



BUILDING TYPES STUDY 429

**NEW LIFE FOR OLD BUILDINGS**

THE ARCHITECT'S RENEWED COMMITMENT TO PRESERVATION

FULL CONTENTS ON PAGES 4 AND 5

SEMI-ANNUAL INDEX ON PAGES 206-209

# ARCHITECTURAL RECORD

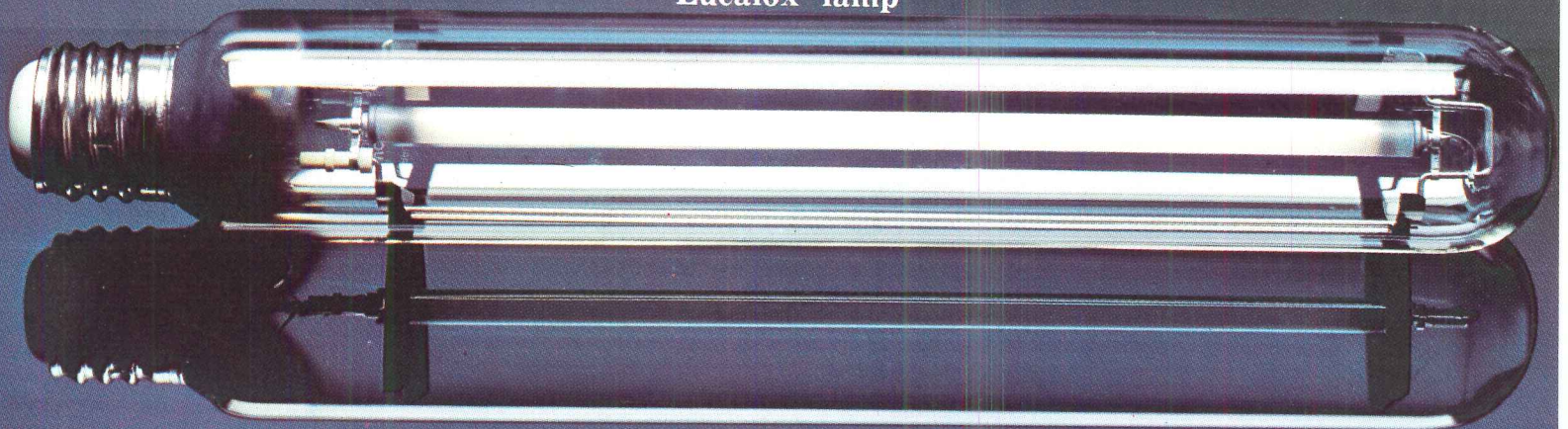
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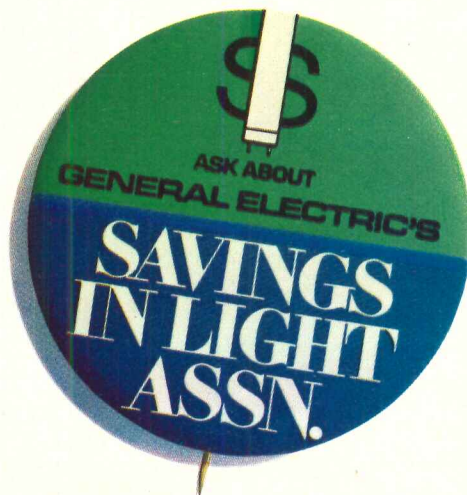
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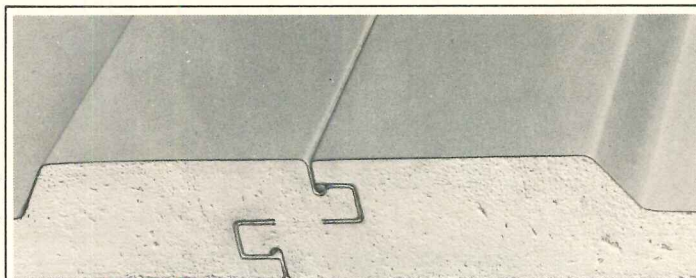
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Cover: Some of our older buildings that have been recently saved—or should be.

Design by Alberto Bucchianeri.

For full credits, see page 42.

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### 81 NEW LIFE FOR OLD BUILDINGS

A detail from an engraving of Boston's Old City Hall, now preserved, is a good symbol of our renewed attempts at finding new uses for buildings.

### 82 THE ARCHITECT'S ROLE IN PRESERVATION

Developing sources of funding, and inventing new ways of bringing historic architecture into the economic mainstream of the 1970's are major parts of the work to be done.

### 86 RESTORATION OF HISTORIC BUILDINGS AND PLACES

Selection of buildings for preservation and restoration on a priority of historic and architectural significance is essential, since many are worthy, but dollars are few. The restorations in this section eminently qualify on both counts.

86 National Collection of Fine Arts—National Portrait Gallery, Washington, D. C.

88 The Auditorium Theater, Chicago, Illinois.

90 James Gallier, Jr., House, New Orleans, Louisiana.

92 Iolani Palace, Honolulu.

93 Historic Districts: Heritage Square, Los Angeles; Old Sacramento, California; Jackson Square, San Francisco; Jacksonville, Oregon.

### 94 RENOVATION WITH A MAJOR NEW ADDITION

New work will always be architects' major source of income, and there are sensitive visual problems connected with combining this work with older architecture.

94 The New York State Bar Center, Albany, New York; James Stewart Polshek and Associates, architects.

100 Mount Sinai Medical Center remodeling, New York City; Kahn & Jacobs, architects.

102 Park-Danforth Home for the Elderly, Portland, Maine; Bruce Porter Arneill, architect.

### 106 PRACTICE PROBLEMS IN REMODELING

Architectural work on existing buildings involves important changes in approach and documentation.

106 Gold mines and land mines lie in practice groundrules for architectural work on existing buildings. While this work is bread and butter to many growing firms, budgets and fees need careful attention, as do contract documents.

110 Survey of architects shows that most do some remodeling—and find surprisingly big jobs and big rewards. This is a report on a nationwide survey by the RECORD Research Department.



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## BUILDINGS: THE ARCHITECT'S RENEWED COMMITMENT TO PRESERVATION

**112 REHABILITATION OF BUILDINGS FOR THE SAME USE**

Rising costs for new construction and deep roots in the community influence many owners to stay and renovate.

- 112 The David Sarnoff Building of the Educational Alliance, New York City; David Specter, architect.
- 114 Levi-Strauss Factory, San Francisco, California; Howard Friedman, architect.
- 116 Project Rehab, an effort by the Federal Government to upgrade a significant portion of the nation's housing inventory.
- 117 Chapel of St. Jude, Christ's Church, Washington, D.C.; Philip Ives, architect.
- 118 The Greening of Ruppert—a land reclamation that has provided New Yorkers with a temporary people's park.

**120 RAILROAD STATIONS: AN ENDANGERED SPECIES**

There was a time when railroad stations meant a lot to America. They were the grand entrances to cities, the outposts along the great lines of travel, part of railroading's movement, power, spectacle, and symbols of their communities. A nostalgic—and evocative review.

**124 REHABILITATION OF OLDER BUILDINGS FOR NEW USE**

They adapt surprisingly well to functions their original designers could never have imagined.

- 124 Newark Community Center of the Arts, Newark, New Jersey; Hardy, Holzman and Pfeiffer, architects.
- 126 Heinz Hall for the Performing Arts, Pittsburgh, Pennsylvania; Stotz, Hess, MacLachlan and Fosner, architects.
- 130 Old City Hall, Boston, Massachusetts; Anderson Notter Associates, architects.
- 132 Jackson Place, San Francisco, California; Lloyd Flood and Bruce Beebe, architects.

**134 THE HERITAGE THAT SHOULD BE SAVED**

A few of many endangered buildings across the country brought to our attention by AIA State Preservation Coordinators and their associates and by the Historic American Buildings Survey.



Frank Taylor

**THE RECORD REPORTS**

- 9 **Editorial**  
Where, oh where, are management skills?
- 35 **News reports**  
Includes news in brief
- 40 **Buildings in the news**
- 51 **Office Notes**

**ARCHITECTURAL BUSINESS**

- 53 **Computers: tools for construction management**
- 60 **Building activity; living with the Phases**
- 64 **Building cost indexes: Cost up 7.8 per cent**
- 152 **Product Reports**
- 190 **Office Literature**
- 206 **Semi-annual Index**
- 210 **Advertising Index**
- 212 **Classified Index**
- 212 **Record Impressions**
- 213 **Reader Service Inquiry Card**

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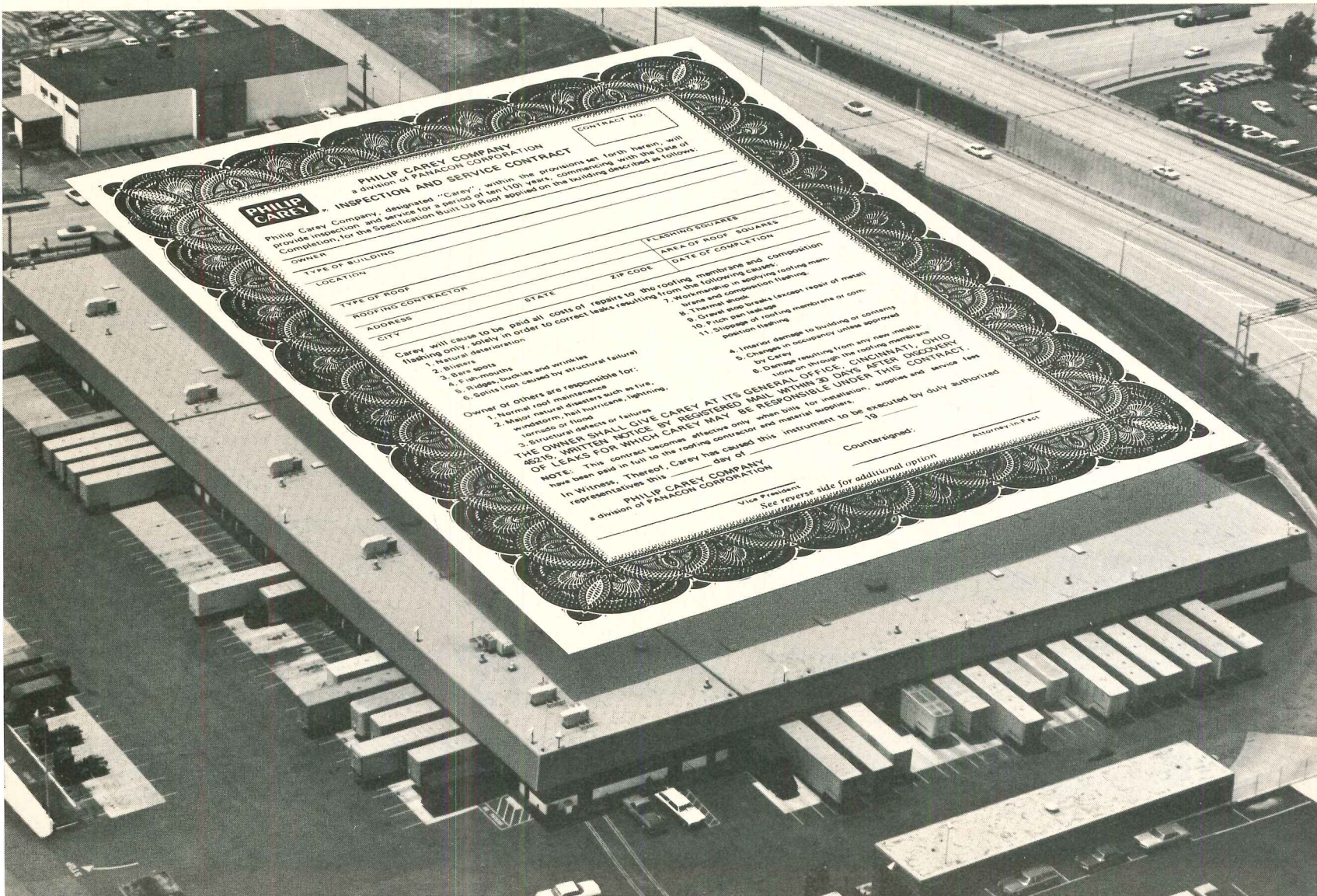
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## Where, oh where, are the management skills?

Oh where, or where, can they be? I suggest—and herewith argue—that the skills needed by “the construction manager” to manage the building process as “a single process, a systematic whole” lie more with the architect than with any other discipline.

In a speech last month, Gerry McKee, president of McKee-Buerger-Mansueti and one of the industry’s savviest managers, said: “We must first distinguish between two related but separate concepts to which “Construction Management” refers.

“First, there is the curiously belated discovery of professional management techniques as a means of improving productivity and achieving economic goals in the construction industry.

“Second, there is the emergence of a Construction Manager, a professional service firm, with whom owners may contract for management solutions for specific construction-project applications.”

In McKee’s view, the main reason for the emergence of the construction manager is not because anything constructive has happened about the difficulties of the industry—“its fragmentation, its rigidity, its resistance to change, its peculiarly local economic dimensions, its enmeshment in restrictive codes and regulations . . .” and the unusual fact that far from being characterized by its means of production (like most industries), the structure of the construction industry is defined by the organization of its labor force. McKee says “What has changed, and what has marked management techniques as important—indeed essential—for the construction industry is the role of the owner. The owner has emerged as a prime mover in the construc-

tion process. If the producer and seller are not large enough to sponsor industry change, the owner is. If the contractor cannot justify management and capital inputs in terms of increased profits, the owner can certainly justify them in terms of reduced costs, or improved delivery time. . . . The Construction Manager is an owner’s tool, invented by the owner out of his own need [and] in one sense, a kind of makeshift device invented to fill the obvious gaps in the construction process.”

Now, I guess in these days of complex building deals, soaring costs, and a history of missed delivery dates, no one can be against better management of the building operation. And I guess architects—who have, in the past, borne responsibility for on-price and on-time delivery (at least they have gotten the blame for missed bids and delivery dates)—have to assume that the rise of the construction manager concept is a reflection on their management of the process.

But I see no reason why the architect—if he wants to, and if he does his homework, and if he gets the right people on his staff, cannot become the manager of the “new process.”

For instance, here is the definition of Construction Manager in RECORD senior editor Bill Foxhall’s important new book\*: “The Construction Manager is a firm that applies knowledge of construction techniques, conditions and costs to the three

\* *Professional Construction Management and Project Administration*, by William B. Foxhall. Published by the American Institute of Architects and ARCHITECTURAL RECORD (330 West 42nd St., New York City 10036). \$15.00.

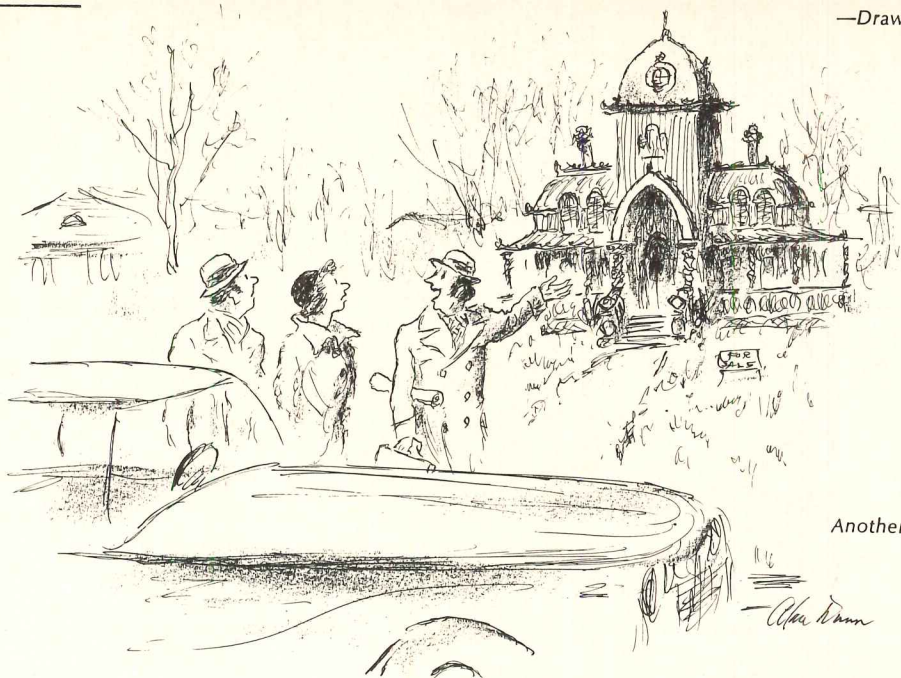
phases of decision, design, and delivery of a project. First, as construction consultant he clarifies the time and costs consequences of decision and design options as they occur. Second, as construction manager he enters, still as a professional, into construction scheduling, pre-purchasing of critical materials, advising on the method of obtaining contractors and awarding contracts, and coordination and direction of all construction activities, including those of the producers of systems and subsystems.”

Now what in that definition seems beyond the capabilities of an architect? To be sure, it includes some activities beyond the traditional skills of the architect. But it also includes some activities beyond the traditional skills of anyone else.

Indeed, was it not architects who invented “Fast Track” or phased construction which is clearly the most effective single tool in cutting time and costs (see RECORD, October 1970, page 154)?

It is indeed clear—whether the client is a big and sophisticated one such as GSA or FECA or SUNY, or a small and one-time client such as the building committee of a school or a church—that “the owner wants a single, systematic integrated effort from earliest planning through occupancy.” It is clearly desirable (indeed, essential) that, as McKee suggests, “construction management emerge as a professional service obtained by the owner through an agency contract.” But, just working for a fee instead of for profit does not make a “professional”—which the architect already is. Some other disciplines—including most contracting firms—which aspire to become “construction managers” must undergo a fundamental change in *attitude* to become professional. It sure makes sense to me that the architect make the strongest possible bid—not by shouting for it or demanding it, but by preparing for it—to provide that professional service.

—Walter F. Wagner, Jr.



Another feature—it's biodegradable

## One long fight that preservationists lost

Five weeks ago, scaffolding was erected around the old Chicago Stock Exchange Building, and wreckers began to strip its once-sumptuous interiors. A permit to demolish the Louis Sullivan-Dankmar Adler structure had finally been issued after a three-year preservation attempt.

Behind the demolition lay months of feverish effort by a handful of lawyers, architects, and interested citizens, and the struggle should be understood for the things it tells us about preservation politics.

In the end, it was a classic struggle; a small cluster of dedicated individuals against the time and money pressures of real-estate economics—and the indifference of bureaucrats and politicians who could have preserved the great building if they had only cared. . .

The old Stock Exchange, one of the last three Sullivan buildings left in the Loop, is (was) a graceful thirteen-story structure, and sits on what may be the most expensive land in the Midwest—the last undeveloped corner of the LaSalle Street canyon. In a city where money talks, no one could ignore the vast rewards promised by the development of the parcel.

The only counterweight to the dreams of Chicago developers for that spot was a 1968 landmarks ordinance. The law established a commission of citizens to advise the city council on designated historic or architectural landmarks. According to the law, once a building is designated a landmark the owners cannot alter or demolish it without permission from the Council. If the owners are determined to demolish it, the Council will be faced with taking the building off the owners' hands through eminent domain or other means, or letting them go ahead with demolition.

Many people had doubts about the strength of the ordinance in 1968, but they weren't prepared for the ease with which

the Council blithely decided against designation on economic considerations (the inability of the city to buy it) rather than architectural or historical features, as the law prescribed.

And while the Council deliberated (until August 1970), the options were narrowing. The two developers who had purchased the leasehold in 1968 for \$3.3 million sold it for close to \$7 million. (Edward Ross admits he was relieved at the offer because it saved his firm from the opprobrium of tearing down a landmark.) But the economic problems were now, of course, twice as great.

The apparent flouting of the landmarks ordinance by the Council might have led to a law suit, but the group trying to save the building hesitated. Instead of a suit, they chose to start the designation procedure all over again. They thought that if they could prove how important the building was, the city council would have to designate it. ("We were extremely naive.") Richard Miller, the young lawyer who emerged as the most active champion of preservation, has a more sophisticated explanation: Going to court would harass the owners but at best result in a temporary delay, while re-opening the proceedings could keep the issue alive while an economic solution was worked out. Actually they came up with one. Jared Schlaes and John J. Costonis devised for the Chicago A.I.A. a creative air-rights-transfer plan which would allow the owner of a landmark to be well compensated without redeveloping the site. Under a change in zoning laws, the owner of a landmark would be allowed to sell the air rights to his property to developers engaged in a building project elsewhere. These developers would pay the landmark owner, but they really would be buying from the city permission to add to their own building project more floors than otherwise allowed under the zoning ordinance. In short, the rights to develop above the landmark

would be transferred to another location.

This plan somehow got lost in the shuffle—and the Council never seriously considered it—as the fight over the Stock Exchange dragged on. Then, shortly before the mayoral election, Chicago Mayor Daley appointed a special "blue-ribbon" committee. In the past, such committees have been used to neutralize opposition by taking a difficult task "out of politics" and placing it on the shoulders of a group of distinguished citizens. The committee's solution was a limp alternative to the air-rights-transfer plan. The city would buy the building, then resell it to a developer who would build a high-rise on an adjoining parcel and also preserve the Stock Exchange. The mayor charged his committee with finding such a developer within 30 days. Murray Finley, president of the Amalgamated Clothing Workers and chairman of the committee, says the group talked to about 20 developers. One reluctant firm did do a study, but decided that the project did not meet their investment criteria.

And that sealed it. The mayor allowed the wrecking permit to be issued. A flurry of interest by the Federal Advisory Council on Historic Preservation had subsided when the developers promised to do their study, and did not re-enter. The Landmarks Preservation Council sought a Writ of Mandamus to require the City Council to designate the building a landmark, but they were at the end of their string. Appeals in the press, and a last-minute march around the building concluded the fight.

So in spite of the best intentions, innovative ideas, and a lot of hard work, another effort to preserve an architectural masterpiece had foundered. Whatever the assessment, the fight will be waged again, for other great examples of the Chicago School—the Monadnock, the Reliance, and the Rookery—also "stand in the way of progress."

—Jane Shaw, *McGraw-Hill World News*,  
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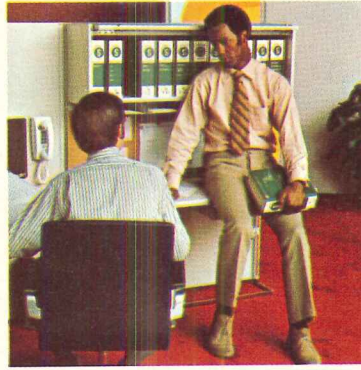
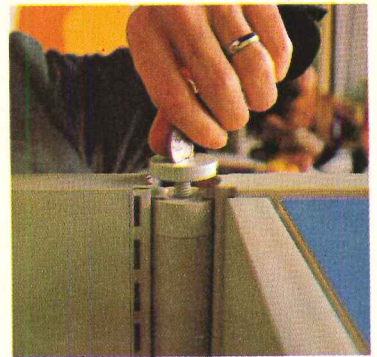
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(212) 692-5112

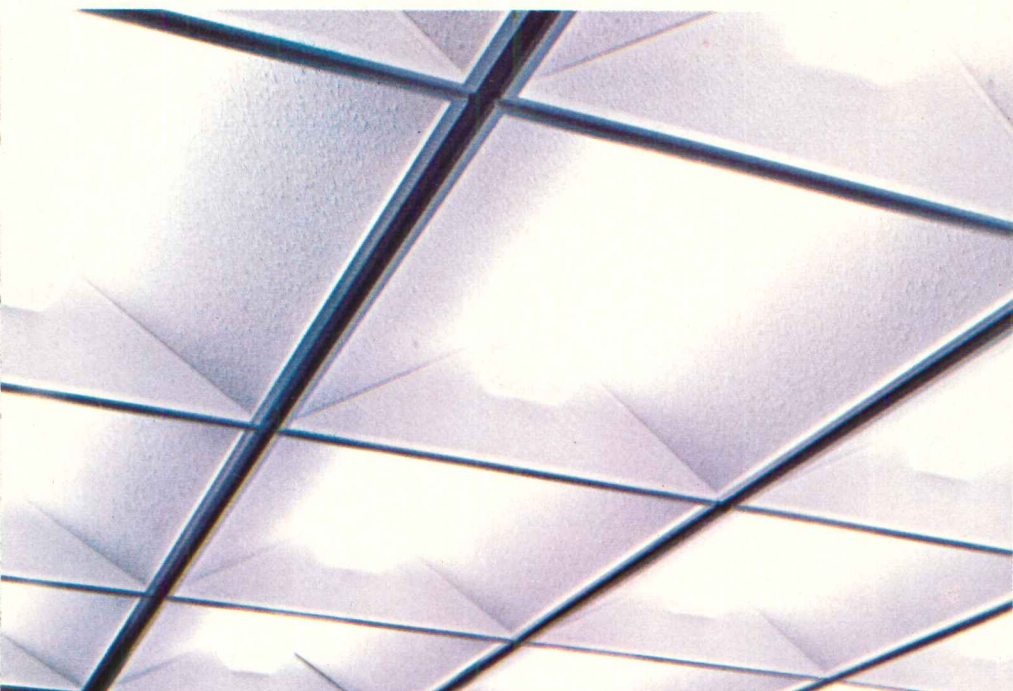
You can be sure . . .  
if it's Westinghouse.



## Westinghouse

For more data, circle 6 on inquiry card

**What makes  
this ceiling  
right for this job?**



# The way it accommodates interior partitions.

Armstrong Luminaire Ceilings go with partitions the way your straightedge goes with your drawing board. When the time comes to change partitioned spaces around, this ceiling won't offer any resistance—just easy flexibility.

Not only that, this Armstrong Luminaire Ceiling boldly enhances interior design with its efficient high-level lighting and beautiful looks. Its 60" x 30" modular construction allows for easy change and flexibility in design. (Luminaire is adaptable to 1,183 other sizes from 24" x 41" to 60" x 72".) Another architectural concern was the requirement for three-quarter-hour fire protection. Again, no problem.

The price? A lot less than you'd expect for a complete ceiling system with Armstrong Luminaire's Supply-Air Linear Diffuser, which supplies conditioned air without the use of distracting ceiling hardware. To see what would make an Armstrong ceiling right for your next job, write Armstrong, 4212 Rock Street, Lancaster, PA 17604.

**Armstrong** / **CEILING SYSTEMS THAT WORK**

For more data, circle 1 on inquiry card

Detroit Bank & Trust, Woodward - Hamilton Office, Birmingham, Michigan  
ARCHITECT: Swanson Associates, Inc., Bloomfield Hills, Michigan  
GENERAL CONTRACTOR: Maurice V. Rogers Company, Troy, Michigan  
MECHANICAL CONTRACTOR: Frank Krist Company, Detroit, Michigan  
ELECTRICAL CONTRACTOR: Van Norman Sales & Engineering Company, Inc., Detroit, Michigan  
CEILING SYSTEMS CONTRACTOR: R. E. Leggette Company, Dearborn, Michigan  
INTERIOR DESIGNER: Pipsan Saarinen Swanson, AID-HAIA, Bloomfield Hills, Michigan



# Do it right the second time.



DeVAC Replacement Windows are quite often the answer . . . when original window installations begin to rot, or leak air, or lose their good looks.

They offer you beauty, economical maintenance, and substantial cost savings by stopping the loss of conditioned air. DeVAC windows are available in a wide range of colors, and custom design configurations — in protective, double or single glazing.

DeVAC yields to no manufacturer on a quality installation. Constantly measured and checked by our competition, we are prepared to validate our high performance tests.

Refer to Sweets and Spec-Data DeV 8.15 or send us the coupon.



10130 Highway #55  
Minneapolis, Minn. 55441

Please send me your brochure — "More than a new lease on life for older buildings."

I have a renovation project involving window replacement in a:

- school  
 hospital

office building  
 other \_\_\_\_\_

I need:

- test data information  
 a trial installation  
 renovation assistance. Have salesman call for appointment.

Mail to: DeVAC, 10130 Highway #55, Minneapolis, Minn. 55441

10074

NAME \_\_\_\_\_

FIRM NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

PHONE (AC) \_\_\_\_\_

For more data, circle 7 on inquiry card



# One Speedramp system leads to another for the May Company



**This 11 year old Speedramp installation in the May Company's Mission Valley Shopping Center de-escalated insurance and maintenance costs.**

Back in 1960, the May Company installed a SPEEDRAMP® system

in its Mission Valley Shopping Center in San Diego. In eleven years of continuous operation there has been only one passenger mishap (resulting in \$25 in damages). And no major breakdowns. That kind of record has helped the May Company qualify for the lowest applicable insurance rates. And substantially reduced maintenance costs.



**That's why the May Company selected Speedramp systems for use at the new Meriden Square Shopping Center in Meriden, Connecticut.**

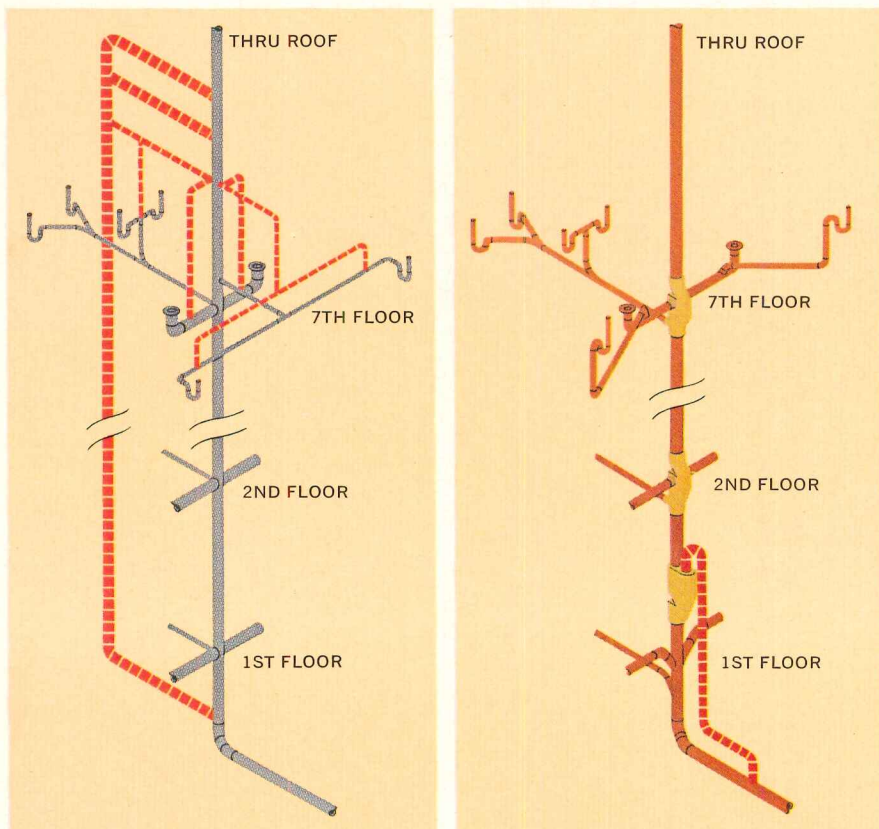
Now May Company customers at Meriden Square can discover the many advantages SPEEDRAMP has over conventional escalators. Like the gentle incline of the continuous moving ramp. And the safe, resilient rubber surface. SPEEDRAMP is easy to get on and off, with no disappearing steps to worry about. Strollers, carts and wheelchairs just roll on and off. If you've got people to move from one level to

another, it pays to design with a SPEEDRAMP system in mind. Ask the May Company. For data on SPEEDRAMP® incline belt passenger conveyor systems (or SPEEDWALK® horizontal belt passenger conveyor systems), write Goodyear, Box 52, Akron, Ohio 44309.

**GOODYEAR**  
TRANSPORT SYSTEMS



# Copper Sovent single-stack plumbing system. The new way to cut multi-story drainage costs.



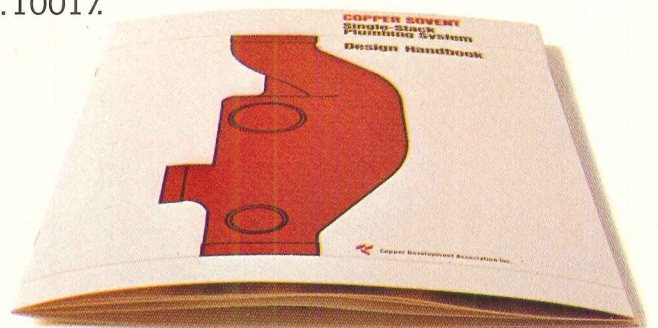
The simplicity and economy of the Copper Sovent system (right) are dramatically shown in this graphic comparison with the traditional two-pipe system. One contractor, on a recent 200-unit job, returned a credit of \$13,000 to the Housing Authority, based on savings with Sovent.

But that's just the beginning. Forty additional major installations are being planned right now, for a grand total of more than 8,000 apartments.

Couldn't you use more room or flexibility in your new building design?

For a detailed design handbook on the Copper Sovent single-stack plumbing system, write us: Copper Development Association Inc., 405 Lexington Ave., New York, N.Y. 10017.

 **COUNT ON COPPER**



Even though the Copper Sovent single-stack plumbing system is a major construction breakthrough, it's really very simple.

The soil and vent stacks are combined into one Sovent self-ventilating stack.

What you don't need any more is a separate vent pipe.

So you can put fixtures, like island sinks, where you want them. Not where the old two-pipe drainage system forced you to put them.

Plus you get more square feet of income-producing space because the Copper Sovent system takes up less space in the walls.

And because the Copper Sovent system weighs less, you get more room in your structural load estimates.

There's more room in your budget too because the Copper Sovent system is easier and cheaper to install.

Since it was first installed in the Habitat Apartments at Montreal's Expo '67, the Copper Sovent system has been used in 18 high-rise buildings across the United States.

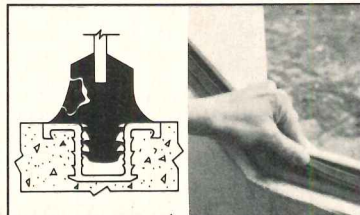
For more data, circle 9 on inquiry card

# Redundantly reliable.

That's how builder/owner We're Associates describe their new office community in Huntington, Long Island. Reliability is one of the reasons that architect William A. Schroeder, R.A., specified glazing gaskets of Du Pont Neoprene.

Neoprene gaskets have proven reliability. They are neat for better appearance. Resilient to hold their grip and keep a tight seal. Dependable because, properly compounded, Neoprene has proven resistance to sun, weather, heat, cold, ozone, chemicals and wear. And, they're fire-resistant because Neoprene won't propagate flame.

The "STANLOCK" Neoprene gaskets,



manufactured by the Standard Products Company, Port Clinton, Ohio, are of a special spline type design for precast

concrete. Coupled with a patented reglet, this gasketing system provides a dependable seal for either single or double glazed windows.

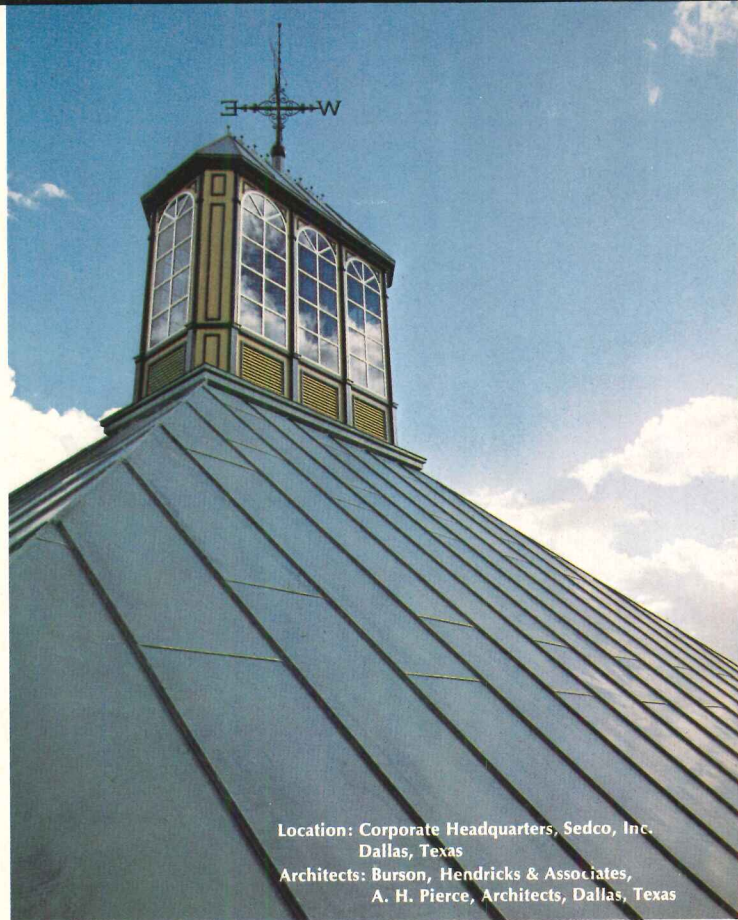
Du Pont makes Neoprene synthetic rubber, not gaskets.

For information on other architectural uses of Neoprene, write Du Pont Co., Room 22064, Wilmington, DE 19898.

 **Neoprene**  
REG. U.S. PAT. OFF.

For more data, circle 10 on inquiry card

# ROOFTOP RENAISSANCE!



Location: Corporate Headquarters, Sedco, Inc.  
Dallas, Texas  
Architects: Burson, Hendricks & Associates,  
A. H. Pierce, Architects, Dallas, Texas

## TIMELESS TITANALLOY® "A" ...

was the natural choice in roofing material to top things off in the restoration of the old Cumberland School in downtown Dallas. The building now serves as corporate headquarters for Sedco, Inc., an offshore oil drilling company. Sedco's president, Dallas native William P. Clements Jr., felt that restoration of this venerable landmark would be an outstanding addition to the Dallas skyline. The building has already won two architectural awards; one from the Dallas AIA chapter, the other from the Texas Society of Architects.

The standing seam roof of Titanaloy "A" was selected because it closely simulates the color and ribbed effect of roofs that were common in the Texas Hill Country in the late 19th century.

The dove grey patina color is achieved through an exclusive pre-aging process which assures designers roofing material that will age uniformly without bleeding, streaking or staining adjacent materials.

Titanaloy "A" offers important cost and application economies too, when compared with other less functional roofing materials. Available now in continuous coils up to 36" wide.

Get the full story on maintenance free TITANALLOY "A" in SWEET'S Architectural file under 7.2/Mat or let us supply samples and the name of the Matthiessen & Hegeler distributor nearest you. Matthiessen & Hegeler Zinc Company, La Salle, Illinois, 61301; New York Office, 233 Broadway, Rm 4015, Phone 815/223-8600, or 212/267-6542.

For more data, circle 11 on inquiry card



**TITANALLOY® "A"**  
THE ARCHITECT'S METAL

**Control Data asked  
its architects  
how to lower costs.  
Their answer: Vari-Tran®**

A dynamic computer corporation like Control Data needs space to grow in. But it wants to keep costs down. While at the same time managing to look good. With all that in mind, building architects Henningson, Durham & Richardson specified Thermopane® insulating glass with an outer pane of golden Vari-Tran for Control



Data's new three-tower office complex.

Vari-Tran has the ability to reflect part of the sun's radiant heat. This reduces cooling requirements both in tonnage and mechanical equipment like fan-coil machinery, duct work, etc. Which means the amount of usable floor space increases.

Image? No problem.

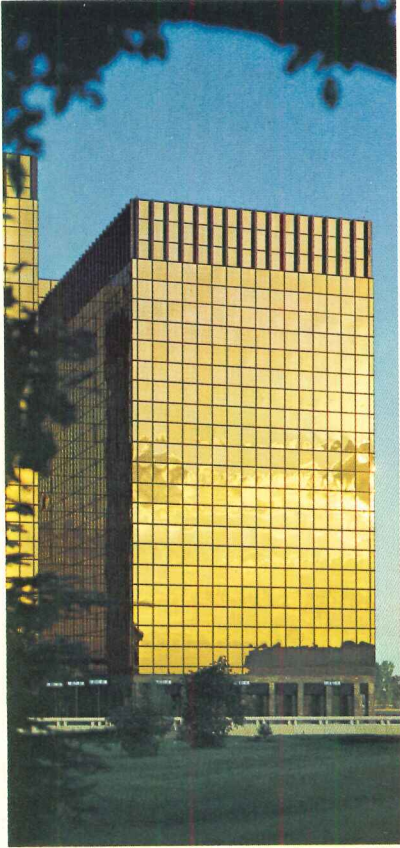
Vari-Tran's golden coating adds desired warmth and beauty. Each building is reflected in the other. And all three towers present an ever-changing mural of sky, clouds and sun.

Most important, there's cost. Control Data's architects developed a computer program to compare the results of using reflective glass with grey

or clear glass. They found Vari-Tran saved enough air conditioning tonnage to pay for itself, even though it's our most expensive glass. Not to mention the future reduction in operating costs.

Vari-Tran is available in silvery as well as golden coatings with light transmissions of 8, 14 and 20 percent.

If you'd like a computerized cost analysis of glazing alternatives for a building you're planning, give us a call. We'll be glad to do it for you. Contact your L-O-F Architectural Representative or Architectural Dept., Libbey-Owens-Ford Company, Toledo, Ohio 43624. You'll see how lowering costs can be a beautiful idea.



The Control Data Headquarters Building  
Owner: Control Data Corporation, Minneapolis, Minn.  
Architect: Henningson, Durham & Richardson, Omaha, Neb.  
General Contractor: Kraus-Anderson of St. Paul Co., St. Paul, Minn.  
Glazing Contractor: Larry's Glass & Mirror Co., St. Paul, Minn.

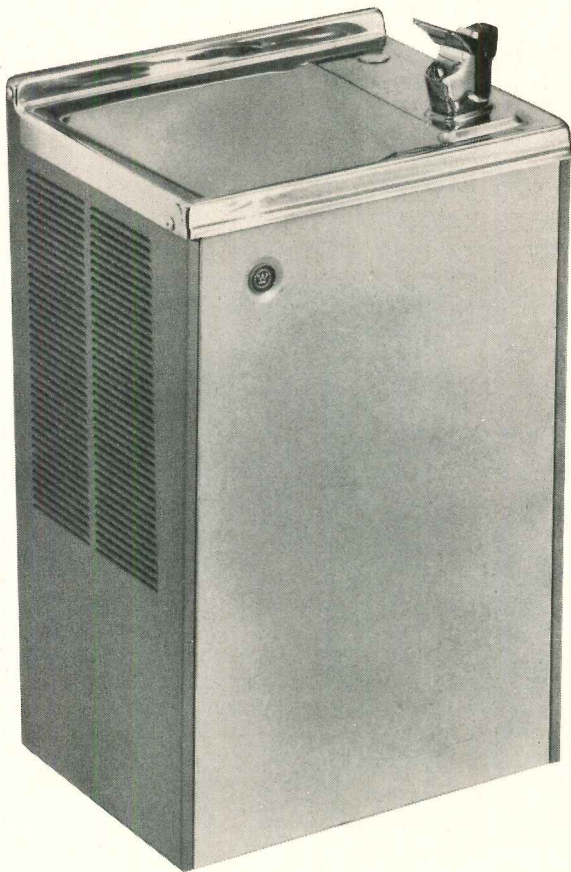


**Hi-Performance Glass**

*The glass that cuts building costs*

*For more data, circle 12 on inquiry card*

# Water Colors.



Frost White  
Platinum Beige  
Metallic Bronze  
Nugget Gold  
Dusty Olive  
Coral Red

Just install them and Westinghouse Instant Cold Water Coolers turn into water colors on your wall. Install easily, too. Packed with each Wall Mount is a time saving installation template. Only Westinghouse has these colorful ways to make your Water Coolers a thing of beauty. Also available in brushed satin stainless-steel or two-tone olive-beige enamel.

You can have instant hot water, too, with our hot water accessory. Factory-installed on all models. Backed by Westinghouse Nationwide Sure Service. See Sweet's Files. Or refer to "Water Coolers" in the Yellow Pages. Westinghouse Water Cooler Dept., Columbus, Ohio 43228.

You can be sure... if it's

**Westinghouse** 

*For more data, circle 13 on inquiry card*



LENNOX PROVIDES **The atmosphere:  
a critical element in "shop" design**



The Mall at Echelon, Voorhees Township, New Jersey, a totally enclosed shopping environment with over 100 stores. The shopping mall is the first development in a projected total urban community that will include office buildings, apartments, recreation and health care facilities. Developers: Echelon Mall, Inc., a subsidiary of The Rouse Company, Columbia, Maryland. Architects & Engineers: Day & Zimmerman, Philadelphia.



Shops and stores pose special problems for HVAC systems. Occupancy can change quickly from zero population to a massive congestion of heat-generating bodies. Spaces vary in size from intimate boutiques to landscaped plains of openness. Lighting is intense and critical, adding heat unevenly to the

(continued overleaf)

continued . . .

## The atmosphere...

environment. And there is need for continuous flexibility in the size and uses of space. And in the availability of power.

A study of user requirements, and the performance criteria into which they translate, establishes Lennox rooftop systems as an optimal solution. Available in single or multizone systems, they can adjust to any change in the critical areas of ceiling, lighting, power and

partitions. And adjust to any change in space configuration or size. A Lennox Direct Multizone System can heat and cool at the same time, thus meeting any demand imposed on it.

Lennox HVAC systems also fit the economics of shop and store design. Costs are fully predictable. They are packaged systems, eliminating much on-site labor. Cost of owning can be fixed by service contracts.

Operating economies are provided by POWER SAVER,™ which begins to cool free at temperatures under 70°F. And by re-use of heat removed by refrigeration. Because the equipment is a single-source package, it offers single-source responsibility.

Lennox HVAC systems offer the designer precise, known performance data with which to work, and complete flexibility with which to design the other critical, highly visual environments of his project.

For information write Lennox Industries Inc., 980 South 12th Avenue, Marshalltown, Iowa 50158.

**LENNOX**  
AIR CONDITIONING • HEATING

*For more data, circle 14 on inquiry card*

Lennox gas-electric single zone units atop Echelon Mall, Voorhees Township, New Jersey.





The Mercado, a cluster of 48 shops built around cobblestoned plazas in Rancho Bernado, a development in Southern California. Developer: AVCO Community Developers. Architects: Gary Coad, Dale Naegle Architecture & Planning, Inc., La Jolla, California. Engineers: University Mechanical Engineers & Contractors, Inc., San Diego. This open mall and Spanish design fit the climate, the history, the life style of Southern California.

Fashion Square Shopping Center, La Habra, California, an open air mall. Lennox roof mounted heat pumps provided an ideal design solution in Southern California's mild climate. Owner: U.I.D.C., Inc. Architect: Welton Beckett & Associates, Los Angeles.



**Logical  
answer for  
floors in  
remodeling  
projects...**

# **Jute- backed carpet glued directly to existing floors**

Write for Architectural Guide Specification,  
Case Histories of Installations

## **Jute Carpet Backing Council, Inc.**

25 Broadway • New York, NY 10004

American Industries, Inc. • BMT Commodity Corp. • C. G. Trading Corp.  
• Delca International Corp. • Dennard & Pritchard Co., Ltd. •  
A. de Swaan, Inc. • Robert F. Fitzpatrick & Co. • Gillespie & Co. of  
N. Y., Inc. • Hanson & Orth, Inc. • O. G. Innes Corp. • Jute Industries,  
Ltd. • Lou Meltzer Co. • Pak-Am Inc. • William E. Peck & Co. of N. Y.,  
Inc. • R. L. Pritchard & Co. • Revonah Spinning Mills • Stein, Hall &  
Co., Inc. • White Lamb Finlay Inc. • Willcox Enterprises, Inc.



The prevalent flooring in most older structures is hard surface tiles or sheet material. Specify jute-backed carpet cemented over it. Floor preparation is minimal . . . just strip wax, fill in larger holes. Cost of removing existing material and sanding off remaining mastic is eliminated. Similar carpet application is feasible over any subfloor . . . concrete, terrazzo, metal, wood.

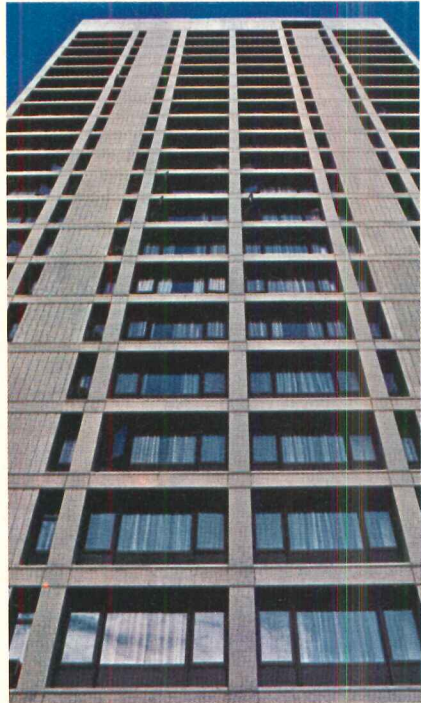
Level-loop jute-backed contract carpet glued down provides a firm surface over which casters and wheels under chairs, carts, mobile equipment and hospital beds roll easily. Without sacrificing carpet's aesthetic, acoustical, safety, easy maintenance benefits.

Jute has over double the thickness of other no-pad carpet backings. Cracks in old flooring won't depress the carpet or be felt underfoot. Jute's extra thickness also provides greater area for edge "beading" with adhesive at seams, important since heavy traffic strains seams.

Jute backing absorbs and retains adhesive, providing a secure floor bond. Its dimensional stability assures permanent precise fit to floor cut-outs. It permits carpet to be pulled up, intact for reinstallation. If "stretch" installation is desired for selected areas, jute hooks taut on tackless gripper pins without loosening up.

For more data, circle 15 on inquiry card

# More Environmental Control with Shatterproof Insulating Glass



1. Residential Complex, The Children's Hospital Medical Center, Boston, Mass. Architects: The Architects Collaborative, Cambridge, Mass.
2. Imperial House Apartments, Kenosha, Wisconsin Architect: Sheldon Segel, A.I.A., Milwaukee, Wisconsin
3. Delta Airlines Waiting Rooms, Standiford Field, Louisville, Kentucky Architect: Pierce, Wolf, Yee & Assoc.
4. Ashland Ski Bowl, Ashland, Oregon Designer: Robert L. Bosworth, Medford, Oregon
5. Bismarck Municipal Airport Terminal, Bismarck, North Dakota Architects: Ritterbush Brothers, Bismarck, North Dakota

Shatterproof Insulating Glass gives you more Environmental Control because you combine the functions you need for ultimate comfort.

Functions like Heat and Cold Protection, Solar Rejection, Sound Control, Glare Reduction, Security and Safety.

... Alone or in combinations. It's our most comfortable glass.

And Shatterproof Insulating Glass makes building owners more comfortable too. Because it can drastically reduce heating and air conditioning costs, while providing more usable floor space.

Manufactured in the largest quality sizes in the industry ... in clear and tones of bronze and gray, as well as subdued reflective tones of bronze, gold, gray and chrome.

If you're looking for flexibility in Environmental Control, write for our Insulating Glass Brochure,

Shatterproof Glass Corporation, Department 101E,  
4815 Cabot Avenue, Detroit, Michigan 48210. Phone: 313/582-6200.

**Shatterproof**  
GLASS CORPORATION Architectural Division

For more data, circle 16 on inquiry card



AREALUME

## Stonco introduces a new concept in architectural illumination: geometric area lighting.

### **Why a geometric approach?**

Until now, most outdoor and area lighting fixtures bore little or no relation to the geometry of the building they were lighting. Awkward, bulky shapes clashed with the architecture, and were difficult to adapt to modern building planes and angles.

### **Stonco's innovation**

Stonco has changed all that. We've designed the first complete series of architectural area lighting fixtures

that are geometric, flexible, modular ... and harmonize perfectly with today's building styles.

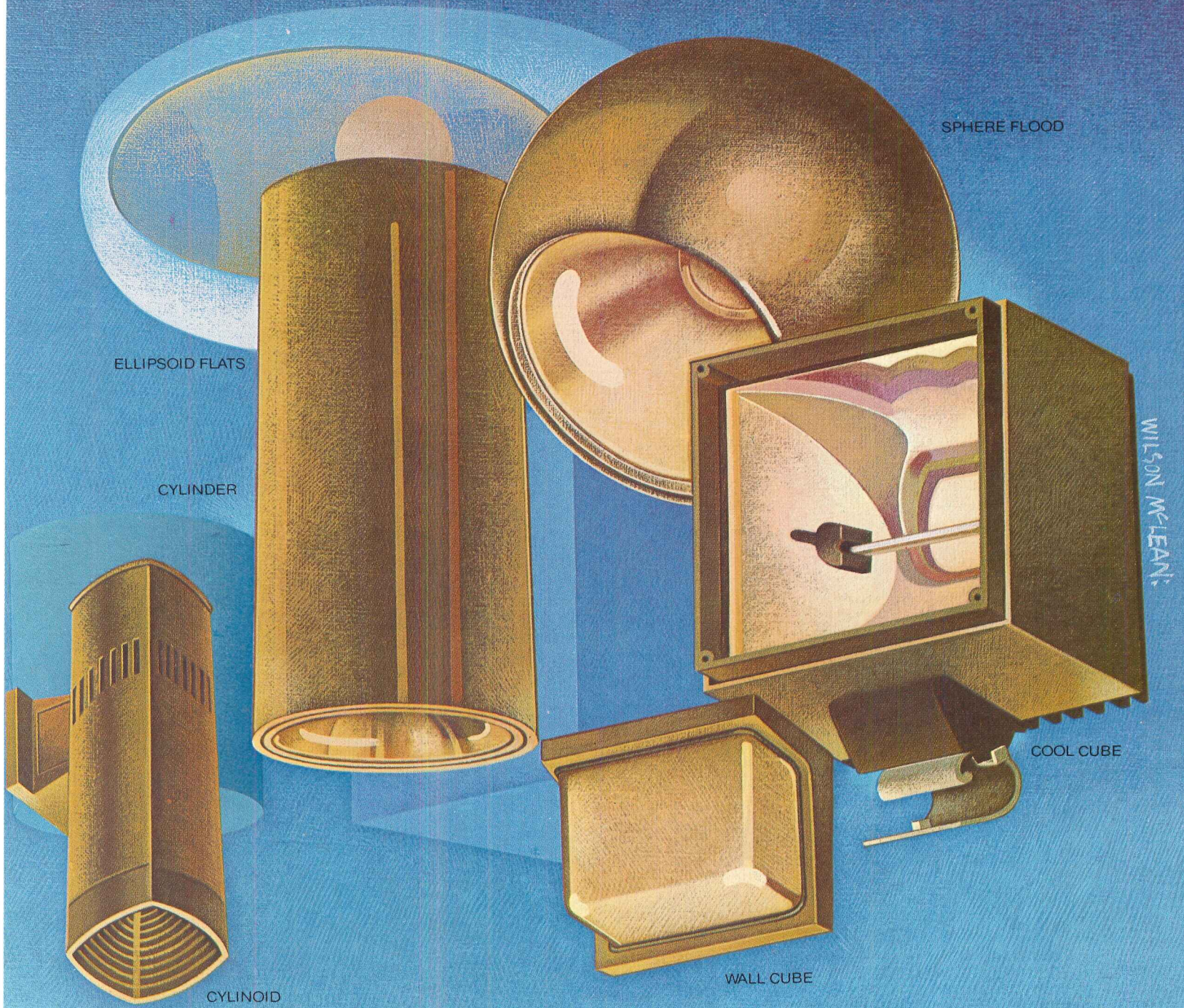
### **Back to fundamentals**

We did it by going back to the basic shapes of modern architecture—the cube, the sphere, the cylinder. Then we designed fixtures with clean, uncluttered lines to match these geometric forms. Now, by selecting from a wide choice of new Stonco lighting fixtures you can design area lighting as an integral

part of your building plan.

### **A brilliant example: Cool Cube**

Consider the quartz area flood. Most conventional types are distracting in shape, unfinished in appearance. But Stonco designed Cool Cube—up to 1500W of tungsten halogen lighting—as a compact cube that has all the inherent quality a fine building exterior demands. It's made with extruded aluminum satin-polished and anodized to a deep bronze



SPHERE FLOOD

ELLIPSOID FLATS

CYLINDER

WILSON W-LEANI

COOL CUBE

WALL CUBE

CYLINOID

finish. And a new socket design, integral with the housing, provides a more efficient heat sink.

**Plus a square luminaire**

Another example: the usual outdoor bracket is rounded, bulky and a problem to adapt to walkways and tunnels. Not Stonco's new Wall Cube. We fashioned it as a crisp, square unit that mounts in almost any position on any surface to direct all the light you need, wherever you need it.

**And, for variety...**

To relieve the rectangular look, Stonco also offers you architectural-quality fixtures in other basic shapes: cylindrical area floods, new Arealume® pole-top designs, Cylinoid Downlights®, prismatic and opals. All are styles to blend into your plan, alone or in combination with other Stonco geometric fixtures.

**How can you learn more?**

Our new brochure, "The Shape of

Architectural Lighting," illustrates all the styles, features and options that the latest Stonco geometric area fixtures offer you. For your copy, simply circle the reader service card. Or write for details to Keene Corporation, Stonco Lighting, 2345 Vaux Hall Rd., Union, N.J. 07083.

**KEENE**  
CORPORATION

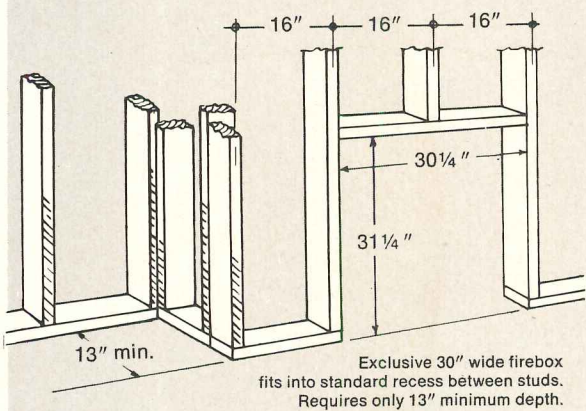
**STONCO LIGHTING**

**We've just begun to grow.**

## Low-cost installation



Build into or out from any wall.  
No masonry, no additional final trim.



## Renters pay up to \$15 more a month



# Save and earn more with the new dimension in gas fireplaces.

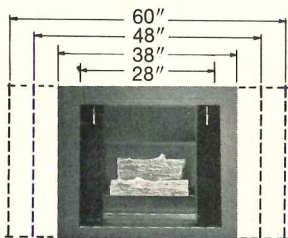
Now you have another great reason to include Heatilator fireplacing in your building plans. It's the new compact Mark 2028 gas fireplace . . . with an exclusive 30" wide firebox that's fully compatible with standard studding. Perfect for apartments (and single dwellings).

**Support and surround with combustibles.** Factory-built Mark 2028 needs no masonry. Build into or out from any wall—with or without a raised or recessed hearth. And no additional final trimming because the pre-finished Flatte Black surround completely self-trims against the wall surface. But if you want to decorate, the possibilities are endless.

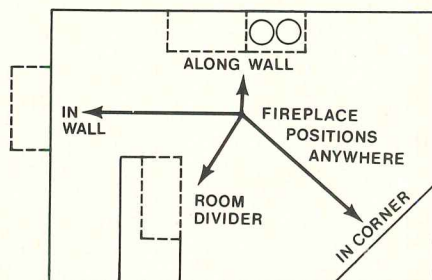
**Instant pushbutton control.** Clean, convenient pushbutton operation activates flames on realistic oak logs. AGA certified and tested for natural or LP gas. Self-generating burner pilot does not connect to building electrical power.

**Renters will pay premium rent for real fireplacing.** Up to \$15 more per month. That brings more cash flow, rental profits, loan and sales value for builders and investors. Moreover, it helps assure steadier occupancy.

**Send for the Heatilator Architectural File.** Wood- and gas-fireplace systems are detailed in full color catalogs and representative architectural drawings. Write: Vega Industries, Inc., 33121 W. Saunders St., Mt. Pleasant, Iowa 52641. Also available in Canada.

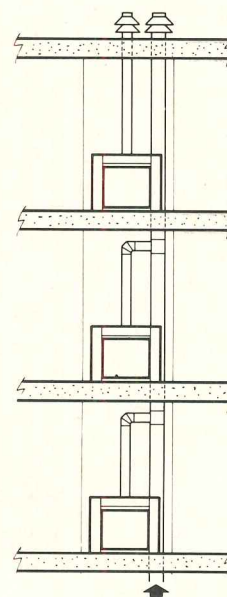


**Increased Visual Width.** Screen extension packages are available that extend the screen width from the standard 28" size to 38", 48" or 60".



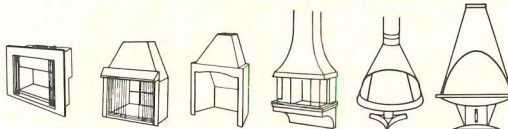
### Also, the dramatic wall-hung Mark 5880

For high visual impact consider the Mark 5880 —hangs on any wall, can be painted any color. Cantilevered base, raised hearth and gradually receding hood silhouette add contemporary flair for that extra spark of excitement.



Vented with standard B-vent, in either single or multi-level arrangements.

**heatilator**  
America's Leading Fireplace Systems



Built-in/Free-standing/Wall-hung

For more data, circle 18 on inquiry card



Only Haws has **Blend**  
 precast stone drinking **one**  
 fountains—in five **with**  
 colors to match your **your**  
 ideas. Ask your **next**  
 Haws representative **idea**  
 to show you a  
 color sample kit  
 and specifications  
 today, or write:  
 Haws Drinking  
 Faucet Company,  
 1441 Fourth Street,  
 Berkeley, California  
 94710

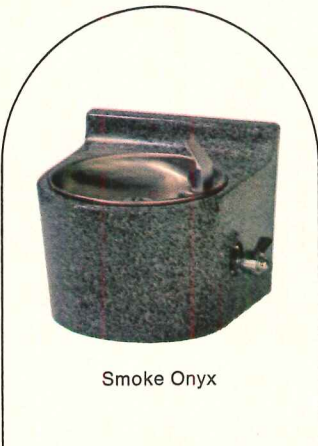
Model 2000 (90-C) at right,  
 1040 (50-C) below, available  
 in all five colors. Ask about  
 Haws remote chillers for  
 hidden cold-water source.



Laurel Green



drinking fountains and faucets, emergency decontamination  
 units and water coolers



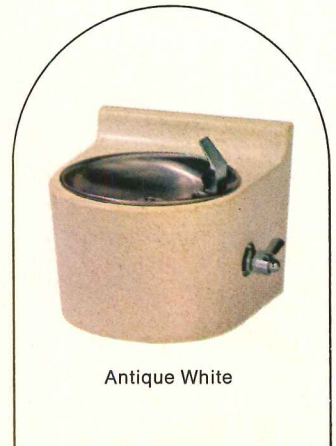
Smoke Onyx



Silvertone Gray



Terra Cotta Beige



Antique White

For more data, circle 19 on inquiry card

Exit devices. Outwardly, their design reflects an inner strength and reliability. □ Now look beneath the cover for the real Sargent quality. Built for service through simple design; a smooth, positive interaction of all moving parts. □ And look at the completeness of the line . . . all functions in all finishes, including a full line of Fire Exit Hardware. □ Sargent exit devices . . . well worth another look.



The  
strength

The  
style

The  
range

 **SARGENT**®

A complete line of advanced architectural hardware, including the Sargent Maximum Security System  
New Haven, Connecticut □ Ontario, Canada

*For more data, circle 20 on inquiry card*

**If any other anti-static fiber fails,  
you can expect an apology.**

**If ours fails, you can expect a new carpet.**



Saying you're sorry isn't going to make a customer any less sorry he bought an anti-static carpet that doesn't perform.

Unless he's been promised a new carpet.

And the only one to do that is Dow Badische.

We guarantee that a nylon or acrylic-mod-acrylic carpet blended with as little as 2% Zefstat® anti-static metallic yarn will reduce static below the level of human sensitivity for the useful life of the carpet or five years. Or else we replace the entire carpet, free of all charges.

Of course, we're willing to give you this strong a guarantee because we're absolutely certain not only that Zefstat works, but that it's better than anybody else's answer to the static problem.


The only thing we'll apologize for is hurting our competitors' feelings.

For more information, write Dow Badische Company, 350 Fifth Avenue, New York, N.Y. 10001.

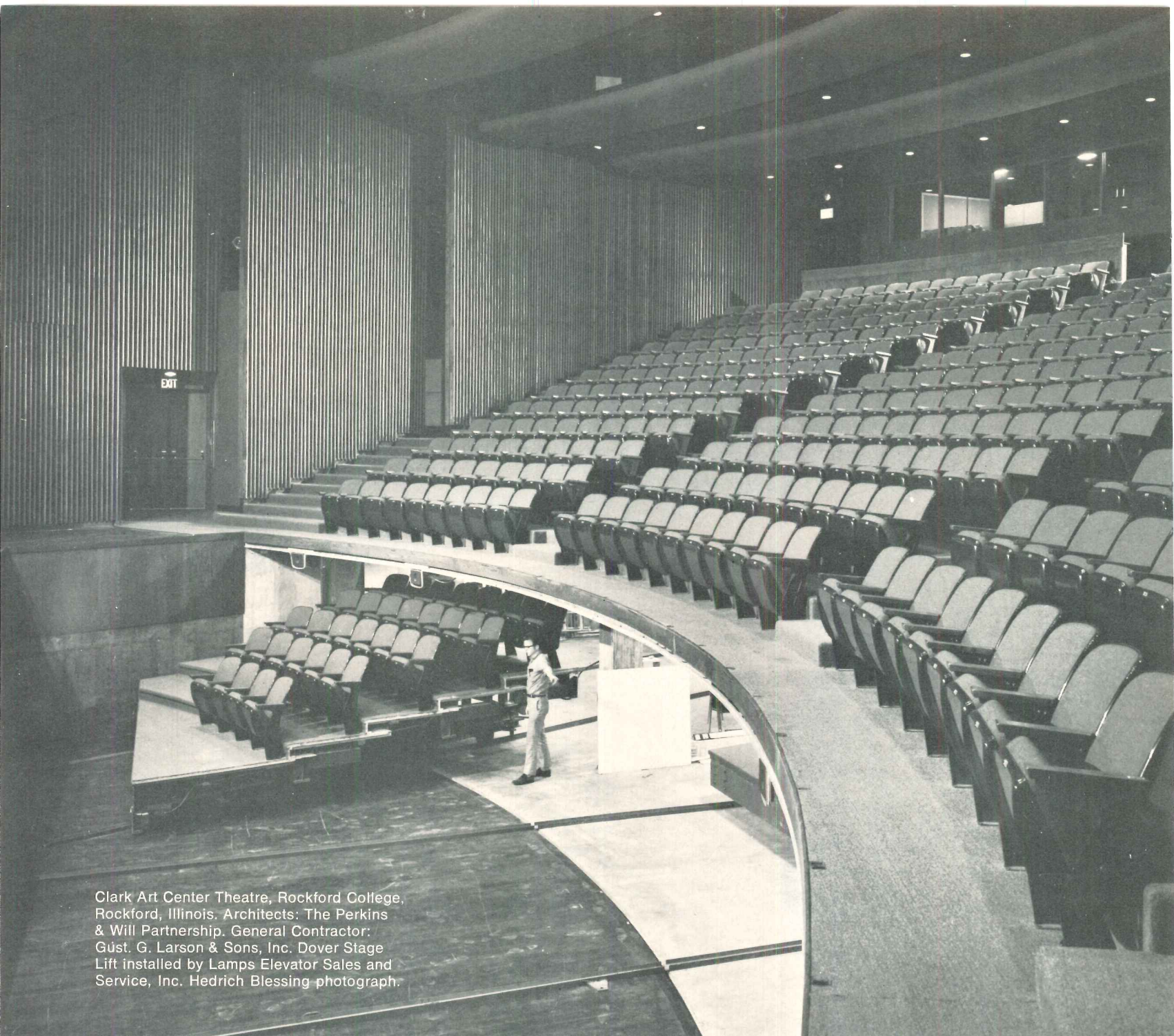
Zefstat is a registered trademark of Dow Badische Company.

Dow Badische Company guarantees to the original purchaser that a carpet made with Zefstat will not generate static in excess of 2,500 volts down to a relative humidity of 20% at 70°F. (The threshold of average human sensitivity is considered to be 3,000 volts.) This anti-shock feature is guaranteed for the useful life of the carpet or five years, whichever is sooner.

If the anti-shock performance fails to meet the above standard and if human comfort is adversely affected by static generation, the purchaser must notify the manufacturer and make the carpet available for testing by Dow Badische Company. If failure is verified by our tests, the carpet will be replaced, free of all charges, including the cost of installation.

**ZEFSTAT**   
**THE ONLY ANTI-STATIC YARN GUARANTEED FOR 5 YEARS**

For more data, circle 25 on inquiry card



Clark Art Center Theatre, Rockford College, Rockford, Illinois. Architects: The Perkins & Will Partnership. General Contractor: Güst. G. Larson & Sons, Inc. Dover Stage Lift installed by Lamps Elevator Sales and Service, Inc. Hedrich Blessing photograph.

## Dover Stage Lift helps create a theatre for all seasons.

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## News in brief

**Housing starts and building permits moved downward in September to just under the 2 million mark.**

The annual starts rate declined to 1,958,000 units, down 12.4% from the record August rate of 2,235,000 units. The annual permits rate, on the other hand, dropped by only 1.9%—from 2,066,000 units in August to 1,967,000 units in September. The decline in the September starts rate was mainly in apartments (structures with 5 or more units). However, permits issued for apartments in September remained at record levels, indicating stronger activity in this sector in the immediate future.

**General Services Administration has selected Turner Construction Company of New York** as construction manager for a package of three social security payment centers to be built in San Francisco, Chicago, and Philadelphia. Turner's bid was \$1,497,800.

**The Illuminating Engineering Society announces that nominations for the Lumen Award (for lighting design) are being received until January 12, 1972.** Submissions are limited to installations completed this calendar year and located in New York City or Westchester. For more information: Viggo B. Rambusch, 40 West 13th Street, New York, N.Y.

**The Construction Industry Stabilization Committee has reviewed 1258 cases since it was established.** According to figures released by the Associated General Contractors of America, in their national newsletter, the Committee has approved 730 cases (averaging increases of 11.2 per cent), approved partial adjustments in 204 cases, and returned 140 cases to the craft boards for further negotiation. In 1968, wage increases in construction averaged 8 per cent; in 1969, 15 per cent; and in 1970, 18 per cent.

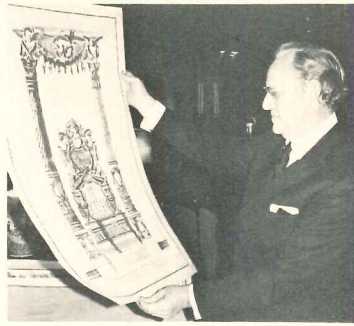
**Second International Symposium on Lower-Cost Housing Problems will convene on April 24-26, 1972 in St. Louis, Missouri.** Technical Papers on every aspect of housing will be presented. For more information contact: Dr. Oktay Ural, Symposium Co-Chairman, Civil Engineering Department, University of Missouri-Rolla, Rolla, Missouri 65401.

**The NY/AIA Chapter announces that proposals are invited for the Arnold W. Brunner Scholarship.** Areas of study are: 1) Computers—an evaluation of their present and future worth in professional offices; 2) Minority groups in the Profession—their access to schools and the profession; 3) Design—the effects of ecology and climate in the design of buildings and communities. A research stipend of up to \$10,000 will be given to the winning candidate. Selection will be announced June 1, 1972.

**William H. Edgerton, and the consulting firm of McKee, Berger, Mansueto, Inc., have established a publishing company** to publish and distribute books and services of interest to the construction industry. To be called Construction Publishing Company, Inc., the new firm will be located at 2 Park Avenue, New York, N.Y. 10016. Mr. Edgerton was formerly Manager of Dodge Building Cost Services of McGraw-Hill Inc.

**G. Holmes Perkins has been named University Professor of Architecture and Urbanism** by the Trustees of the University of Pennsylvania. Perkins, who retired in June 1971 after 20 years as dean of the Graduate School of Fine Arts, received a professorship that is awarded to a small group of senior faculty who are distinguished in their field and who have made major contributions to the University.

**The 21st Architecture and Gardens Tour of Japan, Spring, 1972,** directed by Kenneth M. Nishimoto, A.I.A. of Pasadena, California, will leave by air from Los Angeles on April 6, 1972. The 22 day tour of Japan will include visits to numerous gardens and buildings of architectural significance both modern and traditional. Members of the tour will also visit the Katsura Imperial Villa and Gardens in Kyoto. The group will be limited to 25 members. For more information, contact Kenneth M. Nishimoto, A.I.A., 285 South Los Robles Avenue, Pasadena, California 91101.



Mel Chamowitz

2.



**1. Washington conference on new communities**

About 350 architects, economists, and planners came to Washington, D. C., November 3rd through the 6th, to attend the AIA's New Communities Conference. Federal legislation (Title VII) enabling developers to begin planning and building new communities was devised only in 1970, and the principal author of that legislation, Representative Thomas Ashley (Dem., Ohio) was on hand Thursday to tell the conference that Title VII is not being administered, nor the available funding spent, so that the law can help new communities to the degree intended. Because of the newness of the legislation, and the uneasy agreement about what new communities are, the conference could have been inconclusive. Instead, it was one of the better organized conferences of the year; the format allowed what hard information there is about new communities to be disseminated, architects were shown what physical progress there is at the sites, and the two or three positions taken against new communities concepts as they are now forming, were clearly presented so listeners understood the issues and the choices.

Presentation boards were on display outside the general meeting room, showing many of the new communities now underway and being considered, but the two shown to the conference in slides were Jonathan, Minnesota, being developed on 8,000 acres twenty miles from Minneapolis, with a projected population of 50,000; and Cedar-Riverside, Minneapolis, an in-town new town on 100 acres, with a projected population of

30,000. Minneapolis is definitely one of the centers of action in the field. Jonathan is a satellite, probably commuter-oriented new town like most of them being sponsored by HUD, and Lloyd Rodwin and Lawrence Susskind, both professors at MIT and the two doubters of the conference, took exception to the long-term usefulness of this type. Calling such new-towns merely better organized hopefully racially mixed suburbs whose land will be developed anyway for private profit, Rodwin and Susskind call for long-term regional growth planning, and perhaps "magnet-dimension" new cities developed from scratch, with populations of 500,000 or more. Several examples of this kind of urban development are now in the talking stages, but much hard planning remains to be done.

The comments of all the speakers and participants in the conference (about twenty-one) including Rodwin's and Susskind's, are presented in papers that were available prior to the conference, and are still available from the AIA in Washington. Carroll S. McNulty, Jr., AIA, was conference moderator, and Michael Barker, AIA Director of Urban Programs was the conference organizer.

**2. Piranesi find**

A set of 24 original architectural drawings by Giovanni Battista Piranesi (1720-1778) has been discovered by Columbia University and acquired by the university through the generosity of the art collector Arthur Sackler. The 24 drawings show Piranesi's 1764 plan for remodeling Rome's ancient Basilica of S. Giovanni Laterano, one of the oldest and most important churches in Christendom. The Lateran rebuilding proposal was one of only two working architectural projects Piranesi ever developed. He presented the drawings in 1767 to Cardinal Rezzonico for consideration by the Cardinal's uncle, Pope Clement XIII. But the plan was never executed. The Church of Santa Maria Priorato in Rome remains the only existing Piranesi building.

The drawings will be part of a comprehensive exhibition of Columbia's Piranesi collections that will go on display this March at the University.

**Tall buildings can still be built in San Francisco**

Proposition T, to limit height of new buildings throughout the city to 72 feet—was roundly defeated by a vote of 139,775 to 85,031 in last month's hotly contested election, and its initiator, dressmaker Alvin Duskin, was also defeated in his try for a post on the City-County Board of Supervisors.

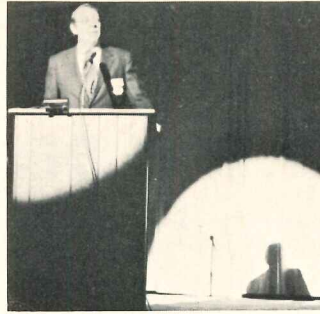
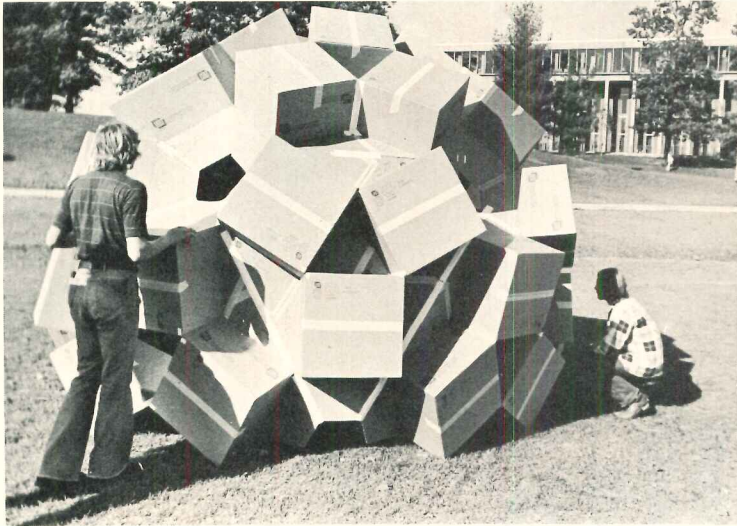
Actually, Proposition T allowed for buildings over 72 feet in height if the people voted for them. But they would have to vote on any and every over-72 foot height application. The vote was a blow for Duskin, who had gathered

45,000 signatures from San Franciscans to get the proposition on the ballot. Duskin may be out but he is by no means through. Unless the city rejects the urban design plan and adopts a "realistic new plan," Duskin promises to get another proposition on the ballot next year. He also demands that the city finance a major independent study of the economic and ecological impact of tall buildings, tax all new highrise buildings to pay for "extra services" they incur, increase bridge and freeway tolls, develop neighborhood control of local planning, to prohibit political campaign contributions and to establish a city wide environmental agency.

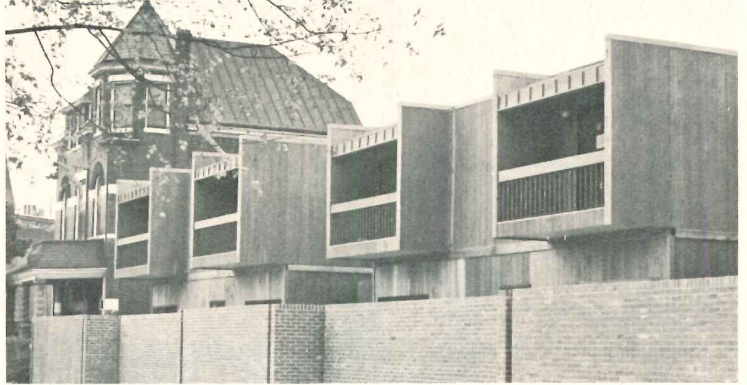
The Urban Design Plan, presented by the City Planning Department last spring, is the first such plan by a major city. It sets limits on building bulk and proposes locations for high rise buildings (of various heights) where their height would not be injurious to the cityscape, either at skyline or at eyeline. The City Planning Commission adopted the plan last August and immediately enacted zoning laws to implement it, but in October it violated its own decisions by approving a highrise hotel on Van Ness Avenue, not one of the locations designated by the plan for high-rise structures.

Duskin obviously hit a sore spot among citizens in the proposals he made. But they were badly drawn, their intent unclear and there were implications of throttled opportunities for the city in the limitations they would have imposed.

3.



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### 3. Students design Instant Environments

The design of an "Instant Environment" was the subject of a competition at Kent State University recently between the ten student chapters of the AIA. The day began at 9:30 when Buckminster Fuller, a dynamic 76, warmed to his favorite subject—how to do more with less. Only occasionally pausing to choose the right word, Fuller discussed the theories of energy and motion, the discovery of the elements, and some of his personal thoughts on religion, politics and economics. All the while, students were assembling their projects on the University's practice football field.

At 5 p.m., when Fuller's lecture ended, Instant Environment had come to Kent State. The winning design, by Kent State junior Edward Monaco, was titled "Boxed House" (photo above). The program called for structures that were inexpensive and lightweight.

There was nothing lightweight about the six-hour Fuller lecture.

### 4. Inbex notes

There were more people, more exhibits and more examples of industrialized housing that has actually been built in Inbex (the Industrialized Building Exposition and Congress, Louisville, October 31-November 4) this year than at the first one held there last year. Thus it appears to be an index of dramatically increasing American interest in industrialized building.

But it is not industrialized building as architects like to think of it. The gap between those committed to innovation in building design and those beginning to construct modular housing is as wide as ever. Yes, a few architects who have done work in systems building (Philip Meathe, Clovis Heimsath and George Heery, for instance) stood on platforms talking to large audiences about architecture and industrialized building. But they were often speaking of matters their listeners could not understand. Architects are designing the products which this new industry is producing, it is true, but generally they are the same ones who did the floor plans for builders in the past.

This does not mean the show had no value for the architect/visitor. Many full-scale examples of modular design inside the hall and nearby could be seen. A Louisville-based firm, Unex Building Systems, Inc., also had just completed a neatly-detailed 24-unit complex in the Old Louisville urban renewal area for the inspection of visitors, (above). It was designed by architects Hartstern, Schnell and Associates. The exhibition hall was also filled with new products for modular manufacturing and several examples of packaged kitchen, bath

and utility cores around which conventional structures can be built.

Two European speakers especially emphasized the potential of industrialized housing as architects see it. Jan van Ettinger, executive president of the Rotterdam Bauwcentrum, a building research organization which had led Holland's post-war reconstruction efforts, spoke of his own concern for using systematized construction to produce a humanized environment. Fritz C. Stucky, president of Variel Building Systems, a Swiss firm, showed many examples of large-scale commercial and institutional projects all over Europe that use their open module—a floor structure with corner posts and beams to support the next module above. A surprising degree of design freedom is possible since the designer cannot only stock modules as he pleases but has complete control of wall materials and fenestration.

Many architects in attendance expressed the hope that, by the time Inbex convenes again next fall, the breach between objective and realization will have started to close.

### Allen office to OAE

Employees in the Office of Rex Whitaker Allen & Associates voted 13-12 recently to join the Organization of Architectural Employees. The Allen office thus becomes the second to vote in favor of OAE (Hertzka & Knowles voted 16-2 in favor in September). NLRB ruled only 26 of the firm's 50 people eligible to vote. Thus, critics charge, the 13 who voted for OAE (there was 1 abstention) determined the outcome for three times their number.

### International reciprocity

International reciprocity for architects took a step forward at the recent NCARB sponsored World Conference that opened in Amsterdam, October 1.

Twenty-five architects representing ten countries attended. These were Australia, Canada, Eire, France, Malaysia, Mexico, Spain, the United Kingdom, the Republic of South Africa and the United States. The delegates unanimously accepted, in principle, a resolution broadening international, architectural reciprocity.

Matters for on-going study were:

1. recognition and accrediting internationally accepted standards of architectural education;
2. defining and establishing internationally accepted standards of professional training and experience (exclusive of discipline) beyond academic qualifications;
3. specifying special conditions that must be recognized in particular regions and countries.

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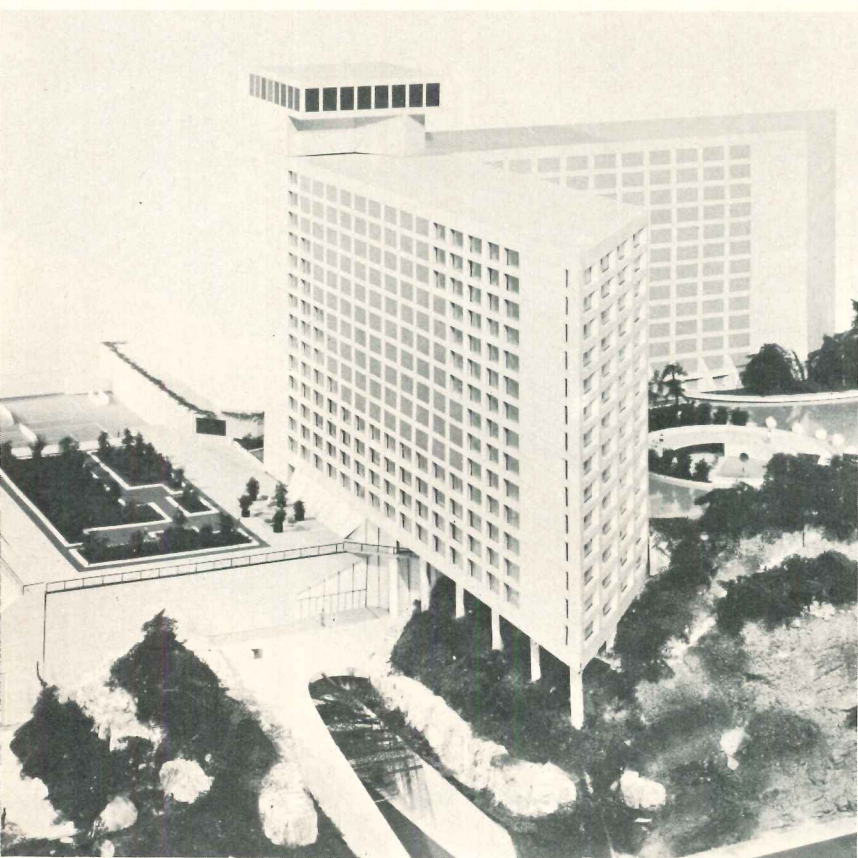
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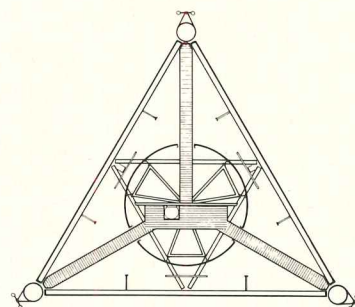
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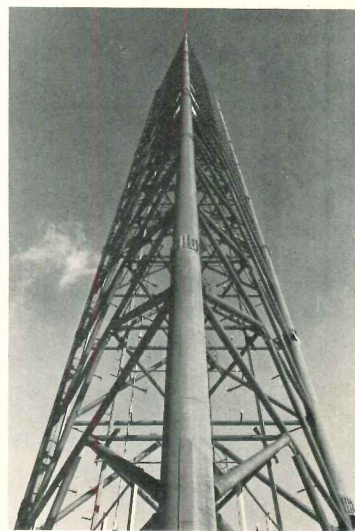
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**Crown Center Hotel**, Kansas City, by Harry Weese will have 750 rooms and all the luxury features of a tropical resort. The ground level building will have the lobby, a restaurant-bar, coffee shop, another bar, night club, grand ball-room, ten banquet rooms, kitchens and service, registration and parking. The rooms and suites will be in the L-shaped hilltop tower overlooking a lagoon.

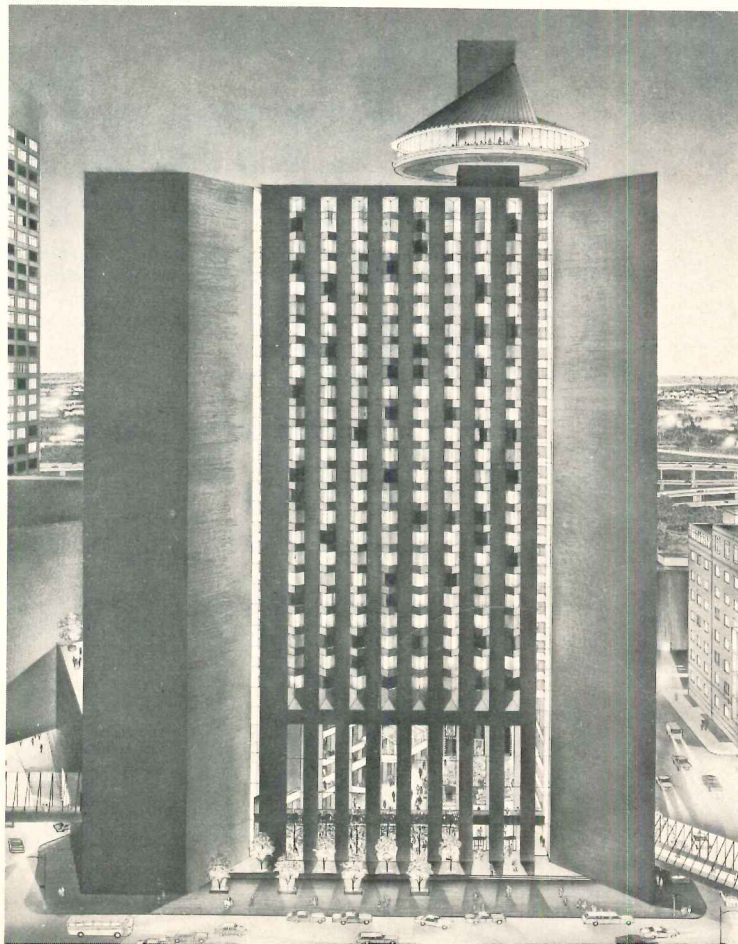
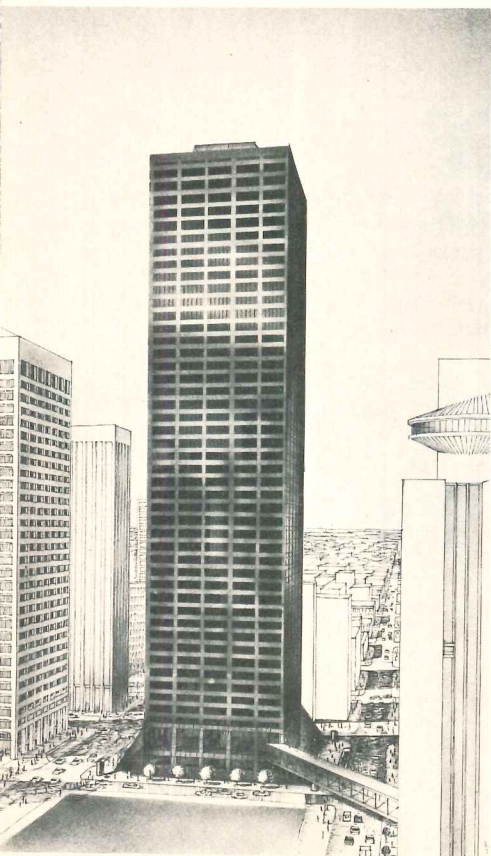


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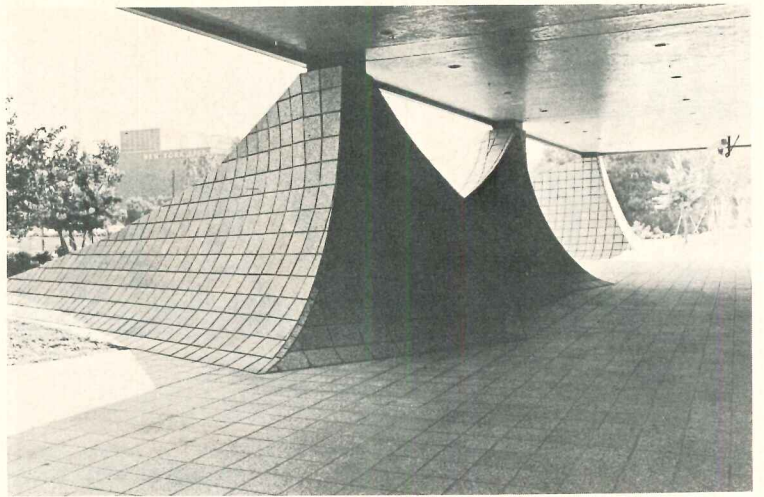


Clive Clark

**The Bell Canada Microwave structure** in Toronto is the tallest self-supporting microwave edifice in North America (501 ft). It is of high-strength, tubular, weathering steel. Architects and engineers: Gordon S. Adamson & Associates; associate consulting engineers: Morrison, Hershfield, Millman & Huggins.



**The Office Tower** (far left) and **Regency Hyatt Hotel** (left), Houston, were designed by JV III, a joint venture of Koetter, Tharp & Cowell; Caudill-Rowlet-Scott; and Neuhaus & Taylor. The 47-story office tower is skirted by a sloping glass wall from the fourth floor to the sidewalk which will begin 30 ft from the curb and slope at a 60 degree angle joining the tower 55 ft above the sidewalk, providing an air-conditioned pedestrian mall. It will be linked with the 1000 room luxury hotel and its adjacent 14-story, 2,750-car parking garage by a pedestrian skywalk and underground concourse. The hotel is built around a 29-story skylighted atrium with glass front elevators revealing the changing view.



**CNA Park Place Building**, Los Angeles, designed by Ernest C. Wilson, Jr., of Langdon & Wilson, architects, is a 19-story tower placed diagonally on its corner site and resting on sculptured buttresses rising from its granite plaza to heights of 14 feet. CNA coordinated plans with the Parks Department to enhance the adjacent park.

*Lawrence S. Williams Inc.*



**Veterans Stadium**, Philadelphia, seats 65,000 for football, 50,000 for baseball. Executive architect Hugh Stubbins says it is "a slightly arced

square based on eight points of radii of two concentric circles." Associated Architects: Stonorov and Haws and George M. Ewing Co.

*Hickey & Robertson*

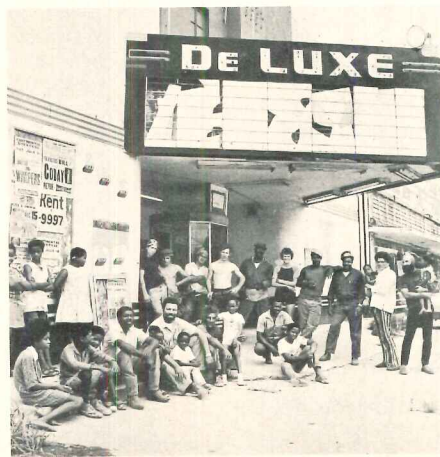
**John T. Holmes' house**, Mill Valley Cal., is constructed of "recycled" windows. An Honor Award winner in the AIA Sunset Magazine Western Home Awards competi-

tion, it was designed by William W. Kirsch. With conservation of trees in mind, the house was built up rather than being allowed to sprawl across the site.



*Glenn M. Christiansen*

**The De Luxe**, an abandoned movie theater in Houston's Pearl Harbor area (so named because of its condition), was remodeled in three weeks to provide space for a high caliber avant-garde art show including such black artists as Al Loving (painting right) and Richard Hunt. After this show the space became a campaign headquarters. Other exhibits and community uses are planned to continue to bring attention and new life to the neighborhood.



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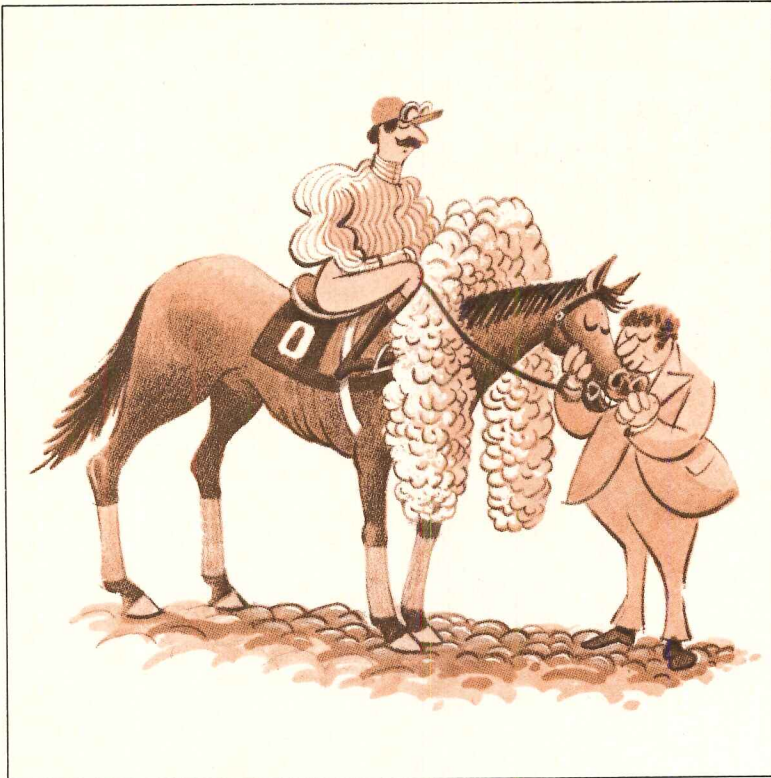
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We want to thank A.I.A. State Preservation Coordinators and their associates for their generous response to our query about endangered buildings in their vicinity and Jack E. Boucher for material from the Historic American Buildings Survey (HABS).

From top to bottom, left to right:

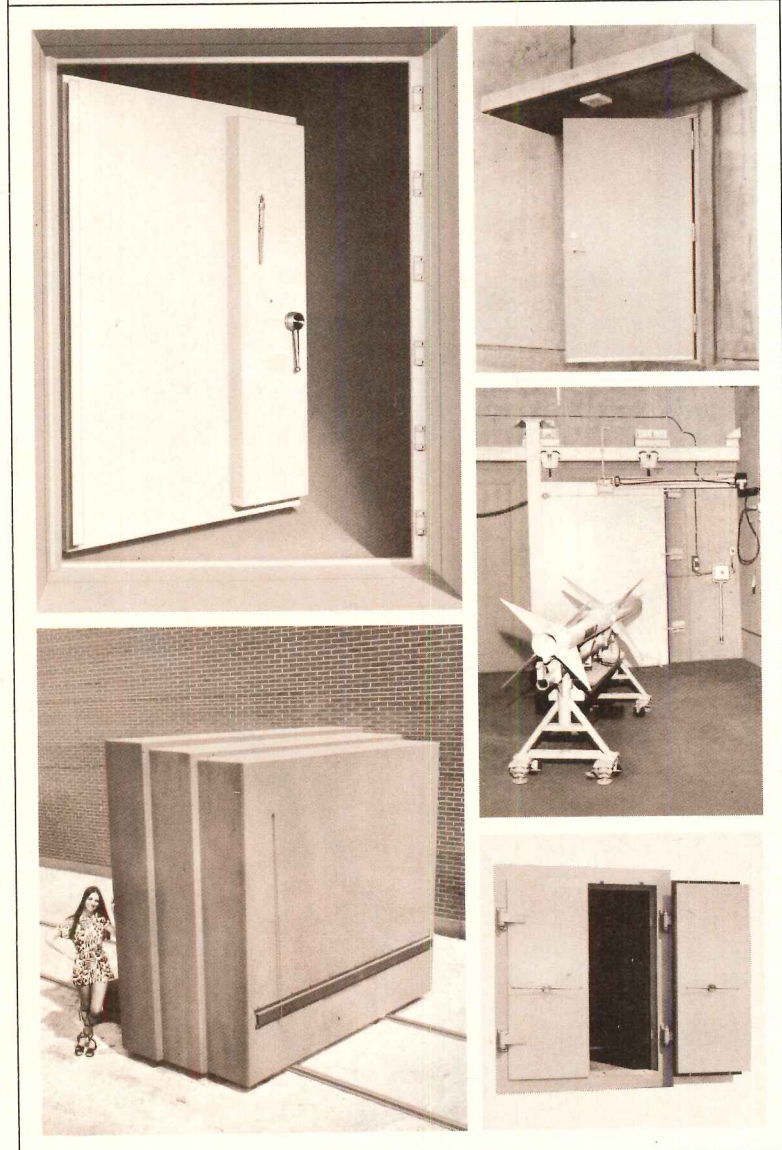
1. Boley Clothing Store (now Katz Building), Kansas City, Mo.; architect Louis S. Curtiss; from Edward John Wimmer. 2. Genesar, Berlin vicinity, Md.; HABS photo. 3. Little-Stevenson House, Deephaven, Lake Minnetonka, Minn.; architect Frank Lloyd Wright; Bob Jacobson photo from William W. Scott. 4. John H. Lake House, Rockford, Ill.; photo from Wilbert Hasbrouck, Chicago Chapter & Ill. Council A.I.A. 5. Courthouse, Eureka, Nev.; HABS photo. 6. Jackson Place, San Francisco; architects Lloyd Flood and Bruce Beebe; Morley Baer photo. 7. Nuestra Señora de los Dolores, Bernalillo, N.M.; Louis Castillo photo from George Clayton Pearl. 8. Devereaus (Staines-Jennings Mansion), Salt Lake City, Utah; HABS photo by P. Kent Fairbanks. 9. Old Post Office, Washington, D.C.; HABS photo by George Eisenman. 10. Belmont House, Wayside, Miss., 1855; architect William Worthington, Jr.; Dr. D. Cameron Montgomery, Jr. photo from William Lampton Gill. 11. Park-Danforth Home For The Aged, Portland, Maine; architect Bruce Porter Arneill; Bill Maris photo. 12. Custom House, Post Office, Courthouse, Cairo, Ill.; architect A. B. Mullett; Paul Sprague photo from Wilbert Hasbrouck, Chicago Chapter & Ill. Council A.I.A. 13. Dodd-Hinsdale House, Raleigh, N.C., 1887; Madlin Futrell photo from John G. Zehmer, Jr., N.C. Dept. of Archives and History. 14. St. Louis Union Station Grand Hall window, Mo., 1895; architects Theodore C. Link and Edward A. Cameron; M.D. (McCue) Holmes photo from Mrs. William L. Holmes. 15. The Auditorium Theatre, Chicago, Ill.; architect Louis Sullivan; restored by architects Harry Weese and Assocs. 16. Shaker Center House, South Union, Ken.; HABS photo by Prof. Elmer R. Pearson. 17. Orendorff-Nimietz House, Canton, Ill.; architect Robert C. Spencer, Jr.; Thomas Yanul photo. 18. Davis-Horton House, San Diego, Cal., ca. 1850, prefabricated; Historical Collection, Title Insurance and Trust Co., San Diego, photo from Historical Sites Board, San Diego. 19. Pillsbury "A" Mill and Elevator, Minneapolis, Minn., 1882; architect L. S. Buffington; Eric Sutherland photo. 20. St. Jude's Chapel, Christ Church, Georgetown, Washington, D.C.; Robert Lautman photo. 21. City Hall, Binghamton, N.Y., 1897; architects Ingle and Admirall; from Stephen F. Dragos. 22. same as no. 12. 23. Bradley House, Providence, R.I., ca. 1855; architect Thomas Alexander Tefft; from Eric Hertfelder, R.I. Historical Preservation Commission. 24. Dorsey mansion, Chico Springs, N.M., 1884; from George Clayton Pearl. 25. Indiana Theatre, Indianapolis, 1927; architects Rubush and Hunter; HABS photo by Jack Boucher from Historic Landmarks Foundation of Indiana via H. Roll McLaughlin. 26. Chase County Courthouse, Kansas, 1873; architect John G. Haskell; from Charles L. Hall. 27. Butler Brothers, Minneapolis, Minn.; architect Harry Jones; Eric Sutherland photo. 28. Roland Park Water Tower, Baltimore, Md., 1904; architect William G. Fizone; Baltimore Commission for Historical and Architectural Preservation photo from Orin M. Bullock. 29. Scarrit Building, Kansas City, Mo., 1908; architects Root and Siemens; Paul Sprague photo from Edward John Wimmer. 30. Jose Maria Garcia Opera House, Socorro, N.M., 1885; George Pearl photo. 31. Clara Barker Dorr House, Pensacola, Fla.; HABS photo by Ray Malinowski. 32. Carnton, Franklin, Tenn., Charles W. Watterfield, Jr., photo. 33. Seaboard Depot, Hamlet, N.C., 1900; Al Honeycutt photo from John G. Zehmer, Jr., N.C. Dept. of Archives and History. 34. same as no. 1. 35. Old City Hall, Boston, Mass.; architects Anderson Notter Assocs.; Carol Rankin photo. 36. The Auditorium Theatre, Chicago, Ill.; architect Louis Sullivan; photo ca. 1900 courtesy of Chicago Historical Society.



## *Anything can happen*

at the track. The racehorse, Dragon Blood, ridden by Lester Piggott in the Premio Naviglio in Milan, Italy, on June 1, 1967, went off at 10,000 to 1 odds, the longest in racing history. He won.

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## *And anything can happen at Overly*

Like doors that plug nuclear reactor cores.

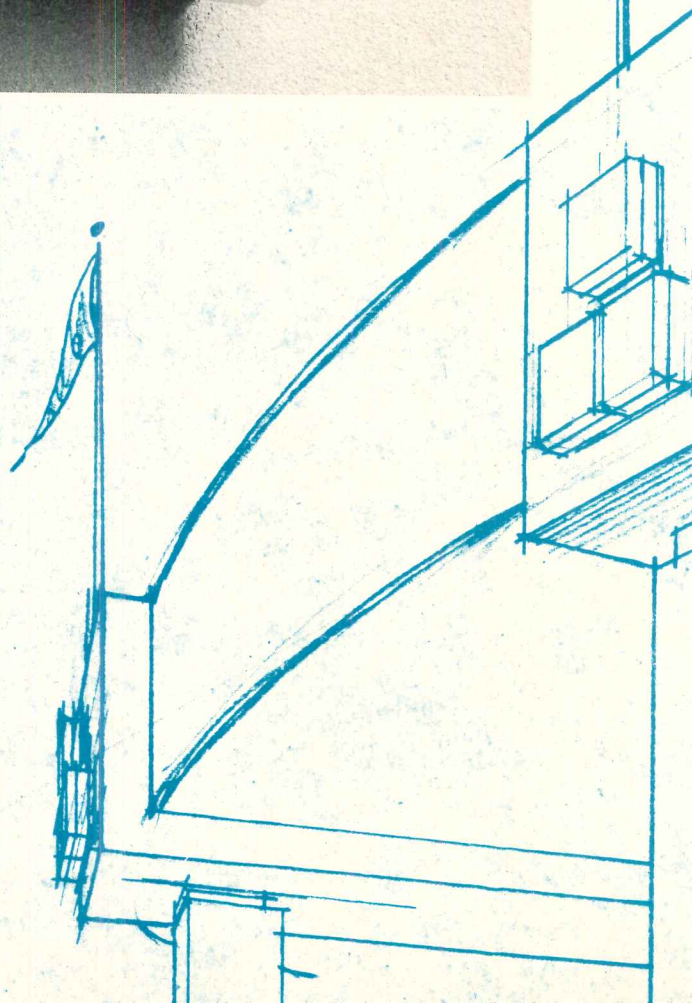
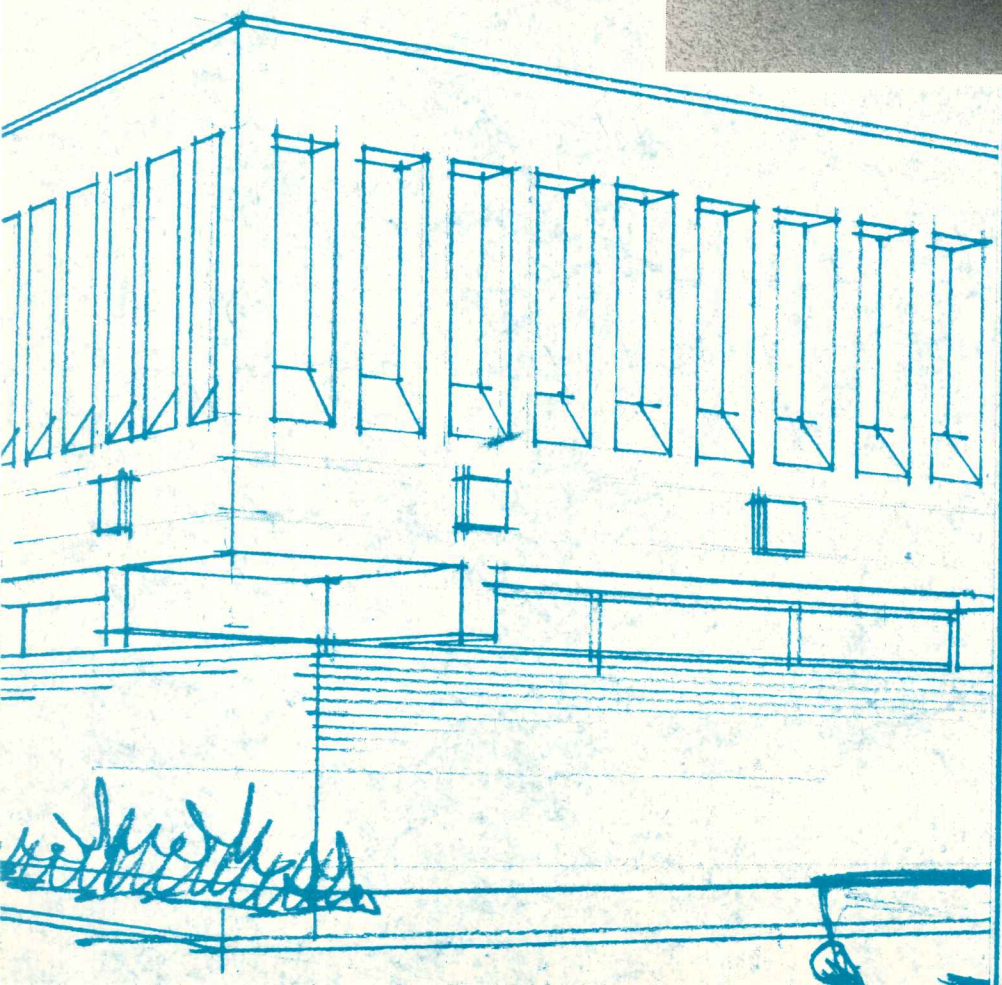
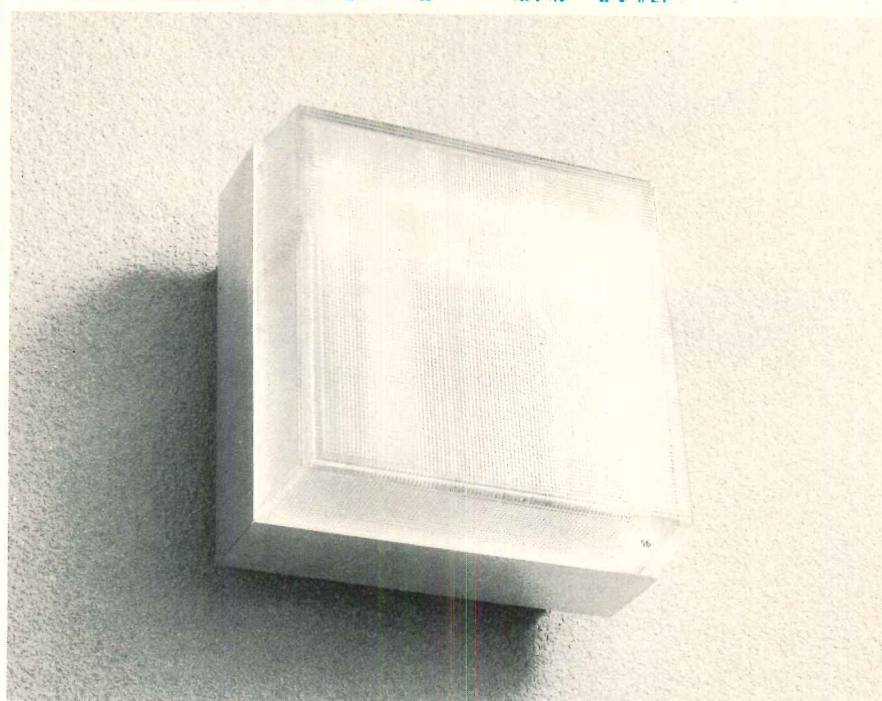
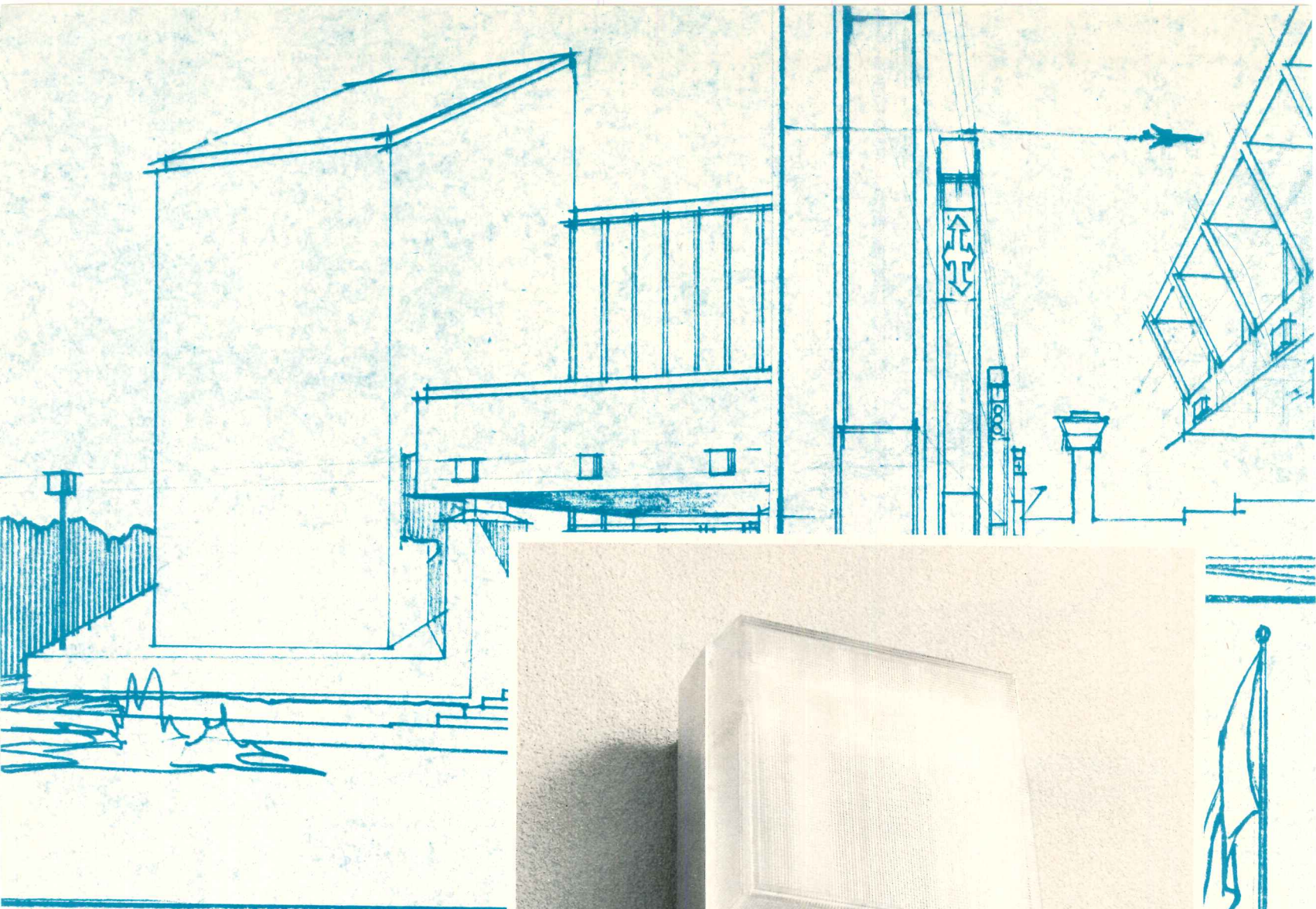
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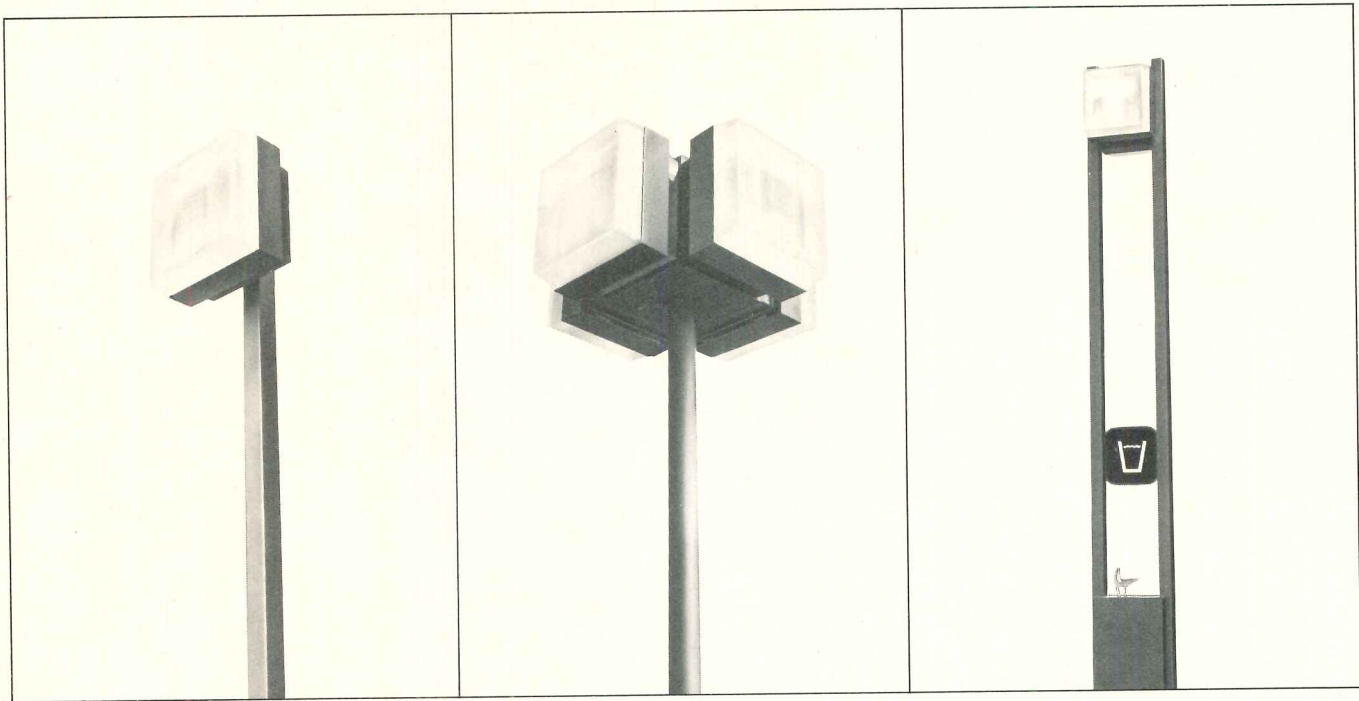
Anywhere protection is a problem, there's an Overly door to solve it. At Overly, anything can happen . . . and it happens for the good. We have plants in Greensburg, Pa., and Los Angeles, Calif. For more information, contact Overly Manufacturing Co., Dept. 19, West Otterman St., Greensburg, Pa. 15601.

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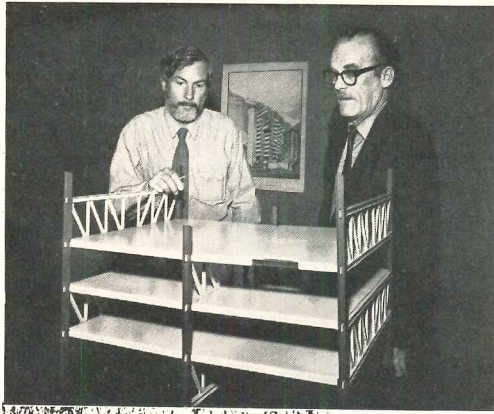
For complete information, see your Holophane sales engineer.

Or write Dept. AR-12, Holophane Company, Inc., 1120 Avenue of the Americas, New York, N. Y. 10036.



## Holophane

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Morton Rader (l) of Chan Rader and Associates, Architects & Planning Consultants; and Harold Stockstad (r) of Chin & Hensolt, Inc., Structural Engineers. Jannan Construction, Inc. was the General Contractor. Dublin Steel Co. the Steel Fabricator and Ashby Metal Products, Inc., the Erector.





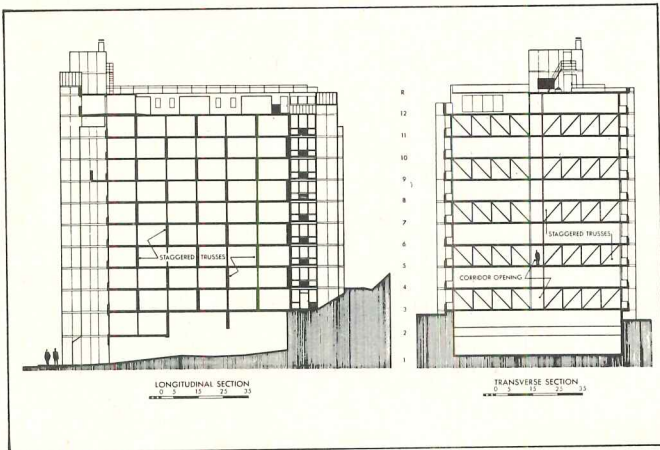
# At 7 lbs. psf, staggered truss delivers a 1971 apartment house for 1968 costs.

A new 12-story apartment house for the elderly in San Francisco is the first application of a staggered steel truss design in the West. And the cost savings that resulted were considerable.

In size and accommodations, the new building is practically a duplicate of a conventional concrete framed building which was designed two years ago for the same site. Thanks to the economies of staggered truss, the new building—despite substantial increases in material and labor costs over the past few years—costs no more than the 1968 structure.

It costs no more because its structural system costs less. The structural steel weight for the staggered truss was only 7 psf for a typical bay. The fireproofing, intermediate stud walls and ceilings added only 15 psf for a total of 22 psf. This compares to 65 psf for the concrete structure. An additional savings of 27 psf was achieved by the use of the composite steel and concrete floor system. At about half the weight of a concrete structure, the staggered truss system significantly reduces foundation requirements and costs.

But cost wasn't the only advantage of the staggered truss design. It provided an indispensable 70'1"



x 60'0" column free garage which increased usable space by 50 percent. There is little or no on-street parking available in this section of San Francisco, and adequate garage accommodations are mandatory legal requirements.

This building is the first application of staggered truss in a seismic design area in this country.

## Structural Report

If you're planning a new apartment house or similar structure, you should investigate the staggered truss system. We'll be happy to send you a copy of our "Structural Report—ADUSS 27-5111-01," which details its use in

this building. Call our nearest sales office and ask for a USS Construction Marketing Representative or write U.S. Steel, Box 86, Pittsburgh, Pa. 15230.

## Construction Details

Description: 12-story apartment with clear-span integral 14-car garage, with a one-story recreation building attached. Steeply sloped site, with closely adjoining buildings on east and west sites. Typical floor contains 10 studio apartments, 2 one-bedroom apartments, two elevators (one large enough to handle stretchers), lobby, corridor and stairway.

Erection: Floor-by-floor due to steep, cramped site.

Design Live Loads:		Wind:
Floors	40# psf	0'—29'—15 psf
Roof	20# psf	30'—49'—20 psf
Stairways	100# psf	50'—99'—25 psf
Roof Terrace	50# psf	100'—up—30 psf

Building Code: City of San Francisco

Structural Steel: 120 tons of A-36 steel 7# psf of structure.

Floor Deck: 3" metal deck, H.H. Robertson (Q L-21)

Shear Walls: Concrete service cores at north and south ends.

Foundations: Square Footings and Belled Caissons.

Curtain Wall: Exposed formed concrete and 3-5/8" precast wall panels.

Interior Walls: At trusses: 7/8" insulating plaster on metal lath and steel channel furring. At stud walls: 1/2" gypsum board on each side and 1 1/2" batt insulation with 2 1/2" and 6" steel studs.

Ceiling: 1/2" gypsum board on 3/4" steel furring channels. 1/2" sprayed fireproofing.

Elevators: Two at 200 fpm (one accommodates stretcher).

Fire Resistance: Trusses—3 hours @ interior walls. Trusses—4 hours @ exterior walls. Columns—4 hours. Floor and Ceilings—2 hours/Inner Walls—1 hour.

Construction Costs: Total—\$2,057,500 (includes site development) Steel (erected)—\$82,800.

Construction Time: 510 days (due to adverse site conditions).

Gross Area: 77,505 sq. ft.

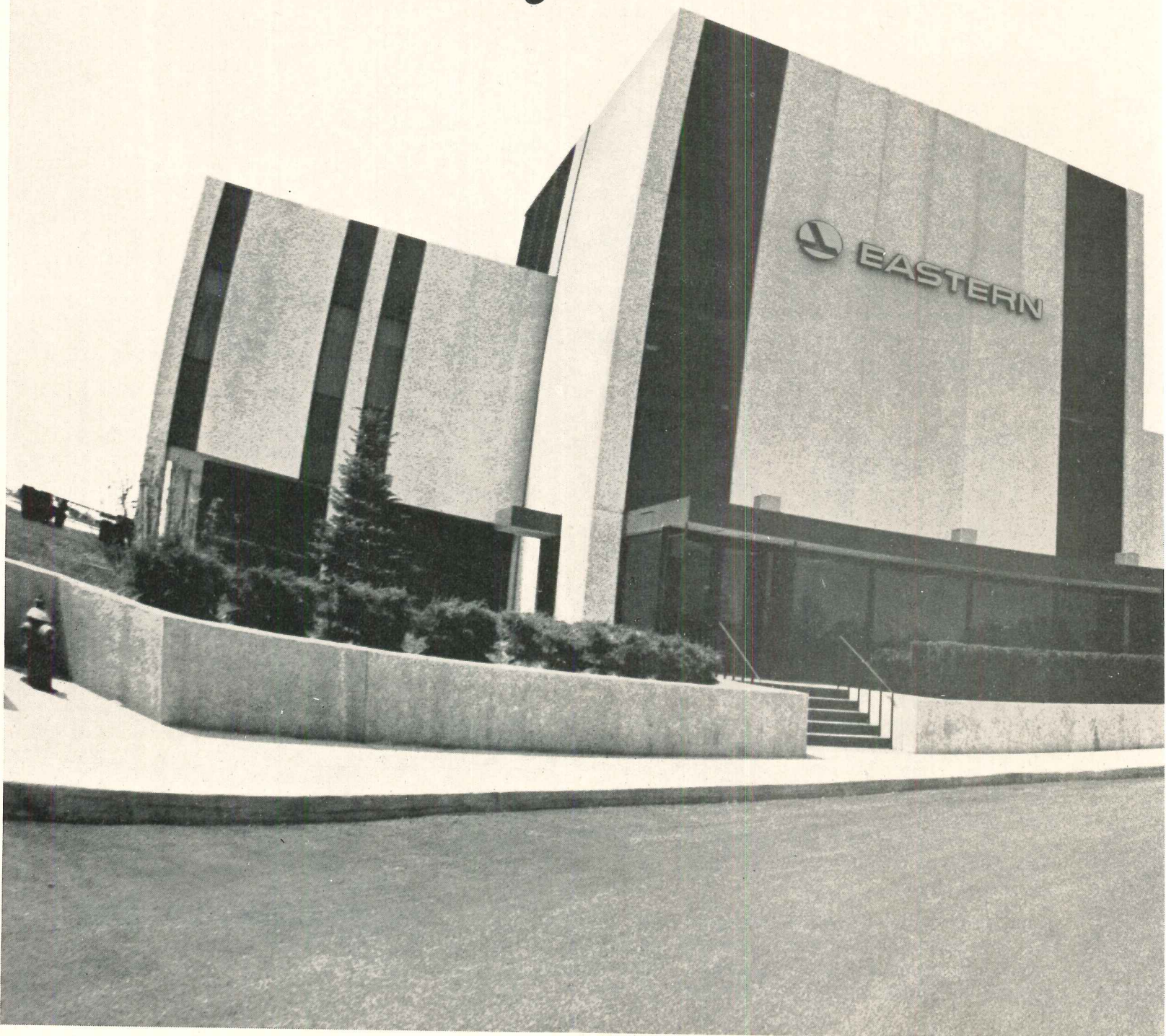
Floor-to-floor height: 8'6-3/4"

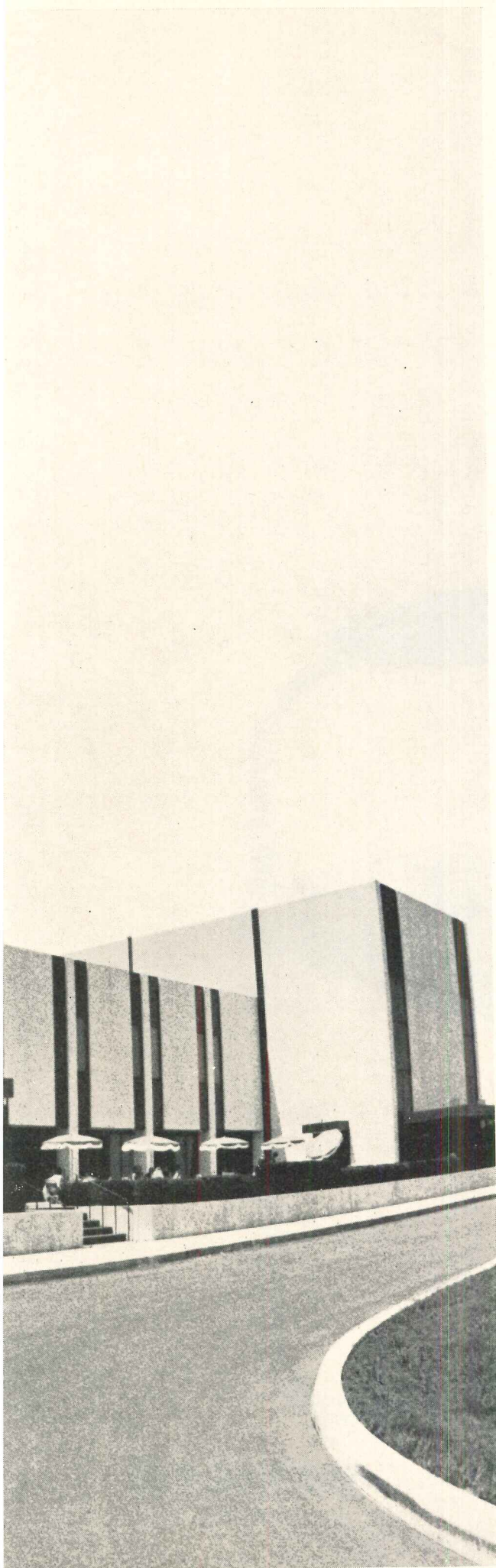
Floor-to-ceiling height: 8'



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## OFFICE NOTES

### NEW PERSONNEL

**Kral, Zepf, Freitag & Associates**, Environmental Design Consultants, of Cincinnati, Ohio, announce the appointment of **Richard J. Allen** and **David T. Richards** as Associates of the firm.

**John M. Sanders**, AIA, of San Angelo, recently joined the architectural-engineering firm of **Parker, Croston & Associates**, AIA, 610 Bailey Street, Fort Worth.

**John E. Figel**, formerly of Celli-Flynn Associates, has joined the firm of **Damianos and Pedone**, Architects as an Associate.

**Curtis and Davis**, Architects and Planners, has recently appointed two new Associates to its New York office, **Mr. Frank J. Abbadessa** and **Mr. Edoardo Leoncavallo**.

**Christopher R. Wojciechowski**, AIA, Los Angeles architecture and planning firm announce that **Paul R. Drag** has joined the organization as partner in charge of design and planning.

**Perkins & Will Architects, Inc.** is pleased to announce the election of **Charles William Brubaker** as President.

**Wallace W. Scott**, AIA and **Donald K. Renshaw**, AIA have been made associates in the firm of **Renshaw and Taylor**, Architects, P. A.

**Collins Uhl Hoisington Anderson**, Architects, Engineers, Planners announce that **Marvin B. Jacobson**, AIA has been named an associate of the firm.

**LeMessurier Associates Inc.** wish to announce that **Stanley H. Goldstein**, of their New York office, and **Salvatore G. Mazzota**, of their Cambridge, Mass. office, have been named Associates of the firm.

**Holt & Morgan Architects** are pleased to announce the appointment of **Arthur W. Schwartz** as an associate.

The firm of **Richard Manhoff Marsh, Inc.** are pleased to announce that **Peter M. Cohen** has joined the firm as Vice President.

**Thomas H. Price, Jr.**, AIA, has been named an associate of **The Eggers Partnership**.

**C. Kenneth Campbell**, a registered Professional Engineer, was recently selected as an Associate of the Miami architectural and engineering firm of **Smith, Korach, Hayet, Lippack, Haynie & Associates**.

**James M. Montgomery, Consulting Engineers, Inc.** welcomes the addition of **Mr. David K. Haase**, AIA, as staff architect.

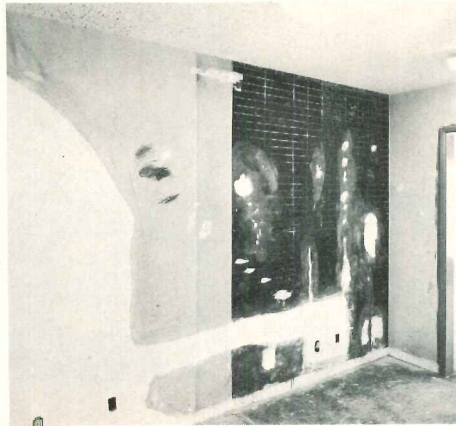
**Stephen S. Page** has joined **Giffels Associates, Inc.** of Detroit as assistant director of architectural design.

**Jordan R. Kilbrick** has been named Director/Corporate Development by **Maxwell Starkman AIA & Associates**. Mr. Kilbrick's former position as construction manager will be filled by **Guy A. Zebert**.

**Delbert E. Allison** and **John V. Grundmanis** have joined **Ellerbe** as project architects.

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## Computers: tools for construction management

The following extract from the book, "Professional Construction Management and Project Administration" by William B. Foxhall, owes much to a presentation by Paul Spindel of McKee-Berger-Mansueto at a Spring 1971 conference of Advanced Management Research. The book is published jointly by A.I.A. and ARCHITECTURAL RECORD.

Computers play a dual role as tools for time, cost and quality control in construction management. First, they serve as high-speed mathematical aids—especially in the areas of engineering, estimating and scheduling. Second, computers are a sorting, collating and reporting tool for the management process. They can relate the emplacement schedule to, for example, purchasing, cash flow, inspection, meetings and approvals. The special conditions of client procedures, the myriad variations in emphasis and detail for communicating the same body of information to, say, the contractor, the purchasing agent and the project administrator; all can be sorted out by the computer with idiot speed.

The computer can make infinite lists. It can list all the systems and activities in a project in several ways: by date of early or late start in a CPM network, by longest-lead time for purchasing, by cost, by supplier, by contractor or (for the project administrator) by overall summary of cost and schedule.

The listing and sorting process is perhaps the least demanding on the potential skills of the computer and its programmers. It has been called a trivial use of great capacity. But it can be, on complex projects, the computer's most rewarding use in terms of savings in time and money; in terms of coordinated communications; and in terms of evaluating the cost/quality options.

The myth of the computer as super-machine that takes over all tasks and has its accomplishments measured in stacked feet of print-out paper is long past. Now the machine is more maturely regarded as a high-level investment in the *profitable* (i.e. rapid) manipulation of *massive* and *relevant* data. It has a mindless talent for repetitive scanning, with key (and keyed) variations in either the core-memory of applied parameters or the daily input of job data.

But building design and construction are exceptionally non-repetitive—in comparison with manufacturing or accounting procedures. Although both manufacturing and accounting are within the purview of construction management, the idiosyncracies of each job and each client call for rigorous assessment of the computer's applicability job by job. The key words emphasized in the preceding paragraph are: *profitable*, *massive*, and *relevant*.

There are two major considerations that bear on the construction manager's assessment of computer applicability.

1. No management program can be turned over to a computer to the total exclusion of manual calculation and verbal communication. Someone has to read the print-out, make decisions, write reports and orders, negotiate, see that things get done. Even cost estimating, a chore of massive detail that would seem readily amenable to computerization, becomes progressively more refined and immediate, to the point where the real price is the bid price. Computerized costing is a well-developed service, but there comes a time on every project where the computer must give way to the pencil sharpener.

2. The smaller the project, the larger is the proportion of manual and verbal (i.e., non-computerized) components in the management task. Considering the difference between, say, the World Trade Center and a \$500,000 factory, that seems a simplistic statement. But somewhere on the scale of size and complexity between those two extremes is a point below which no job-developed software is warranted—no matter how much in-house hardware is standing by to handle it. The location of that point is itself a management decision based on the answer to a simple question. Does it pay?

The answer to that question is not always revealed by simple arithmetic. It can be distorted by two opposing attitudes. One that has cost untold amounts in overkill is the compulsion to "keep the hardware busy." The other, equally costly, has been a reluctance to use expensive and exotic machines in the trivial role of giant tickler file. A judgment must be made based on the particulars of

- 1) available hardware in-house,
- 2) its cost to own or rent,

- 3) its current loading,
- 4) software programming cost for the project.
- 5) available core programs,
- 6) management demands of the project,
- 7) management fees available.

At risk of offering figures that are dated and otherwise limited by special conditions, we report the following yardsticks of computer cost mentioned at a 1971 seminar of the Advanced Management Research International.

1. Engineering firms with repetitive usage of well developed programs and good load factor spend about \$40 per month per graduate engineer on staff.

2. The cost of in-house hardware is about one-third to one-half of the cost of computing; the rest goes into people, programming, supplies and space.

3. A minimum cost for in-house hardware alone is between \$1500 and \$2000 per month.

4. Initial cost for time-sharing at a service center is much less, but the added cost of communication and travel brings the total to almost \$1500—not counting personnel.

The two major considerations previously stated having to do with the limits of computer application (i.e.: no program can be 100 per cent computerized; and small projects may not warrant any computerization at all) set the stage for developing management systems for cost, quality and time control using the computer at key points. Those points are determined by the criteria of project characteristics in size and complexity and by the resources of the managing firm itself.

The ideal management system would be totally flexible so that it could be applied logically and economically over a full scale of job and firm criteria. It turns out, however, that the development of a computer-oriented system capable of serving the management of large projects calls for a certain commitment of the management firm to full-time staffing for computer programming, cost estimating and field operating personnel. That commitment sets a high break-even point that almost automatically precludes the handling of small projects except on a fragmentary basis.

## Components of the computerized management system

A well-designed management system for the control of construction projects will combine capabilities in cost estimating, critical path analysis, financial status and progress reports, and administrative procedures in a well-organized format. Individual reports should be designed for each level of project administration and construction management. In each case, the system should be able to use either a manual or a computerized mode of reporting in order to approach as closely as practicable the kind of ideal flexibility previously described.

Because of the mass of data available and the immense capability of the machine to absorb and report, an essentially editorial judgment should be made as to content and format of these reports. That judgment should be based on the function and preoccupation of individual recipients. For example, the project administrator might receive a summary schedule and financial status report while the on-site construction manager would require a more detailed list of all work items for each phase of the job.

Individual reports and input documents should not only be tailored to each user but should also have consistent format one with another, so that translation of data into decision and action is handled readily.

The information presented by the system should be coordinated on the basis of a scheduled flow of input related to stipulated intervals and classifications of output. That is, the data sources, such as estimators, field inspectors, job captains, clerks of the works, etc., should be encouraged to report back to the system at stipulated intervals and in patterned format readily convertible to input data.

A workable system might be designed to present four basic areas of information (schedule, cost, financial and administrative) to three key decision-making groups: project administration, construction management and a third level comparable to job captain or field superintendent which might be labeled "technical management." Definition of the four areas of information might be amplified as follows:

A. Scheduling, planning, and control of project duration usually employs the CPM technique or one of its variations. The system should develop a detailed model of each project's design-delivery-occupancy process as a single identity made up of many parts. The network technique both views the process as a whole and separates its parts into manageable modules.

B. Cost control systems should present timely cost data in useful format. These data are exceptionally sensitive to the chance conditions of the market and the phase of design development. For that reason, its reporting method usually has a high manual component.

C. Financial summaries integrate data

generated in the estimating and scheduling areas in order to show how much of the project's total cost has been spent and how much will be committed in designated future periods. These summaries also indicate the extent to which funding and cash flow have been approved and appropriated for the job.

D. The administrative applications of the system tend to be less rigidly structured than other areas and are tailored to the in-house capabilities and methods of the owner and/or project administrator. In order to provide full services to a variety of clients, public and private, over a substantial spread of project size, the construction management firm should be prepared to fit its own capabilities to those of the client. The danger lies in overstaffing for a level of administrative participation that may not be required to a consistent degree from one client to another.

Some of the administrative backup services to be considered might include manuals of procedure, either general to the construction management process or specific for the project at hand, outlines of useful administrative reports, step-by-step procedures and background literature on construction markets and practices that may be helpful to the less sophisticated client.

### Develop sets of useful management reports

In order to discipline the unlimited computer output at a manageable level, the professional construction manager should establish specific sets of reports. These reports will draw upon the complete reservoir of project data, but will be assembled in format relating the four categories of information previously described to the needs of recipients. The reports will also be tailored to the management level to which they are directed.

**Top-level reports.** Most major projects have a senior decision-making group made up of client representatives, and principals of the architectural, engineering and construction management firms. Ordinarily, these people have more than one center of interest in addition to the project itself. Their objective as a group is to maintain adequate surveillance of the project development in order to respond intelligently when top level decisions are required. Useful reports for this group should give clear and concise information about a project's general progress, its cost status related to the schedule and its financial status related to the budget. This information might be usefully divided into:

1) A narrative report from the principal in charge of construction management, summarizing overall development and pointing up significant problems that might call for action of the top management group;

2) A financial-status report summarizing critical aspects of the budget-schedule

relationship, noting any significant change between the current and prior period, alerting management to any need for additional or progress funding;

3) A master schedule chart in some readily comprehensible form (usually a bar chart) which serves as a summary of current status of the CPM schedule condensing all significant aspects of the project delivery process through a display of key activities.

**Action-level reports.** At the second level of management, directly related full-time to the project, is a second category of reports also tailored to the problems of the individuals concerned. The objective is to avoid inundating all members of this management echelon with the massive data typical of large projects. The "need to know" principle should be applied to the editing of these reports, which might include:

1) A narrative report based on cost and progress information from the field or from "technical management" summarizing current developments;

2) A summary of the master schedule detailing activities of the network for the entire project and serving as a central scheduling checklist for the project;

3. A critical list of items within the network with minimal float time that must be watched most carefully;

4. A list of important dates on individual schedules of the project;

5) An alerting list of key activities scheduled to take place within the immediate future; a period of, say 60 to 90 days, in a print-out arranged in sequence by early start date;

6) A master tickler for central management summarizing the upcoming activities of staff and compiled from the individual tickler files of staff members in a uniform format;

7) Current working estimates bringing out significant detail from the data used as background for the top management cost and financial status reports;

8) Detailed current cost estimates identifying building system costs and noting changes from the preceding period to readily spot any system in danger of a cost overrun;

9) A cash flow summary providing a monthly check against schedule activity and not only projecting cash flow requirements but implementing the payment process for upcoming schedules.

The sorting and format of these reports, the intervals of their issuance, and the lists of individuals to whom they are directed are all subject to the characteristics of the project and the organization of the management firm itself. Computer print-outs are not the most readable of documents, although as users become familiar with them and programmers edit their physical volumes to manageable dimensions, they become increasingly useful as both management tools and field documents.



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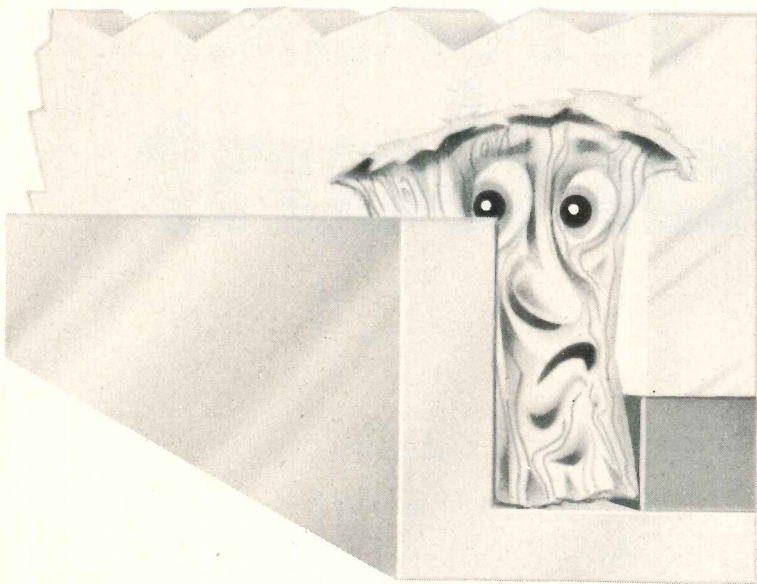
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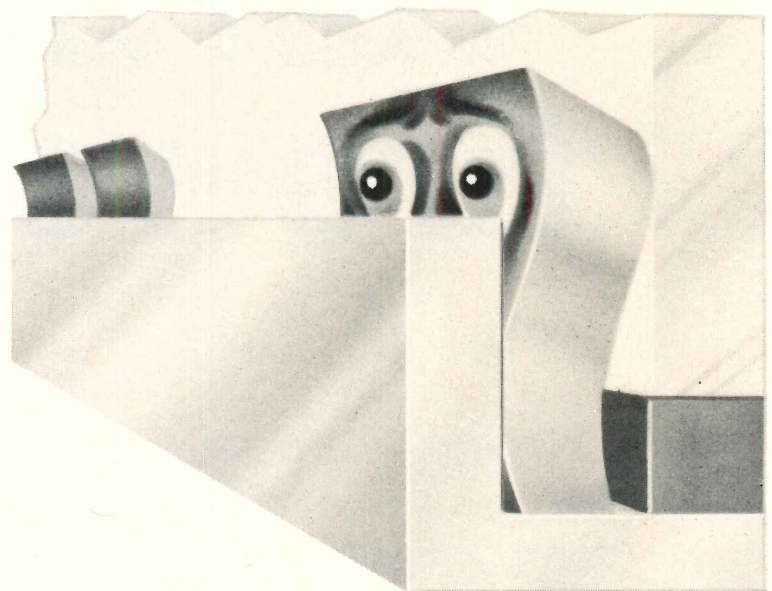
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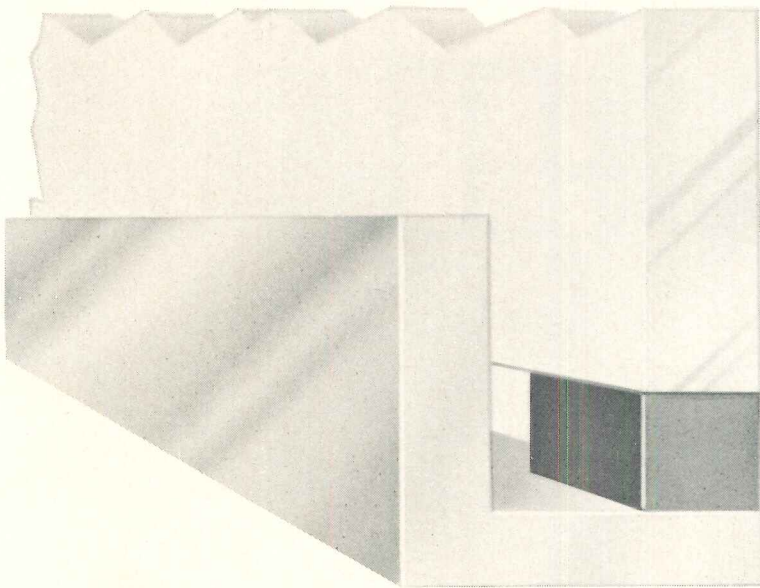
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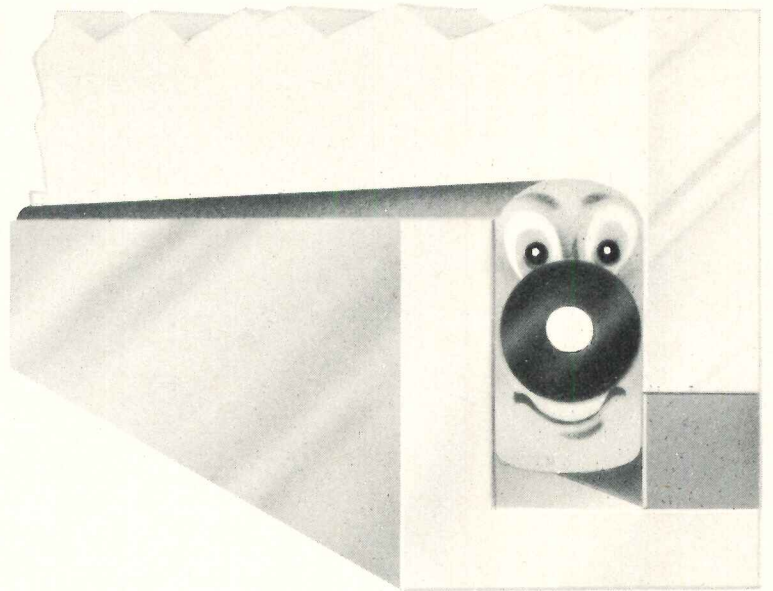
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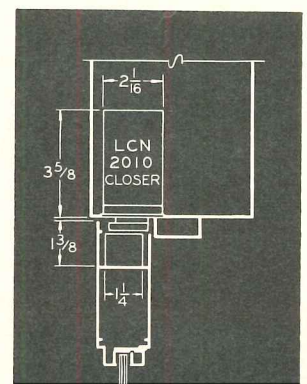


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## Living with the Phases

A shift in economic policy that holds out the prospect of changes as vast and sweeping as President Nixon's August 15th pronouncements is bound to settle unevenly over the economy—if only by virtue of timing.

The cause of the financial planner, who got prospective clients to listen to him by explaining the need for a "hedge against inflation," was not served very well by the August 15th pronouncements. Neither was the cause of the New York Telephone worker, who refused to sign the national labor contract in hope of getting something better.

On the other hand, the construction tradesman nodded approvingly now that everyone was going to live under rules similar to the ones that were imposed on him earlier in the year.

Construction labor began living under its own special Phase Two last March, with the creation of the Construction Industry Stabilization Committee. Since March, the Committee has reviewed some 1,400 contract agreements, approved about two-thirds of them, and sent the rest back to be re-negotiated. Committee members claim that they have been successful in cutting negotiated first year increases down from around 20 per cent, to something closer to 10 per cent. This is a big drop, but it has to be halved again, to conform to the 5.5 per cent ceiling imposed under the new law. Also, it was achieved at the expense of a shorter average contract period, thus sowing the seeds for possible future trouble.

These factors aside, the progress made by the Committee in bringing construction wage gains back toward a more reasonable level has been considerable. This is particularly true when you remember that, up to August 15th, construction labor was the only area subjected to controls. In a situation like this, the urge to resist and the cries of discrimination could have been much stronger than they were.

There are a number of factors behind the building trades' relative cooperation in this respect. An important one, of course, was their position in the economy with regard to past wage gains. In this year's first quarter, average hourly wages in contract construction were \$5.54, nearly two-thirds greater than the average for the economy

as a whole, with future wages in the negotiations mill that called for first year gains in the neighborhood of 20 per cent. With the unions asking for and getting results like this, what justifications they had in the past for gains on the basis of equity were beginning to wear pretty thin. Another factor, a paradox of sorts, that pointed up the failure of the competitive forces of supply and demand in this area, was that the seasonally adjusted unemployment rates for both skilled craftsmen and construction laborers during this year's first quarter were more than *double* the low point reached in the second quarter of 1969. And, they've remained at that high level through the rest of this year, so far.

In effect, while specific crafts in specific localities may still have had the muscle to get large wage increases, the general level of unemployment in the industry dictated caution and cooperation, rather than a more antagonistic stand, once the Construction Industry Stabilization Committee was created.

Another aspect to this is the fact that 1971 has been a banner year for housing, the segment of the industry that is typically less unionized than the rest. In effect, the new job opportunities were being filled by nonunion personnel at a faster rate than had been the case in prior years. This, too, forced some of the craft unions to take a second look at their past practices with respect to wage demands.

1972's construction markets, as you saw on these pages last month, are expected to show strong gains in the area of nonresidential building. This is a sure bet to dry up some of the persistent unemployment in the industry, particularly among the skilled construction trades. But, a labor shortage of the type that existed through the last few years of the 1960's, and set the stage for much of the recent pressure for sharp wage increases is not in the cards. Also, since housing is expected to continue strong in 1972, the trend toward proportionally more nonunion workers will continue. This plus the fact that the rest of the economy will be in the same Phase Two boat (the construction unions will remain under the authority of their own Stabilization Committee, but will conform to the general guidelines of the Pay Board) augurs well for further reduc-

tions in construction wage gains next year. The case will get even stronger if the Price Commission meets with any success in holding down gains in general prices.

Materials prices were not a very prominent factor in construction costs during 1970, rising less than one per cent, on the average, over the 1969 rate. This year, however, due largely to gains in prices of housing-related materials like lumber and gypsum, the rise in the aggregate index has been in excess of five per cent, well above the 2.5 per cent target for Phase Two. It stands out as an area that would probably receive close scrutiny from the Price Commission if a price increase is proposed in the months ahead.

Within this respect it is significant that most building products manufacturers fell either in tier one, or tier two of the three tier price policing mechanism set up. Materials manufacturers' prices, then, will be followed more carefully than those of the contractor, engineer, or architect, most of whom will be down in the third tier, reserved for small business firms. Although they will be spot checked, the smaller firms will not carry the financial burden and inconvenience of periodic reporting.

Another big factor in the cost of construction, the cost of money, will also be affected by the new economic programs. Though it won't be directly regulated, Phase One and Phase Two have acted to relieve the Federal Reserve System of most of its inflation-fighting burden. The policymakers at the Fed can now concentrate on holding down interest rates and insuring an adequate supply of funds to meet 1972 business and personal credit needs.

There is one aspect of the system that could impose a significant burden to certain areas of construction next year, though. This is the fact—particularly critical in the area of homebuilding—that unimproved land prices are not controlled. This will not pose much of a problem for the apartment builder, because rents on new apartment units are not subject to control either. The price of a new single family house will be controlled, though. This could put the homebuilder in a squeeze.

In the short-term, the Nixon phases will most assuredly do what they're designed to do—reduce the rate of inflation in the economy.

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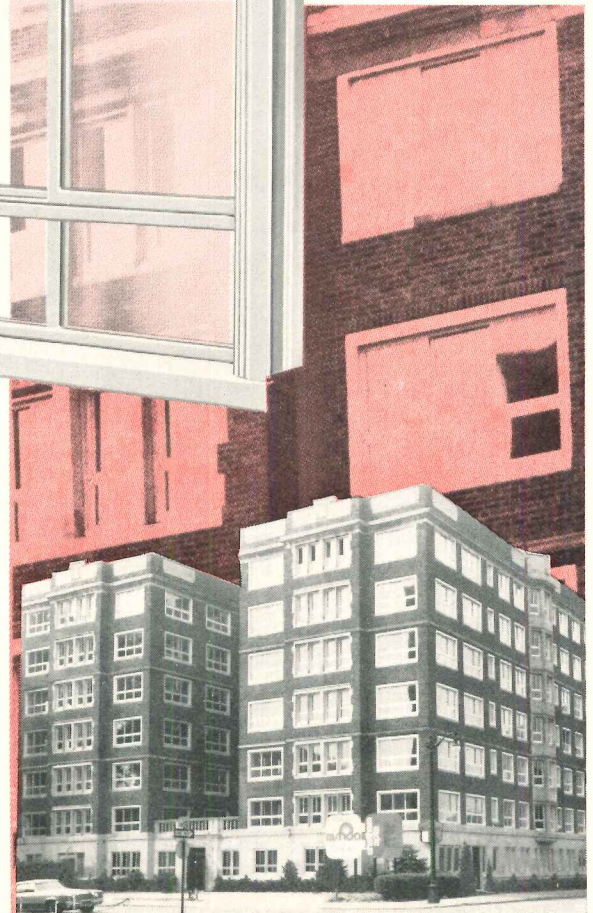
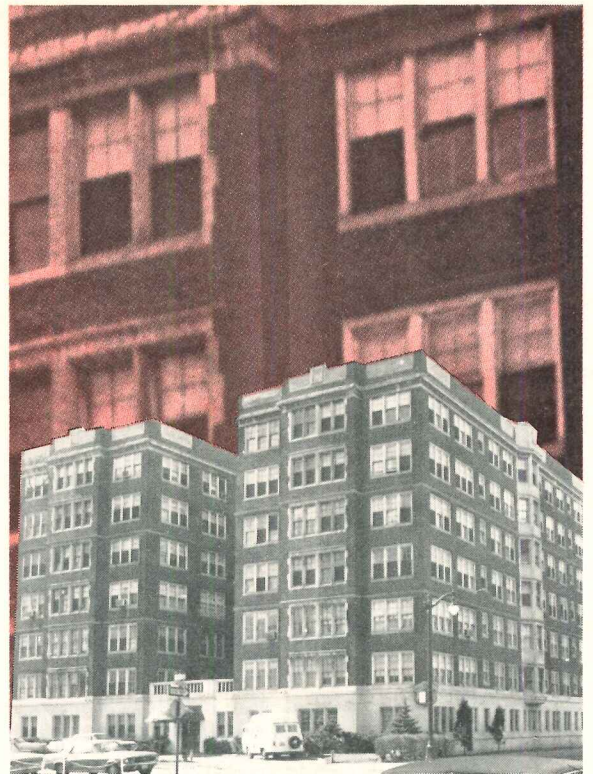
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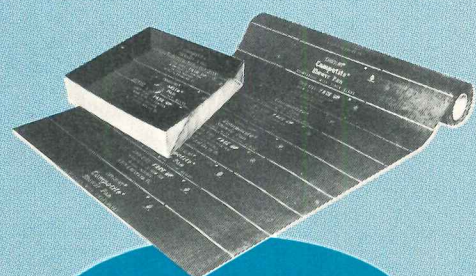
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### COSTS UP 7.8 PER CENT

Nationwide construction costs registered an average 7.8 per cent gain for the twelve-month period ending September 30. By comparison, the cost of construction labor and materials rose 8.1 per cent during the previous period ending September 30, 1970.

The most significant factor in the current increase was an average four per cent rise in building materials costs plus a 10.7 per cent jump in wages for building trades craftsmen. Craftsmen's wages a year earlier showed a 12.9 per cent rise. This cost information is based on semi-annual surveys of 182 cities in the continental United States. Highest regional gains were in the New England and the Mississippi River/West Central regions; both registered 8.3 per cent cost hikes.

Although not reflected in the current data, the wage-price freeze, Phase Two and the establishment of the Construction Industry Stabilization Committee are expected to have a noticeable impact on the results of the Spring 1972 survey. This should produce a slower rise in construction materials and wage costs.

### Building cost indexes

All the indexes on this page are based on wage rates for nine skilled trades, together with common labor, and prices of five basic building materials are included in the index for each listed city.

1941 average for each city = 100.00

Metropolitan area	Cost differential	Current Indexes				% change last 12 months
		non-res.	residential	masonry	steel	
<b>DECEMBER 1971</b>						
U.S. Average	8.4	367.8	345.3	360.3	351.3	+ 8.68
Atlanta	7.8	465.2	438.6	453.5	444.0	+ 8.84
Baltimore	8.0	388.6	365.3	378.6	368.9	+ 9.59
Birmingham	7.4	336.2	312.7	325.7	319.9	+ 7.35
Boston	8.9	367.0	346.8	364.0	353.0	+ 10.33
Buffalo	9.3	416.2	390.8	410.4	397.1	+ 9.27
Chicago	8.5	425.1	404.2	410.6	404.0	+ 8.61
Cincinnati	8.7	391.5	368.4	382.4	372.9	+ 10.95
Cleveland	9.6	421.6	396.7	411.9	402.1	+ 9.51
Columbus, Ohio	8.5	395.3	371.2	384.3	376.7	+ 7.42
Dallas	7.7	361.5	350.0	355.2	347.3	+ 9.55
Denver	8.3	397.6	374.1	393.9	379.9	+ 6.88
Detroit	9.6	414.6	395.0	412.9	398.2	+ 8.73
Houston	7.7	353.3	331.8	345.0	338.7	+ 8.07
Indianapolis	8.0	343.0	322.0	335.4	328.2	+ 9.67
Kansas City	8.3	349.5	330.2	339.7	332.2	+ 9.50
Los Angeles	8.3	410.0	374.8	398.5	390.5	+ 10.96
Louisville	7.6	362.7	340.6	354.7	347.2	+ 9.50
Memphis	7.6	342.4	321.6	332.1	327.7	+ 5.21
Miami	8.1	389.7	371.3	380.7	371.9	+ 9.07
Milwaukee	8.6	423.3	397.5	418.0	404.2	+ 7.61
Minneapolis	9.0	401.5	377.7	393.7	382.8	+ 10.01
Newark	9.0	366.6	344.2	361.8	352.5	+ 7.63
New Orleans	7.3	346.6	327.1	341.8	333.9	+ 7.32
New York	10.0	405.1	376.6	391.1	382.4	+ 8.24
Philadelphia	8.5	379.4	361.4	372.7	364.3	+ 8.35
Phoenix	7.8	207.7	195.0	200.6	197.7	+ 11.25
Pittsburgh	9.0	366.4	344.7	359.4	349.3	+ 10.84
St. Louis	8.7	380.8	359.4	376.3	364.6	+ 9.19
San Antonio	7.8	144.3	135.5	141.0	137.5	+ 4.56
San Diego	8.0	145.5	136.7	142.0	139.2	+ 5.99
San Francisco	9.2	524.1	479.0	519.9	503.8	+ 10.29
Seattle	8.8	368.1	329.4	365.7	351.0	+ 5.01
Washington, D.C.	7.9	347.1	326.0	336.4	329.7	+ 11.07

Cost differentials compare current local costs, not indexes.

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

1941 average for each city = 100.00

Metropolitan area	1962	1963	1964	1965	1966	1967	1968	1969	1970 (Quarterly)				1971 (Quarterly)			
									1st	2nd	3rd	4th	1st	2nd	3rd	4th
Atlanta	298.2	305.7	313.7	321.5	329.8	335.7	353.1	384.0	399.9	406.2	408.1	422.4	424.0	445.1	447.2	
Baltimore	271.8	275.5	280.6	285.7	280.9	295.8	308.7	322.8	323.7	330.3	332.2	348.8	350.3	360.5	362.5	
Birmingham	250.0	256.3	260.9	265.6	270.7	274.7	284.3	303.4	303.5	308.6	310.2	309.3	310.6	314.6	316.4	
Boston	239.8	244.1	252.1	257.8	262.0	265.7	277.1	295.0	300.5	305.6	307.3	328.6	330.0	338.9	341.0	
Chicago	292.0	301.0	306.6	311.7	320.4	328.4	339.5	356.1	362.2	368.6	370.6	386.1	387.7	391.0	393.2	
Cincinnati	258.8	263.9	269.5	274.0	278.3	288.2	302.6	325.8	332.8	338.4	340.1	348.5	350.0	372.3	374.3	
Cleveland	268.5	275.8	283.0	292.3	300.7	303.7	331.5	358.3	359.7	366.1	368.1	380.1	381.6	391.1	393.5	
Dallas	246.9	253.0	256.4	260.8	266.9	270.4	281.7	308.6	310.4	314.4	316.1	327.1	328.6	341.4	343.4	
Denver	274.9	282.5	287.3	294.0	297.5	305.1	312.5	339.0	343.4	348.4	350.3	368.1	369.7	377.1	379.1	
Detroit	265.9	272.2	277.7	284.7	296.9	301.2	316.4	352.9	355.2	360.5	360.6	377.4	379.0	384.6	386.8	
Kansas City	240.1	247.8	250.5	256.4	261.0	264.3	278.0	295.5	301.8	306.8	308.8	315.3	316.6	329.5	331.5	
Los Angeles	276.3	282.5	288.2	297.1	302.7	310.1	320.1	344.1	346.4	355.3	357.3	361.9	363.4	374.2	376.4	
Miami	260.3	269.3	274.4	277.5	284.0	286.1	305.3	332.3	338.2	343.5	345.5	353.2	354.7	366.8	368.9	
Minneapolis	269.0	275.3	282.4	285.0	289.4	300.2	309.4	331.2	341.6	346.6	348.5	361.1	362.7	366.0	368.0	
New Orleans	245.1	284.3	240.9	256.3	259.8	267.6	274.2	297.5	305.4	310.6	312.2	318.9	320.4	327.9	329.8	
New York	276.0	282.3	289.4	297.1	304.0	313.6	321.4	344.5	351.1	360.5	361.7	366.0	367.7	378.9	381.0	
Philadelphia	265.2	271.2	275.2	280.8	286.6	293.7	301.7	321.0	328.9	337.7	335.7	346.5	348.0	356.4	358.4	
Pittsburgh	251.8	258.2	263.8	267.0	271.1	275.0	293.8	311.0	316.9	321.6	323.3	327.2	328.7	338.1	340.1	
St. Louis	255.4	263.4	272.1	280.9	288.3	293.2	304.4	324.7	335.2	340.8	342.7	344.4	345.9	360.0	361.9	
San Francisco	343.3	352.4	365.4	368.6	386.0	390.8	402.9	441.1	455.4	466.9	468.6	465.1	466.8	480.7	482.6	
Seattle	252.5	260.6	266.6	268.9	275.0	283.5	292.2	317.8	325.4	335.1	336.9	341.8	343.3	347.1	349.0	

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



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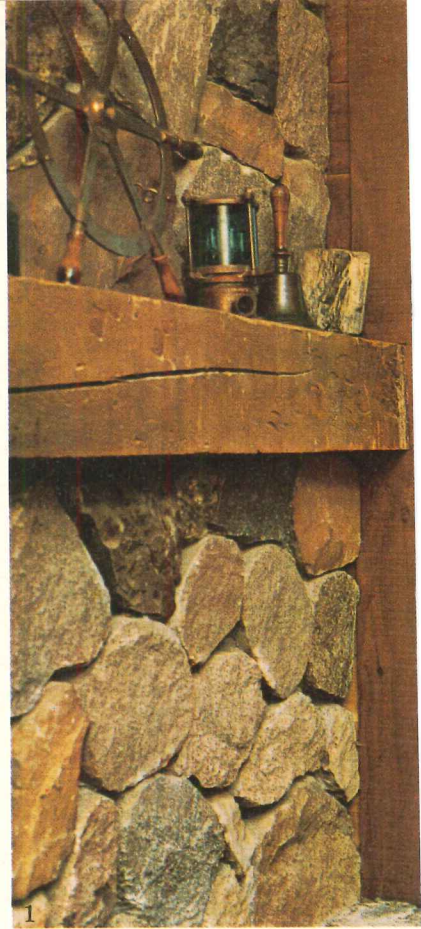
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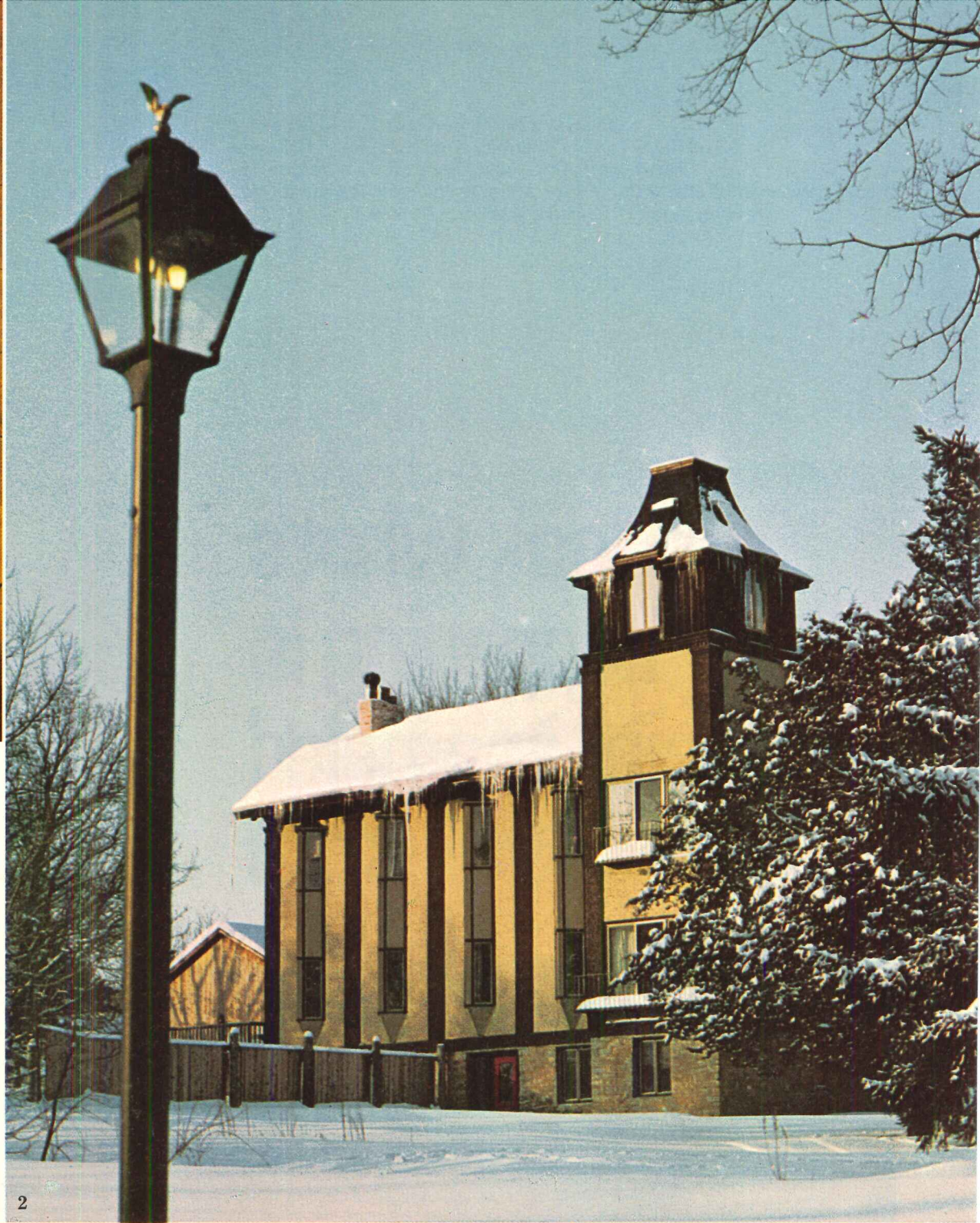
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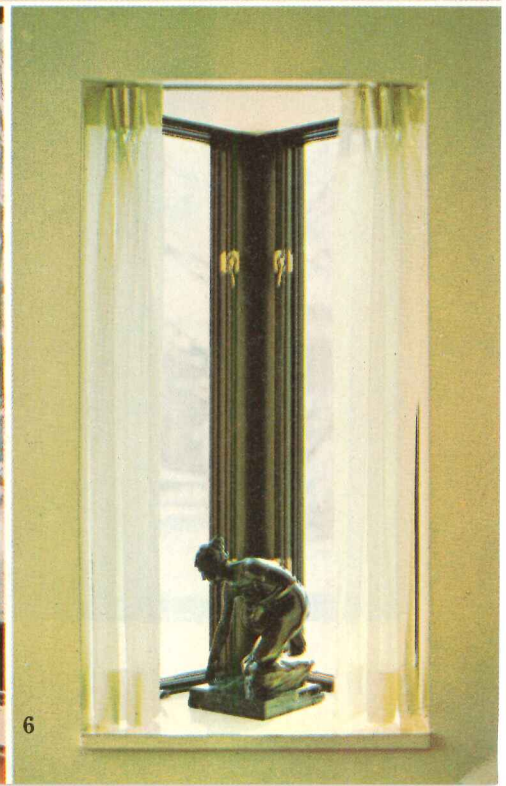
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5



6

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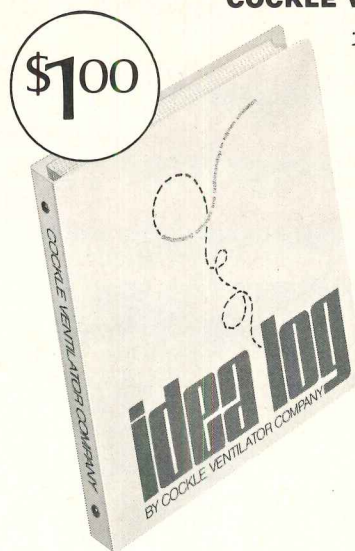
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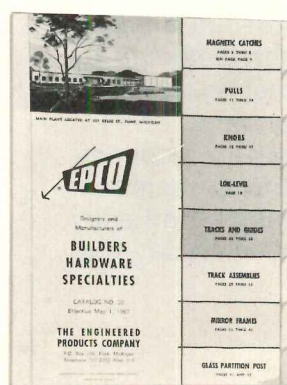


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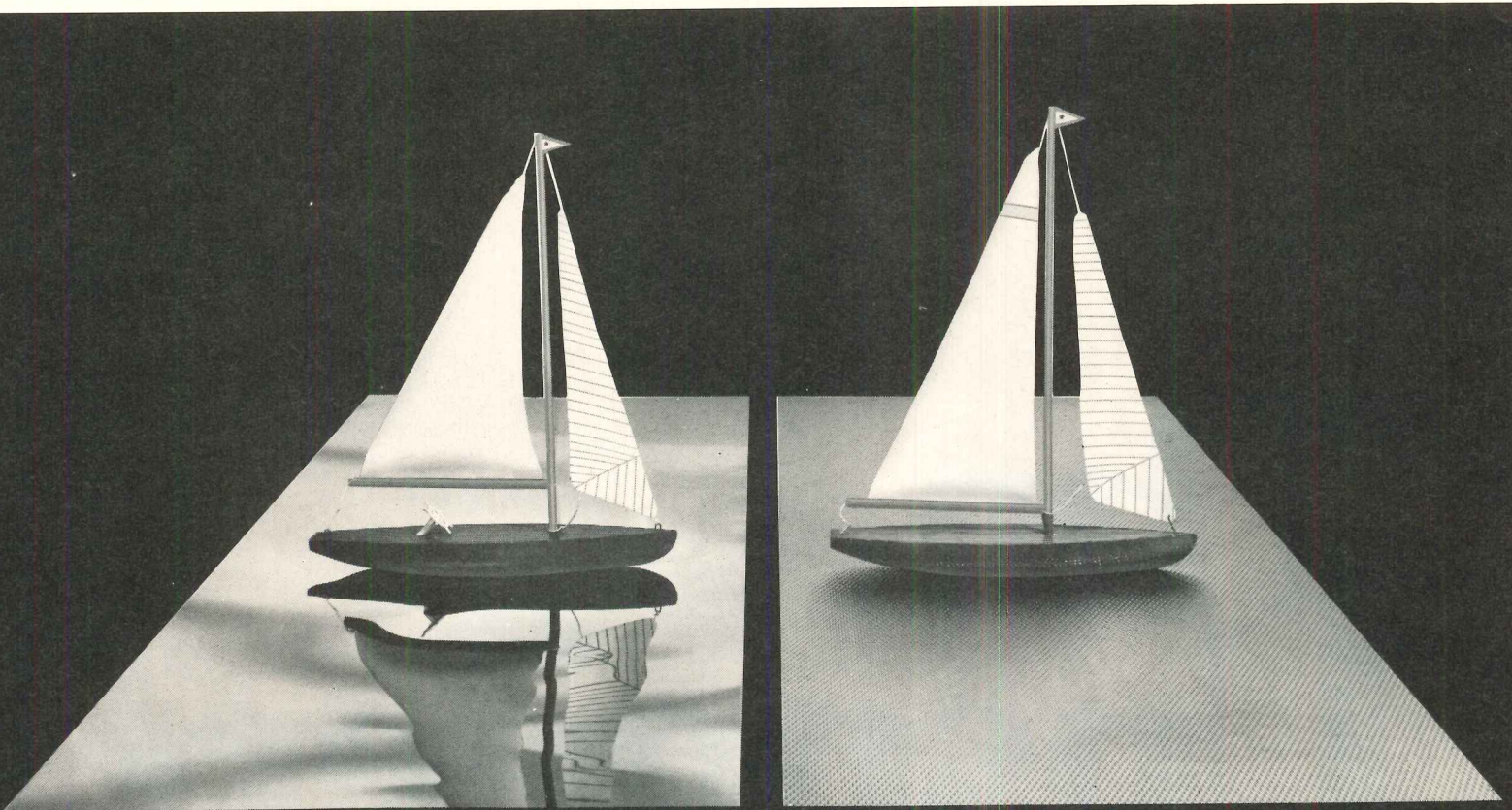
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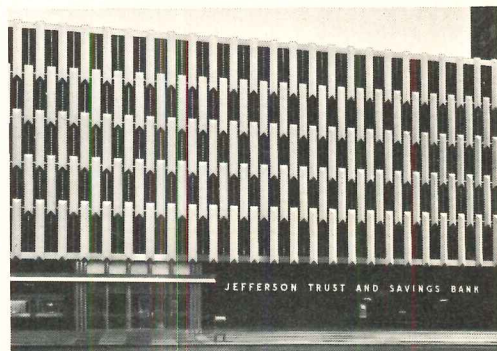


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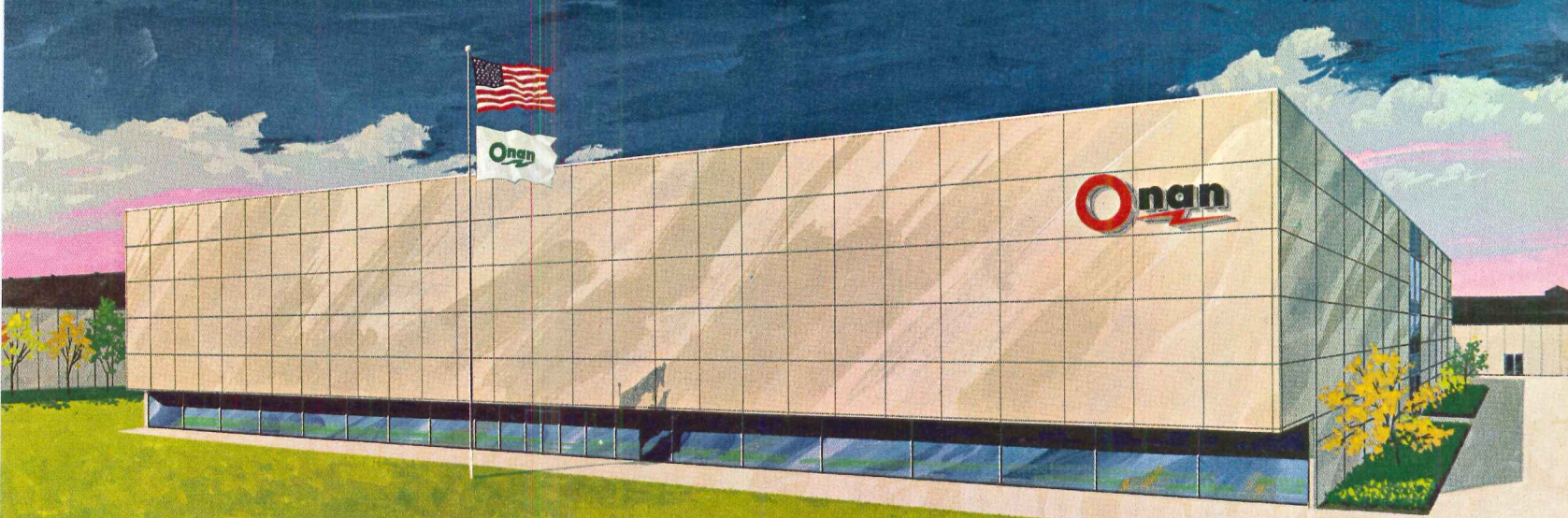


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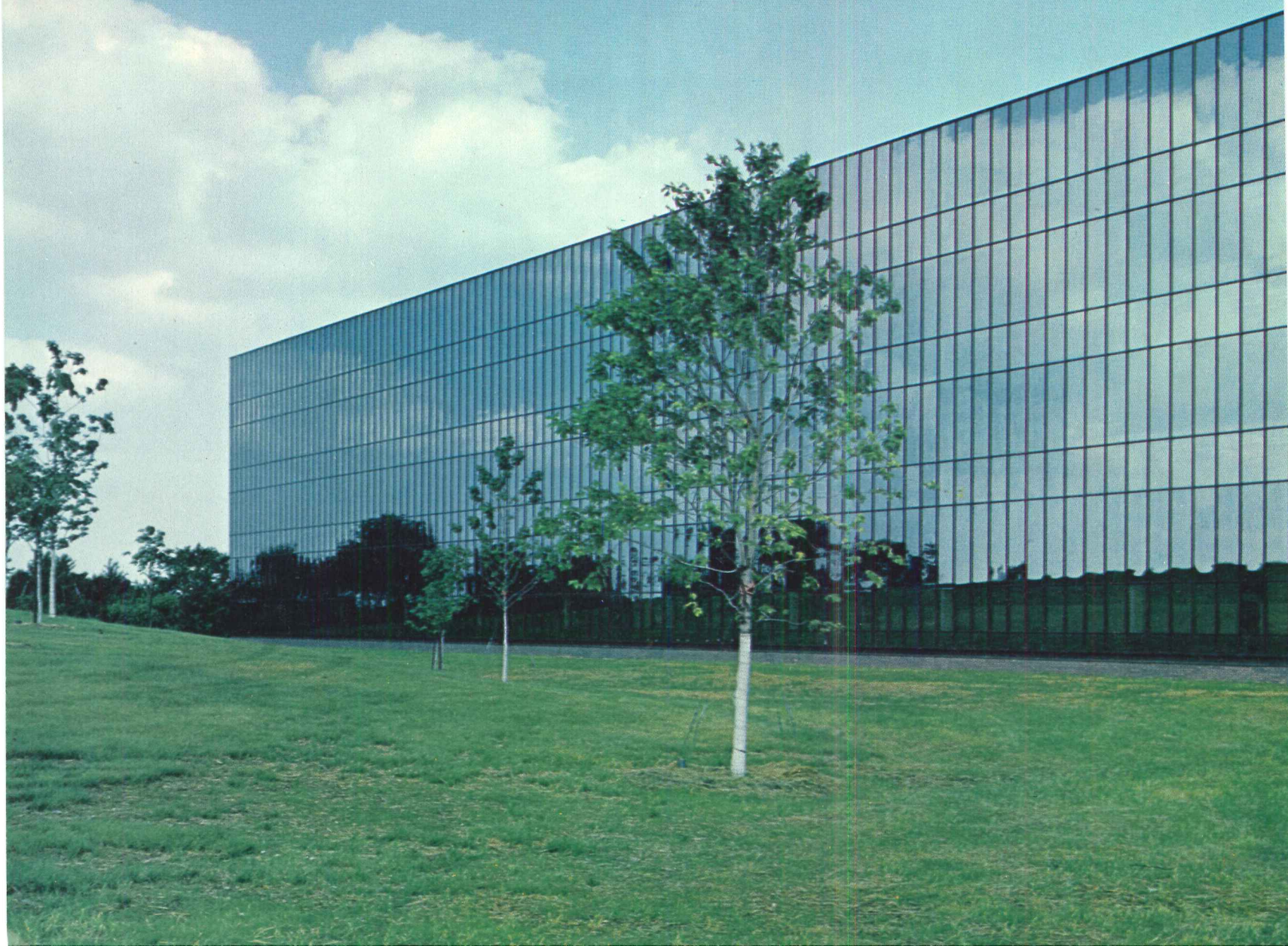
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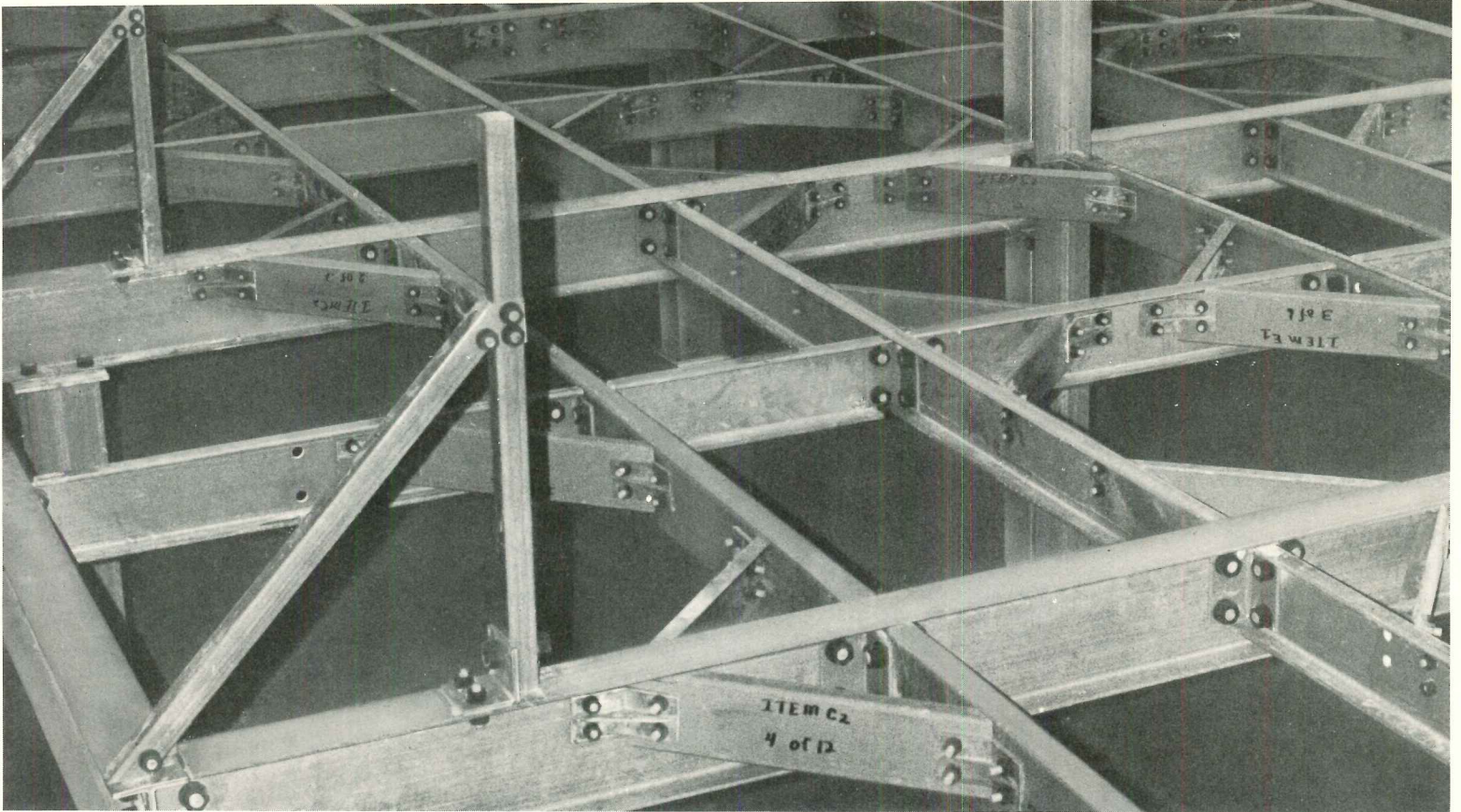
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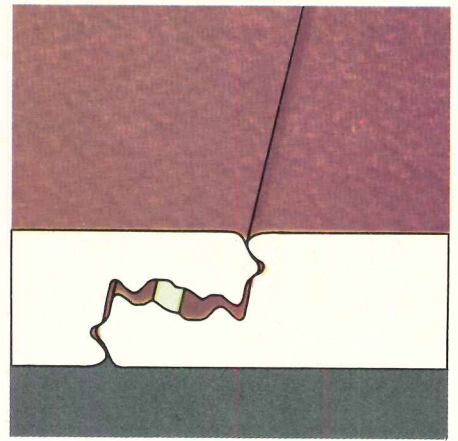
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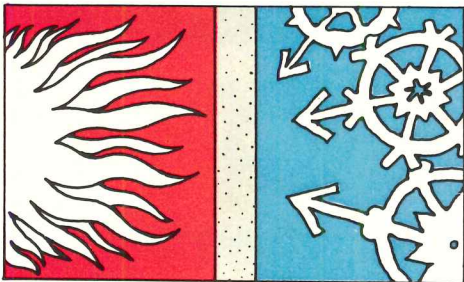
Sterling Heights High School; Warren, Michigan; Architect: Wakely-Kushner Assoc.



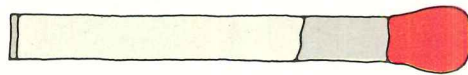
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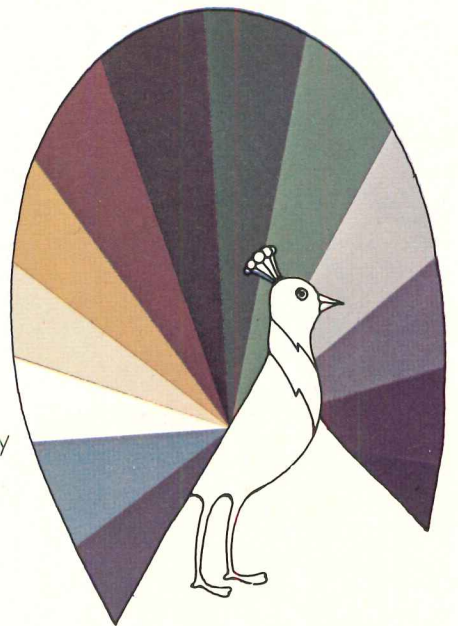


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BUILDING TYPES STUDY 429

®

the architect's role  
in preservation

restoration of historic  
buildings and places

renovation with a  
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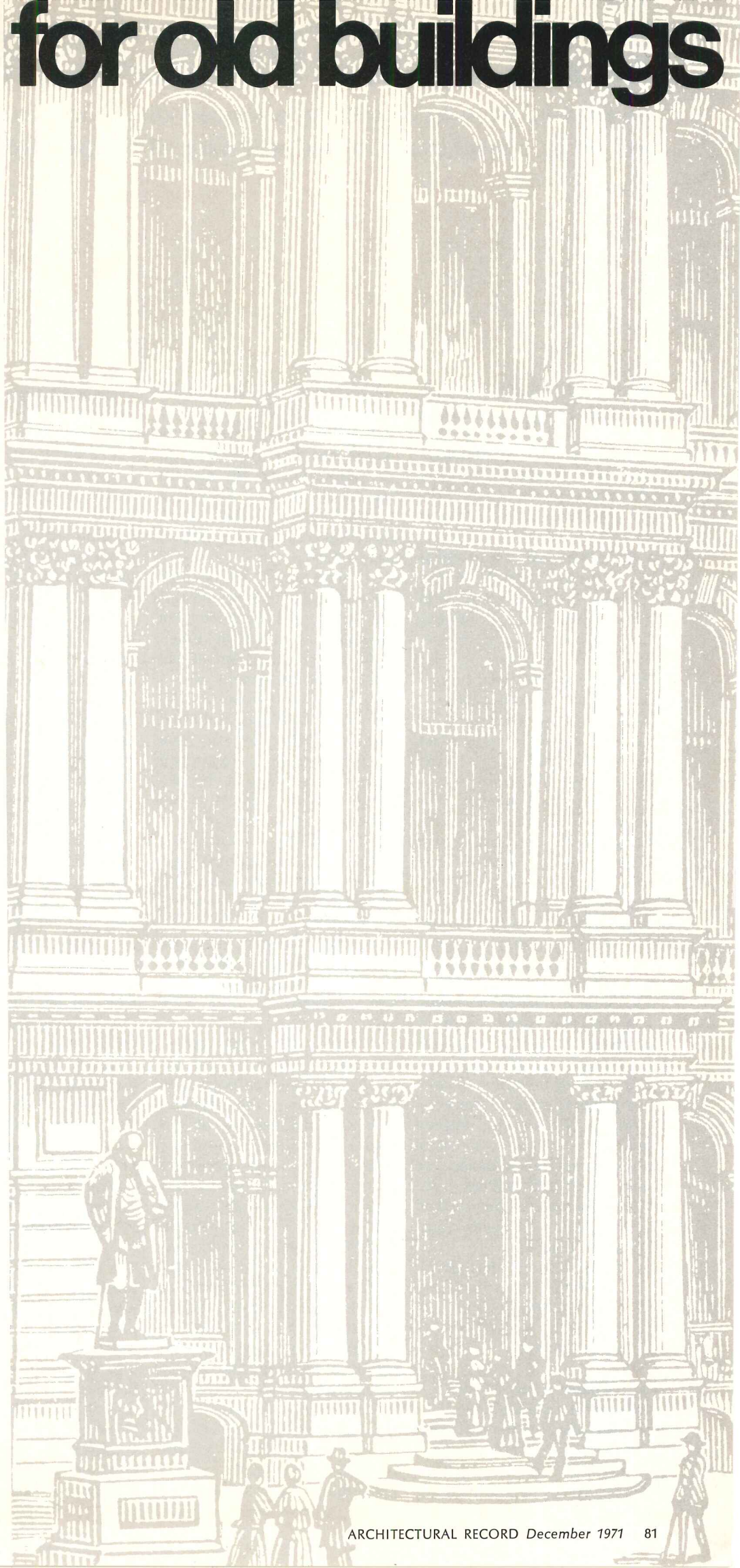
practice problems  
in remodeling

rehabilitation of buildings  
for the same use

railroad stations:  
an endangered species

rehabilitation of older  
buildings for new use

the heritage  
that should be saved



# the architect's role in pre

He must be persuasive with unconvinced clients, seek out funding for local preservation, and act as a synthesizer, when necessary, of historic and modern architecture

People need familiar objects, buildings, and spaces to remind them of what their lives have been in the past, and how their lives are proceeding today. When we quickly move from one town to another or, more powerfully, when we *return* to a place that used to be familiar but now has changed, we feel a direct personal break with former events that is emotional, easily recognized, a bit mysterious, and probably universal. The power of this very human capacity to remember, and to associate forms with events, is the principal force behind the preservation movement today, in our cities and towns. It is a movement that is affecting the architect deeply because he understands the personal human values involved, and he has often been a leader in those local battles to save a good building. It is a movement now affecting even those architects who have never done a restoration or bothered with remodelings, because the economic balance between keeping existing architecture and building new architecture has changed too. In a growing number of specific projects there is less economic justification for tearing down and starting over than there is for rehabilitating an older structure or adding to it: this is a gradual realignment that is nevertheless changing many architects' practice.

These broad philosophical and economic questions are what the editors have tried to illustrate in this one-subject issue on preservation.

**For someone doing his first work with an old building, the definitions can be confusing**  
Consider this list of terms: conservation, preservation, restoration, reconstruction, renovation,

rehabilitation, rebuilding, modernization, alteration, remodeling, repair. These are similar words, and they mean close to the same thing in any dictionary. In preservation work as it is developing, however, some meanings are becoming distinct from others.

"Preservation" has become the term encompassing most of the others, and describing the movement as a whole. Originally the principal aim of the preservation movement was to save historic and architecturally significant buildings, and that focus continues. But the scale of preservation is expanding today. It aims now at the rescue of historic districts—often a better cultural record than single buildings—and it attempts to record and maintain some of the smaller artifacts of towns and cities that seem important—artifacts like the streetcars of San Francisco, important bridges, a group of neighborhood light posts, or an "Uncle Sam" mailbox in rural New York.

The word "conservation" has been claimed by the environmentalists, and applies in familiar usage to the regeneration and maintenance of our natural surroundings—rivers, forests, soil, air, sea—more than to our man-made world. But it can also be applied to man's ecological context in general, including buildings and cities, and probably should be so applied. Our environment includes our architecture, and preservationists now are trying to strengthen their legitimate philosophical links with the powerful environmental protection movement as a whole.

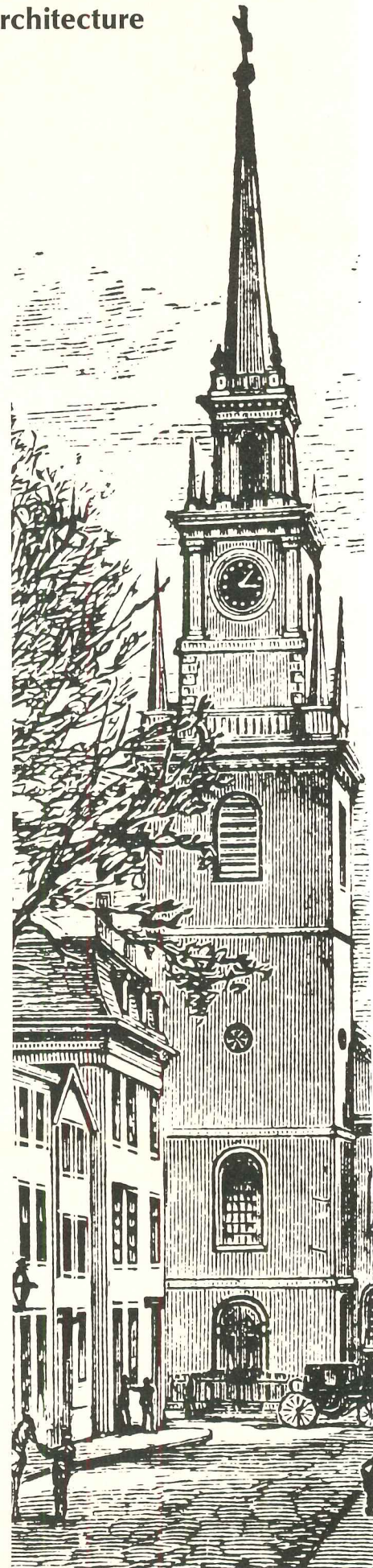
"Restoration" means returning a building to its appearance at a specific period, with meticulous attention to

original details and materials. In its most familiar form it is like the work at Williamsburg, but it need not always create museum-piece buildings that people visit or look at or study but do not otherwise use. Restoration work is specialized, however, involving the skills of the historian and archeologist, as well as architects.

The rest of the terms we listed are less clearly differentiated in the profession. "Reconstruction" has been defined in the *A.I.A.'s Handbook of Professional Practice*, section 21, as "... utilizing documentary evidence to design and construct a replica of an earlier building or facility which no longer exists." "Rehabilitation" is defined as "... equipping the building or facility for an extended useful life with a minimum alteration of original construction," but the term is coming more and more to be associated with the rehabilitation of housing, where the emphasis is on making old housing re-inhabitable, with not much attention given to reclaiming the architecture. Remodeling, alteration, renovation, and modernization probably have specific meaning in some cities or regions, but they have still to be defined professionally other than in their normal language connotations. We use them interchangeably.

**The important work in preservation now is developing new uses for older buildings or districts**

Much of our old architecture may be destroyed if it cannot be made productive. The new uses that must be created may allow an old building to be accurately restored to some former period in its history, or it may not. It is acceptable if the



Christ Church (Old North),  
Salem Street, Boston, 1889 illustration

old facade can be retained while the interior is entirely remodelled, or if a substantial new addition can be made that is compatible with the old work and revitalizes it. At the Tulane University School of Architecture in New Orleans, for instance, a group of advanced students under the direction of the late Dean John L. Lawrence and Professor Jack Cosner have produced and published a paperback booklet delimiting possible new uses for the New Orleans Mint, William Strickland Architect, 1835. One of the outstanding architectural monuments in New Orleans or any city, the precise Greek Revival building sits abandoned now, but immediately adjacent to an area controlled by a large group of private developers. The old mint is supposedly secure (it was deeded to the state of Louisiana in 1966, with the stipulation that it be preserved) but as long as it remains without an economic or institutional base of its own, it is implicitly threatened, as private development increases the value of land around it. Investigating new uses for the New Orleans Mint is one of the most important preservation efforts in that city. A series of bright sketches and possibilities for new use done by the Tulane students is one way to broaden public conceptions of what might be possible in an old building that now looks useless and crumbling.

**It is the expanding role of the architect in preservation that we are concerned with here**  
An archaeologist may provide valuable information about an old building or neighborhood through excavation, that would help in a reconstruction. The historian or curator is needed

to document the original forms of a building or the general characteristics of a town, and he provides the historical evidence from which restoration work can proceed. The sympathy of at least one attorney is required in most preservation contests, to fight through the courts for the public values by which preservationists must usually confront private interests and private profit. But finally, the architect must deal with the physical forms themselves; esthetically, structurally, and through codes. The medium of his involvement is usually the individual building, even when historic district preservation is the context, because most of the decisions about what work to do in an historic district, and how to do it, will take place building by building.

Particularly with substantial new additions to existing architecture, or with major alterations for new uses, the architect must make decisions that no one else is qualified to make. He must decide how the old forms can most effectively be complemented by the modern forms he understands, for it is rarely appropriate now to copy moldings and details, or to simply continue old facades. In additions or major alterations, an architect is concerned with the late 18th century (perhaps) in the context of the late 20th century, and he must deal artistically with both.

#### **Schools and government agencies are expanding their involvement in preservation**

Among architecture schools in this country, the first graduate program directed specifically at architectural preservation was initiated at Columbia in 1963, and there are programs leading

*text continued on page 85*

### **Some funding sources for preservation and rehabilitation**

*The following is a list of various specific sources where architects and preservationists might look for money to assist either themselves or their clients. It is a very abbreviated list: for more sources, write to Russell V. Keune, Director, Department of Field Services, National Trust for Historic Preservation, 740 Jackson Place N.W., Washington, D.C.*

#### **Federal Urban Renewal Program**

*Description:* Grants, planning advances and temporary loans to help finance blight elimination through surveys and planning, land acquisition, rehabilitation of existing structures and installations or public improvements. A project can include relocation of structures which will be restored and maintained for historic purposes, and restoration of historic properties.

*Example:* Grant in 1970 to Pittsburgh Urban Renewal Authority for the restoration of 19th-century townhouses in the Hill District, Pittsburgh, Pennsylvania.

*Eligibility:* Preservation activities must be part of local urban renewal program. Restoration activity may only be carried out on acquired properties that will remain in urban renewal area. Properties must meet "criteria or evaluation" set by National Park Service for the National Register. Local public agencies, renewal agencies or housing authorities or government departments empowered to carry out urban renewal may apply.

*Federal funding agency:* Renewal Assistance Administration, Department of Housing and Urban Development

*Legislation:* Housing Act of 1949 (P.L. 81-171)

*For information contact:* Assistant Regional Administration for Renewal Assistance, HUD Regional Office.

#### **Historic Preservation**

*Description:* Matching grants are provided to cover up to 50 per cent of the cost of acquiring, restoring, and improving sites, structures, or areas of historic or architectural significance in urban areas, in accord with comprehensive local planning. Projects must result in a public use or benefit. Applicants must assure maintenance.

*Example:* Grant for the acquisition and restoration of the South San Francisco Opera House, a landmark dating from 1888, San Francisco, California, 1970.

*Eligibility:* States or local public bodies with authority to carry out the above activities and to contract with the Federal Government. Properties must be listed in the National Register of Historic Places.

*Federal funding agency:* Office of Community Development, Department of Housing and Urban Development

*Legislation:* Housing Act of 1961 (P.L. 87-70)

# ole in preservation / the arc



Chestnut Street, Philadelphia, south side from Seventh to Eighth Streets, ca.1879

For information contact: Assistant Regional Administrator for Community Development, appropriate HUD Regional Office.

### **Comprehensive Planning Assistance Program**

*Description:* Matching grants at two-thirds of costs to help finance surveys for identifying historic and architecturally significant structures and sites, estimating costs of their rehabilitation or restoration, and providing other information to serve as a foundation for a historic preservation plan.

*Eligibility:* State and local comprehensive planning agencies, or cities, municipalities or counties.

*Federal funding agency:* Department of Housing and Urban Development

*Legislation:* Housing Act of 1954 (P.L. 83-560), Sec. 701, as amended.

*For information contact:* The appropriate HUD Regional Office, Assistant Regional Administrator for Planning Coordination.

### **Urban Renewal Demonstrations**

*Description:* A program of grants to help develop, test, and report new or improved methods and techniques for preventing and eliminating slums and blight.

Grants are made to cover up to 90 per cent of the cost of developing and testing innovative methods and techniques, and the full cost of writing and publishing reports on the results. Grants may also be made to cover the full cost of writing and publishing reports on innovative activities not financed under this program.

*Eligibility:* Public bodies or nonprofit organizations legally authorized to undertake the proposed activities and to contract with the Federal Government. Other interested public or private agencies may participate and contribute.

*Federal funding agency:* Office of Research and Technology, Department of Housing and Urban Development.

*Legislation:* Housing Act of 1954 (P.L. 83-560)

*For information contact:* Office of Research and Technology, Department of Housing and Urban Development.

### **Archeological and Paleontological Salvage**

*Description:* To preserve for public use historical and prehistoric sites, buildings, and objects of national significance for the inspiration and benefit of the people of the United States, where such sites, buildings, and objects lie within the limits of proposed highway construction.

*Eligibility:* Federal and Federal-aid highway funds may be used for such salvage costs as are clearly attributable to highway projects, including survey costs incurred in advance of construction, as are determined to be necessary to preserve historical objects which might otherwise be adversely affected by highway construction, or to avoid increased salvage costs as might other-

wise occur during highway construction.

*Federal funding agency:* Federal Highway Administration, through the Highway Trust Fund.

*For information contact:* Chief, Utilities Staff, Office of Right-of-Way and Location, Federal Highway Administration, Department of Transportation, Washington, D.C. 20591.

### **Project and Research Grants**

*Description:* Makes grants to groups and individuals for projects and research in architecture, landscape architecture, and urban planning.

*Example:* Grant in 1969 to the National Trust for Historic Preservation for the "National Conference on Architectural Review, Landmarks, and Historic Districts."

*Eligibility:* Individuals, groups and schools of architecture

*Federal funding agency:* National Endowment for the Arts

*Legislation:* National Foundation on the Arts and Humanities Act of 1965 (P.L. 89-209)

*For information contact:* Director, Architecture Programs, National Endowment for the Arts, Washington, D.C. 20506.

### **Research Grants**

*Description:* Provides grants to individuals or groups for scholarly research in any field of the humanities, including archaeology and historic preservation. Grants as such do not usually exceed \$15,000.

*Eligibility:* Individuals or groups in all fields of the humanities. Persons affiliated with institutions must apply through it.

*Funding agency:* National Endowment for the Humanities

*Legislation:* National Foundation on the Arts and Humanities Act of 1965 (P.L. 89-209)

*For information contact:* Director of Research and Publication, National Endowment for the Humanities, Washington, D.C.

### **National Historic Preservation Program**

*Description:* Makes matching grants for state historic surveys and plans, acquisition and restoration of individual properties. Matching grants to National Trust for Historic Preservation. Properties receiving assistance must be included in the National Register of Historic Places. States must have qualified survey staffs and review boards.

*Example:* \$2 million was appropriated for 40 states and the District of Columbia for historic survey and plan projects, fiscal 1971.

*Eligibility:* The States and the National Trust for Historic Preservation

*Federal funding agency:* National Park Service

*Legislation:* Historic Preservation Act of 1966 (P.L. 89-665)

*For information contact:* The National Register, National Park Service, 801 19th Street, N.W., Washington, D.C. 20006.

# Architect's role in preservation



Chestnut Street, Philadelphia, north side from Sixth to Seventh Streets, ca.1879

text continued from page 83

to similar graduate degrees at Cornell, the University of Florida, and Virginia. But it is still unusual to find any emphasis on preservation in the undergraduate schools. A recent questionnaire mailed to 49 schools of architecture in the United States by the AIA's Committee on Historic Resources discovered that about half of them had never given a design problem, in any undergraduate studio, in which the emphasis was preserving and enhancing an existing building or district. Eighty per cent of the schools had no course that dealt with systems for inventorying and documenting historic buildings in a community, and 90 per cent of the schools had no undergraduate courses on the architectural techniques of restoration, rehabilitation, or reconstruction.

The Department of Housing and Urban Development

program was funded at \$75 million for fiscal 1971 but this sum will nearly triple—to \$200 million—if President Nixon's budget request for 1972 is approved. There is more money available now than there used to be, and funding machinery is in place ready to go; grant applications are what is needed now to make it effective.

The Department of the Interior's main preservation assistance programs are under the National Park Service's Office of Archeology and Historic Preservation, and administered by the National Register of Historic Places. Over two thousand five hundred places are now on the National Register, and the inclusion of a building on this list is usually necessary for funding from HUD and other governmental agencies. The intention, of course, is to expand the registry and its availability. This year, funding for direct architectural activity is being

**In saving older buildings, an architect must act as his community's advocate with his client**

This issue is organized in a way that, we hope, will be useful to an architect thinking about preservation work. Part one is on restoration; part two on new-addition renovations; part three on practice problems in remodeling; part four on rehabilitation for the same use, and part five on new-use rehabilitation. The principal justification for separating the last two is the architect's different involvement with codes. When rehabilitating a structure for the use it has had, new laws requiring additional exit-units or stricter fire ratings or user restrictions can sometimes be ignored if the owner and architect agree, because such laws do not apply to previously established buildings. But if a new use is being developed, of course all existing codes apply, and they usu-

# restoration of historic bu

Interest in preserving the monuments of our past is on the increase and, fortunately, so is knowledge of how to restore and strengthen them to endure for the future

Restoring any building is an exacting process, but restoring a building of historic or architectural significance requires all the art and science at an architect's command. At every step, another man's ideas and another era's ways must govern. There is no room for ego in a good restoration. The satisfaction of rescuing an important building from oblivion and of association with the work of some long-gone master architect offsets the challenge of such a disciplined procedure. But there is far more to restoration than mere duplication of another's work: the right decisions, the careful judgments, demand insight and imagination, and getting at the facts themselves can have as exciting overtones as the unraveling of a mystery.

To restore a building, however, it must first be saved from whatever ravages threaten it—termites, weather, vandalism, or the ultimate destruction of a wrecking crew—and that takes money. Since there will never be enough money, public or private, to preserve all the worthy buildings, let alone to restore them, those of greatest historical or architectural importance and significance must be the chosen ones. The four buildings shown in this section are of that kind.

The Patent Office Building (right), Washington, D.C., now the National Collection of Fine Arts and the National Portrait Gallery, is a remarkable building, exhibiting the changing tastes of an eventful 27-year period in the development of the United States. Four architects of note contributed to its Greek Revival design, one of the handsomest buildings (and certainly one of the largest in this country) of this architectural style. In its new role of sheltering two art galleries, the old

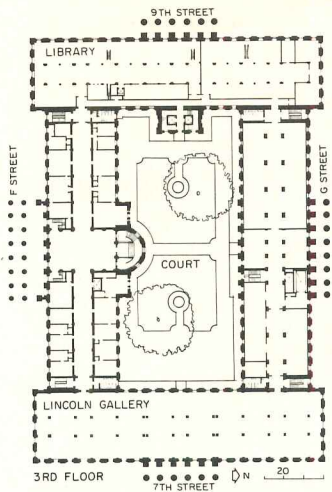
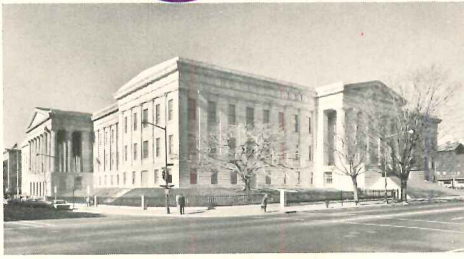


Norman McGrath photos





# Buildings and places/restoration



## Restored for new life: the old Patent Office now houses two art museums

The original building of the old Patent Office was Greek Revival, and this has survived as its exterior character. But when two wings, destroyed by fire, were rebuilt in 1877, the interiors of these sections were done to newer tastes: the third floor library (3), with its three tiers of reading areas and stacks, is an example of the eclectic design of that day. The burned wings had roofs supported by iron trusses and vaults, instead of the masonry vaults and wood roofs used by Robert Mills in the first two wings which did not burn. The building was designed with great halls for display of patent models, one of which was the scene of the inaugural ball for Lincoln's second presidential term (2). Its 28 freestanding square marble columns and four pilasters, of unusual and original design, support a series of groined vaults 300 feet long.

THE FINE ARTS-PORTRAIT GALLERY, Washington, D.C. Owner: The Smithsonian Institution. Architects: William P. Eliot, Ithiel Town, Robert Mills, Thomas U. Walter (original); Faulkner, Stenhouse, Fryer & Faulkner (restoration); Victor Proetz, Bayard Underwood, consultants. Engineers: Conger & Kraas, structural; Wilberding Company, Inc., Egli & Gompf, mechanical. Lighting Consultant: Stanley R. McCandless. Landscape architect: Lester A. Collins. General contractor: Grunley-Walsh Construction Co.



# ion of historic buildings and

building makes a remarkable come-back, thanks to sensitive and skillful treatment.

Unlike the Patent Office Building, Adler & Sullivan's great Auditorium Theater in Chicago had been badly misused for 25 years before its restoration was begun, but like the Patent Office, it had barely escaped demolition. To bring it back to its original form was more a matter of renovation and repair than of reconstruction, for the building proved, after careful structural inspection and analysis, to be basically sound. One truss was found to have become over-stressed because of settling, and this was strengthened. The stage floor was replaced (it had been used as a bowling alley during World War II when the theater was a USO Center) and new fans and heating and cooling coils were installed to work with the original duct system. The remarkable stage equipment—Adler's genius showed here as in the heating and air conditioning system he devised—was in surprisingly good condition, considering its years of disuse and misuse. New stage lighting was required; new ropes for scenery placement, restoration of some of the hydraulic lifts, new dressing rooms and new plumbing were provided. The major costs, however, were for plaster repair, paint and a new electrical system. There were unexpected rewards for faithful adherence to the original plans: When a row of boxes, installed between the orchestra seats and the grand foyer were removed to restore the continuity between theater area and foyer, excellently preserved examples of the original paint and Sullivan's beautiful stencilling were found. The faithful restoration included new chairs in the original design, a



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Courtesy Chicago Historical Society

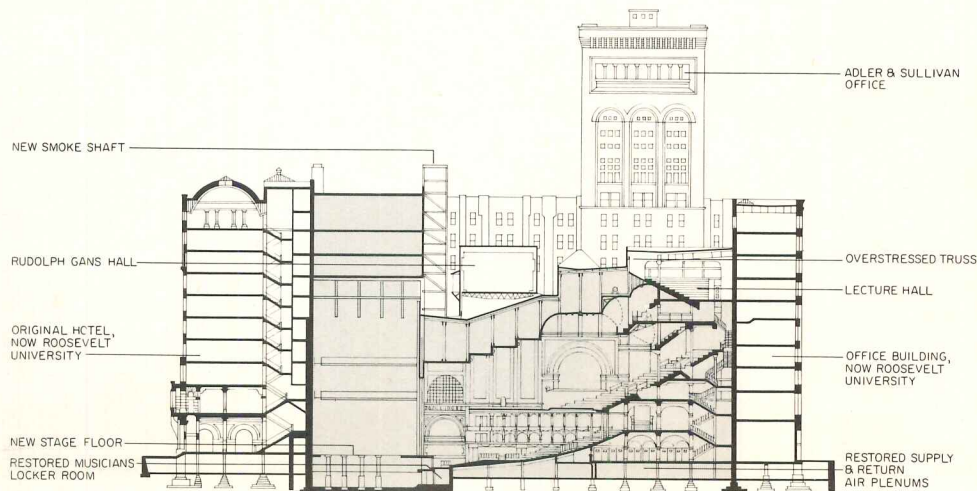
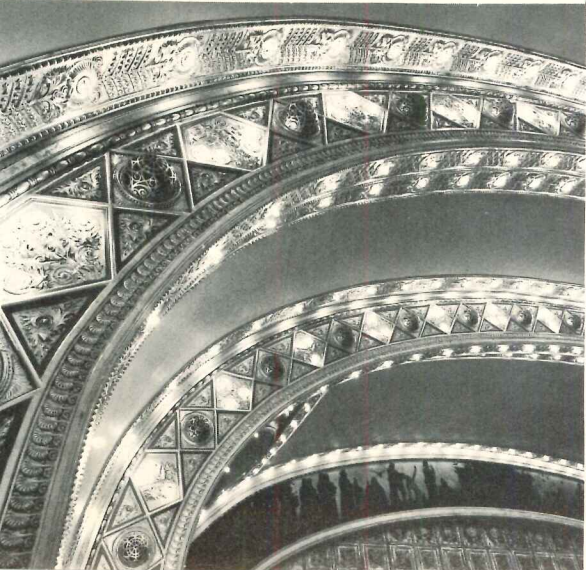
## Adler & Sullivan's masterpiece: restored and reactivated

The successful restoration of the Auditorium Theater, a demanding and difficult job because of a tight budget, was due to the careful research of the building's original condition, the repair and reconditioning of every possible part of the theater, and the replacement of only those parts (missing plaster ornament, for instance) that could not be repaired. To replace the theater today, with its superb acoustics, its unimpaired sightlines, its array of stage equipment, would cost \$16 million, estimates Harry Weese, the restoration architect. But if it had been replaced, there would have been no living record of the genius of Adler, the virtuosity of Sullivan and the techniques of the late 19th century. The Theater's stage—98 feet in clear width, 87 feet in grid height, 62 feet deep—will make possible performances on the grand scale most theaters cannot accommodate.

THE AUDITORIUM THEATER, Chicago, Illinois. Owner: The Auditorium Theater Council. Architects: Adler & Sullivan (original); Harry Weese & Associates (restoration). Engineers: Severud Associates; The Engineers Collaborative. Interiors: Dolores Miller & Associates. General Contractor: J. W. Snyder Construction Co.



Hedrich-Blessing



# oric buildings and places,

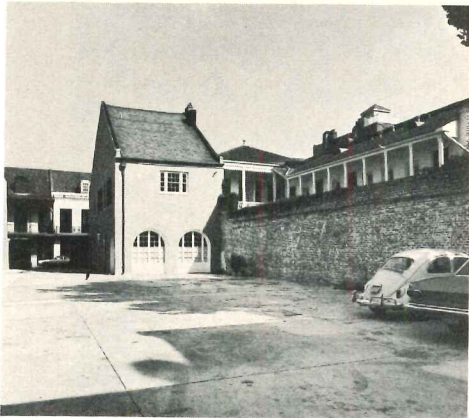
duplication of the red carpet Sullivan had designed, even the same kind of long carbon-filament light bulbs that had made the "Golden Arches" scintillate.

The house an architect designs for himself is always of interest, especially if he is well-known. But the house of a mid-19th century architect is a rare object. The Gallier House in the Vieux Carre of New Orleans was built by James Gallier, Jr., for his family but can be associated with his equally distinguished father, also an architect, since the father lived for 11 years after the house was completed in 1857. Renovated and some parts remodeled for private owners a few years ago, the house has now been restored to its state when new and furnished with objects that closely match those owned by the Galliers. This work was done for the Ella West Freeman Foundation which now administers the house as a historic house museum. The Foundation acquired two adjacent properties to provide facilities necessary to public use (elevator, stairs, coffee shop, ticket desk) which would otherwise have had to be inserted in the Gallier House. This adjacent building also contains displays of objects belonging to the two architects and pertaining to their profession.

Restoration of the Gallier House was greatly facilitated by access to the original working drawings, now deposited at Tulane University, to old photographs and to an annotated plan describing the original heating and plumbing equipment. Not all restoration architects are so fortunate, and many find the first thing required is to make measured drawings of the building, particularly if the building has not



# restoration of historic build

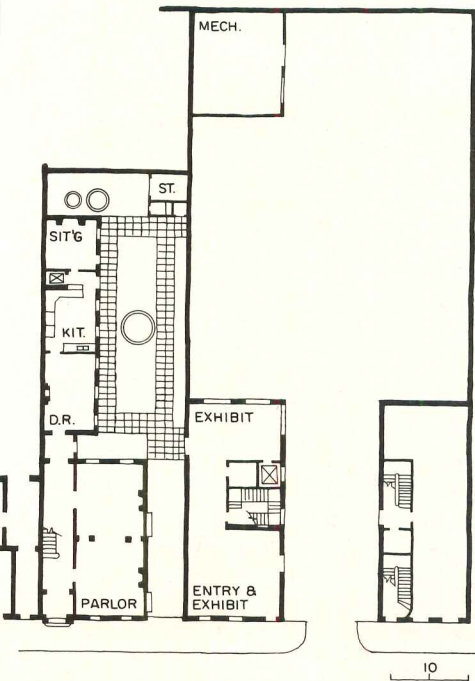


3

## Architect Gallier's house in New Orleans: returned to its original 1857 state

The Gallier House, as elegant and dignified now as it was 100 years ago, was restored without visitor facilities—since these could be located in the adjacent building, renovated to provide exhibition space and a controlled entrance to the Gallier House. The facade of the exhibition building was restored (5), but the interior has been remodeled and the warehouse of which it had long been a part was demolished, opening up an alley to a rare commodity in the French Quarter: parking space (3). On the other side of the alley is the twin of the exhibition building, available for expansion when needed.

JAMES GALLIER, JR., HOUSE, New Orleans, Louisiana. Owner: The Ella West Freeman Foundation. Architects: James Gallier, Jr. (original); Richard Koch and Samuel Wilson, Jr. (restoration). Engineers: A. W. Thompson & Associates, structural; Warren G. Moses, mechanical / electrical. Landscape architect: Christopher C. Friedrichs; Richard Koch & Samuel Wilson, Jr. General Contractor: Haase Construction Company.



4



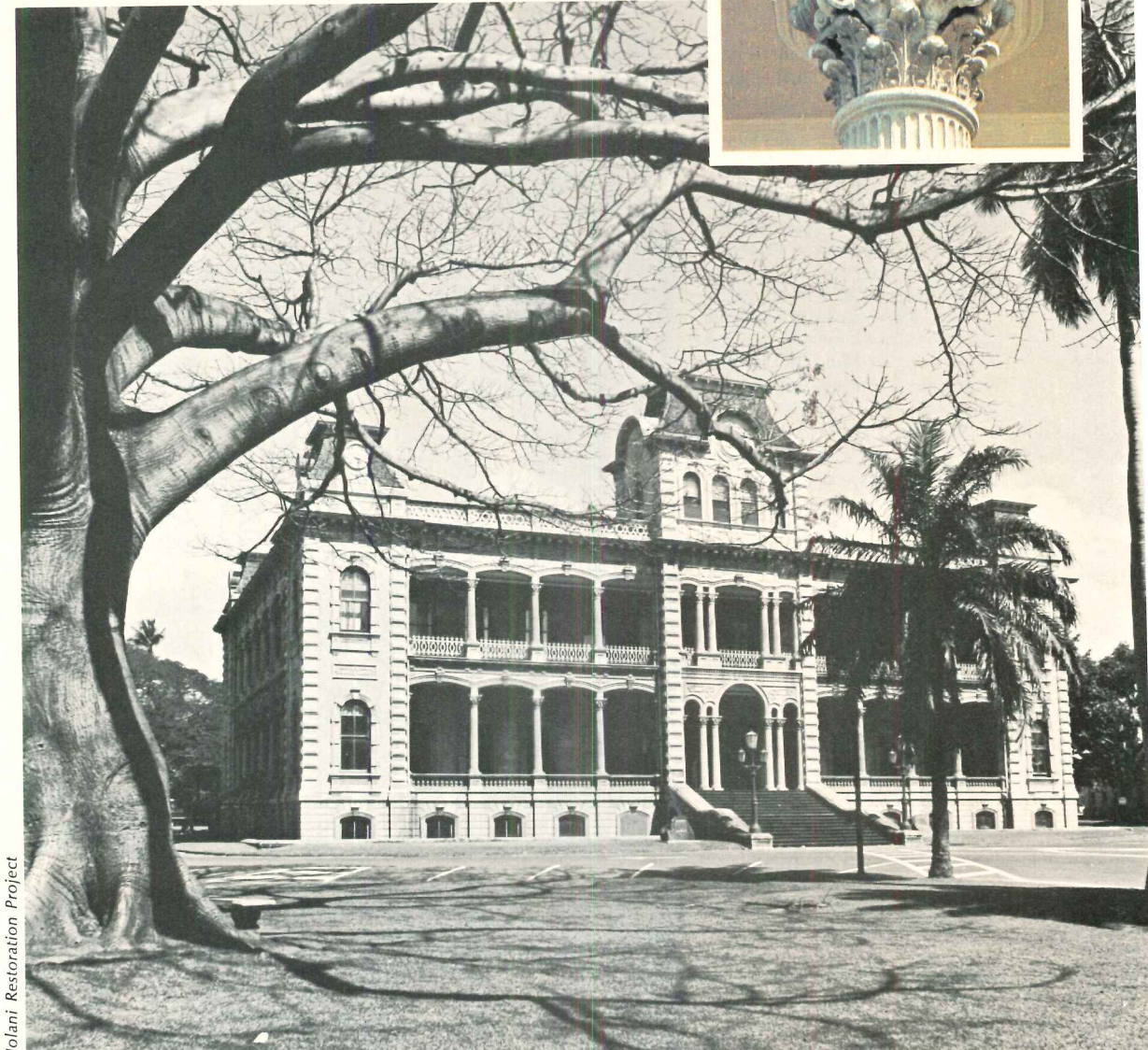
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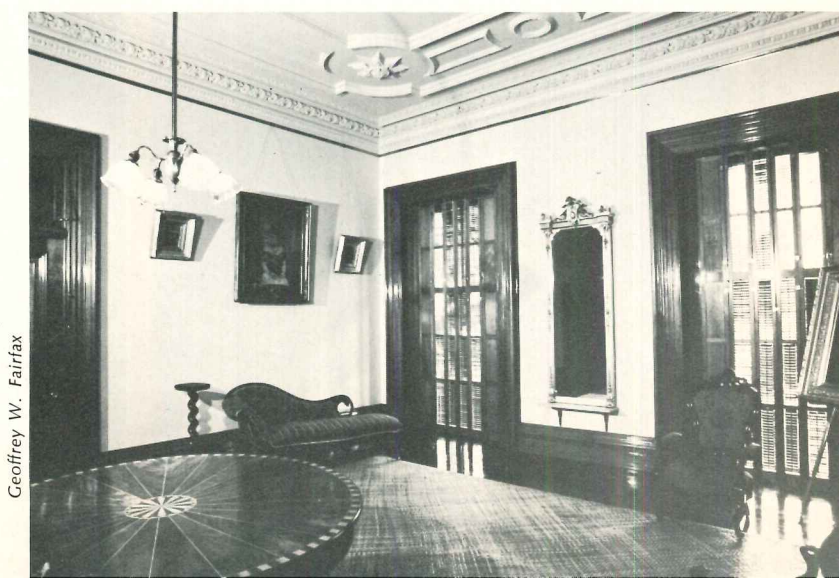
been recorded by the Historic American Buildings Survey of the National Park Service. Since 1935 HABS has measured, photographed and recorded data on historic buildings, and now has accumulated such material on over 15,000 buildings and has placed it in its archives in the Library of Congress.

Among the buildings measured by HABS is Iolani Palace in Honolulu, the last royal residence of the kings of Hawaii. The Palace, used since 1895 as the seat of government, first of the Territory, then of the State, of Hawaii, is in process of restoration to the splendor it had in the last years of the monarchy (1882-1893) when it was new. The original plans of the Palace have not been found, although a notion persists that they are in the cornerstone. Continuing research in the building and excavation of the grounds to determine actual site use, plus the HABS documents, are providing the basis for decisions on the restoration. Paint samples, analyzed for color and chemical content, have yielded unexpected information: for instance, instead of gold leaf having been used on the picture rails as had been believed, orange shellac over tin alloy leaf had produced the effect, and this was easily and (more important) inexpensively restored. Funds for the project are from HUD and the State, and are administered by a non-profit organization, the Friends of Iolani Palace. The project was begun in 1969 and will take four years to complete.

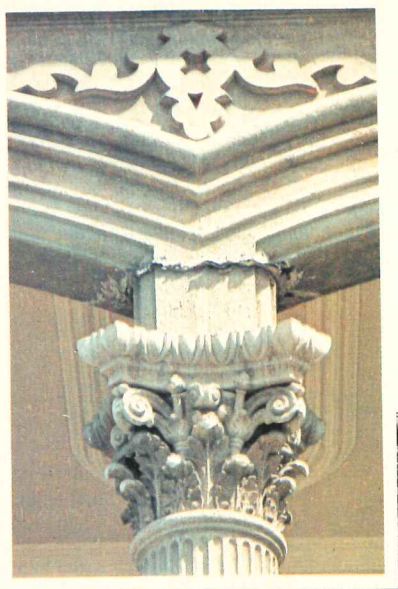
Of the four buildings shown here, one was protected by municipal ordinance. The others saved only by the active intervention of interested citizens who saw their context and scale as positive urban values.



Iolani Restoration Project



Geoffrey W. Fairfax



## Iolani Palace: only royal residence in U.S. restored to regal splendor

*Palace life in monarchy will be recreated. First-room finished is in Queen's suite.*

IOLANI PALACE, Honolulu. Owner: The State of Hawaii. Architects: Thomas J. Baker, Charles J. Wall, Isaac Moore (original); Geoffrey W. Fairfax (restoration). Engineers: J. Brian Hughes & Assocs., Inc., structural; Bennett & Drane, electrical; Howard Hole & Assocs., Inc., mechanical; Walter Lum Assocs., Inc., soil.

# n of historic buildings and p



Cultural Heritage Board

1

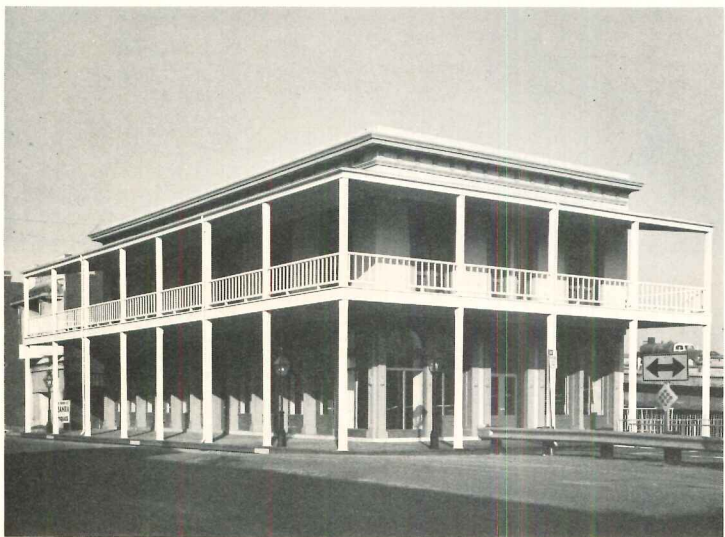


2

## Historic districts: to preserve the look of a place and time

To save old buildings of significance, Los Angeles' Cultural Heritage Board established Heritage Square on unused city park land as a kind of historic district in the making. Two Victorian houses (1, 2) are already on the site and will be restored as funds are available. Western historical and architectural heritage is largely from the Victorian era, with only a few from earlier periods still extant. Occasionally a whole town merits designation as a national landmark, as did Jackson

ville, Ore. (5), its late 19th century environment almost completely intact. The town preserved its character with a municipal historic district ordinance. "Old Sacramento" is a six-block section of the city's redevelopment area, where 41 Gold Rush buildings will be restored, 57 will be reconstructed on their sites, as a tourist attraction and self-sustaining business district. The agency has restored the Old Morse Building (3) as a demonstration project (restoration architects: Angello-Vitiello) to encourage private developers. San Francisco wants to make a historic district of Jackson Square (4), where private restoration of many buildings preserves 19th century style and scale.



3



4

HABS photo—Jack C. Boucher



5

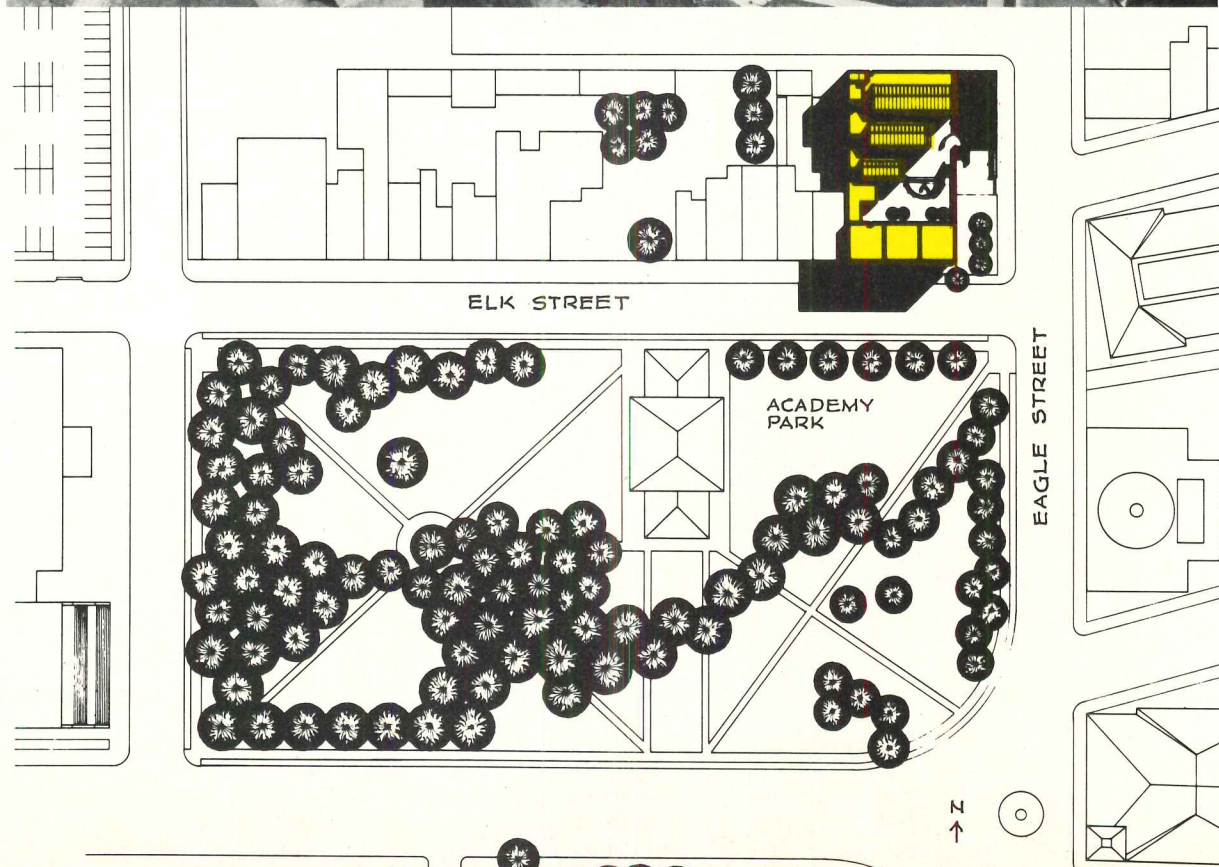
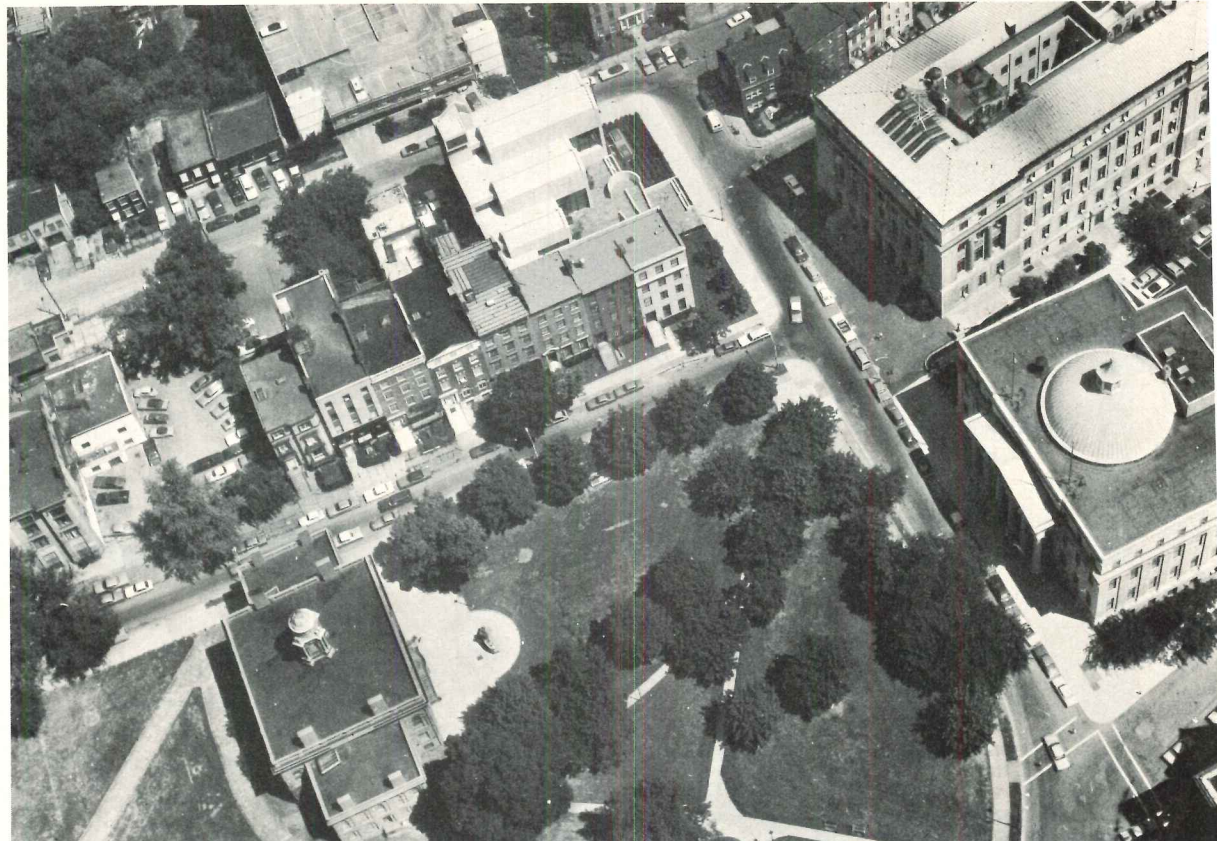
# renovation with a major I

An architect's principal work will always be new construction, and when that work is placed in conjunction with older buildings that need to be saved, the architect uses skills that no other preservationist can apply

## A new building in Albany dramatically unites tradition and creativity

Any major new addition to older buildings requires that the architect be a bridge between one era and another; between an earlier time in a culture's history whose old forms remain intact, and the present time that almost certainly demands new forms to express new intentions. Usually, the architect today will not attempt any accurate reproduction of the old building (except perhaps to make an artistic comment about it, like Warhol copies soup cans), and he won't bury the old forms in modern facades or paneling.

The New York Bar Center by James Stewart Polshek is a case in point. Yet the enlightened architectural compromises shown here were not obviously necessary from the beginning; they had to be fought for to be achieved, and most other preservation projects will have to be, too. The New York Bar Association's first intentions when the headquarters was being considered four years ago, were to remove all four of the early 19th century row houses then on the site, and build an entirely new structure. Before the architects had barely finished first schematics on this parti, several members of the Albany Historic Sites Commission got wind of things, and began publicly denouncing the project's intentions. Of course, it was not just that Albany might lose four fine row houses; the most important part was where the row houses were. As the aerial photo and site plan at the immediate right indicate, these houses form part of the boundary for one of Albany's finest



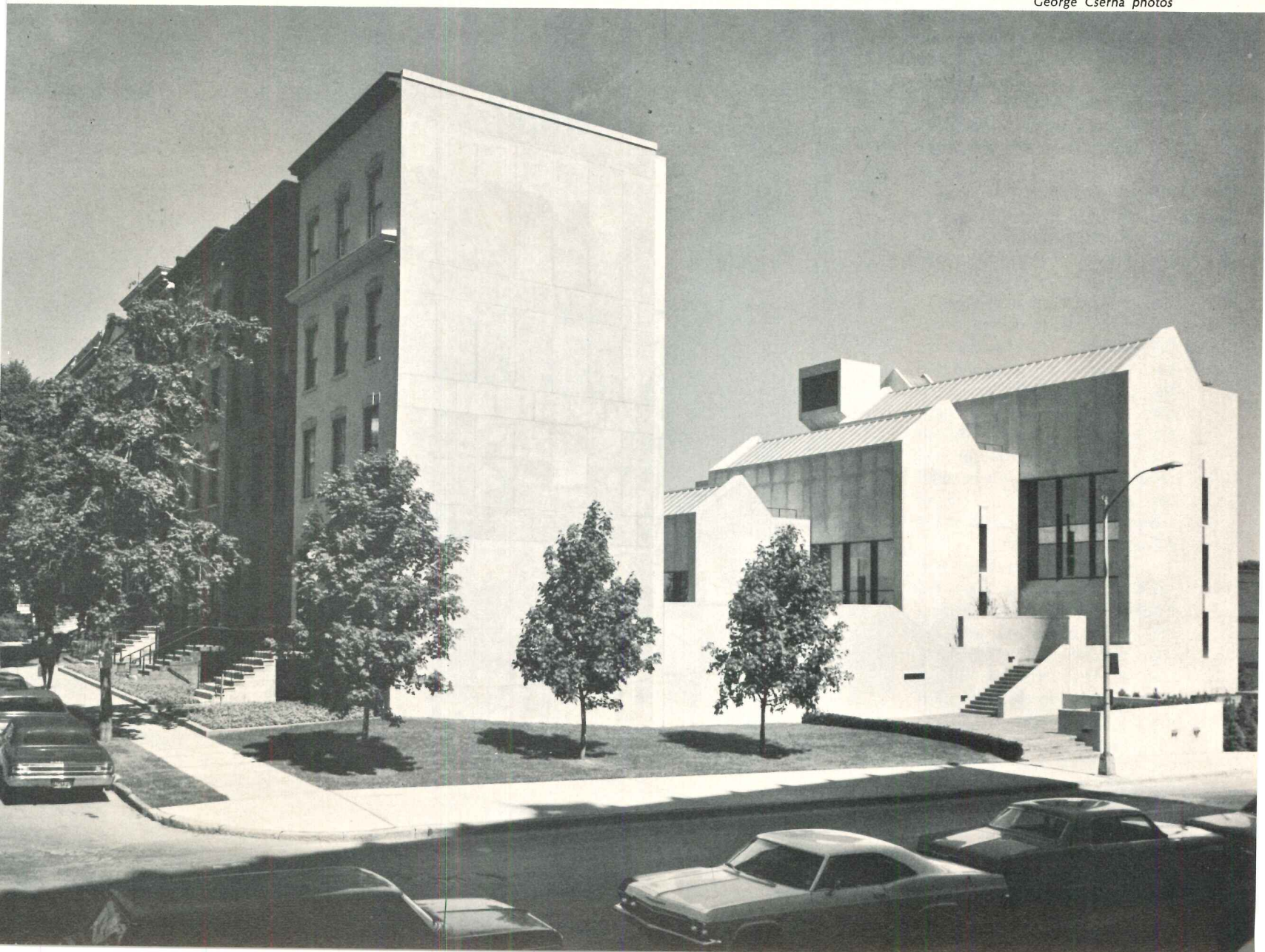


# ew addition/renovation w

*The preserved Elk Street facade of the Albany Bar Center is shown at the right, while the photo below shows the major new addition that has been connected at the back. The aerial photo at left shows the neighborhood context of the new center, including the continuing line of residential facades of which it is a part, Academy Park which these old houses face, and several of the New York State government buildings that also face the park. Preservation of this neighborhood context was a major justification for saving the three old houses as part of the new Bar Center.*



George Cserna photos



# ith a major new addition / I

small parks, one that eventually leads to the Capitol building itself, two blocks away. The stakes were the preservation of four individual buildings, the quality of the space in front of them, and ultimately, the still-intact 19th century continuity of the whole district. Soon the Hudson River Valley Commission (a New York State agency) held a public hearing on the issue, and the result was a judicial order barring any demolition whatsoever. All this (it must be emphasized because it is important) happened before either the architects or the owners had any substantial design commitments at all.

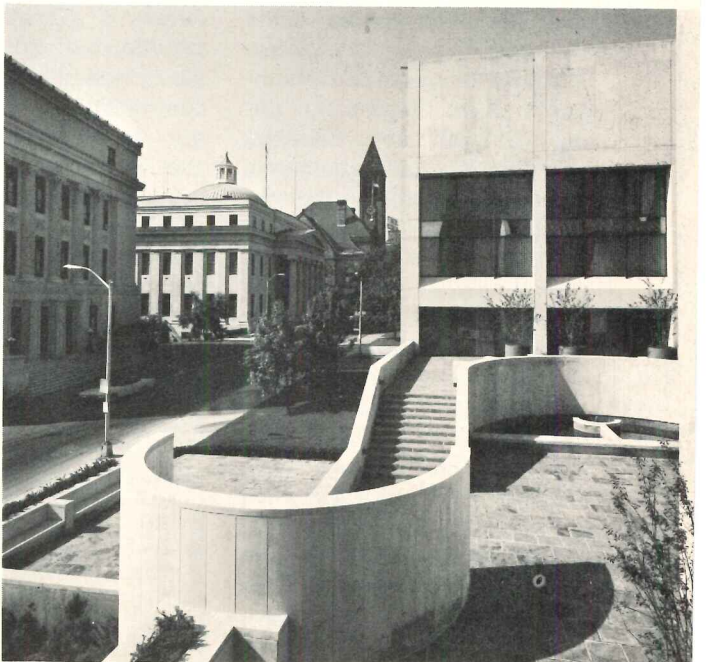
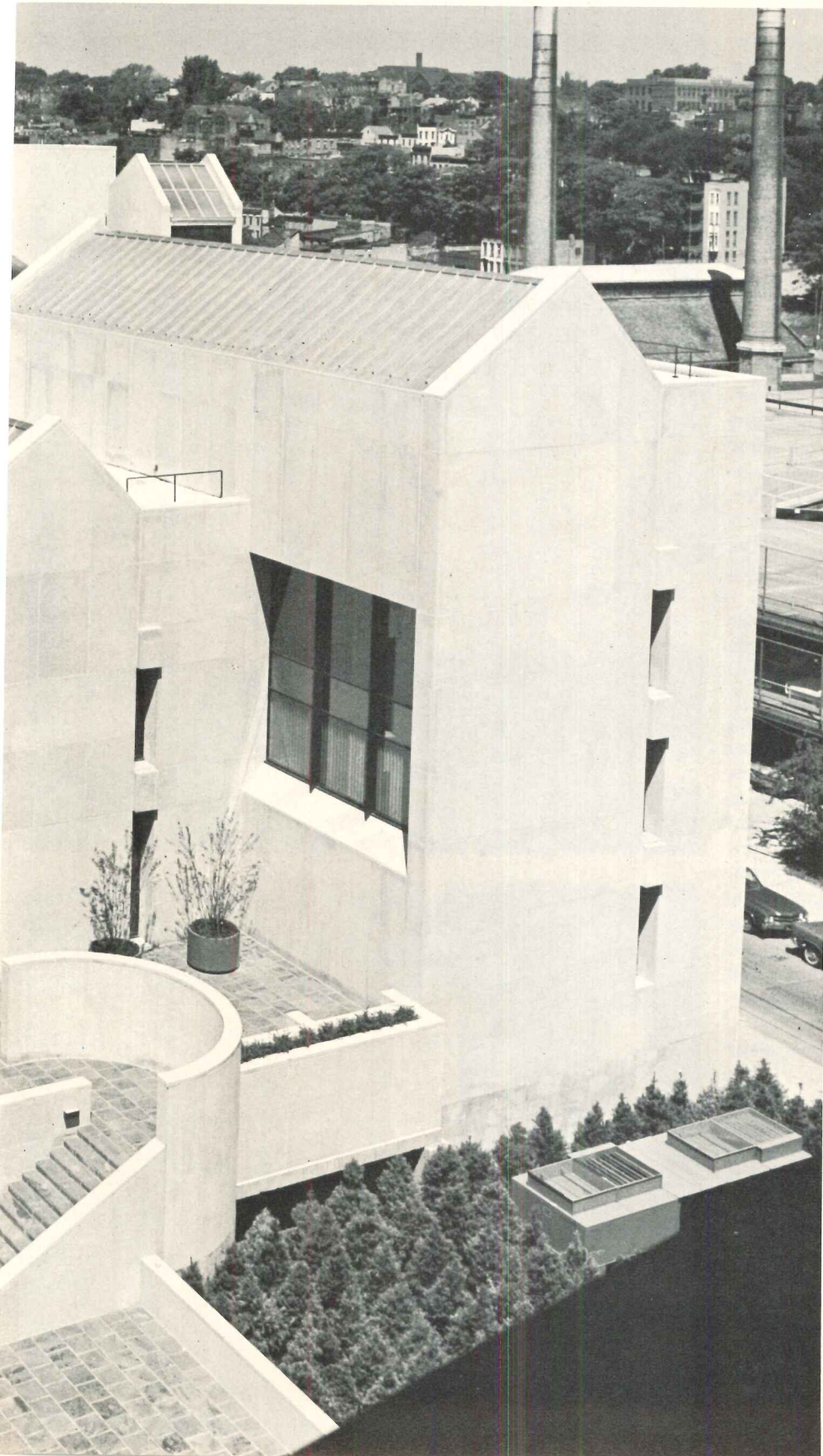
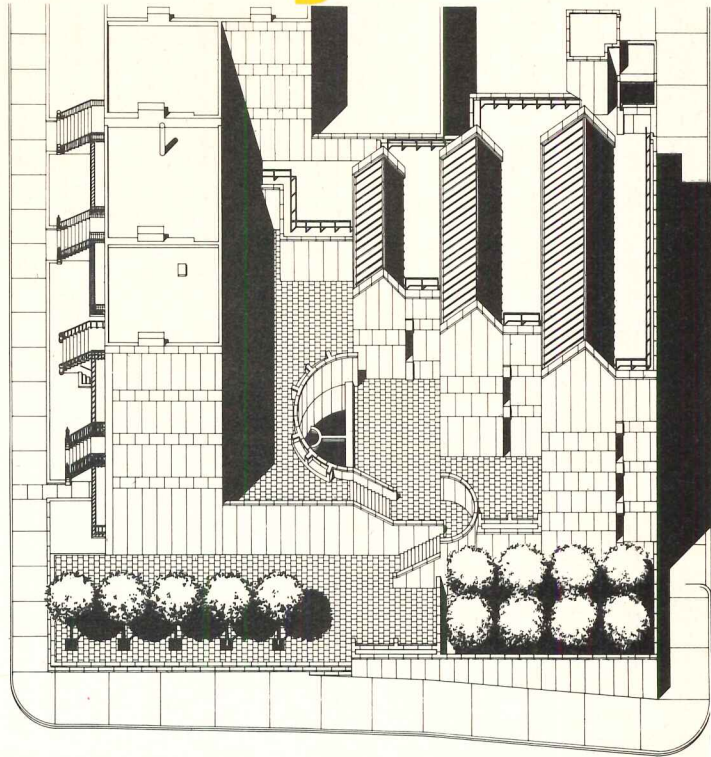
The architects insisted to the clients that the four row houses could be saved, although of course they said it would cost more money to save them, and it did. As for the clients themselves, one critic found the point exactly, saying "The legal profession is trained to reason, if not to urban esthetics. Reasonably, the Bar Association reconsidered the project." They saw their own self-interest within a sufficiently large context, and almost any preservation project requires this kind of broader perspective if it is to be achieved in the face of direct economic calculations.

As these photos show, Polshak's final scheme uses the front half of three of the original four row houses, with the main entrance to the Bar Association now through house number one, shown in the middle photo, far right. The fourth row house (it used to be on the corner that is now grass and trees) was incorporated into the design too, but it developed severe structural cracks during construction. Consequently, the fourth house was removed en-



# renovation with a major new

*The new Bar Center has created a large exterior court between old and new, as the photo below shows. The main entrance to the Center is still through row house number one (below, center) but a major secondary entrance lies through the court. The three principal spaces of the new addition have skylights into them, set within the three peaked roofs of terne-coated stainless steel. These three loft-like spaces are spanned with reinforced concrete beams, resting on concrete bearing walls and columns.*



# v addition/renovation with

tirely. Such unforeseen structural and construction problems can be related directly to placing new work in conjunction with existing, and these problems are usually typical.

Concrete caissons were used to shore up the old foundations of the houses, but soil conditions at the site were not ideal. Concrete driven into the ground of some Albany soil tends to cause uplifting in concrete that has been previously placed; "bulls liver" soil, it is ominously called. Consequently, most of the new construction is placed on grade beams and spread footings. Removing the house that failed structurally and restoring the old facades added \$80,000 to the project's cost, and about \$205,000 went into foundation problems caused by the poor soil. These foundation costs can be related in part to saving the old structures; it is rare that preservation of old work in conjunction with new will come out cheaper.

The exterior of the new work at the Bar Association is Indiana limestone, and that material has been carried across the Eagle Street wall of the existing row houses, as the photographs show. Except for this material connection, Polshek's new smaller scaled geometric forms are a contrast to the simple large rectangle that the old houses exhibit (perspective section opposite). The new work is larger in total volume than the old work saved, but it is fragmented into three simple pieces outside that cascade downward, descending and bowing toward the large single rectangle of houses. These three skylighted spaces recede in area in plan, too, as they near the older houses. Major interior spaces of the new work have been kept underneath the new

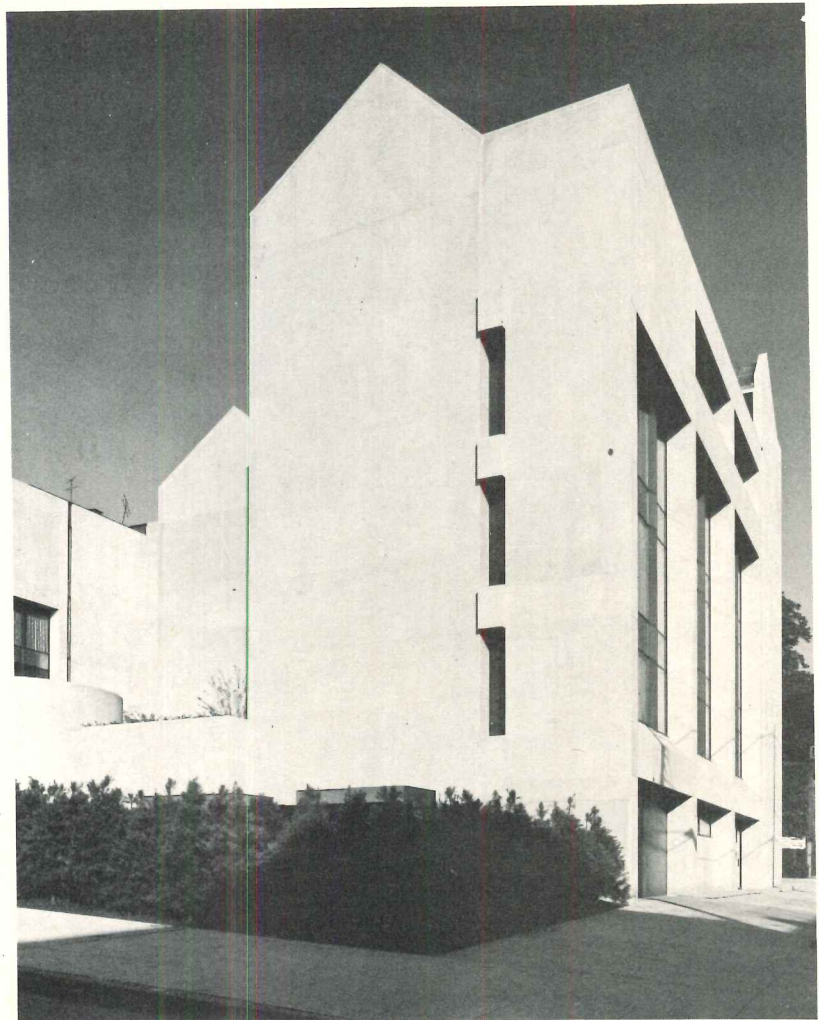
courtyard and entrance level, thus using the slope of the site away from the houses in the rear to further reduce the exterior mass. It is this kind of architectural content that keeps the addition from overpowering the houses, while the new work itself remains clearly committed to the late 20th century in which it was built.

The function of the New York State Bar Association is that of providing information to its member attorneys across the state, disseminating information to the public, acting as a lobbying arm in the New York State legislature, and monitoring ethical standards within the profession. For these purposes, the new Center is the working base for about 40 men and women.

This kind of work is political and, of course, the people involved in it take a very broad view of public relationships, trying to include variations and bridge differences. It is appropriate and not surprising, therefore, that they were able to sponsor this project. The Bar Center is a synthesis of new and old, and offers us an example of how similar architectural confrontations between progress, large institutional needs and technology on the one hand, and tradition and our personal needs for continuity on the other hand, might be solved across the country.

NEW YORK STATE BAR CENTER, Albany, New York. Architects: James Stewart Polshek and Associates; project architect, James Stewart Polshek; associate-in-charge, Howard M. Kaplan; interior designer, Pamela Babey. Landscape architects: Johnson and Dee; mechanical and electrical engineers: Benjamin and Zicherman; structural engineers: Aaron Garfinkel Associates. Graphic design: Arnold Saks Inc. Banners: Norman Laliberté. General contractor: McManus, Longe, Brockwehl, Inc.

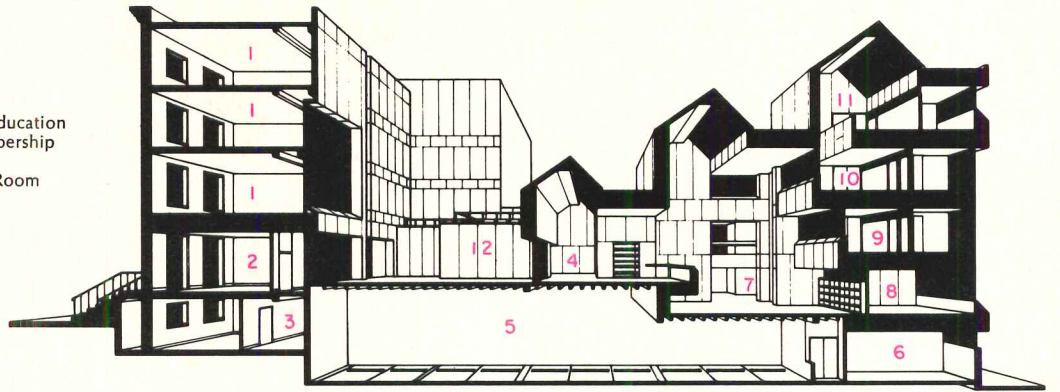
The perspective section at right shows the relationship of new and old spaces. The major interior is the Great Hall (below, right), which functions as a library, lounge, and social reception area for the Center. The space is 40 by 66 feet, and is filled dramatically by Norman Laliberte's bright banners, depicting various mottos, scenes, and events from legal history. The interior below looks into the small reception and sitting room from the Great Hall, then out to the interior court.



# a major new addition/reno

LEGEND:

- 1. Storage and expansion
- 2. 1st Floor, reception
- 3. Maintenance staff
- 4. Hinman Library
- 5. Garage
- 6. Employee's lounge
- 7. The Great Hall
- 8. Reproduction and records
- 9. Mezzanine:
  - Conference room
  - Public Relations Department
  - Accounting Department
- 10. 2nd Floor:
  - Executive Director
  - Foundation Office
  - Continuing Legal Education
  - Meetings and Membership
- 11. 3rd Floor:
  - Grievance Hearing Room
  - Counsel
  - Staff Attorneys
  - Legislation Offices
- 12. Courtyard



## An old hospital structure becomes a modern example of serviceable space

Mount Sinai Hospital in New York City has been in a continuous state of remodeling for the last two decades, a condition any growing hospital today finds inevitable. One firm—Kahn and Jacobs—has performed most of this work, adding several entirely new buildings, and remodeling a campus of 26 older structures varying in age from 9 to 67 years.

The building shown here is a conversion of old open-ward nursing units (see photo, opposite) to semi-private acute patient rooms that are fully serviced with central air conditioning, toilets in each patient's room, and piped oxygen and vacuum systems overhead.

The key to remodeling was the quality of the old building itself. It was originally designed as an open-ward center in 1900 by Arnold W. Brunner, a New York City architect, and it has a handsome neo-renaissance facade that has been retained, as the picture at the right shows. It was also built with a sound masonry and steel structural system, vaulted flooring (middle photo, right) and a substantial floor-to-floor height—17 feet, 10 inches. Before air conditioning, a high ceiling was a common mode for aiding human comfort. Because of the ceiling height, Kahn and Jacobs were able to remodel in stages, and provide the remodeled nursing units with a modern concept in hospital planning: that is, the flexibility of "interstitial spaces" for the housing of mechanical systems immediately above and below the working floor levels.



*Above is the facade of the old open-ward unit which has been allowed to remain intact, with some changes in elevation and circulation at the ground level. Before, during, and after stages of reconstruction are shown from top to bottom in the series of three photographs at the right, and the section, far right, illustrates construction of the interstitial mechanical spaces.*

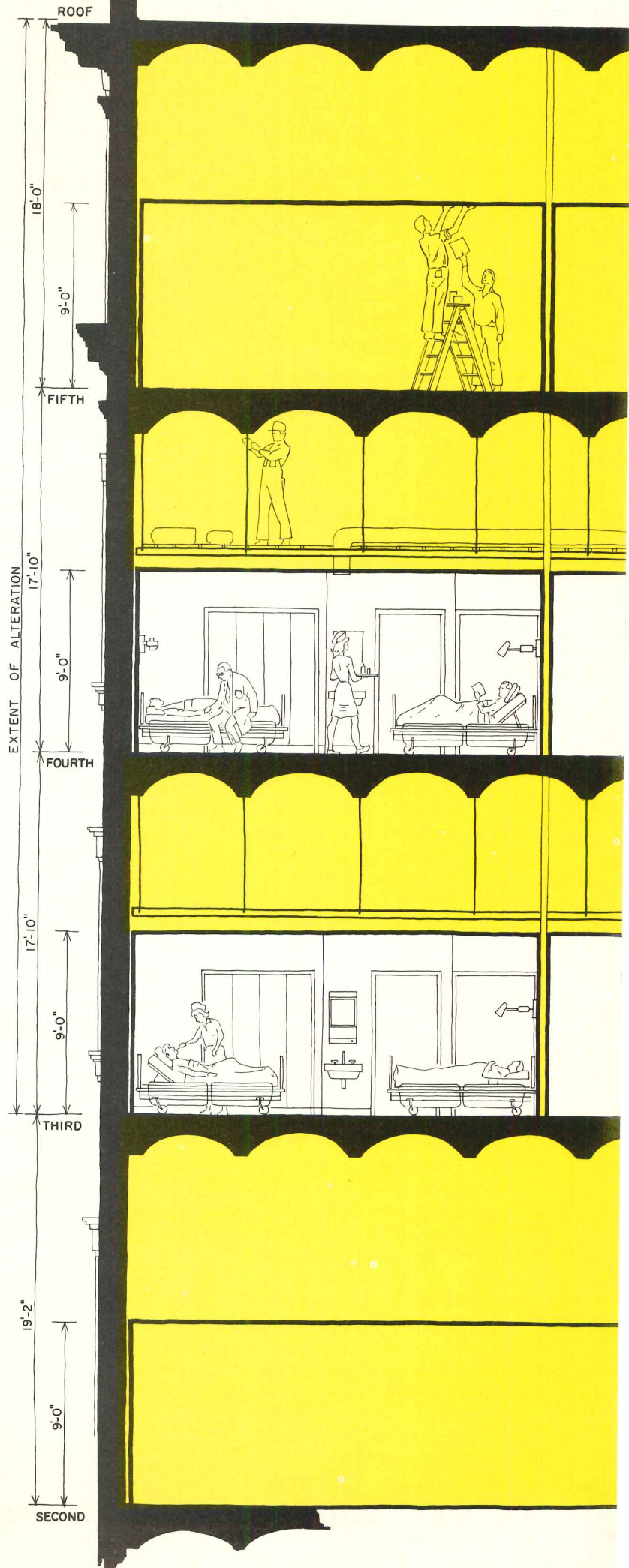
The alteration was executed in stages so that a typical floor could be reconstructed while all the rest of the floors were in use, as in the large section, far right. The phasing went something like this: all vertical piping was brought to the underside of the third floor (for instance) while that floor was still occupied. Patients were then relocated from the third floor, and existing construction was demolished and removed. A permanent full-floor catwalk was then constructed ten feet above the floor, and all lateral distribution piping and other mechanical components were installed from the catwalk. Finally, new partitions and finishes were added to the third floor below the catwalk and the floor was re-occupied by patients. Then the fourth floor was evacuated and demolished, beginning the process again.

This rebuilding provided "as new" facilities at a construction cost of under \$16,000.00 per bed. It would have been impossible to accomplish had the original building been removed, or had it been originally constructed on a smaller bay module with less ceiling height. The investigations to determine what old construction should be saved, and how to best use that old construction for new facilities, is largely up to the architects, and of course this kind of creative rehabilitation work is an important part of many large architectural offices today.

MOUNT SINAI MEDICAL CENTER REMODELING, New York City. Architects: Kahn and Jacobs—Robert W. Hegardt, project architect. Structural engineers: Chester & Chester; mechanical engineers: Jansen & Rogan; contractors: D. M. & L. Construction; interiors: K. & J. Designs. Project co-ordinator for Mount Sinai: Rosemary Tetreault.

# addition/renovation with a n

Jay Hoops photos



## Elderly housing that exhibits a welcome sense of tradition

When the Home For Aged Men in Portland, Maine, was ready to expand, it could have torn down the fine old residence it was utilizing, and started over. The house was in adequate condition, but it violated many of the more stringent code requirements developed over the last 10 years for this kind of housing, and needed to be completely "modernized." But it was not torn down; it was saved and used as the esthetic keystone for further development of the property, as the photograph at right so nicely shows. Now both the old home and the major new addition that it generated are housing elderly people, and maintaining the architectural continuity of the 18th-century residential neighborhood around them. And the people of Portland, Maine are publicly praising both the sponsor and their architect, as they should.

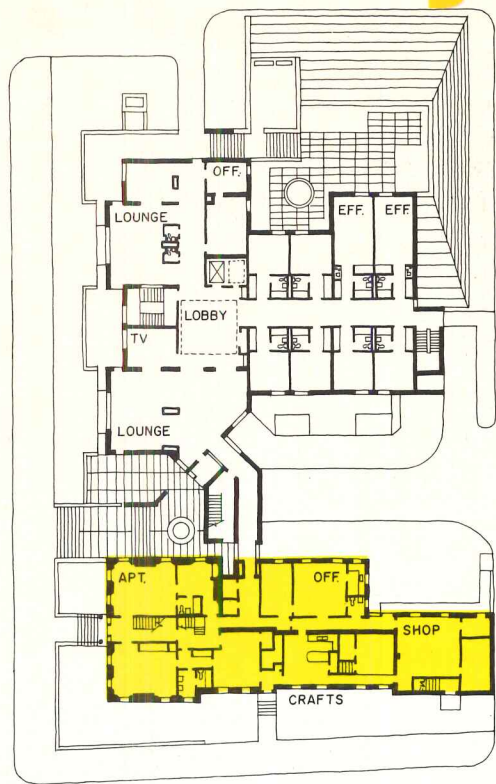
The old Levi Cutter House, built ca. 1810, with extensions added during the 19th century, was placed in trust by Mr. Cutter when he died to be converted to a home for elderly men. It remained in this use until 1964, housing from six to 24 men in a kind of boarding house arrangement. Then the board of directors of the trust decided they should try to enlarge the effectiveness of the home, and hired the young firm of Bruce Porter Arneill as their architects. Arneill studied the problem, and came up with the solution on these pages. As Arneill puts it: "The basic concept was to have the old and new buildings complement each other, and the space be-



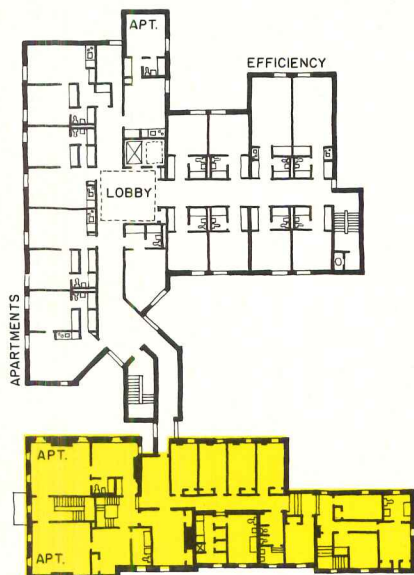


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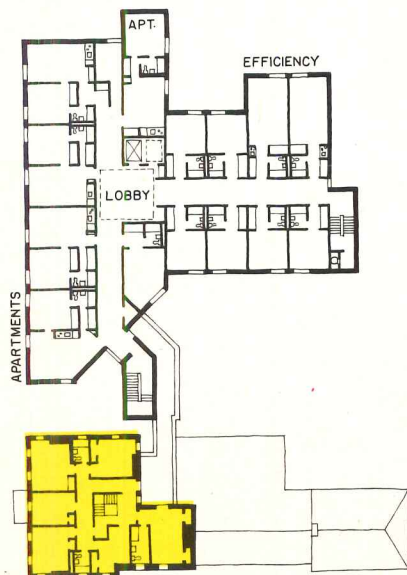
The three plans below show the major floors of the housing complex, and the grading, with the previously existing facilities overlaid in color. The long neck linking the two parts allows a clear division between the two, creates an adequate space for an entrance vestibule, and allows the corridor to slope up or down to meet existing floor heights. The original house, it is apparent, had several additions to it between 1810 and 1900.



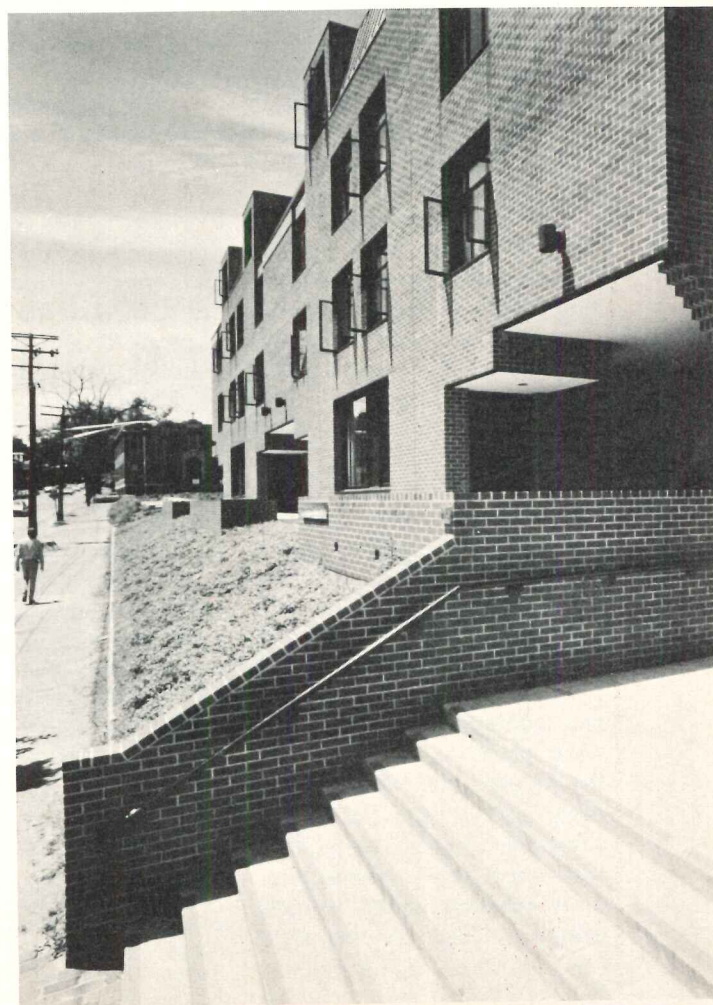
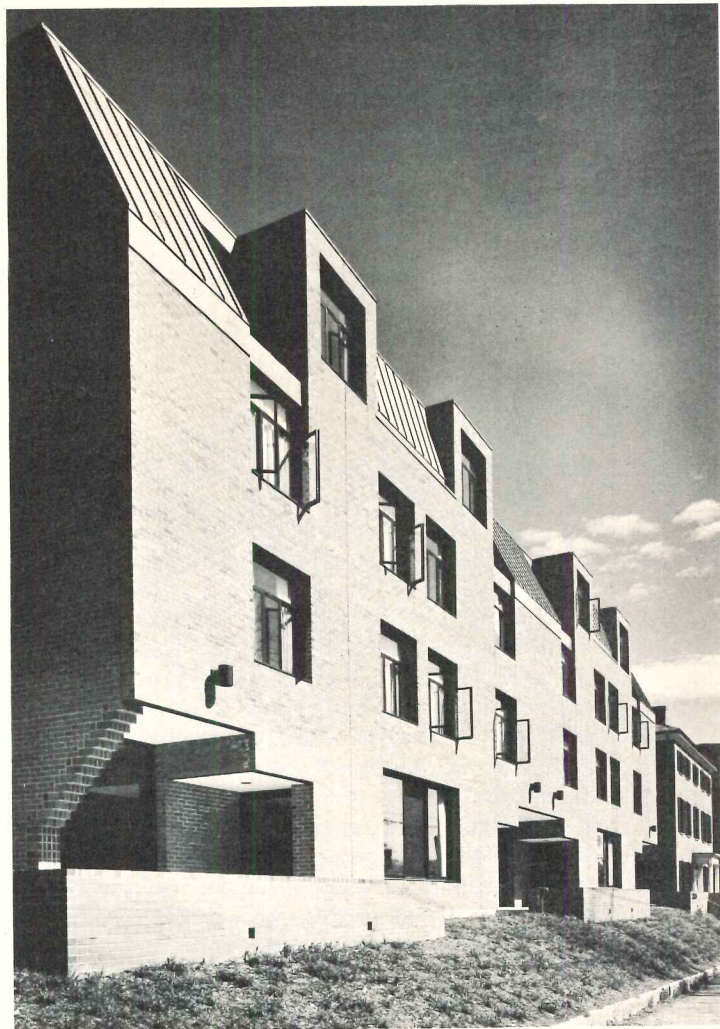
FIRST FLOOR



SECOND FLOOR



THIRD FLOOR



Bill Maris photos

# tion/renovation with a ma

The west end of the new addition (below) is designed so that the corridor on each level can plug into a future addition, and the new elevating and kitchen system has been designed to accommodate this future addition, too. Below, the interior of the new lounge looks onto the street, and some of the other early 19th century architecture of the neighborhood. At right, the new main entrance of the home fits between the old and new buildings. Note how the major horizontal elements of each facade line up with each other.

tween invite you in. . . . We studied all the pertinent characteristics of the older building, and these influenced the detail design decisions on our new work."

The first problem of designing a compatible addition was one of scale: the finished new facility was to house 85 people, both men and women, rather than the six people it had housed for the last few years, so it would have been easy to dominate the old house with the new addition. The problem was solved by maintaining the roof line of the house, by making the windows in the new addition about the same size as the old window shapes (including the shutters) and by matching the old brick as closely as possible. The mansard roof of the addition allows a fourth floor to be worked in while still maintaining a three-floor roof line.

Matching the floor elevations in the old house was a problem, because new construction generally requires a greater floor-to-floor height than the nine feet of the original building. The nine foot height was accomplished by using brick bearing wall construction, concrete planking for the floors, and by eliminating dropped and suspended ceilings except in certain corridors. The interior ceiling height is still maintained from eight feet to eight feet six inches throughout. The front facade of the new addition is in exactly the same plane as the facade of the house, and about three times as long, but the undercutting for terraces and porches that occurs at the ground floor of the addition lightens its mass effectively. Because the addition went up four stories, large parts of the site became avail-

able for terracing and exterior use (photo, above right) that would not have been available if an earlier two-story concept had been continued.

The old stairway of the original house is intact inside, as well as most of its original moldings. What the architect has added is paint; paint in bright colors and broad stripes to give the interior of the house a fresh new life without permanently harming any of its old forms. The house and its earlier additions now provide sleeping rooms for 22 people, plus activity and storage areas. The new addition houses the kitchen, dining room, administrative offices, lounges, and 15 one-bedroom apartments, eight efficiency apartments, and 27 single rooms.

The main entrance to both the old and the new parts of the complex is now between the two structures, shown in the large photo, opposite. The steps here are fewer than in the old entrance, and because of the grading of the site a person can avoid all steps into the building from the parking area at the rear.

The Park-Danforth Home has room sizes that are substantially larger than the FHA standards for elderly housing. There is no Federal money at all in the project; the original trust itself put up about half the funds and local Portland banks put up the other half. Total cost of the addition and rehabilitation together was \$1,100,000.

PARK-DANFORTH HOME FOR THE ELDERLY, Portland, Maine. Architect: Bruce Porter Arneill; structural engineer: Rudolph Besier; mechanical engineers: Francis Associates; interior design: Raymond Doernberg; contractor: Consolidated Constructors & Builders, Inc.



# or new addition/renovation



least one potential high cost situation ahead of time. In another instance of high design cost—that is, client indecision—the simple mechanics of the inexorable monthly rendering of time spent multiplied by the hourly rate tends to produce an acceptable degree of self-regulation on the part of the indecisive client.

“The high front-end loading of the typical remodeling fee contributes to another cost problem which has proven more difficult to resolve—the client who pulls out before proceeding into working drawings or construction and is (I suppose, understandably) unenthusiastic about paying for what has, for him, become an entirely unproductive building venture. Since our uncollected bills can only work to increase our overhead and hence our billing rates, we are actively seeking ways to overcome this problem. In this regard we have found that when a first meeting with a client has indicated any likelihood of a project’s untimely demise, the old fashioned retainer works very effectively. But since prognosis of this type often borders on clairvoyance, we are investigating other more mundane methods.”

**The commercial client**, that is the owner or prospective buyer of an office building, is understandably more hard-headed about the cost of remodeling versus the returns on proposed occupancy. Economic feasibility of the project therefore becomes a double study; first, to weigh the economics of total demolition and rebuilding, and second, to accurately assess the cost of remodeling. Early consultation should be fortified in these areas of feasibility for commercial work with special

attention not only to accurate costs but also to the floor loadings and mechanical requirements of proposed occupancy.

Two advantages commercial clients have over some others are: Sophistication in assessment of the economic rationale of proposals, and flexibility in adaptation to appropriate compensation negotiations.

Commercial remodeling occurs over a wide range of project size and the compensation rates vary accordingly. The Slingerland firm previously mentioned reports a range of projects from \$500,000 to over a million dollars and a corresponding range of compensation rates that work out to about 12 per cent on the smaller work and about 9 per cent at the upper end of the scale. These are generalizations subject to considerable modification from job to job depending on the complexities involved.

Occasionally, preservation and remodeling occur jointly on some important projects. The \$9.3 million commission to Alfred Shaw and Associates for remodeling Chicago’s Board of Trade building is a case in point.

The Board of Trade’s landmark structure, designed 41 years ago by Holabird and Root, will be virtually re-designed on the inside while preserving the external character and basic structure of the building.

The modernization project, now in full swing, includes replacement of existing heating, ventilating and air conditioning systems; conversion to an all-electric energy system; replacement of 22 elevators; the creation of two entirely new interior stairwells and the reclamation of 180,000 square feet of waste space for rental.

Simultaneously, a tenant im-

provement program will transform office space into modern, flexible units offering amenities competitive with any new building in the city.

Virtually the only area to remain untouched is the trading floor, a five-story oak-paneled chamber where \$73.3 billion worth of commodities were traded in 1970.

The renovation program is being directed by the real estate firm of Cushman & Wakefield, Inc., which assumed management of the building on November 1, 1969. The program is based on a 16-month study made by Alfred Shaw and Associates, architects; William Meek Associates, Inc., interior designers; DM&L Construction Company and Environmental Systems Designs, consulting engineers.

Despite the scope and cost of the undertaking, the decision to renovate was made with relative ease, according to Lawrence Blum, a silver trader and chairman of the Board’s Real Estate Committee: “We hadn’t made any money on office rental in two years. The building would have been empty in another five. It wasn’t hard to figure out that by investing \$10 million we could almost double the value of the building and bring our gross annual rental income to a profitable level by 1973. Besides (and important to value considerations), the building has become a symbol of this city over the years.”

**Institutional clients** such as hospitals and universities pose the same problems of architect-client relationships that exist in new-building work with the added complication that much of this work is in the form of additions to existing buildings that may require remodeling to

accommodate joining of the old to the new. Some examples of this kind of work were shown in the Hospital Building Type-Study for September, 1971. A solution at another hospital is shown on pages 100 and 101 of this issue.

Characteristic of institutional work is the likelihood that the remodeling and additions often occur as an ongoing relationship between the architect and the institution. Robert Hegardt of Kahn & Jacobs, architects for the Mt. Sinai project shown on page 100, describes the situation as follows.

“Rather than looking at this ongoing commission as a series of isolated, trying alterations varying in cost from \$50,000 to \$1.5 million to be sandwiched into the schedule of a large busy general practice in architecture, Kahn and Jacobs treated it as a single continuing task of protecting and enhancing a highly complex, interlocking, specialty real estate investment valued well in excess of \$100 million.

“To this end the architects maintain a section of their office which devotes itself entirely to the problems of the Mount Sinai Medical Center. In effect, this group has become an office within an office. It has the flexibility and specialists normally available to the large parent practice. At the same time it provides the client with personal-service architecture of the nature more usually encountered in small office alterations practice.

“Through its continuing knowledge of The Mount Sinai Medical Center, its buildings and its growth problems, this group, in conjunction with the Mount Sinai Offices of Planning and Design & Construction, can

# problems in remodeling/pr

Chicago's Board of Trade building: preservation and renovation



Mart Studios, Inc.

and does remove some of the mystery prior to starting an alteration. It cannot, however, remove the perversity, or resistance to change so often built into original structures as a result of false economies made to meet a stringent budget (short structural spans, inadequately spaced or sized risers, badly located stairs and low floor-to-floor heights). These represent minor first cost savings but are a major factor in increased costs incurred by the inevitable series of alterations that follow. This is one of the major issues to be resolved in establishing long-term institutional client relationships."

**The public client** usually operates under a set of procedural constraints that are particularly difficult in remodeling work. First is the widespread legal provision that compensation must be charged on the basis of a legally pegged per cent of construction cost. Second is the common requirement of open competitive bidding on construction work of all kinds. This precludes early consultation with pre-qualified contractors except on a strictly professional basis and by separate commission directly with the client. It also encumbers the prequalification of contractors, an important aspect of successful remodeling work. Documentation of public work also is forced into patterns of phasing and approval prior to the start of actual work. This frequently defeats the economics and flexibility of remodeling as a mode of lengthening the life of public buildings.

## **Problems of documentation reflect special conditions**

In most remodeling and preservation work, the building itself

is a physical component of the documentation of required work. The existence of record or as-built drawings is not only problematical but is frequently insufficient for conventional documentation of the new work. Therefore, the architect in developing efficient modes of remodeling documentation is turning more and more to photo techniques. Some of these involve actual photographs of the existing building, key details, or parts of the mechanical and structural systems on which drawn alterations are superimposed. Another technique uses a photographically shaded set of plans on Mylar or other film systems upon which the designers of the various new systems can work out their changes in solid black line.

The drawings of record of the completed remodeling job also will contain the photographic record, which therefore must be fairly well documented as to date and angle of exposure of each picture.

Where standard forms of agreement between owner and architect are used in remodeling or preservation work, they should be carefully adapted to this special use. The outline of basic services, for example, should be amplified to cover any special research or consultation, not only in pre-design services but also at key points during the schematic, design development and construction document phases. Where A.I.A. document B131 (per cent based compensation) is used, it should be modified to cover these extra services. The previously cited Handbook chapter 21 provides detail on these points in preservation work, and the implications of all of the foregoing should provide legal counsel with some guidance.

# actice problems in remod

## Survey of architects shows most do some remodeling—and find big jobs and big rewards

Increasingly aware of the importance of remodeling, preservation and restoration as a substantial portion of architectural practice, the RECORD Research Department last spring drew up an extensive questionnaire that was mailed to 1,000 architectural firms selected by a sampling method that characteristically produces a true national cross section of firms with respect to size and location. There was a surprisingly large and detailed response from 25.3 per cent of the firms surveyed.

The questionnaire began with the following statement: "The questionnaire that follows is about *remodeling*. By this we mean any commission to alter an existing building—whether the project is called *renovation*, *rehabilitation* or *restoration*."

Highlights of results are shown in the box at right.

### Response in detail shows active participation

The first question: "Has your firm been involved in building remodeling in the last two years?" Answers revealed that 77 per cent of firms had been so involved, and of those who were not, only five firms declared they would not undertake commissions for remodeling work.

Question 2: "Approximately what percentage of your firm's work is remodeling (as opposed to new construction)?" brought 191 replies, among which 65 reported more than 20 per cent of their work as remodeling, five firms had over 70 per cent of their work in this category. The median firm had about 14

per cent of its work in remodeling of existing buildings.

Question 3: "Are you doing more or less remodeling work than you did, say, five years ago?" brought 190 replies of which 87 per cent reported they were doing the same amount or more than they had done previously.

Question 4 was a two-part question asking whether respondents expected more or less remodeling work in the next two years—and why. Some 35 per cent expect more; 55 per cent about the same and 9 per cent expect less. The reasons given for an expected increase were: the increasing cost of new construction, the prevalence of structurally sound existing buildings and a general tendency to expand existing facilities. Notable among observations supporting an expected

### HIGHLIGHTS OF RESULTS

77 per cent of the respondent firms have been involved in building remodeling in the last two years.

The median architectural firm had about 14 per cent of its work in remodeling.

87 per cent of the firms are doing the same or more remodeling work than they did five years ago.

90 per cent of the firms expect to be doing the same or more remodeling work in the next two years.

The respondent firms reported details on a total of 645 remodeling projects of various types, for a total dollar volume of \$242,682,000.

increase were those dealing with systems approaches to inner-city rehabilitation and the probability of more school remodeling as local bond issues fail in passage and school expansion needs diminish.

Three of the respondents who expect less remodeling work simply state: "It doesn't pay."

### Shift in procedures revealed in key question

Question 5 was another two-part question about whether firms handle remodeling projects in the same way as new building projects.

a. "Do the same people in your firm work on remodeling projects as work on new buildings?" (yes, 94 per cent)

b. "Does your firm write the same kinds of specifications for remodeling work as for new buildings?" (yes, 54 per cent; sometimes 24 per cent; no, 22 per cent)

Respondents who replied "no" or "sometimes" to the question about specifications were asked for comment about what is different. Following is a sampling of comments:

"Special conditions are more varied and complicated."

"We try to define much of the work and materials on the drawings."

"Specifications for remodeling work usually put on drawings."

"Matching or reusing some existing equipment."

"Instructions of how to perform."

"Other headings, processes, etc.—often not bid—but contractor selected at outset."

"Specs vary on alteration jobs. No repeats, at least not too many."

"Description and control at demolition; contractor has more

leeway to handle unforeseen conditions."

"All the difference in the world. Scope is always more complex."

"Most sections have paragraphs referring to existing work."

"Revamping and reusing existing items in order to keep costs down."

"More specific in areas of cutting, patching, painting, demolition, etc."

"Demolition, site utilities, shoring, special conditions, temporary facilities, finishes, mechanical and electrical."

"The basic reason is that remodeling work is not the same as new work. Demolition and site investigation are important items. Disposition of removed materials plays a big part, etc."

"On larger work above \$100,000, specs are the same type. On smaller, incidental work the specs are on the drawings as much as possible, plus a 'Scope of the Work'."

"Many items subject to specific site considerations."

"In remodeling work you never know for certain what conditions exist until you have the job under construction and changes are apt to occur in specifications as a result."

### A substantial market comes to light

The questionnaire probed projects handled in the last two years by each firm. Some 645 projects were reported in detail with a total dollar volume of \$242,682,500; an average value of \$376,251 per project. Among these, 232 projects involved major increases in floor area. The principal reasons given for remodeling were change in function of space; improve comfort; bring up to standard; increase

# ing/practice problems in

profitability; and conform with codes.

The age distribution among 613 buildings reported was as follows:

Under 5 years	19
5-10 years	80
11-15	81
16-20	76
21-25	45
26-30	50
31-35	13
36-40	55
41-45	14
46-50	52
51-60	34
61-70	18
71-80	25
81-90	5
91-100	10
over 100 years	36

The results by building type are tabulated below right. It is interesting to note that the average job cost for houses is about \$55,000. This rather high figure is a result of considerable expansion work on some very large and very old houses.

### Comments summarize experience and reaction

The survey's concluding invitation was: "Would you give us what comments you like on your firm's experiences with remodeling work—how important it is to you—how your firm approaches a remodeling job—what you think is the future of the architect in the remodeling field—your thoughts on the whole subject of remodeling." Following is a sampling of replies received.

■ We feel that remodeling should be approached with the same degree of attention, enthusiasm and idealism as a new project. The challenge to solve existing problems in the most efficient, esthetic and economical manner possible is just as

great or even greater due to the investigation and research required. As construction costs continue to rise, remodeling jobs should increase greatly. Architectural firms interested in remodeling and prepared to do it properly should have little trouble in keeping gainfully occupied.

■ Most architects have started their careers with a renovation commission, and those who maintain fairly small general practices will always be involved with additions and remodelings of some type. This is an important area of service, as it should achieve the same goals as a new structure for the client. Many older buildings are in too good condition to be razed but need to be updated. Architects will always be called on to render this service and should treat it with the same respect shown any commission.

■ Remodeling is a way of life with clients who are constantly expanding existing facilities and acquiring new markets. Our specific endeavor is with the airlines industry. There is continual change at existing airports and remodeling is the byword for most architectural-engineering work even when new facilities are constructed. Existing outdated facilities are revamped for another use.

■ Remodeling is a very important part of our practice. Some of our most satisfying significant work is remodeling. Remodeling work is highly challenging due to the additional limits imposed. Our approach is complete modernization, not "make-do."

■ Most often exteriors of existing buildings are completely

usable and often are too expensive to duplicate. Approach is substantially same as for new building. Design is often simplified by having a set of boundaries—floor area, heights, etc. Remodeling is a great challenge and for the most part interesting work.

■ In our work remodeling is not a separate field, but is done either in connection with an addition to a building or for an owner for whom we have done new building work—a "regular client" who wants to update and improve an older building.

■ As far as our firm is concerned, remodeling and renovation work is important. We are primarily engaged in the design of hospitals and for the last four or five years approximately 75 per cent of our work has been expansion programs for hospitals which we originally designed.

■ We find an increase in remodeling work, thus are spend-

ing more time investigating new products and architectural solutions for this type of work. Generally, we have been able to satisfy the client's requirements, sometimes with better results than could have been achieved with new construction. Our firm has experienced great success with minor capital improvements programs for schools and hospitals. The greater portion of this work is remodeling. Many facilities require updating of old buildings while the newer areas are constantly revised to accommodate expansion and/or new programs of occupancy.

■ We do mostly custom residential work and from this experience I believe there will be a great need for residential remodeling due mainly to the high cost of property and heavy construction. I believe new materials are helping to save money on remodeling. As for commercial work, of which we have none at the moment, I believe there will be a greater surge.

SUMMARY OF BUILDING TYPES REMODELED  
(by 253 representative architectural firms)

Building type	No. of projects	total value, \$ million	average proj. cost \$ thousand	median bldg. age years	per cent involving expansion
All buildings	645	243	376	28	36
Office buildings	103	23	222	28	19
Houses	106	6	55	23	57
Schools (K-11)	71	101	1,423	36	44
Msc. commercial	59	13	217	20	39
Religious	42	4	101	37	38
Stores	38	4	94	33	16
Factories	30	22	722	12	47
Banks	30	6	209	29	17
Hospitals	30	34	1,116	16	57
Public buildings	23	3	129	40	26
Social & recreational	34	10	288	40	32
Msc. institutional	16	1	815	30	25
Apartments	12	3	222	37	25
Warehouses	11	2	158	27	27
College buildings	10	3	338	18	30
Hotels, motels & dorms	10	2	235	42	20
Msc. non-residential	20	7	332	22	40

# rehabilitation of buildings

The rising cost of new construction, deep roots in the community, and an awakening interest in our architectural heritage are among the most important reasons these owners decided to stay and renovate

Norman McGrath photos



## Renovation sustains cultural goals of a community service institution

This 77-year-old structure, located on Manhattan's Lower East Side, has long been the headquarters of the Educational Alliance — a settlement house that sprang up before the turn of the century to serve the educational needs of a Jewish immigrant community. As the ethnic character of the community gradually expanded to include other minorities, the Alliance's goals and services have broadened in response. Because its roots are so deep in the community, the Alliance decided to renovate rather than seek quarters at a new location.

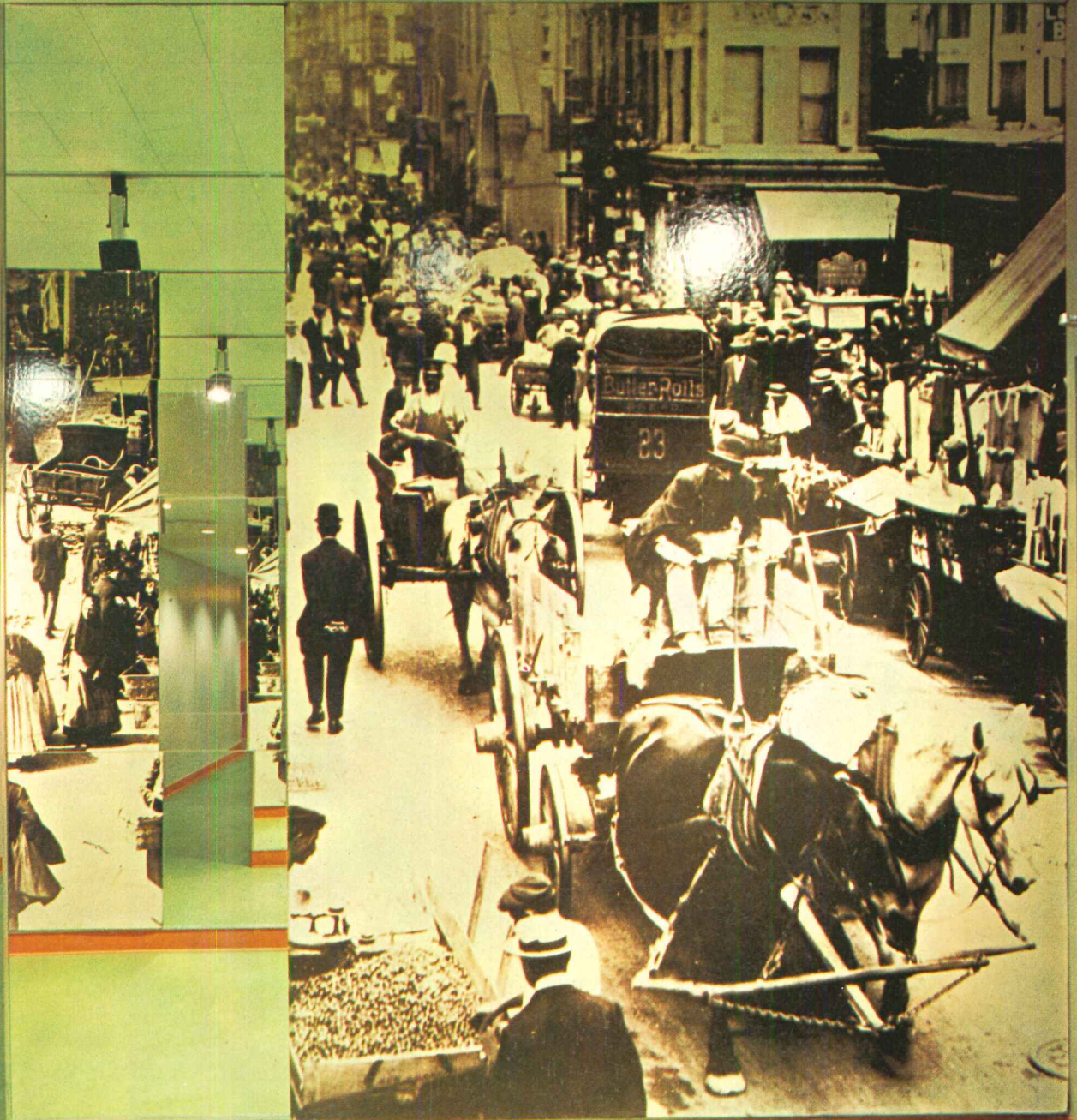
In planning the renovation, architect David Specter strove to preserve the building's exterior esthetic while bringing its functional standards up to current levels of acceptability. On the three floors now renovated, many spaces have been reorganized and finish surfaces are largely new. Halls and stairwells are color-saturated with supergraphics that convey information and lend visual enrichment in powerful doses. Throughout the building, Specter has used large photomurals culled from various archives, that catch the color and flavor of community life at the turn of the century. The photos also serve as a constant reminder of long years of dedicated and uninterrupted service.

DAVID SARNOFF BUILDING OF THE EDUCATIONAL ALLIANCE, New York City, New York. Architect: David Kenneth Specter; structural engineer: Wayman C. Wing; mechanical engineers: Flack & Kurtz; graphics consultant: Denison Cash Stockman; contractor: Koren-Diresta Company.





# for the same use/rehabilit



# ation of buildings for the s

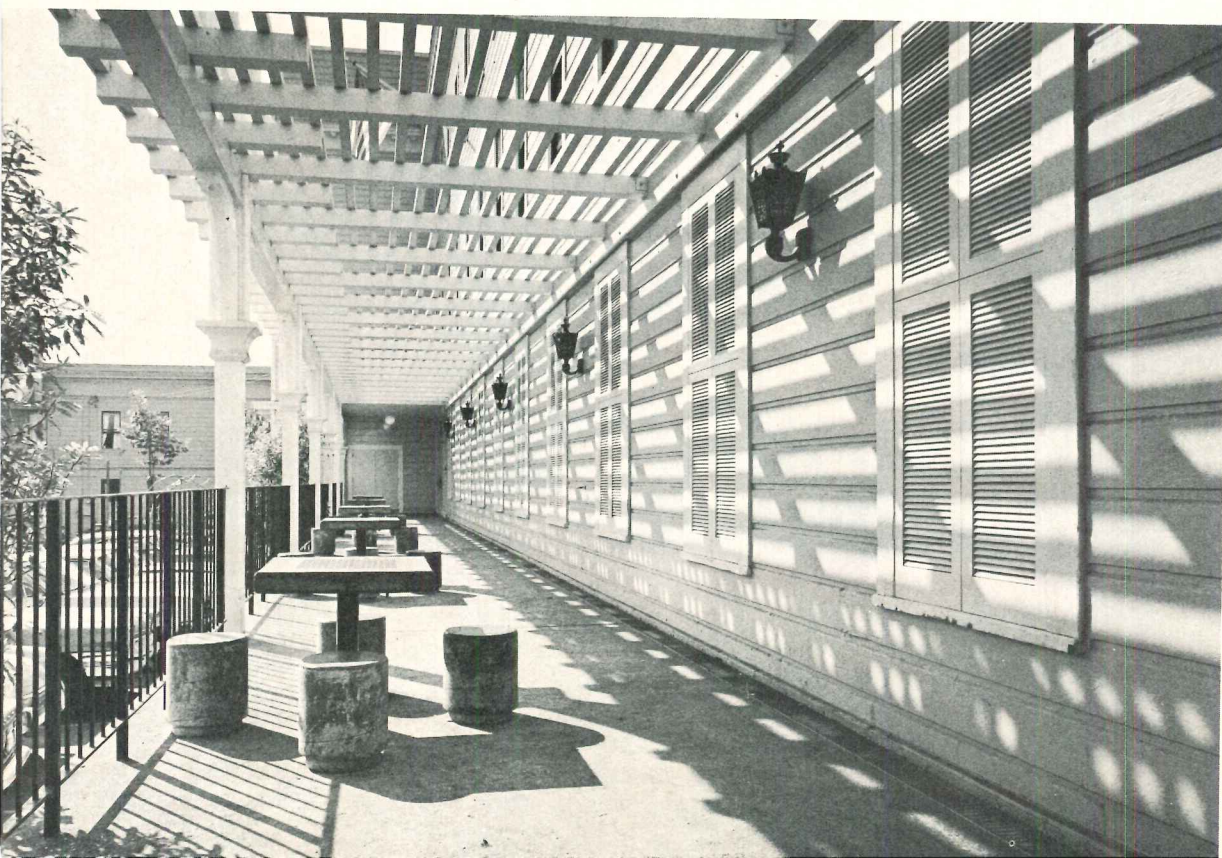
Vano, Wells, Fagliano photos



## San Francisco building restored to the way it should have looked—but didn't

Soon after the savage fire of 1906, Levi-Strauss & Company (makers of the well-known clothing line) began construction of a large manufacturing plant in downtown San Francisco. The structure was a three-story wood frame box of pleasant proportions but no particular architectural distinction. Since original construction, both the building and the neighborhood have gradually deteriorated.

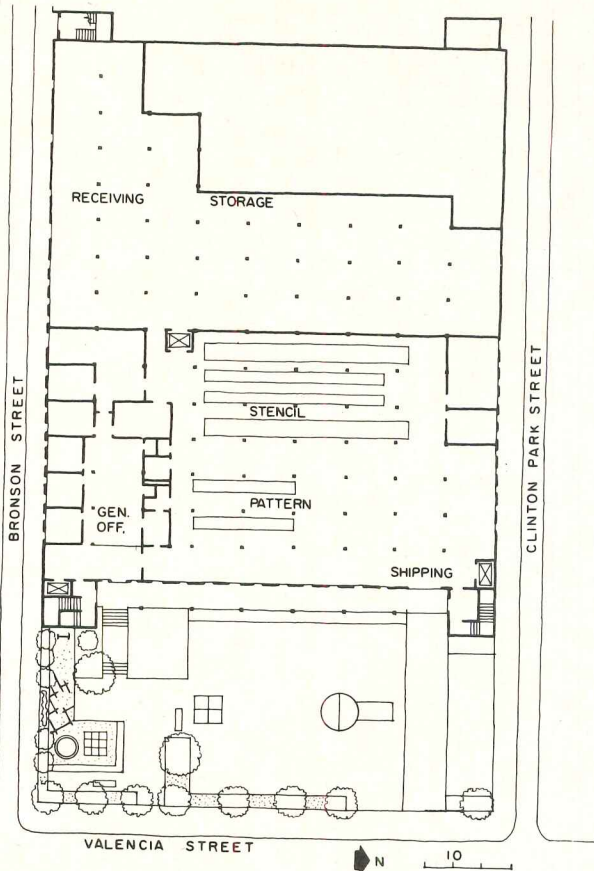
In renovating this building, architect Howard Friedman's somewhat whimsical approach was to create "a sort of Disneyland Western Hotel look—in keeping with Levi's original cowboy image." Four stair towers were added at the building's corners to meet the city's standards for required exits. The porch was constructed for period style and to provide a place for employees and public to relax. A playground for public use was added as a commitment to the neighborhood. The interior planning, by contrast, is serious in intent and reflects 1971 corporate functions. The heavy wood structure—posts, trusses and plank floors—was retained and highlighted with color. Functions within the building have been redistributed. A new sculptural light court, new partitioning, lighting and mechanical equipment complete this spirited and timely renovation.



LEVI-STRAUSS & COMPANY, San Francisco, California. Architects: Howard A. Friedman & Associates; mechanical engineers: Kasin, Guttman and Associates; general contractor: Maloney & O'Hare.

# Time use/rehabilitation of b

*Renovation of this building has lent impetus to a drive toward upgrading the appearance of the whole neighborhood. The sharing of playground equipment with neighborhood children has met with warm affirmative response. After almost a year of use in an area characterized in the past by widespread vandalism, not one pane of glass or lighting fixture has needed replacement.*



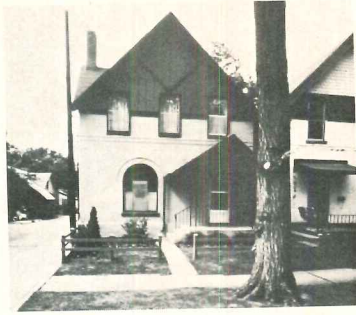
# Buildings for the same use

## Federal funds sponsor housing rehabilitation in 20 U.S. cities

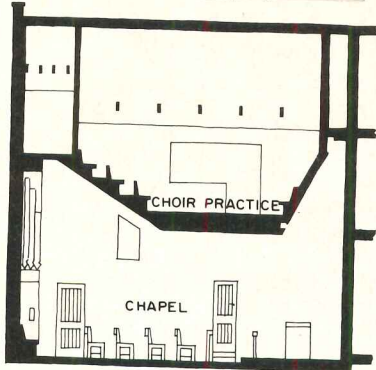
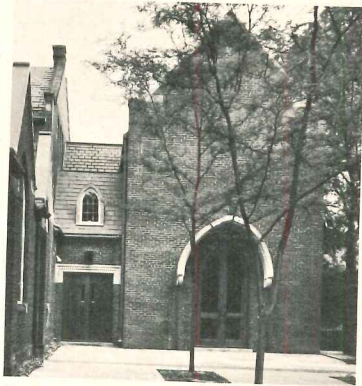
The surging, nation-wide demand for low- and moderate-income urban housing has lent special urgency to HUD's *Project Rehab*. Responding to needs outlined in the Second Annual Report on National Housing Goals, *Project Rehab*, headed by Assistant Commissioner Robert E. Philpott, has an ambitious long-term objective of a million rehabilitated units over the next decade. With better than 15,000 units now complete or under way, *Rehab* has made a strong beginning. "We hope to have 37,400 units under contract by the end of this fiscal year," says Philpott, who has a 1971 budget of approximately \$35 million to be distributed over several types of subsidies. Operating currently in 20 United States cities (and hoping to increase the number) *Rehab* teams work with private developers through local elected officials who have demonstrated a strong and continuing commitment to the program. Historically, housing rehabilitation, like the urban renewal of which it has been a part, has concentrated almost exclusively on efficient re-use—too often at the expense of architectural character. High among the *Rehab* teams' priorities is a determination to maintain the architectural character and integrity of buildings and neighborhoods in which they work (photos, left). None of the funding for *Rehab* projects has been diverted from other HUD programs.

It is too early to tell much, but many signs are certainly encouraging.

Two examples from Pittsburgh are in many ways typical of housing rehabilitation in 20 U.S. cities. Preservation of architectural character is apparent in before and after photos.



# renovation of buildings for



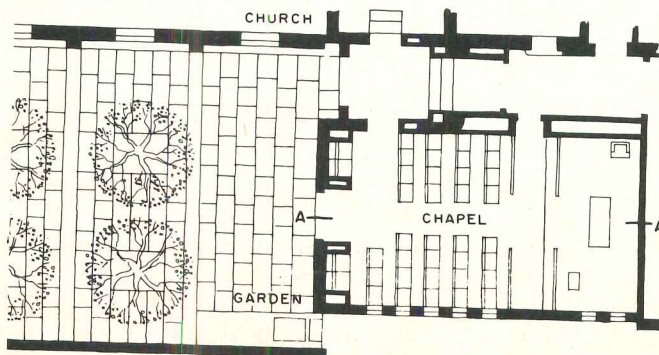
SECTION A-A

## A Georgetown chapel renovated with warmth and sensitivity

This small chapel has been shaped from a two-story parish house that formed an annex to a nineteenth-century Episcopal church. Much of the success of the renovation stems from architect Philip Ives' decision to move the choir practice room upstairs and slope its floor upward at both ends to gain space in the chapel below (see section). The added height in the chapel is used at the rear for a row of overhead organ pipes and, behind the altar, for a high wall washed by concealed lighting. The effective use of light as a design tool, the simple but elegant detailing and the careful choice of finish materials combine to form a very handsome and exceptionally successful renovation.

Interior walls are textured plaster, floors are gray slate, woodwork is stained dark. Chairs, altar, lectern and font are designed by the architect.

CHAPEL OF ST. JUDE, CHRIST CHURCH, Washington, D.C. Architect: Philip Ives; associate architect: Theo Dominick; structural engineer: Carl C. Hanson; mechanical engineer: William A. Brown; landscape architect: Peter C. Rolland; lighting consultant: Edison Price; contractor: E. A. Baker Company.



Robert C. Lautman photos

Outside grade, originally several feet above the first floor level, has been cut back to provide a landscaped forecourt to be used by parishoners for informal gatherings after Sunday services. Entrance to the chapel is from small vestibule that links the chapel with the main church.



# or the same use/rehabilitat

*Reg van Cuylenburg photos*



# on of buildings for the same

Peter Aaron photos

## An urban wasteland converted into a low budget community park

The rubble-strewn site (photo top left) is not Cologne after the fire bombings in 1944. It is a site in the heart of New York City once occupied by the Ruppert Brewery. Now owned by the City and slated for future high-rise development, the demolished, multi-block site has lingered too long as an eyesore and community blight.

A small group of concerned citizens, headed by architecturally trained Mac Gordon, William Hodgson and Oliver Hamill, bent to a task they called "The Greening of Ruppert." With the sponsorship of the Parks Council and the financial assistance of the Astor Foundation, the designers regraded the flat cut slope into a rolling meadow, seeded the area with grass and planted fast-growing vines on the battered chain link fence surrounding the property. "Design," says Gordon, "was a constant exercise in improvisation. We used whatever found materials we had at hand—old railroad ties, cable reels and scrap lumber." Allotment gardens, on the site's periphery, are tended by members of the community who grow flowers and vegetables. Several festivals and park events are now scheduled.

The designers have done more than bring life to dead land. They have provided a constructive format for community action and an example of what might be done with any of the thousands of city lots now vacant and neglected.

GREENING OF RUPPERT, New York City. Planning consultants: *Thomas Mikalski*; landscape consultant: *Wolfgang Oehme*; portable playground designer: *Sheila Berkley*.



# railroad stations: an end

There was a time when railroad stations meant a lot to America. They were the grand entrances to cities, the outposts along the great lines of travel, part of railroading's movement, power, spectacle, and symbols of their communities. In a romantic age, they took on the most romantic of forms, from Tudor manors to Spanish cathedrals. Even small stations tended to be special.

The stations are still there by the hundred, but they are being left high and dry by the steady, rapid decline of passenger travel. Six months ago, the decline became a nose-dive when *Amtrak*, the new Federally sponsored railroad organization, cut passenger service throughout the country in half, leaving dozens of stations empty. *Amtrak* has commissioned a study on stations, but *Amtrak* has no power to save them: it does not own stations or equipment, but rents them from private rail companies. Many of the best have been destroyed, and many more will be. The sites, usually in the center of town, frequently are too valuable to make any kind of preservation as profitable as new construction. Money built these stations—and money is tearing them down. Often, however, stations are demolished only because no one has thought of a new use.

Henry Hobson Richardson raised railroad architecture to a high art. Most of his stations are gone, but the finest of all—New London, Connecticut—remains. For a while, anyway. The station's demolition is written into New London's urban renewal plan. (February 1971, page 36). Many New Londoners hate their station, which is filthy inside and out, though solid. The station is needed (New London is *Amtrak*-served) and must be replaced by a new station before

it can be torn down. Preservationists now believe there is some hope it can be saved and refurbished.

Happily, railroad stations have shown remarkable adaptability. They have been converted into private homes, libraries, restaurants, meeting halls, offices, banks, stores, galleries. A few are surviving as railway offices. But if you want to see a train buff light up, show him a station that's still going strong. The old romance is still alive.

—Jonathan Hale

1. New Hope, Pa., 1891. Now restored and serving as the terminal for short steam excursions. Photo: H. H. Harwood, Jr.  
2. North Conway, N. H., ca. 1872. Planned for restoration as a base for a steam tourist railroad. Photo: R.A. Newbegin.

3. Charlestown, N. H. and Springfield, Vt.; now a hardware store. Photo: R. A. Newbegin.

4. Union Station, Nashville, Tenn., 1900. Now almost empty, but sympathetic owners and public are studying ways to adapt it to new uses. Photo: Jack E. Boucher, Historic American Buildings Survey.

5. Cumberland, Md., 1872, built as a combination luxury hotel-station. A recent casualty, demolished in late October after a cliff-hanging fight. Photo: Edmund Barrett, HABS.

6. Stoughton, Mass., 1888, Charles Brigham, architect. Still in service, good condition. Photo: George Cushing for HABS.

7. Burlingame, Cal., 1893; still in use, excellent condition. Photo: Morley Baer, HABS.

8. Bethlehem, Pa., ca. 1875. Restored and used by local Junior Chamber of Commerce since 1966. Photo: H. H. Harwood, Jr.

9. Mt. Royal Station, Baltimore, Md., 1894. Now part of Mary-





# Endangered species/railroads



8



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9

# tations: an endangered sp

land Institute of Art. Photo: Edmund Barrett, HABS.

**10.** Union Railroad Station, New London, Conn., 1885, Henry Hobson Richardson, architect. In serious danger, but chances for saving it have improved. Photo: Robert F. Fulton III, HABS.

**11., 12.** North Easton, Mass., 1883, H. H. Richardson, architect. Recently repurchased by the Ames family, its original builders, and given to the Easton Historical Society. Photos: H. H. Harwood, Jr.

**13.** Greensburg, Pa., ca. 1890. Amtrak by-passed it, now vacant. Photo: H. H. Harwood, Jr.

**14.** Stafford, Pa. 1876. Built for the Philadelphia Centennial, now a well-kept suburban station. Photo: H. H. Harwood, Jr.

**15.** Main Street Station, Richmond, Va., 1901, Wilson, Harris and Richards, architects. Little changed and still in use. Photo: Edgar S. Heite, HABS.

**16.** Whitman, Mass., ca. 1880. Now used as a freight agency. Future uncertain. Photo: H. H. Harwood, Jr.

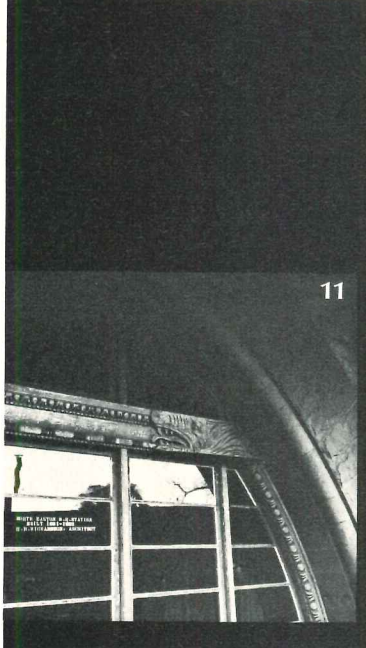
**17.** San Diego, Cal., 1915, Bakewell & Brown, architects. Now almost empty and threatened. Photo: Marvin Rand, HABS.

**18.** Union Station, Washington, D. C., Daniel Burnham, architect, now being converted into a tourist information center by the National Park Service. Photo: Jack Boucher, HABS.

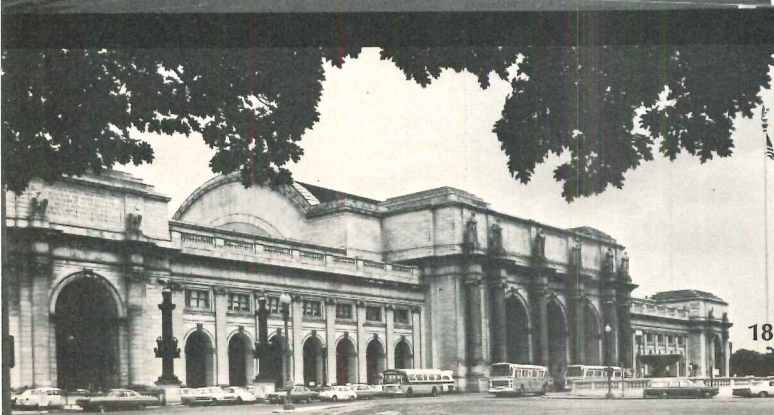
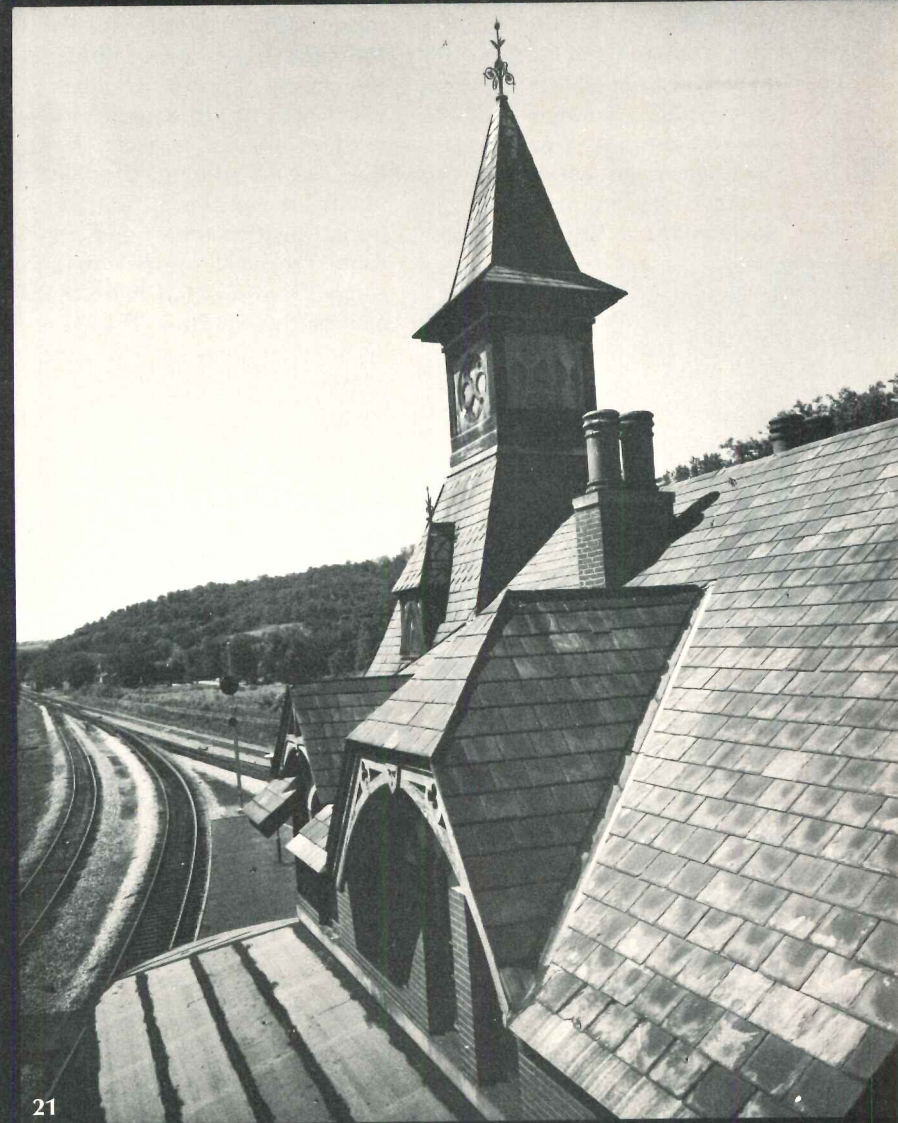
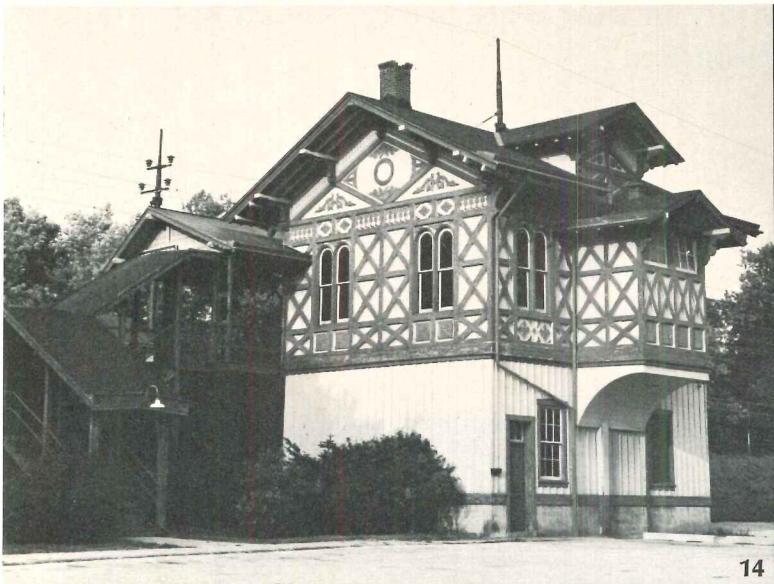
**19.** Lake Odessa, Mich. 1888. Amtrak by-passed; but still occupied by a freight agency. Photo: E. D. Galvin.

**20.** Cincinnati Union Terminal, 1933, Fellheimer and Wagner architects. Only two trains a day. Concourse currently an exhibition hall of the Cincinnati Science Center. Future in doubt. Photo: H. H. Harwood, Jr.

**21.** Point of Rocks, Md., 1875. Still in use as a commuter station. Photo: Edmund Barrett, HABS.



# ecies/railroad stations: an



# rehabilitation of older bu

Nineteenth-century buildings, renovated for a variety of new uses, prove remarkably adaptable to functions unforeseen by their original designers

## Music/dance students now perform in this old Newark carriage house

The rehabilitation of carriage houses, in those communities lucky enough to have them, for residential use began as soon as the automobile replaced the horse-drawn carriage. As in most residential work, the architectural and legal problems are relatively simple. But when the carriage house is converted to public use, as was this one at the Newark Community Center of the Arts, the designer must deal with code requirements as stringent as those for new construction of the same type. Thus, a building of 2,000 square feet must accommodate two means of egress, provide adequate toilets, and meet the same codes as larger structures.



Hardy, Holzman and Pfeiffer Associates, architects for the renovation, have met those restrictions with their customary flair. With a limited budget and area in which to work, they have provided rehearsal and performance space for music and dance which works well and admirably captures the spirit of the school. Mrs. David Lass and Saunders Davis, music teachers in the Newark school system, established the Center in January, 1968. Enrollment grew so rapidly that new quar-

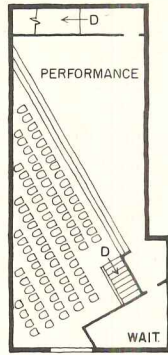
ters were needed within six months. Grants from two foundations enabled the school to move into a large house in a once well-to-do Newark neighborhood. Soon afterwards the architects began the conversion of the carriage house behind.

Although the roof and some of the masonry of the existing building had to be replaced, the 20-foot-wide shell dictated the proportions of the revised design. The alley facade (top of the plan, opposite page) remains as it was with all new construction toward the house (which now contains offices and music rehearsal rooms). Performance-goers pass through the house into a courtyard, which will be developed as an outdoor theater, across which they see the sprightly elevation (right). A split-level entrance leads down to toilets and mirrored rehearsal room with an elegant two-position barre and new hardwood floor. The stairs up bring audiences directly into a large room divided diagonally into stage and seating areas. Faced with a 2:5 plan proportion, the architects felt that the diagonal stage permitted the width necessary for dance movement, as a standard stage across one end would not, while not spreading the audience the entire length of the space. A new roof structure echoes and reinforces the stage angle while a clerestory over the audience increases the sense of enclosure about the stage. Performers can come onto the stage from a ramp leading to the lower floor or can enter from an alcove over the lobby. An adjustable stage lighting system adds a glamorous note.

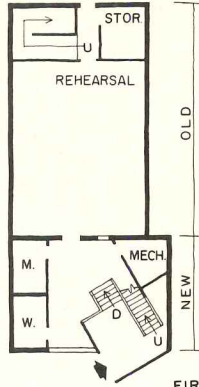
NEWARK COMMUNITY CENTER OF THE ARTS, Newark, New Jersey. Architects: Hardy, Holzman and Pfeiffer Associates; general contractor: Verfield Construction Company, Inc.



# dings for new use/rehabili



SECOND LEVEL



FIRST LEVEL



# tation of older buildings fo

## Pittsburgh's Heinz Hall: a movie palace becomes a first-class concert hall

When Loew's Penn theater closed its doors in 1964, after providing film and vaudeville entertainment for 37 years, demolition seemed inevitable. After all, on all sides of the Golden Triangle, old structures were being pulled down and replaced by shiny metal-skinned towers. But circumstances held a far different fate for the building.



On September 10, 1971, the Penn theater became the Heinz Hall for the Performing Arts. Plans to renovate the building for its new use began in 1968 after test concerts in the theater (see marquee, above) proved that not only did the room work well for symphonic music but that Pittsburghers were very willing to come downtown for concerts. Henry J. Heinz II, through the Howard Heinz Endowment, agreed to purchase the building and to substantially pay for the cost of rehabilitating it—approximately ten million dollars to date. The 2,730-seat hall will not only serve the renowned Pittsburgh Symphony but the Pittsburgh Opera, the Civic Light Opera, the Pittsburgh Ballet and the Youth Symphony as well.

Although the neo-Baroque opulence of the old movie palace remains, photo right (heightened if anything by the restraint and tact of the architects Stotz, Hess, MacLachlan and Fosner and their interior designer, Verner Purnell), the technical requirements necessary for revamping the building to its new use have been achieved economically and unobtrusively. In addition to restoring the Grand Foyer, the Grand Lobby and the hall itself to a tasteful reflection of the late twenties, the architects and their many consultants revised circulation patterns thoroughly with a new lobby (right center), intermission lounges and staircase, (right, bottom), provided three floors of offices for the various performing groups, added a wing behind the stage containing enlarged backstage space and other support facilities, and finally—under the direction of Dr. Heinrich Keilholz of Salzburg, Austria—added a large acoustical reflector above the proscenium and other refinements for optimal sound delivery in a multi-purpose hall.

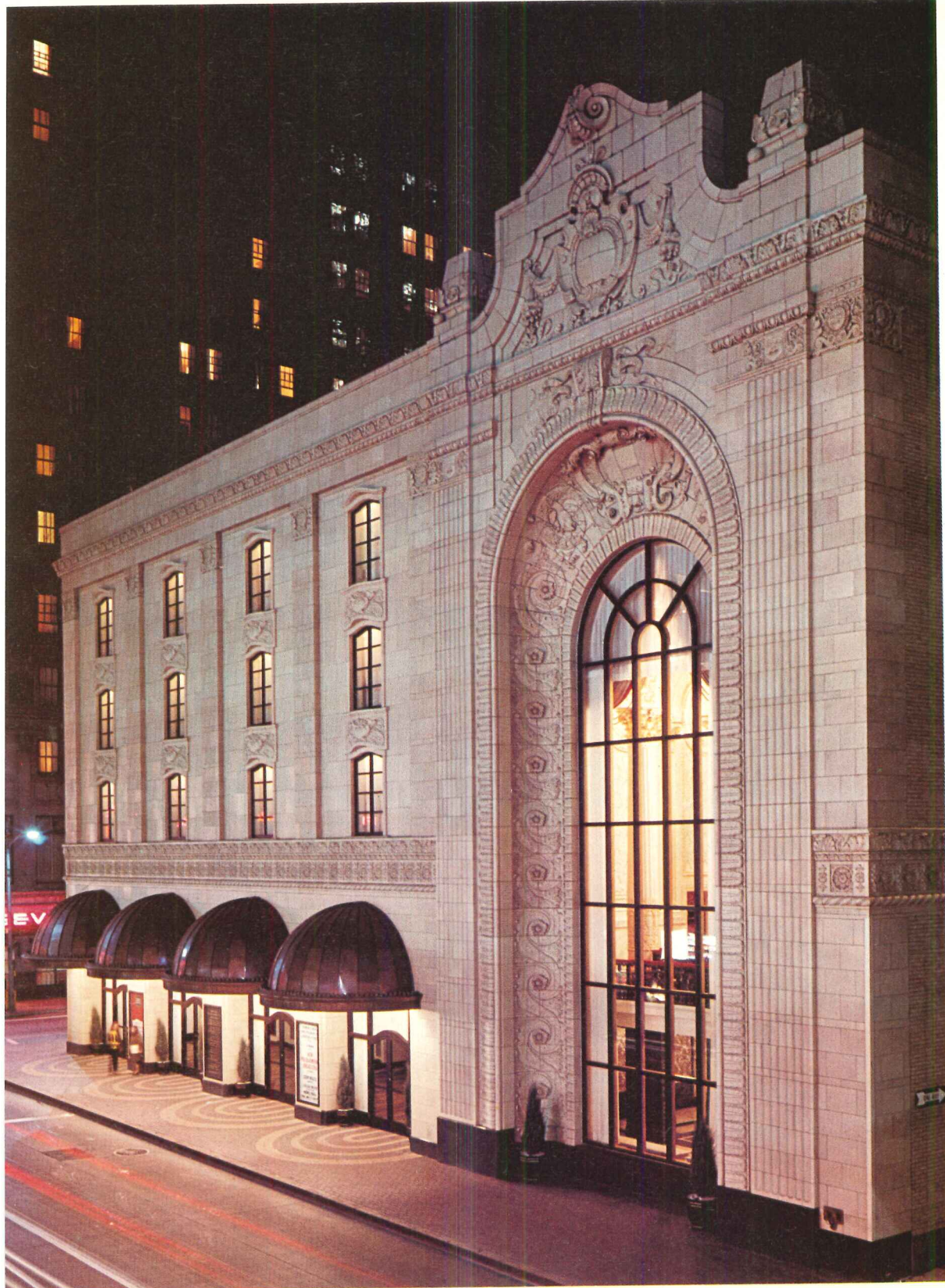
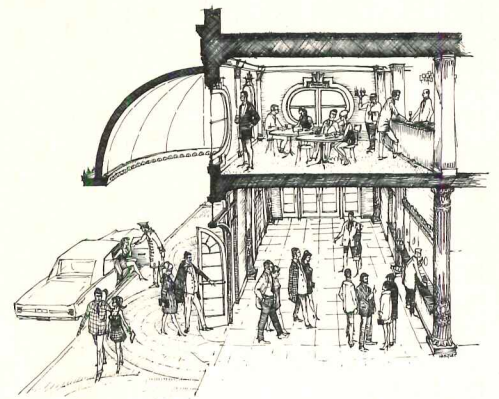
Symphony, ballet, and especially opera performances, as opposed to moviegoing, require spacious and comfortable rooms in which to relax and greet friends during intermissions. The mezzanine plan, page 128, shows two major additions for that purpose. A new horseshoe staircase from the main floor to the mezzanine brings the audience to a new lounge and to the Grand Foyer, formerly a space open to the main floor but now bridged at the mezzanine level to provide intermission space. Where once the marquee glittered, a four-story window reveals the Grand Lobby to evening passersby, (right). The newly-built ticket lobby is en-



Elton Schnellbacher photos



# new use/rehabilitation of c



tered by five doorways under copper-sheathed cupolas. The bulb-lined cupolas serve not only to shelter the entrances, but to screen the view of those in the lounge from flashing neon signs on the shops across the street, section above.

A six-story addition behind the existing building spans an important city utility right-of-way in order to permit a stage twice as deep as before. Two two-story rehearsal rooms, dressing rooms, practice rooms, instrument storage, a music library, performers' entrance and other circulation space is included in a compact new building.

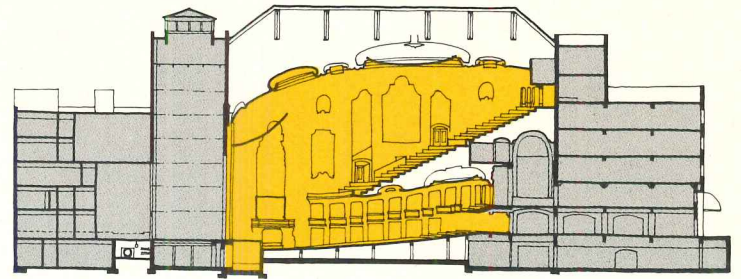
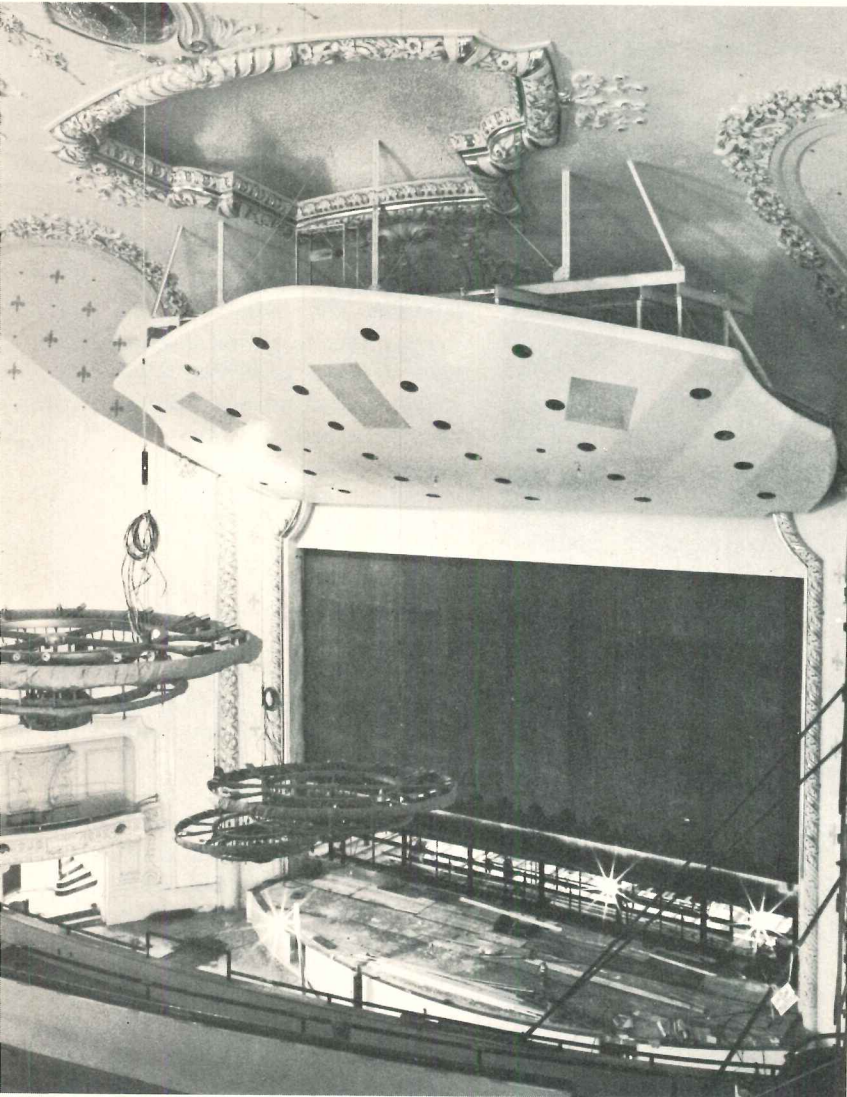
The most intriguing technical aspect of concert hall design is, of course, the acoustical one. Here, Dr. Keilholz, who has an impressive list of accomplishments, including the final and successful work at New York's Philharmonic Hall, has used the classic technique of reflection from solid, hard surfaces to reinforce the energy transmitted to the listener by the orchestra or singer. A movable but heavily-built enclosure around the orchestra combined with the reflector, overpage, and panels flown above the players produces clear but lively sound images for a variety of performance requirements. In addition to these elements, Dr. Keilholz has specified an electro-acoustical system that permits sound reinforcement of certain productions, although not symphony or opera music.

HEINZ HALL OF THE PERFORMING ARTS, Pittsburgh, Pennsylvania. Architects: Stotz, Hess, MacLachlan and Fosner; acoustical and stage technique consultant: Dr. Heinrich Keilholz; engineers: George Levinson, Inc. (structural), Meucci Engineering Inc. (mechanical), Hornbeck Engineering, Inc. (electrical); interior designer: Verner S. Purnell; general contractor: Mellon-Stuart Co.

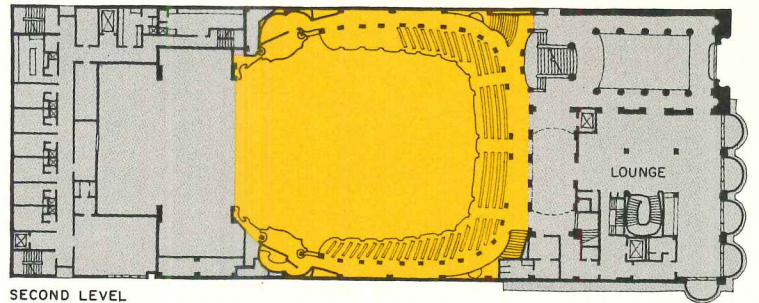
# Older buildings for new use

Although the only changes in the audience portion of Heinz Hall (right) are new seats and a considerably restrained re-decorating of walls and ceilings, the acoustical elements added to make it a first-rate symphony hall are quite evident. The large reflector above the proscenium (shown left) under construction with the circular frames for the twelve chandeliers hovering like space vehicles, is constructed of hard plaster on a steel frame. The orchestra enclosure is stressed seven-ply 3/4-inch plywood

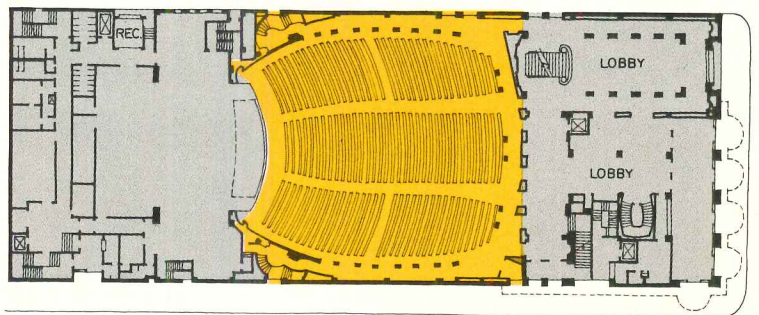
sheets in movable steel frames that permit the enclosure depth to vary more than 15 feet. One of the two-story rehearsal rooms in the new wing (left bottom) has plywood baffles on walls and ceilings. The plans and sections (below) show that most of the changes in the renovation took place in the lobby and backstage areas of the building. Seating capacity was reduced by 700 seats because of increased seat spacing and removal of some seats in the uppermost balcony.



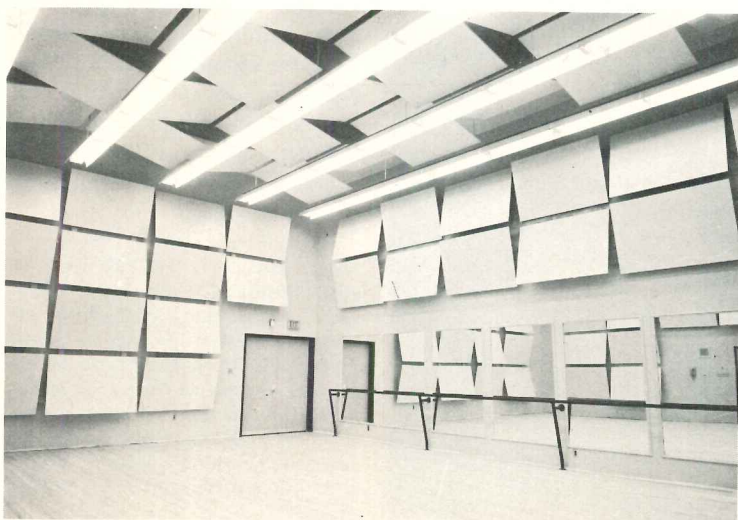
SECTION



SECOND LEVEL

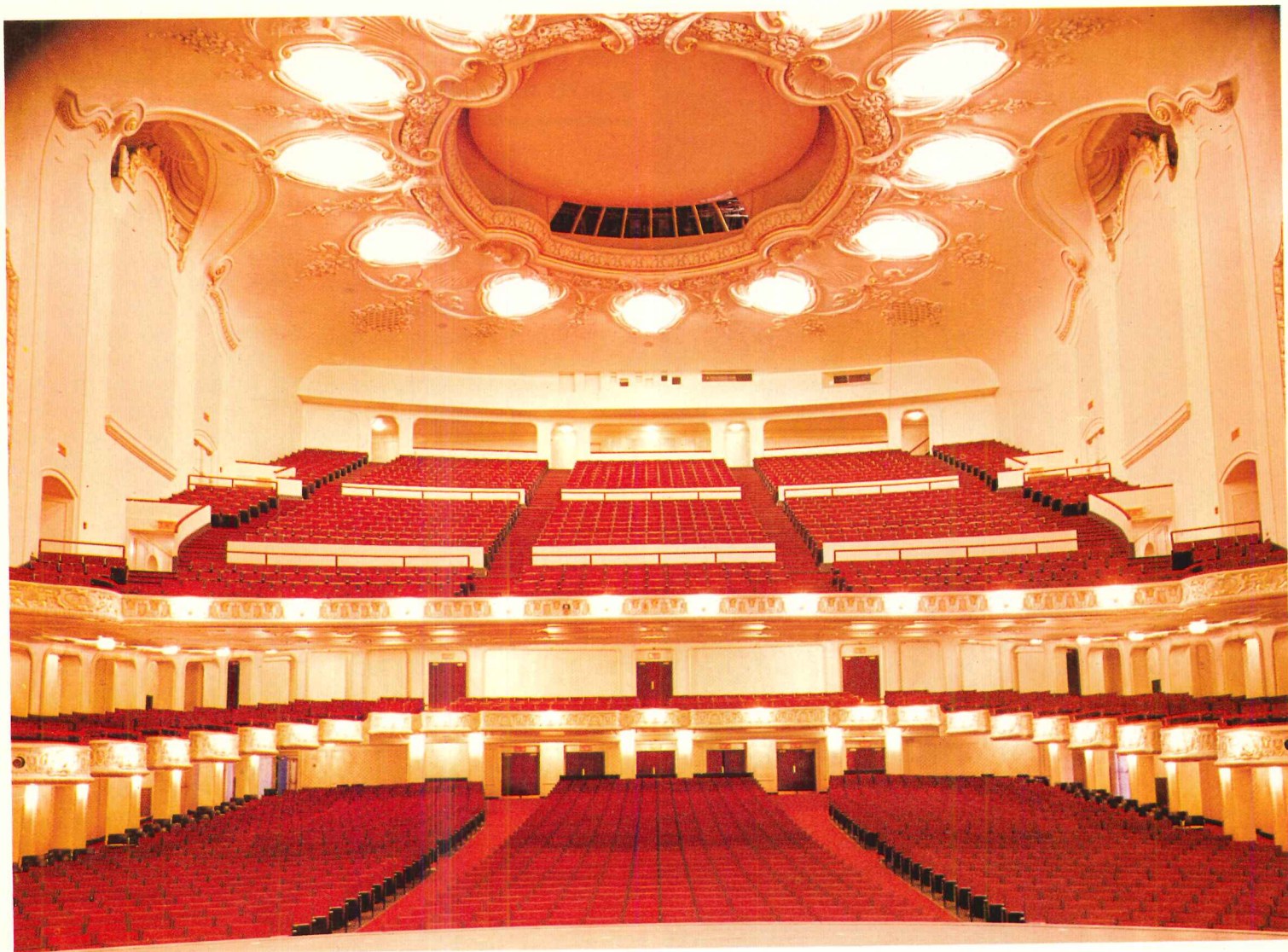


FIRST LEVEL



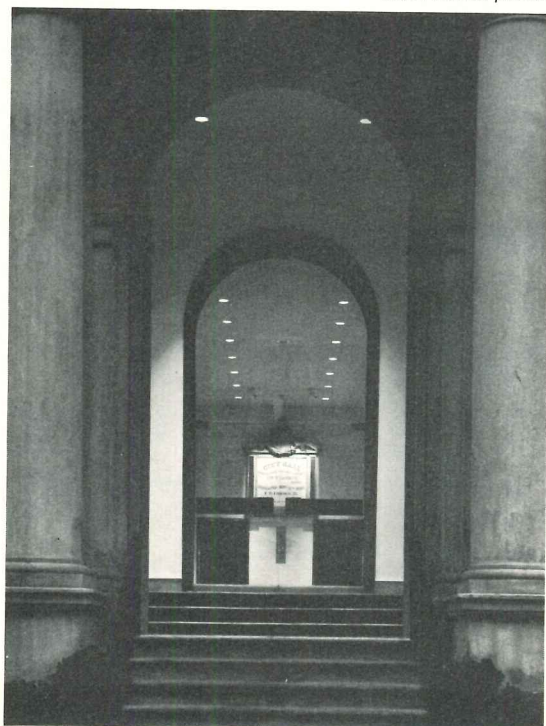


# rehabilitation of older build





Carol Rankin photos



## Boston's old city hall now pays taxes as a private office building

Over a hundred years before the Boston City Hall Competition of 1962, another competition for a Boston city hall was held. The winning entry of that one, designed by Gridley J. F. Bryant and Arthur Gilman, was as influential in its time as its worthy successor. The style was known as Second Empire and the architects of many public buildings around the United States drew inspiration from the Boston building, completed in 1865 at a cost of about \$500,000.

When the new city hall was occupied late in 1968, the Boston Redevelopment Authority sought a private developer who would respect the architectural character of the building while converting it into a prestigious office building with commercial and restaurant facilities. Architectural Heritage Inc., a non-profit corporation, was interested in seeing the building properly renovated. It sponsored, in 1969, preparation of a historical report which underlined the BRA's concern for preservation of the existing structure and demonstrated the economic feasibility of the project. Based upon that report, a subsidiary of Architectural Heritage, Old City Hall Landmark Corporation, and Graham Gund, at the time an urban design student at the Harvard Graduate School of Design who had been part of the project from its inception, were named co-developers. They in turn chose Anderson Notter as architects.

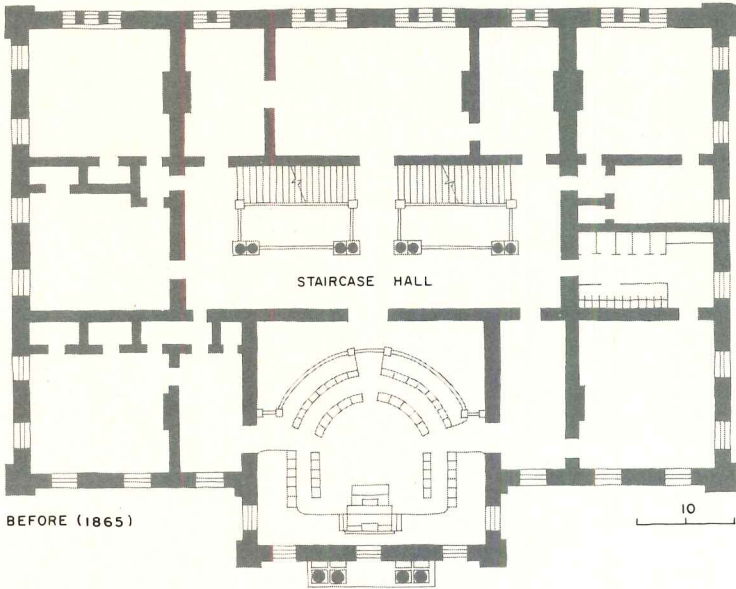
Today, almost all of the 80,000 sq ft of renovated office and commercial space in the newly-cleaned granite building has been rented and many ten-

ants have moved in. The original central staircase, and two ancient elevators added soon after the building was finished, occupied a large hall surrounded by interior bearing walls, upper plan, right. That space was large enough to accommodate a new core with two separate egress stairs, two modern elevators, toilets and circulation corridors for the entire floor. Thus, the perimeter, as in a standard contemporary office building, was left entirely free for development of office and secretarial space. All windows have been re-glazed with single sheets of glass (left), the only visible exterior change, but one which strengthens the original design.

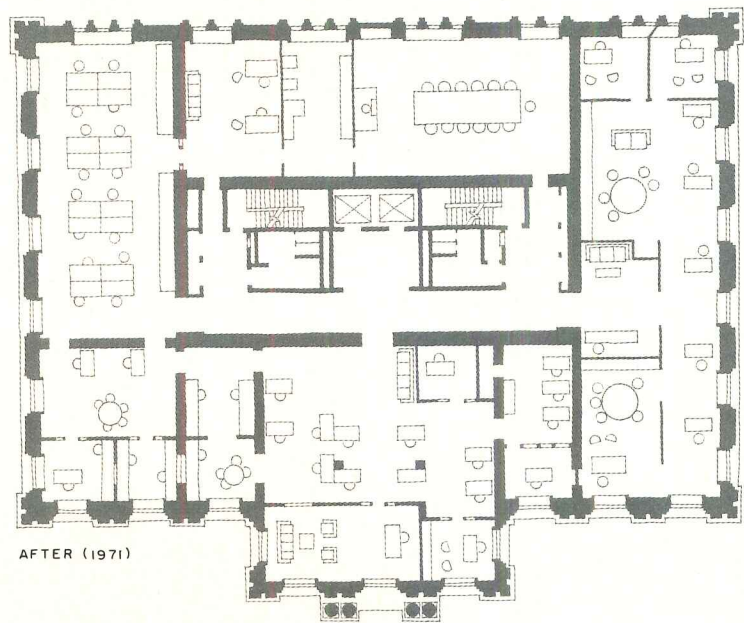
The two lower floors of the old city hall have had substantial interior revision as well. A new entrance passage (bottom left) leads through an arched glass door that contrasts elegantly with the clustered stone columns. The original dedication plaque is visible above the elevators. The right half of the main floor has been occupied by the First National Bank of Boston (right bottom), another interior by the architects. In the future, the left half may be occupied by spacious dining rooms of Maitre Jacques, a well-known restaurant in Boston. For the moment, Chef Lucien Robert and his interior designer, Les Larson, are finishing a smaller group of dining rooms, bar and kitchen in the basement. Next summer, an outdoor dining patio outside the bar will open for lunches.

OLD CITY HALL, Boston, Massachusetts; owner: Old City Hall Landmark Corporation. Architects: Anderson Notter Associates Inc.; engineers: LeMessurier Associates, Inc. (structural); Progressive Consulting Engineers, Inc. (mechanical); Herosy Associates, Inc. (electrical); general contractor: Kirkland Construction Company.

# ation of older buildings for



BEFORE (1865)



AFTER (1971)

The most successful office floor interior completed to date, and the only one by the architects, Anderson Notter, is occupied by the Massachusetts Housing Finance Authority, a quasi-public agency which lends money for construction of low- and moderate-income housing. Its spaces (photographs below

and bottom plan) express most clearly the architect's intent to carry the theme of the building's arched windows by creating new arches faced with natural-finish wood in interior partitions. These arches, sometimes glazed, form a strong axis that seems entirely appropriate in a classical building.



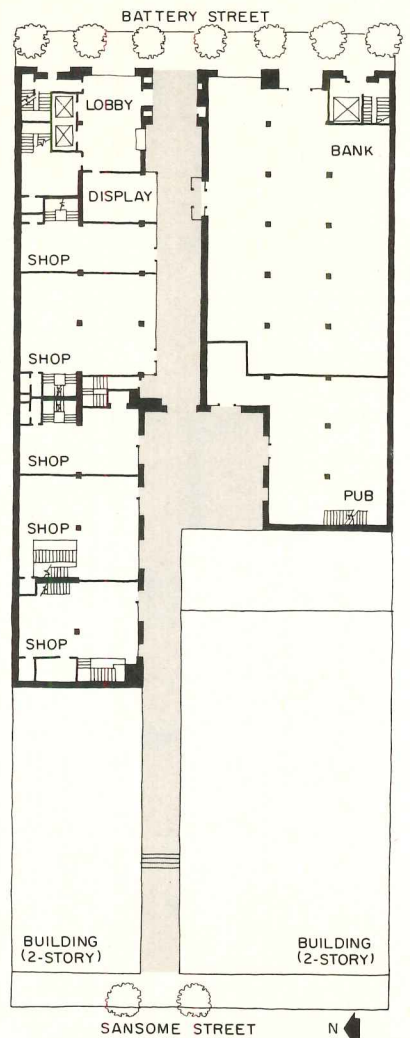
# new use/rehabilitation of c

## Renovation has brought new spirit to this San Francisco warehouse

When this building was a warehouse for the Crown-Zellerbach Paper Company, horse carts and old-fashioned trucks unloaded in the courtyard, (right). Today San Franciscans come to the Irish Pub (bottom) and sit in the same courtyard sipping a pint. Jackson Place was the precursor of the tide of renovation which has seen nearly abandoned warehouses and factories turned into elegant commercial facilities—Ghiradelli Square, the Cannery, the Dancer-Fitzgerald-Sample offices (RECORD, August). It quickly proved that urban renewal through preservation, not demolition, was a sound idea, both economically and esthetically.

Built in 1907 of brick salvaged from the earthquake and fire of the previous year, the existing complex was for San Francisco as old and outmoded as anything could be. For one thing, even though it was used as a whiskey warehouse after the repeal of Prohibition, the long alley leading to the truck dock was very inefficient for modern vehicles. For another, no self-respecting business would consider it as an address in the days when new office skyscrapers were shooting up all over town.

As in the case of Dancer-Fitzgerald-Sample, it was an advertising man, Joseph Weiner, who first saw the potential in the solid old structure. With industrial designer Walter Landor, he approached architect Lloyd Flood who has developed 100,000 sq ft of luxury business space. Although Jackson Place has special charm due to the scale of its shop-lined passage



Morley Baer photos

# Older buildings for new use

—not unlike a Venetian *calle*—it shares certain advantages with the nineteenth- and early twentieth-century warehouse industrial buildings found in every American town: solid construction and lots of high-ceilinged, unobstructed floor space. Given the relatively moderate cost of installing modern conveniences into these lofts, commercial tenants can afford to rent much more space than they could in new construction. Furthermore, the brick walls and timber truss structures soaring above individual cubicles can give office workers a sense of belonging.

Architect Flood, for instance, spent approximately \$20 per sq ft (in 1968) and produced such elegant offices as the one for U.S. Leasing Corp. (center photo, left). Where fire escapes were needed he installed steel balconies (right). This is a solution very similar to that used in the courtyard of New York's Westbeth (RECORD, March, 1970), another open space formerly used for truck loading. Wherever possible, Flood has exposed the timber structure (below left) to the space below and has introduced devices in every office area to give it distinct character: tiny patios off executive offices; planting areas; even, in one case, a glass cage cantilevered from the brick wall to give greater spaciousness and light. Corridors, too, are varied by shallow glass bays which either project or are indented and which prevent the depressing monotony of most office building corridors.

JACKSON PLACE, San Francisco, California. Architects: Lloyd Flood, Bruce Beebe (Phase 1); engineers: David Allan Welisch (structural); Westcon Associates, Robert A. Wistort (mechanical); R. F. Darmsted & Associates (electrical); general contractor: H. S. Meinberger and Sons.

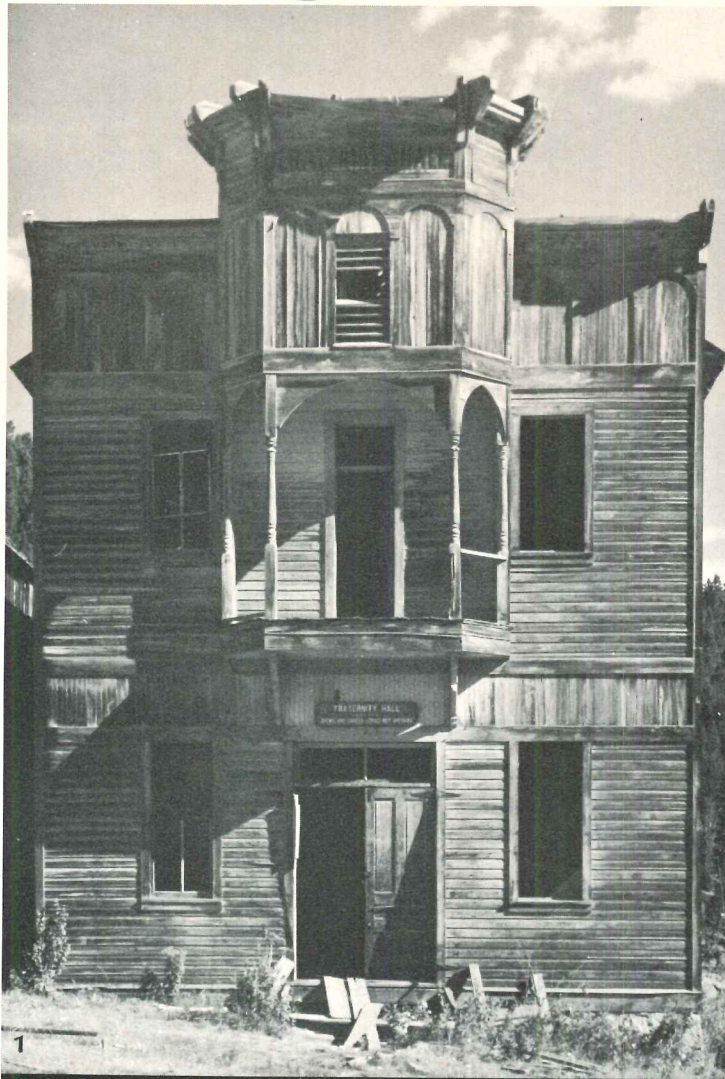


# the heritage that should

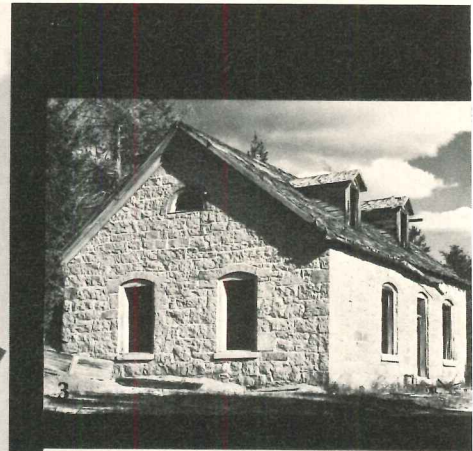
## A few endangered buildings across the country brought to our attention by local and national preservationists

### WEST

1. Fraternity Hall, Elkhorn, Mont. ca. 1880: the social center during the silver and gold boom. 2. The Old Saloon next door. 3. Superintendent's House, Granite, Mont. The mill office may have been upstairs. 4. Old City Hall, Tacoma, Wash., by Hatherton & McIntosh, 1893. Suggested uses: tourist and recreation or cultural center; special high school. 5. Courthouse, Belmont, Nev., 1874. 6. The ZCMI Store, Salt Lake City, Utah. Its cast iron and pressed metal facade may be modernized leaving only a fiber glass replica of a portion of the original. 7. The Mill, 1898, is in Berlin, Nev., a ghost town and State Park, and the only Nevada mining area with buildings of the gold and silver days still standing. 8. The Long-Waterman house, San Diego, Cal., 1889, by D. P. Benson. 9. Broadwater Hotel (left) and Natatorium (right)—razed due to earthquake damage), 1889, Helena, Mont. Photo ca. 1900. Phased out as an elegant hotel in the 30's it became a dance and gambling hall and is now empty. 10. The Mills house, Springer, N. M., 1876, is a thirty-room adobe mansion in the French academic style. 11. Nuestra Señora de los Dolores, Bernalillo, N.M., (mid-late 19th c.) was flat roofed. The pitched roof was added after railroads brought corrugated iron in 1879. Because of a new church this stands empty. 12. The Dorsey Mansion, Chico Springs, N.M., 1878-1884, has thirty rooms, some of logs, others of stone.



1



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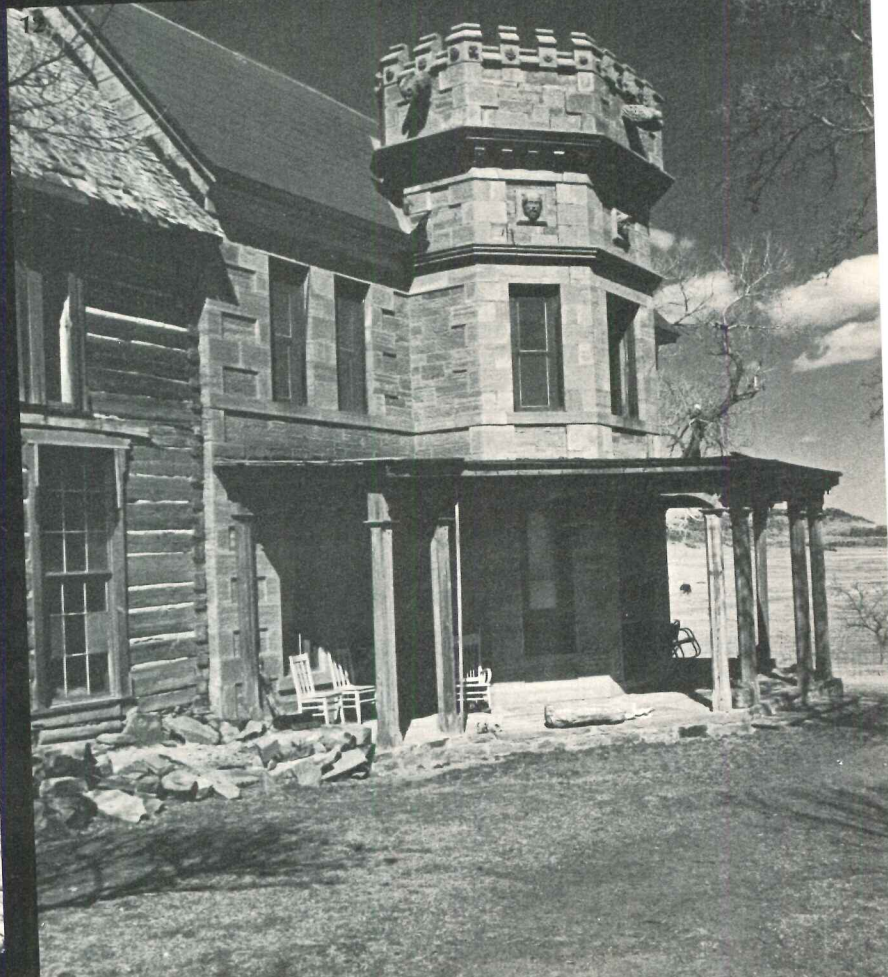


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6

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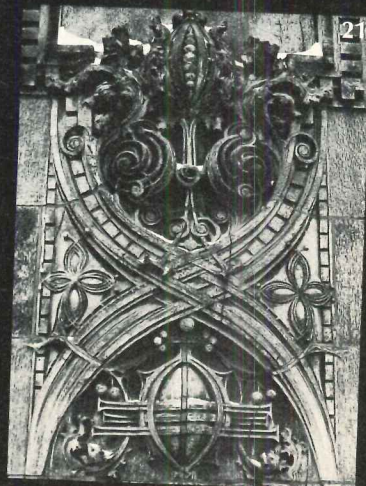
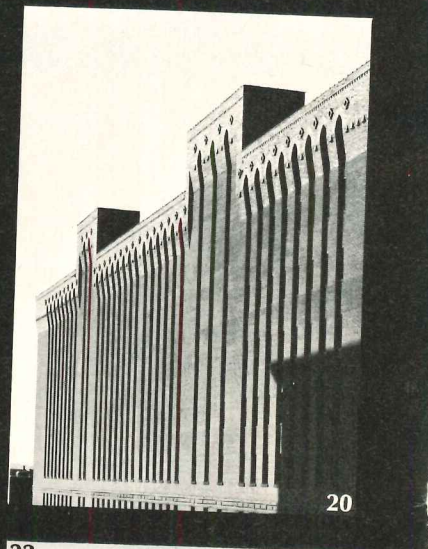
## SOUTH

**13.** Seven Oaks, New Orleans, La., a vandalised and neglected peristyle plantation house. **14.** The Edward C. Peters house, Atlanta, Ga., 1885, by G. L. Norrman, needs a sympathetic buyer. **15. & 16.** City Hall, Richmond, Va., 1887-1894, by Elijah E. Myers, is in danger when the city offices move to new quarters. It might become a courts or state office building. **17.** The Bellamy mansion, Wilmington, N.C., by Rufus Bunnell, is increasingly in need of repair. **18.** The Convent of Mary Immaculate, Key West, Fla., of native stone, was a hospital during the Spanish American War.



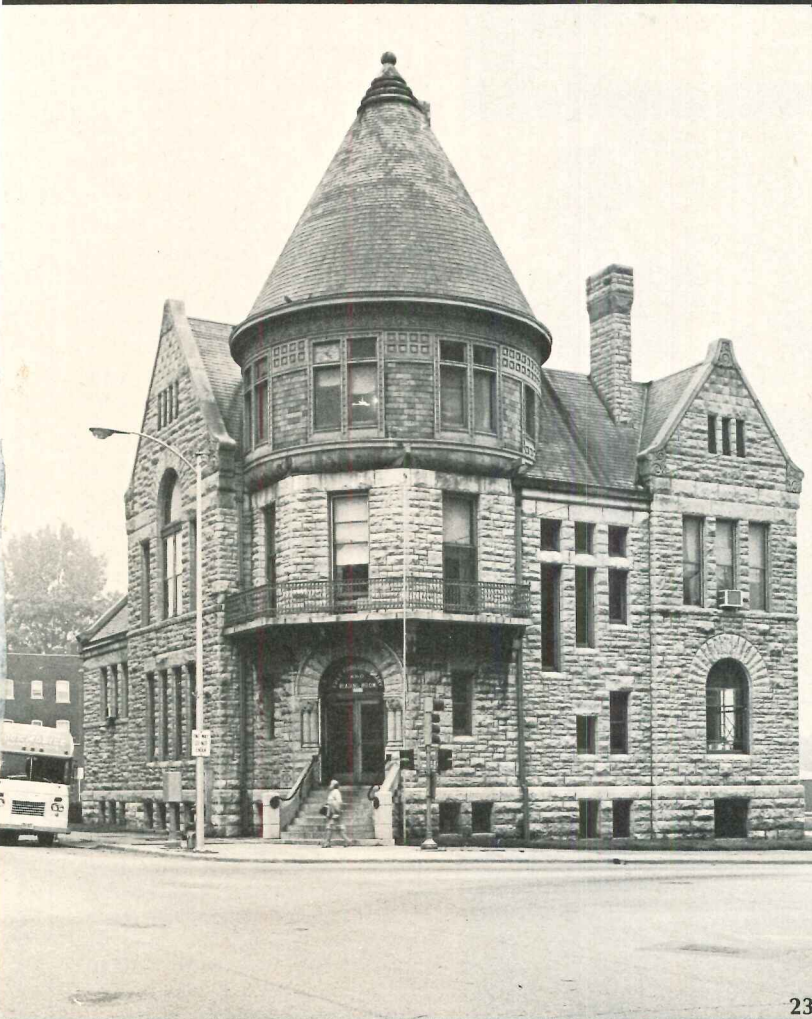
## MIDWEST

**19.** The Old Post Office, Akron, Ohio, 1895, by a Treasury Department architect, may be a senior citizens' center or exhibition space for a variety of groups. **20.** Butler Brothers, Minneapolis, by Harry Jones—some call it the city's most significant building—is a warehouse vacated because low floor-to-floor heights and deep wood structure hamper its use. **21, 22.** Scarrit Building and arcade, Kansas City, Mo., 1908, by Root and Siemans, shows Chicago and Sullivan influence. **23.** The Library, Quincy, Ill., 1889, by Patton & Fisher, is a good example of Richardsonian Romanesque. **24.** Pillsbury "A" Mill and Elevator, Minneapolis, 1882, by L. S. Buffington. The owners have found no economic adaptive use. **25.** Orchestra Hall, Detroit, 1919, deserted by the symphony despite its extraordinary acoustics because the neighborhood deteriorated, might be rejuvenated by the neighborhood. **26.** Indiana Theater, Indianapolis, a picture palace with an even more lavish interior.

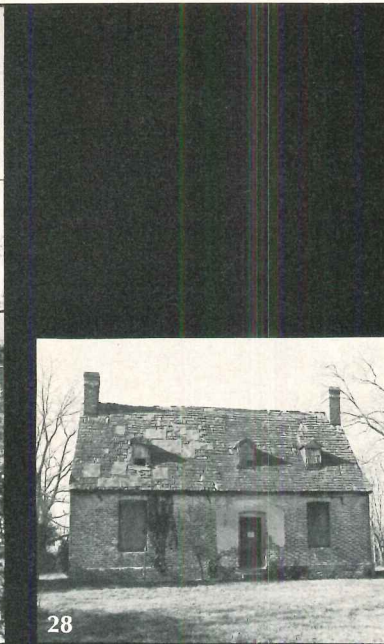




# tage that should be saved

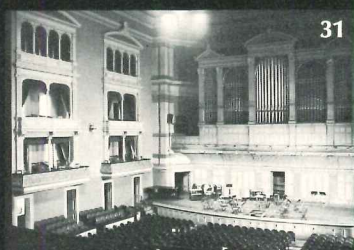
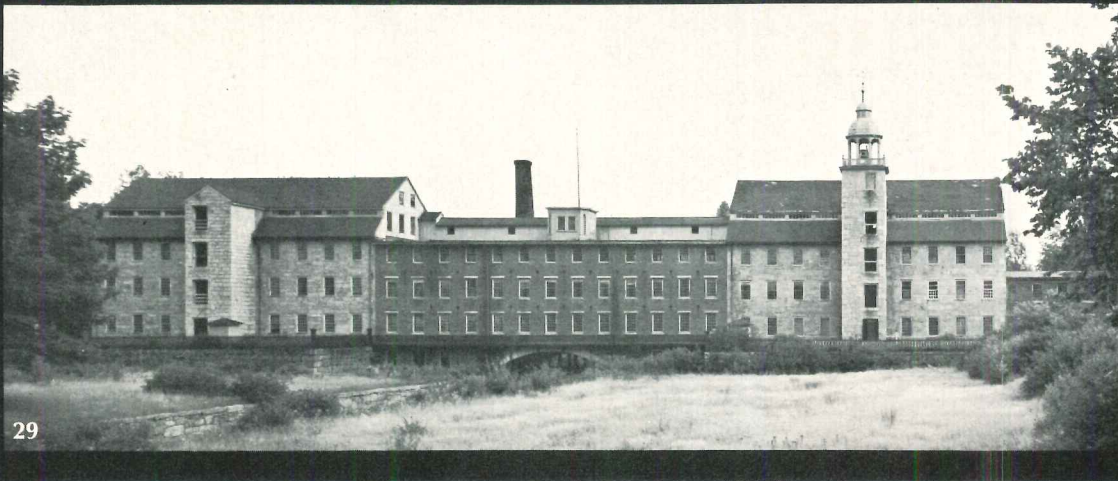


# the heritage that should



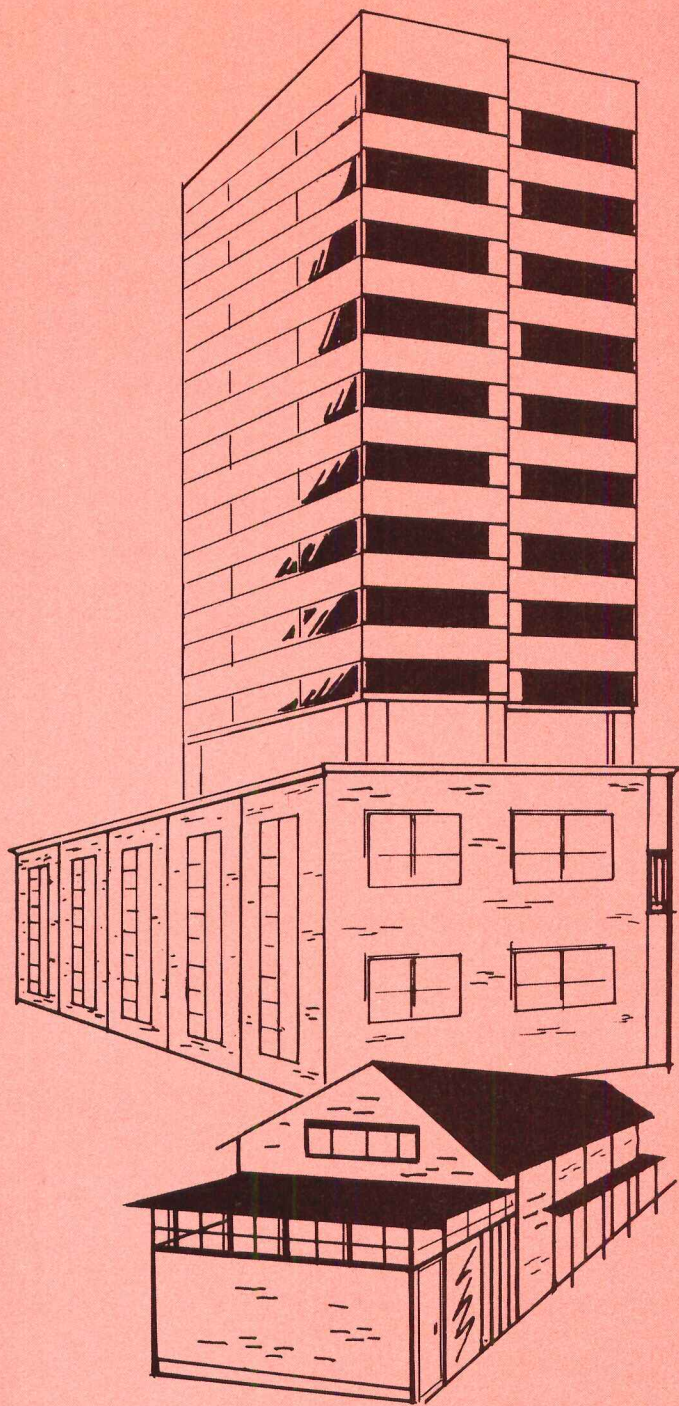
## EAST

27. Harrisville, N.H., a rural industrial village threatened by the closing of the mills and sale of the town. 28. Resurrection Manor, St. Mary's County, Md., 1652, a rare survival. 29. Crown and Eagle Mill, North Uxbridge, Mass., an abandoned textile mill. 30, 31. The Music Hall, Troy, N.Y., ca. 1870, by George B. Post, is above the Troy Savings Bank. Some say it has the best acoustics in America. 32. Sailors' Snug Harbor, Richmond, Staten Island, N.Y., a rare Greek Revival group; the central one by Martin E. Thompson, 1833. They proved the strength of the Landmark Preservation Law but need funds. 33. Court of Appeals, Annapolis, Md., 1901, with marble court and Tiffany glass, may be torn down.



Credits. WEST. 1, 2, 3. photos by and from John N. DeHaas. 4. Tom Upper photo from Alan Liddle. 5, 7. photo from Edward S. Parsons. 6. P. Kent Fairbanks photo from HABS. 8. Historical Collection, Title Insurance and Trust Co., San Diego, photo from Historical Sites Board, A.I.A. 9. Montana Historical Society photo. 10, 11. Louis Castillo photo. 10, 11, 12. photos from George Clayton Pearl. SOUTH 13. Richard Koch photo from HABS. 14. Jet Lowe photo from William R. Mitchell, Jr., Georgia Historical Commission. 15, 16. Virginia Museum of Fine Arts photo from Tucker Hill, Va. Museum Landmarks Commission. 17. Tony Wrenn photo from John G. Zehmer, Jr., State of N.C. Dept. of Archives and History. 18. J. Brooks photo from HABS. MIDWEST 19. Charles Mayer photo from J. Henry Chambers. 20, 24. Eric Sutherland photo; William W. Scott, source. 21, 22. photos from Edward John Wimmer. 23. Paul Sprague photo from Wilbert Hasbrouck, Chicago Chapter and Ill. Council A.I.A. 26, 27. Jack E. Boucher photo from HABS. 25. Allen Stross photo from Marilyn Tuchow. 28. Charles W. Snell photo from National Park Service. 29. R. Randolph Langenbach photo from HABS. 30, 31. Al Livingston photos. 32. New York Landmark Commission photo. 33. M.E. Warren photo from Orin M. Bullock.

**how to  
comfort  
condition  
your remodeled  
buildings**

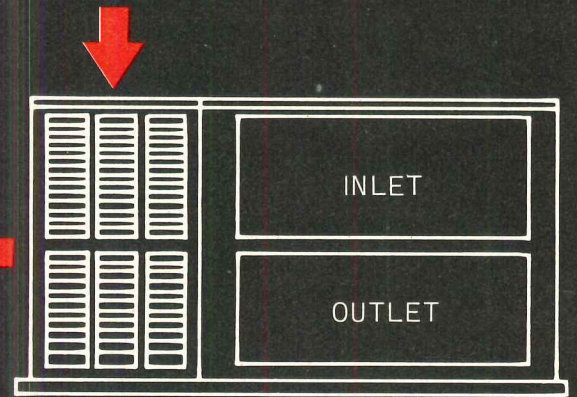
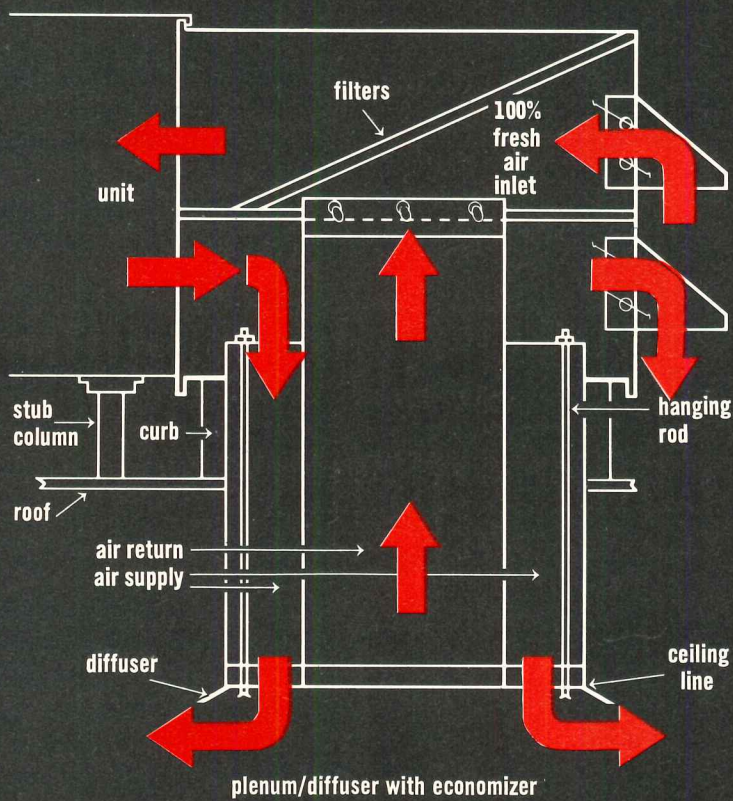


12 pages of  
proven ideas  
for environmental  
remodeling

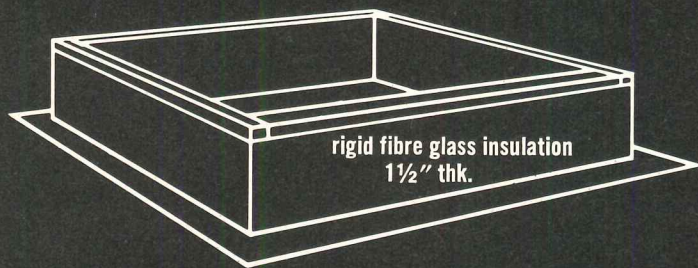
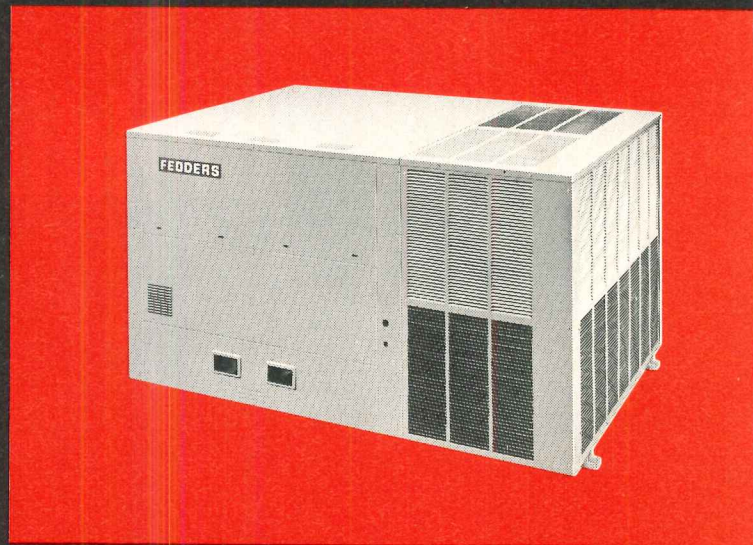


# FEDDERS

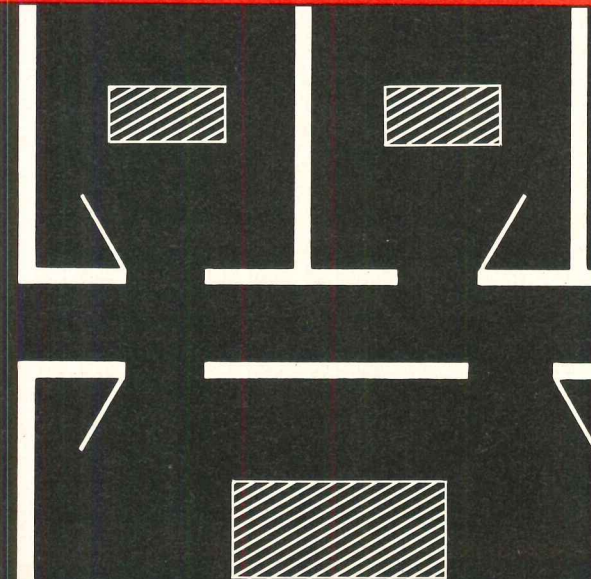
Equipment Shall Be



SIDE



roof curb



# Submittal # 1

## Fedders Adaptopak Rooftop Heating

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**because** Fedders gives you flexibility plus in air conditioning and heating any structure. From the smallest office to the largest arena Fedders has exactly the right model to do the job the best way possible. Take the job shown in plan view below . . . Fedders models fit every requirements from the two ton rooftops to cool the offices to the 50 ton units for the large meeting and dining areas.

All models 6 tons and more bring even further flexibility and economies with operational capacity reductions in both heating and cooling. Dampers and economizers permit cooling operation to 0°F. and fresh air up to 100%.

Adaptopak rooftops have exceptionally low silhouettes and power vents eliminate unsightly stacks. Side discharge and returns permit ground level slab mounting. All units are completely fabricated and tested at the factory. Each is an integral system, not a patchwork of heating and cooling components forced into compatibility. Condenser air is discharged upward along with the operating sounds of the powerful compressors and motors to minimize sound transmission to surrounding areas and to the structure. Fedders rooftops have exceptionally low maintenance records because of the durable com-

ponents . . . because each unit is completely assembled and tested at the factory . . . because problems have been anticipated with preventions such as automatic pilot relighting. Compact design and rigging provisions permit installation of any of the 42 Adaptopaks at minimal costs. Add this to low initial equipment costs of \$200 or under per ton and it becomes a practical necessity to specify Fedders rooftops.

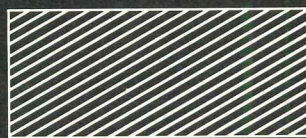
Fedders full range of air cooled and water cooled chillers, air handlers, terminal air conditioning and heating (see submittals 2 and 3 this issue) give you the opportunity to have one brand you can rely on for all your air conditioning and heating.

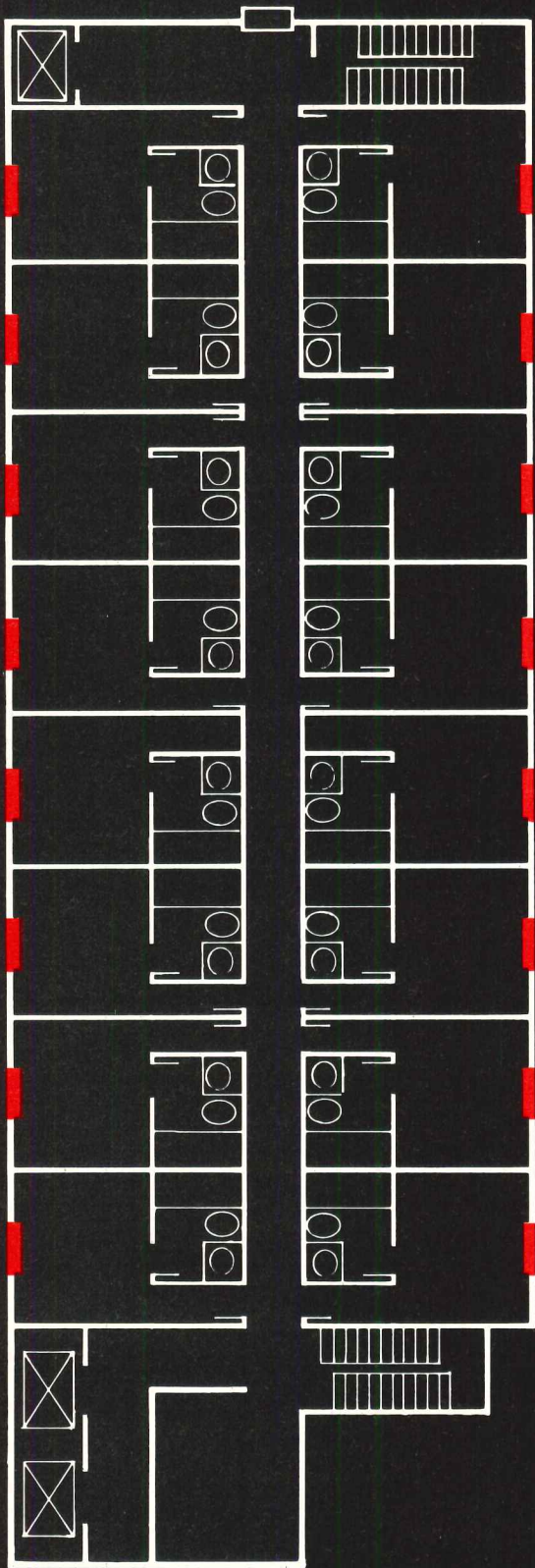
For further information, write the Fedders Technical Information Department.

# FEDDERS

**CENTRAL AIR CONDITIONING & HEATING**  
**EDISON, NEW JERSEY 08817**

*For more data, circle 57 on inquiry card*



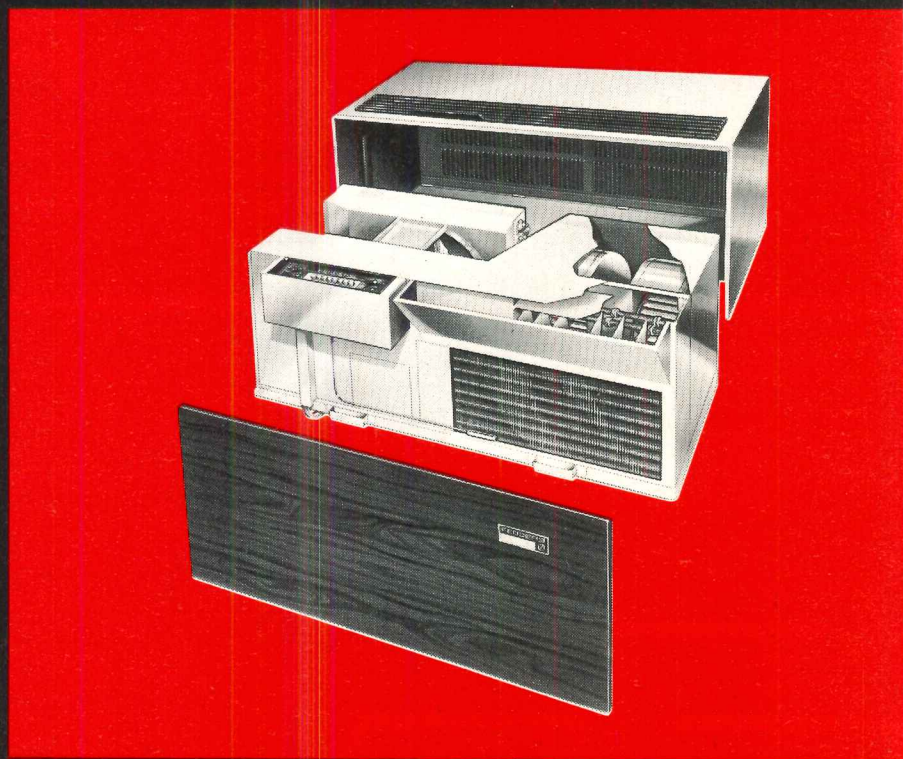


# FEDDERS

## Equipment Shall Be

**because** Unizone permits individual room control and is especially suitable for itinerant occupancy as units may be shut down when rooms are not in use. It is also ideal for perimeter rooms where cooling or heating needs fluctuate widely. The broad, flexible line of 35 Unizone models meets every cooling, every cooling/heating, and every wiring requirement for motels, nursing homes, apartments, and other lo- and hi-rise buildings, whether new or older construction. Whenever economical zonal cooling or heating is required, Unizone does the job — reliably and quietly.

Unizone is increasingly specified because of its extreme degree of quietness. But then quietness was among the major design criteria when Unizone was engineered. The sleeve is acoustically insulated with heavy glass fiber batts. Unizone has twin double-inlet blowers



# Submittal # 2

## Unizone Terminal Air Conditioning and Heating

for softer delivery of room-side air. A separate motor drives the condenser fan — this Unizone is quiet outside the building as well. Lavish use of steel and aluminum — rather than low cost substitutes — assures durability.

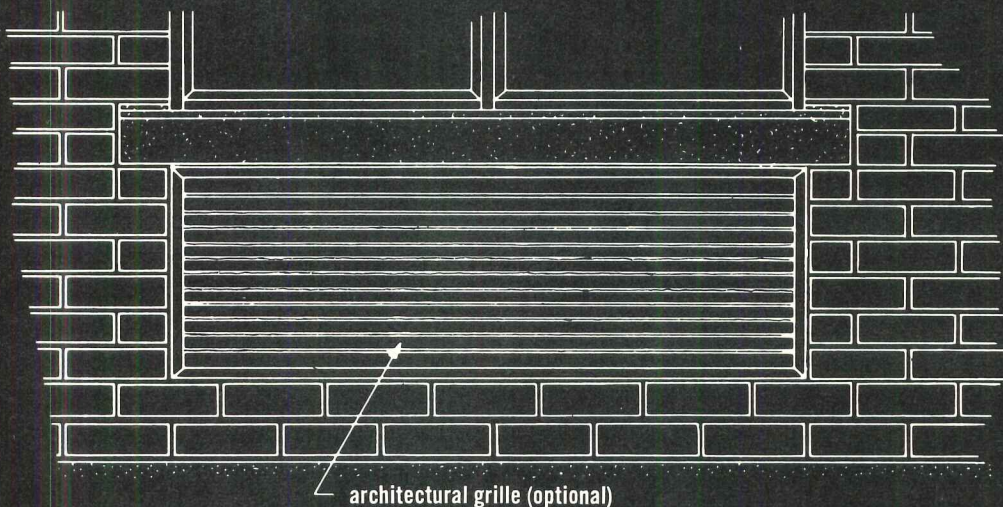
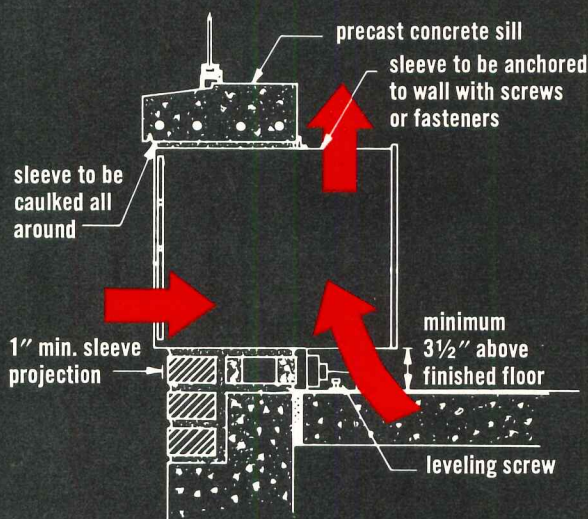
Capacities in cooling are 7,000, 9,000, 12,000 and 15,000 Btu/hr. Resistance heating ranges from 5,500 to 17,000 Btu/hr. Hydronic heating ranges from 6,950 to 24,600 Btu/hr. Models are available in 230, 208, 230/208 dual voltage and 277 volts.

Unizone sleeves are installed as the building is constructed with the chassis inserted at a convenient later date. A sub-base permits Unizone to fit wall thicknesses from 1" to 12". Sub-bases are available with electrical receptacle to meet U.L. regulations and local codes. An optional horizontal line exterior louver is also available.

The Unizone packaged terminal unit is studded with fine features. It will cool a room interior without coil freeze-up even when outside ambient temperatures are as low as 35°F. A large damper door permits up to 20 percent fresh outside make-up air in keeping with the requirements for hospitals, schools, and nursing homes.

Unizone is simple to operate. There are color-keyed pushbuttons, which include three cooling speeds, and two heating speeds on heat/cool models. Other controls include a rotary thermostat and rotary air exchanger. Unizone has a concealed, owner-adjustable fan or continuous cycle selection switch. Air vanes are also owner adjustable and are easily directed.

*Examine Unizone and by all means listen to it. You'll then understand its popularity with specifiers and with tenants.*



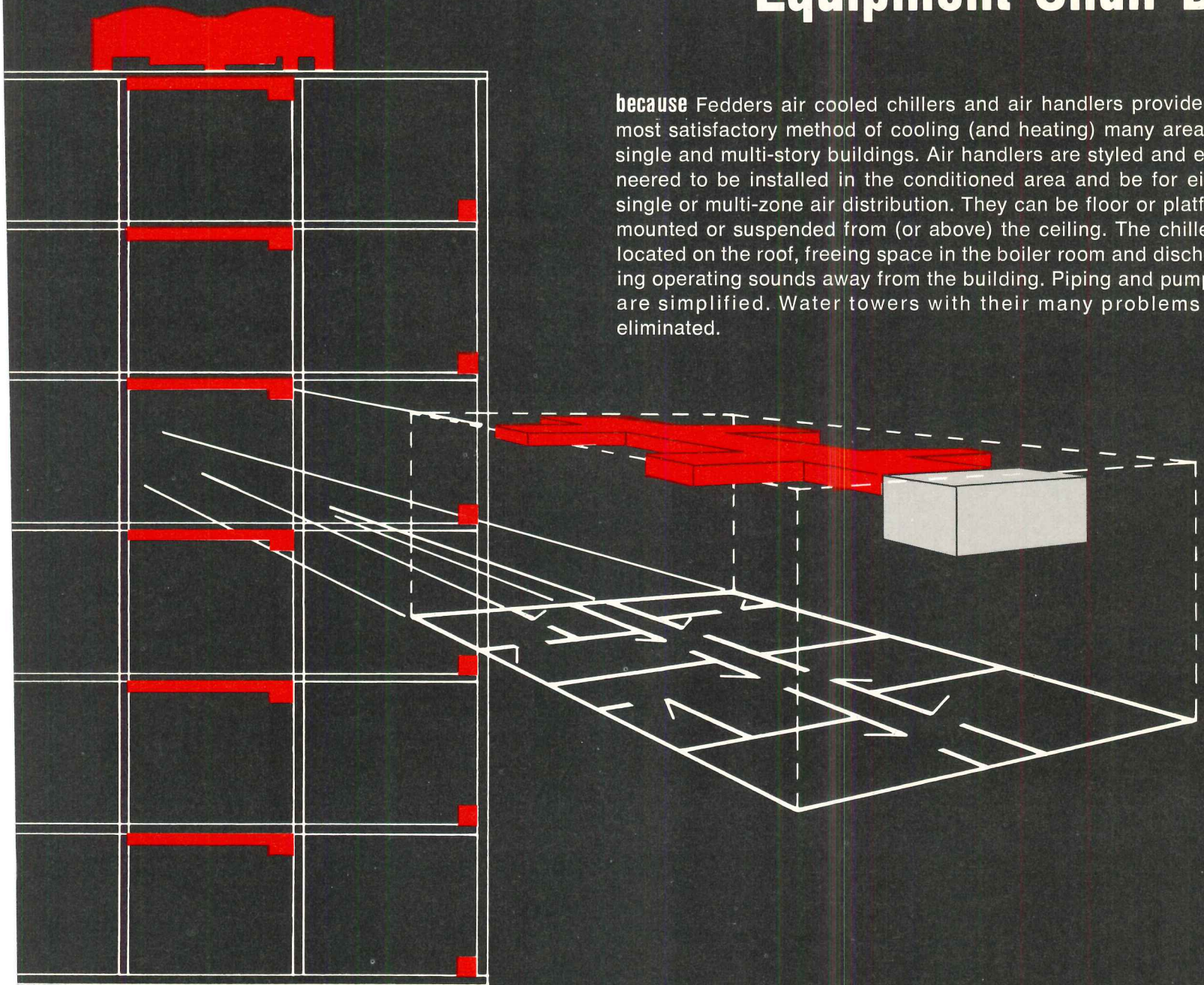
**FEDDERS**  
CENTRAL AIR CONDITIONING & HEATING  
EDISON, NEW JERSEY 08817

For more data, circle 58 on inquiry card

# FEDDERS

## Equipment Shall Be

**because** Fedders air cooled chillers and air handlers provide the most satisfactory method of cooling (and heating) many areas of single and multi-story buildings. Air handlers are styled and engineered to be installed in the conditioned area and be for either single or multi-zone air distribution. They can be floor or platform mounted or suspended from (or above) the ceiling. The chiller is located on the roof, freeing space in the boiler room and discharging operating sounds away from the building. Piping and pumping are simplified. Water towers with their many problems are eliminated.





# Submittal # 3

## Fedders Air Cooled Chillers and Air Handlers

Fedders Chillers with a complete range of air handlers are available in capacities up to 80 tons of cooling with hot water and steam coils to provide compatible heating. You can choose CFM's from 800 to 36,000 with the heavy duty air handlers operating against statics up to 5" and standard models up to 3". Each of the compressors is designed so capacity can be adjusted to satisfy varying comfort demands. Capacity control is maintained by a temperature sensor located in the leaving water. The factory mounted starter is predesigned for minimum in-rush conditions to provide savings in demand charges.

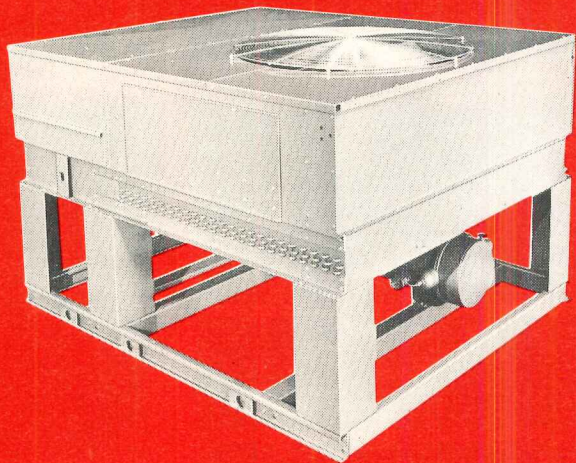
The Fedders system may be operated year round. A mild ambient (to 35° F.) control is supplied as standard equipment. Optional low ambient control permits operation at temperatures down to 0°F.

Maintenance and service have been reduced to a minimum because only heavy duty components are used and because both the chiller and the air handler are completely fabricated and run tested at the factory.

Shown in the elevation drawing is a typical Fedders system. Air cooled liquid chiller is located on roof supplying chilled water to air handlers located in the core areas on each floor. The perimeter offices and rooms are cooled and heated by Fedders Unizone terminal units (see Fedders submittal #2 this issue) to provide each of these high temperature fluctuation areas with individual comfort control. And for the one story areas (not shown) are Fedders rooftop units from two to fifty tons. (See Fedders submittal #1 this issue).

Fedders is the one brand you can rely on for all your air conditioning and heating needs.

For further information, write the Fedders Technical Information Department.



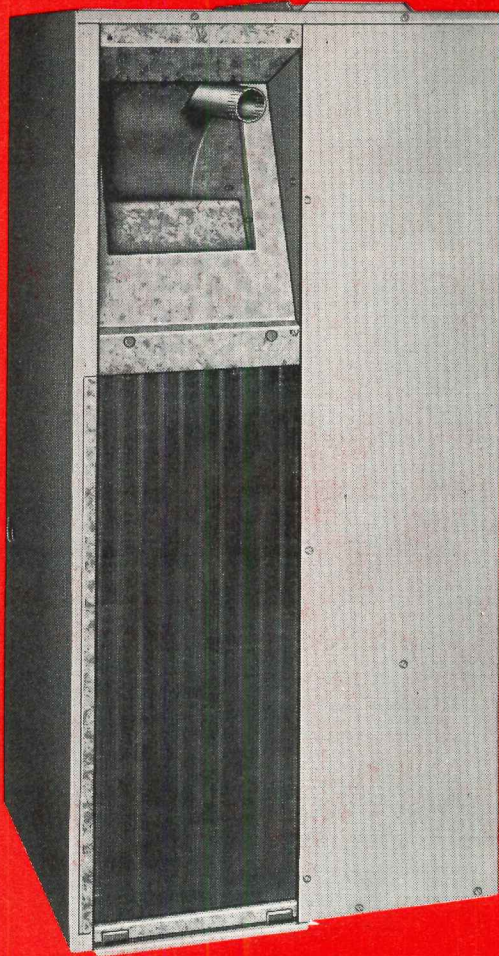
# FEDDERS

**CENTRAL AIR CONDITIONING & HEATING  
EDISON, NEW JERSEY 08817**

*For more data, circle 59 on inquiry card*

# FEDDERS

Equipment shall be



**because** Fedders Instapak provides a ducted heating and cooling system that takes little interior space and installs easily and economically. Instapak consists of a gas fired forced air furnace, a condensing unit and evaporator coil packaged into a cabinet only 27" wide, 24" deep and 56" high. It is completely self-standing, needing no wall or bracing for support. Powerful blowers move condenser air and flue products through a 16" x 56" exterior wall opening that needs only 50% free area . . . eliminates chimney and permits effective decorative concealment of the wall opening.

Three models are available: 18,000 btuh cooling with 50,000 btuh heating; 24,000 and 28,000 btuh cooling with 75,000 btuh heating. Each unit has special fittings for quick connecting of ducts and electric service; and removable panels for access to all interior components.

# Submittal # 4

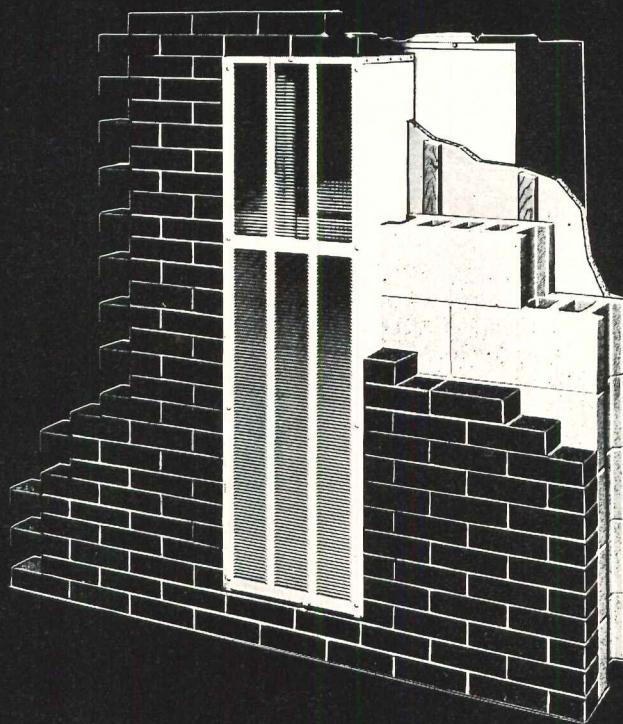
## Instapak Packaged Air Conditioning ... and Heating

To reduce installation costs even further Fedders provides an optional wall sleeve, in various depths, to line the wall openings. The sleeve can be installed as wall is constructed or slipped into rough opening provided. Optional grille supplied by Fedders fastens directly to outer flanged face of the wall sleeve.

The Instapak is ideal for apartment installations because of its configuration, economies and capacities. It can, however, be used effectively in small commercial applications, townhouses, small homes . . . in fact any installation that requires up to 75,000 Btu's heating and 28,000 Btu's cooling.

In addition to the Instapak, Fedders has a complete range of condensing units (see Fedders Submittal #5 this issue) air handlers, heating units, terminal units, air and water cooled liquid chillers, roof top units (see Fedders submittal #6 this issue).

Write Fedders Technical Information Department now to learn more of the advantages of having Fedders as a one brand source for all your air conditioning and heating needs.



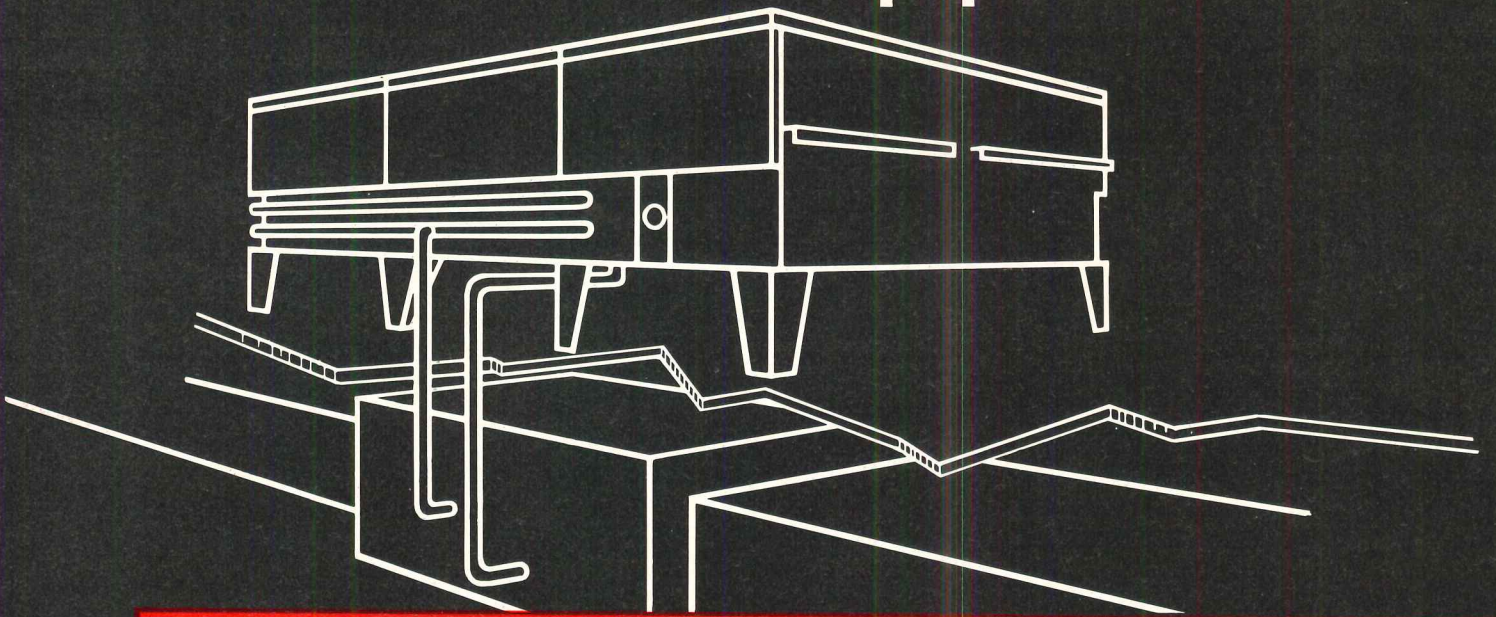
# FEDDERS

**CENTRAL AIR CONDITIONING & HEATING**  
**EDISON, NEW JERSEY 08817**

*For more data, circle 60 on inquiry card*

# FEDDERS

Equipment Shall Be



# Submittal # 5

## Fedders Condensing Units and ... Evaporator Blowers

**because** Fedders condensing units and evaporator blowers are pre-engineered and factory matched for optimum performance and economy.

Capacity requirements can be met exactly because there are 62 condensing units with capacities from 1½ tons to 80 tons. All models 6 tons and over bring even further flexibility with operational capacity reductions in both heating and cooling. Low ambient controls permit year round cooling operation to 0°F.

The condensing units have low silhouettes... line-of-sight for roof mounting is exceptionally shallow. Condenser air is discharged upward by low RPM fan along with the operating sounds of the compressors and motors to minimize sound transmission to surrounding areas and to the structure.

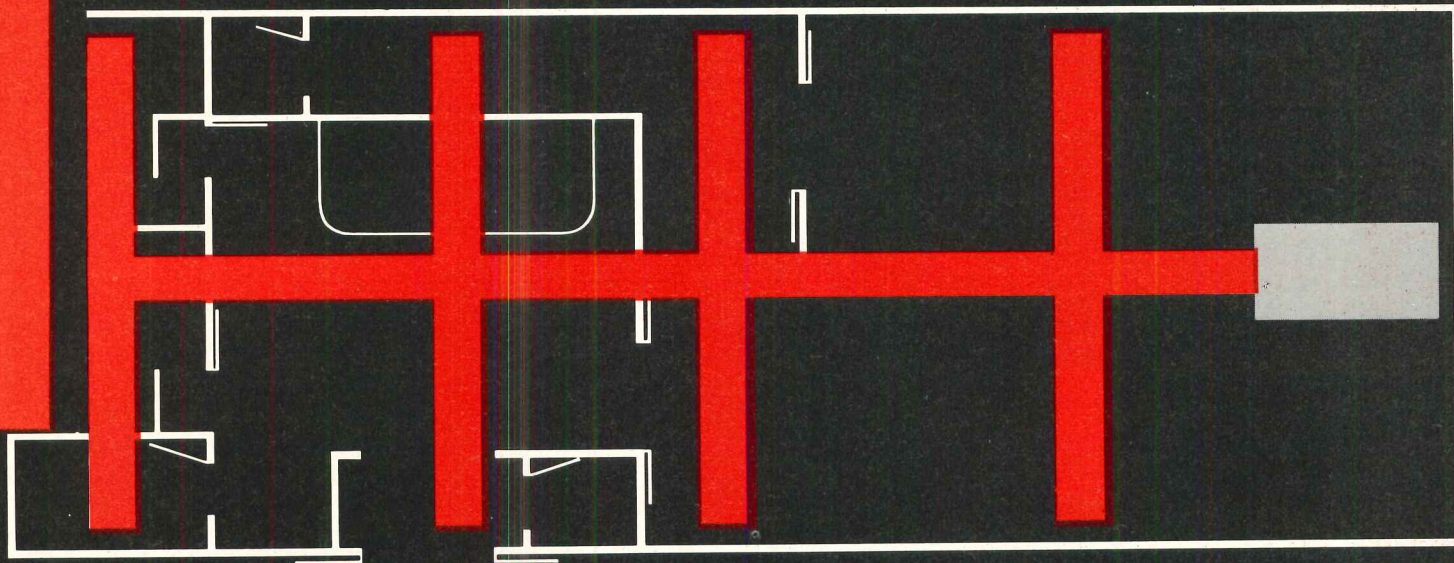
The evaporator blowers come in all sizes and shapes with choices of CFM's from 600 to 36,000. Some are only 10" high so they can be placed on a shelf in a closet or tucked above a drop ceiling. Others are big enough to handle the wide range of CFM's required in commercial applications.

In the application shown in the plan view below and in the sketch at left, the condensing unit is roof mounted and connected to evaporator blower suspended from ceiling joists. Cooled air is ducted to ceiling diffusers.

In addition to the condensing units, Fedders has a complete range of packaged heating and cooling units (see Fedders Submittal #4 this issue), air handlers, heating units, terminal units, rooftop units, air and water cooled chillers (see Fedders Submittal #6 this issue).

Write Fedders Technical Information Department now to learn more of the advantages of having Fedders as one source for all your air conditioning and heating needs.

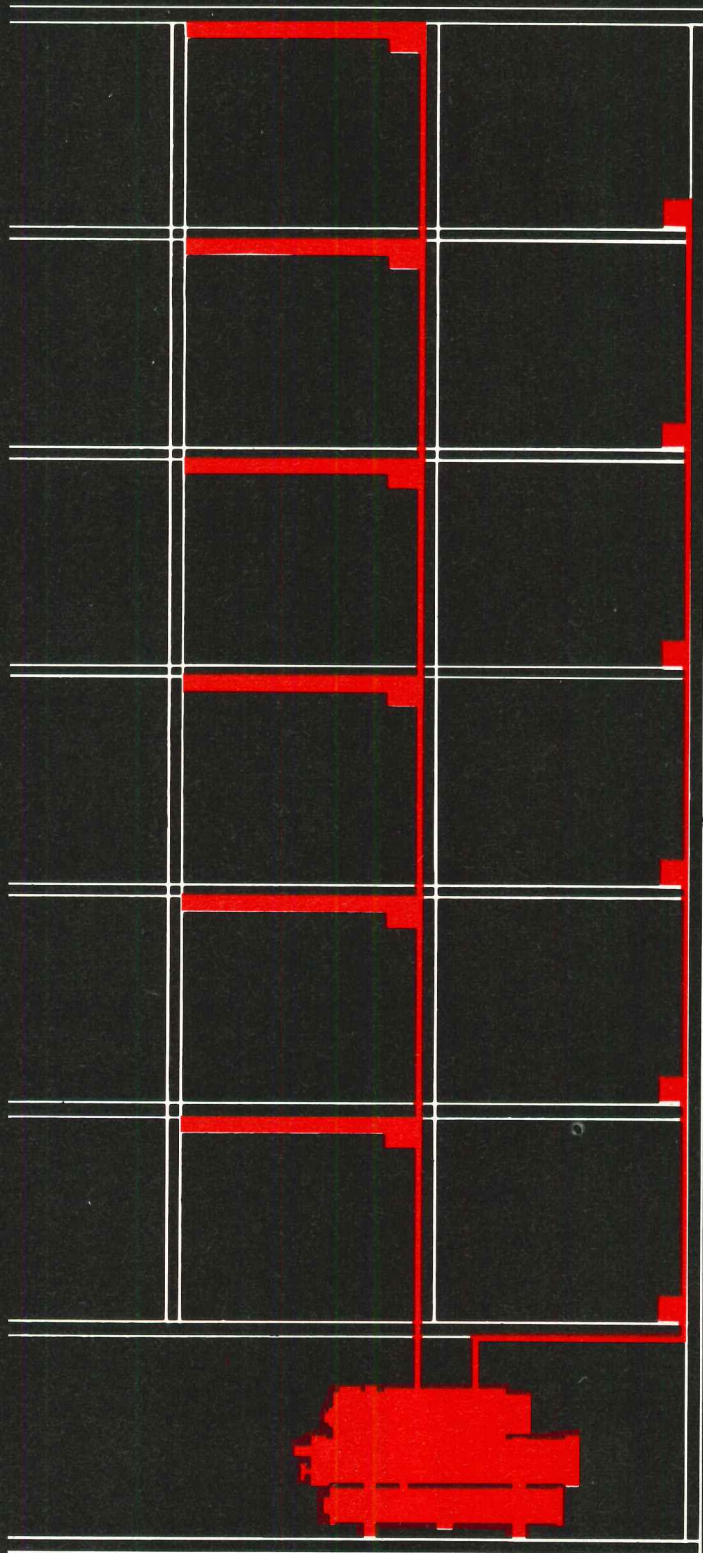
**FEDDERS**  
**CENTRAL AIR CONDITIONING & HEATING**  
**EDISON, NEW JERSEY 08817**



For more data, circle 61 on inquiry card

# FEDDERS

## Equipment Shall Be Fedders

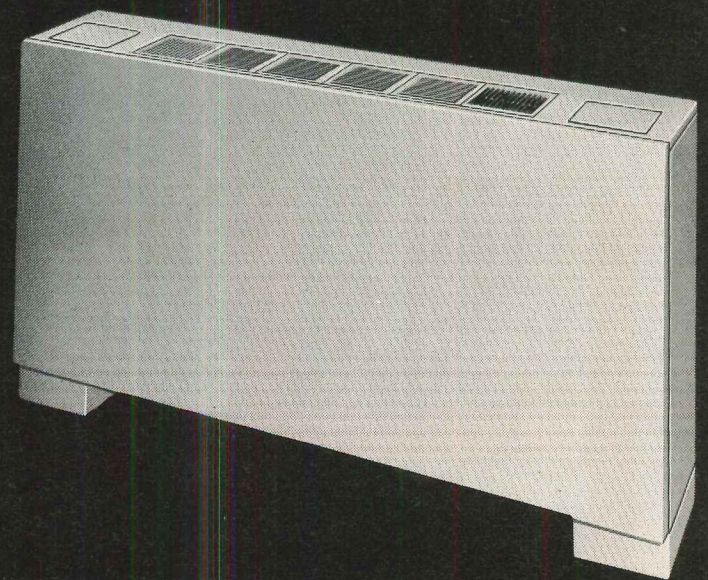


**because** Fedders water cooled liquid chillers are built of carefully selected and tested heavy duty components . . . because the fan coils are engineered for exceptionally low sound levels as rated in compliance with ARI Sound Standard 443-66.

The liquid chillers are available in capacities ranging from 15 to 100 tons and feature a heavy duty industrial type reciprocating compressor with an open motor for more efficient performance, lower maintenance and reduced equipment insurance costs.

The Fedders fan coil units are available in four models with cooling capacities from 6500 to 36,200 btuh and heating capacities from 18,700 to 85,200 btuh.

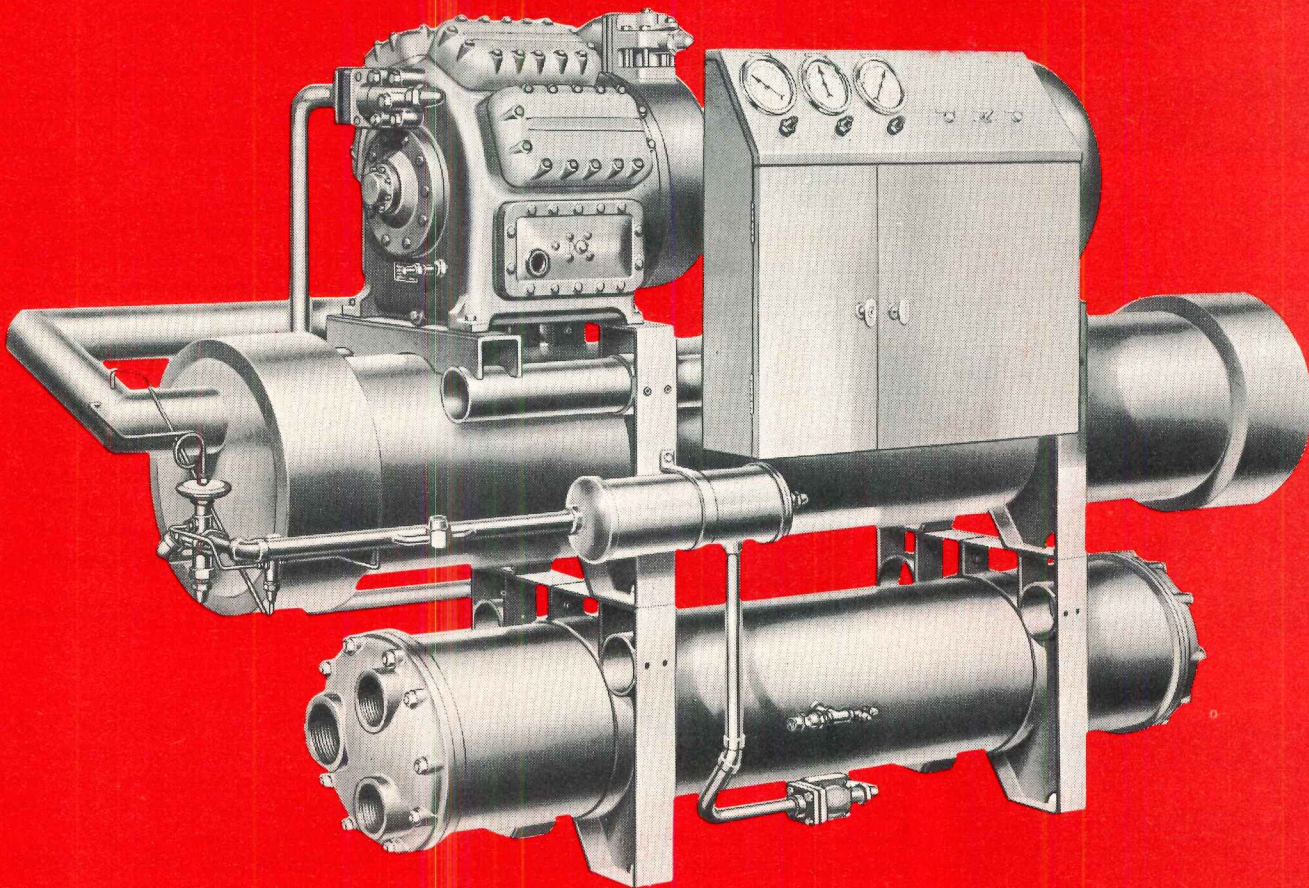
In the application shown in the elevation drawing, the liquid chiller is located in an equipment room and the chilled water is piped to air handlers located in the core area and to fan coil units located in the outer wall of the perimeter areas.



# Submittal # 6

## Water Cooled Coupled Liquid Chillers

## ...And Fan Coil Units



Fedders full range of water and air cooled liquid chillers, air handlers, fan coil units, terminal units, forced air furnaces, package heating & cooling units (see submittal #4 this issue), condensing units, evaporator blowers (see Fedders submittal #5 this issue) and roof top units gives you the opportunity to have one brand you can rely on for all your air conditioning and heating.

For further information, please write the Fedders Technical Information Department.

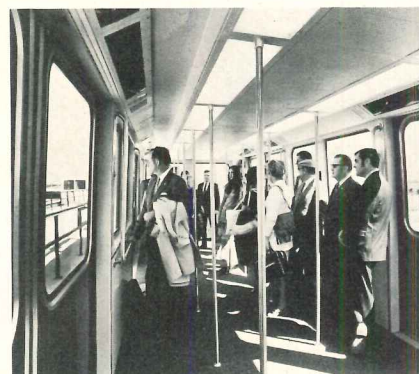
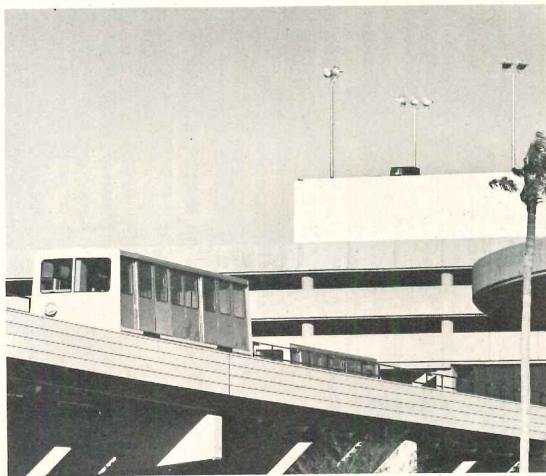
# FEDDERS

**CENTRAL AIR CONDITIONING & HEATING**  
**EDISON, NEW JERSEY 08817**

*For more data, circle 62 on inquiry card*

# PRODUCT REPORTS

For more information circle item numbers on Readers Service Inquiry Card, pages 213-214

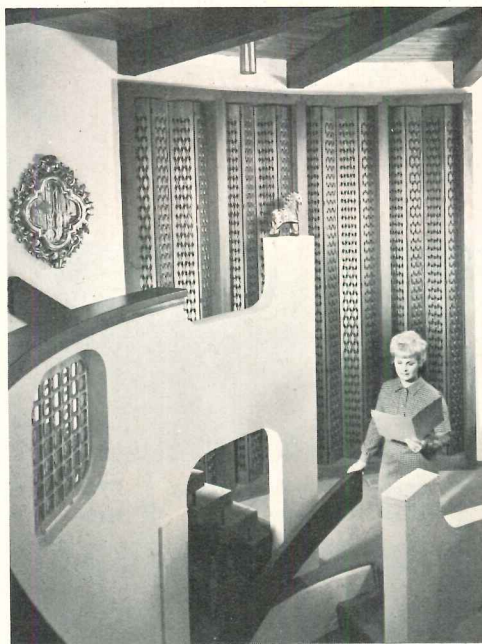


**TRANSIT SYSTEM** / Tampa International Airport's passenger shuttle system is the first to use unattended wheeled transit vehicles operating under completely automatic electronic controls. The system is designed to eliminate much of the air traveler's walking distance between car and plane.

The airport configuration consists of a central building for terminal functions and four satellite buildings, containing holding and loading areas, arranged in a semi-circle around the central building. Four elevated transit legs about 1,000 feet long link the main landside terminal with each airside building. There are two roadways per leg, each with a single vehicle comfortably accommodating 100 passengers. The cars reach a peak speed of 30 miles an hour in their 40-second run between buildings. With station dwell time set at a planned 30 seconds, cars are available every 70 seconds to passengers at any loading point.

Vehicles are controlled by a system of wayside and car-carried equipment linked by two-way radio. The wayside controls together with a central console contain all the intelligence needed to give correct commands such as "stop," "go," emergency stop," "open doors," "reverse power," etc. Each transit leg has its own wayside control operating independently of the others. Failure safety is provided by a combination of conventional railroad-type fail-safe relays and modern solid-state electronic devices. ■ Westinghouse Electric Corp., Gateway Center, Pittsburgh.

Circle 300 on inquiry card

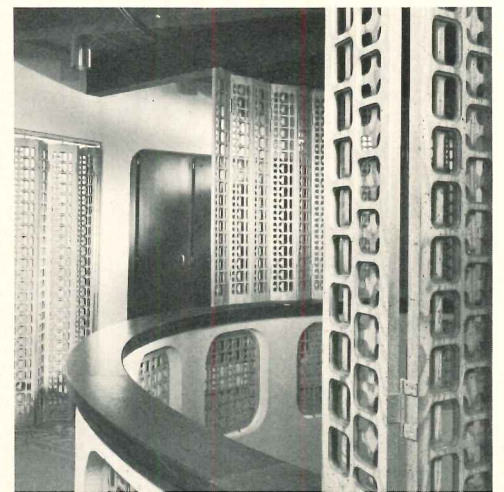


**CARVED WOOD GRILLES** / The carving technique used here leaves a solid un-carved border on all four edges. No frames are required. These "Purdah" grilles are dimensionally adaptable to almost any vertical or horizontal proportioning, limited only by the modules of the design selected. Folding mounts include free-standing screens and overhead track, either bi-fold or center hung. Single panels up to 48 in. wide may be mounted in sliding track or shoji-style.

All grilles are carved from exceptionally stable blanks of random width edge-glued strips of clear furniture grade solid North American hardwoods. No random length material with end joints is used.

The manufacturer offers a complete line of carved wood grilles, panels and doors. ■ Customwood Mfg. Co., Albuquerque, N.M.

Circle 301 on inquiry card  
More products on page 156



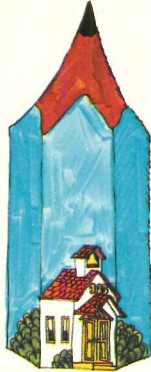


**A Primer  
on Low Rise Apartment  
and Motel Construction  
with Span-Deck.**



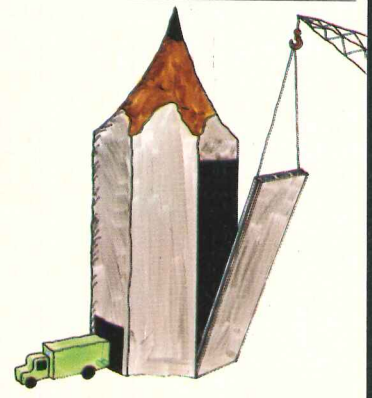
**S-6 Apartments, Motels**

**A Primer  
on School Construction  
with Span-Deck.**



**S-8 Schools**

**A Primer  
on Low-Cost Wall Panels  
and Industrial Construction  
with Span-Deck.**



**S-9 Industrial Bldgs., Wall Panels**

**How does Span-Deck  
fit into Holiday Inn  
construction?**



**S-12 High Rise Motel**

**Mechanical Installations  
And How To Make Them**



**T-2 Mechanical & Plumbing**

**ACOUSTICS**

Sound Conditioning for More Comfortable, More Efficient Environment



**T-3 Acoustics**

**THERMAL TRANSMISSION**

A STUDY OF U-VALUES AT VARYING MEAN TEMPERATURES  
HARD ROCK CONCRETE (TOP) ACOUSTICAL (LIGHTWEIGHT) SOFFIT



**T-7 Thermal Transmission**

**IF YOU DON'T KNOW  
WHAT SPAN-DECK IS FOR  
AND HOW TO USE IT,  
WE CAN TELL YOU.**

**FLOORS  
ROOFS  
CEILINGS  
WALL  
PANELS**



**span deck**



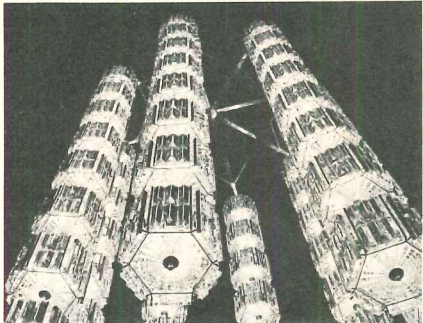
**Sweet's Catalog**

**Span-Deck is prestressed concrete...hollow cored...smooth top and bottom surfaces... quickly erected...fire rated...available across the country and in Canada...used for floors, ceilings, roofs and wall panels...and is selling like hot cakes.**

**If you want to know how it works, send for any of the literature pictured above.**

**SPAN-DECK, INC. P.O. BOX 99, FRANKLIN, TENN. 37064**

*For more data, circle 63 on inquiry card*



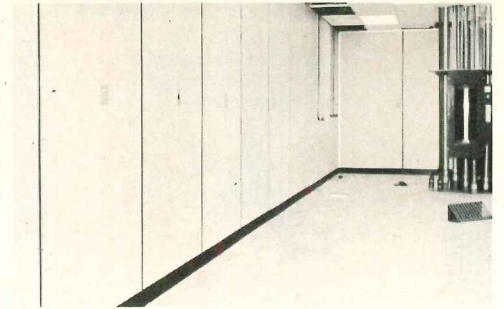
**CRYSTAL CHANDELIERS** / A principal central frame supports eight columns in a star-like configuration. Metal fittings are finished in polished brass; suspension tubes are steel. ■ Fisher, Bruce & Co., Philadelphia.

Circle 302 on inquiry card



**LIGHT BULB** / An average life of 3,000 hours is provided by this household bulb. The extended life is achieved without sacrificing brightness, the manufacturer reports ■ Westinghouse Electric Corp., New York City.

Circle 303 on inquiry card



**PARTITIONS** / Vinyl-covered gypsum wallboard system is one-hour fire-rated and non-progressive. ■ The Flintkote Co., Los Angeles.

Circle 304 on inquiry card

FIRST FROM LITHONIA!

# When Emergency Lighting Is Needed, It's Really Needed.

That's why Lithonia uses all solid state components, sealed, rechargeable maintenance-free NI-CAD batteries. Our system has U.L. approval and we back it up with a full five (5) year unconditional guarantee plus an owner warranty reminder program.

*But wait a minute!*

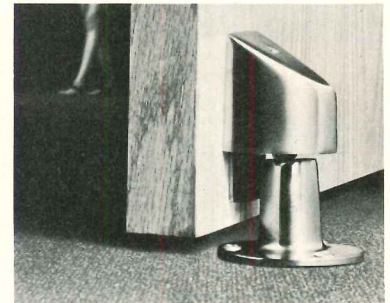
You want clean and uncluttered space. OK. That's why we made an emergency lighting system as an integral part of most any 40-watt rapid start Lithonia fixture. That means you have a wide range of choices. Maybe you want heat removal, air supply, or regressed aluminum door troffers... or maybe you want wraparounds, industrials, or open tubes. And we have companion battery-powered exits, too. All providing over 90 minutes of usable emergency light. Call us collect—404-483-8731. We'll show you our 10-minute film and give you a copy of the Lithonia Emergency Lighting Applications Manual.

*Specify Lithonia. Now, More Than Ever,  
Your Best Value in Lighting.*



A DIVISION OF NATIONAL SERVICE INDUSTRIES, INC.  
BOX A □ CONYERS, GEORGIA 30207 □ 404/483-8731

For more data, circle 64 on inquiry card



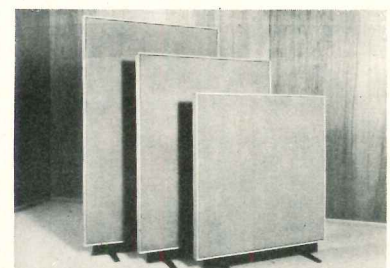
**AUTOMATIC DOOR STOP AND HOLDER** / An arcuate strike configuration compensates for angular misalignment, while allowing door openings of up to 118 degrees. Holders incorporate positive holding with maximum mounting flexibility. ■ H. B. Ives Co., New Haven.

Circle 305 on inquiry card



**SHOWER UNIT** / Pre-assembled stainless steel unit can be wall-mounted at any height. It serves three persons with one set of piping connections. ■ Bradley Washfountain Co., Menomonee Falls, Wis.

Circle 306 on inquiry card



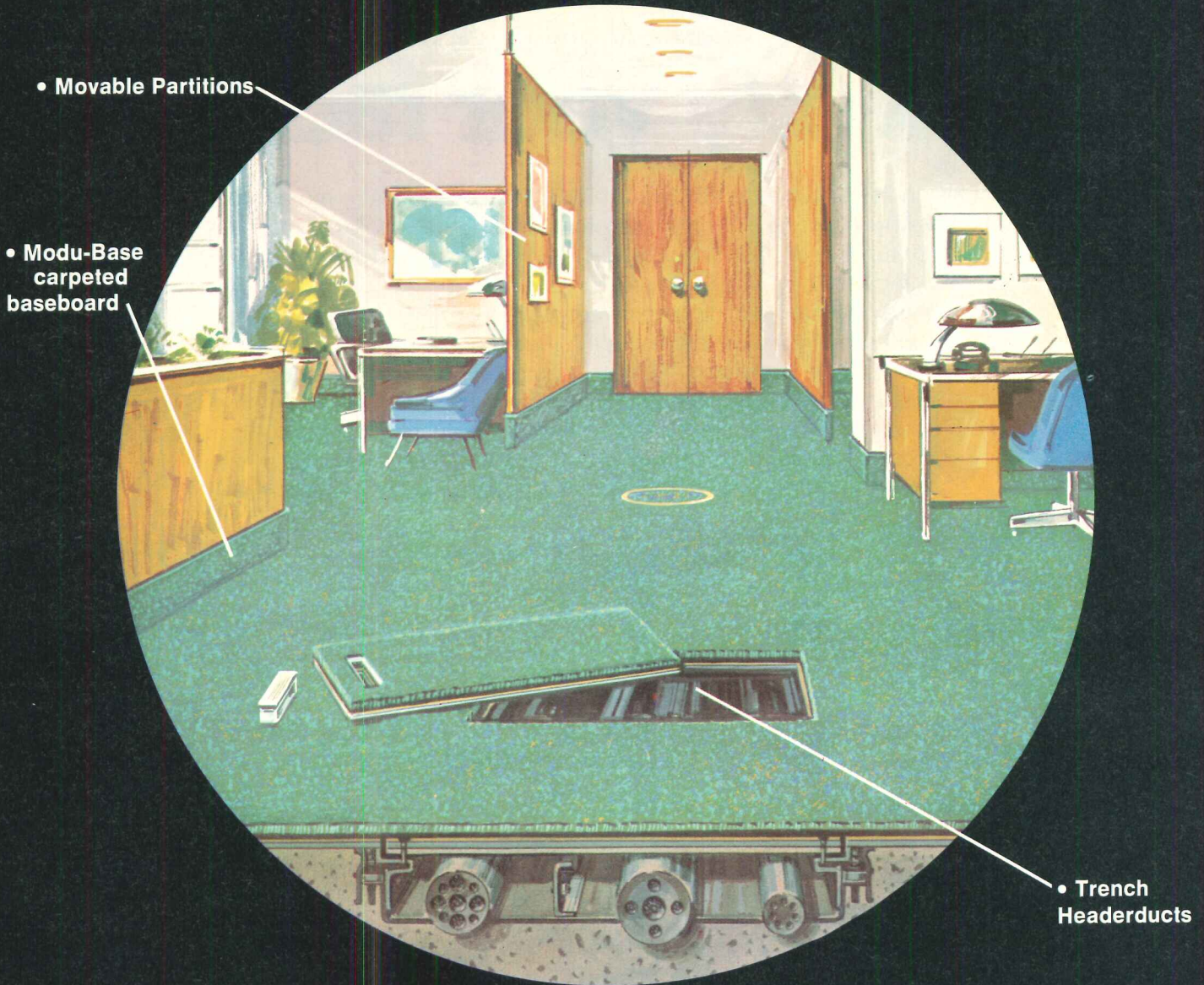
**ACOUSTICAL DIVIDER** / Features include efficient sound control and overall panel thickness of 2 5/8 in. Straight panels are available in five sizes; curved panels in three. ■ Conwed Corp., St. Paul, Minn.

Circle 307 on inquiry card

more products on page 160

# All systems are go

## Carpet Systems from CCC with Acrylic 73... engineered to integrate with all architectural systems.



• Movable Partitions

• Modu-Base  
carpeted  
baseboard

• Trench  
Headerducts

Carpeting is no longer a simple matter of beautiful floors. The challenge today is to integrate carpet with the total architectural environment.

CCC has this very complex problem down to a precise system—the unique Acrylic 73 Carpet System. We analyze every element involved—right from the blueprints. Recommendations are based on design, function and maintenance factors.

The result of this planning: a carpet system that lets you move partitions, gives you easy access to sub-floor systems and includes built-in static control to end the annoyance of shock.

Acrylic 73 is a total performance carpet. CCC's exclusive blend of 70% long-staple Creslan® acrylic and 30% long-staple commercial nylon combines unequalled stamina with design versatility and appearance retention.

CCC is the world's largest manufacturer of commer-

cial and institutional carpet systems. We would like to tell you more about what we can do for you. Why not send in the coupon today.

**Creslan**<sup>®</sup>  
LUXURY ACRYLIC FIBER

Creslan is a product of American Cyanamid Company, Wayne, N.J.



Commercial Carpet Corporation  
Dept. AR-12  
10 West 33rd Street  
New York, New York 10001

Attention: Mr. Walter Brooks  
Please send me a copy of the booklet, "Office Carpet Systems, with Acrylic 73".  Please have a CCC consultant contact me.

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

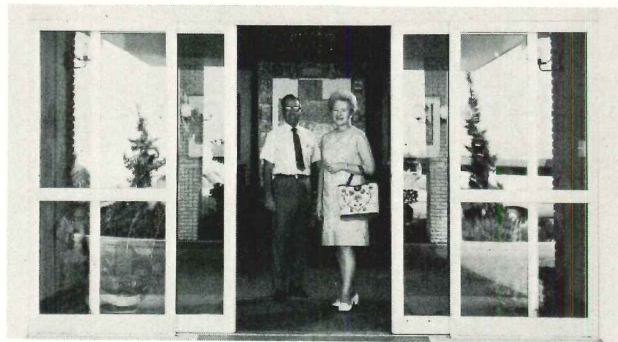
For more data, circle 65 on inquiry card

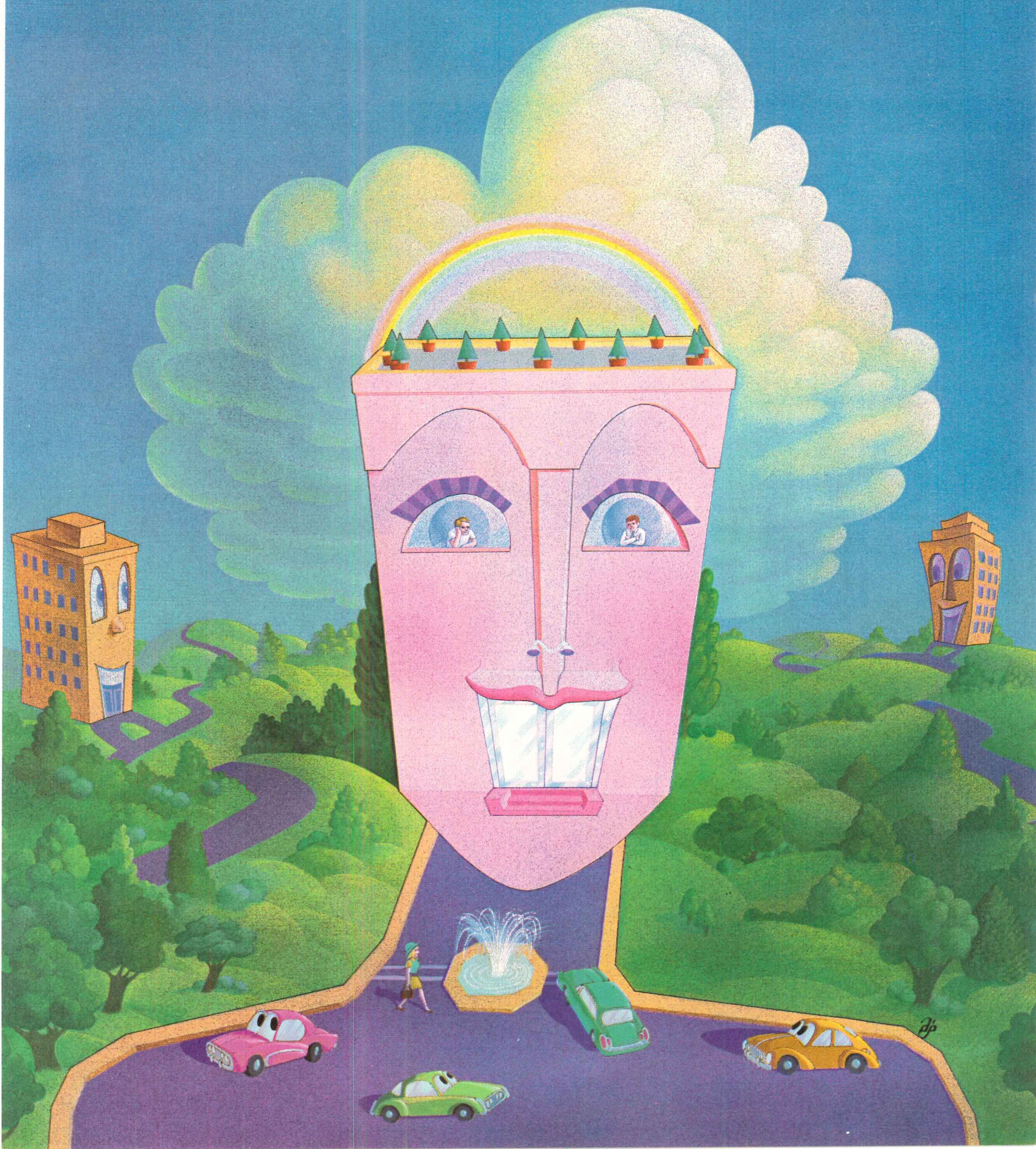
# Horton will pretty your face.

The design flexibility offered by Horton Automatic entrances is virtually limitless.

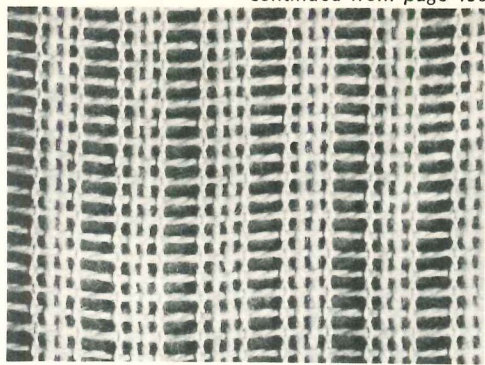
Somewhere among Horton's vast creative design possibilities you'll find an eminently functional door of distinctive beauty. A door that can pretty the facade of any commercial or industrial building you're designing. □ Horton developed the first successful commercial sliding door mechanism in 1956, and has been synonymous with imaginative innovation ever since. For example, Horton's automatic door, with the patented Swing-Slide Breakaway Feature, has been approved by Underwriter's Laboratory as an exitway, meeting or exceeding the strictest building codes. □ Horton Automatic entrances. Another fine product from a company famed for quality products, Overhead Door Corporation.

For more information on Horton Automatics and the name of your local Horton distributor, write us. They can pretty any face you can create.



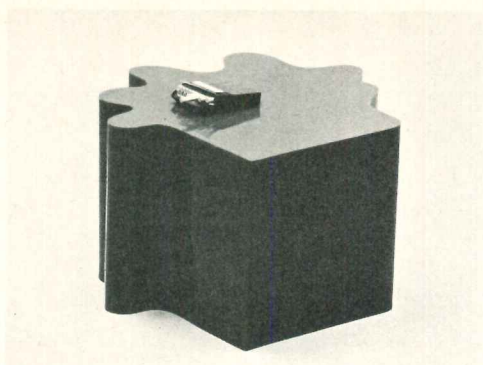


continued from page 156



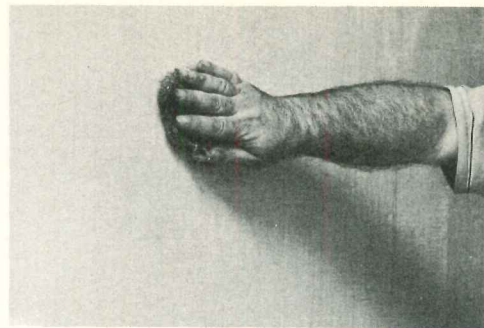
**CONTRACT DRAPERIES** / This natural-colored casement fabric is flame-resistant, dimensionally stable and color fast. ■ Burlington Industries, Inc., New York City.

Circle 308 on inquiry card



**END TABLE** / Scalloped, acrylic design is available in red, black, or white. ■ Stendig Inc., New York City

Circle 309 on inquiry card



**PROTECTIVE SURFACING** / This wall covering has been coated with a polyvinyl fluoride film which reportedly provides a hard surface impenetrable to any known substance. Heavy dirt and stains are removed with rags or steel wool. Spot cleaning leaves no discoloration. ■ E. I. DuPont de Nemours & Co., Wilmington, Del.

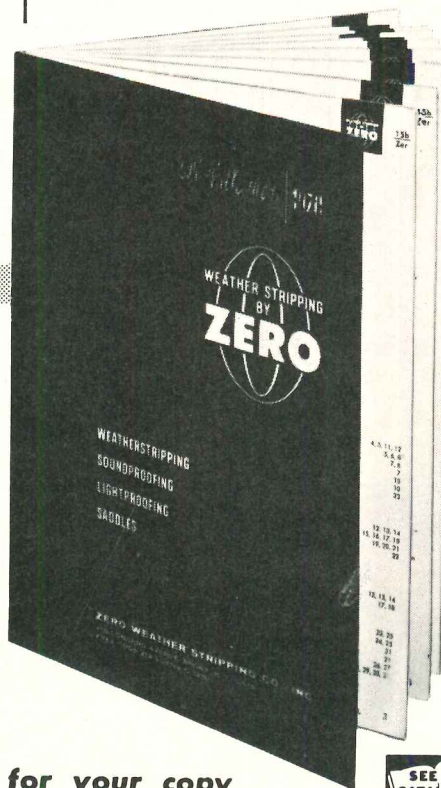
Circle 310 on inquiry card

—our 48th year

**new  
edition  
now  
ready!**

the most complete and authoritative guide for...

- WEATHER STRIPPING
- SOUND PROOFING
- LIGHT PROOFING
- THRESHOLDS



Zero's latest Catalog shows many new products, contains 184 full size drawings.



Write today for your copy

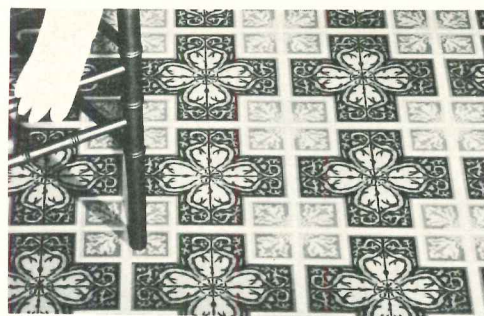
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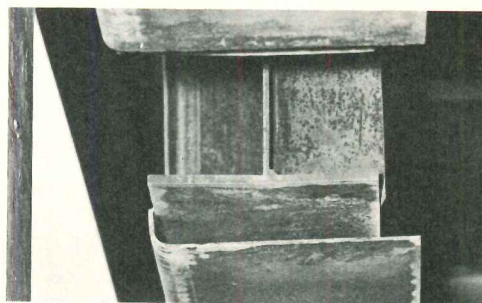


For more data, circle 67 on inquiry card



**SHEET VINYL FLOOR** / Cushioned layer resists indentation. Asbestos backing allows for permanent installation above or below grade. Floor is recommended for light commercial installations. ■ GAF Corp., New York City.

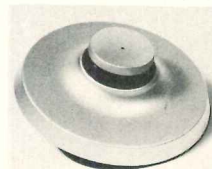
Circle 311 on inquiry card



**FIRE PROTECTION SYSTEM** / The exposed steel spandrel girder shown here has a fire shield welded to top and bottom flanges. Fireproofing material fills the space between flange and shield, combined with fireproofing on interior web surfaces. This system, according to the company, meets code requirements for fire resistance. ■ U.S. Steel, Pittsburgh.

Circle 312 on inquiry card

**FIRE DETECTOR** / Device is designed to close doors equipped with electromagnetic releases to prevent the spread of smoke and fire gases. ■ Firemark, Franklin Park, Ill.



Circle 313 on inquiry card

more products on page 162

# The same know-how that built our reputation now builds our laminate casework.

The same careful attention to detail, the same design expertise, the same flexibility that architects have come to rely upon in St. Charles custom casework of steel and wood is now to be found in our new plastic laminate casework. It,

too, bears the unmistakable signs of St. Charles craftsmanship—functional strength and cleanliness of line. If your need is for plastic laminate, look to St. Charles for casework that outperforms the rest.

## *St. Charles*® Plastic Laminate Casework

Write for our Plastic Laminate Catalog, Dept. AR-5 • St. Charles Manufacturing Company, St. Charles, Illinois 60174

*For more data, circle 68 on inquiry card*



# PATINA



## NEW! BRONZE-TONE STAINLESS STEEL

Here is an exciting new line of water coolers and drinking fountains combining the rich, glowing beauty of bronze with the durability and easy-cleaning qualities of stainless steel.

PATINA is not a surface coating. It is a bronze-colored metal developed by a special patented process after many years of research and field testing. All exposed surfaces, including matching bronze-tone trim, are wear and abrasion resistant. And PATINA wipes clean without scouring.

For special projects where a touch of elegance or the quiet dignity of burnished bronze is required, specify PATINA by Halsey Taylor. Available in fully-recessed, semi-recessed, and wall-mounted models — write for complete information.

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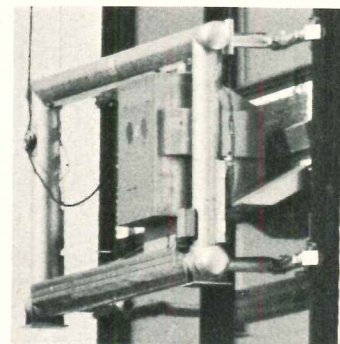
### PRODUCT REPORTS

continued from page 160



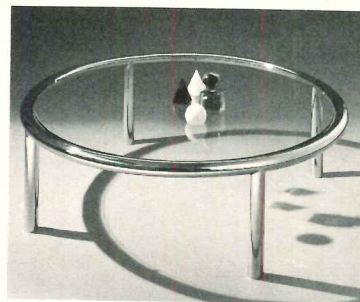
**ROOF/WALL PANELS** / An inner sheet of vinyl-laminated aluminum and an outer sheet of pre-painted aluminum for exterior protection, with a sandwich core of polyurethane foam, comprise the system. ■ Tru-Lok Metal Fabricators, Inc., San Dimas, Calif.

Circle 314 on inquiry card



**AUTOMATIC WINDOW WASHING MACHINE** / This unit will clean recessed or flush windows. As it descends down the building face, it automatically performs all the operations required to clean a vertical strip of windows. ■ Patent Scaffolding Co., Long Island City, N.Y.

Circle 315 on inquiry card



**COFFEE TABLE** / Round stainless steel tubing frames this graceful table. ■ Brueton Industries, Inc., Springfield Gardens, N.Y.

Circle 316 on inquiry card

**ELECTRIC DOOR STRIKE** / Listed by UL under the category of single-point locks or latches for use with single-swing, fire door and frame assemblies having labeled ratings up to and including three hours, strike affords maximum security remote door control. ■ Folger Adam Co., Joliet, Ill.



Circle 317 on inquiry card  
more products on page 170



# The subdued approach to Reflective Glass

With the increasing use of reflective glass for outstanding solar control and lower operating costs, more and more buildings are sticking out in harsh, metallic glare.

Now, Shatterproof Glass Corporation has developed a refined, subdued Reflective Glass that still offers the benefits of the harsh reflective glasses.

... Manufactured in three configurations—Insulating, Laminated and Monolithic—for complete versatility.

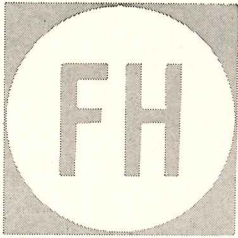
Depending on the type specified, it can also provide thermal control, sound control, security and safety benefits. Available in subdued tones of bronze, gold, gray and chrome ... in the largest quality sizes in the industry.

To learn more, write for our Reflective Brochure, Shatterproof Glass Corporation, Dept. 101A, 4815 Cabot Avenue, Detroit, Michigan 48210. Phone: 313/582-6200.

*For more data, circle 70 on inquiry card*

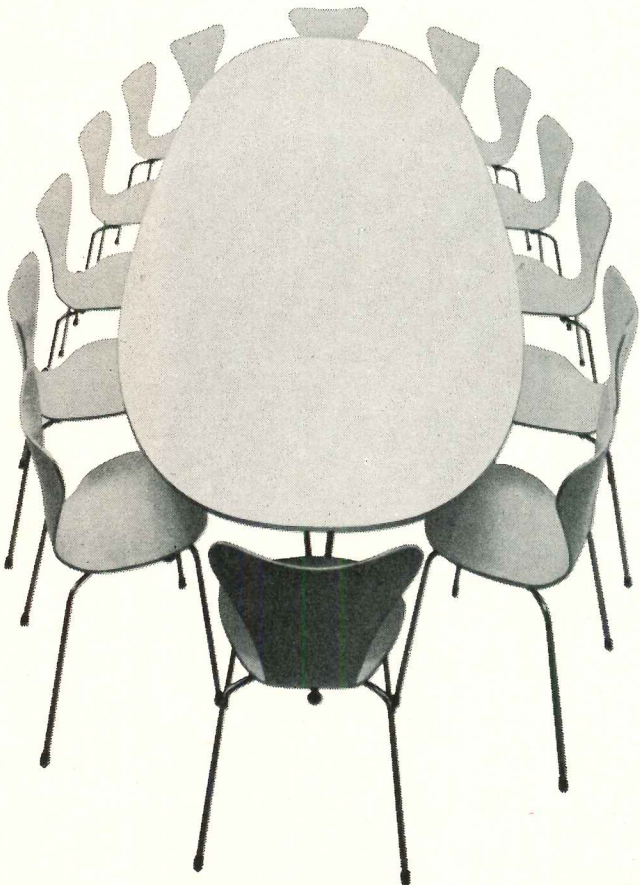
**Shatterproof**  
GLASS CORPORATION *Architectural Division*





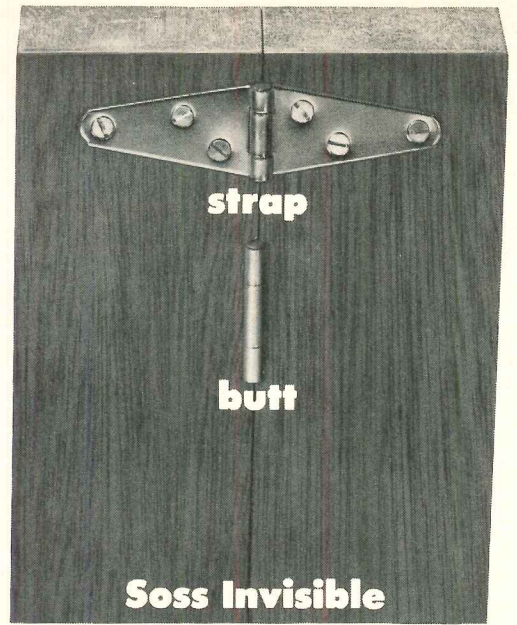
Piet Hein is a poet and a mathematician who combined a rectangle with an ellipse and came up with a super-elliptical table, and a square with a circle for a super-circle table! Strangely fascinating shapes that offer more top working space without using additional floor space. For simplified assembly this unique series is fitted with Hein's tubular steel "span-leg" system.

For more information please write to Fritz Hansen, Inc., 979 Third Ave., New York 10022.



For more data, circle 71 on inquiry card


# Pick the hinge that hides



Compare the Soss look of invisibility with any strap or butt hinge and you'll choose The Soss Invisibles. These amazing hinges hide when closed to blend with any decor. With The Soss Invisibles you can create room, closet, or cabinet openings which are unbroken by hinges or gaps . . . the perfect look for doors, doorwalls, built-in bars, stereos, or T.V.'s. The Invisibles are extra strong, open a full 180 degrees, and are reversible for right or left hand openings. See listing in Sweet's or write for catalog: Soss Manufacturing Company, Division of SOS Consolidated, Inc., P.O. Box 8200, Detroit, Michigan 48213.

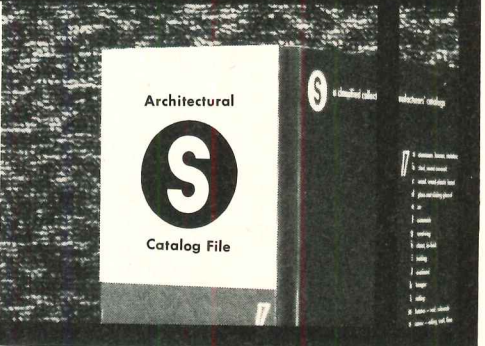



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HOSPITAL, SCHOOL,  
BANK, MOTEL . . . ?

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**Today, Florence, South Carolina is a little warmer place.**



The reason — the community's new City-County Complex built with Trinity Warmtone. Using Trinity Warmtone, Gill and Wilkins AIA, created a naturally warm, inviting building.

And that's the beauty of Warmtone. All the structural

qualities of gray ordinary concrete with the saving grace of warmth.

Warmtone's rich, natural tan color is derived from the manufacturing process. There's no pigment. Cement color consistency is guaranteed, batch to batch.



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Architect: Gill and Wilkins AIA, Florence, South Carolina  
General Contractor: Dargan Construction Company, Inc., Myrtle Beach, South Carolina  
Precast Supplier: Florence Concrete Products, Inc., Florence, South Carolina

*For more data, circle 74 on inquiry card*

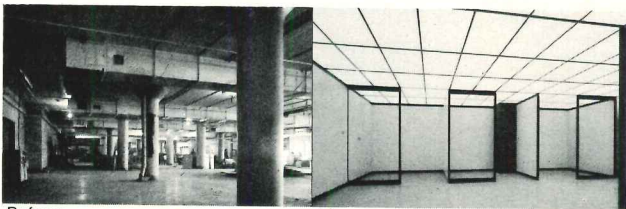
# Wilson Illuminated Ceilings Are Not For Everyone!

## BUT WHERE....

- ... your client's application has a reasonably clean and clear ceiling cavity.
- ... you desire prestigious Lighting Excellence.
- ... you need 100 f.c. and economy.
- ... moving sprinklers is a problem.
- ... strict safety codes are involved.
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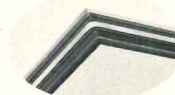
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We did it for Kodak and hundreds of others.  
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ALUMINUM  
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DIMENSION 70

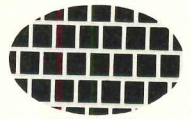


DIMENSION 72

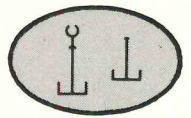
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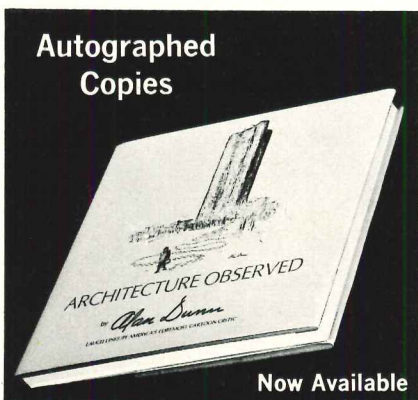
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Earlier this year, Architectural Record published—in hardcover book form—a collection of 139 of Alan Dunn's best cartoons which appeared in the RECORD over the years. The warm reception of this book by architects and others has prompted us to plan a second printing.

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As you start to rise, the RETROFLEX 180 Tablet Arm retracts by itself, at a single touch, in one simple automatic cycle. (In fact, you can't get out of the chair without the arm folding, unless you are a contortionist!)

Patented return mechanism eliminates tablet arm damage occasioned by half-folded or incompletely returned tablet arm, and clears the aisle for quick exit.

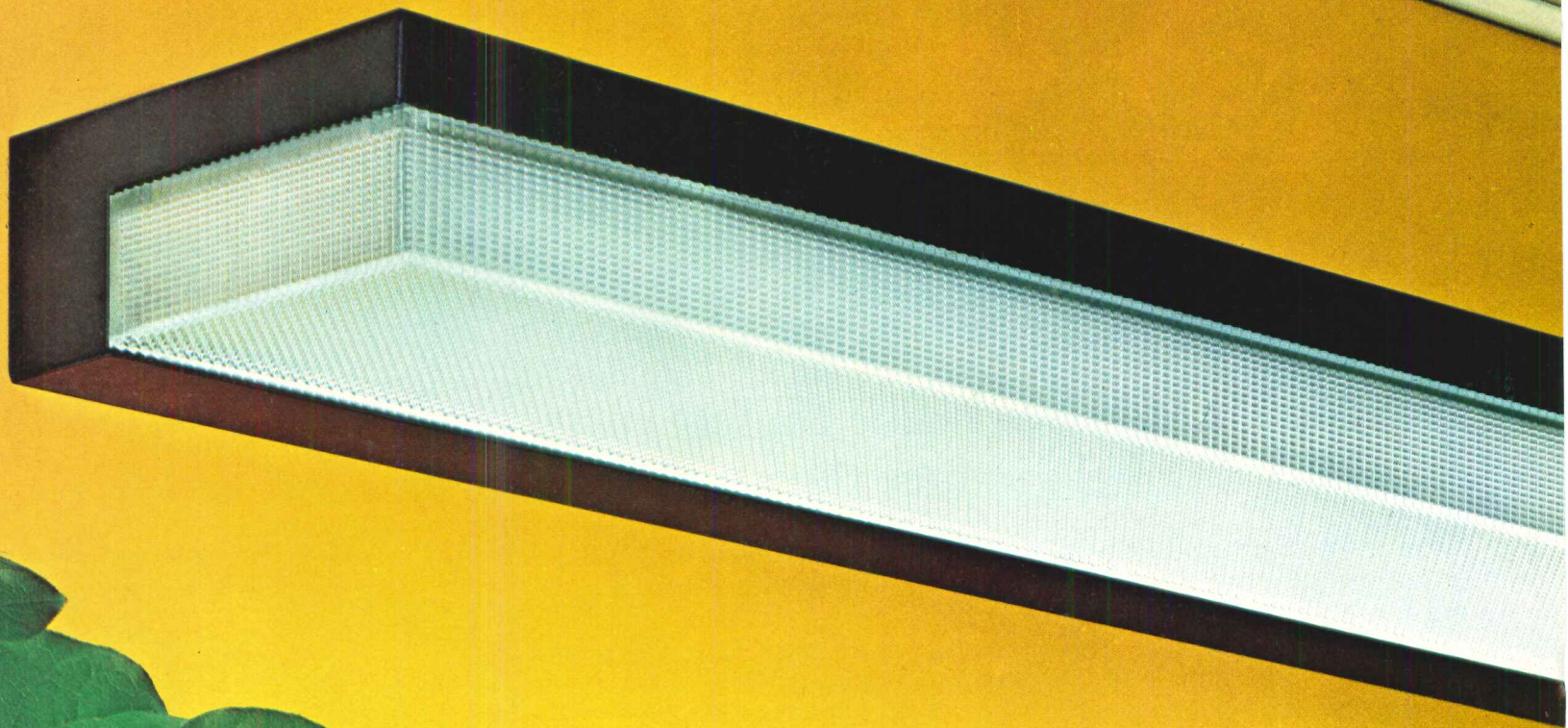
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For more data, circle 76 on inquiry card



## **Sechrist's Celebrity Wall fixture: it's more than dramatic new styling. It's a whole new way to cast light.**

You can see at a glance some of the reasons why Celebrity Wall is a fresh, original answer for lighting almost any contemporary setting. There's the classic simplicity of its cantilevered styling...the trim profile of a fixture that's only three inches deep...the quality accented by a fine baked enamel finish.

But the most important advance is the unique way Celebrity Wall functions, distributing light uniformly down and across the entire illuminated area. The secret is our new lens, a one-piece injection-molded acrylic that's an achievement in precision engineering and molding technique. Rows of identical prisms on the bottom, side and end reflect and refract, mirroring out brightness at critical viewing angles. There are no distracting shadows, no lamp image. Instead, Celebrity Wall

diffuses a warm, equal glow...a new look in modern interior lighting!

Maintenance is more convenient than ever, too, because Celebrity Wall's one-piece lens is easy to remove and replace, and the entire electrical assembly is hinged for hands-free servicing. One- and two-lamp models are available, with matte black or white housings. To see Celebrity Wall in action, contact your Keene Sechrist agent. Or write for details to Keene Corporation, Sechrist Lighting, 4990 Acoma St., Denver, Colo. 80216. Phone (303) 534-0141.

**KEENE**  
CORPORATION

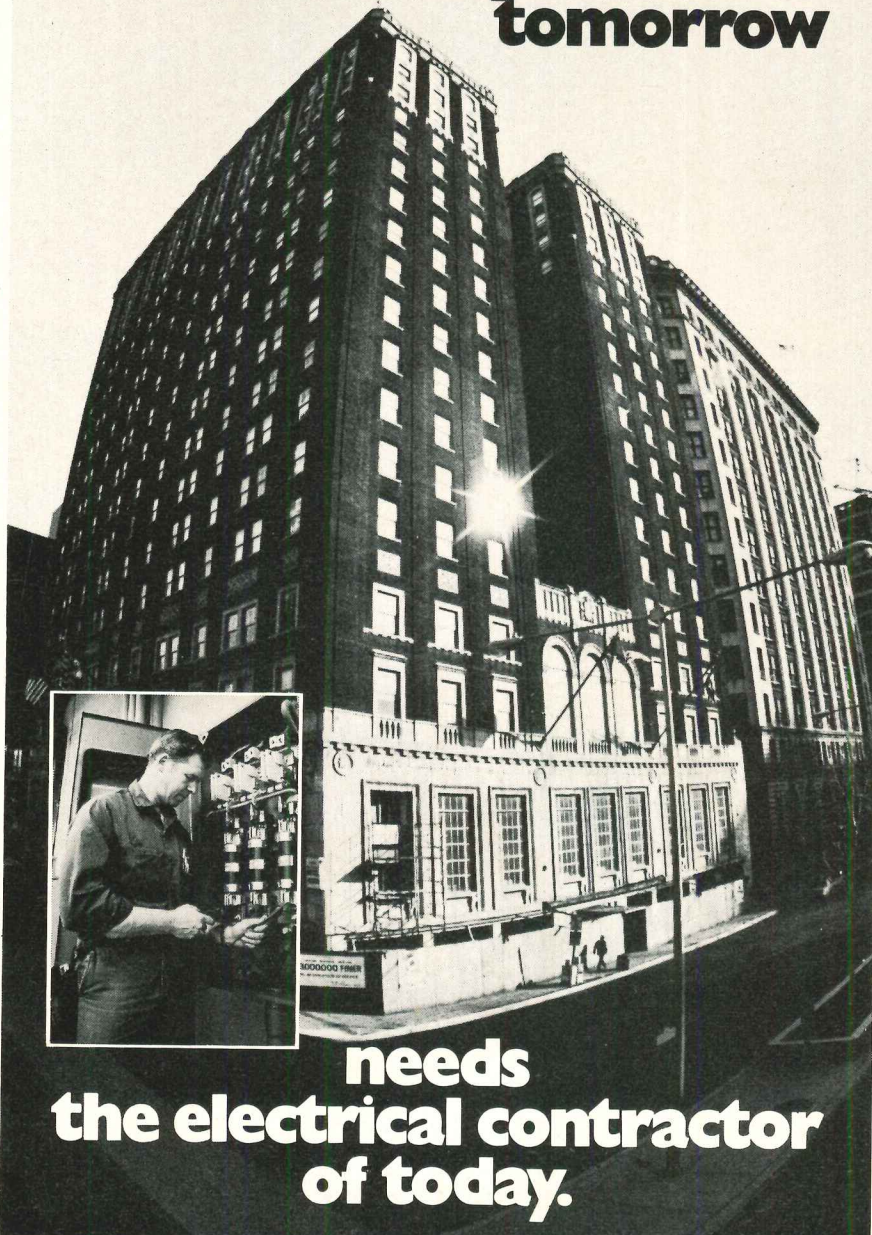
**SECHRIST LIGHTING**

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**We've just begun to grow.**

continued from page 162

# The electrical promise of tomorrow



**needs  
the electrical contractor  
of today.**

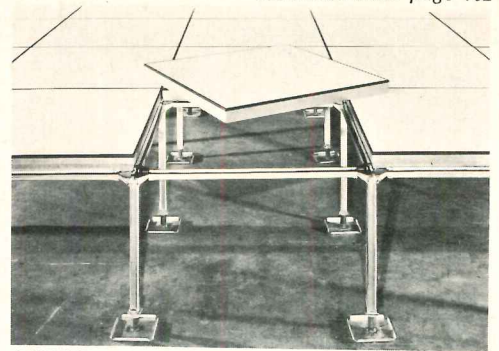
The Lord Baltimore Hotel, Baltimore, Maryland

Remodeling and renovation? Architects thinking of *that* will please the building owners by thinking of *this*: the updating of electrical systems—by a qualified electrical contractor—to handle all of a building's power needs. Advantages? Higher rentals. Not only because an all-electric building gives more rentable space. But because tenants appreciate the cleanliness, comfort and convenience of electrically controlled heating and cooling as well as lighting, communications and business machine operation. Then, too, many building owners have found that conversion to all-electric systems has resulted in lower operating costs, prolonged systems life, lower maintenance expenses.

Remodeling and renovation? This is the time for an architect to have a qualified electrical contractor make the change. Such a contractor has the backlog of specialized experience, the advanced equipment, the flexible and well-trained work force, and the awareness of local codes to do the job right. To match changing power needs. And to match them best by making the building an all-electric building.

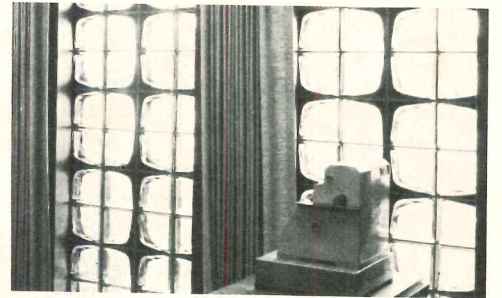


National Electrical  
Contractors Association  
Washington, D.C. 20036



**ACCESS FLOOR** / Standard floor modules 24-through 36-in. square are available to meet a wide range of construction requirements. ■ Washington Aluminum Co., Inc., Baltimore.

Circle 318 on inquiry card



**GLASS BLOCKS** / Each hermetically sealed unit eliminates dust and air flow while admitting light. The sealed blocks, which are virtually unbreakable, are designed for environmental and decorative applications. ■ Pittsburgh Corning Corp., Pittsburgh.

Circle 319 on inquiry card



**ACRYLIC PANEL GLAZING SYSTEM** / Panels add a skylight feature to space-frame construction. They are designed for use with the company's Triodetic structural building system. Dome shapes, arches, square or rectangular grid construction for clearspans up to 600 ft are possible. ■ Butler Mfg. Co., Grandview, Mo.

Circle 320 on inquiry card

**SAND URN/WASTE RECEPTACLE UNIT** / Alumi-



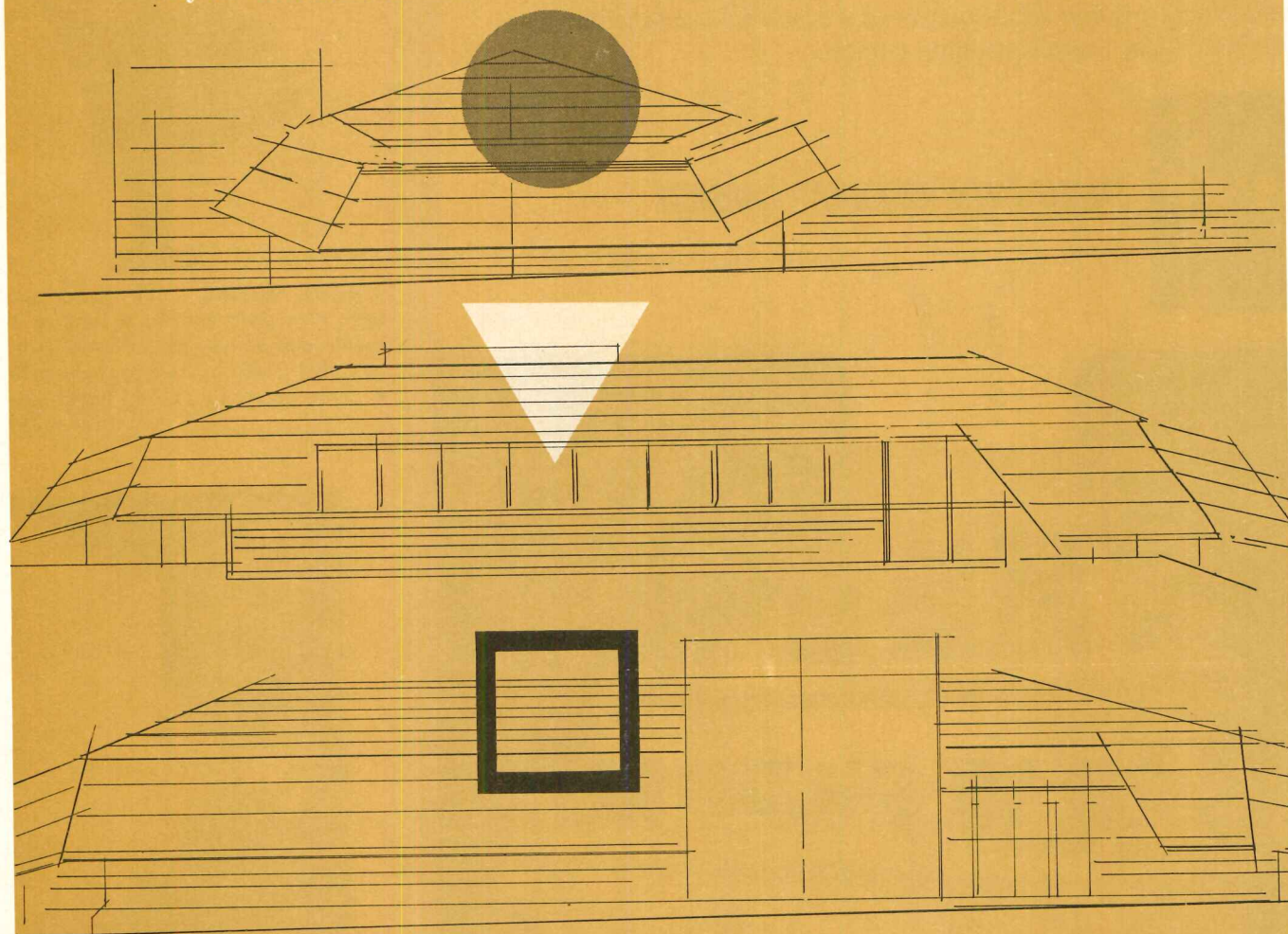
nium alloy column is 24 in. high. The front round opening for inserting trash is 5 in. wide. When the sand tray is removed, a large opening is provided for emptying trash. Finishes available are satin chrome, bronze, or matte black. ■ Habitat, New York City.

Circle 321 on inquiry card

more products on page 182

**FOLLANSBEE STEEL CORPORATION**  
Follansbee, West Virginia

As Frank Lloyd Wright once remarked, "Because of its inherent adaptability . . . Follansbee Terne permits the visible roof area to become a significant part of structural design." The recently completed Fasbender Clinic at Hastings, Minnesota—one of his last major projects—dramatically confirms this statement. Here COLOR ● and FORM ▼ unite in a singular felicity of expression, underlined by the FUNCTIONAL □ integrity of the material itself.



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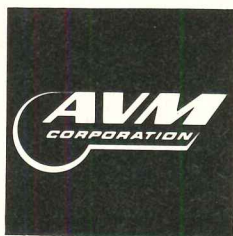
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# Leave experimentation to the lab workers.

If you are the type of architect or contractor who seeks to avoid experimentation with lesser brands, AVM Jamestown makes the caliber of casework you want.

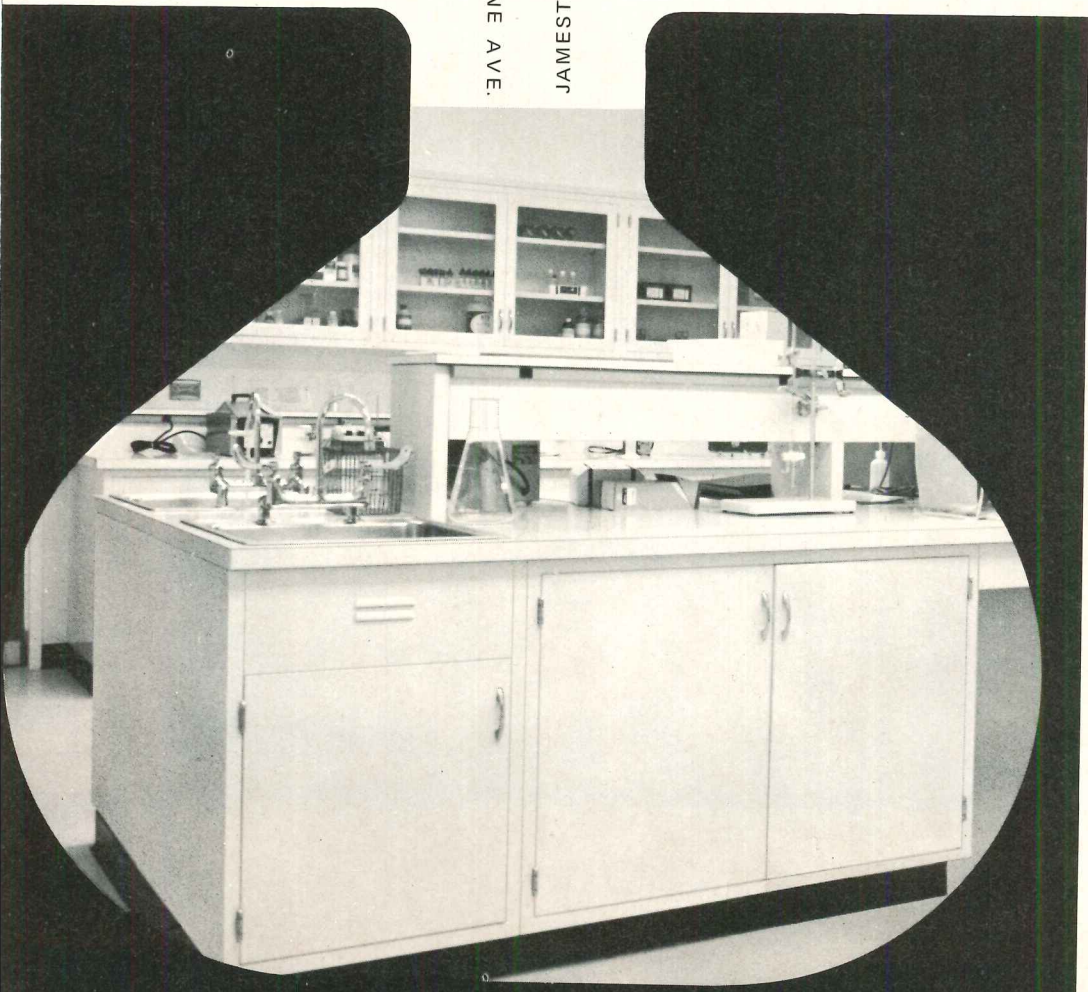
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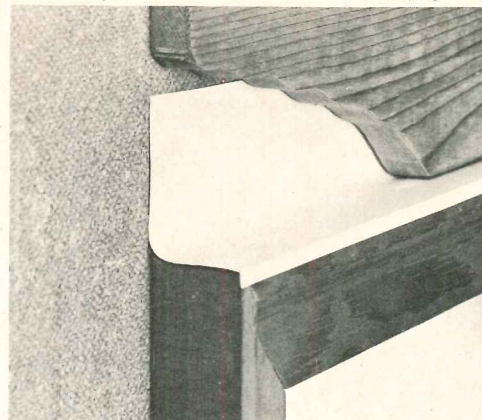
JAMESTOWN PRODUCTS DIVISION

178 BLACKSTONE AVE. JAMESTOWN, N.Y. 14701 PH. 716/485-1196



## PRODUCT REPORTS

*continued from page 170*



**EXTRUDED VINYL FLASHING** / Flexible vinyl portion placed against the wall surface above the head casing is wide enough from front end to back to fit a wide range of different wall constructions of varying thicknesses. ■ Crane Plastics, Columbus, Ohio.

*Circle 322 on inquiry card*



**THEATER SEATING** / This chair's accentuated back slant gives additional comfort. It is recommended for use on the main floor of theaters, particularly in level or slight-incline areas. ■ Irwin Seating Co., Grand Rapids, Mich.

*Circle 323 on inquiry card*



**FILTER SYSTEM** / An extruded vinyl frame, polyester filter media, and metal retainer screen comprise the system, designed to fit virtually any air-handling system. An optional coating gives filtration efficiencies as high as 87 per cent, with no shedding. ■ Honeywell, Commercial Div., Minneapolis.

*Circle 324 on inquiry card*



# THE FIELDLITE WC-1

Beauty, economy and rugged simplicity.  
The ideal solution to night time enhance-  
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Diecast aluminum . . . unbreakable Lexan . . . 75W.



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Photography by Ernest ...

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For more data, circle 89 on inquiry card

# How to keep things cool while saving energy.

That's what the Harrisburg East Shopping Mall does. In fact, it's the first mall with an underground Total Energy plant.

In the plant, six gas engine-generators produce all the electricity the shopping mall needs. These engines give off heat. The Gas Total Energy system captures this heat and uses it to provide a perfect climate for shopping. No matter what the season.

So, the totally enclosed mall's climate control comes from energy that's usually wasted. This efficient operation drastically cuts the cost of providing essential services.

And it uses gas efficiently. With the country's rapidly increasing energy needs, that's pretty important.



AMERICAN GAS ASSOCIATION

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Architect: Evantash-Friedman Architects, Philadelphia, Pa.  
Consulting Engineer: Hattis Service Company, Inc.,  
Division of REH Corp., Deerfield, Illinois

**Conserve natural gas. It's pure energy.**

For more data, circle 90 on inquiry card

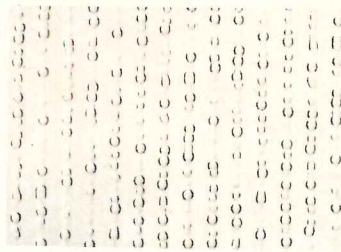


# It takes all kinds.

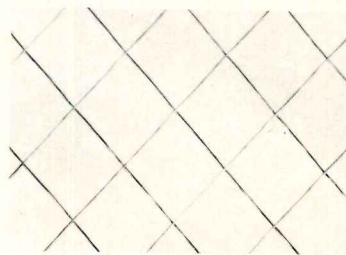
and all kinds of patterned and wired glass are made by ASG  
over 40 varieties, all from a single source.



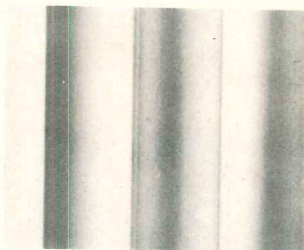
**For businessmen:** Here's a place to swing free with elegant walls of shimmering Beadex® and its raindrop surface, or Randex® with its random linear pattern. Both obviously creative material.



**For schools:** For beauty and safety select Tru-Temp® tempered glass from a wide choice of patterns. These and polished wired glasses, qualify as Safety glass under USAS Z97.1—1966. Nuweld® wired glasses are approved by the National Board of Fire Underwriters as fire retardant.



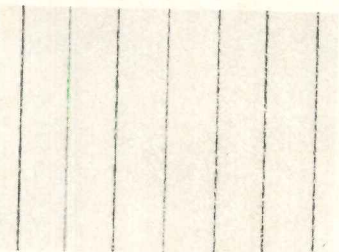
**For homes:** Bring new light and freedom to any architectural style, and do it safely. Use tempered Flutex® as entrance side lights. Or select finely textured Muralex® to provide both light and privacy. ASG patterned glasses are ideal for privacy panels, room dividers, or clerestories.



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**ASG Industries Inc.**  
P.O. Box 929, Kingsport, Tennessee 37662

For more data, circle 91 on inquiry card

You satisfy more individual tastes with Lyon steel office furniture. Each basic component of Lyon desks, tables and modulares is complete in itself. So you can plan combinations for personal comfort. And whatever your choice, Lyon's quieter design will reflect the sound of elegance. Double-wall construction with lavish use of honeycomb filler muffles sound beautifully. File drawers float smoothly on balanced ballbearing rollers. The exclusive "lock-in-top" controls all desk drawers. And the smooth, lustrous finish is 100% acrylic enamel. See your Lyon dealer!

# Personalized modular design by Lyon says you care!



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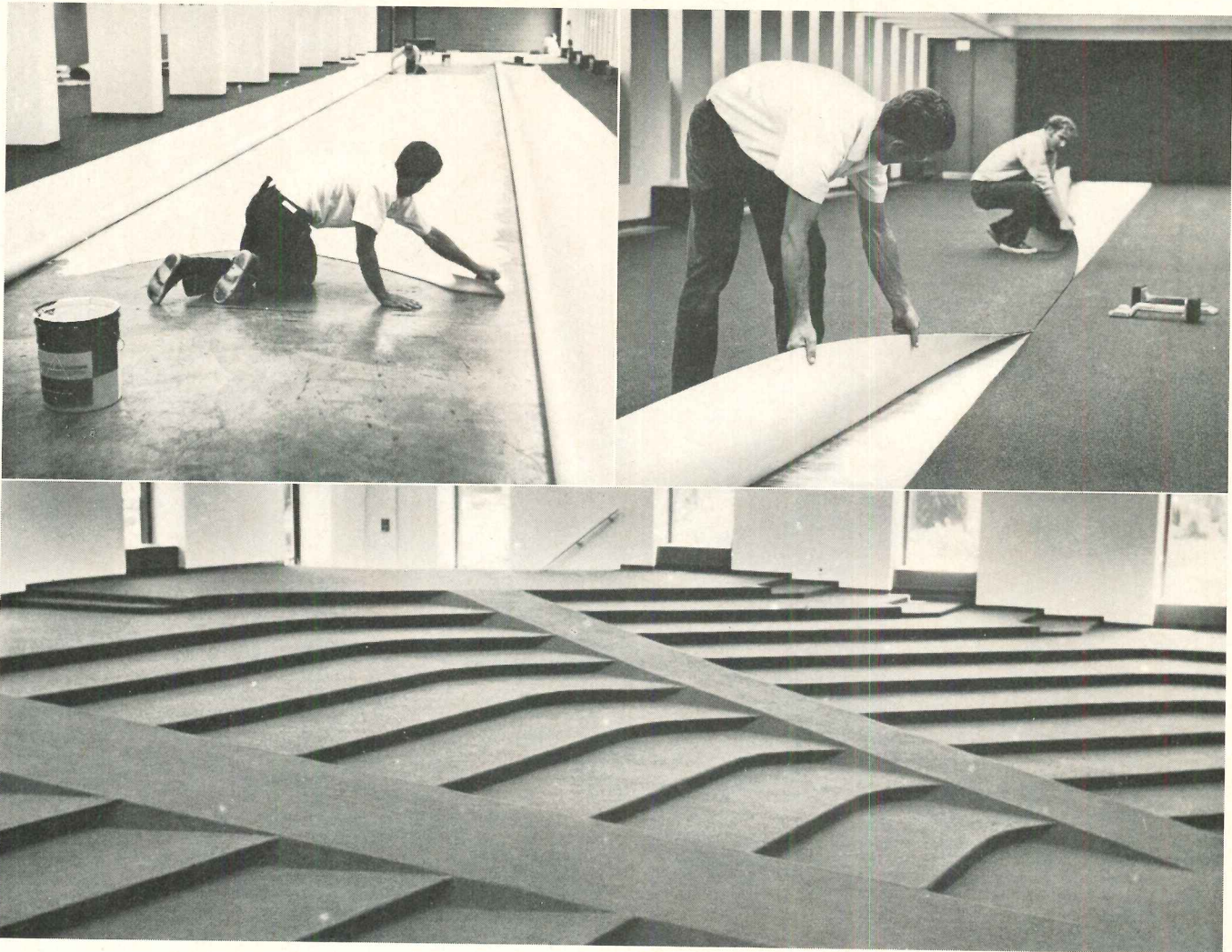
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# AT GEORGETOWN UNIVERSITY LAW CENTER 13,000 SQUARE YARDS OF LOKTUFT® DUON WENT DOWN WITHOUT A FIGHT.



You're looking at just part of the obstacle course that carpet installers were faced with at Georgetown University.

The job, sold by M. S. Ginn & Co., Washington, D.C. called for a glue-down installation of thick 85 ounce carpeting by Bigelow.

So the secondary backing had to be pliable enough to fit a heavy carpet into any troublespot. And tough enough to hold it there.

Loktuft Duon was the secondary backing they used on the carpet.

Non-woven Loktuft cut cleanly and neatly. Without fraying or raveling. No matter how intricate the cuts they had to make.

This was particularly important in the amphitheater-shaped area on the first floor where sloping aisles and curved stepped floors complicated the installation problem.

"That's where we expected to separate the men from the boys", said Jimmie Byrd, President of Superior Carpet Shops, Inc., who handled the entire instal-

lation. "But Loktuft worked beautifully. It made a difficult job easier."

Every inch of Loktuft laid perfectly flat. No bubbling, no rippling. Not even a hint of a grinning seam.

Most important, Loktuft came with a built-in reputation for staying that way.

Made with Marvess® olefin, a Phillips 66 fiber, Loktuft resists rot, mildew and insect damage. And it won't pucker or shrink from moisture exposure.

Which makes it ideal for installations where dampness or high humidity can be harmful to natural fiber backings. And that includes the not-always-great outdoors.

Loktuft Duon. Who'd have thought a secondary backing this tough could ever go down this easy?

**Loktuft**<sup>®</sup>

A PHILLIPS 66 <sup>66</sup> CARPET BACKING

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For more data, circle 93 on inquiry card

# ZINC prevents corrosion from getting a seat in Wrigley Field

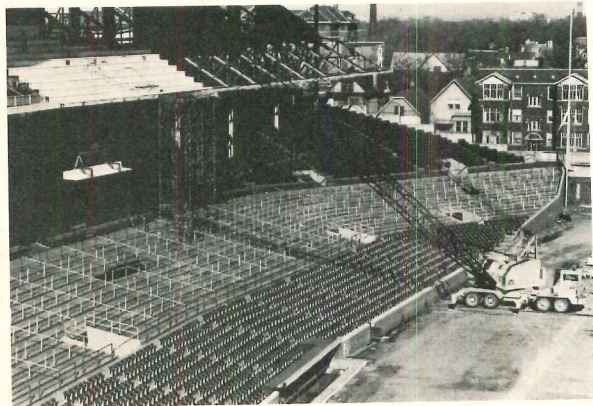
The newly refurbished seating sections in the home of the Cubs use pre-cast concrete panels reinforced with hot dip zinc galvanized steel.

"The galvanizing of reinforcing steel and mesh was specified to eliminate rusting and corrosion in the event of any cracking in the concrete and as part of the requirement of having all imbedded metal items rust resistant to the highest degree possible," said Charles E. Correa, president of LBC, Inc., general contractor for the project.

About 1000 pre-cast L-shaped panels, 19' long by 2'9" wide by 18" high and weighing a ton apiece were used in the \$1,200,000.00 project.

The zinc-protected reinforcing steel was decided upon after consultation among the architect, consulting engineer, owner and general contractor. By preventing sub-surface rust, galvanized re-rod also eliminates surface cracking or spalling from internal pressures caused by rust build-up.

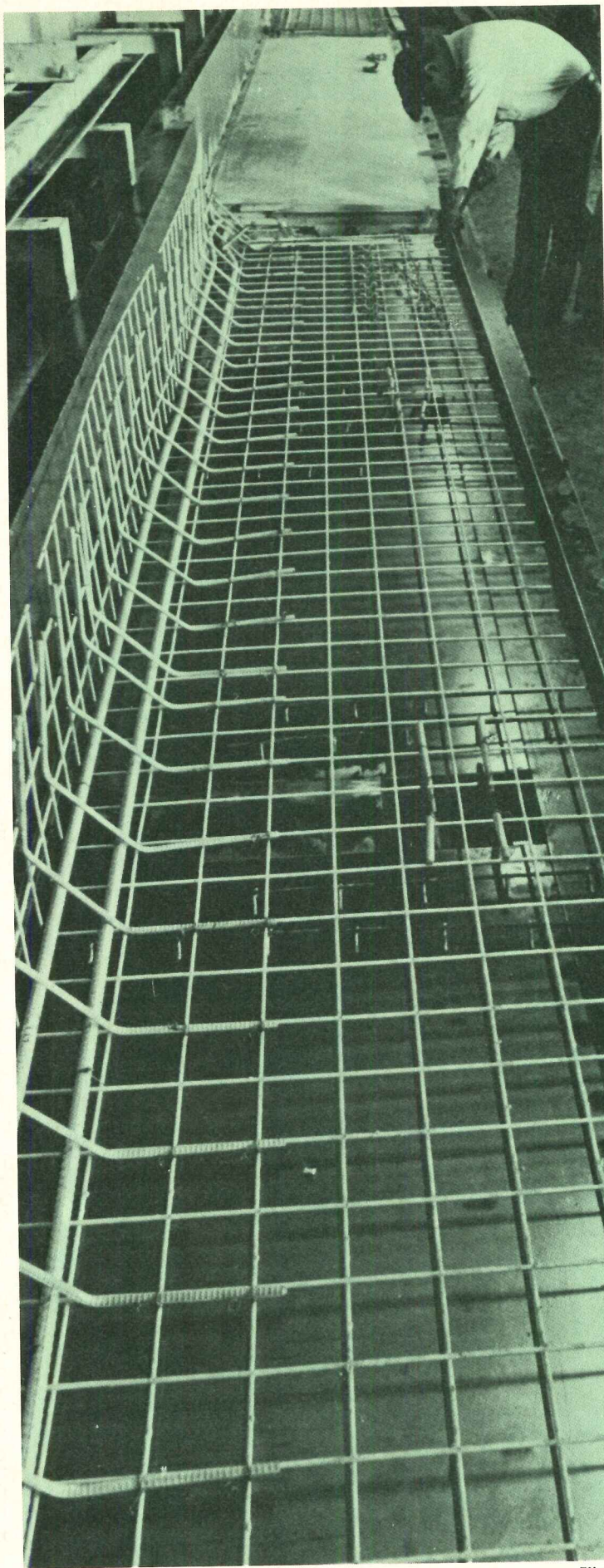
Used in concrete or as a separate material, galvanized steel provides the most practical combination of strength, corrosion resistance and economy.



Architects—Solomon, Corewell, Buenz & Associates • Structural steel design engineers—Alfred Benesch & Company • Concrete panels — Prestrete Corp. and Midwest Concrete Products Co.

**ST. JOE**  
MINERALS CORPORATION

250 Park Avenue, New York, New York 10017, Tel. (212) 986-7474



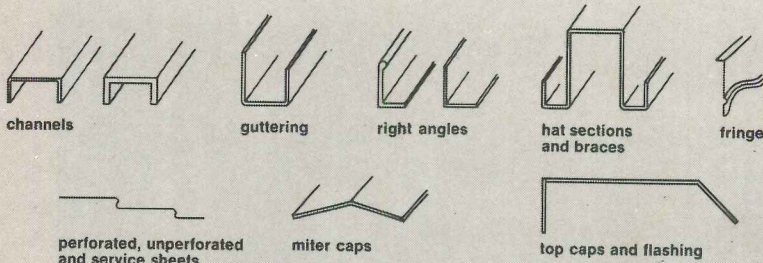
ZN-471

We get it from the mills in big coils like the one shown below. What happens after that is largely up to you. Steel or aluminum, it comes off the roll in a flexible, glistening ribbon, yet can be formed into rigid shapes that will carry heavy loads. Strong, lightweight and prefinished in a wide variety of colors, it can be channeled, angled, boxed, cubed, squared—in fact, everything but curved (and we're working on that). The amazing bonded paint surface will not crack, break or chip under the most severe angle forming.



**formed into Ventaire's Super-V Panel or (flat) Ceilok,**

It is an ideal decking or paneling for siding, canopies, carports, walkway covers, overhangs or marquees.

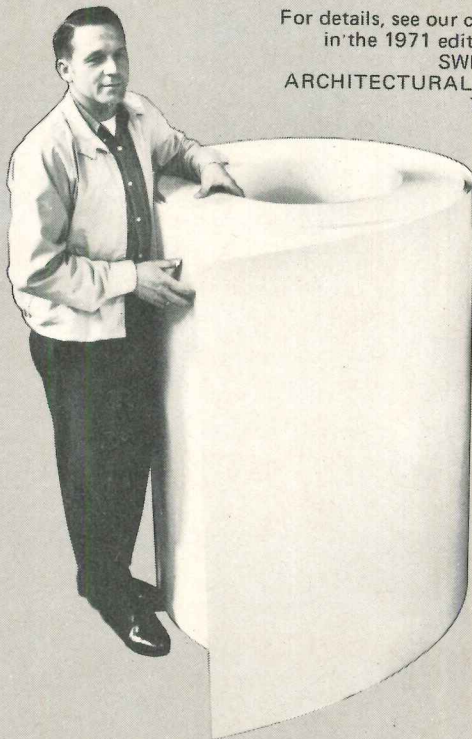


**as a prefabricated structural component**

It is formed to your specifications, ready to install on the job. Any custom color is available.

**architects,  
spec writers,  
contractors . . .**

We know what this material can do...its economy in fabrication...its versatility in forming...its ease of installation...but we need your help. Give us specifications on your interior and exterior preformed, prefinished components and let us demonstrate what we can do!



For details, see our catalog in the 1971 edition of SWEET'S ARCHITECTURAL FILE 73-VE

**Ventaire Corporation**

4345 S. 93rd E. Ave.  
Tulsa, Oklahoma 74145  
(918) 622-1191

**We start with this,  
then do everything  
but curve it!**

For more data, circle 94 on inquiry card

**OFFICE LITERATURE**

For more information circle selected item numbers on Reader Service Inquiry card, pages 213-214.

**SCHOOL FURNITURE** / A line of modular, interfacing activity tables is described in an 8-page brochure. A variety of sizes and shapes is available. Suggested combinations and room layouts are included as planning aids. ■ American Seating Co., Grand Rapids, Mich.\*

Circle 400 on inquiry card

**LABORATORY FURNITURE** / A line featuring wood grain fronts is presented in literature. All metal surfaces are lead-coated steel. ■ Duralab Equipment Corp., Brooklyn, N.Y.\*

Circle 401 on inquiry card

**VENTILATION SYSTEM** / Components consist of acoustically treated wall boxes, dampers, damper motors, inlet grilles and companion roof-mounted ventilating fans. The units tap into vertical duct risers or ceiling ducts. System is available for bathrooms, kitchens, conference rooms and small offices. Technical data is included. ■ ILG Industries Inc., Chicago.

Circle 402 on inquiry card

**WATER AND WASTE TREATMENT** / The function and operation of the manufacturer's systems and equipment are summarized in a 12-page catalog. The catalog includes reference numbers for product bulletins should more detailed information be required. ■ The Permutit Co., Paramus, N.J.

Circle 403 on inquiry card

**OFFICE FURNITURE** / A system of modular units for "open plan" offices is presented in a 24-page brochure. ■ Eppinger Furniture Inc., New York City.

Circle 404 on inquiry card

**CARPORTS AND CANOPIES** / Installation photos, descriptive information, and general specifications for a pre-fabricated line are given in a 4-page brochure. ■ Childers Mfg. Co., Houston.\*

Circle 405 on inquiry card

**ELECTRICAL INSECT CONTROL EQUIPMENT** / Two new insect-electrocutor models designed specifically for use in open food processing and packaging areas are featured in a 16-page catalog. Both units incorporate an escape-proof design. ■ Gardner Mfg. Co., Horicon, Wis.

Circle 406 on inquiry card


**FIREPROOFING TECHNIQUES** / A comprehensive treatment of the practical and esthetic aspects of metal lath and plaster fire protection, and detailed information on material selection and installation for a variety of metal lath assemblies offering up to four hours of fire resistance are included in an 8-page bulletin. ■ Metal Lath Assn., Chicago.

Circle 407 on inquiry card

\*Additional product information in Sweet's Architectural File

more literature on page 194





Dromoland Castle, County Clare, Ireland. Built between 1700 and 1800. Remodeled in 1962 by Milosevich and Trautwein, A.I.A.

## Dromoland Castle doesn't need a moat.

Moats don't have much to do with security these days.

Dromoland Castle relies on Schlage for that.

Inside Dromoland's three-foot-thick walls are seventy guest rooms. On every door is a Schlage lock in the Claremont design. Claremont blends right in with the 271-year-old paneling and wood and stone carvings. But the works inside are as modern as a lock can be.

Dromoland is built for keeps. We expect our locks to be at home there for quite a while.

Architects and builders who care about quality have been specifying Schlage locks since the early twenties.

For applications that range anywhere from a low-income housing project in Omaha to an Irish castle.

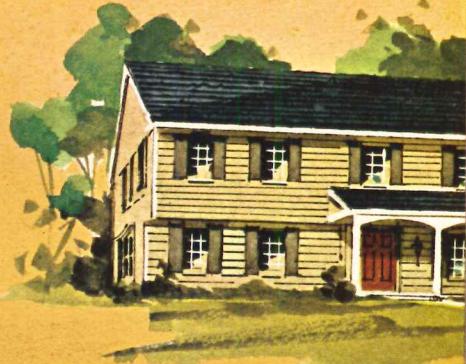
No matter which Schlage lock you specify, you'll get the highest standard of quality in the industry. Because that's the way we make every lock we make.

## Schlage Locks

*For more data, circle 95 on inquiry card*

# Caradco gives

## OUR C-100: THE ECONOMY WINDOW PACKAGE



Before C-100' came along windows could be a pain. Like having to climb ladders or not being airtight. Our C-100' did away with such nonsense.

*The sash lifts out for easy inside cleaning, then snaps back weathertight.* What keeps it tight is something you get only from

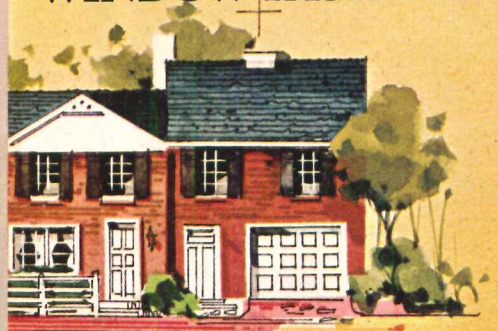
*Caradco: stainless steel weatherstripping* with proven trouble-free performance. So you can forget call-backs, enjoy *reduced on-site labor costs.* Factory treated and primed, too. It looks great. And it's a complete package—grilles, storm panels and screens. Now the clincher: C-100' carries a competitive price. No wonder so many builders are switching to Caradco.



# you a choice



## OUR PF-C100: THE PREFINISHED WINDOW PACKAGE



Here's the window that put an end to painting and clean-up expense. Our PF-C100's *completely prefinished*. We clad the frame in vinyl to give *maintenance-free protection*. The sash is every bit as carefree. Outside, it's covered with a 4-step finish that outlasts conventional finishes two or three times. Inside, it's wood-toned stabilized to resist water and soil—you refinish only to change tone or color. And only Caradco gives you *vinyl gasket glazed insulating glass*. It all adds up to a lot more window for your dollar.



THE WINDOW AND  
DOOR PEOPLE

Dubuque, Iowa 52001

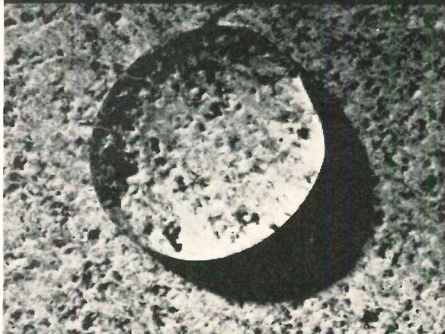
Eastern Assembly Plant,  
Hainesport, New Jersey  
Ohio Assembly Plant,  
Columbus, Ohio

For more data, circle 96 on inquiry card

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## WATERPROOFS for 5 full years



**WE GUARANTEE IT**



**GIVES TREATED  
BUILDINGS A  
CLEAN, DRY  
APPEARANCE  
EVEN  
IN THE RAIN!**

It's a fact. New Sure Klean Weather Seal not only out-weatheres silicone and common acrylic coatings, but we guarantee, in writing, that it will waterproof masonry wall surfaces for 5 FULL YEARS!

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STATE \_\_\_\_\_ ZIP \_\_\_\_\_

AR-121

## OFFICE LITERATURE

*continued from page 190*

**OFFICE CHAIR** / Fourteen models featuring urethane arms, reinforced fiberglass shell, body-contoured recess and sculptured steel pedestal base are presented in an 8-page catalog. ■ The General Fireproofing Co., Youngstown, Ohio.\*  
*Circle 408 on inquiry card*

**CONTOUR-SHAPED GLASS WINDOW PANES** / Descriptive information and installation photos are presented in a 4-page brochure. Detailed glazing instructions and specifications are also available. Window panes do not distort objects seen from either side, the manufacturer reports. ■ The Vexocave Co., Morrison, Colo.  
*Circle 409 on inquiry card*

**CONTRACT CARPETS** / The company's complete contract carpet service and installation photos of their complete line are given in a booklet. Specifications are included. ■ Philadelphia Carpet Co., Cartersville, Ga.  
*Circle 410 on inquiry card*

**CONTROLLED AIR FLOW SYSTEMS** / Design ideas and applications for reliable air flow systems are outlined in a 20-page booklet. Both primary air control equipment and diffusion subsystems are discussed. The manufacturer's product line is featured. ■ Mitco Corp., Somerville, Mass.  
*Circle 411 on inquiry card*

**EXTRUSION DESIGN GUIDE** / Application data on plastic profile extrusions for exterior building products is contained in a 2-page guide. ■ Crane Plastics, Columbus, Ohio.  
*Circle 412 on inquiry card*

**INCANDESCENT WALL-MOUNTED DIMMERS** / A line for commercial and institutional buildings is presented in a brochure. Reportedly, there is no television or FM interference. ■ General Electric, Providence, R.I.  
*Circle 413 on inquiry card*

**INTRUSION ALARM** / Descriptive literature introduces a system featuring dual ultrasonic and ultra-high frequency sensors to eliminate false-alarm, individual sensitivity controls for each mode, optional remote area ultrasonic sensor, and provision for connection to a closed loop perimeter system. ■ Bourns Security Systems, Inc., Smithtown, N.Y.  
*Circle 414 on inquiry card*

**REDWOOD EXTERIOR FINISHES** / Advice on bleaching oils, stains, water repellents, mildewcides, and finish maintenance is included in an 8-page data sheet. ■ California Redwood Assn., San Francisco.\*  
*Circle 415 on inquiry card*

\*Additional product information in Sweet's Architectural File

*more literature on page 202*

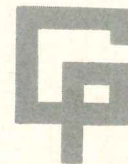


# Are Your Partitions Out-Dated?

You might think that the outhouse is somewhat of an exaggeration. We hope, for your sake, that it is. But, some of the examples of rest room facilities that we have seen lend quite a bit of truth to this 19th Century curio because of poor construction, rust or corrosion. We developed a special kind of partition called PAN-L-TRIM®. The mar-resistant partition with porcelain finish, is not only rust-proof, but it looks great, and comes in 23 different colors — and you can use PAN-L-TRIM® for lavatories, showers, and dressing compartments.

Take a look at partitions—if they look out-dated, replacement dividers, doors and pilasters are available. Write us for information.

We know we can help you.



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MANUFACTURING  
CORPORATION**

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Erie, Pa. 16505  
Phone: 814/833-1154

*Dealer inquiries invited*

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# 65,000 square feet under foot. And no problems.

The new Student Center at Rider College, Lawrenceville, New Jersey, hums till midnight. By 6 AM, when it starts to hum again, everything has to be spotless.

It is. One reason is the Murray quarry tile all over the place. A fast damp-mopping and those 65,000 square feet look like new.

And the architect had other good reasons for picking Murray.

Like durability. Knowing Murray can take years of

stomping traffic in its stride.

And good looks. The tile adds a natural warmth to this new \$29-a-square-foot building that students like.

It fitted the college's needs so well that now Rider's Dining Hall is getting new floors. Of Murray quarry tile.

How about *your* next floor? Write American Olean Tile Company, 1544 Cannon Avenue, Lansdale, Pa. 19446.

CERAMIC TILE  
**American Olean**  
A Division of National Gypsum Company



Reception room



Snack bar



Telephone area



Study hall

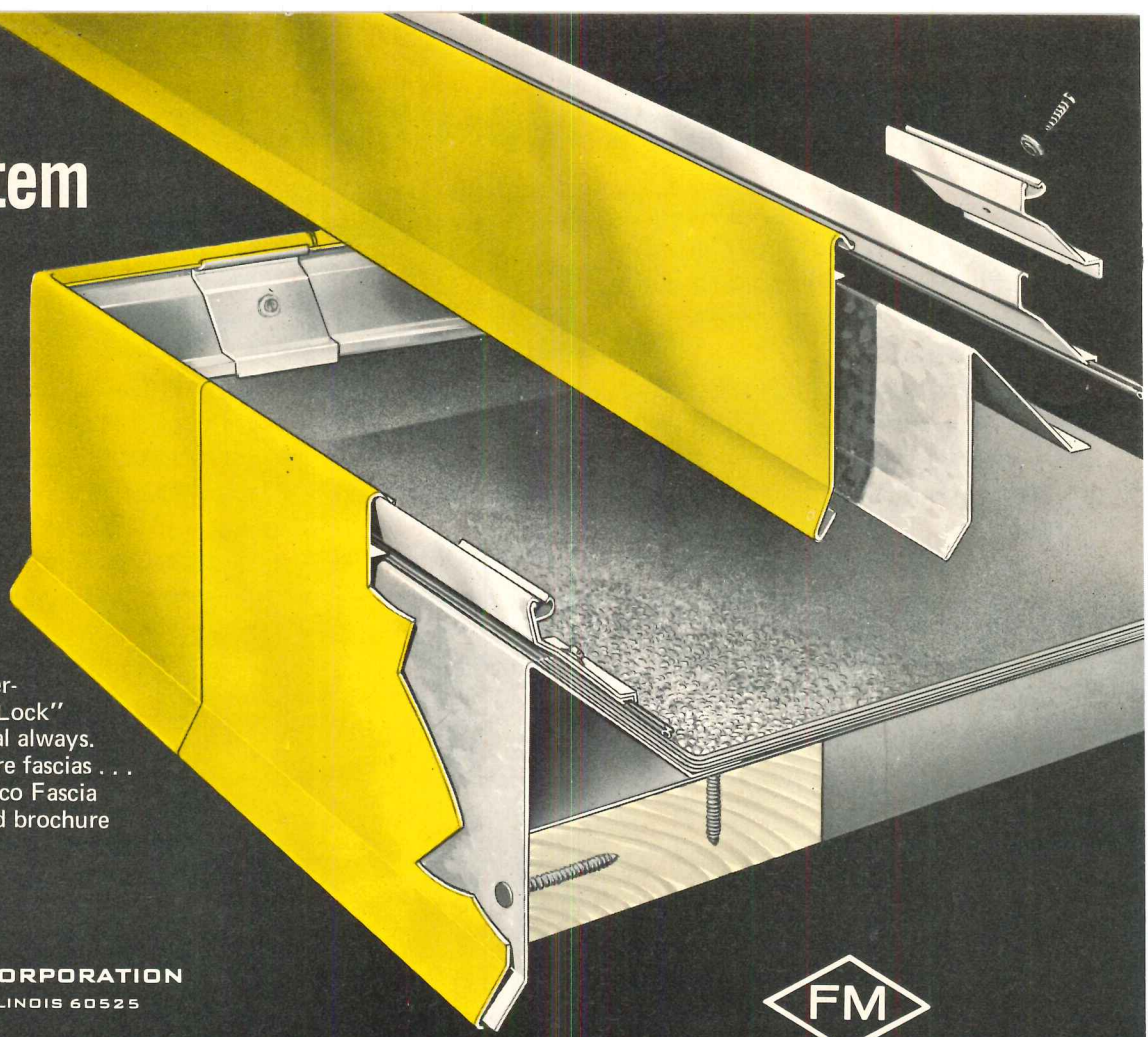
Architect: Ronald Vaughn Associates

## Murray<sup>®</sup> quarry tile. It's the natural thing to use.<sup>™</sup>

For more data, circle 100 on inquiry card

# New Fascia System by SILBRICO

A fascia, water dam, gravel stop, curb and cant . . . all in one simple, durable system. The Silbrico extruded aluminum fascia system is designed and installed to meet Factory Mutual roof perimeter flashing requirements of Data Sheet 1-49 to resist wind uplift of 60 lb./Lin. Ft. of wall. It controls water, prevents leakage at the roof perimeter, withstands high winds, hides building irregularities and provides a most attractive non-corrosive, durable fascia for any building. An exclusive vinyl seal throughout an extruded aluminum liner-flashing is held tight by the Silbrico "Cam-Lock" locking device to assure a positive water seal always. Wide variety of finishes and colors . . . then specify "the tough one" . . . the Silbrico Fascia System. Write for details, specifications and brochure showing complete range of sizes.



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## Windows can win you the commission! **Specify Alpana's Fully-Engineered Replacement System**



31-year-old Minneapolis Star and Tribune Newspapers Building, modernized with Alpana's Series 1100 Thermo-Barrier Aluminum Windows. Architects were Larson and McLaren, Inc., Minneapolis.

Selection of the window installation is key—as part of your presentation—and in the ultimate satisfaction of both you and your client.

You can help insure success on both counts with another of Alpana's 'firsts'—a fully-engineered (to your specs) replacement system.

**Of importance to you:** an Alpana system will match any architectural design.

**Of importance to your client:** an Alpana system guarantees—**■** modernity **■** savings in maintenance **■** savings in heating and air-conditioning **■** reduced noise **■** simple, fast installation **■** minimal loss of occupancy or in operation of building functions **■** no tearout of existing fenestration **■** total replacement project under a single responsibility.

Available in these types of 'Thermo Barrier' aluminum windows:

Fixed and Projected Venetian Blind Pivots  
Casements and Pivots 'Thermo-Barrier' Sliding Doors

For full details and specifications on all types, write:

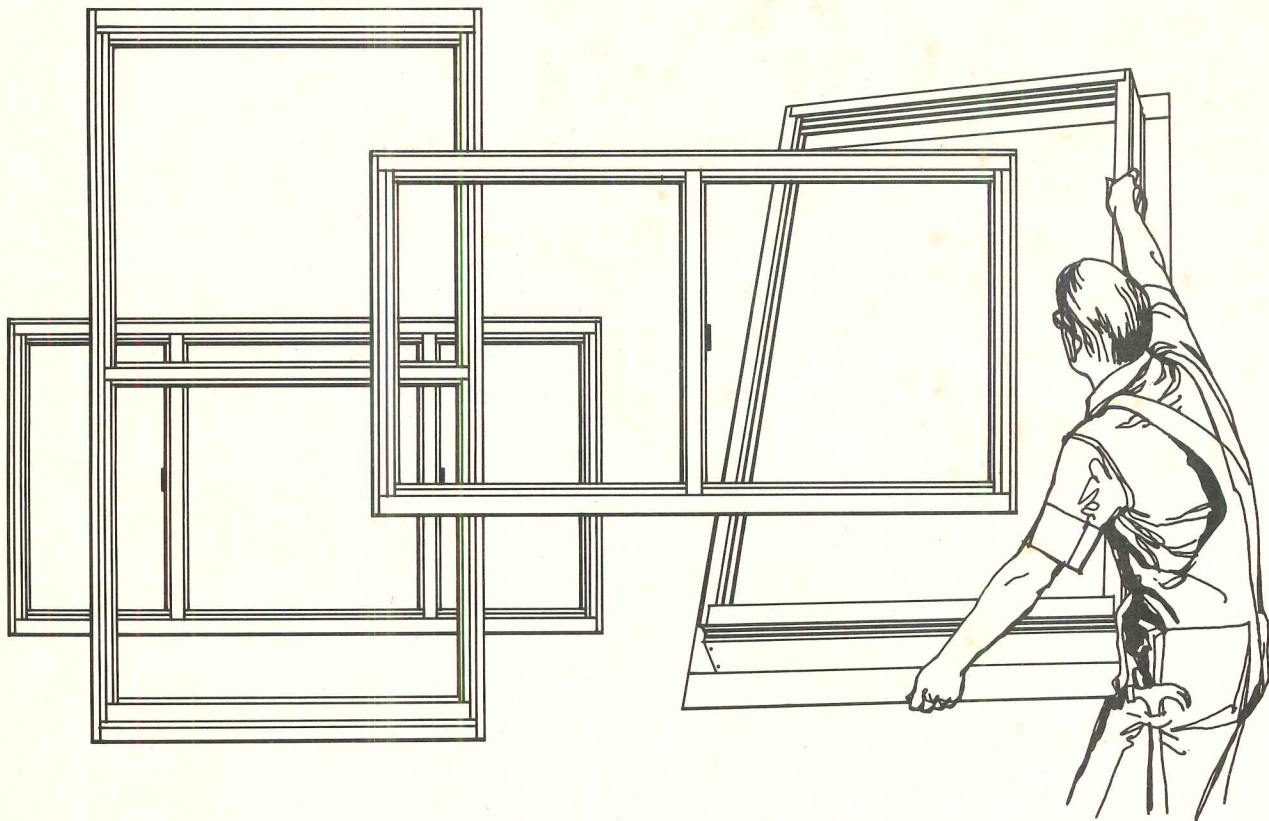


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# You can't afford not to install **NUPRIME** windows now!



To maintain our present production rate during the winter we are drastically cutting our price on Nuprime aluminum replacement windows. Nuprime windows can easily be installed any time of the year since installation can be handled by one man in less than a half-hour from the inside without disrupting normal work routines. No structural changes are required.

You can't afford not to take advantage of this offer. Nuprime windows virtually pay for themselves by cutting high heating, cooling and maintenance costs. All Nuprime windows are custom-made, but assembly-line production keeps our prices low. They are economical to clean and easy to operate.

Available in beautiful Electrocoat colors, Nuprime windows meet, and in most instances exceed, AAMA specifications.

Nuprime windows add dynamic new beauty to office buildings, schools, apartment buildings, hospitals and hotels. Install Nuprime aluminum replacement windows now and save. You can't afford not to.

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I am genuinely interested in Nuprime aluminum replacements for my building.

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# Two ways you can assure the

Built-up roofing, of course, has just one function—to waterproof the space inside a building. It's a nonstructural bituminous membrane, soft and easily penetrated in warm weather, brittle and easily cracked in cold. For this vital but relatively fragile component of a roofing system to do its job, it must have a base that provides these minimum engineering requirements:

- strong, uniform attachment
- rigid, continuous support
- physical and chemical stability
- slope for drainage

Fire resistance, of course, is also highly desirable.

Pittsburgh Corning has two materials that fully satisfy these requirements: Tapered Foamglas® Insulation and Celramic® Roof Deck. Basis of both is closed-cell glass, which is

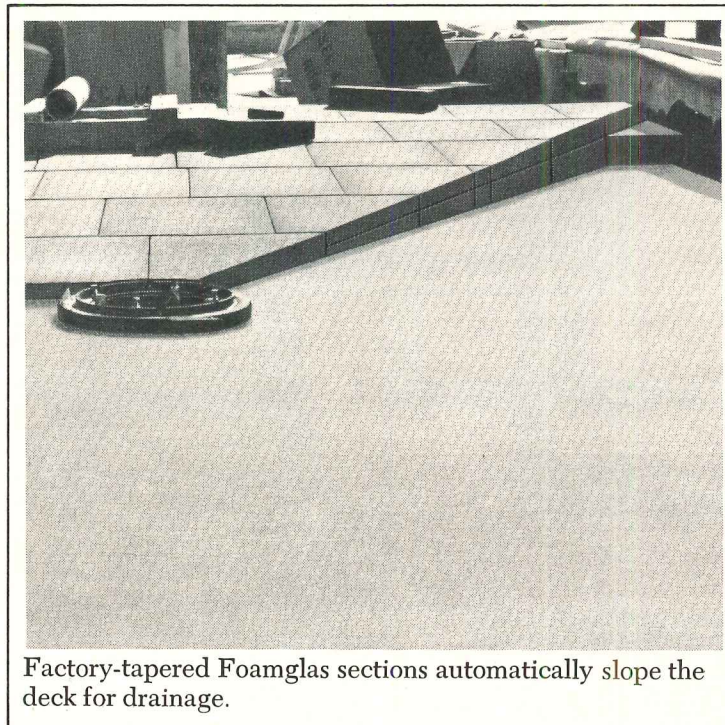
incombustible, inert and impermeable to moisture. A kind of natural selection tells you which to use. When you already have a deck, choose Tapered Foamglas; when you don't,

gious structures; apartments; and utilities. Such buildings, as you know, are massive in framework and generally require heavy roof decking. They're usually high-rise and often have different roof levels. Roof areas are relatively small and broken up with equipment.

These conditions, plus limited space at the job site, make Tapered Foamglas the choice. It's delivered to the job in the exact amount needed, in factory-tapered sections that are easy to handle and apply. No serious disruption of sidewalk and road traffic, no big ground operation, no

operating penalty for variations in roof level and size.

And the moisture-proofness, dimensional stability, incombustibility and high compressive strength of Tapered Foamglas allow it to meet the



Factory-tapered Foamglas sections automatically slope the deck for drainage.

Celramic Roof Deck. Whether you have a deck or not depends on the building type:

*Tapered Foamglas for institutional and public service buildings, including medical, educational, research, and reli-*



# integrity of built-up roofing.

minimum engineering requirements for built-up roofing.

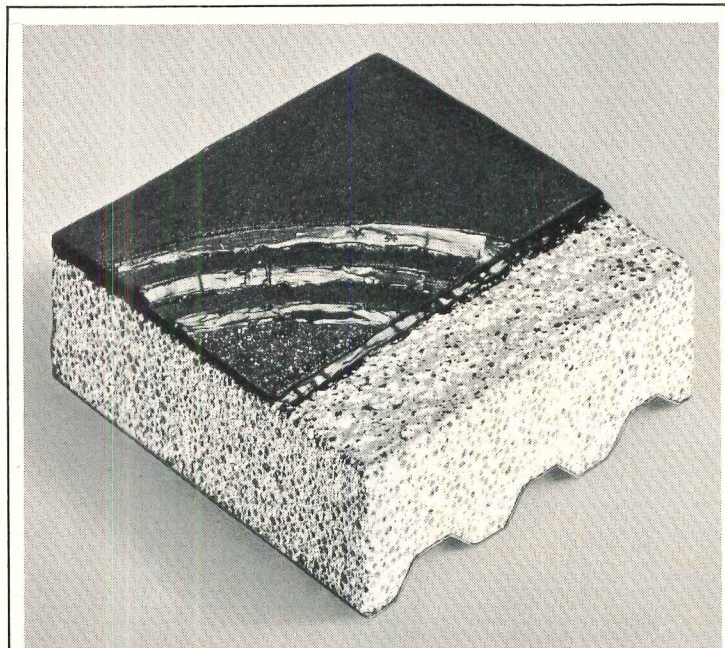
*Celramic Roof Deck* for manufacturing, commercial, and campus buildings, including factories, warehouses, industrial parks, airport wings, shopping and distribution centers, and campus schools. Typical characteristics of such buildings are light or medium framework, low profile, uniform roof level, big roof area, and ample space at the site. These characteristics permit efficient batching operations and uninterrupted placement of 10,000 to 15,000 sq. ft. of roof fill per day.

*Celramic Roof Deck* is the ideal choice for such an operation. It consists of Celramic concrete insulating fill and galvanized steel centering in a composite that provides a totally integrated deck. It perfectly complements light framework, and it has a two-

hour fire rating (ASTM E-119).

Key is Celramic aggregate, "engineered" from closed cell glass, which keeps water-cement ratio low enough to form a strong, monolithic

Deck, get in touch with our nearest representative. Or write to Pittsburgh Corning Corporation, Dept AR-121, Three Gateway Center, Pittsburgh, Pa. 15222.



Celramic fill/steel centering composite forms monolithic concrete deck.

concrete base. No shrinkage or residual moisture problems, no long curing time (48 hours is typical). Easy to slope for drainage, too.

To learn more about Tapered Foamglas and Celramic Roof





# The Lighting Professionals by KSH.

The professionals we're talking about are lined up at right. THEY'RE THE SPECIFICATION-QUALITY PRISMATIC LIGHTING PANELS THAT GUARANTEE PROFESSIONAL RESULTS.

They never let you down with a client. Here's why:

The variety of prismatic patterns lets you put more imagination into your lighting designs.

They're optically correct. Designed right. Produced right. They give you lighting that's right. And they stay like-new year after year.

Remember. Other panels may look like K-Lite because they're KOPIES. But they don't perform like K-Lite.

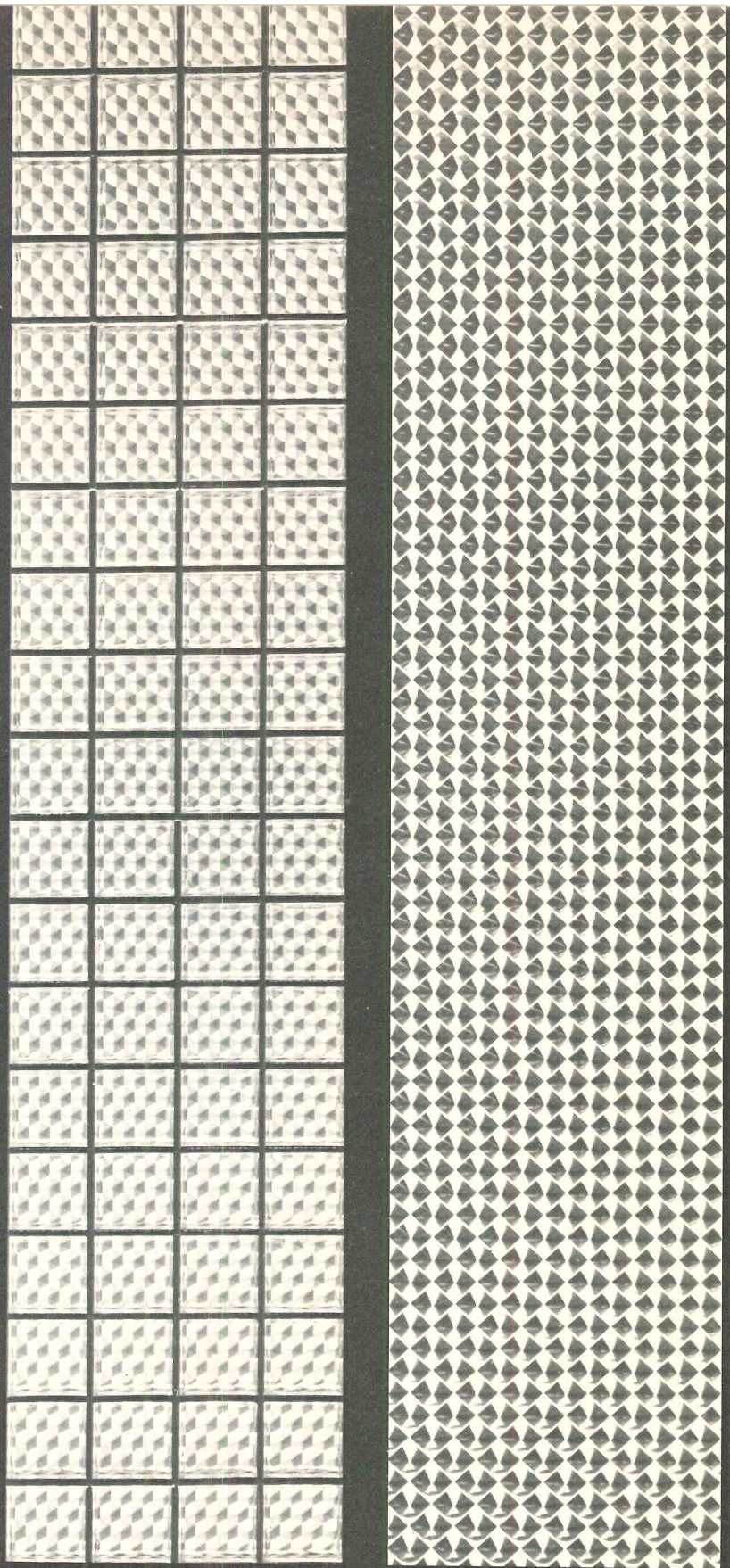
To get the real thing... SPECIFY "THE PROFESSIONALS" BY THE NUMBERS.

Write for the KSH Catalog. It shows many more types of K-Lite Panels.



KSH, Inc. • 10091 Manchester • St. Louis, Mo. 63122

For more data, circle 105 on inquiry card

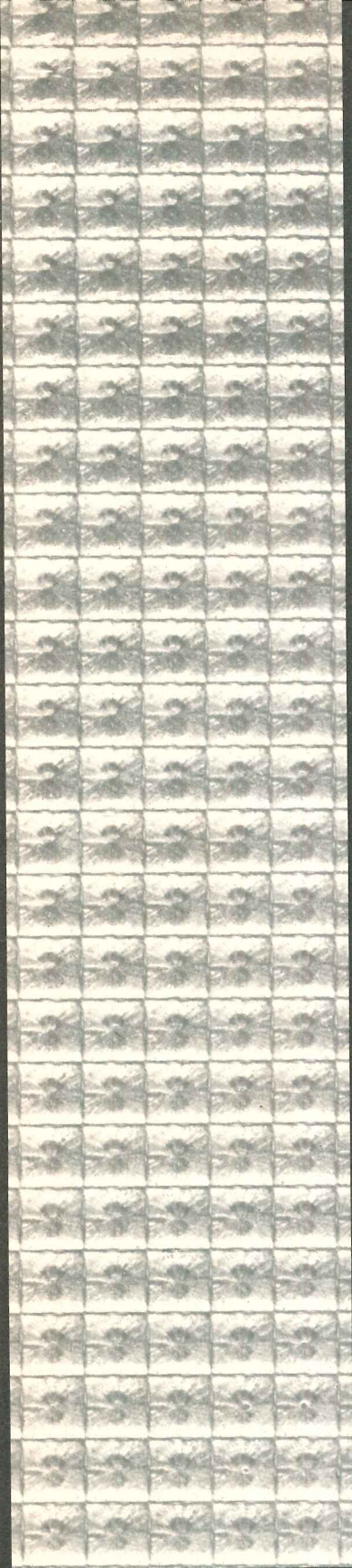


## KSH-11

Unique design. Crystal-sharp prisms in a lattice-like pattern of aluminum accents. Elegance plus superior lamp shielding. Very contemporary. Clear and silvertint. 2 x 4 or smaller.

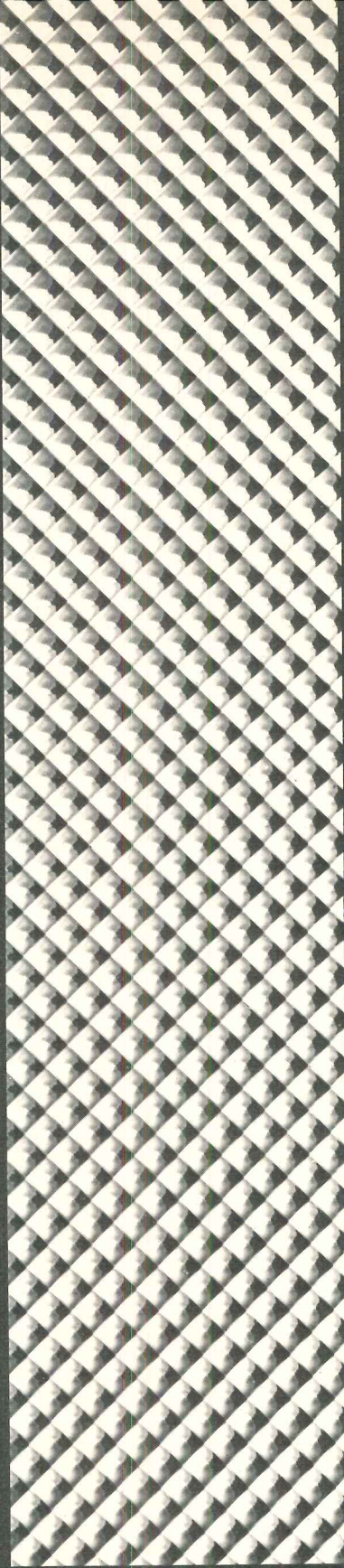
## KSH-12

The standard that has been copied many times. A basic with square prisms on a diagonal axis. Low brightness. Glare-free at luminaire and working surface. Clear, silvertint or white. Up to 4 x 4 in 3/16. 2 x 4 or smaller in 1/8.



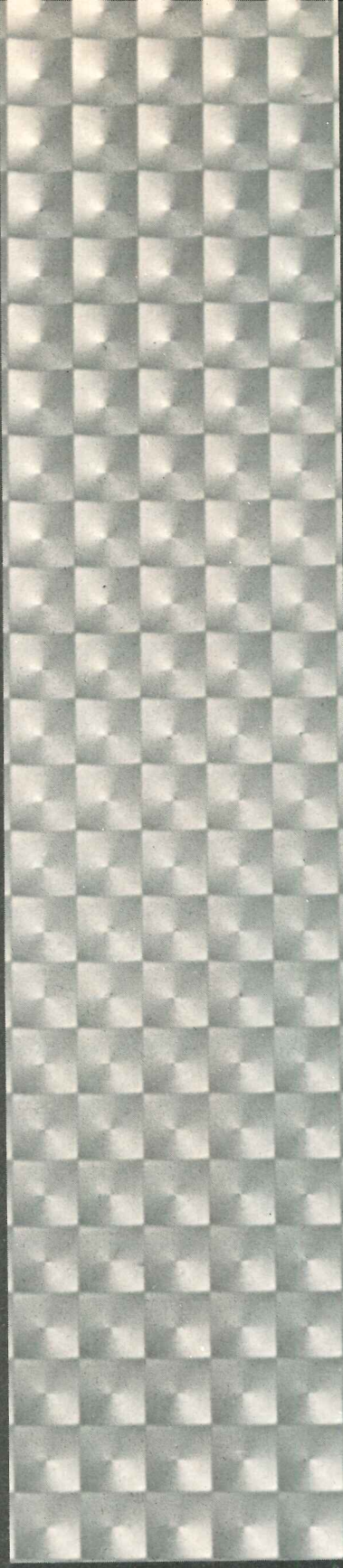
### **KSH-15**

Bold and beautiful. Distinctive 3/8" square prisms create a new modern look. Clear, silvertints or white. Sizes up to 4 x 4. Thickness is .200.



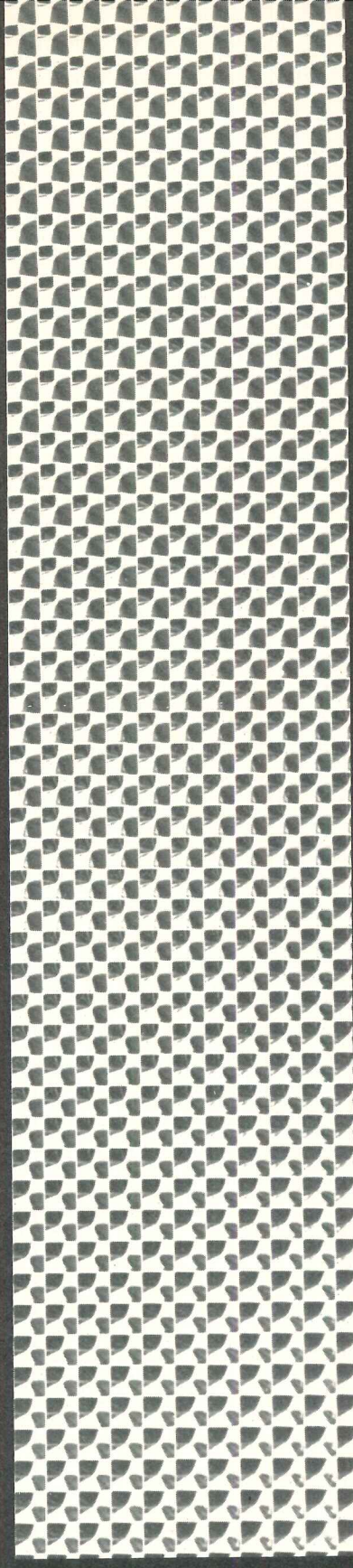
### **KSH-16**

The first prismatic designed to control both direct and reflected glare for new visual efficiency. Lamp hiding equal to opal panels. A thin sheet of acrylic covers the prismatic. Clear and silvertints. 2 x 4 or smaller in .165 O/A. 3 x 3, 2 x 4 or smaller in .225 O/A.



### **KSH-17**

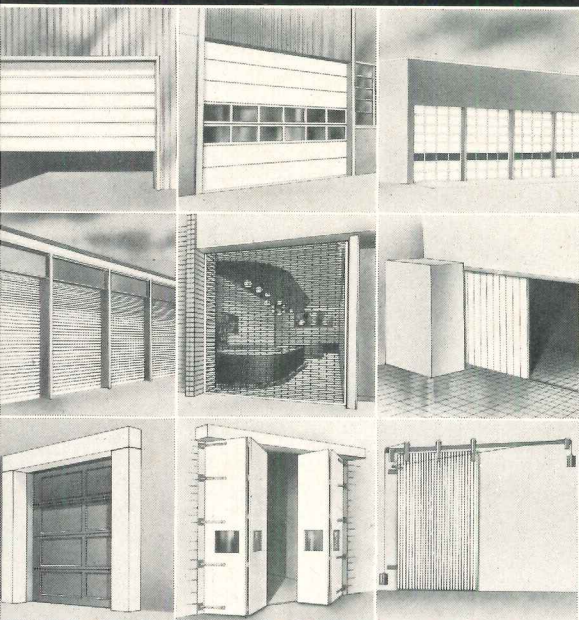
The panel that has everything. A bold modern pattern with thin sheet of acrylic on top. Direct and reflected glare control. High VCP ratings. Clear and silvertints. Sizes up to 4 x 4 in .240.



### **KSH-19**

Another basic with just about everything a panel can offer. Male conical prisms. Excellent lamp hiding. Exceptionally low brightness in 60° to 80° zones. Clear and silvertint. 5/32 or 3/16. Sizes 3 x 3, 2 x 4 or smaller.

when  
it comes to  
filling  
an opening...  
any opening



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- Sectional Doors: Steel, Fiberglass, Aluminum, Wood—Flush and Panel
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- U. L. Labeled Rolling Doors, Counter Shutters, Metal Clad and Corrugated Sliding Fire Doors
- All Special Engineered Doors
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FOR FULL DETAILS SEE YOUR SWEETS ARCHITECTURAL CATALOG FILE Section 8.9/Cra "Uprising Sectional Doors" and/or Section 8.7/Cr "Rolling Doors, Grilles, Shutters and Sliding Fire Doors."

Contact your local Crawford Distributor for specific data.



**Crawford Door Company, 4270  
High Street, Ecorse, Michigan  
48229**  
Division of The Celotex Corp.

### OFFICE LITERATURE

continued from page 194

**LABORATORY SINKS/TABLE TOPS** / Complete mold-size capabilities for both plain and raised rim table tops, plus sink sizes, are illustrated in a 12-page folder. Chemical and physical resistance test data is also included. ■ Kewaunee Scientific Equipment Corp., Adrian, Mich.

Circle 416 on inquiry card

**MATS/MATTING** / An 8-page selection guide presents 12 vinyl-based models, including nylon on vinyl mats for reception rooms and lobbies, country club matting especially made to withstand contact with golf shoes, and matting for recessed frames combining nylon carpeting with a heavy backing of solid vinyl. ■ Crown Rubber, Fremont, Ohio.\*

Circle 417 on inquiry card

**INTERIOR LOCKSETS** ■ Three styles offered in two-tone combinations and solid colors alike are presented in a brochure. Molded in thermoplastics, locksets reportedly will not tarnish, rust, corrode or discolor. ■ Acme General Corp., Monrovia, Calif.

Circle 418 on inquiry card

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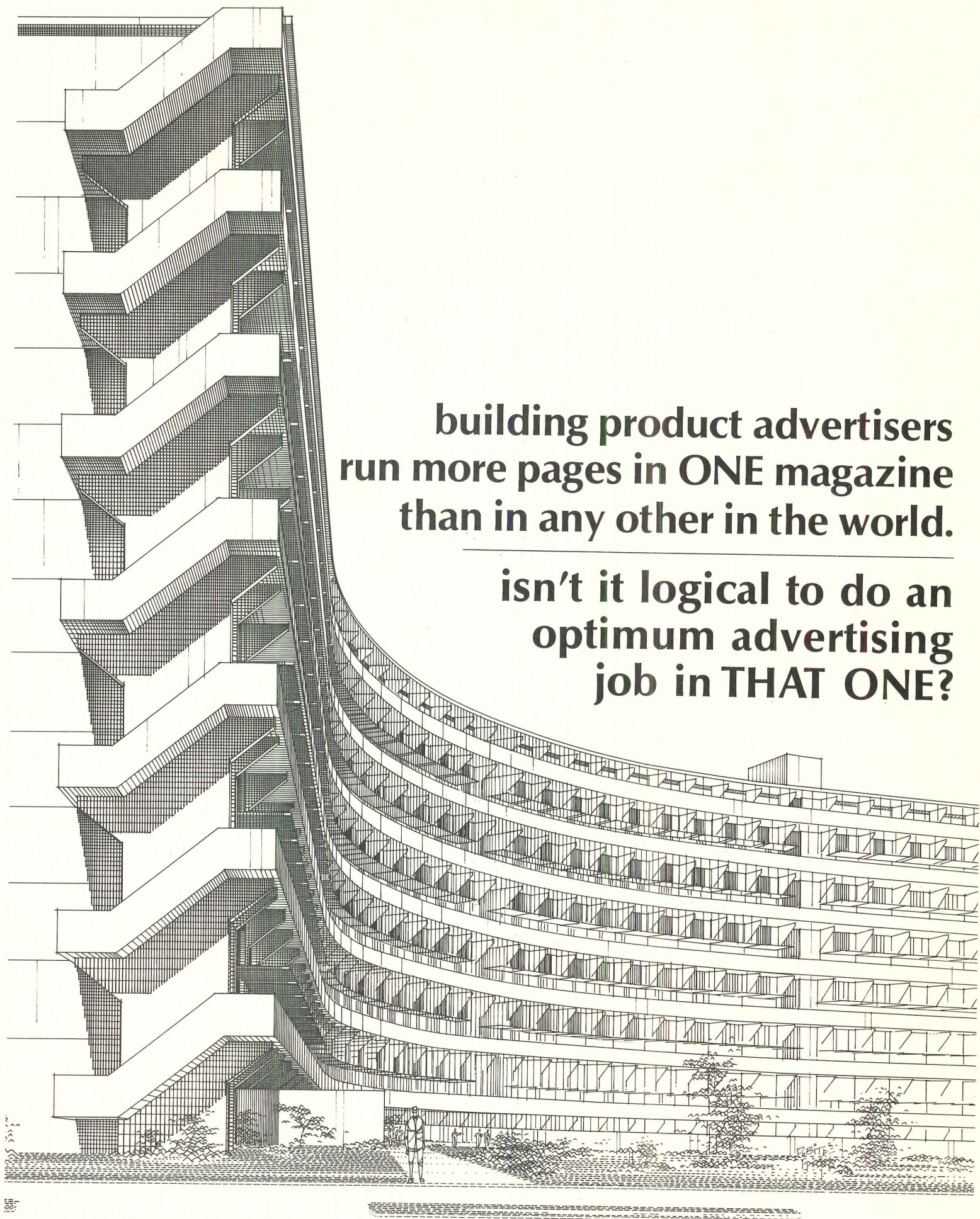
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## SEMI-ANNUAL INDEX VOLUME 150 JULY-DEC. 1971

Readers using the index will find buildings entered in three ways: by architect's name, by building or owner's name, and by building type (apartments, hospitals, schools, etc.). Other categories cover subjects in the engineering section (concrete, lighting, prefabrication, etc.). ABBREVIATIONS: AB—Architectural Business; AE—Architectural Engineering; BC—Building Components; BTS—Building Types Study.

### A

- Acme Wire/Dura Coat, Inc., Garden Grove, Cal.; Ron Yeo, archt.—July 1971, BTS, p. 106
- "AIA Convention report," News Reports, Aug. 1971, pp. 35-38, 42. "AIA starts debating goals for architecture—and for America, The" editorial by Walter F. Wagner, Jr.—July 1971, pp. 9-10
- Albert, Frants review of "The Ideal Communist City" by Alexei Gutnovet, A. Baburov, G. Djumenton, S. Kharitonova, I. Lezava and S. Sadovskij—Oct. 1971, p. 111
- Allen, Rex Whitaker, & Assocs., archts.; Dameron Hospital Addition No. 4, Stockton, Cal.—Sept. 1971, BTS, pp. 146-147
- Apartment. Aleksandra Kasuba's New York City apartment designed by herself—Aug. 1971, pp. 93-95
- Architectural Business. "Budget control of the phased construction project" (extract from book entitled "Professional Construction Management and Project Administration" by William Foxhall)—Oct. 1971, pp. 67-68. "College construction: the emphasis is on classrooms" by James E. Carlson—Sept. 1971, p. 75. "Construction markets: cross-section and perspective"—Oct. 1971, p. 76. "Construction outlook 1971; second update" by George A. Christie—July 1971, p. 62. F.W. Dodge construction outlook; 1972—Nov. 1971, pp. 67-70. "GSA advocates new financing techniques for public buildings" by Arthur F. Sampson, Commissioner, Public Buildings Service, GSA—Sept. 1971, pp. 65-66. "Industrial Building; turning the corner?" by James E. Carlson—Aug. 1971, p. 62. "Recommendations on payment practices by construction industry council"—Aug. 1971, pp. 57-58. "The search for flexibility in hospital design; a perspective on the work of Clibbon and Sachs" by Gordon Best and John Weeks—Sept. 1971, pp. 66, 258
- Architectural Education. "CIDOC: Alternatives in Design and Education" by Robert M. Golder—July 1971, pp. 117-118
- Architectural Engineering. "Dampers blunt the wind's force on tall buildings," World Trade Center, N.Y.; Skilling, Helle, Christiansen, Robertson, engrs.—Sept. 1971, pp. 155-158. "Ingenuity simplifies construction of a complex concrete roof"—Aug. 1971, pp. 125-126. "Innova-

- tive engineering leads to new stadium designs" by Hannskarl Bandel, partner, Severud Associates, consulting engrs.—Nov. 1971, pp. 139-142. "New methods for evaluating lighting systems"—Oct. 1971, pp. 139-144. "The planning disciplines for audio-visual facilities," Special Report No. 14 part 2, by the staff of Hubert Wilke, Inc., communications facilities consultants—July 1971, pp. 123-128
- Architectural Practice. "A new look at registration and licensing" by Elisabeth Kendall Thompson, Sept. 1971, pp. 9-10. "Recommendations on payment practices issued by construction industry council"—Aug. 1971, AB, pp. 57-58. L'Architecture d'Aujourd'hui acquired by Technic Union, McGraw-Hill's International Publications Div.—Oct. 1971, pp. 10, 33
- Arnell, Bruce Porter, archt.; Lakes Region General Hospital, Laconia, N.H.—Sept. 1971, BTS, pp. 144-145
- Articles. "CIDOC: alternatives in design and education" by Robert M. Golder—July 1971, pp. 117-118. "The evolution of nursing space planning for efficient operation" by Michael L. Bobrow—Sept. 1971, BTS, pp. 151-154. "Slide presentations" by Ernest Burden—July 1971, pp. 55-58
- Atelier D'Architecture, archts.; Avoriaz (ski resort), France—Nov. 1971, BTS, pp. 106-112
- Audio-Visual Systems. "The planning disciplines for audio-visual facilities," Special Report No. 14, part 2, by the staff of Hubert Wilke, Inc., communications facilities consultants—July 1971, AE, pp. 123-128
- Avoriaz (ski resort), France; Atelier d'Architecture, archts.—Nov. 1971, BTS, pp. 106-112
- Awards. American Telephone and Telegraph Company 1971 Honor Awards—July 1971, BIN, p. 41. HUD fourth biennial awards for design excellence—Nov. 1971, BIN, p. 43

### B

- Bandel, Hannskarl, partner, Severud Assoc., consulting engrs., "Innovative engineering leads to new stadium designs"—Nov. 1971, AE, pp. 139-142
- Banks. Federal Reserve Bank of Minneapolis; Gunnar Birkerts, archt.—Oct. 1971, pp. 106-109. First National City Bank of Binghamton, N.Y.; Ulrich Franzen & Assocs., archts.—July 1971, pp. 112-113. The Metropolitan Savings & Loan Bank, Southfield, Mich.; Gunnar Birkerts, archt.—Oct. 1971, pp. 100-101
- Banneker Homes, San Francisco; Joseph Esherick & Assocs., archts.—Oct. 1971, BTS, pp. 130-131
- Bassett, Mary Imogene, Hospital, Cooperstown, N.Y.; Skidmore, Owings & Merrill, archts.—Sept. 1971, BTS, pp. 140-143
- Beaubourg Center for Contemporary Arts and Information, Paris; Piano + Rogers, archts., winners of an international competition—Oct. 1971, p. 45
- Becket, Welton & Assocs., archts. & engrs.; Reed Neurological Research Center, UCLA—Aug. 1971, BC, p. 128
- Belluschi, Pietro, consulting archt.; Saint Mary's Cathedral, San Francisco; McSweeney, Ryan & Lee, archts.; Pier Luigi Nervi, consulting engr.—Sept. 1971, pp. 113-120
- Best, Gordon & Weeks, John, "The search for flexibility in hospital design; a perspective on the work of Clibbon and Sachs"—Sept. 1971, AB, pp. 66, 258
- Birkerts, Gunnar, archt., current work: IBM-MCISC Computer Center Facility, Sterling Forest, N.Y.; The Metropolitan Savings & Loan Bank, Southfield, Mich.; Duluth Public Library, Duluth, Minn.; Dance Instructional Facility, SUNY, Purchase, N.Y.; Federal Reserve Bank of Minneapolis; Contemporary Arts Museum, Houston.—Oct. 1971, pp. 97-110
- Bobrow, Michael L., "The evolution of nursing space planning for efficient operation"—Sept. 1971, BTS, pp. 151-154
- Bohlin and Powell, archts.; Fagersta Steels, Inc., Mountaintop, Pa.—July 1971, BTS, pp. 96-97
- Books. "Architecture 2000: Predictions and Methods," by Charles Jencks, Praeger Publishers, Inc.; reviewed by Robert Jensen—Oct. 1971, p. 112. "German Architecture 1960-70" by Wolfgang Pehnt, Praeger Publishers, Inc.; reviewed by Wojciech Lesnikowski—Oct. 1971, pp. 111-112. "The Ideal Communist City," by Alexei Gutnovet, A. Baburov, G. Djumenton, S. Kharitonova, I. Lezava, & S. Sadovskij, translated by Renee Watkins. George Braziller, N.Y. 1970; reviewed by Frants Albert—Oct. 1971, p. 111. "The Legal Aspects of Architecture, Engineering and the Construction Process" by Justin Sweet. West Publishing Co., St. Paul; reviewed by George P. Simonds—Oct. 1971, p. 112
- Booth & Nagle, archts., Shearson-Hammill Co., Inc. office, Rochester, N.Y.—Aug. 1971, p. 100
- Boston Madison Square Garden Club, Boston; Keith Kroeger & Leonard Perfidio, archts.—Aug. 1971, pp. 98-99
- Briscoe, Barrie, graphics, Vidal Sassoon Salon, Toronto; A. J. Diamond & Barton Myers, archts.—Aug. 1971, pp. 96-97
- Brooks, Barr, Graeber & White and Skidmore, Owings & Merrill, assoc. archts.; Lyndon Baines Johnson Library & East Campus Library & Research Building, Austin, Texas—Nov. 1971, pp. 113-120
- "Budget Control of the Phased Construction Project" (extract from a book entitled "Professional Construction Management and Project Administration" by William Foxhall)—Oct. 1971, AB, pp. 67-69
- Building Components. "Asbestos-cement pipe selected for industrial park underground piping"—Aug. 1971, p. 128. "Joint connections of plastic laboratory piping key to cost savings"—Aug. 1971, p. 128. "Lightweight, nailable framing speeds construction of resort hotel"—Aug. 1971, p. 127. "A system of coordinated containers, frames and carts for hospitals"—Sept. 1971, pp. 159-161
- Bumgardner Partnership, The, archts.; house, Mr. & Mrs. Cappy Clarke, Bainbridge Island, Wash.—Nov. 1971, pp. 124-125
- Burden, Ernest, "Slide Presentations"—July 1971, AB, pp. 55-58



## C

Campbell Green Cunzolo, archts. and engrs., Parkway West Technical School, North Fayetteville Township, Pa.—July 1971, BTS, pp. 104-105

Carlson, James E., "College construction: the emphasis is on classrooms"—Sept. 1971, AB, p. 75. "Construction markets: cross-section and perspective"—Oct. 1971, AB, p. 76. "Industrial building; turning corner?"—Aug. 1971, p. 62

Chicago Rapid Transit, Chicago, Ill.; Skidmore, Owings & Merrill, archts.—Nov. 1971, pp. 129-132

Christie, George A., "Construction Outlook 1971: second update"—July 1971, AB, p. 62

CIDOC: Alternatives in Design and Education" by Robert M. Golder—July 1971, pp. 117-118

"City and suburb: instead of shouting, how about talking?" editorial by Walter F. Wagner, Jr.—Oct. 1971, pp. 9-10

City Blue Print Co., Louisville, Ken.; Jasper D. Ward, archt.—July 1971, BTS, pp. 100-101

Clauss, Alfred & Kramer, Hirsch & Carchidi, archts.; Youth Reception & Correction Center, Yardville, N.J.—Aug. 1971, BTS, p. 120

Clibbon and Sachs, "The search for flexibility in hospital design: a perspective on the work of Clibbon and Sachs" by Gordon Best and John Weeks—Sept. 1971, AB, pp. 66, 258

College & Univ. Bldgs. Dance Instructional Facility, SUNY, Purchase, N.Y.; Gunnar Birkerts, archt.—Oct. 1971, pp. 104-105. "College Construction: the emphasis is on classrooms" by James E. Carlson—Sept. 1971, AB, p. 75

Community Design Associates, Troy West, Walter Boykowitz & Richard Britain, archts.; Forbes Field Alternative, Pittsburgh, Pa.—July 1971, pp. 119-122

Community Design/Development Centers (CDC's)—Oct. 1971, BTS, low-income housing, pp. 128-129

Computer Buildings. IBM-MCISC Computer Center Facility, Sterling Forest, N.Y.; Gunnar Birkerts, archt.—Oct. 1971, pp. 98-99

"Construction markets: cross-section and perspective," by James E. Carlson—Oct. 1971, AB, p. 76

"Construction outlook 1971: second update" by George A. Christie—July 1971, AB, p. 62

Contemporary Arts Museum, Houston; Gunnar Birkerts, archt.—Oct. 1971, p. 110

"Controversy over competency": and a proposal for next year" editorial by Walter F. Wagner, Jr.—Aug. 1971, pp. 9-10

Cornell University Multicategorical and Animal Research Laboratory, Ithaca, N.Y.; Ulrich Franzen and Assocs., archts.—July, 1971, pp. 114-116

Correctional Architecture, by Barclay Gordon, Aug. 1971, BTS 425, pp. 109-124; Illinois State Penitentiary, Vienna; Curtis & Davis with Samuel E. Sanner & Assocs., archts.: Liberty Institute, Hickman County, Tenn.; Curtis & Davis with Howard Nielson Lyne Batey & O'Brien, archts.: Regional Correctional Institute, south-central Alaska; Hellmuth, Obata & Kassabaum with Crittenden, Cassetta, Wirum & Cannon: South Carolina Women's Institution, Columbia; Geiger-McElveen-Kennedy in association with Curtis & Davis: Cheshire Corrections Community, Conn.; Curtis & Davis, archts.: St. Albans Correctional Facility, Vt.; Clarence B. Litchfield & Assocs.: Spokane Public Safety Building; Walker & McGough, archts: Leesburg Medium Security Prison, N.J.; Gruzen & Partners, archts.: Washington Institute for Women, Purdy; Walker/McGough/Foltz/Lyerla, archts. in joint venture with John M. Morse, archts.: Orange County Jail, Santa Ana, Cal.; Albert C. Martin & Assocs., archts.: Youth Reception and Correction Center, Yardville, N.J.; Alfred Clauss & Kramer, Hirsch & Carchidi, archts.: Omaha-Council Bluffs Correctional Facility; Kaplan & McLaughlin in joint venture with Kirkham, Michael & Assocs.: Illinois Security Hospital, Belleville, Ill.; Hellmuth, Obata & Kassabaum, archts.: Western Correctional Center, Burke County, N.C.; Charles Morrison Grier & Assocs. with Curtis & Davis, archts.

Craig, Zeidler & Strong, archts.; The Doctor Joseph O. Ruddy General Hospital, Whitby, Ont.—Sept. 1971, BTS, pp. 148-150

Curtis & Davis, archts. with Charles Morrison Grier & Assocs., archts.; Western Correctional Center, Burke County, N.C.—Aug. 1971, p. 124

Custer, Prof. Walter W.; Hochstrasser, Fred & Bleiker, Hans, archts., Maschinenfabrik Heberlein & Co., A.G. Wattwil, Switzerland—July 1971, BTS, pp. 92-93

## D

Damaz, Paul of Damaz & Weigel, archt.; house, Mr. & Mrs. Paul Damaz, Springs, East Hampton, N.Y.—Nov. 1971, pp. 126-127

Dameron Hospital Addition No. 4, Stockton, Cal.; Rex Whitaker Allen & Assocs., archts.—Sept. 1971, BTS, pp. 146-147

Dance Instructional Facility, SUNY, Purchase, N.Y.; Gunnar Birkerts, archt.—Oct. 1971, pp. 104-105

Dancer-Fitzgerald-Sample, Inc. office, San Francisco; Hugh Stubbins/Rex Allen Partnership, archts.—Aug. 1971, pp. 102-104

Deeter Ritchey Sippel, archts.; University of Pittsburgh, Pa.; "Planning for future capital requirements (Forbes Field)—July 1971, pp. 119-122

Design Environment Group Architects, archts.; Village West Housing, Phase 1, Louisville—Oct. 1971, BTS, pp. 136-138

Diamond, A.J. & Myers, Barton, archts.; Ontario Medical Association office building, Toronto—Sept. 1971, pp. 127-134. Vidal Sassoon Salon, Toronto; Barrie Briscoe, graphics—Aug. 1971, pp. 96-97

Duluth Public Library, Duluth, Minn.; Gunnar Birkerts, archt.—Oct. 1971, pp. 102-103

## E

Editorials by Walter F. Wagner, Jr. "The AIA starts debating goals for architecture—and for America"—July 1971, pp. 9-10. "City and suburb; instead of shouting, how about talking?"—Oct. 1971, pp. 9-10. "Controversy over 'competency'; and a proposal for next year"—Aug. 1971, pp. 9-10. "You can't make a power plant look like a tree or waste not, want not"—Nov. 1971, pp. 9-10. Nov. 1971, pp. 9-10. "Where, oh where, are the management skills?"—Dec. 1971, p. 9.

Eitan, Dan & Yashar, Itzhak, archts., assisted by Raz, Dany & Ashkenazi, Moshe, archts.; The Tel Aviv Museum, Israel—Oct. 1971, pp. 119-122

Epstein, A. & Sons, Inc., engrs. & archts.; Playboy Club, Vernon, N.J.—Aug. 1971, BC, p. 127

Esherrick, Joseph & Assocs., archts.; Baneker Homes (apts.), San Francisco—Oct. 1971, BTS, pp. 130-131

"Evolution of nursing space planning for efficient operation, The" by Michael L. Bobrow—Sept. 1971, pp. 151-154

## F

Facelle Co., The, div. of International Paper Co., Oxnard, Cal.; Albert C. Martin & Assocs., archts.—July 1971, BTS, pp. 94-95

Fagersta Steels Inc., Mountaintop, Pa.; Bohlin & Powell, archts.—July 1971, BTS, pp. 96-97

Federal Reserve Bank of Minneapolis, Minn., Gunnar Birkerts, archt.—Oct. 1971, pp. 106-109

First City National Bank of Binghamton, N.Y.; Ulrich Franzen & Assocs., archts.—July 1971, pp. 112-113

First Unitarian Church of Richmond, Va.; Ulrich Franzen & Assocs., archts.—July 1971, pp. 108-109

Florida State Museum, University of Florida, Gainesville; William Morgan, archt.—Sept. 1971, pp. 121-126

Forbes Field, University of Pittsburgh, Pa.; Deeter Ritchey Sippel, archts.: planning for future capital requirements; Community Design Associates (Troy West, Walter Boy-

kowycz & Richard Britain), archts.: Forbes Field Alternative—July 1971, pp. 119-122

Foxhall, William, "Budget control of the phased construction project" (extract from book, "Professional construction management and project administration")—Oct. 1971, pp. 67-68

Franzen, Ulrich, current works: First Unitarian Church of Richmond, Va.; Urban Development Corp. Housing for Utica, N.Y.; First City National Bank of Binghamton, N.Y.; Multicategorical & Animal Research Laboratory, Ithaca, N.Y.—July 1971, pp. 107-116

## G

Golder, Robert M., "CIDOC: Alternatives in Design and Education"—July 1971, pp. 117-118

Gordon, Barclay, "Correctional Architecture", BTS 425, Aug. 1971, BTS, pp. 109-124

Gordon Engineering Co., Wakefield, Mass.; Eroy Webber Assocs., archts.—July 1971, BTS, pp. 98-99

Granada Del Mar (hotel), St. Croix, U.S.V.I.; Robert L. Rotner, archt.—Nov. 1971, BTS, pp. 104-105

Graphics Systems Div., RCA, Dayton, N.J.; Vincent G. Kling & Partners, archts.—July 1971, BTS, pp. 104-105

Greenwich High School, Greenwich, Conn.; Reid & Taric Assocs., archts.—Nov. 1971, pp. 133-138

Grier, Charles Morrison, & Assocs., archts., with Curtis & Davis, archts.; Western Correctional Center, Burke County, N.C.—Aug. 1971, BTS, p. 124

Gruzen & Partners, archts., Leesburg Medium Security Prison, N.J.—Aug. 1971, BTS, p. 117

"GSA advocates new financing techniques for public buildings" by Arthur F. Sampson, Commissioner, Public Buildings Service, GSA—Sept. 1971, AB, pp. 65-66

## H

Health & Physical Education Facility, State University at Fredonia, N.Y.; Richard Meier & Assocs., archts.—Aug. 1971, pp. 105-108

Hellmuth, Obata & Kassabaum, archts.; Illinois Security Hospital, Belleville—Aug. 1971, BTS, pp. 122-123

Historical Center, Columbus, Ohio; Ireland & Assocs., archts.—July 1971, pp. 85-90

Hospitals. Sept. 1971, BTS 426, pp. 139-150; Mary Imogene Bassett Hospital, Cooperstown, N.Y.; Skidmore, Owings & Merrill, archts.; pp. 140-143; Lakes Region General Hospital, Laconia, N.H.; Bruce Porter Arneill, archt.; pp. 144-145; Dameron Hospital Addition No. 4, Stockton, Cal.; Rex Whitaker Allen & Assocs., archts.; pp. 146-147; The Doctor Joseph O. Ruddy General Hospital, Whitby, Ont.; Craig, Zeidler & Strong, archts.; pp. 148-150: "The evolution of nursing space planning for efficient operation" by Michael L. Bobrow—Sept. 1971, BTS, pp. 151-154. "The search for flexibility in hospital design: a perspective on the work of Clibbon and Sachs" by Gordon Best & John Weeks—Sept. 1971, AB, pp. 66, 258. "A system of coordinated containers, frames and carts for hospitals"—Sept. 1971, BC, pp. 159-161

Hotels. Nov. 1971, BTS 428, pp. 95-112 by Mildred F. Schmertz: Sheraton-Islander Inn, Goat Island, Newport, R.I.; Warner Burns Toan Lunde, archts.—pp. 96-99. Martinique Hilton, "Le Bateliere," Schoelcher, Martinique, F.W.I.; Charles Rameau, archt.; Warner Burns Toan Lunde, consulting archts.—pp. 100-103; Granada Del Mar, St. Croix, U.S.V.I.; Robert L. Rotner, archt.—pp. 104-105; Ski resort, Avoriaz, France; Atelier d'Architecture, archts.—pp. 106-112. Playboy Club, Vernon, N.J.; A. Epstein & Sons, Inc., engrs. & archts.—Aug. 1971, BC, p. 127

Houses. Clarke, Mr. & Mrs. Cappy, Bainbridge Island, Wash.; The Bumgardner Partnership, archts.—Nov. 1971, pp. 124-125. Crossman, Mr. & Mrs. John, Sea Ranch, Sonoma County, Cal.; Donald Sandy, Jr., archt.—Nov. 1971, p. 128. Damaz, Mr. & Mrs. Paul, Springs, East Hampton, N.Y.; Paul Damaz of Damaz and Weigel, archt.—Nov. 1971, pp. 126-127. Huygens and Tappé, archts.; White

Mountains, N.H.—Nov. 1971, pp. 121-123. Mallow, Donald C., archt.; Mr. & Mrs. Robert J. Schmertz, Lakewood, N.J.—Oct. 1971, pp. 113-118. Morgan William, archt.; private residence, central Florida—Sept. 1971, pp. 135-138

Housing. (low-income) Oct. 1971, BTS 427, pp. 123-138, by James D. Morgan: Bancker Homes, San Francisco; Joseph Esherrick & Assocs., archts., pp. 130-131; Reno Street Housing, Philadelphia; Joe J. Jordan, archt., pp. 132-133. Reed-Roberts Street Housing, Pittsburgh; Walter Roberts Assocs., archts., pp. 134-135; Village West Housing, Phase I, Louisville; Design Environment Group Architects, pp. 136-138. Urban Development Corp. Housing for Utica, N.Y.; Ulrich Franzen & Assocs., archts.—July 1971, pp. 110-111

Huygens and Tappé, archts.; house, White Mountains, N.H.—Nov. 1971, pp. 121-123

## I

IBM-MSISC Computer Center Facility, Sterling Forest, N.Y.; Gunnar Birkerts, archt.—Oct. 1971, pp. 98-99

Industrial Buildings. July 1971, BTS 424 pp. 91-106: Maschinenfabrik Heberlein and Co. AG, Wattwil, Switzerland; Prof. Walter W. Custer, Fred Hochstrasser & Hans Bleiker, archts.—pp. 92-93; The Facelle Company, Div. of International Paper Co., Oxnard, Cal.; Albert C. Martin & Assocs., archts.—pp. 94-95; Fagersta Steels Inc., Mountaintop, Pa.; Bohlin & Powell, archts.—pp. 96-97; Gordon Engineering Co., Wakefield, Mass.; Elroy Webber Assocs., archts.—pp. 98-99; Westinghouse Electric Vehicle Plant, Homewood, Pa.; Walter Roberts Assocs., archts.—pp. 100-101; City Blue Print Co., Louisville, Ken.; Jasper D. Ward, archt.—pp. 100-101; Salisbury Laboratories Research Center, Charles City, Iowa; Perkins & Will, archts.—pp. 102-103; Parkway West Technical School, North Fayetteville Township, Pa.; Campbell Green Cunzolo, archts. and engrs.—pp. 104-105; Graphics Systems Div., RCA, Dayton, N.J.; Vincent G. Kling & Partners, archts.—p. 104-105; Acme Wire/Dura Coat Inc., Garden Grove, Cal.; Ron Yeo, archt.—p. 106. McGaw Park, American Hospital Supply Corp., Lake County, Ill.; Nelson, Ostrom, Baskin, Berman & Assocs., archts. & engrs.—Aug. 1971, BC, p. 128

Interiors. Mary Imogene Bassett Hospital, Cooperstown, N.Y.; Skidmore, Owings & Merrill, archts.—Sept. 1971, BTS, pp. 140-143. Boston Madison Square Garden Club; Keith Kroeger & Leonard Perfidio, archts.—Aug. 1971, pp. 98-99. Dancer-Fitzgerald-Sample, Inc. (office), San Francisco; Hugh Stubbins/Rex Allen Partnership, archts.—Aug. 1971, p. 102-104. Aleksandra Kasuba's New York City apartment designed by herself—Aug. 1971, pp. 93-95. Ontario Medical Association office bldg., Toronto; A. J. Diamond & Barton Myers, archts.—Sept. 1971, pp. 127-134. Qantas Airways ticket office; Whisler-Patri, archts.—Aug. 1971, p. 101. Vidal Sassoon Salon, Toronto; A. J. Diamond & Barton Myers, archts.; Barrie Briscoe, graphics—Aug. 1971, pp. 96-97. Shearson-Hammill Co., Inc. office, Rochester, N.Y.; Booth & Nagle, archts.—Aug. 1971, p. 100.

Ireland & Assocs., archts., Historical Center, Columbus, Ohio—July 1971, pp. 85-90

Israel. The Tel Aviv Museum, archts: Itzhak Yashar and Dan Eitan, assisted by Dany Raz and Moshe Ashkenazi—Oct. 1971, pp. 119-122

Jensen, Robert, "Common parts and legible spaces in Toronto's O.M.A. building"—Sept. 1971, pp. 127-134

Johnson, Lyndon Baines, Library and East Campus Library and Research Building, Austin, Tex.; Skidmore, Owings & Merrill and Brooks, Barr, Graeber & White, associated archts.—Nov. 1971, pp. 113-120

Jordan, Joe J., archts.; Reno Street Housing, Philadelphia—Oct. 1971, BTS, pp. 132-133

## K

Kansas City Construction Industry Affairs Council—Aug. 1971, AB, pp. 57-58

Kaplan & McLaughlin in joint venture with Kirkham, Michael & Assocs., archts.; Omaha-Council Bluffs Correctional Facility—Aug. 1971, BTS, p. 121

Kasuba, Aleksandra, her apartment, New York City, designed by herself—Aug. 1971, pp. 93-95

Kepes, Gyorgy, artist, stained glass; Saint Mary's Cathedral, San Francisco—Sept. 1971, pp. 113-120

Kirkham, Michael & Assocs., archts. in joint venture with Kaplan & McLaughlin; Omaha-Council Bluffs Correctional Facility—Aug. 1971, BTS, p. 121

Kling, Vincent G., & Partners, archts., Graphics Systems Div., RCA, Dayton, N.J.—July 1971 BTS, pp. 104-105

Kroeger, Keith & Perfidio, Leonard, archts.; Boston Madison Square Garden Club—Aug. 1971, pp. 98-99

## L

Lakes Region General Hospital, Laconia, N.H.; Bruce Porter Arneill, archt.—Sept. 1971, BTS, pp. 144-145

Lesnikowski, Wojciech, review of "German Architecture 1960-1970" by Wolfgang Pehtnt—Oct. 1971, pp. 111-112

Libraries. Duluth Public Library, Duluth, Minn.; Gunnar Birkerts, archt.—Oct. 1971, pp. 102-103. Lyndon Baines Johnson Library & East Campus Library & Research Building, Austin, Texas; Skidmore, Owings & Merrill and Brooks, Barr, Graeber & White, associated archts.—Nov. 1971, pp. 113-120

Lighting. "New methods for evaluating lighting systems"—Oct. 1971, AE, pp. 139-144

Lippold, Richard, artist, baldacchino; Saint Mary's Cathedral, San Francisco—Sept. 1971, pp. 113-120

## M

Mallow, Donald C., archt., house for Mr. & Mrs. Robert J. Schmertz, Lakewood, N.J.—Oct. 1971, pp. 113-118

Martin, Albert C. & Assocs., archts., The Facelle Co., Div. of International Paper Co., Oxnard, Cal.—July 1971, BTS, pp. 94-95. Orange County Jail, Santa Ana, Cal.—Aug. 1971, BTS, p. 119

Martinique Hilton, "Le Bateliere," Schoelcher, Martinique, F.W.I.; Charles Rameau, archt., Warner Burns Toan Lunde, consulting archts.—Nov. 1971, BTS, pp. 100-103

Maschinenfabrik Heberlein & Co. AG, Wattwil, Switzerland; Prof. Walter W. Custer, Fred Hochstrasser and Hans Bleiker, archts.—July 1971, BTS, pp. 92-93

McGaw Park, American Hospital Supply Corp., Lake County, Ill.; Nelson, Ostrom, Baskin, Berman & Assocs., Inc., archts. & Engrs.—Aug. 1971, BC, p. 128

McSweeney, Ryan & Lee, archts., Saint Mary's Cathedral, San Francisco; Pietro Belluschi, consulting archt.; Pier Luigi Nervi, consulting engr.—Sept. 1971, pp. 113-120

Meier, Richard, & Assocs., archts; Health & physical education facility, State University at Fredonia, N.Y.—Aug. 1971, pp. 105-108

Metropolitan Savings & Loan Bank, The; Southfield, Mich.; Gunnar Birkerts, archt.—Oct. 1971, pp. 100-101

Morgan, James D., "6 Interiors"—Aug. 1971, pp. 93-104. "Should Pittsburgh save Forbes Field?" July 1971, pp. 119-122. "A timeless modern house" for Mr. & Mrs. Robert J. Schmertz, Lakewood, N.J.; Donald C. Mallow, archt.—Oct. 1971, pp. 113-118. "Why not build factories people can enjoy?" July 1971, BTS Industrial Buildings 424, pp. 91-106

Morgan, William, archt.; Florida State Museum, University of Florida, Gainesville—Sept. 1971, pp. 121-126. Residence, central Florida—Sept. 1971, pp. 135-138

Multi-categorical and Animal Research Laboratory, Ithaca, N.Y.; Ulrich Franzen & Assocs., archts.—July 1971, pp. 114-116

Museums. Contemporary Arts Museum, Houston; Gunnar

Birkerts, archt.—Oct. 1971, p. 110. Florida State Museum, University of Fla., Gainesville; William Morgan, archt.—Sept. 1971, pp. 121-126. Historical Center, Columbus, Ohio; Ireland & Assocs., archts.—July 1971, pp. 85-90. The Tel Aviv Museum, Israel; architects: Itzhak Yashar & Dan Eitan, assisted by Dany Raz & Moshe Ashkenazi—Oct. 1971, pp. 119-122

## N

Nelson, Ostrom, Baskin, Berman & Assocs., Inc., archts. & engrs.; McGaw Park, American Hospital Supply Corp., Lake County, Ill.—Aug. 1971, p. 128

NEOCON III, third annual National Exposition of Contract Furnishings, News Reports, Aug. 1971, p. 38

Nervi, Pier Luigi, consulting engr.; Saint Mary's Cathedral, San Francisco; McSweeney, Ryan & Lee, archts.; Pietro Belluschi, consulting archt.—Sept. 1971, pp. 113-120

## O

Office Buildings. Dancer-Fitzgerald-Sample, Inc., San Francisco; Hugh Stubbins/Rex Allen Partnership, archts.—Aug. 1971, pp. 102-104. Federal Reserve Bank of Minneapolis, Minn.; Gunnar Birkerts, archt.—Oct. 1971, pp. 106-109. First City National Bank of Binghamton, N.Y.; Ulrich Franzen & Assocs., archts.—July 1971, pp. 112-113. Metropolitan Savings & Loan Bank, Southfield, Mich.; Gunnar Birkerts, archt.—Oct. 1971, pp. 100-101. Ontario Medical Association, Toronto; A. J. Diamond & Barton Myers, archts.—Sept. 1971, pp. 127-134. Ontario Medical Association office bldg., Toronto; A. J. Diamond & Barton Myers, archts.—Sept. 1971, pp. 127-134

Orange County Government Center, Goshen, N.Y.; Paul Rudolph, archt.—Aug. 1971, pp. 83-92

## P

Parkway West Technical School, North Fayetteville Township, Pa.; Campbell Green Cunzolo, archt. & engr.—July 1971, BTS, pp. 104-105

Perkins and Will, archts., Salisbury Laboratories Research Center, Charles City, Iowa—July 1971, BTS, pp. 102-103

Piano + Rogers, archts.; winners of competition for design of Beaubourg Center for Contemporary Arts and Information, Paris—Oct. 1971, p. 45

"Planning disciplines for audio-visual facilities, The," Special Report No. 14 Part 2, by the staff of Hubert Wilke, Inc., communications facilities consultants—July 1971, AE, pp. 123-128

Playboy Club, Vernon, N.J.; A. Epstein & Sons, Inc.; engrs. and archts.—Aug. 1971, BC, p. 127

Prisons. See Correctional Architecture.

Public Buildings. Orange County Government Center, Goshen, N.Y.; Paul Rudolph, archt.—Aug. 1971, pp. 83-92

## Q

Qantas Airways ticket office, Los Angeles; Whisler-Patri, archts.—Aug. 1971, p. 101

## R

Rameau, Charles, archt.; Martinique Hilton, "Le Bateliere," Schoelcher, Martinique, F.W.I.; Warner Burns Toan Lunde, consulting archts.—Nov. 1971, BTS, pp. 100-103

Reed Neurological Research Center, UCLA; Welton Becket and Assocs., archts. & engrs.—Aug. 1971, BC, p. 128

Reed-Roberts Street Housing, Pittsburgh; Walter Roberts Assocs., archts.—Oct. 1971, BTS, pp. 134-135

"Recommendations on payment practices issued by Construction Industry Council"—Aug. 1971, AB, pp. 57-58

Recreation Building. Boston Madison Square Garden Club,

- Boston; Keith Kroeger & Leonard Perfidio, archts.—Aug. 1971, pp. 98-99
- Recreational Buildings. Forbes Field, Pittsburgh, Pa.—July 1971, pp. 119-122. Health and physical education facility, State University at Fredonia, N.Y.; Richard Meier & Assocs., archts.—Aug. 1971, pp. 105-108. "Innovative engineering leads to new stadium designs" by Hanns-karl Bandel, partner, Severud Assocs., consulting engrs.—Nov. 1971, AE, pp. 139-142
- Rehabilitation and renovation. Building Types Study 429, New life for old buildings: the architect's renewed commitment to preservation—Dec. 1971, pp. 81-138: The architect's role in preservation by Robert Jensen: pp. 82-85; Some funding sources for preservation & rehabilitation: pp. 83, 85. Restoration of historic bldgs. & places, by Elisabeth Kendall Thompson: National Collection of Fine Arts-National Portrait Gallery, Washington, D.C.; Faulkner, Stenhouse Fryer & Faulkner, restoration archts., pp. 86-87. The Auditorium Theater, Chicago; Harry Weese & Assocs., restoration archts., pp. 88-89. James Gallier, Jr. house, New Orleans; Richard Koch & Samuel Wilson, Jr., restoration archts., pp. 90-91. Iolani Palace, Honolulu; Geoffrey W. Fairfax, restoration archt., p. 92. Historic districts: Heritage Square, Los Angeles; Old Sacramento, Cal.; Jackson Square, San Francisco; Jacksonville, Ore., p. 93. Renovation with a major new addition, by Robert Jensen: The New York State Bar Center, Albany, N.Y.; James Stewart Polshek & Assocs., archts., pp. 94-99. Mount Sinai Medical Center remodeling, New York City; Kahn & Jacobs, archts., pp. 100-101. Park Danforth Home for the Elderly, Portland, Me.; Bruce Porter Arneill, archt., pp. 102-105. Practice problems in remodeling, by William B. Foxhall, pp. 106-110. Rehabilitation of buildings for the same use, by Barclay Gordon: The David Sarnoff bldg. of the Educational Alliance, New York City; David Specter, archt., pp. 112-113. Levi-Strauss Factory, San Francisco; Howard Friedman, archt., pp. 114-115. Project Rehab (HUD), pp. 116. Chapel of St. Jude, Christ Church, Washington, D.C.; Philip Ives, archt., pp. 117. The Greening of Ruppert, New York City, pp. 118. Railroad stations: an endangered species (a photo essay), by Jonathan Hale, pp. 120-123. Rehabilitation of older bldgs for new use by James Morgan: Newark Community Center of the Arts, N.J.; Hardy, Holzman & Pfeiffer, archts., pp. 124-125. Heinz Hall for the Performing Arts, Pittsburgh; Stotz, Hess, MacLachlan & Fosner, archts., pp. 126-129. Old City Hall, Boston; Anderson Notter, Assocs., archts., pp. 130-131. Jackson Place, San Francisco; Lloyd Flood & Bruce Beebe, archts., pp. 132-133. The heritage that should be saved (a photo essay), by Janet Bloom, pp. 133-138
- Reid & Taric Assocs., archts.; Greenwich High School, Greenwich, Conn.—Nov. 1971, pp. 133-138
- Religious Buildings. First Unitarian Church of Richmond, Va.; Ulrich Franzen & Assocs., archts.—July 1971, pp. 108-109. Saint Mary's Cathedral, San Francisco; McSweeney, Ryan & Lee, archts.; Pietro Belluschi, consulting archt.; Pier Luigi Nervi, consulting engr.—Sept. 1971, pp. 113-120
- Reno Street Housing, Philadelphia; Joe J. Jordan, archt.—Oct. 1971, BTS, pp. 132-133
- Research Buildings. Multi-categorical & animal research laboratory, Ithaca, N.Y.; Ulrich Franzen and Assocs., archts.—July 1971, pp. 114-116. Reed Neurological Research Center, UCLA; Welton Becket and Assocs., archts. & engrs.—Aug. 1971, BC, p. 128. Salsbury Laboratories Research & Admin. Ctr., Charles City, Iowa; Perkins and Will, archts.—July 1971, BTS, pp. 102-103
- Roberts, Walter, Assocs., archts.; Reed-Roberts Street Housing, Pittsburgh—Oct. 1971, BTS, pp. 134-135. Westinghouse Electric Vehicle Plant, Homewood, Pa.—July 1971, BTS, pp. 100-101
- Roofs. "Ingenuity simplifies construction of a complex concrete roof"—Aug. 1971, AE, pp. 125-126
- Rotmer, Robert L., archt.; Granada Del Mar, St. Croix, U.S.V.I.—Nov. 1971, BTS, pp. 104-105
- Ruddy (The Doctor Joseph O.) General Hospital, Whitby, Ontario; Craig, Zeidler & Strong, archts.—Sept. 1971, BTS, pp. 148-150
- Rudolph, Paul, archt., Orange County Government Center, Goshen, N.Y.—Aug. 1971, pp. 83-92
- S**
- Saint Mary's Cathedral, San Francisco; McSweeney, Ryan & Lee, archts.; Pietro Belluschi, consulting archt.; Pier Luigi Nervi, consulting engr. Artists: Gyorgy Kepes, stained glass; Richard Lippold, baldacchino—Sept. 1971, pp. 113-120
- Salsbury Laboratories Research & Admin. Center, Charles City, Iowa; Perkins and Will, archts.—July 1971, BTS, pp. 102-103
- Sampson, Arthur F., Commissioner, Public Buildings Service, GSA; "GSA advocates new financing techniques for public buildings"—Sept. 1971, pp. 65-66
- Sandy, Donald, Jr., archt.; house, Mr. & Mrs. John Crossman, Sea Ranch, Sonoma County, Cal.—Nov. 1971, p. 128
- Sassoon, Vidal, Salon, Toronto; A.J. Diamond & Barton Myers, archts.; Barrie Briscoe, graphics—Aug. 1971, pp. 96-97
- Schmertz, Mildred F., Hotels, BTS 428—Nov. 1971, pp. 95-112. "New directions for Gunnar Birkerts"—Oct. 1971, pp. 97-110. Orange County Government Center, Goshen, N.Y.; Paul Rudolph, archt.—Aug. 1971, pp. 83-92
- Schmertz, Mr. & Mrs. Robert J., house, Lakewood, N.J.; Donald C. Mallow, archt.—Oct. 1971, pp. 113-118
- Schools. Greenwich High School, Greenwich, Conn.; Reid & Taric Assocs., archts.—Nov. 1971, pp. 133-138. Parkway West Technical School, North Fayetteville Township, Pa.; Campbell Green Cunzolo, archts. & engrs.—July 1971, BTS, pp. 104-105
- "Search For Flexibility in Hospital Design, The: A Perspective on the Work of Clibbon and Sachs" by Gordon Best and John Weeks—Sept. 1971, AB, pp. 66, 258
- Shearson-Hammill Co., Inc. office, Rochester, N.Y.; Booth & Nagle, archts.—Aug. 1971, p. 100
- Sheraton-Islander Inn, Goat Island, Newport, R.I.; Warner Burns Toan Lunde, archts.—Nov. 1971, BTS, pp. 96-99
- "Should Pittsburgh Save Forbes Field?" by James D. Morgan—July 1971, pp. 119-122
- Simonds, George P., review of "The Legal Aspects of Architecture, Engineering and the Construction Process" by Justin Sweet—Oct. 1971, p. 112
- Skidmore, Owings & Merrill, archts.; Mary Imogene Bassett Hospital, Cooperstown, N.Y.—Sept. 1971, BTS, pp. 140-143. Chicago Rapid Transit, Chicago, Ill.—Nov. 1971, pp. 129-132. With Brooks, Barr, Graeber & White, assoc. archts.; Lyndon Baines Johnson Library & East Campus Library & Research Building, Austin, Texas—Nov. 1971, pp. 113-120
- Skilling, Helle, Christiansen, Robertson, engrs., World Trade Center, N.Y. "Dampers blunt the wind's force on tall buildings"—Sept. 1971, AE, pp. 155-158
- Slide Presentations by Ernest Burden—July 1971, AB, pp. 55-58
- Structure. "Dampers blunt the wind's force on tall buildings"; World Trade Center, N.Y.; Skilling, Helle, Christiansen, Robertson, engrs.—Sept. 1971, AE, pp. 155-158
- Stubbins, Hugh/Allen, Rex, Partnership, archts., Dancer-Fitzgerald-Sample, Inc. office, San Francisco—Aug. 1971, pp. 102-104
- SUNY, Dance Instructional Facility, Purchase, N.Y.; Gunnar Birkerts, archt.—Oct. 1971, pp. 104-105. Health and Physical Education Facility, Fredonia, N.Y.; Richard Meier & Assocs., archts.—Aug. 1971, pp. 105-108
- Switzerland, Maschinenfabrik Heberlein and Co., AG, Wattwil; Professor Walter W. Custer, Fred Hochstrasser and
- Hans Bleiker, archts.—July 1971, BTS, pp. 92-93
- T**
- Tel Aviv Museum, The; Israel; architects: Itzhak Yashar and Dan Eitan, assisted by Dany Raz & Moshe Ashkenazi—Oct. 1971, pp. 119-122
- Thompson, Elisabeth Kendall, "A new look at registration and licensing"—Sept. 1971, pp. 9-10
- Transportation. Chicago Rapid Transit, Chicago, Ill.; Skidmore, Owings & Merrill, archts.—Nov. 1971, pp. 129-132. Qantas Airways ticket office; Whisler-Patri, archts.—Aug. 1971, p. 101
- U**
- Urban Development Corp. (UDC) Housing for Utica, N.Y.; Ulrich Franzen & Assocs., archts.—July 1971, pp. 110-111
- V**
- Village West Housing, Phase 1, Louisville; Design Environment Group Architects, archts.—Oct. 1971, BTS, pp. 136-138
- W**
- Wagner, Walter F., Jr., editorials: "The AIA starts debating goals for architecture—and for America"—July 1971, pp. 9-10; "City and suburb; instead of shouting, how about talking?"—Oct. 1971, pp. 9-10; "Controversy over 'competency'; and a proposal for next year"—Aug. 1971, pp. 9-10; "You can't make a power plant look like a tree or waste not, want not"—Nov. 1971, pp. 9-10; "Where, oh where are the management skills?"—Dec. 1971, p. 9
- Walker/McGough/Foltz/Lyerla in joint venture with John M. Morse, archts., Washington Institute for Women, Purdy, Wash.—Aug. 1971, BTS, p. 118
- Walker & McGough, archts.; Spokane Public Safety Building—Aug. 1971, BTS, p. 118
- Ward, Jasper D., archt., City Blue Print Co., Louisville, Ken.—July 1971 BTS, pp. 100-101
- Warner Burns Toan Lunde, archts.; Sheraton-Islander Inn, Goat Island, Newport, R.I.—Nov. 1971, BTS, pp. 96-99. Consulting archts. to Charles Rameau, archt.; Martinique Hilton, "Le Bateliere," Schoelcher, Martinique, F.W.I.—Nov. 1971, BTS, pp. 100-103
- Webber, Elroy, & Assocs., archts., Gordon Engineering Co., Wakefield, Mass.—July 1971, BTS, pp. 98-99
- Weeks, John & Best, Gordon, "The search for flexibility in hospital design: a perspective on the work of Clibbon and Sachs"—Sept. 1971, AB, pp. 66, 258
- Westinghouse Electric Vehicle Plant, Homewood, Pa.; Walter Roberts Assocs., archts.—July 1971, BTS, pp. 100-101
- Whisler-Patri, archts., Qantas Airways ticket office, Los Angeles—Aug. 1971, p. 101
- Wilke, Hubert, Inc., the staff of, communications facilities consultants, "The Planning disciplines for audio-visual facilities" Special Report No. 14, Part 2—July 1971, AE, pp. 123-128
- World Trade Center, N.Y.; Skilling, Helle, Christiansen, Robertson, engrs.; "Dampers blunt the wind's force on tall buildings"—Sept. 1971, AE, pp. 155-158
- Y**
- Yashar, Itzhak and Eitan, Dan, assisted by Raz, Dany & Ashkenazi, Moshe, archts.; The Tel Aviv Museum, Israel—Oct. 1971, pp. 119-122
- Yeo, Ron, archt., Acme Wire/Dura Coat Inc., Garden Grove, Cal.—July 1971 BTS, p. 106
- "You can't make a power plant look like a tree or waste not, want not," editorial, by Walter F. Wagner, Jr.—Nov. 1971, pp. 9-10

# ADVERTISING INDEX

Pre-filed catalogs of the manufacturers listed below are available in the 1971 Sweet's Catalog File as follows.

- A Architectural File (green)
- I Industrial Construction File (blue)
- L Light Construction File (yellow)
- D Interior Design File (black)

## A

- A-I Acorn Products Co. .... 61
- A Alpana Aluminum Products Inc. .... 196
- A-I-L American Gas Association .....184-185
- A American Olean Tile Company ..... 195
- A-L Andersen Corp. ....68-69
- Architectural Record .....204-205
- A-I-L-D Armstrong Cork Co. ....12-13
- A-I-L-D ASG Industries Inc. .... 186
- AVM Corporation Jamestown Products Division ..... 182
- Azrock Floor Products .....3rd Cover

## B

- A Ball Corp. .... 72
- A-D Berven of California ..... 164
- Bethlehem Steel Corp. ....70-71
- A-D Burke Rubber .....32-5
- A-I Burns and Russell Co. .... 175

## C

- A-L Caradco Division of Scovill Mfg. Co. ....192-193
- A-I-L Carey Company, Philip ..... 7
- A-D Carpenter & Co., L. E. .... 51
- A-I-L Carrier Air Conditioning Co. ....184-185
- Cockle Ventilator Co., Inc. .... 72
- Commercial Carpet Corporation ..... 157
- A-L Compotite Shower Pan ..... 62
- A-I-D Conwed Corp. ....153-154
- Copper Development Association, Inc. ....16-17
- A Crawford Door Company ..... 202

## D

- A-I DeVAC Inc. .... 14
- A Dover Corp., Elevator Div. .... 34
- D Dow Badische Co. .... 33
- A-I DuPont De Nemours & Co., Inc., E. I. .... 18
- A-I DuPont De Nemours & Co., Inc., E. I.—Textile Fibers ..... 8
- A Durez Division—Hooker Chemical Corporation ..... 62

## E

- Edison Electric Institute .....48-49
- A-L Engineered Products Co. .... 72

## F

- L Fedders Corp. ....139 to 151
- Fife, Inc., Richard ..... 178
- A Follansbee Steel Corp. .... 181
- Fritz Hansen Inc. .... 164

## G

- A-I-L-D General Electric Co. ....2nd Cover-1
- A General Partitions Mfg. Corp. .... 194
- General Portland Cement Co. Trinity Div.—Warmtone ..... 165
- A-I-L-D Georgia-Pacific Corporation ..... 169
- Goodyear Tire & Rubber Co. ....15, 55
- A-I Grefco Inc., Building Products Div. ..38-39
- GTE—Sylvania, L/C Lighting .....66-67

## H

- A Haughton Elevator Company ..... 178
- A Haws Drinking Company .....31, 178
- Holophane Co., Inc. ....44-45

## J

- Jamestown Products Division AVM Corporation ..... 182
- A Jamison Door Co. .... 79
- Jute Carpet Backing Council, Inc. .... 26

## K

- Keene Corp., Sechrist—Lighting Div. .. 167
- A-I Keene Corp.—Stonco Div. ....28-29
- K-S-H, Inc. ....200-201

## L

- Latco Products .....32-6
- A LCN Closers, Inc. .... 58
- A-L Lennox Industries, Inc. ....23 to 25
- A-I-L Libbey-Owens-Ford Co. ....20-21
- Liskey Aluminum Inc. .... 175
- Lithonia Lighting ..... 156
- A Lyon Metal Products, Inc. .... 187

## M

- A Massey Seating Co. .... 166
- A Matthiessen & Hegeler Zinc Co. .... 19
- A Montgomery Elevator Co. .... 52
- Morrison Molded Fiber Glass Co. .... 78

## N

- National Electrical Contractors Association ..... 170

## O

- A-I Onan Div., Studebaker Corp. .... 75
- A Otis Elevator Co. .... 6
- A-I-L Overhead Door Corp. ....158-159
- A Overly Mfg. .... 43

## P

- A Pella Rolscreen Co. ....179-180
- Phillips Fibers Corp. .... 188
- A-I Pittsburgh Corning Corp. ....198-199
- A Pomona ..... 195
- A-L-D PPG Industries, Inc.—Commercial Glass .....76-77
- A-D Prescolite Mfg. Corp. .... 183
- Process Solvent Co. .... 194

## R

- A Ridigized Metal Corp. .... 74
- A-I Robertson Co., H. H. .... 80
- A Rohm and Haas Company ..... 63

## S

- St. Charles Mfg. Co. .... 161
- St. Joe Minerals Corporation .....59, 189
- A Sargent & Company ..... 32
- Schlage Lock Co. .... 191
- Season-all Industries, Inc. .... 197
- A Shatterproof Glass Co. ....27, 163
- A-I Silbrico Corp. .... 196
- Sloan Valve Company .....4th Cover
- A Soss Mfg. Co. ....164
- Southern California Gas Company .....32-2-32-3
- A-I Span-Deck Mfg. Assn. .... 155
- A Standard Conveyor Co. .... 62
- Star Sprinkler Corp. .... 73
- Sweet's Catalog Service ..... 211

## T

- A-I Taylor Co., The Halsey W. .... 162
- A-I Thiokol Chemical Corp. .... 203
- Thonet American Chair Company ..... 50
- A Tremco Mfg. Co. ....56-57, 171-174

## U

- A-I United States Gypsum Co. .... 65
- A-I-L United States Steel Corp. ....46-47
- A-L Uvalde Rock Asphalt .....3rd Cover

## V

- Vega Industries Inc. .... 30
- A Vентаire Corporation ..... 190

## W

- A Watson Mfg. Co. .... 42
- Wells Fargo Bank .....32-1
- A-I-D Westinghouse Electric Corp.—ASD Group ..... 11
- A-D Westinghouse Electric Corp. Water Cooler ..... 22
- A-I Wheeling Corrugating Co. ....2-3
- Wide-Lite Corporation .....176-177
- A Wilson Research Corp. .... 166

## Z

- A-I Zero Weather Stripping Co., Inc. .... 160
- A-I-L Zonolite Division ..... 168

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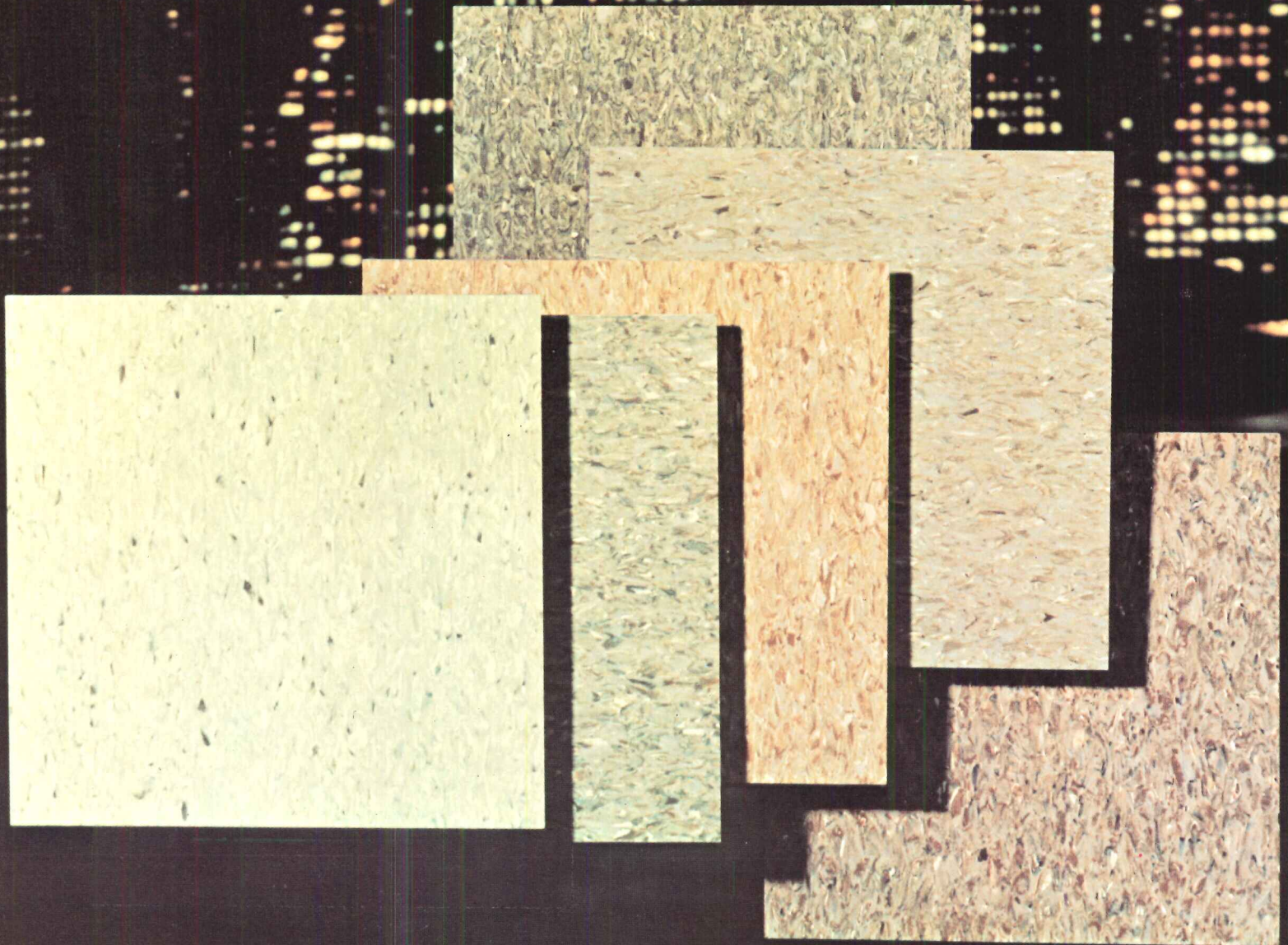
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