NEIMAN-MARCUS, ST. LOUIS, MISSOURI, BY JOHN CARL WARNECKE FAIA AND ASSOCIATES

NEW VERSUS FAMILIAR OPTIONS IN HIGH-RISE APARTMENT HOUSE DESIGN

MOUNTAIN VIEW COLLEGE: TEXAN INNOVATION

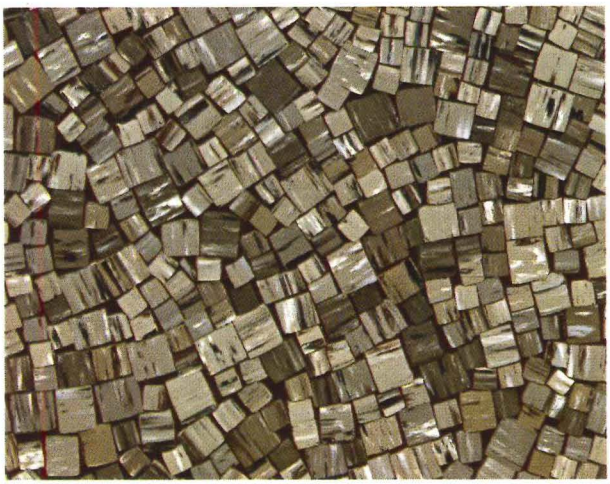
88 PINE STREET: PEI'S FIRM DESIGNS A WHITE CURTAIN WALL FOR MANHATTAN

BUILDING TYPES STUDY: STORES AND SHOPS

FULL CONTENTS ON PAGES 10 AND 11

ARCHITECTURAL RECORD

The Brigantine® floor from Armstrong. At Lowell General Hospital, they'll tell you it has th heart of a beauty and the hide of a brute.



Nurses and orderlies want a floor that doesn't make hard work harder.

The custodial staff wants a floor that doesn't fight back when it's cleaned.

And patients want a floor that doesn't remind them they're in a hospital.

At Lowell General Hospital in Lowell, Mass., everybody's happy. Because the floor they got is Brigantine Vinyl Corlon® from Armstrong.

To the nurses and orderlies, Brigantine's smooth surface means they don't have to struggle to wheel food carts, X-ray machin beds, and other equipmer so vital to better patient ca

To the custodial staff, Brigantine's tough, virtua nonporous surface means spills and soaks can't pen trate. That means Briganti is a floor that's easy to ke sparkling clean. And nowhere is that more importa than in a hospital. What's more, this sheet vinyl floo comes in rolls 6 feet wide and up to 90 feet long—a

x 12" (shown here) or 24" x 24" tiles, and then matched the exposed grid to the d finish. Once your Second Look ceiling is suspended, the grid and ceiling els blend together to give you the look you want. The look of expensive tile. nout the tile and without the expense.

The fact is, Second Look is one of the greatest camouflage jobs you've seen. As well as one of the handsomest. And in today's cost-conscious world, one that really fits. To learn more about this economical lay-in panel, write nstrong, 4204 Rock St., Lancaster, Pa. 17604.

FROM THE INDOOR WORLD® OF

Armstrong

[For more data, circle 2 on inquiry card.

Letters to the editor

Permit me to take issue with Kathleen Kelly's October 1974 office practice article on standard contract forms for professional services.

No standard document produced by AIA or anyone else (including lawyers) can be used without some modification. All AIA documents recognize this in the caveat which appears in the "title block" of every contract form: "This document has important legal consequences; consultation with an attorney is encouraged with respect to its completion or modification." The "tragedy" cited by Ms. Kelly exists not in the document but in the architect's handling thereof. If the architect in his dealings with Ms. Kelly had explained that most everything she was criticizing as not being in the contract was actually there—albeit via Additional Services—perhaps the tenor of their conversation would have changed. The article opts for full detail in the contract yet contradicts itself by pointing out, correctly, that too much detail can create contractual chaos. Ignorance on the part of the user about how to properly use it does not *ipso facto* make the standard form a poor one.

Probably the most difficult part of pre-contract dealings is extracting a clear idea of what the client wants from the architect. The contract form cannot be completed until negotiations are complete; there is no way to arrive at equitable compensation except by full disclosure and a meeting of the minds on required services. Standard forms cannot do those things *for* the architect.

There is too often a tendency, especially on the part of governmental bodies, to set the top dollar first by picking an arbitrary percentage figure or setting an arbitrary maximum lump sum and *then* talking services. This usually results in "bliveting" the architect's contract and requiring a lot of extra work without equitable compensation.

Contrary to Ms. Kelly's conclusion, the architect is well-advised to stay with standard documents which have court-tested wording, wording which tracks other AIA contract documents and ties them all together. The following quotation from *Lawyers and their Work* by Johnstone and Hopson (Bobbs-Merrill Co., Inc., 1967) emphasizes this point in a discussion specifically on the AIA documents:

"Standardized instruments also make for certainty which is increased the longer and more widely the forms are used. Judicial and trade interpretations gradually amplify the documents' express terms, and continued usage increases familiarity with the instruments in a variety of situations. Standard forms are likely to be important enough so that more care and skill go into their preparation and revision than is ture of many non-form instruments."

Following is a quotation from "Contract Alerts" issued in conjunction with seminars on liability conducted by the Office for Professional Liability Research (c/o Victor O. Schinnerer & Company, Inc.):

"The use of standard AIA or NSPE contract documents is highly recommended. When they cannot be used or if they are to be modified because of the client's requirements or otherwise, architects and engineers must be alert to the implications of non-standard contract provisions."

It is of more than passing interest to the profession that New York, California and Ohio have developed a method of determining gross compensation based on prior determination of the services to be required. The Institute, too, has its eye on this as a logical means for the individual practitioner to develop an equitable approach to his compensation. This Cost-Base method allows the architect to price the maximum extent of his involvement. With this method there are no surprises, either to the owner or the architect. Additional services asked for after the contract is signed are easily identified because they have not been previously spelled out.

This appears to be the answer to Ms. Kelly's concern that the architect gets trapped in the money game. It is certainly a lot better and far more prudent than trying to write a new, "appropriate" agreement for each job.

Bernard B. Rothschild, FAIA, FCSI
Finch Alexander Barnes Rothschild and Paschal, Inc.
Atlanta, Georgia

Your editorial in the January issue was well done and certainly has a great deal of meat for discussion. Frankly, I wonder if our illustrious Federal government has the wisdom to listen.

Philip J. Meathe, FAIA
Smith, Hinchman & Grylls Associates Inc.

We were very pleased that our River Quay project was included in the December issue.

Unfortunately, your article did not give proper credit to the firm of Patty Berkebile Nelson Associates, one of the associated architects noted in the project information.

Linda Morton
Don Wudtke and Associates, Inc.

Calendar

APRIL

14-15 Regional seminar on Section 8 Housing Program, Hyatt Hotel, San Francisco. Sponsored by the National Association of Home Builders, the National Association of Housing and Redevelopment Officials, and the Council of State Housing Agencies. Contact: National Association of Home Builders, Washington, D.C. 20005.

14-17 Conference on Rural America, Sheraton-Park Hotel, Washington, D.C. Contact: Rural Housing Alliance, 1346 Connecticut Avenue, N.W., Washington, D.C. 20036.

23-28 Twenty-eighth annual meeting of the Society of Architectural Historians, Copley Plaza Hotel, Boston. Contact: Mrs. Rosann S. Berry, Society of Architectural Historians, 1700 Walnut Street, Philadelphia, Pa. 19103.

24-25 Forty-first annual meeting of the Forest Products Safety Conference, Washington Plaza Hotel, Seattle, Wash. Contact: Mr. William J. Hays, Weyerhaeuser Company, P.O. Box 188, Longview, Wash. 98632.

27-May 1 Eighth annual meeting, the National Conference of States on Building Codes and Standards, Santa Fe Hilton Inn, Santa Fe, New Mexico. Contact: Center for Building Technology, National Bureau of Standards, Washington, D.C. 20234.

28-30 Seventh annual Apartment Builder/Developer Conference and Exposition, Miami Beach. Contact: Mr. Larry Glazier, Lewis & Associates, 68 Post Street, Suite 506, San Francisco, Cal. 94104.

MAY

1-2 Seminar on How to Market Professional Design Services, Dallas. Contact: Building Industry Development Services, 1301 20th Street, N.W., Washington, D.C. 20036.

7-11 Scandinavian Furniture Fair, Bella Centre Mart Building, Copenhagen. Contact: Secretariat, Scandinavian Furniture Fair, 8, Hellerupvej, DK-2900 Hellerup, Denmark.

18-22 Annual convention, American Institute of Architects, Atlanta. Contact: AIA headquarters, 1735 New York Avenue, N.W., Washington, D.C. 20006.

24-28 International Association for Housing Science symposium, Atlanta. Sponsored by The Housing Institute, Clemson University. Contact: Dr. Herbert Busching, Department of Civil Engineering, Clemson University, Clemson, S.C. 29631.

ARCHITECTURAL RECORD (C
with AMERICAN ARCHITECT,
TECTURE and WESTERN ARC
AND ENGINEER)

April 1975, Vol. 157, No. 4, Ti
in U.S. Patent Office copyright ©
McGraw-Hill, Inc. All rights r
Copyright not claimed on front c
editorial four-color separations.
in Reader's Guide to Periodical Li
Art Index, Applied Science and T
ogy Index, Engineering Index, a
Architectural Index. Published
except May, August, and Octob
semi-monthly, by McGraw-Hill,
Quotations on reprints of article
able. Every possible effort will b
to return material submitted for
publication (if accompanied by s
addressed envelope), but the edit
the corporation will not be respon
loss or damage.
EXECUTIVE, EDITORIAL, CIRCUI
AND ADVERTISING OFFICES: 1
enue of the Americas, New Yor
10020. Other Editorial Offices: 4
tery Street, San Francisco, Cal. 9
PUBLICATION OFFICE: 1221 Av
the Americas, New York, Nev
10020. Second-class postage paid
York, New York 10001 and at ad
mailing offices.
OFFICERS OF McGRAW-HILL PU
TIONS COMPANY: John R. Emer
ident; J. Elton Tuohig, executiv
president-administration; David
Grath, group publisher-vice pr
senior vice presidents: Ralph Bla
circulation; John B. Hoglund, cor
David G. Jensen, manufacturing;
L. Jones, marketing; Jerome D.
planning & development; Walter
bury, editorial.
CORPORATION OFFICERS: S
Fisher, chairman of the board an
executive officer; Harold W. McGr
president and chief operating
Wallace F. Traendly, group pr
McGraw-Hill Publications Co., a
Graw-Hill Information Systems Co
ert N. Landes, senior vice preside
secretary; Ralph J. Webb, treasure
SUBSCRIPTIONS: Subscriptions s
only from architects and engineer
tion, firm connection, and type
must be indicated on subscription
CHANGE OF ADDRESS or subsc
service letters should be forwar
Fulfillment Manager, ARCHITEC
RECORD, P.O. Box 430, Hightstov
08520. Provide old and new ad
zip code or postal zone number.
ble, attach issue address label.
subscription prices: U.S., U.S.
sions: $12.00 for architects, engine
other individuals in the fields
others $24.00. Canada: $14 for arc
engineers and other individuals
fields served; others $26.00. Othe
tries: $28.00 to architects, eng
others $35.00. Single copies
GUARANTEE: Publisher agrees to
that part of subscription price appl
unfilled part of subscription if se
unsatisfactory.
ASSOCIATED SERVICES/McGraw-
formation Systems Co.: Sweet's
Files (Architectural, Light Constr
Interior Design, Industrial Constr
Plant Engineering, Canadian
struction), Dodge Building Cost Se
Dodge Reports and Bull
Dodge/SCAN Microfilm Systems,
Management Control Service,
Construction Statistics, Dodge r
construction newspapers (Ch
Denver, Los Angeles, San Francisc
THIS ISSUE is published in nation
separate editions. Additional pa
separate edition numbered or allov
as follows: Western Section 32-1 t
32-2. POSTMASTER: PLEASE
FORM 3579 TO Fulfillment Ma
ARCHITECTURAL RECORD, P.O
430, Hightstown, N.J. 08520.

Arkwright's unique DRY ERASABLE feature is just one of the things you'll like about our Durester Diazo Film.

You start with Arkwright's extra-ordinary drafting surface— a surface a professional draftsman will really appreciate! Then we sensitize it (as only Arkwright can), for super-contrast, super-sharp reproduction.

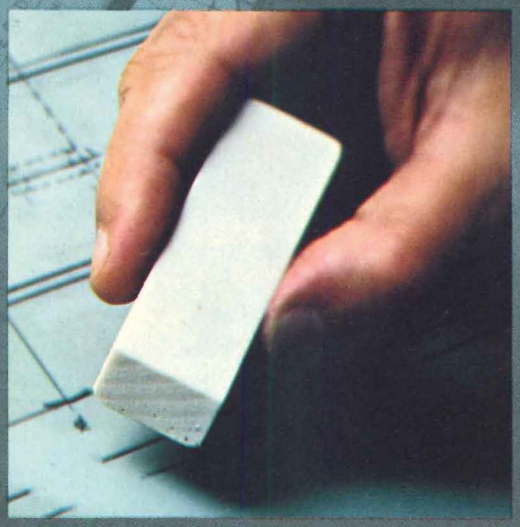
Our Durester Diazo Films (intermediates) are today's "working drawings" for tomorrow's "change in plans", print copies, microfilm masters or further reproducibles. Diazo intermediates are available from 1.5 to 7.5 mil, and in a wide range of colors and speeds for special custom applications, including aluminized for labels and adhesive-backed for paste-ups. Today, ask your Arkwright representative how you can save time and money with Durester Diazo Films. From Arkwright.

You see, our Durester Diazo Films have *earned* the right to be called "second originals"! See if you don't agree?

FREE PRODUCT SEMINAR! To demonstrate the latest developments in the state of the art, and to help improve the operating efficiency of your Drafting and Reproduction Departments, Arkwright will bring in its Team of Specialists and hold a Seminar tailored to your needs. Call or write for details.

a change in plans?

Aren't you glad you're using Arkwright's DRY ERASABLE Diazo Film?



New ways to think arkwright incorporated

Main Street, Fiskeville, Rhode Island 02823 (401) 821-1000

"Because you're in the constructio business in a big way...

When you're talking commercial/industrial air conditioning, you're talking our language.

Single package central air conditioning systems? General Electric offers application flexibility. Our systems can be ducted, or equipped with optional/grille/filter frame. They can be installed through the wall, on the roof or on a slab at ground level. Factory charged refrigerant simplifies installation, improves reliability.

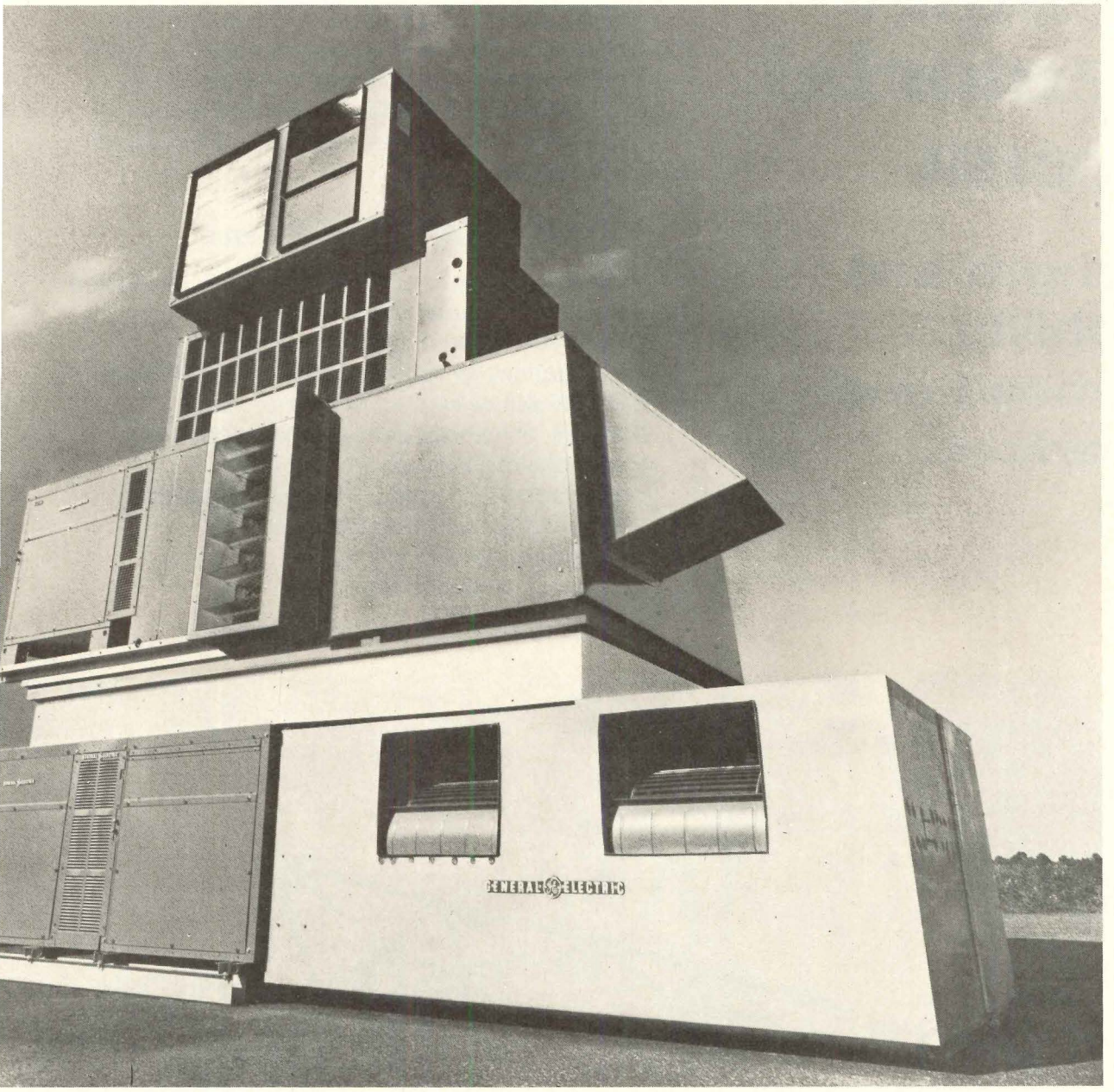
Combination Gas-Electric Units? General Electric offers a complete line of year-round comfort systems for commercial applications. These units combine in one cabinet gas furnace economy and electric air conditioning comfort and convenience. These units, v cooling capacities up to 20 tons, may be multiples where greater heating and coo requirements exist, with the added bene zonal temperature control.

Split cooling systems? General Elec large selection of condensing units avai capacities from 18,000 BTU/H through BTU/H, also cooling coils with capaciti 12,000 BTU/H through 120,000 BTU/H configuration to couple with virtually a air furnace. ("Flat" coils are available in ties from 24,000 to 60,000 BTU/H.)

Count on us for a wide selection of and outdoor air handling sections to acc

:neral Electric is in the central air nditioning business in a big way."

oseph H. Gauss, Vice President and General Manager, Air Conditioning Products Division, General Electric Company.



ariety of supplementary electric heaters ities from 12,000 to 480,000 BTU/H. Also e: steam and hot water coils, return s and air distributors.

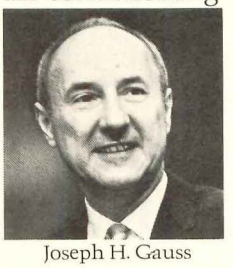
en there is the *Weathertron*® heat pump— veather heat pump that provides year- omfort and convenience for commercial ustrial buildings. Used in multiple eneral Electric heat pumps cool and heat dous areas with the added advantage of -zone temperature control.

it systems are available from 18,000 to BTU/H and packaged equipment from o 120,000 BTU/H. The 7½- and 10-ton e compatible with roof-top accessories.

So, as you see, we're in the central air conditioning business in a big way. And we intend to be in it in a bigger way all the time.

If you're contemplating an air conditioning installation, get in touch with a General Electric Central Air Conditioning dealer. He's in the Yellow Pages under "Air Conditioning Equipment and Systems."

"We're going to be in this business for a long time."



Joseph H. Gauss

GENERAL ELECTRIC

For more data, circle 4 on inquiry card

R. Crosby Kemper Memorial Arena

Strength and durability, overhead and underfoot.

The strong design of the Kemper Arena, with roof and walls suspended from exterior trusses, combines functionalism with durability and ease of maintenance.

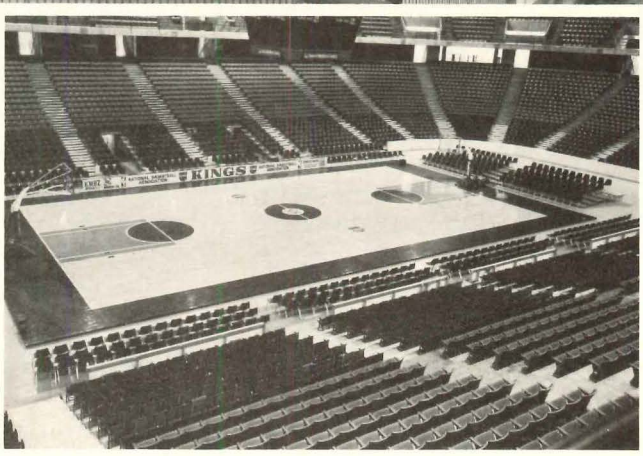
Inside, a championship-caliber basketball floor finished with Trophy® Gym Seal and Finish provides a superb playing surface—hard, smooth, slip-resistant and glare-free—for games of the Kansas City-Omaha Kings professional basketball team. As in more than 20,000 other gyms, arenas and sports complexes, Trophy offers unequaled wearability, beauty and ease of maintenance.

Hillyard Specifications Manual

Write or call for your copy today. This loose-leafed manual is numbered in conformity with the Uniform Construction Index and includes specifications for treatment of all types of floors. Each file will be kept up to date for you. Also ask, at no obligation, for the advice and assistance of a Hillyard architectural consultant. He's trained to recommend proper, approved treatments for the floors you specify and also to supervise application at the job site.

See our specifications manual in Sweet's.

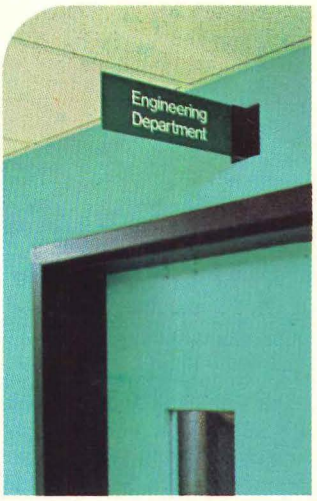
Architect: C. F. Murphy Associates, Kansas City, Missouri.
Portable floor by Horner Flooring Company, Dollar Bay, Michigan.

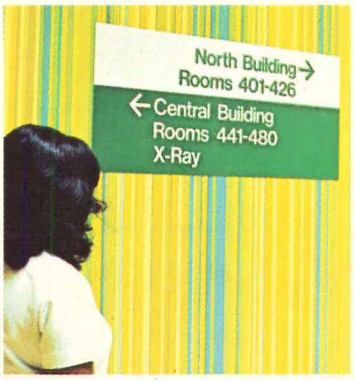


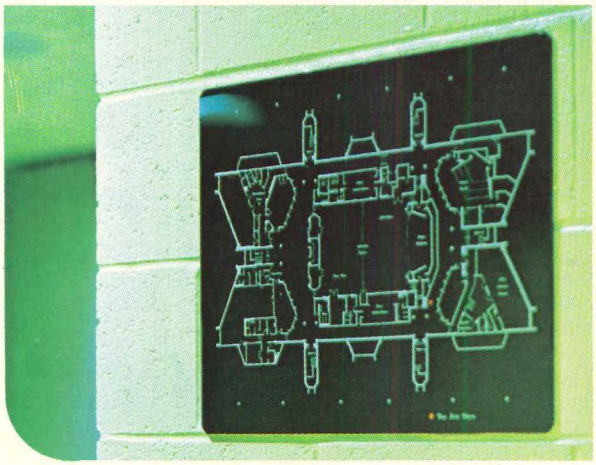
Hillyard
FLOOR TREATMENTS
302 North Fourth Street
St. Joseph, Missouri 64502
(816) 233-1321
Keeper of the floors world-wide

For more data, circle 6 on inquiry card

INTRODUCING NOMAR—THE SIGNAGE THAT RESISTS EVERYTHING BUT GOOD VISIBILITY







Wind, weather, vandalism, chemicals, solvents, ultra-violet rays—NOMAR fiber reinforced polyester resists damage as no other signage material can.

Reason is that we embed the images into the subsurface of the fiber and plastic where the villains can't get at them. And for crisp visibility and color clarity, we match the light refraction index of the fiberglass mat to that of the polyester resin.

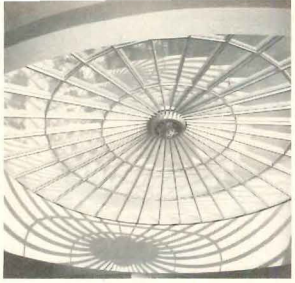
Highly versatile With NOMAR, virtually any image in any printable color can be reproduced from camera-ready art—logos, symbols, maps, photos, supergraphics, etc. Silk screening is the ideal reproduction process, although many other graphic processes may be used.

For interiors or exteriors NOMAR signs can be projected from walls or ceilings with simple hardware. Or surface mounted with tape or adhesives. In post and panel assemblies or in monolithic structures, they are extremely durable, attractive and architecturally compatible. NOMAR signage may be opaque or translucent to permit internal illumination. Maximum dimensions of a standard single sheet are 12 feet by 4 feet. Thicknesses range from 1/32-inch to 1/4-inch.

Matthews. For total identification systems—from design through installation. Write for our comprehensive catalog. Jas. H. Matthews & Co., 1315 West Liberty Avenue, Pittsburgh, Pa. 15226.

For more data, circle 7 on inquiry card

JHM MATTHEWS
Identification Systems



Cover: Dome, Neiman-Marcus Store
St. Louis, Missouri
Architects: John Carl Warnecke FAIA and Associates
Photographer: Martin Helfer

EDITOR

WALTER F. WAGNER, JR., AIA

MANAGING EDITOR

HERBERT L. SMITH, JR., AIA

SENIOR EDITORS

ROBERT E. FISCHER
WILLIAM B. FOXHALL
MILDRED F. SCHMERTZ, AIA
ELISABETH KENDALL THOMPSON, FAIA

ASSOCIATE EDITORS

GERALD ALLEN
GRACE M. ANDERSON
BARCLAY F. GORDON
CHARLES E. HAMLIN
CHARLES K. HOYT, AIA
WILLIAM MARLIN, for
Programs in continuing education

EDITORIAL ASSISTANT

JANET NAIRN

PRODUCTION EDITOR

ANNETTE K. NETBURN

DESIGN

ALEX H. STILLANO, Director
ALBERTO BUCCHIANERI, Associate
ANNA-MARIA EGGER, Assistant
MURIEL CUTTRELL, Illustration
J. DYCK FLEDDERUS, Illustration
JAN WHITE, Consultant

EDITORIAL CONSULTANTS

EDWARD LARRABEE BARNES, FAIA
JONATHAN BARNETT, AIA, Urban design
GEORGE A. CHRISTIE, JR., Economics
ERNEST MICKEL, Hon. AIA, Washington
PAUL RUDOLPH, FAIA
Foreign architecture:
L'Architecture d'Aujourd'hui, Paris

McGRAW-HILL WORLD NEWS

RALPH R. SCHULZ, Director
9 domestic and 10
international news bureaus:
Bonn, Brussels, Buenos Aires,
London, Milan, Moscow, Paris,
Singapore, Tokyo, Toronto.

SALES MANAGER

LOUIS F. KUTSCHER

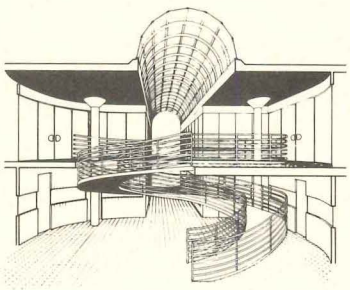
CIRCULATION MANAGER

HUGH S. DONLAN

PUBLISHER

BLAKE HUGHES

THE RECORD REPORTS



ARCHITECTURAL BUSINESS

APRIL 1975 ARCHITECTURAL RECORD

TURES

Ben Weese versus Stanley Tigerman: a debate

Architect Tigerman believes that Mies' esthetic still works for apartment towers as well as for office buildings, yet can be improved upon. He proves his point with Boardwalk, an apartment complex, and contrasts it with Lake Village East, a multi-faceted, highly original approach by Harry Weese & Associates. Ben Weese defends his so-called minimum perimeter apartment tower scheme. The argument is lively and the contrasted buildings are shown in detail.

Displaying and preserving our architectural heritage

. . . those countless drawings and other documents from the past that describe the ways architects have designed and built buildings. What are we doing to preserve them?

Architects' office interiors: The "bare brick school"

In their enthusiasm for renovating old buildings, architects have themselves become major consumers of such space for their own professional offices—and they have developed a surprisingly consistent "style" for adapting them:

Baker Rothschild Horn Blyth, architects, Philadelphia

Hellmuth, Obata & Kassabaum, architects, San Francisco

William Morgan Architects, Jacksonville, Florida

John Hilberry & Associates Inc., architects, Detroit

Robert Welton Stewart, architect, Richmond

Mountain View College Dallas, Texas

Part of a series of two-year colleges in Dallas, an initial building sets a high standard for the scope of facilities and excellence of design that will be provided under the new educational program.

BUILDING TYPES STUDY: 473

Martin Heller

ARCHITECTURAL ENGINEERING

NEXT MONTH IN RECORD

Building Types Study: Schools

Fewer pupils, surplus space and bare-bones budgets have placed enormous pressures on both private and public schools serving kindergarten through twelfth grade students. The architect's role in maximizing the investment that *is* made in space in a way that nurtures learning is the subject of this article on rehabilitating schools.

For information about Al's collections of furniture, lighting, art and accessories
write Al Atelier International, Ltd., 595 Madison Avenue, New York City, New York 10022 or phone 212/644-0400.
Additional showrooms: Boston, Chicago, Dallas, San Francisco, Atlanta, Los Angeles, Miami, Minneapolis.
Sales offices: Denver, Detroit, Akron, Houston, Philadelphia, Portland, San Juan, Washington, D.C., Webster, N.Y.
Furniture illustrated manufactured by Cassina

For more data, circle 8 on inquiry card

Tweedle-dum; Tweedle-dee: Where do they get those priorities?

Nothing inconsistent about me: I went up in smoke again when I read that the President had chosen—now that he had decided to release some impounded funds—to release $2 billion of impounded Highway Trust Funds. $2 billion for roads that we're supposed to minimize driving on so we won't waste gasoline? $2 billion for roads when innovative housing programs (like New York State's Urban Development Corporation) are foundering? $2 billion for roads when there's no money for slum rehabilitation?

The reason for the release of $2 billion for roads would seem to be based not on any kind of real need (on a scale of 1 to 10, where would you put roads, compared with, say, low-income housing or nursing homes or slum rehabilitation—or pollution control, or better urban schools, or food stamps?)

It sure looks that this particular $2 billion got released because it's the easiest $2 billion to release—the President can simply un-impound it from that blankety-blank, single-purpose, beautifully financed Highway Trust Fund without getting involved with Congress.

The problem is compounded, seems to me, by the rules of the Highway Trust Fund, which require matching funds—sometimes 10 per cent, sometimes 30 per cent—by the states. Thus, the release of $2 billion by the Federal government will give the state governments a Hobson's choice: If they don't come up with the matching funds, they will be subject to highly organized criticism from political opponents, labor, the highway lobby, et al for "failure to obtain available funds for jobs through sloth and incompetence (or something like that)." If they do elect to try and scramble, on a first-come, first-served basis, for their "share" of the Federal money, they are surely diverting limited state funds to highways that they might (given a free choice) use for an entirely different array of priorities.

Finally, while we're coping with inflation, let us consider that in no other area of construction have costs gone up *over one-third* in the last year—as they have in road-building.

There is no doubt that the road-building industry can use the boost. But . . .

The Acting Secretary of DOT, John Barnum, makes a "good case" for this particular un-impoundment: the money can be committed immediately, with preference being given to projects that can begin immediately; an estimated 107,000 jobs will be created, half on construction sites, half in supplying industries; and unemployment is drastic in the highway construction industry.

Can't argue with any of that—except to suggest that you could make the same case for releasing housing funds; with the added kicker that what we could get for the $2 billion if it were housing funds that had been released is about 100,000 housing units that real people could live in instead of more and/or smoother roads. The same and probably more jobs in an industry with equal unemployment. Housing starts might even (one blushes to suggest) employ a few architects.

Isn't (for example) housing coming back anyway; and gotten its own Federal funds?

The answer is yes and no; and mostly no. George Christie, chief economist for McGraw-Hill Information Systems Company and the most accurate crystal ball in the East, points out in his first 1975 Forecast update (page 63): "While the improvement from beginning to end of 1975 is able to be quite strong, the year's total of housing starts is not apt to exceed 1.4 million, mainly because the recovery will be taking off from an extremely low point." *N.B.:* Most of that housing, Mr. Christie figures, will be single-family housing.

At the NAHB conference/Exhibition in January, the homebuilders were cheered by promises of more support from the Feds. For example, under the Home Buyers Emergency Assistance Act of 1974, $3 billion has already been released for mortgage funding and another $2 billion is due soon. Sound good? That's about it: It sounds good. But for a whole lot of complicated reasons (including the not-so-complicated reasons that houses now cost more than people are willing to pay for them) the mortgage-easing route hasn't worked.

So why not be $2 billion direct about it? In August 1974 the President signed the Housing and Community Development Act of 1974, authorizing $12 billion of spending authority over three years. That money was intended for direct subsidy of housing and the improvement of community infrastructure—like water treatment and pollution control. Almost none of that $12 billion has been appropriated because HUD just hasn't gone after it—which is just about as useful as impounding it. How about $2 billion of that money?

In short, while we're making jobs (and there is indeed a great need for that) how about making jobs that make improvements that are needed more than new roads?

—Walter F. Wagner, Jr.

Reducing building energy use: How—constraints or incentives?

It's no secret that Federal and state governments, and model-code groups as well, are moving toward mandatory standards for energy usage in buildings, and with no little momentum. The Administration's proposed Energy Independence Act of 1975 would require HUD, with the collaboration of the Federal Energy Administration and Department of Commerce, and utilizing the National Bureau of Standards, to propose energy performance standards for both residential and commercial buildings. Buildings that don't comply would not be eligible for Federally-financed loans, or even loans from Federally-insured or regulated banks. State and local codes are viewed as, "an existing means by which to assure with a minimum of Federal interference . . . that newly constructed buildings contain adequate energy conservation features.

Ever since the oil embargo, political pressure has mounted for codified building energy standards. And if these are to be enacted, many building departments and code groups would like to reference a consensus-type standard that is clear and enforceable.

Whether these standards will be of the prescriptive or of the budget type remains to be seen. Many state governments are currently considering ASHRAE Standard 90 P, "Energy Conservation in New Building Design," which is prescriptive with respect to the building envelope, but which provides a budget approach for determining permissible watts per square square foot for lighting. The building designer doesn't have to abide by the prescriptive rules, however, if he can demonstrate that his design will not exceed the budget figures determined by the 90 P requirements.

The state of Ohio, on the other hand, has developed energy budgets for the 67 building types included in their state code. The budget figures are Btu/hr/sq ft *connected load* (not energy usage), and typically are 50 Btu hr/sq ft (about 112,000 Btu/sq ft/ year) for office buildings, 40 for elementary schools, 70 for hospitals, 100 for stores.

Neither ASHRAE Standard 90 P nor Ohio's energy code set limits on *actual* energy consumption, and for this reason have been criticized by some architects, engineers and building owners among others. While actual energy consumption can be directly determined by meters and fuel bills, it is not easy to say how it might be predicted during the design stage, and whether qualified personnel would be available in building-code departments to evaluate such predictions.

The American Institute of Architects, commenting upon ASHRAE 90 P, has stated, "The present state of the art is such that no reliable standards can be set, and the adoption of the standards approach in formal legislation . . . may retard the nation's realization of its greatest potential in conserving energy in buildings."

The AIA has taken a completely different tack, indicated with the presentation of their new report last month, "A Nation of Energy Efficient Buildings by 1990." Their premise is that older buildings should be retrofitted, and new buildings designed with more energy-conserving equipment. The AIA states that this approach could save as much raw energy as each of the prime energy systems produce: domestic oil, nuclear energy, natural gas or coal.

But in a capital-short economy—which economists predict will continue for some time to come—where is the money to come from?

Leo A. Daly, FAIA, chairman of the AIA Energy Steering Committee, in a talk before the Federal Power Commission, suggested that 12.5 million barrels of oil per day (equivalent) could be saved by 1990 with energy-conserving new and retrofitted buildings. He estimated the capital to generate this otherwise "wasted" energy as $415 billion. If the additional cost to buildings were 10, 15 or 20 per cent, the time required for payoff would be 10, 13 and 15 years, respectively.

The AIA sees this sort of strategy: with reduced payback periods (10, 13, 15 years instead of 30), national capital shortage would be significantly reduced. Present energy suppliers would begin to act as "the basic integrator and manager of a national energy system." There would be an optimum mix of on-site generation and traditional supplies. The energy system within the building, says the AIA, might be owned by the utility and an energy service charge would be levied, which could be structured for a higher than normal return, yielding a surplus to go back into capital investment "to keep the ball rolling." But utilities appear to be having plenty of trouble right now getting their rates increased to pay for higher fuel costs and for capital expenditures for new generating facilities. In fact, they lost potential capital during the oil embargo when customers cut back energy usage by 12 per cent or more during the winter months. So again the question, where does the capital come from? Has the AIA talked to the "energy" companies? To the Federal government?

Can energy budgets work?
Where do the numbers come from?

The energy budget idea is attractive to architects. Some engineers, such as Arnold Windman of Syska & Hennessy, think it makes sense too. Writing recently in *Business Week,* Windman says that there has been too much leg ing and too little engineering applied to, fi all, air pollution, and, now, energy. He t that energy budgets could be develope business buildings if the sample is enough—in this case, at least 2,500.

Manufacturers of glass and lighting ucts would prefer to see the energy budge proach take precedence. They feel, and without justification, that prescriptive rec ments for the building envelope and for candle levels limit the options of designer building owners, and unduly penalize building sub-systems.

The Flat Glass Energy Conservation mittee has proposed a Model Energy Bu Bill, which gives values for the *"designed* imum annual energy consumption at the b ing boundary excluding process equipme Btu's per gross square foot." Typical v are: 150,000 for office buildings, 125,00 schools, 175,000 for hospitals, 200,00 mercantile.

In support of the 150,000 figure for buildings, the Committee cites a 1972 BO (Building Owners' and Managers' Associa survey of 531 office buildings averaging 000 Btu/gross sq ft/yr. A "light energy st by consulting engineers Ross and Baru aided by BOMA International, showe average of 122,119 for 86 buildings wi computer facilities, and an average of 17 for 144 buildings with computer facilities

Engineer Larry Spielvogel doesn't that meaningful energy budgets are all easy to arrive at. He cites the range of b numbers found in surveys. Further, he p out that energy consumption varies with of mechanical system—fan-coil, indu variable-air-volume; central vs. unitary energy, for one thing, can be very signif Also, he points out, there is no direct rel ship between installed capacity of hvac e ment and energy consumption.

There seems to be very little, if any cussion publicly of whether or not energ itself might be a sufficient constraint fo banding energy—the constraint pe sweetened a bit with capital tax reductio more efficient hvac equipment. Despit present disparities in energy costs acro country, the feeling in Washington is th will even out, and everybody will pay m

On the other hand, considering the Administration's philosophy of letting the ticity of the market—the "real" co goods—determine prices to consumers wonders whether tax penalties might b plied to excessive consumption of e above "budget" numbers.—*R.F.*

com/core

com/core
com/core

com/core

A dynamic construction advance that means superior hospital care-systems at significantly lower cost!

COM/CORE obsoletes *all* room-to-room conduit runs, and many outlets and overhead connections. It gathers communications, power, and life-support pipelines in one continuous COREWAY that lets you add services—even modify entire patient wings—with a minimum of downtime and expense.

COM/CORE drop-feeds services to prewired wall CONSOLES which have provisions for every patient/staff facility you may need now or in the future. Mounted back-to-back, they eliminate in-wall conduit, piping, separate headwall outlets, boxes . . . permit minimal wall thickness for more useable room space.

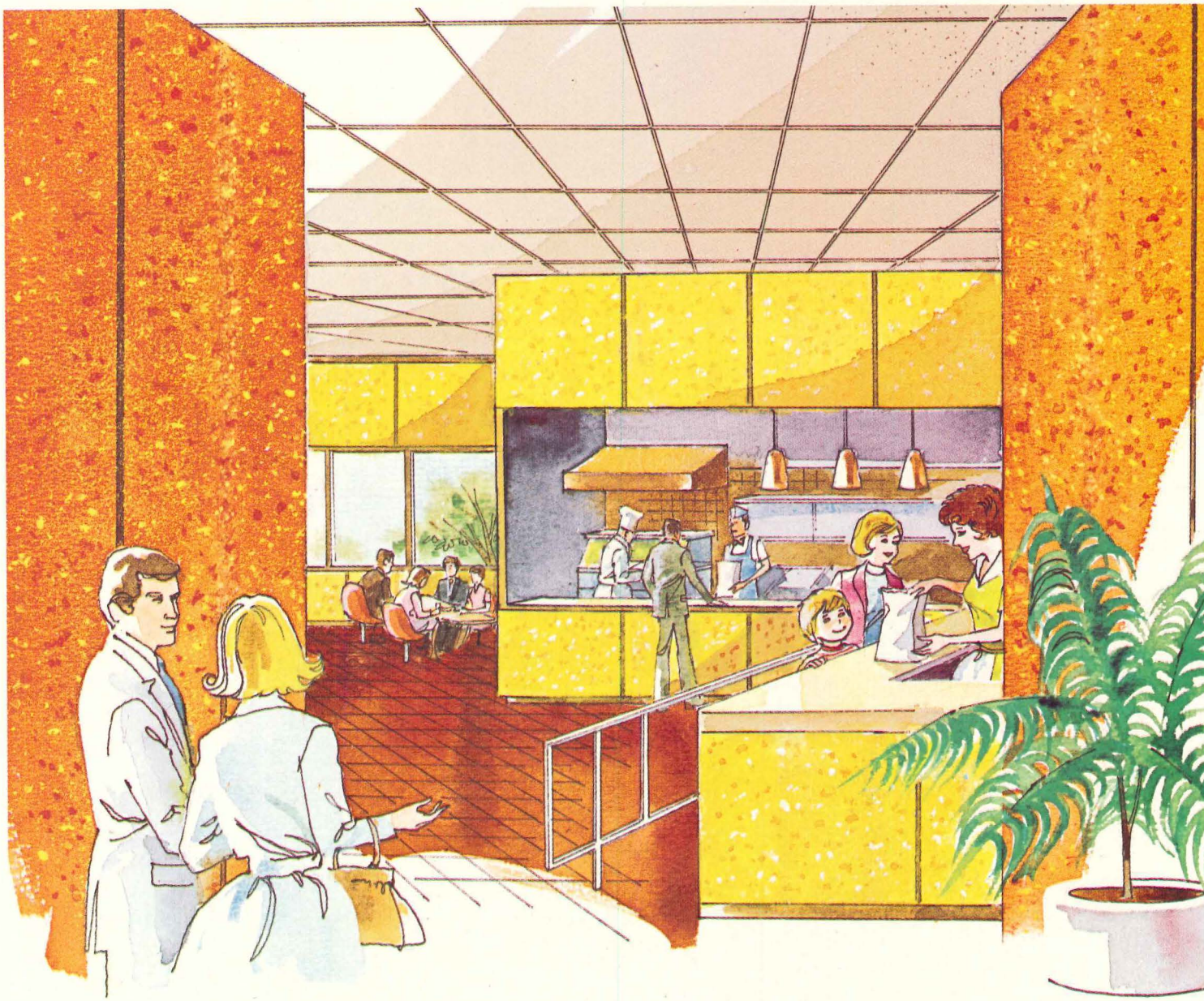
COM/CORE works with any ceiling and wall subsystem; is pre-engineered to install fast and accurately. It speeds construction, lowers labor costs, reduces interim financing and helps achieve earlier occupancy. From planning and design to operations and maintenance . . . every facet of the hospital is positively affected by COM/CORE!

Find out how COM/CORE can work for you. Write today for Bulletin XD4135. Your stamp will be the biggest dime's worth you've ever invested.

DAY-BRITE
DAY-BRITE LIGHTING

DAY-BRITE LIGHTING DIVISION
EMERSON ELECTRIC CO.
8100 W. FLORISSANT
ST. LOUIS, MISSOURI 63136
EMERSON

For more data, circle 9 on inquiry card



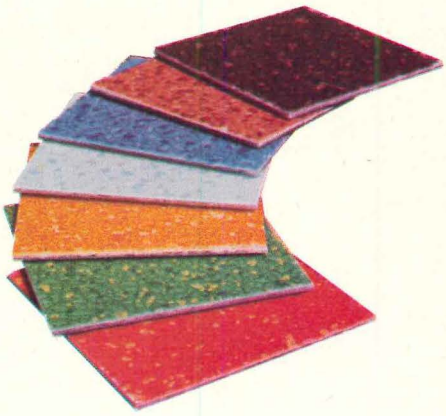
PATNEL® decorative paneling

Versatile, Durable, Cleanable

One frp wall panel that serves *all* purposes for fast food chains and restaurants. It's warm and festive and lends color, cheer, and atmosphere to dining, customer, and service areas. It's tough, stain resistant, easily cleaned, and stands up to daily wear and tear in kitchens and work areas. It repels grime and grease . . . stays bright, colorful, and new looking.

For a completely coordinated look, this indoor/outdoor PATNEL panel of fiber glass reinforced plastic is also ideal for soffits, fascias, washrooms . . . or anywhere decor is important, durability is a must.

PATNEL paneling is offered in a wide variety of standard colors and patterns.



Yet, your individuality and creativity sign and color can be reproduced to your work an exclusive, custom look color and design are embedded withi panel where they cannot chip or fad will keep their fresh, bright appearan

PATNEL paneling—easy to install to clean, easy to maintain. This "go e where" panel provides the design and orative versatility you need.

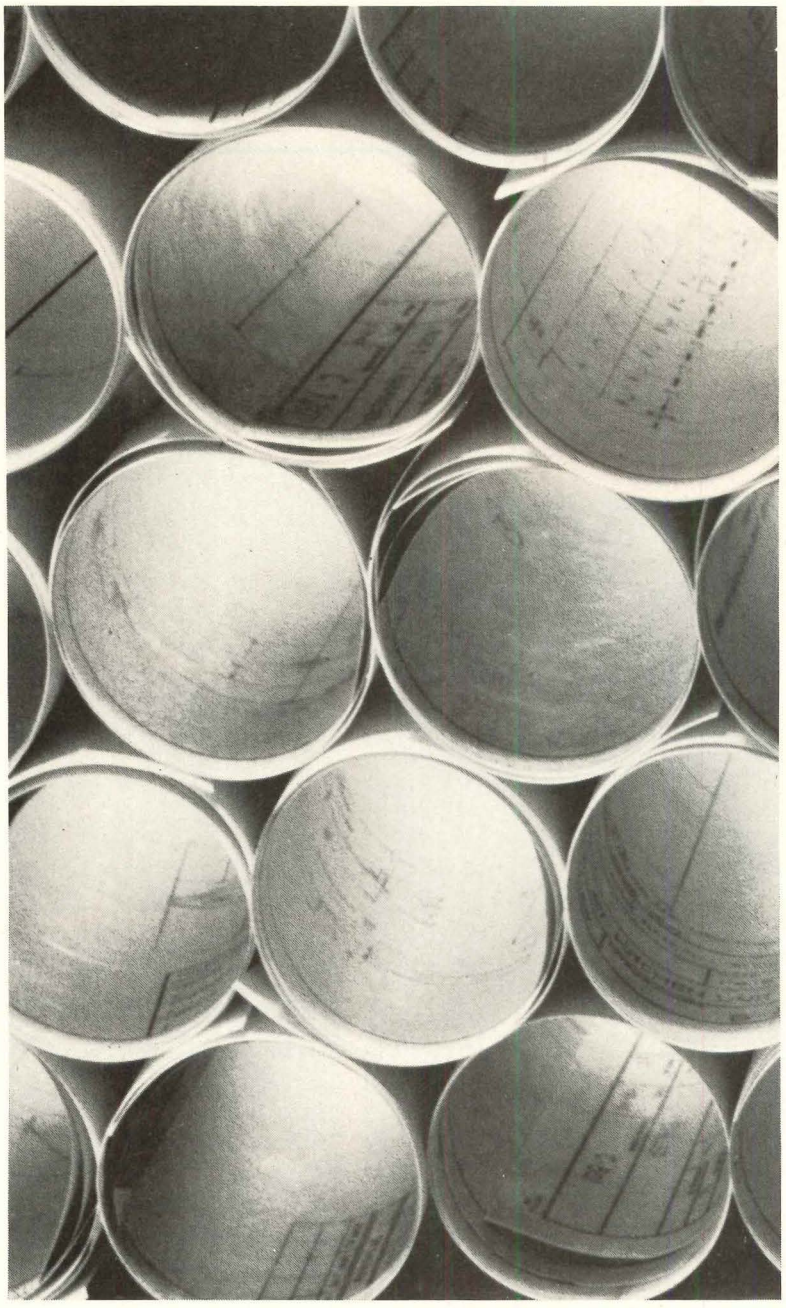
Request samples,
specifications, and information today.

kemlite **KEMLITE CORPORAT**
P. O. Box 429, Joliet, Illinois

**PATNEL paneling is manufactured exclusively by Kemlite Corporation, Joliet, I.*

For more data, circle 10 on inquiry card

How to get more production out of your drafting room.



We don't mean your draftsmen aren't working hard. Certainly they are! But what exactly are they doing? Probably a lot of their work involves revisions, repetitive elements, maybe even restorations. Much of which could be done in minutes instead of hours—photographically.

We can explain how Kodagraph films and papers and modern photo-reproduction techniques can cut redrawing time to a minimum...give you more design time...and probably make your drafting budget go further, too.

And we can show you how to get reproductions back to your draftsmen faster, with a Kodak Supermatic-Star processor. This automated unit processes both wash-off and conventional films, quickly and with outstanding uniformity.

For more information, write: Eastman Kodak Company, Graphics Markets Division, Dept. R5717, Rochester, N.Y. 14650.

Kodak products for drawing reproduction.

Kodak

For more data, circle 11 on inquiry card

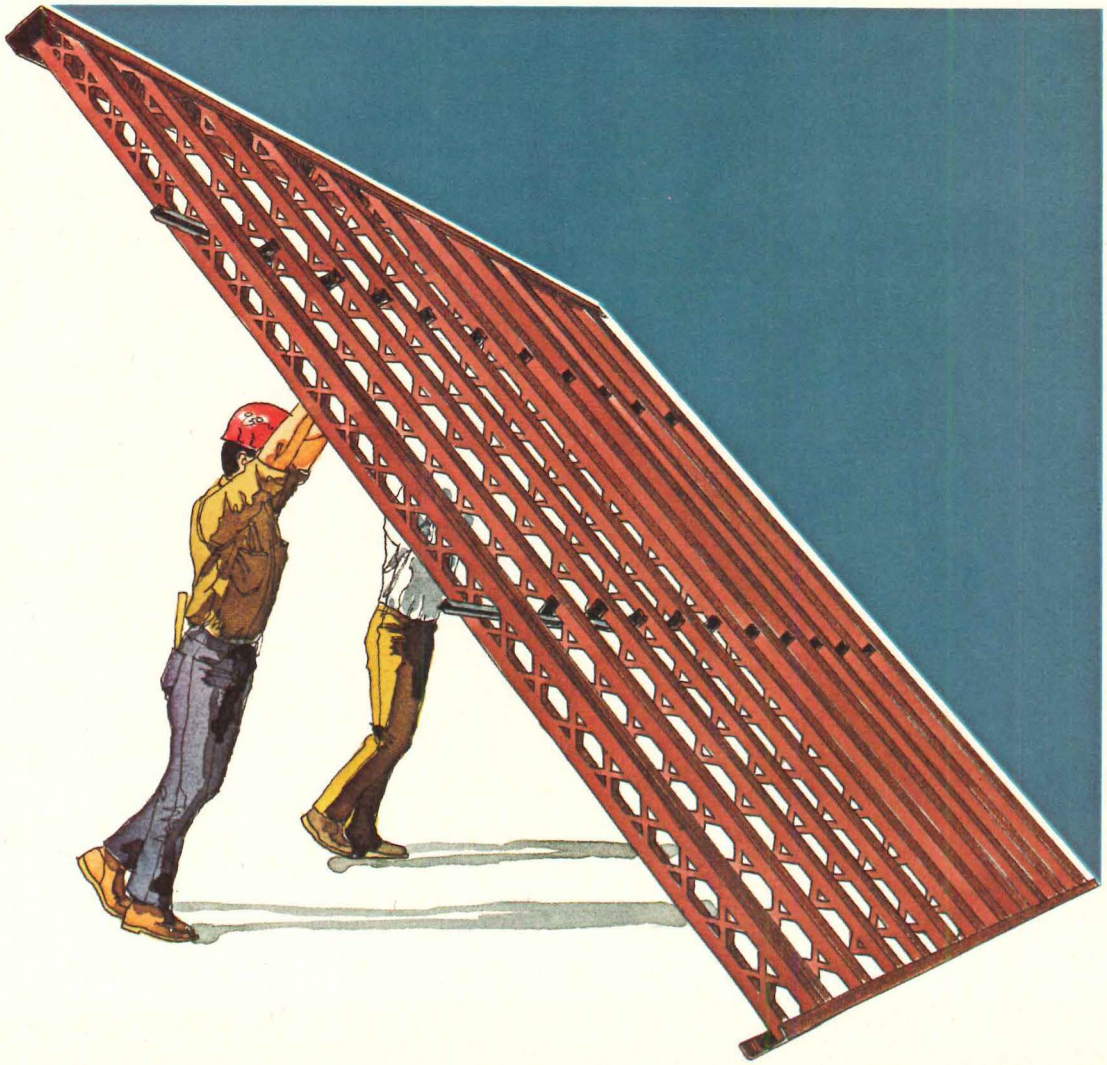
don't overlook the versatility of INRYCO/MILCOR® light gage steel framing

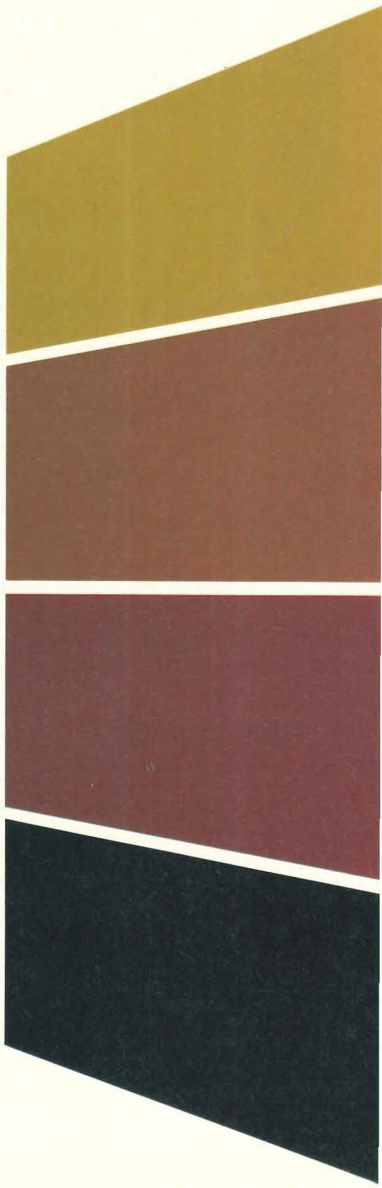
It may be the best way to achieve the effect you w within your budget.

Because of its versatility, light gage steel framing offers worthwhile opportunities for savings in buildings of all shapes and sizes...without restricti your design.

Its uses range over a wide spectrum, including: floo ceiling and roof conditions; interior load bearing wa and non-bearing partitions; and a great variety of exterior wall conditions. It can provide the complet structural framework for buildings up to four stories high.

Just about any surfacing material may be used with Interiors may be drywall, plaster over metal lath or gypsum lath, wood paneling, etc. Exteriors may ha cementitious membranes—textured stucco, expos





egate, simulated brick or stone—or may be brick
eer, metal panels, textured plywood or any other
t material.

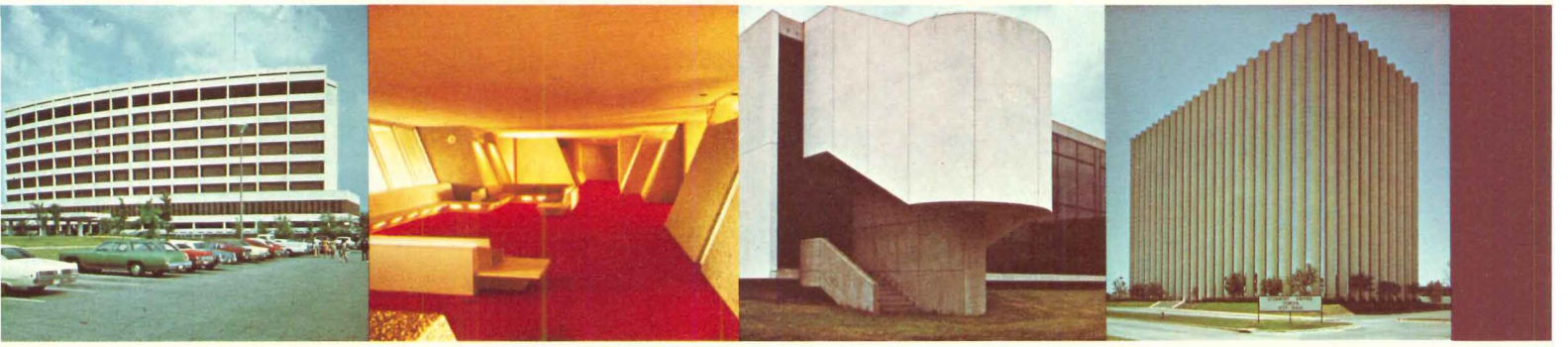
savings it offers may be the result of any one or a
bination of factors: easier execution of intricate
gns; lower in-place cost; faster erection; reduced
dation and footings requirements because of
weight; insurance savings through incombustible
gs. Some or all of these led to its selection for use
e varied buildings shown in the accompanying
os—a small representative selection of recent
co/Milcor projects.

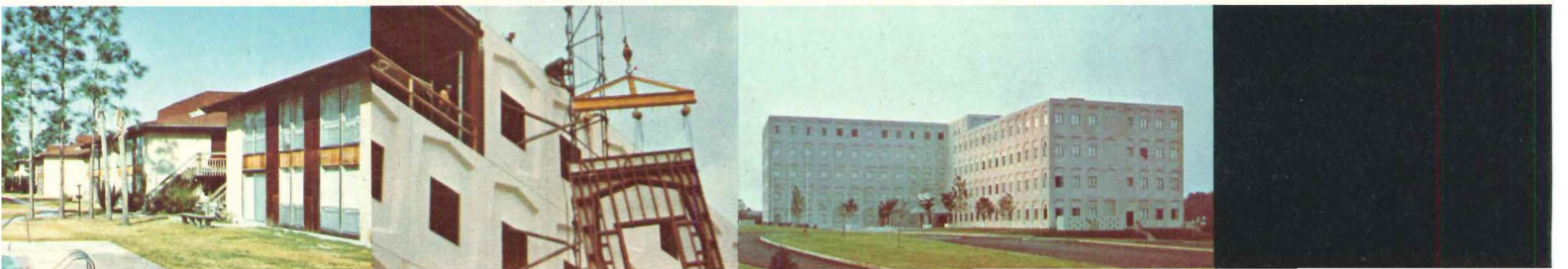
erever your design emphasis is concentrated—
rise or low rise; commercial, institutional or
dential—Inryco/Milcor Light Gage Steel Framing
ems might well provide the perfect solution to a
budget problem. See our catalog in Sweet's, section 5.3/In. Or, if you'd like our representative to call and discuss how the advantages of these systems may apply to a project you are planning, please contact: Milcor Division; INRYCO, Inc.; Dept. D, 4033 West Burnham Street, Milwaukee, Wisconsin 53201.

INRYCO
an **INLAND STEEL** company

General Offices: Melrose Park, Illinois
Formerly INLAND-RYERSON CONSTRUCTION PRODUCTS CO.

For more data, circle 12 on inquiry card






NEW STEEL

Right now is when you should call in Simmons for all the furnishings.

With rising construction costs and the need for careful budgeting, you have to know what your total job will cost – right from the start. And the faster you know, the faster you can turn your drawings into paint and plaster. So the more dollars you stand to save.

That's why right now is the time to call Simmons for your complete furnishings needs.

Simmons can supply virtually everything for your interior design, from lamps and accessories to carpeting. And everything in between. You'll have a single, complete quote for the entire job. That will make budget planning easier and much more accurate.

When you give the complete furnishings assignment to Simmons, you'll save a lot of hassle later on, too. For example, there'll never be a case of carpeting clashing with draperies. Because Simmons' design staff can work it all out with your interiors specialist. It's part of the service.

In addition, you'll have a Simmons project coordinator to take care of all the bothersome paperwork and other details you'd normally have to handle yourself. Think of it—only one man to deal with instead of dozens of salesmen and suppliers. And no need to worry about making sure that the walls are up before the wall covering arrives and the carpeting is down before the furniture is delivered.

Your Simmons coordinator takes care of everything. In fact, he may even be able to offer assistance with the financing.

But perhaps most important, your mind will be at ease with the knowledge that everything you buy is Simmons quality. So that once your interior job is complete, you won't have to worry about replacements for a long, long time.

Ed Parrish would like to tell you more about how Simmons can handle your project's total furnishing needs. Contact him at 1870 Merchandise Mart, Chicago, Illinois 60654. Phone: 312/644-4060. Call him now and let him in on your plans.

SIMMONS
CONTRACT DIVISION
MERCHANDISE MART
CHICAGO, ILL. 60654

E CUBE: A COMPUTER PROGRAM TO HELP YOU MAKE MONEY-SAVING, ENERGY-SAVING DECISIONS.

A THREE-PART LIFE CYCLE ANALYSIS—

1. ENERGY REQUIREMENTS.
E CUBE computes the hour-by-hour energy requirements of your building or planned building for an entire year—taking into account U.S. weather data, solar loads, building design, operating and occupancy schedules, and other operating factors. It sums them coincidentally—for single or multiple zones, even multi-building projects. And there's an easy manual check for every calculation.

2. EQUIPMENT SELECTION.
E CUBE lets you build, on the computer, a model of an energy system. Lets you "operate" that system so you can evaluate its performance. E CUBE can simulate many systems for you to compare—from all-electric to total energy, or any combination along the way—so you can choose the one that works best for you.

3. ECONOMIC COMPARISON.
E CUBE compares the total operating and capital costs of each system you study—takes project life and equipment life into account, provides for irregular and replacement expenses, and ranks the systems comparatively for life cycle costs.

E CUBE is accurate. There are other computer programs in this field, but E CUBE is by far the most advanced and has the experience of thousands of runs made by the American Gas Association member companies, industry, and people in private practice. The U.S. government is among the many successful users of E CUBE.

E CUBE is fast, private, moderately priced. When we say it's private, we mean you give your information directly to the computer. Your project data and the results are never seen by any third party. E CUBE is available to you through the Cybernet® System of Control Data Corporation, with installations in 44 major cities. Of course, we stand ready to provide assistance at your request.

An energy saver for new buildings and existing ones. Whether you're in the construction-planning stage, remodeling, upgrading and replacing old equipment, or simply want to check your building's efficiency, E CUBE can help you make the right decision. Right financially and right for conserving America's energy.

Helps you prepare many required reports. Here's another reason you'll find the impartially, statistically calculated results of E CUBE a tremendous help. It provides information for environmental impact statements, cash flow projections required by senior lenders, and is useful in profit planning.

For further information, mail in the coupon below or telephone Ken Cuccinelli, American Gas Association, (703) 524-2000.

Kenneth T. Cuccinelli
Manager, Gate/Energy Systems
American Gas Association
1515 Wilson Boulevard
Arlington, VA 22209

Name_____

Organization_____

Address_____

City_____

State_____ Zip_____

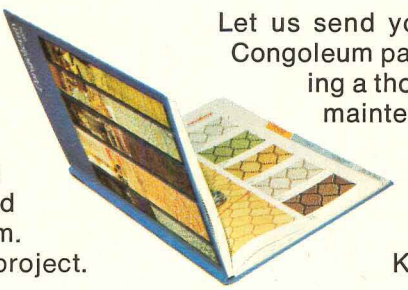
ENERGY CONSERVATION UTILIZING BETTER ENGINEERING.

AGA American Gas Association

For more data, circle 14 on inquiry card

Go ahead. Be creative. Congoleum can match ideas with floor designs for any theme.

From bricks to sunbursts, and woodgrains o mosaics. We've added new designs in Spanish, Mediterranean, Early American, European and Eastern. Congoleum cush-oned vinyls have the features women want most...the ease and convenience of no-wax Shinyl-Vinyl®, the comfort of cushioning, and 375 exciting patterns and colors to choose from. So go ahead...create with us on your next project.



Let us send you your personal copy of the 1975 Congoleum pattern book. Fully indexed, and includ-ing a thorough specifications, installation and maintenance guide for all Congoleum floors. Write for your free copy to Jack K. Berk, contract sales manager, Dept. A, Congoleum Industries, Inc. 195 Belgrove Dr., Kearney, NJ 07032. (201) 991-1000.

Congoleum®

World's largest manufacturer of cushioned vinyl floors

Copyright 1975 Congoleum Industries Inc

i line

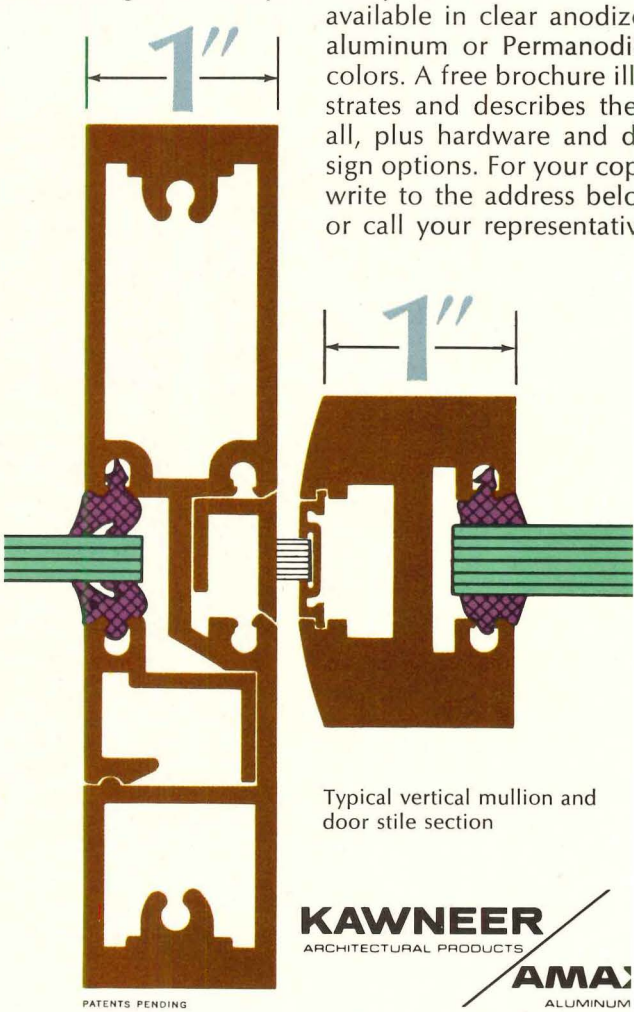
an elegant new dimensio in framing and entrances

Kawneer's I-Line narrow profile aluminum frami and entrances have added an aesthetic new refin ment to design.

For the first time, the beauty of clean, ultra-tri vertical lines on the drawing board have been tran ferred directly into construction. Without sacrifici functional considerations.

I-Line framing's 1" sight line reduces the profile traditional 1¾" framing by nearly one-half. Yet ingenious design provides the same structur strength and glass bite . . . with easy "in-line" flu glazing to accommodate thicknesses up to ⅜".

Framing and complimentary thin stile doors a available in clear anodiz aluminum or Permanodi colors. A free brochure ill strates and describes the all, plus hardware and d sign options. For your cop write to the address belo or call your representativ



Typical vertical mullion and door stile section

KAWNEER
ARCHITECTURAL PRODUCTS
AMAX
ALUMINUM

PATENTS PENDING

For full information, see your Kawn representative or contact Kawn Product Information, 1105 N. Fr Street, Dept. C, Niles, Michigan 49

For more data, circle 15 on inquiry c

Compare TI's NEW SR-51....

●Mean, variance and standard deviation. ●Automatic linear regression. ●20 programmed conversions. ●Percent and percent difference. ●Random number generator. ●3 accessible memories. And much more for only $224.95

FUNCTION	SR-51	HP-45
Log, ln	yes	yes
Trig (sin, cos, tan, Inv)	yes	yes
Hyperbolic (sinh, cosh, tanh, Inv)	yes	no
Degree-radian conversion	yes	yes
Deg/rad mode selection	yes	yes
Decimal degrees—deg-min-sec	yes	yes
Polar-rectangular conversion	yes	yes
y^x	yes	yes
e^x	yes	yes
10^x	yes	yes
x^2	yes	yes
$\sqrt{x}$	yes	yes
$\sqrt[x]{y}$	yes	no
1/x	yes	yes
x!	yes	yes
Exchange x with y	yes	yes
Metric conversion constants	13	3
% and Δ%	yes	yes
Mean and standard deviation	yes	yes
Linear regression	yes	no
Trend line analysis	yes	no
Slope and intercept	yes	no
Store and recall	yes	yes
Σ to memory	yes	yes
Product to memory	yes	yes
Random number generator	yes	no
Automatic permutation	yes	no
Preprogrammed conversions	20	7
Digits accuracy	13	10
Algebraic notation (sum of products)	yes	no
Memory (other than stack)	3	9
Fixed decimal option	yes	yes
Keys	40	35
Second function key	yes	yes
Constant mode operation	yes	no

More math power for the money. More than log and trig and hyperbolics and functions of x . . . the SR-51 has these and also has *statistical* functions... like mean, variance and standard deviation, random numbers, factorials, permutations, slope and intercept, and trend line analysis. Check the chart above—compare it. With the HP-45 or any other quality calculator. Then try it—at no risk. We're sure you'll agree that the SR-51 offers extraordinary value.

Test the SR-51 at no risk. Full refund if not satisfied. Master Charge or Bank Americard accepted.

TO: Texas Instruments Incorporated
P.O. Box 22013, M/S 358, Dallas, Texas 75221

Try it 15 days. Return with all accessories if not satisfied.

Enclosed is my ☐ check, ☐ money order, ☐ company purchase order for $_____ for the purchase of ___SR-51(s).

Please add state and local taxes where applicable.*

Please charge this order to my ☐ Master Charge. Or, ☐ BankAmericard

My Card Number is: ☐☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐

With the expiration date: _____

AR4

If Master Charge is used indicate 4-digit Bank Number appearing on card just above your name: ☐☐☐☐

Name _____

Street _____

City _____ State _____ ZIP _____

_____
Authorizing Signature (If billed to Credit Card Must be signed by card holder)

*AL, AZ, CA, CO, CT, FL, GA, IA, IL, IN, KY, MA, MD, MI, MN, MO, NC, NM, NJ, NY, PA, TN, TX, UT, VA, WA, WI. Offer good only in U.S.

ACTUAL SIZE

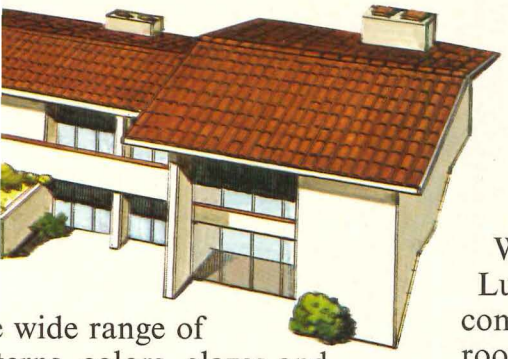
© 1975 Texas Instruments Incorporated
13500 North Central Expressway
Dallas, Texas

TEXAS INSTRUMENTS
INCORPORATED

82016A

Create old, beautiful roofs to crown your finest buildings.

owici roofing tile provides
ng splendor for any
cture.

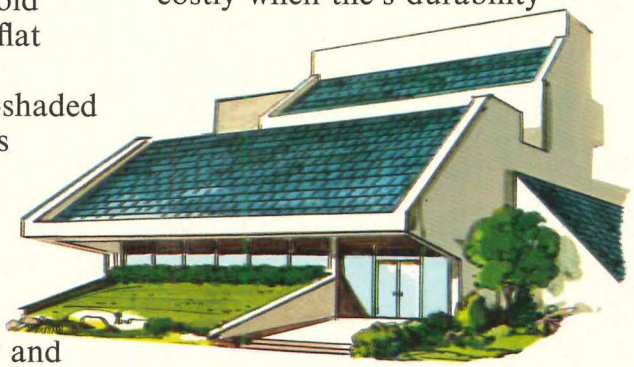


wide range of
terns, colors, glazes and
ures can accommodate any
ign or mood. From bold
rel patterns to subtle flat
ngles, from weathered
faces to smooth multi-shaded
zes, Ludowici tile fuels
imagination of the
st creative designer
satisfies the most
nanding owner.
udowici tile resists
elements. Rain, snow and
will not affect it. Time
rely seasons the appearance,

mellowing the hue and gently softening the texture.

The fireproof characteristics of Ludowici tile are important in this age of increasing concern over life-safety. Little or no maintenance is required. Tile will not decay or disintegrate.

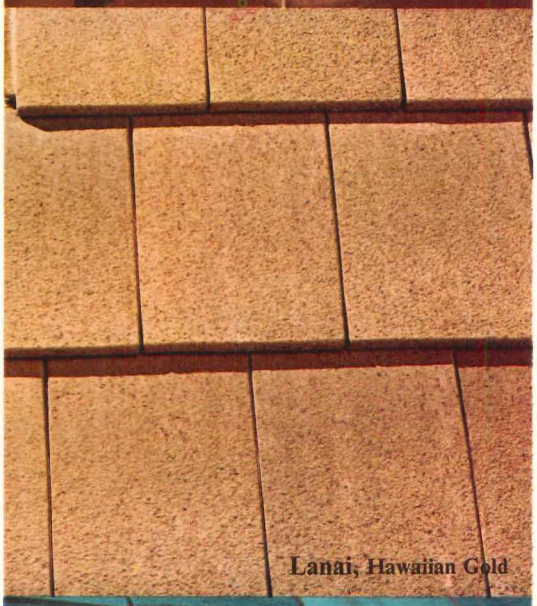
With all these advantages, Ludowici tile remains cost competitive to other quality roofing materials. Even the least expensive material is more costly when tile's durability



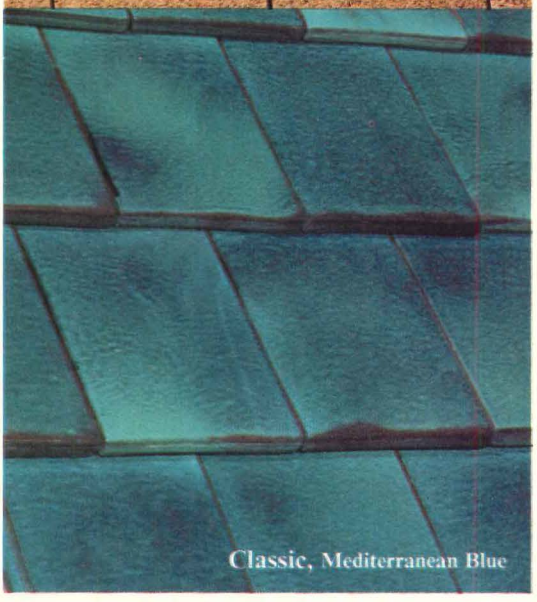
and economy are projected over the life of the structure.

The timeless elegance of Ludowici roofing tile adds a lasting value to any residential, industrial, commercial or institutional building. For more information on this thoroughly practical material, locate your local distributor in the Yellow Pages, or use the coupon.

Spanish, Natural Red



Lanai, Hawaiian Gold



Classic, Mediterranean Blue

Ludowici-Celadon Co.
111 East Wacker Drive, Chicago, Ill. 60601

Gentlemen,
Please send me your full color literature.

Name_____

Firm_____

Address_____

City_____ County_____

State_____ Zip_____

LUDOWICI-CELADON COMPANY
111 EAST WACKER DRIVE, CHICAGO, ILL. 60601 • Phone: (312) 329-0630

Expressions in Masonry

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

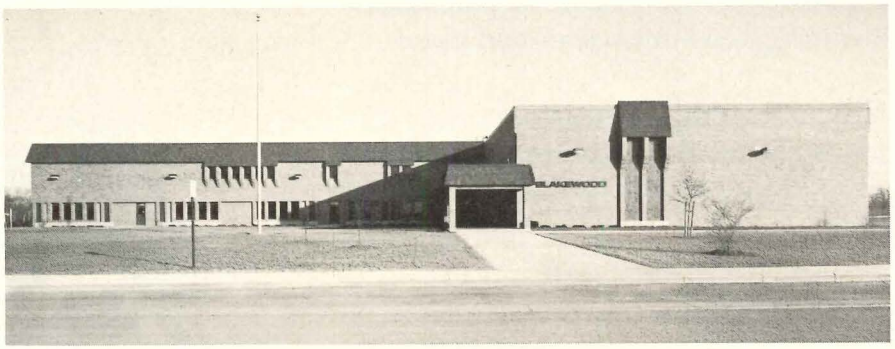
Concrete masonry units enclosing apartments provide rotective firmness and the detail interest of hand-layed units.

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

International Masonry Institute
Suite 1001, 823 15th Street, N.W.
Washington, D.C. 20005
202-783-3908

Research Tower, College of Veterinary Medicine, tate Colleges, Cornell University, Ithaca, N.Y.
rchitect: Ulrich Franzen & Associates
Villiam Street Apartments, Wesleyan University Middletown, Conn.
rchitect: Ulrich Franzen & Associates
Photographs: David Franzen

or more data, circle 17 on inquiry card



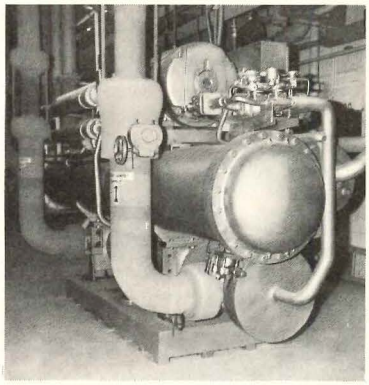
90,000 sq. ft. Blakewood Elementary School, South Milwaukee, Wisconsin
Architect: Py-Vavra, Architects-Engineers, Milwaukee, Wisconsin
Heating, Ventilating & Air Conditioning; Walter R. Ratai, Inc., Milwaukee, Wisconsin
General Contractor: Bauer Construction Company, Hales Corners, Wisconsin

Dunham-Bush saves Blakewood Elementary School $9,913 per year in heating and cooling.

(A Case History: Heat Recovery vs. Conventional Heating/Air Conditioning)

Add up the yearly savings any way you want: $9,913; 583,150 KWH; 121 days free heating and cooling. The advantages of a hydronic heat recovery system featuring Dunham-Bush equipment over a conventional gas heating/electric air conditioning system are measurable in dollars and energy savings every day of the year.

The Blakewood School system is a central type water-to-water heat pump, heat recovery and storage system incorporating a Dunham-Bush PCX-230 Rotary Screw Compressor Packaged Chiller. It provides simultaneous heating and cooling. Hot water from the special condenser and chilled water from the evaporator is supplied to heating and cooling coils. Heat is recovered from lights, people and equipment for use when heat loss exceeds heat gains.



Dunham-Bush PCX-230 Rotary Screw Condenser Packaged Chiller

Heart of this system is the Dunham-Bush Rotary Screw Compressor Packaged Chiller with a condenser designed for hydronic heat recovery. It requires less maintenance because it has fewer moving parts. Conserves energy because its stable operation is maintained over the entire operating range. You can depend on that. We pioneered rotary screw packages. Contact your Dunham-Bush Sales Office listed in the Yellow Pages, or mail the coupon.

AR-4-75

☐ Please send more information on Dunham-Bush Rotary Screw Compressor Packaged Chillers and Hydronic Heat Recovery Systems.

☐ Please have representative call me.

Name _____

Title _____

Company _____

Address _____

City _____ State _____ Zip _____

Phone _____

DUNHAM-BUSH, INC.

175 South Street, West Hartford, Conn. 06110

One of The Signal Companies

For more data, circle 18 on inquiry card

Specify Wilson Art laminated plastic for furniture, fixtures, walls or door surfacing.

ombine decorative design decisions with favorable life-cycle costs.

ew construction or renovation, Wilson Art helps meet the tough design and budget decisions so critical today.

gn Flexibility

Over 200 different esthetic choices four finishes make designing an ting, challenging and ultimately fying experience. You coordinate control *absolutely* every application the board today and in the com- ed project later.

Control

When costs are considered, Wilson ooks even better. Exceptional dura- —applications can look new for ng as 20 years. Minimum maintenance. It is difficult to damage a Wilson Art surface. And cleaning is easy and needed infrequently. Life-cycle cost is one of Wilson Art's best features.

Service Reputation

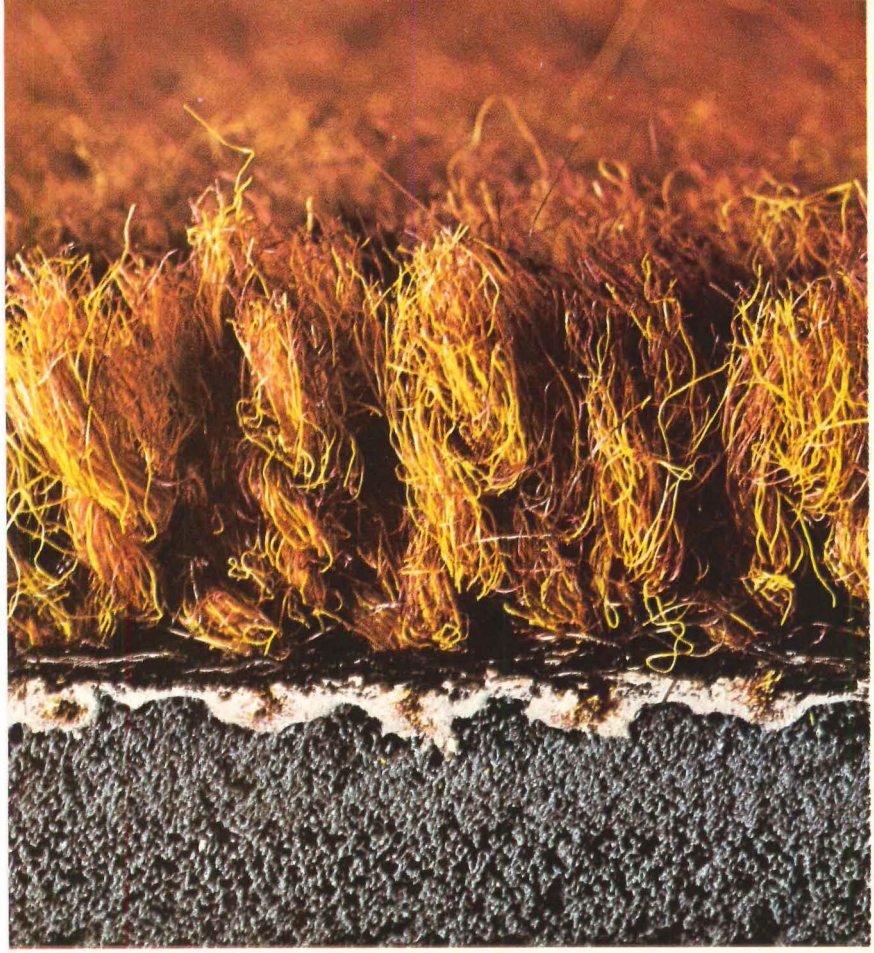
Service is our specialty. Construction delays cost money. Because of Wilson Art's unique warehouse concept, no fabricator will be delayed in finishing your project—whether he needs one fill-in sheet or one-thousand sheets.

Next time you're evaluating decorative surfacing for furniture and fixtures, for walls (four different Wilsonwall systems) or door surfacing (Dor-Surf), call a Wilson Art representative, or write for a complete set of specification materials. Either way, we'll answer promptly.

Warehouses:
Atlanta, Boston, Chicago, Dallas, Denver, Los Angeles, Miami, New Jersey, New York, San Francisco, Seattle and Temple, Texas.

Wilson Art®
LAMINATED PLASTICS

WILSON ART . . . TEMPLE, TEXAS . . . 76501



Both carpets cost the same. But 68% of the people we asked preferred the one on the left, thanks to high-density foam

The carpet on the left has 22 ounces of fiber and 38 ounces of foam per square yard. The one on the right has 26 ounces of fiber and 18 ounces of foam. Both have exactly the same raw materials cost.

We asked 150 women in three cities—Philadelphia, Chicago and Los Angeles—to walk on both. Then we asked them to tell us which one they preferred. Which one they judged to be of higher quality. And which one they thought would be more expensive.

Of the 150 women we asked, 68% preferred the one on the left, 67% judged it to be of higher quality, and 63% thought it would be more expensive. Even though the one on the right actually had a higher fiber content.

The results speak for themselves. When you specify a *quality high density* backing for your latex foam backed carpets, you'll have noticeably higher perceived quality and greater consumer appeal. Which means you'll have more satisfied customers, and be able to maintain higher mark-ups.

Your Goodyear Chemicals representative will be happy to discuss with you the complete results of this study. To get in touch with him, just write Goodyear Chemicals, Dept. 7187, Box 9115, Akron, Ohio 44305.

GOODYEAR
CHEMICALS

For more data, circle 20 on inquiry card

Federal policies in housing, transportation and labor have shifted to new cabinet members. Clara Hills, the new Secretary of Housing and Urban Development, is expected to have little to do with initiating policy, but will see to it that HUD programs maneuvered through Congress last year get off the ground successfully. The new Labor Secretary, John T. Dunlop, is well known to the construction industry and although not making his views on the industry situation known now, he has indicated support for a boost in housing. William T. Coleman, Secretary of Transportation, sees a need to promote more investment in transit. Profiles of these new cabinet members appear on page 34.

Changes in Senate and House Banking Committee leadership may have significant impact on construction financing. With Wisconsin liberal Democrats Senator William Proxmire and Representative Henry Reuss assuming the chairmanships of the two Banking Committees, the nation's money markets, banks and thrift institutions can expect to be the targets of Congressional activity. Goals are to ease up the money supply, and aid the housing industry among others. For an in-depth profile of these two important public figures, see page 35.

The updated Dodge/Sweet's Construction Outlook for 1975 places new construction value at $98 billion, up 5 per cent over 1974. Residential construction, with 1.4 million projected new starts, will lead last year by 11 per cent, but non-residential building is expected to decline by 10 per cent, with a 1975 value of $30.6 billion. For further coverage of the Outlook, see page 57.

Changes in its construction management policies will be explained by GSA on April 23, in Washington. Changes in the GSA approach include: evaluation of construction manager qualifications; the scope of the CM's work; the criteria for CM selection; and the relationship between GSA, the construction manager, and the architect-engineer. Those interested in attending the briefing may contact Ms. Charlene Heeter at (202) 343-4731, or write GSA in Washington, D. C.

The International Architectural Foundation design competition has so far received 400 applications to participate in the design of a housing community in Manila. Entrants are being sought from around the world, and the deadline for registering is May 15, 1975. (See page 176 for details.)

EPA has announced state shares of $4 billion for sewage treatment construction grants. The amount is said to represent a substantial portion of the funds which, under earlier Presidential direction, had been withheld from the allotment of sums for fiscal 1973 and 1974. The money will be divided among the states under the same formula that was used in the allocation of funds in fiscal 1973 and 1974.

GSA has issued a caveat emptor regarding "influence peddling" in A-E selection. According to the General Services Administration, it has come to their attention that there are certain public relations firms and similar organizations claiming to have "personal influence" in the selection of A-E firms for GSA projects. GSA warns that no such influence exists and that any allegation of such influence should be considered as false representation and treated accordingly.

Sir Nikolaus Pevsner has been awarded the Thomas Jefferson Memorial Foundation Medal in Architecture, presented by the University of Virginia annually to an individual who had made outstanding contributions to architecture. The April 14 presentation to the noted English architectural historian carries a $5000 prize. Dr. Pevsner is known for his 46-volume work, *The Buildings of England,* and has authored numerous other books, including *An Outline of European Architecture.* He is presently professor emeritus of art history at Birkbeck College of the University of London.

The General Services Administration second Biennial Design Awards program has been announced. GSA Administrator Arthur F. Sampson said entries are encouraged from architects, engineers, interior designers, energy consultants, artists, urban planners and private industry. Entries must pertain to projects successfully bid or where construction was begun by December 31, 1974. Entries will be judged in May and awards announced in June. More information may be obtained from Walter Roth, Public Buildings Service, GSA, 18th and F Streets, N.W., Washington, D. C. 20405.

An architectural design competition for a community school center has been announced by the NIAE. The 1975 Hirons Prize is co-sponsored by the National Institute for Architectural Education and the AIA, through the Educational Facilities Committee of the New York Chapter. The competition is open to all persons in the architectural field under 35 years of age who are not enrolled in a full-time architectural academic program. Interested persons may obtain a copy of the program from: Byron Bell, National Institute for Architectural Education, 20 West 40th Street, New York, N.Y. 10018.

Migration away from metropolitan areas of the nation continues, says the Urban Land Institute. A December 19, 1974 census report shows that from March 1970 to March 1974, nearly 6 million people moved out of metropolitan areas; 4.1 million moved into these areas, resulting in a net migration loss of 1.8 million. Copies of the report, "Mobility of the Population of the United States, March 1970 to March 1974" are available at $1.35 from the U. S. Government Printing Office, Washington, D. C. 20402.

New cabinet members have construction roles

Control of Federal policies in housing and urban development, transportation and labor has shifted to three new members of President Ford's cabinet. Only one of the three, Secretary of Labor John T. Dunlop, is widely known to the construction industry and in one capacity or another, Dunlop, a Harvard University economics professor, has been involved in trying to ease the industry's labor relations problems for 30 years.

In contrast, the new Secretary of Housing and Urban Development (HUD), Carla Hills, has little experience in either housing or urban affairs.

Before moving to HUD, Mrs. Hills headed the Civil Law Division of the Justice Department where she supervised the work of 237 lawyers and managed a budget of $11.5 million a year. At HUD, she will be responsible for the work of 15,000 employees and in charge of a spending program that President Ford expects to reach $7 billion in the fiscal year starting July 1.

Mrs. Hills job: making White House decisions work

Mrs. Hills has been likened to her predecessor at HUD, James Lynn, who—from the Ford-Nixon administration's point of view—so successfully managed the department that he was promoted to head the powerful Office of Management and Budget. Like Lynn she is a young, smart, successful corporation lawyer.

Mrs. Hills is expected to have little to do in the way of initiating or recommending policy. She will find, as Lynn did, that all the significant decisions are made at the White House. Furthermore, she will find Lynn himself—a firm believer in the Nixon-Ford policies—sitting at the President's side. Instead, her main job will be to see to it that the new HUD programs that Lynn maneuvered through Congress last year get off the ground successfully.

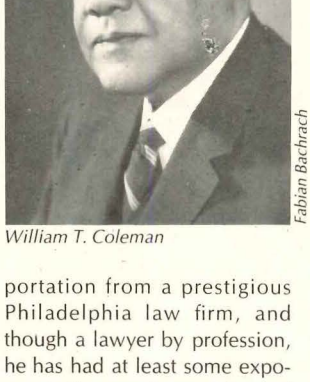
Carla Hills

Those programs are: 1) The $2.5 billion-per-year community development block grant program (which replaces the categorical grant programs that were frozen in January 1973) and, 2) The new Section 8 leased housing subsidy program for lower-income families (which replaces the Sections 235 and 236 housing subsidy programs also frozen two years ago).

The block grant program should not stir up major troubles—the money is passed out to the cities on a formula basis, and they are free to spend it with little supervision from HUD headquarters. The Section 8 program is something else: the Administration has claimed that it will stimulate literally hundreds of thousands of housing starts over the next couple years, while the housing industry and mortgage lenders say it lacks the incentives to do the job.

Coleman: has mass transit a strong voice at last?

William T. Coleman moved into the post of Secretary of Transportation from a prestigious Philadelphia law firm, and though a lawyer by profession, he has had at least some exposure to the complex problems of national transportation policy. Coleman has been a labor negotiator for the Southeastern Pennsylvania Transportation Authority, which handles mass transit in the Philadelphia area, a director of Pan American World Airways, and a member of a research team during the Kennedy Administration that assessed the problems of rail service in the Boston-Washington corridor.



William T. Coleman — *Fabian Bachrach*

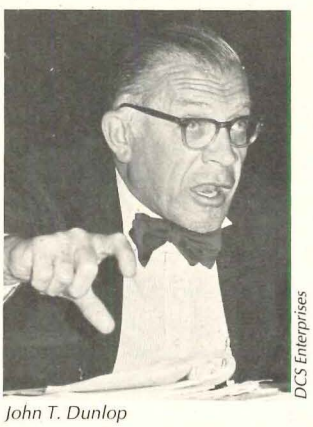
At DOT, Coleman will be on the firing line in taking another big step towards reducing Federal highway expenditures while promoting more urban transportation. But promoting more investment in transit will not be his only major project: the Administration is also faced with trying to find some way the government can assist the nation's railroads in finding the funds necessary for future needs. Coleman will also inherit the job of trying to convince Congress to relax Federal regulations in the transportation field.

In the highway-transit area, Coleman recently told a panel of senators at his confirmation hearing that more funds for transit capital projects may be needed beyond the present $12 billion Federal commitment to transit over the next six years. However, he resisted any suggestions that the highway program should be totally abolished. Until transit facilities can be greatly improved, Coleman added, "Society's best hope is not turning away from the private automobile. For this reason, the interstate highway program as well as the rural program will have to be an important part of any over-all transportation system," he added.

While the Administration is committed to finishing the interstate system, it has also proposed a radical change in road funding. Under the program, expected to take the form of legislation soon, are funding changes designed to eliminate about $5 billion in Federal road-building authority. Interstate funding would continue at approximately $3.5 billion per year, but Congressional authorization of long-term road financing beyond that level which presently exists will be scrapped. These funds will be moved out of the Highway Trust Fund and into general revenues for other uses, including transit; also planned are tax changes designed to limit the amount of Federal excise taxes flowing into the Trust Fund.

Dunlop: a respected pro with a tough new job

John Dunlop's involvement in the labor relations problems of the construction industry for the past three decades has been so deep as to prompt one observer to ask, not entirely in jest, "What are people of construction and the building trades going to do when one day they don't have John Dunlop around to solve their problems anymore?" Dunlop, 60, is best known for his experiences from 1971 to 1974 as a government wage-price controller: two years as head of the Construction Industry Stabilization Committee (CISC), followed by 11 months as director of the Cost of Living Council. More recently, he got construction labor management to agree on a joint committee to deal with industry bargaining.



John T. Dunlop — *DCS Enterprises*

However, he is a man of many facets and apparently boundless energy. He has a solid academic reputation as an economist—he was dean of the faculty of arts and sciences at Harvard before taking on CISC and returned there as a university professor last year—and has long concentrated his attention on the structure problems of the American economy.

As Secretary of Labor, Dunlop will add a strong voice of pragmatism to the inner councils of the Ford Administration. He will be part of the economic deliberations at the White House and, on the basis of his record and beliefs, is likely to come into sharp conflict with conservative advocates of stringent fiscal restraint such as Treasury Secretary William Simon, and Alan Greenspan, chairman of the Council of Economic Advisers.

Despite his long background in construction, Dunlop has not made known his views on what should be done specifically to aid the ailing construction and housing industries, although he did tell his confirmation hearing, "I believe the present recession is very heavily concentrated in the housing industry. . . . I think stimulus for housing is appropriate at this time."

Dunlop is an advocate of the Government taking a much stronger hand in economic planning.

A long-time student of the collective bargaining process, Dunlop has applied this approach to many of his dealings, including the later stages of wage-price control. He has been criticized by conservatives for being too close to unions and letting them get away with too much. And a liberal economist who has known Dunlop for a long time says his mediator's approach frequently tends to give the most to the most powerful. Dunlop, he says, is a master of "unctiously giving the lion's share to the lion."—*Stephen Wildstrom, Donald Loomis, John Higgins, World News.*

Honor recipients announced by AI

Ten individuals, inclu
U.S. Congressmen, h
elected Honorary Me
The American Institute
tects in recognition of
tinguished contributic
architectural professio

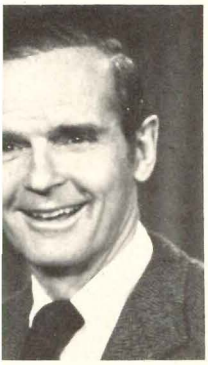
The honorary
ships, extended to per
side the architectura
sion, will be presented
nual convention of th
be in Atlanta, Ga., Ma

The new honora
bers are: Represe
Thomas Ludlow Ash
Ohio); Augustus Baxte
tive director of the Phi
Architects Workshop
Biddle, president of
tional Trust for Historic
ation; Representati
Brooks (D.-Tex.); J
Brown, director of the
Gallery of Art, Was
D.C.; Marvin B. Durn
tle attorney; Philip
chairman of the board
mer, Siler, George A
economic consultant
Kory, director of co
development, N.Y. Sta
Development Corp
Robert M. Pease, e
director, Allegheny Co
on Community Deve
and Bernard Weissbou
ident of Metropolita
tures, Chicago.

The AIA also ar
that Van B. Bruner Jr.
been named as the re
the Whitney M. Young
tion for 1975. Charact
the Jury on Institute H
an "eloquent spokesm
minority architect," Br
hailed for his "dedicat
improvement of opp
for minority architects
challenging and inspir
cacy of minority cause

The Cummins
Foundation, Columb
has been selected to re
Institute's 1975 Citati
Organization. The Fou
efforts, said the jury
made Columbus a
tectural showcase and
the best possible exa
how architecture can
the physical environm
the quality of life."

The 1975 AIA M
Research, awarded an
an individual or to a
zation for distin
achievement in researc
to architecture or the
ment, will be awarded
ronmental Research ar
opment Foundation
City, Mo., for its "sizab
bution to research on th
ioral response to th
tectural environment."



oxmire

Henry Reuss

nking chairmen may shake money markets

feisty Wisconsin lib-
nocrats, Senator Wil-
oxmire and Repre-
Henry Reuss, as the
men of the Senate and
Banking Committees,
ousing policy, as well
l guidelines and con-
institutions that pro-
construction industry's
will be affected.
years the nation's
arkets, banks and thrift
ns have operated with
erference from Con-
gislation affecting the
not infrequently
own between the Sen-
House Banking Com-
hen they were headed
or John Sparkman (D-
Representative Wright
D-Tex.). While both
nmitted to strong gov-
support for housing—
eir successors—the
es often proved inef-
getting legislation en-
ow, Proxmire has re-
arkman via the senior-
(with Sparkman mov-
ead the Foreign Rela-
nmittee) and Reuss has
Patman in a coup
he seniority system,
from fourth place on
nittee to the chairman-
h have been nurtured
opulist Wisconsin pol-
ve waited nearly 20
their chairmanships,
determined to make
swiftly.

prescription:
ion on money

Wisconsin duo do not
o-eye on everything,
nediate changes are in
: pressure on the Fed-
rve to ease up on the
pply, an effort to beef-
controls in concen-
dustries, and a rescue
for housing.
he long range, creation
le agency to regulate
n's banks and a sub-
verhaul of financial in-
, including moves to
ings and loan associa-
ore competitive with
e on the agenda. Both chairmen reject, however, two policy positions taken by the Democratic party: all-out wage-price controls and a new Reconstruction Finance Corporation to bail out failing companies.

Proxmire is the better known of the pair, having been in the headlines frequently with attacks on waste in the Pentagon and assailing bailouts for bankrupt corporations.

Reuss is widely conceded to be the most knowledgeable House member on economic issues, particularly complex international monetary questions. Critics wonder, however, how effective he will be in negotiating controversial measures through the legislative shoals. A senior Republican on the Committee, Representative Chalmers Wylie of Ohio, sees Reuss as a "charge-down-the-field type when he gets an idea, but it remains to be seen how skilled a negotiator he will be." Overall, however, he expects Reuss to be a "fair and effective" chairman who will give everyone a chance to be heard—something he says Patman did not do. But Wylie worries that the thrust of Reuss' chairmanship will be to "invade the marketplace (as with credit allocation) and impede rather than encourage capital formation."

Reuss for openers:
an eye on Federal Reserve

Reuss' first bill through the House was a resolution expressing the sense of Congress that the Federal Reserve should conduct monetary policy this year in a manner designed to lower long-term interest rates. He charges that on the record the Fed has followed a "disastrous" stop-start policy, and he wants the extremes ironed out. He is not a perpetual "easy money" man, however; in hearings last April he was chastising the Fed for letting the money supply grow too fast in the previous two years. "At the time I was saying stop the drunken sailor-ing, and so was Senator Proxmire," he recalls. Proxmire also feels the Fed is too much a power unto itself and should be brought more under the policy direction of Congress.

Both argue for more
investment in social purposes

Another prominent issue this year will be credit allocation. Democratic leaders in Congress have embraced allocation as a party position, and the two banking committees will be holding hearings. Proxmire is cool to the idea, except that he would consider ways of requiring banks to put more of their lending into the housing field. He is also interested in the possibility of requiring the Fed to buy more housing paper, or use the discount rate to steer more money into mortgages.

Ruess has introduced a bill ordering the Fed to allocate credit to "priority" social purposes such as housing, small business and "productive capital investment" and away from conglomerate takeovers, currency speculation or bidding up inventories. Already a compromise is in the works, however. The beleaguered Fed is expected to propose ways of beefing up the present voluntary "affirmative action" program under which banks are supposed to be channeling more credit into social-priority lending on their own.

On the housing front, a bill subsidizing mortgage interest for middle-income citizens as a way of moving the existing housing surplus off the market, is expected to clear Congress swiftly. The government would pick up the tab for interest charges over 6 per cent, phasing out the subsidy over six years. Presumably homebuyers' incomes would grow enough during that time to enable them to pay the full interest charged by the time the subsidy runs out.

Proxmire has also been a strong supporter of government subsidies in the Section 235 and 236 programs. And the committees may be getting into legislation to prevent mass foreclosures on homes. Several proposals to bail out homeowners unable to meet their mortgage payments have been introduced, but the committees have not yet put them on their priority agendas.

High on both committees' agenda are proposals for variable rates on mortgages, with Congressional pressure likely to be against the idea. Congress has 90 days to stop the Home Loan Bank Board from authorizing variable rates. The thrift institutions are supporting the proposals, but the AFL-CIO and consumer groups are opposed and commercial banks are expected to stay neutral. Twice before the agency has backed down under Congressional opposition.

A set of complicated problems will face the two new chairmen when they get down to legislation aimed at restructuring the nation's financial markets. It is far from clear where things will come out.

The Administration is expected to resubmit proposals based on the Hunt Commission's recommendations which got nowhere in the last Congress—but with more hope of action now. Basically they are aimed at letting savings and loans handle checking accounts and broaden the scope of their lending beyond residential housing, while getting other lenders more into mortgage lending and increasing competition in the industry.

Proximire is leery of anything that would jeopardize the S & L's favored position as generators of home mortgage money, including an end to Regulation Q which lets them pay higher interest than full-service banks, and Treasury is backing off its proposed phase-out of Regulation Q. To Reuss, Regulation Q is "philosophically all wrong," but he sees no way of ending it except as part of a complete overhaul of financial institutions. "Our highly compartmentalized banking system is part of the problem that periodically hits housing," he figures. But he has not zeroed in on this problem yet, and thinks another commission including legislators—not just industry representatives—might be needed to study the whole thing once again. Treasury is also ready to include credit unions as mortgage lenders, which will win some friends for the package on Capital Hill.

In any event, the banking panels which have been rather sleepy bailiwicks for the past few years are likely to be the storm center of a great deal of controversial legislation for the next few years. —*David Secrest, World News Washington.*

Grand Central loses landmark status

Late in January, State Supreme Court (New York) Justice Irvin H. Saypol invalidated the landmark designation of Grand Central Terminal in New York City, paving the way for what many fear would be either demolition of the structure, or construction of a 59-story office tower over it.

The court decision did not question the constitutionality of New York's landmark laws, but did find that Grand Central placed an economic hardship on the owner, Penn Central, by preventing the railroad from earning income from its property. However, in the current soft commercial space market in New York, the feasibility of building now on the site is questionable; and a Committee to Save Grand Central Station has been formed in the meantime to overturn the Court's decision.

The Committee includes, among others, Philip Johnson and Paul Rudolph. There is also a national wing headed by William Marshall, AIA president, and James Biddle, National Trust for Historic Preservation.

Mark Johnson

INRYCO
a new name for a century-old company

Though we've decided to change our corporate name, we have no intention of changing our established goals of providing the construction industry with improved products, systems, and services to help you design and build.

Our new name will be a little easier to use than the one we now retire . . .

INLAND RYERSON
CONSTRUCTION PRODUCTS COMPANY

And, since our company's activities now go well beyond supplying construction products, we thought our name should not limit us to that role, vital as it is.

"Inland-Ryerson" now joins the ranks of other names, familiar to you . . . names of our predecessor companies:

Milcor Steel Company
Inland Steel Products Company
and the construction divisions of
Joseph T. Ryerson & Son, Inc.

INRYCO, Inc. remains a wholly-owned subsidiary of Inland Steel Company.

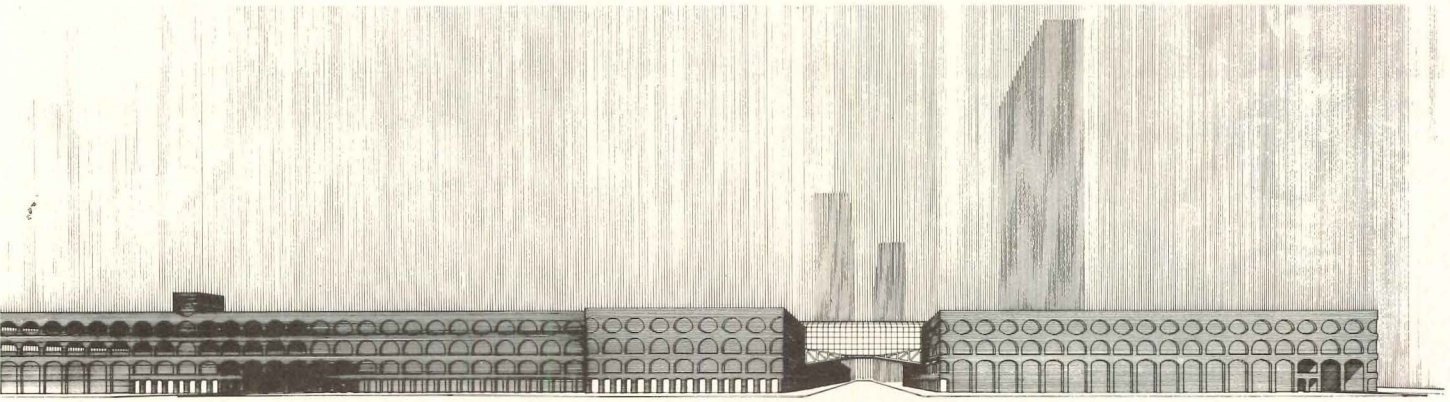
We'll be seeing more of each other!

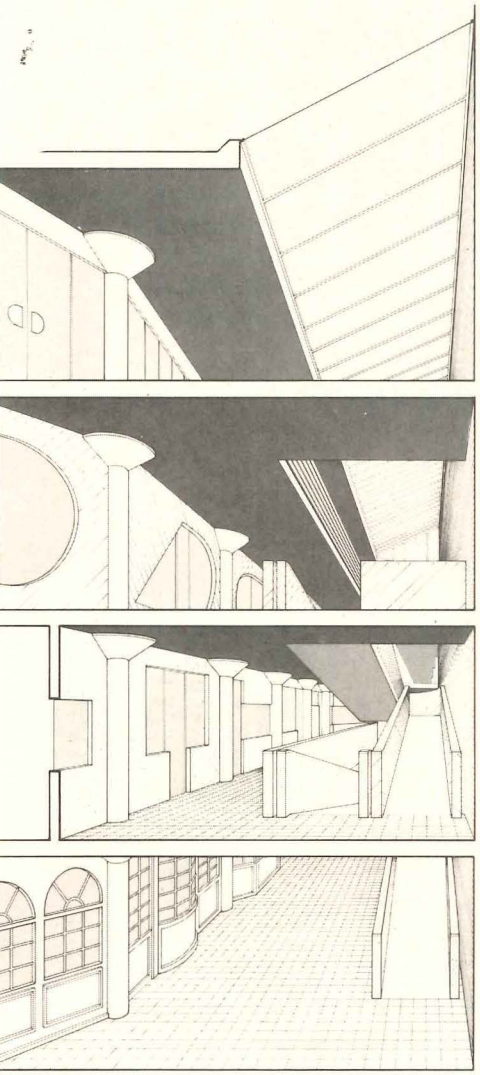
INRYCO, Inc. General Offices: Box 1009, Melrose Park, Illinois 60161. Plants, warehouses, and sales offices in 60 U.S. locations.

INRYCO
an INLAND STEEL company

Products, Systems, Services to Help You Build: Steel Wall, Floor & Roof Systems, Pre-engineered Building Systems, Heavy Structural Steel Fabricatin Lightgage Steel Framing Systems, Post Tensioning, Concrete Reinforcing Products, Telescoping Industrial Doors, Access Doors, Hatches, Fi & Smoke Vents, Roof Drainage Products, Construction Specialties.

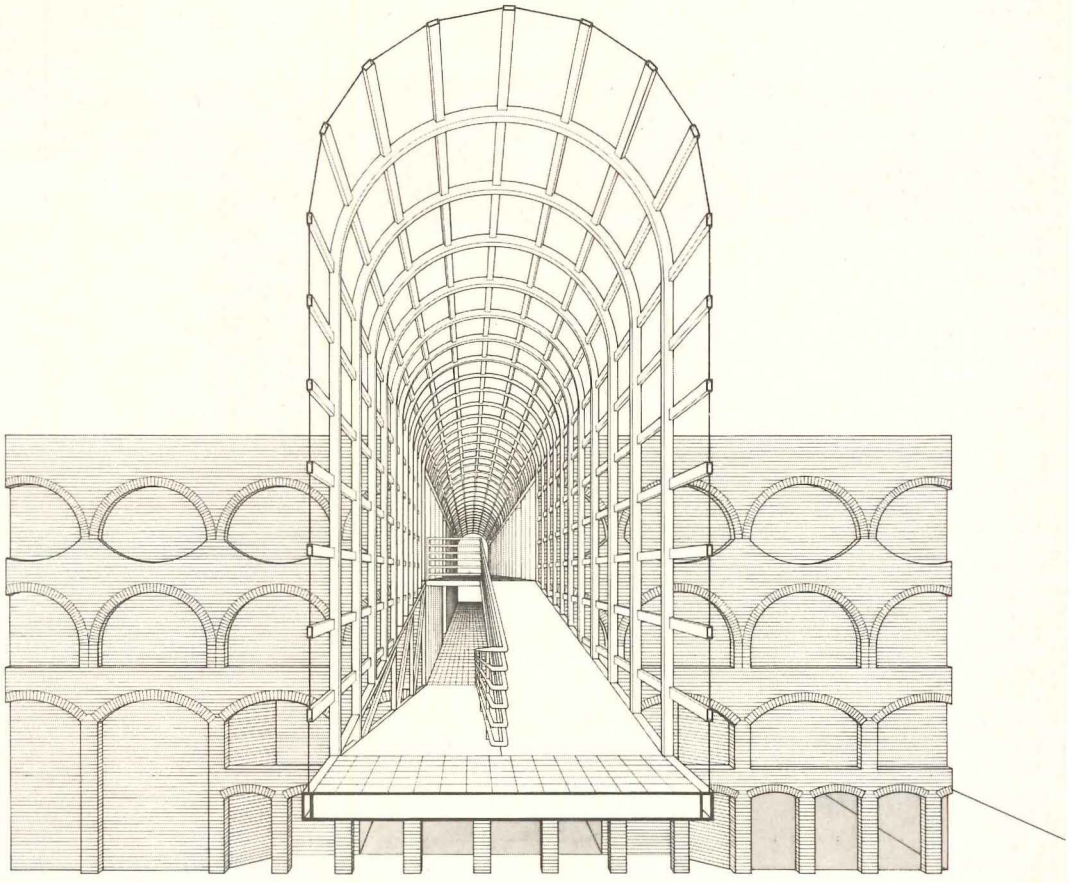
For more data, circle 22 on inquiry card





Piper's Alley, Chicago: nostalgia and Victoriana enrich shopping mall

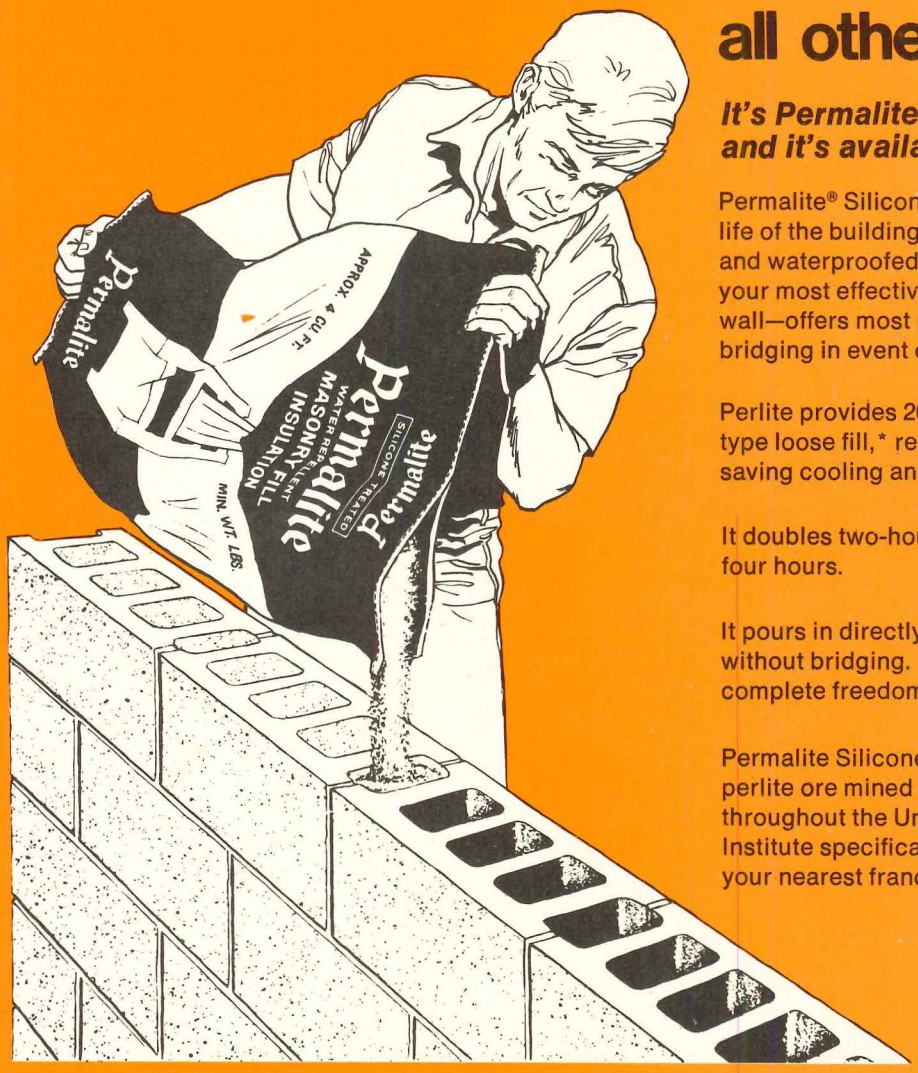
According to the architect of this project, Stanley Tigerman, Piper's Alley in Chicago's "Old Town" has over the years remained a "nostalgic niche, small specialty shops clad in the garb of Queen Victoria." With a desire to retain and expand upon that notion, Mr. Tigerman—through some remodeling, but primarily by new building—plans to expand the Alley into an internalized vertical commercial mall bridging (below) over Wells Street and extending 750 feet along North Avenue (see above). At either end a major drug store and a grocery store anchor the plan, with specialty stores in between. The character of the ground floor has for decades been reminiscent of the Crystal Palace era, hence the English mannerisms (see section, left). On other floors, store fronts approximate Scandinavian, Art Deco and other regional, historic commercial moods seen since the industrial revolution. The first stage of the project will begin in June, with the remodeling of a garage into shops.



MAKING MASONRY WALLS MORE EFFICIEN

NO. 4 IN A SERIES

The loose-fill cavity wall insulation that outperform all other mineral fills!



It's Permalite® Silicone-Treated Perlite Masonry Fi and it's available now!

Permalite® Silicone-Treated Perlite Masonry Fill stays dry for the life of the building because the inorganic perlite particles are coate and waterproofed with non-flammable silicone water repellent. It is your most effective barrier against penetration of moisture across t wall—offers most protection against moisture soak-up and water bridging in event of leaking walls.

Perlite provides 20% better insulation than any other popular mine type loose fill,* reducing heat transmission by 54% or more and saving cooling and heating dollars that soon exceed its cost.

It doubles two-hour fire rated concrete masonry unit construction t four hours.

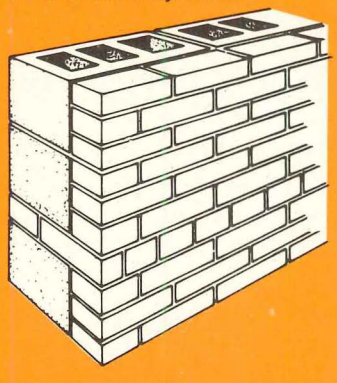
It pours in directly from the bag and is so free-flowing it fills all void without bridging. It is self-leveling—won't settle or pack, and offers complete freedom from rot, termites and vermin.

Permalite Silicone-Treated Perlite Masonry Fill is manufactured fr perlite ore mined by GREFCO, Inc., by licensed Permalite franchise throughout the United States and Canada in conformance to Perlite Institute specifications. Write for specification data and the name o your nearest franchisee who can supply your needs NOW.

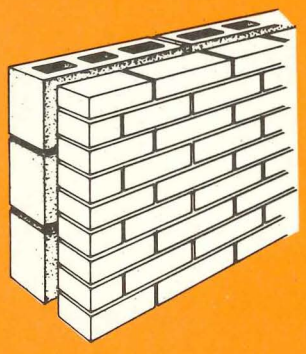
*k factor of 0.38 as published in ASHRAE Handb of Fundamentals.

Permalite Silicone-Treated Perlite Masonry Fill is ideal:
For Concrete Masonry Unit Construction

For Veneer Wall Systems

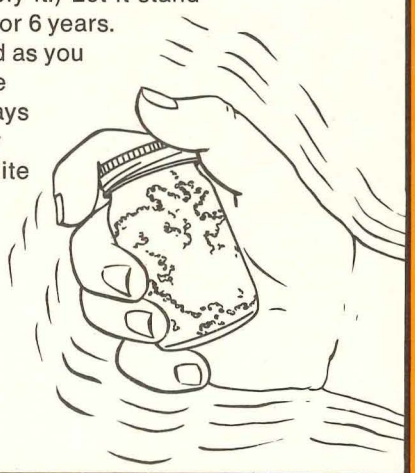


For Cavity Wall Systems



MAKE YOUR OWN INSULATION TEST

Put some Silicone-Treated Perlite Masonry Fill in a jar with water. (Your Permalite franchisee will gladly supply it.) Let it stand 6 hours, 6 days or 6 years. Shake it as hard as you can. The Perlite Masonry Fill stays dry! Laboratory tests prove perlite is five times more water-repellent than the next best mineral fill material!

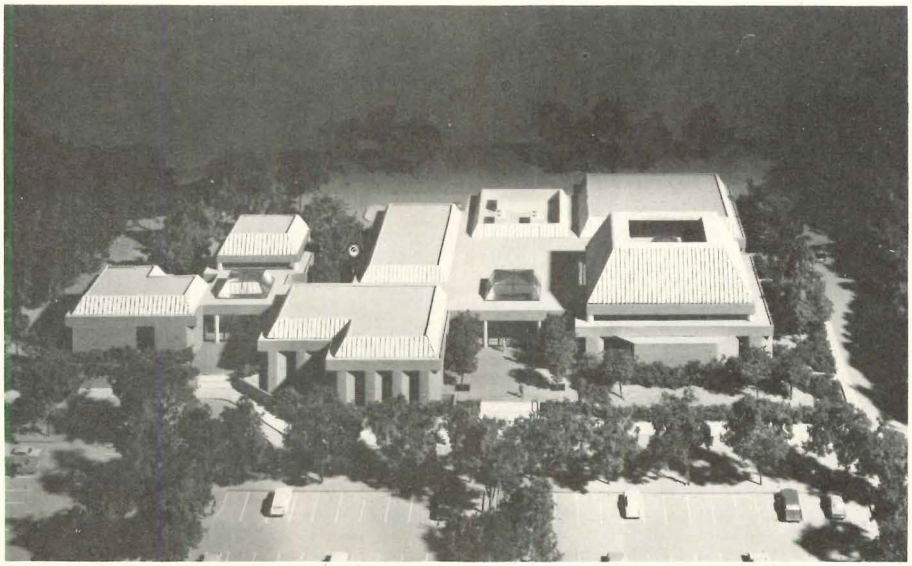


PERMALITE SILICONE-TREATED Perlite Masonry Fill

Permalite® —the world's leading perlite.

GREFCO, Inc./Building Products Division
3450 Wilshire Blvd., Los Angeles, CA. 9001
grefco A subsidiary of General Refractories Compan

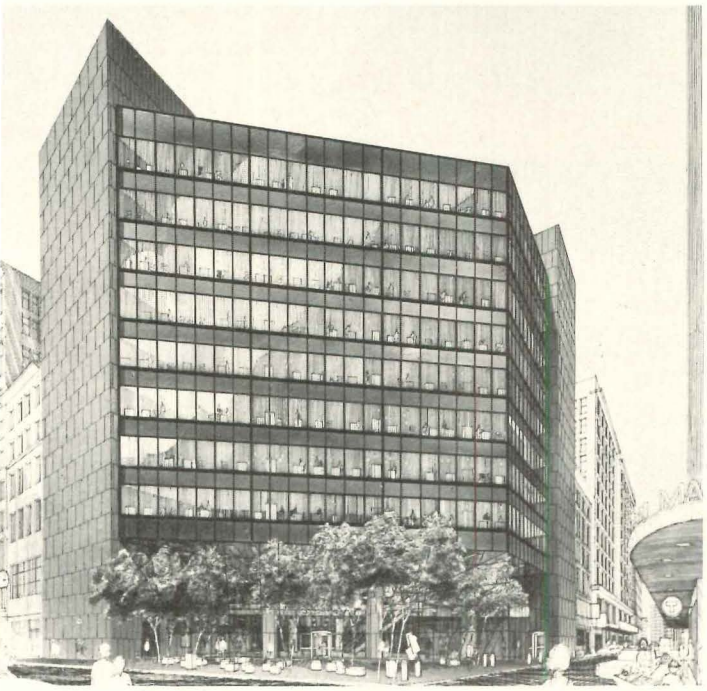
For more data, circle 23 on inquiry card



Ronald N. Anderson

ıction begun on Maryland synagogue

1976 completion date ıed for the 55,000- ıot Congregation B'nai nagogue Complex in ıery County, Mary- ıhen and Haft, Holtz Karabekir + Associates rchitects and planners oject, a masonry structure to be located on a 13.5-acre wooded site near Washington, D.C. The spaces include a 600-seat main sanctuary expandable to 1700. The vaulted sanctuary ceiling (right) "floats" on a ribbon of glass, and is supported by four columns, 70 feet on center. Classrooms are located at left.

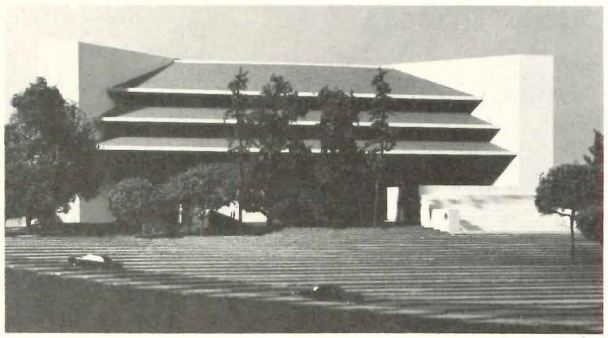


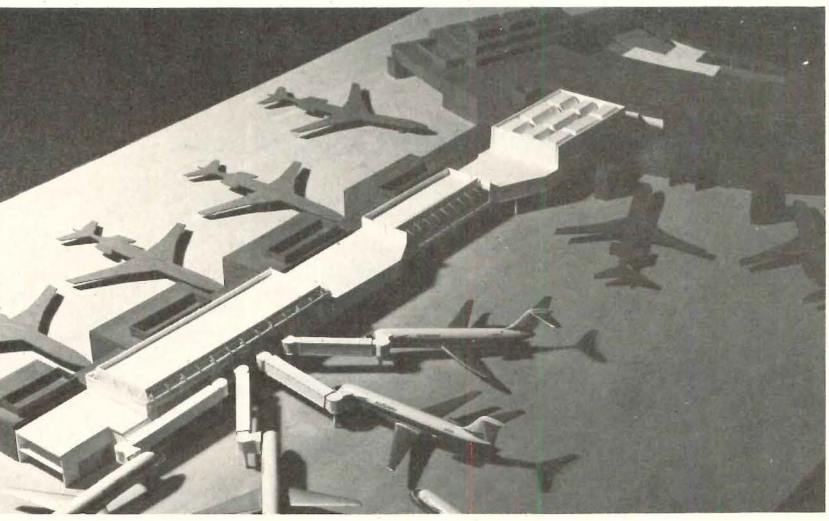
stown Savings Bank rising in downtown Boston

chitects Collaborative, gned this ten-story bank uarters under con- on at Summer and ey Streets in Boston. The will be set back 50 feet from the corner, allowing for an outdoor park with trees and benches. A two-story main banking floor is planned, with escalators connecting it to a mezzanine.

Medical administration building under construction

This $7 million administration building for the Woodruff Medical Center at Emory University in Atlanta was designed by Heery & Heery Architects and Engineers. Situated on the high point of the site, the building is concrete, with red Spanish tile roofs and brick pavers inside and out. The building's triangular plan reflects circulation patterns across the site, and provides a plaza area as well, adjacent to an interior exhibit area.



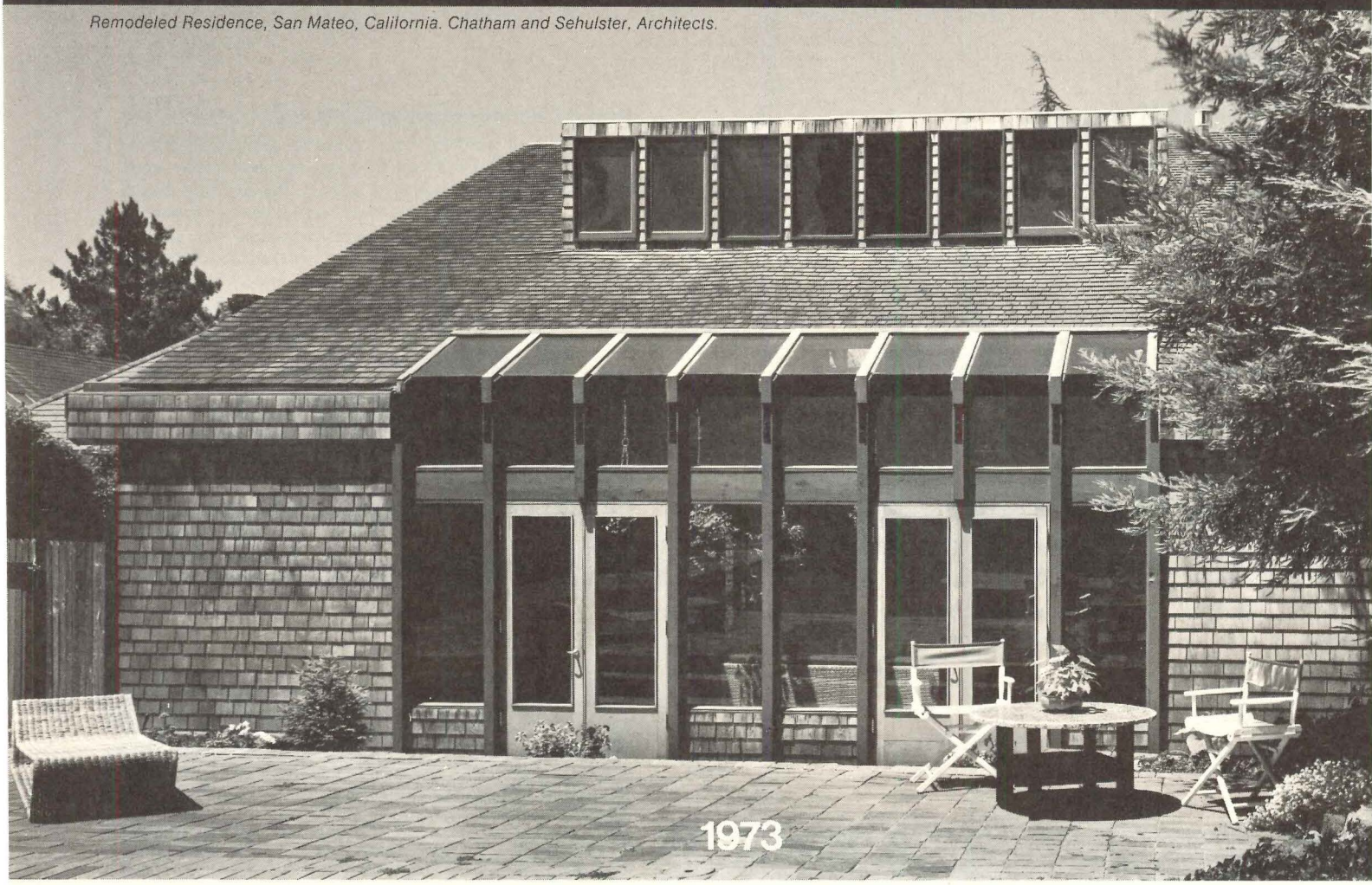


Addition to Washington's National Airport started

Completion is expected for the fall of 1976 on this Allegheny Airlines Unit Terminal designed by Giuliani Associates. The $8 million project will include a skylighted ticketing lobby (above) featuring a kiosk type ticketing counter, departure lounge with four gates, and ground level aircraft support facilities. Efficient passenger flow is expected in the single-level scheme, which eliminates stairs and escalators. Construction was begun in mid-November of last year.

1913

Remodeled Residence, San Mateo, California. Chatham and Sehulster, Architects.



1973

Red cedar comes back on the job after sixty years.

Sixty years ago this house was shingled with red cedar. Through six decades of rain, wind and sun the natural preservatives in the red cedar kept the walls looking beautiful.

So when it came time to remodel it was only natural to use red cedar again.

And remodel is just what the architect did. He added bedrooms in the attic, repositioned kitchen and living areas, added a carport and a patio. He plumbed, rewired and renewed almost everything in the house. Most everything's been changed. From the new skylight windows to the swimming pool in the backyard.

What other material than red cedar could lend continuity and tradition to such a drastic remodeling? And what other material has the unique insulative properties of red cedar, a major consideration in the energy conscious 70's?

For your next new building or remodeling project, put Red Cedar Certigrade Shingles or Certi-Split Shakes on the job. You'll have the peace of mind of knowing they'll still be there, looking as good as ever for a long time to come.

For more details, write Red Cedar Shingle & Handsplit Shake Bureau, 5510 White Bui Seattle, Washington 98101. (In Canada: West Hastings St., Vancouver 1, B.C.)

These labels on bundles of red cedar shingles or handsplit shakes are your guarantee of Bureau-grade quality. Insist on them.

Red Cedar Shingle & Handsplit Shake Bureau

One of a series presented by members of the American Wood Council.

For more data, circle 24 on inquiry card

l honors four com- to planned towns

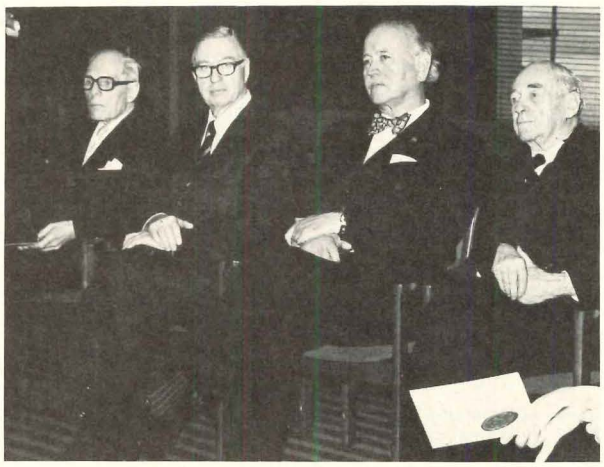
ıry 10, 1975 Dr. Urho n, President of Finland d the Tapiola Medal- our distinguished per-) have made a "signifi- ribution to the creation munities planned to e social and psycho- l needs of human

eiving the award were: alto (right); Otto-livari ın (left), teacher and Bob Frommes (second ht), managing director Société Nationale des ons à Bon Marché, Lux- g; and Frederick Guth- ond from left), formerly t of the Washington or Metropolitan Studies. . Gutheim, who is a in the firm of Gut- eelig/Erickson, Van- B.C., was instrumental g up the International tural Foundation (see D, March 1975, page ch is sponsoring an in- nal design competition sing in Manila. His Arthur Erickson, is the onal advisor to the com-

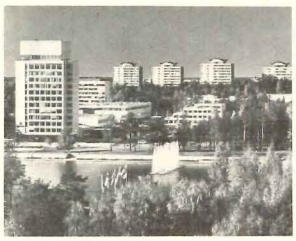
Tapiola Medallion was d in 1971 to commemo- principle that commu- nning should never lose he needs of the individ- piola is almost com- ow, and the Housing tion Asuntosäätiö is g a second project, the town of Kivenlahti. s the town center and a al cluster of Tapiola. n center was designed e Ervi, who won an in- nal design competition . Almost 80 per cent to s in Tapiola were allo- state-subsidized hous- 16,000 persons in both l low buildings.)

e following are ex- remarks by Mr. Gut- on receiving the Medal-

piola found its origin in s national reconstruc- blem of the early 1940's massive resettlement of on and the growth of



Atte Matilainen



Teuro Kaneva

towns had revealed the inadequacy of the conventional apparatus of housing and town planning. But its realization long after these immediate needs had waned was due to the pragmatic outlook and persistence of Heikki Von Hertzen, the managing director of the Housing Foundation. Widely known for its social concepts, its planning innovations and its architectural qualities, Tapiola has been studied equally for its resolution of the problems of housing finance, land development and central city-suburban relations. To the United States it has shown what private initiative can do.

"Today, when the city is widely regarded as an environmental problem, one surveys the world-wide experience with new towns with a fresh appreciation of this aspect of Tapiola. One does not have to eat the new towns doctrine as hot as it was cooked in order to subscribe to the need for greater social planning and participation.

"I shall conclude these brief remarks by reflecting on the significance of Tapiola today. Its importance is no longer that of a concept but of a realization. Here one sees the interaction of social and architectural ideas with the stubborn realities imposed by time, money, politics, organization and the other worldly considerations. From being a subject of critical analysis, Tapiola has become the material history. In the panorama of new town failures, not simply of projects but of disasters of programmatic scale, the success of Tapiola requires historical interpretation. How did it survive the forces that have prematurely aged Cumbernauld and made it a passing fancy that converted the promise of Reston as an alternative to suburbia to another form of suburbanization? That have placed the indelible stamp of bureaucracy upon the new towns of Britain and the Soviet Union alike?

"An urbanizing world demands answers to these questions. They will be asked in the 1976 conference of the United Nations on human settlements. One would like to think that Finland could offer there in Vancouver some graphic description in which pride of accomplishment is balanced by a maturity of historical interpretation that will allow the meaning of Tapiola today to be given a worldwide application equal to its worldwide renown."

World Congress of UIA will meet in Madrid in May

The 12th World Congress of the International Union of Architects (UIA) will be held in Madrid May 5-10. Organized on the theme "Architectural Creativity and Technology," the Congress will feature speakers such as Giancarlo DeCarlo, Italy; Frei Otto, Germany; Kenzo Tange, Japan; Paul Rudolph and Luis Sert, USA; Oscar Niemeyer, Brazil; James Stirling, United Kingdom; and Arthur Erickson, Canada. (Mr. Erickson is the official advisor to the UIA-conducted design competition mentioned on this page in the Tapiola Medallion story.)

Congress regulations, programs, registration forms and fee schedules are available from AIA, Washington, D.C.

Manila competition attracts Texas students

Five Texas Tech University architectural students claim they are benefitting this semester from a large dose of cultural shock, and they're determined to use their experience to improve urban life.

The five are members of a nine-man student team—working with three faculty members—who have entered a competition offered by the International Architectural Foundation, Inc., (RECORD, March 1975, page 13) to design an environment for urban slum dwellers of Manila.

To get a better understanding of slum conditions in Manila, the five students made a three-week visit to Manila in December, to an area called the Tondo District, which has the highest concentration of inhabitants in the city. Within the Tondo there are 180,000 people, the students report, giving it a density of 685 people per acre.

While in Manila, the architectural students visited with officials of several government agencies to learn the parameters of the problem, and with community organizations. The Filipinos, they said, had done a detailed study of the situation and were helpful in sharing data and planning concepts.

The students also visited with individuals in the Tondo district to learn how they earned their livings, what they wanted out of life, how they looked upon the inevitable move from the Tondo which is soon to become an international port area.

"We found a surprising sense of community among the people," one student said, "and we want to design a new environment which will protect this valuable feeling."

The team hopes to develop an urban design approach which will refine strategies for understanding and responding to the character of people and their places.

Working with the nine-member student team are architecture professors William Stewart and Dudley Thompson, who went to Manila, and John White who did not.

(At this writing, over 400 architects and teams have entered the competition. For entry information, see pages 176-177, this issue.)

Sullivan versus Burnham? It's now Burnham versus Sullivan

BURNHAM OF CHICAGO, *by Thomas S. Hines; New York. Oxford University Press, 1974, 445 pages, illustrations, $19.50.*

Reviewed by Edmund M. Bacon

The conflict between Daniel Burnham and Louis Sullivan, those titans of the once-fecund Chicago school, is an issue which is as bright today as it was when these giants first articulated it during the decades around the turn of the century.

At first, of course, "Dan" Burnham was the darling of the establishment, the friend and co-worker of such people as Cyrus McCormick and Frederic Delano. Louis Sullivan, physically wasted and financially impoverished, was the voice from the wilderness. As time went on the Louis Sullivan cry was picked up by a growing number of "modern" architects, until they themselves became the new establishment. Anyone who dared to say a good word for Daniel Burnham was immediately pounced upon, and branded with those pejorative words, "City Beautiful Movement," which, for some obscure reason, were supposed to represent everything that was reprehensible. This type of thinking impregnated the whole structure of the intellectual establishment, and still is mindlessly repeated as the new truth except in such arcane corners as the pages of the *Journal of the Society of Architectural Historians.*

Daniel Burnham of Chicago by Thomas S. Hines restores the discussion of this conflict to the level of a rational discourse. The value of the book lies in the fact that it is a serious attempt to restructure the issues raised by the Burnham-Sullivan conflict in the light of what we know today. To my mind this restructuring is of very great value and is long overdue.

Lest by my ponderous introduction I give the impression that this is a formidable, academic type of book, I hasten to say that it is a very warm, personal biography of a very interesting and enjoyable character, and that the book is beautifully written. When I first heard of it I wondered why, in these days of paper shortage, a new biography was needed in view of Charles Moore's 462-page two-volume biography of Burnham, first published in 1921 and recently republished by Da Capo Press. The answer lies in the fact that Hines knows how to write, leavened by the historical perspective that has accumulated during the period between the two books. Unfortunately, in terms of size, layout and quality of illustrations, we have gone way downhill since the 1909 "Plan of Chicago" was put out under Burnham's supervision. In terms of communication the contrast between this and the Hines book is startling, the latter most assuredly not communicating by its design the ebullience, stature and breadth of view of its subject. This handicap is largely offset by the freshness of the writing, which never lags.

This is a many-faceted book. Even if one were not interested in architecture or city planning, nor especially in Burnham the man, one would likely find the book rewarding because of the window it provides on a significant period of American history. Here the writer's skills come on full force. Through a judicious intermix of separate documentary fragments and sociological backgrounds, Hines brings alive many of the forces that were beating upon Burnham and his contemporaries, and which are shaping our lives today.

At this point I would express a slight disappointment. While I think Hines succeeded admirably in connecting Burnham with historical movements one or two decades before and after his work, I do not think he did as well in relating Burnham to his deeper roots going back to the earlier history of this country, nor to the longer-range implication and impact of his work. The discussion of the interrelation of Burnham's and L'Enfant's approach to the planning of Washington is superficial, and, while frequently mentioned in the book, the debt that modern city planning owes to Burnham was not adequately covered.

Details stand out. I wish even more stress had been laid on the basic plan and interrelationship of buildings and landscape in the 1893 World's Columbian Exposition, and its long-term lessons, such as: the plan is more important than surface stylistic manifestations. I wish he had discussed the fact that Daniel Chester French's colossal figure of the Republic turned her back on Lake Michigan, probably because this fact intrigues me. But under such a broad, generous, lucid ambience, all is forgiven.

It is fashionable nowadays for academics and writers to take the disembodied view of the pure intellectual, to avoid at all costs expressing their own view of the value issues involved in the work they are doing, and so render themselves invulnerable to the accusation of error. Hines does not slide into this happy Nirvana.

In his discussion of the Sullivan-Burnham conflict, Hines is dealing with a very difficult issue. For some reason this issue seems to strike a very sensitive nerve, and almost all references to it have been highly inflamed. Hines' description of it is measured, objective, fair and fascinating, and, I think, will carry along partisans of either side up until the end.

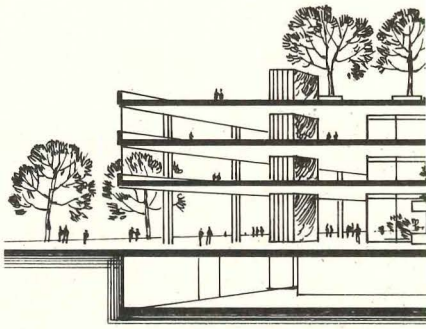
Then, thank God, he is willing to come to a conclusion. The last sentence of the book is a resounding declaration, and I leave it to you to read the entire book to find out what it is—but don't read the end first.

Mr. Bacon was executive director of the Philadelphia City Planning Commission from 1949 until his retirement in 1970. In this role he began a continuous program of rebuilding for which Philadelphia has become famous. He is the author of Design of Cities.

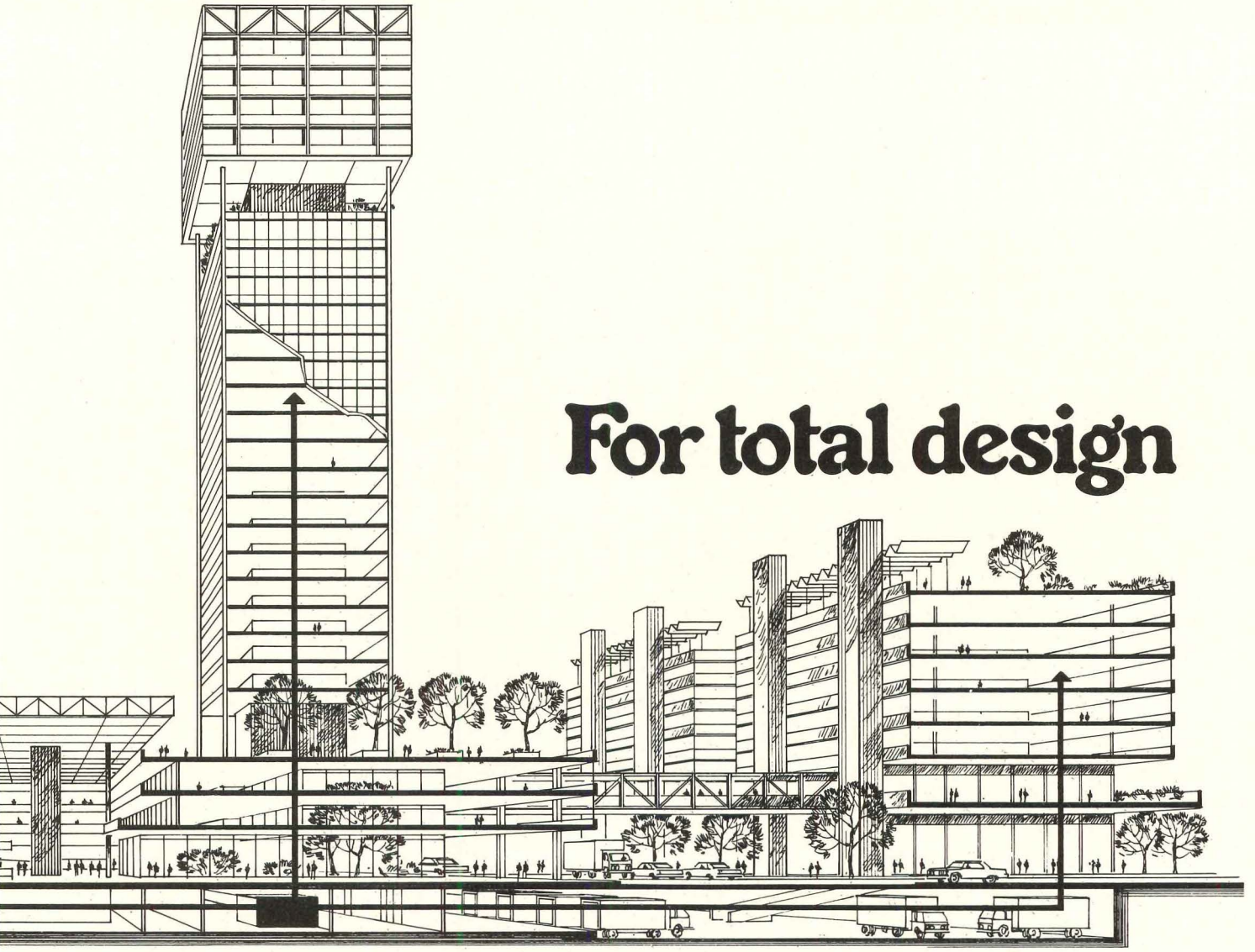
Also received

INTERIOR SPACES DESIGNED BY ARCHITECTS, *edited by Barclay F. Gordon; New York, Architectural Record Books, 1974, 230 pages, illustrations, $22.50.*

A large collection of architectural interiors organized according to use—civic and community, business, teaching, worship, selling and display, dining and drinking, performing arts . . . and "living."



call th



For total design

Bell System when preplanning.

Efficient buildings provide facilities to install today's sophisticated communications systems. Since these facilities should be integrated with your design, we want you to know about our Building Industry Consulting Service.

A Bell System consultant can advise you on local building codes which affect communications, and suggest a system that offers maximum efficiency and makes optimum use of space. And there's no extra charge for this service.

Calling us early can eliminate the need for expensive alteration, or exposed cables and wires.

Our insert in Sweet's Catalogue has basic information. For questions on current or future projects call a Building Industry Consultant at your Bell Company or send in our coupon. At AT&T and your Bell Company, we want to help you produce an efficient end product.

We hear you.

Building Industry Consulting Service
American Telephone and Telegraph Company
Room 2238D, 195 Broadway
New York, New York 10007

K

I am interested in the Building Industry Consulting Service.

☐ Please send me additional information.

☐ Please have a representative contact me.

Name

Title Tel.

Company

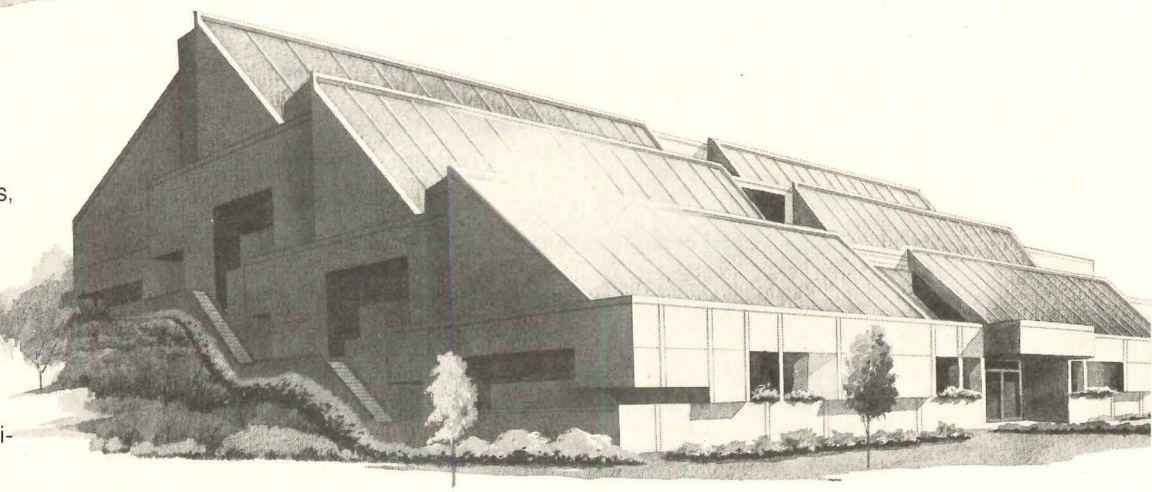
Street

City State Zip

1972 winners: Mercy Hospital II, Coon Rapids, Minn., designed by S.C. Smiley Assoc., Minneapolis. Not shown: Westinghouse Nuclear Center, Monroeville, Pa., designed by Deeter Ritchey Sippel Associates, Pittsburgh. And the Energy Center, Mount Sinai Medical Center, Miami Beach, designed by The Smith Korach, Hayet, Haynie Partnership, Miami, Florida.

1973 winners: Weyerhaeuser World Headquarters Building, Taco designed by Skidmore, Owings & Merrill, San Francisco. Not shown: General Electric River Works Program, Lynn, Mass., designed by GE Lynn, Mass., Constructi and Engineering Sectio And the Boca Raton Co munity Hospital design by The Smith, Korach, Hayet, Haynie Partners Miami, Florida.

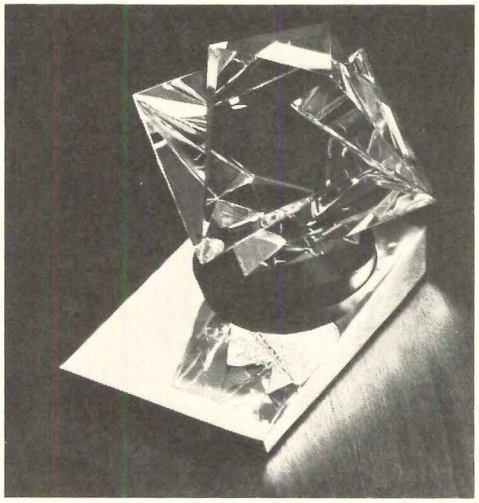
1974 winners: Desert Research Institute, University of Nevada Systems, Boulder City, Nevada, designed by Jack Miller & Associates, Las Vegas, in association with Arthur D. Little, Inc., Cambridge, Mass. Not shown: Federal Building, Saginaw, Mich., designed by Smith, Hinchman & Grylls Associates Inc., Detroit.



These buildings use 33% to 98% less of our nation's energy than conventional structures. Have you designed a building that saves f
See Award Program details on next page.

*T.M. Reg. O.-C F.

Announcing the 4th annual wens-Corning Energy Conservation Awards Program.



The Owens-Corning 1975 Energy Conservation Award. "Triangles," a Steuben Crystal sculpture that captures and reflects light from multiple triangular planes.

v our Awards Jury a building
gn that doesn't waste energy
d you could receive one of
Energy Conservation Awards
ns-Corning will present for
.

The Awards Jury will be look-
or three things: Creativity.
inality. And most important of
designs that save energy.
Too many of our buildings
e fuel and contribute to en-
mental pollution.

By continuing the Energy
servation Awards Program we
ted in 1972, Owens-Corning
s to stimulate even more
to conserve energy. It also
us recognize—and honor
e architects and engineers
do the best job of designing
dings and mechanical sys-
that help conserve our
n's energy.

Who can enter

registered architect or profes-
al engineer practicing in the
is eligible. As an individual.
a team. But to qualify, your entry must be a commissioned building project—in the design process, under construction, or a completed structure.

Although Fiberglas* products are an excellent way to conserve energy, their use is not an entry requirement.

Four entry categories

Winners will be selected from four design categories.

Institutional—schools and hospitals, for example.

Commercial—office buildings, shopping centers, retail stores, and similar structures.

Industrial—including manufacturing plants, research centers, warehouses.

Governmental—post offices, administrative buildings, and military structures, to name a few.

The Awards

Winning architects and/or engineers will receive the Steuben Crystal sculpture at left. Owners or clients will receive other Steuben Crystal awards.

The Awards Jury for 1975

Outstanding professionals in architecture and engineering will serve as the Awards Jury to select the winners.

Send for entry details now.

Completed entries must be submitted by August 31, 1975. Winners will be selected and notified in early September.

For a brochure giving complete details, write X. Y. Meeks, Owens-Corning Fiberglas Corporation, Architectural Products Division, Fiberglas Tower, Toledo, Ohio 43659.

Owens-Corning is Fiberglas

OWENS/CORNING FIBERGLAS TRADEMARK®

For more data, circle 26 on inquiry card

Unless Your Building Ca
You May End Up wit

A report to executives from Johnson Controls.

Buildings today are in trouble. Demanding tenants, fast-changing firecodes, energy short-falls, soaring crime rates, a fitful economy are just some of the problems your building must overcome if it's not to end up in distress.

Listed here are some of the things a modern building can and should do to meet these pressing problems. Prepared by Johnson Controls, the experts who have designed and installed more than half the computerized automation systems in U.S. buildings, it offers you a quick, easy way to measure a building's obsolescence.
You may find some of these items mind-boggling. But they are routinely performed by many modern buildings—buildings your building must compete with.

Compare how your building measures up. To keep abreast of competition, it should do at least 40 of these things. Send for the 24-page booklet offered below. It tells you how you can "add on" automation, system by system, to make your building perform with the best.

To Stay in the Running, Your Building Should Have an Automated Firesafety System That:

1. Anticipates fire. Sniffs out products of combustion before a fire can start.
2. Detects smoke *or* heat *or* flame.
3. Gives the alarm in under 5 seconds.
4. Calls fire department automatically.
5. Exhausts smoke, heat and deadly gasses from the fire area.
6. Automatically closes fire doors to create safe areas,
7. Projects a plan of the fire floor onto a central illuminated screen.
8. Displays instructions to building operating personnel for evacuation, firefighting.
9. Broadcasts prerecorded and actual voice commands throughout the building, telling people what to do, where to go, when, and *why*.
10. Listens to what stranded people have to say, and activates 2-way communications.
11. Determines location, extent and progress of fire for firefighters.
12. Masses elevators at ground level to rush firefighters to the fire scene.
13. Puts firemen in full command of elevators and communications with a control panel made operative by fire department key.
14. Protects itself by automatically bypassing burned areas, to keep vital information flowing.
15. Provides a fire case history, including a typewritten stage-by-stage record of alarms and a taped record of all voice communications and replies.

A Failsafe Security System That:

16. Gives the alarm the instant entry is attempted.
17. Identifies the exact point of intrusion by projecting a floor plan of the area on an illuminated screen.
18. Turns on the lights, if required.
19. Zooms in on the intruder with closed circuit television.
20. Calls the police automatically.
21. Permits entry only at specified hours, using unpickable card readers in place of pickable key locks.
22. Lets you change locks instantly, electronically.
23. Blocks main passageways, safes, and confidential files with a cordon of silent electronic sentinels that detect the slightest movement.
24. Listens for screams. If a victim cries out in a laundry room, elevator, stairwell, it gives the alarm instantly.
25. Sounds the alarm if the system is tampered with, even when off.

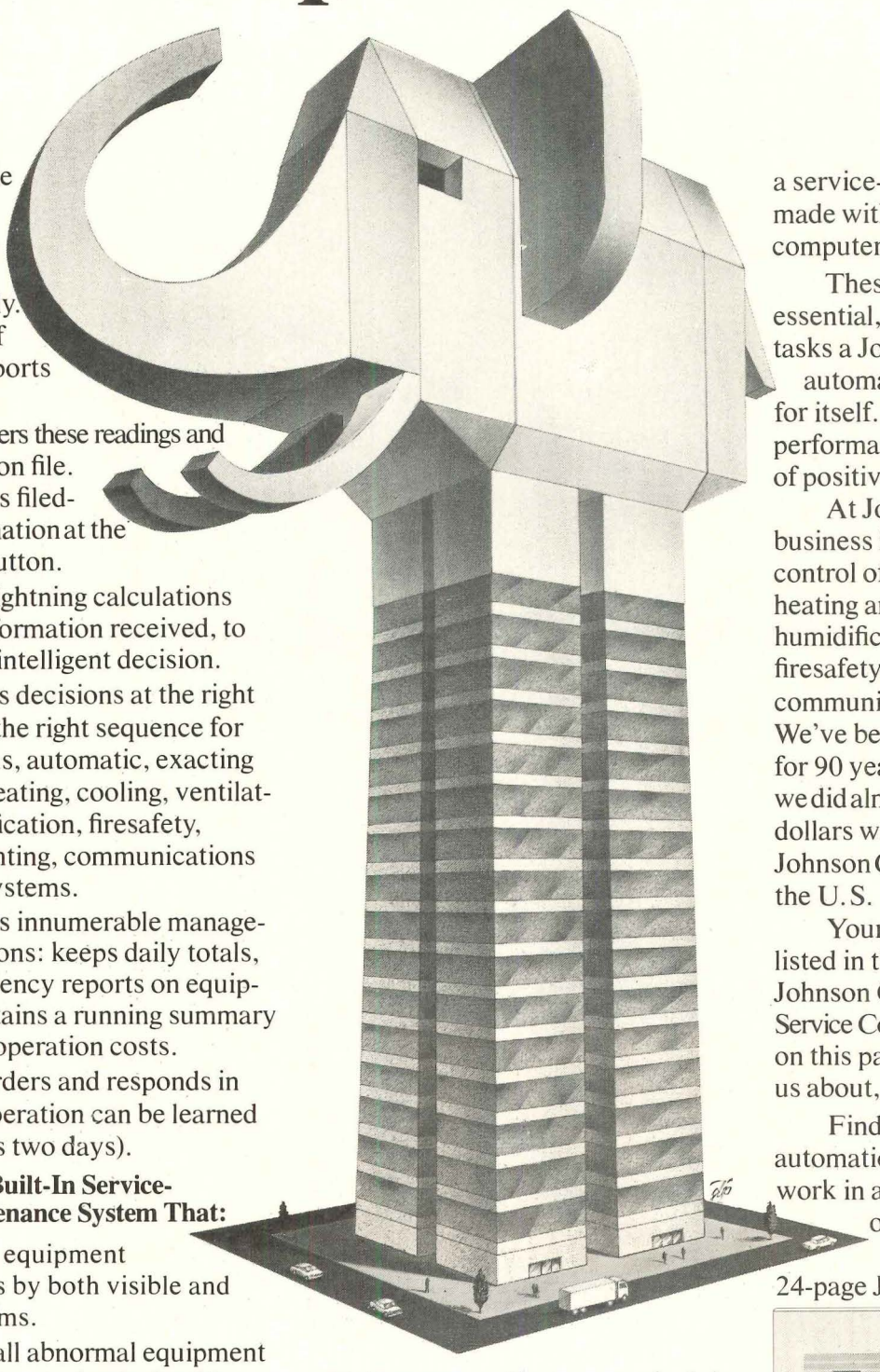
An Automatic Energy Conservation System That:

26. Plans heating and cooling requirements with programs considering occupancy, direction of sunlight, cloud cover, wind force, humidity, and other variables.
27. "Hunts" to seek out the most economical mixture of outside air and recirculated inside air.
28. Uses 100% outside air for "free cooling" when outside air is at the right temperature.
29. Eliminates unnecessary heating whenever possible, by admitting only the barest minimum of outside air to meet codes.
30. Sets temperature higher or lower automatically at night to save heating or cooling costs.
31. Turns non-critical equipment on and off automatically to cut costly peaks in electric demand bills.

A Self-running Control System That

32. Centralizes all building system monitors and controls at a single, one-man control center.
33. Interfaces all separate building systems to form a single, unified automation system.
34. Computer-manages this unified system with superhuman speed and efficiency, using a computer built especially for building automation.
35. Monitors, continuously, hundre

Do 40 of these 48 Things, or White Elephant.



of points located inside and outside your building.

36. Reads, electronically, *thousands* of incoming reports per minute.

37. Remembers these readings and keeps them on file.

38. Produces filed-away information at the touch of a button.

39. Makes lightning calculations based on information received, to arrive at an intelligent decision.

40. Executes decisions at the right time and in the right sequence for simultaneous, automatic, exacting control of heating, cooling, ventilating, humidification, firesafety, security, lighting, communications and clock systems.

41. Performs innumerable management functions: keeps daily totals, makes efficiency reports on equipment, maintains a running summary of building operation costs.

42. Takes orders and responds in English (operation can be learned in as little as two days).

A Built-In Service-Maintenance System That:

43. Reports equipment emergencies by both visible and audible alarms.

44. Signals all abnormal equipment *trends* so they can be dealt with before they become emergencies.

45. Shuts down endangered equipment automatically.

46. Contacts a repairman if an important motor breaks down in the middle of the night.

47. Prepares and issues, on schedule, typed work order sheets for maintenance men describing the job and even listing needed equipment!

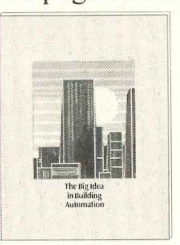
48. Operates under the protection of a service-maintenance contract made with experts who know computerized building automation.

These are just some of the essential, sometimes astonishing tasks a Johnson Controls automated building can perform for itself. The essence of this performance lies in the technology of positive, exacting control.

At Johnson Controls our business is control. The automatic control of America's buildings for heating and cooling, ventilating, humidification, energy conservation, firesafety, security, lighting, communications and clock systems. We've been on top of this business for 90 years. Last year alone we did almost one-quarter of a *billion* dollars worth, from more than 100 Johnson Controls offices throughout the U.S.

Your local Johnson office is listed in the White Pages under Johnson Controls or Johnson Service Company. If there's anything on this page you'd like to ask us about, just give us a call.

Find out how modern building automation systems can be put to work in any building you plan or own. For the latest on today's buildings, get this 24-page Johnson Controls booklet,

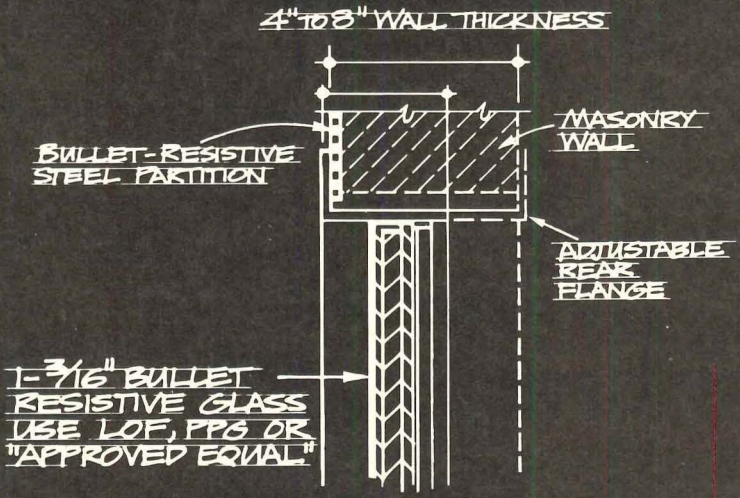


"The Big Idea in Building Automation." Write Fred L. Brengel, President, Johnson Controls, Inc., P.O. Box 423, Milwaukee, Wisconsin 53201.

JOHNSON CONTROLS Prime source of problem-solving systems.

For more data, circle 27 on inquiry card

YOU CALL US 'APPROVED EQUAL



OUR REAL NAME IS SAFELITE®

And we produce quality U.L. listed BULLET RESISTANT GLASS. Our BULLET RESISTANT GLASS comes with mitered or sawed edges for butt glazing when specified and always with clean, clear vision.

Safelite's other specialty glass includes RIOT GLASS for maximum security and SOUND CONTROL GLASS for noise abatement and comfort. Besides clear glass, we utilize a wide range of acceptable architectural colors, each at a specific light transmission, a constant U-value and shading co-efficient.

So — specify us by name . . . . . Safelite Industries . . . . . and we will deliver on time.

Write us for complete brochure or call for information.

Safelite is Service

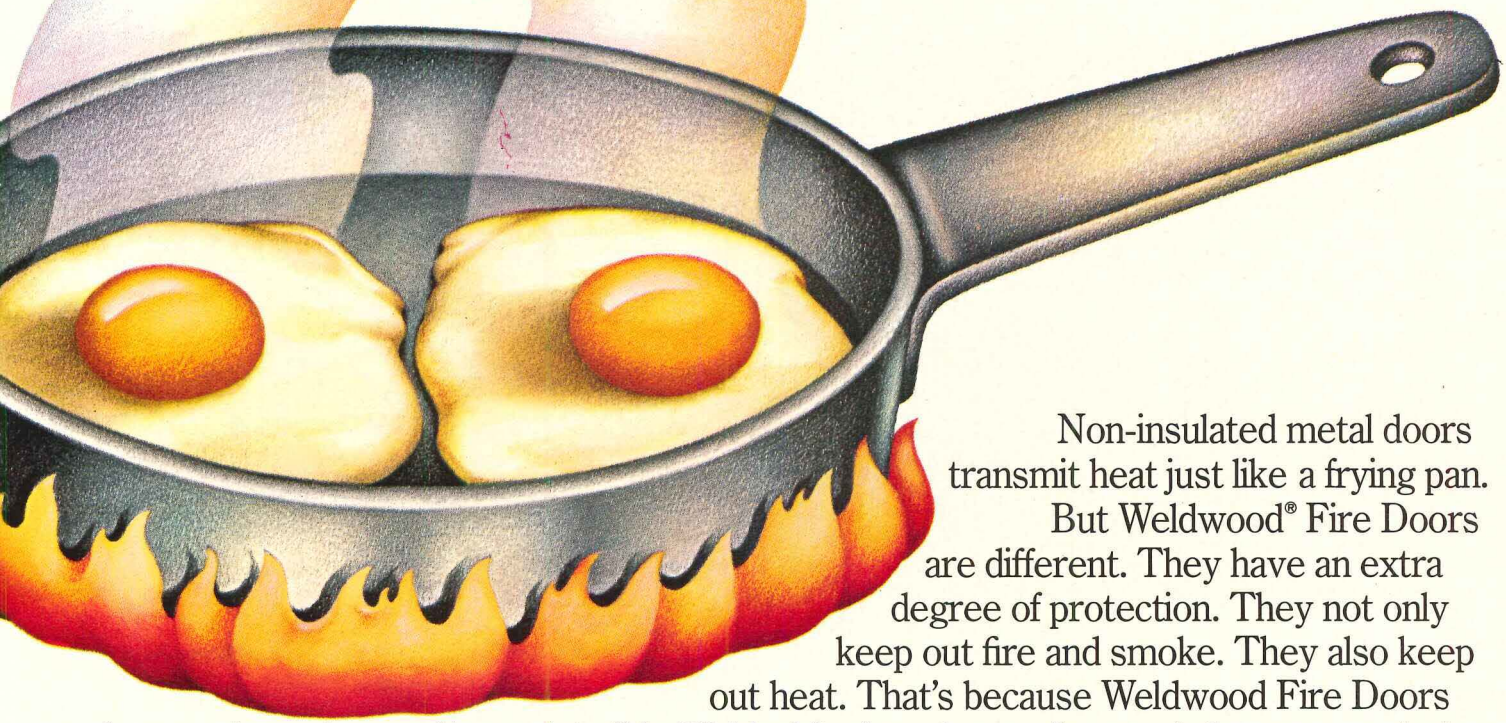
Safelite® Industries

P.O. Box 1879 / Wichita, Kansas 67201

1-800-835-2092

For more data, circle 28 on inquiry card

YOU'RE LOOKING AT WHAT'S WRONG WITH MOST METAL FIRE DOORS.



Non-insulated metal doors transmit heat just like a frying pan. But Weldwood® Fire Doors are different. They have an extra degree of protection. They not only keep out fire and smoke. They also keep out heat. That's because Weldwood Fire Doors have an inner layer of incombustible Weldrok® mineral core. It retards heat transmission. So the unexposed side doesn't get hot enough to be dangerous.

Besides giving extra protection, Weldwood Fire Doors add an extra degree of beauty wherever they're installed. In offices, hotels and apartment buildings, Weldwood real veneer doors look elegant. And in schools, hospitals and factories, our laminated doors add a colorful touch. And Weldwood Fire Doors come in a complete range of time ratings: including ¾ hour, 1 hour and 1½ hours.

t for this metal label on every Weldwood Fire Door.
your assurance of that extra degree of protection.

Before you specify any fire doors, you should make sure you're up on all the fine points of fire door standards, codes and construction details.

You'll find everything you need—and should know—at your U.S. Plywood Branch Office. Or by sending for our new booklet, "All About U.S. Plywood Wood Fire Doors."

Then you'll know all about the Weldwood extra degree of protection.

And perhaps our doors will become your doors.

U.S. Plywood

AR

U.S. Plywood
777 Third Avenue
New York, New York 10017

Please send me your booklet, "All About U.S. Plywood Wood Fire Doors."

NAME

COMPANY

ADDRESS

CITY

STATE ZIP

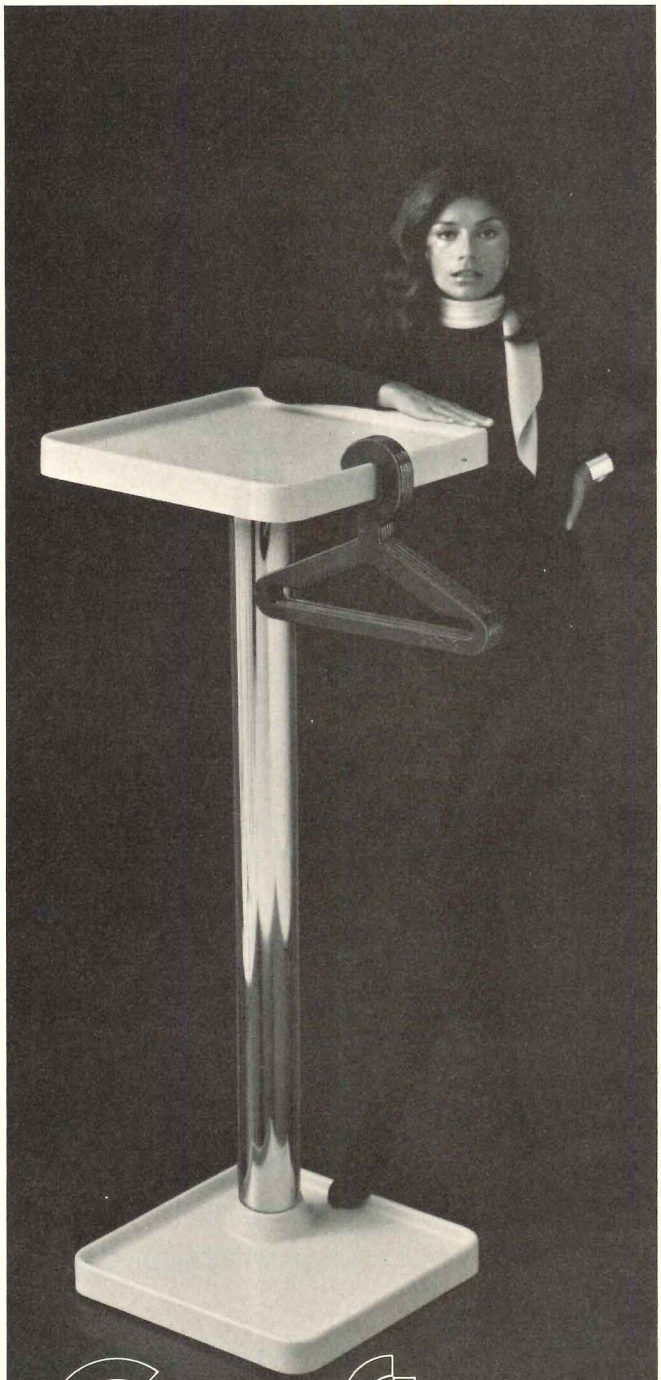
U.S. Plywood
Division of Champion International

For more data, circle 29 on inquiry card

Olympic Overcoat or Olympic Stain. Guaranteed satisfaction you won't get with paint.

For more data, circle 31 on inquiry card

Olympic Stain, 1148 N.W. Leary Way, Seattle, WA 98107
A division of COMERCO, INC.



Grafic Square

A fresh new statement from the designers at Vogel-Peterson who brought the coat rack into the 20th Century and made it more than an object on which to hang coats and hats. Please write for our full color brochure.

VOGEL-PETERSON CO.
ELMHURST, ILLINOIS 60126 • PHONE: 312/279-7123
THE MERCHANDISE MART, CHICAGO, ILLINOIS • SPACE 1689

For more data, circle 30 on inquiry card

Please send me th

wellco

Commercial Carpe Catalog

The complete Wellco line of commercial carpets, over 30 running lines. Exceptional quality in every price range from ground floor to executive suite. Options offered include most commercial fibers, custom colors, weights, construction and backings. Plus tech data on traffic ratings, FHA requirements, fiber characteristics, backings and more. Exacting specification guide. Address to: Don Thompson, Advertising Manager, Dept. R4

Because we're committed to commercial quality and nothing else
wellco carpet corporation
WELLCO CARPET CORPORATION ☐ P. O. BOX 281 ☐ CALHOUN, GEORGIA 30701 ☐ TELEPHONE: 404/629-9276
A WHOLLY OWNED SUBSIDIARY OF MANNINGTON MILLS, INC., SALEM, N. J.

name _____
firm _____ title _____
address _____
city _____ state _____ zip _____

For more data, circle 32 on inquiry card

Many new roofs waste a lot of energy. Here's how to cut that loss by 50 percent-without spending an extra dime.

It may sound amazing, but you can do it.

The only thing you have to do is specify thicker 2¼-inch Fiberglas* roof insulation instead of the thinner 15/16th-inch size.

This dramatically reduces heat loss through your roof. And it actually brings the total cost of your building *down!*

The reason: the improved thermal performance of your roof enables you to get along with less elaborate, *less expensive* heating and cooling equipment.

In general, every dollar you spend on thicker 2¼-inch roof insulation vs. 15/16th-inch size cuts up to *two* dollars off original equipment costs. So you come out considerably *ahead.*

On a suburban office building in northern climates, for example, thicker roof insulation could save as much as $27,000 in equipment costs for every 60,000 square feet of roof.

And, of course, the thicker Fiberglas roof insulation goes on slashing the loss of fuel energy through the roof of your building by 50 percent—and the fuel *bills* by roughly 10 percent—year after year after year.

The exact savings vary according to climate zone, the size and type of roof deck, "U" improvement, and the added cost of the thicker insulation.

We've worked up all the figures and charts in a handy booklet called "Roof Raiser's Guide to Cost Reduction." For a free copy, write: V.C.Meeks, Architectural Products Division, Owens-Corning Fiberglas Corp., Fiberglas Tower, Toledo, Ohio 43659.

More details: See our section in Sweets Catalog, Roof Insulation Systems 7.15/Ow, or contact your Owens-Corning representative.

T.M. O.-C. F.

Owens-Corning is Fiberglas

OWENS/CORNING FIBERGLAS TRADEMARK®

For more data, circle 33 on inquiry card


Volcla

roves it's self-healing .every installation.

That's why—when seepage could be disastrous—Volclay's 20 million year old flexibility is the only answer.

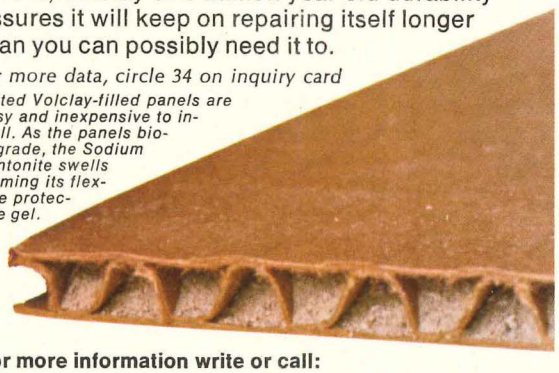
The hundreds of punctures made in Volclay Panels as a part of the installation process are dramatic proof of the ability of Sodium Bentonite to self-heal. When a break occurs, the flexible Sodium Bentonite adjacent to it migrates to eliminate it or to seal against the penetrating object quickly—efficiently.

With any other waterproofing system, a break in the seal protecting a building's foundation from the infiltration of moisture or water is a "call to action." Unfortunately, the break is rarely ever discovered until some damage is done: an unsightly wall stain, discolored or mildewed carpeting, malfunction of mechanical or electronic equipment or disruption of communications systems. Then begins the costly and difficult task of locating and repairing the break. This task is further complicated by the fact that lateral infiltration often carries the water a good distance from the actual break before the evidence appears.

When your foundation is protected by Volclay Panels, breaks self-heal almost instantly so that you not only don't have to worry about them, you'll probably never even know when they occur.

And, Volclay's 20 million year old durability assures it will keep on repairing itself longer than you can possibly need it to.

For more data, circle 34 on inquiry card



Fluted Volclay-filled panels are easy and inexpensive to install. As the panels biodegrade, the Sodium Bentonite swells forming its flexible protective gel.

For more information write or call:
American Colloid Company, Building Materials Division
5100 Suffield Court, Skokie, IL 60076 (312) 966-5720

☐ Please send more information about Volclay Panels.
☐ I have a tough waterproofing problem. Please have a consultant call . . . no obligation, of course.

Name_____

Firm_____

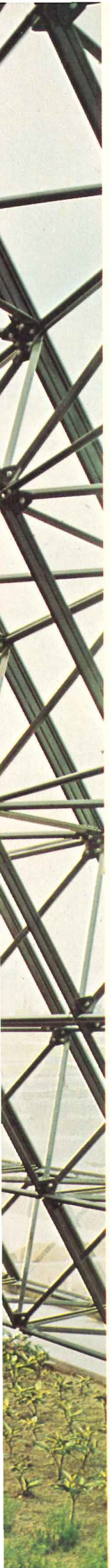
Address_____

City_____ State & Zip_____

Phone_____

AR4-75

VOLCLAY® PANELS
Bentonite Waterproofing Systems



Cool Slant

In Texas, the sun really unloads on this dramatic structure. Its sloping walls don't just live alongside the sun, they face up to it.

It takes a cool slant on the problem to solve it. And the spectacular Century Building in San Antonio has one: C-E Polarpane "20" Gold Reflective Insulating Units.

C-E Polarpane #2016 Gold was chosen for the entire building. Polarpane performance is the reason. These Gold Insulating Units face up to the sun beautifully, rejecting over 90% of infra-red solar energy. Total indoor heat gain is only 37 BTU/hr per square foot.

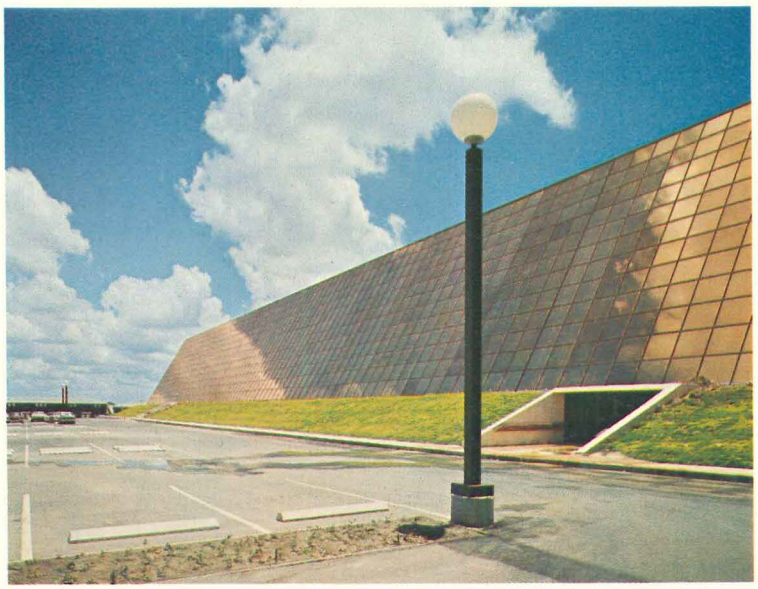
Polarpane Gold is easy on the eyes and restful inside thanks to its low 20% visible light transmission. Yet, this light level is sufficient to eliminate a requirement for excessive interior lighting and associated unnecessary interior heat gain.

When the heating season rolls around, Polarpane excels again . . . with a low .31 "U" value that means most room heat is retained by reflection back into the room.

Polarpane Silver works some wonders of its own with similar high performance characteristics.

There's no finer warranty than you get with C-E Polarpane "20" . . . a guarantee of 20 years of performance backed by Combustion Engineering, Inc., one of America's leading industrial firms.

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



Architect: Neuhaus + Taylor, San Antonio, Texas
Glazing Contractor: Samuels Glass Co., San Antonio, Texas

C-E GLASS
COMBUSTION ENGINEERING, INC.

For more data, circle 35 on inquiry card

Take it from Dave Lennox . . .

ANOTHER LENNOX ENERGY-SAVING INNOVATION!

The exclusive new Lennox "wide no-load band" thermostat brings rooftop multizone HVAC performance within the government energy conservation guidelines.

Until now, the 68°-78° guidelines could not be applied to commercial multiple zone systems. Because these systems are designed for small-differential temperature control, they heat and cool independent zones simultaneously. Never idle. Therefore, lowering or raising the thermostat settings does not effect energy savings.

Lennox answers the problem. Our new "wide no-load band" thermostat gives you about a 6° idle band between heating and cooling demand ranges. No heating or cooling energy is used when all zones are in the no-load band. Yet temperature control remains precise at either end of the band. Energy management improves even further when Lennox optional Outdoor Air Discriminator™ is used with the "wide no-load band" thermostats. Lennox DMS4 options only.

To learn more about this Lennox innovation, write: Lennox Industries Inc., 571 S. 12th Ave., Marshalltown, Iowa 50158.

LENNOX® "Attaboy, Dave!"

AIR CONDITIONING • HEATING

Nifty problem-solving ideas from Lennox.

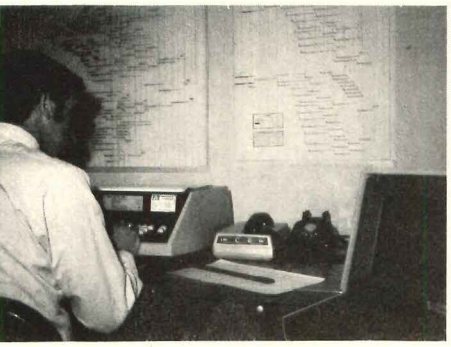
For more data, circle 36 on inquiry card

project scheduling system that really works

e notion of a computer-linked system for ical-path scheduling and monitoring of the ole building process from pre-design ough construction has engaged the attention some first-rate technical minds for many rs. And it has been frustrated many times in bales of printout stacked unread on the nstruction shack floor—or locked up like emy documents in the credenzas of design ces.

The problem has not been one of techni- feasibility—despite the inevitable setbacks of the GIGO principle (garbage in garbage out), overconfidence, and overkill of manageable detail. The real problem has been the slow maturing of the process and its applications in a rather forced transfer from the military-industrial beginnings of CPM and PERT to the multi-disciplined and zealous professional and entrepreneurial mix of today's general building ownership, design and construction.

The article that follows is a detailed description of a construction scheduling system developed out of the resources of the Turner Construction Company and the growing capabilities of central data processing services. The system is described by Garrett Thompson, Turner's chief cost and project control engineer. Briefly, this system works because it has overcome many of the difficulties of other systems, and it comes on stream at a time when owners, architects, engineers and contractors have not only recognized the potential of this management tool, but have allayed some of the apprehensions that accompanied its development in recent years.



ure 1. Data-phone terminals at several Turner ces "talk" directly to a central computer services n in Ann Arbor, Michigan. Date-related CPM rts, such as those on the wall, can be plotted by computer and updated via the oscilloscope con- e at the terminal. Conventional typed printouts received at the terminal being operated by the hor, Garrett Thompson, in the New York office.

ew years ago, CPM was viewed by many THE solution to the organization, schedul-, monitoring and control of the building ocess. Based on early (1956-1958) critical h method experiences of DuPont in engi- ering and construction and the program aluation and review techniques (PERT) of the vy in Polaris missile development in 1958 1960, those expectations seemed warranted.

In the decade and a half since Polaris, nstruction companies have used the critical h method as a scheduling aid, but, the ults have often been disappointing. One of reasons has been the tendency to view M as a cure-all and the failure to realize t the output of any CPM system is only as od as the logic that went into its creation d the willingness of all concerned to read, derstand and apply that logic. A CPM sys- n never could actually define how a project ould be constructed; it can only refine and mbine information given initially.

More specifically, some of the reasons for CPM's relative failure in the construction industry have been insufficient training of project personnel; many managers' apprehension about the computer-dependency of the system and a fear of its inflexibility (and their subsequent accountability); and the fact that schedules were often prepared *for,* rather than *with,* or *by* project staff, leading to feelings of resentment and a non-supportive attitude toward the specific schedule. There has been the additional major problem of excessive detail in traditional CPM schedules leading to inflexible, overcomplicated networks and voluminous computer printouts which inhibit use by job management.

Turner Construction Company has maintained that CPM, if properly applied, could offer many benefits beyond those of more conventional scheduling techniques and could provide the basis for an effective scheduling system. So work continued through the 60's and early 70's to develop a method that would overcome the above difficulties and create a comprehensive, easy-to-use system. Today, we feel that this belief and continued development has paid off in the form of Turner's "Project Scheduling System."

Philosophy, concepts and criteria

The Turner system is designed to provide the user with an effective technique for scheduling, monitoring, and controlling work which must be completed within acceptable resource parameters; i.e. time, cost, manpower, materials, and seasonal effects. Implementation of the system has complimented other widely used scheduling methods such as, manpower controls, bar charts, work-in-place analysis, and so forth.

There are three prime objectives of the project scheduling system: first is a well-defined, realistic schedule plan; second is a visual means of conveying this plan to all levels of project management with a timely updating and monitoring procedure; third is to develop adaptable feedback schedules in order that optimum results may be realized and preset completion dates firmly held. This is called "recovery planning" in the Turner lexicon.

The visual output of the project planning system is a computer-plotted, time-scaled, critical path network that illustrates activities and their logic relationships. All information describing an activity (the work item number, description, duration, and interdependencies) is plotted on the network. Although great emphasis has been placed on the use of the plotted network as the primary project scheduling document, the system also offers to the user a full range of conventional printout reports, sorting out activities by performer, time frame, milestones, or other useful categories.

The key element to success of the system is the ability to easily update the current schedule and turn-around the results in the shortest possible time in order that necessary action may be taken. Using the graphic display as the prime tool of the system, the recording of actual field progress and changes to the over-all plan can be maintained and monitored at the field level. When a formal update is needed, it can generally be produced in a few days from the time a scheduling engineer obtains the information. Due to the simplicity of the system, a small number of logic changes in a given time period may make a manual update more realistic. Thus, the system is self-sufficient and requires a minimum of corporate staff services.

The operational costs of running the system compete favorably with existing scheduling packages. Where costs of construction and benefits from early occupancy are substantial, proper application of the system may pay for itself many times over through the savings of time and related dollars. Of course, costs de-

pend on specific applications and are related to the amount of detail generated.

Several project control concepts are inherent in the Turner system and are essential for its success at the operating level. A key one is the philosophy of "early start" which gears management to think in terms of starting activities as soon as possible, rather than at the last available moment. Such a philosophy stimulates a search for activities which could start earlier than originally planned, e.g. when an activity *can* start vs. when it *must* start.

A second concept in project control involves the level of network detail. Here, the aim is to develop a level of detail necessary to monitor or control significant activities of the project, but without providing *unnecessary* detail. This level of detail is directly related to the type of project (high-rise, hospital, commercial, industrial, etc.), to the complexities of the project, and to the type of contract (construction management, general contract, consulting, pure construction services). Throughout, the aim is to avoid the high degree of network detail which has in many cases proved unworkable. An effective plan must provide the minimum level of detail which can provide a sound basis for the monitoring and control of significant project elements. At the early stages of a project, emphasis should be placed on developing in adequate detail the schedule for the next 6 to 9 months. Actual progress will dictate the degree to which activities previously developed on a more summary basis need additional controls in the form of a more detailed definition of the work. This may be accomplished by means of separate subnetworks or by expanding the current level of network detail.

Inherent in the Turner scheduling philosophy is the idea that one makes greater effort to

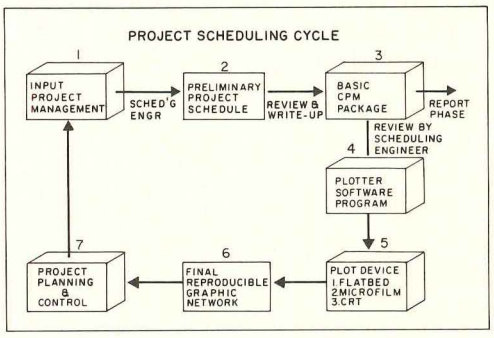


Figure 2. Process elements and feedback flow of the computer-linked Turner project scheduling system.

adhere to a schedule that he has helped establish, rather than one which is imposed upon him by some outside source. Initial and continuing involvement of the project superintendent is essential. His commitment to and support creates both a realistic initial plan and one which he will *use* during the actual construction process. Finally, and most important, is the concept of *recovery planning.* With scheduling objectives agreed upon for both the short and long term, the projects completion date is determined and "locked in." Any variances in progress compared with the schedule will indicate "slippage," and become the basis for formalized action in the form of developing specific recovery plans to return the project to its initial time objective. By keeping end dates fixed, reassessment studies evaluate alternative construction schemes (unusual expediting, shift work, logic revisions) in order to accomplish the end objectives.

The project scheduling cycle

The project scheduling cycle is the process by which the project schedule is developed, reviewed and monitored. The cycle is illustrated in *Figure 2,* and a detailed discussion of each stage follows:

Stage 1, the input phase: At this stage, the project manager and/or the project superintendent along with a scheduling engineer and members of the project management team organize the information necessary for the development of a preliminary project schedule. This initial involvement of the project staff is vital to the establishment and support of the computerized project schedule. It becomes the responsibility of a Turner scheduling engineer to stimulate and encourage discussion during the planning phase. Activities should be forced to start as early as possible, thus supporting an "early-start philosophy." However, realistic constraints to the start and finish of activities should be recognized, such as: manpower, costs, logistics, flow of work, etc.

A key to the success of any project schedule is the degree of detail which is developed. Prior to drawing the network diagram, consideration should be given to the level of detail. It is important to recognize that there are two distinct concepts involving the level of detail. The first concept deals with the number of different contract items to be delineated on the schedule. The second concept deals with the dissection of each of the contract items.

As an example of the first concept of level of detail, consider the scheduling of every item of work handled by each trade or subcontractor. This has been done in the past using CPM software packages and has met with varying degrees of acceptance and success. A second approach is to focus planning efforts on identifying those contract items which most often control the flow of work on a project. In general, this approach has resulted in the production of a much more effective and more manageable schedule.

As an example of the second concept of level of detail, consider the scheduling of two projects similar in construction but different in size. The larger project may require a greater dissection of the construction activities to provide the same control as the smaller project. There may be little difference in the type of work activities scheduled, but there will be a significant variation in the number of monitorable activities scheduled.

The most important schedule planning tool is a project master schedule. This schedule should be developed at the beginning of the project and used to set the framework for all detailed schedules.

The master schedule is made up of all the applicable important items in the project delivery process—i.e. land acquisition, budget approvals, demolition, clearing, surveys, borings,

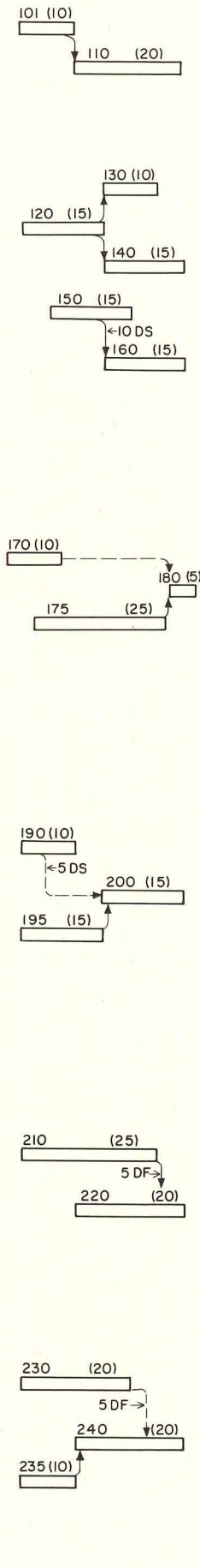


Figure 3. Logic relationships of the network pl based on a scale of 5-day weeks.

najor design phases, and other key mile-
es. In order to obtain this information the
ect manager must communicate with all of
parties who are involved (client, architect
engineer, etc.), visit the site, analyze the
struction market, note the status of related
vities such as site acquisition or fund allot-
ts, and, in general, gain an overview of the
or tasks which must be accomplished from
time of initial development to completion
e project.

e 2, the preliminary project schedule: e project management has organized the rmation which will define the preliminary dule, the scheduling engineer will begin ing the working time-scaled network. It is ested that the working network diagram me-scaled in order that manpower distri-on, flow of work, and seasonal effects may onsidered.

The diagramming technique used is a of CPM network diagramming termed precedence method." Through the use of ous overlapping types, logic relationships veen activities are described. There are e types of overlap: the "E" type or end-to-, the "DS" type or delayed start, and the " type or delayed finish. By being able to lap it is possible to produce a more real-and workable relationship between activi-and reduce the number of total project ac-es required.

e 3, basic CPM package: After the hand-n network has been reviewed by project agement, the schedule is transferred to processing format and is processed by the software program. Estimated dates are ulated as the program makes a forward through the activities based on when ac-es *can* start and finish. Required dates are ulated as the program makes a backward through the activities based on when ac-es *must* start and finish to meet an estab-d project completion date. The program is n a time-sharing mode, with terminals lo-d at some 12 territory offices. Off-line data is provided by means of a tape cassette ce.

Once all format and data input errors have corrected, the scheduling engineer will ate the printing of a work report titled, SWI ort (succeeding work item report). All items nformation shown on the hand-drawn net-k diagram plus calculated data are incor-ted in this report; i.e. preceding work s (PWIS), succeeding work items (SWIS), nated and required start and finish dates, float, total and remaining duration, bind-codes, critical path designation, work item bers, work item descriptions, and mile-e critical activities.

e 4, plotter software program: Step four is plotter software program phase and is re-the point which separates the Turner sys-s output from that of more conventional ems. After input data are checked for errors he scheduling engineer, he can either initi-a report or a plot of the schedule or both. hin the software plotting program, the user has a high degree of flexibility, with many available options. Some of these options are : 1) banding groups of activities; 2) plotting only specific activities, such as mechanical or electrical; 3) plotting a specified time period; 4) graphically identifying the critical path; and 5) designation of procurement activities. This plotter software program was developed specifically for Turner and is linked internally with that of the CPM program, and provides the user optimum turnaround time and ease of operation and handling.

Stage 5, plotter device phase: Following the selection of system options, a decision is made regarding the use of one of the several alternative plotting methods for producing the final graphic network. A drum or flat bed computer-driven plotting device is generally used to produce the graphic display. Or, a microfilm plotting procedure can be used to reproduce the network on 35 mm microfilm. A third alternative is available which utilizes a cathode ray tube unit to produce an image of the network. This method has been used successfully in presentations and internal training to demonstrate the capabilities of the system.

Stage 6, reproducible graphic network: Once the plotting of the schedule has been completed, the plot is sent to a specified address via a predetermined designated delivery method. In general, delivery time of plot revisions is within a few days from the time the data are received at the center.

Stage 7, project planning and control phase: During this phase the schedule is implemented by project management. A key component of the implementation of the schedule is periodic review and update which generally identifies problem areas and stimulates the investigation of alternative solutions. This phase closes the loop to the cycle and integrates a continuous chain of action and interaction.

The monitoring process is, of course, nothing more than determining on a periodic basis where the project actually stands when compared with the plan. In addition to consideration of actual vs. planned time expenditures, effective monitoring should evaluate physical progress, value of work in place and manpower expended against the plan. Obviously, the real task of controlling a job with regard to schedule only begins with the creation of a formal plan and monitoring actual progress against that plan. The difficult part is to evaluate the update or monitoring data and to re-analyze the logic of the original plan based upon this and other new information to develop the plan to complete the project in the most expeditious manner economically consistent with the quality desired. In effect, this may mean replanning the entire job on some periodic basis. Included in this process is the communication and leadership required to put the new plan into action.

In summary

Turner feels that the degree of flexibility along with the components of the graphic display make the CPM scheduling system an effective

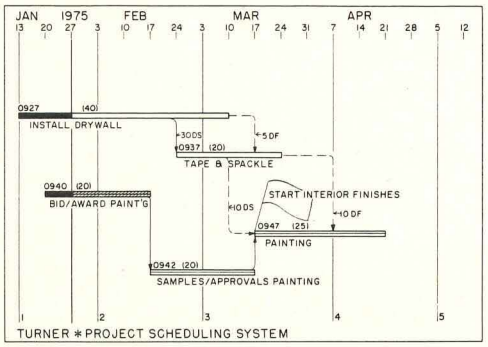


Figure 4. Small segments of the network can be isolated (by trade or otherwise), viewed on the monitor, altered if necessary and reentered for critical effect. Flags mark milestones. Notations are explained in Figure 3.

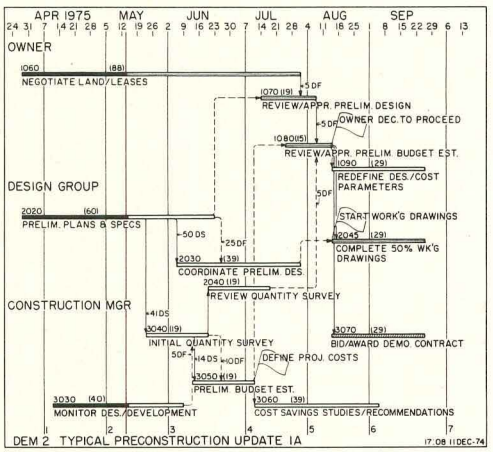


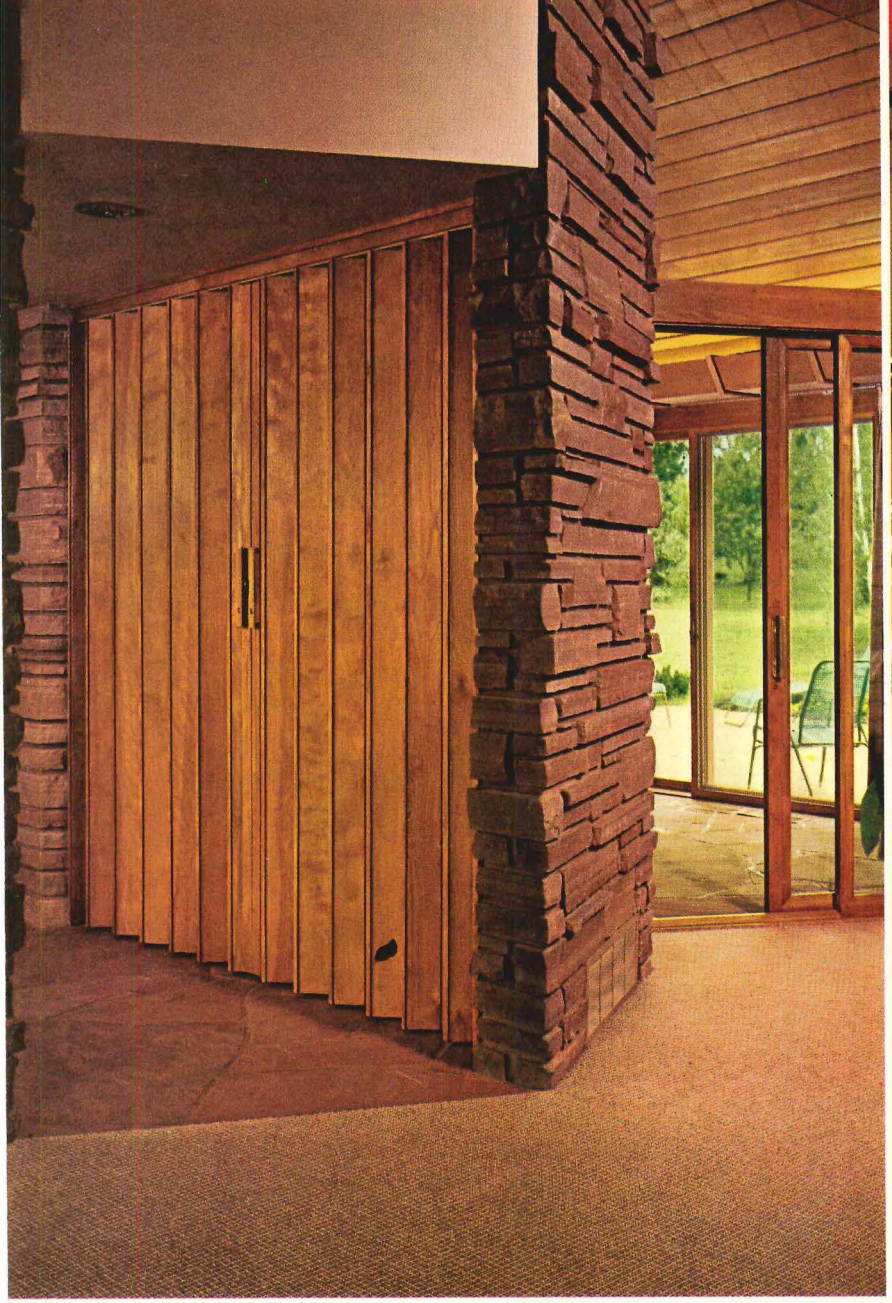
Figure 5. Sorting the preconstruction network by principal operating groups: Owner, A-E and CM.

and responsive management tool. The fact that Turner is using this scheduling system does not mean the elimination of more traditional tools. The system is not a cure-all; it is only one of several procedures such as statistical modeling, cost control systems, job minutes, manpower analysis, etc. Thus far, however, it has been an extremely effective tool resulting from Turner's philosophy of adopting, developing or modifying systems which will support the firm's method of operations, rather than subject personnel to "canned" programs which may adversely affect the management process itself.

While most management tools identify where a project *is* at any given time, the Turner project scheduling system is an attempt to define where the project is *going*. It is a *forward planning* tool as well as a *monitoring* tool. The distinctive graphic display is the tool provided to help managers plan for completing the construction project on time . . . and on budget.

—Garrett Thompson

Turner not only invites but insists upon the participation of owners, designers, consultants and contractors in setting up the basis of a feasible schedule. They are carrying the notion forward to prototype schedules for various building types. These will then form the basis of the approach to projects. In effect, they will be a time-related check list of things to consider, inherent milestones and historically documented time frames for all activities. Such a prototype schedule would, of course, be edited and adapted to the particulars of any given project of the building type. *—W.F.*



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

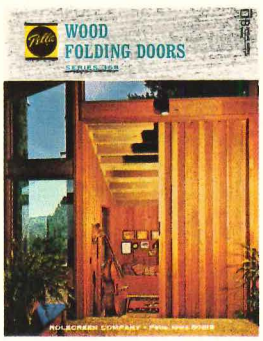
Genuine wood veneers or vinyl. Wood core panels. Hun nylon rollers. Hinged by a patented system of steel alloy

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

Pella®

OUR 50TH YEAR

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



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

Name_____

Firm_____

Address_____

City_____ State_____ ZIP_

Telephone_____

Mail to: Pella Windows & Doors, Dept. T31D5, 100 Main St., Pella, I

Also Available Throughout Canada This coupon answered withi

For more data, circle 37 on inquiry card

mponents of regional cost increases

erage building construction costs have gone 3.9 per cent since last fall and now stand 3.2 per cent above a year ago. 183 metro- itan areas throughout the United States orting in the current Dodge Building Cost lculator survey tie the increase to higher urly wages for building trades craftsmen, up per cent for the year, while building mate- l prices increased 7.6 per cent.

Basic hourly wage rates are 5.8 times at they were in 1941, whereas material ces are about 3.6 times that year. Over-all, ilding construction costs at the builder-to-in- stor level average about 404 per cent higher n in 1941. The accompanying United States mmary table shows how this varies from one jor district to another.

Regional cost increases

	10/74 % to 4/75	4/74 % to 4/75	Index* as of 4/75
tern U.S.			
tro NY-NJ	2.9	7.8	381.1
v England States	3.4	8.1	409.8
rtheastern and North entral States	4.1	7.9	411.9
theastern and South entral States	3.2	7.3	379.7
rage Eastern U.S.	3.4	7.8	395.6
stern U.S.			
sissippi River and Vest Central States	3.8	7.9	398.7
ific Coast and Rocky Mountain States	5.0	9.3	425.8
rage Western U.S.	4.4	8.6	412.3
. average	3.9	8.2	404.0

941 = 100

INDEXES: April 1975 — 1941=100.00 (except as noted)

Metropolitan area	Cost differential	Current Indexes non-res.	residential	masonry	steel	% change last 12 months
U.S. Average	8.5	492.1	461.9	483.5	471.4	+ 7.81
Atlanta	7.5	591.4	557.5	579.9	568.3	+ 5.15
Baltimore	8.5	548.4	515.5	537.6	522.4	+ 4.34
Birmingham	7.3	444.7	413.6	431.6	425.5	+ 8.16
Boston	9.0	490.9	463.8	488.3	472.9	+ 6.37
Buffalo	9.1	541.0	507.9	532.0	517.2	+ 7.01
Chicago	8.3	547.3	520.3	527.1	520.0	+ 4.86
Cincinnati	8.8	525.2	494.2	511.6	498.6	+ 6.92
Cleveland	9.0	524.3	493.4	514.6	500.9	+ 5.36
Columbus, Ohio	8.2	506.9	475.9	499.7	485.7	+ 6.69
Dallas	7.9	493.2	477.6	484.1	475.7	+ 7.63
Denver	8.4	536.8	504.9	529.4	516.1	+11.40
Detroit	9.8	561.1	534.4	570.8	547.2	+ 6.72
Houston	7.4	452.9	425.2	441.2	433.0	+ 8.78
Indianapolis	7.8	443.6	416.5	434.1	423.7	+ 8.06
Kansas City	8.7	487.8	460.9	478.9	470.5	+10.44
Los Angeles	8.5	559.3	511.2	542.3	530.4	+ 6.30
Louisville	7.6	479.1	449.8	466.6	458.3	+ 4.87
Memphis	8.4	507.2	476.2	487.5	479.0	+ 9.61
Miami	7.9	506.0	482.0	491.5	480.6	+ 6.82
Milwaukee	8.7	563.4	529.0	555.2	540.4	+10.51
Minneapolis	8.9	520.1	489.2	512.7	500.8	+ 9.41
Newark	9.0	486.9	457.2	483.0	470.2	+12.03
New Orleans	7.5	470.0	443.7	464.5	452.8	+ 5.94
New York	10.0	536.7	498.9	525.6	513.5	+ 5.37
Philadelphia	9.1	537.9	512.4	534.9	520.4	+ 7.22
Phoenix (1947 = 100)	8.2	290.3	272.6	282.1	275.8	+10.08
Pittsburgh	8.9	480.9	452.4	477.1	461.6	+ 7.10
St. Louis	8.7	504.5	476.1	500.0	488.6	+ 8.46
San Antonio (1960 = 100)	7.6	187.1	175.6	184.1	179.2	+ 7.65
San Diego (1960 = 100)	8.7	208.2	195.5	204.3	198.9	+ 8.29
San Francisco	9.6	732.5	669.5	723.8	702.6	+10.65
Seattle	8.6	485.3	434.2	479.8	461.0	+ 7.93
Washington, D.C.	8.4	486.8	457.1	478.0	465.1	+11.59

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

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

ISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL NON-RESIDENTIAL BUILDING TYPES, 21 CITIES — 1941 average for each city = 100.00

Metropolitan rea	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974 (Quarterly) 1st	2nd	3rd	4th	1975 (Quarterly 1st	2nd	3rd	4th
tlanta	321.5	329.8	335.7	353.1	384.0	422.4	459.2	497.7	544.8	555.2	556.7	573.5	575.0	583.8			
altimore	285.7	280.9	295.8	308.7	322.8	348.8	381.7	420.4	475.5	516.3	517.8	532.8	534.3	538.7			
rmingham	265.9	270.7	274.7	284.3	303.4	309.3	331.6	358.3	402.1	405.5	407.0	419.7	421.2	438.6			
oston	257.8	262.0	265.7	277.1	295.0	328.6	362.0	394.4	437.8	455.1	456.6	461.0	462.5	484.1			
hicago	311.7	320.4	328.4	339.5	356.1	386.1	418.8	444.3	508.6	514.2	515.7	528.1	529.6	539.2			
ncinnati	274.0	278.3	288.2	302.6	325.8	348.5	386.1	410.7	462.4	484.5	486.0	498.6	500.1	518.0			
leveland	292.3	300.7	303.7	331.5	358.3	380.1	415.6	429.3	462.2	490.3	491.8	508,0	509.5	516.6			
allas	260.8	266.9	270.4	281.7	308.6	327.1	357.9	386.6	436.4	453.7	455.2	476.4	477.9	488.3			
enver	294.0	297.5	305.1	312.5	339.0	368.1	392.9	415.4	461.0	476.1	477.6	508.5	510.0	530.4			
etroit	284.7	296.9	301.2	316.4	352.9	377.4	409.7	433.1	501.0	519.5	521.0	537.2	538.7	554.4			
ansas City	256.4	261.0	264.3	278.0	295.5	315.3	344.7	367.0	405.8	435.6	437.1	443.4	444.9	481.1			
os Angeles	297.1	302.7	310.1	320.1	344.1	361.9	400.9	424.5	504.2	514.3	515.8	531.3	531.8	546.7			
iami	277.5	284.0	286.1	305.3	392.3	353.2	384.7	406.4	447.2	467.6	469.1	484.6	485.5	499.5			
inneapolis	285.0	289.4	300.2	309.4	331.2	361.1	417.1	412.9	456.1	469.7	471.2	487.1	488.6	513.9			
ew Orleans	256.3	259.8	267.6	274.2	297.5	318.9	341.8	369.7	420.5	437.5	439.0	440.6	442.1	463.5			
ew York	297.1	304.0	313.6	321.4	344.5	366.0	395.6	423.1	485.3	497.4	498.9	513.8	515.3	524.1			
hiladelphia	280.8	286.6	293.7	301.7	321.0	346.5	374.9	419.5	485.1	495.7	497.2	517.0	518.5	531.5			
ttsburgh	267.0	271.1	275.0	293.8	311.0	327.2	362.1	380.3	424.4	443.7	445.2	464.1	465.6	475.2			
. Louis	280.9	288.3	293.2	304.4	324.7	344.4	375.5	402.5	444.2	458.7	460.2	475.2	476.7	497.5			
an Francisco	368.6	386.0	390.8	402.9	441.1	465.1	512.3	561.0	632.3	647.1	648.6	671.0	672.5	716.0			
eattle	268.9	275.0	283.5	292.2	317.8	341.8	358.4	371.5	424.4	437.8	439.3	448.7	450.2	472.5			

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

The same flair and distinction that is the mark of contemporary architecture is reflected in All-Steel furniture. All-Steel has three complete lines of desks, four contemporary series of chairs and files to let you choose the perfect style and function to fill each office requirement.

Through our national dealer network and our showrooms in Los Angeles, New York, Chicago and Aurora, All-Steel is equipped to furnish the smallest office or to service the most demanding national account.
Write All-Steel Inc., Aurora, Ill. 60507.

ALL·STEEL

ALL·STEEL
Complements the splendor of modern architecture.

All-Steel Showrooms in New York, Los Angeles, Chicago, Aurora. In Canada, All-Steel Canada, Ltd. One of the CIT Companies.

For more data, circle 38 on inquiry card

he Dodge/Sweet's construction outlook for 1975: first update

you confused by the stream of contra-
ions that is being passed off as economic
cy these days?

Like . . . one day the President informs us
he's done a 179-degree turnaround; that
has moved the recession up to position
nber one on his public enemy list, and for
time being, at least, he's dropped inflation
lower rank. Now, to any perceptive lis-
er, this means only one thing: he has given
his WIN program with its restraints and re-
ssion, and in exchange for WIN buttons
substituting policies geared to stimulating
overy and expansion. Fine, but then the
t day he comes out with his "Economic
ort of the President" in which he gives us
eek at how he and his key advisors think—
ntend—the next few years will go. This is
a forecast of recovery and expansion. This
scenario of excessive unemployment and
lerable inflation.

Or . . . how about a *double* reverse? As
as December, Mr. Ford was still clinging
is notion that what we really needed was
ncome tax *surcharge* to siphon off excess
nand. In January that was changed . . . to
x *rebate* in order to encourage more con-
er spending. And then he followed this up
the news that he's going to take it all away
n with a new tax on fuel . . . designed to
ourage us from buying as much as before.

It boggles the mind. But since we have to
tion in this Alice-In-Wonderland environ-
it, here are a couple of interpretations: (1)
Ford Administration is even more confused
the rest of us; (2) national economic pol-
s still in transition, being dragged along by
nts—reacting to them rather than antici-
ng them. Since alternate 1 is a dead end,
see where alternate 2 leads.

Actually, the notion of an economic pol-
n transition fits rather well with what has
ed out to be the most critical assumption
he original *Dodge/Sweet's Construction*
look for 1975. That was published last Oc-
r (RECORD November 1974) and is now
for its first updating. Six months ago, when
yone in the Ford Administration was
ccupied with inflation—even though the
s were everywhere that the economy was
ng apart—we said this: "In the end, auster-
ill eventually yield to the pressure of rising
nployment. Every bit as critical an eco-
ic issue for 1975 as inflation is when, and
abruptly, the present policies of restraint
reluctantly be abandoned." That was last
ober.

And that's exactly what's been happening for the past month or two, and is still going on. Right now we're seeing the transition from austere policies aimed at containing inflation, to activist programs required to generate recovery. It's just too bad that unemployment had to go all the way up past eight per cent in order to bring this change about.

In plain language, Mr. Ford's latest economic strategy—it's all there in his January budget and economic messages—seems to be trying to accomplish two conflicting objectives at the same time. They are both admirable goals. We must conserve energy. And we must get this recession turned around. But to a large degree the goal of energy conservation is in competition with the goal of economy recovery . . . at least the way this Administration insists on going about it. How effectively do you stimulate consumer spending with an income tax cut if at the same time you put a stiff new tax on fuel? That just takes the money out of one of Mr. Simon's pockets and puts it in the other. *And this approach to energy conservation is a large part of the rationale for the Council of Economic Advisors' very grim outlook for the next several years.*

We've come this far, at least: compared with last fall, when national economic policy was highly repressive, it is now more or less neutral (due to its divided objectives). That change alone should be enough to let the recession grind to a halt sometime in 1975. But Mr. Ford hasn't yet become enough of an economic activist to give us a strong recovery once the recession bottoms out. And that's what he must become if we are to avoid a long period of stagnation.

So once again our construction outlook must contain a critical assumption about national priorities. This time it is this: that having moved from a rigid position of total emphasis on inflation to one of divided concern about energy and recession, Mr. Ford and friends will soon go all-out for recovery.

The table of construction spending shows how construction markets actually came out in 1974, and how our evaluation of the changing economic environment will shape 1975's outcome. The key developments to watch for in the year ahead are:

- *A recovery* of the long-depressed housing market. While the improvement from beginning to end of 1975 is likely to be quite strong, the year's total of housing starts is not apt to exceed 1.4 million, mainly because the recovery will be taking off from a very low point.

Dodge/Sweet's construction outlook, 1975: first update
(in billions of dollars)

Building Types	1974 actual	1975 estimate	per cent change
Nonresidential			
Industrial & commercial	$17.7	$14.2	−20%
Institutional & other	16.2	16.4	+ 1
Total	$33.9	$30.6	−10%
Residential			
1 & 2 family homes	$23.3	$26.9	+15%
Apartments	9.3	9.3	—
Hotels, motels, dorms	1.6	1.7	+ 6
Total	$34.2	$37.9	+11%
Nonbuilding			
Public works	$19.8	$23.8*	+20%
Utilities	5.2	5.7	+10
Total	$25.0	$29.5	+18%
Total Construction	$93.1	$98.0	+ 5%
Dodge Index (1967 = 100)	169	178	

*includes an estimated $2 billion trans-Alaska pipeline work scheduled to be started during 1975.

- *Declining* industrial and commercial building through most or all of the year. Experience of the last (1970) recession shows, however, that institutional building (educational, health, public administration, etc.) tends to bear up surprisingly well in periods of moderate economic adversity.
- *Gains* in nonbuilding projects, sparked by the release of billions of impounded Federal funds appropriated for sewer and highway construction to provide temporary employment.

The one thing you can't overlook is that *cyclical sensitivity* is the key to the immediate future of the construction business. Experience shows that the construction cycle normally leads the general business cycle—both on the way down and on the way up again. That's especially true for the design professions whose involvement in the construction process comes at the very earliest stages. So we've taken most of our lumps already. That was in 1974. Now is the time to begin looking for some help through the old accounting principle of FIFO: first in, first out. I'm expecting the construction industry to lead the rest of the economy out of this recession—in 1975 with gains in housing and public works contracting, and in 1976, with a recovery in nonresidential building. And I expect both 1976 and 1977 to be years of well-above-average expansion for the construction industry as that recovery gains momentum.

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

Sterner custom lighting. When you get that incurable itch to cast aside the ordinary.

The creation of high-quality lighting begins with the ideas you generate to enhance the overall environmental concept of your project. That's the hard part. The rest is easy...just call Sterner.

Our staff of lighting experts will make a detailed study of your overall project requirements. Then we create a system, based on your original design, that satisfies your electrical, mechanical and optical specifications.

In addition to our custom capabilities, we offer a complete lighting library of existing designs...plus the expertise of our Simes and Infranor Divisions to solve specialty lighting and floodlighting problems. In short, if lighting is your problem, Sterner is your answer.

STERNER

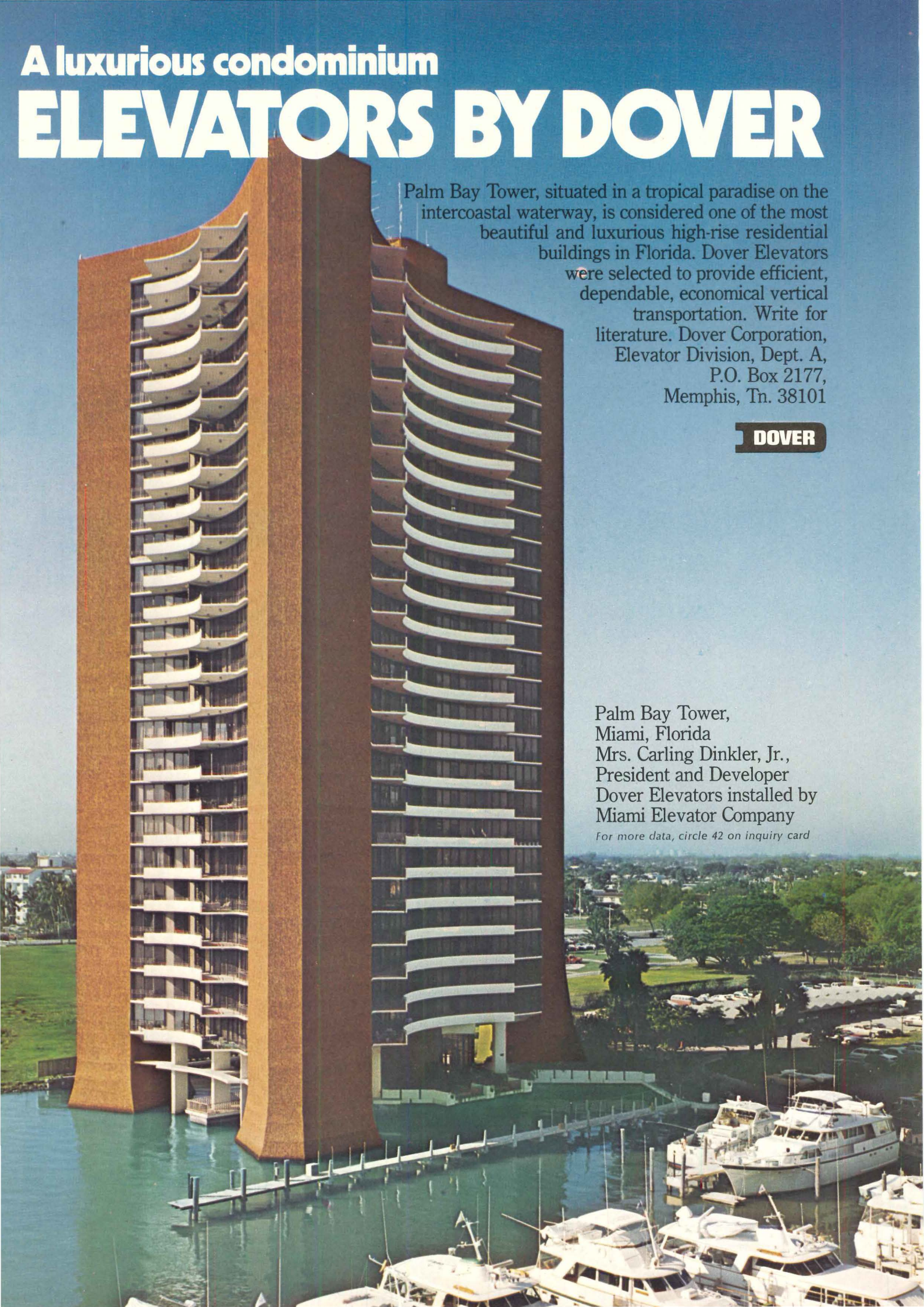
LIGHTING SYSTEMS
INCORPORATED
Winsted, Minnesota 55395
612-485-2141

For more data, circle 39 on inquiry card

A luxurious condominium
ELEVATORS BY DOVER

Palm Bay Tower, situated in a tropical paradise on the intercoastal waterway, is considered one of the most beautiful and luxurious high-rise residential buildings in Florida. Dover Elevators were selected to provide efficient, dependable, economical vertical transportation. Write for literature. Dover Corporation, Elevator Division, Dept. A, P.O. Box 2177, Memphis, Tn. 38101

DOVER

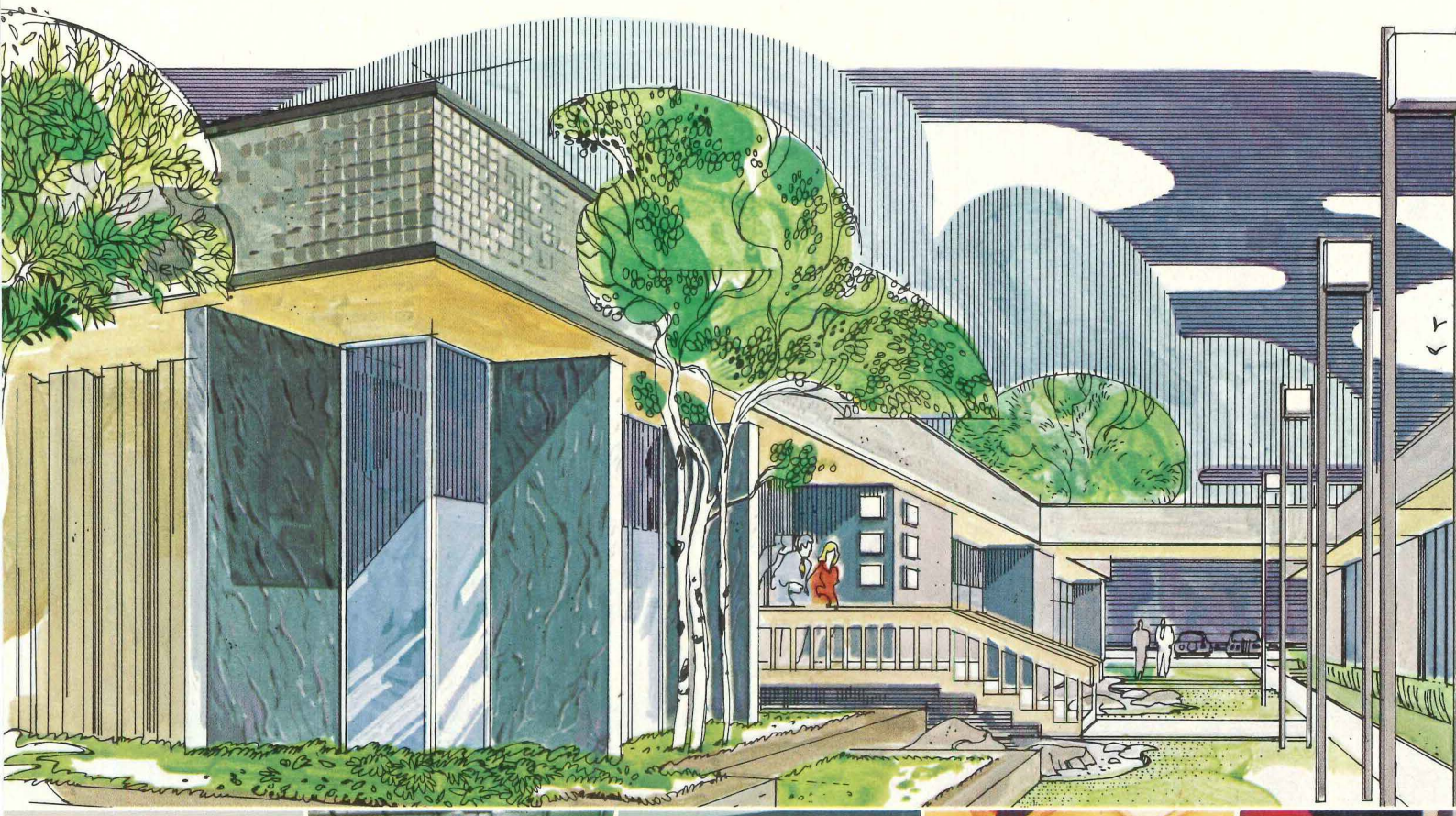


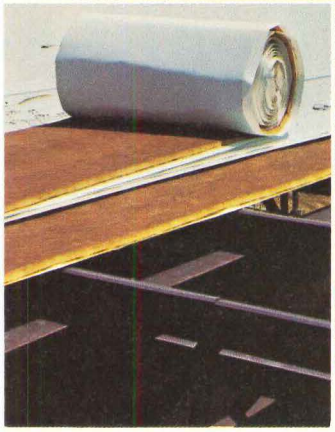
Palm Bay Tower,
Miami, Florida
Mrs. Carling Dinkler, Jr.,
President and Developer
Dover Elevators installed by
Miami Elevator Company

For more data, circle 42 on inquiry card

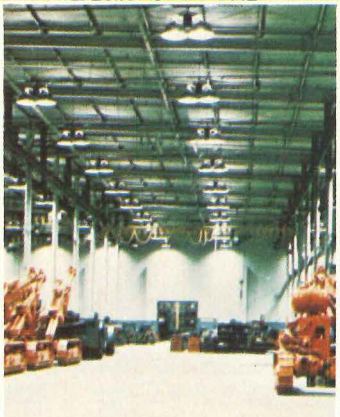
Now Johns-Manville has a One-St
for metal buildi

It's available fro

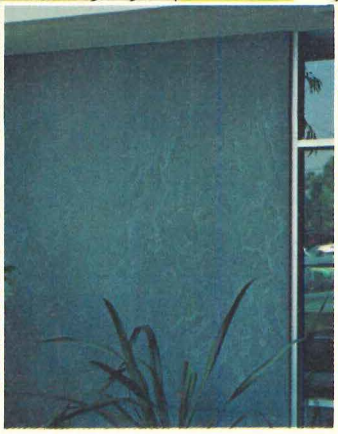




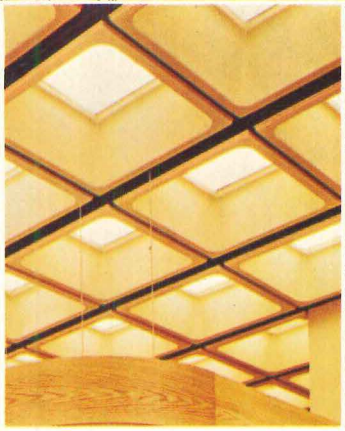
RIGID ROLL, J-M's unique roof and wall insulation.



HOLOPHANE, Luminaires for all your lighting needs.



J-M ARCHITECTURAL PANELS, wide choice of designs and colors for exterior and interior walls.



INTEGRATED CEILING SYSTEMS, all-in-one lighting, sound control and air diffusion with wide choice of beautiful panels.

STRUCTO-GARD, protects colu fire for one hour.

urchasing Plan mponents.

ese salesmen.

JIM BARNWELL,
Atlanta, GA,
P.O. Box 4487,
Zip 30302,
(404) 633-2581

BILL BEUCKE,
Long Beach, CA,
2430 E. 223rd St.,
Zip 90810,
(213) 834-6471

RALPH COX,
Atlanta, GA,
P.O. Box 4487,
Zip 30302,
(404) 633-2581

SAM EATON,
Oakbrook, IL,
Johns-Manville,
2222 Kensington Ct.,
Zip 60521,
(312) 887-7400

JIM HEA,
Toledo, OH,
P.O. Box 517,
Zip 43693,
(419) 878-8111

MIKE HOLTHAUS,
Englewood Cliffs, N.J.,
P.O. Box 1544,
Zip 07632,
(201) 894-1111

BILL MOLL,
Dallas, TX,
P.O. Box 47663,
Zip 75247,
(214) 631-3860

BILL PERRON,
Denver, CO,
P.O. Box 5108,
(303) 770-1000

J-M offers more metal ilding components than yone else. In fact, we ve almost everything you ed to outfit a metal build- ...except the metal.

And we have eight of most professional sales presentatives in the metal ilding industry, fully pre- red to give you the first e-Stop purchasing ca- bility available to a metal building buyer.

Which saves a lot of work when it comes time you to specify all the things that go into your ilding.

Among the components J-M supplies are the owing:

Micro-Lite® "L" insulation, available with a wide oice of facing materials, and offering excel- t thermal insulating performance which is so portant for conserving energy.

Rigid-Roll,® the unique insulation which is de- red in roll form, but bridges the purlins, afford- you savings in shipping and installation. ailable with puncture-resistant facing.

Lighting components by Holophane,® the st respected name in lighting. Holophane lu- naires produce more lumens per unit of energy nsumed.

Holophane luminaires are available for com- te interior systems for commercial and indus- l buildings, tennis courts, and for outdoor ap- cations.

ONE-STOP PURCHASING, AVAILABLE ONLY FROM THESE EIGHT J-M SALESMEN.

J-M architectural panels which will give your metal building that "finished" look.

Structo-Gard® high-temperature protective insulation, applied to the columns of your building to isolate them from heat for one hour in case of fire.

Integrated ceiling systems that make use of J-M's fine line of ceiling tiles and our National Ceiling System® components to "dress" the interior of your building.

And for efficient, low-cost heating and air conditioning...J-M's air handling systems. Micro-Aire® rigid and flexible ductwork that insulates both acoustically and thermally to provide quiet operation and conserve energy.

For more information on J-M's comprehensive One-Stop purchasing plan, contact the J-M sales representative nearest you...or drop us a line for our free literature.

Johns-Manville

For more data, circle 43 on inquiry card

The GF Cube.
It doubles your thinking power.

The new GF Cube offers twice as many desk and console configurations as our best competitors.

That has to start you thinking. Because, this great variety of configurations allows you to make better use of very expensive floor space.

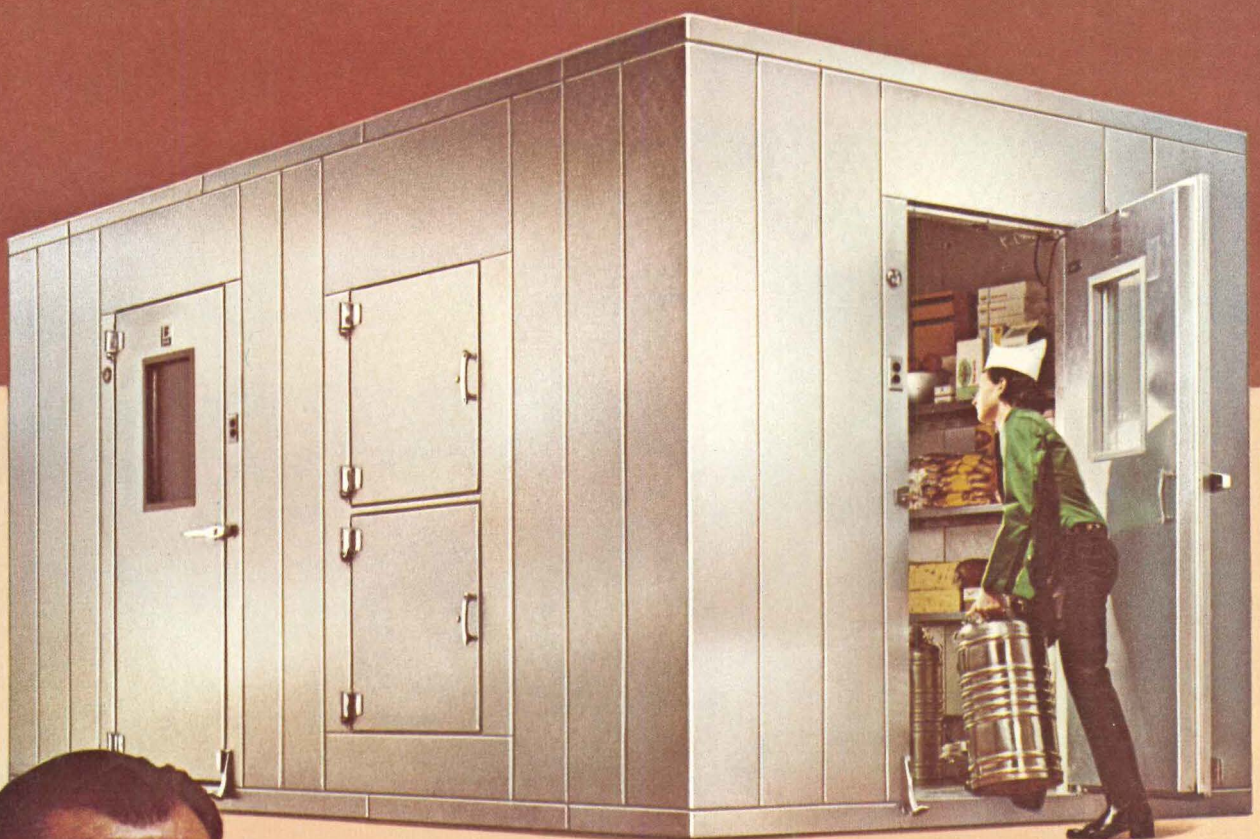
The Open Office shown here gives you just a glimpse of the possibilities.

Ask your GF representative to put the complete GF Cube story together for you. Or write us for literature. GF Business Equipment, Inc., Youngstown, Ohio 44501. In Canada: Toronto, Ontario.

Office Furniture Systems
GF Business Equipment

Bally belongs

where walk-in refrigeration is a critical requirement



Bally Prefabs are there to help snacks score with fans in the stands

Bally Walk-In Coolers and Freezers can be assembled in any size for indoor or outdoor use from standard panels insulated with four inches of foamed-in-place urethane. Choice of stainless steel, galvanized or patterned aluminum. Easy to enlarge . . . easy to relocate. Refrigeration systems from 35°F. cooling to minus 30° freezing. Subject to fast depreciation and investment tax credit. (Ask your accountant.) Write for 28-page book and urethane wall sample. **Bally Case & Cooler Inc., Bally, Pennsylvania 19503.** Phone (215) 845-2311.

ADDRESS ALL CORRESPONDENCE TO DEPT. AF

Bally®

© 1974 ALL RIGHTS RESERVED

For more data, circle 45 on inquiry c

Professional electrical contractors. The electrical energy managers.

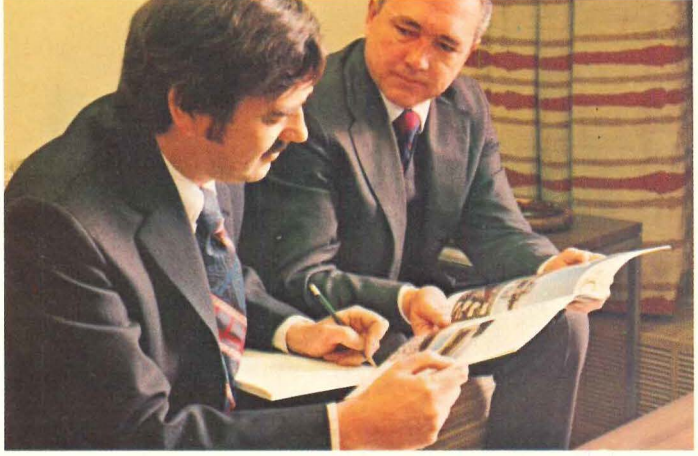
One thing you can be sure of in the current energy situation; clients are no longer taking electrical systems for granted. People who pay the bills now are concerned about the potential cost of future operations as well as the cost of installation. That goes for *all* users and specifiers: government, commercial, industrial, and residential. But you probably already know that.

You also know that electrical systems should be designed to operate as efficiently as possible, because when the time comes to install cable, conduit, and fixtures, it might be too late to save energy. That's why it could be helpful to work with a qualified electrical contractor early in the design stages of a project. Planning an efficient electrical system is a lot easier than trouble-shooting a fuel-waster after construction.

Professional electrical contractors can give you just the support you need. They're familiar with lighting, heating, communications, security, motors, standby and emergency power, automatic controls, and a lot more. You'll be obtaining the benefits of specialized manpower, the latest installation equipment, and professional job-management expertise. Can your clients afford anything less?

Professionalism doesn't cost. It pays.

National Electrical Contractors Association, Inc.
Washington, D.C. 20014



depend on Bethlehem

Call your Bethlehem Sales Engineer for assistance that is practical, professional, and prompt.

That's what he's there for.

To help *you.*

To answer your questions on steel framing . . . on fasteners . . . on weathering steel . . . on the most economical selection of steel grades . . . on *anything* concerned with steel design.

And he's not alone. He's backed up by a buildings group that can provide budget cost information for the total "system package" of a structure under study . . . and by an advanced engineering group that can provide technical evaluation and services to architects and their engineers.

That's just part of your Bethlehem Sales Engineer's story. He'd like you to know all about *all* the services he can provide. And why he can help you most when called in early on a project. Why not set up a meeting soon?

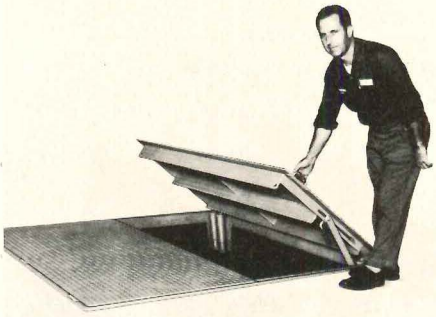
BETHLEHEM STEEL

phone

ATLANTA (404) 522-4918
BALTIMORE (301) 685-5700
BOSTON (617) 267-2111
BUFFALO (716) 856-2400
CHICAGO (312) 664-5422
CINCINNATI (513) 381-6440
CLEVELAND (216) 696-1881
DETROIT (313) 336-5500
HOUSTON (713) 224-5311
LOS ANGELES (213) 726-0611
NEW HAVEN (203) 865-0833
NEW YORK (212) 688-5522
PHILADELPHIA (215) 561-1100
PITTSBURGH (412) 281-5900
ST. LOUIS (314) 726-4500
SAN FRANCISCO (415) 981-2121
SEATTLE (206) 285-2200

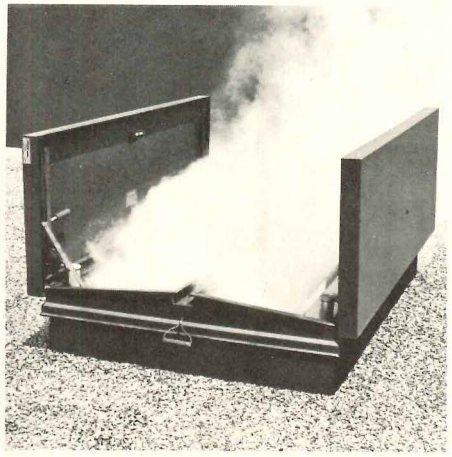
Ask for Sales Engineer.

HORIZONTAL DOORS BY BILCO



Bilco Floor, Pit and Sidewalk Door: Rugged heavy-duty steel construction. Features smooth, easy operation, automatic hold-open device, heavy forged brass hinges. Aluminum models available with stainless steel hardware for corrosive conditions. Eight standard sizes. Special sizes to order.

Bilco Roof Scuttle: For ladder access to the roof. Features floating cover action and positive lock-open with operating handle for safe, easy, one-hand closing. In steel or aluminum construction. Also available in standard sizes for ship stair and normal stair as well as special sizes to order.



Bilco Fire Vent: Features the exclusive Bilco Thermolatch® that provides instantaneous release in emergency, prevents accidental opening. Available for electrical actuation by smoke detector or other emergency device. Eight standard sizes with UL and FM labels. Also available in special sizes.

BILCO BUILDS THEM BEST.

BEST IN DESIGN, BEST IN WORKMANSHIP, BEST IN RELIABILITY

When you specify Bilco, you specify a product designed and built to provide your client with proper operation and long, trouble-free service. Bilco manufactures a full line of horizontal doors, roof scuttles, sidewalk, floor and pit doors, equipment hatches, ceiling access doors, basement doors and automatic fire vents. Each has earned its reputation for performance, reliability and satisfaction. For complete information, sizes and specifications see our catalog in Sweets Architectural and Industrial Construction Files, or write.

Since 1926. Building our reputation for products that satisfy.

Bilco® DOORS FOR SPECIAL SERVICES

The BILCO Company, Dept. AR–45, New Haven, Conn. 06505
Manufactured in Canada by:
RICHARDS-WILCOX of CANADA, LTD., London, Ontario

For more data, circle 46 on inquiry card

WE TOOK THE BEAUTY OF DUTCH PORCELAIN AND PUT IT ON THE FLOOR.

This famous design from Holland gave us the idea for one of our high fashion sheet vinyl designs. It's our new "Dutch Royale" pattern, available in our luxury line of foam-backed GAF GAFSTAR™ Supreme. All GAFSTAR sheet vinyl has a beautiful no-wax surface. And many other widths and thicknesses are available for Contract and Builder use.

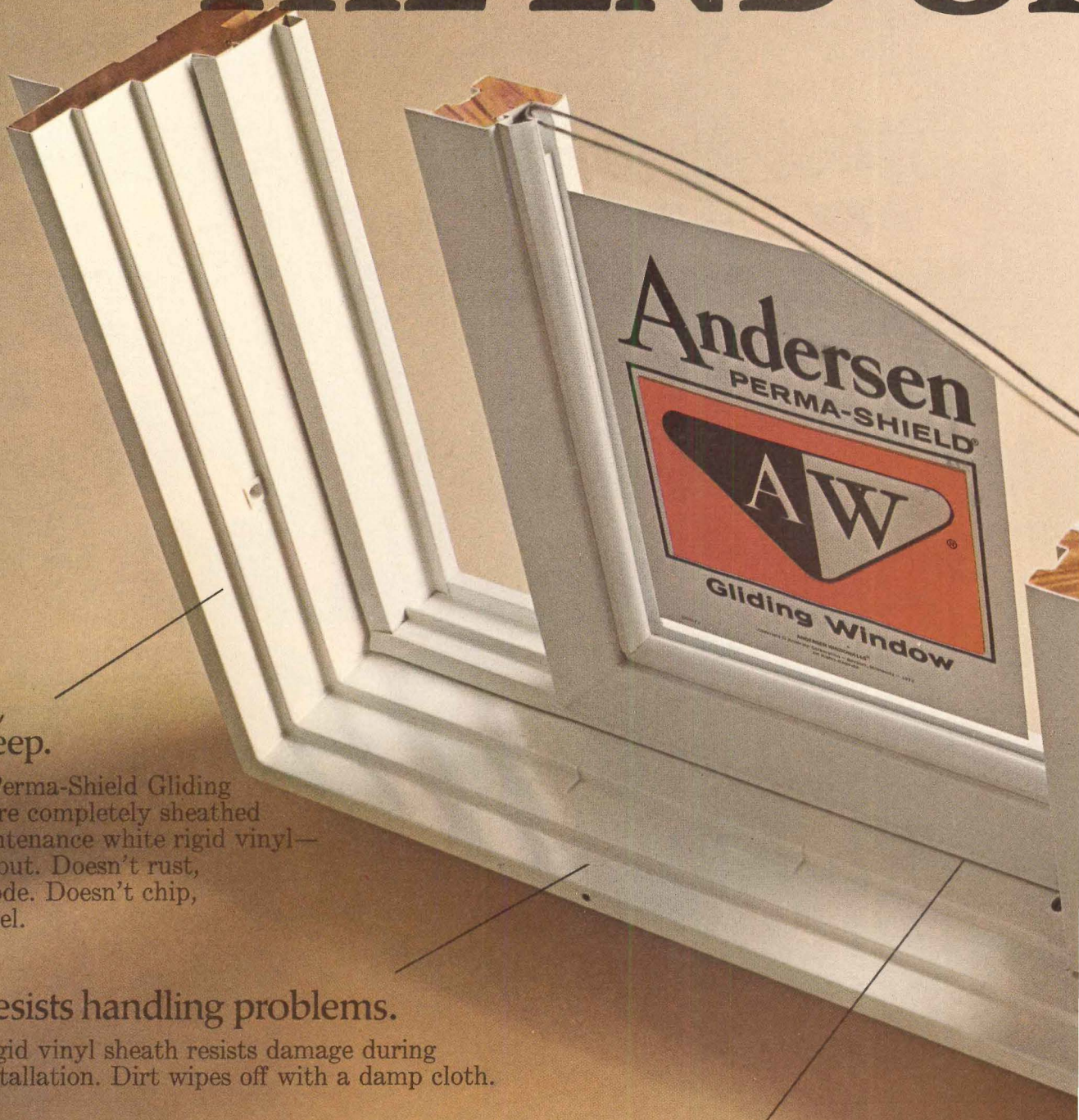
If you need a floor that's practical, and a floor that's a real beauty, get both. In the one floor called GAFSTAR. For more information, call or write to GAF Corporation, Floor Products Division, Dept. F16 , Box 1121, Radio City Station, New York, New York 10021.

gaf®

For more data, circle 47 on inquiry card

Perma-Shield® Gliding Windows

THE END OF



Long life, low upkeep.

Andersen Perma-Shield Gliding Windows are completely sheathed in low maintenance white rigid vinyl—inside and out. Doesn't rust, pit or corrode. Doesn't chip, crack or peel.

Resists handling problems.

Rigid vinyl sheath resists damage during installation. Dirt wipes off with a damp cloth.

Easy operation.

Perma-Shield Gliding Windows slide open easily on chrome-plated steel glides. Andersen quality design assures a snug-fitting window that resists sticking or binding.

Condominiums, apartments, motels, schools, office buildings, nursing homes—you name it. Perma-Shield® Gliding Windows complement almost any commercial or institutional building design. And because they have the same neat, trim lines as other Andersen® Perma-Shield Windows and Gliding Doors, you have total design flexibility.

For more information about Perma-Shield Gliding Windows, see Sweets, File 8P. Or call your Andersen Distributor. He's in the Yellow Pages under "Windows, Wood." Or write us direct.

The beautiful, carefree way to save fuel.

Andersen® Windowalls®

ANDERSEN CORPORATION BAYPORT, MINNESOTA 55003

For more data, circle 48 on inquiry card

WINDOW PAINS.

Fuel savings.

Beneath Perma-Shield Gliding Windows' rigid vinyl sheath lies a wood core, one of nature's best insulators. And with double-pane insulating glass, Andersen Windows can reduce conducted heat loss by up to 35% (compared to single-glazed windows without storms).

Security.

Spring-loaded rods provide positive locking of window at top *and* bottom. Factory installed, with attractive operating handle.

Snug-fitting design.

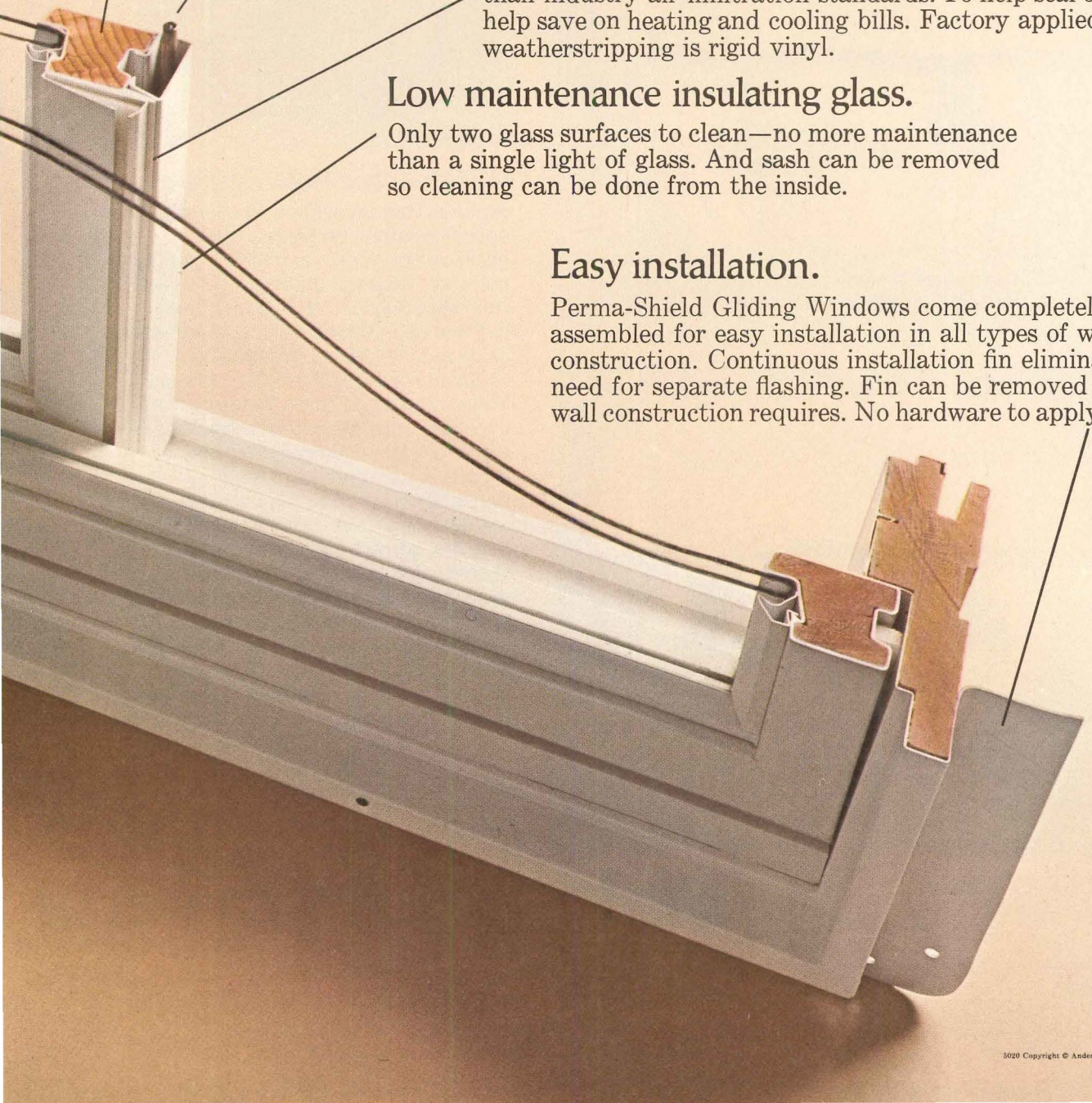
Perma-Shield Gliding Windows are two times more weathertight than industry air-infiltration standards. To help seal out drafts, help save on heating and cooling bills. Factory applied weatherstripping is rigid vinyl.

Low maintenance insulating glass.

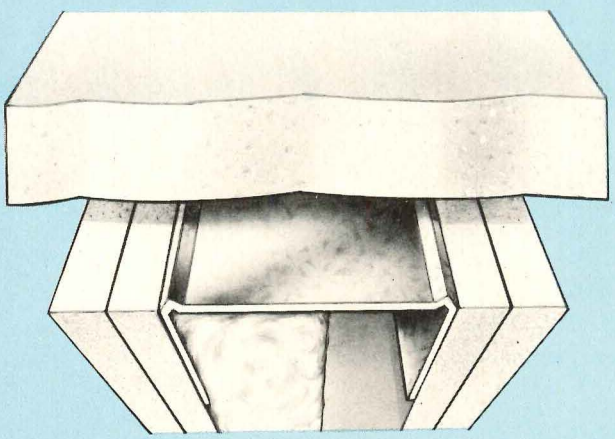
Only two glass surfaces to clean—no more maintenance than a single light of glass. And sash can be removed so cleaning can be done from the inside.

Easy installation.

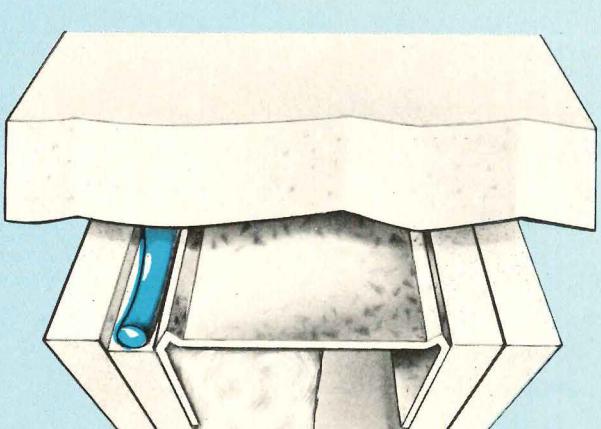
Perma-Shield Gliding Windows come completely assembled for easy installation in all types of wall construction. Continuous installation fin eliminates need for separate flashing. Fin can be removed where wall construction requires. No hardware to apply or lose.



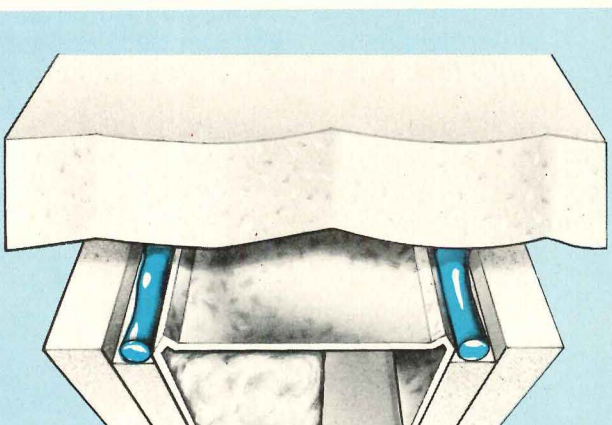
5020 Copyright © Andersen Corp., Bayport, Minn. 1975



29 STC-Unsealed

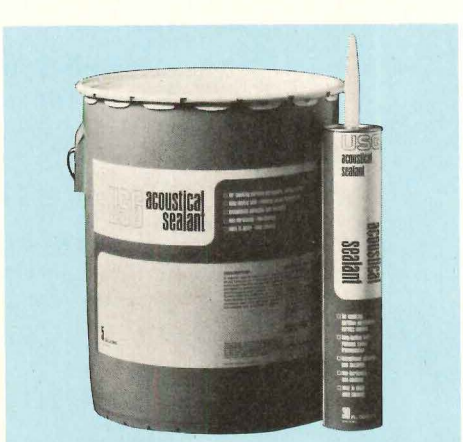


49 STC-Bead of sealant at perimeter of one base layer. No relief on other three perimeters of board.



53 STC-Both base layers sealed. No relief on face layers.

Draw a bead on a higher STC ...up to 53!



USG® Acoustical Sealant

protects your investment in sound control by stopping leaks around partition perimeters and through utility cut-outs. Tests conducted at the U.S.G. Acoustical Research Center showed that two beads at the partition perimeter achieved the maximum sound control capability of the wall. USG Acoustical Sealant has been carefully formulated to provide all eight critical properties of a quality sealant: proper adhesion to porous or non-porous materials, permanent flexibility, high resilience, low shrinkage, non-staining qualities, long life, correct density, and low viscosity for ease of application. It's available in 30-oz. disposable cartridges and 5 gal. containers. See your U.S.G. Representative. And see our catalog in Sweet's, Sec. 9.5 (S). Or write us at 101 S. Wacker Dr., Chicago, Ill. 60606, Dept. AR–45

UNITED STATES GYPSUM
BUILDING AMERICA

For more data, circle 49 on inquiry card

For more data, circle 50 on inqu

Friend of the environment,
consort to the building,
comrade against light pollution.
Kim's EKG luminaire is the professional choice

kim lighting, inc.

City of Industry, Calif. 213/968-5666

Street and Area Lighting • Landscape Lighting • Architectural Fountains

SUBSIDIARY OF LCA CORPORATION

How to keep your customers from doing a slow burn. Install the scorch-proof Contura.

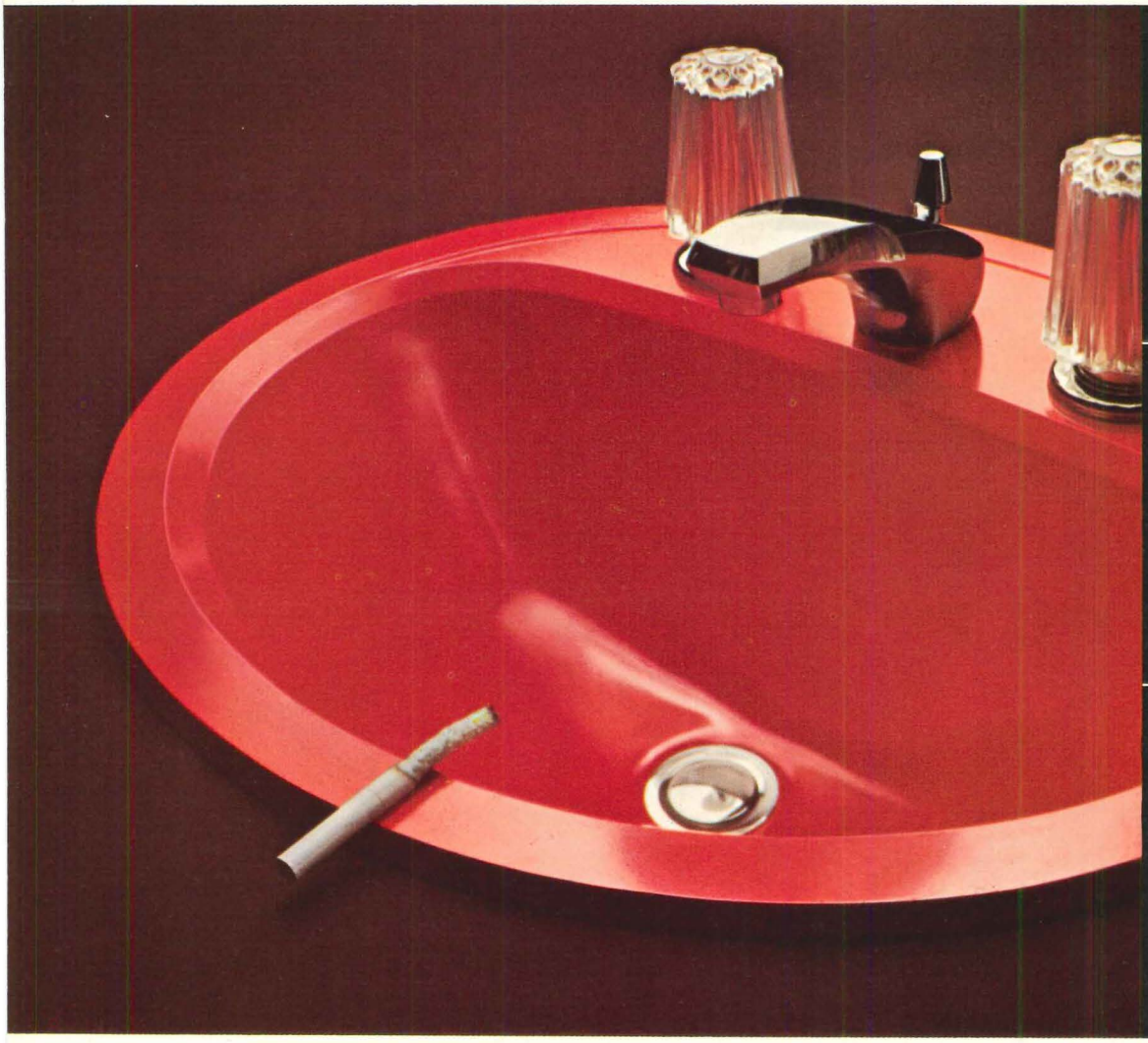
Duramel. The material we spent seven years developing. Available now in two shapes. The classic round Contura™ and the new Oval Contura.

The beauty of them, aside from the obvious, is that they travel light, arrive on the job chip free (and stay that way while you're installing them). And once installed their high performance continues: they're stain resistant and rust proof.

Even more, they're scorch-proof. Impervious to cigarette burns. (A great selling point.) And they come with "Fast-Lav Strip.™" To hold the lavatory in place while fittings are being mounted and the sealant is drying. (To make for quicker installation.)

For further information, write American-Standard, Plumbing/Heating, P.O. Box 2003, New Brunswick, New Jersey 08903.

Lavatories made of Duramel.™ The high performance material.



Contura

Oval Contura

12 striking colors

AMERICAN STANDARD

PLUMBING / HEATING

For more data, circle 51 on inquiry card

The more you have to put up, ıe less you should have to put up with.

ıumental ceilings can cause umental headaches.

ıany things have to work ther just right: the ceiling ɛls, the lighting fixtures, the air ısers, the acoustical insulation, ;ubcontractors. Especially ;ubcontractors.

ɛn everything comes from rent sources, the chance for umental foul-ups goes up.

ɛr the Alcan Planar® Ceiling ɛm. A total system. Complete and uncomplicated. Because you can specify the panels, the fixtures, everything, from one source. From Alcan. You can even specify polywrapped acoustical blankets for pools or food processing plants.

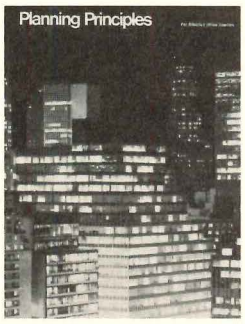
Everything is worked into our ceiling system, so you'll have fewer limitations to work around. Just light-weight, durable, maintenance-free Alcan aluminum that gives you the freedom to execute a monumental idea. Beautifully. And the silicon polyester finish of the Alcan Planar Ceiling lets you carry a total design concept through to exterior soffit treatments.

If you want less to put up with, you ought to look at our Planar Ceiling System. Write for details to Alcan Aluminum. Dept. IA. Box 511. Warren, Ohio 44482. Or check specification information in *Sweet's Catalogue*, Section 13.5.

Alcan Building Products
Division of Alcan Aluminum Corporation
ALCAN

These Steelcase office furniture systems can save you space, time and money.

These booklets show you how. And they're free.



Yes, please send these new Steelcase office systems booklets to:

Your name

Address

City State Zip

Mail to: Steelcase Inc., Dept. G, Grand Rapids, Michigan 49501

Changing, refurbishing or planning new offices? Here's some new ideas on how to make the most effective use of both existing and future office space and how to help your people work more efficiently.

Mobiles. 100 pages of actual planning and installation information. Specific solutions for private and open plan offices.

Planning Principles. Explains the five major principles of office planning. Extremely valuable in preliminary thinking.

Series 9000. The newest furniture system available. This booklet shows how it looks, how it's used and how it can help you save space.

To receive your free copies of these new Steelcase booklets, fill in your name and address on the coupon and mail to Dept. G, Grand Rapids, Michigan 49501.

Steelcase Inc., Grand Rapids, Mi. 49501; Tustin, Ca. 92680; Ontario, Canada; Steelcase (Far East) Ltd., Tokyo.

Top photo left. Steelcase 9000 system in use at an energy company on the West Coast.

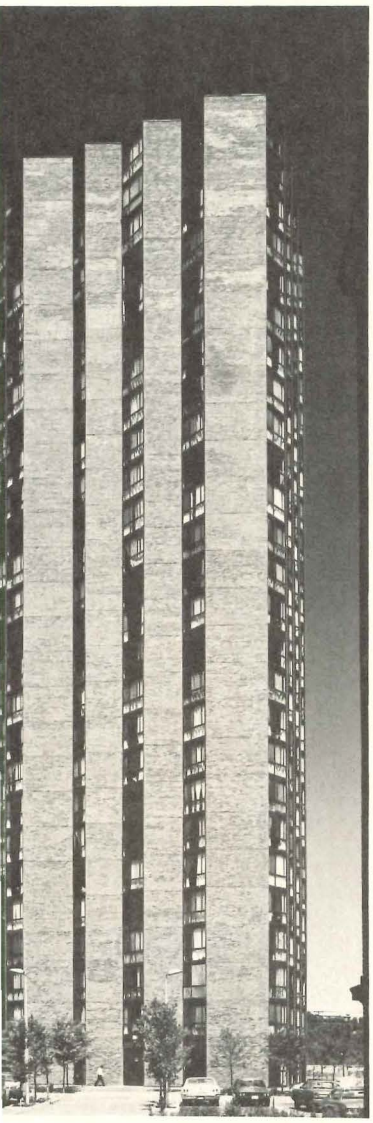
Top photo right. Steelcase Mobiles system in use at a corporate training center in the East.

Steelcase

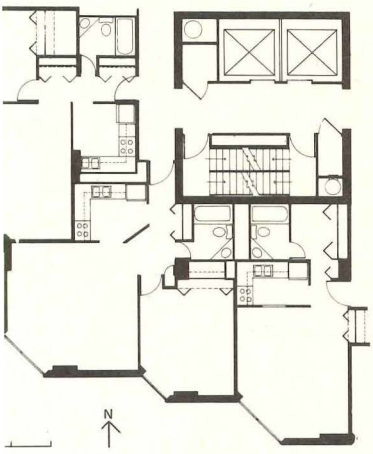
For more data, circle 53 on inquiry card

WEESE (BEN) VERSUS MIES (TIGERMAN): TWO BUILDINGS, TWO ARCHITECTS, TWO POINTS OF VIEW

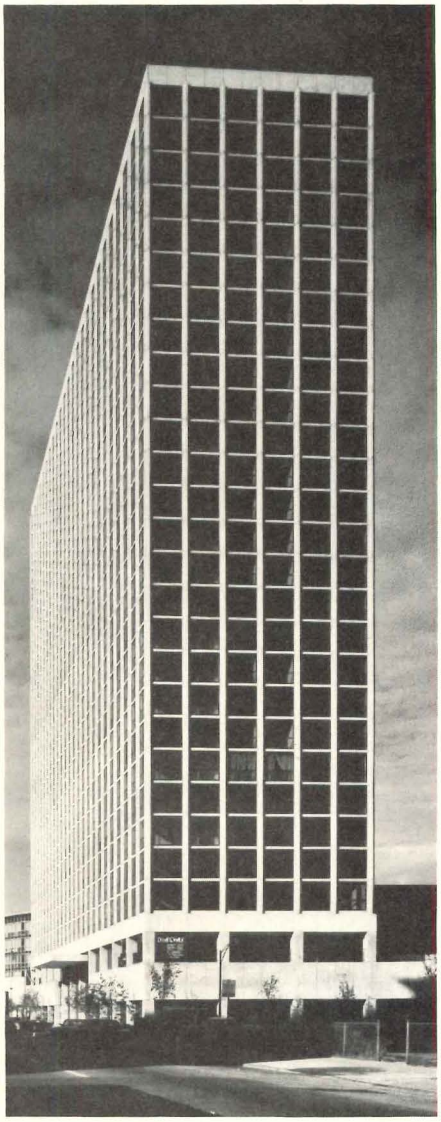
is better, this by Weese . . .



llage East, a 25-story apartment tower

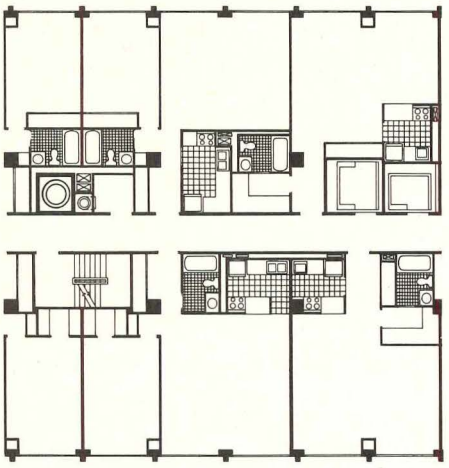


or this by Tigerman?



Ruyell Ho

Boardwalk, a 28-story apartment complex



Architects Stanley Tigerman and Ben Weese of Harry Weese and Associates have each added a high-rise apartment to Chicago's skyline. Tigerman is noted as a radical and innovative designer. His fans and critics were surprised, therefore, when he elected the Miesian manner for Boardwalk, his first high-rise apartment building (right). No one was more astonished than his friend Ben Weese who lately has designed some apartment house towers which are handsome alternatives to the Mies box, including Lake Village East (left).

There is, of course, no one right way to do a building. The two under discussion were built in the same city, at the same time, at comparable costs per square foot—and yet they are remarkably different. Tigerman and Weese are in friendly disagreement about the best approach to high-rise apartment design. Both responded to our invitation to debate the issues in the RECORD offices, and their comments accompany the pictures on the following pages.

Boardwalk is massive, modular and repetitive

The Tigerman apartment house slab is a 28-story complex of reinforced concrete financed under FHA, 221-d(4). Its construction cost as bid in January 1973 and excluding land costs and fees was $8.4 million or $18,-666 per dwelling unit or $15.96 per gross square foot. The project consists of 450 dwelling units made up of 128 studios, 222 one-bedrooms and 100 two-bedrooms. There are 25 typical apartment floors consisting of 18 dwelling units per floor for a typical gross floor area of 14,499 square feet.

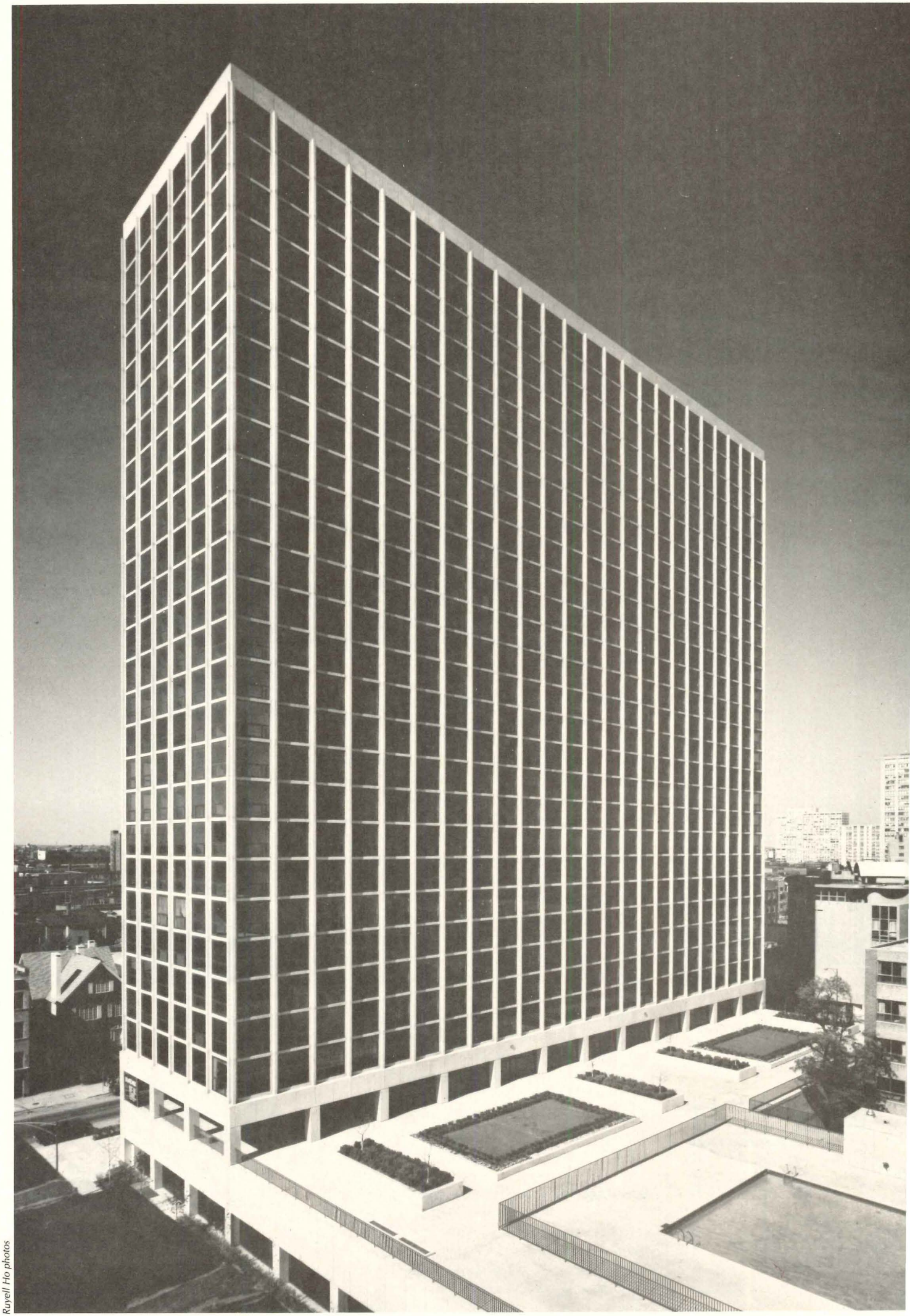
The base accommodates a 270-car parking garage, commercial spaces, restaurant, swimming pool with bath house, tennis court and landscaped plaza deck. The total gross area including these facilities is 526,045 square feet.

The structure is reinforced concrete frame with 20-by-20-foot square bays with a peripheral intermediate column for slab stiffening. This column system produces a repetitive series of 8-by-8-ft openings which are glazed with bronze hued float glass in hard anodic coated aluminum sash. The tower is 60 by 240 feet. The building has central heating and air conditioning distributed by vertical fan coil units at the perimeter.

Lake Village East is slender, non-modular and varied

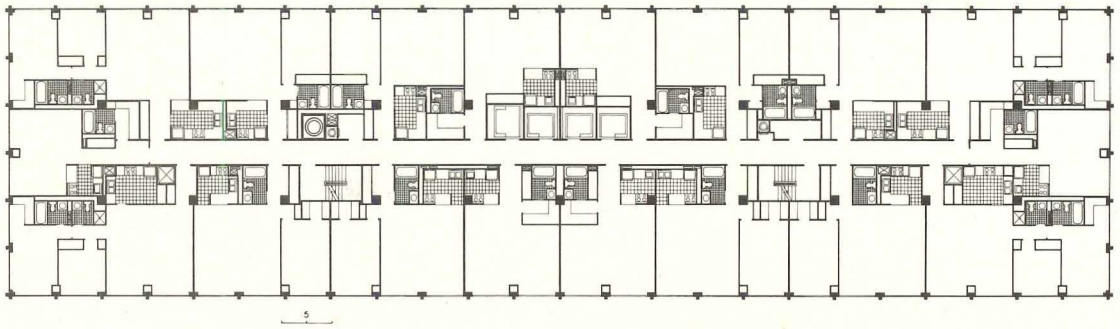
The Weese apartment house tower is a 25-story reinforced concrete structure financed under FHA 236. Its construction cost was $3.1 million or $15,500 per dwelling unit or $16.90 per gross square foot. It consists of 200 dwelling units made up of 50 studios, 75 one-

continued on page 90



Ruyell Ho photos

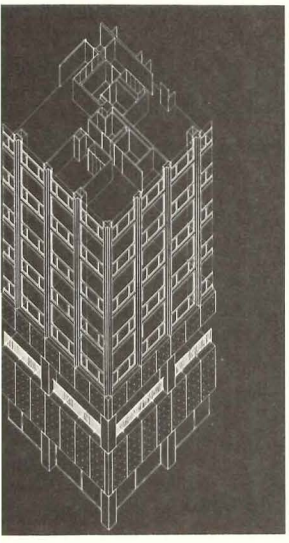
v many more of can Chicago stand?" Weese of Tigerman

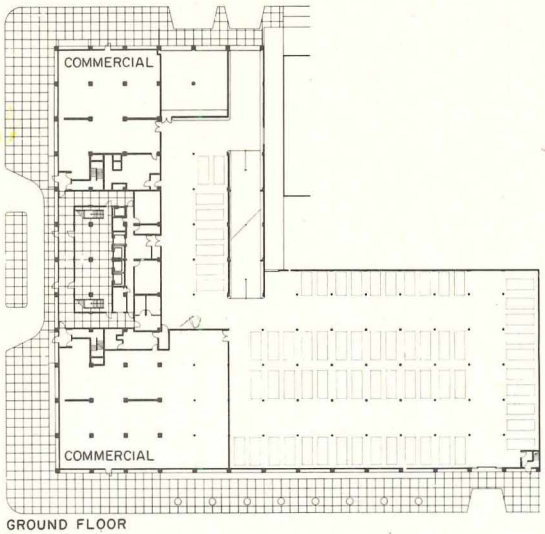


se's view Boardwalk is simply . "You could have done two buildings on that site, Stanis is brutal, austere, overpowerigerman countered by emphahe economies of doing a "big esulting in a 1973 construction $15.96 per gross square foot. fining the 450 dwelling units to e mass a large portion of the cre site was made available for on on a terrace above the parkage. "It takes a large concentratenants to make such extensive on facilities feasible," Tigerints out.

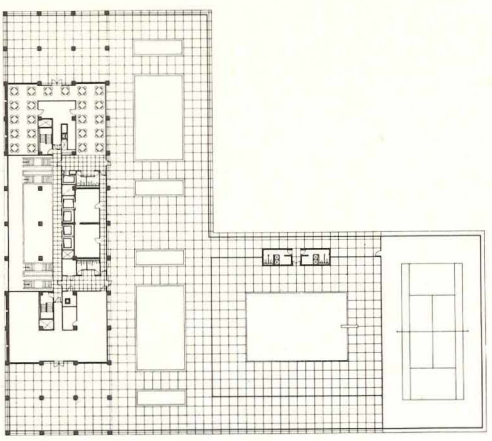
ys Weese: "Why do bedrooms corner exposure with three v bays while living rooms get vo?" Neither architect would e that the other's room spaces adequate size or could be easished. Tigerman's net to gross typical floors is 89.9 percent t, however, and the net areas of rtment units are generous by standards. Studios range in net m 481 to 570 square feet, onems from 570 to 764 square feet o-bedrooms from 976 to 981 feet. These areas are signifiarger than those provided by s plan.

DWALK, Chicago, Illinois. *City Centrum Corporation.* Ars: *Stanley Tigerman—assoAnthony Saifuku, John Haley.* ers: *Cohen-Barreto-Marchertas* ral); *Wallace & Migdal* (mel/electrical). General contrac*, Inc.*

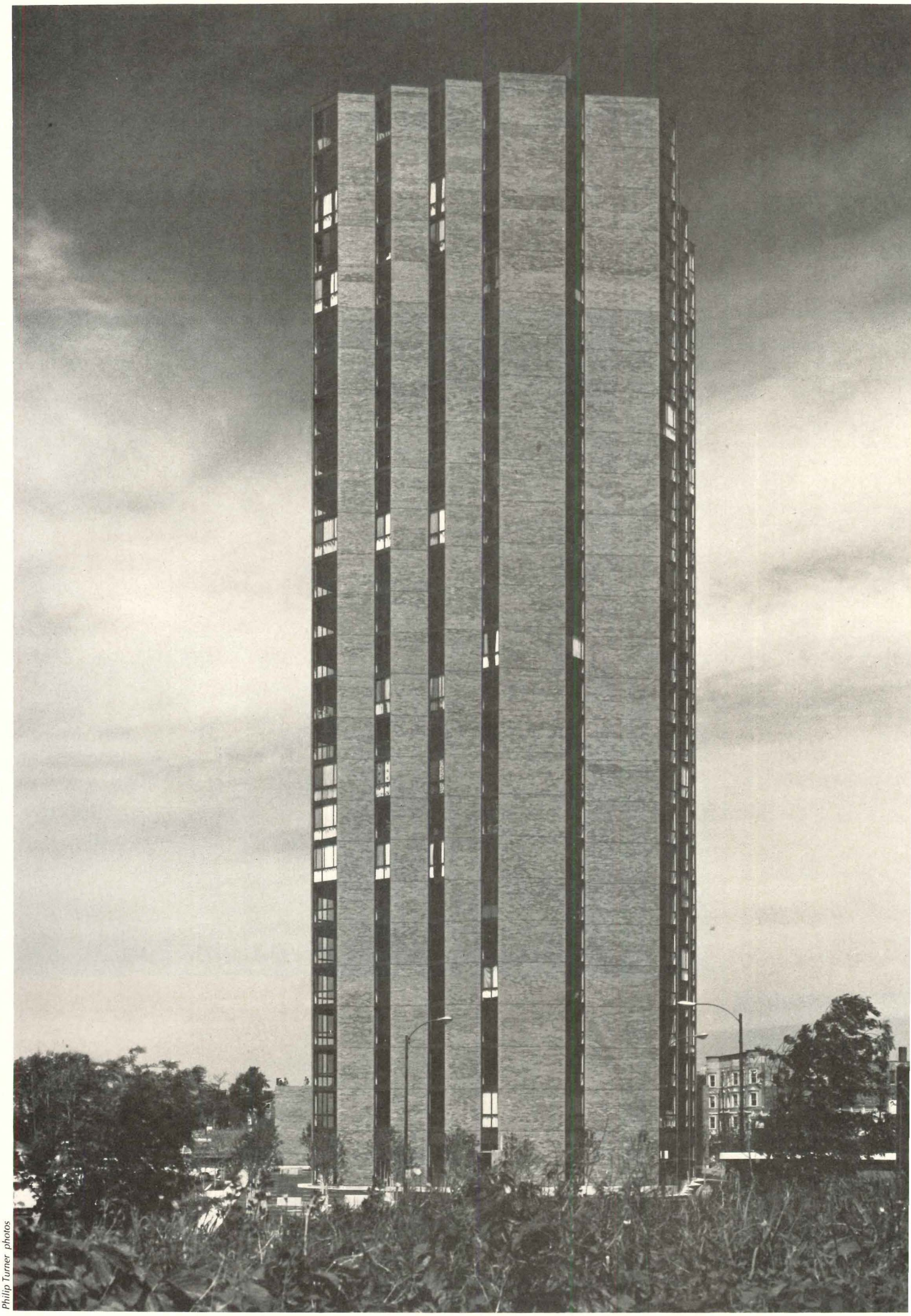




GROUND FLOOR

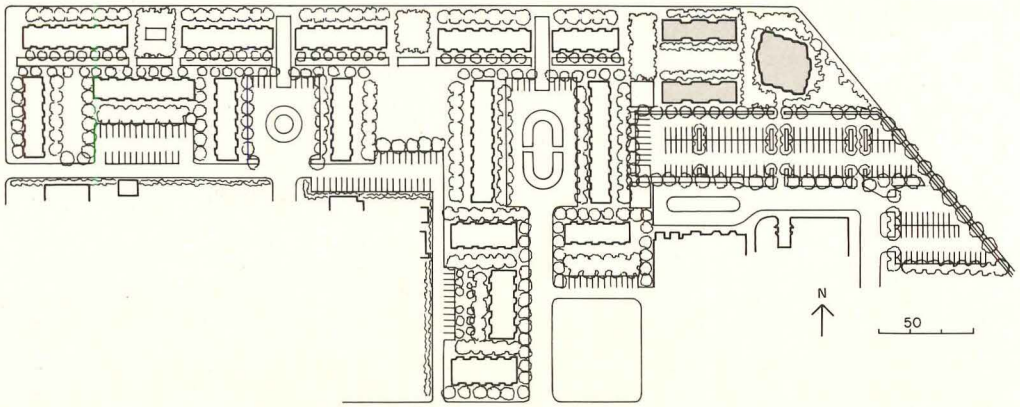


FIRST FLOOR PLAZA & RESTAURANT LEVEL



Philip Turner photos

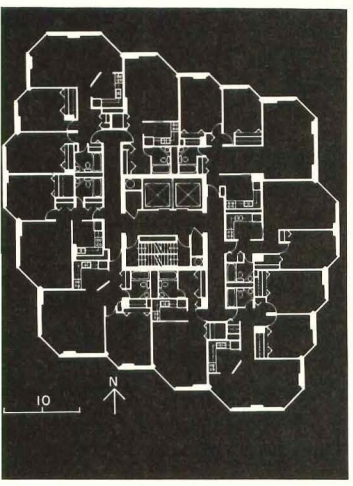
"You think you can do brownstone in the sky," ays Tigerman to Weese, 'but you can't"

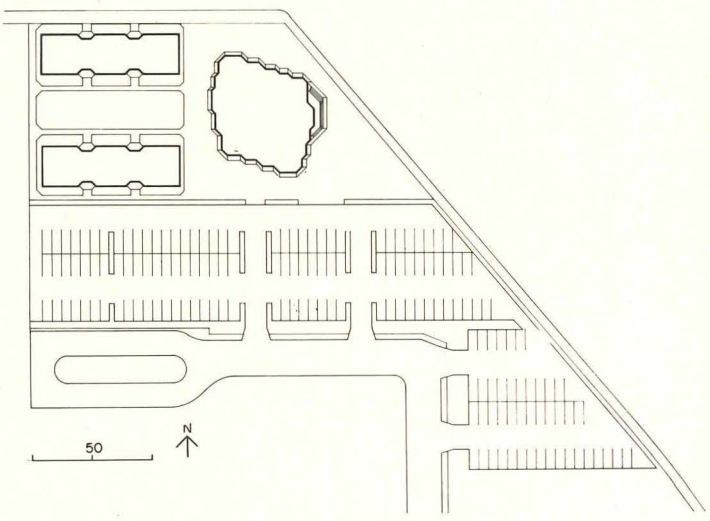


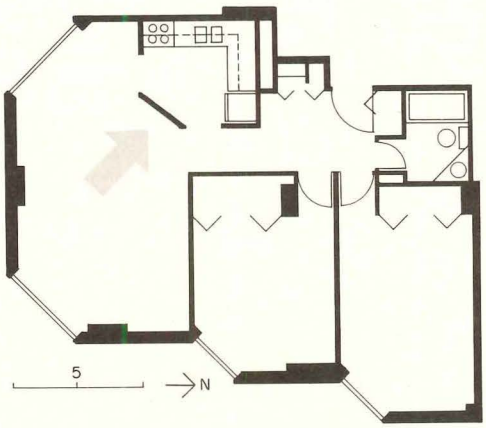
True, but by trying to give apartment nits bay windows and the variety of oom shapes which exist in older types f dwelling places such as brown-tones, it is possible to create an apart-nent tower silhouette of great interest nd variety," counters Weese. This ower is fascinating to look at, chang-ng shape as the viewer circles it right). Windows are angled toward he best orientation and views, but lass area is reduced in favor of con-inuous vertical slabs of brick.

Weese began by developing the lan form (below) to fit the site and re-ate well to the two low-rise buildings ncluded as part of his design (right). The non-modular beam and column ayout came later, after the apartment nits had been worked out. The addi-ional cost of an irregular structural ystem is offset by the minimum pe-imeter skin. Tigerman, on the other and, was limited to 20-foot-square ays to accommodate Boardwalk's asement parking garage. Money aved by adhering to this economical nodule was partially spent to provide he floor-to-ceiling glass for each bay.

AKE VILLAGE EAST, Chicago, Illi-ois. Owner: *Lake Village Associates.* Architects: *Harry Weese & Asso-iates—associate-in-charge: Benjamin H. Weese.* Associated architects: *Gor-lon-Levin Associates.* Engineers: *Cohen-Barreto-Marchertas* (struc-ural); *Nachman, Vragel & Associates* mechanical/electrical). Consultant: *oe Karr & Associates* (landscape). General contractor: *McHugh Con-truction Co.*

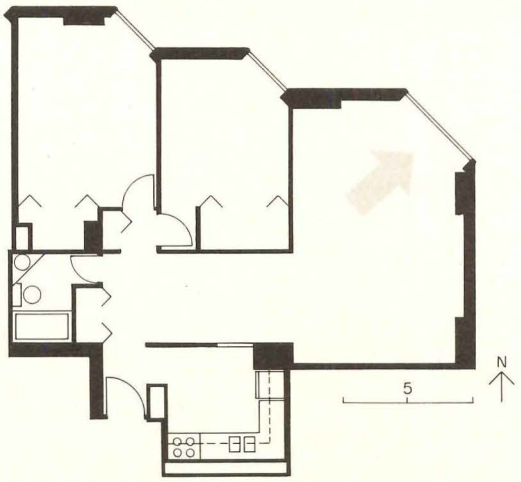






Hedrich-Blessing

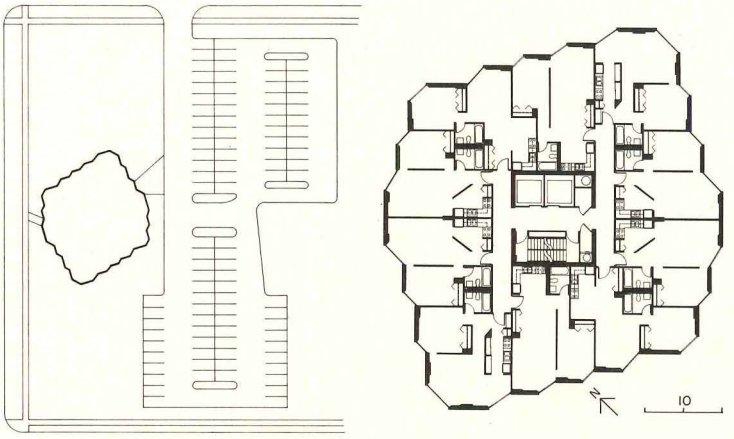
Says Weese: "Universal space is what Mies, in the name of efficiency, said people should live in. Well, I disagree. You can't furnish these spaces. Where do you put the chifforobe—against the window, as I once saw in a Mies apartment? How does a guy live with Biedermeier? We are back to that." Although the Lake Village East model apartments shown above and opposite are poorly furnished examples, Weese's apartment layouts do provide a lot of wall perimeter for chifforobes, escritoires, bibelots and other nostalgic objects to which people unaccountably cling and which are now once more in fashion.



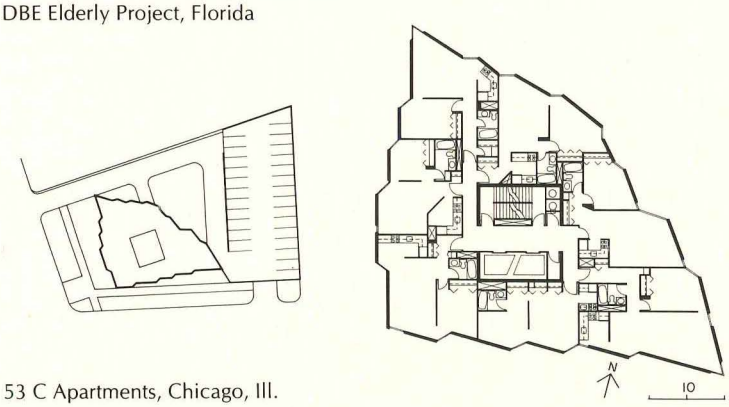
Hedrich-Blessing

"For Boardwalk I wanted to get the biggest units and the largest area possible. I wanted a lot of glass and flexible space." Tigerman got his space. His apartment units are significantly larger than Weese's shown above and opposite. Lake Village East's studios range in net area from 434 to 486 square feet, one-bedrooms from 586 to 690 square feet and two-bedrooms from 859 to 947 square feet. These figures can be compared with those given for Boardwalk on page 85. Weese's net to gross ratio on typical floors is 87 per cent efficient as opposed to Tigerman's 89.9 per cent. Tigerman's units cost less to build.

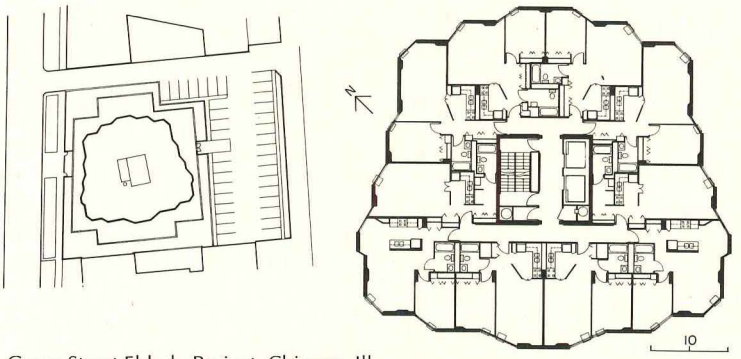
Minimum perimeter floor plans by Weese adapt to a variety of sites



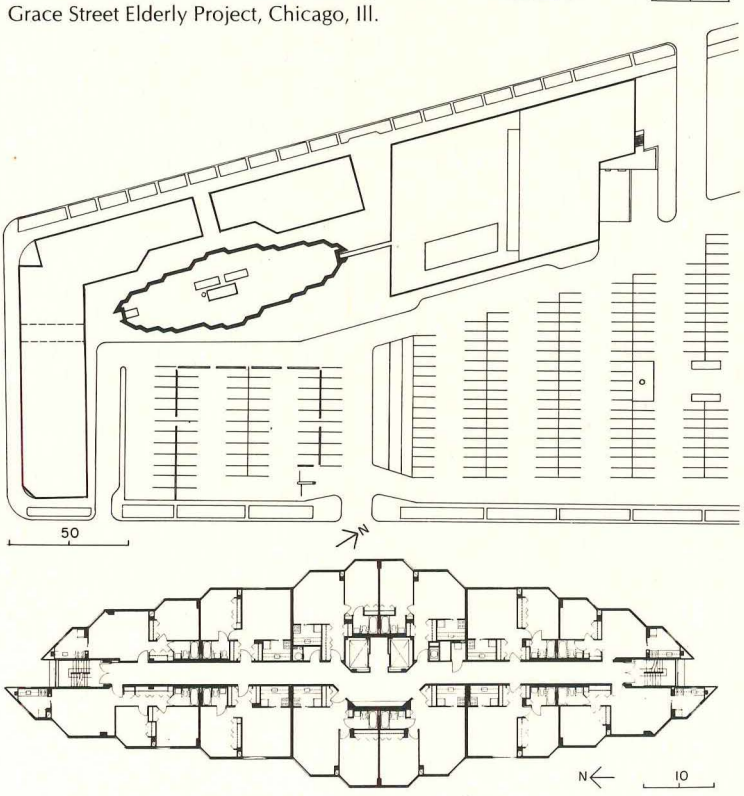
DBE Elderly Project, Florida



53 C Apartments, Chicago, Ill.



Grace Street Elderly Project, Chicago, Ill.



John Knox Home Elderly Housing, Norfolk, Va.

continued from page 83

bedrooms and 75 two-bedrooms. The 25 typical apartment floors have eight units per floor for a gross floor area of 6,255 square feet. Parking for approximately 130 cars is on grade. Its program did not call for the commercial and recreational facilities of the Tigerman project.

Lake Village East demonstrates the advantages of "minimum perimeter" floor planning. Through this approach a variety of finely tuned floor plans can be achieved. Weese has set aside rigid structural modules and predetermined plan shapes in favor of plan forms which he believes are more closely adapted to need. Permutations of these plan forms are devised to suit a variety of programs, even low-income housing. Weese has compared "equivalent area" rectangular and square floor plans. Such plan shapes, which he believes are often used arbitrarily, require sizable additional wall surface to enclose the same amount of floor area. In minimum perimeter schemes the savings in wall area can offset the extra costs stemming from the complexities of non-modular slab and reinforcing steel forming.

Weese asserts that the individual apartment units at Lake Village East are more livable than those in Boardwalk, and that the variety of unit types offered is an advantage. A minimum perimeter tower will fit well into an oddly shaped site and give a reduced sense of mass because of its receding wall planes. It may enhance views and make the most of available orientation.

Designing a building form with 38 facets

The tower, limited to 25 stories by community pressure, was planned to attract young, fairly sophisticated households who would become the nucleus of the population. Ben Weese and his team, working within the Section 236 cost limits and the tight constraints imposed by urban renewal, came forward with a complicated *parti* which departed widely from the standard rectangular form. The structure they proposed was based on developer requirements which included short corridors for efficiency and security, interesting floor plans for rentability, and structural economy. The result was a building form with 38 sides, tending toward the circular form which offers the most economical ratio of perimeter wall to floor area, while at the same time permitting standard rectangular components and rooms. The flexibility of the design allowed maximum planning efficiency, since variations dictated by floor plan considerations could be expressed in the exterior wall without cost penalties. At the same time the plan made the most of the good views toward the lakefront and downtown Chicago, while reducing glass areas to reduce heating and cooling loss.

Examining the options

Tigerman's building illustrates his belief that Miesian architectural forms and details are not only still applicable to current high-rise apartment requirements, but are endlessly perfectable in the esthetic sense. In proving his point, he has created a building which is at once more economical in cost and generous in its square foot allotments than Weese's tower. Lake Village East is of more current architectural interest, however, because it embodies genuinely new planning ideas. Its silhouette is attractive (partly because it is unfamiliar looking) and the basic concept is adaptable to many other site conditions. Neither building is really better than the other. Together they represent two of the kinds of viable, valid options we need.—*Mildred F. Schmertz*

DISPLAYING AND PRESERVING ARCHITECTURAL ARCHIVES

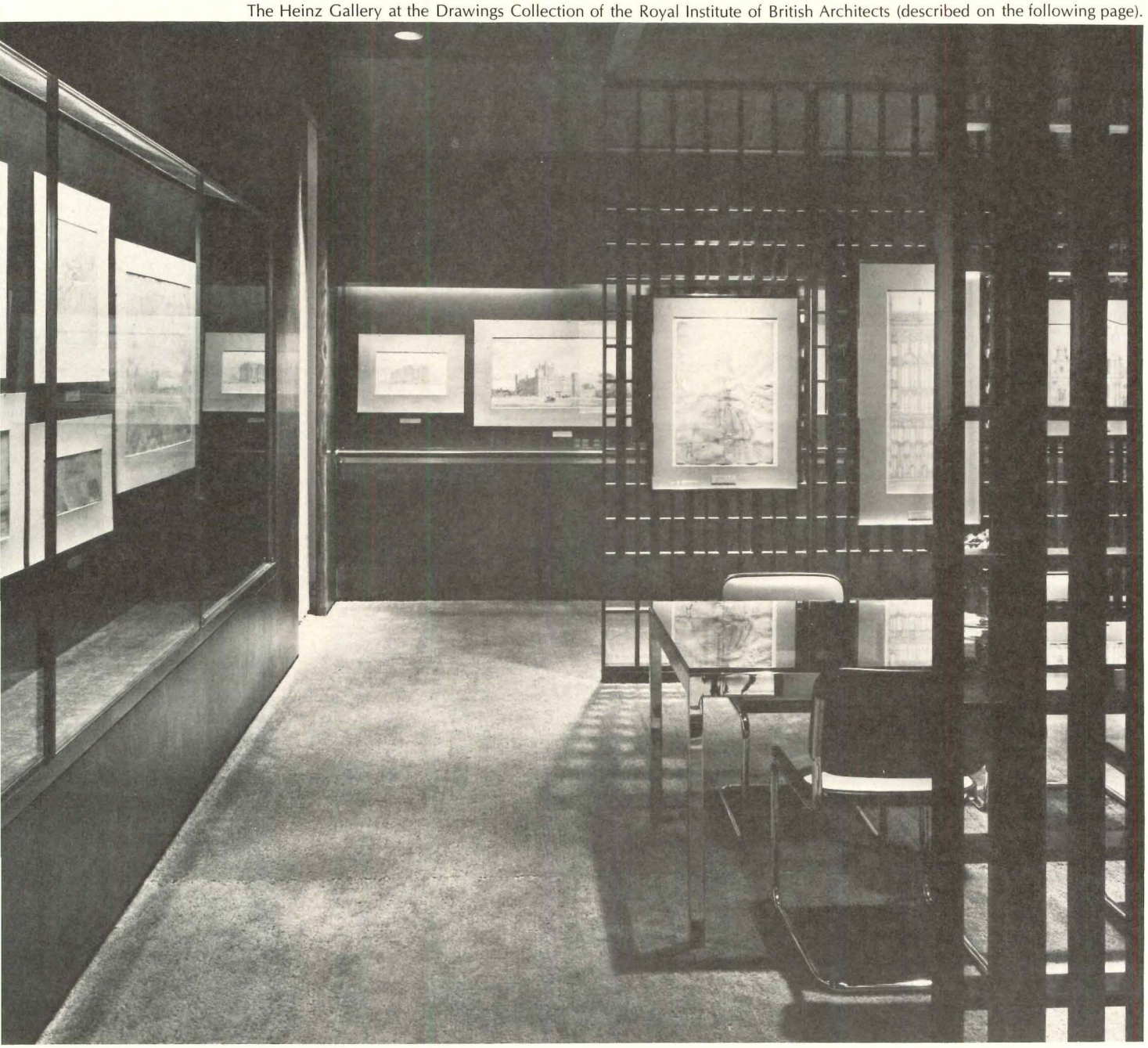
.those countless drawings nd other documents from the ast that describe the ways chitects have designed and uilt buildings. Architectural chives are often objects great beauty, they are of tal interest to historians— nd, with the increasing interest rehabilitation and adaptive se, they are of great practical lue to architects. What are e doing to preserve them nd make them available?

We are not doing enough to save our important architectural documents, according to the Committee for the Preservation of Architectural Records, a group of architects and architectural historians who banded together just over a year ago under the sponsorship of The Architectural League of New York to try to do something about a bad situation.

"We're miles behind countries like Canada and England," says Catha Rambusch, CPAR's project director. "There is really no national architectural archive in the United States, and not only are many valuable documents being lost almost daily, but it is often hard to find out what libraries, museums and other collections actually have stashed away. Sometimes they don't know what they have."

The problem is complicated, too, by the difficult question of just what is really worth preserving, as Adolf Placzek, librarian of Columbia University's Avery Architectural Library, points out: "For a piece of music there is usually only one original score, and for a novel one manuscript. But for a building there are sketches, presentation drawings, working drawings, specifications, plumbers' bills, change orders and so on. It is not easy to decide what to keep." And among today's practicing architects concern for keeping anything for the historical record tends to be low, so that there is no standard procedure for preserving the drawings even of a generally acknowl-

The Heinz Gallery at the Drawings Collection of the Royal Institute of British Architects (described on the following page).



edged great architect like Louis Kahn, the fate of whose papers is at the moment unclear.

An example from abroad

In Great Britain, by contrast, the Royal Institute of British Architects has a vast store of drawings which have been collected since 1834 and which date from about 1520 to the present. The RIBA's collection amounts to well over 200,000 drawings, amply housed in an eighteenth-century row house designed by James Adam, which has a modern gallery (shown on the right) for continuing public exhibitions. RIBA is also in the process of publishing a more than 20-volume catalog of its drawings, so that information about them will be available in architectural libraries virtually everywhere in the world.

The RIBA's drawings collection, and its very large collection of books and its other information services make it a central and important clearing house for almost every kind of architectural information—and even so its library, known as The British Architectural Library, is actively expanding (see box on the following page).

In these terms the American Institute of Architects is considerably less lucky, with a much smaller collection of books and drawings that, at least according to some critics, is incapable of functioning as an information center on a national level. America's nearest parallel to The British Architectural Library is probably the Avery Library at Columbia University in New York, which has not only a large collection of books, but a number of ancillary bibliographical services and between ten and twenty thousand architectural drawings.

In addition, the Historic American Buildings Survey, though it is not itself concerned with old drawings for the sake of their intrinsic artistic merit, has a vast collection of measured drawings and other information on old American buildings. Though it has traditionally received meager funding since its founding 42 years ago, the Historic American Buildings Survey is still a major source of information about the architecture of the past in this country.

But still the vast majority of archival materials are scattered about the country, more or less well preserved, more or less well documented in various libraries and museums and historical societies, in the buildings which the drawings depict, or—quite literally—in people's basements or attics.

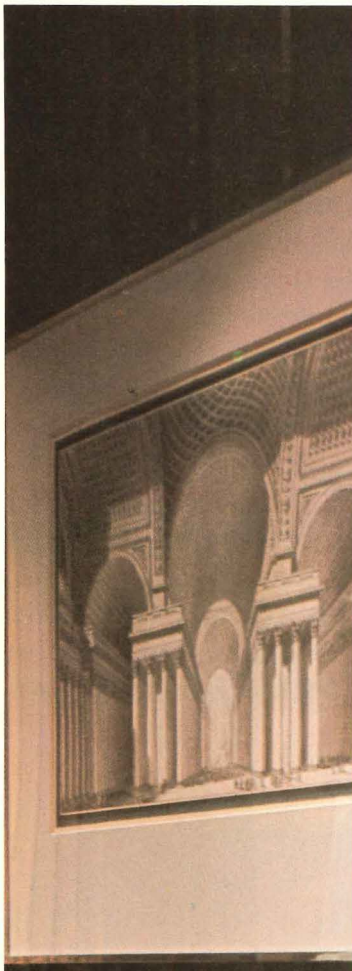
Goals of the Committee for the Preservation of Architectural Records

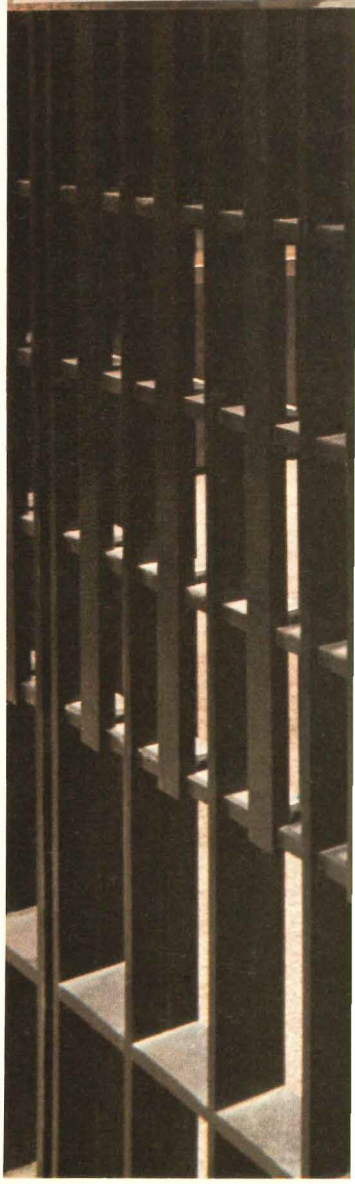
There are in general two different challenges today in the field of architectural archives in the United States: One is that of raising money and enthusiasm, as well as developing techniques, for the preservation of architectural drawings and documents, so that they will not be destroyed either by accident or on purpose, and so that they will not slowly deteriorate in storage. The other quite different challenge is to develop some sensible way for interested people to find out what exists and where. In the process of all this, other important decisions have to be made—like, for instance,

The Heinz Gallery for the Drawings Collection of the Royal Institute of British Architects occupies a completely remodelled ground floor room in an 18th-century London townhouse. All four walls of the room have long recessed showcases with dustproof sliding glass fronts and directional lighting with ultraviolet filters. The lighting consists of parallel rows of fluorescent tubes, one 3000K, which is similar to the temperature of tungsten lamps, and one 4000K, which is closer to the color of daylight. Each set of tubes is controlled by a separate dimmer, and a great variety of color and intensity can thereby be achieved.

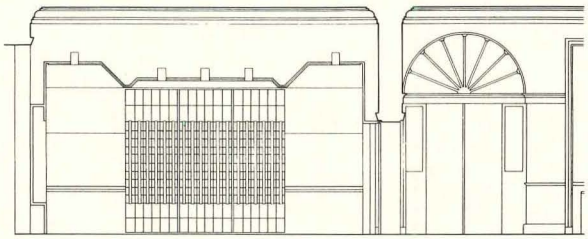
In the center of the room is a stainless steel and glass table, and on either side of it are removable screens made of solid ebony, on which large framed drawings can be hung. The walls are of Brazilian Imbuya veneer, and the carpet is natural color undyed North African wool.

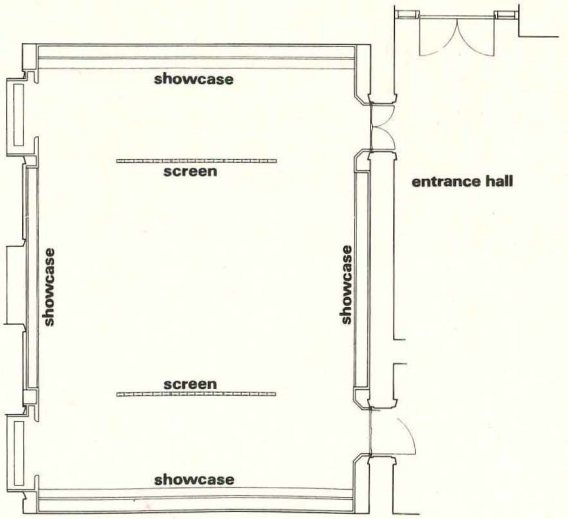
THE HEINZ GALLERY, Royal Institute of British Architects, London. Architects: *Stefan Buzas and Alan Irvine.* General contractor: *E.A. Edmonds & Co. Ltd.*

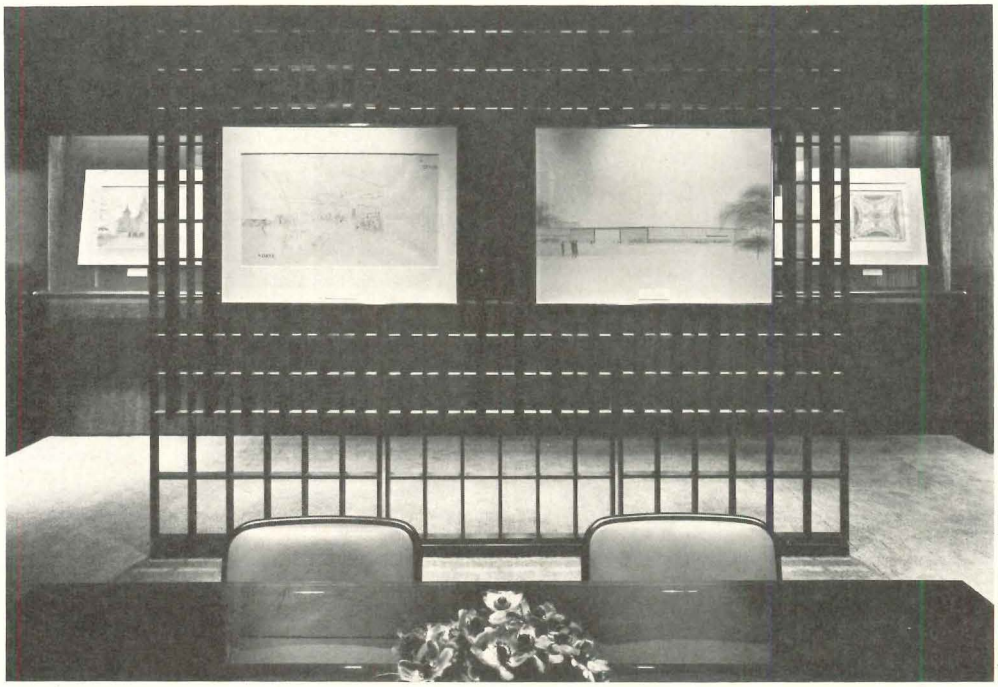




John Vaughan







Edgar Hyman

what kinds of architectural drawings are valuable as objects of art themselves (and are therefore worth preserving as originals) and what kinds are valuable only for the information they convey (and can therefore be stored more efficiently on microfilm or microfiche).

The Committee for the Preservation of Archiectural Records is a loosely knit group of people whose interest is focused on the question of architectural archives on a national level. The central ingredient is concern for the problem, and it is matched by a sufficient flexibility to respond to several different constituencies—architects interested in preserving their own records or those of others, art and architectural historians who want to know about the location and availability of certain documents, librarians and other people interested in establishing and maintaining architectural archives in their communities.

So far the Committee has concentrated mainly on the task of providing information. A directory of existing architectural resources in New York City has been established as a pilot project which it is hoped will be emulated elsewhere in the country. In cooperation with Columbia University the Committee is also developing as a pilot project inventories of three existing New York City architectural firms, and, as is described below, they publish their own newsletter for the benefit of interested architects, scholars and students.

Where to find old architectural drawings and drawings of historic buildings

The Koyl-Mathieson Catalog

Far from complete, this is still by far the most complete listing of drawings of American buildings, catalogued with descriptions of individual drawings and their whereabouts. The original is now housed in the Smithsonian Institution, Washington, D.C. 20560, where access to it is limited but can be arranged.

A part of the Koyl-Mathieson catalog was published in 1969 in four volumes and in a cumbersome format. It is available in some libraries. A useful Bicentennial project would be the publication of the full catalog in a more convenient format—but so far there are no funds.

Historic American Buildings Survey

HABS, which is a part of the National Parks Service, has assembled a collection of measured drawings, photographs and other information about more than 16,000 American buildings. The collection is stored in the Library of Congress, where it can be consulted. Copies of HABS material can also be ordered from the Prints and Photographs Division, Library of Congress, Washington, D.C. 20540.

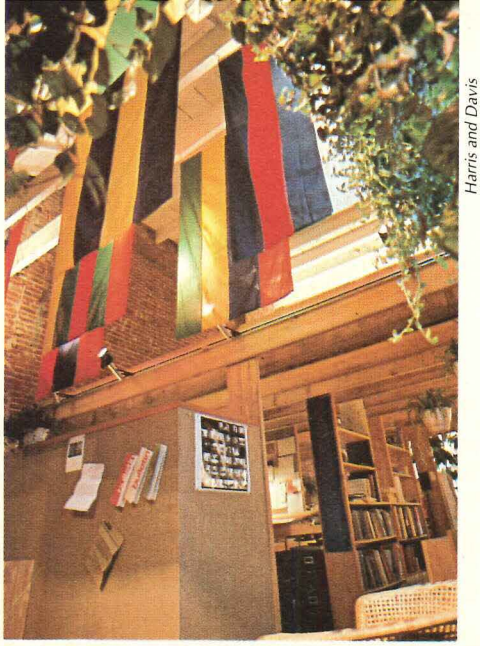
Finding out what HABS actually has in its collection can be confusing. Its orginal catalog was published in 1941, followed by supplements in 1959 and 1963. Since the supplements are not cumulative it may be necessary to look in all three listings to find a particular building. Since 1963, however, HABS has begun a new series of cumulative and comprehensive catalogs organized by states or by region. HABS hopes to complete this series by 1976; more information can be obtained from the Historic American Buildings Survey, Office of Archeology and Historic Preservation, National Park Service, Department of the Interior, Washington, D.C. 20540.

Newsletter of the Committee for the Preservation of Architectural Records

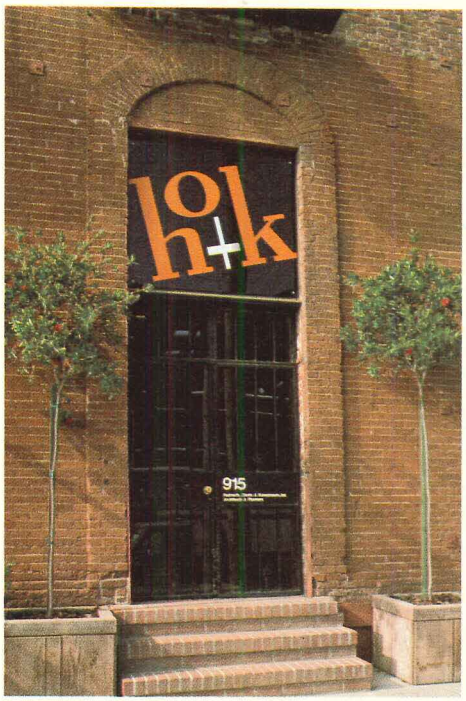
CPAR regularly publishes a two-page *Newsletter* as a part of its efforts to act as a clearing house for information about all aspects of architectural archives. More information can be obtained from the Committee for the Preservation of Architectural Records, The Architectural League of New York, 41 East 65th Street, New York, N.Y. 10021

The British Architectural Library

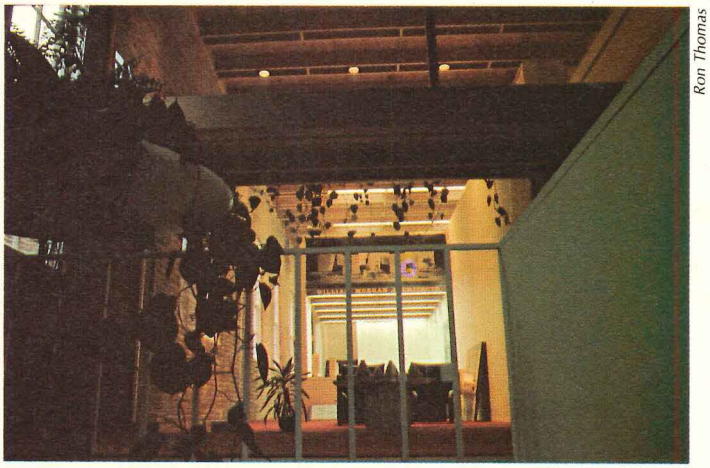
The main collection is in the Royal Institute of British Architects, 66 Portland Place, London WIN 4AD, and the Drawings Collection is at 21 Portman Square, London W1H 9HF. The Library will answer requests for information from the United States, and it also invites contributions to its current appeal for $2.5 million for expansion of its collections & services.



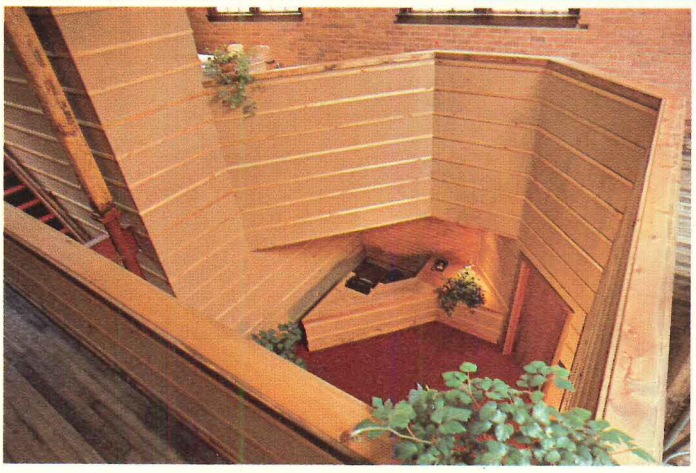
Harris and Davis



Stephen Dunham and Kiku Obata



Ron Thomas

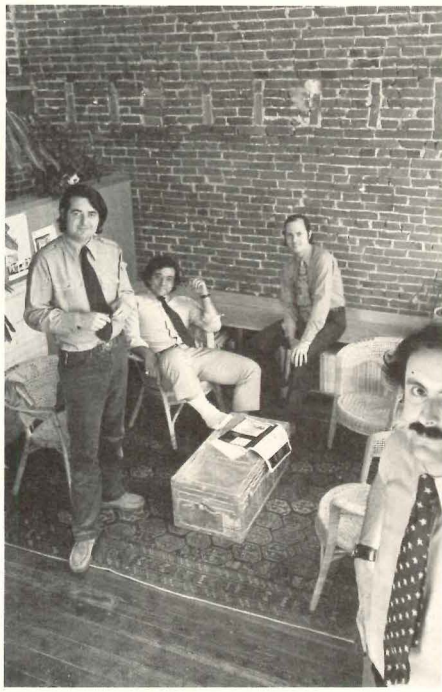


Balthazar Korab

John G. Lewis, Jr.

THE "BARE BRICK SCHOOL"

In their enthusiasm for old buildings, architects have become major consumers of renovated spaces for their own offices. They not only have discovered the economic advantages of remodeling an older building, but together they have also developed a surprisingly consistent rehab style, consisting of exposed wood surfaces, rough and ready details, bright colors (preferably Marimekko) and—above all—the obligatory bare brick wall. What has emerged is one thing the profession desperately needs—a vernacular style that is handsome, economical, easily understood and easily copied by just about anybody just about anywhere. Some examples. . . .

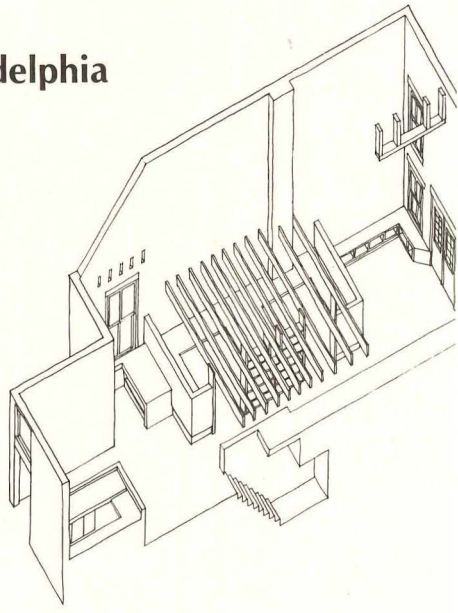


Harris and Davis photos

Baker Rothschild Horn Blyth—brick and bright color in Philadelphia

This young firm took on as its first project the remodeling of an 840-square-foot space for its own office. The space is on the third floor of a nineteenth-century commercial loft building, and originally it had two levels. The architects put new joists into the existing joist pockets to create the feeling of separation between the reception area (photo top right) and the rest of the office (photo above). Below the new joists are individual work stations for each of the firm's four partners, and above—in due course—there will be a mezzanine for expansion. The conference area (photo above right) is the only part of the office where the full 19-foot height of the loft space is unobstructed; it stands at the opposite end of the office from the raft of colored banners that are the office's other memorable feature.

OFFICE FOR BAKER ROTHSCHILD HORN BLYTH, Philadelphia, Pennsylvania. Architects and general contractor: *Baker Rothschild Horn Blyth.*

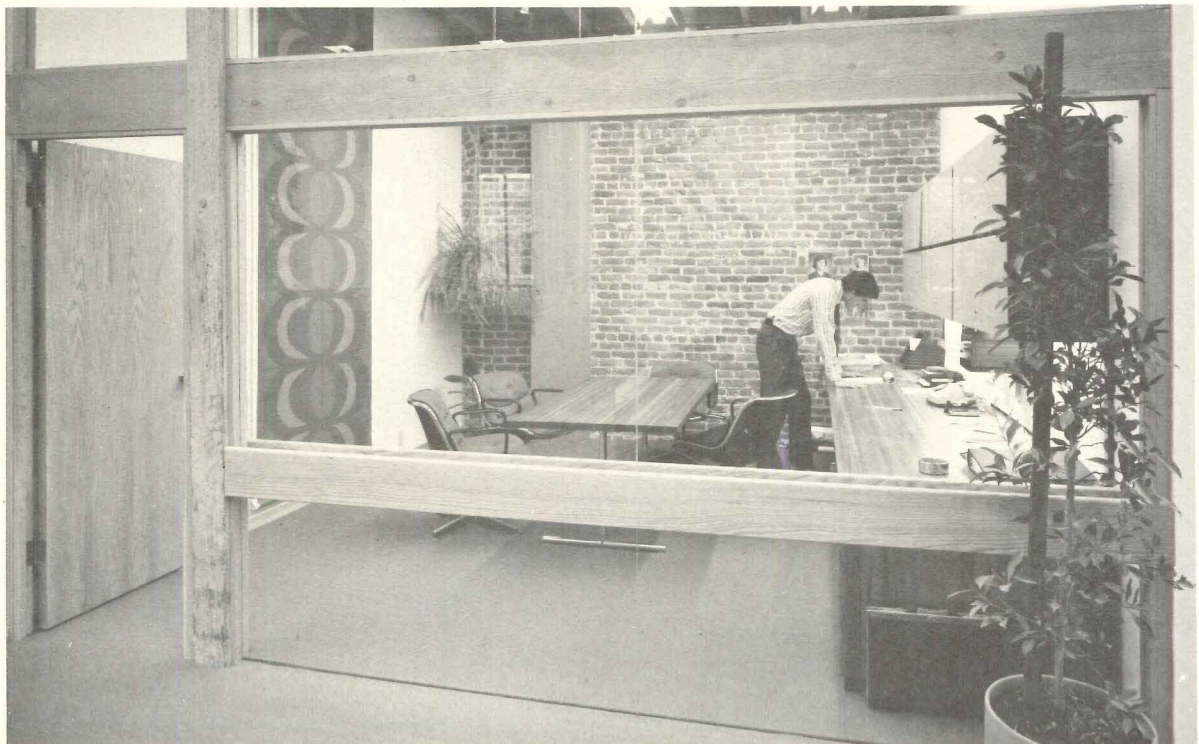


Stephen Dunham and Kiku Obata photos

HOK in San Francisco—a big firm goes Bare Brick

HOK'S San Francisco office is in a part of the city between downtown and Telegraph Hill where renovation and adaptive use are the rage—an area characterized by large brick warehouse buildings ready to be turned to more glamourous commercial use. In this case the intention was to create a simple kind of space where there could be a heterogeneous mix of employees without the usual distinctions between front and back room. So the major part of the space is given over to one open office area (photo above) where members of the staff have their own work stations defined by low partitions. This large space is on the outside of the building, with exposure to natural light. On the inside wall there are three offices that offer more privacy (photo below) and a conference room.

OFFICE FOR HELLMUTH, OBATA & KASSABAUM, San Francisco, California. Architects: Hellmuth, Obata & Kassabaum—project team: Gyo Obata, Dan Gale, Bill Valentine and Bob Stauder. Contractor: *Balliet Brothers Construction Corporation.*



William Morgan Architects—crisp and white hits old and mellow

The building this architectural office calls home began life in 1901 as a livery stable and a blacksmith's shop. In more recent times its ground floor had been turned into a parking garage and its second floor, where the office now is, contained a printer's shop and press. What was originally the blacksmith's shop is now the entrance stairwell (photo far right) leading up to the office proper (photo below). This is a high skylit space in which an elegant white structure has been inserted, in strong contrast to the rough brick walls and the bare roof joists above. The main level of the office is occupied by a reception area and a conference room (photo immediately right), while the upper level is one large, open drafting loft, brightly lit by the skylights immediately overhead.

OFFICE FOR WILLIAM MORGAN ARCHITECTS, Jacksonville, Florida. Architects: *William Morgan.* Engineers: *Haley W. Keister,* (structural); *Roy Turknett & Associates* (mechanical/electrical). Contractor: *Newman Construction Co.*

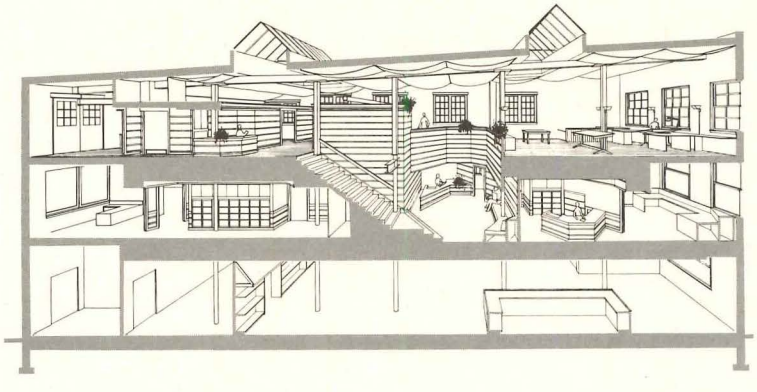
Ron Thomas ph

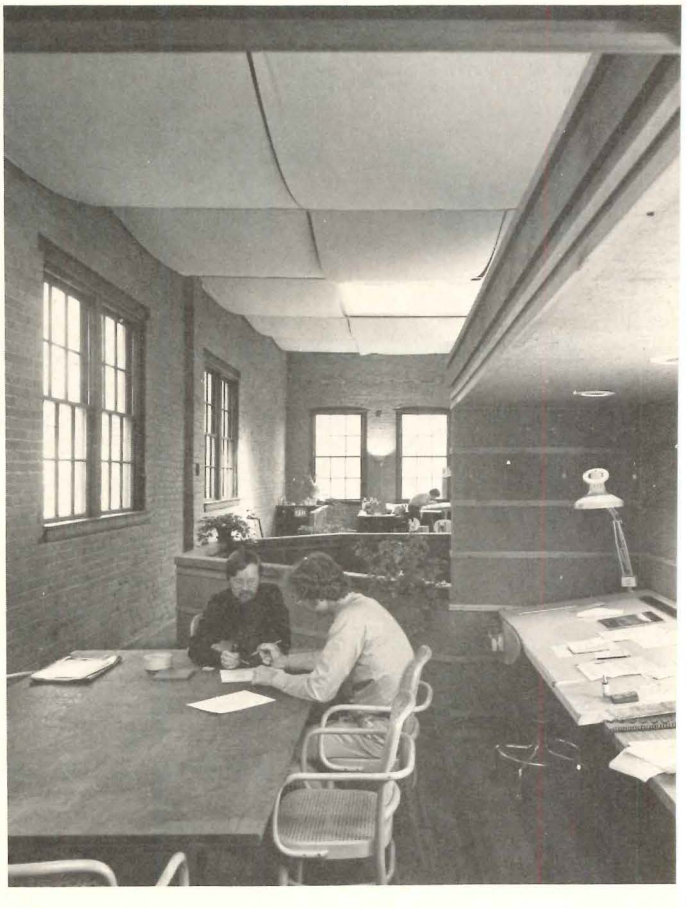
Balthazar Korab photos

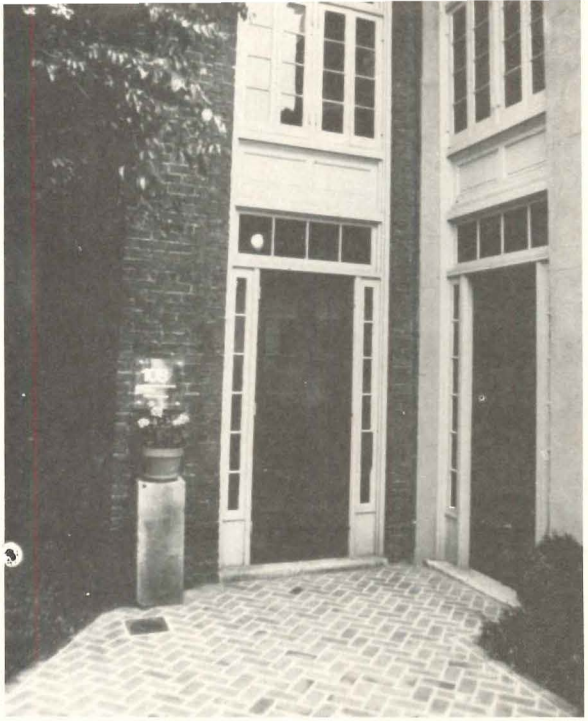
John Hilberry and Associates—negative value becomes positive worth

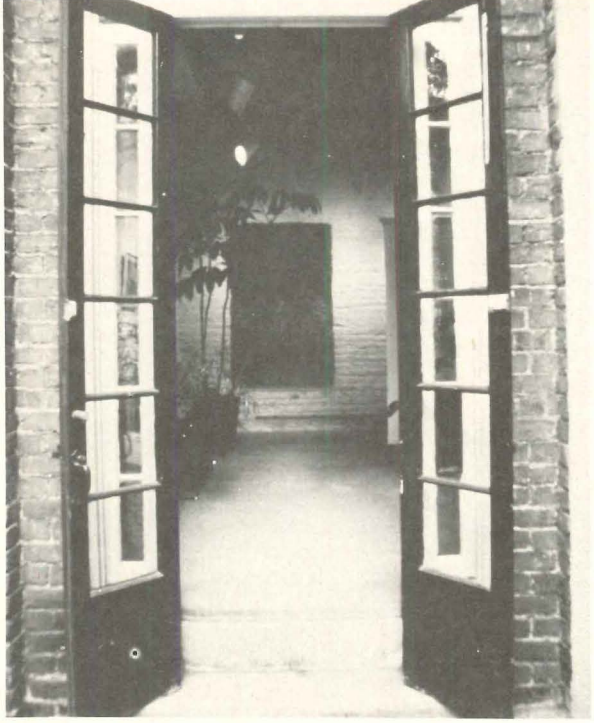
John Hilberry and Associates is a six-man architectural firm with a particular commitment to an area of Detroit known as Harmonie Park. As architects they have worked with local businessmen to organize a special tax assessment district and with city agencies to expedite public improvements—all to preserve and enhance the special sense of place of this area. By moving their own offices there they sought to demonstrate to others that the area was viable, and that buildings there were worth reusing. The building they chose for themselves was a three-story loft structure that was so little prized that its lot was considered more valuable with the building gone. The architects renovated the top floor for their own use and rented the other two.

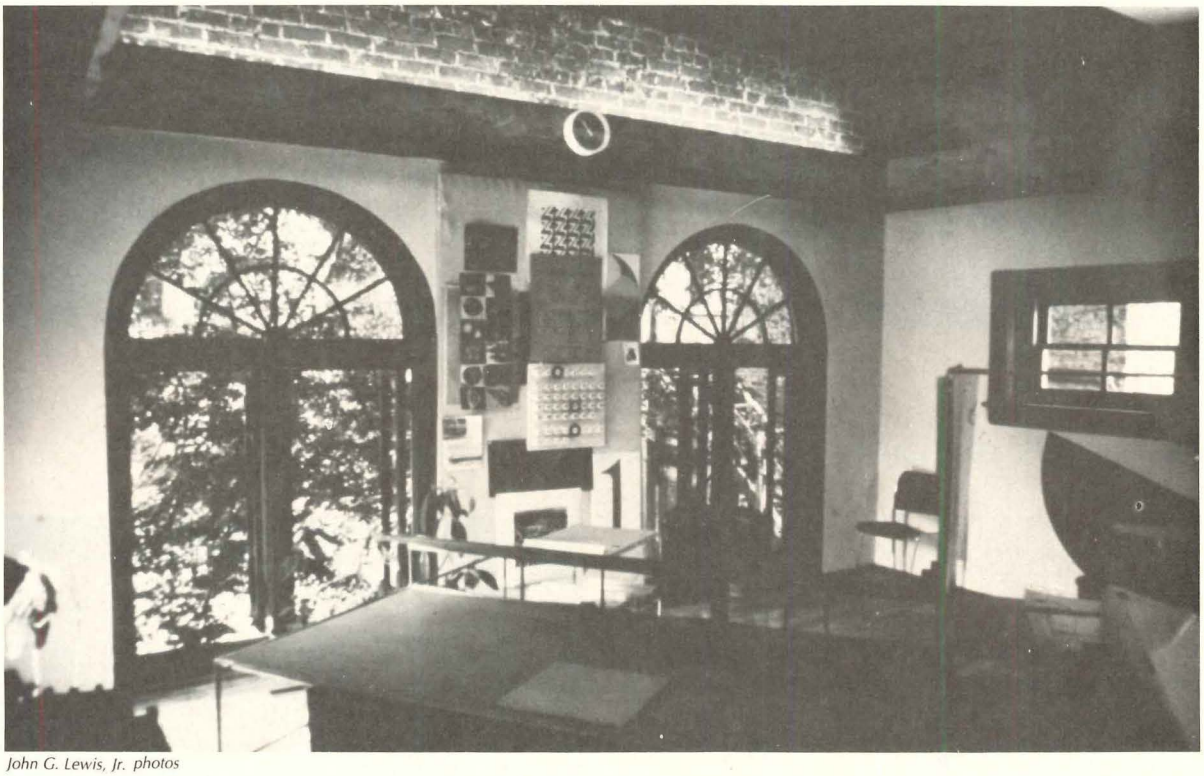
OFFICE FOR JOHN HILBERRY & ASSOCIATES INC., Detroit, Michigan. Architects, owners and construction managers: *John Hilberry & Associates Inc.—project team: John Hilberry and Anthony Foust (partners), Keith Moffat, William Vogan, and Erick Mesko.* Engineer: *Gerry Shreve* (mechanical).











John G. Lewis, Jr. photos

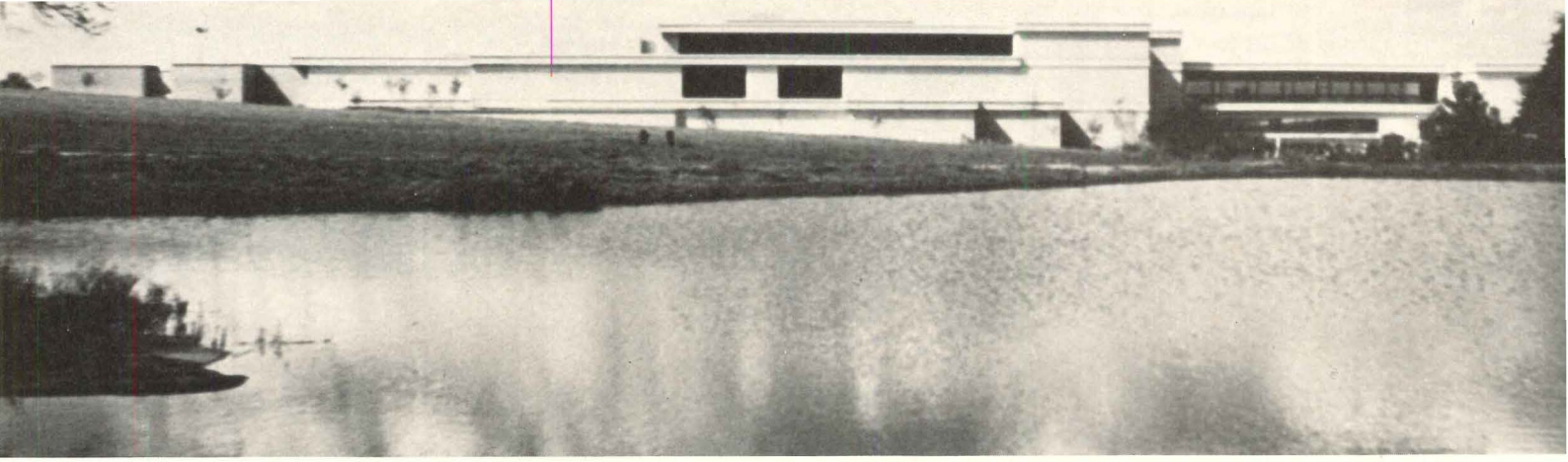
Robert Welton Stewart—Southern comfort in a carriage house

The Kent-Valentine house in the heart of Richmond, with its oasis of magnolia trees and its grassy lawn, is a valuable asset to the city, and it has been acquired for preservation and adaptive reuse by the Garden Club of Virginia. Robert Stewart, an architect who encouraged the acquisition, found himself actively involved when the chance came to remodel the Kent-Valentine house's carriage house for his professional office. The small courtyard of the carriage house opens into a reception area and drafting room (top photos), from which a stairway leads to a second drafting room on the floor above (photo immediately above). Alterations to the existing building were minimal, and the genius of the design lies in Stewart's demonstrated ability to seize the moment and to recognize a pleasant and reusable building that had escaped others' notice.

OFFICE FOR ROBERT WELTON STEWART, Richmond, Virginia. Architect: *Robert Welton Stewart.* Contractor: *George Banducci.*

MOUNTAIN VIEW COLLEGE: BIG, INNOVATIVE AND SURPRISING

Viewed toward the students' entrance in the photo above, this building does not appear large by single-building-college standards. But it is really an upside-down pyramid; the "apex" is in a void between the massive building elements where the floors are steps down both sloping sides of a sunken stream—or in suburban Dallas, an arroyo. Turning a seeming defect of the natural site into an asset, architects Harrell + Hamilton/Chan + Rader have produced a big, rich, interior environment in a building that does not overpower its surroundings. And it is this stimulating environment that generates the involvement necessary for such junior colleges to produce better-rounded graduates. By an unorthodox arrangement of facilities and a strong visual connection between them, there is a pleasant exposure to the constant options of varied activities; students are encouraged toward a much broader range of programs than those required to just get through.—Charles Hoyt

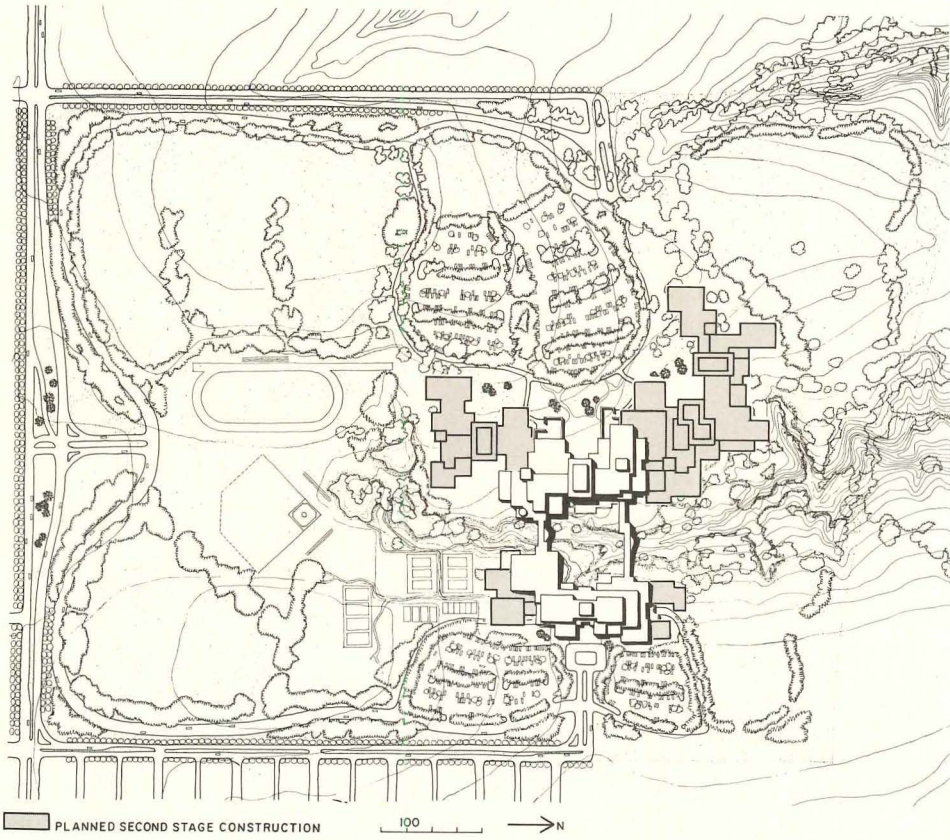


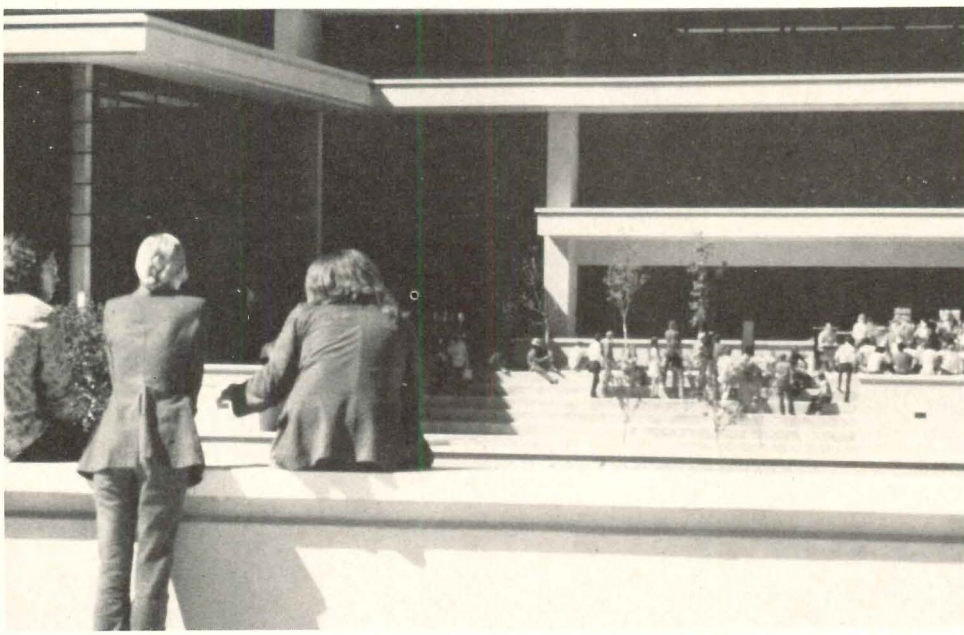
In Dallas, a rapidly growing population is creating an ever increasing demand for school facilities, contrary to that of the nation as a whole. Currently, seven junior colleges are planned on scattered sites for easy neighborhood access. Each will meet the need for both technical-occupational and liberal-arts educations. One of the initial buildings is Mountain View, which is located in the southwest section of the city on a gently rolling, largely undeveloped site of 200 acres. Much of the surrounding area is similar in character, although a development of closely spaced houses to the east presages the possible future environment. Incidentally, there are no real mountains in Mountain View's view.

Rather than dominating such a site with a building exhibiting its true size of over 360,000 square feet, the architects chose to take advantage of the terrain's potentially unusable natural feature, an arroyo. By placement in this sunken area, the bulk of the building is minimized. Indeed, it is completely hidden from the students' entrance at the south of the site by low hills which have been planted with local trees to augment the natural vegetation.

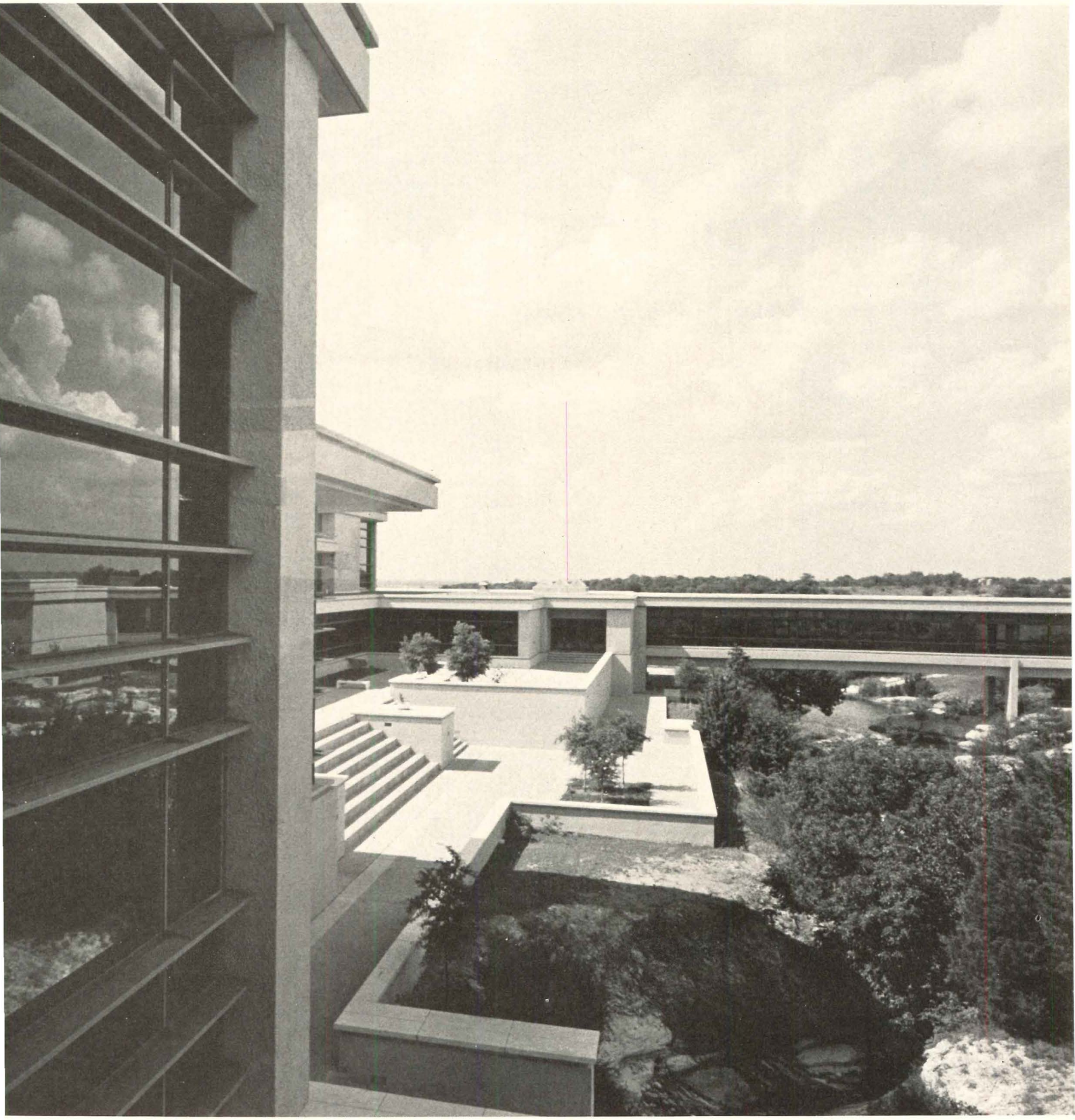
While an important concept in planning was to expose the students to the widest range of activities during daily travels through the college, the activities were separated into two building units (connected by bridges) to facilitate community use. The gym, auditorium, administrative offices and the public entrance are located in the eastern element. Students enter the western part of the building by crossing a large plaza (photo on page 101), which forms a semi-enclosed transition from the open spaces of the site. The two elements are centered on the arroyo, (photo right) extending several levels below the entrances and terraced as an open-air extension of the interior student center.

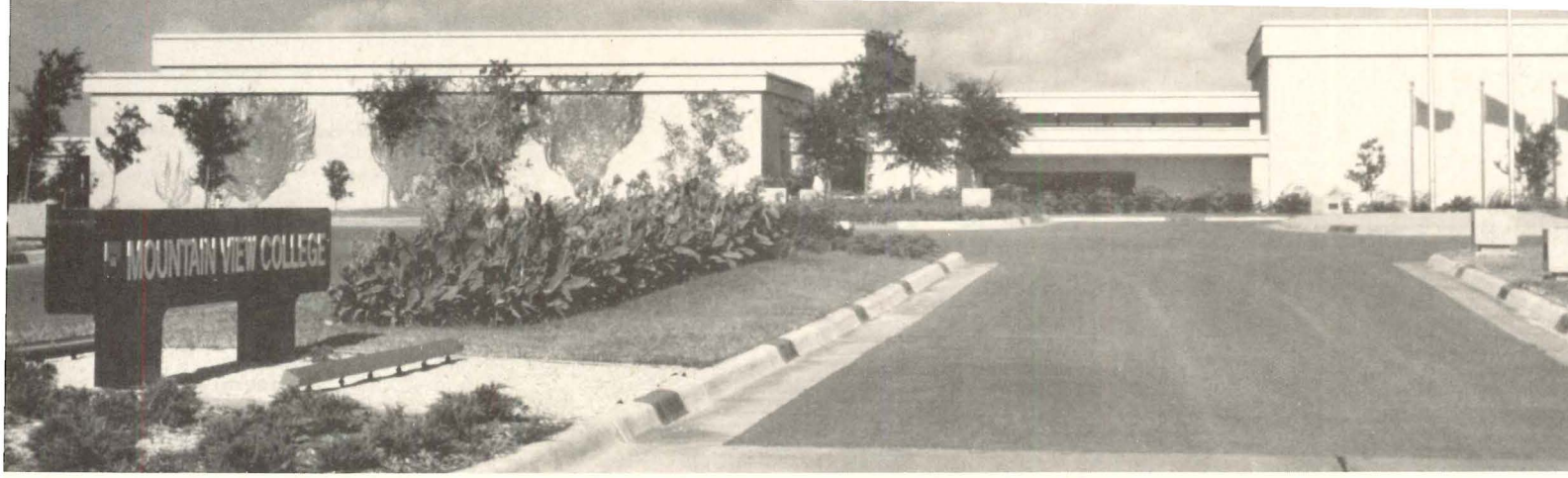
Mountain View can presently accommodate 2,500 to 3,000 students, and projected expansion is planned to double that number (see site plan). Accordingly, the central facilities in the eastern building element, along with the student center and the laboratories have been sized to meet the eventual demand. Parking and athletic fields are also projected to occupy the greater portion of the site. Therefore, the placement of the building in the arroyo has a twofold purpose. Beside allowing the recessing of the bulk of the building and providing for expansion, it frees the remainder of the site for a green buffer at the perimeters.

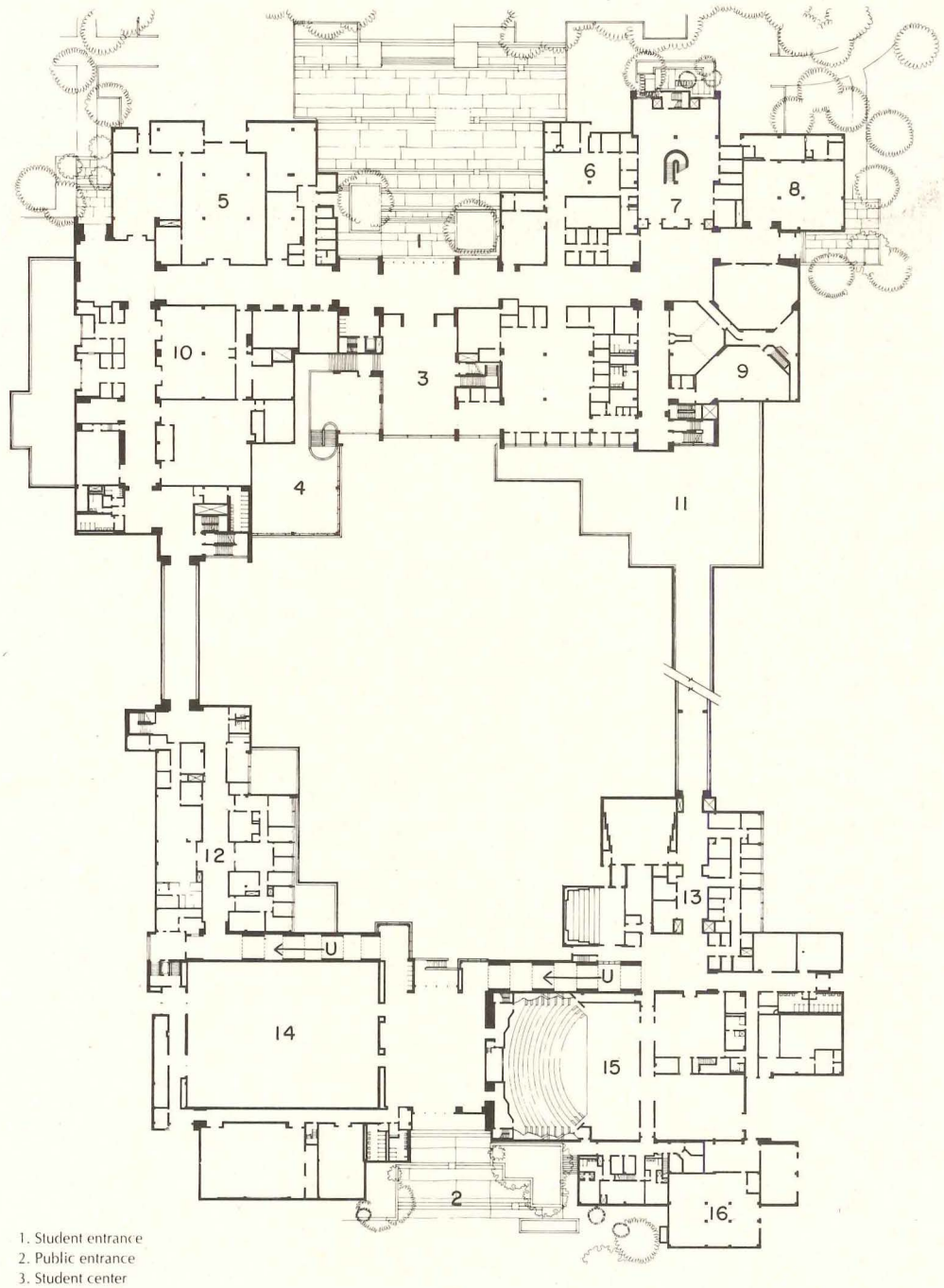




A view of part of the building from the south (photo left) shows the transition from the single-story students' entrance, on the west facade, to the multi-level space within the arroyo shown in the photos below (the other half of the building is shown overleaf). The connecting bridges span a stream, which is kept at a constant level by artificial lakes. Terraces are an extension of the student center, and are a focal point of activity above the natural stream bed. A jazz concert is shown in progress. The dark colored glass is typically shielded from the sun by projecting horizontal mullions as shown in the photo below.







1. Student entrance
2. Public entrance
3. Student center
4. Dining
5. Machine shop
6. Audio-visual
7. Library
8. Store
9. Lecture rooms
10. Classrooms
11. Roof of level below
12. Administration
13. Music
14. Physical education
15. Auditorium
16. Mechanical Equipment

Many school boards in Texas have recog
nationally shared problems in education
are willing to try new solutions. Junior co
have particular problems. The students te
be there for an education in a part
occupation, without much exposure to th
eral arts, or they want a general educ
without the commitment of a four-year
gram. To counter the limitations of either
tion, Mountain View functions as a mer
diser of options. There is maximum exp
to every sort of activity as the students
through the building, and those activitie
located in surprising places. For instanc
highly visible machine shops are adjace
the student center, the "heart" of daily a
(photos, right). From the student entranc
pleasantest route to the science and art d
ments on the floor below is across a b
through the physical education, drama
music departments, and back across a l
at the lower level. All of the time, the st
is seeing different activities. A bright a
phere, as seen in the student center, en
ages involvement by making the coll
pleasant place to be.

In recognition of a sometimes hars
mate, Mountain View has limited glass
which are mainly oriented toward the
between the two elements of the bu
there are largly solid walls around the p
ter of the complex which are faced with
painted to match the exposed limestone
site. Five separate air handling units ar
plied with the appropriate chilled or hot
from a central mechanical room. Hot
was chosen over steam because of the
lems of returning condensate throug
change of elevation between the two bu
elements. The poured-in-place concrete
ture rests on spread footings or ca
depending on the varied soil condition
ceptions to the general structure of 25-
foot bays are: the steel-truss roof of the t
the pre-cast-T gym roof and post-ten
bridges. Costs were $32 per square foot

MOUNTAIN VIEW COLLEGE, Dallas,
Owner: *Dallas County*. Associated architect
*rell + Hamilton/Chan + Rader—principal-in
and designer: E.G. Hamilton*. Engineers: *Te
senlund & Co.* (structural); *Texas Testing
tories* (soils); *Gaynor & Sirmen, Inc.* (m
cal/electrical). Consultants: *Paul Vanekla
Assoc.* (acoustical); *Dan Heyn* (landscape);
Hunt & Bogan (theater). General contractor
hattan Construction Co.

The plan shows the public entrance (photo left) halfway between the student-entry level and a floor of teaching spaces below that level. A third part-floor is occupied by faculty offices which open on the balcony above the student center's lounge (photos below). This lounge is the hub of activity where students meet, and it is furnished for both relaxing and study. The student center consists of several spaces for varied activities and includes the dining room (photo opposite page, bottom), which is on the level below the adjacent lounge. This relationship brings the center's activities to both the main floors.

or photographs by Luigi Cuberli

The extra wide corridors are designed for students' leisurely viewing of the activities in the adjacent teaching spaces. The polished concrete floor, tile murals, banners and skylights contribute to a cheerful atmosphere. The greater ceiling heights in the classrooms are detailed with dropped soffits around each wall, which carry through the corridor ceiling height and conceal mechanical equipment and wall lighting. Other uses for the wide corridors include exhibits such as an airplane, which signals the presence of the machine shops. The skylights also permit indoor planting, which is a lush contrast to the arid environment.

STORES AND SHOPS

For storekeepers, the name of the game is merchandising; for architects, it is design. Put these two together and the result can be merchandising in a place designed to enhance the use of the most sophisticated selling devices of the retail world. In a boom economy, anyone can sell in any kind of environment. In an economic slowdown, it takes something more than goods for sale to induce customers to enter, and to persuade them to buy. In the four stores shown here, innovation and creative design have provided the right combinations at the right time.

Bergdorf Goodman store, White Plains, New York

Martin Helfer photos

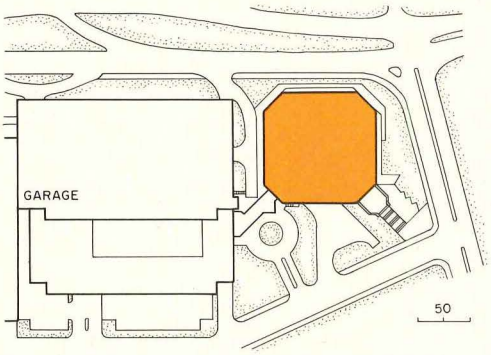
Skylighted open space in branch specialty store continues a tradition of elegance within an innovative design

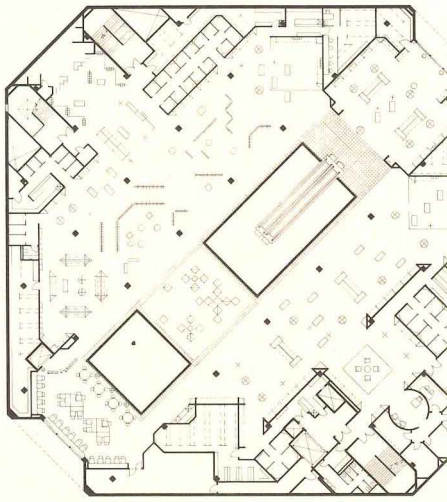
For the first time in its long history, Bergdorf Goodman—an elegant specialty store on New York's Fifth Avenue—has a store building designed to its own needs and desires. The new building is in the retail section of White Plains, New York, a fast-growing center (not a mall) for shopping which serves all of Westchester County, reported to be the "largest retail area in New York State."

Since this was the client's first experience with a project of this kind (the first store had been remodelled and added onto but was never a custom building for the client), the standards for the new store's program grew out of the reputation for elegance and service that had characterized the first store. Some of the physical amenities of the New York location also became requirements for the suburban site. In New York, for instance, Bergdorf Goodman is "on the Plaza" by the Plaza Hotel, and across 59th Street from Central Park. At White Plains, Bergdorf Goodman opens from a plaza which, like the Plaza in New York, has a distinctive fountain and is across the street from the park.

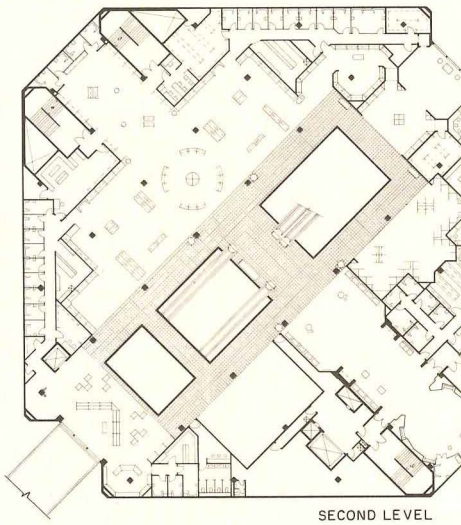
Inside the elegant travertine-faced building, everything focuses on a great open space covered by a 200-foot-long mirror-glass skylight which floods the store with light by day and at night presents a kaleidoscopic picture of colorful merchandise and movements of people below. This open space functions much as a street would—Fifth Avenue, for instance—providing circulation among and access to the boutiques which line its perimeter. The visual excitement produced by the great court overshadows the basic architectural function served by the covering skylight: to unify the diverse elements of the store, and in providing the means for understanding the whole store at a glance, to act as a constant orientation for the shopper. It is traditional elegance achieved without using traditional forms.

BERGDORF GOODMAN, White Plains, New York. Architects: *John Carl Warnecke, F.A.I.A., Architects—project team: A. Eugene Kohn, partner-in-charge; Emilio Arechaederra, project director; Laurence Goldberg, project manager; Stanley Abercrombie, Joe Owczarek, designers.* Interiors: *Eleanor LeMaire Associates, Inc.—Warren Hansen, design director; Vincent Caruso, project design; Naomi Leff, Jody Sayler, David Tredway, designers; Edward J. Agastino, managing director.* Engineers: *Ames & Selnik* (structural); *Joseph R. Loring & Associates, Inc.* (mechanical/electrical). Lighting consultant: *Douglas Baker.* Landscape architects: *M. Paul Friedberg Associates.* Contractors: *Conforti & Eisele.*

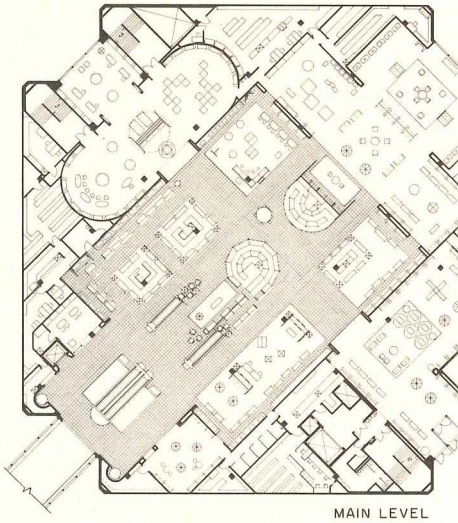




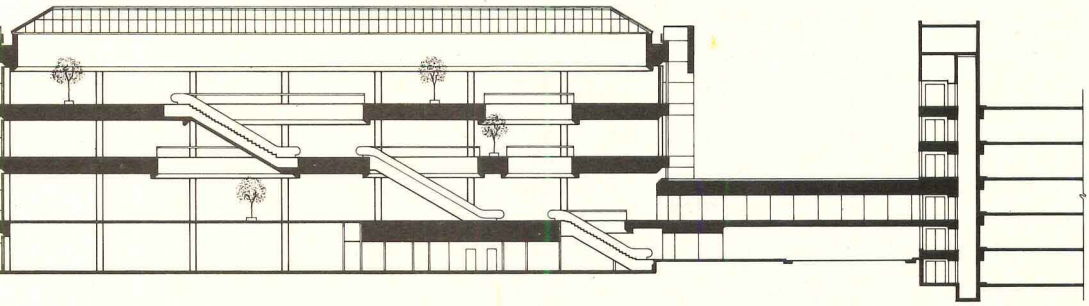
THIRD LEVEL



SECOND LEVEL

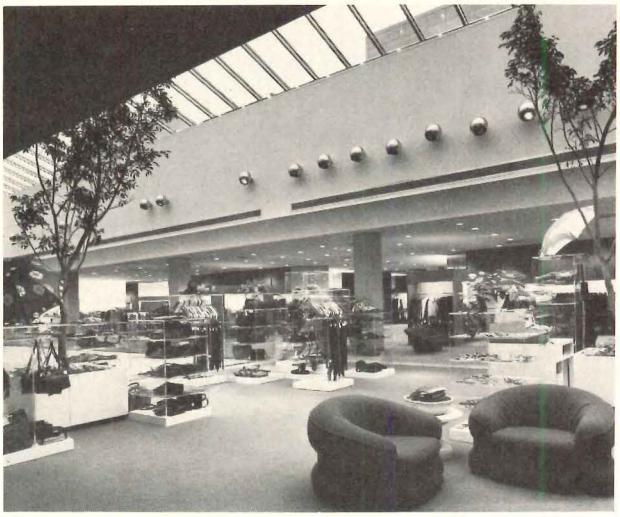


MAIN LEVEL



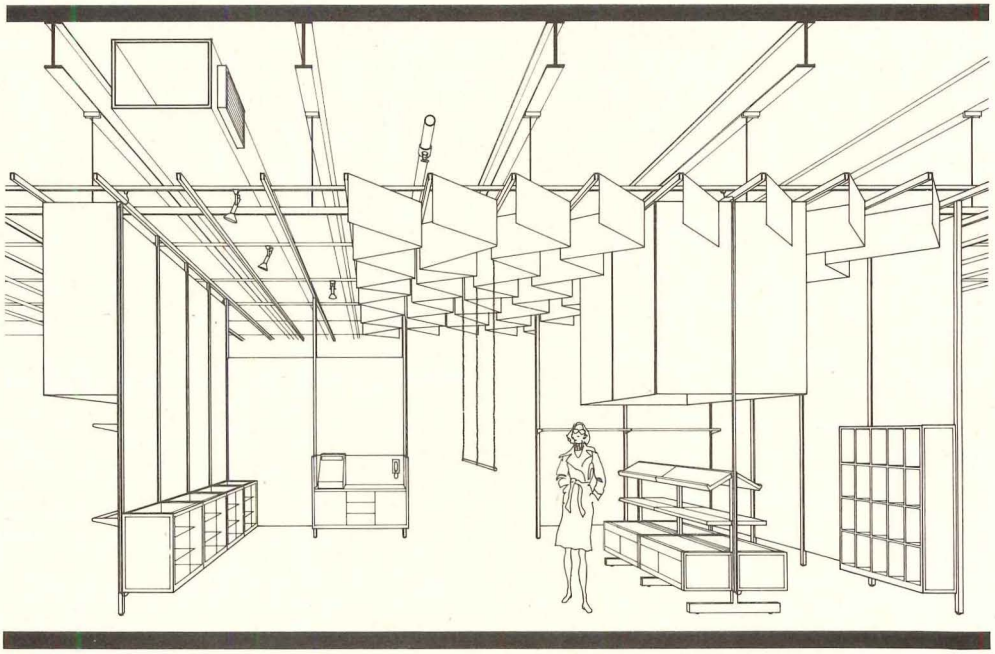
Escalators cascade through the open court on an angled line from topmost level to the lowest floor. Around the court or "street" are boutiques, shaped to the particular kind of merchandise offered and open to the "street." The boutiques are small, defined and intimate, but the over-all effect is an easy elegance, a degree of informality but never casualness. Fine materials play an important part in the quality of the store: marble and bronze are the principal materials used—marble for floors of general use (selling areas are carpeted) and to enclose escalator wells, bronze to cap and trim horizontal planes.

Two materials—marble and bronze—are used as a common denominator throughout the store, but color identifies specific departments and kinds of merchandise: warm neutrals make a quietly elegant background for accessories on the first floor; deep, rich colors on the second floor suggest high fashion; strong bright colors against a neutral gray background on the third floor are the mark of young shoppers. The men's department on the first floor (top left) is done in brown tones; the third floor restaurant (top) is dramatic with mirrors, many small lights and lots of red; the colorful wares of Marimekko on the third floor (center) are in wood cases; the third floor street is display area and lounge.



omprehensive system r store fixturing ves store unusual exibility in interior rangement and merchandising

The drawing below diagrams the basic elements of the OMNIPLAN system, which concentrates all necessary services, all the means of organizing and subdividing sales space, and provides for the hardware accessories used for showcases, hang rods, display islands and tables, cash registers and other merchandising devices. Baffles screen the above-ceiling grid. All components of the system are interchangeable, so that there is an important degree of flexibility. Essentially, the system coordinates the building shell and the interior of the store, and is applicable to both new and remodelled space.



Bill Cox

Miller's West Town, a department store in a pping center in Knoxville, Tennessee, the nitects, OMNIPLAN Architects Harrell + milton, used a comprehensive fixturing sys- that coordinates dimensionally the shell of store building—new or existing—with the eriors to provide a consistent but highly flex- relationship among all facets of the store. ce all components of the system are of mod- design, they are interchangeable.

Three new stores for Miller's, now in de- opment by the same architects, will use the tem even more fully than the West Town e has done. In this first of their new stores, ler's was hesitant about giving up some ventional store practices—partitions are ndard metal studs and gypsum board, elec- al outlets are in floors, floor coverings nge from department to department—but ce the store has been in operation, it has nd that the flexibility that it wanted was atly restricted by the inflexibility which re- ed from these decisions.

One of the first tests of the store's flexi- ty came in the last days before its opening. cause changes in merchandise and in cus- ner demand occur with great rapidity, much he planned layout for fixturing had become olete between completion of design and ar- l of fixtures. With a minimum of time and ible, the sales staff reorganized the area, re- ed the configuration of the fixture compo- ts, and opened the store with the latest s approach.

Frank S. Kelly, senior vice president of OM- AN Architects Harrell + Hamilton, was ject architect of Miller's West Town, and es this vivid account of his firm's answer to ler's request for a store that would be "a ible sales tool, responsive to new directions nerchandising and in merchandise:

"Because department stores are usually lgeted and designed in two parts—building ll and interiors—the potential of the store as ales tool, and its esthetic qualities, are ely a factor of how well the two parts work ether. Often, they fail to support each other sometimes, over the life of the building, can even be in actual conflict.

"What we have tried to do in our OMNI- system is to overcome this failure and sible conflict. Using a 2-foot-6-inch plan- grid, we have coordinated dimensionally elements of the shell (columns and walls) the interiors (fixtures, partitions, decor, plays). And we have provided, in the

process, not only consistency throughout the store but the kind of flexibility that stores—especially today when things change radically in short periods of time—require to stay abreast of new developments.

"Three aspects of the system account for the high degree of flexibility:

1. The dimensions of every display component are based on a multiple of the modular grid. Each component fits into any location of the store, and is interchangeable with every other component.

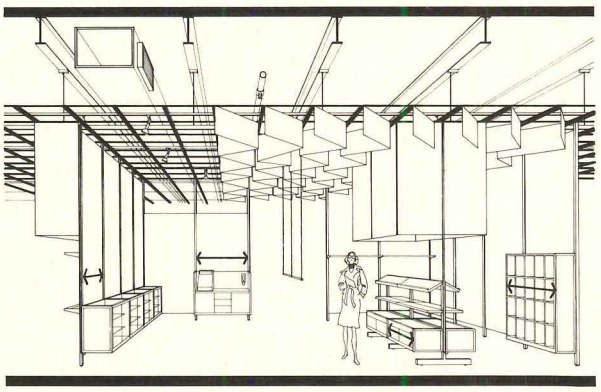
2. Components are connected to supporting standards with the same detail, so that any component can be hung from any standard in the store.

3. The same white plastic laminate finish is used on every component. Large components can take interchangeable decorative panels, but most surfaces of each component are clad in white so that they can be used in any sales area without consideration of color scheme or decor.

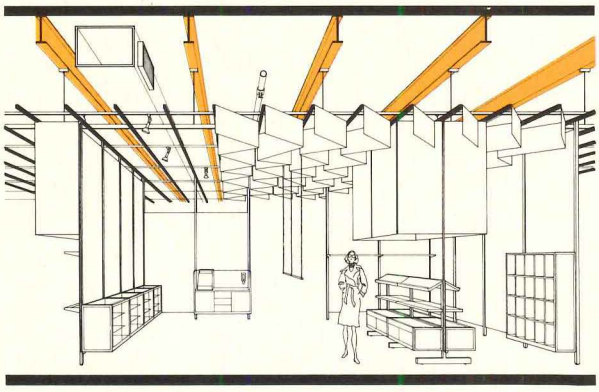
"The OMNIPLAN Ceiling System is designed as the interface for the building shell and the interior. It is a grid of structural steel channels hung from the building's frame—at Miller's this is a composite of fireproofed steel beams and concrete slabs. From the grid are hung aluminum baffles, painted white, which give the overhead plane a rich texture and openness that make it seem higher than it is.

"The Ceiling System is an integral part of the Fixturing System which also is based on the 2-foot 6-inch grid. This is both a system of related components from which fixtures and partitions of many configurations can be assembled, and also a collection of completed fixtures. Fixtures are made by hanging display components (partition panels, shelves, drawer units, show cases, cash desks) on hang rods or supporting members called standards. There are six kinds of standards, all fabricated from steel tubing and designed to provide for every fixturing need, from formation of complete display islands to individual show cases. In all, almost 100 components were developed. All are described in a catalog from which Miller's may select whatever it needs to assemble fixtures for new merchandise arrangements.

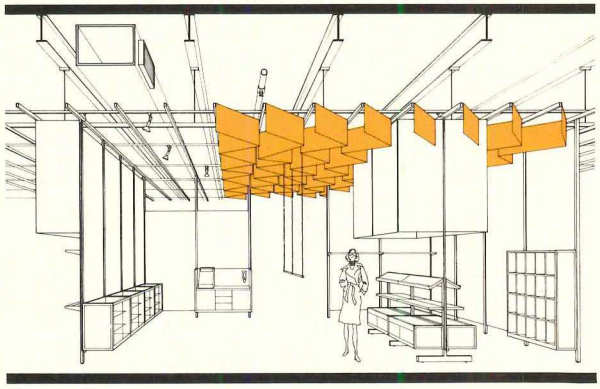
"None of our OMNIPLAN components disappear behind the merchandise but instead are clear forms which provide a framework or background against which, or within which, the merchandise can be seen better. Neither merchandise nor fixtures dominate; they work



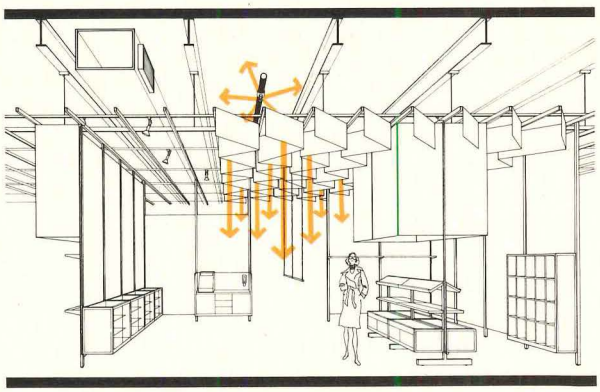
Dimensional organization
The elements of the building shell (umns, walls) and the interior (fixtu partitions, decor, display) are dim sionally coordinated to make a fl ble, consistent relationship among facets of the store. Such element mechanical, electrical and comm cation systems, however, are not of this interrelationshp and can be signed independently. Dimension display components are based o multiple of the modular grid and interchangeable.



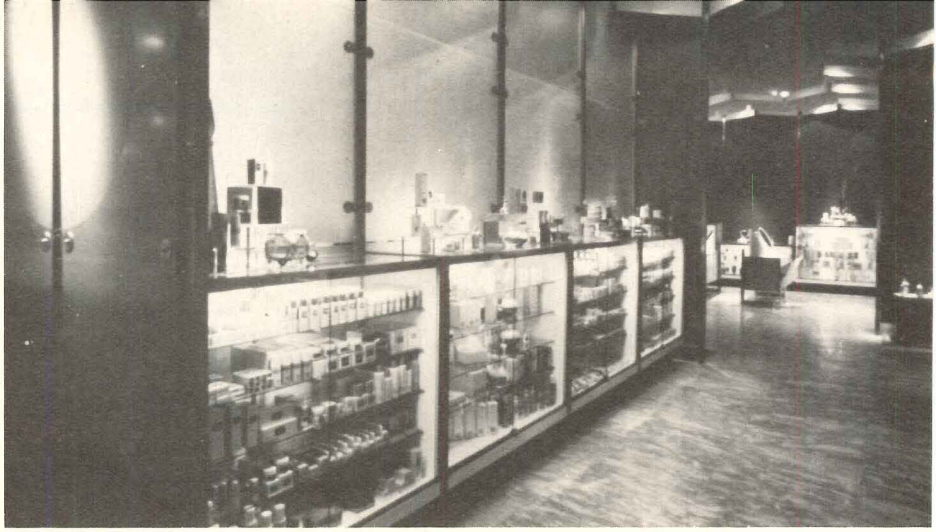
Structure
The ceiling system is suspended rigid steel rods from the building st ture. The type of structure is of no ter, provided that it is suited to porting the concentrated loads wh result from the system's use. (proofing, if required, must be de oped by the structure itself, not by ceiling of the building.) The ce system is the interface between shell of the building and the fixt and displays.



Ceilings
The ceiling system has two main p a structural framework of steel c nels laid out on the modular grid hung from the building's struc frame, with the channel facing d to receive connections for fixtures displays; and a system of painted minum baffles, hung from the which screen the mechanical eq ment from the sales space below.



Sprinklers
Sprinkler heads and piping are cealed above the baffles. The ba do not interfere with the water d bution pattern, and are easily acc ble since the ceiling grid is open below.



Frank S. Kelly photos

Bill Cox

together to create effective sales displays.

"Miller's interiors were originally budgeted for standard fixturing, but using the OMNIPLAN system, they were completed for less than the anticipated cost.

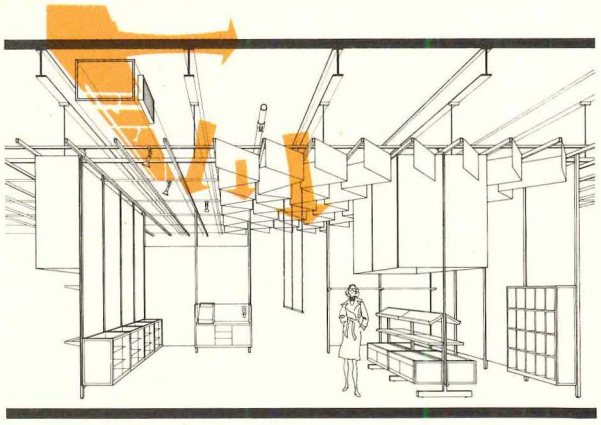
"From our experience at Miller's we have found no direct relation between the cost of store interiors and the use of our OMNIPLAN system. By modifying only the details and the materials, while retaining all the basic functional concepts, the cost can be geared to either high or low budgets.

"Department stores function, in effect, like theaters: they present hundreds of small vignettes which tell the shopper what is for sale and elicit his or her interest. Many merchants have recognized this resemblance, but they have not gone beyond the creation of the show to prepare the basic tool of the theater, the stage. The building and fixtures at Miller's West Town are a stage. The decor and merchandise are the sets and performers. The 'stage' is designed to provide the environment and equipment for any merchandising performance, from a fur coat to a pressure cooker. The capabilities of a theater were developed at Miller's West Town through OMNIPLAN's comprehensive fixturing concept.

"From a designer's point of view, the system has worked well, in terms of maintaining the intended character of the store. With the frequent changes that department stores normally must make, it is quite discouraging to a designer to visit one of his projects after it has been open for a while, because of the remodelling that has been done—often quite amateurishly. The use of the system components provides a visual framework which gives order to almost any change, even when done less than professionally. Miller's looks almost as good today as when it opened, and we have not been involved in any of the changes. This may not be ideal from a purely design point of view but it is very unrealistic to think that any store will return to its original designer every time it needs to move a wall."

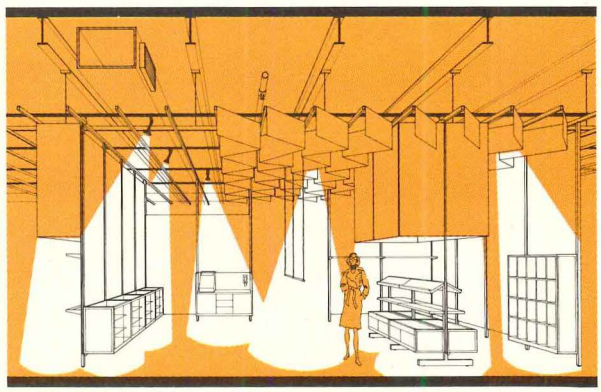
In the new stores, new in design, there will be no fixed interior partitions, and one floor covering will be used throughout the store. The OMNIPLAN System will be used to its designed capability.

MILLER'S WEST TOWN DEPARTMENT STORE, Knoxville, Tennessee. Architect: *Omniplan—Frank S. Kelly,* project architect; *Eann Thut,* interior designer. General contractor: *Anton Waldmann Associates.*



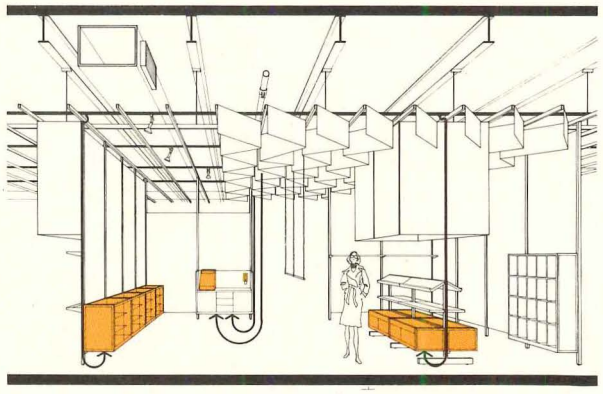
Mechanical Systems

All ducts and registers are loca above the baffles and are thus c cealed from sight. Air is distribu horizontally above the ceiling. The turn is non-ducted. The space ab the ceiling grid acts as a plenum, everything in it is painted black minimize the possibility of its be seen: ducts, piping, electrical and t phone wiring, speakers and secu devices.



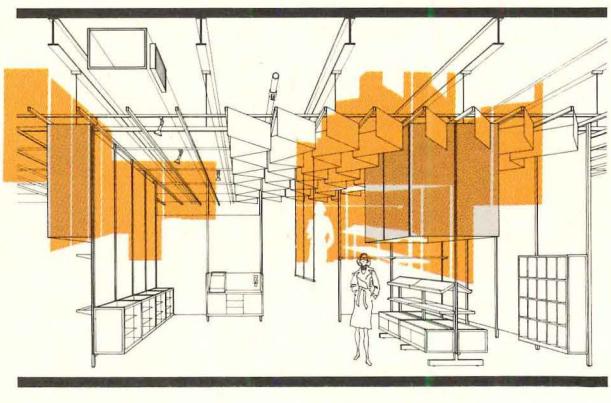
Power and communications

Since all electrical wiring carries l voltage, and since the ceiling is op all wiring is run exposed, without c duits. Wiring from telephones, sou systems, and point-of-sale data p cessing equipment runs in the plen above the ceiling grid and the ma white baffles. Power drops from electrical system above the grid along ceiling-to-floor fixturing sta ards, act as extension cords from busways, and can be located a where on the grid.



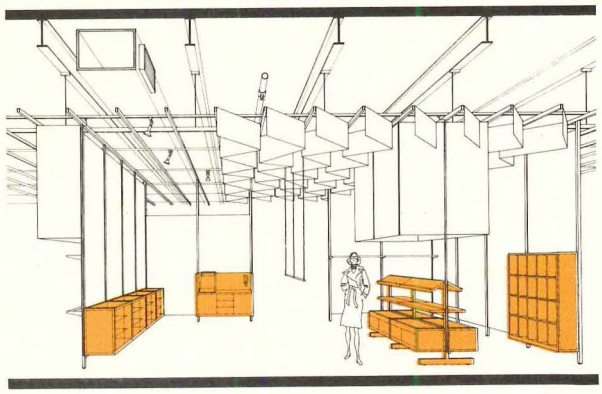
Electrical distribution

Electrical busways, run above the c ing grid, provide power for both lig ing and floor fixturing. Lighting tures, attached directly to the ceil grid members, are so located that a point on the sales floor can be illu nated. There is no general illuminat in the store. The incandescent syst is efficient for the purposes of the s tem and uses only 3.7 watts per squ foot of sales area. Wiring is dropp through a steel tube from the electri busway to fixturing on the sales flo



Spatial definition

Sales spaces and displays can be fined in several ways. Forms of varie sizes, configurations and materials c be suspended from the ceiling grid; partition panels, supported by floor- ceiling standards which bear on floor and are bolted to the ceiling g can be used. Partitions may be fa cated of any light material—wo veneers, fabrics, vinyls, acrylics (tra parent and translucent)—up to t inches in thickness, and can be hu at any height.



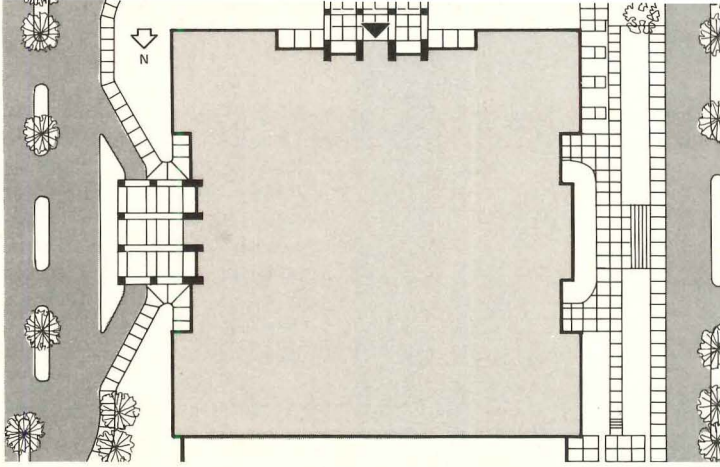
Fixtures

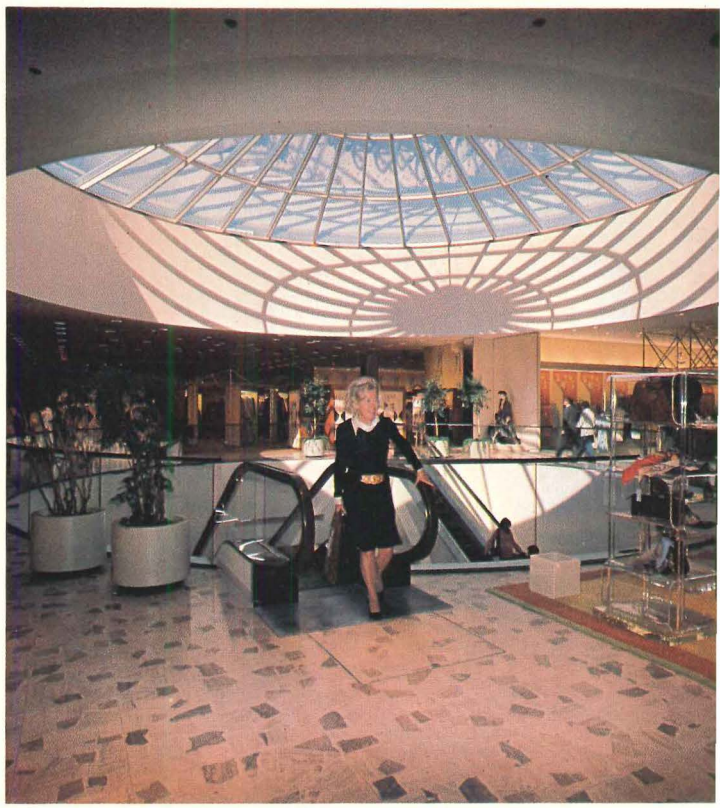
All display components, includ showcases and other types of fixtur are of modular design so that th work with the system's other pa They are supported on the floor- ceiling standards. Floor fixtures of a size and configuration can be asse bled from the components and standards. Power drops from the b ways supply wiring to floor fixtures that they can be internally illuminat Display components are neutral color, but end panels can be coor nated with specific decors.

At Miller's West Town, OMNIPLAN's system has had a successful initial use, and has put to almost constant use the flexibility inherent in the system. Departmental changes—expansion or contraction—have been effected with a minimum of labor and no skilled craftsmen, and with little interruption to sales. The system allows a surprising variety in visual effect, both in decor and in merchandise display, thanks to the components of the system which make possible both hanging and floor display fixtures.

Bill Cox photos

Rotunda and dome give elegant distinction and spatial excitement to specialty store in large shopping center



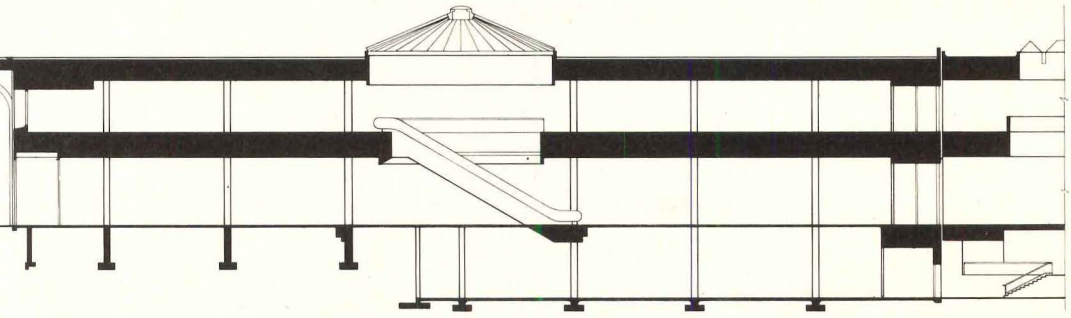


The store that wants to locate in an existing shopping center faces the problem of fitting its building into an established architectural concept with which it may not agree—for purely architectural reasons or because the design is alien to the store's identity—but with which it must conform. In such cases, the store and its architects rely on interiors of exceptional concept to create an attraction strong enough to overcome what is, at least initially, the handicap of the non-identifying exterior.

At the Frontenac Fashion Center in St. Louis, a highly desirable retail location for a store of the calibre of Neiman-Marcus, the prevailing (and mandatory) design character was wholly out of character with the Neiman-Marcus image. The exterior of this new store conforms to the vocabulary of the center, but inside, with no impediments to design and expression, what the name Neiman-Marcus stands for is dramatically manifest. The elegant high fashion merchandise for which it is known is displayed with sophistication that enhances both the goods to be sold and the customer who comes either to buy or to look.

At the center of this essentially square building is a breathtakingly handsome "shaft of space," topped with a circular dome of mirror glass which daylights the area and much of the second floor. At night the mirror surface reflects the activity below, so that it is at all times a spectacular part of the store's effective environment. Since this shaft is also the space through which the escalator runs, it becomes a certain and unavoidable orientation for circulation between floors. Around the central "super space" are departments and boutiques with a variety of fixtures for display, with individual manners of setting off their merchandise from neighboring displays.

Although the central court or shaft appears to be an opulent use of space, it is cannily put to work as the location of the escalator circulation for the store, so that it is, in effect, considerably less a luxury than a handsomely executed necessity. Indeed, handsomeness is a key word throughout, expressed in the quality of the materials used, in the colors which differentiate departments and floors, and in a very special way, in the art works which owner Stanley Marcus has placed, as he has in his other stores, throughout this store. The works range in type from sculpture to needlework, from painting to macrame, and their subjects are equally varied. Displayed as part of the store's decor, and never as an exhibition, these



Besides the value of the mirror-glass dome as a focal point and an exceptional attraction for the store, the dome and the light it admits by day to the center of the building provide immediate orientation from any point on either floor. Not only is this two-story shaft of space both dramatic and luxurious, but the continually changing light, from morning to night, is itself an effective aspect of the store's decor. What it reflects from below at night again changes the effect of the interior. The store is large in area but only two stories high above ground, so one escalator only is used to connect the two principal floors.

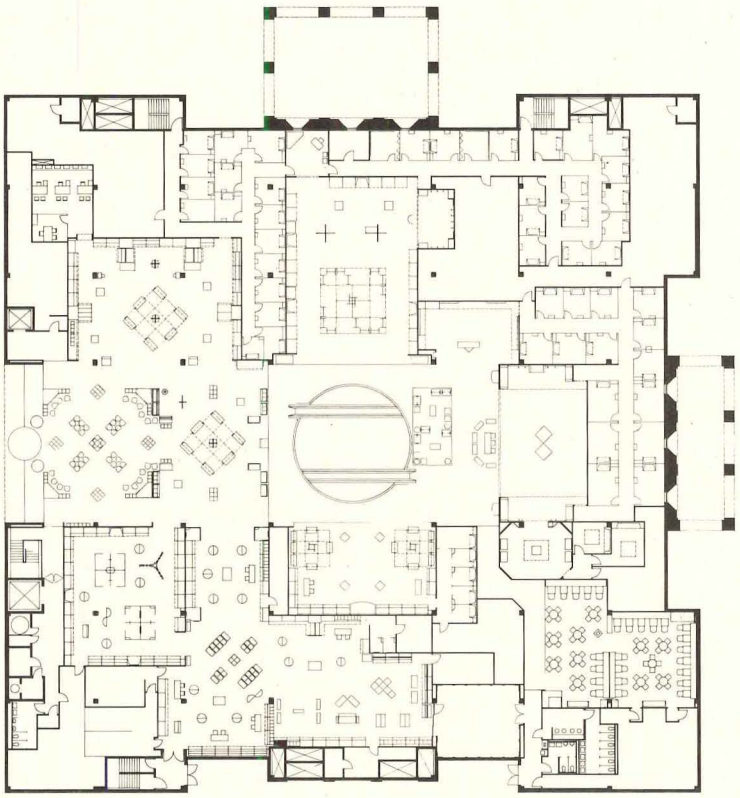
Helfer photos

works add greatly to the quality of the store's environment.

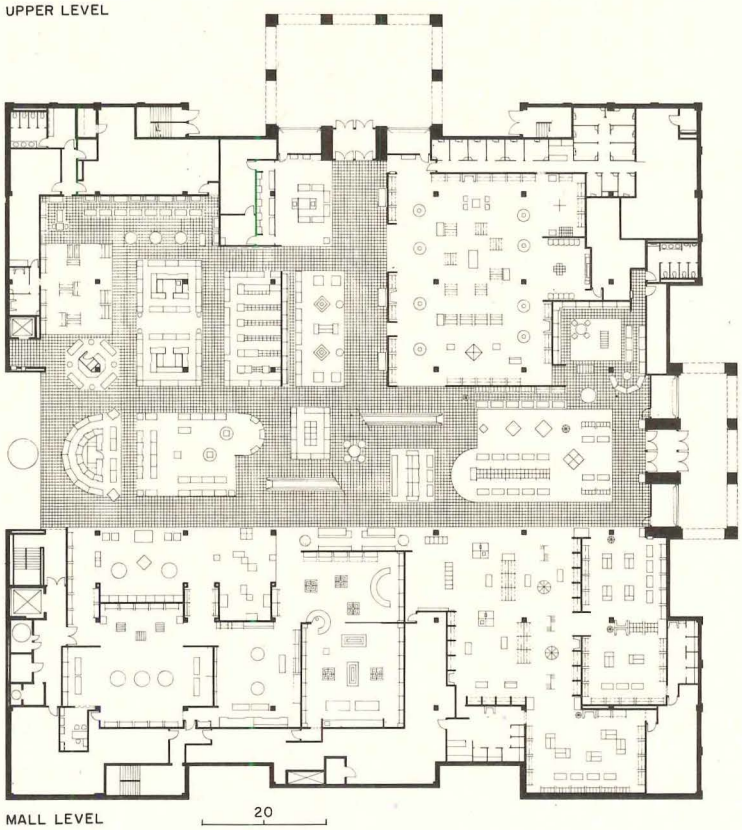
The materials used throughout are not only embellishment of the store's interior, but are used with a subtle degree of functionalism: precast travertine terrazzo is used to state graphically the traffic pattern on each floor, whereas carpeting is used in each departmental sales area. The travertine terrazzo, made in two shades of beige, in Italy, in pieces large enough to emphasize the scale of the spaces in the store, provides an instantly recognizable identification for each boutique or shop, and the carpeting, in special colors developed for this store, invites the customer into the sales area. In certain departments—the second floor fashion department, for instance—custom designs are made for both carpeting and for the printed fabrics used on the walls. Elsewhere, stock designs in special colors, clear and fresh, are used. Acrylic sheet materials are used on the walls of the children's department. Where wood is used, it is left natural.

The design team that worked out the concept for this store represents the coordination of two design offices: the architectural firm and the interior design firm which is its subsidiary, an unusual conjunction but one which worked well together to produce a harmonious integration of space, color and materials. Long-continued studies of the merchandising field have led to participation by the interior designers in the decisions made by the store management on the location and juxtaposition of departments as well as on the design of the interiors. Since Neiman-Marcus stores have a policy of not identifying by signs either departments or merchandise, the interrelation of design and merchandise display is of particular importance in the successful operation of the store.

NEIMAN -MARCUS, Frontenac Fashion Center, St. Louis, Missouri. Architect: *John Carl Warnecke, F.A.I.A., Architects—A. Eugene Kohn, partner-in-charge; Emilio Arechaederra, director of store division; Guillermo Loos, project director; Laurence Goldberg, project manager; Stanley Abercrombie, Joe Owczarek, designers.* Interiors: *Eleanor LeMaire Associates, Inc.—Robert A. Malderez, design director; Frank J. LaBianca, project designer; Henry J. Wilson, Jim Robertson, Cindy Collins, staff designers; Edward J. Agostino, managing director.* Engineers: *Harald Nielsen & Associates, Inc.* (structural); *Magill-Cloud Engineers, Inc.* (mechanical/electrical). Lighting consultant: *Douglas Baker.* Contractor: *Gamble Construction Company.*



UPPER LEVEL



MALL LEVEL

et elegance where elegance is
ed for characterizes the shops and
artments in Neiman-Marcus' St.
s store. At left is the men's depart-
t on the main floor; near right is
jewelry department, also on the
n floor, where sculptor Ernest
va's stanless steel "Gox" is on dis-
. At far right is the girls' depart-
t, adaptable to the addition of
r by display designers, while re-
ng its basic clarity of plan and de-
The Zodiac restaurant (below) on
second floor is basically a simple
ce made dramatically exciting by
n tubing and plexiglass as an at-
tion to its remote corner location.

Three-story court is dramatic focus for department store in a Southern California regional shopping center

Marvin Rand p

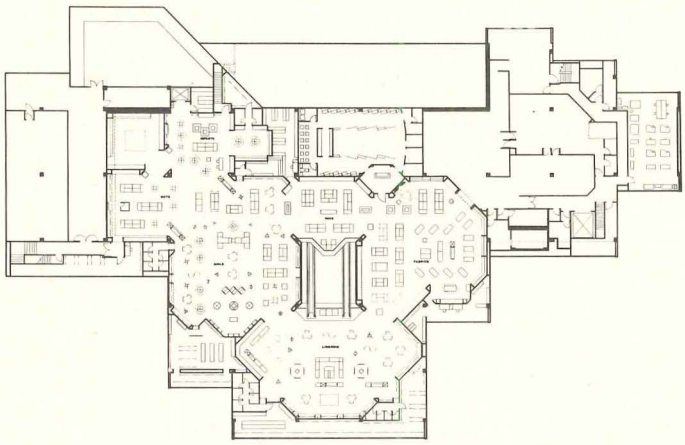
Bullock's is a chain of department stores in Southern California, most of whose newer buildings are located in shopping centers. This store in South Coast Plaza, a regional shopping center in Orange County, is in the city of Costa Mesa. It is the anchor store for the center and follows, in its exterior form, the precedent set by one of Bullock's earlier stores. Its walls are of ribbed weathering steel, with light-colored brick for trim and as a frame for entrances and a facing for some walls. Projecting elements break the length of the building and give it a distinctive form, something the client wanted as an identifying mark in the center.

The interior makes the most of the building's height by providing a three-story open space at the center. On each side of this great space are the escalators, with a dramatic view of the space and the several landings. The ceiling over this space is jet black and is studded with hundreds of clear-glass filament lamps set in crystal globes, and suspended at different distances from the ceiling.

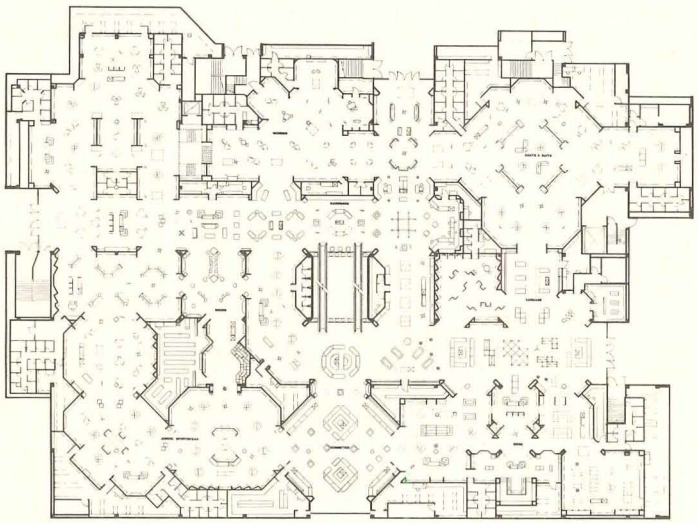
General lighting in the store is minimum, provided by incandescent fixtures set in dark ceilings. Accent lighting from spotlights on a comprehensive system of tracks is used for specific merchandise and to focus on certain areas of the store.

Materials and colors for the interior were selected for their appropriateness to the casual living of the Orange County area: brick and rough sawn wood, earth colors, textured fabrics, and living—not plastic—plants. In the court, for instance, the escalator runs are faced with rough wood, as is the bow on the third floor which projects over the court; the two sides of the court are faced with heavy-textured brick set both flat and at angles. The floors at each landing are paved with octagonal and square tiles, and planters are effectively placed near the escalators. Carpet is used in the selling areas in colors appropriate to the merchandise: brick red, gold, green, blue, brown, red. Walls are treated in several ways—by painting, by use of graphics, and in the Fashion Gallery, silk damask as a wall covering. The architects designed all the interiors as well as all the graphics for the store.

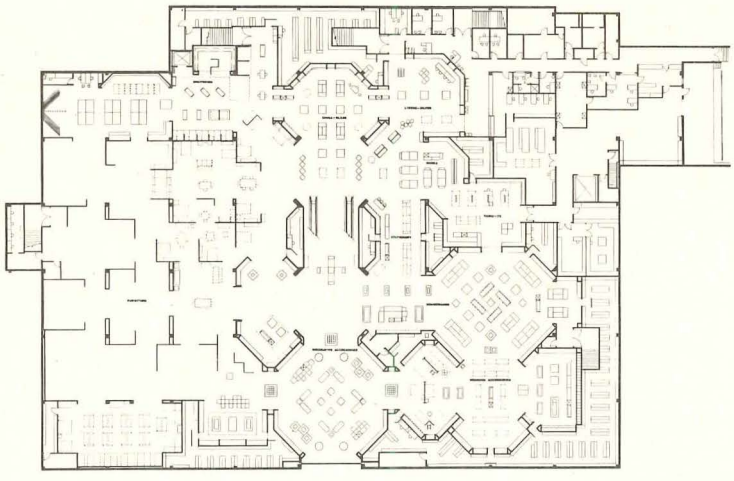
BULLOCK'S SOUTH COAST PLAZA, Costa Mesa, California. Architects, interior designers and graphics: *Welton Becket and Associates.* Engineers: *Welton Becket and Associates* (structural); *Herman Blum Consulting Engineers* (mechanical/electrical); *LeRoy Crandall & Associates* (soils). Landscape architects: *Bridgers, Troller & Hazlett.* Contractor: *C.L. Peck.*



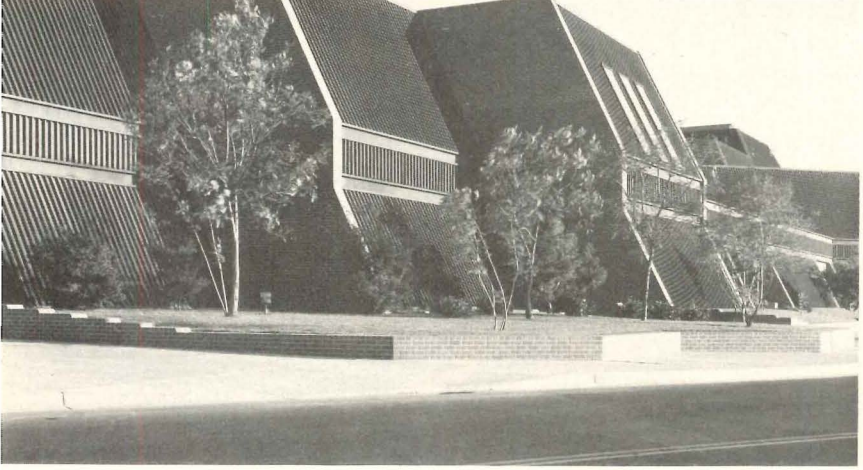
THIRD FLOOR PLAN



SECOND FLOOR PLAN



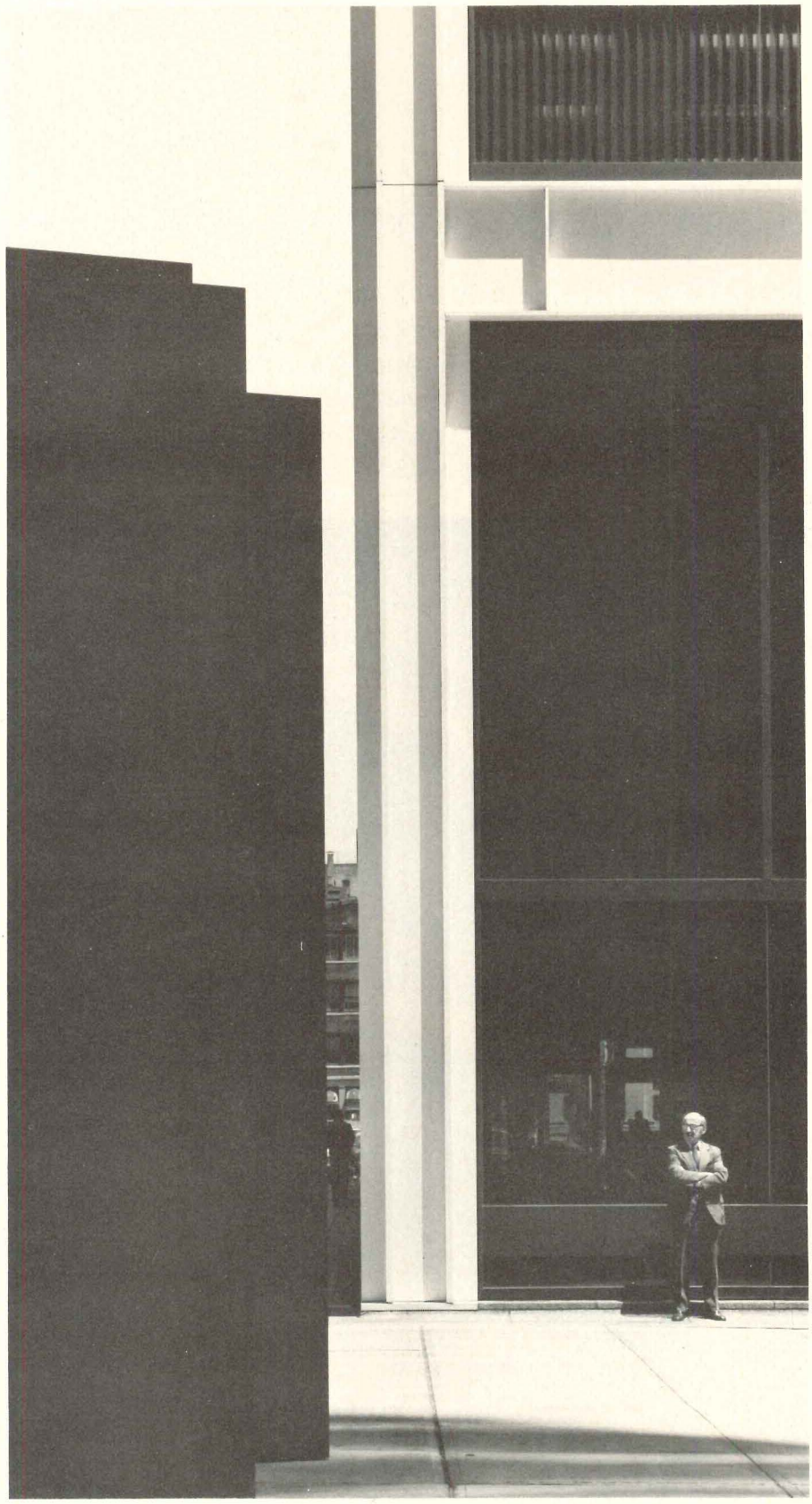
FIRST FLOOR PLAN



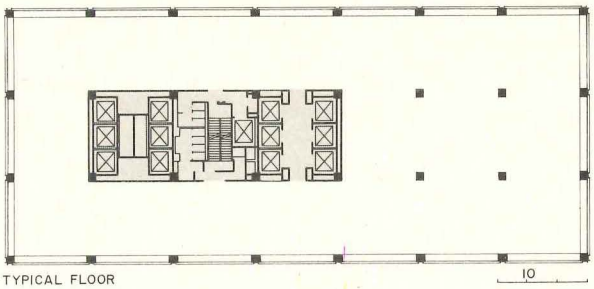
The escalators, which serve the second and third floors, run through a dramatic three-story-high open "court" topped by a black ceiling studded with hundreds of clear-filament clear glass lamps suspended at different distances from the ceiling. The rough-cut wood paneling on the end walls and on the sides of the escalators, and the heavy-textured bricks, set both flat and at angles on the side walls of the "court," contribute to the informal environment sought by the clients for their store in this location. At each landing the floor is set with highly polished octagonal and square tiles in a sandy beige color.

An expressive skin-and-bones facade done with utmost care

While it is not altogether true that good design costs no more than bad design, neither need it cost that much more. I. M. Pei & Partners' refined and sprightly design for 88 Pine Street cost about $3 a square foot more than similar investment office buildings, and returns excellent design value for the money. Its crisply detailed curtain wall, its glittering stainless-steel lobby, above all, perhaps, its brilliant whiteness, raise it well above the esthetic standard of most of Manhattan's spec offices.



The finely articulated cage that encloses 88 Pine Street poises near the edge of New York's East River, its slender elegance providing a foil for Wall Street's weightier buildings and a backdrop for the schooners and clippers moored at South Street Seaport. Elevator core is offset to give large bull-pen area at one end of the floor.



Downtown Manhattan, where dark, massi towers crowd narrow streets and even n rower sidewalks, challenges the architect who aspires design a building of distinction. The economic realit of the highly competitive office rental business place f ther constraints on the design of speculative offices.

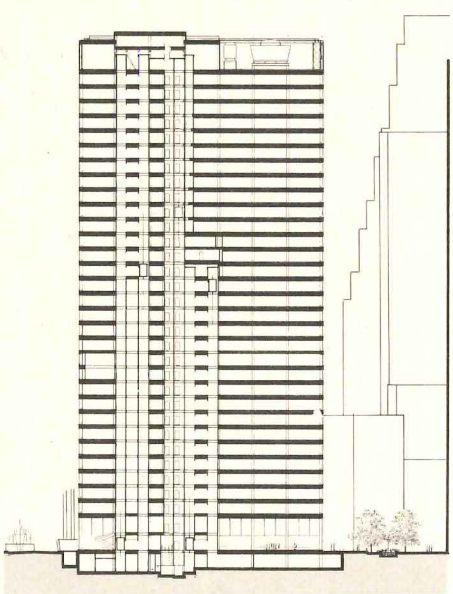
At 88 Pine Street, owner Morley Cho was willing pay a premium for quality—within limits, of course. B even when the owner is willing, there are fairly f ways to spend extra money. The floor plan for comm cial rental space is standard, based on open loft spa that will be divided up and finished by tenants unide fied at the planning stage. Pei's design varies this sta ard plan somewhat by locating the elevator core c center. This arrangement anticipates the needs of W Street tenants—brokerage houses and the like—wh operations require large, unpartitioned areas. The asy metrical Pine Street plan allows small private offices one end of the floor and three bays of bull-pen space the other. (Above the 18th floor, where one eleva bank terminates, this space expands to four bays.)

Essentially, however, the structure of the buildi and the services provided to the tenants—hvac, ele tors and so on—are conventional, meeting the fa high standards that have become normal in the N York office market. The building's personality had to in the end, declared in public spaces, such as the pla and the lobby, and in its visible exterior.

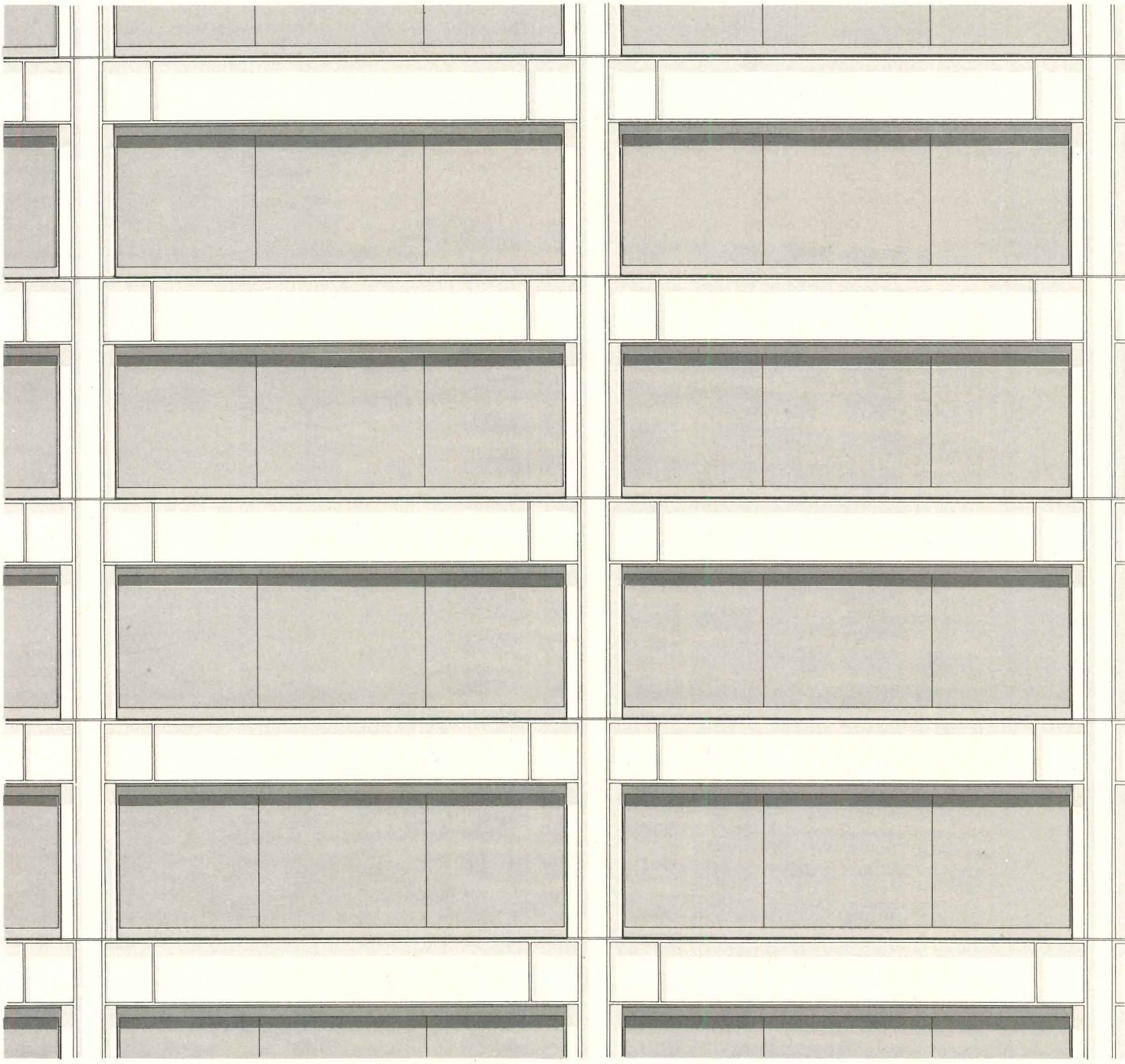
Plazas, though nowadays also standard equipm for New York office buildings, are particularly welco in the downtown area, where they provide needed op space for pedestrians as well as sight lines for otherw obscured buildings. And the handsome lobby, with curved surfaces of polished stainless steel and its C nese-red elevator cabs, gives what the architects call touch of theater" to the unostentatious building.

Ultimately, however, it is that whiter-than-wh curtain wall, with its refinement of proportion and d tail, that sets the building apart from less inspired e amples of its type.

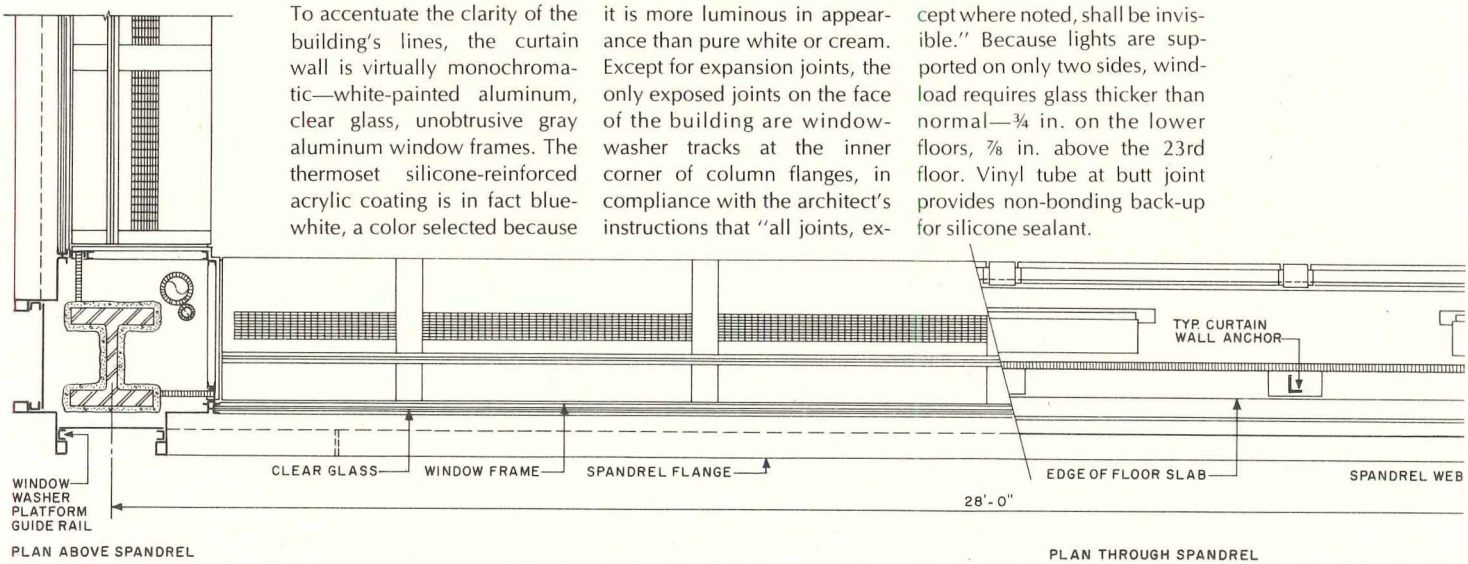
A major consideration in the design of the curta wall was that the building should appear clean, light a transparent as a foil to its neighbors, some of which a pretty undistinguished. A short-lived attempt to devise



ge Cserna photos, except as noted

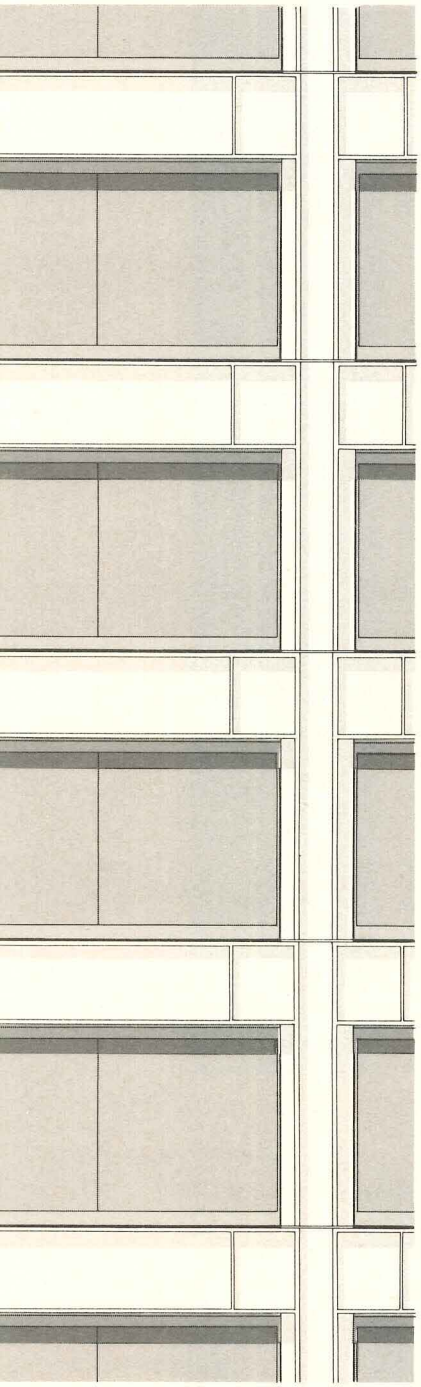


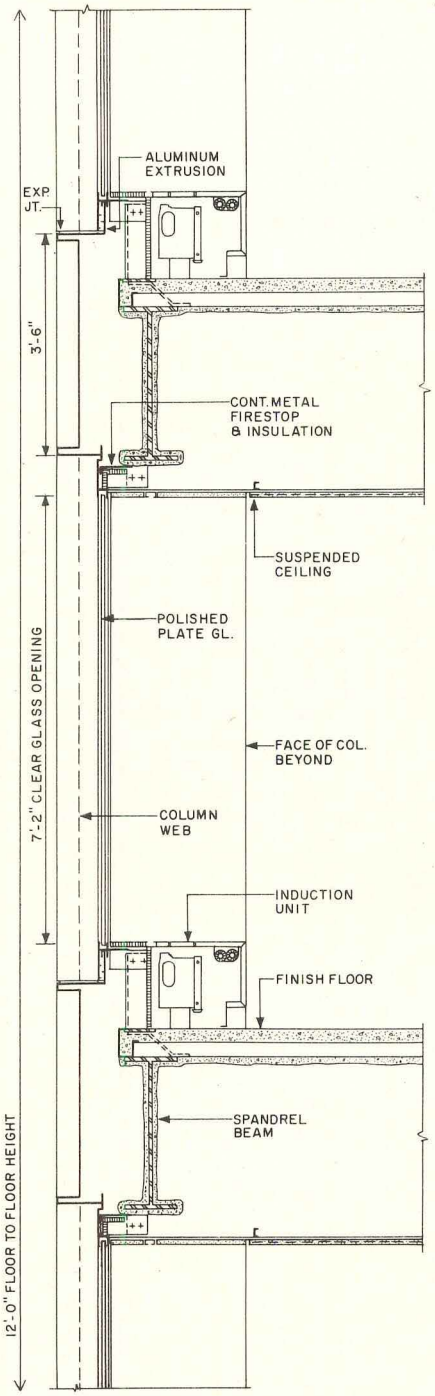
To accentuate the clarity of the building's lines, the curtain wall is virtually monochromatic—white-painted aluminum, clear glass, unobtrusive gray aluminum window frames. The thermoset silicone-reinforced acrylic coating is in fact blue-white, a color selected because it is more luminous in appearance than pure white or cream. Except for expansion joints, the only exposed joints on the face of the building are window-washer tracks at the inner corner of column flanges, in compliance with the architect's instructions that "all joints, except where noted, shall be invisible." Because lights are supported on only two sides, wind-load requires glass thicker than normal—¾ in. on the lower floors, ⅞ in. above the 23rd floor. Vinyl tube at butt joint provides non-bonding back-up for silicone sealant.

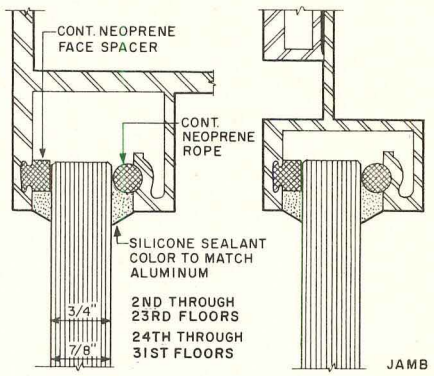


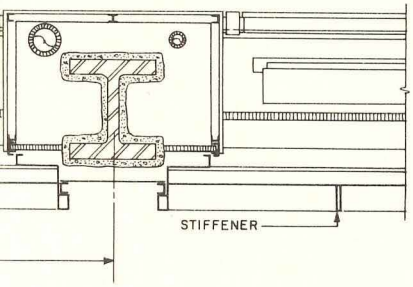
PLAN ABOVE SPANDREL

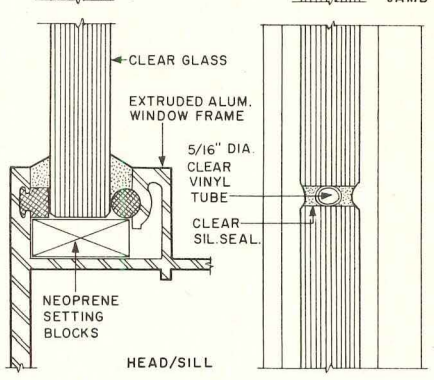
PLAN THROUGH SPANDREL











steel wall that would work structurally was scrapped in favor of aluminum cladding that would trace with some accuracy the shape of the rigid-frame structure. (The stiffeners on either side of the columns do not reflect the structure behind, but were added to support the 26-ft spandrels as they were slung into place. They also add greatly to the sought-after play of light and shadow on the face of the building.)

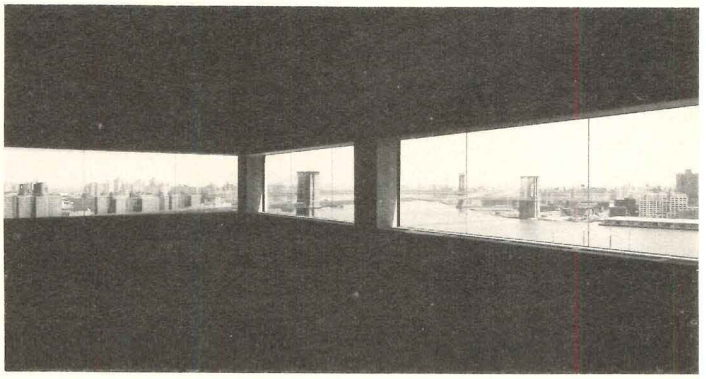
The aluminum cladding is "painted" with baked-on silicone-reinforced acrylic enamel, the first such application of this material on a metal wall of this size. White was chosen partly to contrast with the building's somber neighbors and partly to evoke images of ships and shipping: the site is near the East River and the South Street Seaport Museum, and the owner has considerable maritime interests. (Mr. Cho was the last owner of the liner *Queen Elizabeth,* whose salvaged bronze initials compose one of the plaza's sculptures.)

The voids formed by the curtain-wall members are filled with glass—three lights, butt-jointed with silicone sealant, to each bay. From the outside, this 26-ft expanse of glass imparts the transparency that was one of the guiding design principles; at the same time, the absence of mullions preserves a simplicity of appearance and suggests the flexibility of the interior space. From the inside, the windows offer sweeping views of East River traffic and the Manhattan skyline.

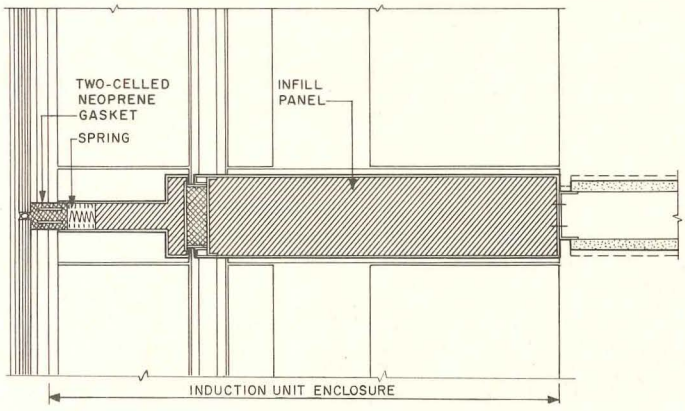
The visual simplicity of the curtain wall contradicts the amount of work that went into its design. The ability of Pei's firm to produce a building with such superlatively executed detail must be attributed, one feels, to a high degree of competence at all levels within the firm, as well as to a corporate capacity for taking pains. The early involvement of cost consultants allowed the architects to consider alternatives before making final design commitments. Subsequent studies of materials, shapes and connections engaged the attention of aluminum fabricators, coating suppliers and glazers, as well as engineers, and produced details of great exactness.

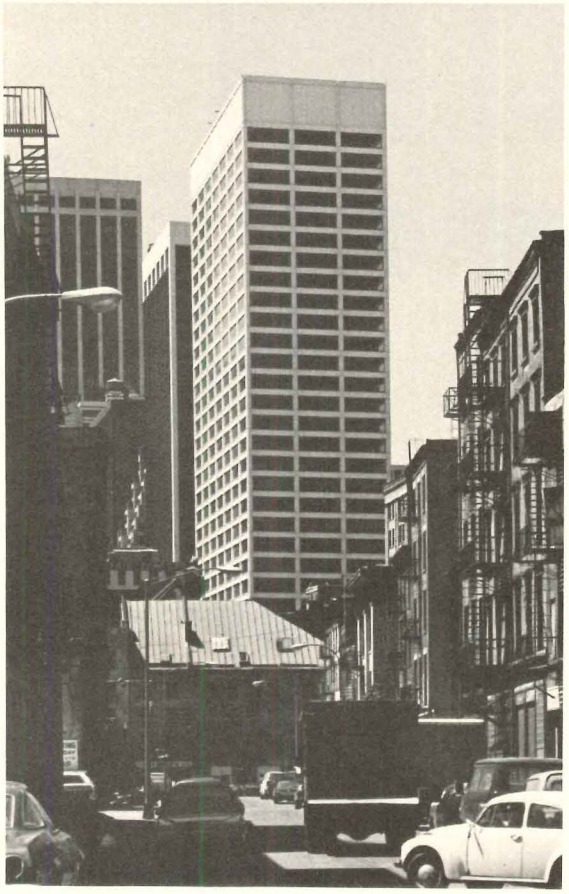
---

88 PINE STREET, New York City. Architects: *I.M. Pei & Partners—James Ingo Freed, associate partner-in-charge; Bernard Rice, associate; Robert Milburn, job captain; Michael D. Flynn, senior associate, and Stewart Barger, curtain-wall design.* Engineers: *The Office of James Ruderman* (structural); *Cosentini Associates* (mechanical/electrical). Consultants: *Diesel Construction, a Division of Carl A. Morse, Inc.* (construction management). Owner: *Orient Overseas Associates.*



Robert E. Fischer





Because the heavy glass tends to bow under its own weight, partitions for outside offices are provided with spring-loaded neoprene gaskets for a continuous fit at the window. Still another example of the meticulous attention to detail underlying the building's air of well-groomed assurance is the handling of the painted aluminum cornice: the six panels required for the infill are made to appear as three, repeating the proportions of the butt-jointed windows, with alternate hairline and revealed joints.

33 stories of long-life white: a dramatic first for DURACRON® coatings

ORIENT OVERSEAS ASSOCIATES BUILDING, New York
Architect: I. M. Pei & Partners
Curtainwall and window fabricator: Lupton Manufacturing Co., Aluminum Group, Olin Corporation
DURACRON Coating applicator: Aluminum Company of America

88 Pine Street" offers more of pecial interest to architects and uilders than distinctive beauty alone. his striking new addition to lanhattan's skyline is the first uilding constructed of aluminum urtain wall in a column-and-beam tyle. And to accentuate its face ramatically, it is also the first high-se finished exclusively in a white rganic coating. The result is a leaming study in light and shadows -a clean, carefree appearance that ill endure for years to come.

ll spandrel panels and column covers ere fabricated from aluminum xtrusions, then factory finished with aked-on DURACRON Super 800 oating. This silicone-fortified acrylic nish from PPG offers outstanding urability and color integrity. In ddition to excellent performance haracteristics, this DURACRON oating provides the savings of a moderately priced extrusion finish. For data on PPG color coatings, check Sweet's Architectural or Industrial Construction Files 9.10/PPG. Complete product information is available from Product Manager, Extrusion Coatings, PPG INDUSTRIES, Inc., Dept. 16W, One Gateway Center, Pittsburgh, Pa. 15222.

PPG: a Concern for the Future

Extrusion Coatings

PPG INDUSTRIES

See Sweet's Interior Design File. ®Registered trademark. TM a trademark of E.T. Barwick Industries, Inc.

MR. BARWICK, THE DOCTOR WILL SEE YOU NOW.

Setting up practice is a painless experience with Barwick. Because we make the most extensive selection of contract carpet and tufted wall coverings for every design imaginable.

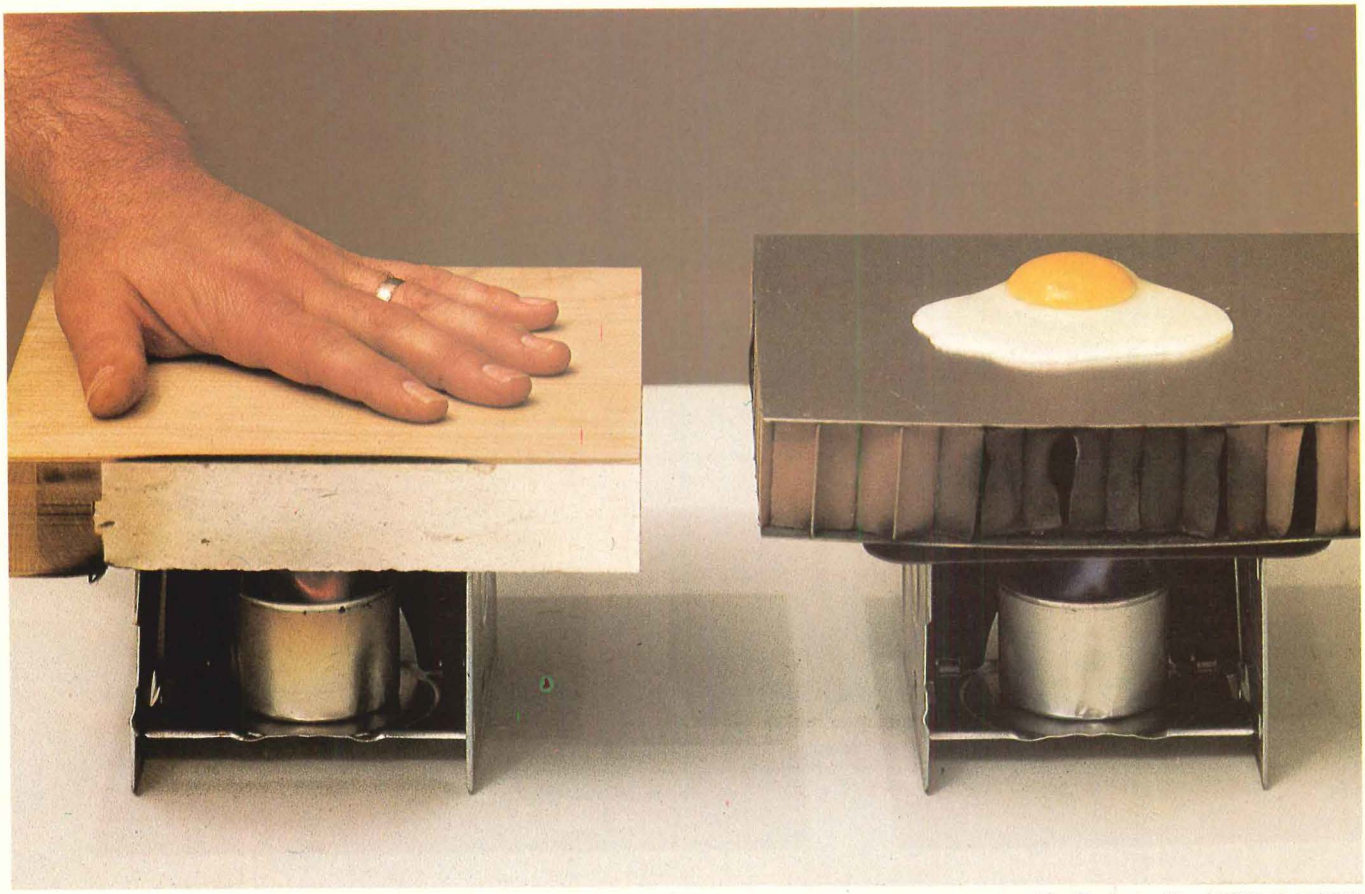
This is just one of them: "Headquarters,™" a 70% Creslan® acrylic, 30% P.V.A. textured cut-and-loop carpet with Brunslon® anti-static inhibitor added for additional protection. In 12 soil-hiding, heather-tweed colorations.

For more information on the carpet that meets the requirements of the job you're working on, call Bob Alpert collect at 404/455-6400, or write: Barwick Contract Carpet Systems, Chamblee, Ga. 30341.

BARWICK CONTRACT CARPET SYSTEMS™

A Division of E.T. Barwick Mills.™ World's leading maker of tufted carpets.

For more data, circle 55 on inquiry card



After 30 minutes: Wood 180° F., Metal 380° F.

The Fried Egg Test.

OR WHY A WOOD FIRE DOOR IS SAFER THAN A METAL FIRE DOOR.

Both wood and metal fire doors serve the same purpose.

To retard the spread of flames, heat, smoke and poisonous gases in a burning building.

However, each type of door differs greatly in its ability to transmit heat — which can also be a life and death consideration.

In a real fire, hollow core metal doors reach almost 1000° F. (after thirty minutes) on the side opposite the fire.

Wood fire doors, under the same conditions, reach a maximum temperature of only 250° F.

It doesn't take complicated testing to show you the difference. Two cans of sterno and a piece of each door will tell the story.

After 30 minutes, the metal fire door was hot enough to fry an egg.

The wood fire door was cool enough to touch.

The real question is — why install a fire door that can't be touched or possibly even passed? Or that will jam, buckle and maybe ignite materials on the side opposite the fire?

Play it safe.

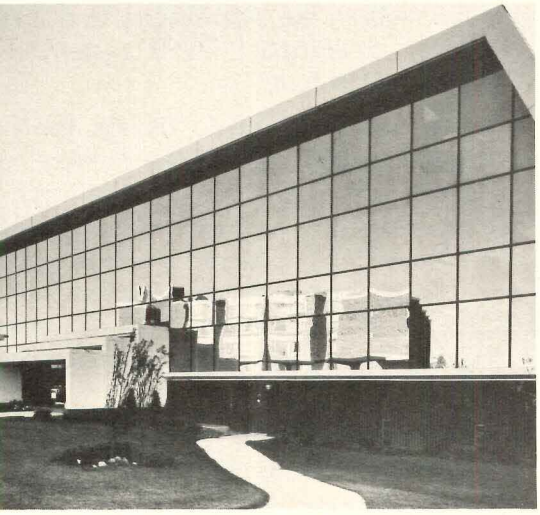
Send for the full story on safer, quicker, quieter, more attractive fire doors backed by a lifetime guarantee.

Write Weyerhaeuser Company, Box B-2478, Tacoma, WA 98401.

Weyerhaeuser

For more data, circle 56 on inquiry card

re information, circle item numbers on Service Inquiry Card, pages 189-190.



r anodized black gasket system announced

GS 580 possesses a num- features including a neo- thermal barrier between or and interior metal to re- thermal conductivity. n here on the Block Build- esigned by Donald L. Associates, the L-shaped framing assures that each light is supported by an integral aluminum ledge to prevent stacking. The system is joined at mitered corners with stainless steel clips so that the elasticity of the neoprene is not impaired. ▪ Amarlite/Anaconda, Atlanta, Ga.

Circle 300 on inquiry card

George Cserna

ow venetian blinds used on sloped windows

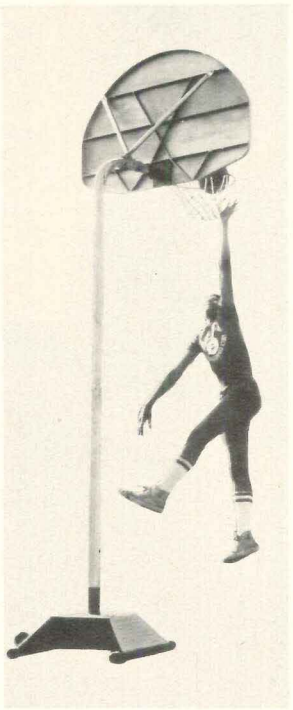
uinco Consulting Center umbus, Indiana, by James rt Polshek Associates fea- a special modification of company's 1-in.-wide blinds which holds them el to the window where it slopes at an 18-degree-angle (top). By using a self-compensating tension wire, tilt and lift operations remain unaffected by any slope. ▪ Alcan Building Products, Warren, Ohio.

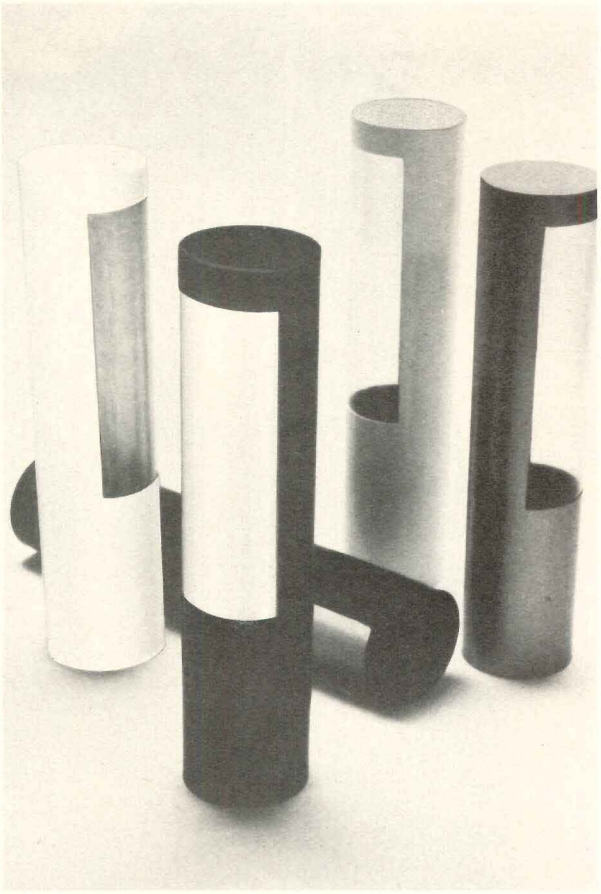
Circle 301 on inquiry card

Portable basketball backboard

An aluminum backboard guaranteed for life rolls by tipping onto two rubber tire wheels. The 370-lb unit is official size and glare-free with adjustable height from 8 to 10 ft. ▪ Sportsplay Products, St. Louis, Mo.

Circle 302 on inquiry card



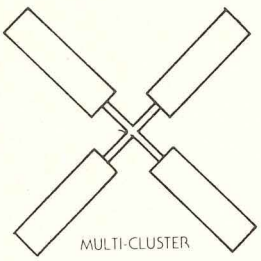


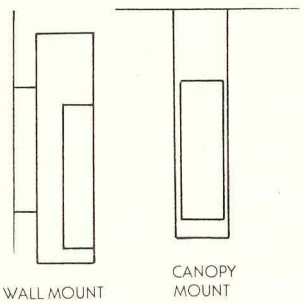
Outdoor luminaire for sodium and H.I.D. lamps

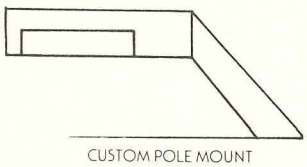
The company introduces the *Tubaloid* architectural lighting fixture for use with low-pressure sodium or mercury vapor lamps. Available in anodized or painted aluminum, for mounting on poles, walls, canopies or the ground as a bollard (see drawings), the unit has a polycarbonate clear or diffuse white lens that resists breakage, and installation is said to be fast and simple. For relamping and maintenance, only the captive end cap need be opened. Pole options include aluminum with satin ground finish or steel poles, prime painted. A single upsweep davit pole and custom poles are also available. Luminaire mounting height ranges from 10 to 20 feet above the ground, in 2-ft increments. The company claims the unit can be totally maintained without disassembling or electrically disconnecting it. Acrylic lenses are also available. ▪ Voight Lighting Industries, Inc., Leonia, N.J.

Circle 303 on inquiry card

more products on page 137







"A money-saving, space-saving DWV system." That's what Tyler RufWall™ delivered to the One U.N. Plaza Hotel.

United Nations Development Corporation, Owner

David Norkin, President of Norkin Plumbing Company, tells why RufWall was cho for the 10-story, 350-unit hotel portion of Manhattan's newest combination story office/hotel building.

"Rigid space requirements, narrow channels in the slab floors, and lack storage space called for a compact DWV system. Ty RufWall was the ideal solution.

"In addition to furnishing basic fittings for flo mounted back-outlet water closets, the RufWall u will pick up tubs which rough-in above the floor c still fit 2-inch pipe into 3-inch channel slots in the sl And because the RufWall system uses less mate than traditional XH class cast iron installation, co were reduced. All in all, RufWall gave us just w we were looking for, a money-saving, space-sav DWV system."

But there's another side to this case history

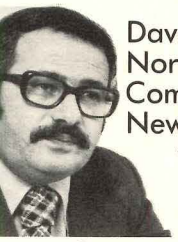
The 350 RufWall units for the 10-floor hotel p tion of the building weighed only 66,336 poun including 5,750 No-Hub couplings. Tyler deliver the system from Texas on two Tyler trucks; b arrived at the job site in downtown Manhat on time.

The XH soil pipe and fittings and the thread pipe in the lower 30 floors of One U.N. Pla exceeded 300,000 pounds, and required sev tons of lead and 1.7 miles of oaku

Complete on time delivery is not unus for Tyler, the nation's only full-line p ducer of SV and No-Hub cast i soil pipe and fittings with Wa SV and No-Hub specif tion products to mo

For more data, circle 57 on inquiry

Here's what the One U.N. Plaza construction team has to say about Tyler RufWall.

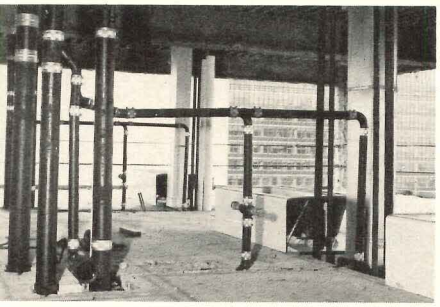


Dave Norkin, President
Norkin Plumbing Company
New York, New York

"Tyler RufWall proved to be a real on-the-job time aver. Our journeymen plumbers vere able to install the units and nake the No-Hub connections in ninutes using only a torque wrench. Ve were so impressed with the me savings and ease of installa- on that we are using RufWall in ne penthouse addition to the hotel nd on other projects."

Robert Emmert
Cosentini Associates
Consulting Engineers
New York, New York

"The hotel design called for a compact DWV system. The construction chedule was tight. There were the ypical site storage and vertical lelivery problems associated with ighrise construction in Manhattan, vhich could have caused delays vith a less versatile piping system. Iowever, Tyler's RufWall did the ob and provided us with more seful living area in each room."



ufWall double units on the 2nd floor of One U.N. Plaza.

or complete information on the yler DWV system in One U.N. laza and your copy of our ufWall brochure, write Engi- eered Products Department, ox 2027, Tyler, Texas 75701.

Tyler Pipe

Subsidiary of
Tyler Corporation

ember CISPI ©1975 Tyler Pipe

For more information, circle item numbers on Readers Service Inquiry Card, pages 189-190.

RESIDENTIAL HVAC / A six-page brochure describes the operation and advantages of this central system for older homes and homes with hot water, steam or electric radiant heat. The system includes small, flexible, factory-insulated ducts that thread around studs and other obstacles instead of through them, and end up as inconspicuous two-inch diffuser openings in floor, ceiling, or soffit areas. ▪ Dunham-Bush, Inc., Harrisonburg, Va.

Circle 400 on inquiry card

OFFICE PLANNING / Nine ways to plan offices and work-stations are described in a 20-page brochure on the company's modular *Series 9000*. Executive and managerial offices, as well as work stations for word processors, programmers and CRT operators, are among the arrangements presented by the brochure, which is designed as an idea workbook. Photographs, ⅛-in.-scale layouts and exploded drawings detail the components required for each assembly. ▪ Steelcase Inc., Grand Rapids, Mich.

Circle 401 on inquiry card

COMBINATION HEATING/COOLING / Complete data covering 7½- and 10-ton combination heating and cooling roof-top units are available in a 12-page folder. In addition to physical, electrical, capacity and dimensional data, the folder also provides information on gas and electric heating, plus air flow arrangements and performance. ▪ Rheem Mfg. Co., Jackson, Mich.

Circle 402 on inquiry card

CARPET CUSHION / A sample kit for architects and interior designers contains samples and complete specifications of four cushions manufactured by the company. All of the four lines are specifically formulated according to traffic pattern requirements and are suitable for use in virtually any type of installation. All the cushions also meet or exceed the non-flammability requirements of DOC FF 1-70 and three meet requirements of ASTM E 84-68 (Pill and Steiner Tunnel tests). These cushions are designed to meet medium and heavy traffic in commercial areas. ▪ Dayco Carpet Cushion Co., Dayton, Ohio.

Circle 403 on inquiry card

ASPHALT ROOFING MANUFACTURERS / The revised edition of the Asphalt Roofing Manufacturers Association booklet is designed as a guide for the roofer, dealer or architect and discusses the latest industry-approved techniques for steep roofing. ▪ ARMA, New York City.

Circle 404 on inquiry card

A-E PRIMER ON FEDERAL CONTRACTS / The second edition of "Contracting with the Federal Government/A Primer for Architects and Engineers" has just been published by the Committee on the Federal Procurement of Architect-Engineer Services (COFPAES.) The comprehensive document provides a full explanation of the A-E procurement process used by the Federal government, agencies which contract for A-E services, an explanation of how government agencies select and negotiate architect/engineer agreements, and copies of Federal regulations covering A-E contracts. Cost of the primer is $10. ▪ COFPAES, Silver Spring, Md.

Circle 405 on inquiry card

UPHOLSTERED CHAIRS CATALOG / A full color catalog illustrating new styles of molded polyurethane shell chairs is now offered by the company. Each shell style is available with five different bases including wood-clad, wine-stem or traditional four-legged styling. ▪ Virco Mfg. Corp., Torrance, Cal.

Circle 406 on inquiry card

PLYWOOD SPECIFICATIONS / A revised plywood design specification and three new supplements are now available. The 30-page specification contains new section properties and recommended design stresses for plywood. Supplement 1 presents working stresses and design ideas for plywood curved panels in 10 illustrated pages. Plywood beams are covered in Supplement 2, a 16-page booklet which includes general information on glued beam fabrication and testing. Working stresses and designs for flat plywood stressed skin panels are offered in the 20-page Supplement 3, and Supplement 4 covers construction details on plywood sandwich panels. Data presented in all five specifications are in accordance with PS 1-74. ▪ American Plywood Assn., Tacoma, Wash.

Circle 407 on inquiry card

NON-METALLIC GROUT / A four-page catalog describing the features of *Sealtight V-1* non-metallic grout points out that the product is a pre-mixed, high-density, high-compressive strength, non-shrink grout used for precision grouting of machinery and equipment, anchor bolts, sole plates, bridge bearings, columns, etc. It offers high yield, withstands high vibratory and dynamic forces, is non-corrosive and exhibits outstanding workability, according to the company. ▪ W. R. Meadows, Inc., Elgin, Ill.

Circle 408 on inquiry card

INDUSTRIAL-COMMERCIAL LIGHTING / A catalog describing a complete line of energy-efficient industrial and commercial lighting systems is entitled "Indoor Lighting Systems—Designer's and Buyer's Guide" and refers to High Intensity Discharge (HID) lighting systems: mercury, metal halide, and *Lucalox*. The publication includes such data as coefficients of utilization, temperature, room classification, indoor illumination levels. ▪ Lighting Systems Business Dept., General Electric Co., Hendersonville, N.C.

Circle 409 on inquiry card

BUSINESS COMMUNICATION SYSTEMS / Literature is available for the company's *LSI Interconnex* systems for firms with requirements from 12 to several thousand extensions. Full service from branch offices is available, including system design, installation, personnel training and maintenance. ▪ Lear Siegler, Inc., Oklahoma City, Okla.

Circle 410 on inquiry card

EXHAUST REGISTER / The bulletin describes the register's concept of assuring uniform exhaust flow, and its low noise level, which permits high-velocity duct design. Also explained is the prebalancing of the exhaust system, and a claim regarding the register's ease of installation. ▪ American SF Products, Inc., Fort Lauderdale, Fla.

Circle 411 on inquiry card

DOOR HEATER CATALOG / The catalog describes gas-fired and steam/hot water door heaters; it includes selection procedure, suggested specifications, heating capacities and dimensions of all available models. ▪ Modine Mfg. Co., Racine, Wis.

Circle 412 on inquiry card

INDUSTRIAL DOORS / In addition to providing guidance for correct door selection, catalog includes drawings, specifications and photographs of power- and manually-operated doors for a wide variety of industrial applications. Descriptions of all door controls, and standard and optional components are included. ▪ Clark Door Co., Inc., Cranford, N.J.

Circle 413 on inquiry card

more literature on page 145

Plexiglas® lighting panels are clearly safer overhead.

A shard of broken glass is a dangerous missile. While broken glass is a hazard anywhere, weight and susceptibility to breakage combine to make glass a particularly hazardous material overhead.

Plexiglas acrylic plastic eliminates these hazards in lighting lenses and diffusers. It is tough and resilient, its impact resistance being a function of its thickness. Given sufficient impact, it can be cracked and even broken, but the resulting large, dull-edged fragments minimize the risk of laceration. Plexiglas never breaks into an "infinity" of small fragments.

Do Plexiglas lighting panels create a fire safety problem? The answer of building officials, rating bureaus and fire fighters is, "No". Here's why:

1) To meet installation requirements under building codes and Underwriters' Laboratories standards, Plexiglas panels must be freely mounted in the lighting fixture.

2) When exposed to an occupancy fire, a properly installed panel will fall from its mounting at a temperature well below the ignition temperature of Plexiglas. Intensive testing and a quarter century of experience have established that Plexiglas lighting panels do not ignite and burn in place.

3) Plexiglas diffusers are not ignited by electrical arcs created in a properly fused system.

Because they meet generally accepted standards of fire safety and eliminate the hazards of glass, Plexiglas lighting lenses and diffusers are accepted under the Uniform Building Code (ICBO), the Southern Building Code (SBCC) and the Basic Code (BOCA).

Safety is only one of several important reasons why Plexiglas is the superior lighting material. We invite you to consider some others.

For your copy of "8 Reasons Why", or technical assistance, call toll-free 800-325-6400* now!

***In Missouri, 800-342-6600**

Plexiglas acrylic plastic is a combustible thermoplastic. Observe fire precautions appropriate for comparable forms of wood. For building uses, check code approvals. Impact resistance a factor of thickness. Avoid exposure to heat or aromatic solvents. Clean with soap and water. Avoid abrasives.

the trademark PLEXIGLAS | *the company* ROHM AND HAAS PHILADELPHIA, PA. 19105

For more data, circle 58 on inquiry card

LAR ENERGY COLLECTOR GLAZING / "Tedlar" PVF film, recently developed by the company, is recommended for glazing solar energy collectors. The .004-in. thick film transmits 92 to 94 per cent of total incident solar energy, with the main losses sed by surface reflection. The film can be heat-ed, shrink-wrapped, and bonded by adhesives. sile strength is approximately 13,000 lbs/sq in. n an elongation at break of approximately 250 cent. ▪ Du Pont Co., Wilmington, Del.

Circle 304 on inquiry card

RKING/DIRECTIONAL SIGNS / To help in the identification of accessible buildings, and accessible facilities within the building, specially designed signage incorporating the international symbol of access has been developed. The symbol is also used to identify sloping ramps, ground level ances, specially reserved parking places, level ks without curbs at crosswalks, elevators, and lic telephones and drinking fountains placed low ugh so they can be used by persons in wheel-irs. The symbol is offered on a variety of signs, ques and decals. ▪ Seton Name Plate Corp., v Haven, Conn.

Circle 305 on inquiry card

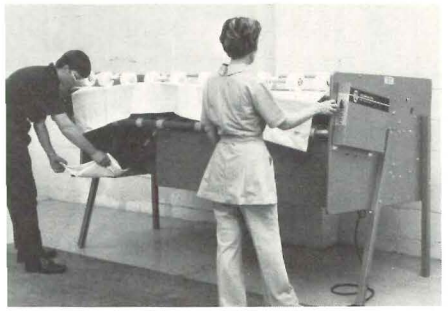
E CABINETS / Over 100 sizes and configurations comprise a standard line of hospital, laboratory and institutional casework with flush interior construction to make good housekeeping easy. Other features include mitreweld corners to elimi- seams on the cabinet face, institutional-type ges with lubricant-impregnated nylon spacers be-en knuckles, heavy-duty drawer channels, nylon-steel-ball bearing rollers, double-pan doors honeycomb sound-deadening mechanism, and forced cabinet bottoms. Providing a standard 24-depth and 30½- or 24⅞-in. height, any of a mber of standard cabinet widths can be selected. ntertops are made in a single continuous unit for or more cabinets. ▪ American Sterilizer Co., , Pa.

Circle 306 on inquiry card

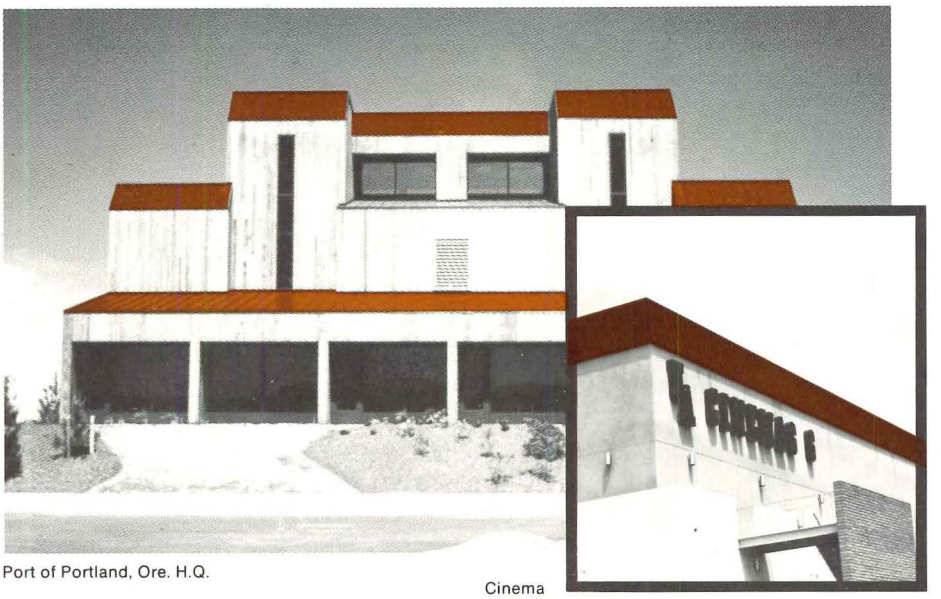
TOMATIC LAUNDRY FOLDERS / Two automatic folding machines, include: the "Foldmaster" del B-4 that folds large linen items such as sheets tablecloths uniformly and automatically; and ldmaster" model B-5, for folding smaller linen s such as towels and pillow cases. ▪ Economics oratory, Inc., White Plains, N.Y.

Circle 307 on inquiry card

more products on page 141



Architects tell us "Our only regret is that we didn't know about ColorKlad sooner...



Port of Portland, Ore. H.Q.

Cinema

...so we could have specified it for our earlier projects."

This is an exact quote from an Upper Midwest architectural firm. Why are they so high on **COLORKLAD?**

PERFORMANCE—The architects asked their sheet metal contractor to test **COLORKLAD.** Bang it around. Beat it up. The answer came back. "It's the toughest on the market. Stands up to every test. Excellent color retention. Doesn't need to be pampered." And the color is warranted—in writing—for 20 years.

ECONOMY—COLORKLAD is approximately half the cost of copper; one-third less than zinc based flashing metals, soft stainless steel, or copper clad steel. Costwise, it compares favorably with shop or field painted galvanized.

SEND FOR OUR NEW COLORKLAD BROCHURE AND COLORCHART TODAY!

NAME _____

TITLE _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

COLORKLAD — The roll coated flashing and fascia sheet that is making big news in the building industry! Send for our new brochure.

Vincent

BUILDING PRODUCTS DIVISION
BRASS & ALUMINUM CO.
724 24TH AVE. S.E.
MINNEAPOLIS, MINN. 55414
CALL COLLECT (612) 378-1131

For more data, circle 59 on inquiry card

Genon is the result of General Tire's uniquely coordinated styling artistry and vinyl fabric technology. Pattern, texture and color concepts are precisely translated into quality wall coverings in the manufacturing process.

Unlimited editions of fine wall covering art.

The Genon gallery of over 700 items satisfies all commercial and institutional requirements with: deep weaves; grass cloths; linens; silks; wood and stone effects; solids; stripes; and random patterns. Genon is available in heavy, medium, and a broad new line of light weight materials. Scrubbable, strippable Genon is known for durability, ease of maintenance and installation, and meets Federal Specification CCC-W-408A.

Genon service meets the same high standards of quality, with: sales and design consultation; complete customizing capabilities; on-time, on-site delivery; and assurance of product performance.

For your next installation, whether new construction or refurbishing, specify Genon, the medium of fine environmental artists. The General Tire and Rubber Company, Contract Wall Covering Group, 979 Third Ave., New York, N.Y. 10022.

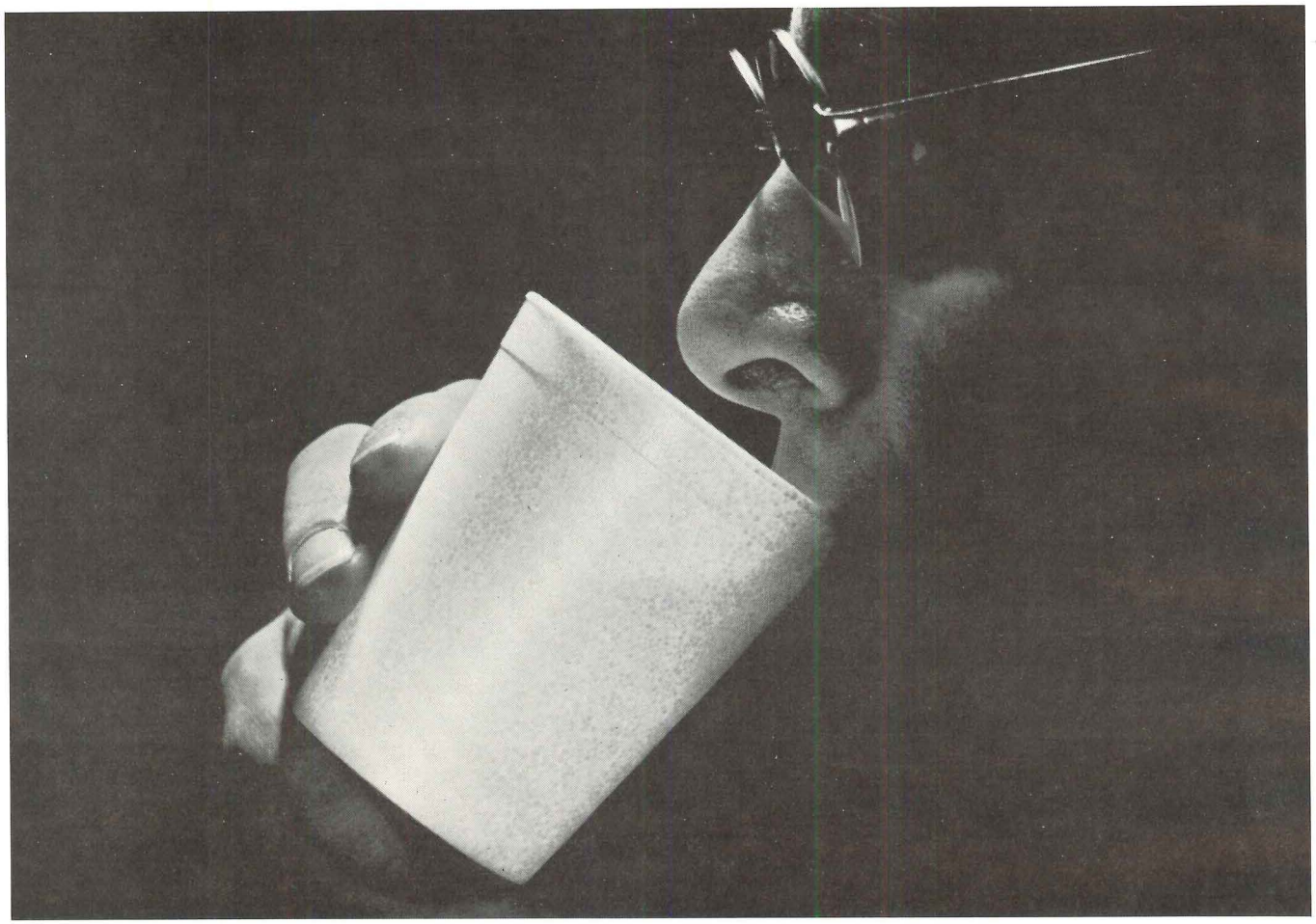
unlimited editions of fine wall covering art

genon®
vinyl wall covering

GENERAL TIRE®

That great building insulation material you've been looking for could be right under your nose:

Dylite® foam.



If you're drinking your morning coffee or tea out of a foam cup, chances are it's made of Dylite expanded polystyrene—the same material that's available as insulation for commercial and industrial construction.

The superior insulating properties of Dylite make it ideal for many facets of construction: as a core for wall and roofing panels; cold storage applications; as a weight-reducing, insulating core for concrete panels; as plaster base for walls; as a backing for siding.

When you use Dylite, construction progresses faster, especially with pre-insulated panels. You save time and on-site labor. Building owners and occupants save on energy costs.

Dylite can be easily shaped and sized. No special tools required.

For more information, write to ARCO/ Polymers, inc., 1500 Market Street, Philadelphia, PA 19101.

ARCO/Polymers, inc.
Subsidiary of AtlanticRichfieldCompany

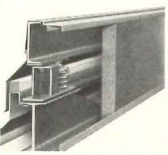
CAUTION: Dylite is combustible and should not be exposed to open flame or other ignition sources.

For more data, circle 60 on inquiry card

EL SPIRAL STAIR KITS / The "Model 30" and "Model 40" are within the moderate-to-low budget range and the kit price is for a complete standard stair, including 12 treads, 13 risers and platform with handrail. All the hardware needed to assemble and install the stairs is included, with 3½-in. diameter center post, 10-in. welded base plate, ¾-in.-sq. spindles, ⅛-in. formed steel platform and treads. All metal s are primed with flat black. ▪ Whitten Enter-es, Inc., Bennington, Vt.

Circle 308 on inquiry card

AC VIBRATION ISOLATION SYSTEM / A combination roof mounting frame, curb, and vibration elimination base for rooftop mounted heating and cooling units is being introduced. Named *Vibro-b*, the one-piece factory-fabricated system iso-s vibration from a typical unit's fans, motors and mpressors to reduce the transmission levels to se-sensitive spaces below, by as much as 90 per t. A 2-in.-thick high-density fiberglass wall within curb and under the unit's space provides an ustic chamber for the return air. Duct silencers also be factory installed in this chamber to save ield installation. Counter flashing is snapped in e to make the entire assembly weather-t. ▪ Vibro-Curb, Inc., Wheaton, Ill.



Circle 309 on inquiry card

URISHMENT CENTER / Two modular pre-fabricated nourishment centers have been designed for use in nursing homes, medical and dental practice buildings, institutions and other health facilities; they can be used for serving supplementary rishment, special diets and whole meals. The 57-enter is free-standing and the 60-in. center is de-ed to be built-in. They include a microwave n, refrigerator, icemaker, two electric surface s, sink-top and cabinets. ▪ Dwyer Products o., Michigan City, Ind.

Circle 310 on inquiry card

A-COMPLIANCE CLOCK / Introduced two years ago, the "Richboro" electric wall clock was specially designed to comply with OSHA regulations that all electrical appliances in industrial plants, offices and institutions be grounded. It is equipped with a 3-wire cord set with molded-on plug that grounds the electric motor, preventing danger of electric shock. Originally offered in 2-in.-diameter dial size, the clock is now also able in an 8-in.-diameter version. Additionally, dials of both clocks have been redesigned with y black Gothic numerals on a white face for ter legibility. ▪ Franklin Instrument Co., Inc., boro, Pa.

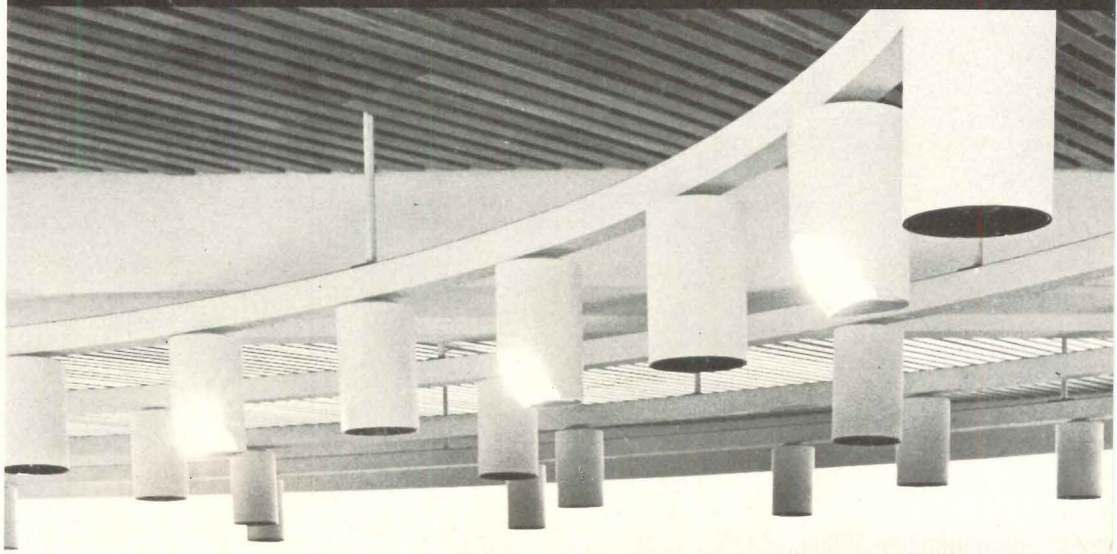
Circle 311 on inquiry card

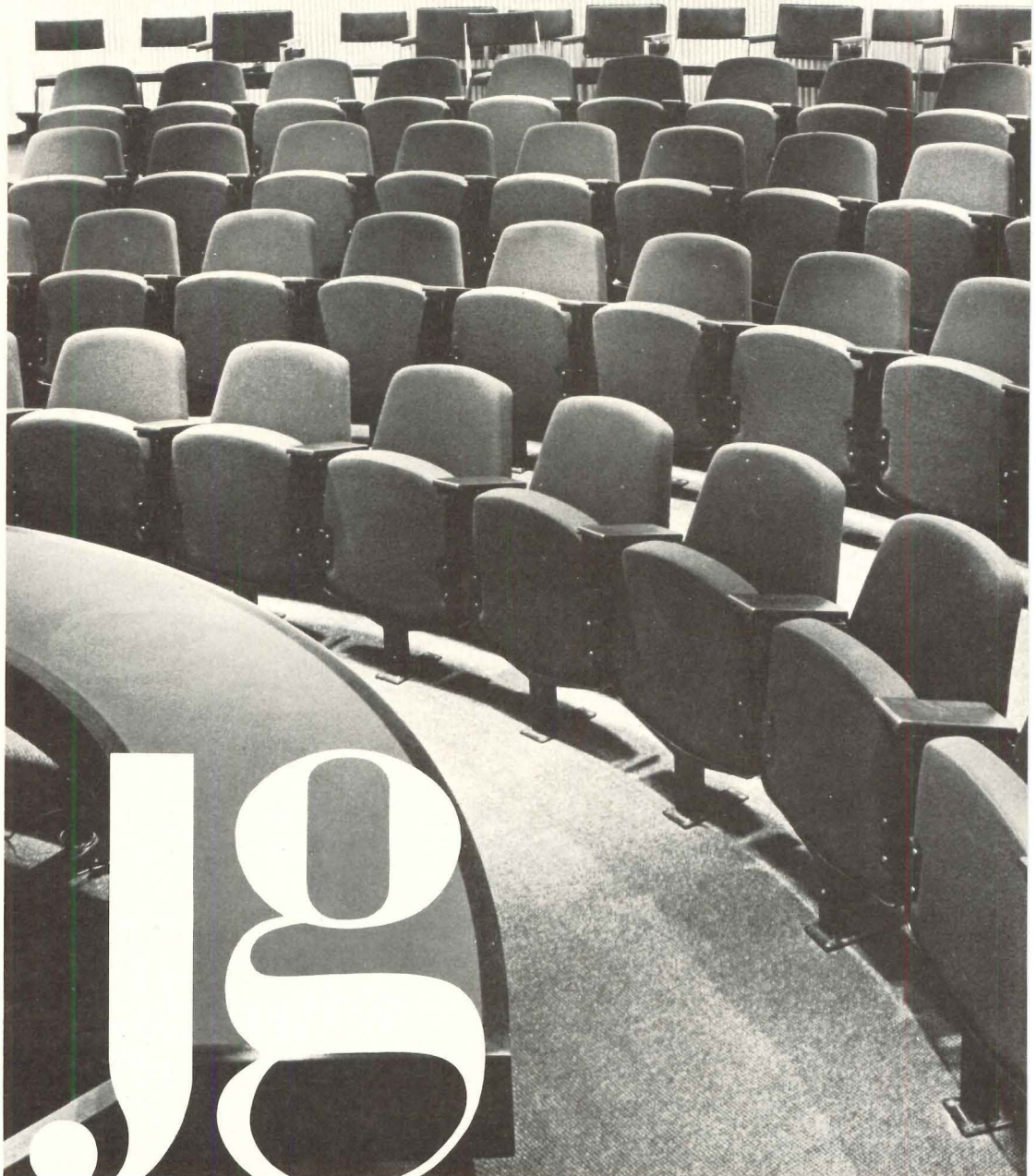
more products on page 143

62-63

Auditorium seat
designed by Peter Dickinson
Installed at the Institute for
Advanced Study, Princeton, N.J.
Architects : Geddes Brecher
Qualls Cunningham, P.C.
Interior Consultants :
Semanko-Bobrowicz

JG Furniture Company, Inc. 121 Park Avenue Quakertown, Pa. 18951





For more data, circle 61 on inquiry card

Transform building codes into beauty codes

with Hager's new Torsion Hinge.

Now, meet institutional building codes with the clean, crisp, uncluttered lines and enduring strength of Hager's new Torsion Hinge. Eleven tempered spring steel torsion bands provide even, adjustable closing strength for doors weighing up to 100 lbs. No more cluttered appearances. One center mounted torsion hinge eliminates the unsightly coils of bulky spring hinges. It installs easily like an ordinary mortise hinge. Specify one of several beautiful decorator finishes.

Ask your architectural hardware consultant for an interesting look at Hager's complete line of fine quality door hardware. Or, write Hager Hinge Canada, Ltd., 771 Wilson Avenue, Kitchener, Ontario.

UL LISTED

Hager®

EVERYTHING HINGES ON *Hager!*

For more data, circle 62 on inquiry card

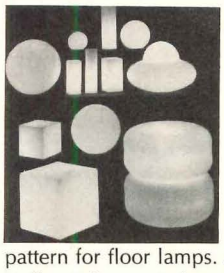
TOP
HE MUSIC!..
vith
COUSTILEAD®

less you put a sound barrier in the
num—the space between a hung
ling and the slab above—you'll
ve piped-in noise throughout your
lding or office.
Acoustilead, 1/64" thin sheet lead,
one of the best noise stoppers in
business. It's limp and dense,
n't let noise seep through, as
ous materials do.
Acoustilead is easy to install. It
s with scissors or a knife, crimps
ound ducts and vents. You'll
rdly hear a note, a laugh, or a
ewriter.
For a booklet on Acoustilead for
num Barriers, or the name of an
oustilead distributor near you,
te Sound Attenuation Department,
arco, 150 St. Charles Street,
wark, N.J. 07101.

ASARCO
erican Smelting and Refining Company
FEDERATED METALS DIVISION

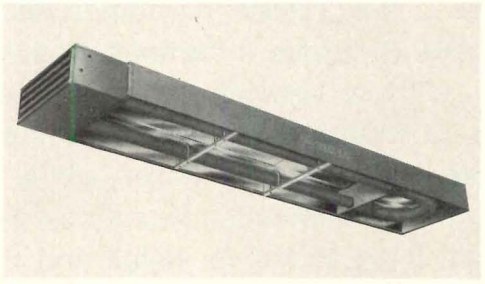
For more data, circle 63 on inquiry card

TABLE AND FLOOR LAMPS / "Light-White" lamps



are molded from high-density, impact-resistant, translucent white polyethylene, and with UL-approved electrical parts. The cylinders are made of opal acrylic. Certain styles can be stacked up to 4 high for a unique design pattern for floor lamps. All lamps are wired with an "off-on" line switch. ▪ Trimble House Corp., Norcross, Ga.

Circle 312 on inquiry card



INFRA-RED RADIANT TUBE HEATER / The 175,000 Btu/hr radiant tube heater is available in either vented or unvented models for complete comfort heating to zone or spot heating, condensation control, thawing or drying. Heater can be installed as close as 12 in. below combustibles except when mounted on a 90 degree angle. Measuring about 13 ft long with an infra-red emitting surface of 25 sq ft, this heater provides heating either indoors or outdoors, and is suited for use over large doors that are frequently opened. ▪ Space-Ray Div., Gas-Fired Products, Inc., Charlotte, N.C.

Circle 313 on inquiry card

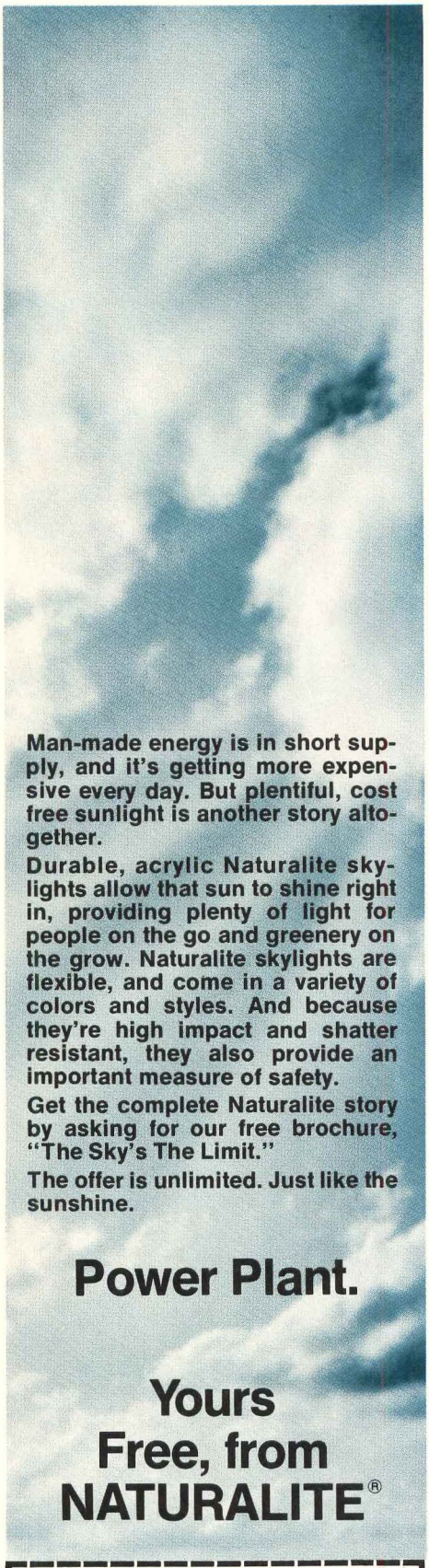
SOUND-ABSORB MIRRORED CEILINGS / *Vista Sonic* mirrored ceiling panels are made from fire-retardant acoustical ceiling panels covered with a tough aluminized back surface that minimizes dust build-up. A ⅛-in. air space between the film and the acoustical tile backing acts as a cushion that allows the film to give under minor impact without damage, and the shatter-proof surface offers distortion-free light reflection. ▪ United States Gypsum Co., Chicago, Ill.

Circle 314 on inquiry card

INSULATING TACKABLE PRODUCTS / Utilizing a

patented substrate and fire retardant burlap, the company has achieved a fire hazard classification of Class A on the combined products. In addition to fire retardant burlap, dark Portuguese cork and natural cork panels achieved the same fire hazard classification. ▪ Homasote Co., West Trenton, N.J.

Circle 315 on inquiry card



Man-made energy is in short supply, and it's getting more expensive every day. But plentiful, cost free sunlight is another story altogether.

Durable, acrylic Naturalite skylights allow that sun to shine right in, providing plenty of light for people on the go and greenery on the grow. Naturalite skylights are flexible, and come in a variety of colors and styles. And because they're high impact and shatter resistant, they also provide an important measure of safety.

Get the complete Naturalite story by asking for our free brochure, "The Sky's The Limit."

The offer is unlimited. Just like the sunshine.

Power Plant.

Yours Free, from NATURALITE®

R-4

A little sunshine sounds good. Send the brochure.

NATURALITE® INC.

Skylights that save energy . . . naturally.
Box 28636/Dallas, Texas 75228/214 278-1354.

Now in our Thirtieth Year

Manufacturers of Plastic Dome Skylights • Fire Vents • Custom Dome Enclosures

NAME _____

FIRM _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

For more data, circle 64 on inquiry card

New "Rite-On, Wipe-Off"* Writing System Paints A Pretty Picture

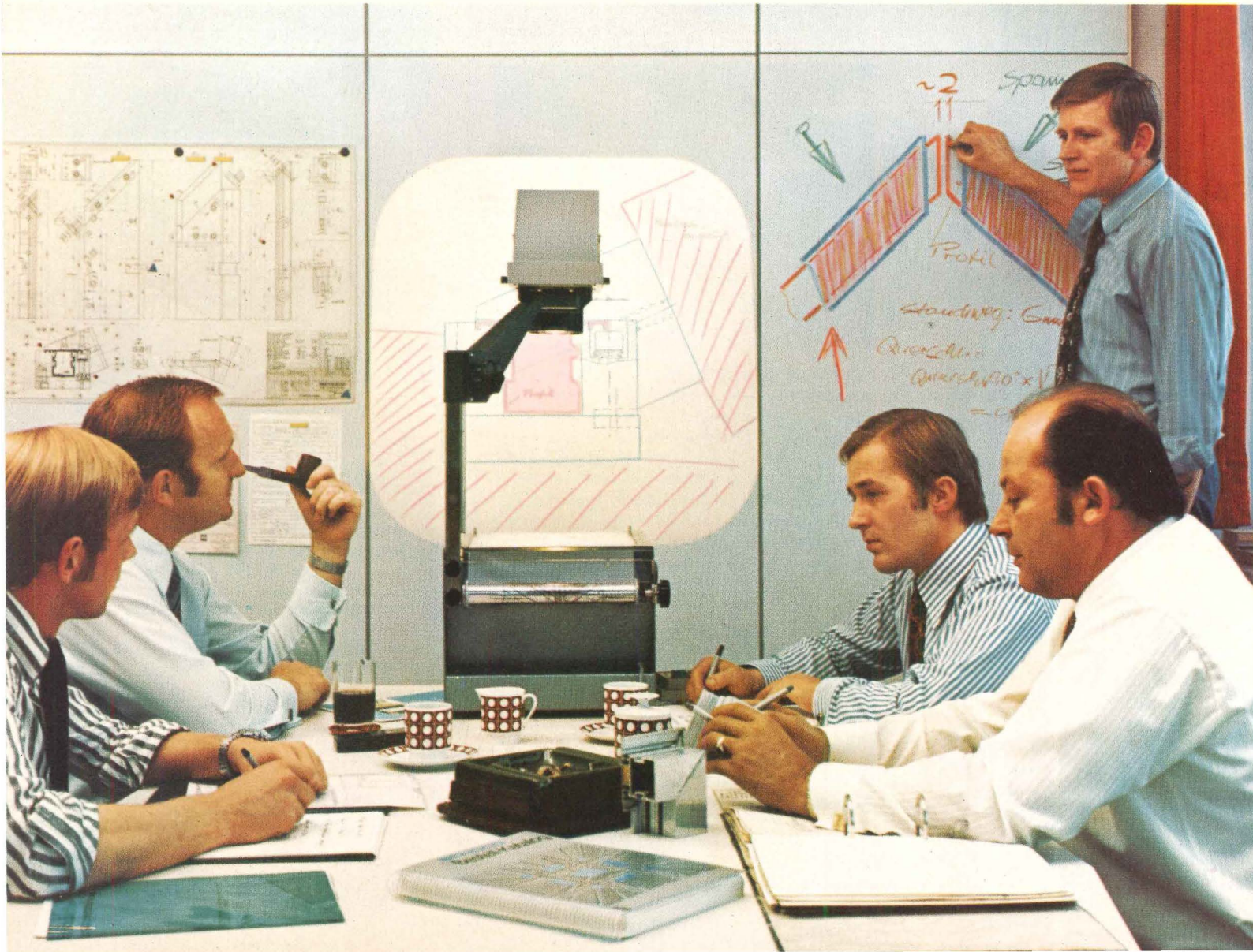
The pretty picture is this: 1. New system combines AllianceWall porcelain wall panels and dry marker pens to create a completely dustless writing system. 2. Porcelain panels come with a special finish that enhances both writing and erasing. 3. Writing dries instantly and can be erased with a dry cloth or eraser. 4. Every inch of every office wall becomes a productive work surface. 5. Laminated to low-cost gypsum board, the panels are fire-proof, inexpensive to install and maintenance free. 6. No special lighting system is necessary. 7. Boards are guaranteed for 50 YEARS and can be used with any partition system.

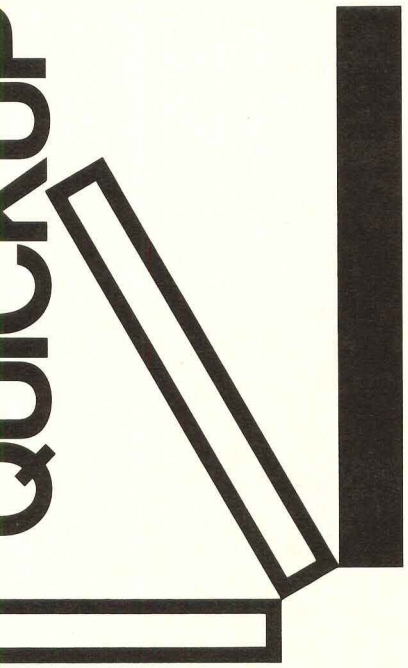
*"Rite-On, Wipe-Off" dry marker pens are now available through local AllianceWall distributors.

Other plants:
Okmulgee, Oklahoma; Genk, Belgium and Seden, Denmark

AllianceWall® CORPORATION
Box 247, Alliance, Ohio 44601

For more data, circle 65 on inquiry card





If your work includes
ti-residential or light commercial
ects, we urge you to look into
use of steel framing. For a
ber of very good reasons.

First, speed. All framing
ponents can be prefabricated
panels—up to 40 feet long—
ch are simply positioned,
nbed, and welded or screw
ched. Each section includes the
essary openings for doors,
dows, air conditioning and
tilation units. Once the structural
ne is in position, the assembly
be quickly closed in—allowing
de work to proceed immediately
without regard to weather
ditions.

Steel framing can trim
eral months from the
struction schedule. Which
ans earlier occupancy and,
n, substantial savings in interim
ncing.

Overall costs are lower than
alternative construction
nniques. The assemblies are
tweight, so no heavy equipment
eeded for placement. And
nponents of the steel framework
not warp, shrink or swell . . . are
ombustible . . . and are
ervious to termites, rot, or
ying climatic conditions.

Design freedom is virtually
mited. These systems can
ommodate a wide variety of
erior finishes—from traditional
ne and brick to intricate stucco,
al, wood and concrete panels,
composite facing materials.

Write for our Technical
letins 131 and 136 which give
nplete information on steel
ming.

Metal Lath/
Steel Framing Association
221 North LaSalle Street
Chicago, Illinois 60601

For more data, circle 66 on inquiry card

OFFICE LITERATURE *continued from page 135*

METAL DOOR CATALOG / A metal doors and frames catalog depicts the company's 1975 line of steel doors and framing, lists specifications and explains labeled fire doors and transom panel assemblies. ▪ Amweld Building Products, Niles, Ohio.

Circle 414 on inquiry card

OFFICE PARTITIONING / A 12-page booklet illustrates full-height walls and screens, and cabinetry, work surfaces, power columns and other accessories. Use of magnets for accessory attachment to the basic steel wall system is also described. ▪ Hauserman, Inc., Cleveland, Ohio.

Circle 415 on inquiry card

AUDIO-VISUAL INFORMATION / A low-cost packaged audio-visual system that claims to give business and other users most of the advantages of expensive custom units is described in a brochure. The self-contained unit provides for sound motion pictures, slides and overhead transparencies. ▪ Jerome Menell Co., Inc., New York City.

Circle 416 on inquiry card

INSULATED MODULAR BUILDING SYSTEM / Prefab insulated modular panel building systems for frozen food, meat and dairy plants, cold storage warehouses, freezers, coolers, and environmental control structures are described in a catalog including specifications. The panels incorporate a core of expanded rigid polystyrene foam insulation. Aluminum and other facings are available in a selection of colors and finishes. ▪ Modular Panel Co., New Bedford, Mass.

Circle 417 on inquiry card

SHINGLES, SIDING / A comprehensive catalog describing the company's roof shingles, sidings, and related building products provides basic information on asphalt roofing shingles, vinyl and mineral sidings, plastic shutters, asbestos-cement building board, built-up roofing materials, roof coatings, plastic cements, fiberglass insulation and corrugated canal bulkheading. The catalog also features information on *Vanguard* vinyl siding. ▪ GAF Corp., New York City.

Circle 418 on inquiry card

ALL-ALUMINUM POOLS / A 1975 color brochure features the engineering design of the company's pools with illustrations of projects in: schools, colleges, parks, municipalities, hospitals, hotels, motels, and country clubs. Special interest pools such as therapeutic and teaching pools are also included. All are constructed of aluminum. ▪ Chester Products Inc., Middletown, Ohio.

Circle 419 on inquiry card

MOBILE STORAGE SYSTEMS / Based on eliminating aisle space by making all storage units mobile, these systems are designed to be moved manually or electrically. Full details and illustrations are in the "Mobile Filing & Storage Systems" catalog. ▪ Spacemakers, Inc., Brooklyn, N.Y.

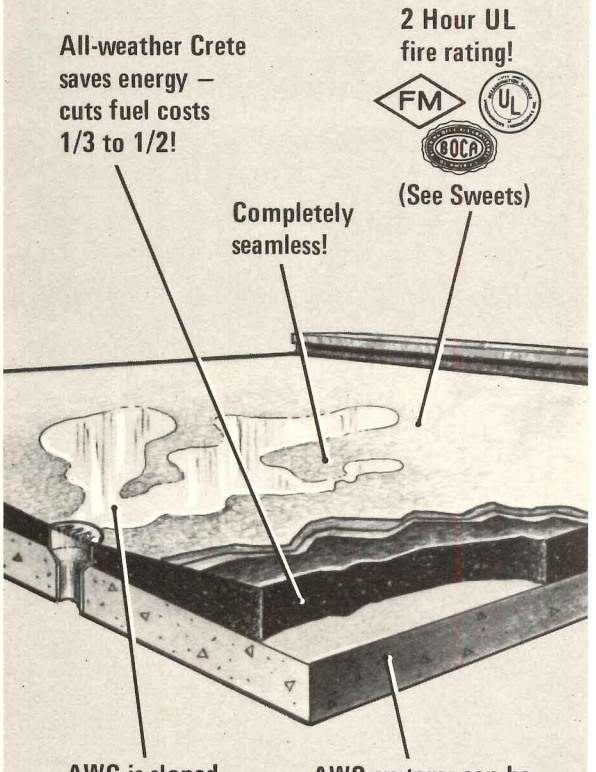
Circle 420 on inquiry card

STORAGE EQUIPMENT GUIDE / This catalog contains 136 pages picturing equipment for in-plant and warehouse transporting, lifting, dumping, hoisting, pulling, conveying, storing, and drum handling. New products such as cabinets, conveyors, slings, racks, scissor lifts, lockers and rotabins are featured. Complete prices and specifications are included along with technical and engineering information. ▪ Standard Handling Devices, Medford, Mass.

Circle 421 on inquiry card

more literature on page 147

imagine a roof deck insulation this effective!



Quality installation only by trained, licensed applicators!

Hot applied even in freezing weather!

All-weather Crete®

ROOF DECK INSULATION

Get all the technical facts in this new 1975 AWC 16 page brochure.

SILBRICO CORPORATION
6300 River Rd. • Hodgkins, Ill. 60525
Chicago Phone (312) 735-3322

Old faithful

It's the pay-off end of a Halse
Taylor water cooler. O
exclusive double bubbler—th
only twin stream projector
the busines

Sure, it gives fuller, mo
generous gulps of cold wate
But it also identifies the cool
beneath it as the one specifie
more often than any othe
Simply because architects re
on it. From past experienc

We pay a lot of attentio
to product appearanc
of course. And w
produce the wide
selection of models ar
colors in the indust
—to give you the greate
possible design latitud

But performance is what we'
really hooked on. So we use th
finest quality materials ar
components, assemble the
scrupulously, test the
thoroughly and turn o
coolers that give year aft
year of maintenance-fre
service. Depend on
Old Faithful wor
let you dow

If you'd like to have o
new catalog, write
HalseyTaylor Divisio
1554 Thomas Roa
Warren, Ohio 4448

For more data, circle 68 on inqu

Halsey Taylor®
KING-SEELEY KST THERMOS CO.

Contractors SHOPPING CENTER

ET THIS FREE CATALOGUE HOWING PRODUCTS AND SER-ICES FOR REINFORCED CON-RETE CONSTRUCTION

will assist you in securing a complete uality line of Building Specialties for oncrete construction from one reliable ource. Engineering details and data e included.

so included, are the many services of-red by Gateway including removable rms for concrete joist floor construc-on.

ASK FOR CATALOG G-742

GATEWAY BUILDING PRODUCTS
DIVISION OF IMOCO-GATEWAY CORPORATION
233 W. Grand Ave. • Chicago, Ill. 60651
SALES OFFICES, PLANTS & WAREHOUSES
Baltimore, Md. • Miamitown, Ohio
Kansas City, Mo. • St. Louis, Mo.
Mequon, Wisc. • Miami, Florida

For more data, circle 69 on inquiry card

OFFICE LITERATURE *continued from page 145*

EARTHQUAKE REPORT / Lessons learned from investigations on the Managua, Nicaragua, earthquake of December 23, 1972, are summarized in a report published by American Iron and Steel Institute. The 54-page report consists of two papers. One, entitled "Engineering Lessons from the Managua Earthquake," describes effects of the quake on major buildings in Managua and ends with 12 important lessons learned from the disaster. The second paper, entitled "Managua: Effects on Systems," describes how the earthquake crippled systems that are not always easily visible but which are vital to the functioning of a city—water and sewer lines, electrical generating stations and lines, the airport and railroad, streets and highways, communications systems, and heavy mechanical and electrical equipment in buildings. ▪ American Iron and Steel Institute, Washington, D.C.

Circle 422 on inquiry card

ELECTRICAL LOAD PROGRAMMER / A new bulletin describes a power-conserving load programmer with automatic setpoint adjustment. The unit is designed to defer electrical loads and limit peak demands, conserving power and reducing total electrical costs for a wide variety of building types. The bulletin details how the automatic programming adjusts a building's circuits (from 4 to 60) during peak loads and periods when power is less expensive. Complete operation of the load programmer, including setpoints, automatic adjustments, and measures to minimize hunting and maintain service to the maximum number of circuits, is explained. ▪ I-T-E Imperial Corp., Spring House, Pa.

Circle 423 on inquiry card

ELECTRIC UNIT HEATERS / These units are available for horizontal or vertical mounting with discharge flexibility to provide full 360-degree warm air patterns. All-welded construction is provided, with sub-divided circuit protection to UL and NEC requirements; units are completely pre-wired. Totally enclosed motors and automatic thermostats are standard features. Units are suitable for commercial and industrial applications for spot or auxiliary heating, and sizes range from 1½ to 36 kw for operation on all voltages; 24 volt and two-stage thermostats are also available. The bulletin contains complete technical and electrical information. ▪ ILG Industries, Chicago, Ill.

Circle 424 on inquiry card

SIGNAGE PRODUCTS / A file folder of product literature on signage systems and products provides architects, designers and building owners with a single supply source for a complete line of visually coordinated signage materials and components designed to complement one another. The brochures list specifications on pressure-sensitive legends and emblems; fiber-reinforced polyester (FRP) signs, components and monoliths; post and panel assemblies; plaque signage; metal letters; cast tablets and plaques; finishes and enamel colors; building directories; and a line of letter styles. ▪ Jas. H. Matthews & Co., Pittsburgh, Pa.

Circle 425 on inquiry card

IDENTIFICATION SYSTEMS / A 68-page full line catalog, complete with prices and ordering information includes: safety signs, lettering systems, numbering and coding, floor marking, and pipe marking. The catalog contains descriptive information, cross-references to related products, and stock numbers. ▪ W. H. Brady Co., Milwaukee, Wis.

Circle 426 on inquiry card

How little it takes...
TO BRING HAPPINESS
TO A BUILDING

specify:

Bike-Dock T.M.

Attractive but rugged, Ready Metal's BIKE DOCK is modular in design: plan for three bikes, or three hundred.

BIKE DOCK mounts to any wall; it can be anchored to a post of any diameter; it can be free standing.

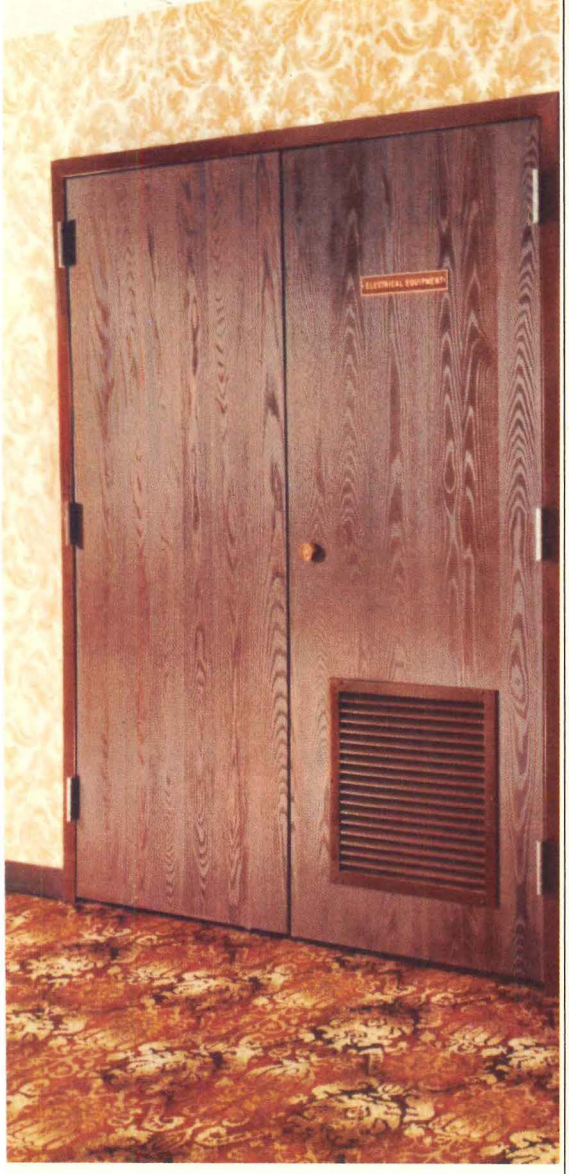
Eliminate bike-parking headaches with two words:

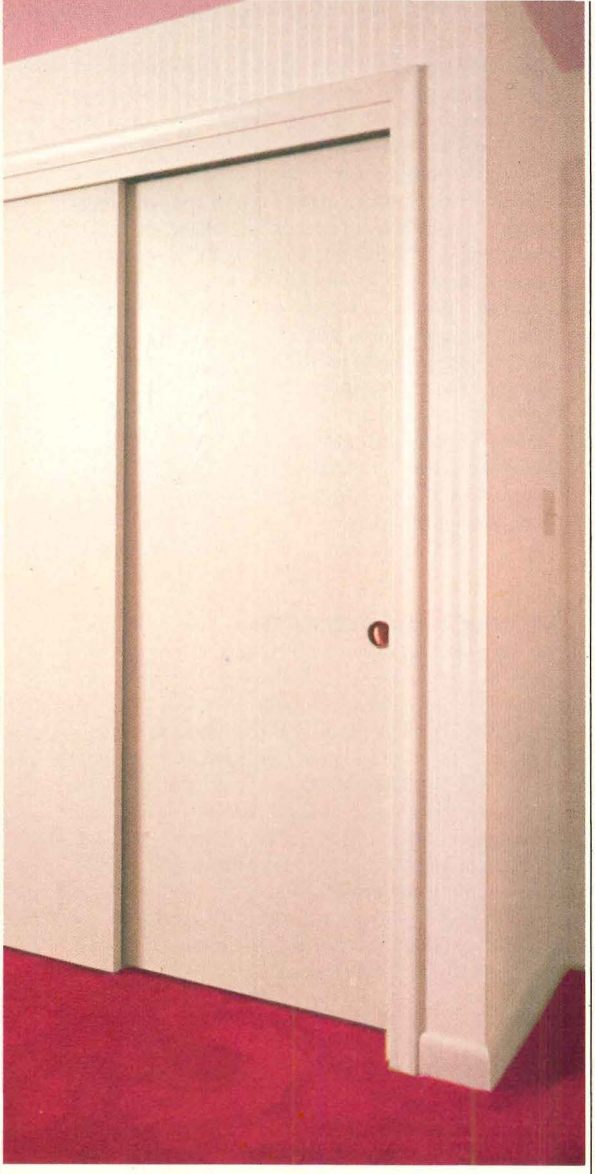
Bike-Dock TM

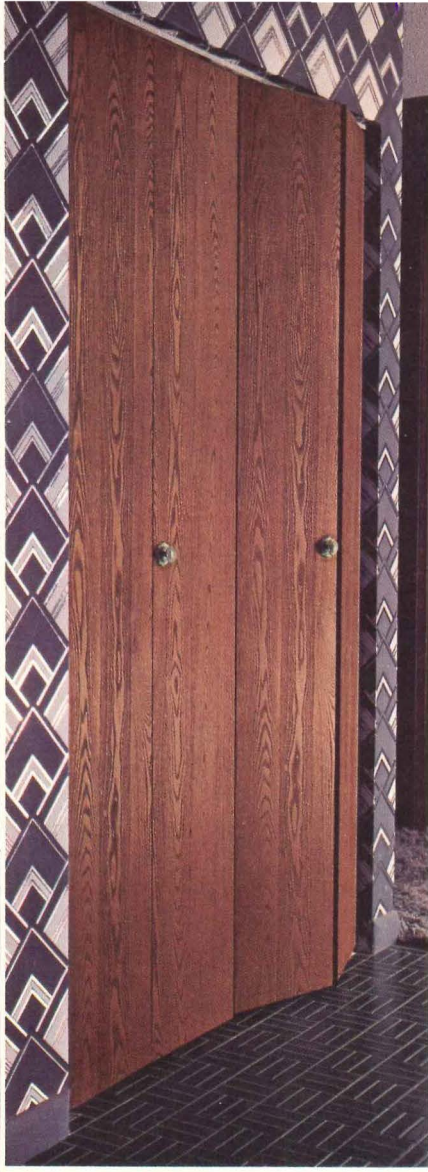
Write or call for brochures and price lists:

Bernard Cicora, Sales Manager
READY METAL
MANUFACTURING CO.
Dept. AR4 4500 W. 47th Street
Chicago, Il. 60632
(312) 376-9700

For more data, circle 70 on inquiry card







For Heavy Duty
50% again as dense as natural wood, and prefinished with a hard stain resistant surface. All the subtleties of wood grain are faithfully reproduced in the durable hardboard surface.

For day to day
No plywood or wood surfaced door can equal Legacy's resistance to splitting, splintering, cracking or checking. Its easy-to-clean surface has the texture that pleases the eye and hand while resisting wear.

For sheer beauty
Flat surfaced doors with a mere grain finish cannot match Legacy's natural yet luxurious look. Competitively priced, prefinished Legacy generally costs less installed, definitely costs less to maintain.

For architectural flexibility Legacy® stands alone

Embossed prefinished Legacy is available in white, oak-tone and walnut-tone for home, condominium, apartment, and commercial installations in sizes up to 5′ wide and 8′ tall.

For the names of quality door manufacturers currently using Legacy, write: Masonite Corporation, 29 North Wacker Drive, Chicago, Illinois 60606. Or consult your Sweet's 1975 File.

MASONITE® CORPORATION

Legacy and Masonite are trademarks of Masonite Corporation. / Man-made finishes on real Masonite hardboard.

For more data, circle 71 on inquiry card

N THE CAUSE OF
ARCHITECTURE
FRANK LLOYD
WRIGHT

WRIGHT'S
HISTORIC
ESSAYS
FOR THE FIRST TIME
IN ONE VOLUME

Essays for *Architectural Record* 1908-1952

With a symposium on architecture
EDITED BY
FREDERICK GUTHEIM

w for the first time ever, the seventeen toric essays Frank Lloyd Wright wrote *Architectural Record* are collected in e definitive volume. *In the Cause of chitecture*, Wright's major statement his architectural philosophy, is an es- ntial key to understanding this creative nt.

produced in their entirety and in their ginal format as they appeared in the ges of the *Record*, these essays give netrating insights into the mind of an chitectural genius at the time he was eating his most significant works.

s handsome, 256-page volume is il- trated with hundreds of photos, draw- gs, plans and perspectives of F.LL.W.'s eatest buildings as well as a fascinat- photo-essay of never-before-pub- hed pictures of Wright taken shortly fore his death.

ited by noted Wright authority Fred- ck Gutheim, the book also includes a mposium of eight essays by Wright's sociates that take a new look at the e and work of America's greatest chitect.

the Cause of Architecture will be of ting interest to architects, students, d all those interested in Wright—a sic reference for school, home and ice libraries. Beautifully designed, it l be a treasured gift for years to come.

chitectural Record Books
21 Avenue of the Americas, 41st Fl.
ew York, New York 10020

ase send me _____ copies of
he Cause of Architecture: Frank
yd Wright @ $17.50 each.

me _____

dress _____

y _____

te _____ Zip _____

Payment must accompany order

OFFICE NOTES

New offices, office changes

Jacques de Brer, AIA, has opened his new office at 562 Mission Street, San Francisco, Cal.

MacFadyen DeVido Architects have moved to 27 West 53 Street, New York City.

Darrell Leatham and Nat J. Adams have announced the merging of their architectural firms, to form **Adams & Leatham, Architects,** 100 W. State Street, Boise, Idaho.

Page Southerland Page have opened a Dallas office at Two Turtle Creek Village.

Alec Yuill-Thornton and John Russell Levikow have announced the continuation of the practice of Yuill-Thornton, Warner Et Levikow as **Yuill-Thornton Et Levikow, Inc.,** 442 Post Street, San Francisco, Cal.

John Roger Johansen, AIA has opened his office at 228 N. Main Street, Cheboygan, Mich.

Following the death of Louis I. Kahn, members of his staff who had worked in close association with him have formed a partnership. The new firm is called **David Wisdom & Associates,** located at 1501 Walnut Street, Philadelphia, Pa.

Marquis & Stoller have changed their firm name to **Marquis Associates,** 243 Vallejo Street, San Francisco, Cal.

The Eggers Partnership have announced the opening of a new branch office in Suite 801, 1629 K Street, N.W., Washington, D.C.

Patrick Anthony Roy, AIA, AIP, has announced the establishment of his consulting office for the practice of architecture, environmental design and urban and regional planning. Offices are located at 3 Chaucer Road, Englishtown, N.J.

Ralph Hahn and Associates, consulting and design engineers, Springfield, Ill., have recently opened a branch office at 230 Royal Palm Way, Palm Beach, Fla.

Barton-Aschman Associates, Chicago, have opened a branch office in Arcadia, Cal.

T. R. Larson, Architect, announced the relocation of his office to 213 Grand Ave., Pacific Grove, Cal.

New associates, promotions

Fred Fast has been named an associate of Wilscam & Mullins, Inc., Minn. Also **John R. Birge, R. William Cramer** and **Phillip Higgason** have been promoted to associates in the Omaha, Neb. offices.

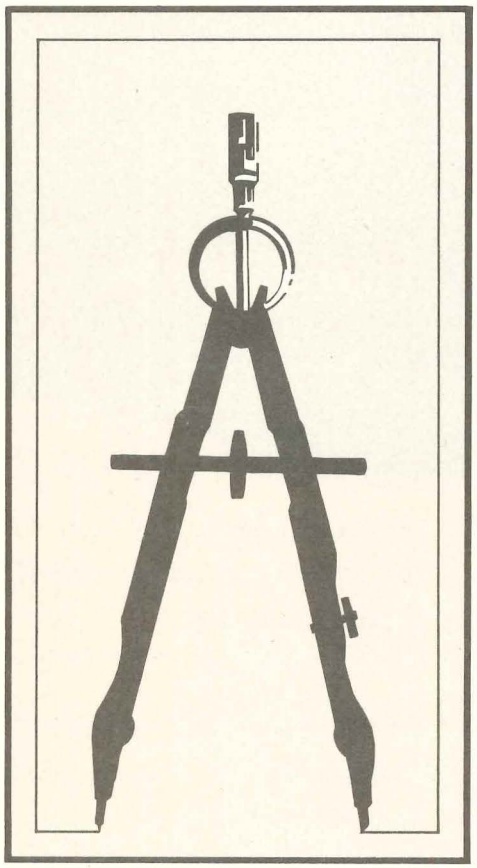
Adel Foz, Kyung-Bae Park and **Jane Weinzapfel** have been named associates of the firm of Wallace, Floyd, Ellenzweig, Moore, Inc.

Flower & Associates, Inc. of Dallas, Tex., have announced the election of **William S. Poole, P.E.** as vice president and director and the appointment of **James L. Balliet** as associate.

Locke Wright Foster Incorporated, Architects-Planners, Oklahoma City, Okla. announce the appointment of **Joe Davis, Tom Fish,** and **Dennis Ward** as associates.

Kamlah L. Johnson has been named manager of the New Orleans office of Ellerbe Architects.

Edward R. "Ned" Jones, Jr., AIA, has been named vice president and general manager of the Los Angeles office of Charles Luckman Associates.



THIRD
MOBILE HOME
DESIGN
COMPETITION

Call for entries
first prize $7,500

Here is an exciting design challenge that tests your inventiveness and creativity in the design of mobile homes. How should they look? How could they look? What is your design opinion? There are substantial rewards.

The competition is open to architects and architectural firms, industrial designers and design firms and students in accredited architecture or design schools. Judgement will be made by your professional peers and representatives of the mobile home industry.

The focus is on exterior and interior design of low-cost, single-family units that can be mass produced economically and transported to site. All entries must be received on or before July 15, 1975. Mail this coupon today to get full information and specifications.

REYNOLDS ALUMINUM
TRANSHELTER PRODUCTS

Mobile Home Design Competition
Reynolds Metals Company
P. O. Box 27003
Richmond, Virginia 23261

Please send me all the information on the Third Reynolds Mobile Home Design Competition.

Name _____

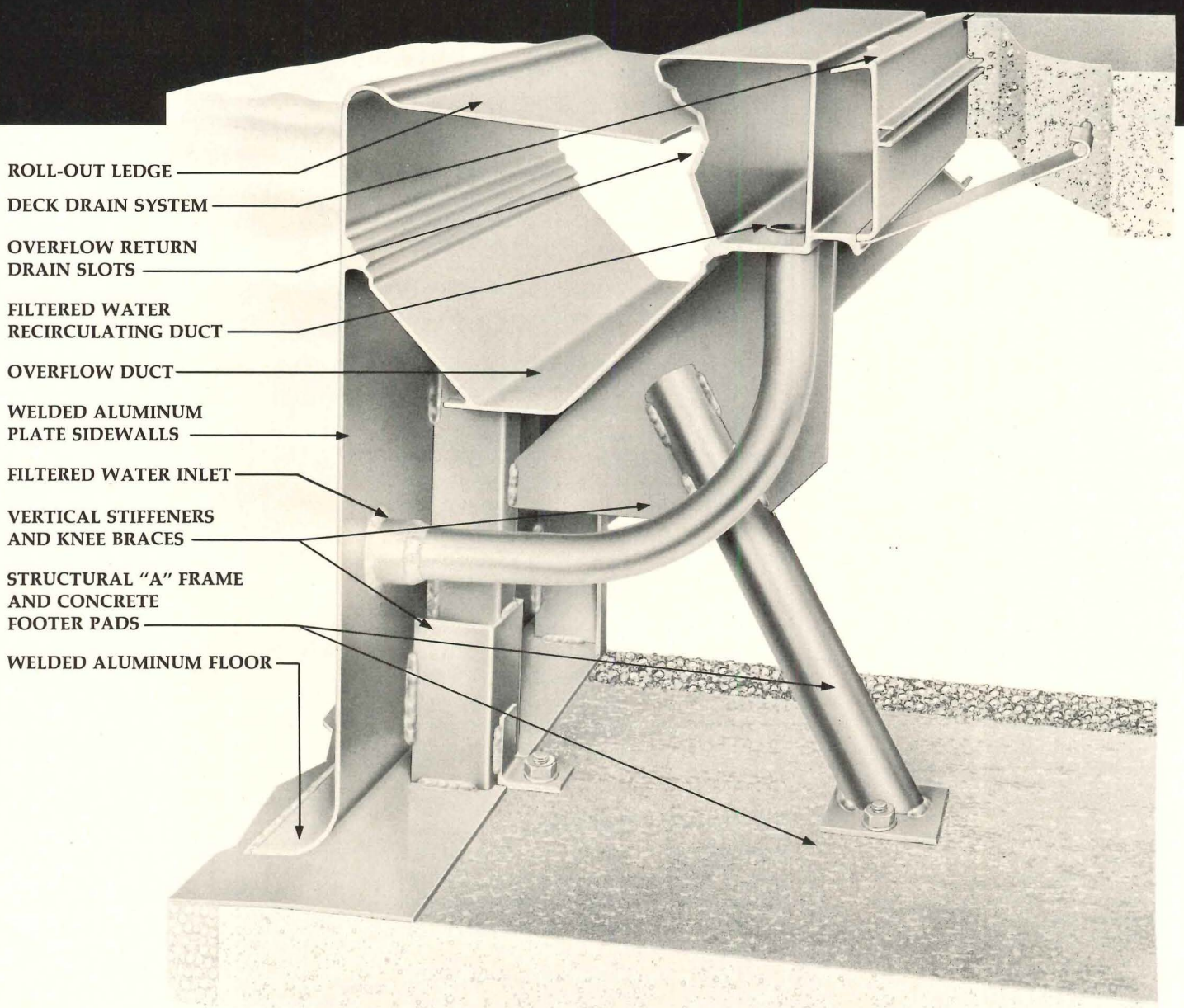
Firm or School _____

Address _____

City _____ State _____ Zip _____

CHESTER POOL SYSTEMS BEGIN HERE

the same place your pool problems end



The Chester pool wall. Self-supporting. Structurally stable. Incorporating an extrusion forming all circulation and overflow ducts. The beginning of a totally engineered pool system, low in maintenance, free of repair. The Chester system — pool, filtration tank, piping between. All aluminum. Chester . . . the single source, single responsibility pool package . . . designed, fabricated, and constructed by the builders with over 20 years of proven performance . . . backed by a comprehensive 5 year warranty. See Sweets architectural file 13.22 Ch. Case histories are available for study which may parallel your present situation.

CHESTER
POOL SYSTEMS
1300 Lafayette Avenue
Middletown, Ohio 45042.

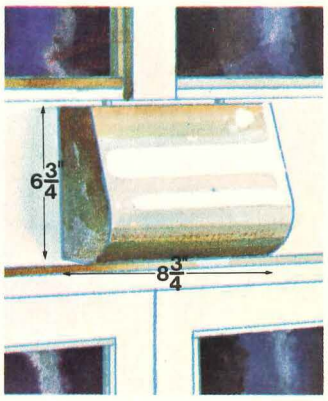
For more data, circle 72 on inquiry card

Stanley introduces the Magic-Scan™ Sensor. Smartest door control ever made.

There's more than a little magic in this one.

The Magic-Scan Sensor continuously "scans" a 5′ x 5′ zone in front of the door. Inside, outside or both. When someone enters the zone, the control is actuated. And the sliding doors open.

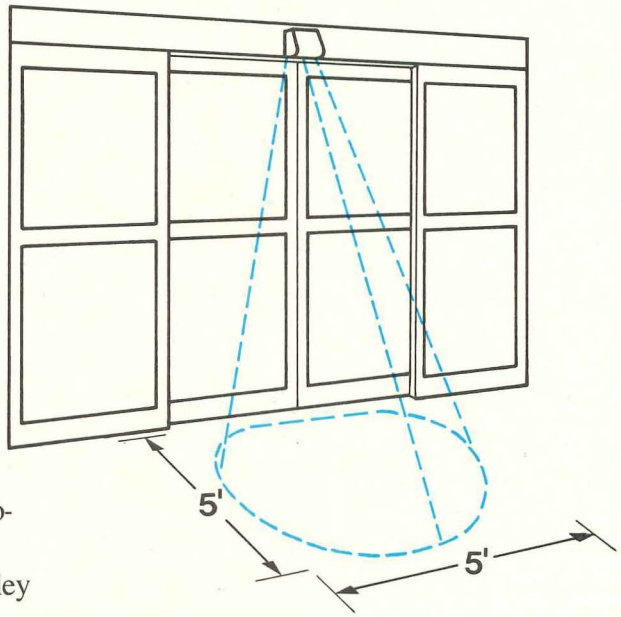
The Magic-Scan Sensor is completely self-contained, simply mounted on the header. It's solid state for dependability. Heat or cold won't affect it.



You get longer trouble-free life — and an uncluttered, more pleasing appearance.

The Magic-Scan Sensor can be used with all Stanley Auto-Slide® Door Packages.

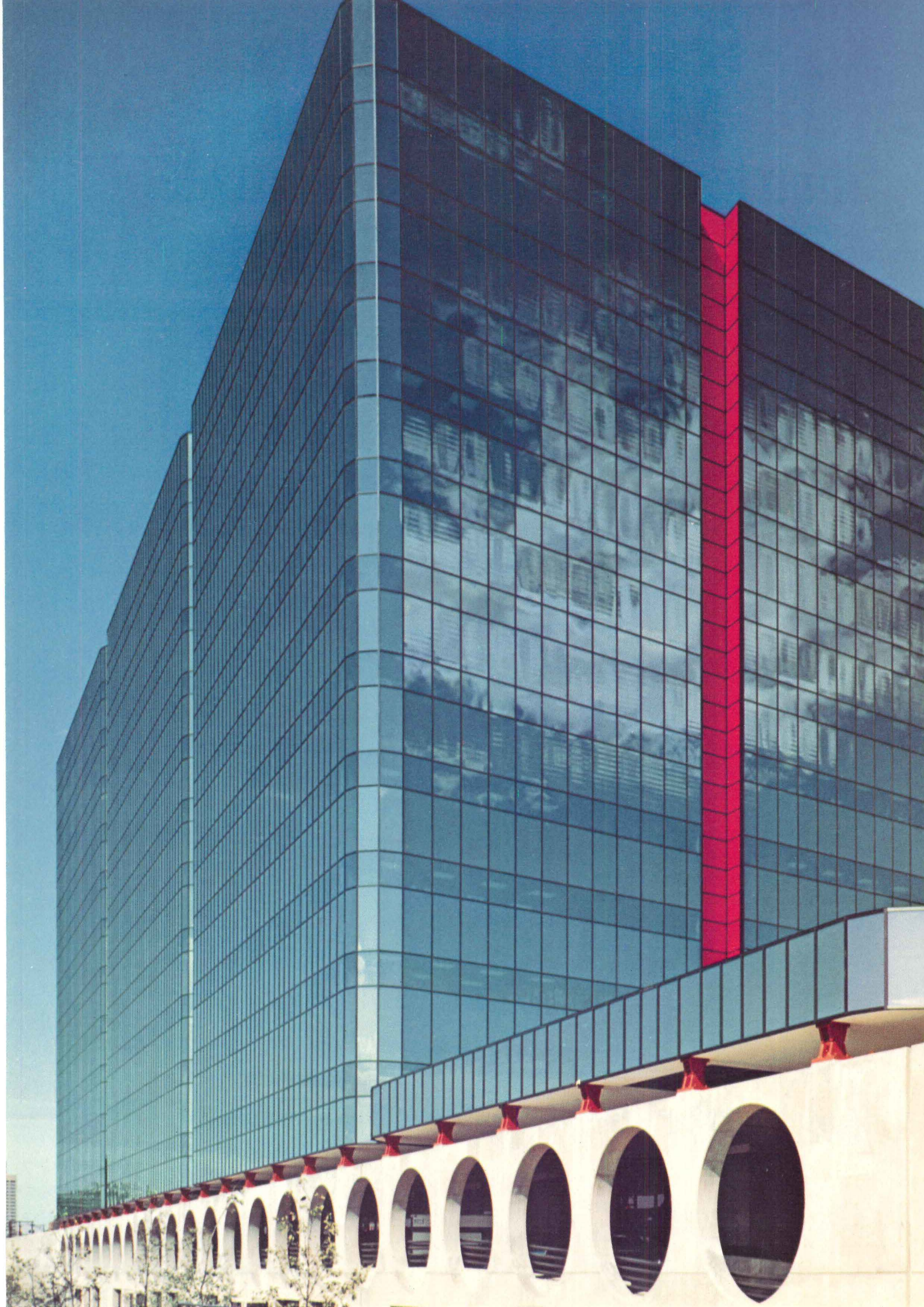
Be smart and call us. Stanley Door Operating Equipment, Division of The Stanley Works, Farmington, Connecticut 06032



STANLEY®

helps you do things right

For more data, circle 73 on inquiry card



PPG GLASS GAVE BLUE CROSS AND BLUE SHIELD OF COLORADO THE BEST COVERAGE.

Their new Denver headquarters presented problems.

The site dictated one thing, and the owner's business another.

PPG Solarban® 550 Twindow® insulating glass helped solve the architects' dilemma. Beautifully and efficiently.

The building is the landmark the owner wanted, and certainly big enough to meet his everyday practical demands.

Yet, for all its size, it is still a graceful neighbor to the smaller buildings in the area.

Visually, its bulk seems to retreat. An effect the architects achieved by using muted-toned reflective glass. And by setting the building back from the street.

But esthetics were not the only consideration. Because of the site, the building had to have an east-to-west orientation. Which created solar heat gain problems. So they needed performance, too. And PPG Solarban 550 Twindow insulating glass gave them the best of both. (Its shading coefficient of 0.24 reduces solar heat gain 76% compared to single-glazed clear glass.)

And since the glass performed so well, they were able to use a lot of it and create view spaces that do justice to Colorado's magnificent vistas.

In short, the glass gave everyone concerned with the building—the owner, his employees, the architects, even the neighbors—something to be happy about.

And we think it can have much the same effect on your building.

Find how PPG Solarban 550 Twindow insulating glass—or another in our family of High-Performance Glasses—can help you combine esthetics and efficiency for truly remarkable effects. Write for our book "Architectural Glass Products," or refer to Sweets Architectural File, Catalog Code 8.26/Pp. PPG Industries, Inc., One Gateway Center, Pittsburgh, Pa. 15222.

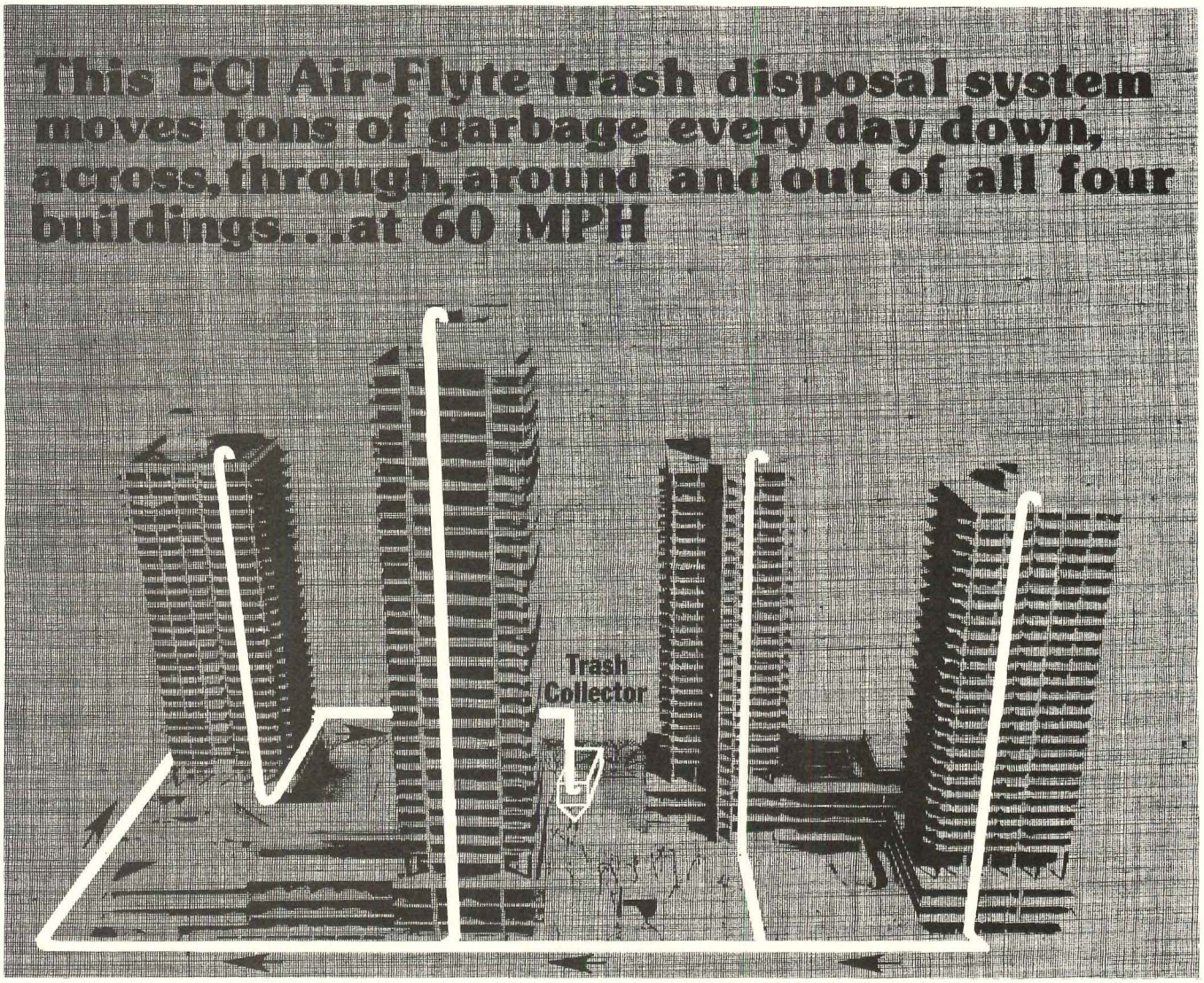
Owner: Blue Cross and Blue Shield of Colorado
Architect: URS/The Ken R. White Company
Design Consultants: Muchow Associates Architects

PPG: a Concern for the Future

For more data, circle 74 on inquiry card

PPG INDUSTRIES

This ECI Air-Flyte trash disposal system moves tons of garbage every day down, across, through, around and out of all four buildings...at 60 MPH



The people in this four tower highrise project in Harlem may never again see a garbage can,...hear a garbage truck,...smell the odors of refuse or see another rat.

The 656 families (plus a day care center, playhouse, amphitheater and stores) that are housed in the East Harlem highrise project have a built-in waste conveying system developed by ECI Air-Flyte Corp. The ECI Air-Flyte Pneumatic Conveying System uses negative pressure to remove all trash, cleanly, quickly and effectively.

The East Harlem Tenant Council and their architects, Silverman & Cika wanted to make sure that the garbage cans, the odors and most importantly the vermin and the rodents that can ruin a project of this size, were completely eliminated.

A housing project as large as this can develop a lot of trash. The initial estimate was 7,500 pounds a day. The system consists of conventional gravity trash chutes, specially designed sizing and receiving hoppers, an ECI Air-Flyte pneumatic conveying system and a waste-holding area, containing two large compactors with 35 yard roll-off containers.

Waste is placed in the gravity trash chutes, or directly into receiving hoppers in the commercial and service areas. The system automatically sizes and transports the waste to the central collection system via the Air-Flyte conveying system. The Air-Flyte system uses a high velocity negative pressure principle to carry the waste at a mile-a-minute, in any direction, up, down, diagonally, around corners – over any required distance. Once the waste is placed in a trash chute or hopper it's never touched again. Because the system is completely enclosed, odors, vermin and rodents are eliminated.

The Air-Flyte system works efficiently to keep the environment clean, in Harlem or anywhere else. Ask your ECI representative for the whole story on Air-Flyte trash collection systems.

For information on ECI Air-Flyte see Sweets file 11.25 EA.

ECI Air-Flyte Corp.

Subsidiary of Eastern Cyclone Industries, Inc.
15 Daniel Road • Fairfield, New Jersey 07006
Regional Sales Offices:
BOSTON • CHICAGO • LOS ANGELES • ATLANTA • DALLAS

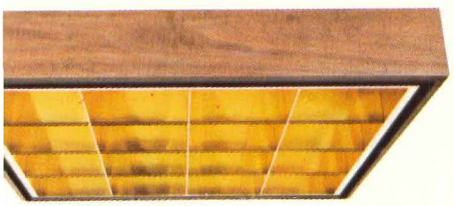
For more data, circle 75 on inquiry card

As James Thurber's grandmother said:

"Electricity was leaking all over..."

ut you can stop it with PARABOLUME

es Thurber's grandmother believed electricity "dripped" from unused sockets. We don't go to that ex-e, but we do believe in conserva- For over 10 years, we have been ng an energy-saving fluorescent naire called Parabolume, a pioneer field.



Now, we have come up with a new way for you to use your own energy-conscious imagination in the next building you design. It's an adaptation of standard Parabolume fixtures to control lighting levels for different jobs, for different ambients, to differentiate spaces, or simply to save precious energy whenever possible.

What you create, in effect, is your own custom-designed lighting system, and the esthetic results are an intentional part of your interior design. Your building has a unique three-level lighting system, without the need for special fixtures, ballasts, fancy or expensive wiring.

Ease the mind of Thurber's grandmother. Write for details on how to cut energy drain with Parabolume, or contact your local Columbia Lighting representative.

COLUMBIA
lighting, inc.

For more data circle 5 on inquiry card.

3808 Sullivan Rd. Terminal Annex Box 2787 Spokane, Washington 99220 Phone (509) 924-7000

A Subsidiary of GTE SYLVANIA INCORPORATED

the Brentwood collection by R-WAY

R-Way has created in BRENTWOOD a series of four distinctive designs—with top selections of black walnut, high-pressure plastic laminate or vinyl—a broad selection of high and low profile variations—modular pedestal selection—matching seating.

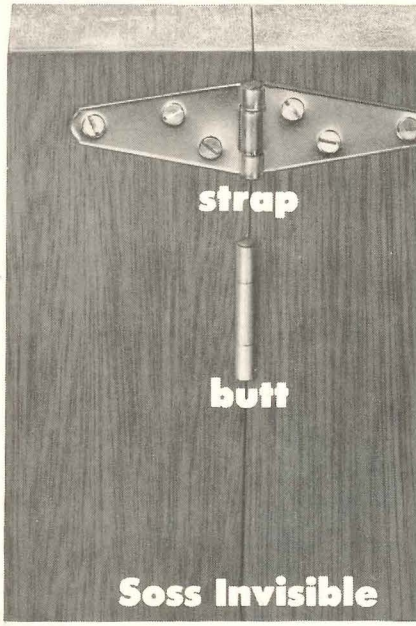
BRENTWOOD, with its end selections of stainless steel or black walnut plus a finish selection of oiled walnut or hand rubbed lacquer, offers unlimited design selection.

To learn more about the BRENTWOOD COLLECTION send for a complete color catalog.

R-WAY Furniture Company, Sheboygan, WI 53081 Phone: Area 414-457-4833
Showrooms: Chicago, New York, Minneapolis, Dallas.

For more data, circle 76 on inquiry card

Pick the hinge that hides

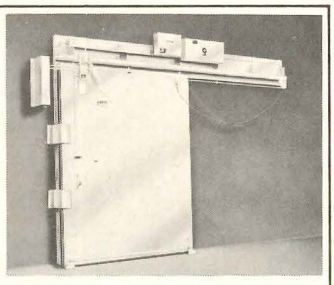


Compare the Soss look of invisibility with any strap or bu and you'll choose The Soss Invisibles. These amazing hing when closed to blend with any decor. With The Soss Invisib can create room, closet, or cabinet openings which are ur by hinges or gaps . . . the perfect look for doors, doorwalls, bars, stereos, or T.V.'s. The Invisibles are extra strong, ope 180 degrees, and are reversible for right or left hand openir listing in Sweet's or write for catalog: Soss Manufacturing Company, Division of SOS Consolidated, Inc., P.O. Box 8200, Detroit, Michigan 48213.

the SO Invisibl

For more data, circle 77 on inquiry card

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



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

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

Write for this free descriptive literature!

CLARK DOOR

69 Myrtle St., Cranford, N.J. 07016
(201) 272-5100 Telex 13-8268

For more data, circle 78 on inquiry card

See how corrosion starts, then stops, because of an aluminum substrate.

Scanning-electron photomicrograph (2500X) of test sample of metal siding with an organic coating, exposed to a highly corrosive industrial atmosphere for four years.

The scanning-electron photomicrograph you're looking at shows how any organic coating weathers in time.

The coating has become spongelike and retains moisture. Wet cycles last longer. The hydrophilic cells trap such contaminants as sulfur dioxide, which combines with water to form sulfuric acid. Now the corrosive effects of electrolytic action include chemical attack at the interface . . . underfilm problems that can cause flaking or loss of adhesion . . . and staining or streaking, depending on the performance of the substrate.

At this point, however, an aluminum substrate helps to *protect* an organic coating because its natural aluminum oxide film resists the effects of electrolytic action. This stability at the paint-metal interface discourages flaking or adhesion loss. Painted aluminum can be drilled, punched and sawed without concern about chipping or undercutting.

If you want color in the second place, put it on aluminum in the first place. It will last. Especially if you specify an Alcoa® Super Alumalure® finish, the long-life PVF coating that offers the advantages of a super-tough fluorocarbon at a price you can live with.

For more information, see Sweet's Architectural or ICR/PE files. Or write Aluminum Company of America,1085–D Alcoa Building, Pittsburgh, PA 15219.

Change for the better with Alcoa Aluminum

ALCOA

For more data, circle 79 on inquiry card

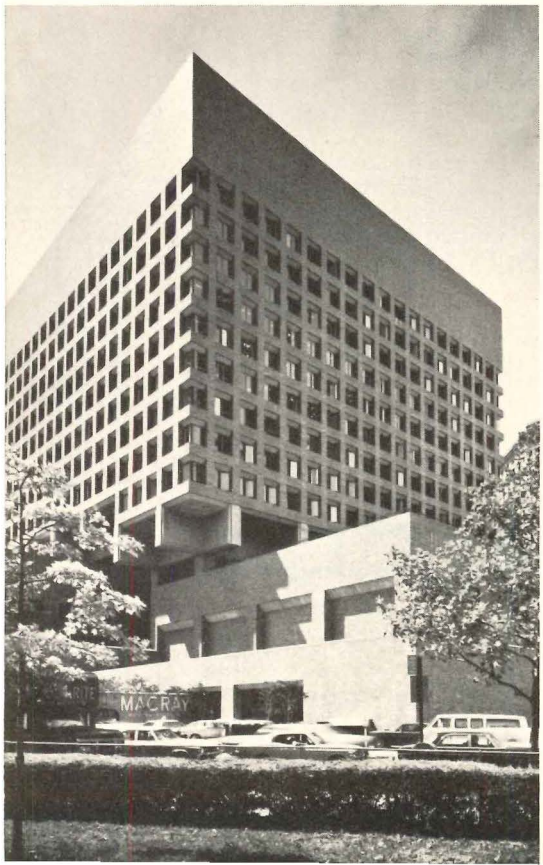
winners

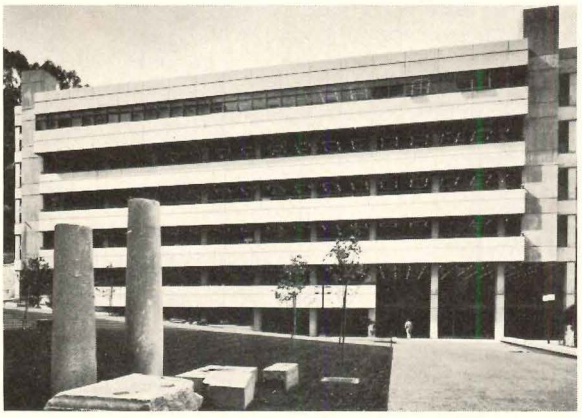
1974 CRSI design awards program

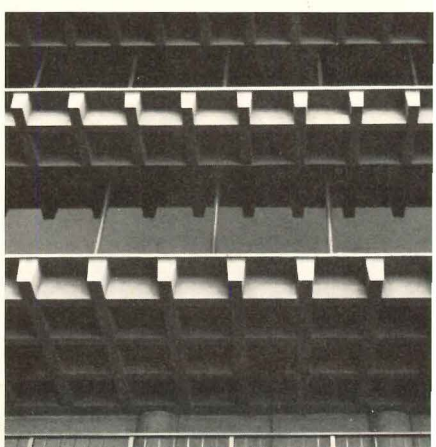
ONE POLICE PLAZA, New York, New York.
Judges' Comments: "Powerful and welcome addition to civic architecture. Well-proportioned and flexible while making good use of a congested urban site."
Owner: City of New York.
Architect: Gruzen & Partners, New York, N.Y.
Structural Engineer: Farkas, Barron & Partners, New York, N.Y.
General Contractor: Castagna & Son, Inc., Manhasset, N.Y.

SCHOOL OF NURSING BUILDING, University of California Medical Center, San Francisco, Calif.
Judges' Comments: "Simple, understated, and responsible. Good value without loss of quality. Sensitive site development."
Owner: Regents of the University of California, San Francisco, Calif.
Architect: George Matsumoto & Associates, San Francisco, Calif.
Structural Engineer: Hirsch and Gray, San Francisco, Calif.
General Contractor: Perini Corporation, San Francisco, Calif.

CLINICS EXPANSION & PARKING STRUCTURE, University of California, San Francisco, Calif.
Judges' Comments: "Complex problem well-solved. Delicate and valid expression of reinforced concrete in architectural terms. Commendable contrast of forms—translucent and solid."
Owner: University of California, San Francisco Medical Center, San Francisco, Calif.
Architect and Structural Engineer: Reid & Tarics Associates, San Francisco, Calif.
General Contractor: Donovan Construction Co., St. Paul, Minn.







winners from a distinguished group of entries. Each of se structures is a winner in the first annual CRSI Design ards Program. Each, in the opinion of our panel of ges, demonstrates innovative use of cast-in-place re-rced concrete.

ard recognition shared equally by winners. Since rein-ced concrete can be used to solve so many different design problems, there are no categories of awards in this program. Nor is any ranking expressed or implied in the arrangement of presentation in this announcement.

A portfolio is available. Complete details on the award-winning structures are given in the new Design Awards portfolio. For your copy, write CRSI, at the address below, attention George Leyh, Director of Marketing.

nel of judges

Bradley, FAIA
e-President, AIA
honics Corporation
Wayne, Indiana

Russell S. Fling,
Vice-President, American Concrete Institute
President, R.S. Fling and Partners, Inc.
Columbus, Ohio

George J. Hasslein, FAIA
Dean, School of Architecture
California Polytechnic State University
San Luis Obispo, California

Hugh Stubbins, FAIA
Hugh Stubbins and Associates, Inc.
Cambridge, Massachusetts

Harry M. Weese, FAIA
Harry M. Weese & Associates
Chicago, Illinois

Special Design Award Consultant—Maria Murray, AIA Headquarters

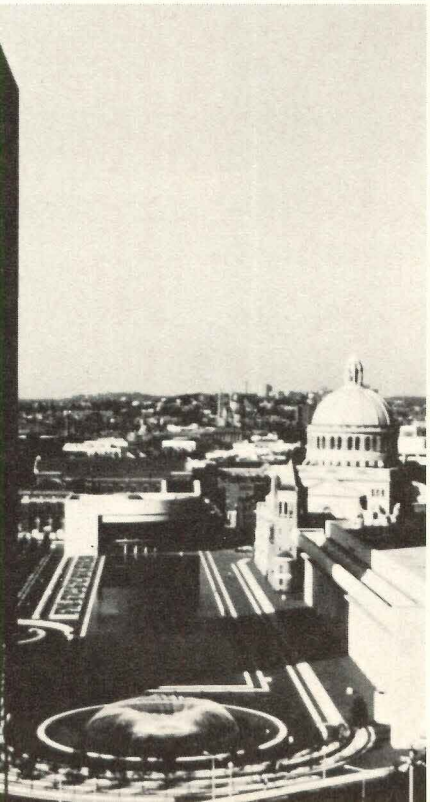
CRSI CONCRETE REINFORCING STEEL INSTITUTE
FOUNDED 1924
180 North LaSalle Street, Room 2108-D,
Chicago, Illinois 60601

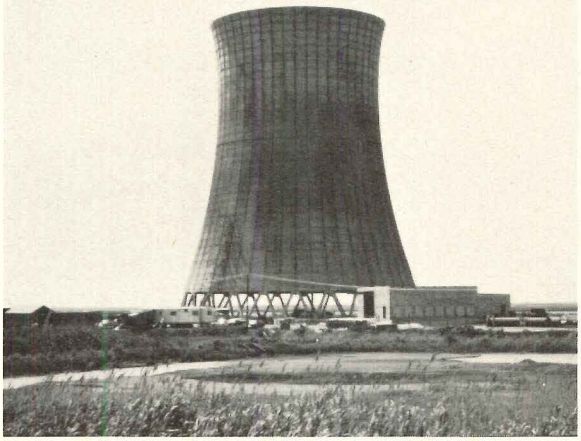
For more data, circle 117 on inquiry card

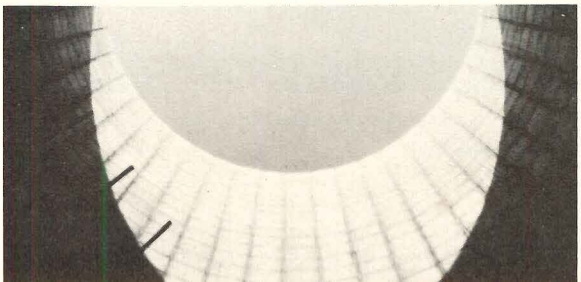
CHRISTIAN SCIENCE CENTER, Boston, Massachusetts.
Judges' Comments: "Monumental architecture in modern material. Restrained and elegant. Probably the most technically proficient in-site concrete extant."
Owner: The Christian Science Church.
Architect: I.M. Pei & Partners & Araldo Cossutta Associated Architects, New York, N.Y.
Structural Engineer: Weiskopf & Pickworth, New York, N.Y.
General Contractor: Aberthaw Construction Co., Boston, Mass.

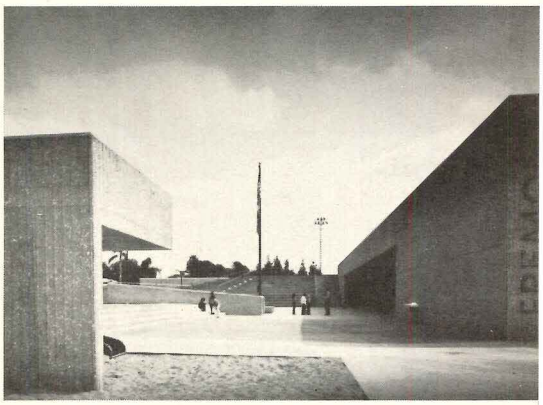
B.L. ENGLAND STATION, SALT WATER NATURAL DRAFT COOLING TOWER, Beasley Point, New Jersey.
Judges' Comments: "Pure form derived from scientific principle, executed with maximum efficiency."
Owner: Atlantic City Electric Company, Atlantic City, N.J.
Designed & Built by: Hamon Cooling Tower Division, Research-Cottrell, Bound Brook, N.J.
Architect/Engineer: United Engineers and Constructors, Philadelphia, Pa.

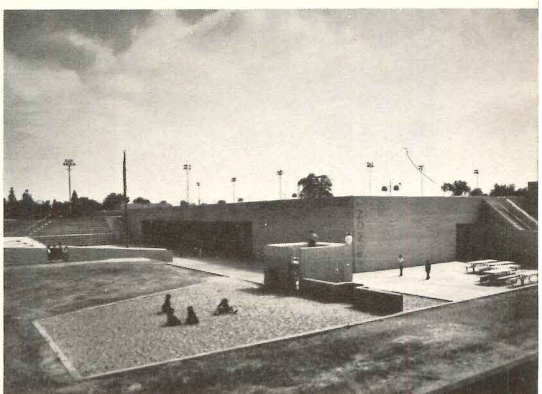
FREMONT ELEMENTARY SCHOOL, Santa Ana, California.
Judges' Comments: "Understated, restrained, and effective site planning for maximum utilization. Concrete a natural for a substructure outcropping like strata of rock. Permanence personified."
Owner: Santa Ana Unified School District, Santa Ana, Calif.
Architect: Allen & Miller Architects, Santa Ana, Calif.
Structural Engineer: Martin, Tranberger & Associates, Newport Beach, Calif.
General Contractor: Kemp Brothers, Whittier, Calif.







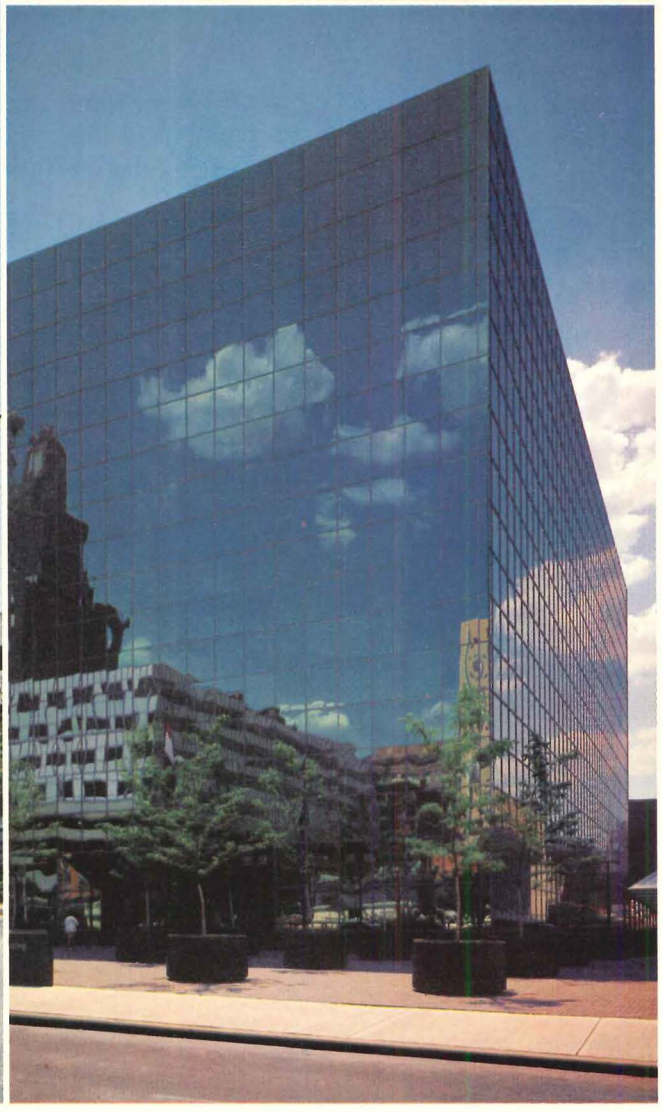




WE SHOWED T

Executive Plaza, Kansas City, Missouri. Owner: Tower Properties Co. Architectural Firm: Hellmuth, Obata & Kassabaum, Inc. Mechanical Engineers: Herman Blum Consulting Engineers, Inc.

M IN MISSOURI.



INSULATION YOU CAN SEE THROUGH, FROM LOF.

They liked what they saw because it not only looked beautiful, but it saved energy and money, too.

$79,067 SAVED IN INITIAL A/C HEATING COSTS.

In fact, by choosing LOF high-performance Vari-Tran® in Thermopane® units over single-pane bronze tinted ¼" glass, Kansas City's Executive Plaza owners saved $79,067 in initial heating and air conditioning costs. The extra cost of this high-performance glass was more than recovered in energy-dollar savings (life cycle costing).

PEAK LOAD REQUIREMENTS REDUCED.

When compared to tinted glass with medium drapes, this LOF high-performance glass (with no drapes) reduced peak cooling load requirements by almost a million BTUH. It also reduced peak heating load requirements by over one and one-half million BTUH.

But Vari-Tran did more than just make Executive Plaza figures look impressive. It gave building tenants a comfortable working environment. And it showed Kansas City just how beautiful an energy-saving building can be.

LOF CAN HELP YOU.

After all, LOF has been bringing you glass for storm sash for over 40 years, Thermopane insulating units for over 30 years, and Vari-Tran coating since the mid-'60s.

If you want to save energy dollars with the right glass, one of our highly qualified architectural representatives will be glad to help you. Or you can write Libbey-Owens-Ford Company, 811 Madison Avenue, Toledo, Ohio 43695.

LOF

For more data, circle 80 on inquiry card

SYMONS SOLUTIONS: Help architects to create unique and dramatic concepts in enduring concrete.

The towering, twisted columns of Beth El—inspired by the biblical "Tent of Meeting".

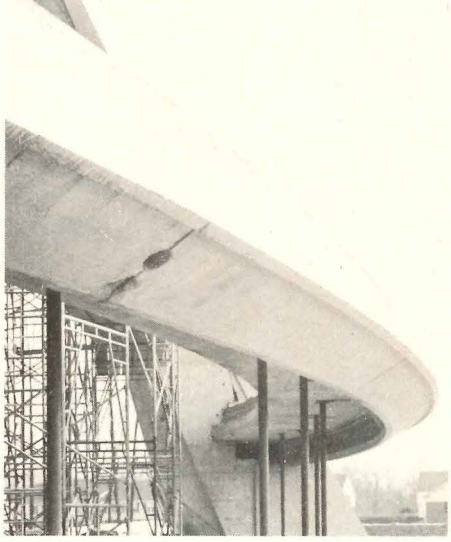
It would be hard to imagine support columns more graceful than the four which support Detroit's remarkable Temple Beth El.

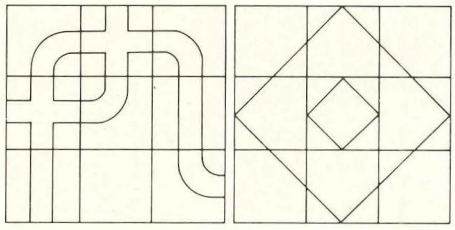
Or to imagine columns more difficult to form.

Designed by world-renowned Minoru Yamasaki & Associates, the Temple's sweeping use of concrete sends columns twisting skyward to a height of 90 feet in a unique parabolic curve.

"Symons did an excellent job of this very complex, tight-tolerance forming task," reports Top 400 contractor A. J. Etkin. "Their custom forms produced a beautiful finish."

For full information, write for Case History No. 109.



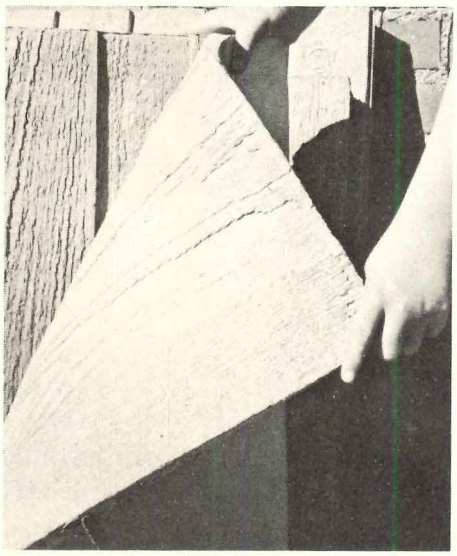


Symons Plastic and Fiberglass Form Liners achieve special architectural surfaces.

Now you have the freedom to create unique surface patterns, or unusual textures in your next design.

Because Symons will furnish economical custom plastic or fiberglass liners designed to achieve desired effects. There is a wide variety of standard textures available and, they can be formed into an almost unlimited variety of shapes and textures.

For more information, write for "Symons Custom Made Architectural Form Liners".



Flexible Elastomeric form liners offer excellent reproduction in a wide variety of standard surface textures.

There are 24 standard surfaces—in the Symons Elastomeric line—from weathered barnwood to fractured fin. Plus an endless range of custom possibilities. Beautiful effects can be achieved in both pre-cast and cast-in-place concrete.

Because they're so versatile, Symons Elastomeric liners give architects total freedom in designing distinctive surface finishes.

Because they're so durable and flexible, contractors can reuse them hundreds of times at a very low cost per use.

Write for more information on Symons Elastomeric Form Liners.

Symons offers a complete line of concrete care chemicals to protect your designs.

From start to finish, Symons MagicKOTE® chemicals help provide the clean, stain-free concrete surfaces you create and specify.

From MagicKOTE® form release to curing and hardening agents, and ACS sealers that continue to shield your designs against dirt, moisture, rust, hydrocarbon emissions, efflorescence and fungi. (Even graffiti can be cleaned off.) Symons has a complete package of chemicals to preserve your concrete design.

Write today for information on Symons Chemical Products for Concrete Care.

Please send me material checked.

- ☐ Case History Report 109
- ☐ Custom Form Liners
- ☐ Elastomeric Form Liners
- ☐ Concrete Care Products

Name

Title

Company

Address

City State Zip 120

SYMONS

When we promise a solution, you get a solution.

118 East Touhy Avenue, Dept. 7522, Des Plaines, Illinois 60018, 312/298-3200

For more data, circle 81 on inquiry card

Colorstyle doors add beauty to the Washington scene

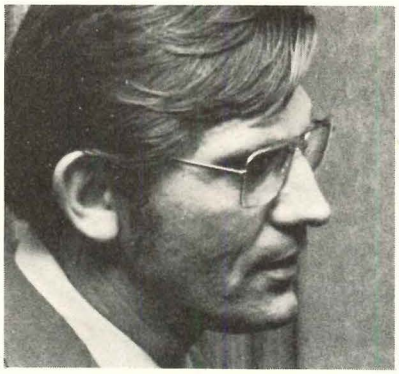
Style and beauty plus ruggedness make Ceco steel doors attractive to architects in Washington and throughout the country. Ceco doors meet every functional need. Use them as a "package" to accent your design. Ceco doors and frames are prepared for simple erection in minutes. And both are prepared for quick and solid attachment of hardware. Ceco doors and frames are tough and stable—won't warp, swell, shrink or rot. You gain the advantages of durability and trouble-free performance. Our Colorstyle doors have factory-baked quality finishes, kept fresh in poly bags. See Sweet's, or consult your local Ceco office.

CECO steel doors

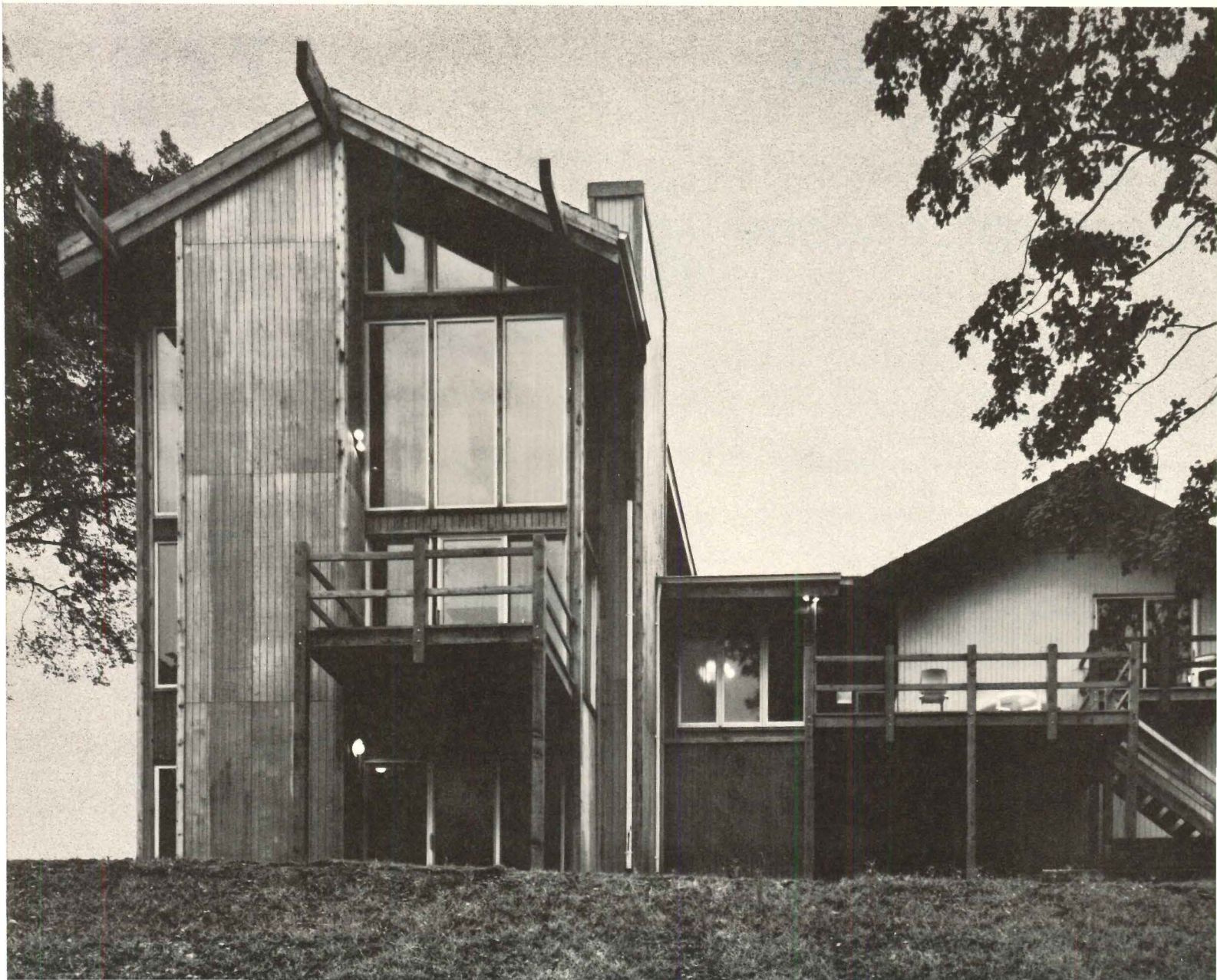
The Ceco Corporation • 5601 West 26th Street • Chicago, Ill. 60650

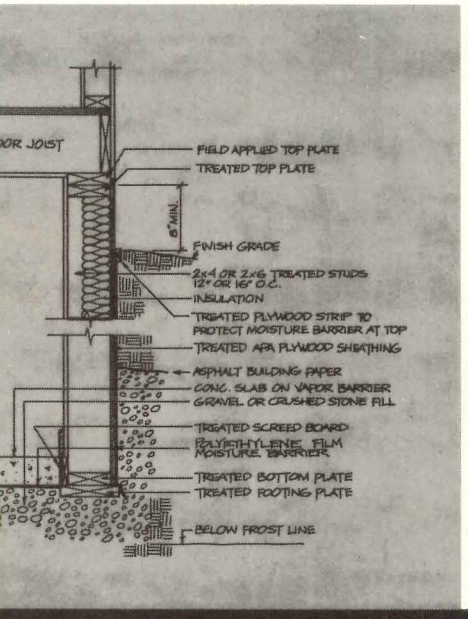
"The door people"

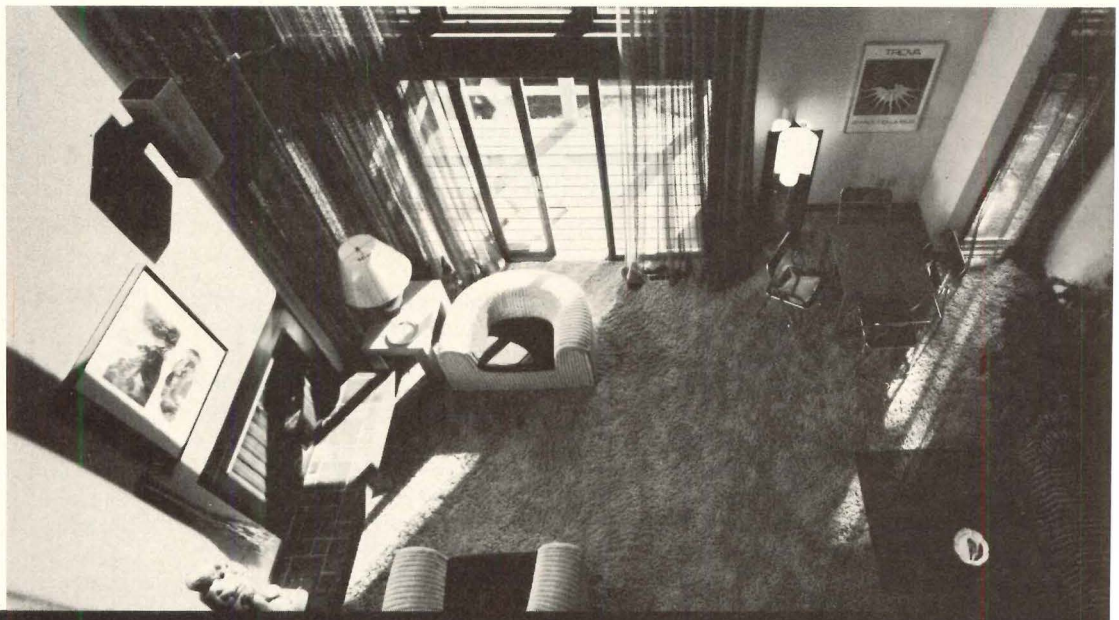
For more data, circle 82 on inquiry card



The All-Weather Wood Foundation saved $300 here. But that's peanuts compared to the design freedom it gave Tom Tilsley.







rom the street, this Cincinnati
ne looks like a two-level plywood
stone design — a far cry from its
e 4,700 square feet.
ut from the rear the house soars
several stories high. Clerestory
dows admit walls of natural light,
the view stretches all the way
vn to the woods and valley below.
he problem: a steep hillside.
he architect: Tom Tilsley of Pan-
a, Dohme, Tilsley & Co., Cincinnati.
ilsley ended up using the hillside
is advantage, by designing a com-
ation crawl-space and daylight
ement foundation using pressure-treated plywood and framing members.

The All-Weather Wood Foundation not only saved $300 over a concrete foundation, but more important it made a handsome basement space.

"We used the basement for a recreation room, bath and bedroom which gave us a lot more freedom in the upper levels," said Tilsley.

System Details: The 50- by 57-ft. foundation is set on 2x8 pressure-treated wood footing placed over an 8-inch deep gravel footing. The concrete basement floor was poured over a gravel bed with a sump pump installed to provide positive drainage. The panelized AWWF was constructed of pressure-treated half-inch 32/16 C-D interior with exterior glue APA grade-trademarked plywood nailed to pressure-treated 2x6 studs set 16 inches on center.

For more information on the All-Weather Wood Foundation, write to Department AR-045, Tacoma Washington 98401.

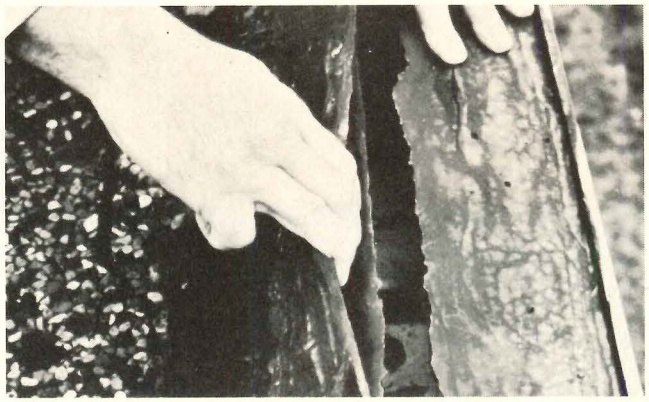
AMERICAN PLYWOOD ASSOCIATION

For more data, circle 83 on inquiry card

Three ways to ruin your roof.

Edging damage is involved in 80% of all roof losses

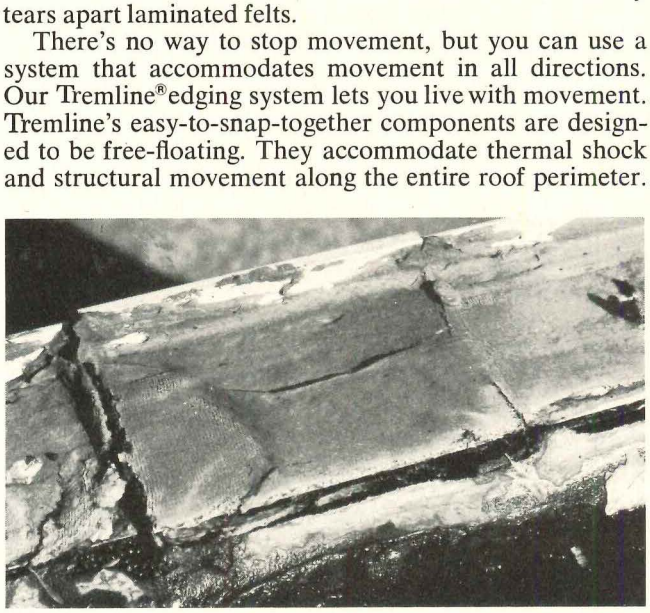
Recently, Factory Mutual Systems studied 145 roof losses. They found that perimeter failure and edge damage were involved in four out of five of these losses. If you wan your roof to last, you must do something about these three common roof edging problems.

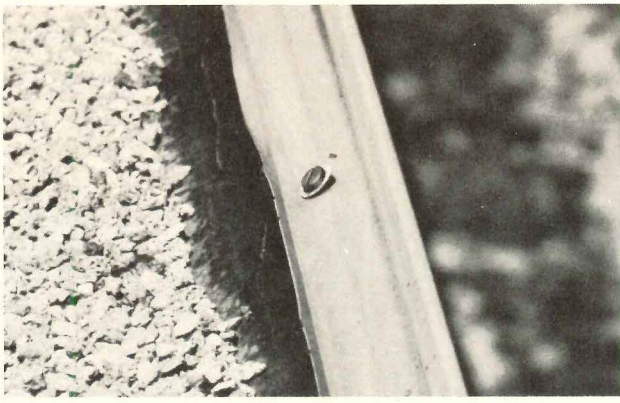


Ignore roof movement, and you'll have problems.

Whenever two structural planes meet, there is movement in different directions and at different rates. Exterior walls move laterally in response to thermal expansion and contraction. Roof decks move in a direction perpendicular to the wall movement. This differential movement literally tears apart laminated felts.

There's no way to stop movement, but you can use a system that accommodates movement in all directions. Our Tremline®edging system lets you live with movement. Tremline's easy-to-snap-together components are designed to be free-floating. They accommodate thermal shock and structural movement along the entire roof perimeter.





Use exposed fasteners or ones that puncture the membrane, and in comes trouble.

Alternating expansion and contraction often caus exposed nails to pop, nail holes to enlarge and leaks begin. Thermal changes and ice pressure all pull on expo ed fasteners, making the problem even worse.

If you use fasteners that puncture the roof membran water can leak in. The insulation can get wet and becor ineffective. That's just the beginning of trouble and t beginning of the end of the roof.

The Tremline system uses no exposed fasteners or on that puncture the membrane. So you have two less pro lems to worry about.

◀Don't isolate the roof membrane from wall movement, and you'll have headache

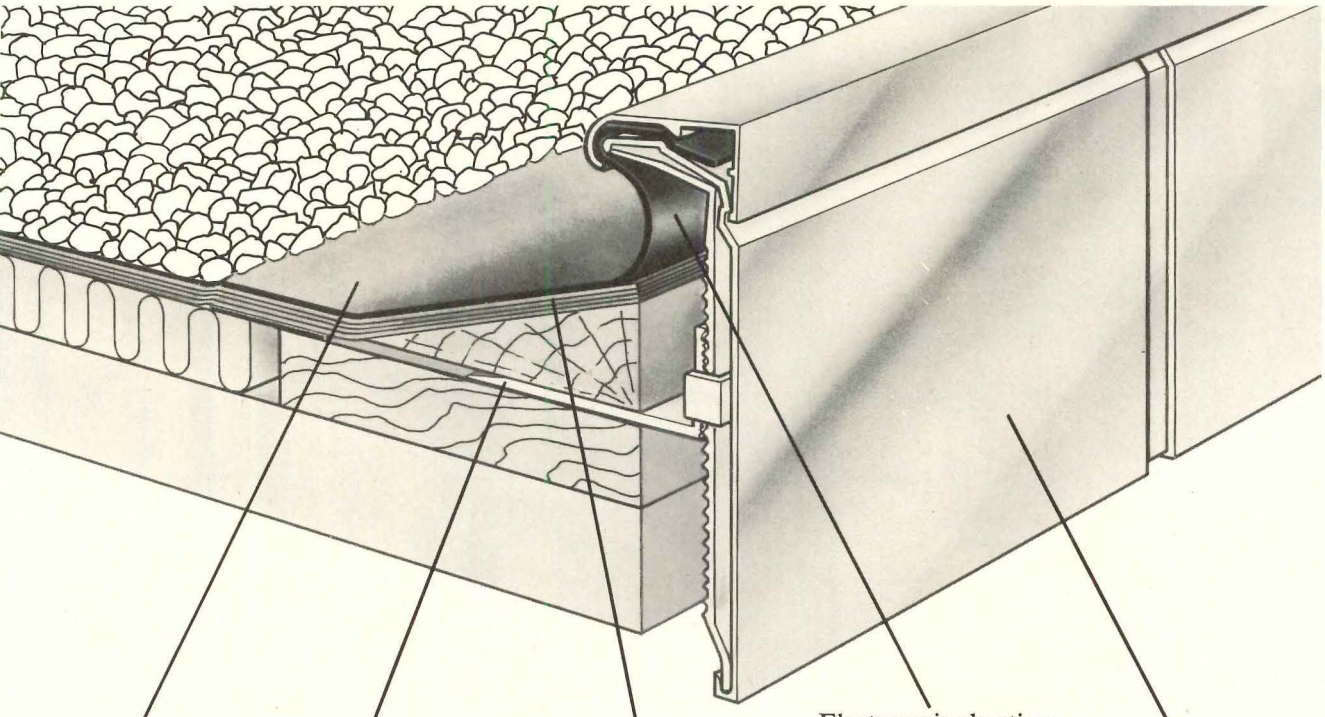
Movement between the vertical and horizontal surfaces your edging is one of the most difficult movements to li with. The best way to do it is to isolate the roof membra from wall movement.

Tremline's reinforced elastomeric sheeting functions an expansion joint. It provides a flexible watershed dam from the metal fascia to the roof membrane.

One beautiful way to preserve it.

Tremline: the trouble-free roof edging system.

A patented system, Tremline has more than seven years of proven performance and meets insurance wind requirements (approved by Factory Mutual Systems).



No exposed nail heads or fasteners.

The only fasteners are located under the cant strips. They can't puncture the membrane.

The membrane is unbroken.

Elastomeric sheeting works as an expansion joint by absorbing movement between roof and fascia.

Fascia sections are free-floating, designed to take movement in stride.

The Tremline edging system does away with most of the problems that ruin roofs. Tremline is uniquely beautiful, too. It gives a clean line appearance to the roof edge.

The Tremline edging system is only one of the ways we can solve your weatherproofing problems. For over 45 years we've been caring for buildings with some 15 job-proven glazing and caulking sealants such as MONO®, DYmeric®, and Lasto-Meric® plus our unique TREMproof® waterproofing systems. Your Tremco man can recommend complete waterproofing systems that are exactly right for your job.

So talk to us. Contact your Tremco rep. Or Tremco, Cleveland, Ohio 44104. Toronto, Ontario M4H 1G7.

THE ALWITRA EDGING SYSTEMS FROM TREMCO.

TREMCO®

For more data, circle 84 on inquiry card

Amarlite architectural products designed to protect people from

☐ **energy loss** ☐ **injury**

☐ **forced entry problems**

Newspaper headlines and TV-radio newscasts have made everyone aware of the energy crisis. To conserve energy, the architect has turned to thermal curtain wall systems.

But which one? The imaginative architects who have added the Amarlite PBS-380 positive thermal barrier system to their design tools like it because it is flexible to give added design freedom as well as energy conservation and cost savings.

• dry glaze system for low-rise (PBS-383, a similar system for high rise) • single or double glazing • adaptor permits reduction from 1" to ⅛" through ¾" within one module • variety of vertical mullion depths through exterior covers • choice of clear anodized or Amanodic bronze or black finish • contrast finishes between exterior and interior at no cost penalty.

SAFETYLINE — SAFE AND SECURE

You specify entrances protecting people from injury and forced entry, when you design with Amarlite Safetyline:

• no injury at pivot stile — cylindrical design prevents opening at jamb • no injury at lock stile — vinyl cushion protects fingers • no forced entry — top and bottom rods unlocked only by key — inset lock cylinder defies burglar tools.

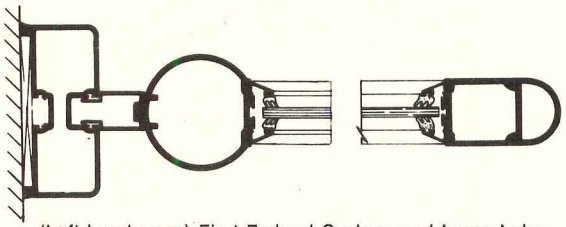
Specify Safetyline in clear anodized or Amanodic bronze or black finish. Models to meet any job requirement.

Going places together with **AMARLITE...**

ANACONDA Aluminum Division

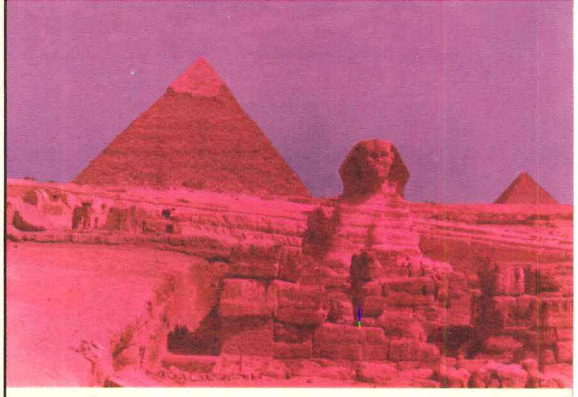
© 1975, Amarlite Products Division, Anaconda Aluminum Company, Inc.

For more data, circle 85 on inquiry card



(Left hand page) First Federal Savings and Loan: Lakeland, Fla. Architect: Perry C. Langston. General Contractor: Pritchard-Wetherington, Inc. Glass Contractor: Central Glass Co., Inc., Lakeland, Fla. Curtain Wall: PBS-380.

(Left) One of several entrances as seen from lobby of Lakeland Civic Center, Lakeland, Fla. Architects: Setliff and Regnvall. General Contractor: Biltmore Construc-

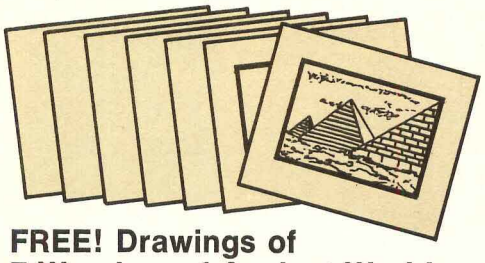


Win a Trip for Two to the Pyramids or sites of other Architectural Wonders

See the Pyramids of Egypt — the only one of the 7 Wonders of the Ancient World that exists today. Or choose a trip to the area of any of the others: Hanging Gardens of Babylon, Mausoleum at Halicarnassus, Shrine of Zeus, Colossus of Rhodes, Temple of Diana at Ephesus, Pharos Lighthouse at Alexandria.

SWEEPSTAKES RULES

1. Fill out entry card to be eligible for Sweepstakes and free set of 7 Wonders prints.
2. Entries must be postmarked before December 31, 1975.
3. All entries eligible for Sweepstakes Drawing, January 21, 1976.
4. Winner will be notified by mail.
5. This contest is nationwide except where prohibited by law.
6. Winner will be announced February 1, 1976.



FREE! Drawings of 7 Wonders of Ancient World.

Suitable for framing. Available to registered architects and consulting engineers.

A limited edition printed on parchment type paper, these drawings are a handsome addition to any wall. Each set is accompanied by a synopsis of the Wonder's history and architecture. Yours FREE with the coupon. Send for your limited edition set now.

MAIL TO:
AMARLITE/ANACONDA
MARKETING DEPT., P.O. BOX 1719
ATLANTA, GEORGIA 30301

Yes, I wish to enter the Amarlite Going Places Together Sweepstakes and receive a set of 7 Wonders of the World Prints.

NAME_____

TITLE_____

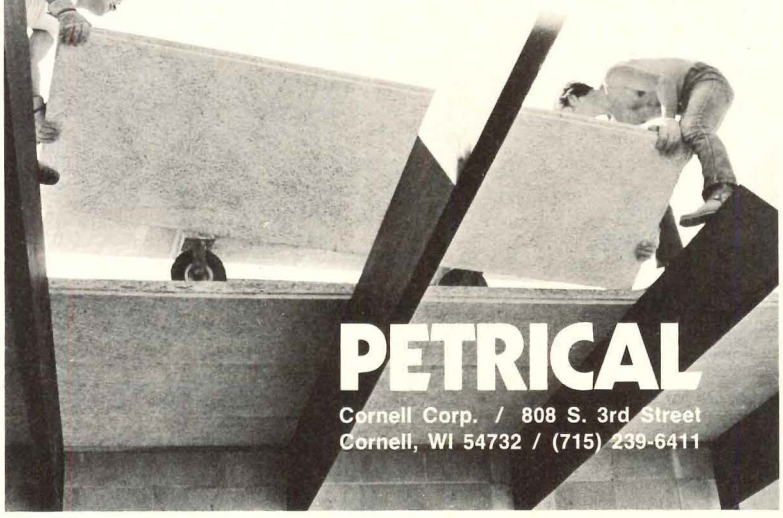
COMPANY_____

ADDRESS_____

PetriCal Roof Decks Help Reduce Construction Costs.

■ Longer span capability of new DUAL-TEE subpurlin system speeds up installation of cement/fiber PetriCal Roof Decks. And faster means reduced construction costs.

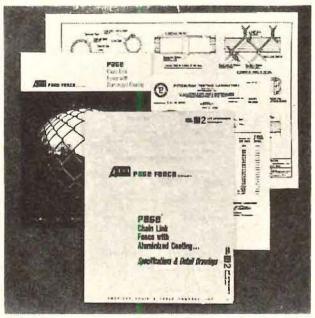
See Sweet's Architectural File. Call for the name of your local distributor.



For more data, circle 86 on inquiry card

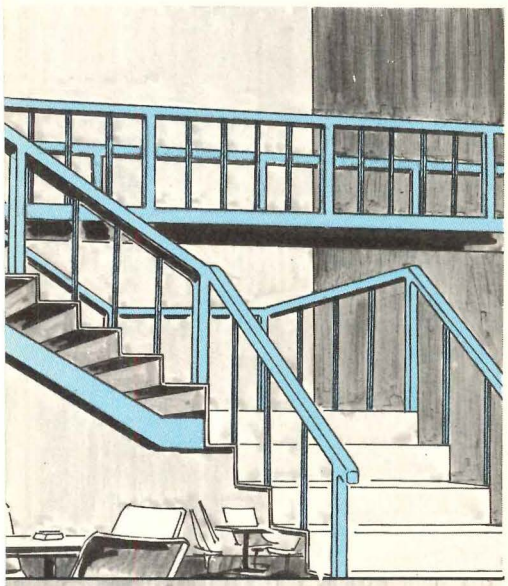
FOUNTAINS BY HOBBS rising maj
tically from the Main floor in Atlan
Northlake Mall, this architectu
sculpture illustrates the infinite des
possibilities of water animation—a
the creative engineering ability of W
Hobbs Ltd. Specializing in custom
sign and off-the-shelf fountain k
fountain equipment and related arc
tectural accessories, we offer an
depth design and engineering service with a manufacturing faci
with unique fiberglass construction capabilities. A free catalog
available. Write: Wm. Hobbs, Ltd., 5252 Snapfinger Woods Dri
Decatur, Georgia 30032

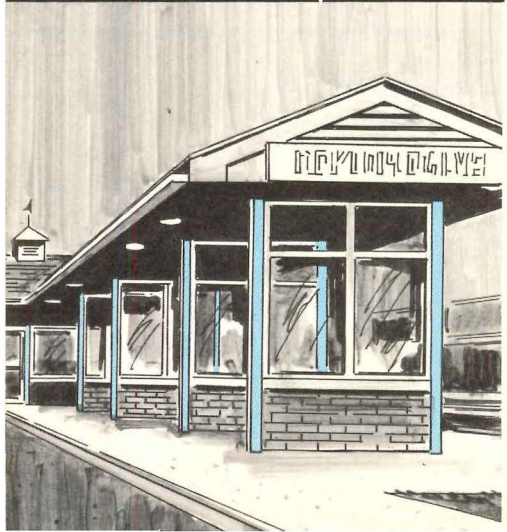
For more data, circle 87 on inquiry card



FREE FENCE SPEC KIT saves time, tr
ble. Invaluable for planning chain l
fencing. Kit includes drawings on sty
wire gauges, gates, fittings, framewo
Also includes lab reports, work she
and specifications. Page® aluminiz
fabric lasts 3-5 times longer than
best of galvanized. Send for your kit
day. Page Fence Division of Ameri
Chain & Cable Company, Inc., P
Box 430, Bridgeport, Conn. 06602

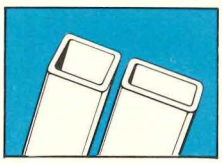
For more data, circle 88 on inquiry card





Designing with steel?

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



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

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

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

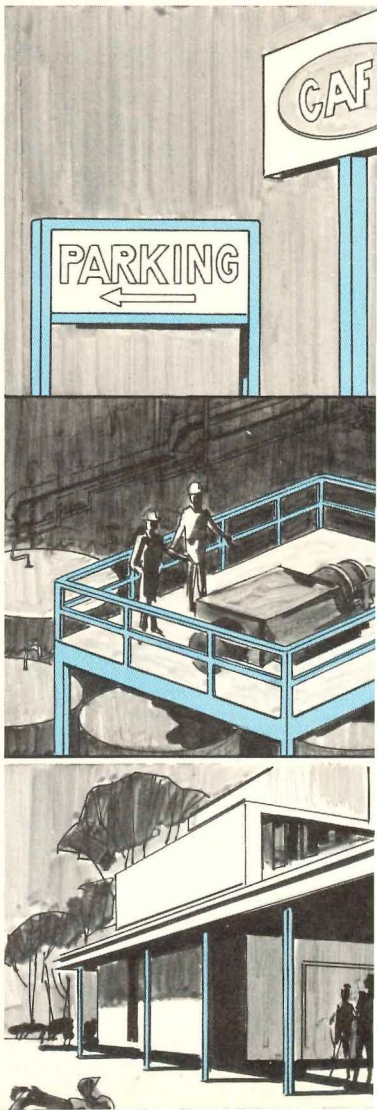
You can simplify layout and speed construction due to easy joining to the four flat surfaces.

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

REGAL TUBE COMPANY
a Copperweld enterprise

7401 South Linder Ave., Chicago, Ill. 60638 • 312/458-4820

For more data, circle 89 on inquiry card




MORE
LEXAN® shapes than you can bat a stick at. . . .
Over sixty non-destructible designs in mercury vapor,
incandescent and fluorescent lighting – Recessed, surface
mounts and brackets engineered for performance.
When you name drop LEXAN® make certain
the first name is DURATHON.
MARCO
NON-DESTRUCTIBLE
Durathon II SERIES
Write for full color catalog
MARVIN ELECTRIC MANUFACTURING COMPANY · 6100 SOUTH WILMINGTON, LOS ANGELES, CALIFORNIA 90001
A DIVISION OF LCA CORPORATION

Washfountains that wipe out vandalism while they clean up the kids.

Bradley's "School Board Special" Washfountain. Built right because we developed it to the specific needs of an actual school district. And built dependable because of Bradley's long experience in designing for school markets.

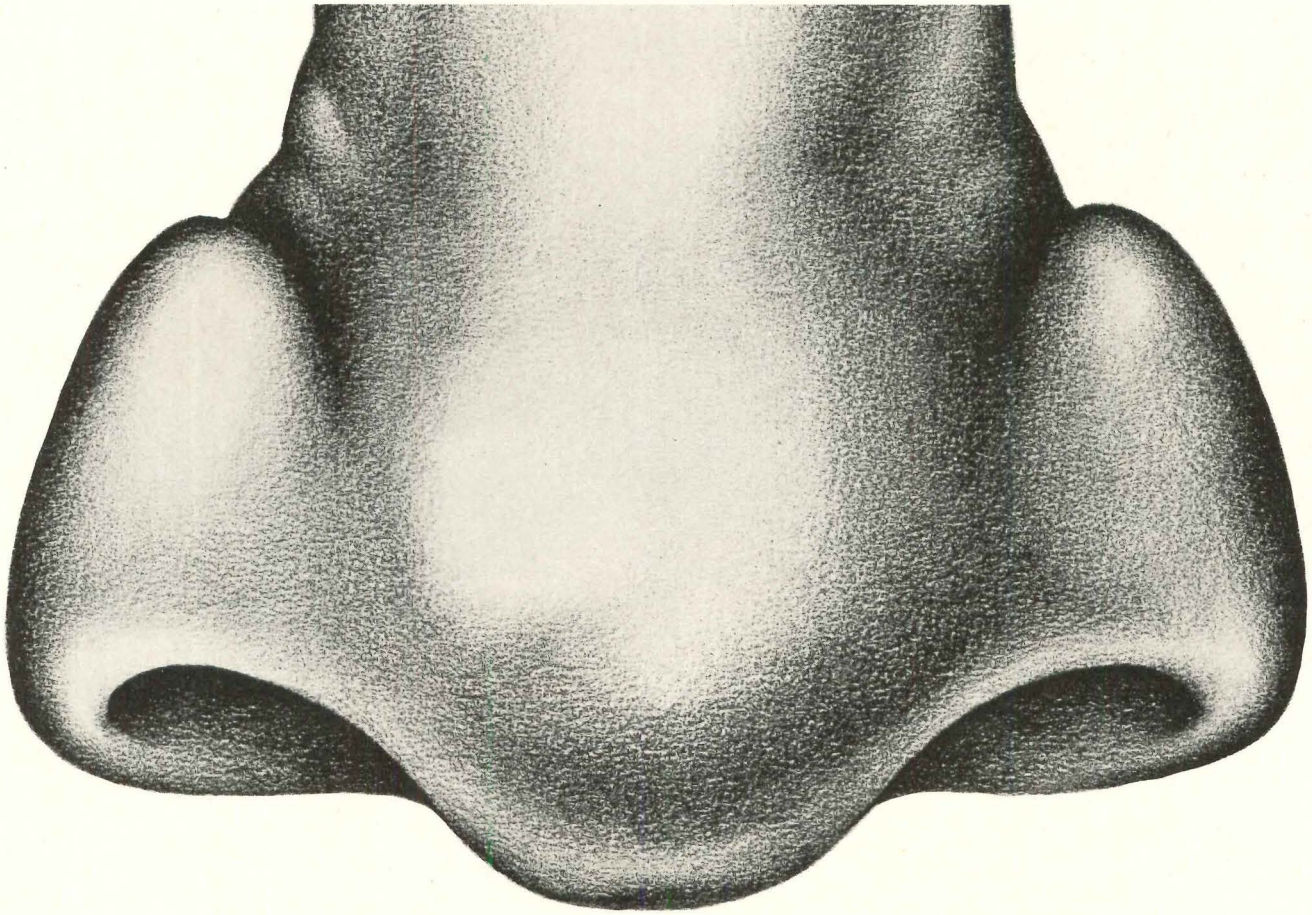
We work with school maintenance people to find features that will help solve their individual vandalism problem. And the result is Washfountains that require less maintenance and are more vandal resistant. New ideas like the combination soap dispenser/restraining bracket that dispenses soap while anchoring the sprayhead support tube assembly. A pressurized system that dispenses soap with a minimum of effort. A foot controlled tape switch instead of a foot rail. And more.

You can even specify the material that best fits your needs. Stainless steel. Precast terrazzo. Or new tough Bradglas® Choose from a wide range of colors and options, too. For complete details, see your Bradley representative and write for latest literature, including a list of communities that have installed these special units. Or call (414) 251-6000. Bradley Corporation, 9109 Fountain Drive, Menomonee Falls, Wisconsin 53051.

Another bright idea from BRADLEY **Bradley**

For more data, circle 91 on inquiry card

Metalatex goes largely undetected.



Open a can of Metalatex™ Semi-Gloss, and you'll find the awfullest things missing. Awful solvents. Awful lead. Awful odors. Which means you can specify Metalatex for everything. Factories. Commercial buildings. Hospitals. Schools. Processing plants. Occupied areas. Wherever the assignment takes you. Both outside and in.

Metalatex is versatile, too. It goes on wood, masonry, steel, aluminum. And is available in five safety colors meeting OSHA regulations. As well as all federal, state and municipal environmental requirements.

And it's really tough stuff. Salt. Alkalies. People. Metalatex withstands them all. Keeps its gloss and color longer than even silicone alkyd paints.

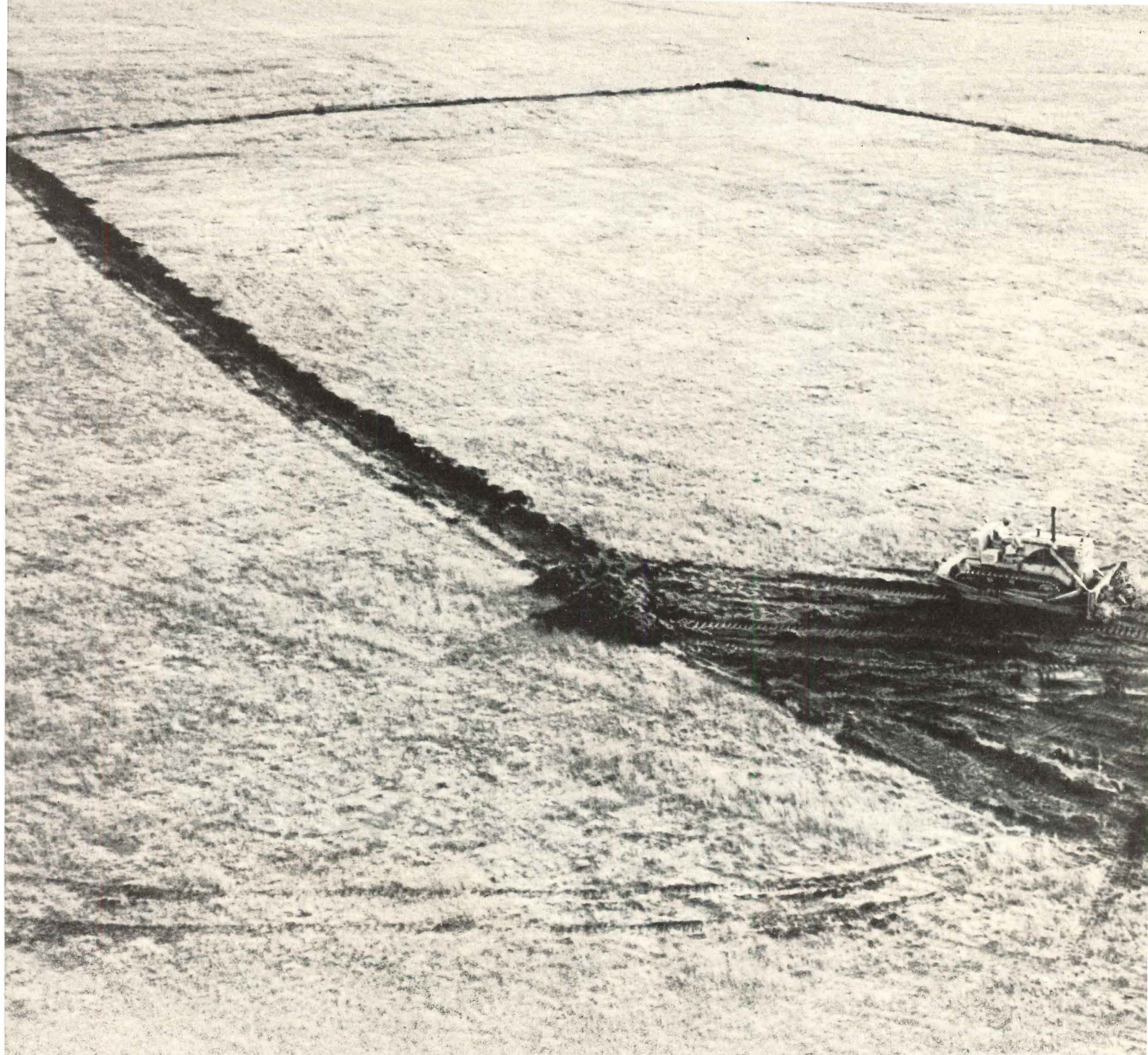
Metalatex Semi-Gloss. Available from any Sherwin-Williams representative in a wide range of eye-catching tints. All of which smell like nothing.

Professional Coatings Div.,
101 Prospect Ave., N. W. Cleveland, Ohio 44115

SHERWIN WILLIAMS®

Helps you do it all.

For more data, circle 92 on inquiry card



Fesco-Foam™ roof insulati
on this site $21,800 the fi

And it's available now!

Fesco-Foam roof insulation makes designing within your energy budgets a lot easier for you.

And saves a lot of money for building owners.

How big a saving?

Assume, for example, a 200,000 square foot, single-story office building in Denver, Colorado.

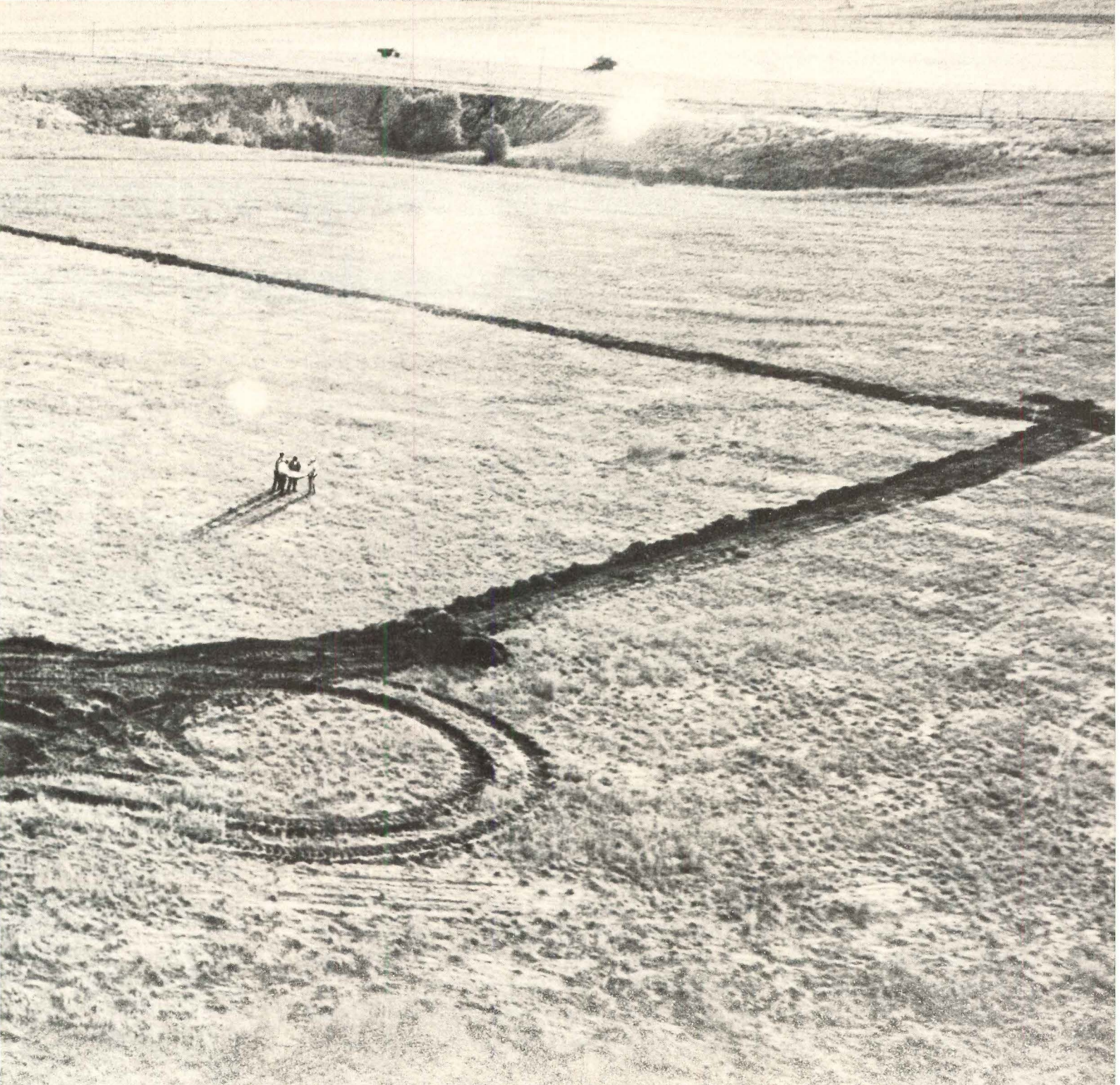
By upgrading the insulation on the roof from 1" Fesco® Board to C-10 Fesco-Foam, the cost of heating/air conditioning equipment alone can be reduced by $90,000.*

And a lot less fuel is used, with savings of $50,514 over the 20-year life of the roof. This is based on $1,800 fuel savings the first year, with a 10% escalation in fuel costs for the next 5 years. Net savings will add up to $70,514 present worth value of $40,629 based on a 10% rate—even after taking into account the initial co grading the building to a Fesco-Foam roof.*

A dramatic reduction in building costs and in th energy—both made possible just by the use of Fesc

What is Fesco-Foam?

It's a composite thermal roof insulation board w Fesco Board as the bottom layer—on the "people sid roof. The core is polyurethane foam. And the top su asphalt saturated felt. Fesco-Foam meets Factory standards for Class I Construction and UL Cons Nos. 1, 2 and 27. Johns-Manville recommends of Fesco-Foam in these UL and FM systems, as t



ll save the owners of the building ar and $70,514 in 20 years.*

n test results that simulate actual fire conditions. res no joint taping, has low moisture ion, good resistance to indenta- l crushing. And because of h thermal efficiency per thickness, Fesco-Foam of- nomic advantages in han- nd design.

n get Fesco-Foam now.

can specify Fesco-Foam confident that ient will get delivery.
ke Fesco-Foam an important part of your life-cycle . For information about Fesco-Foam—or any of complete built-up roofing systems—call the J-M District Office near you, or contact Peter McCracken, Johns-Manville, Box 5108, Denver, Colorado 80217, (303) 770-1000.

*Savings are based on a hypothetical building using optimum design criteria. Actual savings may vary depending on calculations.

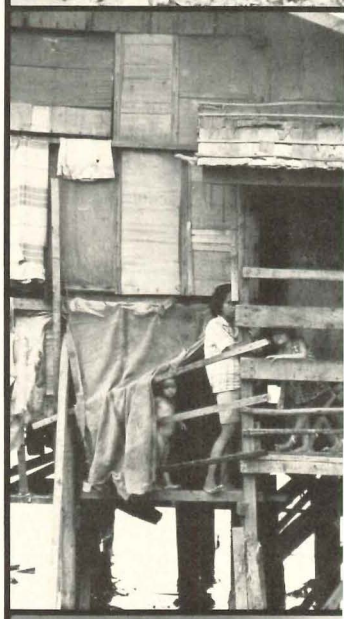
The single-source built-up roofing system.

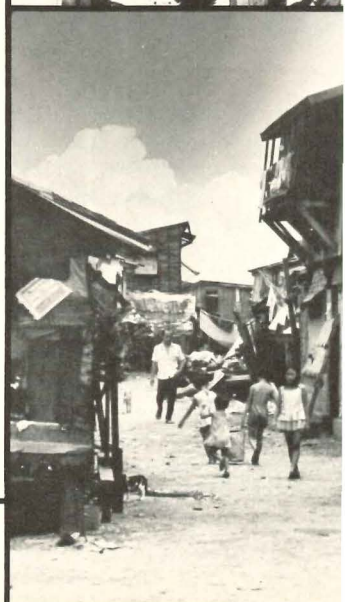
Johns-Manville

You are invited to enter

The international design competitio of developing countri

A one-stage international architectural competition for the design of a self-help housing community in a developing nation has been announced by The International Architectural Foundation, a nonprofit corporation created by two of the world's leading architectural magazines, ARCHITECTURAL RECORD and L'ARCHITECTURE D'AUJOURD'HUI. The Foundation is strongly supportive of the United Nations Environment Programme, and its competition is a project conceived in conjunction with Habitat '76, the major UN Conference-Exposition on Human Settlements to be held in Vancouver, B.C. (Canada) May 31-June 11, 1976. Habitat '76 will be a large-scale international meeting concerned with the accelerating urban crisis in the developing countries and will include official representatives and technical experts from member states of the United Nations.





The design problem

The site for the competition project, which will provide housing and community facilities for approximately 3,500 to 5,000 people, is located in Dagat-Dagatan, in the metropolitan area of Manila, Philippines. Typical of urban growth problems throughout much of the developing world, the area has been receiving heavy in-migration of population. Extensive studies of this area (photos, right) have produced the body of data and preparatory planning that led to the selection of this site for the competition.

In addition to the generous grants from the contributors listed on the opposite page, funds to meet all cash awards and certain other competition expenses have been guaranteed by the Philippine Government, and local public agencies have provided assurance that the project will be built and the winning architect commissioned. The competition conditions will be approved in their final form by the Philippine Institute of Architects (the local section of the International Union of Architects) and members of the jury.

The competition addresses the world-wide problem of housing in the context of rapid urbanization, and seeks solutions that will be widely applicable throughout the developing world. It assumes a high degree of self-help in the realization of the community. Advanced measures to minimize environmental impact will be specified in the competition conditions. Thus the competition deals with the entire question of human habitat and its future, and the competitors must resolve the highly practical aspects of a specific problem and a particular location.

The winning designs will be widely publicized throughout the world, particularly in the architectural press, and will be exhibited in Vancouver during Habitat '76.

r the urban environment
tused on Manila

The International Design Competition is made possible by generous grants from:

Sponsors

Graham Foundation for Advanced Studies in the Fine Arts
Johns-Manville

Patrons

International Development Research Centre (Canada)

Donors

The Rockefeller Foundation
The Asia Foundation
The Austin Company
George P. McNear, Jr. Foundation
PPG Industries Foundation
The Architects Collaborative
Architectural Record
Skidmore, Owings & Merrill
Hyatt International Corporation

Contributors

Smith, Hinchman & Grylls Associates Inc.
Hellmuth, Obata & Kassabaum, Inc.
CP Air
Arthur Sworn Goldman & Associates, Inc.
Architectural Record Staff
Ir. E. Hendrik Grolle, RAIC
Dalton•Dalton•Little•Newport
Gruzen and Partners
Harrison & Abramovitz
W. R. Bonsal Company
Building Industry Development Services

Special Grant

The Government of the Philippines

TERNATIONAL ARCHITECTURAL FOUNDATION, INC.
1 AVENUE OF THE AMERICAS, NEW YORK, N.Y. 10020

IAF

"Help make a world where hope makes sense"

The awards

Awards to winning architects or design teams total $70,000 (U.S.)

First award (plus commission to complete design subject to the Philippine laws)*	$35,000
Second award	$15,000
Third award	$10,000
Discretionary awards	$10,000

**Possibility exists for commissioning of additional entrants because competition site is part of larger site which will eventually accommodate neighborhoods for 100,000 to 140,000 people.*

Qualifications for entering Competition

Anyone qualified to practice architecture in his own country, or any design team (including students) with such a qualified architect, can enter the Competition, to be conducted under the regulations of the International Union of Architects.

How to enter

Complete registration application at bottom of page, and remit $25 (U.S.) payable to The International Architectural Foundation, Inc., to Gutheim/Seelig/Erickson. Documents and complete program will be mailed to you promptly. First date on which conditions will be posted: March 1, 1975. Closing date for registration: postmark May 15, 1975. Last date for designs: postmark October 15, 1975.

Jury for the Competition

Balkrishna Vithaldas Doshi, architect (India)
Eric Lyons, FRIBA (Great Britain)
Moshe Safdie, PQAA (Canada)
Mildred F. Schmertz, AIA (U.S.A.)
General Gaudencio V. Tobias (Philippines)
Takamasa Yoshizaka, JAA,AIJ (Japan) *reserve*
William Whitfield, RIBA (Great Britain) *reserve*

Professional advisor

Arthur Erickson, FRAIC, Vancouver, B.C., Canada

This coupon will serve as your registration application. Please type or print clearly. All information must be supplied. Mail this form or a copy of it to Gutheim/Seelig/Erickson, 2412 Laurel Street, Vancouver, B.C., V5Z-3T2, Canada. **Include fee of $25 (U.S.) payable to The International Architectural Foundation, Inc. You will receive complete competition documents** without further correspondence, and you will be officially registered. Fee is not returnable.

Name _____

Firm name or institutional affiliation (if any) _____

Country in which qualified to practice _____

Complete address: Street & Number (or P.O. Box) _____

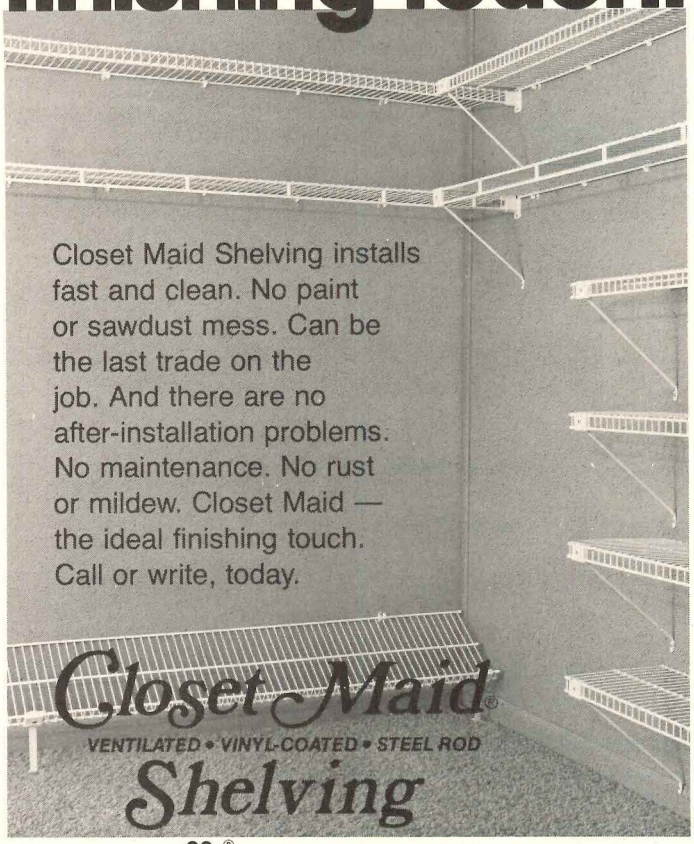
_____

City or Place _____

Country _____ Telephone Number _____

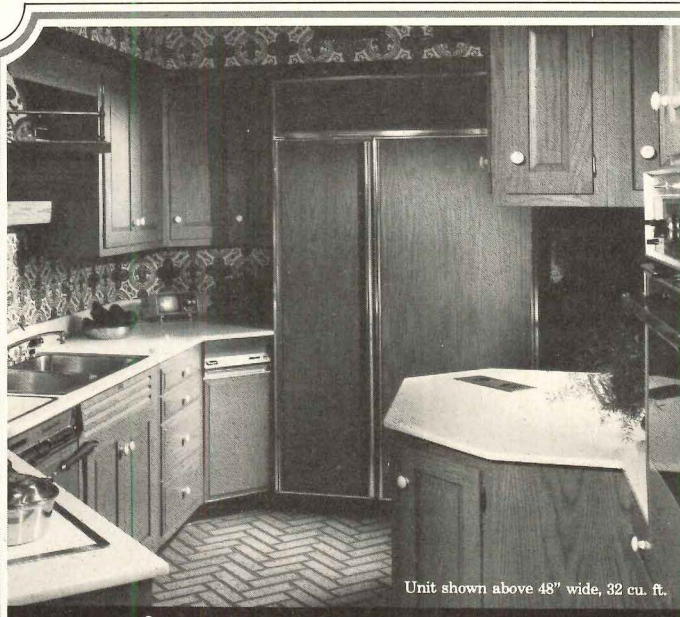
If this application represents a group or design team, please describe the composition of this group in an attachment.

finishing touch.



Manufactured by Closet Maid Corporation / Ocala, Florida 32670
(904) 732-8734 / P.O. Box 304 / 720 S. W. 17th St. / Suite 155
See us at Booth 2517 – Apartment Builder / Developer Show – Miami

For more data, circle 94 on inquiry card


Unit shown above 48" wide, 32 cu. ft.

Elegance in home refrigeration

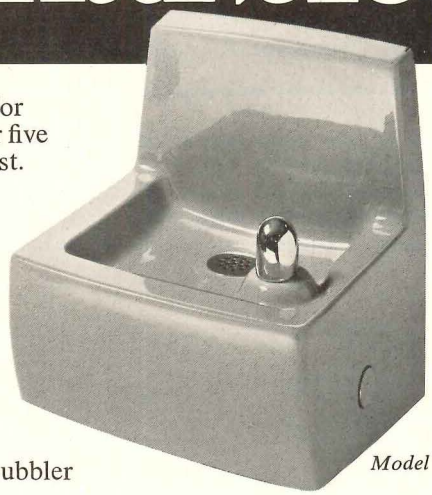
All units are designed as "built-ins" so as to "blend-in." Exteriors will accept the material of your choice . . . to match your decor. The largest capacity home units manufactured. Superbly crafted and factory tested for complete performance.

Send 25c for built-in refrigeration ideas to:
SUB-ZERO FREEZER CO.,
Box 4130, Madison, Wisconsin 53711

SUB-ZERO

For more data, circle 95 on inquiry card

For luster that lasts... choose polymarble


Model 1205

Select from the Haws line . . . for drinking fountains in white, or five attractive colors at no extra cost. Color is throughout this durable, highly impact-resistant material. Colors are Cerulean Blue, Pistachio Green, Yellow Mist, Gray Satin and Tan. Patented flush-mounted push-button valves are virtually tamper-proof.

Get full particulars on this and other one, two and three bubbler polymarble models . . . write
Haws Drinking Faucet Co., 1441 Fourth St., Berkeley, CA 94710.

Haws® DRINKING FOUNTAINS

For more data, circle 96 on inquiry card

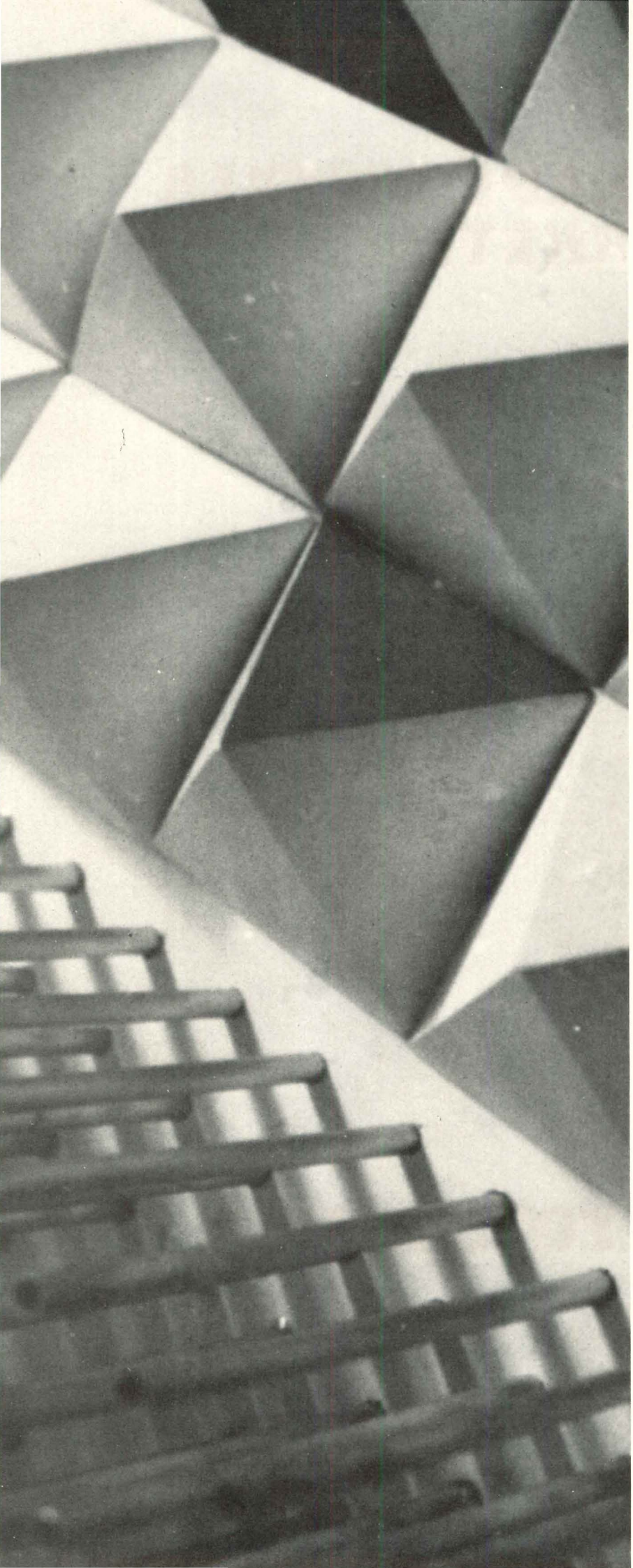
4" MESSAGE SYSTEM

The key to hospital communication

Consider this: good internal communication is the key to coordinated productivity in today's busy hospital. And AMSCO's 4" Pneumatic Message System is the key to good internal communication. Delivers rolled X-rays and small stat. items as well as paperwork, reports, requisitions and the like. Never stops for coffee breaks or waits for elevators, either.

AMSCO
American Sterilizer Company
ERIE · PENNSYLVANIA

For more data, circle 97 on inquiry card



Coming in mid-August . . . .

ENGINEERING FOR ARCHITECTURE

Architectural Record's second annual presentation of the year's most significant developments in engineering for buildings

Featuring . . .

- Case Studies of Effective Engineer-Architect Collaboration
- Round Table Report: "Towards a Rational Policy for Energy Usage in Building"
- "Quality Lighting with Fewer Watts"
- "Solar Energy: Is It Practical? How Do You Design It?"
- "The Engineer's Role in Design: What Direction Is It Taking?"
- "Government's Increasing Role in the Science of Building: Who Wants It and Why?"

Engineering for Architecture 1975, focusing on the integration of architecture and engineering in building design and emphasizing one of the most important issues of the day—energy conservation, provides an exceptional and timely advertising opportunity for manufacturers of building products.

AE '75 will reach the largest paid architect and engineer subscriber audience ever made available—nearly 45,000 architects and engineers. And, as an extra bonus, 3,000 engineers newly active in the building field whose names appear on *Dodge Reports* for one full year after publication.

Closing date is July 15.

A McGRAW-HILL MARKET-DIRECTED PUBLICATION

ARCHITECTURAL RECORD

1221 Avenue of the Americas New York 10020

MOUSETRAPS, METALS AND MARKETING

Consider for a moment that old New England adage to the effect that if a man make a better mousetrap than his neighbor, "tho' he build his house in the woods, the world will make a beaten path to his door." How little relevant these words seem at a time when merchandising can often be more important than the product merchandised. And rather unhappily so from our own standpoint, for in TCS (Terne-Coated Stainless Steel), Follansbee has a nearly perfect example of the proverbial better mousetrap.

Here—quite simply—is a roofing and weather-sealing metal which has literally no peer when measured by the major criteria of corrosion resistance, freedom from maintenance, durability and amortized cost.

We can, of course, prove this statement, but in an era considerably more McLuhanesque than Emersonian, we are still confronted with the formidable task of bringing such proof to the attention of most architects and engineers, professionals who, as a group, are notably product-wary and slogan-shy.

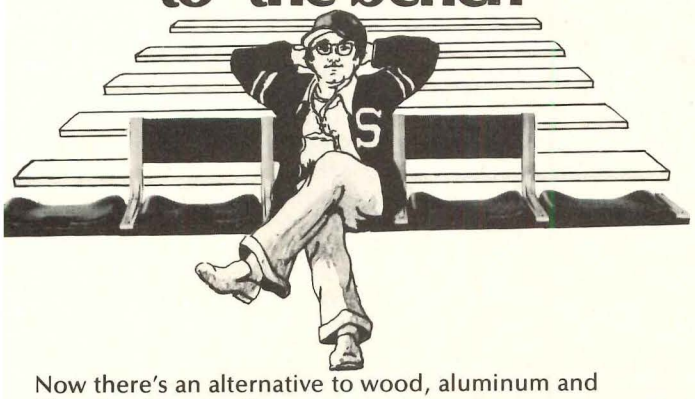
As one step toward that goal, may we at least make the TCS data available to you?

FOLLANSBEE

FOLLANSBEE STEEL CORPORATION • FOLLANSBEE, WEST VIRGINIA

For more data, circle 98 on inquiry card

Don't send your spectators to "the bench"



Now there's an alternative to wood, aluminum and fiberglas "Benches".

Sport Seating® modular units offer the economy, durability and low maintenance you need for indoor/outdoor arenas. And more.

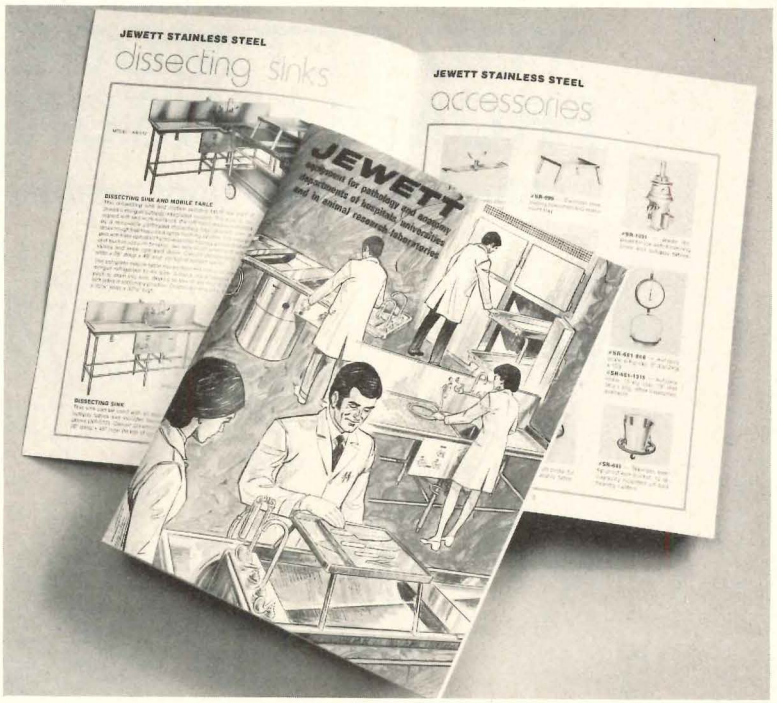
Because seats are contour-molded from high-density polyethylene, there's no fiberglas "blooming" or aluminum or wood splinters. Just built-in comfort and colorful good looks, year after year after year. And after all, isn't that what you *and* your spectators really want?

For information on our full line, see Sweets Architectural Catalog # 11.17 SP, or contact Sport Seating Company.

Sport Seating co.

THE ULTIMATE IN SPECTATOR SEATING
1540 CHESTNUT ST., EMMAUS, PA 18049 – (215) 967-5450

For more data, circle 99 on inquiry card



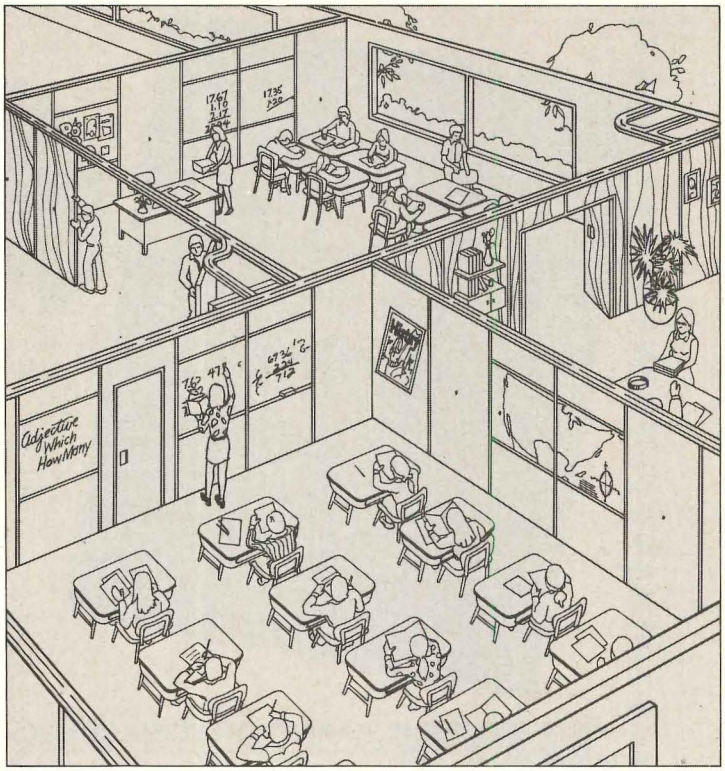
Jewett offers morgue/autopsy planning service

Whether you are planning a new morgue/autopsy facility or modernizing and equipping present facilities, Jewett specialists provide expert design counseling. Jewett will analyze your requirements with you and your architect or consultant and will send you plans of the complete layout including equipment specifications. Jewett's morgue/autopsy planning services can save you time and costly mistakes. Your new construction or renovation project will not only be right for your current needs, it will also allow for future growth. Send for 16 page equipment catalog.

JEWETT
REFRIGERATOR
2 LETCHWORTH ST.
BUFFALO, N.Y. 14213

For more data, circle 100 on inquiry card

How to turn one large room into three classrooms and a study center. Instantly...with movable Kwik-Wall.

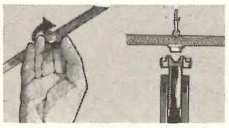


Now interior school space can be scheduled to match the daily curriculum. With movable Kwik-Wall, the kind of classroom space that is needed can be available *when* it's needed.

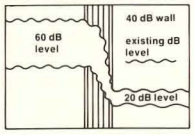
Attractive Kwik-Wall features the permanent look in movable walls, durable and sound retardant. Doubly versatile in either track-mounted or operable portable partitions.

Anyone can move them. Or store them. Take your pick from more than 1500 decorator facings.

Suspended ceilings?
Two of our new portable models have been specially designed to interface with soft ceilings.



Sound control?
Our acoustical core both dampens and absorbs sound, making every room a real room.



KWIK WALL

The permanent look in movable walls
KWIK-WALL Company, Dept. 52S
P.O. Box 3267, Springfield, Illinois 62708
Send free color brochure.

Name **Title**
Firm
Address
City/State **Zip**

For more data, circle 101 on inquiry card

YOU GET MORE FROM JAMISON

(the cold storage door people)

More people to help solve your problems.

It takes a lot of experienced people, applying their specialized knowledge, to assure you the best selection of a door to meet your cold storage requirements.

That's why it pays to look to Jamison for the cooler and freezer doors you need. Jamison has more than 300 people to give you problem-solving help. They include highly experienced research and engineering personnel, production and quality control specialists, and many others. All are eager to help you save time and money in selection, specification, and installation.

Jamison has more people than anyone else . . . more cooler and freezer doors, too. The result—traditional Jamison quality, durability, and service in every price range. Call or write now for full details.

COLD STORAGE DOORS BY
JAMISON
JAMISON DOOR CO • HAGERSTOWN, MD 21740

For more data, circle 102 on inquiry card

IMPORTANT NOTICE REGARDING THE FLAMMABILITY OF CELLULAR PLASTICS USED IN BUILDING CONSTRUCTION, AND LOW DENSITY CELLULAR PLASTICS USED IN FURNITURE

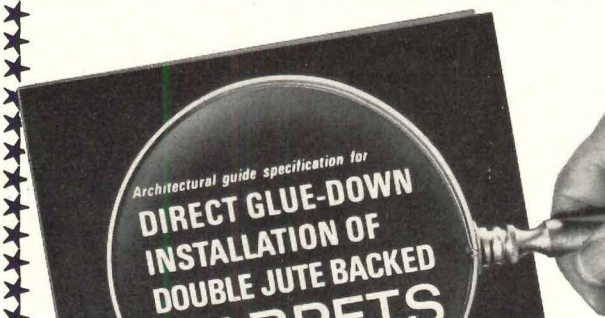
The flammability characteristics of cellular plastics used in building construction, and low density cellular plastics used in furniture are tested under numerous test methods and standards. Included among these are ASTM D-568, 635, 757, 1433, 1692, E-84, 162 and 286; UL 94 and 723; and NFPA 255. The Federal Trade Commission considers that these standards are not accurate indicators of the performance of the tested materials under actual fire conditions, and that they are only valid as a measurement of the performance of such materials under spcific, controlled test conditions. The terminology associated with the above tests or standards, such as "non-burning," "self-extinguishing," "non-combustible" or "25 (or any other) flame spread" is not intended to reflect hazards presented by such products under actual fire conditions. Moreover, so hazards associated with numerical flame spread ratings of such products derived from test methods and standards may be significantly greater than those which would be expected of other products with the same numerical rating.

The Commission considers that under actual fire conditions, such products, if allowed to remain exposed or unprotected, will under some circumstances produce rapid flame spread, quick flashover, toxic or flammable gases, dense smoke and intense and immediate heat and may present a serious fire hazard. The manufacturer of the particular product or The Society of the Plastics Industry, Inc. should be consulted for instructions for use to minimize the risks that may be involved in the use of these products.

The Federal Trade Commission, Washington, D.C. 20580 requests that any representation that is inconsistent with the terms of this Notice be brought to its attention. This Notice is distributed by The Society of the Plastics Industry, Inc., 250 Park Avenue, New York, New York 10017.

For more data, circle 103 on inquiry card

The guide spec that opened countless doors to carpet



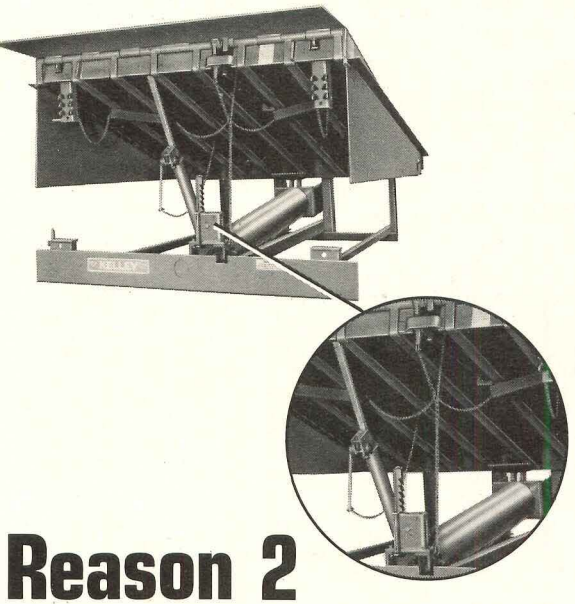
Prepared by William E. Lunt, Jr. C. S. I.

Write, or u Reader Servi card in ba for your fr copy, pl editor repr detaili this prov carp installati syste

JUTE CARPET BACKING COUNCIL, IN
30 ROCKEFELLER PLAZA • NEW YORK, NY 100

For more data, circle 104 on inquiry card

Why you need Kelley "NO SHORTCUTS" DOCKBOARDS



Reason 2

KELLEY'S PATENTED, FULLY-AUTOMATIC TRIPLE SAFETY SYSTEM

The old axiom, "If it's not automatic, it's not safe", is particularly true on loading docks. With a Kelley "No Shortcuts" dockboard you get Kelley patented cross-traffic legs to support the board in the level or four below-level positions.

For emergency situations your choice of a 5-position or 20-position safety system. Either provides automatic full-capacity support if a truck pulls out while your driver, fork truck and load are on the board. Neither interferes with normal operation.
It doesnt pay to "shortcut" safety. That's why Kelley offers the "No Shortcuts" dockboard. So call your Kelley representative or contact:

Kelley Company, Inc.
6768 North Teutonia Ave.
Milwaukee, Wisconsin 53209
Telephone: (414) 352-1000 • Telex: 26-661

KELLEY®

55-607

For more data, circle 107 on inquiry card

LOS ANGELES CONVENTION CENTER WEARS KEMIKO CONCRETE COLORS (over 1/2 million square feet)

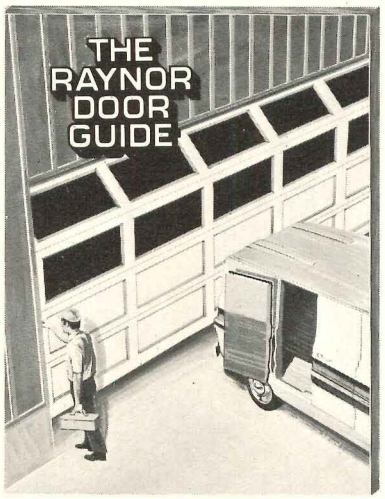
When a combination of beauty and durability was required for the spacious pedestrian plaza of Los Angeles' spectacular Auditorium and Exhibition Center, architect Charles Luckman & Associates and Robert E. McKee General Contractor, Inc., chose Kemiko's Permanent Concrete Stain and Col-r-tone Finishes. To achieve the striking geometric pattern illustrated, Kemiko's "Sandstone" color was combined with borders of custom mixed "Charcoal" and "Off-White". Kemiko inorganic chemical stains cannot crack, chip or peel. They become an integral part of the concrete surface. A heavy-duty Col-r-tone base topped with regular Col-r-tone will defy sun, wear and moisture for years in any climate. These Col-r-tone non-skid, glare-free finishes are easily applied by brush or roller. They may be intermixed to provide over 50 contemporary colors, typical of which is Tennis Court Green—used on 90% of all Southern California tennis courts.

Write for free beautifully illustrated brochure and color chips.

KEMIKO, Inc., Dept. AR-45, 2443 N. Naomi St., Burbank, Calif. 91504

Specialists in coloring concrete and asphalt since 1930.

For more data, circle 105 on inquiry card



All the facts you should know about garage doors can be found in this complete Raynor reference guide. Garage door styles, materials, mountings, applications, specifications (including handy door and track selection guides),... **PLUS** information on Raynor's new deep-ribbed, good-looking 'Security Line' steel doors. See why Raynor builds better doors.

Just clip this coupon and mail to:
RAYNOR MANUFACTURING COMPANY
DEPT. AR–4 DIXON, ILLINOIS 61021

Name _____

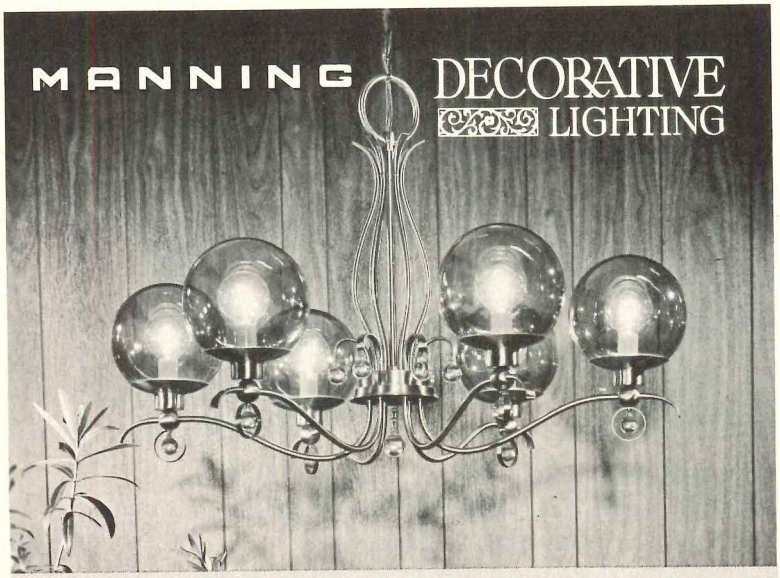
Firm _____

Address _____

City _____

State _____ Zip

For more data, circle 106 on inquiry card



NEW

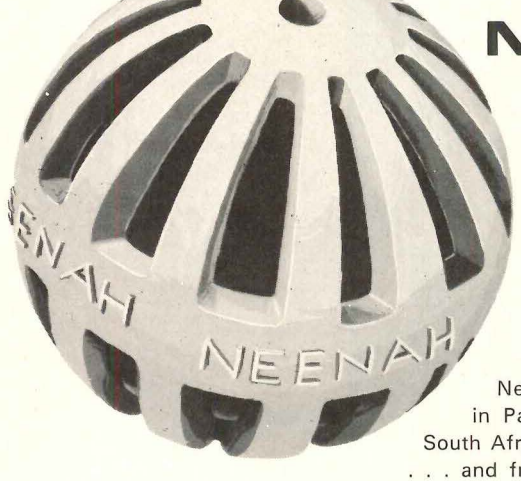
Complete line of decorative lighting equipment—specifically designed for commercial interiors.

REQUEST FULL COLOR CATALOG "M"

R.A. MANNING COMPANY INC.

P.O. BOX 643 SHEBOYGAN, WIS. 53081

For more data, circle 108 on inquiry card



YOU NOTICE NEENAH CASTINGS AROUND THE WORLD

Architects, designers and planners know Neenah castings are found in Pakistan, Kuwait, Turkey, South Africa, Argentina, Bahamas . . . and from Paris to Pittsburgh.

They know Neenah makes the finest quality castings: from gray iron manhole covers . . . to ductile iron airport drainage grates . . . to decorative tree grates . . . and a complete line of building castings.

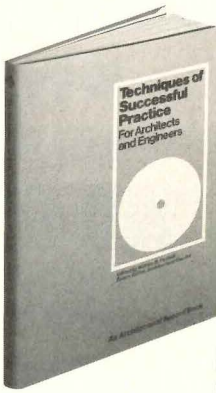
But did you know Neenah has thousands of design variations to choose from? Over 100 years of experience? Three modern plants?

Write or call for the most complete construction castings catalog, Neenah's Catalog "R", 6th edition.

NEENAH FOUNDRY COMPANY

NEENAH, WI 54956 Phone: 414-725-3041
Jobbers in most principal cities

A Senior Editor of *Architectural Record* shows you today's most effective techniques of successful practice for architects, engineers, and consultants, in a timely, practical, wide ranging book . . .



Techniques Of Successful Practice

For Architects and Engineers

By William B. Foxhall
Senior Editor, Architectural Record

■ How to market architectural services ■ How to approach government ■ How to handle project administration ■ How to save untold dollars through effective cost control

Between the covers of a new professional reference, you r have the key points of information you need to develop a improve a successful architecture or engineering pract today. Whether you are new or established in the field . whether you want to start a new practice or are searching helpful advice on making right decisions about the gro and direction of your firm . . . or whether you need frank a astute assessments of alternatives—here is a rich practi source of useful background and information.

In this one carefully planned, authoritatively written bo are thoughtful discussions of today's problems in professio firm management, as well as valuable tips on the newest, m effective techniques now emerging in such areas as constr tion management, value engineering, and life-cycle costi and in the increasingly complex area of the legal aspects practice, on which the book's experts give you their b advice on legal pitfalls, simple guide to avoiding liabil explanations of laws on copyright of plans, interstate pr tice laws, and much more.

The idea for this guide was an outgrowth of the outstand popularity of selected reprinted articles formerly used i premium paperback book, which had become invaluable architects and engineers. The need for such a book i permanent binding became apparent and the result is t enlarged, revised, updated guide, with fuller treatment of topics and many more topics added. It is now an essential t for practices of all kinds—associated, joint venture, corpora interstate, and international—and for everyone needing gu ance on what it takes to be more successful in today's cha ing and challenging professional world.

Among major topics covered:

• The Changing Patterns of Architectural Practice • The Respo to Change • The Young Architects: A Profile • Some Thought Starting Your Own Practice • Various Modes of Practice • Mana ment of the professional firm • Practice and the Law • Draw and Drafting • Project Administration and Cost Control

Mail Coupon Today For Free Examination

Architectural Record
1221 Avenue of the Americas, N.Y., N.Y. 10020

Send **Techniques Of Successful Practice** (002229-1) for 10 days' examination. In that time I will remit $14.95, plus tax, postage and handling costs, or return the book and owe nothing. *This offer good only in the U.S. and subject to acceptance by McGraw-Hill.*

Name

Address

City State Zip

Pay Now And Save! Remit in full with this coupon, plus tax, and we pay postage and handling costs; same refund privilege.

23K133-4000

For more data, circle 109 on inquiry card

FOR VIRTUALLY INVISIBLE SLOTTED STANDARD INSTALLATION
SPECIFY

YOCA™

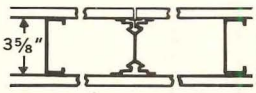
STUD WALL SYSTEM

Patent No. 3562970
Manufactured only by

Crown Metal

The slotted standard is practically invisible and takes brackets for shelves, cornices, hang rail and other devices, all of which are available in our complete line of shelving.

Combining slotted standard and metal stud in ONE sturdy unit used in conjunction with standard metal studs for installing dry wall.
YOCA™ studs offer the perfect solution for in-store merchandise display or off-the-floor storage for commerce, industry, institution or school.

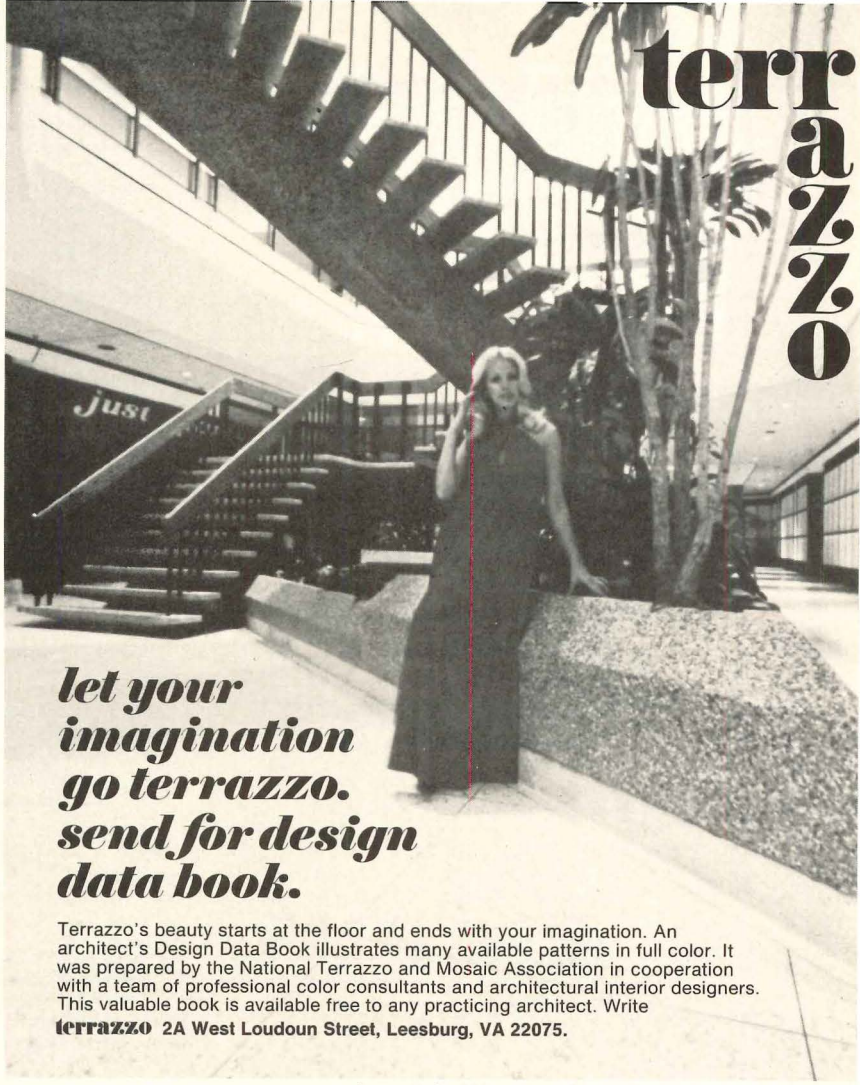


Standard USG metal stud at necessary spacing.

For complete specifications, please write, and we'll send you our complete catalog of other display hardware too.

Crown Metal MANUFACTURING CO
312/873-3833 Dept. AR 75
5925 South Lowe Avenue, Chicago, Illinois 60621

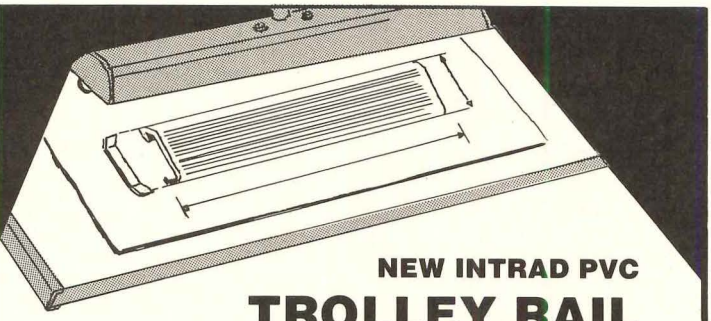
For more data, circle 110 on inquiry card



let your imagination go terrazzo. send for design data book.

Terrazzo's beauty starts at the floor and ends with your imagination. An architect's Design Data Book illustrates many available patterns in full color. It was prepared by the National Terrazzo and Mosaic Association in cooperation with a team of professional color consultants and architectural interior designers. This valuable book is available free to any practicing architect. Write
terrazzo 2A West Loudoun Street, Leesburg, VA 22075.

For more data, circle 111 on inquiry card

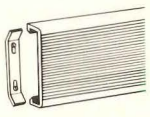


NEW INTRAD PVC

TROLLEY RAIL PREVENTS BROKEN WALLS!

FLOAT" design plastic rail acts as a continuous bumper to provide wall and corner protection.

• Low Cost • Ideal for heavy traffic areas (corridors, kitchens, laundries, service areas) in hospitals, schools, commercial and industrial buildings. • Easy installation for new construction or remodelling and repair.



Easily installed wall brackets hold 8" x 1 3/16" rail which snaps into place.

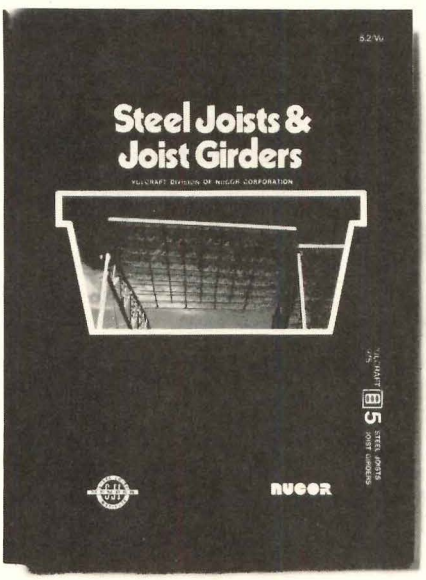
CLASS "A" FLAME - SPREAD RATING

Shock absorbing action prevents any damage.

REE BROCHURE GIVES COMPLETE DETAILS
Sweets 10.6/Tep
TEPROMARK INTERNATIONAL INC.
206 Mosher Ave., Woodmere, N.Y. 11598
) 569-4533 • Telex: 96-7799

For more data, circle 112 on inquiry card

READING THIS PAPERBACK CAN CHANGE YOUR MEANS OF SUPPORT.



Find out how Vulcraft's system of steel joists and joist girders offers better support. Send for a free, 24-page Specification Guide. If you can't wait for the mail, just call (704) 366-7000 for more information.

I could use support from Vulcraft. Please send me a free Specification Guide immediately.

Name

Address

City

State Zip

VULCRAFT
P.O. Box 17656, Charlotte, N.C. 28211

For more data, circle 113 on inquiry card

ADVERTISING INDEX

Prefiled catalogs of the manufacturers listed below are available in the 1975 Sweet's Catalog File as follows.

A Architectural File (green)
I Industrial Construction File (blue)
L Light Construction File (yellow)
D Interior Design File (black)

CHITECTURAL RECORD

McGraw-Hill, Inc., 1221 Avenue of the Americas, New York
New York 10020
Advertising Sales Mgr.: Louis F. Kutscher (212) 997-2838
Eastern Sales Mgr.: Robert G. Kliesch (215) 568-6161
Western Sales Mgr.: James A. Anderson (312) 751-3770
Advertising Services Mgr.: Joseph R. Wunk (212) 997-2793
Marketing Services Mgr.: Elizabeth Hayman (212) 997-2858
Research Mgr.: Camille Padula (212) 997-2814
Classified Advertising: (212) 997-2557

trict Offices:

anta 30309
Edward G. Graves, 100 Colony Square, (404) 892-2868

ton 02116
Robert L. Tagen, 607 Boylston St., (617) 262-1160

cago 60611
James A. Anderson, Robert T. Franden, Edward R. Novak,
645 N. Michigan Ave. (312) 751-3770

veland 44113
Willis W. Ingersoll, 55 Public Square, (216) 781-7000

nver 80202
Harry B. Doyle, 1700 Broadway (303) 266-3863

roit 48202
John W. Maisel, 1400 Fisher Bldg., (313) 873-7410

Angeles 90010
Richard R. Butera, 3200 Wilshire Blvd.-South Tower (213) 487-1160

v York 10020
Blair McClenachan, 1221 Avenue of the Americas (212) 997-3584

adelphia 19102
Robert G. Kliesch, George T. Broskey, Three Parkway
(215) 568-6161

sburgh 15222
Edward C. Weil, III, 4 Gateway Center, (412) 391-1314

Louis 63011
Richard Grater, Manchester Rd., (314) 227-1600

Francisco 94111
Richard R. Butera, 425 Battery Street (415) 362-4600

erseas Offices:

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

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

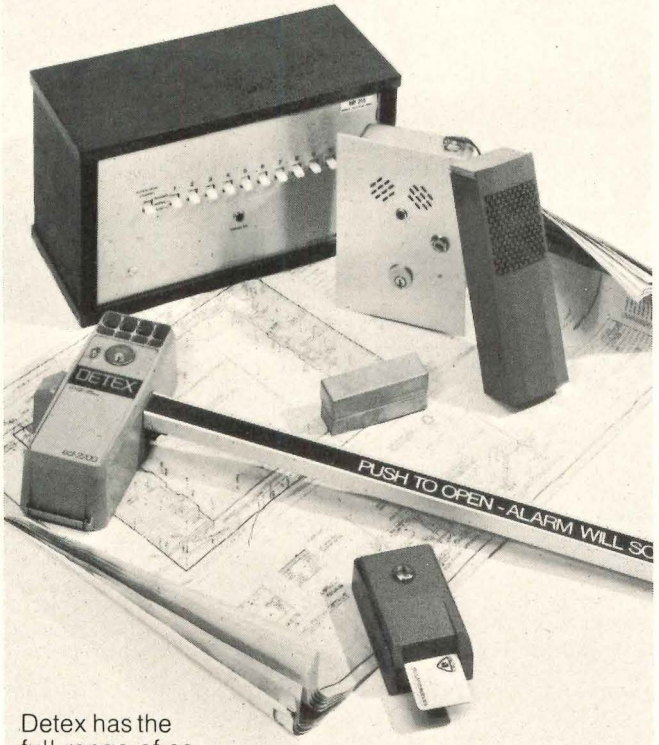
don
34 Dover Street, London W.1, England

an
Via Baracchini No. 1, Milan, Italy

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

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

SECURITY
that combines good design and good sense



Detex has the full range of security equipment you need to completely implement an effective system —no matter what the size.

From a single entrance to an entire building complex, Detex exit alarms, exit control locks, entry controls, switches and remote indicating panels keep you covered. They work together, individually or with other components and may monitor equipment as well as internal safety and security.

Send today for full details on hard working, effective Detex equipment.

DETEX
4147 N. Ravenswood Chicago, IL 60613 (312) 348-3377
Sales Offices in Major U.S. Markets;
Distributors Throughout the World

For more data, circle 114 on inquiry card

CLASSIFIED SECTION

POSITIONS VACANT

VOLUNTEER PEACE CORPS/VISTA
Architects/planners needed for Peace Corps projects in Latin America, Africa, Asia; VISTA projects in 25 U.S. cities. Housing projects, design of schools, hospitals, community centers, rehab, university teaching, regional planning, etc. Expenses paid, travel, medical, vacation and living. Information: Lynn Rotenberg,
ACTION,
ORC Box A-1, Washington, D.C. 20525.

Architectural Draftsman: Established Central Illinois firm has long term employment opportunity for experienced draftsman capable in all project phases with emphasis on construction documents. Advancement potential to project manager excellent. Experience mandatory. Send resume. Reply in confidence to P-7271, Architectural Record.

Architects—Major designer-builder of medical and education facilities seeks highly successful architects for Project Manager—and/or Consultant-to-Medical Industry—career openings. Apply only if you are management type with good experience in this area. Send resume with salary history and telephone number to Harry Case at Management Recruiters, 115 S. Jefferson, Green Bay, Wisc. 54301. Direct Dial 1/414/437-4353. Afterhours and on weekends call 414/435-0685.

Construction Technology—Department Chairperson, Half-Time Teaching, Half-Time Administrative. Requirements: BS or BA degree in Architecture, Civil Engineering, or Construction with Master's degree. Teaching experience plus five years' professional or construction experience. Construction orientation preferred. Registration not required but preferred. This is a 10-month position as associate professor, beginning August 20, 1975. Apply to: Dr. Kenneth R. Johnson, chairman, Construction Technology, Chairperson, Search and Screen Committee, B50 Neff Hall, Indiana University-Purdue University at Fort Wayne, 2101 Coliseum Boulevard East, Fort Wayne, Indiana 46805.

Ohio firm with widely varied practice, but non-institutionally oriented, seeks experienced designer. Seeking individual who is capable and mature. Good opportunity for growth in nationally established firm. P-7356, Architectural Record.

The Syracuse University School of Architecture has a full time permanent position open for the Fall of 1975, in the Structural Design and Analysis sequence of its curriculum. The position involves teaching statics and strength of materials, design of steel and timber structures. Please send resumes and references to Julio M. San Jose, Chairman, Appointments Committee, School of Architecture, Syracuse University, Syracuse, New York 13210. Syracuse University is an Equal Opportunity/Affirmative Action Employer.

POSITIONS WANTED

Treasurer-Controller—Heavy exp. listed co. V.P., Controller; also Treasurer acquisitions, natl. public acctg. Expd. real estate, Construction industries. CPA, attorney. Personable, creative, take-charge. $28-32,000 required. PW-6758, Architectural Record.

Grad. Architect/Health Planner: M. Arch. health facility design-programming, M.P.H. health services-administration, 12 years experience-commerical, industrial, residential, 2 years specialization health care system planning-analysis. Contact Dan Burbine, 4336 Lafayette, Houston, TX 77401.

Architect—B.A. & B.S. in Architecture from U.S.A. B.S. Civil Eng, from Middle East. 18 years experience in Middle East & U.S.A. Strong in project control capable directing team to better achievement and success in Middle East or to establish American firm in Arabia. Architectural Record, PW-7215.

POSITIONS WANTED

Site planner, diversified designer degree. Landscape architecture and horticulture. Five years experience. Architects and consulting engineers involved in condominium development, road improvement, parks, urban planning, design layout, storm, and sanitary engineering. Contract drawings, specifications, client contact. PW-7212, Architectural Record.

SPECIAL SERVICES

Nationwide Architectural Arts, Inc.: New-5-day national service for Budget Renderings/Scale Models, including-free-shipping via air express the sixth day. Budget Renderings are realistic, full-color, full-bleed, landscaped, board size about 20" x 30", with one main structure rendered (high rise accepted). Views: Eye level $159.-$239. Aerial $239.-$339. 10% off with furnished usable perspective. Budget Models are graphically colorful, landscaped, excellent for photographing/presentation $159.-$599. For fast service: Airmail drawings/information; drawings acknowledged by phone. Budget services: P.O. Box 145, Fairless Hills, Pa. 19030. Job opportunities details: P.O. Box 21251, Seattle, Wa. 98111. Terms: C.O.D. to new customers. "Nationwide" in business by repeat business for 5 years.

Nationwide Architectural Arts, Inc.: New promotional brochure available; P.O. Box 615, Rochester, MI 48063.

Nationwide Architectural Arts, Inc.: Complex renderings/scale models; airmail plans. P.O. Box 246, Trenton, NJ 08602.

Call the Artist, Paul, for distinctive personalized full color renderings with layman appeal. On-site service to architects and engineers throughout New England and New York for fifteen years. (413) 229-8079, (eves. 229-8993) Paul Greene Associates, 75 Main Street, Sheffield, Mass. 01257.

Licensed Engineer, N.Y., N.J., extensive background H.V.A.C. offers to work with Architect on individual jobs, including design, drawings, cost estimating, specifications. Inquire: Alexander Spear, P.E., 19 Lincoln Drive, Flanders, N.J. 07836.

Artistic renderings, architectural and engineering models, commercial and public interiors, meaningful exterior and interior lighting, all subordinated to your design concept, can be ordered from "VITRUVIUS DESIGNS CORP.", Box 1316 Radio City Sta., New York, N. Y. 10019, (212) 586-7382.

Consulting group specializing in fountains and custom water displays, offers comprehensive design and engineering services. Architectural and traditional ornamental fountains, unique water shows, rain and special effects, programmed lighting and water displays. Excellent facilities. Contact: Ptolemy Associates, 3944 East Oakdale Ave., Pasadena, Calif. 91107 (213) 684-0957.

Parking Consulting—Edison Parking is a major national parking company in: (1) ownership and operation of 100 facilities in nine states; (2) consulting to architects for the functional design and economic analysis of parking facilities. The professionals and technicians of Edison's Consulting Division serve on the architect's team for development of a project, combining operating experience with design and economic disciplines. Background booklet and free Parking Design Checklist on request. Edison is a true independent consultant; we are not seeking architectural or engineering design work nor are we affiliated with any "package" building system. Contact Jerome Gottesman, Edison Parking Corp., 69 Academy Street, Newark, N.J. 201/643-3170.

EQUIPMENT FOR SALE

BUSINESS OPPORTUNITIES

Registered architects desirous of purchasing going architectural firm in New York area or surrounding suburbs. Replies held in strict confidence. BO-7322, Architectural Record.

PROFESSIONAL SERVICE

Hibbard Engineers
Complete engineering service - structural, mechanical electrical, civil. For hospitals, university buildings, schools, apartments, government buildings. Project Management - Construction Estimates.
2637 Main Street, Niagara Falls, New York 14305
Tel. (716) 282-1282

CORRESPONDENCE COURSE

In Search of Something to Believe In? Try our $10.—10-Lesson Correspondence Course. Henry George School of Social Science, 1318 Beacon Street, Brookline, Massachusetts 02146.

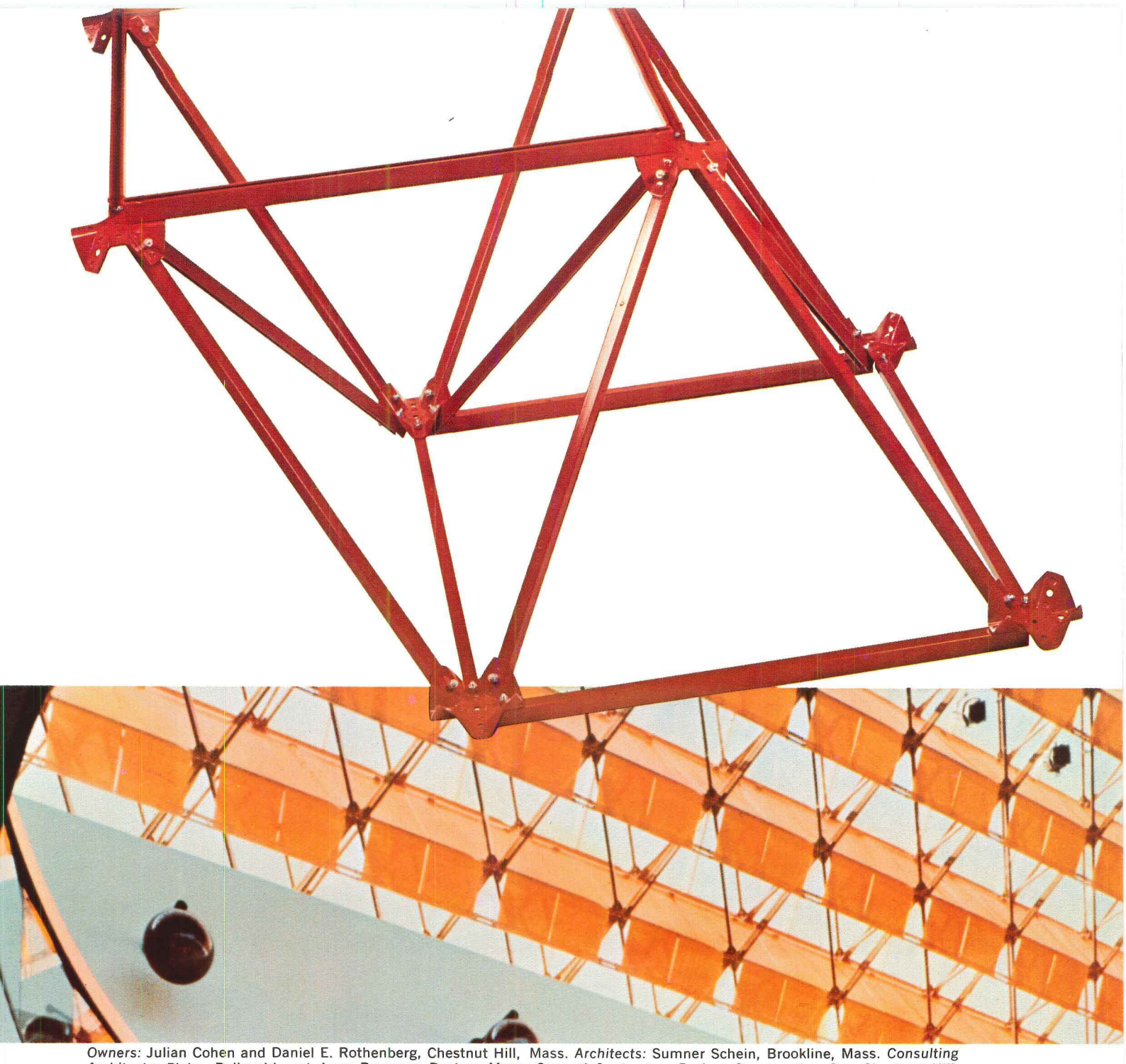
SUMMER PRE-COLLEGE PROGRAM

College of Fine Arts
SUMMER
PRE-COLLEGE PROGRAM
A comprehensive pre-view of college Architecture experiences for students in the 10th, 11th, and 12th grade
JUNE 23 – AUGUST 1
ARCHITECTURE
Director, Summer Program
Carnegie-Mellon University
5000 Forbes Avenue
Pittsburgh, Pennsylvania 15213
Department of Architecture
Carnegie-Mellon University

EMPLOYMENT SERVICE

Career Builders, Inc., Agency—Complete range of Architectural and Interior Design placement under the direction of Ruth Hirsch, Apprentices to Senior Designers and Project Architects, Professional screening and personalized service, References checked. 501 Madison Av., New York, NY 10022; PL2-7640.

When Answering
BOX NUMBERS
to expedite the handling of your correspondence and avoid confusion, please do not address a single reply to more than one individual box number. Be sure to address separate replies for each advertisement.



Owners: Julian Cohen and Daniel E. Rothenberg, Chestnut Hill, Mass. *Architects:* Sumner Schein, Brookline, Mass. *Consulting Architects:* Pietro Belluschi and Jung Brannen, Boston, Mass. *General Contractor:* Barkan Construction Co., Chestnut Hill.

Beautiful structures exposed.

It's the MODUSPAN® concept.

Open, airy space-frames, all from standard production components. Bolted together into a single load-sharing modular truss.

Like the Mall at Chestnut Hill, Massachusetts. Here, Moduspan space-frames form wall and roof structures. They're painted a handsome orange and fitted with bright yellow shades to control sunlight.

Mass-produced Moduspan components are available in 4′ and 5′ systems, and six durable architectural colors, to help you create beautiful structures. Because they're standard, they reduce architect and engineer man-hours. And eliminate on-the-job delays caused by awaiting custom-designed fabrications.

Attachment of auxiliary items (light fixtures, glass, etc.) is simple, because the entire structure is made up of Unistrut channels.

Moduspan—an infinity of form from five basic parts. UNISTRUT Corporation, Wayne, Michigan 48184.

UNISTRUT CORPORATION

GTE SYLVANIA

New Independent Report proves Sloan Flush Valves use 12½% less water than tank-fed systems

High-rise developers, especially, should read this comparative test report by Stevens Institute. It covers water usage, drain system compatibility and fixture performance.

We knew that Sloan Flush Valves saved water.

However, now an independent report published by the Davidson Laboratory of the Stevens Institute of Technology proves conclusively that Sloan Flush Valves use 12½ % less water than tank-fed water closets.

The Stevens Report also proves that Sloan Flush Valves are fully compatible with 4-inch wet vent drainage systems and meet all plumbing codes. No significant difference occurred between Sloan-operated and tank-operated water closets under various conditions of system stack flow, trap seal retention, or blowback failure.

Ten separate and severe fixture performance tests were also run. Here, too, Sloan Flush Valves equalled or bettered tank performance.

There's no point in talking about water conservation unless we all do something about it. Sloan Flush Valves do something. They save water. 12½ % over tanks.

Send for the Stevens Report now. It's free and it contains facts and figures available nowhere else.

SLOAN VALVE COMPANY
10500 Seymour Avenue
Franklin Park, Illinois 60131

SLOAN FLUSH VALVES THE WATER SAVERS

For more data, circle 116 on inquiry card