

# Progressive Architecture

December 1975 An  Reinhold publication



831050  
636E23



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



Serving people is what a hospital is all about. Obviously, anything that goes into a hospital has to benefit the patient first. But it must also prove useful to those who minister to the patient's needs—the doctors, nurses, techni-



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

No one would say that flooring is as vital to a hospital as diagnostic equipment, X-ray machines, and drugs. But, still, it's an important consideration. Because it's used continuously. Day after day. Week after week. Year after year.



To stand up to that kind of punishment takes a special kind of character. At Middlesex General Hospital in New Brunswick, New Jersey, they've found the prescription they need in Brigantine Vinyl Corlon® from Armstrong.

First off, Brigantine's colors help make patient rooms cheery and inviting. In fact, they go a long way toward making a sick room look healthy and homey.

But in a hospital like Middle-



sex, it's Brigantine's constitution that really shines. For all its beauty, Brigantine also has the muscle it takes to stand up under the daily grind.



Because Brigantine's surface is vinyl, most spills can't soak in. And that means Brigantine is relatively easy to keep hospital-clean.

Because Brigantine's surface is tough, it shrugs off the torture of heavy traffic.

Because Brigantine's surface is smooth, there's little problem in wheeling hospital equipment from one room to another.

Because Brigantine comes in rolls six feet wide and up to 90 feet long, it can be installed

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

If further proof is needed, Middlesex General offers plenty. Look at the patient rooms, meeting rooms, recreation rooms, teaching rooms. Look at the reception areas, corridors, and labs. In all of which Brigantine has been hard at work for three long years, standing up to the daily rounds. Taking it on the chin and hardly flinching at all. If that's the kind of floor covering you want to specify, we'll be happy to tell you more. Write Armstrong, 312 Watson St., Lancaster, Pa. 17604.



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

Circle No. 312, on Reader Service Card

FROM THE  INDOOR WORLD® OF  
**Armstrong**





**Otis**  
Elevator Company

**We've got a sweet deal on the largest selection of pre-engineered elevators available anywhere. Designed to fit your budget, your building and your taste. Take your choice.**

For more information see Sweet's Architectural File, File No. 14.1/OT



**Editor**  
John Morris Dixon, AIA

**Managing Editor**  
James A. Murphy, AIA

**Senior Editors**  
David A. Morton, Features, Books  
Suzanne Stephens, Features

**Associate Editors**  
Sharon Lee Ryder, Interior design  
Roger Yee, Technics  
Ann Carter, News report  
Charlotte VanVoorhis, Products

**Assistant to the Editor**  
Barbara McCarthy

**Editorial Assistant**  
Judith A. Wasson

**Graphics**  
George Coderre, Art Director  
Anne Marie Sapione, Art & Production  
David W. Scott, AIA, Architectural drawings

**Contributing Editors**  
Norman Coplan, It's the law  
Bernard Tomson, Hon. AIA, It's the law  
Harold J. Rosen, PE, FCSI, Specifications clinic  
Josephine H. Drummond, Specifications clinic  
William T. Lohmann, AIA, CSI, Specifications clinic  
Alvin D. Skolnik, FCSI, Specifications clinic  
Ronald P. Bowie, Specifications clinic  
Martin P. Martensen, Specifications clinic  
Robert D. Williams, CSI, Specifications clinic  
Hanscomb Associates Inc, Cost analysis  
Esther McCoy, Los Angeles  
Roger Montgomery, San Francisco  
Sally Woodbridge, San Francisco  
Antonin Aeck, AIA, Atlanta  
George McCue, St. Louis  
Peter Papademetriou, Houston  
Ralph Warburton, AIA, AIP, PE, Miami  
Stuart E. Cohen, AIA, Chicago

**Editorial Panel**  
Michael Brill, President, BOSTI; Professor, SUNY, Buffalo  
Theodore Liebman, New York State Urban Development Corp.  
Walter Netsch FAIA, Partner, Skidmore, Owings & Merrill  
Herman Spiegel, Dean, Yale School of Architecture

**Publisher**  
Philip H. Hubbard, Jr.

James J. Hoverman, Director of Sales  
Burchard M. Day, Promotion Director  
Daniel H. Desimone, Production Manager  
Thomas Moran, Circulation Director  
G. Charles Huebner, Circulation Manager  
E.M. Dwyer, Customer Service Manager  
Elizabeth A. Mercede, Sales Service Manager



Progressive Architecture is published monthly by Reinhold Publishing Company, Inc., a subsidiary of Industrial Publishing Co. Thomas L. Dempsey, Chairman; Philip H. Hubbard, Jr., President; Harry I. Martin, Vice-President. Executive and editorial offices, 600 Summer St., Stamford, Conn. 06904 (203-348-7531).

For all subscription information write Circulation Dept., Industrial Publishing Co., 614 Superior Ave., W., Cleveland, Ohio 44113 (216-696-0300). When filing a change of address, give former as well as new address, zip codes, and include recent address label if possible. Allow two months for change. Subscriptions payable in advance. Publisher reserves right to refuse unqualified subscriptions. Professional rate (\$7 per year) is available to architectural and architectural-engineering firm personnel and architects, designers, engineers, and draftsmen employed in allied fields. Professionals outside U.S. and Canada \$18 per year. Nonprofessionals outside U.S. and Canada \$30 per year. Single copy \$3, payable in advance. Indexed in Art Index, Architectural Index, Engineering Index. Second-class postage paid at Stamford, Conn. and additional offices. Volume LVI, No. 12. Printed in U.S.A. Copyright © 1975 Reinhold Publishing Company, Inc. All rights reserved.



December 1975

# Progressive Architecture

## 7 Editorial: To better days

### Design and planning

## 37 Microcosms of urbanity

The Galleria and Olympic Tower in New York and Water Tower Place in Chicago profitability combine uses within single urban structures.

## 52 College town

Davis, Brody & Associates successfully mix uses in the Joseph Ellicott Complex for upper New York State suburban campus.

## 62 Interior architecture: Off on a tangent

Saphier, Lerner, Schindler's design for the Gilman Paper Co. offices is a departure from standard office design for both client and designer.

## 66 Tilt to the river

Caudill, Rowlett, Scott solve difficult problems of neighborhood and site while retaining smashing view of Hudson river for new academy.

### Technics

## Specifications clinic: Contract documents for overseas work

### The well-tempered caulking gun

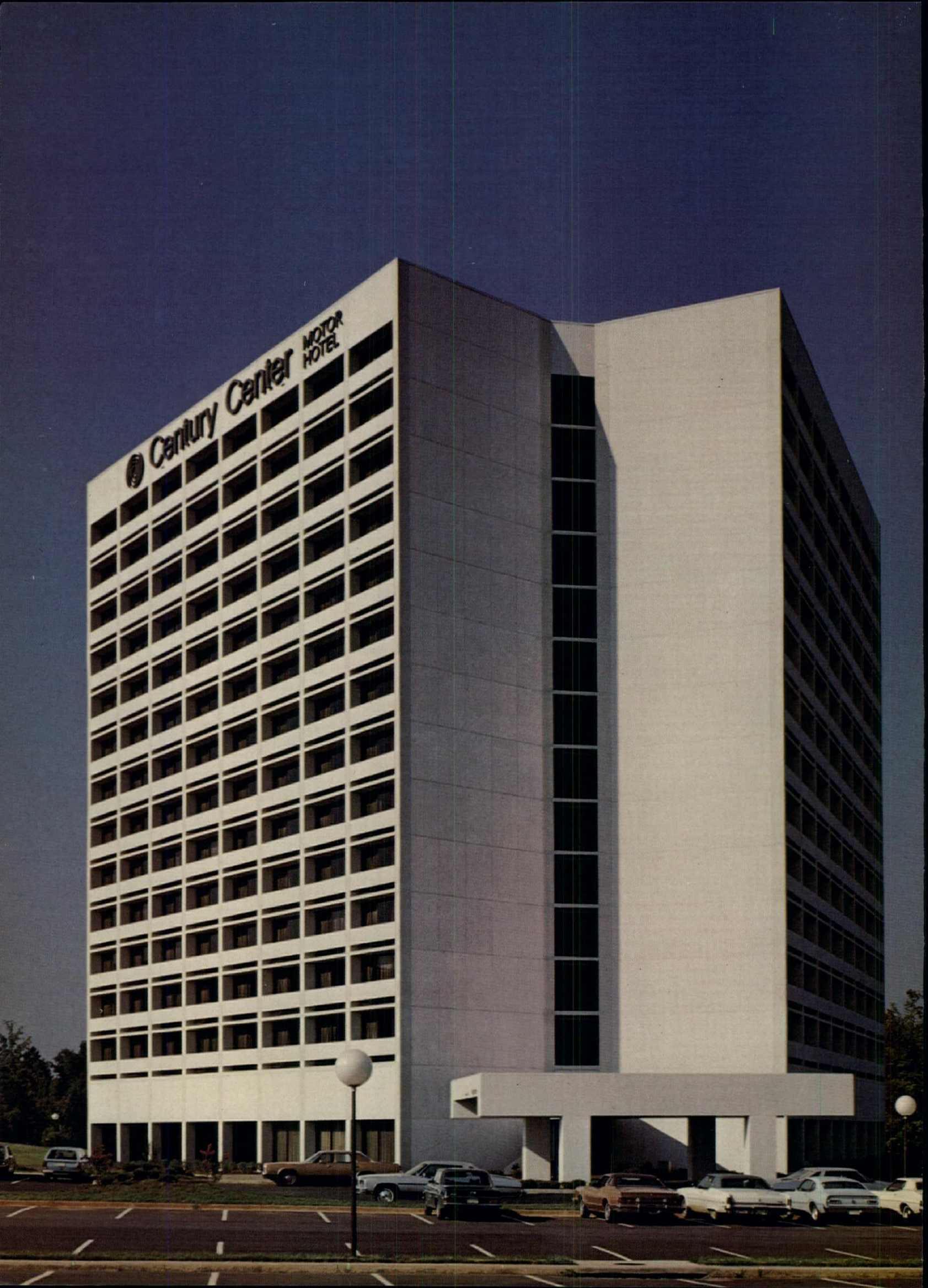
P/A and the industry survey sealants: the mastics, tapes, and gaskets popular today, and how they seal the gaps in modern architecture.

### Departments

8	Views	88	Products and literature
17	News report	92	Annual index
28	Calendar	95	Building materials
28	Personalities	97	Job mart
30	In progress	100	Directory of advertisers
84	It's the law	101	Reader service card
86	Books		

**Cover:** The Joseph Ellicott Complex, State University of New York at Buffalo by Davis, Brody & Associates (p. 52). Photo: Don Higgins.





 Century Center  
MOTOR  
HOTEL



*The Century Center  
Motor Hotel got a great  
deal on its beautiful  
white esthetics  
with Qasal<sup>®</sup> mineral  
cladding panels from PPG.*

On a building, Qasal  
(say ka-salle') cladding  
panels look every bit as  
good as high-quality con-  
crete work. (Five feet away  
you can't tell the difference.)

But on an invoice there's  
no comparison.

Qasal panels are con-  
siderably less expensive.

So you get great-looking  
panels at a great-looking  
price. Which is to say you  
get a great deal.

And since you get it  
from PPG, you get a great  
deal more.

PPG knows construc-  
tion. And architecture. And  
more than just supplying  
you with products, we can  
also supply answers, alterna-  
tives, and a level of expertise  
that's hard to match.

So before you clad your  
next building, call PPG. We  
have the panels (our Qasal  
panel is just one of many  
choices), the price, and the  
performance to make it  
worth your while.

For more information  
call the PPG representative  
near you. Or write:  
PPG Industries, Inc.,  
Mineral Products Dept.,  
1000 RIDC Plaza,  
P.O. Box 2811, Pittsburgh,  
Pa. 15230.

Owner: Gray Properties, Atlanta, Georgia.  
Architect: Neuhaus+Taylor, Houston, Texas.

PPG:  
a Concern for the Future



QASAL



**Announcing**

# MONDRIAN

## LOCKER



**New Low Decibel Lockers  
combine artistry of  
styling with remarkable  
sound control.**

Each grouping of Republic's new achievement in locker design offers the effect of a Mondrian painting.

Aptly named for the Mondrian style of design — Mondrian, who made an art of straight lines and blocks of solid color.

Locker groupings and corridors literally become instant works of art, aesthetically pleasing to enhance your overall school design.

We achieve the Mondrian effect with an imaginative flush-front design.

Nothing projects beyond the face of the locker. There are no visible vents, no projecting handle, no projecting lock. Sheer beauty.

Unobtrusive one-quarter-inch frame surrounds the door edge. You design your own Mondrian with Republic's choice of 19 colors.

Ventilation is accomplished through Republic's exclusive Verti-Vent design.

Artistry comes to lockers. Send the coupon for product information.

\*MONDRIAN is a trademark of Republic Steel Corporation.

**Republicsteel**  
Industrial Products

Circle No. 331, on Reader Service Card

REPUBLIC STEEL CORPORATION  
Industrial Products Division, Dept. PA  
1038 Belden Avenue NE  
Canton OH 44705

- ☐ Please send information on flush-front MONDRIAN\* lockers  
☐ Please have a salesman contact me

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

Zip \_\_\_\_\_



# To better days

December 1975

Goodbye, without regrets, to 1975. This has been the year of the bottoming-out. The economic indicators now point upward, and any reversal in a big election year would be unthinkable, if not impossible.

Construction is expected to make moderate gains in 1976, in line with the economy as a whole. But it will not be *leading* the economy, as it traditionally has been during periods of recovery, because of several restraints: the tight mortgage market, the disastrous bond market, the tightening of government budgets at all levels, and the cautious acceptance of this recovery in the business community. Can the economy recover fully without the usual spurt in construction (or, for that matter, without the usual spurt in automobile production)? If not, we may just have to settle for something less.

Under this administration, at least, we can hardly expect much stimulation of construction. Inflation is still viewed as too serious a threat—justifiably so, notwithstanding those jokes about WIN buttons—which by some curious process could lead us back into recession. Besides, this administration remains fundamentally opposed to subsidized housing or other socially oriented construction programs and is unlikely to spend heavily on activities such as defense or space research, which have generated much construction in years past.

Those involved in the construction process have always been peculiarly vulnerable to boom and bust cycles, but in the past those early, abrupt declines have been offset by early, strong rebounds. There was enough overlap at the bottom of the valley to cushion the impact on all sectors of the industry.

In the face of the current severe, prolonged construction slump, fundamental questions have surfaced. To what extent can this one industry be used—or abused—as a shock absorber for economic cycles? At a recent conference at Harvard, a panelist on housing policy defended government manipulation of this “easily controlled” segment of the economy—easily controlled because so susceptible to both direct government expenditures and indirect control by way of money markets.

At Harvard, it was Ray Nasher, formerly a prosperous and adventurous developer from Dallas, who rose among a room full of architects to challenge this traditional assumption. How is it possible, he asked, to develop effective management or stable organizations in an industry subject to such extreme cycles of expansion and contraction? He was referring to developers and contractors, but the same instability lies behind the extravagant wage demands and discouraging productivity of construction labor, the unsteady management and undercapitalization of architectural firms, the minimal investment in architectural research and industrialization. We may not be able to calculate the cost to society, but we know it would be measured in dollars per square foot.

The same issues came up, repeatedly, at the annual Building Product Executives conference held recently in Washington under the auspices of McGraw-Hill Information Systems. “For valid economic as well as social reasons,” said W.F. Newton, vice president of PPG Industries, “we are going to have to find ways to smooth out the peaks and valleys of construction in the United States.”

One device for stabilizing the construction climate may be the newly formed National Construction Industry Council comprising representatives from among contractors, architects, and engineers. Speaking before the annual conference of the Producers’ Council, AIA President Chick Marshall and Engineering News-Record Editor Art Fox (both of whom had a hand in the formation of NCIC) expressed some hope that this council could eventually give the various participants in the construction process—representing 13 percent of our gross national product—the unified voice they would need nationally to effect any change. If construction labor and mortgage financing interests can be persuaded to join this chorus, some stability in the construction industry may turn out to be an attainable national goal.

*John Morris Difer*



# Views

## The Red Wall

Whether your article "The road to Xanadu and beyond" by Geoffrey Broadbent (P/A, Sept. 1975, p. 68) is done "tongue in cheek" or not, for my interpretation at least I would hope that it is. There is no question that there are elements of the Taller's architecture that are quite exciting, especially in the early work. However a great distinction should be made here. The Red Wall (La Muralla Roja) is such a horrendous phase of their work that I can only believe your magazine has put it on the cover as a kind of architectural joke.

It seems to me that the distinction should be made between that architecture which is designed for dense urban places where everything is man-made and nature is an outsider, and that which is located on a magnificent natural site such as La Muralla Roja's location seems to be. This is the kind of disfigurement that if practiced by many architects would bring the entire conservation movement down on our collective heads.

At this point, I am not even concerned with the question of whether it is "interesting, exciting, or imaginative." That is not the point. Your magazine featured several issues back the house designed by Richard Meier overlooking Lake Michigan... an imaginative and interesting house, yet also boastful regarding the landscape as a stage for the architect's show. These projects enveloped in nature's framework seem to say "LOOK AT ME" much like a child making a drawing and yearning for attention.

If there are enough architects, be they talented or not, who insist on showing people for miles around their acrobatical genius, then our natural environment will simply become a foreground for every architect's masterpiece—be it on cliff, hill, or mountaintop. Imagine La Muralla Roja mounted high over Yosemite or on the Grand Canyon or simply on the shore of a beautiful Maine or California coast. It would certainly make a spectacular cover for your magazine, but I truly wonder what our children would think of us as responsible protectors of our environment in years to come.

Peter Samton, FAIA  
Partner / Design Director  
Gruzen & Partners  
New York, N.Y.

[The debate over whether a well-designed ob-

ject enhances its setting must go back through many landmarks such as the Golden Gate Bridge, the Eiffel Tower, and ultimately even to the pyramids.—Editors]

## Minneapolis dissent

The thematic nature of P/A's October issue seems to have caused it to suspend critical judgment in favor of reportage in the case of at least two of the projects featured therein:

As commendable as the recycling efforts, especially the vision of the developer, at Butler Square in Minneapolis may be in all other respects, it should be noted that the brick spandrels were not merely lowered, as was reported by P/A, but have disappeared completely behind continuous, shimmering slits of reflective glass which dematerialize and, in effect, destroy the monolithic and impressively clifflike fabric of the original façade.

A more serious offense to this reader, however, is the incredibly simplistic reasoning cited by the architect for the absurd orientation of the Native American Center of Minneapolis, which the author cheerfully accepts, and which in fact underlies both the symbolic and urbanistic failure of the building as well as the functional shortcomings which P/A cited.

Unless the architect was deliberately seeking to dramatize the historic plight of the American Indian, the orientation, and even the very formalism of the building, are all wrong. Implicit in the architect's own statement is the admission that the building turns its back, not only on the decaying commercial strip but on the Indian as well, in order to embrace the values of white bourgeois culture. Except for those Indians living in a rather dismal housing project a few blocks to the southeast of the center, much of the Indian community does indeed approach the building from the west where it is confronted by a rather forbidding concrete and (again) reflective glass wall followed by an architectural obstacle course around an unfriendly corner that would be difficult to negotiate even in clement weather (until a recent sign was posted forbidding entry via the "side" door convenient to the parking lot, the "front" door has rarely been used since the week of the grand opening).

What a vital focus this Native American Center could have been, not only for the aspirations of the urban Indian community it was intended to serve, but for the potentialities of the commercial strip serving that community as well, if only it had opened its arms to them, in a great civic gesture, instead of damming up what was already a stagnant back water of urban street space and along with it a whole lot of neurotic notions about the importance of "architecture as artifact."

David Gustafson, Architect  
Minneapolis, Minn.

[Despite our disagreement with Mr. Gustafson's interpretation of the center's formal qualities, we feel his point about the orientation of the building to the main thoroughfare is very well taken. However, the architect's own rationale for the orientation reflects the true dilemma here which has to do with image and communication. The center, seen from the expressway, will communicate to the public at large the nature of its symbolic function for the Indian community (pride, rebirth, etc.). If it had been oriented in the other direction down the main street, it would have

communicated on a more private level its function to the Indian community (center for community life, spirit, self-pride). With such a difficult site, which was not the first choice of the Indians by any means, the quandary was obviously complicated. The architects decided to make a statement to the larger public, considering the prejudices and stereotypes in our society. How much this impedes the Indian community's awareness of the place should become more apparent with time. But so far it appears *not* to have deterred its active use.—Editors]

## Metric adjustments

Robert Williams's remarks on the Metric System were most appropriate (P/A, Sept. 1975, p. 84); I would like to add a comment on the specific issue of ceiling heights.

Our present "standard" ceiling height of 8 ft evolved from a standard dimension for materials. As Americans become taller, it is increasingly apparent that this standard is obsolete and oppressive. We should be concerned, therefore, that when the United States adopts the Metric System, we adopt a standard dimension for materials which will allow a humane ceiling height. The 2200mm (7'-3") and 2300mm (7'-7") which have been published in some British public housing standards are obviously inadequate. 2500mm, or 2.5 meters, is both a convenient metric increment and a +2-inch improvement on the current 8 feet; this figure might be a good starting point for discussion.

I hope that architects will interest themselves in this issue during the preparations for metric conversion, as it will seriously affect the quality of housing in which many Americans will live during the next century.

Joseph Buch  
Eugene, Ore.

The subject of the article by Robert Williams in the September P/A is indeed timely. The publication date, however, was untimely.

I am sure you know that the U.S. House of Representatives passed a Metric Bill on September 5 with a vote of 300 for, as described in the September 19 issue of *Metric Reporter*. As a result of testimony for AIA before the House Subcommittee on Science, Research, and Technology, the final Bill was amended to include a representative from the construction industry on the President's Advisory Board.

The *Metric Reporter* is published by the American National Metric Council (ANMC). The ANMC was established by ANSI, and is a non-profit organization established to develop an orderly plan for metric conversion for all sectors of the U.S. economy. It comprises five Coordinating Committees.

As a member of the American Institute of Architects, I am their representative to the Construction Industries Coordinating Committee. All sectors of our industry are represented—standards and codes, labor, real estate, owners, building product manufacturers, and designers. As convener of the Design Sector, I have asked that the CSI be one of the organizations invited to participate in the work of this Sector.

Anna M. Halpin, AIA, CSI  
Sweet's Division  
McGraw-Hill Information Systems Company  
New York, N.Y.



# TERNE ROOFING FORM, COLOR, FUNCTION

## *From the standpoint of form,*

Terne permits any visual roof area to become an integral part of the total design concept.

## *From the standpoint of color,*

Terne provides the architect with a creative latitude as broad as the spectrum itself.

## *From the standpoint of function,*

Terne's durability is measured in generations rather than years; it is easily installed, and when measured by the criteria of those to whom ultimate performance is no less significant than initial cost, it is relatively moderate in price.

## **FOLLANSBEE**

FOLLANSBEE STEEL CORPORATION  
FOLLANSBEE, WEST VIRGINIA

Boulder Recreation Center, Boulder, Colorado  
Architects: Nixon-Brown-Brokaw-Bowen, Boulder, Colorado  
Roofer: Reliable Heating, Longmont, Colorado



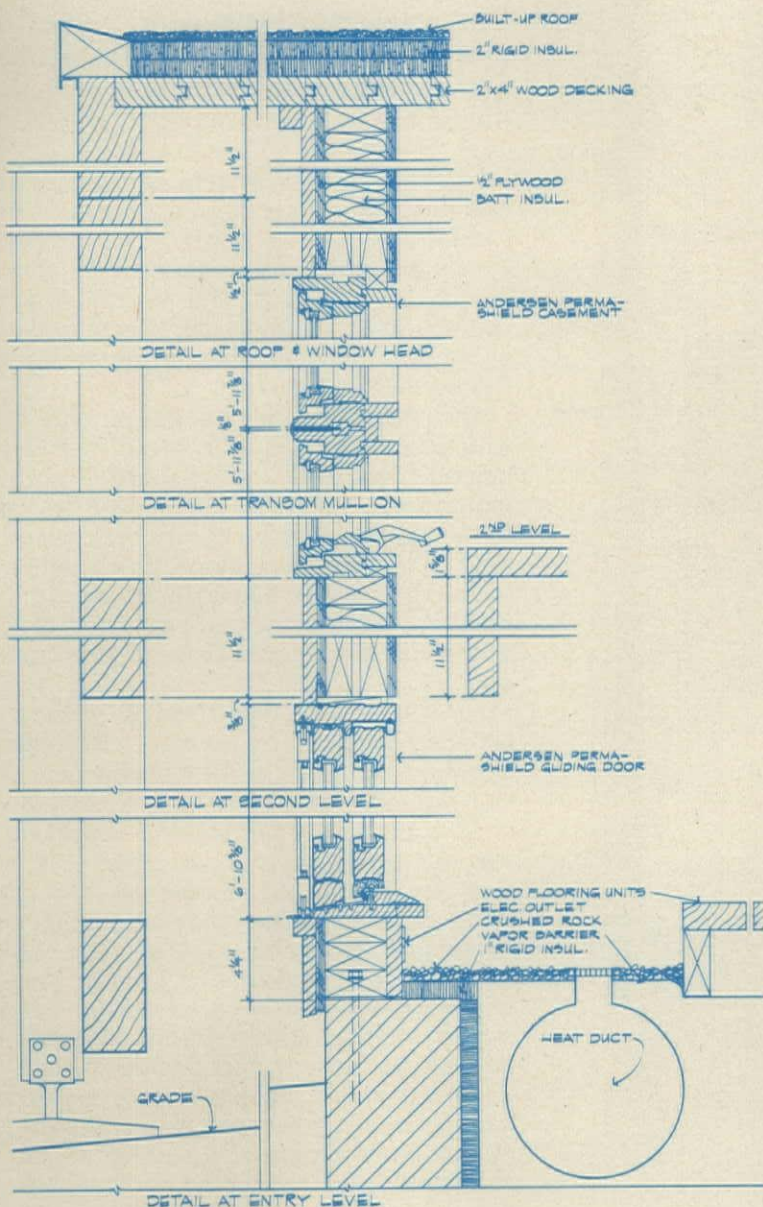






# Rapsons' Glass Cube

## (48 Andersen® Windows and 8 Andersen Gliding Doors).



Rapsons' Glass Cube  
Apple River Valley, Wisc.  
Architect: Ralph Rapson, F.A.I.A.

5055G Copyright © Andersen Corp., Bayport, Minn. 1975

Designing his own weekend home was a lot tougher than award-winning architect Ralph Rapson thought.

Mainly because a conventional retreat just wouldn't do. He wanted a place that would allow him to take full advantage of the picturesque Apple River Valley.

So Mr. Rapson designed a transparent home to permit continuity of nature throughout the house.

His vehicle for bringing the idea to life? Andersen® Perma-Shield® Windows and Gliding Doors.

Mr. Rapson was impressed by their solid, sturdy construction and neat, trim lines.

And Mrs. Rapson liked their smooth, silent, easy operation.

The Rapsons will have plenty of time away from window chores to enjoy their home, too.

Because Perma-Shield Windows and Gliding Doors are made of treated wood and sheathed in long-life rigid vinyl that doesn't chip, flake, peel or blister. Doesn't rust, pit or corrode.

And double-pane insulating glass provides a major part of the fuel-saving benefits of storm windows.

So, whether you're constructing a weekend retreat or an everyday building, use Perma-Shield Windows and Gliding Doors.

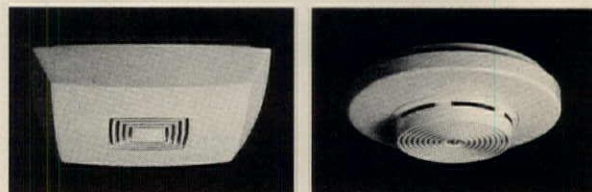
For more information see Sweet's, File 8P. Or call your Andersen Dealer or Distributor. He's in the Yellow Pages under "Windows."

The beautiful, carefree window.

**Andersen Windowalls**   
ANDERSEN CORPORATION BAYPORT, MINNESOTA 55503



## Unique answer to multi-family fire detection.



**BRK's new MCP741 Master Control Panel and advanced ionization detectors solve many of the special problems of apartment house fire detection.**

Basically, a BRK system consists of at least one ionization detector in each apartment, and a centrally located Master Control Panel, to which the ionization units are connected by a simple 2-wire circuit. The ionization detectors will sound an alarm in the affected apartment, as well as a general alarm at the Panel and throughout the building.

Each ionization detector has terminal strips to which heat sensors and rate-of-rise detectors can be connected. There's a *battery conversion* feature, too, allowing the ionization detector to be cut out of the building's system and operated on battery power alone. If an apartment has too many nuisance alarms that disturb the whole building, its detector can be placed on battery operation, confining alarms to that apartment only.

To insure each apartment's privacy, while allowing tests of its detector, BRK has key-operated test stations for hallway location. The key not only tests for "power on", but also checks the unit's circuits and sensitivity. Hallway pull boxes are also part of the BRK system, and are connected to the MCP741 Control Panel. This advanced solid-state panel accommodates up to 8 zone modules, each capable of handling up to 60 detectors. Overall, the system can accommodate hundreds of ionization detectors, plus an almost infinite number of heat and rate-of-rise detectors and pull boxes.

Other features include remote annunciation, battery backup power and float recharge system in the control panel, UL listing of detectors and panel, easy installation, and reliable operation. For more facts write or phone BRK Electronics, Div. of Pittway Corp., 525 Rathbone Ave., Aurora, Ill. 60538. Phone: (312) 892-8721.



**BRK**  
**ELECTRONICS**

*First in Fire Warning*

Circle No. 316, on Reader Service Card





## Chadwick: new freedom, new directions.

Now your lounge seating can really do its own thing—free of straight-line wall restrictions; free of columns and other things that get in the way.

Chadwick lounge seating can curve gently and gracefully, or form perfect circles—inside or outside curves. Chadwick opens your lounge seating to a whole new range of dramatic planning possibilities. And Chadwick brings a new perspective to the often boring business of just sitting.

Chadwick does all of these things comfortably, colorfully and durably—with an ease of maintenance that will surprise and please you.

For more information contact your Herman Miller Dealer, or write or phone The Herman Miller Sales Aid Center, 616 772-2161, Zeeland, Michigan 49464.

LM herman miller



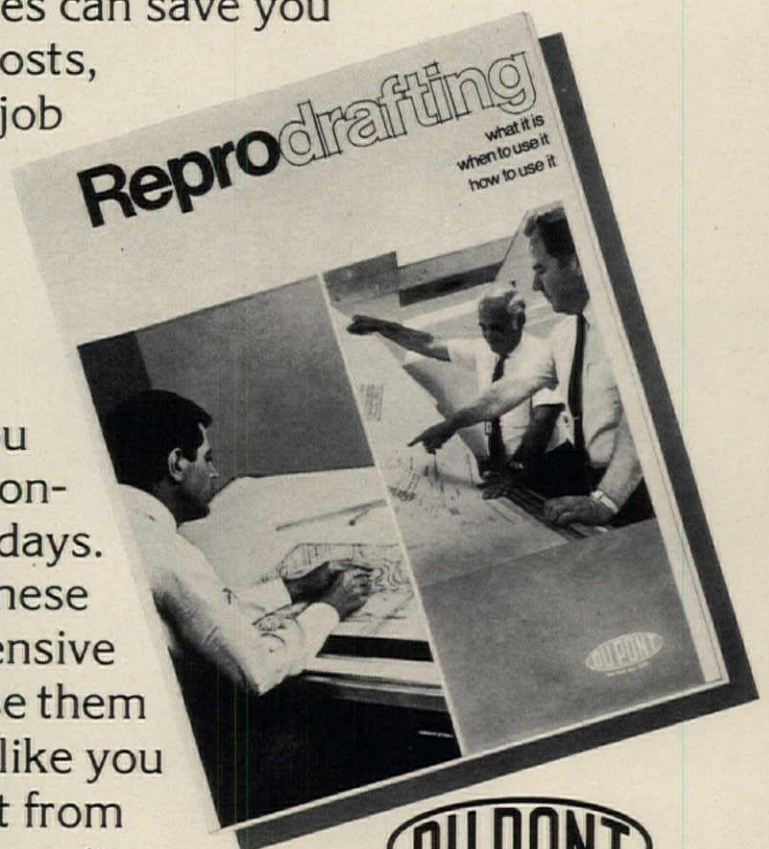


**Save time  
save money  
use  
Reprodrafting.**

Reprodrafting isn't new. It's made up of techniques you may know of but probably aren't using to the fullest extent—like paste-up drafting, photodrawing, team drafting and other photographic reproduction techniques.

Reprodrafting techniques can save you up to 80% of your drafting costs, depending on the particular job involved, and give you better results. These techniques let draftsmen work more productively by relieving them of repetitive detail. And they can help you meet project schedules by condensing weeks of work into days.

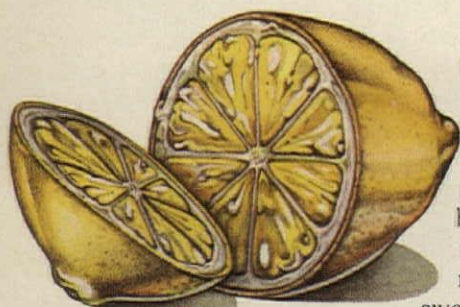
We've collected six of these techniques in one comprehensive booklet that tells when to use them and how to use them. We'd like you to have it. It's free. Ask for it from your reproduction service, or write: Du Pont Company, Room 24031, Wilmington, Delaware 19898.



**Photo Products**



# A few words about Marlite® doors...

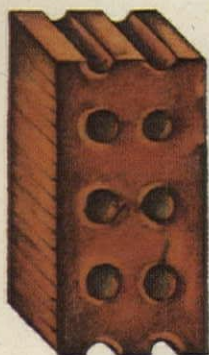


pumpkin, orange peel, lettuce, harvest gold, apple orange, brick, sky blue, frosty blue, forest green, blue, vivid blue, wild iris, cerise, regimental blue, black, black pearl,

**Give us the word on what color you want.** White, polar white, swan white, designer's white, solid white, misty white, meerscham, oyster white, dove grey, antique white, champagne, parchment, beige, portland grey, putty, oatmeal, burnished gold, ponce, parrot green, biscuit, pale gold, citron, honey suede, mayan gold, mayan sweet lime, green-



lemon, daffodil, yellow, butterscotch, brier, indian gold, kumquat, green, patriot red, chinese red, delft blue, raspberry, cranberry, russet, space independence blue, terra cotta, burgundy, plum, brown, tuscan brown.

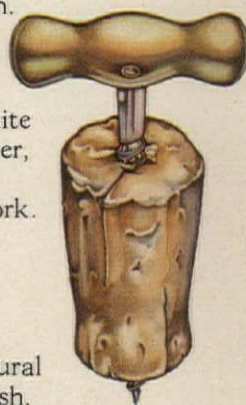


**Talk to us about textured and dimensional finishes.**

Mini-weave, prism, fresco, blue denim, natural cane,



planked corcho, natural cork, stucco, white slate, black slate, herringbone, fossil, leather, natural cane, intaglio, shantung, cordoba tipped leather, planked corcho, natural cork.



**Speaking of woodgrains.**



Designer's teak, light wormy chestnut design, chapel oak design, dark wormy chestnut design, shell pecan design, concord gray weatherboard, darby brown weatherboard, walnut design, gray barnside®, rosewood design, swedish cherry design, american walnut



design, brown barnside®, executive walnut, colonial maple, oak, figured rosewood, english oak, silvan teak, natural butcher block, barrel oak,

distressed pecan, natural silvan teak, golden ash, frostwood design, weathered yew, knotty cedar design, denver walnut design, pecan design, lotus teak, presidential dark walnut, light teakwood, carpathian burl, wormy chestnut, shenandoah fruitwood.



**Leathers, abstracts and marbles worth a 1000 words.**

Executive leather, HIA brown leather, palomino leather, harvest leather, avocado leather, black leather, white leather, pompeii, cathedral, DaVinci, blue cathedral, white onyx, golden antigua, harvest sonata, lime antigua, spring sonata, brown antigua, avocado cascade, burnt orange antigua. And many, many more.



**Marlite, the last word in doors.**

Doors from Marlite. Doors that do more than just open and close. Doors that complement interiors. Doors that do something for you. Any high-pressure laminate finish: solid colors, dimensionals, textures, woodgrains. And, of course, doors faced with Marlite for unique textures and deeply embossed finishes. Custom doors? They're our specialty. Name your door — the size, quantity, delivery date. You'll get what you want from Marlite. For openers, write for our catalog or see Sweets.



**Marlite® CUSTOM PRODUCTS**

Division of Masonite Corporation  
Dover, Ohio 44622 / (216) 343-6621

Marlite panels are hardboard with man-made finish. Marlite, Masonite and Barnside are registered trademarks of Masonite Corporation. No. 7614



# Who knows how to build reliable heat pumps that can save your customers 26% to 61%\* in heating costs?

# Amana<sup>®</sup> knows.

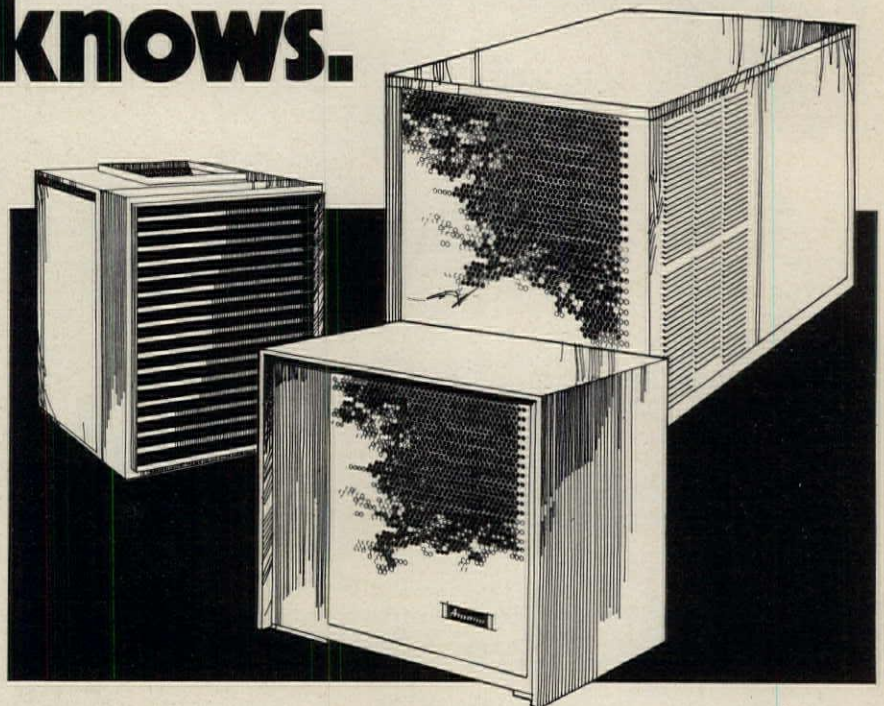
With almost 20 years' experience under its belt, Amana knows how to build dependable heat pumps. Reliability which can mean fewer call backs and greater profits for you. With Amana you can take advantage of our special sales, application and service training program that will make you a heat pump expert, too.

Choose from a complete line of package and remote heat pump systems including universal indoor sections with supplemental heat factory installed to fit any climate. Package units have space allowed in the unit for easy addition of strip heaters.

Each Amana heat pump has Amana's proven reliable time and temperature activated defrost control, rugged Powerpact compressor, and Amana-built coils that meet rigid performance standards.

Every Amana heat pump is factory assembled and run-tested for quick installation. You and your customers can count on dependable, carefree operation.

At Amana we think you should know what we know about quality energy saving



heating-cooling products that can increase your sales and profits.

\*Compared to a conventional electric furnace over an entire heating season. Based on design conditions and Seasonal Performance Factors for these cities: Minneapolis, MN.—26.58% Savings; Kansas City, MO.—44.13%; Philadelphia, PA.—48.72%; Atlanta, GA.—55.56%; Tampa, FL.—61.09%; San Francisco, CA.—61.39%. Savings will vary with climate and weather conditions.

**Look to *Amana* today  
for the energy saving ideas  
of tomorrow.**

**Amana**  
COOLING • HEATING

AMANA REFRIGERATION, INC., AMANA, IOWA 52203 • SUBSIDIARY OF RAYTHEON COMPANY

**IF YOU'D LIKE MORE INFORMATION ON AMANA ENERGY SAVERS, WRITE DEPT. C-164, AMANA, IOWA 52203**



# News report

## MOMA Beaux-Arts exhibition a must

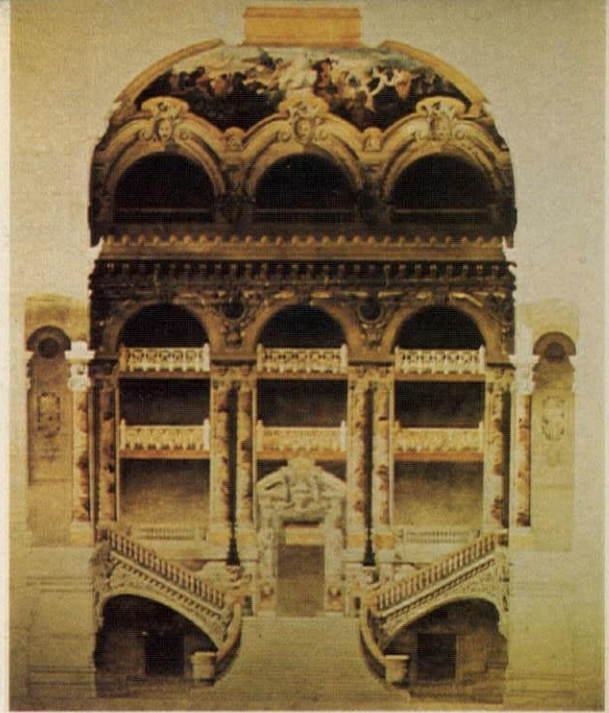
There are some who wish the Beaux-Arts exhibit on view through Jan. 4 at the Museum of Modern Art, New York, would stimulate a new direction in design. Certainly, as has already been stated in a number of ways, the show is ironic because of its presence in the museum which, even more so than with art, is identified with the modern movement, the Bauhaus and the International Style, which overthrew Beaux-Arts traditions 40 years ago.

Others view the possible, though improbable, directional change the show may effect as a threat, carrying on as if the modernists have had to recant. The recent Beaux-Arts exhibition in Atlanta from the Paris Prize competition (P/A June 1975 p. 22) shows that the Beaux-Arts are moving in.

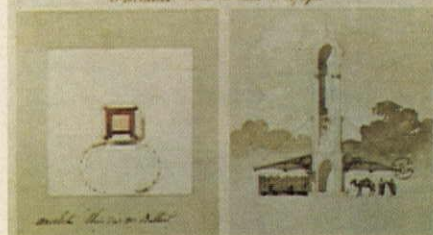
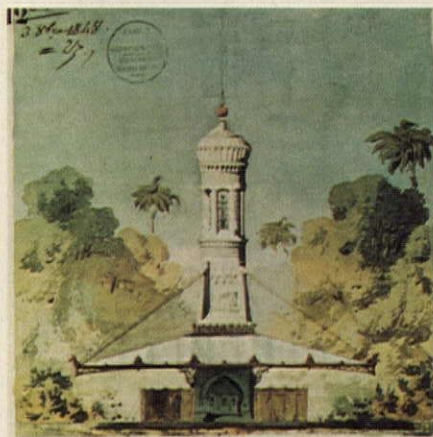
For most people, the show was received as it was intended: a reexamination of our "architectural pieties," to quote Arthur Drexler, director of the museum's department of architecture and design, who organized the show.

As he pointed out in the introduction to a relatively thin, 40-page catalogue—and as he surely will elaborate upon in a forthcoming book—there was much about Beaux-Arts which was misunderstood by the function-oriented moderns: the "eclectic use of historic styles" by the Beaux-Arts group, for example, and the relationship of the elevation and section to plan (a favorite Beaux-Arts exercise).

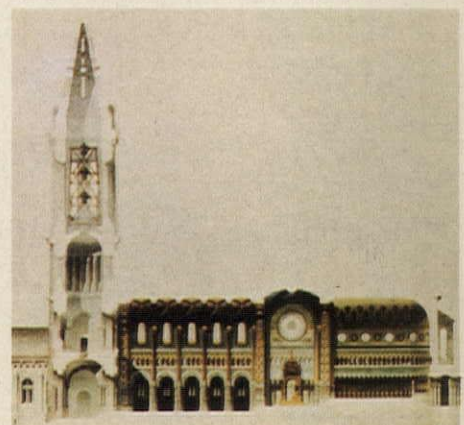
"Now that modern experience so often contradicts modern faith, we would be well advised to reexamine



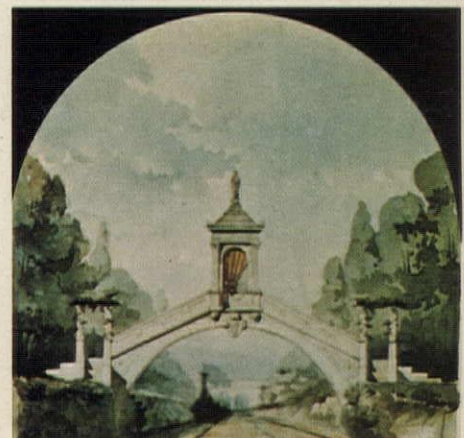
Stair hall, Paris Opera House, 1862, by Charles Garnier.



Fountain, 1848, Algeria, by Gabriel Ancelet.



Chapel, Alpine hospice, 1864, by Julien Guadet.

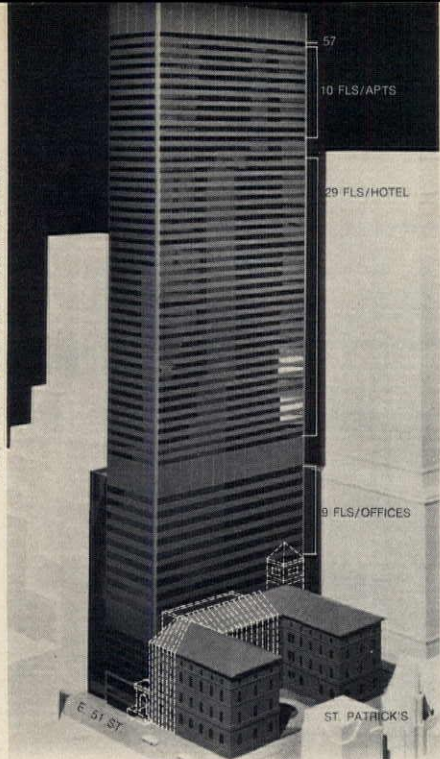


Bridge (above) over railway, 1852, by Emile Vaudremer. Parthenon (left) reconstruction, 1881, by Edouard Loviot.

our architectural pieties," he said.

He did not comment on what is the most striking element of the show: the exquisite beauty of the drawings as works of art of incredible detail, delicate washes, seemingly flawless draftsmanship. How these sumptuous works will affect the vision of young designers whose eyes never have been exposed to such opulence is difficult to estimate. At least evident for some time has been a longing for orna-





Villard Houses flanked by proposed Palace Hotel. New scheme saves Gold Room and dining room. Indicated are portions to be demolished: the porch and interiors of 24 E. 51 St., interiors of 453 and 455 Madison Ave., and the corner tower.

## News report

ment, richness, and fantasy which the modern movement has categorically denied. Ada Louise Huxtable of *The New York Times* said the exhibition "is obviously about to break a taboo" by making the Paris academy respectable once more; and the show's greatest impact, she feels, will be in causing designers to think through again the role of utility and sociology. Her colleague Paul Goldberger wrote in the *Times* that the Beaux-Arts period is better studied rather than romanticized "as the golden time that holds the answer to all of our design problems."

It is significant that the exhibit, composed of about 200 works, is installed on the first floor in space reserved for major special shows at the museum instead of on one of the upper floors in the usual exhibition rooms for architectural subjects. This at a time when several other museums, notably the Whitney, are turning away architectural exhibitions for want of funds.

Although most of the projects were grandiose, some reflected the increasing importance of technology—cabs for elevators and even two elegant designs for utility poles. One bizarre drawing combined frontier, industry, and Beaux-Arts into one scheme: a factory in Alaska. The long, linear structure was formal and symmetri-

cal—and built log-cabin style. Was this the radical designer of his day?

The drawings were framed in thin black strips and hung on walls painted deep muted hues, like plum, to accent the delicacy of the works' detail. Even a student's drawing notebook, the size of a desk top, was displayed, open, in a clear plastic case on the wall. It's understandable why the students had to carry them *en charrette* (in a cart) to school for the competitive examination.

## New plan to save Villard's Gold Room

As a result of an outcry protesting the destruction of the famed Gold Room and other sumptuous interiors in New York's 19th-Century Villard Houses to make way for a high-rise hotel, office, and apartment tower (P/A Aug. 1975 p. 27), another plan has been proposed which would save the Gold Room, turning it into a cocktail lounge to serve the hotel.

This, said architect Richard Roth Jr. of Emery Roth & Sons, New York, is the 15th or 16th design of the project, which from the start intended to save some, if not all, of the Villard Houses, which were designed in the 1880s by McKim, Mead & White. The alternative, which he said would be "hassle-free," would be to completely remove the houses and build to the legal height of 81 stories. "The Landmarks commission has no jurisdiction over a charitable organization," he remarked. The Villard Houses—six altogether—are owned by the Roman Catholic Archdiocese of New York. Developer Helmsley-Spear Inc. has a long-term lease on the property on which it proposes to erect a luxury hotel, together with apartments and offices incorporating the Villard Houses as part of the grand entrance on Madison Avenue.

Along with the Gold Room changes, the developer also has added five floors to the tower bringing the total now to 57 stories. At the same time, office floors were reduced from previous schemes giving 10½ more to apartments. In addition, Helmsley-Spear has decided to change its route of obtaining approval from the Board of Standards and Appeals to the Planning Commission, where it plans to ask for a special permit to build. This is seen by

preservationists as not particularly threatening. Working with the Landmarks Conservancy on the new set of plans, the architect proposed the cocktail lounge transformation for the Gold Room while the adjacent dining room of the mansion would be turned into a bar lounge. Part of the adaptation would involve making an entrance in the wood panels of the Gold Room.

Still, up to 25 ft of the rear of the Villard Houses will be removed to make way for the tower, as will the entire interior of two of the center houses, to accommodate the hotel.

In particular, the New York Landmarks Conservancy, which has led the preservation movement, is now concerned about the 24 E. 51 St. house, the only one presently occupied and the only one with a series of interior spaces of residential scale. The developer plans to renovate these floors to make modern meeting rooms with movable partitions but the Conservancy is proposing they be preserved intact to accommodate gatherings. The rooms are up to 23 ft square with wood paneling and 16-ft ceilings. One has a domed ceiling.

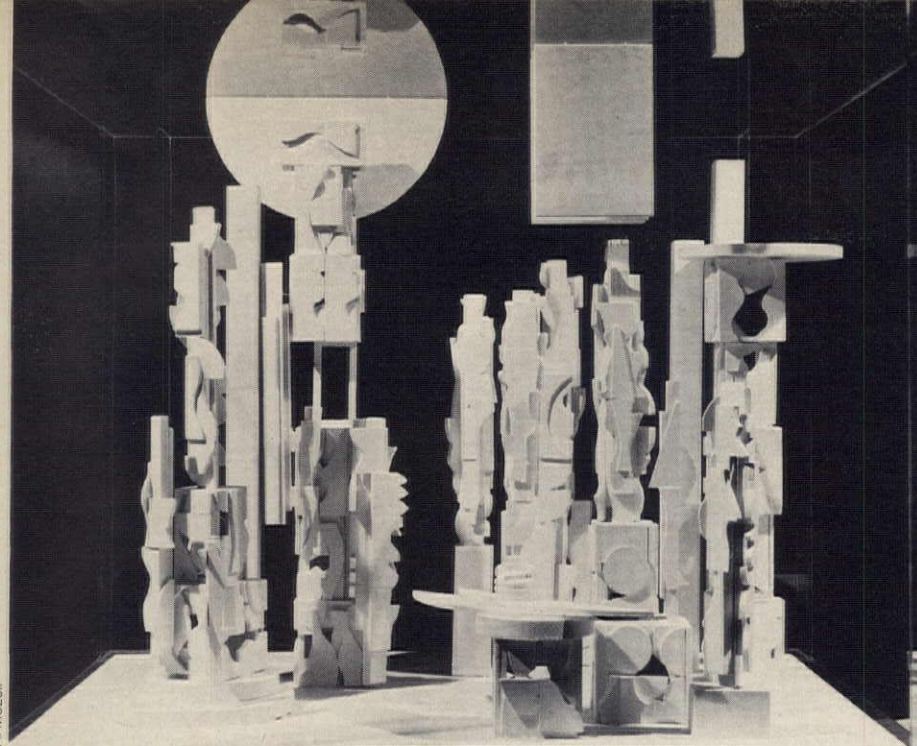
As for other rooms in the Villard Houses, the developers hope the appropriate tenants may be found, such as various missions to the United Nations, for example. Before the latest proposal can go to the Planning Commission it needs a recommendation from the Landmark Commission, which has given the proposal a hearing but has not yet reached a decision.

## Sculpture for federal complex

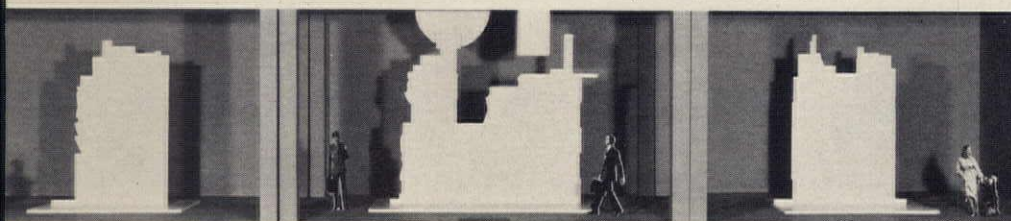
Sculpture by Louise Nevelson of New York and David Von Schlegell, director of sculpture studies at Yale University, and a wall mural by Philadelphia artist Charles Searles have been commissioned for the recently completed William J. Green Federal Building and James A. Byrne Courthouse in Philadelphia. The buildings are a joint venture of Bartley Long Mirenda & Reynolds, J. Roy Carroll & Partners, and Bellante Clauss Miller & Nolan.

The Nevelson white-painted wood sculpture entitled "Bicentennial Dawn" will consist of three segments installed in the courthouse lobby. The work will respond to changing light from early





Sculpture model, "Bicentennial Dawn," center section, by Louise Nevelson.



Study model of Nevelson work for federal courthouse.

dawn to late afternoon and, according to the artist, was designed as a "contemplative experience in search of awareness that already exists in the human mind."

Von Schlegell's piece of stainless steel is for the pool in the plaza. Searles' mural will be located in the lobby of the Federal Building.

The General Services Administration commissioned the works as part of the federal fine arts program calling for a portion of the cost (one-half of one percent) of any federal structure to be allocated for art. The Nevelson and Von Schlegell commissions were \$175,000 each; and Searles', \$30,000.

## Stock Exchange rival faces foreclosure

The 43-story office tower which replaced Louis Sullivan's Stock Exchange Building in Chicago after a desperate fight to save the Exchange is less than 50 percent occupied and is in foreclosure litigation. The structure also is boarded around the sidewalk to protect passersby from falling glass; causes for the glass failure have not been determined.

Originally the structure was named

the Heller Building after its major tenant, the Walter E. Heller International Corp., which never moved in, breaking a lease that even provided two years free rent. Now the tower is known simply as the 30 N. LaSalle Building.

The Prudential Life Insurance Company has opened foreclosure proceedings on its \$41.3 million loan, and Advance Mortgage Corp. is foreclosing on a \$5 million second mortgage. The nine development partners including a former state senator, lawyers, financiers, and real estate executives, and the Tishman Realty & Construction Co. which jointly own the building could not meet the monthly payments of more than \$400,000.

An attorney for the nine partners said that the two-year struggle to save the old Stock Exchange delayed the project so that the new building "lost the market" and was ready for occupancy when office rentals were low throughout the nation.

Preservationists failed to win the battle to save the Stock Exchange in face of arguments that the exchange no longer was economically viable. The Commission on Chicago Historical and Architectural Landmarks twice recommended designation of the Stock Exchange as a landmark, noting



30 N. LaSalle Building on old Stock Exchange site in foreclosure proceedings.

Richard Nickel



Chicago Stock Exchange, 1894 to 1971, by Louis Sullivan.

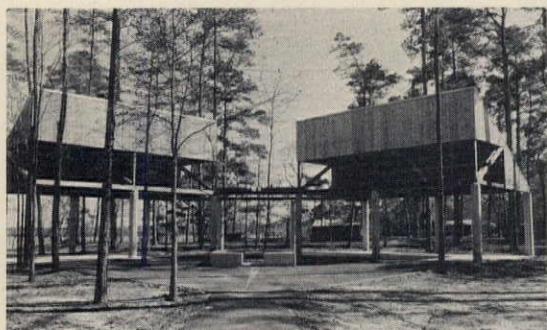
that it was economically viable and fully rented, but the Chicago City Council did not act on the recommendations. The Stock Exchange, built in 1894, was torn down the summer of 1971. Architectural photographer Richard Nickel was killed on the site while documenting the demolition.

## California architects oppose energy rules

The California Council, American Institute of Architects, has asked a state commission to reject proposed energy conservation standards because they are "proscriptive" and "a waste of time and money." In a 23-page report submitted to the State Commission on Energy Resources and Development, the Council outlined its objectives to



## News report



Michael Moncrief Park by Alexander/Murray Associates.



Bicentennial striper ready to roll.



Irwin Union Bank and Trust, Caudill Rowlett Scott. A. Dean Taylor, associated architects.



Residence by Irving Phillips and Robert Peterson.

the proposed regulations and recommended that flexible rules based on performance standards be adopted.

Referring to the commission's draft, Council president Ward Deems of San Diego said, "This monster they've created is indeed defying the Act (California Senate Bill 144), which calls for performance standards."

In response to objections, the Energy Commission has decided to further study the proposed conservation standards. Deems said the prescriptive rules involve highly technical formulas which do not acknowledge energy-saving technology or methods

other than the ones specified in the standards. Performance standards, however, could determine a building's energy-saving capability over a year's time—not just peak periods—would be flexible, easy to update, and readily enforceable.

California is one of the first states to propose in-depth energy legislation; seven others have followed; 19 states are considering standards; and Congress is considering bills from each of its houses on energy conservation. The Senate bill (S-594) is proscriptive, but the House bill (HR-2650) is good and has AIA support.

## Texas Society gives nine design awards

The annual Design Awards program of the Texas Society of Architects received an unprecedented number of over 200 submissions. From this total the jury, which included architects Gunnar Birkerts and Richard Meier, selected nine equal winners.

Three of the nine awards were previously features in P/A: Fodrea Elemen-

tary School, Columbus, Ind. by Caudill Rowlett Scott (P/A May, 1974 p. 84), the Peaceable Kingdom Barn, near Washington-on-the-Brazos, by Architects Incahoos & Associates (P/A Sept., 1974 p. 24), and the KPRC TV and Radio Station, Houston by S. I. Morris Associates (formerly Wilson, Morris, Crain & Anderson) (P/A March, 1975, p. 30).

Other selections were: First Professional Bank, Houston, by S. I. Morris Associates; First International Building, Dallas, by Hellmuth, Obata & Kassabaum and Harwood K. Smith & Partners (associate architects); Irwin Union Bank and Trust Company branch bank, Columbus, Ind. by Caudill Rowlett Scott (A. Dean Taylor, associate architect); Brochstein Residence, Houston, by Brochstein, Todd & Cannady (associated architects); McCormick Residence, near Navasota by The Firm of W. Irving Phillips & Robert Peterson; and Moncrief Park, Harris County, by Alexander/Murray associates.

## Bicentennial striper: parking lot patriotism

A machine that paints a 6-inch-wide stripe of red, white, and blue is available from the Fox Valley Marking Systems, Inc., of Bartlett, Ill. The paint comes in aerosol cans which snap onto the painting device for application on parking lots and roads. The paint was developed to last all year in all kinds of weather conditions.

## Wainwright stolen windows recovered

Fifteen stained glass windows stolen from Louis Sullivan's Wainwright Building in St. Louis (P/A, Sept. 1975 p. 32) have been recovered a few miles south of the city by county police. An unidentified person who said he bought the windows for \$3200 "in good faith" returned them to the police. The Missouri legislature has not appropriated funds for new construction on the Wainwright site, where the competition-winning scheme of Mitchell/Giurgola Associates and Hastings & Chivetta incorporates the Wainwright with new state office structures, but work on Sullivan's building is going ahead as scheduled.



# Two theaters in one civic center

# STAGE LIFTS BY DOVER

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



## **DOVER** Stage Lifts

Circle No. 320, on Reader Service Card

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

Architects: Geddes Brecher Qualls Cunningham,  
Philadelphia, Pa.

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

General Contractor: Brice Building Company, Birmingham.

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

Dover Stage Lifts installed by  
Dover Elevator Company,  
Birmingham.





## Architects inspect D.C. riot sites

A group of 45 architects learned recently on an inspection tour of Washington, D.C., that little has been built on the sites destroyed by the rioting that followed Martin Luther King Jr.'s assassination seven years ago. So much the better for those architects, however, who were there to see the "opportunities" available. The tour was part of the day-long "Inner City Opportunities Conference" co-sponsored by the American Institute of Architects and the National Organization of Minority Architects.

The bus excursion began at the 14th Street Urban Renewal Area and wound its way through three other renewal districts before ending with a visit to the new-town-in-town of Fort Lincoln on the northeast side. While little development has occurred in the riot areas other than scattered infill housing projects of about 50 units each, many by the black firm of Bryant & Bryant Architects of Washington, the Southwest Renewal Area near the Capitol has undergone virtually total clearance and rebuilding, but the effect has been disappointing. The sense of urban space has been destroyed by too many open spaces set against wide boulevards. The shopping center for this area has been a failure, and the low-income housing, built almost as an after-thought, looks out of place next to the upper-income townhouses.

Tour guide Robert Nash of Robert Nash & Associates and the first black architect to be a vice-president of the AIA, said that the 14th Street area before the 1968 riot was the second highest revenue-producing neighborhood but in the intervening years economic activity has dropped and the only major project developed has been a health center.

In the Shaw School Urban Renewal Area just south of the 14th Street corridor the once-popular Kennedy Playground financed privately is now desolate. Visible throughout this and the other renewal districts are numerous vacant lots cordoned by barriers of wood pilings driven into the ground to prevent parking and dumping.

Little effort has been made to save

old buildings, said Nash, and a number of the old structures torn down belonged to well-known blacks. Much of the existing housing is blocks of turn-of-the-century walkup apartment and townhouses of pleasing scale and ornamentation facing tree-lined streets. These structures need maintenance and repair or else they surely will face the wrecking ball when the money situation loosens.

It was just this kind of housing that was demolished in the early 1960s in the Southwest Renewal Area, which blacks view as the epitome of "Negro removal" and which Nash calls "an economic flop."

Throughout the tour new projects by blacks were pointed out: the Dunbar High School by Bryant & Bryant Architects; a mixed-use project of housing placed on top of a supermarket by Nash's firm and Madison & Madison Associates; a school by Fry & Welch in Fort Lincoln; and a hotel which is under construction by Sulton & Campbell Architects.

In the area of Howard University, a leading university for blacks, a number of major projects are underway, but by white firms: among them a hospital by Smith, Hinchman & Grylls Associates of Detroit, and a growth plan developed by Perkins & Will's Washington office. Some black firms are doing smaller projects at Howard, but the large contracts reportedly go to big firms, which are white, because the contracts are General Services Administration-controlled, and Howard is a federally funded institution. Blacks, said Nash, are seeking and finding ways to increase their participation in federal projects. Meanwhile, the architects who really have been by-passed for "opportunities" in recent years, Nash said, are the local white offices that are edged aside by joint ventures between local blacks and out-of-town white firms.

## National Council adopts report

The subject of barrier-free architecture was included in an 11-page report containing numerous resolutions to aid the handicapped adopted this fall by the National Council on the Arts. Designer Charles Eames said the demand today on architects to make buildings

more accessible to the handicapped—by designing ramps for wheelchair-users, for example—would be invigorating to the profession. Architect Harry Weese was less optimistic, commenting that "some architects have eliminated stairs so completely there will never be stairs again." Eames, nevertheless, insisted that "Any constraint usually adds to the rigor of the discipline of the problem and eventually to the better aesthetic."

The report was prepared by Phyllis Wyeth and Virginia Cassiano in response to a resolution adopted unanimously by the Council in 1973 identifying the arts as "a right not a privilege." The report discussed the prevailing attitude towards the arts and the handicapped as remedial and recreational and showed how National Endowment funds, which the Council administers, foster segregation of the handicapped from the mainstream of artists. A dance workshop, for instance, did not allow hearing performers to be included even though the instructor, choreographer Fanny Yeh, firmly believes in the interaction between hearing and non-hearing dancers.

Among the recommendations of the report was the establishment of a pilot program in architecture and environmental arts to stimulate design solutions for barrier-free architecture. In addition, the Council also makes available a resource paper which includes a list of facilities, such as museums, with arts programs accessible to the handicapped.

## Counter-claims filed in John Hancock suit

A second round of suits has been filed in the case of the faulty glazing of Boston's John Hancock tower. I.M. Pei & Partners, New York, has filed suit against Toledo glass manufacturer Libbey-Owens-Ford for fraud and misrepresentation and against two contractors for indemnification. Libbey-Owens-Ford is suing Pei and the two contractors, blaming them for the glazing problems. LOF also has brought suit against John Hancock Mutual Life Insurance Co., charging damage to LOF's reputation as a result of Hancock's claims of LOF negligence and breach of warranty in providing some 10,000 double-glazed units.





# Tussah

"NATURE IN ITS MOST  
NATURAL FORM"

*(The wild, untamed silk found in India)*

The silk worms that produce tussah feed on anything they can find in the rugged, uncultivated lands of Middle Asia. This causes the yarn to be of many natural shades from off whites to earthy browns, and of an uneven, nubby texture.

It is woven into magnificent fabrics on Scalamandre's own looms in the United States and is excellent for today's contract demand for natural tones and texture.

#99259-0 "TUSSAH" TEXTURE  
53" WIDE  
62% Silk 28% Cotton

Specified for  
Federal Mint, Philadelphia  
Arco Towers, Center Square, Philadelphia  
by Interspace  
Officer in Charge: Herb Kramer

*Scalamandre*

950 Third Avenue, 10th Floor, New York 10022  
Atlanta • Boston • Chicago • Dallas • Los Angeles  
Houston • Philadelphia • San Francisco

*To the trade only*

Circle No. 333, on Reader Service Card



## News report

Pei charges that LOF withheld information showing that the seal of its thermopane units was defective, that LOF planned to discontinue use of that particular seal and that the same kind of units had failed in other projects.

An LOF spokesman denied the Pei charges and said the failures were the result of an "error in the architect's windload specifications for the tower and underdesign of the building." The suit against Pei and the contractors, Gilbane Building Company of Providence, R.I., general contractor, and H.H. Robertson Company of Pittsburgh, subcontractor for the curtain wall, "in essence charges the glass problems are the fault of those parties and not LOF," said LOF's counsel.

Both Pei and LOF have asked to have dismissed charges brought in a suit against them and four other companies by John Hancock, whose unoccupied new tower headquarters in Boston was completely re-glazed after numerous windows broke following installation (P/A Oct, 1975 p. 40).

Meanwhile, a spokesman for H.H. Robertson Company replied to Hancock's suit saying no grounds for liability on the part of Robertson are evident—that Robertson, in fact, received the contract to install the new windows "with glass many times stronger than that originally specified" and that it assumed it was included in the Hancock suit "solely on the basis that it (Robertson) purchased and installed the glass described and specified in the contract documents prepared by the architect for the building."

Pei, in answer to Hancock's allegations, said that on all four counts Hancock failed to state a claim upon which relief can be granted. Pei's defense states that at all times Hancock employed an outside consultant to review and approve all design and services and that all services were performed in accordance with the degree of skill and care which then obtained in the architectural profession. Pei further alleged that its contract with Hancock did not require Pei to supervise construction of the tower except for limited on-site services and that its specifications for the curtain wall called for performance standards and did not include a "pressure-equalized system of metal work"

recommended and designed by Robertson. Pei also said the glass units furnished for the specifications had a "latent defect" and did not conform with the contract documents.

Pei further stated that the tower in question was 62 stories—not 60, as cited in Hancock's suit. After the first window failures occurred in the fall of 1972, Pei said a letter was sent in June 1973 to the Boston Building Commissioner reporting test-revealed defects in the seal of the windows and stating that the replacement of the lower floor windows had been ordered. Three months later Pei wrote another letter to the commissioner stating that all units were to be replaced. Henry N. Cobb, Pei partner-in-charge of the tower design, said these letters were kept confidential for two years at the request of the client, John Hancock Mutual Life Insurance Company.

## Public policy / design: separate tables

Harvard's annual Urban Design Conference, held October 9th and 10th in its Graduate School of Design, followed its usual tradition of focusing on a compelling issue of the day for its conference theme. Unfortunately, "Public Policy and the Built Environment" proved to be as amorphous a conference topic as it is an ineffable endeavor in real life.

Although the stated goal of the conference was "to bring together public officials and practicing professionals for an exchange of views on the pressing social issues of housing, land use, and energy efficient design," most panelists and speakers devoted large portions of the time simply to explaining the nature of the public policy in their particular area of concern. This approach is natural (even necessary) to the many who are not familiar with all the government programs and policies. But one longed for intensive debate on the effectiveness, potentials, and pitfalls of such policies between professionals and policy-makers.

A narrower topic (e.g. just federal policy toward housing) might have allowed for explanation, question answering, then intensive debate. However an even more important obstacle was the actual composition of the panels. Most panels (or "workshops")

seemed to have a majority of one or another background point of view. For example, "Washington and the Built Environment" included Walter Meisen, Acting Commissioner of the Public Buildings Service, GSA; Lois Craig, Director of the Federal Architecture Project of the National Endowment for the Arts; and Richard Gray, Chief of the Architectural Branch of the U.S. Department of State, and coordinator of the Department of Architectural Consultants. All presented views, observations, and information pertaining to their roles as public officials. For example, Meisen urged that architectural schools teach architects how to be good clients since about 25 percent of architects now in school will end up as members of a client organization (like Meisen) rather than a design organization. Craig discussed the Design Improvement program, which is trying to get better design professionals hired in federal projects, upgrade graphics of printed matter, publish aspects of federal architecture, and generally promote bureaucrat interest in design.

Gray mentioned that the Foreign Buildings Operation had to tailor its plans to the image the U.S. wants to present—from monumental in the years just after World War II, to the adventurous in the 1950s and 1960s, to low profile now.

While Robert Campbell, architect (Sert Jackson & Associates) and critic (Boston Globe) represented the "other" side in his role as moderator, additional presence on the panel of adversary points of view might have gotten the presentations turned more towards debate of issues.

The "Housing Policy" and "Housing Design" panels were structured fairly much the same way. In fact, most of the public officials were on one panel, practicing architects on the other. And to clinch the irony, the panels were scheduled at the same time.

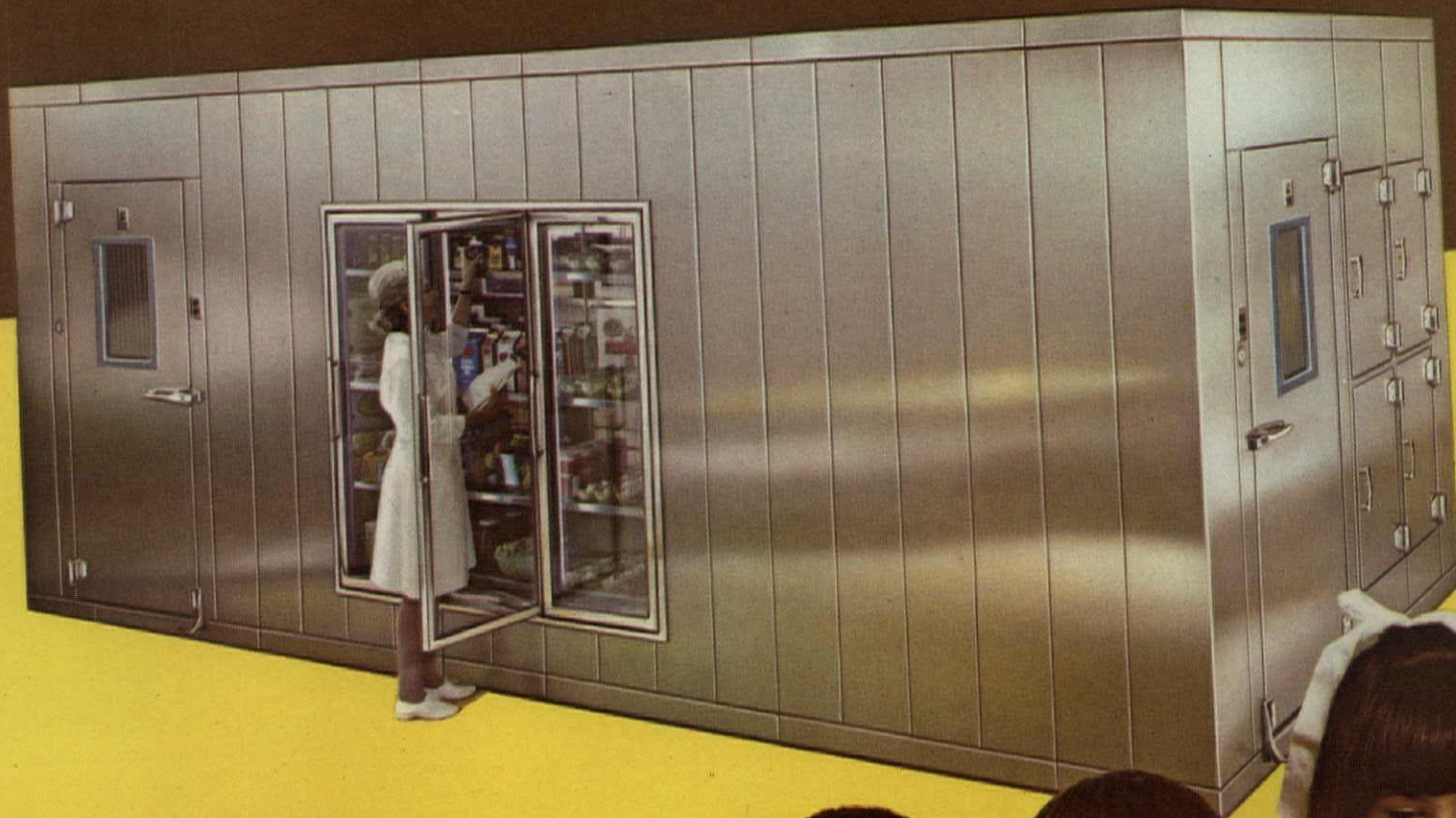
The next day, three urban designers and architects either formerly or currently with the New York City Department of City Planning were on the same panel to discuss urban design issues. (Richard Weinstein, Raquel Ramati, Jonathan Barnett.)

Not that anything is wrong with such experienced and sometimes fascinating insights, attitudes, experiences. Nor did the audience appear uninterested: it generally responded with questions, arguments, even polemic.



# Bally belongs

where walk-in refrigeration is a critical requirement



## Bally Prefabs are there for the lively bunch at school lunch

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°F. freezing. Subject to fast depreciation and investment tax credit. (Ask your accountant.) Write for 28-page book and urethane wall sample. Our 182-page *Working Data Catalog* is available to Architects and Specifiers at no charge. Also, see our catalog in Sweets, 11.24/Ba. **Bally Case & Cooler, Inc., Bally, Pennsylvania 19503.** Phone: (215) 845-2311. Address all correspondence to Dept. PA-12.



© 1975 ALL RIGHTS RESERVED  
Circle No. 314, on Reader Service Card





But the main problem is that the format means that issues and information are received in fragmentary bits and pieces. The real question about how public policy should be formed with the help of design professionals and lay public, and what should result of course remained undiscussed. Especially among the people who gathered to discuss it. Meanwhile, we go on wondering why public policy and the built environment often seem so incompatible. [SS and JD]

## Zoning for sex: hard pill to take

Few urban designers and city planners ever thought they would be inventorying the location of massage parlors, or suggesting ways of designing store fronts for skin flicks. However, as the sex industry has burgeoned, sex has become a planning issue.

Several city planning departments have resorted to zoning proposals as a way of dealing with the problem. Strangely enough among the vanguard are the proper city of Boston and the suburban town of Islip, Long Island. As Boston urban renewal forced some of the sex-industry businesses located in old 19th-Century structures in lower Washington St. (near Chinatown) to move elsewhere, concern mounted. Last year the city passed an Entertainment District amendment which created an "adult entertainment zone" where X-rated films, bookstores, cabarets, and pinball parlors are permitted to flourish in all their flaming lasciviousness. Adult entertainment is distinguished from general entertainment that is customarily open to the public at large and does not exclude any minor by reason of age as a prevailing practice."

While the police realize that "illegal" activities, i.e., prostitution, could go on there, they feel that a zoned district will make enforcement easier.

The Boston zoning amendment also permits the city design-review powers before a private owner can receive a building permit. To encourage private improvements in the "Combat Zone" as it affectionately is called, the Boston Redevelopment Authority will provide consultation services on design cost



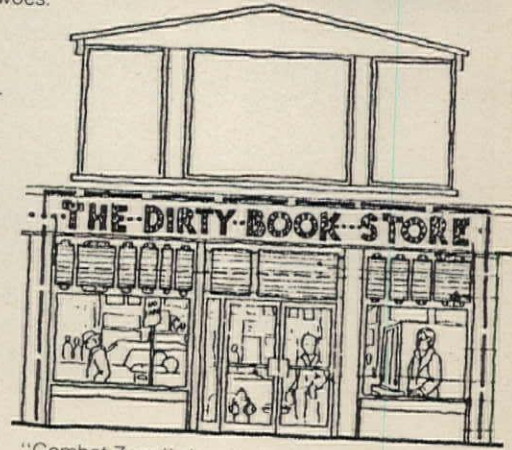
"Porn City"—Times Square, New York, has its woes.

estimates and even working drawings free of charge. The city has also undertaken a program to install parks, new sidewalks, and lighting, and allows moving or intermittently flashing lights on signs that are elsewhere prohibited.

The legality of this kind of zoning is being partially tested elsewhere. The U.S. Supreme Court currently is deciding on a Detroit zoning regulation limiting that city's sex industry activities. The Sixth Circuit Court of Appeals earlier decided that the ordinance was unconstitutional because these businesses were treated differently from others without just cause.

Meanwhile New York City is worrying about the "Porn City" reputation of Times Square now that the Democratic Convention draws near. Times Square's sex industry makes Boston's two-block-long Combat Zone look like a dress rehearsal for a high school version of *The Skin of Our Teeth*. Like Boston, though, Times Square has received a natural agglomeration (more like a festering) of sex-related activities through the years. The only problem is that the Broadway theater district was there first. The incompatibility of the two uses is felt by both sides: Complained one massage parlor owner to the Office of Midtown Planning and Design, "Those little old blue-haired ladies who invade this area every Wednesday afternoon are killing my business. Can't you do something?"

While New York is entertaining the idea of an adult entertainment zone, OMPD doubts it can be contained. And where would it be located? OMPD's in-



"Combat Zone" signage from Boston's code book.

ventory of massage parlors, peep shows, and bookstore locations shows that the sex "zone" is highly fluid: right now much of it has moved to the East Side along Lexington and Third Avenues.

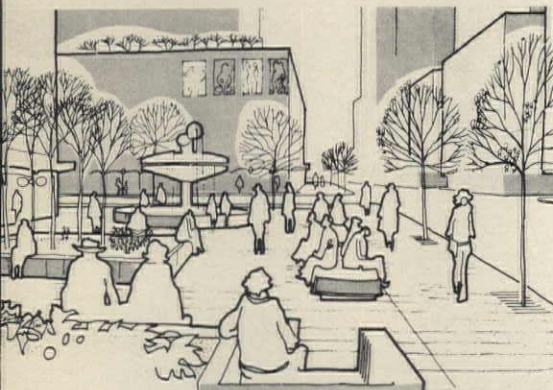
Instead, the city has resorted to a zoning proposal that soon will go before the City Planning Commission and from there before the Board of Estimate. The proposal seeks to limit the sex industry by classifying massage parlors, "rap" parlors, "sensitivity training" centers, and other euphemistic terms for storefront bordellos as "physical culture and health establishments" that will have to meet the standards of sports institutions, or be located in a community center or 200-room hotel. All of which the city hopes would require a tremendously discouraging investment of money.

The city would also like to pass a one-year moratorium on opening new physical culture establishments. But according to *The New York Times*, legal challenges could still pop up, par-



ticularly on the First Amendment question relating to "rap" parlors.

And of course despite the constitutionality of this law, New York lacks the manpower to enforce it. It's a worthwhile effort, but New York probably will not solve the problem of sex industry until it devises a more comprehensive sex ordinance. This may mean an adult entertainment zone, even though the situation obviously is more complex than it is in Boston or Islip if only because of the extent and concentration of the sex industry there. But city planners have been able to come up with ingenious "special district" plans before—for activities they want to encourage. Appearing to endorse sex by a special district is too risqué a suggestion for some. [SS]



Ordinance gives bonus for plaza benches.

## New zoning improves plaza amenities

New York City has recently passed an amendment for its plaza bonus created by the 1961 zoning ordinance that should put back the "amenity" into this amenity. When the ordinance was initially passed giving owners of new buildings extra floor area for including a plaza, few foresaw the numbers of treeless, benchless, shadowy and lifeless plazas that would abound in the next decade. Now the city's Urban Design Group, headed by architect Raquel Ramati has devised zoning regulations that will require such improvements in commercial areas in midtown and lower Manhattan. In order for the developer to receive the bonus of 10 sq ft of floor area in the new building for each square foot of open space, he now must follow the new open space requirements.

The plaza requirements are quite specific for the three kinds of open

spaces discussed—open air concourse, sidewalk widening, and urban plaza. Regulations for each kind of space designate certain dimensions, permit obstructions (e.g. kiosks and cafes) prescribe location, shape, types of circulation, and mandatory conditions regarding seating, minimum lighting, planting. Even kiosks have restrictions on height, area and materials, and plazas must meet certain sun exposure requirements depending on location.

Another interesting feature of this legislation, approved by the Board of Estimate last May, is that the owner of the commercial building must put up a performance bond before he receives a certificate of occupancy. This will ensure mandatory tree planting, movable seating, and litter-free maintenance including tree replacements. [SS]

## Factory-built homes still top attraction

Last year's International Building Exposition (INBEX) became this year's National Building Show. Following the relatively poor attendance in 1974, sponsors this year expanded the theme and changed the name and format to attract exhibitors and attendees—with considerable success. Held in Chicago in late October, the show included 160 display booths and was attended by 12,400 visitors.

The sponsors, including the National Association of Building Manufacturers and National Apartment Association, focused on broader topics than just industrialized building, which has become unfashionable. These areas included energy, which is fashionable; restoration, a necessity; export, which has become lucrative; and marketing and finance, always discussable.

Yet the several sessions on industrialized housing still were the major attraction for most conference-goers. The session "Industrialized Housing: Dead or Alive?" could not produce one speaker who believed it was dead. Panelists were Harold Bell, Columbia University; Gordon Bagby, University of Illinois; architect Steven Winter; manufacturer Lawrence Haiman; and Shep Robinson, moderator.

Figures show that 4000 companies operating 7000 plants produced by some industrial process 72 percent of all housing in the United States in



Factory-built units destined for military housing.

1974. Moreover, foreign buyers in the Middle East, Africa, and Latin America are clamoring for U.S. industrialized techniques to build large volumes of housing. Industrialized housing was found to be alive and, if the world's housing needs are to be met, it will continue to be so.

In another session, "Small Building Manufacturers Make Big Money," it was shown how profitable a small (less than \$10 million in sales) producer of homes can become. The advice: build good quality products; hire well-paid, clean-living salesmen; and avoid "high tech" equipment and Harvard types.

"Operation Breakthrough" came and went, but its challenge left the nation's manufactured housing industry still the winner. The real industrialized housing producer typically is the small manufacturer operating in Pennsylvania or Indiana.

He builds wood-framed modular or panelized units and produces about 500 single-family homes a year, all of them similar in appearance, basic in layout, and identical in production technique. His product generally is quite banal, but is high in quality responsive to consumer needs, and moderate in cost. This builder doesn't seek publicity, rarely appears in glossy magazines, and never crosses paths with architects. He is unknown to Wall Street, big cities, or schools of architecture, but he produces almost three-fourths of all housing in the United States. [Steven Winter]  
*Mr. Winter, an architect, specializes in systems building.*



## Personalities

James Ingo Freed has been appointed dean of the newly formed College of Architecture, Planning, and Design at the Illinois Institute of Technology, Chicago.

Graeme M. Morland has been named chairman of the Department of Architecture of the University of Southern California's School of Architecture and Fine Arts, Los Angeles.

Chartier Newton has been appointed visiting associate professor in the School of Architecture at the University of Texas at Austin. Michael Benedikt, Alan Black, Larry Doll, Lawrence Speck and Ivan Zaknic have been named assistant professors.

James E. Westphall has been named assistant vice chancellor, physical planning and development of the California State University and Colleges, Los Angeles.

George J. Mann has been named associate professor of architecture and

planning, and director of the Health Services Planning & Design Program at the Columbia University Graduate School of Architecture and Planning, New York City.

## Calendar

Through Jan. 4. "The Architecture of the Ecole des Beaux-Arts" exhibit, The Museum of Modern Art, New York.

Through Jan. 4. Environment '76, the Denver Art Museum. An exhibit, organized by the American Institute of Architects, of suggestions from the public for improving Colorado's environment. The best ideas will be implemented with the help of the AIA.

Through Jan. 18. "Nelson/Eames/Girard/Propst: the Design Process at Herman Miller" exhibit, Walker Art Center, Minneapolis.

Dec. 31. Deadline for entries to the Plywood Design Awards Program, co-sponsored by the American Plywood Association and *Professional Builder*.

Jan. 5-16. Second annual Building Construction Institute, University of Wisconsin, Madison.

Jan. 11-Feb. 22. "Naives and Visionaries" exhibit, Worcester Art Museum, Worcester, Mass.

Jan. 18-22. The National Association of Home Builders annual convention and exposition, Dallas Convention Center, Dallas, Tex.

Jan. 24-28. Two solar heating and cooling workshops and a product exhibit, sponsored by the Solar Energy Industries Association, Hyatt House Hotel Los Angeles Airport.

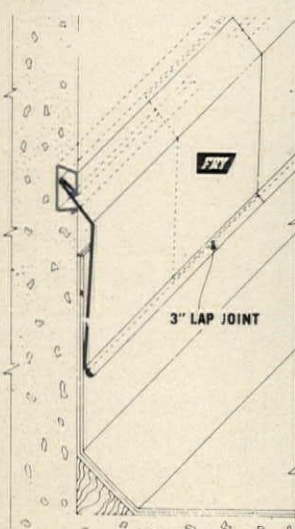
Jan. 29-30. Fourth national architecture/engineering federal programs conference, sponsored by the Committee on Federal Procurement of A/E Services, San Francisco.

Feb. 3-6. Thirty-first annual conference of the Reinforced Plastics/Composites Institute, Shoreham/Americana Hotel, Washington, D.C.

Feb. 27-Mar. 27. "Form, Space and Symbol in Chicago Architecture" show, Cooper Union, New York City. The exhibit is organized by Stanley Tigerman, Benjamin Weese, and Stuart Cohen with Laurence Booth as advisor, and is supported in part by a grant from the Illinois Arts Council.

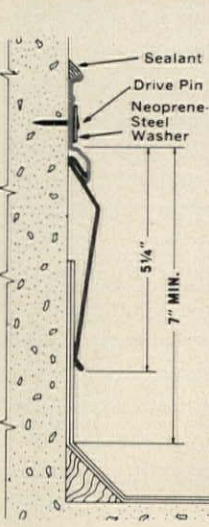
# FRY SPRING-LOK PERMANENT FLASHING SYSTEMS

## CONCRETE FLASHING SYSTEM Type CO



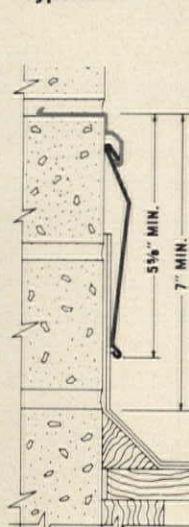
Reglet is designed especially for placing in concrete to take roof flashing. Taped to prevent invasion of grout. Flashing snaps instantly into reglet without screws after roofing is applied. Flashing is easily removed from reglet for re-roofing.

## SURFACE MOUNTED FLASHING SYSTEM — Type SM



Fast, easy installation on surface. Cuts labor costs by 25-30% ... because both flashing and reglet are installed at one time. Drive pin inserted through concealed expansion slots which prevents buckling. Job-tested and proven on thousands of jobs during past decade. Also ideal for re-roofing.

## MASONRY FLASHING SYSTEM Type MA

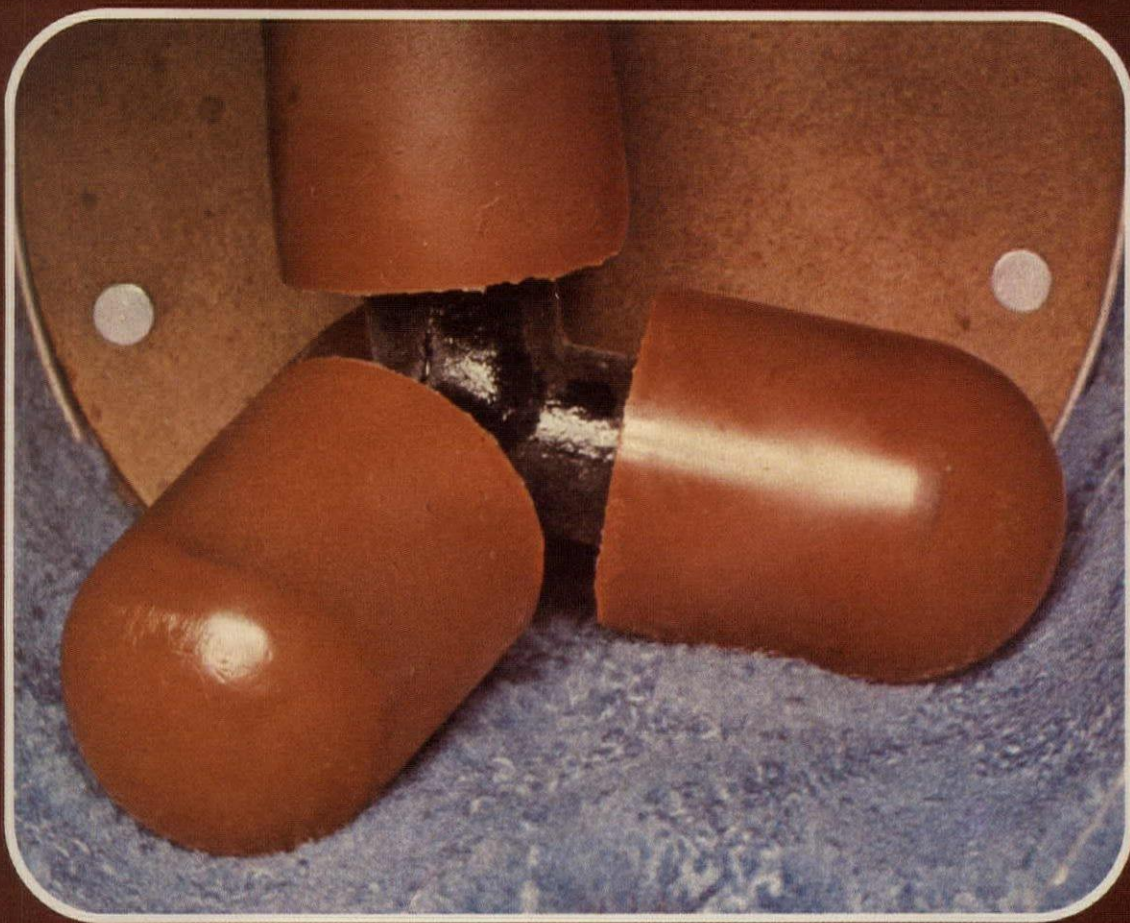


Made especially for masonry. Flashing snaps into reglet easily and quickly to reduce labor costs. Airbreak prevents capillary action between roofing and flashing ... on all three flashings.

**FRY REGLET CORPORATION**

For detail sheets, prices and mounted free samples, write Fry today.  
801 West Milford Street • Glendale, California 91203 • Phone: (213) 245-9471





## A carpet that passes our Tetrapod Wear Performance test can take the traffic in any store.

Thousands of shoppers tramping around a department store all day—every day—can wear out an ordinary carpet in no time at all. This is not so with carpets that have passed the Dow Badische Performance Certification tests. We put them through eight of the toughest lab tests in the industry before they are judged fit to perform in heavy traffic.

The Tetrapod test is one of these tests. In this test we simulate severe abrasion conditions by placing rubber-tipped "feet" in a steel cylinder lined with carpet. The cylinder is rotated at 50 RPM until a half-million revolutions are completed. The carpet is then removed and critically evaluated for general appearance, wear and pile retention.

The other tough tests carpets have to pass before they can carry our prestigious Performance Certification label include: flammability, static generation, compression resistance, tuft bind strength, light fastness, delamination and appearance retention.

The next time you specify carpet for a store—or any place where crowds gather—look for the carpets that carry our Performance Certification label. You know they will not cave in under traffic. Write for our Contract Carpeting Selection and Specifications Guide.

CREATE\* is a service mark of Dow Badische Company.



Dow Badische Company  
Create\* Center  
Williamsburg, Va. 23185  
(804) 887-6573

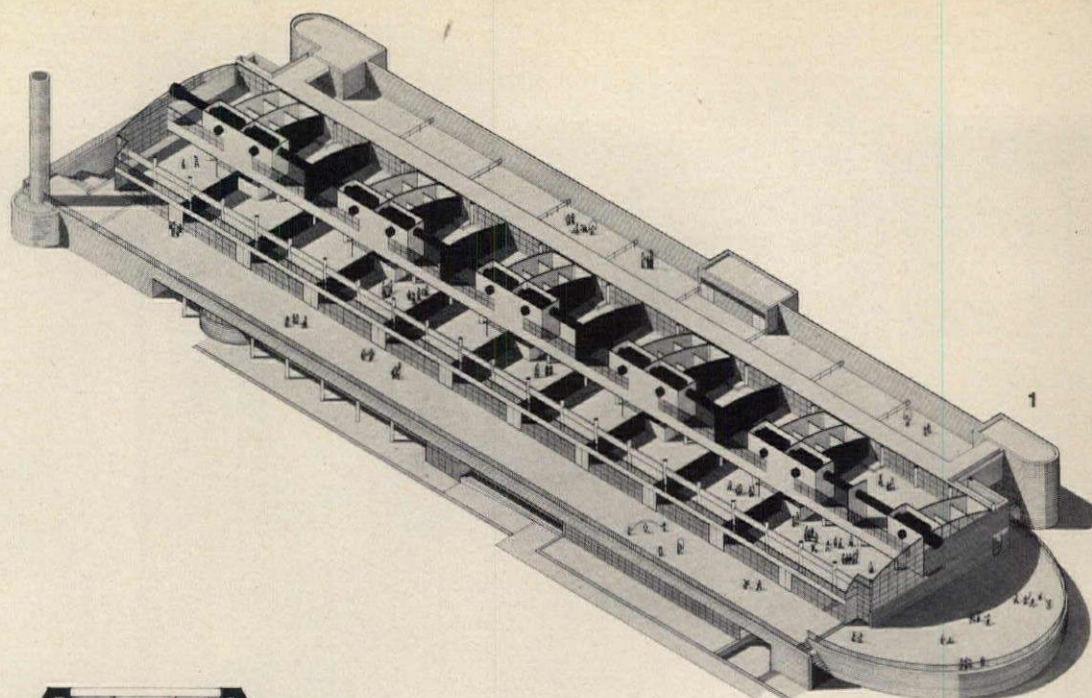


**CARPET**

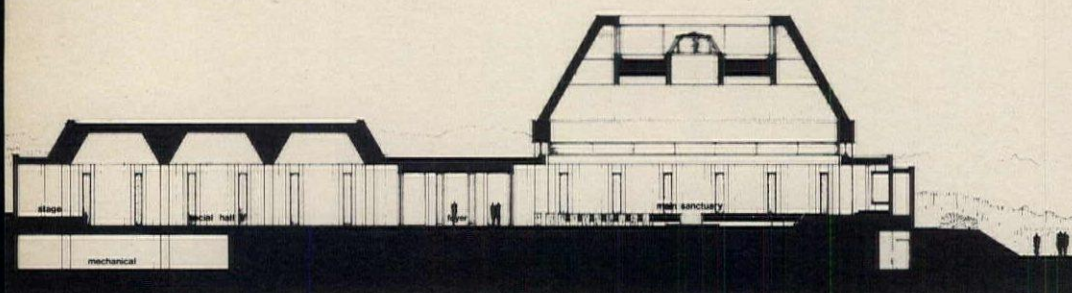
**PERFORMANCE  
CERTIFICATION**



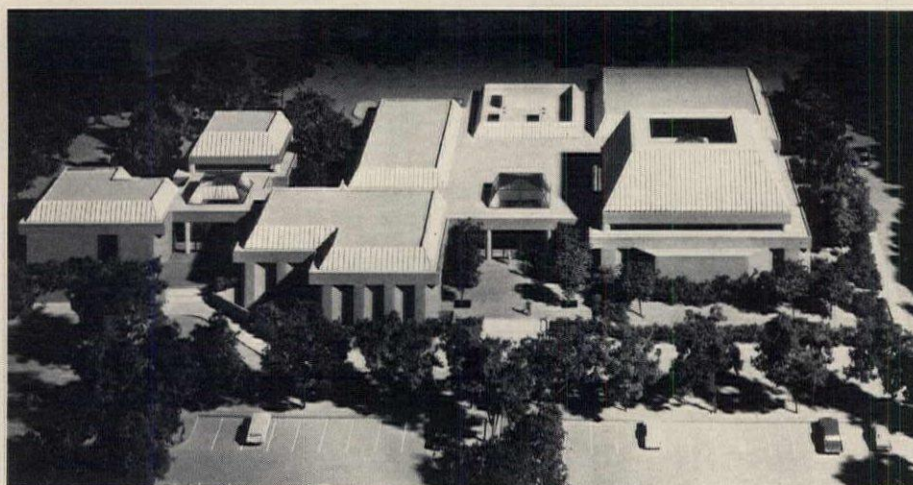
# In progress



**1 Brooklyn school**—Construction is underway on a 1500-student open plan elementary school in Brooklyn, N.Y., built on a site in conjunction with a 450-unit apartment building. Facilities such as a tiered theater and lunchroom also will serve the community. Classrooms are arranged in individual complexes with its own office, toilets, and outdoor play deck area at the mezzanine level. Students enter from the outdoors on ramps to protect them from street traffic. The architect is Perkins & Will, New York.

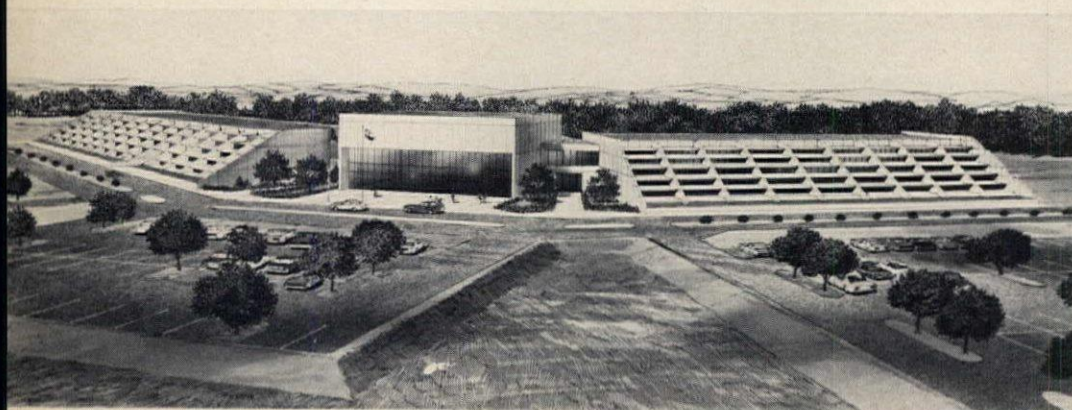


2



**2 Synagogue for Montgomery County**—Cohen and Haft, Holtz Kerxton Karabekir & Associates of Silver Spring, Md., are architects for a synagogue complex for the Congregation B'nai Israel in Montgomery County, Va. The 600-seat sanctuary is linked to a social hall by two skylit atriums at the entries. Traditional seating is used in the main sanctuary. The social hall includes a 200-seat chapel, youth lounge, and offices. The vaulted ceiling of the sanctuary rises above a band of stained glass and is supported by four columns 70 ft on center. Beige brick is the building material topped by a roof of dark red-brown aluminum. The \$2.5 million building will be ready for occupancy in July.

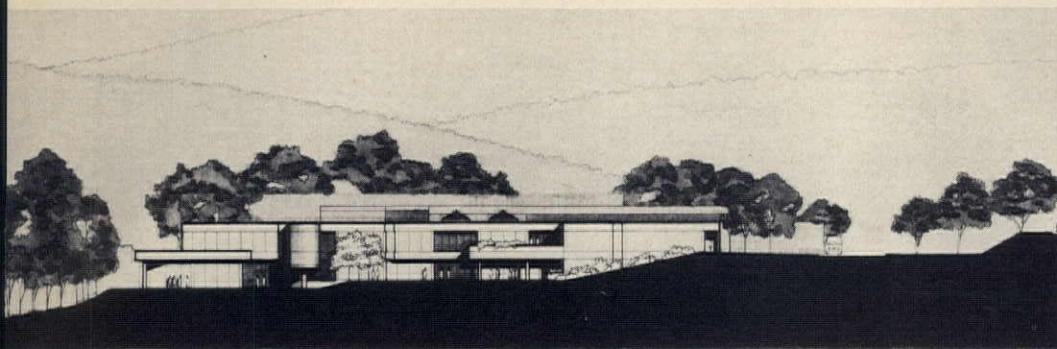
3



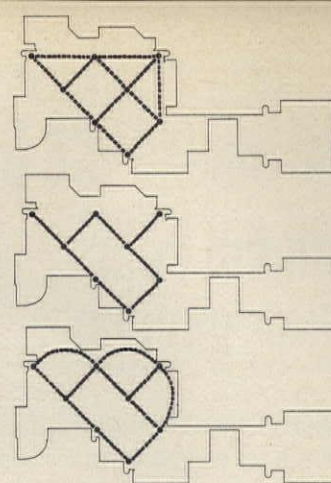
**3 Texas Parks and Wildlife building**—The Houston firm of Wyatt C. Hendrick, Architects and Engineers, is the designer of a \$6.3 million office building for the Texas Parks and Wildlife Department. The two-level structure is under construction seven miles southeast of Austin.

**4 Open plan high school**—A \$9 million open plan school, Parkway South Campus, grades 10 through 12, will be ready for occupancy this summer in southwest St. Louis County, Missouri. The architect is Saur/Obrock Design Associates of St. Louis which took what it feels are the best features of open planning, such as having semi-defined teaching corners, and applied them to the three-level structure. The ground, or terrace level has fixed spaces—a community-shared gymnasium, theater, and a mall. Flexibility of the upper levels is achieved by fixing only stair points and allowing the connecting passages to vary. Board-formed concrete is used throughout the project.

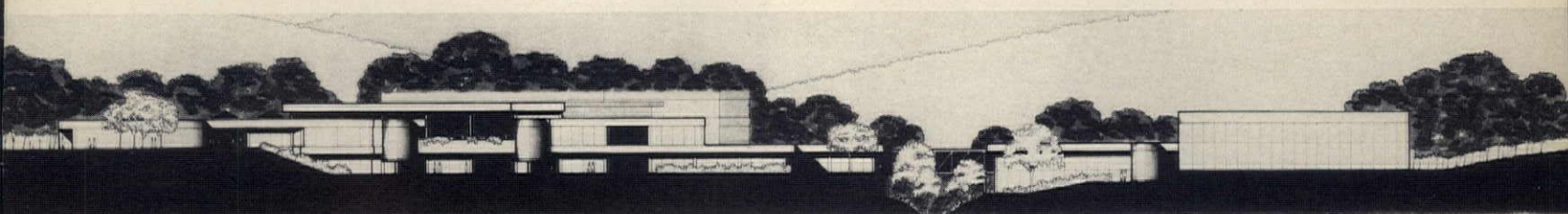




4



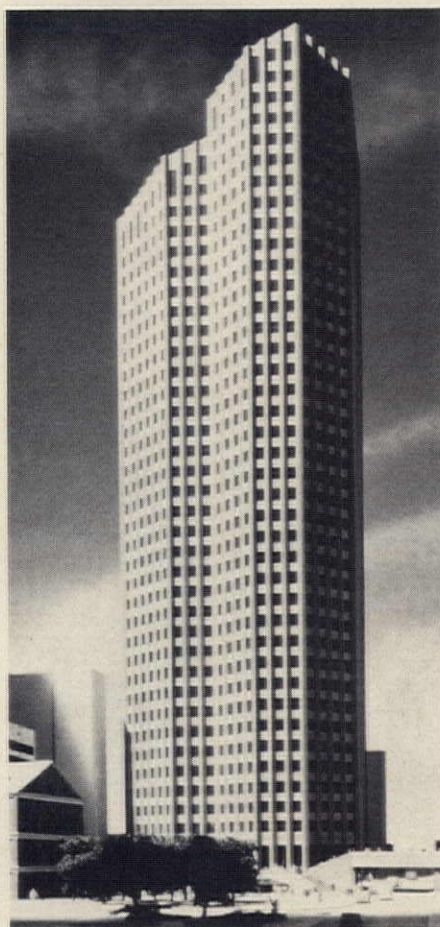
first level - flexible



**5 Towering neighbor for Faneuil Hall**—A 40-story office tower in Boston's business district is under construction next to historic Faneuil Hall. Architects Skidmore, Owings & Merrill, Chicago, designed the structure for Cabot, Cabot & Forbes of Boston. Some changes in the original design and height were made to harmonize the building with surrounding historic structures. Also to be considered were the monumental, modern aesthetics of the nearby Government Center. The tower will be separated from Faneuil Hall by a brick plaza which will be connected by a pedestrian bridge across the street to the City Hall plaza. Completion will be in late 1977.

**6 Opry-motel complex in Illinois**—Construction is scheduled to begin in the spring for a 4000-seat country music hall combined with a 150-unit motel with conventional facilities. Architect for the project is the Sarti-Huff Partnership of Springfield, which has designed a four-level glass-enclosed lobby in the hall to take advantage of the views of the 32-acre sloping site, which is one mile south of New Salem State Park. The owner is Gilbert Productions, the Illinois Country Opry Inc. The auditorium will be equipped for radio and television broadcasts and recordings. It also will accommodate a variety of family entertainment including musicals.

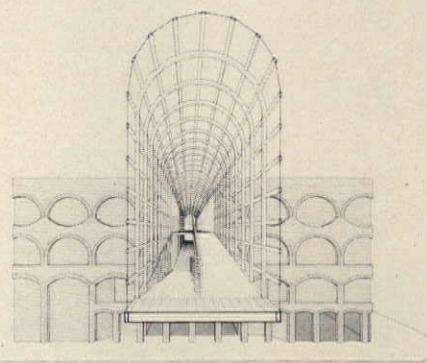
**7 Piper's Alley, Chicago**—For some time the center of activity for Chicago's Old Town has been Piper's alley, a winding off-the-street arcade of boutiques. Now construction is in progress to expand the concept, and architect Stanley Tigerman & Associates, Chicago, has given the three-story project a linear form that embraces a major grocery chain at one end and a major drug chain at the other. The new, 750-ft structure is connected to the existing buildings via a two-level glazed bridge. The brick structure with arched windows may be infilled with a "permanent graffiti system" of panels depicting seasonal and holiday changes such as Christmas. The phased project will be completed in a year.



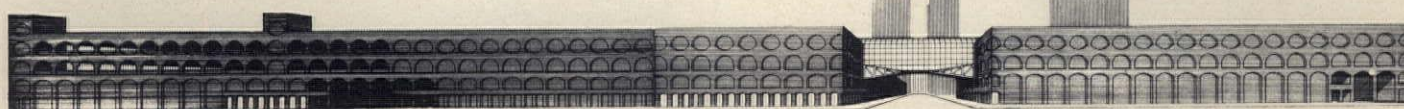
5



6



7





# The Deluxe 1CB Binder and vertical filing system.

How else can you spoil yourself so much for so little extra?

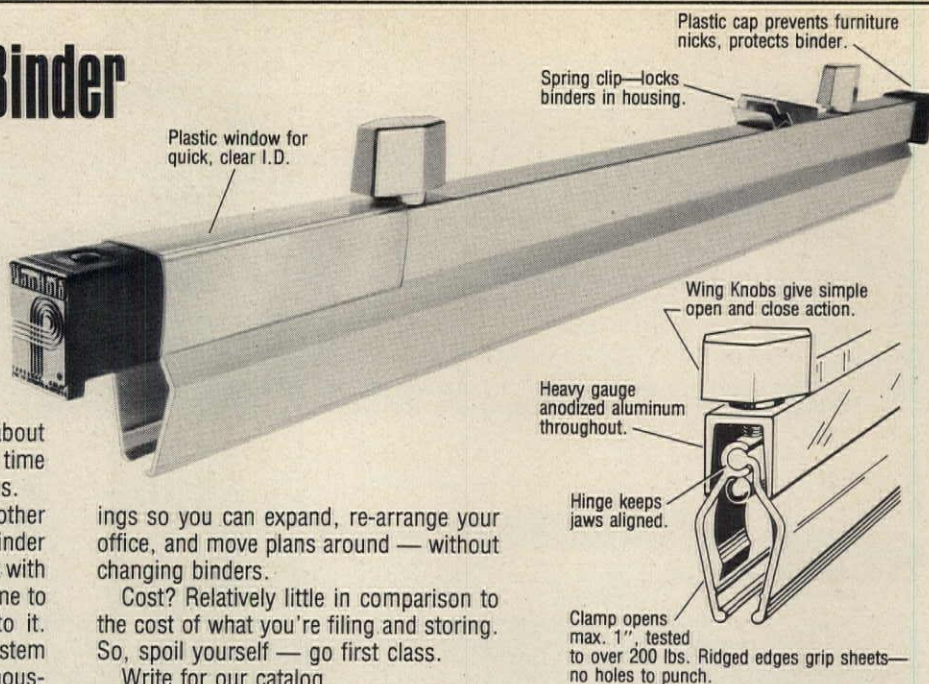
First, our vertical system saves about 80% in filing space and 75% in filing time over conventional flat drawer systems.

Second, our 1CB binder is in another class from every other vertical filing binder we've seen. Our designers (who work with plans themselves) simply took the time to design the right quality features into it. They also designed the 1CB into a system that includes 8 types of vertical file hous-

ings so you can expand, re-arrange your office, and move plans around — without changing binders.

Cost? Relatively little in comparison to the cost of what you're filing and storing. So, spoil yourself — go first class.

Write for our catalog.



The 1CB system includes:

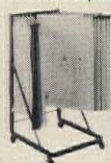
Wall Rack  
12 binder capacity



Combo Cabinet  
12 binder capacity



Rolling Stand  
12 binder capacity



Plan Center  
18 binder capacity



**PLAN HOLD**

**TIMES MIRROR**

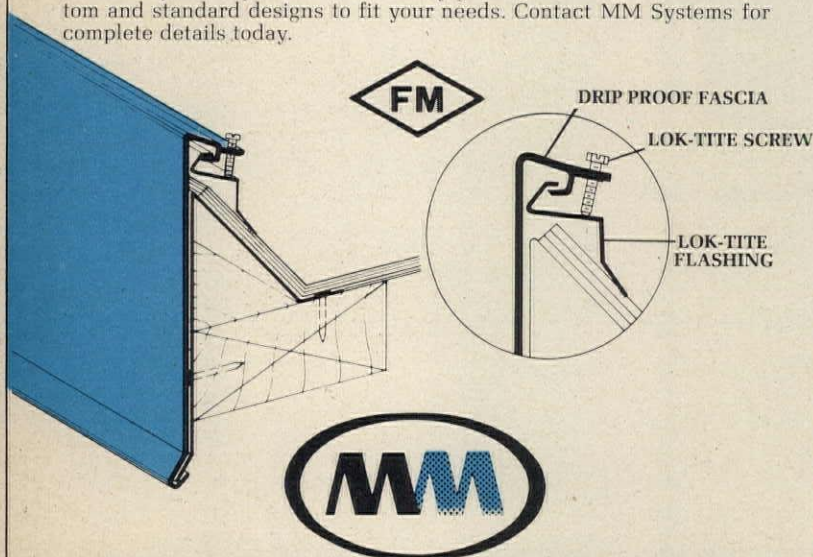
17621 Von Karman Avenue,  
Irvine, California 92705

Circle No. 330, on Reader Service Card

## THE MATERIALS MAKE IT... THE SYSTEM SHOWS IT.

Send for MM Systems' FREE brochure and let us show you how our proven engineering designs can help you with your roofing construction needs. For example, the brochure includes MM Systems' FM approved DRIP PROOF fascia system with the exclusive non-penetrating LOK-TITE design.

All MM Systems' products are factory prefabricated and include custom and standard designs to fit your needs. Contact MM Systems for complete details today.

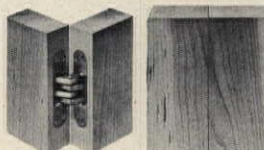
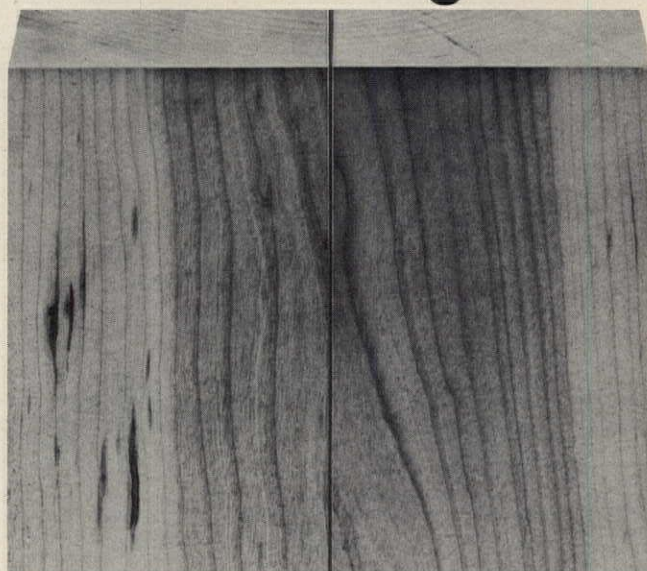


**MM SYSTEMS CORPORATION**

4520 ELMDALE DRIVE, TUCKER, GEORGIA 30084 / PHONE (404) 938-7570

Circle No. 329, on Reader Service Card

## Just like no hinge at all



Now you see it. Now you don't!

**the SOSS**  
**Invisibles**

### The hinge that hides

Some hinges are decorative. Some are functional. But only one hinge is invisible.

So when the best hinge would be no hinge at all, specify Soss.

Choose from 18 models and four finishes. All models open 180° and disappear when closed.

Complete specifications are in Sweet's. Or, write to Soss Mfg. Co., Div. SOS Consolidated Inc., P.O. Box 8200, Detroit, Mi. 48213.

Circle No. 334, on Reader Service Card



# Microcosms of urbanity

**Three mixed-use structures in two major cities focus on architectural and urbanistic issues relating to specific contexts within which they were conceived.**

By now the scenario is too well known: The boom of office construction in downtown cores in the 50s and 60s led to the escalation in land values there, until only office buildings could afford their central locations. Downtown now operates on a nine-to-five shift; while living, recreational, cultural, and retail facilities have increasingly gravitated elsewhere. Zoning regulations separating land uses have played their part in this standardization of the environment.

Thus one of the singular searches in the past decade has concentrated on introducing (or re-introducing) additional uses into the high-priced central business district. Combining uses in single structures is one way to make that mix profitable. Therefore by means of incentives offered to developers in the form of additional floor area, to a relaxation of certain density, height, or setback restrictions for mixed uses, legal means are being concocted to lure private interests into ventures that will reinforce a district's economic and social vitality. The slump in the office rental market helps make other uses more palatable; on the other hand getting developers to build anything at all in this economic climate is getting trickier. While the rules of the game are being quickly devised by city planners, everyone knows the developers still hold the cards.

Each of the buildings on the following pages demonstrates different devices for arriving at these hoped-for microcosms of urbanity. Two, New York City's Galleria and Olympic Tower, result from separate zoning measures formulated by New York's Office of Midtown Planning and Development, and Office of Lower Manhattan Development during the Lindsay Administration. The third, Water Tower Place in Chicago, displays the consequences of developers' initiative tempered by a modicum of zoning strictures.

Since all three buildings are only in the final stages of construction and are not quite fully occupied, formulating a comprehensive assessment about their ultimate impact would be a trifle premature. But already questions about the architectural and planning issues in the three ap-

Photo: Courtesy L'architettura.



Naples, following Milan's example, in 1890 built a mixed-use Galleria Umberto I designed by Emmanuele Rocco to heighten the city's urban image.



## Mixed-use buildings

proaches are being raised that warrant some kind of scrutiny before they are enthusiastically embraced in other urban situations. Each building should form an interesting object lesson—not only at the economic and social levels, but in terms of urban design and architectural implications. The projects all share basic similarities of course—such as the combination of office space, retail, and residential uses, albeit in different doses. But all three strike a closer chord in their choice of location and the market for which they are geared: prime locations; a frankly rich clientele. The reasons take little guesswork: In a shaky economic environment, developers want to be certain of some kind of guarantee of a profitable return.

Thus the mixed-use buildings in no way solve social problems for other classes further down on the economic ladder. And certainly the value of designing and planning for the rich who have the money to take care of themselves can be called into account. Yet ironically New York (at least) needs the rich right now, in its effort to maintain its reputation as glittering capital of the 20th Century while it teeters so precariously near bankruptcy. No doubt Galleria and Olympic Tower will present more the illusion of wealth than direct income for the city in the form of taxes or multiplier effects. But the two buildings still project the aura of opulence needed to polish up the tarnished image of the "city of class," to attract tourism and even to keep the rest of the wealthy from leaving. Signs of decay still abound—even in midtown where numerous parcels of cleared rumble-strewn or asphalted land wait (at a reduced tax assessment) for new development. Any gesture of regeneration will do. Soon banal office blocks will look good.

On the other hand New York buildings are not intended to be give-away programs for the benefit of private interests. The city wants something in return to ensure a broader-based economic and social viability. Thus city planners have dreamed up intriguing devices to convince reluctant developers to include public amenities as well as mixed-uses in their new buildings. Where once plazas and arcades seemed all that was necessary to bring urbanity to the fore, now other means are being sought—with "covered pedestrian spaces," "through-block connections," and such forms of semi-enclosed public areas.

The increasingly sophisticated zoning tools New York City has forged haven't overcome all possible instances of fallibility. Zoning regulations can specify the physical measurements of a public amenity and proffer regulations governing its components. But specifications are not yet strong enough to ensure correlation to planning intentions. As Alan Colquhoun once wrote "Our sense of place and relationship in, say, an urban environment or in a building, are not dependent on any objective fact that is measurable; they are phenomenal. The purpose of the aesthetic organization of our environment is to capitalise on this subjective schematization, and make it socially available." Here the architectural interpretation of the zoning code can present perceptual data at odds with original goals as both Galleria and Olympic Tower illustrate. Of a more direct measurable correlation, is the fact that the square footage the developer receives for bonuses has got to show up somewhere.

And sure enough it does, as Olympic Tower or Water Tower Place makes clear. Then too, the final configuration of a building often says more about what zoning allowed than what architectural (formal), considerations dictated.

Meanwhile the public spaces New York has had to encourage through floor area plums held out to developers show up in Chicago as a matter of course. Water Tower Place features a large pedestrian mall because the owners decided such a public amenity with some razzmatazz would be a wise investment to attract shoppers up and around the seven-story retail complex. The New York real estate bunch, spoiled by the high demand for developed property by banks and airline offices, haven't needed to let this kind of thinking penetrate too often.

But this comparison does not mean to suggest that public amenities should be left to private initiative. It only worked in this particular situation, and the city still lost out on other desirable urban features—such as perhaps the most propitious placement of the building in city planning terms, a reinforcement of street life, physical links to other parts of the neighborhood, or the architectural relation of building to its immediate context. Therefore the zoning mechanisms of New York appear preferable in urban design terms. (Economically, Water Tower Place could win hands down over its New York counterparts, judging from the already incredibly successful retail operation.)

Actually, all three cities have only gained piecemeal fragments in terms of urbanity, image, and opportunities for renewed economic life from the mixed-use buildings. And architecturally, neither Chicago nor New York has received a significant form to announce the new architectural prototype. The Galleria is the only one of the three structures that forces *all* of its different activities to come together in an interactive and powerful interior space. But the Galleria, Olympic Tower, and Water Tower Place do not begin to address the need for a typological model of a mixed-use structure: a single building that reflects and communicates the nature of its diverse urban activities. Without these two aspects of expression being considered, along with the necessary physical ties to the immediate surroundings, the building becomes only a sum of separate parts—not a living totality fully integrated with city life.

Since the buildings near completion in a time of economic stagnation, their economic and social viability may not be visible for a while. Nevertheless in a time when new construction has dwindled, it is a proper time for city planners (those who are still left) to examine the failures and successes of their ever shrewder games, just to find out who *is* winning. And that is just what New York is doing right now. The city's Urban Design Group headed by architect Raquel Ramati is beginning an inventory and evaluation of the public amenities resulting from the last few years of incentive zoning in New York. The task isn't that easy since many of the categories and their restrictions overlap, with boundaries blurring. But the group seeks to reduce the confusion about what developers can get, and what the city can expect. When times are good again, the city will benefit from that kind of self-analysis and careful scrutiny. [Suzanne Stephens]



## Mixed-use buildings

### The Galleria

New York's Galleria on 57th Street near Park Avenue easily exudes more pizzazz per square foot than its other mixed-use siblings; an imposing granite and glass entrance funnels into a dramatic 90-foot-high skylit atrium through which bridges soar and multi-leveled spaces intersect. And granite luxuriantly abounds. The interior daringly combines the theatricality of a Portmanesque space with the city slicker tastes for muted-toned finishes, plus a remembrance of Frank Lloyd Wright in its rugged materials and horizontal motifs. The brew may be a little thick for some tastes but the public likes it undiluted. The architect is David Kenneth Specter.

The atrium didn't just happen. Both this space and the mixed commercial-residential character of the building (38 floors for apartments, 12 for offices and a private club not including service floors) result from various zoning devices that permitted the buildings' particular bulk and density.

The zoning revision that shaped the Galleria seeks to encourage mixed-use development (i.e., residential with commercial) in certain peripheral areas of the business district. To entice the developer, Madison Equities, into this venture, certain penalties existing previously for this combination of uses were removed. The owner was also given extra floor area for including such public amenities as the recently formulated "covered pedestrian space." Behind this zoning concept lies the image of the Milan Galleria. To seduce developers into its re-creation (if possible), the Office of Midtown Planning and Development and the Office of Lower Manhattan Development had previously come up with a complex set of mechanisms that essentially allowed developers up to 14 square feet of additional floor space for one square foot of covered pedestrian space. This amenity however carries its own set of provisos: It must be at least 30 feet high, 30 feet wide and 3000 sq feet in area, with some retail space included. Because c.p.s. legislation was being modified at the time, owners took an 11-sq-ft bonus. What amenities qualified for a 14-sq-ft bonus was still greatly undetermined and thus a risky investment.

The most stunning features of the Galleria's atrium, ironically, were neither bonused, nor mandatory. David Specter sold the developer on installing the 90-ft-high atrium and topping it with a skylight when only a 30-ft ceiling was required. To further emphasize its role as a mixed-use building, he brought together all the movement pertaining to the different activities that might take place in the structure. Residents, office workers, pedestrians, sightseers, browsers, and café-goers will all enter and pass through this atrium. Yet circulation for each is separated by pedes-

trian bridges and elevator banks on different levels.

Still one must face it: the Galleria isn't quite as mixed-use as its commercial-residential designation implies. Because only nine floors are *actually* being rented for office space (the rest is a club), the Galleria better resembles a luxury hotel: retail shops, residential space, private club with separate dining and swimming, all tucked into the 55-story-high structure.

Nor is its covered pedestrian space likely to be quite as people-on-the-street oriented as the legislation originally in-

tended. Strollers passing from 57th through the atrium to 58th Street must descend 12 steps (six feet) to the main lobby then go up again before coming out at grade. (Sub-level spaces are not deducted from a developer's allowable floor area). Furthermore, the passageway jogs enough so that the route is hardly direct. An easy short cut to Bloomingdale's will have to be found elsewhere.

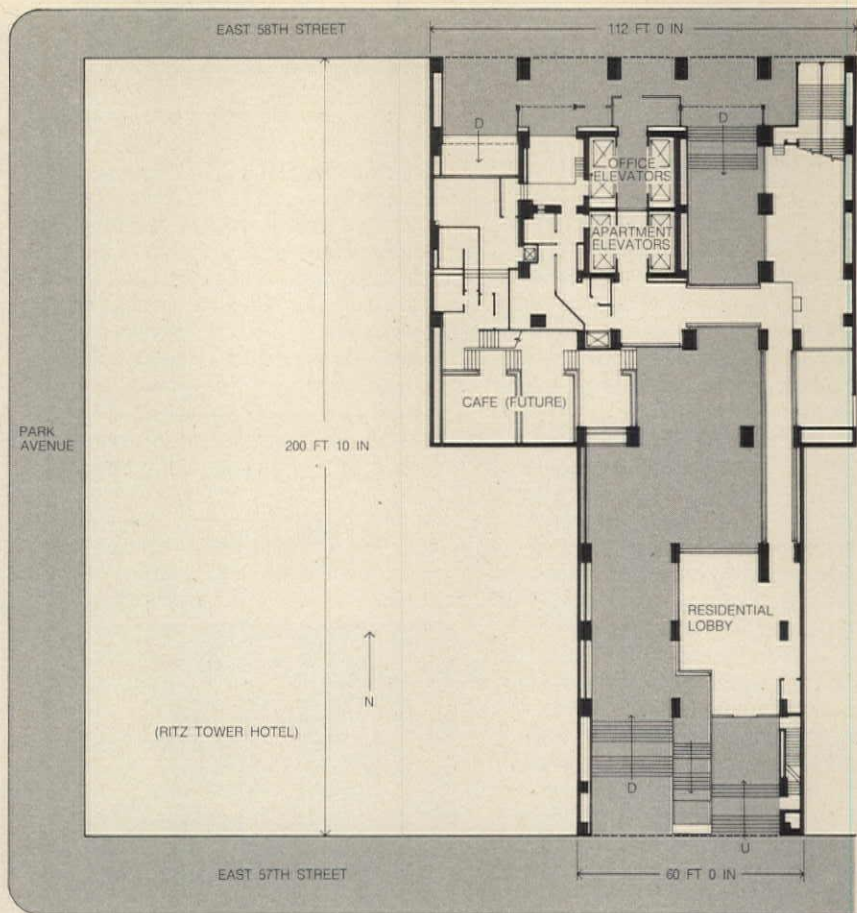
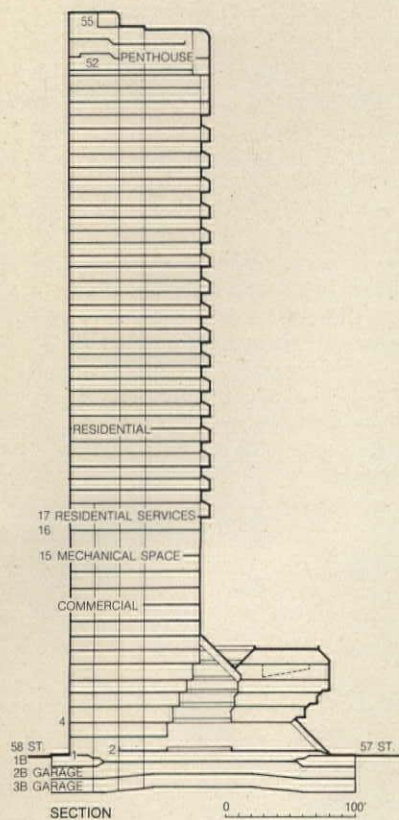
A thorny aspect of its covered pedestrian space legislation is the requirement that it be open to the public from 7 a.m. to midnight, with no enclosure (such as

The 45 degree angled skylight is supported on three steel trusses. Offices overlook atrium on either side. Granite clad walls and columns, articulated by steel channels extend from the outside into the atrium, as does the terrazzo and quarry tile paving.





## Mixed-use buildings: Galleria



FLOOR PLAN—STREET LEVEL AND APARTMENT LOBBY  
Galleria's 57-story tower is set at rear of lot behind the atrium.

doors) on either side up to at least a 12-foot height. When covered pedestrian spaces also accommodate cafés, plus shops and lobbies, heating and cooling is desirable: It is best achieved through a positive pressure system forcing air out through one opening, but this "air curtain" requires a closed wall opposite. To provide the climate control and meet the city requirements, Specter installed the glass doors on 57th Street entrance which lower into an underground version of a flyspace. Above these doors a canted awning also rolls up into a cross brace. While it is a spectacular device, a nagging question still lingers. Is it really legal? For according to the zoning, the covered pedestrian spaces that go through a block must be fully open all day on *both* sides, and not just in good weather.

Other than questions of legality, there is one of communication: as attention-riveting as the entrance is, its design concomitantly gives off signs of a self-contained world within, not immediately perceptible to the unknowing public. The dark granite walls of the atrium and the reflectivity of the glass doors make it well nigh impossible to peer inside; the canvas awnings further cut down on the visibility of the interior (and limit the amount of natural light entering the atrium).

### Uneasy welcome

The ambiguity regarding the messages the various design features are conveying to passersby could very well be related to the unresolved character of the surrounding



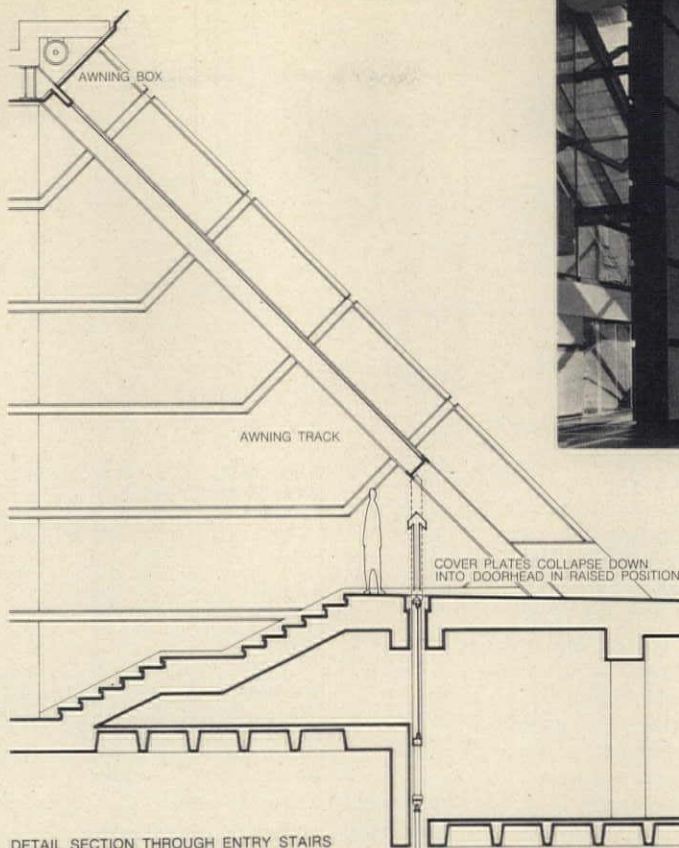


neighborhood. While the Ritz Tower Hotel immediately to the west is still ritzy and Park Avenue still classy, the development to the east is increasingly tacky. The remainder of the block between the Galleria and Lexington Avenue comprises low-scale buildings that have visibly gone to seed in the hands of tenants on short-term leases. Bloomingdale's and the art cinemas may be right around the corner, but since the appearance of Alexander's, discount "boutiques," and fast food chains there, the neighborhood has altered its character and its clientele. More New Yorkers have begun to complain about being accosted by peddlers, handbill pushers, assaulted by headshop rock and roll, sickened by rancid grease smells and piles of litter. Park Avenue it isn't. And one would suspect that Madison Equities would rather not see some of this action make its way into the Galleria's covered pedestrian space.

Now, of course, this area to the east could change. Especially since Madison Equities is reported to own a great deal of the rest of the block between 57th and 58th toward Lexington. Rumor has it they eventually are planning on constructing a Galleria II. But for now, this gamey mix of activities gains momentum.

#### Settling in

Still, the Galleria's parti, with the eight-story-high entrance wing, makes certain important urban gestures to 57th Street. It acknowledges and reinforces the low-scale of the buildings to the east—the F.A.R. of which must remain because of the transfer of development rights from several parcels bought by Madison Equities to increase its zoning lot size. Fortunately, the 55-story-high tower can scarcely be seen from 57th St., since it sits on the rear of the lot at the 58th Street side. The placement of the tower was prompted by factors that had more to do with economics and zoning, however, than with visual effect. First the through-block lot was rather narrow—only 17,200 sq ft, though Madison Equities owns development rights on an additional 12,000 sq ft.



The main entrance to the Galleria is divided into two sections by a glass prism (below, left) to be filled with plants. On the right steps lead up the residential lobby; on the left, down to the public space. Here doors retract into ground (detail, photo, above) and awnings roll on tracks upward to create open access in attempted conformance with zoning rules.





## Mixed-use buildings: Galleria

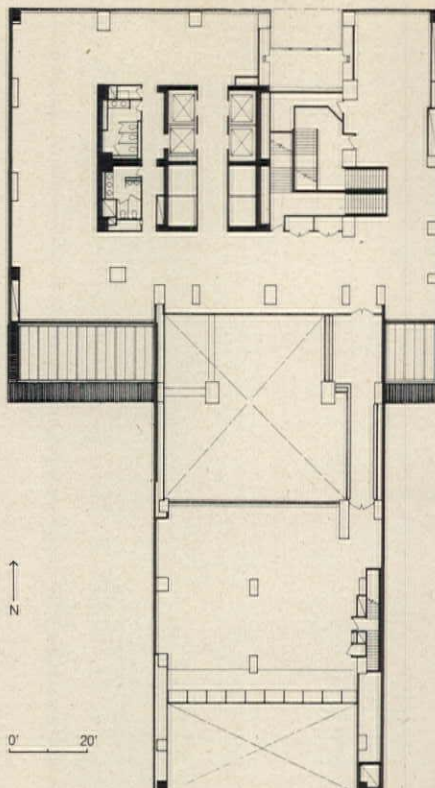
Secondly, the Ritz Tower owns a 20-foot easement between its east wall and the Galleria above the seventh floor. Moreover, the developers had obtained extra floor area through bonuses and the development rights. Since the tower could only occupy 40 percent of the lot, the solution was to push it straight against the 58th Street line. Happily, the plaza and arcade of a new building across the street from the Galleria opens the 58th Street block up to light and air.

In spite of the rational parti, the overall architectural scheme remains disjointed. The granite-clad entrance and atrium base looks as if it were a separate building from the conventionally treated brown brick and glass tower. On top of the tower the quadraplex penthouse executed for philanthropist Stewart Mott in exposed reinforced concrete settles a little too heavily on the tower to read as a fascia. This trabeated effect clarifies too disconcertingly the separate uses of the building. In spite of its successful parts, a coherent architectural prototype for a mixed-use structure has not been developed here.

### Living there

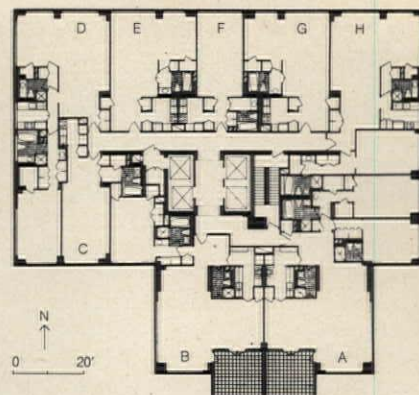
As a mixed-use prototype, however, the Galleria never had the same significance in city planners' eyes that a building in the Fifth Avenue Special District (e.g. Olympic Tower) might have. There, mixed-use structures were conceived specifically to prevent offices, airlines, and banks from taking over New York's fabled shopping promenade. Not part of the Fifth Avenue district where retail uses are bonused, the Galleria comes under the different strategy: simply to make it easier for the combination office and residential buildings to exist in areas around commercial districts. Whereas the Fifth Avenue zoning allows the developer greater *bulk*, hence a Floor Area Ratio of 21.6, city planners preferred to keep the F.A.R. down to 18 along 57th Street.

In order to attract mixed-use development there, the city then loosened up on lot area requirements governing *density*. While bulk is measured in F.A.R., density is measured in the number of rooms in relation to the lot area. This relation in turn determines the number of square feet per room—a number previously affected by the amount of commercial space in the building. Thus the city established minimum room sizes at the Galleria at an average of 300 sq ft per room (the same as R-10 zoning, the highest density housing allowed in the city). Galleria's developers, however, chose to raise the average to 385 sq ft per room, due to the market they hoped to attract. (Affluent to rich—prices range from \$30,000 to \$500,000 for a condominium.) In other words, while the city did not give additional floor area for mixed-use buildings here, it made residential space more inviting as an alternate development option. There are stipulations of course: the



ATRIUM OFFICE FLOOR (4TH FLOOR)

The residential portion features glassed-in balconies on every other floor facing south (right above).



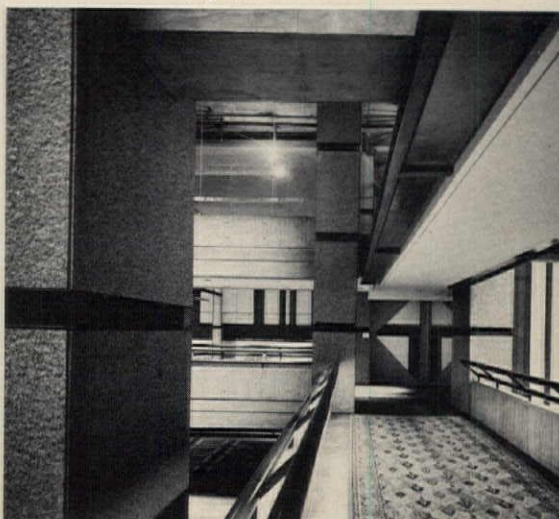
APARTMENT FLOOR PLAN (FLOORS 19 - 47 ALTERNATE)



Club has sundeck (above left), residents the terrace next to penthouse (right).



Sheila Hicks tapestry lines residential lobby wall; bridge leads to elevators.





maximum F.A.R. for housing is 12, leaving 6 for commercial. Also 6.25 square feet of recreation space must be provided free of charge for each residential room. Thus tenants have a 5400-sq-ft partially enclosed roof terrace on the 52nd floor to themselves (and the public has the enclosed atrium downstairs).

The introduction of one of Galleria's superb features, the "wintergarden" into a number of south-facing apartments, presented another zoning problem. If an enclosed balcony recedes more than half way into the building's volume, it begins to eat up the developer's allowable floor area: the old debate between what is an enclosed balcony and what is a glazed room given free to the developer still goes unresolved. The Office of Midtown Planning and Development pushed for legislation allowing Galleria's developer to install wintergardens without floor area being deducted. But it didn't work; too many argued other developers could follow suit, creating situations where tenants could wall off the balcony and make it a standard bedroom.

Madison Equities decided to go ahead with the idea, making up for the lost floor area by applying for another lot (121 E. 57th) to be included in the site size, so that the floor area could be jacked up accordingly. It was thus able to pick up enough square footage to install three floors under Stewart Mott's penthouse.

But aside from exceptions in apartment types at the top, and the inclusion of the 13 by 13 ft 4 in wintergardens on every other floor of the south-facing apartments, the layouts of the residential floors (18 to 46) are rather ordinary. Eight apartments are crammed into the 9686-sq-ft tower floors: four studios, three one-bedroom apartments and one two-bedroom apartment. This is not Specter's fault however. The office of Philip Birnbaum was pulled in to design these layouts so commonplace to spec buildings. Nicely enough, Madison Equities allowed Specter's ten-person office to commandeer all phases of working drawings and construction supervision, though some architects were hired on loan from big offices. Madison weakened on the apartment layouts, however, reportedly because Birnbaum was known by the banks. A lesson for us all.

#### Keeping up with competition

Economic pressures also created the intricate financial mechanism that governs the sale and ownership of residential and commercial space. Basically, the building has been divided into 254 condominiums of which all commercial space, owned by Madison Equities, constitutes one condominium. The rest of the 253 condominiums will be owned by a cooperative corporation that will allow prospective buyers, both individual and companies, to purchase the apartment either as a cooperative, or as a condominium.

The principal reasons such a complicated set-up was established had to do with tax laws governing deductions on co-



The 58th Street entrance (rear of photo) will permit direct access to office elevators. A cafe is planned for skylit section of public space with retail shops along the sides.

operatives; but it also meant a special application to the New York State Attorney General, and a delay in marketing the apartments. So far, the Galleria is lagging in sales behind the Olympic Tower, though most of the wintergarden apartments have been snapped up. The owners won't say how retail and office rental is faring.

#### Loads to bear

If the legal and financial aspects of Galleria were complicated, the structure was just as much a headache. For starters, bedrock sloped from zero to 20 to 40 feet below grade. This site condition required structural footings sunk over 40 feet in the earth. Meanwhile at the top of the tower, philanthropist Stewart Mott bought a four-story penthouse specially designed by Specter's offices. But Mott wanted 7500-sq-ft penthouse terraces to hold two feet of soil for his "farm." The soil alone weighs 2000 tons. Loads were thus calculated at 600 lbs per square foot at the roof, cumulating in a whopping load of two million lbs average on the columns in the lower part of the structure. To allow for this bit of burden, the structural engineers, the office of Irwin G. Cantor, resorted to high strength concrete with a capacity of 6000 psi for the first 22 floors. Owing to the slow delivery of steel, they decided to make the entire structure poured-in-place concrete, the tallest in the city.

Obviously Galleria represents a tremendous expenditure in effort, time, money—and risk. Despite its shortcomings, its mannerist excesses in "structural" detailing, its achievement extends it miles ahead of mainstream New York architecture. Both developer and architect were willing to push beyond the requirements of a successful spec building—and the minimum requirements of zoning.

#### Data

**Project:** Galleria, 117 E. 57th St., New York City.

**Architect:** David Kenneth Specter, New York City; Gerald L. Jonas project (and penthouse) architect, John Davison Allen, duplex apartment design associate; with the Office of Philip Birnbaum, New York City, as architects for apartment residences.

**Program:** 458,945 sq ft residential, office and retail structure on a small midtown site. Project would include a public "covered pedestrian space" extending through the block with some 15,000 sq ft of shops. A quadruplex penthouse atop the 55-story tower required additional structural capacity for 2000 tons of soil on 7500 sq ft of terraces.

**Site:** 17,200 sq ft of vacant land, plus 12,000 sq ft of land to which client owns development rights.

**Structural system:** Reinforced concrete frame and flat slab; high strength concrete on first 22 floors with 6000 psi loading. Transfer girders 12 ft deep, 30 ft long on the 15th floor. Sixty per cent of the columns shifted from five to fifteen feet in lower floors.

**Mechanical system:** Steam supplied to air handling units in interior zone; steam generated hot water circulated to heating coils in incremental units and baseboard fin tubes in exterior zones. Centrifugal chiller supplies chilled water to air handling units interior zone; incremental units, exterior zone.

**Major Materials:** Reinforced concrete, Caledonia granite, brick, concrete block, quarry tile and terrazzo paving; glass skylights and clear plate glass. (Building materials p. 95.)

**Consultants:** The Office of Irwin G. Cantor, structural engineers; Sidney Barbanel, consulting engineer; HRH Construction, construction administration.

**Client:** Madison Equities, New York City.

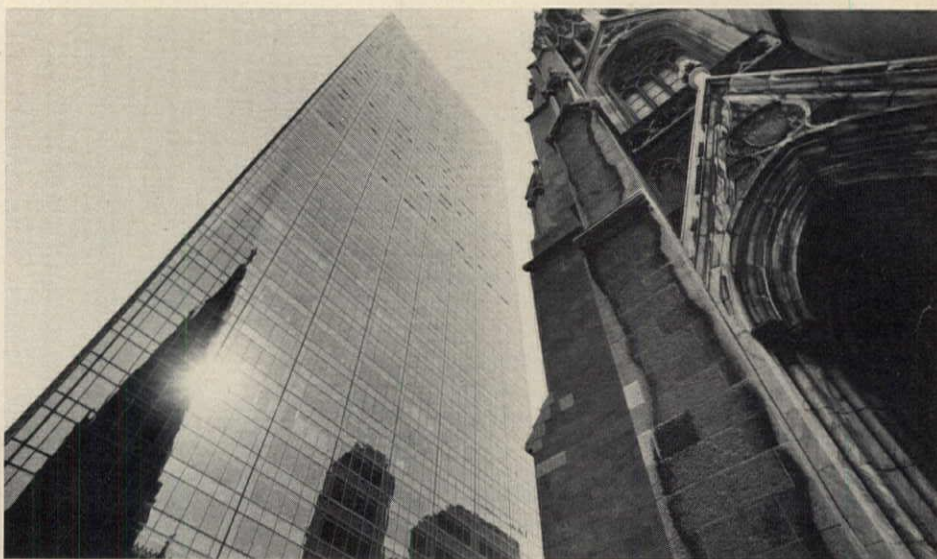
**Cost:** Figure withheld at request of client.

**Photography:** Norman McGrath.



## Mixed-use buildings

### Olympic Tower



Fifth Avenue's Olympic Tower perhaps has gotten more advance publicity per square foot than its two rivals. It helps to have Aristotle Onassis as part owner (Victory Corporation) with Arlen Realty and Development Corp. Olympic Tower first began by attracting adverse publicity when plans were announced to build an office tower on the old Best & Co. site. Located on 51st St. across from Saint Patrick's Cathedral, the new tower was reported to come with a plaza extending between it and the landmark Cartier building. The architect was Morris Lapidus Associates.

Despite the owners' shrewd inclusion of a covered pedestrian space, the fear began to mount: as older stores abandoned Fifth Avenue, the deadening towers and plazas generated by the 1961 zoning resolution were beginning to invade New York's historic shopping promenade. A *New York Times* editorial proclaimed this a major planning problem that had better be attacked before all the stores—and the Avenue's unsullied character—were lost to speculative builders and Miami Beach architects.

In short order, the Olympic Tower was loudly proclaimed as the first mixed retail residential and office building in the Fifth Avenue Special District. Its architects were Skidmore, Owings & Merrill of New York. Subject to the zoning regulations formulated by the crusading Office of Midtown Planning and Development, Olympic Tower captured public imagination as the first step toward the salvation of Fifth Ave.

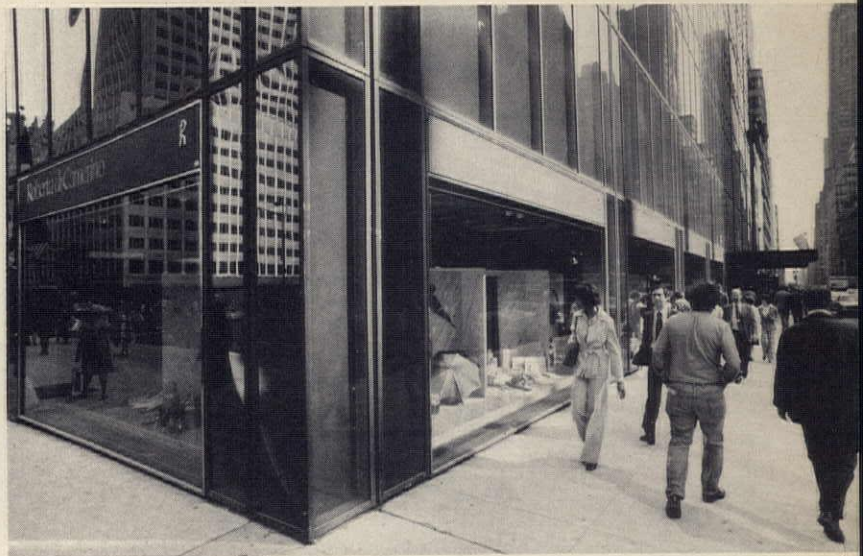
To bolster slowly decaying retail uses, the Fifth Avenue zoning gives floor area bonuses to developers who include retail (and residential space) in office buildings. The goal is not simply to generate more square footage of retail or residential use, but to create an urban focus and vitality on the Avenue. The mixture of uses would guarantee not only the retention of Fifth Avenue's traditional role and image as shopping mecca, but also inject midtown itself with added life after dark.

So now Olympic Tower, receptacle of hopes, dreams and aspirations for midtown, nears completion. A far cry from

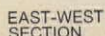


South elevation facing St. Patrick's Cathedral.





Entrance to both apartment lobby and mall is on 51st Street.



But the game is not played with such architectural intangibles as part of the stakes. The rules require measurable criteria. And in fact, the special district controls allow (but do not mandate) building up to



## Mixed-use buildings: Olympic Tower

the street line along the east side of Fifth Ave., as other stores do. (Nevertheless a setback on the west side of the street is required after an 85-ft height.) Other mandatory provisions of the district limit the kinds of retail uses to discourage banks and airline offices, and require that space on the ground floor be devoted to restaurants and shops at least within 50 feet of Fifth Ave.

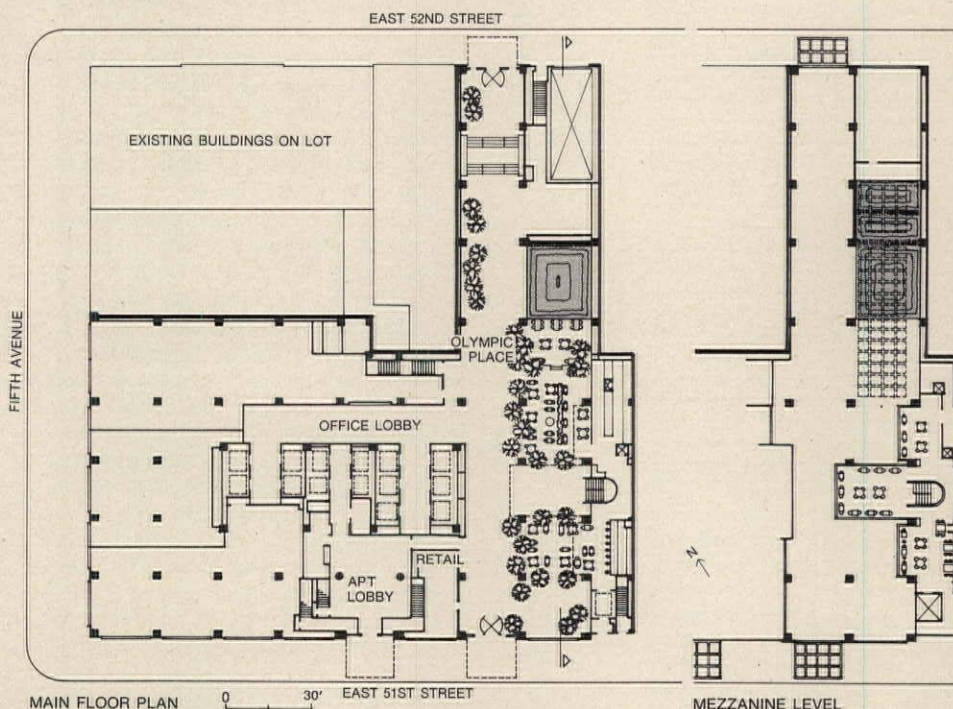
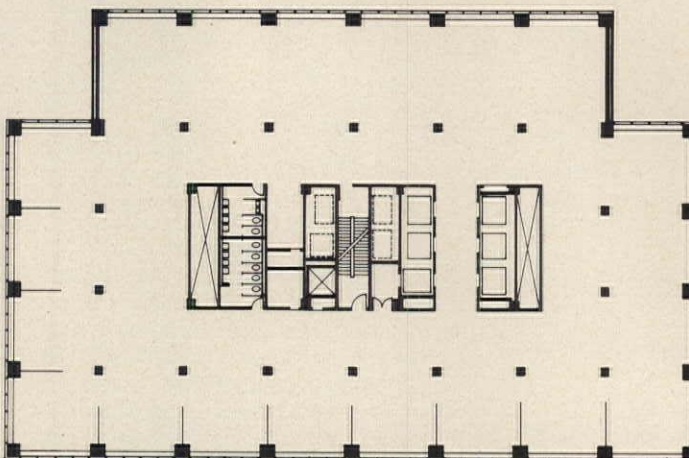
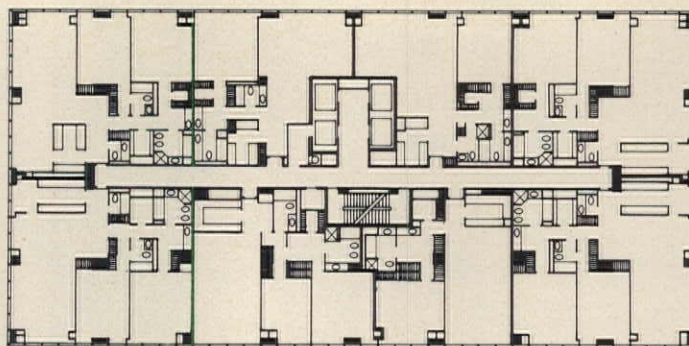
Olympic Tower, like any future development on Fifth, can receive extra square footage only in the form of residential space, in return for the ground floor shops. And before its developers may begin to acquire those bonuses for retail footage (four sq ft of floor area for one of retail), they first have to provide shops equal in square footage to the lot size (1 FAR). As an elective, the developer may install a through-block mall like Olympic Tower's and receive additional bonuses. But this space carries its own special set of restrictions.

The 8766-sq-ft mall, approved under the original covered pedestrian space legislation, is similar to the Galleria except for its two levels of spaces—one at grade, one underground. It was required to reach a minimum height of 30 feet (Olympic Place is generally 34½ ft high) and be anywhere between 20 to 30 ft wide depending on its through-block length. At the time approval was given to Olympic's covered pedestrian space, the owners could install doors at either end if the mall were heated and cooled. In fact, the developer could even receive a higher bonus for heating and air conditioning than without (14 sq ft of floor area versus 11 sq ft for every one sq ft of mall). When the city realized they would be *encouraging* developers to enclose this public amenity—thereby deterring the public from casual access, they modified the law. Meanwhile Olympic will have doors.

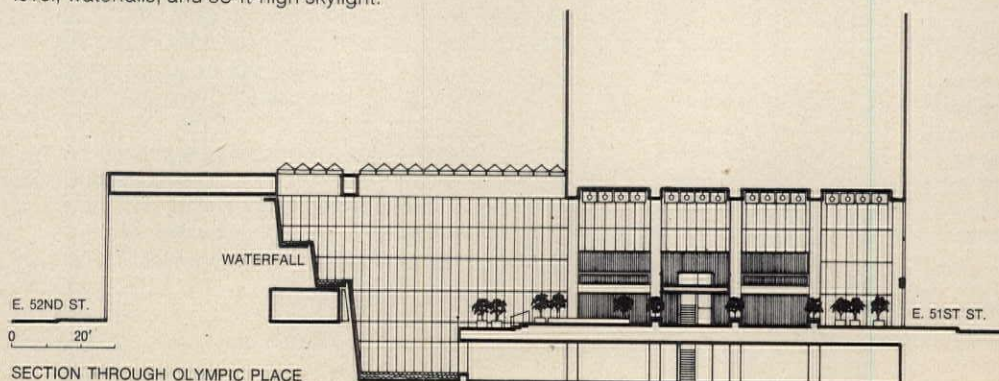
### Getting bigger

Another bonus allowable in this district concerns lot coverage. The total lot size was 40,500 sq ft, including the 14,800 sq footage to which they owned the development rights. For each 18 FAR reserved for residential use, lot coverage can be increased by one percent. But the increase cannot go beyond 10 percent nor maximum coverage of 50 percent of the lot. (Under the old zoning, towers could cover only 40 percent of the site; plazas took up the rest.) In case of Olympic Tower, Arlen and Onassis needed the extra tower coverage to apply on the commercial floors for enlarged rentable space. By adding the winglike slab, they increased the office tower coverage to 48 percent of the lot, or 20,000 sq ft per floor. The residential portion covers 37.3 percent of the lot, allowing 16,000 sq ft per floor.

Although zoning allowed the Fifth Avenue elevation to go straight up without a setback, 51st and 52nd Streets still required them. Arlen and Onassis asked for (and got) zoning modifications on height and setback on 51st St. on the basis that a



Olympic Place, a two-level covered pedestrian space will feature restaurants, including mezzanine level, waterfalls, and 58-ft-high skylight.





setback would impair bulk (yes indeed) and aesthetics. (But what about the streetscape?)

And so Olympic Tower stands today, awkward in form, but slick in style, a solution that conveys signs of urbanity rather than creating a sense of urban place. Its clientele comes first. Arlen went to Europe, Mexico, South America and marketed there *first* to attract that clientele. It worked: about 80 percent of the 253 condominiums have been purchased by foreign owners, willing to pay between \$122,000 to \$650,000 for an apartment. Arlen reports they only have about 20 apartments left, and office space, they report, is 85 percent rented. But retail and restaurant leasing seems more of a headache. No restaurants have made a definite commitment to the space, and only a few shops apparently are lined up. Meanwhile the Mall is scheduled to open next spring.

#### Data

**Project:** Olympic Tower, 645 Fifth Ave., New York City.

**Architect:** Skidmore, Owings & Merrill, New York, Whitson Overcash, partner-in-charge; Paul Baren, project manager.

**Program:** a 791,745-sq-ft building including 253 condominiums, 480,000 sq ft of office space, ground floor retail space and a 8766-sq-ft mall with retail space and restaurants. Mall, approved under "covered pedestrian space" incentive zoning.

**Site:** approximately 25,600-sq-ft lot, plus 14,800 sq ft of land to which client owns development rights.

**Structural system:** structural steel columns and girders used for first 21 floors of offices; galvanized steel decking with concrete fill. Residential portion received reinforced concrete slabs and columns (more practical for acoustical reasons; require less floor depth in switch from beam to flat slab construction; apartments require less flexibility in arranging partitions).

**Mechanical system:** steam service for heating and cooling; secondary water system, ventilation, pipe fan coil system; domestic hot water heating and steam absorption machines.

**Major materials:** steel, black anodized aluminum curtain wall system; bronze heat absorbing glass. (Building materials p. 96.)

**Consultants:** Skidmore, Owings & Merrill, interior designers; W.A. DiGiacomo & Associates, mechanical; Office of James Ruderman, structural; Max Siegel Associates, zoning and code, Tishman Realty & Construction, general contractor.

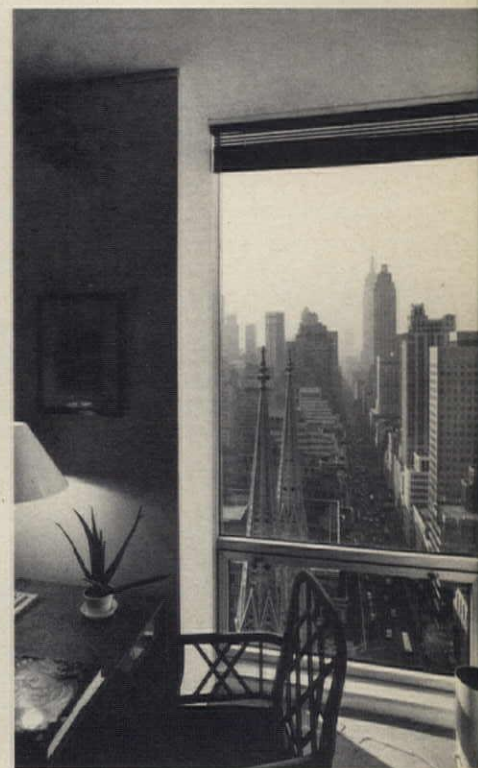
**Client:** Arlen Realty Corp and Victory Development Corp.

**Cost:** withheld at request of client.

**Photography:** Robert Perron, except for p. 44 bottom; Gil Amiaga.



North elevation (left) shows the wing added for extra office space beneath the 22nd floor. Model apartments (below) illustrate views permitted by floor to ceiling glazing, ducts vertically stacked.





## Mixed-use buildings

# Water Tower Place

In the city of muscle and clout rises Water Tower Place. Metaphor for Chicago's bucks, brawn, and bigness; microcosm of the traditional notion that the marketplace constitutes urbanity.

Unlike its New York counterparts, Water Tower Place in Chicago was *not* the result of sophisticated zoning incentives. In fact, it was hardly the result of zoning; Chicago's laissez-faire attitude toward building bulk and density controls helped create Water Tower Place more than the reverse. For, on a site of 113,624 sq ft, existing zoning permitted an F.A.R. of 12 with floor area bonuses given for the tower setback that boosted the total F.A.R. to a hefty 26.94. While the total floor area allowable is thus over three million sq ft, Water Tower Place doesn't go all the way: built square footage above grade comes to 2,530,000 sq ft. In 1973, however, zoning controls regarding planned-use development were initiated that would now make it impossible for a Water Tower Place to ease through without review by the City Planning and Development department. Whereas Water Tower Place needed only a traffic permit for its 640 parking places, now any building in that district over 800 ft tall (Water Tower Place is 850 ft high), and with a site larger than two acres must go before the city.

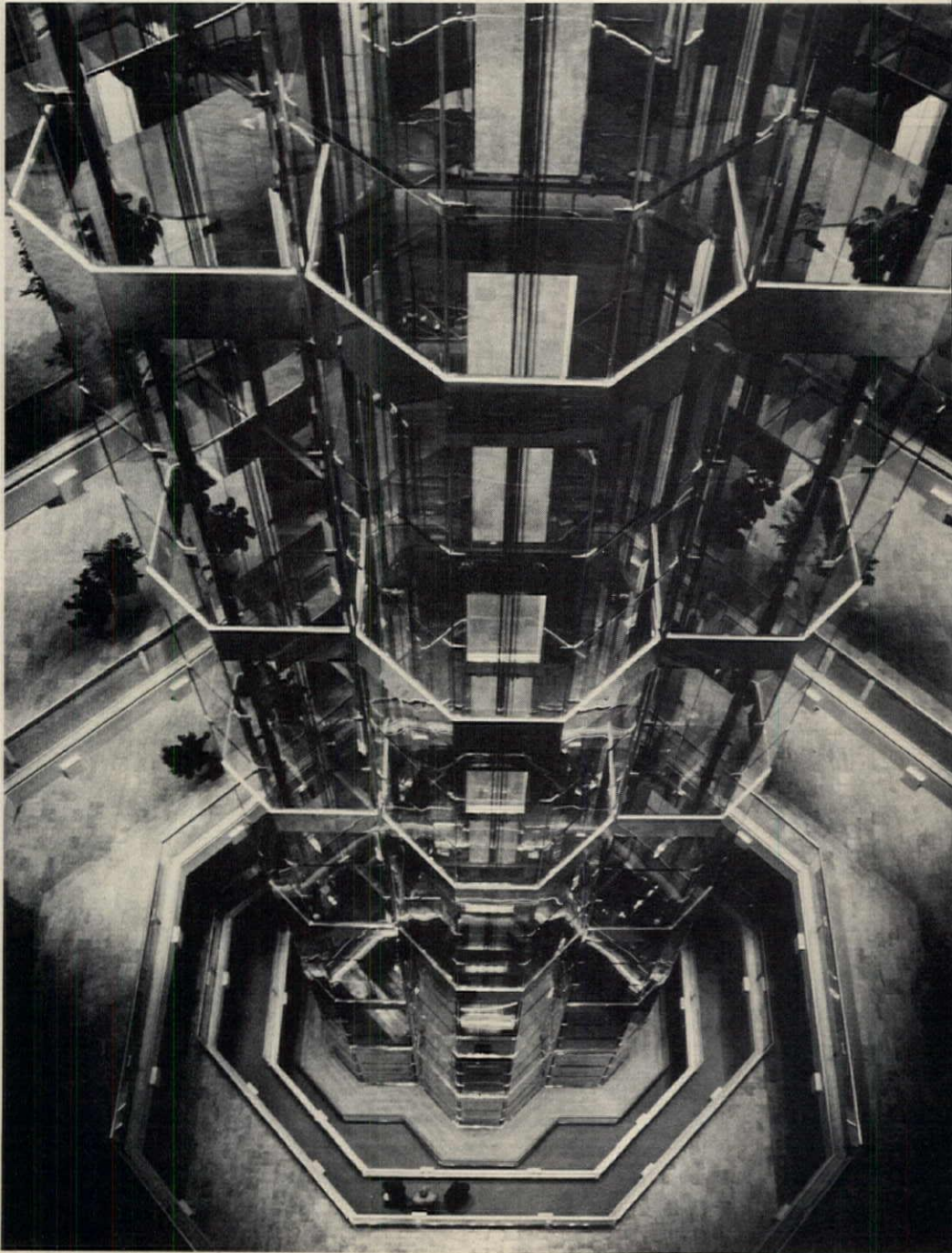
So there it stands, 73 stories high on North Michigan Avenue, cheek by jowl with the Hancock Center, an earlier mixed-use building itself. While a "shorty" by Chicago's standards (the Sears Tower is, after all, 109 stories high), Water Tower Place is no slouch in the record-breaking department. It is the tallest reinforced concrete building in the world—right now. And even if Water Tower Place were not conceived as a planning scheme to bolster the character of a particular shopping district like New York's Fifth Avenue zoning, it's got something else. It has almost as much square footage in its retail space alone as Olympic Tower has in the whole building—a whopping 597,000 sq ft—more than Galleria's total square footage. And Water Tower Place already has chi-chi shops

lined up, like Rizzoli, Courreges, F.A.O. Schwartz, McDonald's (McDonald's?) not to mention the key anchoring department stores, Lord & Taylor and Marshall Field.

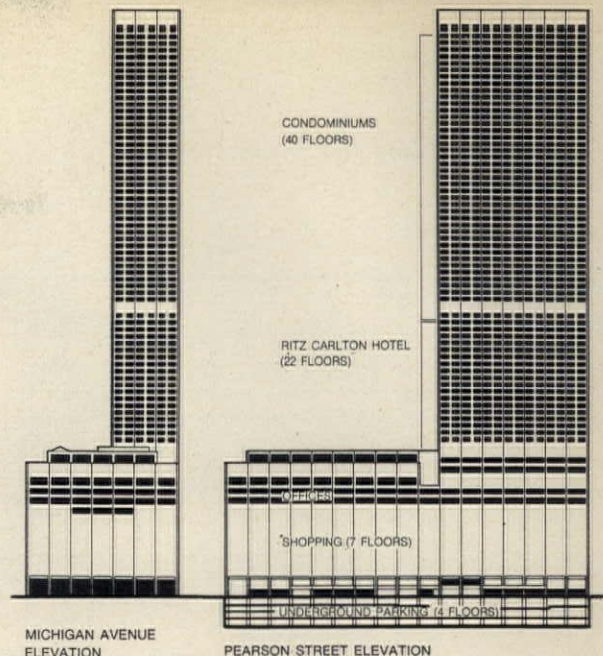
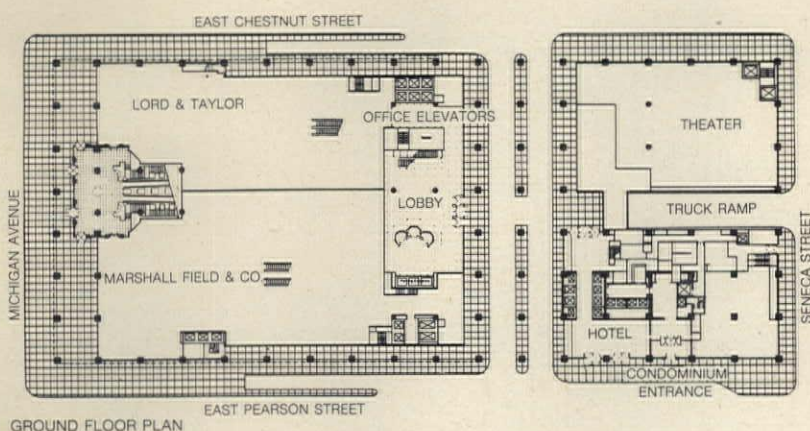
If it sounds like a high-class shopping center that's precisely the point. Its developers, Urban Investment and Development Company, in a joint venture with Marshall Field, bought the land in the posh part of the Chicago's uptown for an in-town seven- or eight-story merchandising mall. Marshall Field of course already had a department store downtown in the Loop, but as competitors continually moved north along the "Miracle Mile" it wanted to follow suit. Architects Loeb Schlossman Dart & Hackl with C.F. Murphy Associates began developing site studies. Parking provisions created problems on the original parcel, a portion of the current lot. So the lust

for land assemblage was on. The developers picked up a parcel belonging to the John Hancock Company, owners of the Hancock Center next door. As land costs mounted, the owners thought about providing office space. But the land had a deed restriction: nothing could be built past 559 ft, in order for Hancock's residents to have an unrestricted view down North Michigan Ave. Meanwhile, the office market was softening to an ooze; residential use was becoming economically attractive. More land was assembled—including the site of the well-loved old Pearson Hotel—so that a new tower with hotel and condominiums could rise in its place. Finally the building configuration slowly took form: a tower placed on the southeast corner of the lot covered by a 12-story-high podium. And in that podium

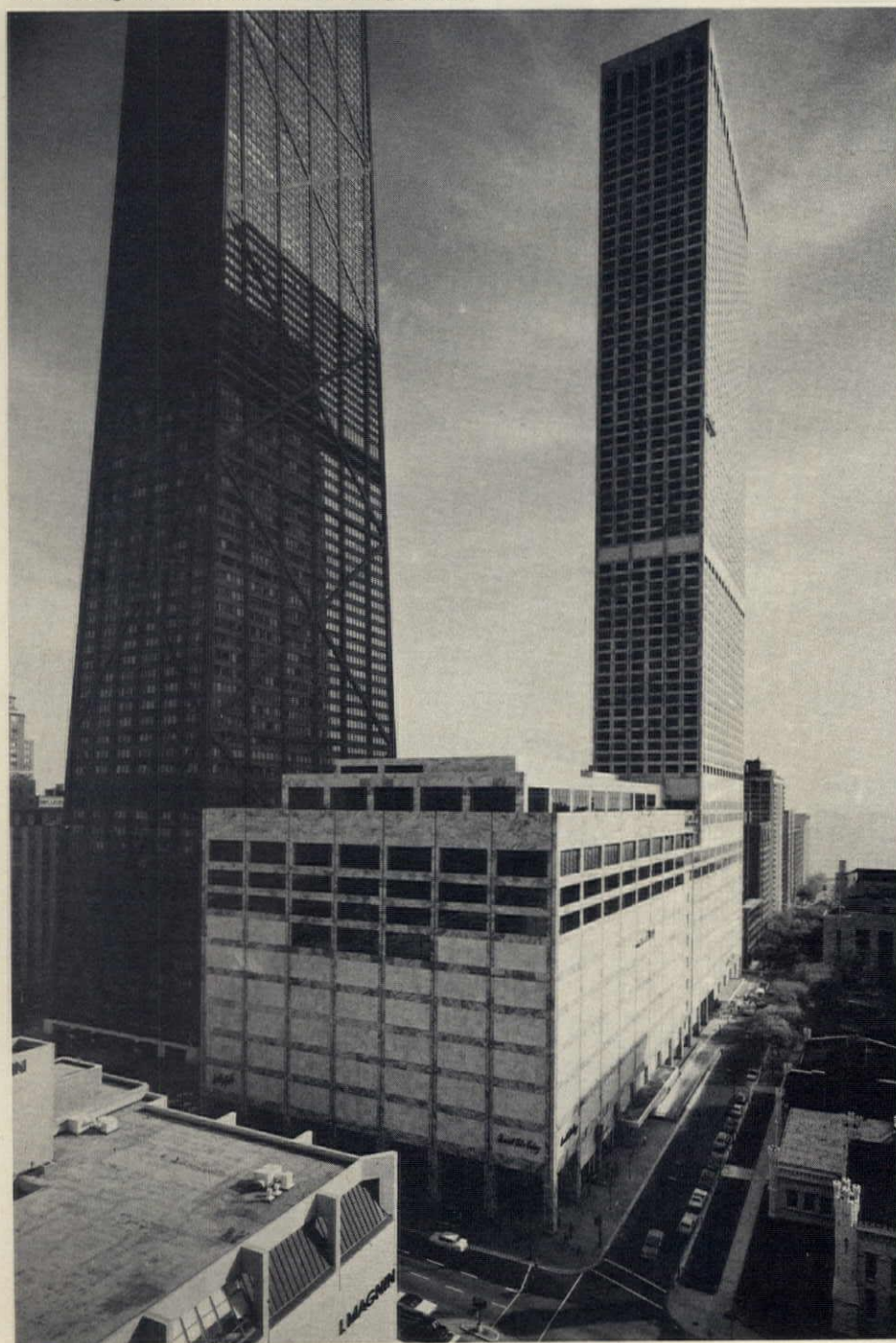
Glass and stainless steel elevator extends through seven-story atrium.







Gray marble-clad tower is set back to rear of lot to allow Hancock Center to retain its view down North Michigan Avenue, as part of deed agreement.



is 7 stories of leasable store space plus 121,000 sq ft in open mall space, and two floors of offices besides four film theaters and one dinner theater.

#### Implications: profit vs. planning

In economic terms, all this retail area should generate good income return to its developers—particularly since shops are renting well. Since the Ritz Carlton has taken over 22 floors for a 540-room hotel, Water Tower Place developers need only worry about selling the condominiums, of which three-fourths are still available. (These apartments with lavishly sized kitchens, closets, and bathrooms come priced more reasonably at the top than New York's apartments: \$135,000 to \$257,000.)

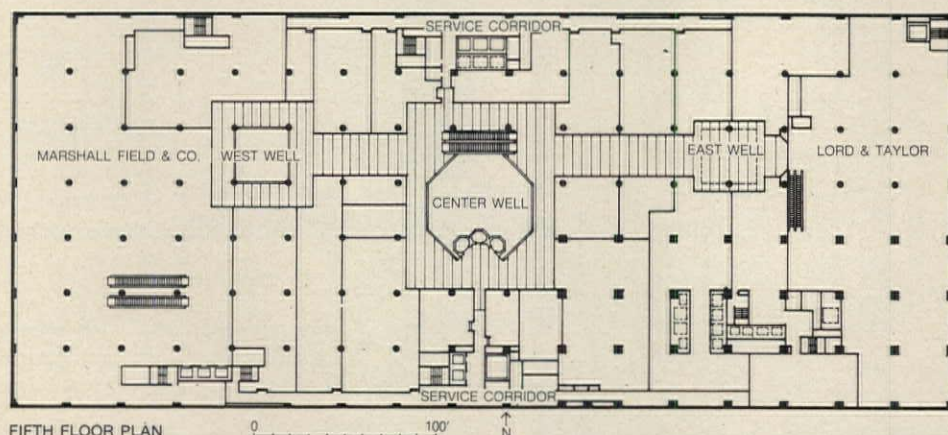
In planning terms, however, the shopping center, hotel, and condominiums could have done more for Chicago if they were back downtown. North Michigan doesn't require the retail stabilization that Fifth Avenue needs right now. It is in its heyday as a shopping magnet and a residential enclave for the affluent. The Loop however, which contains mostly landmarks and/or office buildings, could use a little mixed-use activity, a little round-the-clock action. But the developers quite naturally wanted to be where the retail/hotel/residential market already was.

While it will be a self-contained shopper's paradise of diversified consumption, Water Tower Place conveys little physical sense of its multi-use nature. The retail space is linked to the hotel, but one could still frequent each portion of the building without being aware of the others. The fact that the building wasn't conceived as a mixed-use center from the start is echoed in its isolation of separate circulation modes, and is reflected in its perfunctory tower-on-a-slab parti.

Loebl, Schlossman Dart & Hackl could argue, of course, that the different functions are clearly articulated on the exterior, if not by the setback tower and the slab, then through change in fenestration and bay size. Few windows grace the retail



## Mixed-use buildings: Water Tower Place



Lobby entrance to retail center.



A three story high atrium flanks entrance.

block owing to merchandising preferences for storage space on the building perimeter. The only windows are either shop windows or bands of fenestration indicating office space on the 8th and 9th floor. Smaller operable sash windows are found in hotel and condominiums rooms in the tower where bay size shifts from 30-ft-bay widths to 15-ft widths.

### Mixed meanings

One of the most extraordinary and controversial aspects of Water Tower Place was the decision to emphasize the concrete frame by a dark gray Georgian "solar" marble with lighter gray marble infill panels on the exterior elevations. In a narrow sense, this kind of structural delineation could be said to give proper clues to the change in functions in the multi-use building—albeit rather too schematic to be effective. The truly important signifier is the

marble—and the hoped-for message is "elegance." But a touch of class is not that easy to come by. Marble's strengths are in its subtlety and its mute tones, not these heavy-handed striations screaming "marble" 20 blocks away: not the obviousness of its veneerlike nature when applied to high-rise structures. The late Ed Dart, LSD&H's partner-in-charge of design, wanted granite and thought he was going to get it, so the story goes. But one of the clients insisted on marble "because it will appeal to the ladies." Interesting if true. The laugh, of course, will be on us in 50 years, when the gray marble has weathered to a dark rich patina, adored by the architectural public. But in the meantime . . . it presents a very closed formidable exterior, *not* terribly appealing.

Scarcely a suggestion is given of the excitement and activity taking place within those walls. Inside the structure; a plant-

filled seven-story atrium in the shape of a Japanese lantern will contain a transparent glass and chrome elevator core. Designed (as were the remainder of the public interior spaces) by Warren Platner & Associates, consulting architects for Water Tower Place, the interiors promise some pyrotechnics, highlighted by the elevator's glittering glass prism, but dampened by clumsy detailing elsewhere.

Unfortunately no skylight tops the central atrium or any of the ancillary double- or triple-height spaces adjoining the two department stores. Perhaps the public needn't be reminded about the outdoors. Platner points out that the public mall is geared closely to the owners' merchandising concept: to get the shoppers moving upwards and around all seven stories of shops—many more floors than usually considered financially sound for a normal shopping center.



Thus the street-life around the structure is virtually ignored (except for the store windows and colonnade along two sides). All action begins on the mezzanine. Whereas New York's mixed-use buildings are conceived as important urban design contributions that provide public amenities at street level and link one street to another, Water Tower Place stands alone. A self-contained entity. No plazas, through-block arcades, pedestrian links to other buildings above or below ground. The 1974 amendment to the planned development ordinance now calls for these factors—plus types of uses, bulk, density, impact on surroundings, open space, and siting for light, air, and view—to be closely scrutinized. However, since the criteria aren't spelled out with exactitude of New York's zoning, there is a chance that Wa-

ter Tower Place could still be built the same way again. It solves merchandising concerns imaginatively but is indifferent to the larger issues of planning, urban design, and overall architectural concept.

#### Data

**Project:** Water Tower Place, N. Michigan Ave. Chicago, Ill.

**Architects:** Loeb, Schlossman Dart & Hackl, C.F. Murphy Associates, associate architects and engineers. Edward D. Dart, design principal-in-charge; Donald J. Hackl, principal-in-charge; David A. Marks, project architect.

**Program:** to combine four major uses—multi-story retail shopping center (597,000,000 sq ft), offices (228,000 sq ft), hotel (540 rooms), residences (260 units)—in 3 million sq ft of space (including underground space). Other

related uses include one 1000-seat theater and four movie theaters.

**Site:** 113,936-sq-ft site, one city block.

**Structural system:** Foundations are 176 caissons plus 57-ft-deep slurry wall anchored with 60-ft tie-back rods. Caissons under tower widen to 10 ft in diameter. Structure is reinforced concrete. A 15-ft-deep transfer girder was installed on the 14th floor, where bays change size. For lateral wind bracing, a shear wall divides the tower, extending from 74th floor to top of transfer girders. Below girders a double set of core walls (shear tubes) extend to the top of the caissons.

**Fire protection:** computer monitoring system plus sprinklers throughout. Fire zones in retail section plus fan system with 100 percent exhaust capability for zones receiving smoke.

**Mechanical system:** heat by light and ambient electric load with reheat make up; air cooling from main fans in commercial area, fan coil units in rest of units.

**Major materials:** reinforced concrete, cladding on structural frame is gray travertine with pre-cast marble-faced infill panels; concrete block and drywall partitions; marble tile (travertine) or carpeting surfaces floor; windows are black anodized aluminum frames with solar gray thermopane glazing. (Building materials, p. 96.)

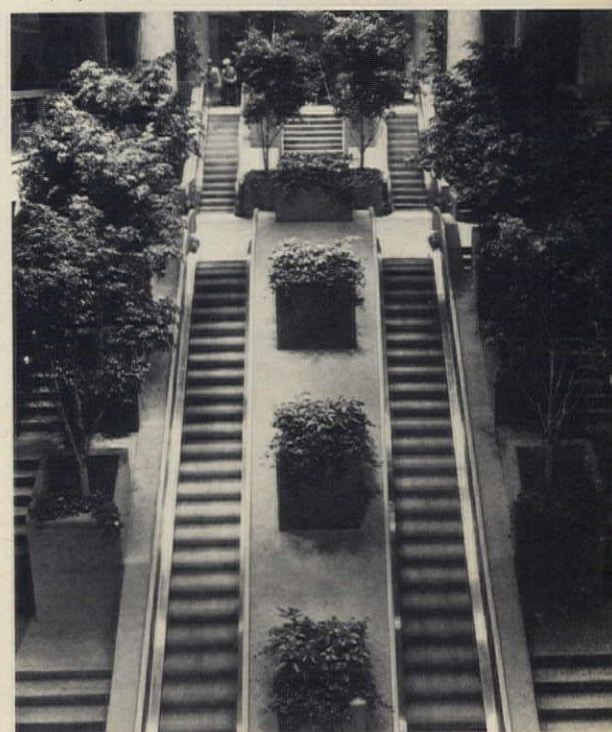
**Consultants:** Warren Platner & Associates, Architects, architectural consultants in charge of interior public spaces; Dan Kiley & Associates, landscaping; Rolf Jensen & Associates, fire protection; Claude Engle, lighting for public spaces; Lyle Yerges, acoustics.

**Client:** Marban (joint venture of Urban Investments & Development Co. and Mafco, Inc. a subsidiary of Marshall Field & Co.)

**Cost:** approximately \$150,000,000.

**Photography:** Hedrich-Blessing.

The central atrium, shaped like a Japanese lantern widens to a 60-ft diameter (left). Planting is lavishly dispersed throughout, even on splayed escalators (below).





# College town

**Many townscape visions of recent decades have been summed up by architects Davis, Brody & Associates in an urban precinct on a new suburban campus.**

Rising up out of a bucolic landscape, bristling with overhangs and castellations, the Ellicott complex calls forth mixed images of Oz and El Dorado, Carcassonne and San Gimignano. Within this picturesque silhouette, architects Davis, Brody & Associates have assembled six "colleges" of the State University at Buffalo, with living quarters for 3300 students, teaching and recreation facilities for 2700 commuters as well. And in the process they have embodied an impressive set of urban design virtues: mixed use at high density, separation of vehicular traffic, choice of open or protected pedestrian routes, effective hierarchy of spaces from communal to private.

The Ellicott complex is the one exhilarating corner in the vast and largely disappointing new University campus at Buffalo. It stands isolated from an academic core on which some of the nation's best-known architects have collaborated to produce a hodgepodge. As the campus plan evolved, Ellicott came to be relied upon as a self-contained element, ready to operate earlier than most of the academic core and adaptable to any deviations from the university's ambitious master plan.

Officials responsible for developing this new Buffalo campus vividly recall debates over the relocation of the university to this site at the metropolitan fringe. The decision was made in 1967 to abandon the existing campus—in a tree-shaded residential area of the city—for a site that would accommodate projected expansion to 40,000 students. A downtown site on the under-utilized waterfront—with obvious advantages in terms of accessibility and urban revitalization—was rejected for the appeal of a 1200-acre undeveloped tract 11 miles from downtown in Amherst, an urban fringe area on the brink of intensive development.

Initially, planning for the new campus was placed in the hands of Gordon Bunshaft of Skidmore, Owings & Merrill in New York, a native of Buffalo who had amply demonstrated his skills locally in his expansion of the Albright-Knox Gallery. Bunshaft proposed to concentrate the university's academic core in a single massive megastructure, dis-

tributing 30 proposed residential "colleges" in dense clusters around it. High density construction was proposed not only to generate a sense of urbanity, but because of the high water table and poor bearing capacity of the soil, which demanded deep pile footings in most portions of the site. Davis, Brody was invited to share in the design of the first six colleges, three to be done by each firm.

University officials would not accept the all-or-nothing constraints of SOM's megastructure—the difficulty of building it in phases and making later changes. Bunshaft and his client eventually parted, and Sasaki, Dawson & Demay were called in to produce a revised campus plan. The academic core was parceled out among several firms (including Breuer, Weese, Franzen, Bartos, and the Sasaki firm). Davis, Brody was given responsibility for all of the first six colleges—which may be the last six, as plans now stand.

## Taming the gentle landscape

Lew Davis vividly recalls his first visit to the Ellicott site. His feet sank into the soupy soil and "the mosquitoes came out as if they had never seen a human being before." With the Sasaki firm, plans were made to raise the contours of the site and create mounds to screen the extensive parking lots from ground-level view—the fill coming from the man-made flood-control lake abutting their site. With careful planning, most of the mature trees on the site were spared from either the extensive regrading or building construction.

In pulling the six colleges together into a single urban place, the architects based the entire scheme on a continuous podium, linking all colleges. At grade level (basements were ruled out by the high water table), the podium contains all services, six cafeterias and their kitchens, and indoor circulation links, along which are arrayed retail shops, laundry rooms, and, at the geometrical center, a "student center" which is a snack bar by day and a club by night. Running through this level and touching all colleges is a service road, along which are truck docks and passenger platforms for the buses that link the colleges to the old campus (where much of the teaching still takes place).

The roof of the podium yields an impressive series of plazas and promenades, the fair-weather routes of the complex. At this level are the main entrances to the colleges, with their all-important magnets, the student mail





Ellicott can be seen as a whole from approach road (above) and examined at closer range from across man-made lake (below).





## Joseph Ellicott Complex

boxes; here also are entrances to the academic buildings.

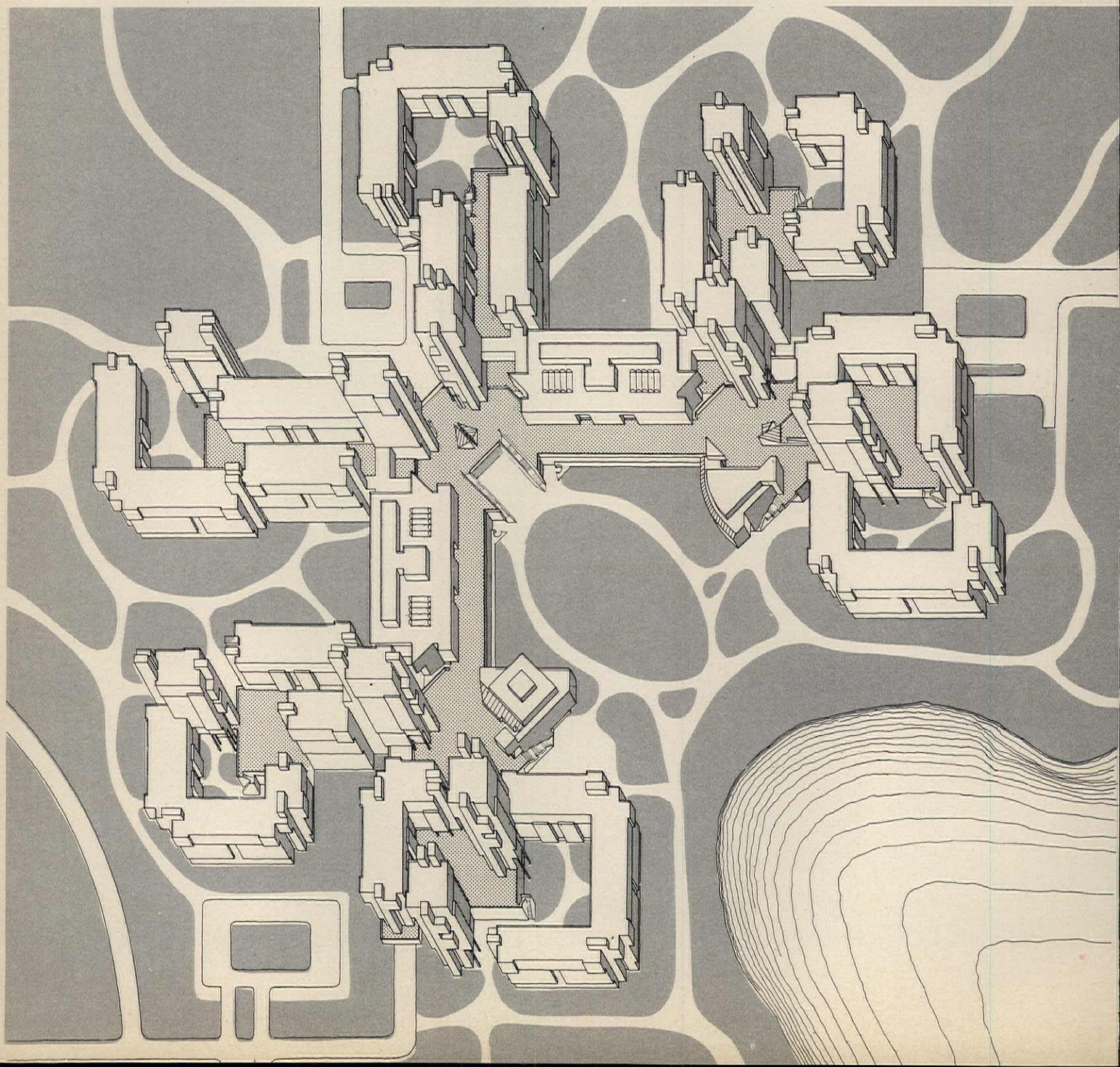
The concept of a multi-level service-circulation base, from which academic and residential structures rise, has been familiar since Candilis, Josic & Wood's competition design of 1963 for the Free University of Berlin, and is related to urban megastructure schemes at least as far back as Rockefeller Center. At Buffalo, however, this platform does not underlie the entire development, but takes the form of narrow fingers extending only far enough to make the necessary connections. Buildings sit at or just off the edge, enclosing areas of landscape. An architectural ordering device hence becomes a means of generating a fine-grained interaction between buildings and nature.

All circulation in the complex—on both levels—is orga-

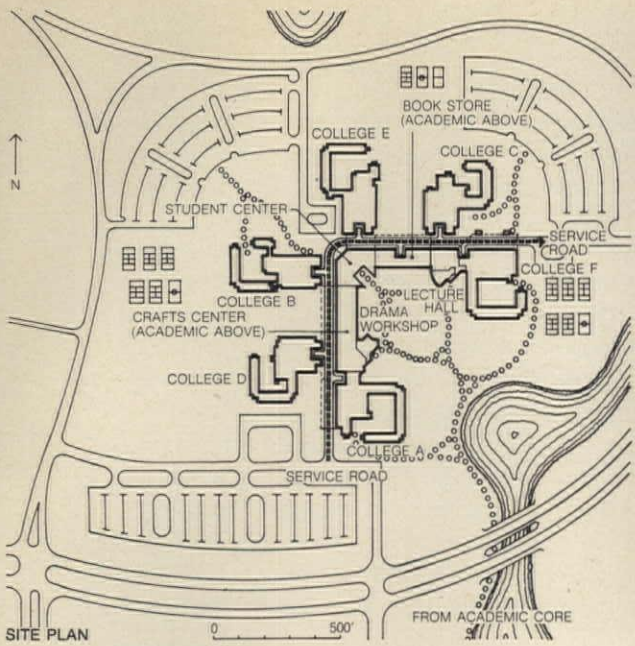
nized symmetrically, branching out from two main trunks that emanate from the student center and the plaza above it. But so understated is this geometrical center—so hard to identify except from the air—that the visitor to the complex would find it hard to locate. From the parking areas, the overall layout and the entrance points are anything but obvious. Only from the lakeside is the geometry of the complex apparent, as are the stairways up to the three plaza-level nodes—one for each pair of colleges. And the approach along the lake is meant to be the main student link to the academic core—still only partly operative—and to an enclave of private commercial-residential development on campus. (Planned as part of the adjoining new town of Audubon, this now faces the uncertainties of UDC sponsorship). As it is, students are likely to arrive by bus from the old campus and disperse along the drab service road.

Once the visitor has reached the plaza level, orientation

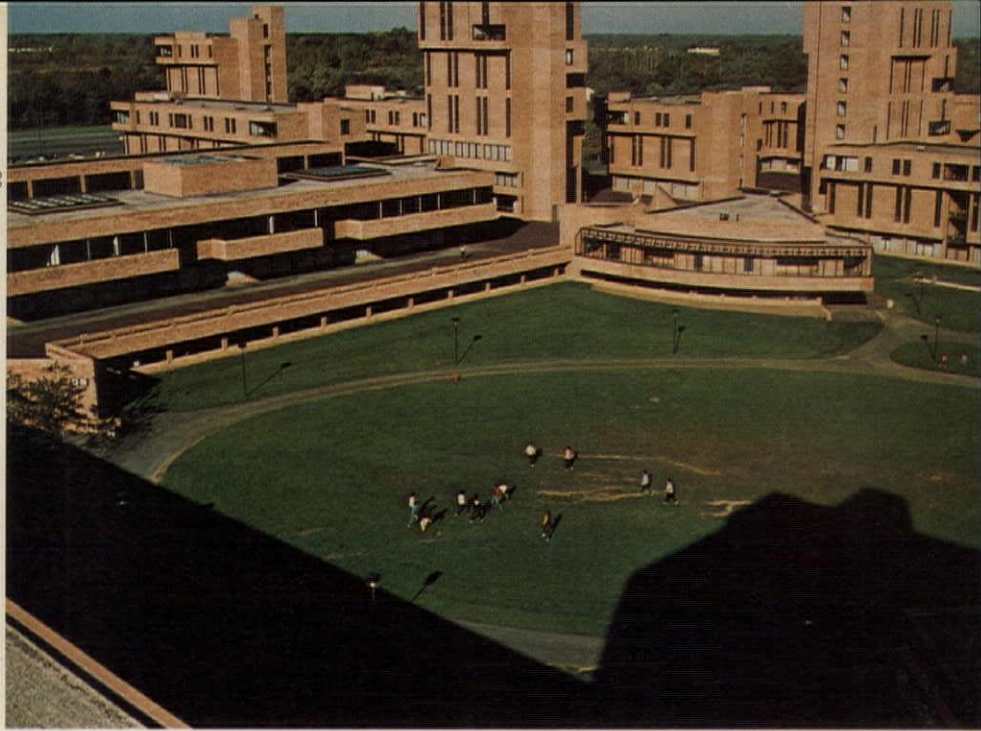
Architects' axonometric illustrates symmetry of complex about diagonal axis, which is echoed in a few angular building planes.







Site plan shows vehicular access, mix of uses.



Views toward east end of complex show plaza-level promenades overlooking green and lake.





## Joseph Ellicott Complex

is easy along the trunk walkways, which form a V opening toward the lake. But finding a particular entrance in one of the by-ways branching off these promenades requires a resident guide. Like the Medieval city, Ellicott demands familiarity if one is not to get lost.

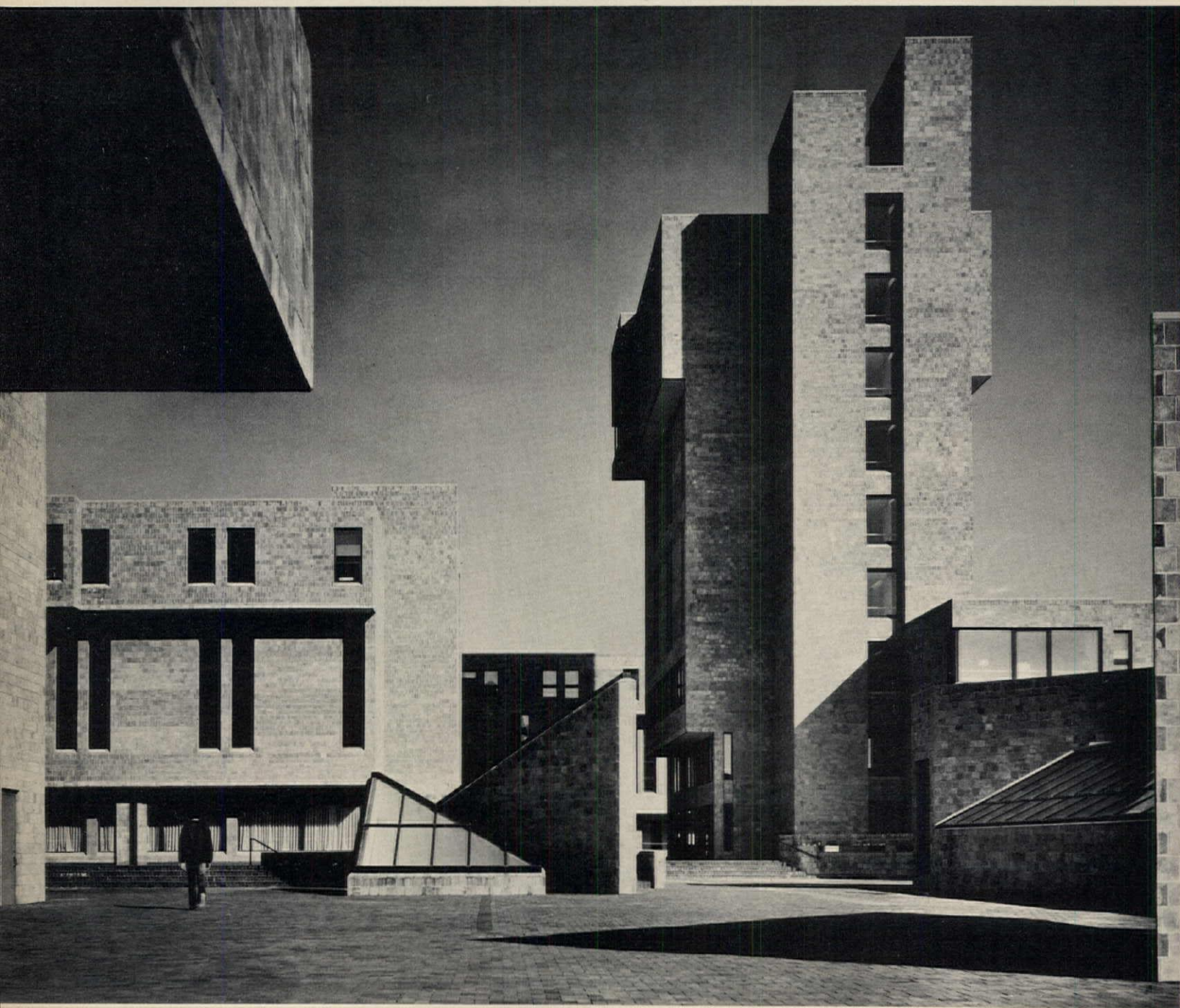
For the visitor, the fear of getting lost is eased somewhat by the sheer sculptural interest of buildings along the way. The articulation of various room types, lounges, studies, stair and elevator towers, and corridor ends (illustrations below) makes vigorous additive sculpture of these buildings. Movement through the complex yields constantly changing compositions of overlapping silhouettes and shadows, all of the forms shaped from the same material and all seen against a sympathetic natural backdrop.

The peculiar symmetry of the Ellicott plan, where all elements turn 90 degrees at a diagonal main axis, produces an intriguing effect under sunlight: any element on one side of the axis has a very different light-and-shadow pattern from the same element on the other side.

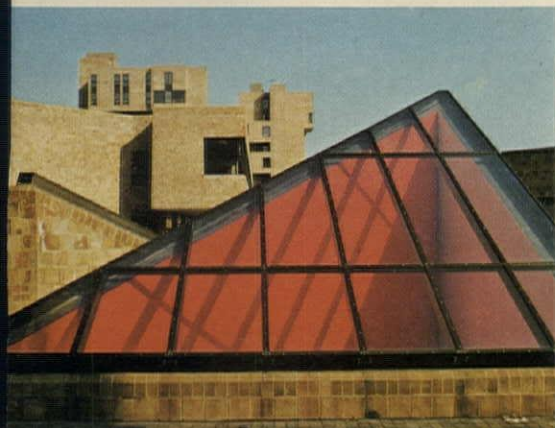
Each of the six colleges has 10-story tower marking its "gateway" from the main promenades and identifying it on the skyline. These towers are laid out with strict symmetry, but behind its tower, each college has a slightly different composition of residential blocks and of courtyards—a "hard" plaza-level court overlooking a planted "soft" court. College layouts are not sufficiently different, however, to give any of them individuality, which has been attempted by varying the plantings in the "soft" courts—massed pines in one college, cherry, birch, etc. in others.

At a few points—all too few—the regularity of massing is relieved by a special architectural incident. At three plaza-

At east end of main promenade is entrance tower of College F. Skylights at center are over small library.

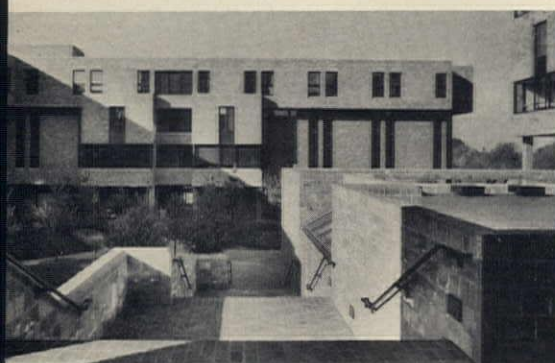






John M. Dixon

Acrylic-glazed skylights, lined with vivid red or ochre, light college reading rooms at either end of complex and identify crossroads in the plaza-level circulation system.

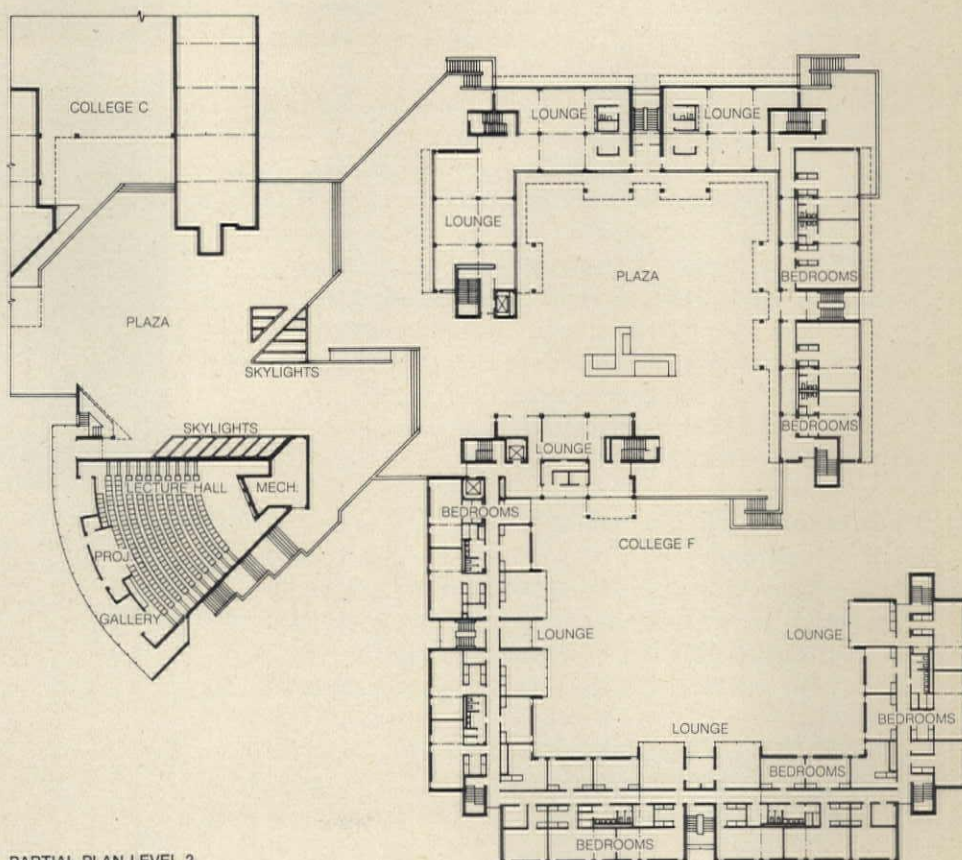


Don Higgins

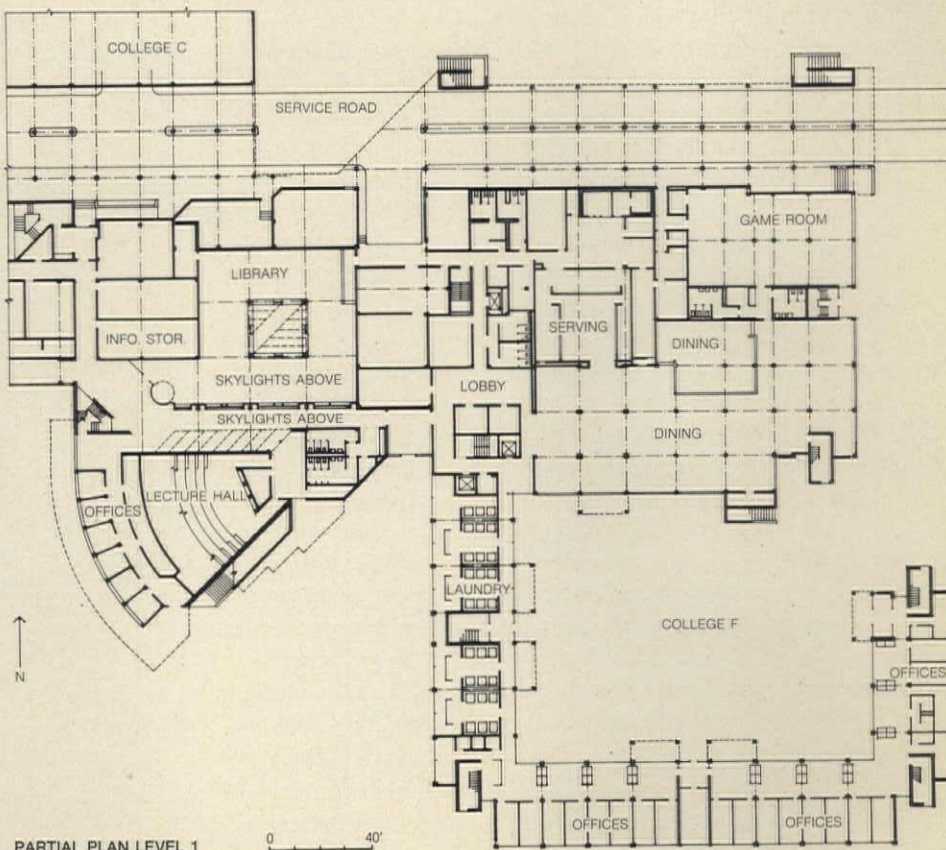
Within the college, plaza level ends in stair to tree-planted court (above). All college buildings are made up of same volumes (below): G, graduate bedrooms; U, undergraduate; L, two-story lounge (upper space converted during design to four-bed room); S, study room. Lower floors of tower house college offices.



Robert Gray



PARTIAL PLAN LEVEL 2



PARTIAL PLAN LEVEL 1

Plans of College F (renamed Wilkeson Quadrangle) show typical plaza-level lounge spaces and residential floors. Layout of bedrooms and lounges between entrance and emergency stairwells is repeated, with variations in building form, in all colleges.



## Joseph Ellicott Complex

level circulation nodes, sculptural skylights, lined with color, poke through (lighting the student center at the middle and libraries at either end). The most important breaks in the regularity of forms, however, are the structures for the drama workshop and the lecture hall, located symmetrically at the ends of the main promenades. The architects have exploited their distinctive programs to produce two highly individual landmarks. Similar in height and volume, similar in their links to the indoor circulation at stage level and their prominent audience entrances from the promenade, the two structures are pointedly exceptional in form—the wedge-shaped lecture hall reminiscent of “functional” auditoriums circa 1950, the drama workshop built up of squares rotated in plan. Both structures make gestures toward the diagonal axis of the complex.

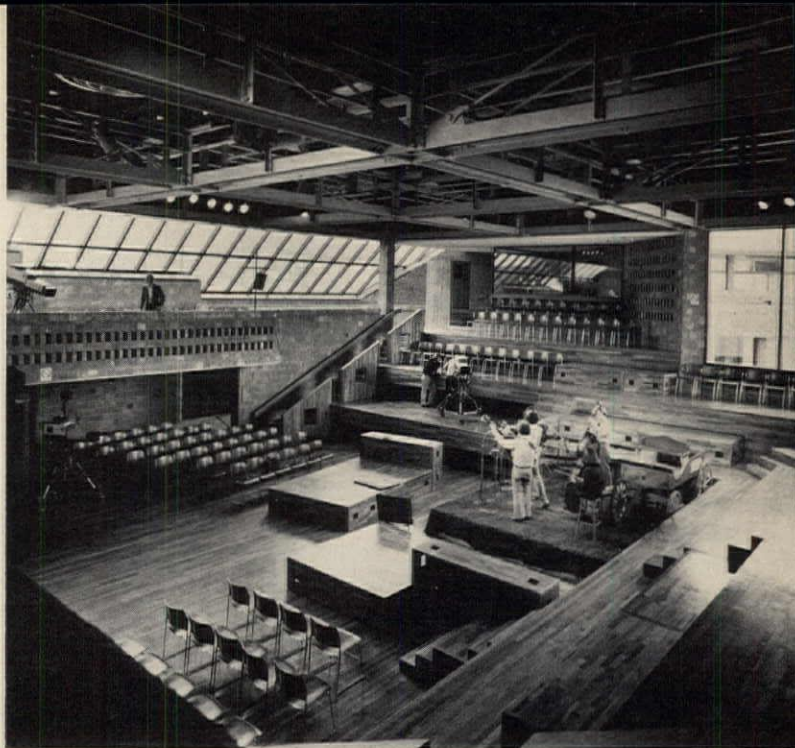
### Experience is in the details

All of these highly articulated forms of the Ellicott buildings are enhanced by a consistent texture of impeccably designed brick walls. The evolution of Davis, Brody's wall detailing dates back to their Riverbend housing of 1968, and has been refined successively in their six subsequent housing complexes in New York and in their laboratory buildings at other state university campuses (P/A, Sept. 1968, March 1974). Here they have used an 8" x 8" brick, employing 24 special shapes at special conditions; chamfered corners range from 1 in. at intersecting walls to 5 in. at parapets. In color, the brick includes a range of warm tans that takes on many colors, depending on weather and lighting. In full sun, its light-dispersing surface tends to whiten, so that there is more color in shadows; when wet, the brick takes on a deeper, reddish tone that is welcome on rainy days. Mortar color is carefully adjusted to approach that of the brick, remaining lighter to maintain a grid. Brick pavers are of similar color, but darker.

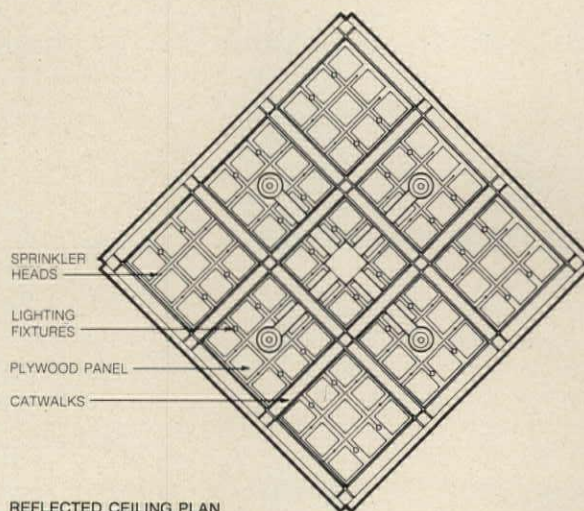
Night lighting of the complex is one of its most instructive successes. All of the plaza-level areas are lighted from two sources: incandescent “window washers” lined up just inside glass walls of lounges and reading rooms fronting on them; and fluorescent strips set into pockets in the balustrades. (These openings in the balustrades produce, in effect, brick handrails, which some of us find hard to accept.) The light is dispersed from the edges of the plazas, where it is most wanted, and some spills from balustrades into what might otherwise be dark corners on the ground below. There is no need for light standards or for fixtures mounted on buildings; no light shines into anyone's face or bedroom window. And fixtures are well located for maintenance.

Inside the buildings, the architects had uneven success. Furnishings of cafeterias, student center, and academic spaces are solid and pleasantly colorful. Modular seating in lounges has been rearranged by occupants into some bizarre configurations. Some areas are not used quite as intended: cafeterias designed to be entered freely by several routes now have checkpoints and makeshift barriers; two small libraries at either end of the complex lack books and are used for other purposes.

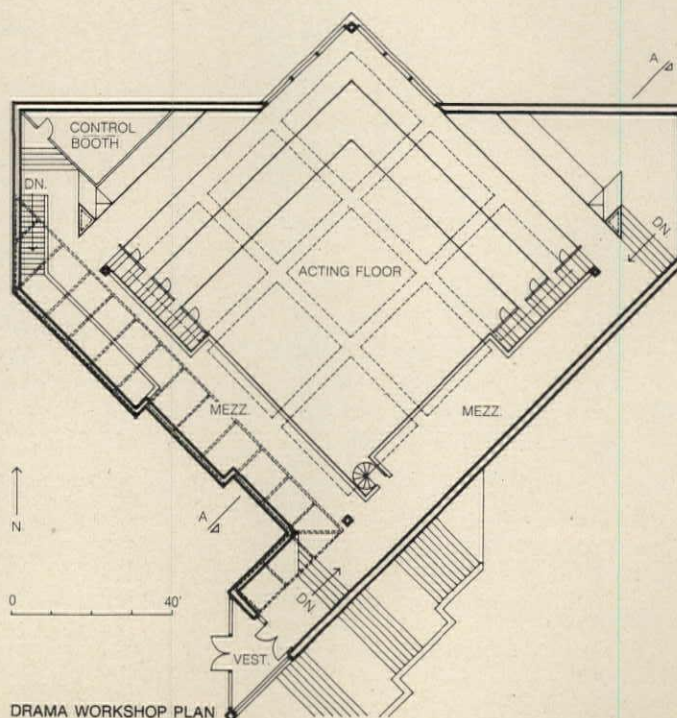
On the residential floors, losses were more serious. In the working drawing phase, the client decided to increase the



Drama workshop, adaptable for variety of meetings and events, has movable platforms and seating; louvers to block out daylight will be installed.

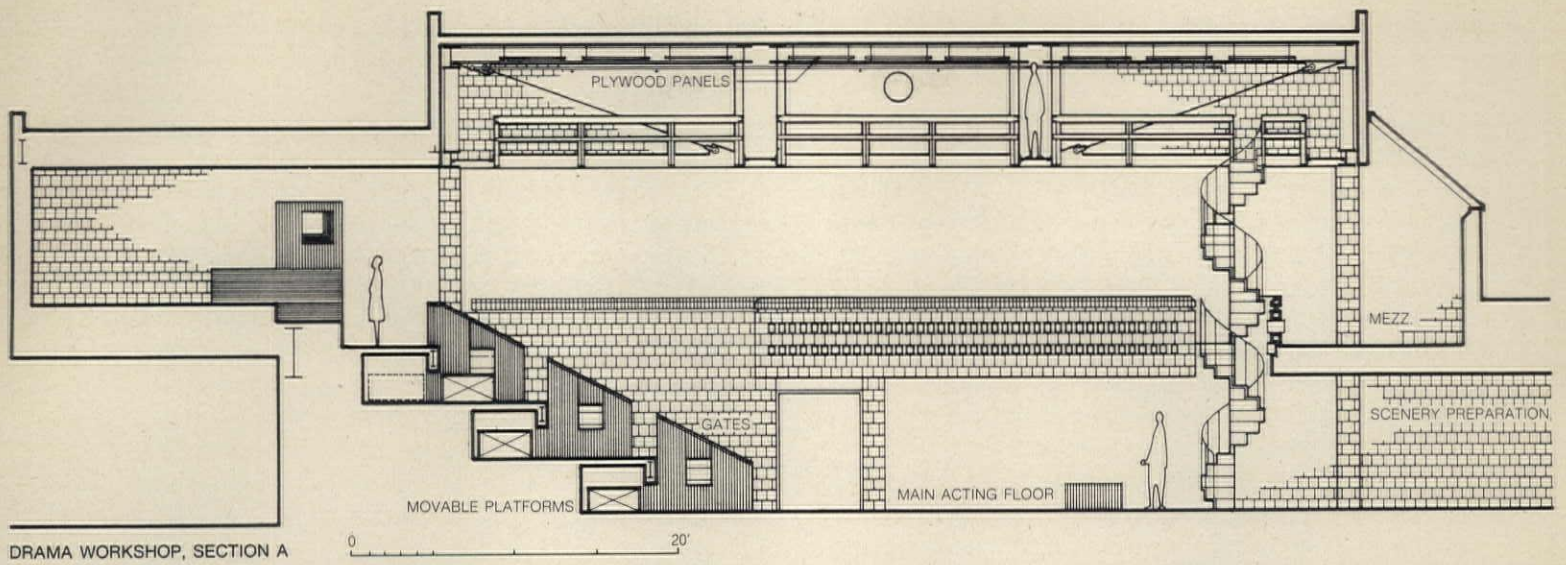


REFLECTED CEILING PLAN



DRAMA WORKSHOP PLAN







## Joseph Ellicott Complex

number of beds from 2653 to 3307 to lower the cost per bed. Result: two-story lounges, each intended to serve 20 residents, were divided vertically by a floor slab and the upper portions converted to four-bed rooms (as were some of the single-floor lounges for graduates). Furnishing of all bedrooms was out of the architects' hands.

Considering the extensive changes in university administration during the design and construction period the pressures on the State University Construction Fund to economize, it is encouraging that the original intentions of architects and client were not eroded further.

In the end, Davis, Brody & Associates has created at Buffalo a highly individual, memorable living-learning environment for 6000 students. They have set off the site's pasto-

ral charms by drawing the buildings together. In its less spectacular way, the complex meets the visionary objectives stated by Paolo Soleri: its activity is disengaged from the land and the roads that cross it, yet the landscape is always in view.

In some respects, sadly enough, Ellicott has already become a period piece—a reminder of the optimistic period just past when a public agency such as the New York State University Construction Fund could build generously, commissioning the most creative architects, monitoring their work with professional expertise to elicit their best efforts and to ensure the greatest public benefit for the dollar. While Ellicott may represent a last hurrah for a period of architectural patronage, it also represents, ironically, a superb model for dense, mixed-use development—ready whenever we begin to build in earnest again.

[John Morris Dixon]



Skylighted reading rooms (left) occupy centers of the two academic buildings, with plaza just outside and classroom corridors around upper portions. At geometrical center of complex (above) plaza covers clublike student center (below), which is lit by red-lined monitors and opens onto a tree-shaded terrace.





## Data

**Project:** Joseph Ellicott Complex, State University of New York at Buffalo, Amherst, N.Y.

**Architects:** Davis, Brody & Associates, New York, N.Y.; Milstein, Wittek, Davis & Associates, Buffalo, N.Y., associate architects; Albert Grossman, associate in charge of project; Maria Twirbutt, associate for Colleges A, D, C, and F; Costas Kondylis, Joshua Pan, Cynthia Peterson, Hisao Yamasaki, design team; Wilfrid Worland, Roger Sparling, Jon Edelbaum, construction coordinators.

**Client:** State University Construction Fund and Dormitory Authority, State of New York.

**Program:** six "colleges" with living quarters for a total of 3307 students (increased from 2653 during design phase at sacrifice of lounges) with academic and recreational facilities serving 2700 commuting students as well; 35 percent residents in single rooms, 25 percent in doubles, 15 percent in triples, 25 percent in four-person suites; six cafeterias with capacity of 2400 seats; offices for 140 faculty and staff; 200-seat drama workshop; 250-seat cinema/lecture hall. Floor areas (net sq ft): 320,000 sq ft, living quarters; 15,000 sq ft, classrooms; 24,000 sq ft, offices; 25,000 sq

ft, libraries; 4620 sq ft, drama workshop; 2880 sq ft, lecture hall. Total net sq ft: one million, approximate.

**Site:** 50-acre portion of 1200-acre campus, largely undeveloped, 11 miles from center of Buffalo; relatively flat meadow and woodland, poor drainage and high water-table; much of site subject to flooding at 15-year frequency from creeks crossing it.

**Structural system:** steel frame with concrete slab floors on metal decking.

**Mechanical system:** perimeter electric radiation heating; public spaces air-conditioned by small air- and water-cooled units.

**Major materials:** exterior walls of brick, 8"x8"x4"; brick pavers; vinyl asbestos or carpet on interior floors; anodized aluminum windows; clear glass; acrylic skylights. (Building material, p. 96.)

**Consultants:** Geiger & Berger, structural engineers; Cosentini Associates, mechanical and electrical engineers; Sasaki, Dawson, Demay Associates (now Sasaki Associates), landscape consultants; Cynthia Peterson (Davis, Brody & Associates) and Roseann Gordon, interior design.

**Contractors:** Albert Elia Building Co. and John W. Cowper Co., building contractors; Oak Grove Construction, Inc., site work contractors.

**Costs:** \$54.5 million, including site development, excluding fees.

**Photography:** Norman McGrath, except as noted.

Don Higgins



Lecture hall ambulatory (above) has broad view through acrylic curve.



Night lighting (below) is supplied from bands in parapets and window heads.





# Off on a tangent

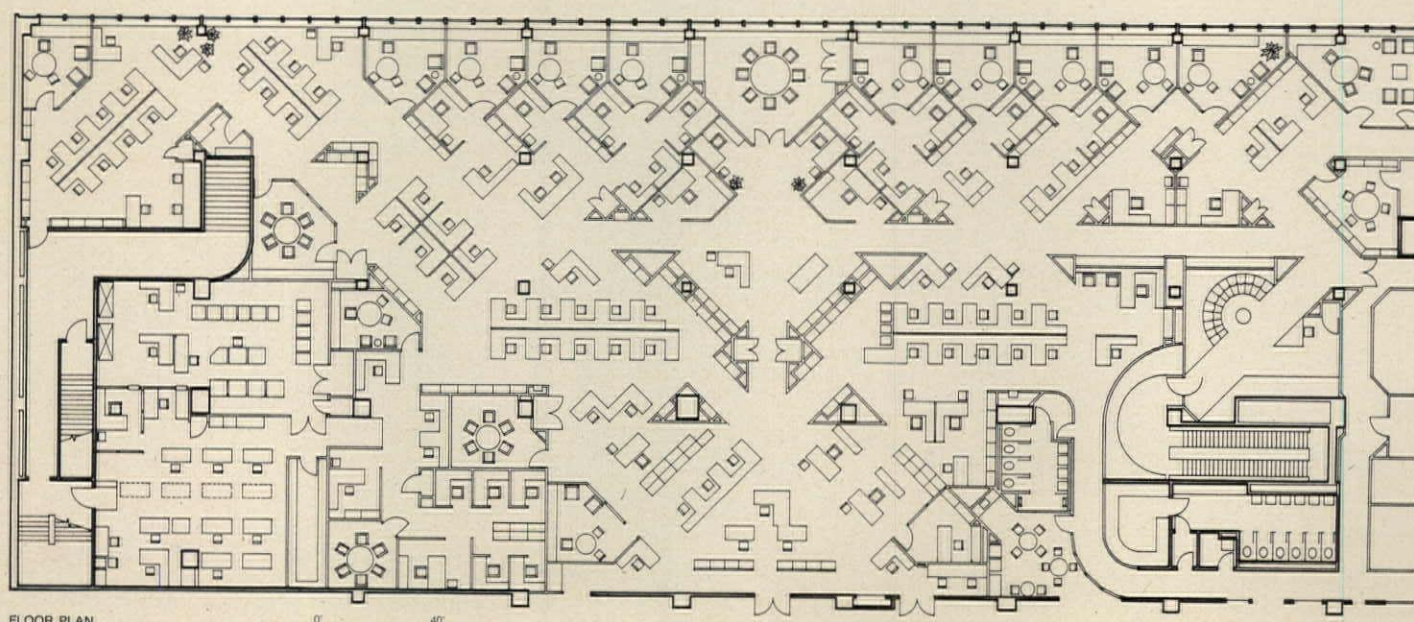
**The New York offices of the Gilman Paper Company represent a departure not only from standard office interiors, but also from the work produced by SLS.**

After entering the lobby of the Time-Life Building, ascending a stainless steel escalator to the mezzanine level, and entering a reception area done in corporate cool, a visitor to The Gilman Paper Company's New York offices finds the unexpected. The offices are no accident, however. Howard Gilman specifically wanted them to be a place where people could enjoy themselves. The result is, perhaps, one of the most interesting office interiors in New York and one of the best design projects yet to come from Saphier, Lerner, Schindler, under the direction of Larry Lerner. Even the 40,000 sq ft of empty space was unique for New York City. As designers, SLS had reviewed several spaces in the midtown area for their client and this particular space, located on the mezzanine level with its own escalator access directly from the lobby, had a clear ceiling height of 14 ft—a factor that Lerner feels played a very important part in shaping the design concepts. Lerner wanted to maintain the clear height—or at least the illusion of it—so that the

ductwork and lighting were custom designed in self-contained units, located only where necessary over work areas. The hourglass shape of the gypsum board enclosure for the ductwork was selected as the least massive form and as an acoustical consideration to reduce noise levels by reflecting sound down to the carpet or up to the acoustical tile ceiling. Low brightness, parabolic fluorescent fixtures form the underside of the duct enclosure; air intake and return is handled through the brushed aluminum grill of the lighting fixture. Where there are no ducts, the ceiling surface is a mylar-covered lightweight panel hung from the concrete ceiling on a 1 in. exposed, white spline. In other areas, the concrete beams were left exposed and painted white, and acoustical tile was applied to the underside of the concrete ceiling.

The general work area is organized at a 45 degree angle to the existing structural grid of the building. Low gypsum board walls, covered in vivid-colored vinyl divide and organize the various work areas, screen major circulation

The plan shows the general work area organized on a 45-degree angle to the existing structural grid of the building. Photo shows the custom designed, hourglass-shaped duct and lighting enclosures.









## Interior architecture

spaces, and serve as enclosures for files that are painted to match the wall colors. A second series of white walls, lower than the colored ones, provide more private, individual work areas. Although the entire plan for this area is open, it was found that using gypsum board construction, even though it might have to be knocked down if changes were needed, was less expensive than investing in an open office system.

There is a lot going on in this one space. The ceiling has white concrete beams, white acoustical tile, mylar, duct enclosures, and light fixtures hung at two different levels. The space also has every conceivable color in the spectrum from red through purple. The orange carpeted floor is the only surface not treated in more than one way, and somehow that subtlety is lost.

The first glimpse of the work space as one enters from the reception area.

And as if all this weren't confusing enough, the 45 degree plan succeeds in disorientating the viewer. It is difficult to establish a sense of order among the various parts of the interior—or a relationship to the outside, since in most areas the peripheral spaces are allocated to private offices, cutting off the line of the curtain wall. The work areas, created by the colored walls, don't seem to have a clear relationship to one another or to an overall concept of organization, although in scale and proportion they work well in the overall volume of the space.

These considerations aside (familiarity no doubt helps), the space is still visually exciting and stimulating. The executive quarters, in another area, are more grandly detailed with lavish materials in the usual corporate genre. The general office workers have won out. [Sharon Lee Ryder]







Central circulation space reveals the juxtaposition of the two grids.



Low walls are used when more privacy is required.



Offices are reflected in mylar ceiling panels (above). Built-in, custom-colored files (below) divide and organize the various work areas. The orange carpet, used throughout the space, is the only surface to remain consistent.





# Tilt to the river

**Consideration of site, adjacent structures, the neighborhood and a Hudson River view produce a directly responsive architectural statement.**

Yes, it works. With drama, no less, and even playfulness. What else could you ask a piece of architecture to do? The Salanter-Akiba-Riverdale Academy (hereinafter referred to as SAR), in the Riverdale section of the Bronx, shows Caudill Rowlett Scott's acumen at handling several different, difficult problems at once. First, there was the site. Then there was the sedate residential neighborhood. Then there were adjacent buildings and trees. And, not incidentally, there was available a smashing view of the Hudson River (not a problem).

The site, part of the estate of the late conductor Arturo Toscanini, held two options. One was a flat area adjacent to an existing building, and the other a steeply sloping bank near another existing building. The client had originally selected the flat area, concurrently offering an open-plan approach—through educational consultants Englehardt & Englehardt—in their program. The requirement was for 480 students, grades one through eight. CRS, after meeting with the client and environmentalists from Wave Hill Environmental Center, changed the site to the hillside, preserving the only flat areas for needed playfields. The program remained. So did most of the trees and all of the adjacent buildings. And the view of the Hudson was even more available.

One of the major concerns of the Academy was that the new facility not violate the residential character around it—in other words, keep a low profile. SAR does just that; it fits the hill like the proverbial glove. From the upper entrance to the grounds, the buildings appear no more obtrusive than one-story, understated elements. Nor does that change on the way down the slope, except that the statement gets more expressive. But only to achieve structural, programmatic, and view objectives. The open space and the view were paramount in the engineering parti. Heavy built-up steel roof trusses slope down with the site, the diagonal members are H-shaped to carry drainage from the stepped roofs. The horizontal sections are arranged so that windows between their lower chord and the next roof down

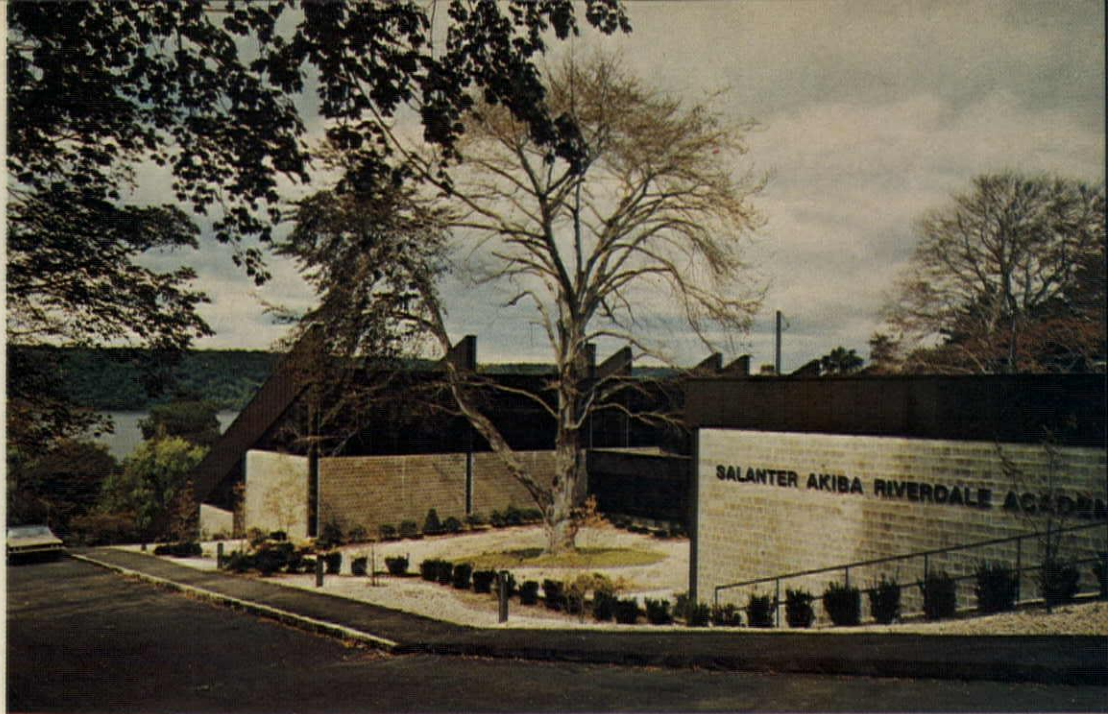




Jim Parker



Low profile from uphill side (right), and Hudson River view is maintained as (below) the building slopes down the hill in stepped levels. Deep expressed trusses and horizontal girders help frame clerestories. Inside, Hebrew symbols.

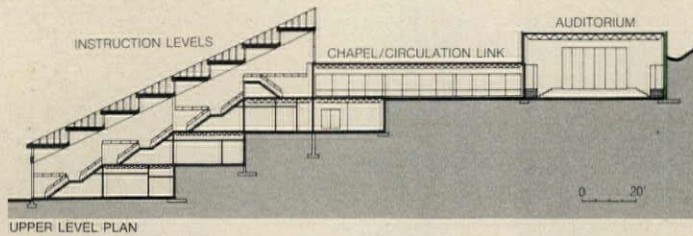


Laurin McCracken





S.A.R. Academy, New York



Dramatic interior, with many educational levels, is alive with activity.

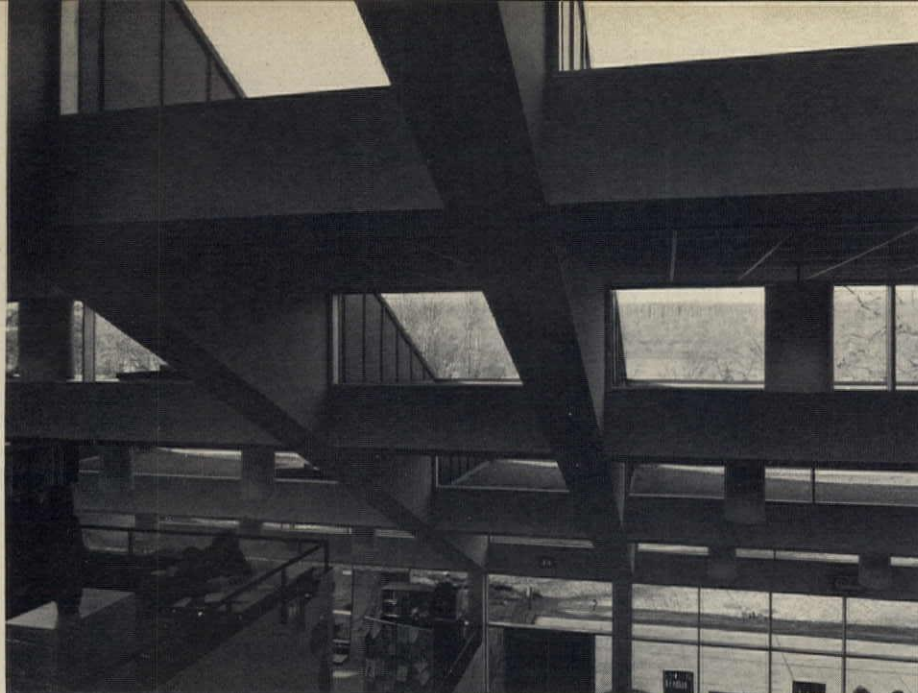
Jim Parker



More conventional teaching spaces (above) below the open tiers provide acoustical and educational options and areas for materials resources.







Clerestories at diagonal and horizontal members and roof slabs give river view to all levels.



Corner stair condition provides use variations.

provide the river view at every level in the academic space. Difficulty in showing that drama in photos on these pages arises in that the contrast between indoor and outdoor light/focus makes the effect observable only by an on-site visit. But it *is*, as mentioned, smashing.

Only one slight disappointment (unavoidable) appears from the exterior: the stairs, so much a part of the layered open space, and so visible from outside the pitched façades, are not at the same angle as the massive roof trusses. Practical considerations involving necessary landings at intermediate levels (see section) precluded an angular coordination of these two elements. But it only hurts for a little while.

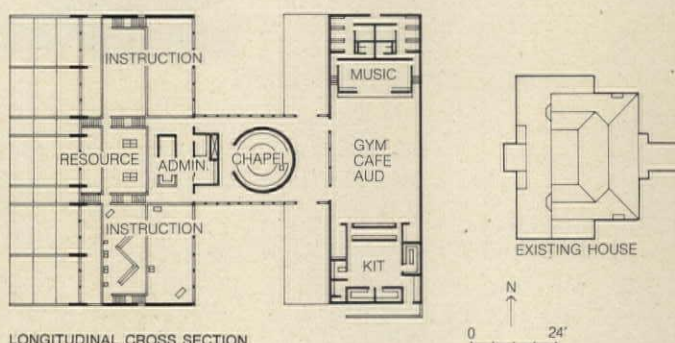
### Upon entering

Inside the main space, a visitor sees why those "annoying" landings occur. They are the access to primary and ancillary teaching spaces—simple as that. The open teaching trays are one-half level above or below supporting resource/administrative functions. And the space is exciting; filled with kids, activity, color, and graphics (Hebrew and numeric), it is alive and surprisingly without undue distraction. Rabbi Sheldon Chwat and staff *might just* have some input to that status, but the noise level is just high enough to be fun, and low enough for education to take place—and that's a nice combination. Other events, in the form of carpeted stepped areas and corner shelves for teaching, present an everchanging stage for educational improvisation and experiences.

At the entrance, the chapel is the center of all circulation and, of course, of the religious functions at the school; it is the symbolic center of the Academy's purpose. On the uphill side of the chapel, opposite the academic area, is the gymnasium/cafeteria. Colors in the chapel/entrance are understandably more subdued, picking up intensity in the multipurpose space.

### A similarity

There is an irrepressible urge to compare buildings of similar intent. SAR (educational and diagonal in section) and Harvard's Gund Hall (ditto, different level of education) are in some ways similar. They were designed almost simultaneously in different parts of the hemisphere. Rationale and



LONGITUDINAL CROSS SECTION

execution are undeniably different as, probably, are results as measured by users and architectural peers. But it is clear that the slope of Gund—however well or poorly it functions—did not derive from the same criteria as SAR's. The scale is different, too, and appropriate to the divergent requirements of the programs of each. The slope and the scale, as they fit the context of SAR, seem eminently more defensible in Riverdale than do those in Cambridge. [Jim Murphy]

### Data

**Project:** Salanter-Akiba-Riverdale Academy, Bronx (Riverdale), New York, N.Y.

**Architects:** Caudill Rowlett Scott, New York, Houston, Los Angeles; Partner-in-charge, Jack W. Smith; project manager, Charles Baskett.

**Program:** academy, chapel, and gym/cafeteria for 480 children, grades one through eight.

**Site:** part of Riverdale estate, sloping to Hudson River, with adjoining buildings.

**Structural system:** reinforced concrete foundation supports steel columns on concrete slabs (steel centering); primary roof members are built-up steel trusses, lightweight steel deck on steel joist secondary members.

**Mechanical system:** multizone rooftop HVAC unit.

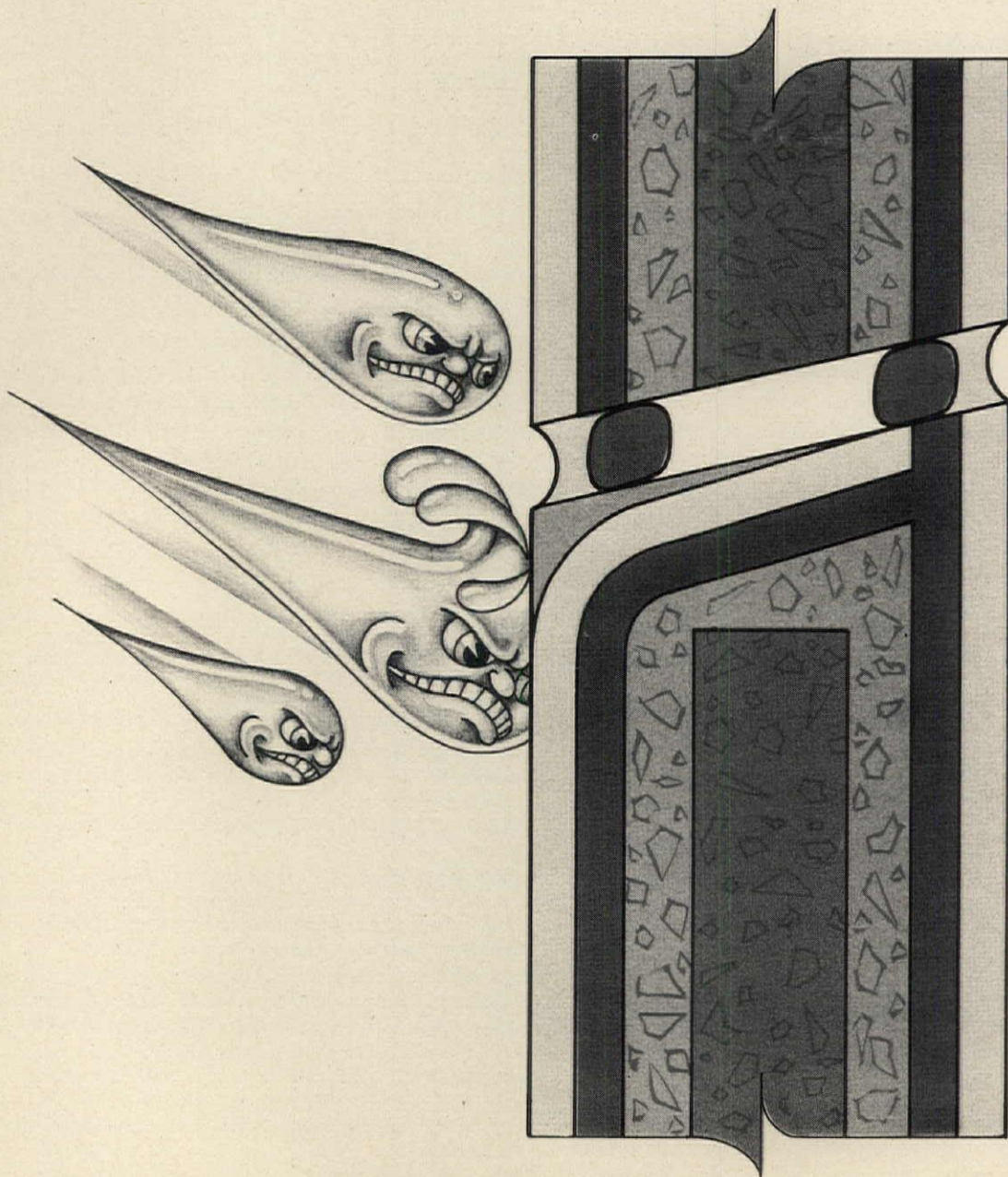
**Major materials:** exteriors, buff-colored block masonry, bronze-coated aluminum cladding for major structural elements; interiors, acoustic tile ceilings, masonry and gypsum board walls, carpet floors. (Building materials, p. 96)

**Consultants:** structural, CRS; contractor, Miller & Raved, Inc., who contracted Schlosberg, Inc. for mechanical, Sage Plumbing & Heating for plumbing, E.J. Electric for electrical. Educational consultants: Englehardt & Englehardt.

**Costs:** \$2.2 million, \$52/sq ft.



# HOW TO DESIGN A PRECAST JOINT FOR WEATHERPROOF SECURITY.





With all its design advantages, precast also presents some joint sealing problems. Tremco has developed the modified rain-screen principle to help you keep the advantages of precast and still get weather-proof security.

One problem with precast panels is that they are subject to dynamic movement. That movement can create openings in even the most carefully constructed panels and joints.

The modified rain-screen calls for a vented joint seal on the exterior, and a total airseal on the interior side. This creates an air-pressure equalization chamber between the joints. Unlike one-stage sealing systems, this design gives you two lines of defense against the weather.

### Why the modified rain-screen works better.

With one-stage joints, openings can let wind-driven water into the building or pull warm moist air from the interior into the wall cavity. Either way, there are problems: uncontrolled air flow, water in the building, moisture condensation and ice-damage in the walls. With the two-stage rain-screen principle, you can avoid these problems, and control air flow — reduce energy loss.

The modified rain-screen consists of three elements: an airtight seal on the interior joint, an air chamber and a vented seal on the exterior joint. (See diagram on left page.)

If there's a break in the exterior

seal, wind-driven water entering the air chamber drops down and drains out because of the pressure equalization effect. (See diagram 1.)

What happens if there is a break in the interior seal? If the warm interior air is carrying moisture, as it usually does, the moisture condenses in the cooler wall cavity, drops down and drains to the exterior. (See diagram 2.)

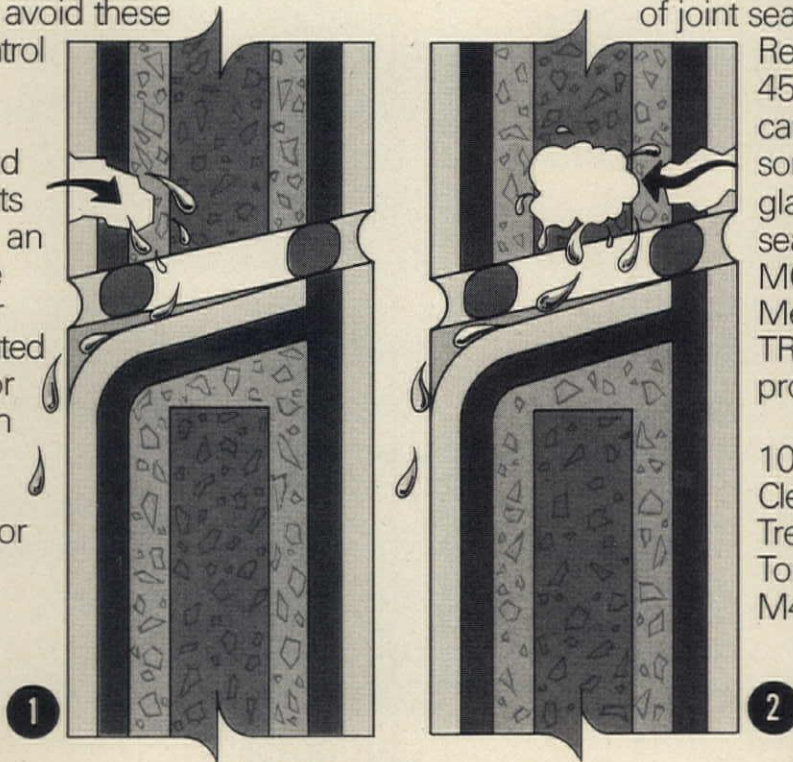
### Qualified help from Tremco.

Your Tremco man can show you a number of details which will help you adapt the modified rain-screen principle to your precast design. He can also fill you in on the performance of DYmeric®, the Tremco sealant formulated especially for precast work. DYmeric stands up to the joint-movement and stress of precast cladding and seals joints up to 2 inches wide without sagging.

For more information or specific help with the rain-screen principle, or designing a fire resistive joint for precast buildings, see your Tremco man. He can be a big help from drawing board to on-site instruction of joint sealing techniques.

Remember, for over 45 years, Tremco has cared for buildings with some 15 job-proven glazing and caulking sealants, such as MONO® and Lasto-Meric® plus our unique TREMproof® water-proofing systems.

Tremco,  
10701 Shaker Blvd.,  
Cleveland, Ohio 44104.  
Tremco (Canada) Ltd.,  
Toronto, Ontario,  
M4H 1G7.



# TREMCO®





## Cookson guards the trucks that guard the money.

When the company whose very name stands for security chooses a steel rolling door, it's no beauty contest.

The door has to be tough. And reliable. It has to stand up to abuse from weather as well as normal wear and tear. And it has to be easy to operate, day or night.

No wonder Cookson was specified.

The slats in Cookson rolling doors are copper-bearing steel that is galvanized, bonderized, primed with epoxy, then given a thermosetting grey acrylic top coat. To assure top-notch durability and built-in weather resistance.

To assure reliability, we don't skimp on the horsepower of our motors. Our standard motor unit is 1½ H.P., not the usual (and not usually mentioned) ½ H.P.

A lot of special features make

Cookson rolling doors better than the usual. Our ball bearing mounts suspend the heavy rotating members.

Our continuous guides support the door's full weight. Our high-windload windlocks keep curtains from leaving the guides. And our built-in counterbalancing mechanism is engineered to make each door easy to open and close.

So, when you're looking for the best way to close an opening, specify Cookson. It's like getting the armored car of rolling doors.

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

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



# Contract documents for overseas work

Alvin D. Skolnik

**The author sets forth guidelines for American specifiers engaged in product research and contract document preparation for architecture to be constructed overseas.**

For the American specifier, product research and the preparation of contract documents for work to be constructed overseas involves considerations beyond those applicable to domestic work. The P/A Specifications clinic, August 1975 dealt with product evaluation for domestic work.

While all those considerations must still be brought into focus for work overseas, certain others would be helpful.

**Reference standards.** You must become familiar with the accepted local standards, with which local contractors are already familiar. In certain cases, these standards will be mandatory (as minimum criteria) because of references in local building laws or "norms." Some examples are British Standards, South African Bureau of Standards, and German Institute for Standardization documents.

Most of the national standards bodies participate in joint efforts for internationalization through activity in the ISO (International Organization for Standardization). While ISO committees deliberate, a recent fact-finding study discovered that among the principal causes of difficulty in achieving agreement was the apparent European preference for a single standard for a product, not allowing for a second parallel standard in those cases where dual standards are an already established fact. In addition, the approach taken in some ISO committees, that a standard must contain both performance test methods and limits, delayed publishing test methods because of the difficulty in coming to agreement on limits.

To become familiar with foreign standards, you might either contact the respective organizations directly, or contact the American National Standards Institute, which maintains an extensive library of foreign standards through exchange with those bodies. You should also become familiar with the Agreement Boards in some European countries and the standards for evaluation of materials which they define. (See P/A Specifications clinic, July 1974).

When analysis of a local reference standard reveals areas in which criteria should be made more stringent, modifications to the document should be specified very

clearly. This often necessitates advanced conferences with potential product suppliers to determine their ability and willingness to comply with these new and upgraded standards. In addition, provisions should be made for the testing of products and systems manufactured against new standards; these requirements should be included in the specifications. Since many of these test programs may be introduced for the first time in a locale, they should be carried out under scrupulous supervision.

**Product availability survey.** When undertaking a project where you have not been involved previously, a very useful undertaking is a product availability survey to cover the major materials and systems to be incorporated in the design. In this regard, it is important to interview the principals of the firm surveyed. Request data on: current production capacity and size of jobs under contract, shop drawings and sample procedures, method of manufacture, adaptability to produce work of a nature more in keeping with the anticipated design requirements, stockpiling capacity and quality control programs. If possible visit buildings under construction and completed work in which the company's products were used.

American technology and quality standards are more advanced and higher than in most other countries. When attempting to upgrade the quality of the work normally acceptable in the program's locale, you must not lose sight of the varying degree of interest and ability of local manufacturers to produce and upgrade products to satisfy these standards. Where local authorities permit the import of products similar to those manufactured in their country, consider the merits of importing (with the attendant extra costs imposed) against the value of an upgraded local product. You must take into account local environmental factors in the selection of products, too.

**"Familiar" products.** Very often U.S. manufacturers have overseas operations and it is not uncommon in looking at foreign product literature to see what appears to be a familiar brand name. It is important to determine whether or not this similarity is coincidental. I once encountered a sealant of a familiar trade name being produced in a foreign country under license by an American manufacturer who supplied formulations and prepolymers without monitoring the quality control of the end product. Arrangements were made with the licensor to test random samples taken from the job site to determine compliance with specifications.

**The specifier's role.** With the growing construction volume in the emerging nations involving U.S. design professionals, we will be pressed to upgrade foreign construction practice standards. This will not only present an opportunity to promote the export of appropriate American products, it will also necessitate close cooperation with foreign manufacturers who will be anxious to venture into new industries or to improve production quality and efficiency. The specifier will be a catalyst in this. Preparation of contract documents and the selection of products and systems for work overseas presents an exciting new challenge for American design professionals. The specifier has a key, responsible role in this effort. □

**Author:** Alvin D. Skolnik, FSCI is Director of Research and Specifications for Skidmore, Owings & Merrill, New York.



# The well tempered caulking gun

**The flanks of mighty edifices may not be made of clay, but there is a strong possibility that they may leak. P/A searches the caulking and sealants industry for help.**

You are respectfully challenged to a duel. Your adversaries: water, wind, dust, and vermin. Your choice of weapons: caulking and sealants. The time: any time. The place: along your building's joints. The rules of play: outrageously simple. If you do not properly seal them off, your adversaries shall penetrate your joints and cause extensive structural and aesthetic damage inside. Should you prevail, the duel shall continue indefinitely. Should your adversaries prevail, your building shall be forfeited. RSVP.

The forces of man and nature clasp our buildings in a continuous and powerful embrace. Whether a building can survive such affection depends on its structure—and the sealants that bridge and seal its joinery. Taking note of this continuing problem in architecture, P/A presents a brief review of these rubbery chemical compounds formed as mastics, tapes, and gaskets: why they are used, what important properties they possess, and which formulations are most in demand today.

Until the final lunge of a wrecking ball, a building's components move constantly. Temperature fluctuation, wind loading, vibration, humidity, weathering, aging, and settlement set powerful forces in motion that alter their chemical and physical properties. Where components are relatively free to move, spatial orientation is also subject to change.

Where the components are well restrained, there may be practically no perceptible movement at all. An opening in a masonry load bearing wall can experience far less movement than its counterpart in a light framed curtain wall. Its joinery is described as nonworking, i.e., stationary. Examples include coping, reglet, and interior glazing joints.

The desire to move can be implacable, however. The designer may be obliged to tie active components somewhat loosely to the larger structure. This is by way of a working joint, i.e., one that permits a predetermined latitude of movement around a chosen normal position. Examples include control, isolation, and sheet lap joints.

Why draw the fine distinction? Some joints open and close and others stay put. Stuff them up and forget them.

And watch the walls come tumbling down. No penultimate sealant exists that could satisfy the fastidious appetites of this architectural menagerie of openings, intersections, and transitions. If the joint moves very little, a caulk, i.e., a sealant with relatively low (less than 20 percent) movement capability may be selected. Otherwise a sealant with greater (over 20 percent) movement capability is needed. It is both careless and profligate to specify sealants with more overall performance than is necessary, even for safety.

## Give us a squeeze

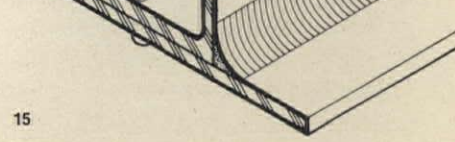
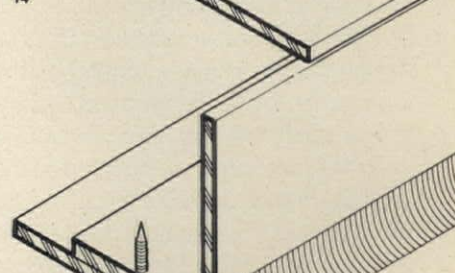
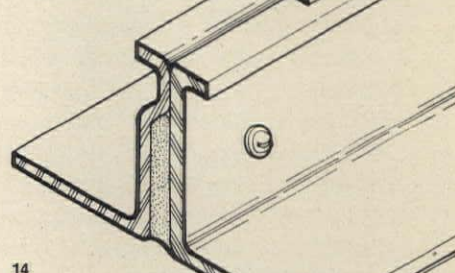
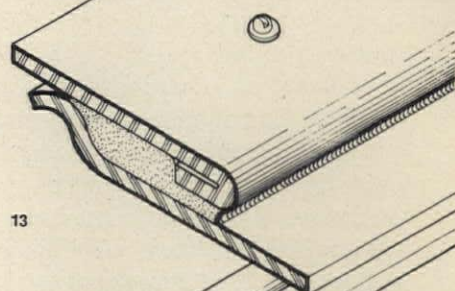
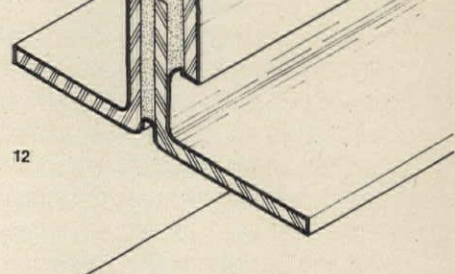
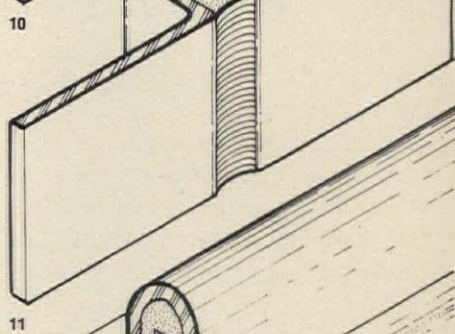
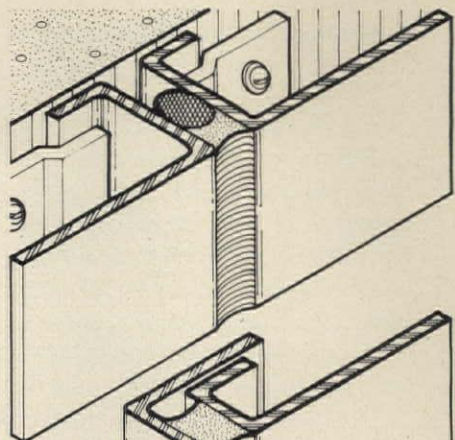
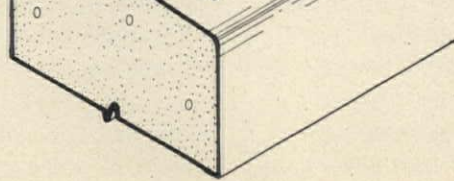
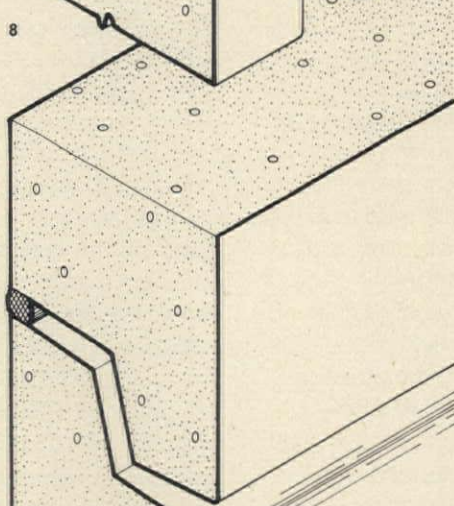
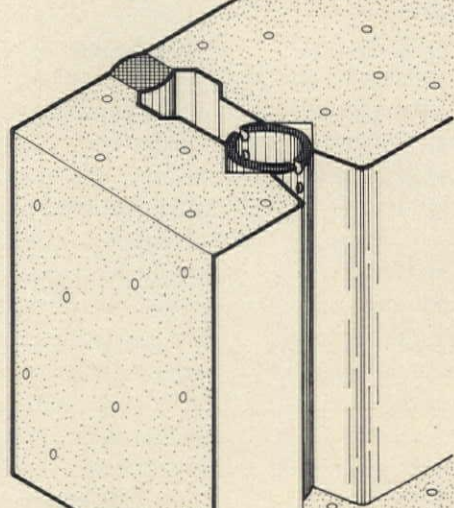
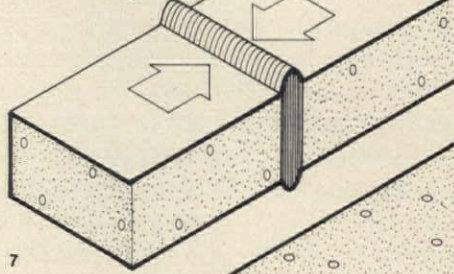
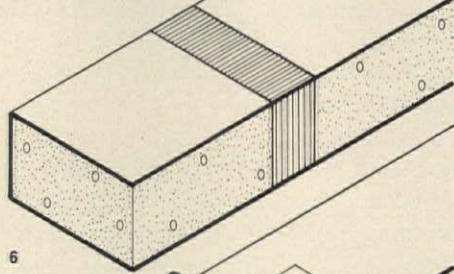
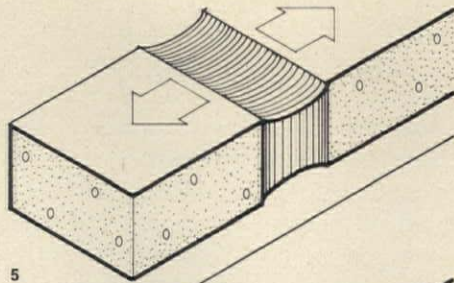
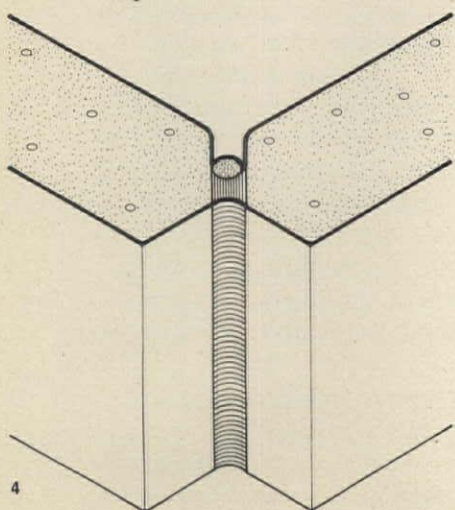
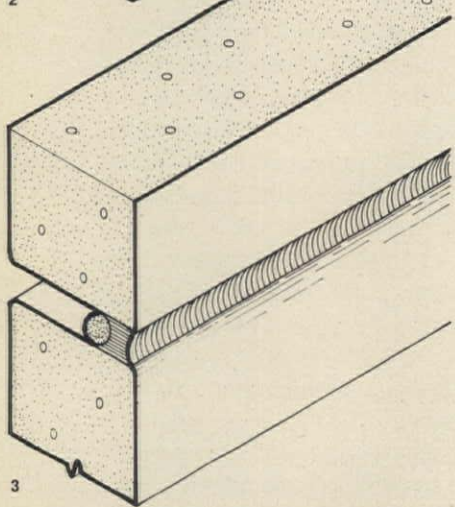
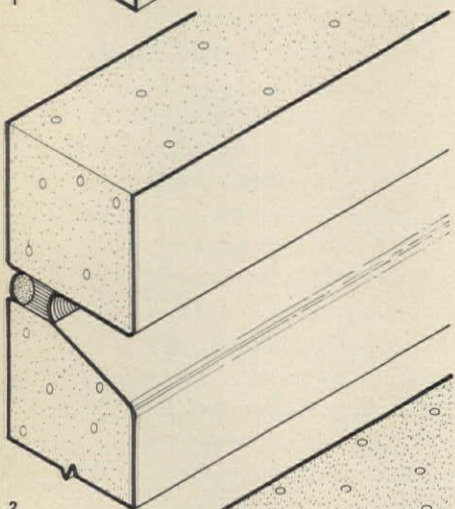
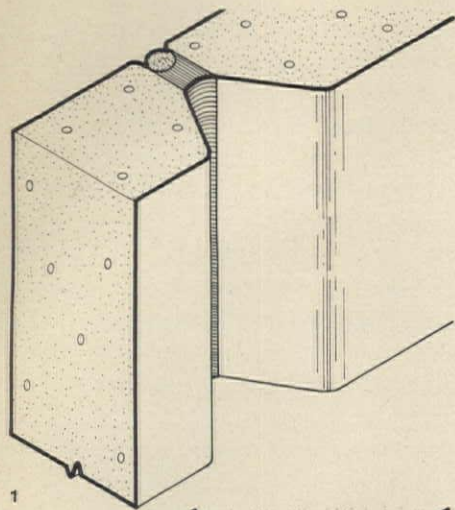
Exactly how much a working joint moves is still a mystery, however. There are too many complex interrelated environmental forces whose concerted action at a given moment exceeds our analytical ability to unravel. The situation is tenable only because we approximate joint movement so well via thermal flux measurements.

Materials generally expand when heated and contract when cooled. Nothing mysterious about this. And observing the phenomenon closely, we know that each material reacts to temperature change at its own steady rate. We express this relationship as the coefficient of linear expansion, the material's characteristic change of linear dimension per unit of length for each degree of change in temperature.

Knowing the coefficient and the anticipated temperature range of climate and orientation in situ permits us to size a joint with confidence. Not that this educated guess obviates us from our other environmental responsibilities. Just consider the movements caused by wind loads against a high-rise structure. But it is one of the more pleasant accidents of nature that designing for thermal movement alone yields a very serviceable approximation in most situations.

The art of joinery. 1–4: one-stage concrete panel joints with tooled surfaced sealant bead, bond breaker, and performed tubular back-up. Note beveled edges for fitting, water runoff, and sealant installation. 1 Recessed vertical butt. 2 Recessed horizontal butt. 3 Flush butt. 4 Recessed corner. 5–7: sealant deforms. 6 Mean temperature. 5 Winter: bead under tension. 7 Summer: bead under compression. 8, 9: two-stage concrete panel joints. 8 Vertical: neoprene tubular rain seal, sponge air seal. 9 Horizontal. 10–12, working joints and 13–15, nonworking joints in aluminum curtain walls. Illustrations courtesy of Prestressed Concrete Institute, 1–4 and 8, 9; Architectural Aluminum Manufacturers Association, 10–15.







## Technics: Caulking and sealants

If sealant is tailored to the joint, what will most sealants be like? In America: lean and tough. Unlike Europeans and many Canadians, we like to give our sealants a beating. To save time, simplify construction details, and reduce installation and maintenance to one-step operations, we design a one-stage joint that seals out air and water at a single point within the exterior building surface.

By contrast, the European two-stage joint divides these labors. A rail seal just within the building surface serves to deflect most if not all the water that washes down or is driven into the joint. Past this point is a pressure equalization chamber drained and vented to the outside to channel penetrating water back to the exterior. At the rear of the joint is an air seal.

What makes this sequential solution so appealing is its use of lower performance, lower cost sealants than we require. A fully exposed sealant is subjected to wet-dry cycles, UV radiation, and temperature extremes. As this is the American way, we demand a broader range of sealants from low modulus, low recovery caulking to high modulus, high recovery sealants.

Should we change our ways, there will be many already available sealants to assist us. Yet the prospects for proselytizing are not entirely good. Two-stage joinery requires careful detailing, fabrication, and installation to succeed. Sealants are not always so easily placed in the two-stage joint either. Worse, resealing becomes a difficult and expensive chore. Our sado-masochistic affair with sealants will probably continue for a long time.

### Bubble, bubble . . .

One needn't be a car fancier to notice that our most ostentatious cars contain many of the same humble ingredients used in more utilitarian models. The same can be said for sealants. Only the differences are far more critical between sealants than between cars.

Any sealant is compounded of a base plastic polymer and those additives that enhance or suppress its inherent properties towards a desired end. Base polymers establish the general sealant performance. How a sealant elongates, compresses, recovers, ages, weathers, and reacts with water, solvents, acids and alkalis, electricity, and temperature is largely the responsibility of the base polymer.

However, many of the same additives are mixed with different base polymers for appreciably different results. The architect soon learns to read the fine print. Mistakes are all too easy to make, and misused sealants can be as vengeful as operatic divas. In addition to its base polymer, a finished sealant may contain any number of fillers, plasticizers, curing agents, solvents, pigments, adhesion promoters, and thixotropic (non-sag) agents—a partial listing! And the chemical potpourri may still need the support of such vital accessories as primers, back-up materials, lubricant-adhesives, and release agents (bond breakers). While the industry does not expect the architect to appreciate the finer points of polymer chemistry, he should recognize what basic sealant additives and adhesives do for base polymers.

**Fillers** add bulk to a sealant. By lowering the percentage of costly base polymer in the finished product, they lower final

cost as well. They can also improve the sealant's performance by controlling consistency, reducing sag, and raising the modulus of elasticity. A sampling of fillers and their functions include: carbon black and ground silica for reinforcement, clays and calcium carbonate for control of consistency, and bentonite, asbestos fiber, and colloidal silica for thixotropy. (Bentonite is also important in sealing underground joints from additional water penetration.)

**Plasticizers** keep a sealant workable. They simultaneously lower the modulus of elasticity, increase ultimate elongation, and facilitate the addition of fillers through solvent action. They may also maintain sealant flexibility at low temperatures that can render many unworkable.

**Curing agents** cure a sealant. Their mechanisms vary with the formulations: oxidation, catalytic action, or other chemical means, absorption of atmospheric moisture, and solvent release through evaporation. High performance sealants generally cure through chemical action, directly or indirectly. As one-component sealants, they are mixed together with curing agents and restrained from reaction until the moment of use. The curing agent is often coated in a protective water soluble resin which atmospheric moisture dissolves to begin the reaction. As two-component sealants, they are mixed with curing agents just prior to use or mixed and frozen to prevent curing.

One-component sealants are ready to use but form a protective skin which can prolong the inward curing process. Two-component sealants cure at even rates throughout the bead section so that they are more attractive for use in wider joints. But the use of special mixing equipment on site may be unavoidable.

**Solvents**, like plasticizers, keep a sealant workable. They are avoided where possible because their eventual release through evaporation shrinks the installed sealant bead down to the percentage of solids quoted in the formulation. As a rule of thumb, higher percentages of solids or lower percentages of solvents indicate better quality sealants. Typical solvents: water, naphthas, toluene, and xylene.

**Pigments** color the sealant to match the substrate. Some also reinforce or soften as they color. Typical pigments include: carbon black, titanium dioxide, and various aluminum compounds.

**Adhesion** promoters and primers are internal and external agents that improve a sealant's adhesion to its substrate. Where the latter are used, their tendency to wet and cover the substrate means that a sealant actually adheres to a thin layer of primer. The choice of primer is determined by compatibility with both the sealant and the substrate.

**Back-up materials** control the depth of mastic sealant placed in a joint. Since the shape of a sealant bead influences its effectiveness under stress, the selection and installation of a back-up cannot be any less deliberate than the choice of sealant. Interactions can cause a loss of adhesion or the staining of the substrate. Among the successful materials used as back-up are: foams of neoprene (a registered DuPont trademark), urethane, and polyethylene, tubes of neoprene and rubber, cotton rope, jute, and cork and composition boards.

**Release agents** or bond breakers are placed atop the back-up material and elsewhere in joints where no sealant adhesion to the substrate is wanted. When a sealant bead is stressed, some of its surfaces must be free to deform.



Were they inadvertently bonded to the substrate, the additional load thus applied could rupture the sealant. For example, the top and bottom surfaces of a butt joint sealing bead must be free to "neck down" to parabolic deformation curves when stress is applied. Possible release agents are polyethylene film or tape, wax-backed tapes, and even masking tape in emergencies.

**Lubricant-adhesives** position preformed gasket seals and then hold them in place as the joint moves. Either or both functions may be performed by a single material. Various substances are used such as soaps or compatible sealants.

### Rubbery duckies

That wasn't so terrifying, was it? The next step in selecting



Close-up of elastomer in concrete joint. Courtesy of General Electric.

and installing a sealant is to distinguish sealants by their broad performance categories. The reader may be relieved to know there are but a few distinctions to consider at this macroscopic scale: mastics, gaskets, tapes, and specialties. We might say that sealants lie in their joints much as we lie in bed; some of us prefer to remain still while others drift around. So it goes with sealants.

All sealants can be pushed and pulled. Some enjoy it more than others, however. As we shall see, the ability to return to an original form when an applied load is removed can be as important for some sealants as the sheer ability to distort under stress is for others.

Elastomeric sealants, which include silicones, urethanes, and higher modulus polysulfides and polymercaptans, have a high degree of recovery of original form after removal of an applied stress. This particularly suits them for sealing working joints. Innumerable stress and relaxation cycles, manifested in butt joints by tension and compression forces and in lap joints by shearing stresses, are best sustained by sealants like these, which remain in a stressed state while deformed.

Their tenacity has its dangers, nevertheless. Because the elastomers have such resilient cohesiveness, their internal stress can build up at the risk of adhesive failure (loss of bond between sealant and substrate), spalling failure (tearing away of substrate where sealant cohesion is greater

than substrate cohesion), and the rapid propagation of tears (initiated by puncture, entrapped and abrasive dirt particles, and other destructive actions).

Deformable sealants, which include lower modulus polysulfides and polymercaptans, butyls, acrylics, latex caulks, and oil-based caulks, relax under stress. That is, they respond to short-term loading with instantaneous elasticity, but tend to creep or flow into new unstressed shapes under long-term loading. They are accordingly more appropriate to nonworking joints.

Unlike many elastomeric sealants, these formulations usually display better tear resistance. When they fail in tension or compression it is more likely to be due to internal inadequacy. Either the material is stretched and fails as a column would upon compression, or it is compressed and fails at a point close to its joint interface with the next tension cycle. Though stress relaxation tends to wrinkle the surfaces of deformable sealants, this is only a problem when the joint is visible to the public.

The mastics perform the bulk of sealant work. However, there are additional generic forms and specialties that have important roles to play. These are preformed gasket seals, preformed sealing tapes, and such specialties as neoprene-hypalon (a registered DuPont trademark), ethylene-propylene, styrene-butadiene rubber, polybutene, polyisobutylene, epoxies, and polyesters.

Preformed gasket seals made of high recovery elastomers like neoprene, vinyls, butyls, and silicones, can be rigid extrusions or foams. In either case, they are pre-compressed into the joint so that their attempt to relieve stress exerts force on the joint surfaces and forms a tight seal. Though they require close tolerances and tailoring to each joint—lest excessive relief of pressure loosens the fit and dislodges the gasket—need special adhesives to effect a field weld, and may experience some difficulty with leakage, they offer labor savings, efficient use of material, and long service life. Their uses include glazing, exterior panel joinery, and structural (supportive) glazing.

Preformed sealing tapes have been likened to gaskets as being more compliant preformed compression seals. These extruded ribbons of sealant come as resilient or non-resilient tapes. Resilient tapes are compounded of high molecular weight polyisobutylene or cured butyls and show moderate recovery and low cohesive and adhesive strengths. Nonresilient tapes contain polybutene or uncured butyl and have no substantial adhesive strength or recovery. Though they cannot handle working joints having any appreciable movement, tapes are extremely useful in glazing (sealing but not spacing the glass in the rabbet), sheet siding and roofing, and hidden wall joints.

As for the numerous specialty sealants, few generalizations about their performance are useful. While technical developments introduce new polymers and new combinations of familiar polymers to the market continuously, some of the specialties have been in use for quite some time. They generally have one or two outstanding properties which can be exploited in the right circumstances.

Most of us don't care to inspect the kitchens of our favorite restaurants. What about the test reports of our favorite sealants? If the outcome is satisfying, why not just leave the means well enough alone? A good sealant should be installed and then forgotten.



## Technics: Caulking and sealants

To the credit of the sealants industry, this is often possible. But only exhaustive tests that reflect every conceivable major environmental stress a sealant will encounter can validate any performance claims. The architect must be aware of at least some of the following test characteristics: modulus of elasticity; creep, stress, and recovery; cyclic tension and compression; adhesive strength; ultimate elongation; hardness; tear resistance; UV resistance; fire, solvent, acid and alkali resistance; aging; weathering; electrical insulation; water immersion, and more. A handful of the more important characteristics follow.

**Adhesive strength** measures a sealant's ability to stick to the joint interface. It is experimentally determined by such tests as tensile adhesion (bond extension), cyclic tension and compression, and peel adhesion, all means of stressing a sample to failure in tension and/or compression. Although the phenomenon is essential to a good sealant, its mechanism is not yet fully understood by researchers.

**Hardness** denotes a sealant's resistance to penetration. It is measured by a Shore durometer on a scale of 0 to 100, where 100 represents absolute resistance to penetration. Since the quality of hardness tends to rise with the modulus of elasticity, it is often regarded as a shorthand estimate of the sealant's modulus, or ratio of stress to strain in psi. Hardness also relates to a sealant's "stiffness" and general ability to absorb or resist movement. A soft-setting low modulus sealant can be expected to transfer little stress to the adhesive bond. This characteristic alone cannot describe how a sealant will perform in a working joint.

**Modulus** of elasticity as reported for sealants does not provide the decisive stress-to-strain profile that the architect associates with such other building materials as steel, concrete, and wood, whose plotted stress-strain curves manifest an initial straight line interval. The modulus curves of sealants curve continuously. Any modulus slope drawn to their stress-strain curves at a given value of strain must be considered arbitrary at this time.

**Creep**, stress relaxation, and recovery are interrelated phenomena. Creep measures a sealant's readiness to deform: instantaneous elasticity, delayed elasticity, and flow. Stress relaxation, on the other hand, measures the tendency of a sealant to readjust its internal stress while held in a fixed position of deformation. Of the three tests, recovery, expressed as the percentage a sealant returns to its original dimensions with the removal of an applied load, is preferred by the architect. Its measurements are considered the most accessible of flow characteristics for specific applications.

**Ultimate elongation** measures how much a sealant can stretch. High elongation is not a blessing in itself. Does the material recover well from extension? Does it place high adhesive stress on the substrate that could damage the substrate or the bond? That a sealant can be ultimately elongated by 500 or 1000 percent before failure in cohesion may mean nothing to the architect.

### Stick with us

Squeeze one and you've not squeezed all: the selection of a base polymer and its particular formulation is undoubtedly a very (may the reader forgive) sticky business. No au-

thoritative discussion of the available base polymers is possible here. A series of sketches follows for principal mastic sealants: oil-based caulks, butyl caulks, latex caulks, acrylic sealants, polysulfide sealants, urethane sealants, polymercaptan sealants, and silicone sealants.

**Oil-based caulks** were the first commercial sealants. Their market share is still very substantial; a slow but continuing market slippage to elastomers, butyls, and latex caulks does not signify their eventual disappearance from the building industry. Research and development continue to improve them.

They are formed from drying and non-drying oils like linseed, fish, soybean, tung, and castor that cure by oil oxidation. The better grades tolerate some movement and last for about 5 to 10 years. But they have almost no recovery. Their advantages include a high percentage of solids (nearly 100 percent) that virtually eliminates shrinkage, easy storage, handling, application, and painting over, good UV resistance, and a tendency to self-heal after cohesive rupture.

Architects use oil-based caulks for nonworking interior joints and exterior glazing, door and window frames, interior crack sealing, and copings among many uses. Both knife and gun grades are available. Priming is strongly advised only for wood substrates.

**Butyl caulks** were the postwar children of the World War II butyl rubber industry. They first appeared in the 1950s. Today their share of the nonresidential construction sealants market is second only to polysulfides in total volume.

A handful of major suppliers manufacture the basic butyl rubber for dozens of formulators. The butyl caulks that result are one-component, gun grade sealants containing 80 to 85 percent solids that are cured by solvent release. They do not elongate as much as could be expected of low modulus sealants—20 percent or less. However, they age and weather well, have good UV, oil, solvent, acid and alkali, and water immersion resistances, and display balanced adhesive and cohesive strengths that permit adhesion to most substrates. Two basic varieties are available, vulcanized high performance butyls and unvulcanized lower performance butyls.

Because of their versatility, butyls are marketed to the grateful home repairman under such novel labels as "driveway crack sealer" and "gutter sealer." Architects apply the butyls to coping and bedding joints, air seals in two-stage joints, exterior metal sash glazing, roofing reglets, and door and window perimeters among possible uses. They are not intended for traffic bearing joints.

**Latex caulks** invaded the market on the coattails of latex paints. Since the two are highly compatible, their successful commercial association is not surprising. Both offer a very attractive ease of application and clean up.

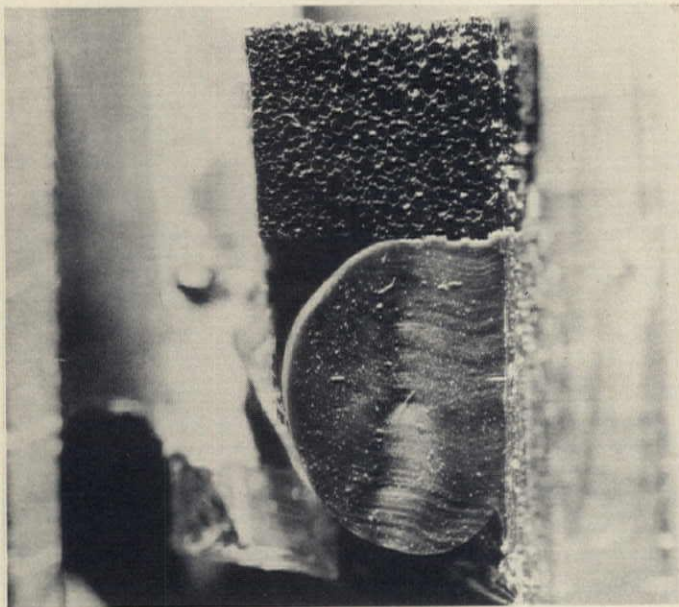
"Latex" covers many plastics suspended as latices. Generally latex caulks are based on a vinyl acrylic or a polyvinyl acetate. They are low modulus one-component, gun grade sealants that take up to 20 percent movement, have little recovery but good permanent flexibility, and skin over quickly for immediate painting. They bond well without primers to many substrates, including such damp surfaces as wood, concrete, and brick masonry. While they tolerate much intermittent water exposure, they should not be subjected to continuous immersion. Users criticize their shrink-



age, and manufacturers have made efforts to reduce it. Current latex caulks are about 80 percent solids.

They are not for heavy construction. Light construction users apply them to above grade joints, door and window perimeters, flashing, and glazing. The homeowner and small painting contractor are also enthusiastic about them as sealants and adhesives.

**Acrylic sealants** are solvent-based sealants prepared from thermoplastic acrylic polymers based on alkyl esters of acrylic and/or methacrylic acid. First introduced to the construction industry in 1960, they enjoy an excellent record in heavy construction. They are not so apt for smaller scale construction and home use.



Close-up of glazing sealant and back-up. Courtesy of General Electric.

The acrylics are one-component, gun grade, low recovery sealants with good resistance to many chemical solvents, excellent adhesion without priming, self-healing in cohesion failure, good resistance to water and salt spray, excellent UV resistance, and fine aging and weathering characteristics. They are rubbery. Yet they are not true elastomers due to rapid stress relaxation accompanied by poor recovery.

Glazing, control joints, brick and masonry pointing, and glass-to-mullion joints are good applications for acrylic sealants. Their low recovery is in fact not a detriment in these and other appropriate applications where high adhesion is important. However, acrylics do cure slowly. A persisting tackiness can lead to dirt pick-up and discoloration. In addition, acrylics require heating prior to extrusion to establish the gunnability of the thermoplastic base polymer.

**Polysulfide sealants** are the longest known elastomeric joint sealants in the building industry. Produced by Thiokol Chemical Company in 1929, this synthetic rubber was developed on an accelerated schedule during World War II (as were many other synthetic substances) and was offered for construction purposes as a sealant in 1952. (Thiokol still provides the sealants industry with its major share of liquid polysulfide polymer, as well as an important sealant quality control and certification program.) Polysulfide sealants are frequently regarded as the standard measure for sealant products in general.

They are available as flowing and non-sag one- and two-component formulations. Characterizing their properties is complicated by the large number of formulations prepared for a broad range of construction applications. They have good water immersion, organic solvent, oil, and chemical resistances, variable hardness (from almost 0 to greater than 50), and variable modulus, depending on fillers, cross-linking, and temperature, good aging and weathering characteristics, adequate UV resistance for glazing, balanced and excellent cohesive and adhesive strengths, and good tear resistance. Priming is recommended especially for working joints. Joint cleaning is a must.

The polysulfides are well known and respected in the building industry. They may not have as high a recovery as silicones or urethanes, but their tolerance of joint movements of close to 50 percent and many other positive attributes have made them highly useful to architects in the design of working joints. Among high performance sealants, they are competitive in price.

**Urethane sealants** are compounded from one of the most adaptable of plastics, the urethane polymer. Besides appearing in sealants in 1960, urethanes have been produced as foams, coatings, fibers, and rubbers for many phases of architectural work. The properties of urethane sealants are generally ranked between polysulfides and silicones.

High recovery, good workability, good adhesion, very good oil resistance, excellent UV resistance, very good aging and weathering resistance, excellent tear resistance, and variable hardness and modulus with very little creep or flow are some of the reasons they are being intensively studied by the industry. Both non-sag and self-leveling two-component formulations and non-sag one-component formulations are available. A certain delicacy in its handling lingers, however: mixing must be meticulously performed, slowly and uniformly for want of a diffusion cure, joints must be very clean and primed, and water can be troublesome during curing and in even continuous exposure after the curing process.

The urethanes compete well with polysulfides for the servicing of working joints. They can withstand traffic well because of their great potential hardness and a high capacity for abrasion. Their ability to adhere to glass and good UV resistance make them candidates for glazing work as well.

**Polymercaptan sealants** are based on mercaptan (sulfur-hydrogen group) terminated polymers similar to those of the polysulfides, anchored to polymer chains similar to that of the urethanes. This naturally suggests a performance profile that captures the best of polysulfides and urethanes. As they are relatively new in the industry, their competitive position in the high performance sealants market is not fully established yet. They are available as one- and two-component formulations, have good adhesion, and appear to endure aging and weathering well. Their modulus is similar to that of silicones and urethanes, and is thus higher than that of the polysulfides; their recovery is moderate, falling somewhere between polysulfides and urethanes.

**Silicones** have been known for over a century, but the first silicones for architectural sealants appeared rather late, in 1960. Since then, the high performance of the silicones has won them a small but growing share of the market. Their quality and consistency are very predictable; few manufacturers produce them, and those that do create fin-



# Comparative characteristics and properties of sealing compounds

<sup>1</sup> Cure time as well as pot life are greatly affected by temperature and humidity. Low temperatures and low humidity create longer pot life and longer cure time; conversely, high temperatures and high humidity create shorter pot life and shorter cure time.

<sup>2</sup> Resistance to extension is better known in technical terms as modulus. Modulus is defined as the unit stress required to produce a given strain. It is not constant but, rather, changes in values as the amount of elongation changes.

<sup>3</sup> Life expectancy is directly related to joint design, workmanship, and conditions imposed on any sealant. The length of time illustrated is based on joint design within the limitations outlined by the manufacturer, and good workmanship based on accepted field practices and average job conditions. A violation of any one of the above would shorten the life expectancy to a degree. A total disregard for all would render any sealant useless within a very short period of time.

<sup>4</sup> Material cost per lineal foot and applied cost per lineal foot are approximated by taking the average cost of many manufacturers' sealants and average labor, benefits, insurance costs, and thus formulating figures which are meant to serve as a guideline. Keep in mind there are many lower cost sealants, many higher cost sealants, as well as lower and higher labor rates throughout North America. Thus, differing costs and rates could affect these figures, either up or down.

Maslow, Chemical Materials for Construction, 1974.  
Courtesy of Structures Publishing Co.

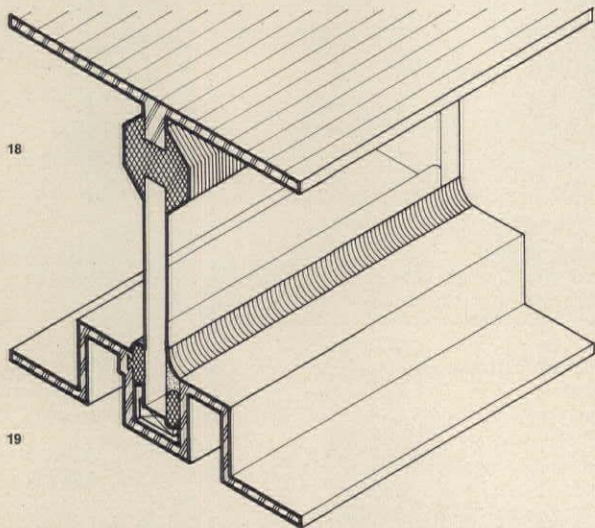
	Oil Base	Butyls		Acrylics		Polysulfides		Polyurethanes		Silicones
		Skinning Type	Non-Skinning Type	Solvent-Release Type	Water-Release Type	One-Component	Two-Component	One-Component	Two-Component	
Chief ingredients	Selected oils, fillers, plasticizers, binders, pigment	Butyl polymers, inert reinforcing pigments, non-volatile plasticizers and polymerizable dryers	Butyl polymers, inert reinforcing pigments, non-volatile plasticizers	Acrylic polymers with limited amounts of fillers & plasticizers	Acrylic polymers with fillers and plasticizers	Polysulfide polymers, activators, pigments, inert fillers, curing agents, and non-volatile plasticizers	Base: polysulfide polymers, activators, pigments, plasticizers, fillers. Activator: accelerators, extenders, activators	Polyurethane prepolymer, filler pigments & plasticizers	Base: polyurethane prepolymer, filler, pigment, plasticizers. Activator: accelerators, extenders, activators	Siloxane polymer, pigment & fillers
Primer required	in certain applications	none	none	none	none	usually	usually	usually	always	usually
Curing process	solvent release, oxidation	solvent release, oxidation	no curing; remains permanently tacky	solvent release	water evaporation	chemical reaction with moisture in air & oxidation	chemical reaction with curing agent	chemical reaction with moisture in the air	chemical reaction with curing agent	chemical reaction with moisture in the air
Tack-free time (hrs)	6	24	remains indefinitely tacky	36	36	24	36-48	36	24	2
Cure time days	continuing	continuing	N/A	14	5	14-21	7	14	3-5	5
Max. cured elongation	15%	40%	N/A	60%	not available	300%	600%	300%	400%	250%
Recommended max. joint movement, %	±3% decreasing with age	±7½%	N/A	±10%	±5%	±25%	±25%	±15%	±25%	±20%
Max. joint width	1"	¾"	N/A	¾"	⅝"	1"	1"	¾"	1"	⅝"
Resiliency	low	low	low	low	low	high	high	high	high	high
Resistance to compression	very low	moderate	low	very low	low	moderate	moderate	high	high	high
Resistance to extension	very low	low	low	very low	low	moderate	moderate	high	high	high
Service temp. range °F	-20° to 150°	-20° to 180°	-20° to 180°	-20° to 180°	-20° to 180°	-40° to 200°	-60° to 200°	-25° to 250°	-40° to 250°	-60° to 250°
Normal application temp. range	+40° to +120°	+40° to +120°	+40° to +120°	+40° to +120°	+40° to +120°	+40° to +120°	+40° to +120°	+40° to +120°	+40° to +120°	-20° to +160°
Weather resistance	poor	fair	fair	very good	not available	good	good	very good	very good	excellent
Ultra-violet resistance, direct	poor	good	good	very good	not available	good	good	poor to good	poor to good	excellent
Cut, tear, abrasion resistance	N/A	N/A	N/A	N/A	N/A	good	good	excellent	excellent	poor
Life expectancy	5 to 10 years	10 years +	10 years +	20 years +	not available	20 years +	20 years +	20 years +	20 years +	20 years +
Hardness Shore A	20-80	20-40	N/A	20-40	30-35	25-35	25-45	25-45	25-45	30-40
Cost/ft material (¾ × ½)	.02-.06	.04-.08	.04-.08	.08-.13	.04-.08	.14-.20	.11-.18	.12-.20	.10-.18	.25-.28
Cost/ft applied (¾ × ½)	.20-.40	.25-.45	.25-.45	.40-.65	.25-.45	.45-.85	.45-.85	.40-.75	.40-.75	.65-.85
Applicable specifications	FS-TTC-598B	TTS-001657	none	FS-TTS-230C 19-GP-5 (Canadian)	none	FS-TTS-230C Thiokol Bldg. Trade Spec. 19-GP-13A (Canadian)	FS-TTS-00227E USAS-A-116.1-1967 Thiokol Bldg. Trade Spec. 19-GP-3B (Canadian)	FS-TTS-230C 19-GP-15 (Canadian)	FS-TTS-00227E 19-GP-15 (Canadian)	FS-TTS-230C FS-TTS-001543



ished sealants rather than basic polymers for formulators.

Silica sand is the source of the clear, colorless silicone polymer used in silicone sealants. The base polymer is compounded with fillers, pigments, and other substances as one or two-component formulations of high or low modulus. They are almost 100 percent solids; shrinkage is insignificant. Their exceptional recovery is their principal distinction, however. It is accompanied by fine gunnability and workability, very stable viscosity, on-the-shelf stability, and excellent resistances to weathering, moisture, ozone, UV, and more.

But the magic costs money. More, in fact, than other quality elastomeric sealants whose properties, save for re-



Glazing joint details for aluminum curtain walls, outside to right. Top shows glass set in lockstrip gasket. Bottom shows glass set with exterior elastomer and neoprene roll-in rod and interior with dense neoprene gasket. Courtesy of Architectural Aluminum Manufacturers Association.

covery, are quite comparable with the silicones. If the architect has working joints that justify the premium cost of silicones, he must also accept such disadvantages as a relatively low adhesive strength for its given cohesive strength, low tear resistance, diligent and unavoidable substrate surface preparation and priming, and somewhat lower elongation properties. Nevertheless, it is a superb sealant for such exterior exposed joints as curtain wall panel joints, expansion joints, control joints, and metal-to-glass sealing. Particularly, the low modulus formulations seem to sustain joint movements of up to 50 percent easily.

#### What to do with the goo

Here you are, patient reader, caulk or sealant finally in hand, wondering what could go wrong next. Ask any architect or contractor. Plenty. But to be more optimistic, here is a brief introduction to the proper installation of mastic sealants, as suggested by the industry and by other independent specialists.

One- and two-component gun grade mastic sealants are installed using essentially the same techniques, for all their genuine differences in composition. The joint is prepared in the following sequence: cleaning, insertion of the back-up material, positioning of the bond breaker, and priming as recommended. When the primer is ready, the sealant is extruded from a caulking gun operated by hand or by air. The exposed sealant surface is then tooled to give the proper contour to the bead, force sealant in and against the back-

up material, and spread sealant against the substrate interfacing surfaces.

This is not a job for amateurs. Such factors as could easily be overlooked might include: failure to clean or prime a joint; too much or too little sealant; improper sealant bead shape for the type of joint (e.g., butt joints have an ideal shape factor which suggests that a bead should be approximately twice as wide as it is deep); improper weather conditions (seasonal extremes are to be avoided), and improper joint design or sealant selection. Much of the post-occupancy agonies of leaky joinery can be avoided by architects: do your designs respect both the state of technology and the art of construction? Can builders realistically handle the building details and sealants they are given?

One-component mastics are delivered in cartridges and pails. Cartridges are ready to use in hand guns; pails are for bulk loading guns. The one-component sealant is rather easy to use as it needs no mixing and stays workable for a much longer period of time after it is opened—hours or even a day or more.

Two-component mastics usually come to the site in pails that must be well blended together to effect a proper cure. Confusion is minimized by having sealant and curing agent packaged in clearly differentiated containers whose contents also differ in color. Various mixing devices are available for blending.

However, two-component sealants can be premixed at the factory, placed in cartridges, and frozen. At the site, these cartridges must be thawed and used promptly. By whichever path they are delivered, two-component sealants tend to become rubber sooner than one-component sealants. Installers usually have about two to three hours to apply them once mixed.

Tape and gasket installations are not without their details either. But a certain burden is removed simply because their essential compositions are factory made. There are still the joint preparation, placing, and splicing to be accomplished on site, however.

And so it goes. Sealants are certainly not the only chemical products an architect must specify. However, they can throw a perfectly monstrous tantrum when heedlessly selected, installed, and abused. They can effectively bring down your house. So it pays to know them individually; these strange little worms that hide in cracks and thereby seal the floodgates of architecture. [Roger Yee]

**References:** Architectural specifiers rely on such references as the Federal and Military Specifications in wording their own documents. As for standard reference materials, the reader is directed to the classic works by John Cook, *Construction Sealants and Adhesives*, 1970 New York, John Wiley & Sons, and by A. Damusis, *Sealants*, 1967 New York, Van Nostrand Reinhold Publishing Co. There is also a useful general discussion in a text by Philip Maslow, *Chemical Materials for Construction*, 1974 Farmington, Mich., Structures Publishing Co. Research and development on sealants continues vigorously within the industry, at the National Bureau of Standards laboratory for the Bureau of Building Technology in Gaithersburg, Md., and otherwise under the auspices of the ASTM Joint Committee on Sealants, C24. Readers can address inquiries to individual manufacturers.



# P/A Book Store

Described on the following pages are architectural books that are now available to you from leading publishers. Each has been selected for its usefulness to you in the various aspects of your professional practice.

Book orders will be forwarded to the publishers who will bill you direct, including all required state and local taxes. As purchases of professional and business publications are tax deductible, we suggest that you retain copies of the publishers' invoices.

## Reader Service

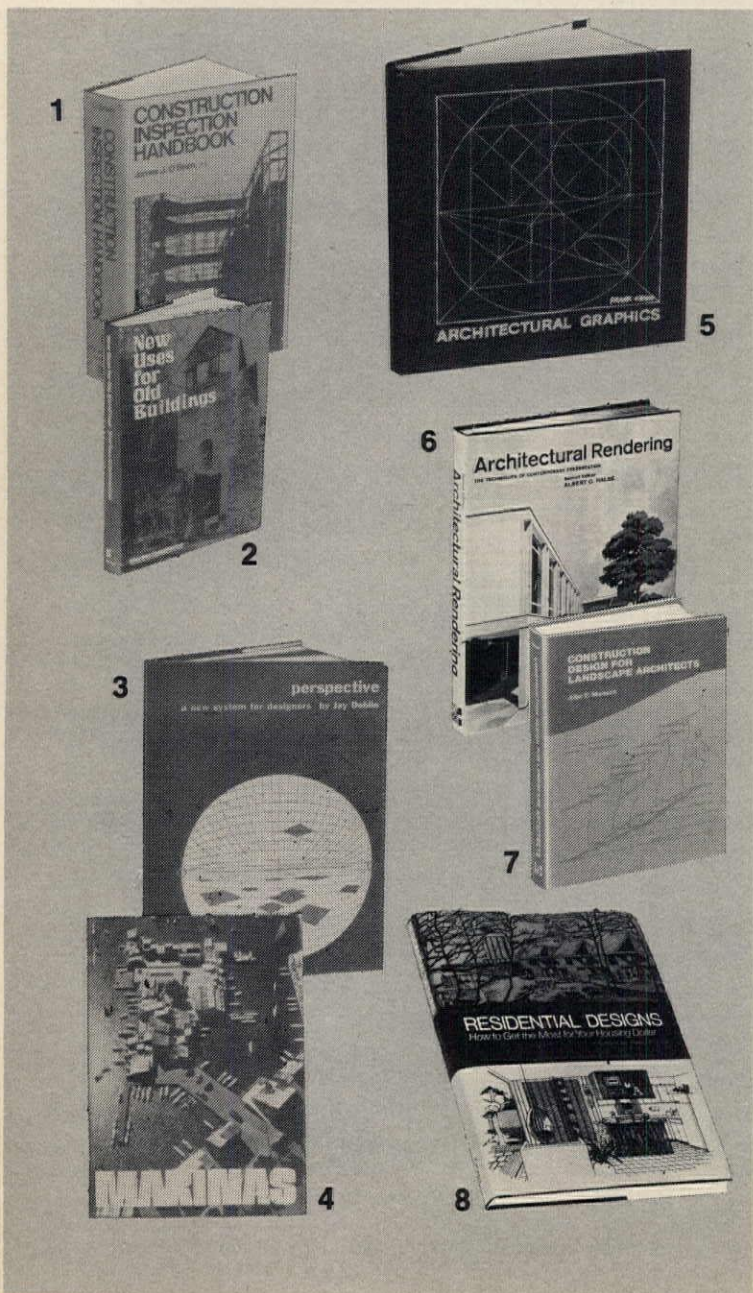
As a service to the profession, Progressive Architecture provides easy-to-use Reader Service cards in the back of each issue to speed your book

orders to publishers. To order books, simply circle the appropriate number or numbers on the card, add your name and address and drop in the mail. Postage is paid by P/A, and your order will be forwarded immediately to publishers for shipment to you.

## Subscribe to Progressive Architecture

To subscribe to P/A or to renew your subscription, check the appropriate boxes on the Reader Service card.

**We cannot accept book orders from outside of the United States unless they are accompanied by a money order.**



### 1 Construction Inspection Handbook

By James J. O'Brien, 512 pp., 140 illus., ... \$17.95

Outlines the duties, requirements and interests of the construction inspector. Describes the "whys" as well as the "how-tos" involved in observation of construction quality. Including handy checklists to work from, the book shows you exactly what should be reviewed and inspected.

**Circle B601 under Books.**

### 2 New Uses for Old Buildings

By Sherban Cantacuzino, 280 pp., illus., ... \$29.95

'New Uses for Old Buildings' presents an architectural concept whose time has come. There are many unused or under-utilized buildings existing today whose construction and detail — which can never be recreated — should be preserved. But today's increasingly sophisticated demands for standards and services, as well as tighter codes for fire and safety, make the conversion of an old building to a new one a formidable task.

**Circle B602 under Books.**

### 3 Perspective: a new system for designers

By Jay Doblin, 68 pp., illus., ... \$7.50

The first system developed to solve the kind of drawing problems encountered by designers. Eliminates the complex mechanical drawing that an architect normally employs in his traditional way of working with plans and elevations. The system offers a simpler method of visualizing any three dimensional object accurately and quickly.

**Circle B603 under Books.**

### 4 Marinas: A Working Guide to Their Development and Design

By Donald W. Adie, 336 pp., illus., ... \$39.95

Boating occupies an increasingly important position in the major growth industry of leisure. Because boating involves vast expenditures, and the need to conserve and use water resources wisely, these facilities demand high ex-

pertise in planning and design, which this up-to-date guide provides.

**Circle B604 under Books.**

### 5 Architectural Graphics

by Frank Ching, 128 pp., illus., ... \$9.95

This book presents graphic techniques available for conveying architectural ideas. Included is know-how on equipment and materials; drafting; architectural conventions for orthographic, paraline and perspective drawings; devices for rendering tonal/textural values and context; graphic symbols and lettering; freehand sketching and diagramming; and effective presentation of design proposals.

**Circle B605 under Books.**

### 6 Architectural Rendering The Techniques of Contemporary Presentation

By Albert O. Halse, 326 pp., illus., 2nd edition, 1972 ... \$24.50

This completely up-dated revision of the most widely used guide to architectural rendering covers all working phases from pencil strokes to finished product — and shows how to obtain the desired mood, perspective, light and color effects, select proper equipment and work in different media.

**Circle B606 under Books.**

### 7 Construction Design For Landscape Architects

By Albe E. Munson, 256 pp., illus., ... \$11.50

This volume is a complete guide to the preparation of a building site for construction or landscaping. The book was written for use as a rapid refresher for the practicing landscape architect as well as a handy reference guide to short-cut methods that will be of interest to the civil engineer doing site improvement plans.

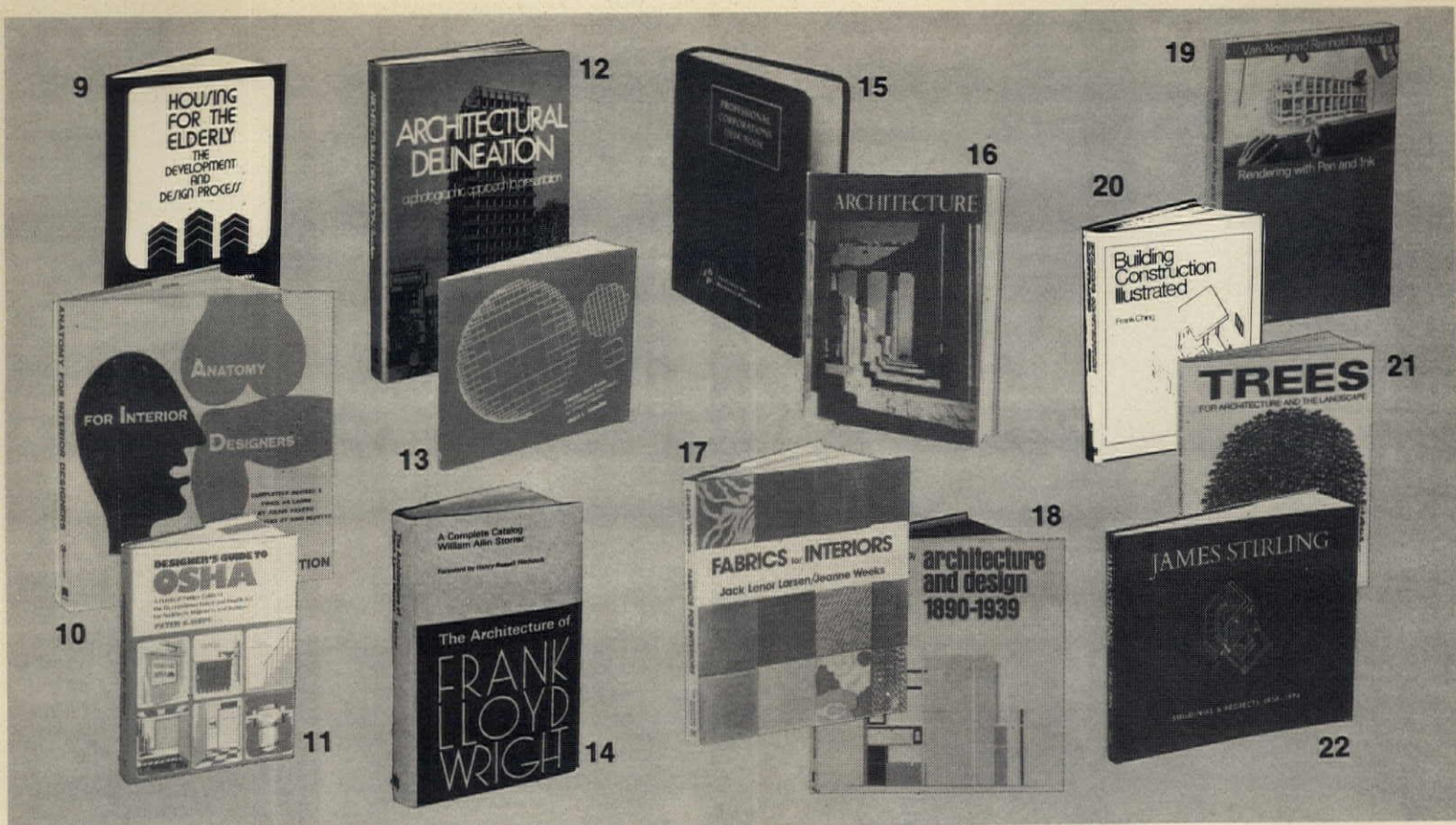
**Circle B607 under Books.**

### 8 Residential Designs

Edited by David E. Link, 192 pp., ... \$14.50

Hi-rise or low cost, condo, multi-family, custom or townhouse, here's a design book that shows you the very best in





every class. Complete collection of designs with over 200 illustrations featuring techniques used by some of the nation's leading builders, planners and designers.

**Circle B608 under Books.**

## 9 Housing for the Elderly

By Isaac Green, Bernard E. Fedewa, Charles A. Johnston, William M. Jackson and Howard L. Deardorff, 174 pp., illus., ... \$13.95

This book provides ready-to-use guidelines for producing high quality housing for older Americans. It shows the kinds of housing that meets the physical, social and perceptual needs of senior citizens. Emphasized are types of shelter, environments and services required by independent elderly tenants as well as those who need limited health and social services.

**Circle B609 under Books.**

## 10 Anatomy for Interior Designers:

Third Edition  
By Julius Panero,  
160 pp., illus., ... \$9.95

This is a comprehensive book of graphic standards for designers of interiors. It contains all the data the reader needs for designing around people, designing people in and designing things for people to use: the basis of design, residential and commercial applications, lighting, material on horizontal and vertical movement, storage space, furniture, windows, and doors.

**Circle B610 under Books.**

## 11 Designer's Guide to OSHA

By Peter S. Hopf, A.I.A.  
288 pp., illus., ... \$17.50

This practical volume translates OSHA's tens of thousands of words into easy-to-use drawings, diagrams, charts and graphs. With OSHA violations increasing, engineers obviously need a working guide to compliance with government job safety and health standards. This book fills that need. All material is presented in the same sequence as the OSHA regulations are written.

**Circle B611 under Books.**

## 12 Architectural Delineation A Photographic Approach to Presentation

By Ernest Burden, 288 pp.,  
illus., 1971 ... \$21.95

In this illustrated book, the author demonstrates a simple, flexible method of using photography to depict architectural projects in true perspective. Also how to create models for photography and how to put together an effective slide presentation.

**Circle B12 under Books.**

## 13 Energy and Form

By Ralph L. Knowles,  
198 pp., illus., ... \$27.50

This is a scholarly, theoretical book, a major work that will be used for years to come. The projects described concentrate on reducing environmental problems in individual or groups of buildings by controlling shape and structure, scale and surface, volume ratio, location and orientation, isolation and insulation.

Publisher will bill you direct before shipping any book.

**Circle B613 under Books.**

## 14 The Architecture of Frank Lloyd Wright: A Complete Catalog

By William Allin Storrer, \$11.95

The first fully complete catalog of every building designed by Wright that was actually constructed — 433 in all — includes a photograph of practically every one of them, and a descriptive note on the materials used, the plan, and the circumstances of construction.

Publisher will bill you direct before shipping any book.

**Circle B614 under Books.**

## 15 Professional Corporation Desk Book

Published by: The Institute for  
Business Planning, Inc.  
427 pp., illus., ... \$29.95

You see at a glance which form of practice is best for you — partnership or corporation. The Desk Book compares the opportunities and pitfalls of each. It singles out retirement planning, especially in light of the new Pension

Reform — the biggest single reason why so many professional men have opted for a corporate form of practice.

**Circle B615 under Books.**

## 16 Architecture

By David Jacobs,  
191 pp., illus., ... \$10.00

Stunning modern photographs juxtaposed with plans, cross sections, scale models and historic views form a vivid counterpoint to the authoritative text. A five-page chronology relates events in the history of architecture to other cultural and political developments.

**Circle B616 under Books.**

## 17 Fabrics for Interiors

By Jack Larsen and Jeanne Weeks,  
208 pp., illus., ... \$14.95

Completely geared to current trends, this book can make the difference between costly mistakes and successful, personalized interiors. It explains functions and requirements of fabrics for windows, furniture, walls and ceilings.

**Circle B617 under Books.**

## 18 Architecture and Design, 1890-1939

Edited by Timothy Benton and  
Charlotte Benton; with Dennis Sharp,  
264 pp., illus., ... \$12.50

This concentrated study of the rise of the Modern Movement in architecture and design covers the half century during which attitudes toward these practical arts were changing dramatically. Based solely on original source material, this book contains extracts from the writings of such influential men as: Adolf Loos, Henry Van De Velde, Hermann Muthesius, Walter Gropius, Le Corbusier, Mies van der Rohe, Bruno Taut, Louis Sullivan, and Frank Lloyd Wright.

**Circle B618 under Books.**

## 19 Rendering With Pen And Ink

By Robert W. Gill,  
368 pp., illus., ... \$6.95

This paper-back edition is a copiously illustrated guide to the techniques and methods of rendering, including sec-

tions on perspective, projection, shadow, reflections, and how to draw cars, ships, aircraft, trees, and human figures. The author also describes the very wide range of instruments and equipment currently in use.

**Circle B619 under Books.**

## 20 Building Construction Illustrated

By Frank China,  
320 pp., illus., ... \$17.95

Charmingly hand-lettered by the author, this book presents step-by-step techniques in residential and light construction. Containing over 1,000 drawings, it covers materials, finishes, fastenings, posts, trusses, slabs, wood joists, light steel/aluminum, structural calculations, planning and site work, cost estimating, and construction sequencing.

**Circle B620 under Books.**

## 21 Trees

By Robert L. Zion,  
168 pp., illus., ... \$12.95

An inexpensive paperback version of the book with virtually everything you want to know about using trees to complement the buildings you design. Both aesthetic and practical considerations are given, including tree characteristics, as well as cost considerations, planting, maintenance, rate of growth, and city and seashore recommendations.

**Circle B21 under Books.**

## 22 James Stirling

Introduction by John Jacobus,  
184 pp., illus., ... \$30

Although Stirling's fame rests primarily on his designs for academic institutions, his work covers a wide range of building types, from single houses in London to mass low-cost housing in Peru, from an urban redevelopment study for part of New York to commercial and industrial buildings. Close to 700 photos, drawings, plans.

**Circle B622 under Books.**



# Minimum fee schedules

Bernard Tomson and Norman Coplan

**The U.S. Supreme Court declares the legal profession's minimum fee schedules an illegal trade restraint, a matter of grave concern to the architecture profession.**

In the past few years the United States Justice Department has been challenging the legality of minimum fee schedules propounded by professional societies on the ground that these schedules violated the anti-trust laws of the United States. Many state and local chapters of the American Institute of Architects had issued recommended fee schedules for use by the profession in negotiating fees and it was, of course, of great concern whether these recommended schedules would be similarly challenged. In 1973, we reported on an action instituted in a Virginia Federal District Court challenging the minimum fee schedules of county and state bar associations in Virginia as violating the Sherman Anti-Trust Act ("It's the law," P/A, Dec. 1973). The District Court in this case (*Goldfarb v. Virginia State Bar*) ruled that the County Bar Association's minimum fee schedule, even though it be construed as not mandatory, was illegal price-fixing in violation of the anti-trust laws, since these minimum fees were generally accepted and adhered to by the members of the profession.

This case was appealed to the United States Circuit Court of Appeals, and the Appeals Court reversed the determination of the Trial Court on the ground that the practice of law is a "learned profession" immune from the application of the Sherman Anti-Trust Act. The Court further held that attorneys' activities did not have sufficient effect on Interstate Commerce to support jurisdiction of the anti-trust laws. This case was further appealed to the United States Supreme Court, and that Court recently rendered its determination, finding that the minimum fee schedule of the Virginia County Bar Association was an illegal trade restraint violating the anti-trust laws (*Goldfarb v. Virginia State Bar*, 43 L.W. 4723).

In the *Goldfarb* case, the petitioners, a husband and wife, had contracted to buy a house in Fairfax County, Virginia. Required to secure title insurance, they sought the assistance of an attorney for a title examination, and were quoted the precise fee suggested in a minimum fee schedule published by the Fairfax County Bar Association. Petitioners

then tried to find another lawyer who would charge less, but did not succeed. The petitioners brought a class action against the State Bar and the County Bar Associations (the State Bar was eventually found not liable because it was considered a state agency not subject to the anti-trust laws) alleging that the publishing of minimum fee schedules constituted price fixing in violation of the Sherman Anti-Trust Act. The United States Supreme Court, in holding the County Bar Association schedule illegal, stated the following:

*"The County Bar argues that because the fee schedule is merely advisory, the schedule and its enforcement mechanism do not constitute price fixing . . . The facts found by the trier belie these contentions . . . The fee schedule was enforced through the prospect of professional discipline from the State Bar, and the desire of attorney to comply with announced professional norms . . . the motivation to conform was reinforced by the assurance that other lawyers would not compete by underbidding."*

In response to the argument of the County Bar that any effect on interstate commerce caused by the fee schedules' restraint on legal services was incidental and remote and thus not covered by the anti-trust laws, the United States Supreme Court said:

*"As the District Court found, 'a significant portion of funds furnished for the purchasing of homes in Fairfax County comes from without the State of Virginia' and 'significant amounts of loans on Fairfax County real estate are guaranteed by the United States Veterans Administration and Department of Housing and Urban Development' . . . The necessary connection between the interstate transactions and the restraint of trade provided by the minimum fee schedule is present because, in a practical sense, title examinations are necessary in real estate transactions to assure a lien on a valid title of the borrower."*

Finally, the County Bar argued to the U.S. Supreme Court that Congress never intended to include the learned professions within the term "trade and commerce," the basis of the Sherman Anti-Trust Act jurisdiction; thus the sale of professional services is exempt from the Act. In rejecting this argument, the Court stated:

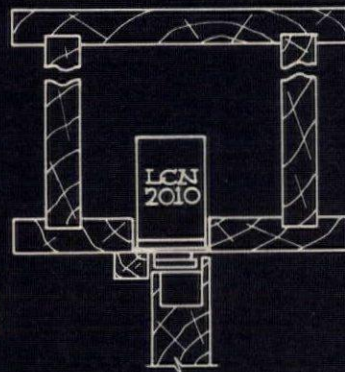
*"The nature of an occupation, standing alone, does not provide sanctuary from the Sherman Act . . . nor is the public service aspect of professional practice controlling in determining whether §1 (of the Anti-Trust Act) includes professions . . . Congress intended to strike as broadly as it could in §1 of the Sherman Act, and to read into it so wide an exemption as that urged on us would be at odds with that purpose . . . In the modern world it cannot be denied that the activities of lawyers plays an important part in commercial intercourse, and that anti-competitive activities by lawyers may exert a restraint on commerce."*

Although the Supreme Court pointed out that not every professional activity on the part of an attorney could necessarily be considered as affecting interstate commerce, or that every anti-trust concept applicable to business operations could apply to professional operations, it would appear that its opinion is broad enough to put into serious question the advisability of any profession maintaining recommended minimum fee schedules. □



# LCN SERIES 2010 CLOSER

## Effective, Concealed Door Control



Office Building for Jones Associates, Inc., Bellevue, Wa.  
Ridenour, Cochran & Lewis, Architects, Bellevue, Wa.

HIGHLIGHTED BY THE SURROUNDING COMBINATION OF MATERIALS AND TEXTURES, THIS DOORWAY DEMANDED A FULLY CONCEALED DOOR CLOSER. THE LCN 2010 SERIES, CONCEALED IN THE HEAD FRAME, IS REMOVED FROM THE HAZARDS COMMON TO FLOOR CLOSERS. THE 2010 HAS ALL THE ELEMENTS OF SUPERIOR DOOR CONTROL AND IS BUILT FOR YEARS OF TROUBLE-FREE OPERATION WITH LITTLE OR NO MAINTENANCE.

SEE SWEET'S, SEC. 8 OR SEND FOR CATALOG.



LCN CLOSERS, Princeton, Illinois 61356



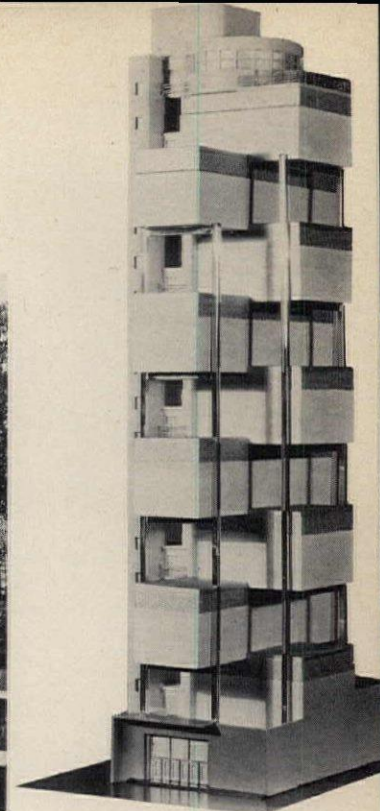
# Toward a Modern American Architecture

**George Howe: Toward a Modern American Architecture** by Robert A. M. Stern. New Haven and London, Yale University Press, 1975, 273 pp., 133 illus., \$25.

Reviewed by Walter Kidney, former associate editor of Progressive Architecture.

A study of George Howe is bound to have a fascination for the historically interested reader. Here was an established, even famous, Eclectic who abandoned the ways of design that made him successful in order to participate in the emerging modernism of the late 1920s. Perhaps only Gunnar Asplund offers a true parallel during the time of stress for architecture. Bertram Goodhue and Raymond Hood, two other famous American Eclectics who made such a conversion, did so much less radically and consistently, while other leading Eclectics who "did" modern from time to time, like Paul Cret and Royal Barry Wills, did so only because the particular job seemed to call for it. But Howe is almost unique, and one is tempted to see in him a kind of test-tube miniaturization of what was going on in the United States from 1927 or so on.

Because this is so, Robert Stern is to be commended for his self-restraint. George Howe's life was one that could have lent itself readily to an intellectually cheap treatment. Consider the themes: father Howe, rich, dying at just the right time for the purposes of the willful mother Howe, who wanted to raise her son the architect with complete and undivided control over his development. George Howe the infant cosmopolite, the popular, socially eligible Harvard dilettante. Howe the Beaux-Arts graduate, building for himself, at the age of 28, the mansion he had just designed as his senior thesis. Howe the Philadelphia gentleman, moving in the little world of Chestnut Hill. Then, Howe the military man, accompanying the diplomatic missions through the chaos of post-war Germany; disillusion setting in. Afterwards, a false normalcy: Howe the partner of Mellor, Meigs & Howe, back from the war to produce Cotswold and Norman farmhouses for the rich. But then, Howe suffering the *crise à quarante ans*, repudiating the past and searching for a way forward. Howe discovering the seminal

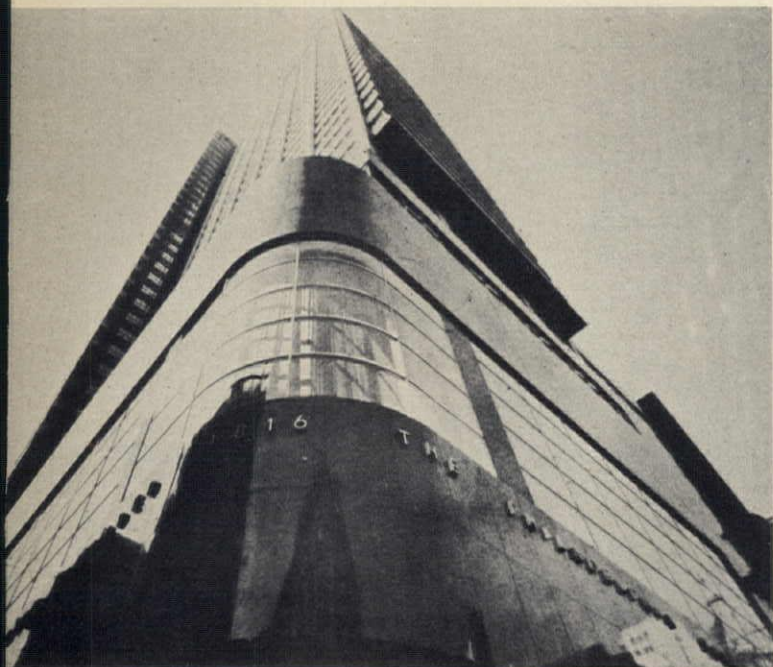


George Howe's High Hollow, Chestnut Hill, Pa., 1914-16 (above left). Howe and Lescaze, Museum of Modern Art, NYC, scheme 4, 1930. (above right).

words of Spengler concerning "a style which drives through walls into the limitless universe of space and makes both the exterior and interior of the building complementary images of one and the same world-feeling." Howe in pursuit of the world-feeling, reading on "the evolution of geometry, of number, of space-time concepts, of speculative science, of philosophy and history." Howe of the PSFS Building, of Fortune Rock. And finally, Howe the educator. All this, except for a certain lack of climax, reads like a novel about an architect rather than a true story, and the opportunities for conventional moralizing are many. But Stern, no friend to Eclecticism and with a long-standing interest in what happened in world culture around 1927, lets his own opinions show without laboring them, and for this let me repeat, he is to be commended. Nor does he indulge himself in the vice of many artist's biographers of putting his subject in a rat-race competition with his contemporaries for a nebulous thing called Greatness (Eakins was profound, therefore Sargent was shallow; Beethoven was a giant, therefore Mendelssohn was a pygmy). True, he shows that Meigs was brash and Lescaze facile and bounderish, but he can document these things. His treatment of Fuller, Kahn, Wright, Stonorov, and others is sober, and while his portrayal of the personalities at Yale in the 1950s is not exactly kind, it seems not to be unjust. In short, he has written an important biography without the routine retrospective polemics that so many such studies have had in the past. He is interested in Howe, but seems neither to see him as a hero nor to tout him as a scholarly property.

Howe seems to have been a very on-and-off designer. High Hollow, his own mansion, is traditional but not literalistic, fresh and sensitive, but I suspect that some day it will be seen as the best thing he, by himself, ever did. Oak Lane and PSFS are partly Lescaze's, and the tower of PSFS is tied together visually by vertical piers demanded by the bank's president. Howe's Eclectic work, as illustrated by Stern, seems curiously lifeless, inferior to that of the boorish Meigs. Square Shadows (a polemical, 1930s sort of name for a house, like Behrens' New Ways in England)



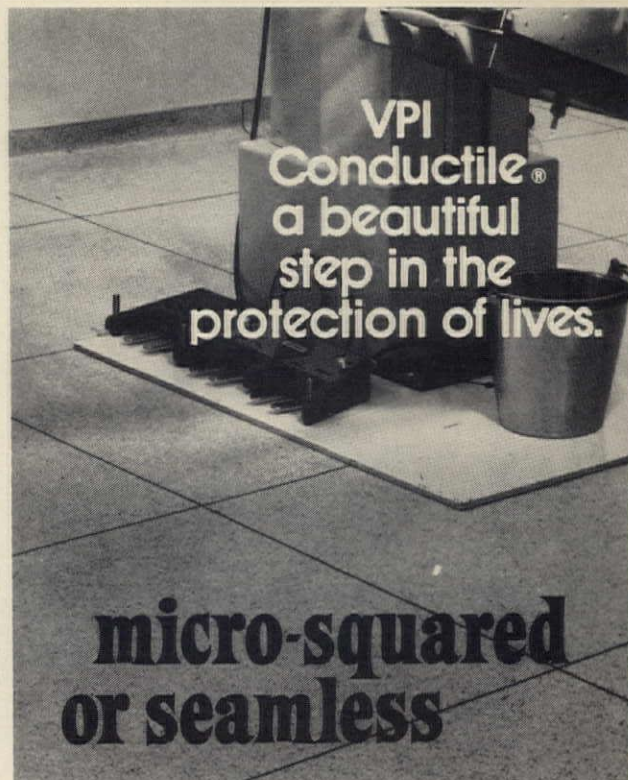


Howe and Lescaze, Philadelphia Saving Fund Society (PSFS), Philadelphia, Pa., 1931. Wide-angle view of curved corner of banking room from N.E.

uses materials well but seems dully virtuous in overall composition, and cannot the same be said for Fortune Rock? Furthermore, Howe was not a very industrious designer; it may be that his heart was not really in it, and that, like Ralph Adams Cram, he was fated to talk a good architecture rather than design it.

A sub-theme of the book is that of escape. Howe returned from a Germany that had gone from straightforward military homicide to homicide in the name of social progress, and Stern tells us that he wanted to forget Germany by designing Old World houses for businessmen who presumably wanted to forget the office—butch Marie Antoinettes who might even have a few ducks in the yard. Later, Howe recited a few acts of contrition over these houses, and even gave up High Hollow, "the badge of my servitude to romantic-classicism" (was he being serious when he said this?). But was it really escape to design these picturesque but essentially modest essays in fieldstone? I have seen many such houses in Chestnut Hill, and barring a few stylistic affectations they are exactly right for their setting. They are no more of an escape than civilized life itself is.

Howe's world-feeling appears to be that of scientists and professors in their professional capacities. But he was not really a science-worshipper. He was not a pure materialist, like Fuller, nor did he regard the machine as the great Form-Giver of his century. He held on to older ideas of the articulation of construction and plan, learned in his student years, and these really did more for his actual work than the world-feeling did, as far as I can see. It may be, in short, that he did not really know what he wanted, except to avoid excess, yet somehow to get away from "escape." Perhaps he was really a misfit in the milieu of architecture, not quite a designer, not quite a theorist, forced by his early upbringing to cast his abilities and desires arbitrarily into an architectural guise. Since he was such a success as chairman of the architecture department at Yale, it may even be possible that he should have been the president of a corporation, applying common sense to its problems and then commuting to some fieldstone house, Cotswold or not. □



Only VPI Conductile gives you a choice of exclusive Micro-Squared™ tiles or a seam-welded system for a completely seamless floor. Both provide positive sterile floor capabilities. Either way, Conductile can be coved up the wall to eliminate dirt and bacteria at the critical floor/wall juncture.

## design flexibility

A modern, subtle pattern accents four pleasing pastel colors and two new dark tones. Satisfies any decor or functional consideration.

## hospital proved

Conductile has earned the confidence of Architects and Hospital Administrators alike through a quarter-century of reliable performance. Equally applicable for new construction or renovation. Easily installed over most subfloors or existing floor coverings. Minimal interruption of surgical schedules. No copper strip grid required. Guaranteed to meet NFPA code for 5 years when installed under factory approved supervision.

51-299

Write for your new free catalog

**pioneers  
in safety**

**VPI**  
VINYL PLASTICS INC.  
Manufacturers  
of Quality Products  
Since 1946

3123 S. 9th ST., SHEBOYGAN, WIS. 53081 • PHONE 414-458-4664

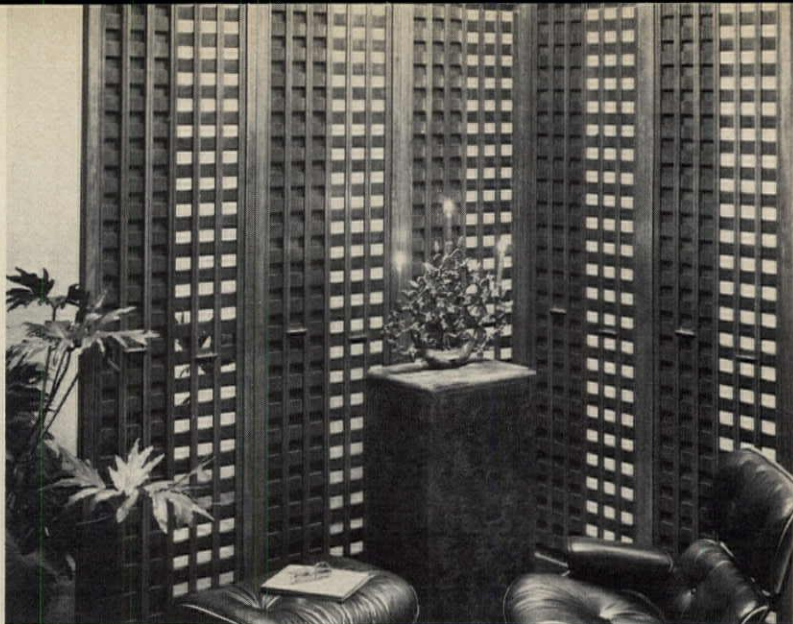




# Products and literature



Light strip



Hardwood grilles

**Light strip** requires only one outlet but as many lamps as desired may be used. It can be secured horizontally or vertically and lamps can be made to illuminate any pattern, in chase sequences, or in timed off-on modes. The 2" x 2" size allows surface mounting of a wide variety of candelabra or screw base incandescent lamps. It is available, in 2-, 3-, 4-, or 8-ft sections and in five different finishes. Sections can be butted together or joined at any angle with mitred corners. No external hardware is visible when unit is installed. Sockets are on 6-in. centers. Lighting Services, Inc.

Circle 101 on reader service card

**Hardwood grilles.** Magnetic positioning device permits infinite setting adjustments to control light, view, temperature, sound, privacy, and environment. Manufactured for use as office screens, conference partitions, room dividers, doors, shutters. Grilles are offered in sycamore, red oak, ash, maple, or walnut with finishes such as walnut, fruitwood, ebony, Spanish oak, or clear. Each grille is 1 1/2" thick plus frame. Standard widths are 14 1/2" or 26 1/4" with standard lengths of 48, 72, 80, or 96 inches. Other custom sizes may be ordered. Customwood Mfg.

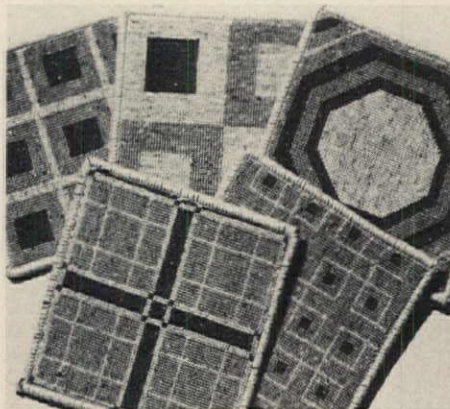
Circle 102 on reader service card

**Flame retardant sealer** is a rubber based, elastomeric bead sealant for all metal building construction. Some of its physical characteristics are that it has a burn rate per HLT-15 of 100; elongation at 77 degrees, 250 percent min.; percent solids, 99 percent; specific gravity, 1.5-1.7; shelf life, indefinite; consistency, ASTM 300 gm, C.P. at 77 degrees, 80-100 mm. Chemical Sealing Corporation.

Circle 103 on reader service card

**Rubber floor covering.** Said to be suitable for high traffic areas in educational, office, institutional, hospital, and shopping environments, Norament is a German made produce now available throughout the United States. It is manufactured in 100x100 cm squares in a choice of colors. Back side is finished with cones of 1mm or smooth. Installation is with neoprene adhesive. TransContinental Distributors, Division of The Slater Company.

Circle 104 on reader service card



**Carpet.** Custom woven jacquard Wilton Berber carpets have acrylic pile with anti-shock protection for static control. As many as four of the ten natural Berber colors available can be custom woven into one carpet in unlimited original designs. Pattern selections can also be made from the mill's design library. Philadelphia Carpet Company.

Circle 105 on reader service card

**Lock.** The interlocking of the pin tumblers in the cylinder is said to be the critical feature of the unit. These must not only be properly raised but also rotated to the proper angle before the lock will open. A special key that has angular cuts in it is necessary to open the lock. According to maker, the lock is said to be pickproof and highly resistant to drilling due to special hardened steel armor rods and shield. Emhart Corporation.

Circle 106 on reader service card

**Filing system.** Slimstak consists of two rows of files, one stationary and one mobile. Optional doors can be added. Other options include special shelves for storing tapes and film, and for holding data processing binders. Portable filing pockets can be removed with contents and taken to desk or conference room. Interstate Industries, Inc.

Circle 107 on reader service card

**Urethane foam** is formulated to provide a smooth surface over which the protective coating can be applied. Isofoam urethane can be froth-sprayed at low temperatures, enabling the contractor to work during some of the colder months when it is difficult to obtain satisfactory results by the spray method, states maker. Witco Chemical Corp.

Circle 108 on reader service card



**Armchairs.** Upholstered, tight seat round and square armchairs have bullnose-shaped fully exposed wood frames in a wide range of woods and finishes, including lacquers, and a wide choice of fabric and leather upholstery. Helikon Furniture Co., Inc.

Circle 109 on reader service card

**Energy control.** Basic unit includes a heating/cooling thermostat, plus clock programmer which can be set for any day/night ratio and reset to meet changes in heating or cooling requirements. Options include a night switch to automatically close outside air dampers during the energy-saving cycle and monitor lights to indicate clogged air filters, operating modes (heating or cooling), fan operation, and malfunctions in the heating or cooling systems. Can also operate remote thermostats located throughout a building. Maker states it can be programmed to skip days, such as weekends or holidays. Pilot Industries.

Circle 110 on reader service card

**Roof-deck insulation.** A fire-resistant, lightweight insulating concrete made from industrial waste paper fibers meets ASTM-E85 fire hazard test standards with ratings of flame spread 15, fuel contributed 0, and smoke developed 5. James Flett Organization, Inc.

Circle 111 on reader service card

[continued on page 90]





# CONDES

## Dallas Contract/Design Show

### January 14-16, 1976

Condes III, an exciting extension of the Dallas Market Center's innovative marketing philosophy into Contract/Design, will be introduced to contract buyers, specifiers and architects attending the winter's largest contract market in Dallas. Plan to attend this creative and informative show, featuring special events and programs. Shop the finest lines in contract, all displayed in the Contract/Design Center, 6th floor of the World Trade Center, and in many other fine contract/design showrooms in the Trade Mart, Homefurnishings Mart and Decorative Center.

Wednesday, January 14: 8:30 - 10:00 AM — 6th Floor, World Trade Center, Contract/Design Center

American Society of Interior Designers presents:  
 "Design Effects of Flammability Legislation"  
 William McCreery, Assistant to President, Stroheim-Romann  
 Lawrence Bratschie, Director of Marketing, Steelcase, Inc.  
 Norman DeHaan, FASID, 1975 ASID President, Moderator

12:00 Noon World Trade Club, World Trade Center  
 ASID/Contract Magazine co-sponsor  
 1st Annual Regional Contract and Design Award Luncheon

Thursday, January 15: 8:30 - 10:00 AM — 6th Floor, World Trade Center, Contract/Design Center

Institute of Business Designers presents:  
 "Designs for Energy Conservation"  
 Jordan A. Berman, IBD, Jordan A. Berman Assoc., Inc.  
 Sylvan R. Shemitz of Sylvan R. Shemitz & Assoc., Inc.  
 Bob Davis of Trane Company  
 Andre Staffebach, National President, IBD, Moderator

3:30 - 5:00 PM 6th Floor World Trade Center, Contract/Design Center  
 Office and Contract Furnishings Division, National Office Products Association presents:  
 "Return on Investment — Your Customer's Key to Justifying New Office Furniture Installations."  
 Jack Carp of Marketing & Distribution Resources, Inc.

7:00 - 12:00 World Trade Club, World Trade Center  
 IBD 2nd Annual CONDES Dinner Dance

Friday, January 16: 8:30 - 10:00 AM — 6th Floor, World Trade Center, Contract/Design Center

American Institute of Architects presents:  
 "Update on Contract Documents"  
 Alan B. Stover, Director, Documents Division, Professional Practice, American Institute of Architects  
 William S. Pulgram, President, Associated Space Design, Inc.

#### No Registration Fee

For hotel accommodations, write (do not call) the Housing Bureau of the Dallas Chamber of Commerce, 1507 Pacific Avenue, Dallas, Texas 75201, or call the Dallas Market Center toll free 1-800-492-6618 (within Texas) or 1-800-527-2730 (within continental United States). Courtesy DMC buses provide buyers with transportation to downtown and area hotels and motels during market. 7,600 free parking spaces, plus two 500 car garages.

Come early for the Winter Homefurnishings Market, January 11-16, 1976



## DALLAS MARKET CENTER

2100 Stemmons Freeway — Dallas, Texas 75207 — 214/748-6832

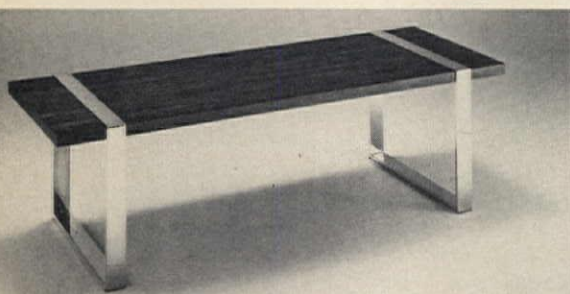
Trade Mart — Decorative Center — Market Hall — Homefurnishings Mart — World Trade Center — Apparel Mart



Products continued from page 88



Theater seating



**Strap tables.** Solid walnut butcher block tables feature supports of rectangular steel in mirror chrome or antique bronze. Tables are available in a variety of sizes to meet individual needs. Monarch Furniture Corporation.  
*Circle 112 on reader service card*

**Theater seating.** Chairs are floor attached or riser mounted, consisting of fully upholstered back and arms, and hinged, fully upholstered seat which returns to a 90 degree upright position. Automatic seat return gravity controlled. Frames constructed of steel tubing and finished in baked, black enamel. JG Furniture Company.  
*Circle 113 on reader service card*

**Carpet plate and cover.** Plastic plate, in colors, includes a separate split cover that converts to a dual-service cover for both high and low tension services. Molded from polycarbonate, the plate and cover are available in colors to match or blend with carpet. Split cover has molded cut-outs to accommodate telephone and power service cords directly from the concealed devices. Midland Ross.  
*Circle 114 on reader service card*

**Drafting paper.** According to maker, product is receptive to nearly every drawing medium yet it is erasable. Both sides are usable, it can be printed, and accepts typewriting, and is translucent enough for use in tracings and overlays. It will not discolor nor become brittle with age, is non-curling, anti-static, and resistant to solvents. Paper comes in sheets and rolls. Borden & Riley Paper Co., Inc.  
*Circle 115 on reader service card*

**Flexi-Curve.** A device that can be bent to correspond to any planar curve, according to maker. Composite construction includes a lead core, steel spring reinforcement, and PVC out cover. Sizes range from 12 in. to 36 in. Hunter Associates.  
*Circle 116 on reader service card*



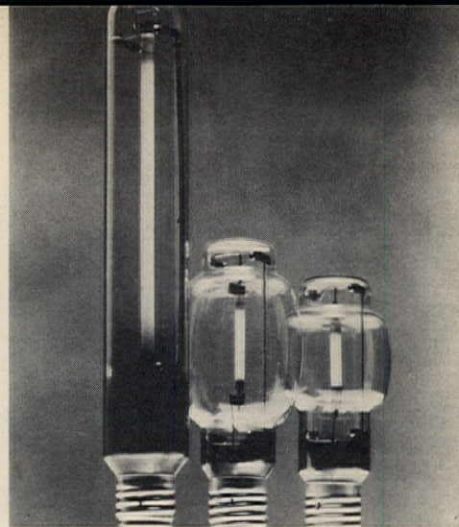
Pre-Columbian artifacts



**Door stops.** Made of anodized aluminum with a rubber bumper, stops come in a variety of lengths and anodized finishes. Series includes a stop that has a coat hanger feature built in. Vermaline Products Company.  
*Circle 117 on reader service card*

**Architectural idea file.** SYSTEM/A is a self-contained information retrieval system using keyword punch cards. The user selects whichever keyword cards best describe his architectural problem and simply stacks them on top of each other. The points at which open holes match on all cards identify all articles relevant to the search question. Digests of referenced articles are bound in volumes and numbered. Each SYSTEM/A digest volume covers four months of published articles, beginning with January 1974. Each four months, subscribers receive an additional digest volume and a new set of keyword cards covering both current and past material. It is designed for both practicing architects and researchers. Godex International, Inc.  
*Circle 118 on reader service card*

**Acoustical telephone booth** for indoor use with coin telephones has inner and outer shells of heavy steel with dark bronze baked enamel finish. Full acoustical treatment and perforated interior walls are backed by a heavy blanket of sound-absorbing material. Stainless steel interior is available on special order. It can be wall-mounted, pedestal-mounted back-to-back, or pedestal-mounted in clusters of four or six stations. Shelf is of tempered glass. Acoustics Development Corporation.  
*Circle 119 on reader service card*



High pressure sodium lamps



**Seating.** A fully upholstered base/frame holds single cushion of chair. Seat cushion is a foam and dacron wrap with buttons, which are repeated on the inside of arms and back. Comes in suede, smooth leathers, and fabrics. Marden Mfg., Inc.  
*Circle 120 on reader service card*

**High pressure sodium lamps** in 1000 w, 150 w, 100 v, 150 w, 55 v. units have been added to lamp line. All lamps require less than four minutes to stabilize following a cold start and one minute to restrike after interruption. All are equipped with a mogul screw base. GTE Sylvania Incorporated.  
*Circle 121 on reader service card*

**Pre-Columbian artifacts** are exact reproductions of the original pre-Columbian work, even to the patina reproducing the effect of centuries. Only by obtaining the matrix imprints of the molds by copying directly from the original figures in the National Museum of Anthropology was it possible to reproduce these objects exactly. The small collection is made up of reproductions from Tectihuacan, Monte Alban, Casa Grande, and Colima. The INAH brand is imprinted on the base of all pieces certifying as to the authenticity of each piece. An INAH certificate of reproduction explaining the original region, culture, and general characteristics of the reproduction accompanies each piece of work. Artiques, Ltd.  
*Circle 122 on reader service card*

**Metal interior panels** for use in industrial/commercial buildings and building renovations are available in 12-in. and 24-in. widths with depths of 1 1/2 in. Panels may be specified in plain or painted galvanized steel, or aluminum. In addition to six standard colors, a variety of other paint colors may be specified. Perforated acoustical panels or special embossments are available by special order. Crown Panels Co.  
*Circle 123 on reader service card*





**Office furniture.** Carpathian burled elm is contrasted with natural maple on the cabinets, panels, tables, and chairs in this collection. Cabinets may be free standing with panels or attached to existing walls. Tongue and groove construction provides wall to hold cabinets or shelves. Individual panels are secured into position with solid upper and bottom rails. Used free standing, the units are supported with side panels. Part of collection is oval desk/table of 11-in.-thick veneered Carpathian elm edged with solid maple which measures 96" x 42" but can be ordered in custom sizes up to 120 in. Standard U- or V-shaped table bases are available in polished chrome. Custom bases are also available. Upholstered club chair features laminated burled elm arm panels. Collection may also be custom ordered in walnut, rosewood, or veneers. OMNI. *Circle 124 on reader service card*

## Literature

**Roof decks.** 12-page 1976 brochure includes data on fire resistive characteristics, code approvals, and seismic design "U" factors and load span tables; technical drawings and specifications are also included. W.R. Grace & Co. *Circle 201 on reader service card*

**Electrostatic paper** is designed to give reproduction where permanent, transparent, reproducible second original copies are required. A specification list gives stock papers, matching machine numbers, thruput sizes and stock suggestions. Clearprint Paper Co. *Circle 202 on reader service card*

**Aluminum batten roofs.** Manufacturer has announced a 30-year warranty on its metal roofs, said to be the longest in the industry. Roof brochure or sample warranty is available from Overly Manufacturing Co. *Circle 203 on reader service card*

**Prefabricated walk-in coolers and freezers,** prefab refrigerated buildings, refrigeration systems, and accessories are described and illustrated in 28-page catalog. Architectural specifications for both walk-ins and prefab buildings are also included. Bally Case & Cooler, Inc. *Circle 204 on reader service card*

**Fire-retardant treated wood.** Brochure provides technical data on flameproof fire-retardant treated wood for wall, floor, roof, and ceiling assemblies. Also includes information on the pressure treating process, comparison to metal construction, specifications, standards and approvals, and diagrams of systems using fire-retardant treated wood. Osmose Wood Preserving Co. *Circle 205 on reader service card*

**Sprayed fireproofing** is described in 8-page brochure which contains recommended guide specifications, physical properties, and data on applicable fire ratings for columns, beams, floors, and roofs. W. R. Grace & Co. *Circle 206 on reader service card*

**Aluminum construction products.** The 1976 catalog includes details of gravel stops, reglets, roof expansion joints, coping, fascia panels, and more. Also includes specifications and scale drawings. W. P. Hickman Co., Inc. *Circle 207 on reader service card*

**Construction sealant.** A revised edition of sealant comparison chart lists the properties of silicone and non-silicone sealants and gives information on acrylic, polysulfide, and polyurethane sealants. Among properties listed are gunnability, tack-free time, weatherability, adhesion, life expectancy, and ability to absorb dynamic movement. General Electric Co. *Circle 208 on reader service card*

**Plywood Commercial/Industrial Construction Guide** is a 56-page booklet that illustrates systems which range from on-site construction to shop-fabricated components, includes span tables for roof systems, photos and data on roof deck applications as well as special systems and materials such as preframed panels, open web joists, box beams, roof diaphragms and long span, curved panel and folded plate roofs. Sidings, sheathing, shear walls, and the single wall system are covered. Basic information on subflooring, underlayment, and glued floor system is included. The American Plywood Association. *Circle 209 on reader service card*

**Multi-purpose corner bead.** Designed for use with drywall and one-coat veneer plaster, this steel bead is said to eliminate the need for conventional metal corner beads. Bead applies with staples, nails, or clinch-on tools. Galvanized to resist rust, it features expanded 1 1/4-in.-wide fine-mesh flanges with tapered edges to prevent chattering and can be used with ready-mixed or powder joint compounds. Request brochure CS-10. United States Gypsum Company. *Circle 210 on reader service card*

**Spray-on cellulose insulation.** Catalog follows exact guidelines which coincide with the stages of the product selection process in construction, presents the information units in proper sequence. Product provides thermal resistance, controls condensation and corrosion, and absorbs sound. It is available in most colors, has a carpetlike texture, is noncombustible, and bonds to wood, concrete, glass, steel, galvanized metals and all other common construction materials. National Cellulose Corporation. *Circle 211 on reader service card*

**Railing.** A full-color, 40-page catalog has component parts color coded for easy metal reference of aluminum, bronze, stainless steel, and plastic. All components are diagrammed and accompanied by a complete listing of weights and dimensions. Updated catalog also includes engineering data. Julius Blum & Co., Inc. *Circle 212 on reader service card*

**Exterior paneling system** combines a finished interior surface, thermal insulation, and weathertight exterior in one panel, is structurally strong enough to carry wind and snow loads without girts or purling at spans up to 12 ft, according to maker. Panels are designed to slip together once top and bottom retainer channels are in place to provide a weatherproof enclosure with no exposed fasteners. A wide variety of colored and textured aluminum or steel facings is available in stock, special, or matching colors. Complete catalog and technical information is available from W.H. Porter, Inc. *Circle 213 on reader service card*

**Water base coatings.** Types of coatings the 16-page booklet describes are acrylic-epoxy, high gloss enamel, inhibitive metal primers, enamel undercoater, acrylic latex stains, and interior satin varnish that have been formulated for commercial, industrial, institutional, and residential uses. Request booklet *Eight New Water Base Coatings*. PPG Industries, Inc. *Circle 214 on reader service card*

**Hardwood Plywood manual** provides a compilation of the wall paneling products, includes name of the plant in which follow-up inspection service is provided, the type of listing, i.e., flamespread, structural, description of products, and where applicable, the actual flamespread, smoke, and fuel contribution values obtained by testing at laboratory. Manual is intended to provide a quick-reference identification of companies manufacturing hardwood plywood wall paneling conforming to the flamespread and structural requirements of local, state, and federal building construction codes. Hardwood Plywood Manufacturers Association. *Circle 215 on reader service card*

**Architectural coating.** A four-page color chip brochure presents the color line of Fluorpon, a fluorocarbon architectural coating said to require little or no maintenance. Material can be coil coated for steel or aluminum building panels, fascia, and shingles, and it can be spray coated on aluminum panels, louvers, trim, and extrusions. DeSoto, Inc. *Circle 216 on reader service card*

**Aluminum.** A 24-page full-color brochure, *Aluminum in Architecture*, describes sulfuric acid and color anodized aluminum. Technical data on the integral-color hardcoat anodizing process is also included. Kaiser Aluminum & Chemical Corp. *Circle 217 on reader service card*

**Electric heating.** Full-color, 48-page catalog shows complete line of electric heating products for commercial, industrial, and residential use. Included are specifications and drawings of installation. Emerson Electric Co. *Circle 218 on reader service card*



# Annual index January- December 1975

## Acoustics

Some sound advice: Musical acoustics (Nov.), pp. 54-63.

## Applied research

Parables of wise and foolish children (jury comments P/A awards) (Jan.), pp. 72-73.  
Improving city streets for use at night, Norfolk, Va., P/A first award (Jan.), pp. 74-75.  
Housing for the Elderly Development Process, Mich., P/A award (Jan.), pp. 76-77.  
Planning for Cardiac Care, a study at the Univ. of Mich., P/A first award (Jan.), pp. 78-80.  
Ambulatory Care Services Model, Ph 2, State Univ. of N.Y. at Buffalo, P/A first award (Jan.), p. 81.  
Evaluation of SEF Study of Systems Bldg., Toronto, Can., P/A cit. (Jan.), p. 82.

## Architecture

Introduction: The 22nd awards program (Jan.), pp. 42-43.  
Architectural design: Agreeing to disagree (jury comments P/A awards) (Jan.), pp. 44-45.  
HHPA's USA: (Hardy Holzman Pfeiffer Assocs.) (Feb.), pp. 42-59.  
Skyscraper style: Art Deco architecture of the 1920s is re-evaluated and illust. (Feb.), pp. 68-73.

**Concert halls** (see performing arts structures)

## Cultural facilities

Of nature and modernity: Native American Center, Minneapolis, Minn. (Oct.), pp. 66-69.  
HHPA's USA: Artpark, Lewiston Artpark, Lewiston, N.Y. (Feb.), pp. 46-49.  
Street smarts: Arts for Living Center: Henry Street Settlement, New York (Nov.), pp. 64-70.

## Editorials

737 submissions in search of recognition (Jan.), p. 41.  
Nonmonumental achievement (Feb.), p. 41.  
The museum (Mar.), p. 41.  
Revival of historical allusion (Apr.), p. 59.  
Energy imperatives (May), p. 45.  
Recovery architecture (June), p. 7.  
Architects and their public (July), p. 6.  
P/A's jury, your entries (Aug.), p. 6.  
Architecture and magazines (Sept.), p. 7.  
Urban prospects (Oct.), p. 7.  
Blessing the Beaux-Arts (Nov.), p. 7.  
To better days (Dec.), p. 7.

## Educational facilities

Refugee Road/Noe-Bixby Road Elementary School, Columbus, Ohio, P/A award (Jan.), pp. 48-49.  
East Bank Bookstore/Admissions and Record Facility, Univ. of Minn., Minneapolis, P/A award (Jan.), pp. 52-53.  
Renovations and remodeling Rocky River H.S., Rocky River, Ohio, P/A cit. (Jan.), p. 63.  
James L. Jones Alternative Learning Center, Los Angeles, Calif., P/A cit. (Jan.), p. 64.  
Main Library Addition, Ohio State Univ., Columbus, Ohio, P/A cit. (Jan.), p. 65.  
HHPA's USA: Robert G. Olmsted theater, Adelphi Univ., Garden City, N.Y. (Feb.), pp. 42-45.  
Images for education: Wharton Graduate Center, Phase 1, Vance Hall, Univ. of Pennsylvania, Phila. (Apr.), pp. 62-65.  
Between town and gown: Student Union, State Univ. College, Plattsburgh, N.Y. (Apr.), pp. 66-71.  
A re-presentation: Foundation Building, Copper Union, New York (July), pp. 50-57.  
Introduction: Beds of Academe (Aug.), pp. 35-36.  
Student's village: Chandler Village, Worcester State College, Mass. (Aug.), pp. 37-41.  
Rust City: Brockport College apartments, Brockport, N.Y. (Aug.), pp. 42-47.  
Berkeley bravado: Rochdale Village, Univ. of Calif., Berkeley (Aug.), pp. 48-51.  
In Harvard's Yard: Canaday Hall, Harvard Univ., Cambridge, Mass. (Aug.), pp. 52-55.  
Interior architecture: Pieceable kingdom: Univ. of Mass. (Aug.), pp. 56-59.  
Judicious juxtapositions: Hampshire College Recreational Facility, Amherst, Mass. (Oct.), pp. 86-91.  
Tilt to the river: Salanter-Akiba-Riverdale Academy, Bronx, N.Y. (Dec.), pp. 66-69.

## Energy

Chopping energy costs: Children's Hospital of Philadelphia, Pa. (May), pp. 46-53.  
Brother, can you spare a dyne?: energy policy (May), pp. 54-59.  
Sunstokers and windbaggers: Solar and wind energy (May), pp. 60-67.  
By all means: Stillman White Brass Foundry, Providence, R.I. (May), pp. 68-75.  
Ultimately, a flower barge: Center for Applied Computer Research and Programming, Mexico City (May), pp. 76-79.  
Waste not, watt not: Atlantic-Richfield Eastern Area Headquarters, Phila., Pa. (May), pp. 80-83.  
Energy bibliography (May), p. 84.

## Hospitals

Chopping energy costs: Children's Hospital of Philadelphia, Pa. (May), pp. 46-53.

## Housing

House, Miami, Fla., (Remmert-Koolhaas-Laurinda-Spear), P/A award (Jan.), pp. 46-47.  
Communitas, a residential & commercial development, Jefferson Cty, Colo., P/A award (Jan.), pp. 50-51.  
Residence, Fairfax, Va., (MLTW/Turnbull), P/A award (Jan.), pp. 54-55.  
Davids' Plaza, townhouses/shops, Chicago, Ill., P/A award (Jan.), pp. 56-57.  
Findley Place Housing Development, Min-

neapolis, Minn., P/A cit. (Jan.), p. 60.  
Oceanfront Condominium, Ocean City, Md., P/A cit. (Jan.), p. 62.  
From Piano to forte: Three old industrial bldgs. converted to new uses (Feb.), pp. 60-67.  
Towards an architecture of symbolic assemblage: Burns residence, Los Angeles, Calif. (Apr.), pp. 72-77.  
Where are we now, Vincent Scully?: Lang residence, Washington, Conn. (Apr.), pp. 78-83.  
Optical allusions: Gothic revival Victorian house, Woodstock, N.Y. (Apr.), pp. 84-87.  
Semantic distinctions: Two house additions (Claghorne and Alexander), Princeton, N.J. (Apr.), pp. 88-91.  
One point of view: Charles Moore house, Essex, Conn. (Apr.), pp. 92-93.  
Douglas House: Harbor Springs, Mich., by Richard Meier (July), pp. 38-45.  
This side of Habitat: Roosevelt Island Housing Competition, New York City (July), pp. 58-63.  
Introduction: Beds of Academe, (Aug.), pp. 35-36.  
Student's village: Chandler Village, Worcester State College, Mass. (Aug.), pp. 37-41.  
Rust City: Brockport College apartments, Brockport, N.Y. (Aug.), pp. 42-47.  
Berkeley bravado: Rochdale Village, Univ. of Calif., Berkeley (Aug.) pp. 48-51.  
In Harvard's yard: Canaday Hall, Harvard Univ., Cambridge, Mass. (Aug.), pp. 52-55.  
Interior architecture: Pieceable kingdom: Univ. of Mass. (Aug.), pp. 56-59.  
The Road to Xanadu and beyond: Taller de Arquitectura, Barcelona, Spain (Sept.), pp. 68-83.  
Astle's castle: Myott Park housing, Omaha, Neb. (Oct.), pp. 70-73.  
College town: Joseph Ellicott Complex, State Univ. of New York at Buffalo (Dec.), pp. 66-69.

## Interior architecture

From piano to forte: Three old industrial bldgs. are converted to new uses (Feb.), pp. 60-67.  
The art of high art: The context in which art is displayed provides clues to its message (Mar.), pp. 62-67.  
One point of view: Charles Moore house, Essex, Conn. (Apr.), pp. 92-93.  
Waste not, watt not: Atlantic-Richfield Eastern Area Headquarters, Phila., Pa. (May), pp. 80-83.  
Two by four: Two offices: Charter Atlantic by Potter/Williams and TransAmmonia by Gwathmey Siegel, New York, N.Y. (June), pp. 66-73.  
Mother never told me: bathing environments, by Leonard Koren (July), pp. 46-49.  
Pieceable kingdom: Univ. of Mass. (Aug.), pp. 56-59.  
From the folks who gave you 20-20 vision: A media studio and a kitchen by Ant Farm (Sept.), pp. 64-67.  
Up, up and atrium: Transformation of a warehouse, Minneapolis, Minn. (Oct.), pp. 74-78.  
Design for the corporation (Oct.), pp. 80-85.  
Theater in the raw, Allegheny, Pa. (Nov.), pp. 52-53.  
Some sound advice: Musical acoustics (Nov.), pp. 54-63.  
Off on a tangent: Gilman Paper Co. offices (Dec.), pp. 62-65.

**Law** (Bernard Tomson and Norman Coplan)  
Underestimating building costs (Jan.), p. 90.  
[continued on page 94]



Look into **LP**  
Replacement  
**WINDOWS**

**Immediately  
CUT COSTS!**  
Heating/Cooling  
Cleaning/  
Maintenance!

LP windows mean savings... top quality plus custom fit for any building... without disturbing wall finishes. LP windows never need painting or maintenance, sash tilt-in for easy glass cleaning from inside — more savings!

The added economy of insulating glass is available for every style window... reduces heating and cooling costs and deadens outside noise.

See Sweet's File 8.15/L0 or Write today for all the facts

**LP** Louisiana-Pacific  
**Weather-Seal Division**  
Commercial Products: 324 Wooster Rd. N.  
Barberton, Ohio 44203 216/745-1661

Send for free color brochure complete with specifications



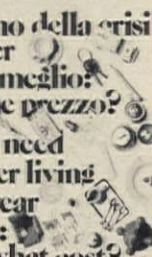

Circle No. 326, on Reader Service Card

# ABITARE

is the authentic journal of international contemporary design. Published in Italy ten times a year and printed in both English and Italian, each issue offers more than two hundred pages of unique and complete coverage from all over the world.

## ABITARE

*Nell'anno della crisi tutto per abitare meglio: ma a che prezzo?*  
**All you need for better living in this year of crisis: but at what cost?**



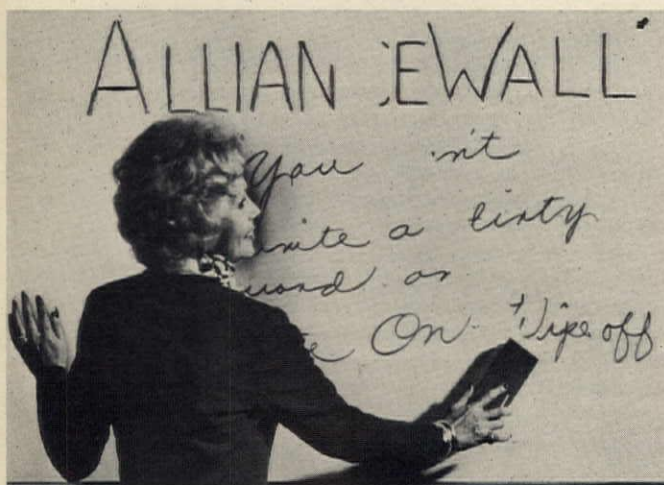
**ABITARE** is a must for all architects, home builders, space planners, furniture-lamps-accessories mfrs. and everybody interested in a better living environment. Even the advertising is an education in modern design and materials.

Send your \$25 check (1 year — 10 issues) to:

**ABITARE**  
OF AMERICA  
6725 Allott Avenue  
Van Nuys, CA 91401  
or call (213) 994-4462

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_  
State \_\_\_\_\_ Zip \_\_\_\_\_

Circle No. 342, on Reader Service Card



## You Can't Write A Dirty Word With AllianceWall's Rite-On, Wipe-Off System

Specially treated porcelain-on-steel panels and dry marker pens are combined to create a completely DUSTLESS WRITING SYSTEM. Writing dries instantly. Can be erased with a dry cloth or felt eraser. Laminated to low-cost gypsum board, AllianceWall Rite-On, Wipe-Off panels are fireproof, inexpensive to install and maintenance free. Panels double as bulletin board when used with miniature magnets. Also make excellent projection screens. Can be used with any partition system. No special lighting required. Writing surface is guaranteed for 50 years.

**AllianceWall**  
CORPORATION  
BOX 247  
ALLIANCE, OHIO 44601

Manufacturing plants in Alliance, Ohio; Okmulgee, Oklahoma; Genk, Belgium and Odense, Denmark.

Circle No. 310, on Reader Service Card

## Graphics in wood...

...for interior and exterior applications is just one of the unique things we can do with our exclusive Graphic Blast® process. We can transform any typeface or design which can be drawn in black and white into a permanent image in wood, plastics, metals, glass, fiberglass, stone, even individual bricks. Contact us for information and a full review of our unique services.



# BEST

Best Manufacturing Company  
3214 Troost  
Kansas City, Missouri 64109  
(816) 531-6611

Circle No. 315, on Reader Service Card



## Annual index continued from page 92

Malpractice claims (Mar.), p. 82.  
Malpractice actions and the statute of limitations (Apr.), p. 110.  
Practicing architecture in the U.S.S.R. (May), p. 100.  
Bidding documents (July), p. 85.  
Discriminatory land use regulations (Aug.), p. 74.  
Discriminatory land use regulations—part II (Sept.), p. 98.  
Lifetime liability limited (Oct.), p. 96.  
Court denies challenge to zoning ordinance (Nov.), p. 86.  
Minimum fee schedules (Dec.), p. 84.

### Mixed-use buildings

Microcosmos of urbanity: Introduction to mixed-use bldgs. (Dec.), pp. 37–38.  
The Galleria: New York, N.Y. by David Specter with the Office of Philip Birnbaum (Dec.), pp. 39–43.  
Olympic Tower: New York, N.Y. by Skidmore, Owings & Merrill (Dec.), pp. 44–49.  
Water Tower Place: Chicago, Ill. by Loebli, Schlossman, Dart, Hackl and C.F. Murphy Associates (Dec.), pp. 50–51.

### Museums

Museums as monument: Hirshhorn Museum and Sculpture Garden, Washington, D.C. (Mar.), pp. 42–47.  
Too little from Tange: Minneapolis Institute of Arts, Minneapolis Society of Fine Arts Park, Minn. (Mar.), pp. 48–51.  
Varied reflections in Houston: Contemporary Arts Museum, Houston, Tex. (Mar.), pp. 52–57.  
MOMA, Italian style: Museum of Modern Art, Florence, Italy (Mar.), pp. 58–61.  
The art of high art: Exhibits at the MOMA (Mar.), pp. 62–67.  
A touch of De Stijl: Vincent van Gogh Museum, Amsterdam, Netherlands (Mar.), pp. 68–71.  
'Wrong but impeccable': Lehman Wing, Metropolitan Museum of Art, New York (Aug.), pp. 60–63.

### Office buildings/offices

From piano to forte: Three old industrial bldgs. are converted to new uses (Feb.), pp. 60–67.  
Waste not, watt not: Atlantic-Richfield Eastern Area Hdqrs. Phila., Pa. (May), pp. 80–83.  
Two by four: Two offices: Charter Atlantic by Potter/Williams and TransAmmonia by Gwathmey Siegel, New York, N.Y. (June), pp. 66–73.  
By reflected light: Office building, Detroit, Mich. (Sept.), pp. 58–63.  
Off on a tangent: Gilman Paper Co. offices (Dec.), pp. 62–65.

### Performing arts structures

HHPA's USA: Robert G. Olmsted theater, Adelphi Univ., Garden City, N.Y. (Feb.), pp. 42–45.  
HHPA's USA: Orchestra hall, Minneapolis, Minn. (Feb.), pp. 50–53.  
Introduction: The performance of change (Nov.), p. 39.  
Kind of uptown: Concert Hall, Birmingham-Jefferson Civic Center, Birmingham, Ala. (Nov.), pp. 40–43.  
Orpheus Nebraskensis: Orpheum Theater,

Omaha, Neb. (Nov.), pp. 44–47.  
Gloria in transit: Tent theater, New York (Nov.), pp. 48–51.  
Theater in the raw: Allegheny, Pa. (Nov.), pp. 52–53.  
Some sound advice: Musical acoustics (Nov.), pp. 54–63.

### Planning

Urban Design and Planning: Make no fragmented plans (jury comments P/A awards) (Jan.), pp. 66–67.  
Clinton area study, New York, N.Y., P/A award (Jan.), pp. 68–69.  
An urban design investigation of Harvard Square, Cambridge, Mass., P/A cit. (Jan.), p. 70.  
A study for the Second Ave. subway station, New York, N.Y., P/A cit. (Jan.), p. 71.

### Preservation/renovation

The Faneuil Hall Market, Boston, Mass., P/A cit. (Jan.), p. 61.  
By all means: The Stillman White Brass Foundry, Providence, R.I. (May), pp. 68–75.  
A re-presentation: Foundation Building, Cooper Union, New York (July), pp. 50–57.  
Up, up and atrium: Transforming a warehouse into a commercial structure, Minneapolis, Minn. (Oct.), pp. 74–78.

### Recreational facilities/parks

Sherman Creek State Park, New York, N.Y., P/A cit. (Jan.), pp. 58–59.  
Judicious juxtapositions: Hampshire College Recreational Facility, Amherst, Mass. (Oct.), pp. 86–91.

### Research and programming

Ultimately, a flower barge: Center for Applied Computer Research and Programming, Mexico City (May), pp. 76–79.

### Shopping centers

Green mansion: Market Place, Glen Lochen, Glastonbury, Conn., (Oct.), pp. 63–65.

### Technics

Slouching towards Barcelona: Classic chairs in form and function (Feb.), pp. 78–85.  
A muse named déjà vu: Design by photo-composition (Feb.), pp. 86–89.  
Smoke gets in your van Eycks: Museum fire and security control (Mar.), pp. 78–81.  
The ascent and descent of man: Elevator operations (Apr.), pp. 102–109.  
Brother, can you spare a dyne?: Energy policy (May), pp. 54–59.  
Sunstrokers and windbaggers: Solar and wind energy (May), pp. 60–67.  
The immersion of Venice: Venice, Italy (June), pp. 78–83.  
Dear john: Plumbing fixtures (July), pp. 70–79.  
Supershed: Pre-engineered building (Aug.), pp. 68–73.  
Pandora's plastic box: Plastics in architecture (Sept.), pp. 86–91.  
Witness for the preservation: Photogrammetry (Sept.), pp. 92–95.  
Tales from the American woods: Wood in architecture (Oct.), pp. 55–62.  
Gloria in transit: Tent theater (Nov.), 48–51.  
The well-tempered caulking gun: Caulking and sealants (Dec.), pp. 74–81.

### Technics (Specifications clinic)

Sealants, Part II (Feb.), p. 77.  
Meet the materials technologist (Mar.), p. 72.  
The Hippocratic oath of architecture (Apr.), p. 101.  
Performance criteria for a walk on Mars (May), p. 90.  
Payment for stored materials (June), p. 77.  
If these kids don't make it, neither will you (July), p. 69.  
Product evaluation (Aug.), p. 67.  
The metric system—a look to the future (Sept.), p. 84.  
Custom curtain walls (Oct.), p. 92.  
Getting the paper out (Nov.), p. 85.  
Contract documents for overseas work (Dec.), p. 73.

### Theaters (see performing arts structures)

### Urban waterfronts

Introduction: Urban waterfronts (June), pp. 41–47.  
A fear of filling?: New York City Waterfront (June), pp. 48–57.  
The battle for Georgetown: Washington, D.C. (June), pp. 58–61.  
Stream of consciousness: San Antonio River, Tex. (June), pp. 62–65.

### Contributors

Broadbent, Geoffrey: The road to Xanadu and beyond: The Taller de Arquitectura, Barcelona, Spain (Sept.), pp. 68–83.  
Huxtable, Ada Louise: 'Wrong but impeccable': Lehman Wing, Metropolitan Museum of Art, New York (Aug.), pp. 60–63.  
Koren, Leonard: Mother never told me: Bathing environments, Los Angeles, Calif. (July), pp. 46–49.  
Nydele, Ann: Design for the corporation: Interior architecture (Oct.), pp. 80–85.

### Architects, designers, engineers, planners

ACSM-2 Project Team: Ambulatory Care Services Model, Ph 2, State Univ. of N. Y. at Buffalo, P/A first award (Jan.), p. 81.  
Ambasz, Emilio: Ultimately, a flower barge: Center for Applied Computer Research and Programming, Mexico City (May), pp. 76–79.  
Amenta, William A., associated architects: Chopping energy costs: Children's Hospital of Phila., Pa. (May), pp. 46–53.  
Amico, Robert: This side of Habitat (Roosevelt Island) New York (July), pp. 58–63.  
Ant Farm: From the folks who gave you 20–20 vision: Interior architecture: Media studio and a kitchen. (Sept.), pp. 64–67.  
Arrowstreet: Student's village: Chandler Village, Worcester State College, Mass. (Aug.), pp. 37–41.  
Astle, Neil & Associates: Astle's castle: Myott Park housing, Omaha, Neb. (Oct.), pp. 70–73.  
Backen, Arrigoni & Ross, Inc.: James L. Jones Alternative Learning Center, Los Angeles, Calif., P/A cit. (Jan.), p. 64.  
Beckett Jackson Raeder Inc.: Housing for the Elderly Development Process, Mich., P/A award (Jan.), pp. 76–77.  
Birkerts, Gunnar & Associates: Varied reflections in Houston: Contemporary Arts Museum, Houston, Tex. (Mar.), pp. 52–57.  
By reflected light: Commercial office building in Detroit, Mich. (Sept.), pp. 58–63.



- Birnbaum, Phillip, Office of:** The Galleria (Dec.), pp. 39-43.
- Booth & Nagle:** Davids' Plaza townhouses/shops, Chicago, Ill., P/A award (Jan.), pp. 56-67.
- Bower & Fradley:** Images for education: Wharton Graduate Center, Phase 1, Vance Hall, Univ. of Penna., Phila. (Apr.), pp. 60-65.
- Brandon, Robert:** This side of Habitat (Roosevelt Island), New York (July), pp. 58-63.
- Bofill, Richardo:** The road to Xanadu and beyond: Taller de Arquitectura, Barcelona, Spain (Sept.), pp. 68-83.
- Callister Payne & Bischoff:** Green Mansion: Market Place, Glen Lochen, Glastonbury, Conn. (Oct.), pp. 63-65.
- Caudill Rowlett Scott:** Rust City: Brockport College apartments: Brockport, N.Y. (Aug.), pp. 42-27; Tilt to the river: Salanter-Akiba-Riverdale Academy, Bronx, N.Y. (Dec.), pp. 66-69.
- Clipson, Colin W.:** Planning for Cardiac Care, a study at the Univ. of Mich., P/A first award (Jan.), pp. 78-80.
- Daly, Leo A. Company:** Orpheus Nebraskensis: Orpheum Theater, Omaha, Nebraska (Nov.), pp. 44-47.
- Dattner, Richard & Associates:** Sherman Creek State Park, New York, N.Y., P/A cit. (Jan.), pp. 58-59.
- Davis, Brody & Associates:** Judicious juxtapositions: Hampshire College Recreational Facility, Amherst, Mass. (Oct.), pp. 86-91; College town: Joseph Ellicott Complex, State University of New York at Buffalo (Dec.), pp. 52-61.
- Davis, Sam:** This side of Habitat (Roosevelt Island), New York (July), pp. 58-63.
- Ehrenkrantz, Ezra D. & Associates:** In Harvard's yard: Canaday Hall, Harvard Univ. Cambridge, Mass. (Aug.), pp. 52-55.
- ELS Design Group:** This side of Habitat (Roosevelt Island) New York (July), pp. 58-63.
- Fiorentino, Imero Associates:** Gloria in transit: Tent theater New York (Nov.), pp. 48-51.
- Geddes, Brecher, Qualls, Cunningham:** Kind of uptown: Concert Hall, Birmingham-Jefferson Civic Center Birmingham, Alabama (Nov.), pp. 40-43.
- Gelardin/Brunner/Cott:** From piano to forte: Keyboard colossus: The Piano Craft Guild, Boston, Mass. (Feb.), p. 67.
- Gran, Warren W. & Associates:** Clinton area study, New York, N.Y., P/A award (Jan.), pp. 68-69.
- Graves, Michael:** Semantic distinctions: two house additions (Claghorne and Alexander), Princeton, N.J. (Apr.), pp. 88-91.
- Hack, Gary:** Improving City Streets for Use at Night, Norfolk, Va., P/A first award (Jan.), pp. 74-75.
- Hammel Green & Abrahamson, Inc.:** HHPA's USA: orchestra hall: Minneapolis, Minn. (Feb.), pp. 50-53.
- Harbeson Hough Livingston & Larson:** Chopping energy costs: Children's Hospital of Phila., Pa. (May), pp. 46-53.
- Hardy Holzman Pfeiffer Associates:** HHPA's USA: three arts projects (Feb.), pp. 42-59.
- Hatami, Marvin & Associates:** Communitas, a residential & commercial development, Jefferson, City., Colo., P/A award (Jan.), pp. 50-51.
- Hejduk, John:** A re-presentation: Foundation Building, Cooper Union, N.Y. (July), pp. 50-57.
- Hisaka, Don M. & Associates:** Refugee Road/Noe-Bixby Road Elementary School, Columbus, Ohio, P/A award (Jan.), pp. 48-49; Renovations and remodeling Rocky River H.S., Rocky River, Ohio, P/A cit. (Jan.), p. 63.
- Hodne/Stageberg Partners:** Of nature and modernity: Native American Center, Minneapolis, Minn. (Oct.), pp. 66-69.
- Hurr, Doug:** (see Ant Farm)
- Institute for Architecture and Urban Studies, The:** From piano to forte: Harmony Mills, Cohoes, N.Y. (Feb.), pp. 61-63.
- Interspace Design Associates:** Waste not, watt not: Atlantic-Richfield Eastern Area Headquarters, Phila., Pa. (May), pp. 80-83.
- Jacobs, Stephen B. & Associates:** From piano to forte: Cast iron conversion: McCreary Dept. Store, N.Y. (Feb.), pp. 64-66.
- Karmi-Melamede, Ada:** A study for the Second Ave. subway station, New York, N.Y., P/A cit. (Jan.), p. 71.
- Koolhaas, Remment/Laurinda Spear:** House, Miami, Fla., P/A award (Jan.), pp. 46-47.
- Lam, William Associates:** Improving City Streets for Use at Night, Norfolk, Va., P/A first award (Jan.), pp. 74-75.
- Leman Architects/Planners:** Evaluation of SEF Study of Systems bldg., Toronto, Can., P/A cit. (Jan.), p. 82.
- Loebl, Schlossman, Dart, Hackl:** Water Tower Place (Dec.), pp. 50-51.
- Lord, Chip:** (see Ant Farm)
- Lorenz Williams Lively Likens and Partners:** Main Library Addition, Ohio State Univ., Columbus, Ohio, P/A cit. (Jan.), p. 65.
- O'Dell, Hewlett & Luckenbach, Inc.:** Housing for the Elderly Development Process, Mich., P/A award (Jan.), pp. 76-77.
- Meier, Richard & Associates:** MOMA, Italian style: Museum of Modern Art, Florence, Italy (Mar.), pp. 58-61.
- Douglas House, Harbor Springs, Mich. (July), pp. 38-45.**
- Michels, Doug:** (see Ant Farm)
- MLTW/Turnbull Associates:** Residence, Fairfax, Va., P/A award (Jan.), pp. 54-55.
- Miller, Hanson, Westerbeck, Bell:** Up, up and atrium: Minneapolis, Minn. (Oct.), pp. 74-78.
- Mitchell/Giurgola Associates:** Between town and gown: Student Union, State Univ. College, Plattsburgh, N.Y. (Apr.), pp. 66-71.
- Monacelli Associates:** An urban design investigation of Harvard Square, Cambridge, Mass., P/A cit. (Jan.), p. 70.
- Moore, Charles W. Associates:** Towards an architecture of symbolic assemblage: Burns residence, Los Angeles, Calif. (Apr.), pp. 72-77; One point of view: Charles Moore house, Essex, Conn. (Apr.), pp. 92-93.
- Morgan, William Architects:** Oceanfront Condominium, Ocean City, Md., P/A cit. (Jan.), p. 62.
- Murphy, C.F. Associates:** Water Tower Place (Dec.), pp. 50-51.
- Myers & Bennett Architects/BRW:** East Bank Bookstore/Admissions and Record Facility, Univ. of Minn., Minneapolis, P/A award (Jan.), pp. 52-53.
- Parker, Klein Associates:** Too little from Tange: Minneapolis Institute of Arts, Minn. (Mar.), pp. 48-51.
- Potter/Williams:** Two by four: Charter Atlantic, New York, N.Y. (June), pp. 66-72.
- Prentice & Chan, Ohlhausen:** Street smarts: Arts for Living Center: Henry Street Settlement, New York, N.Y. (Nov.) pp. 64-70.
- REDE (Research and Design Institute):** By all means: Rhode Island Energy Conservation Station, Providence, R.I. (May), pp. 68-75.
- Ramati, Raquel:** A study for the Second Ave. subway station, New York, N.Y., P/A cit. (Jan.), p. 71.
- Rietveld, Gerrit:** A touch of De Stijl: Vincent van Gogh Museum, Amsterdam, Netherlands (Mar.) pp. 68-71.
- Ratcliff, Siama & Cadwalader:** Berkeley bravado: Rochdale Village, Univ. of Calif., Berkeley (Aug.), pp. 48-51.
- Roche-Dinkeloo & Associates:** 'Wrong but impeccable': Lehman Wing, Metropolitan Museum of Art, New York, N.Y. (Aug.), pp. 60-63.
- Saphier, Lerner, Schindler:** Off on a tangent: Gilman Paper Co. offices (Dec.), pp. 62-65.
- Siegel, Gwathmey:** Two by four: Trans-Ammonia, New York, N.Y. (June), pp. 66-72.
- Skidmore, Owings & Merrill:** Museum as monument: Hirshhorn Museum and Sculpture Garden, Washington, D.C. (Mar.), pp. 42-47; Olympic Tower: (Dec.), pp. 44-49.
- Specter, David:** The Galleria (Dec.), pp. 39-43.
- Stern, Robert A.M. & Hagmann, John S.:** Where are we now, Vincent Scully?: Lang residence, Washington, Conn. (Apr.), pp. 78-83.
- This side of Habitat (Roosevelt Island), New York (July), pp. 58-63.**
- Schreier, Curtis:** (see Ant Farm)
- Tange, Kenzo:** Too little from Tange: Minneapolis Institute of Arts, Minn. (Mar.), pp. 48-51.
- Thompson, Benjamin & Associates, Inc.:** The Faneuil Hall Market, Boston, Mass., P/A cit. (Jan.), p. 61.
- Urtec:** Too little from Tange: Minneapolis Institute of Arts, Minn. (Mar.), pp. 48-51.
- van Dillen, J.:** A touch of De Stijl: Vincent van Gogh Museum, Amsterdam, Netherlands (Mar.), pp. 68-71.
- van Tricht, J.:** A touch of De Stijl: Vincent van Gogh Museum, Amsterdam, Netherlands (Mar.), pp. 68-71.
- Walker, Lester:** Optical allusions: Gothic revival Victorian house, Woodstock, N.Y. (Apr.), pp. 84-87.
- Wehrer, Joseph J.:** Planning for Cardiac Care, a study at the Univ. of Mich., P/A first award (Jan.), pp. 78-80.
- Williams/O'Brien Associates, Inc.:** Findley Place Housing Development, Minneapolis, Minn., P/A cit. (Jan.), p. 60.
- Woo, Kyu Sung:** This side of Habitat (Roosevelt Island) New York (July), pp. 58-63.
- Wexler, Peter:** Theater in the raw: The Pittsburgh Public Theater, Allegheny, Pa. (Nov.), pp. 52-53.

## Building materials

**Major materials suppliers for buildings that are featured this month, as they were furnished to P/A by the architects.**

**The Galleria, New York, New York (p. 39).** Architect: David Kenneth Specter, New York, and Office of Philip Birnbaum, New York (apartments). Reinforced concrete structure: Colonial Sand & Stone Co (concrete); Hudson Cement



# When you want a small package delivered fast, it's in the bag.



Delta's DASH guarantees delivery on the flight or routing you specify between most Delta cities. Packages accepted up to 50 lbs. with length plus width plus height not to exceed 90"

Bring your package to Delta's passenger counter or air freight terminal at the airport at least 30 minutes before scheduled departure time. Package can be picked up at DASH Claim Area next to airport baggage claim area 30 minutes after flight arrival at destination.

Charges for DASH shipments are nominal. Delta reservations will be pleased to quote actual charges between specific points. Payments accepted in cash, by company check, most general-purpose credit cards, special credit arrangements or on government shipments by GBL.



Rate examples	(Tax included)
Atlanta-Washington	\$21.00
Boston-Miami	\$26.25
Los Angeles-New Orleans	\$31.50
Dallas/Ft. Worth-Los Angeles	\$26.25
San Francisco-Atlanta	\$31.50
Philadelphia-Houston	\$26.25
New York-Tampa	\$26.25
Chicago-Orlando	\$26.25
Detroit-Memphis	\$21.00

For full details, call Delta reservations.

## Delta is ready when you are.®

Co. (cement). Atrium skylights supports: Bethlehem Steel Corp. (A-36 steel). Caledonia granite wall surfacing: National Granite Ltd. Alma, Quebec. Brick wall surfacing: Glen-Gery Corp ("Bethany" blend). Concrete block interior walls: Allentown Block Co. Floor surfacing: Wilkinson & Sons (rustic terrazzo); Murray Tile Co. (quarry tile); Tibbals Flooring Co. (oak parquet). Associated Marble of Italy (marble bath floors). Skim coat plaster ceiling: U.S. Gypsum Co. Acoustic ceiling tile: U.S. Gypsum Co. Built up asphalt felt-rolled roofing: G.A.F. Waterproofing; Tremco Corp. Fabric flashing: Rubber & Plastic Compound Co. Under roofing insulation: Johns Manville. Styrofoam insulation, balconies: Am-spec Corp. Drywall partitions: Kaiser Cement & Gypsum. Metal Studs: Marino Industries. Painted aluminum window frames (4th to 46th floor): General Bronze Architectural Products. (46th to 51st floor), Alwinseal Inc. Glass windows: PPG Industries and Libbey-Owens Ford. Hollow metal doors: Williamsburg Steel Products. Hollow wood doors: Flush Door Distributors. Bifold doors: Paniflex Doors. Overhead doors: North American Door. Aluminum doors entrance and elevators: Albro Metal Products; Door-O-Matic; Hankins & Johann, CRS Architectural Products. Locksets (commercial): Arrowlock Corp; (residential): P & F Corbin. Spring Hinges: Bommer Spring Hinge Co. Butt Hinges: McKinney. Panic exist: P & F Corbin. Paint and stain, walls, ceiling trim: Purity Paint Co. Interior stain for exposed granite supports channels: Tnemec Paint Co. Gas Ranges, kitchen: Magic Chef. Dishwashers and refrigerators: General Electric. Oakwood Kitchen cabinets: Mallis Industries. Elevators: Westinghouse Electric Corp. Central pedestrian space lighting fixtures: Edison Price. Residential lighting: L.S.I. and Neo-Ray Products. Electric distribution panels: Bright Electric Co. White vitreous china sinks, toilets, tubs: American Standard. Chrome-plated brass flush valves: Coyne & Delany. Copper pipe: Phelps Dodge Brass Co. Cast Iron: Central Foundry Co. Sprinkler heads: Reliable Automatic Sprinkler. Steam supplied incremental units: Embassy Industries. Air handlers, chiller: York Co. Cooling tower: Baltimore Aircoil, Baseboard fintubes: Slant Fin Corp.

**Water Tower Place, 845 N. Michigan Ave., Chicago Ill. (p. 50).** Architects: Loeb, Schlossman, Dart, Hackl Chicago Ill. and C.F. Murphy Associates Chicago, associated architects. Concrete foundations and structure: Material Service. Reinforcing steel: Inland Ryerson. Marble cladding: Georgia Marble Co. Interior drywall partitions: U.S. Gypsum. Marble tile floors: Buffalini Marble. Carpeting: Mohawk Carpet Mills, Stratton Industries. Vinyl asbestos tile flooring: Armstrong Cork Co.; Kentile Floors Inc. Ceiling acoustic tile: Celotex Corp., U.S. Gypsum. Thermal insulation: Pittsburgh Corning. Mineral wool blankets insulation: U.S. Gypsum. Acoustical mineral wool blankets: U.S. Gypsum. Roof drain heads: Zurn Industries. Concrete block partitions and drywall partitions: U.S. Gypsum. Aluminum frame windows with black anodized finished, solar thermopane glazing; P.P.G. Inc. Hollow metal doors: Johnson Fireproof Door. Wood doors: U.S. Plywood Corp. Steel slat curtains: Apton Metal Products. Stainless steel, bronze, and baked enamel on steel elevators: Otis Elevator Co. Bronze anodized aluminum entrance doors: International Steel. Locksets:

Schlage Lock Co. Door closers: Norton Door Control Products. Butt hinges: McKinney Mfg. Co. Pivot hinges: Rixson Inc. Paints and stains for interiors: Glidden Coatings & Resins. Kitchen equipment: Southern Equipment Co. Kitchen coolers: Econocold. Laundry washers: G.A. Braum Inc. Dryers: Huebsch Originals, McGraw-Edison Co. Residential appliances: General Electric, Thermador. Moving stairs: Otis Elevator Co. Lighting fixtures (incandescent): Lightolinc Inc, Arcom Industries, Edison Price. Lighting fixtures (fluorescent): Metalux Corp. Electrical distribution: ITE. Bathroom fixtures: American Standard. Flush valves: Sloan Valve Co. Exposed sidewall sprinklers: Gem. Flush sprinklers: The Viking Corp. Heating: Barber/Colman Co., Tuttle & Bailey, Div. Air conditioning: Trane Co., Fan coil units: McQuay Inc, International Environmental Corp. Thermostats: Johnson Control. Monitoring life safety devices: Johnson Control.

**Joseph Ellicott Complex, State University of New York at Buffalo (p. 52).** Architects: Davis, Brody & Associates, New York, N.Y. Structural steel: Bethlehem. Brick walls: Glen Gery. Metal decking (under concrete floor slabs): Wheeling Corrugated Co. Brick pavers: Glen Gery. Vinyl asbestos tile flooring: Armstrong. Carpet: Mohawk. Acoustic ceiling tile: U.S. Gypsum. Acoustic metal pan (in kitchens): Gold Bond. Membrane waterproofing (exterior decks and plazas): Uniroyal and PRC Sprayed-on insulation: Spray-Don. Batt insulation: Owens-Corning. Aluminum windows (duranodic finish): Kawneer, Sampson. Exterior doors: PPG. Interior wood doors: U.S. Plywood and Weyerhaeuser. Hardware: Russell, Corbin, Van Duprin. Prefab kitchen units: Dwyer. Walk-in freezer units: Vollrath. Elevators: Otis and Gallagher (Parkline cabs). Lighting: Kliegl (drama workshop); Kurt Versen (int. and ext. downlights); Silvray-Litecraft (int. downlights); Marco (ext. mercury vapor); Moldcast (misc. ext. lighting). Plumbing fixtures: Kohler. Drapery fabric: Design Tex. Dining tables: Thonet (tops); L&B Products (bases). Lounge furniture: Rothman, Probbler, CI Designs, Knoll. Cinema seating: American Seating Co. Misc. chairs: General Fireproofing.

**Salanter-Akiba-Riverdale Academy, Bronx (Riverdale), New York, N.Y. (p. 66).** Architects: Caudill Rowlett Scott, New York, Houston, Los Angeles. Structural steel and steel joists: Oxhandler and Kelly Masonry Corp. Block masonry wall surfacing: Kelly Masonry Corp. Acoustical tile ceiling surfacing: Johns-Manville Corp. 040 aluminum Fluoropon roof surfacing: Julius Watsky, Inc. Rubber Seal fiberglass-cloth No. 54 waterproofing and dampproofing: Mitchell Rand Mfg. Corp. Gypsum board and metal stud partitions: U.S. Gypsum. Aluminum and glass windows: S.&C. Products. Steel interior doors: Williamsburg Steel Products. Aluminum and glass entrance doors: S.&C. Products. Mortise locksets: Corbin. Slimline door closers: Norton. Surface mounted panic exit: Von Duprin, Inc. Paint for interior walls and graphics: Pittsburgh Plate Glass. Central control public address equipment: Executone. Plumbing and sanitary equipment: American Standard. Rooftop low-silhouette universal reheat system (gas heating, electric air conditioning): ITT Nesbitt.



# Job mart

## Situations open

### Chairman, Department of Architecture:

Nominations and applications are invited for the position of Chairman, Department of Architecture, School of Fine Arts. **Qualifications:** Master of Architecture or equivalent; architectural registration or professorial equivalent; administrative or managerial experience preferably in higher education; teaching experience in an accredited architectural program. **Salary/Contract Conditions:** Rank and salary commensurate with the qualifications of the individual. **Position Availability Date:** July 1, 1976. **Credentials Deadline Date:** January 15, 1976. **Address Inquiries To:** Dr. Charles L. Spohn, Dean of the School of Fine Arts, Room 113, Hiestand Hall, Miami University, Oxford, Ohio 45056.

**Cost Engineer:** Opportunity for key position for mature architect or engineer with significant experience in construction administration, cost control and estimating in connection with large architectural projects. Responsible for supervising staff with project management firm in New York City. Write Box #1361-885, *Progressive Architecture*.

**Designer:** To head six person Interiors Section of a one hundred person firm of architects, engineers, planners, and designers. Major emphasis on creative interiors and furnishings. Outstanding opportunity for advancement and professional growth as a key member of interdisciplinary design team for individual with demonstrated leadership and management capability. Minimum six years experience. Full benefit package. Outstanding community and university environment. Submit complete resume, brochure, references and salary requirements in confidence to Hansen Lind Meyer, 116 South Linn Street, Iowa City, Iowa 52240.

**Faculty Positions:** School of Architecture at Oklahoma State University, Stillwater, Oklahoma, has two faculty positions open. Academic rank and salary will depend upon the candidate's qualifications.

1. **Environmental Control Program;** teaching and research in areas of low- and alternate-energy application, mechanical engineering, lighting and acoustics. Master's degree required with either or both undergraduate and graduate degrees in Architecture or Architectural Engineering. Teaching and practical experience desirable.
2. **Design/Building Systems;** teaching and research in Design, Construction Materials and Systems, Construction Documents. Master's degree and several years of practical experience required; teaching experience desirable. Oklahoma State University is an Equal Opportunity/Affirmative Action

employer. Minorities and women are urged to apply.

**Head:** Young, large Pre-Design Professions Department with enthusiastic, capable, and diverse faculty. Program provides basic education prior to professional programs in architecture, interior architecture and landscape architecture. Many faculty members in the College, which includes a planning department, teach in more than one department. Requirements: background in an environmental design field; terminal degree in specialization; commitment to educational development and advising; teaching experience. Position available July 76. To be assured of consideration, applications must be received before 30 January. Send resume and statement of educational and administrative philosophy to Bernd Foerster, Professor and Dean, College of Architecture and Design, Kansas State University, Manhattan, Kansas 66506 Affirmative action-equal opportunity employer.

**Mechanical Engineer:** Consulting Engineer/Architect firm has opening for B.S.M.E. Must be registered professional engineer with minimum 6 years experience in design and plan-specification preparation of all types of mechanical systems for commercial and industrial buildings. Consulting background preferred. Salary dependent upon experience and ability. Excellent fringe benefit program. Reply with resume to: Owen Ayres and Associates, Inc., 1300 W. Clairemont Avenue, Eau Claire, Wisconsin 54701. Attention: Personnel Director. We Are An Equal Opportunity Employer.

**Required:** A young free lance photographer, age 25-30, to travel with for 4-6 months, February to June, to assist with museum research, textile design and color and/or architectural design in France, Switzerland, Italy and possibly W. Germany and Austria. All expenses paid including air return trip to U.S., plus travel allowance. Please reply to Box 1361-886, *Progressive Architecture* with resume.

**The University of Hawaii:** Is seeking a Head for Architecture/Environmental design. Responsibilities: academic administration, financial management, program and staff development, and teaching. Qualifications: degree(s) in architecture, planning, or environmental design with sufficient practice and teaching to qualify for full rank. Compensation: commensurate with background and experience with excellent fringe benefits. Appointment: effective August 1976 with selection to be made during the spring. Application: resumes and references should be sent before December 15, 1975 to Chairman, Search Committee, Room 204—2528 The Mall, Univ. of Hawaii, Honolulu, Hawaii 96822.

**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. U.S. citizen. Singles or couples only. Information: Lynn Rothenberg, ACTION, ORC Box A-2, Washington, D. C. 20525.

## Situations Wanted

**Architect:** A.I.A., NCARB, 18 years experience, strong in administration and project coordination. Seeks affiliation or position with architect, engineer, or developer. Reply to Box #1361-813, *Progressive Architecture*.

**Architect:** A.I.A., NCARB, multiple registrations, 21 years broad experience, competent, versatile, facile and decisive. Total project administration-coordination, conception through completion—health, recreation, multi-family housing, planning, religious, educational and civic—in medium size offices. Need challenge of responsible associateship leading to partnership. Reply to Box #1361-887, *Progressive Architecture*.

**Architect:** M. Architect, 29, Turkish, resident in England, nine years experience in Europe and continental, diversified projects. Interested in creative position with design oriented firm. West Coast preferred. Resume, transcript and references on request. Please reply to Box No 1361-879. *Progressive Architecture*.

**Architect:** M.U.P.I., B.Arch, Inst. of Store Planners. Solid background in all aspects of commercial, industrial, and residential property design, development and construction supervision. Documented success as corporate building representative. Participated in N.Y.C. master plan. Age 27 w/ salary progress of 120% to substantiate accomplishments. Reply to D.M.G. Box 219, Amalwalk, N.Y. 10501. Will relocate.

**Architect Preservationist:** 28, single, B.S. Architecture, B.A. Art History. Desire experience in all facets of preservation, including manual skills. Ability to organize information, conscientious, and enjoy working with people. Optimism and vitality toward life rooted in my whole being. East, Great Lakes urban area preferred. Reply: Box #1361-867, *Progressive Architecture*.

**Architect:** 30, M.Arch., registered, head of own firm with national design competition recognition, seeks design head position with medium or small sized firm or teaching appointment. Wide design and production experience. Box #1361-890, *Progressive Architecture*.

**Architect:** 34, Family, M. Arch., Registered Illinois, NCARB, 9 years of diversified experience in all phases of Architectural Projects, Building types like Hospitals, Hotels-Motels, (hi-rise) Schools, Banks, & Industrial Buildings. Seeks responsible, Permanent position. Will relocate. Salary no consideration. Reply to Box #1361-891, *Progressive Architecture*.

[continued on page 98]



Job mart continued from page 97

**Architect/Designer:** 26, married, B. Arch., M. Arch., awaiting registration, personable, energetic. Seeking responsible design oriented position with progressive architectural firm. 4 years diverse experience covering full spectrum of architectural services. Designed numerous large projects with administrative and project coordination responsibilities. Superior presentation skills. Will relocate, reply to Box #1361-892, Progressive Architecture.

**Architect/Designer/Environmental:** NCARB, AIA, principal, Illinois graduate, nineteen years diversified, comprehensive, quality experience. Organizational ability. Capable of directing all practice phases. Desire position with partnership potential directing design and production (or equivalent) in ethical, progressive firm interested in best contemporary architecture. Prefer southwest—other areas considered. Box #1361-893, Progressive Architecture.

**Architectural Designer, Draftsman, Delineator:** Married, children, 20 years total involvement, all building types. Desire versatile opportunity with mature office, quality standards. New York State or New England area. Reply to Box #1361-851, Progressive Architecture.

**Architecture Graduate:** 24, B.A. Washington University. Nearly two years experience with St. Louis firms. Seeks opportunity with progressive, well-established firm in South,

Southwest, Midwest, or St. Louis. Will relocate anywhere for the right opportunity. My interests are broad... I want a challenge. All responses seriously considered. J. Alan Hajek, 3520 Glen Bay Drive, St. Louis County, Missouri 63125. (314) 892-6830.

**Consulting Specifier:** 20 years most types buildings including large, complex design-type projects and C.M. All phases coordinated in 16 Division Uniform Systems, 3-part Section Format. AIA, NSPE, CSI, AGC recommended practice. Update design liability shelters, master system, material research, consultant communications, project administration procedures. Best references. Can travel. P.O. Box 552, Plymouth, Michigan 48170.

**Interior Designer/Project Manager:** Age 35, Pratt Institute, 14 years experience with major architectural firms. Seeking responsible position with quality, design oriented architectural firm. Will relocate. Box 1361-8941, Progressive Architecture.

**Project Designer:** B. Arch., 27, married, 2 children, 3 years experience with design/build development. Much experience in shopping center development; capable of full design development responsibilities. Also experienced with food stores, motels, offices, and residential development. Resume upon request. Eager to re-locate. Reply to: 6 Shorewood South, Danville, Illinois 61832.

**Registered Architect:** A.I.A., B.Arch Cornell, Masters in Urban Studies; ten years comprehensive experience with top firms, all phases of practice including management,

many project types. Seeks position leading to associateship/partnership in architectural firm or challenging position with developer, design-build firm or public agency. Resume available. Box #1361-895 Progressive Architecture.

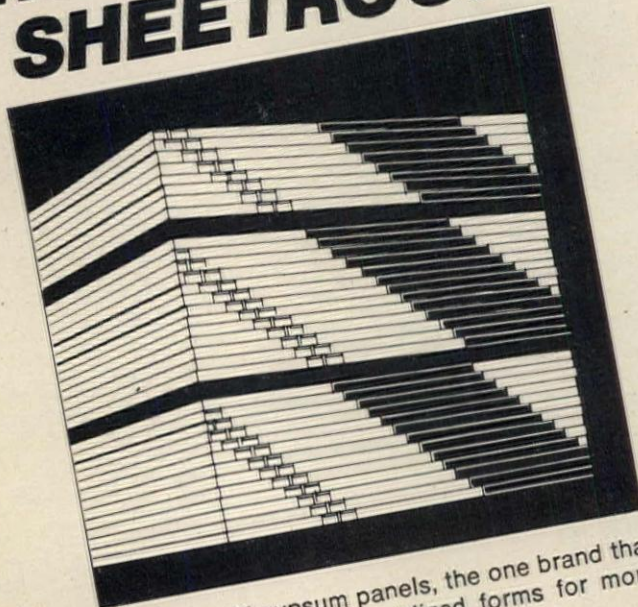
**Solar Energy:** Candidate architect seeks permanent research/design position with progressive architectural firm. Special interests: environmental analysis, energy conservation, solar energy collection. Likes problem solving, research, analysis, organization, design. Math/physics background. B.S.Arch., M.Arch. 1 year office experience plus self-employment. North America, Europe. Single, 26. Reply Box #1361-896, Progressive Architecture.

#### Architectural services

**Architectural Arts by Vathauer Studios:** Architectural renderings, scale models, graphic coordination for sales offices, displays and design. Prompt service coast to coast. Offering quality workmanship at budget prices. Send for brochure. ARCHITECTURAL ARTS BY VATHAUER STUDIOS 2115 S.W. 2nd AVE. Tel. (305) 523-1312, Ft. Lauderdale, Florida 33315.

**Charrette/Vinylsign:** Pressure sensitive vinyl sign letters. Useful indoors or outdoors. Economical letters enable architect to retain elegant design control. Ideal for hospitals, office buildings, universities, etc. where changes are needed constantly. Available at our New York and Cambridge stores. Mail orders and information: Charrette Corpora-

## There's only one SHEETROCK®



SHEETROCK gypsum panels, the one brand that comes in so many specialized forms for more efficient and economical installations. Please note: SHEETROCK is the registered trademark for gypsum panels made only by

**UNITED STATES GYPSUM**  
BUILDING AMERICA

## P/A in January: The 23rd annual P/A awards

Deliberations are over, and telegrams have gone to the winners of **P/A's 23rd Awards Program**. Eigh-  
jurors spent a busy two days evaluating the 464  
and their decisions and discussion will, as always,  
make the January P/A must reading.



tion, 2000 Massachusetts Ave., Cambridge, Mass. 02140.

**Educational Facilities Consultant:** Expert and efficient handling of equipment and furniture for any educational building or library. Planning, client contact, specifications, drawings, purchasing. Whole job or part. Educational Specifications, Space Requirements prepared for new buildings. Contact: Louis David, 1547 High Ridge Road, Stamford, CT. 06903. T: 203-322-2423.

**Equivalency Exam & Professional Exam:** Simulated tests at a reasonable cost. Inquire: ARCHINFORM (Formerly "PH. Lee"), P.O. Box 27732, Los Angeles, California 90027.

**Historical Architectural Watercolors:** painted traditionally, old master quality. Send research photo(s) of building(s). We originate/compose people, horses, carriages/autos in period around building(s). Paper: Arches/22"x30". Send your own quotation: \$150-\$300., based upon complexity; we usually accept it. Nationwide Architectural Arts, Inc., Box 21251, Seattle, WA 98111.

**Nationwide Architectural Arts, Inc.:** 3-5-day national service for budget renderings: Realistic, full-color, full-bleed, landscaped, with figures/autos, board about 20"x30", one main structure rendered (high rise accepted). Views: Eye level \$159-\$289. Aerial \$239-\$389. You may send your own fair budget quotation; we usually accept it

(uniqueness with value). Rendering finished in 3 days if you send a usable perspective (your advantage because exact view known). Complex renderings, models, mosaics & super graphics: Your choice of highly specialized artists. Airmail drawings: Phoned acknowledgement. Free air shipping USA/Canada. New clients: C.O.D. Budget/complex services only: Box 21251, Seattle, WA 98111. Color catalog only: Box 615, Rochester, MI 48063. Artists: Commissions available nationally (send no samples).

**Professionally** highly experienced team for checking hollow metal, architectural aluminum curtain walls, hardware and related architectural shop drawings. Terms available on request: Rama, Rodriguez and Associates 86-84 78 Street, Woodhaven, New York 11421, Phone—212-296-1589.

**Rendering Services:** Top professional rendering service coast to coast. Architectural, urban, landscape, interiors, industrial, advertising illustration in pen and ink or colour for the best reproduction. Portfolio by appointment. Allow maximum time for job completion. Please call Mark de Nalovy-Rozvadovski (203) 869-4598, 25 Birchwood Drive, Greenwich, Conn. 06830.

**RitaSue Siegel Agency:** Ms. Woody Gibson introduces creative architects, interior designers and urban planners to our international clients. RitaSue Siegel identifies and evaluates industrial and graphic designers. You are invited to submit confidential resumes. Our clients pay all fees. 60 W. 55th

St., N.Y.C. 10019, (212) 586-4750.

**Solar Consultants:** From high-rises to tool sheds, it's not too late to convert projects on your boards to immediate—or future—solar heating. We red-pencil prints sent us by architects not yet familiar with this money-saving science. Mail information and drawings, we'll return them within two weeks, full of notes and sketches. Our fee: \$40 per hour. (House—approximately 3 hours; school—average 9 hours.) We can also provide renderings and highly professional scale models at reasonable cost to support your solar proposals. We invite your inquiries. Malcolm Wells, Solar Service Corporation, 306 Cranford Road, Cherry Hill, New Jersey 08003.

**Vitruvius Designs Corp:** Artistic renderings and scale models, for a better image. Commercial interiors from sketches to shop drawings. Regular drafting services available. Write Box 1316 Dept. PA, Radio City Sta., N.Y., N.Y. 10019 (212) 697-5499.

#### Advertising Rates

Standard charge for each unit is Twenty-five Dollars, with a maximum of 50 words. In counting words your complete address (any address) counts as five words, a box number as three words. Two units may be purchased for Fifty dollars, with a maximum of 100 words. Check or money order should accompany advertisement and be mailed to Job Mart c/o Progressive Architecture, 600 Summer Street, Stamford, Conn. 06904. Insertions will be accepted not later than the 1st of the month preceding month of publication. Box number replies should be addressed as noted above with the box number placed in lower left hand corner of envelope.

## WORLD BANK GROUP

The World Bank has an immediate need for an

# Architect/Planner and Architect

in Education Facilities to participate as members of teams of specialists providing advice to member countries of the Bank on development projects, particularly those related to education.

Candidates should possess a university degree or an equivalent qualification in architecture, with some training in urban planning preferred. Several years' relevant architectural and/or planning experience, that has included the planning of educational buildings, and familiarity with current trends in school building design, are desirable, as is a knowledge of or experience in, developing countries.

The World Bank is an international organization which makes loans for productive projects that lead to economic growth in its developing member countries. It offers interesting and challenging work with frequent opportunity for international travel.

Salaries are competitive and determined on the basis of qualifications and experience. Benefits include five weeks' annual leave, health and life insurance programs, pension plan and relocation expenses on appointment.

Please send detailed resumé to:  
Personnel Department  
The World Bank, 1818 H Street N.W.  
WASHINGTON, D.C. 20433, U.S.A.



# Advertisers

Abitare of America .....	93
<i>Studio 2000</i>	
Alliancewall Corp. ....	93
<i>Battle Advertising, Inc.</i>	
Amana Refrigeration, Inc. ....	16
<i>Grey-North, Inc.</i>	
Andersen Corp. ....	10, 11
<i>Campbell-Mithun, Inc.</i>	
Armstrong Cork Co. ....	IFC, 1
<i>Marsteller, Inc.</i>	
Bally Case & Cooler, Inc. ....	25
<i>Beaumont, Heller &amp; Sperling, Inc.</i>	
Best Manufacturing Co. ....	93
<i>Robert A. Eberle &amp; Assoc., Inc.</i>	
BRK Electronics, Div. of Pittway Corp. ...	12
Cookson Company .....	72
<i>Botsford Ketchum, Inc.</i>	
Dallas Market Center .....	89
<i>Admakers, Inc.</i>	
Delta Airlines .....	96
<i>Burke Dowling Adams, Inc.</i>	
Dover Corporation—Elevator Division ....	21
<i>The Caldwell Agency</i>	
Dow Badische Co. ....	29
<i>Vitt Media International, Inc.</i>	
duPont, E. I. de Nemours & Co. ....	14
<i>N.W. Ayer &amp; Son, Inc.</i>	
Emhart Corp./Russwin Div. ....	OBC
<i>Horton, Church &amp; Goff, Inc.</i>	
Follansbee Steel Corp. ....	9
<i>George Hill Co.</i>	
Fry Reglet Corp. ....	28
<i>Averill Advertising</i>	

Gaco Western, Inc. ....	16WB
<i>Kraft &amp; Smith</i>	
Koppers Company, Inc. ....	33-36
<i>The Advertising Center</i>	
LCN Closers .....	85
<i>Alex T. Franz, Inc.</i>	
Limestone Products Corp. ....	16R1, 16R2
<i>of America</i>	
<i>Edward Owen &amp; Co.</i>	
Louisiana-Pacific Corp., Weather-Seal Division .....	93
<i>Belden/Frenz/Lehman, Inc.</i>	
Marlite, Div. of Masonite Corp. ....	15
<i>Penn &amp; Hamaker, Inc.</i>	
Herman Miller, Inc. ....	13
<i>McDonald &amp; Little</i>	
MM Systems Corporation .....	32
<i>Mackey, Green &amp; Associates, Inc.</i>	
Otis Elevator Co. ....	2
<i>Poppe Tyson, Inc.</i>	
Plan Hold .....	32
<i>Reeds &amp; Farris</i>	
PPG Industries, Inc. ....	4, 5
<i>Ketchum, MacLeod &amp; Grove, Inc.</i>	
Progressive Architecture Bookstore ....	82, 83
Republic Steel Corp. ....	6
<i>M&amp;F Advertising</i>	
Russwin Div./Emhart Corp. ....	IBC
<i>Horton, Church &amp; Goff, Inc.</i>	
Scalamandre Silks .....	23
<i>Givaudan Advertising, Inc.</i>	
Soss Manufacturing Co. ....	32
<i>Brewer Associates, Inc.</i>	
Sterner Lighting Systems Inc. ....	OBC
<i>Kerker &amp; Associates</i>	

Tremco Mfg. Co. ....	70, 71
<i>Carr Liggett Advertising, Inc.</i>	
U.S. Gypsum Co. ....	98
<i>Needham, Harper &amp; Steers Advertising, Inc.</i>	
Vinyl Plastics, Inc. ....	87
<i>Andrews Advertising, Inc.</i>	
World Bank .....	99
<i>PA Advertising Ltd.</i>	

## Advertising Sales Offices

<b>Stamford, Connecticut 06904:</b>	
600 Summer Street	203-348-7531
James J. Hoverman	
<i>Director of Sales</i>	
Harrington A. Rose, <i>District Manager</i>	
<b>Pittsburgh, Pennsylvania 15222:</b>	
Three Gateway Center—Room 1827	412-281-9421
Robert S. McGinnis, <i>District Manager</i>	
<b>Chicago, Illinois 60601</b>	
2 Illinois Center Bldg., Suite 1326	312-565-1282
Jerrold E. Driscoll, <i>District Manager</i>	
<b>Cleveland, Ohio 44113:</b>	
614 Superior Ave., W.	216-696-0300
John F. Kelly, <i>District Manager</i>	
<b>West Coast</b>	
16250 Ventura Blvd.	Suite 300
Encino, CA 91436	213-981-4863
(Toll free from LA: 872-2184)	
Philip W. Muller, <i>District Manager</i>	
<b>Atlanta, Georgia 30308:</b>	
805 Peachtree Bldg.—Room 505	404-874-6427
Harmon L. Proctor,	
<i>Director of Southern Operations</i>	
<b>London, SW1H, OBH, England</b>	
14 Broadway	
John Lankester, <i>Representative</i>	
<b>Verviers, Belgium</b>	
1 rue Mallar	
Andre Jamar, <i>Representative</i>	
<b>Tokyo, Japan</b>	
Bancho Koheki	
15 Sanyei-cho, Skinjuku-ku	
Genzo Uchida, <i>Representative</i>	