

COUNTY FEDERAL SAVINGS BANK, GREENS FARMS, CONNECTICUT, BY MOORE GROVER HARPER
BUILDING TYPES STUDY: RECORD INTERIORS OF 1976
SPELMAN HALLS AT PRINCETON UNIVERSITY BY I. M. PEI & PARTNERS
BEAUX ARTS OR BOZARTS? BY JEAN PAUL CARLHIAN
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ARCHITECTURAL RECORD

JANUARY 1976 **1** A MCGRAW-HILL PUBLICATION FOUR DOLLARS PER COPY

Introducing Quiet Zone® II from Armstrong. Step on it and it feels like carpet; spill on it and you know it's vinyl.

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Shown left to right are the three Quiet Zone II patterns: Houndstooth Check, Random Texture, and Grand Central — each available in a range of colors to complement your decor.

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Datacenter/The Equitable Life Assurance Society of the United States, Easton, Pennsylvania, Architects: Kahn and Jacobs, New York City, Ceiling System: Armstrong C-60/60 Luminaire

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Security National Bank, San Antonio, Texas, Architects: Environmental Professionals Corporation, San Antonio, Texas, Ceiling System: Armstrong AW 3600 Luminaire

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Quebec.



Palmyra Area High School, Palmyra, Pennsylvania, Architects: Lawrie and Green, Harrisburg, Pennsylvania, Ceiling System: Armstrong C-60/30 Luminaire

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FROM THE  INDOOR WORLD® OF
Armstrong

Letters to the editor

It was not very apparent in your October issue report on the Roosevelt Island Housing Competition that there were two winning schemes which you chose not to publish. These were the schemes by Kyu Sung Woo of M.I.T. and Robert M. Brandon and Robert L. Amico of the University of Illinois.

Robert M. Brandon
University of Illinois
at Urbana-Champaign

We reported that UDC's financial troubles forced "a temporary cancellation of the competition, then a telescoping of the two stages into one, and finally (because of a jury squabble) the awarding of only four, rather than eight, prizes" and we wrote that we were publishing "a collection of entries in the Roosevelt Island Competition—two winners and six, so to speak, losers."

Re: A news item in October: Washington D.C. is not the only jurisdiction to tax architects. The U.S. Virgin Islands has the dubious distinction of taxing us (since July 1973) on gross receipts (over \$1000 per month) rather than on net receipts. This is a horror which is also being levied on all professional services here in the islands. This horror is driving many of us out of business. Can we band together and determine the constitutionality of these taxes?

Daniel Sullivan AIA and Associates
Cruz Bay, St. John, U.S. Virgin Islands

We support and agree with the major thrust of the article on lighting in "Engineering for Architecture 1975," emphasizing the overriding importance of energy considerations and the relationship of light to task. Our major concerns must be with the effect of lighting on the total environment and the support it gives to people.

We naturally share your point of view about the primacy of ESI footcandles over raw footcandles.

However, the problems of designing effective low-energy lighting systems sympathetic to both the user and the space are complex and involve many inter-relating factors, particularly where flexibility is required.

We find that some of the solutions shown in your article introduce new problems even as they solve old ones. In figures 1-4 on page 114, figure 4 is the best solution. But it appears to us that this scheme fails to meet another significant lighting quality criterion which is not mentioned in the article, namely the luminance ratio between the task and the wall facing the oval

worktable. We would estimate that the luminance of the (assumed 80 per cent reflective-white) wall facing the oval worktable would be approximately 6 foot-lamberts, representing a ratio of 1 to 9 to the luminance of the task (white paper). It would not be a comfortable work environment.

In figures 5 and 6 on page 115, the relationships between desks and luminaires precisely as shown are a reasonable solution based on the batwing configuration of the light emanating from the fixtures. However, there are substantial variations in lighting levels from place-to-place on individual work surfaces. More important, there is little flexibility here. If the desks are moved, the lighting levels will be reduced.

We strongly believe that no ceiling lighting system can do as effective a job as a furniture-oriented system against the criteria of low wattage per square foot, minimal veiling reflections, acceptable luminance contrast from task to surround, and flexibility.

Sylvan R. Shemitz
West Haven, Connecticut

The exhibition of Beaux Arts drawings is especially impressive because it is a documentary of a society which passionately cared about how its surroundings looked. In those drawings it is also clearly stated that the quality of interior space was a public objective.

Warren Platner
New Haven, Connecticut

Calendar

JANUARY

18-22 National Association of Home Builders annual convention, Dallas, Texas. Contact: NAHB, 15th and M Streets N.W., Washington, D.C. 20005.

24-28 West Coast solar heating workshops and exhibits, Hyatt House Hotel, Los Angeles International Airport. Contact: Solar Energy Industries Association, 1001 Connecticut Avenue N.W., Washington, D.C. 20036.

29-30 A/E Federal Program Conference, a briefing by Federal officials on new Standard Forms 254 and 255, Federal construction budgets, competitive bidding, and overseas markets. Sponsored by the Committee on Federal procurement of A/E Services (COFPAES). Contact: Marshall E. Purnell, AIA, 1735 New York Avenue N.W., Washington, D.C. 20006.

FEBRUARY

2-4 The Southwest Air-Conditioning, Heating, Refrigerating Exposition, Dallas Convention Center. Contact:

International Exposition Co., 200 Park Avenue, New York, New York 10017.

5-6 Professional Marketing Workshop (PMW), Atlanta, sponsored by Building Industry Development Services. Contact: BIDS, 1301 20th Street N.W., Washington, D.C. 20036.

MARCH

16-18 Third Annual Contract Marketplace—New York, Americana Hotel, New York City. Exhibition of contract furnishings, and seminars. Contact: Contract Marketplace, Ltd., Box 908, Larchmont, New York 10538.

24-25 Symposium on building construction, for public and private building owners. National Bureau of Standards, Gaithersburg, Maryland. Contact: Harry Thompson or James Haecker, Center for Building Technology, NBS, Washington, D.C. 20234.

31-April 2 National Conference, "The Conservation of the Older Courthouse: Some Practical Solutions," St. Louis. Sponsored by the National Trust for Historic Architecture, the National Clearinghouse for Criminal Justice Planning and Architecture, The University of Illinois Department of Architecture, the National Association of Counties, and the National Endowment for the Arts. Contact: Cheryl I. Krieger, Program Assistant, National Trust for Historic Preservation, 507 South Dearborn Street, Suite 710, Chicago, Illinois 60605, or Elmer Edwards, conference coordinator, University of Illinois, 116 Illini Hall, Champaign, Illinois 61802.

31-April 3 The Ninth National/International Sculpture Conference, "Monumental Sculpture for Today," New Orleans, Louisiana. Sponsored by the National Sculpture Center, University of Kansas. Contact: National Sculpture Center, The University of Kansas, Lawrence, Kansas 66405.

MAY

2-5 Annual convention, American Institute of Architects, Philadelphia.

19-24 The 29th annual meeting of the Society of Architectural Historians, Hilton Hotel, Philadelphia. Contact: Mrs. Rosann S. Berry, Executive Secretary, Society of Architectural Historians, 1700 Walnut Street, Philadelphia, Pennsylvania 19103.

24-28 International Symposium on Lower-Cost Housing Problems, Regency Hyatt Atlanta Hotel, Atlanta. Contact: International Association for Housing Science, P.O. Box 340254, Coral Gables, Florida 33134.

31-June 11 Habitat, the UN Conference-Exposition on Human Settlements, Vancouver, British Columbia.

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

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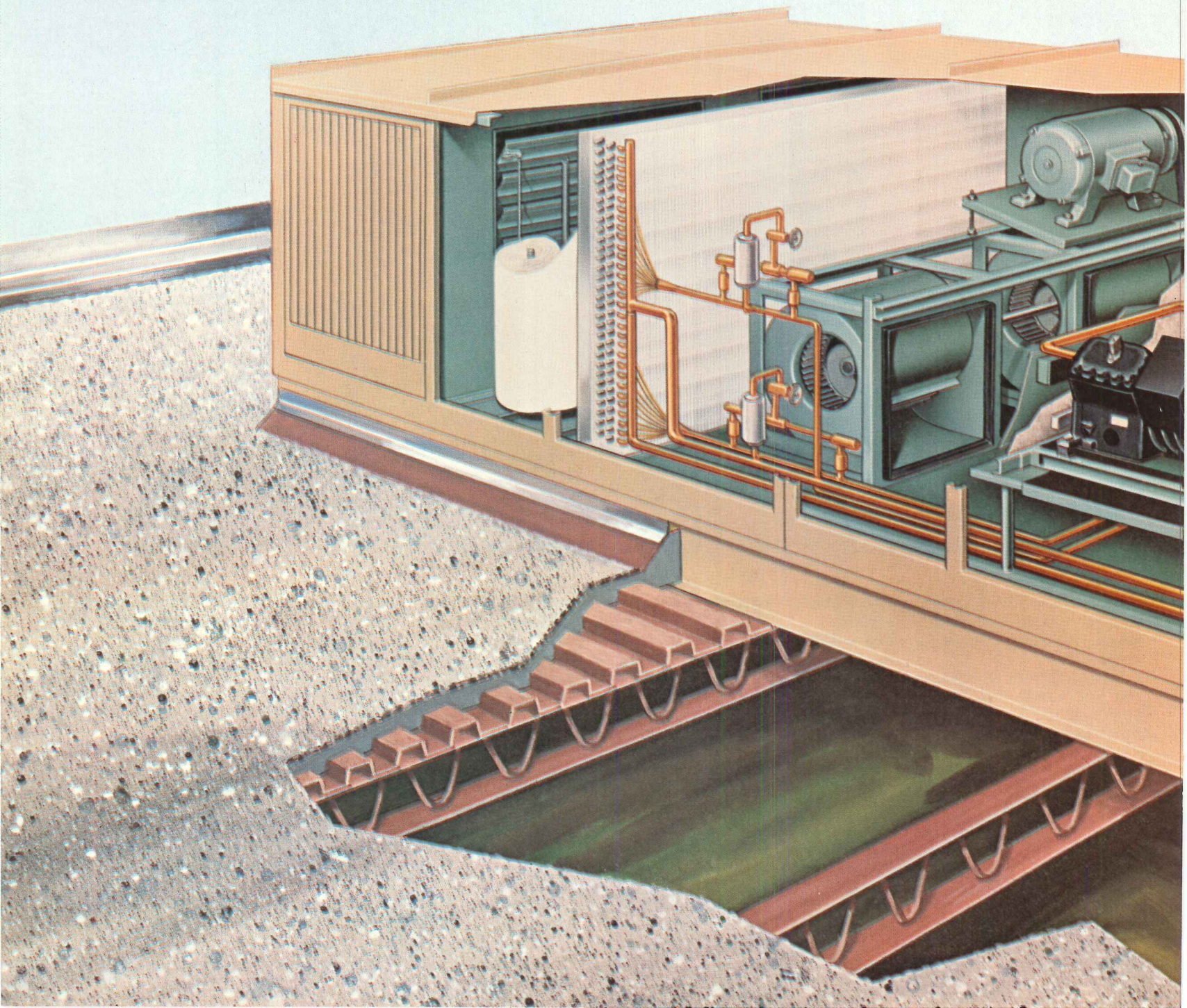
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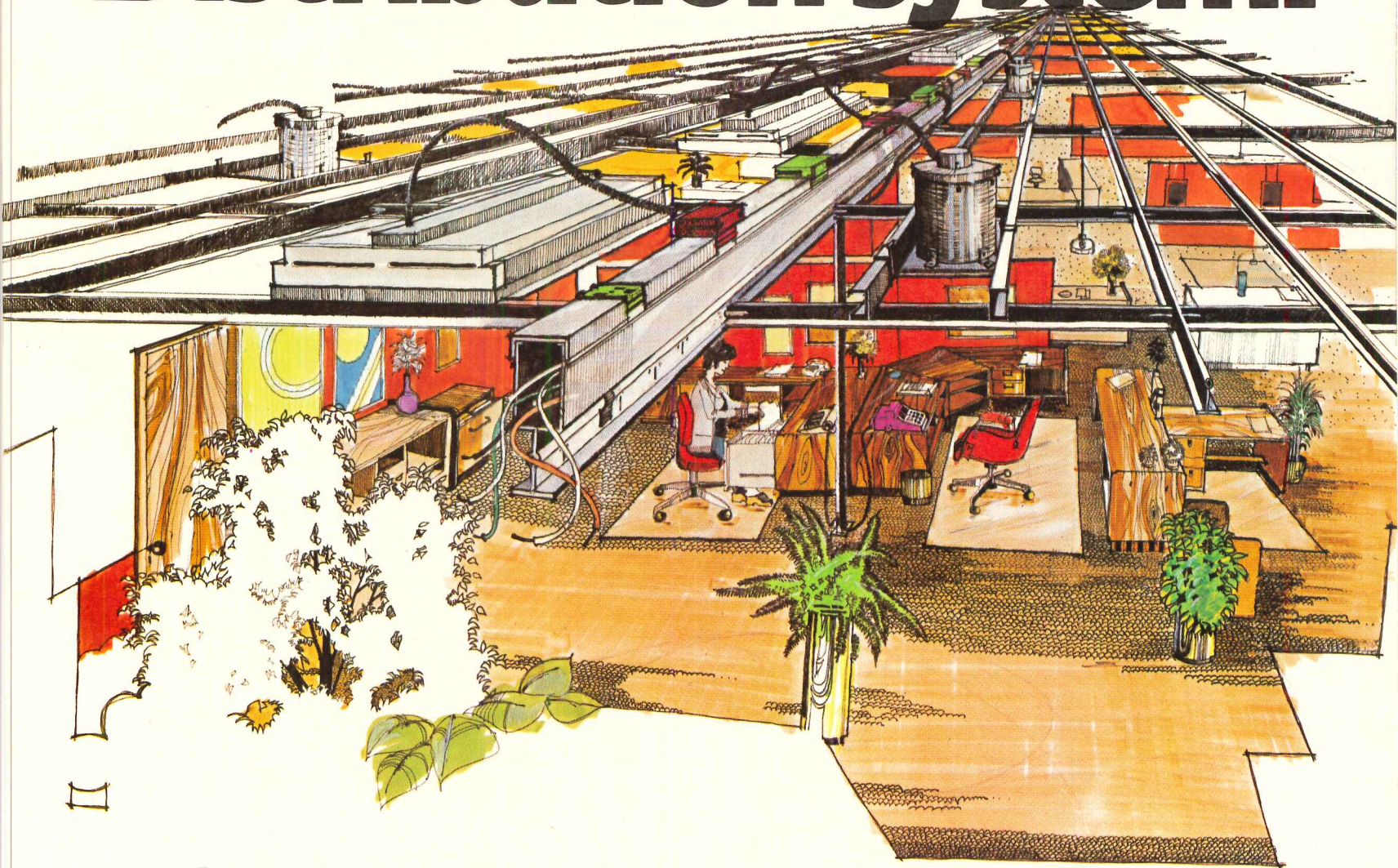
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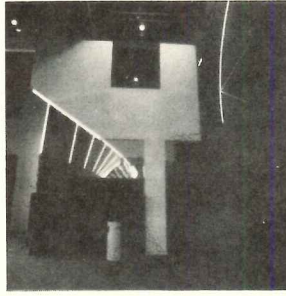
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January 29-30, Federal agency and department officials will meet in San Francisco to brief architects on ways to work with a multi-billion dollar client, the U.S. government. The agenda is outlined in this report.

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Fourth quarter figures for historical building cost indexes in 21 U.S. cities.

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Boston architects Crissman & Solomon have transformed a very small building, only 25 by 30 feet and three-stories-high, into a study and laboratory for its owner, which doubles as a self-sufficient guest house.

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Spelman Halls, in its spatial and structural configuration, picks up and newly interprets the traditional mood of a tightly knit, beautifully wooded campus.



George Cserna

131 Beaux Arts or "Bozarts"

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135 North Park Shopping Center expands a successful formula

Hailed as a culmination of grouped-retail-store design in 1966, North Park has recently grown in ways that both recognize the reasons for an early success and that create new concepts for this type of building.

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The cable-restrained, low-profile air roofs for Pontiac Metropolitan Stadium and the UNI-Dome at the University of Northern Iowa were substantially less costly than rigid roofs of the same span. Engineering expertise, materials technology and inventive construction made it all possible.

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NEXT MONTH IN RECORD

Building Types Study: Hotels

Construction of new hotels has been severely depressed in 1975, but there are still certain types that will continue to proliferate. Among these will be hotels in smaller towns (especially those with urban renewal projects), specialized resorts (catering to constantly changing fashion) rehabilitated older buildings and new hostelries by American chains in the Mid East, Far East, Africa and Latin America. RECORD will analyze these various opportunities for new construction and show some examples.

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The New Year used to be a time for turning over new leaves ...

... but these days, mostly, we seem to be looking for new ways to turn over rocks. It used to be, when editors wrote editorials for January issues, that you could indulge in positive thinking. Lately, that hasn't been possible.

Looking back, I found I began my January 1974 editorial with the words, "We enter the year 1974 in what clearly is a gloomy mood." I went on to argue that maybe 1974 might be "a year that we find time to stop and think"—and ask "What's it all about, this practice of architecture? Design for people? Personal satisfaction with the quality of work? Or is it all really just a business where everybody wishes he were General Motors?" Two years later, "stopping to think" seems even more important than it did then.

In January 1976 even the continuing slowdown doesn't seem the most critical problem

The critical problem seems not a lack of work (for that does seem to be easing) but a lack of direction. Last month, Blake Hughes, RECORD's publisher, asked each editor to list the five most important problems facing the profession. The results showed a startling consensus:

- High on almost everyone's list was the danger in—and the danger of competition from—"bigness." It was first on my list: "In today's economy, the trend by owners to demand a fixed schedule and price is understandable—but the resulting cost to the quality of building design and the quality of the environment is high. This emphasis on time and cost seems to be leading more and more owners (especially corporations) to choose big, 'full-service' architectural firms that seem to many clients to be 'more comfortable to work with.'" Another editor put it this way: "The major problem is adapting to a changing practice while avoiding the lure of 'bigness.' Do we really want a handful of giant architectural consortiums with a network of offices flung across the world?"

The question is probably not size *per se*—but the question of why, in the time/price/quality equation, quality is always what gives. For quality is what we all must live with—or live without.

- Related is "the multi-faced client." Wrote another editor: "With the growth in the numbers of people who may represent a single corporate or governmental or public client, architects are increasingly cast as moderators, without firm input or direction from intended users. It is therefore on the architect's shoulders not only to take a strong lead in developing the building design, but to shepherd that design

through an often-indecisive, ever-changing, and sometimes contradictory multi-faced client."

- Beyond that was a concern that, because of growing complexity of jobs and that "changing client," design is taking a back seat. Sample comment: "Because of the complexities of evaluating technological alternatives, orchestrating more and more consultants, and coping with a complex client—and the time that must be spent on such nonconceptual activities—the chance is diminished to do the thing that most architects joined the profession to do: produce better buildings with a firm hand in all phases of design to assure that better product."

Related were a host of design-oriented problems: "Image. Are all those mediocre buildings out there really ours?" "Coping with the present design ferment and changing public opinion about architecture and architects." "Preserving the environment—land, water, air, the ecological balance." "Preserving, conserving, and recycling the built environment we already have." "Designing to save energy." "Meeting the need for shelter not just in developed countries, but the developing world."

Another editor wrote what seems a good summation: "The problem is the imprecise image many people have of architects. To put it simply, the market for architecture depends on people knowing what is to be gained by employing an architect . . . The architect faces competition from anyone who claims to build . . . Laws are written to assure the safety of a structure—but not to assure its sensitive design or impact on the environment—factors that affect the daily lives of millions. The architect has not moved effectively to define and protect his talent as the valuable service it is . . . to bring to the attention of the public that the skill of the architect is *necessary* to a healthy built environment."

With that beginning, RECORD editors would like to expand the dialogue on the future

. . . and herewith a request and invitation for readers across the country to submit their thoughts on the critical problems facing architects and architecture, and their ideas on the possible solutions. We cannot make work for architects—but we can make a noise that might be heard in the land. The most thoughtful submissions will be published as part of what I hope will be a continuing dialogue among and on behalf of architects—and the unique and uniquely important service they provide which is good architecture.

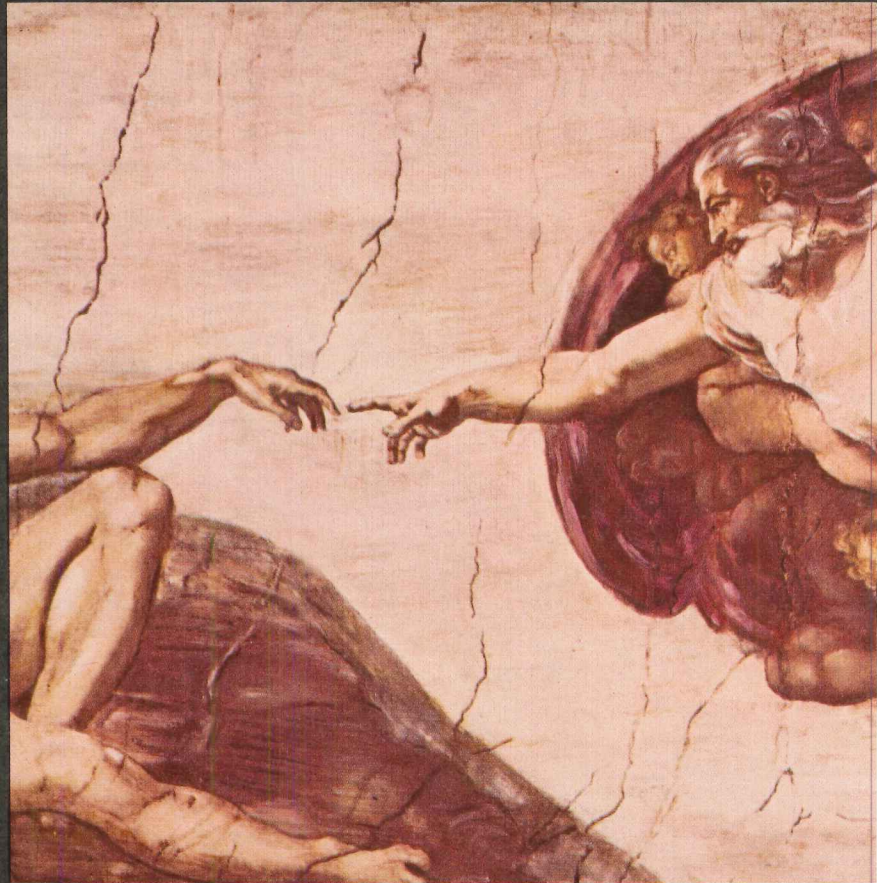
—Walter F. Wagner Jr.

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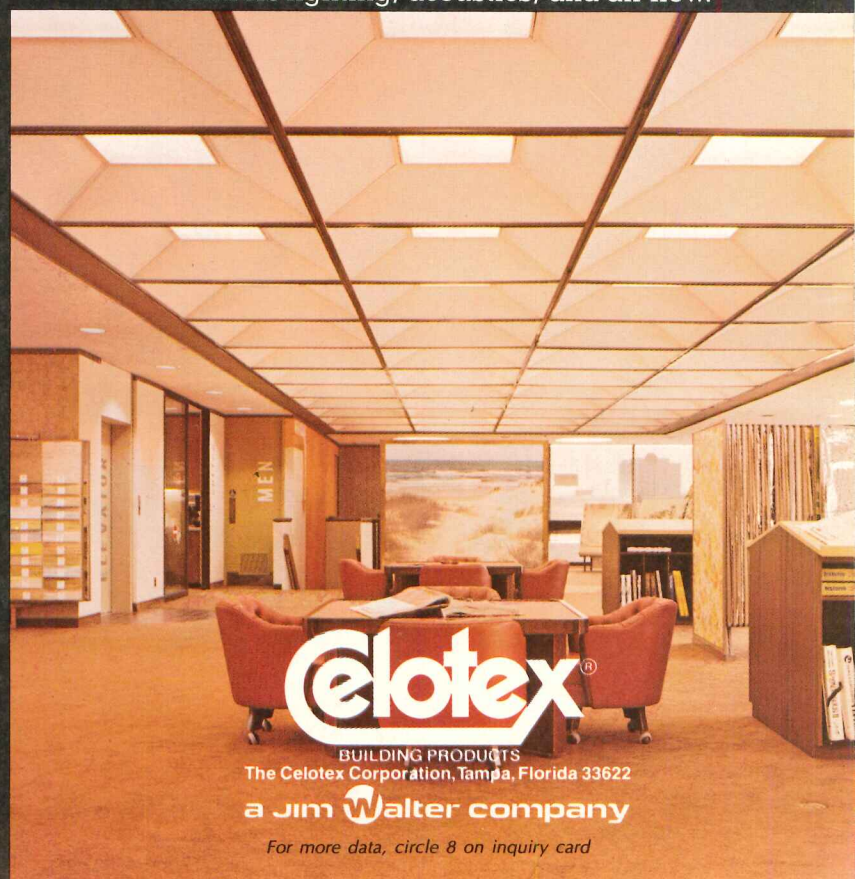
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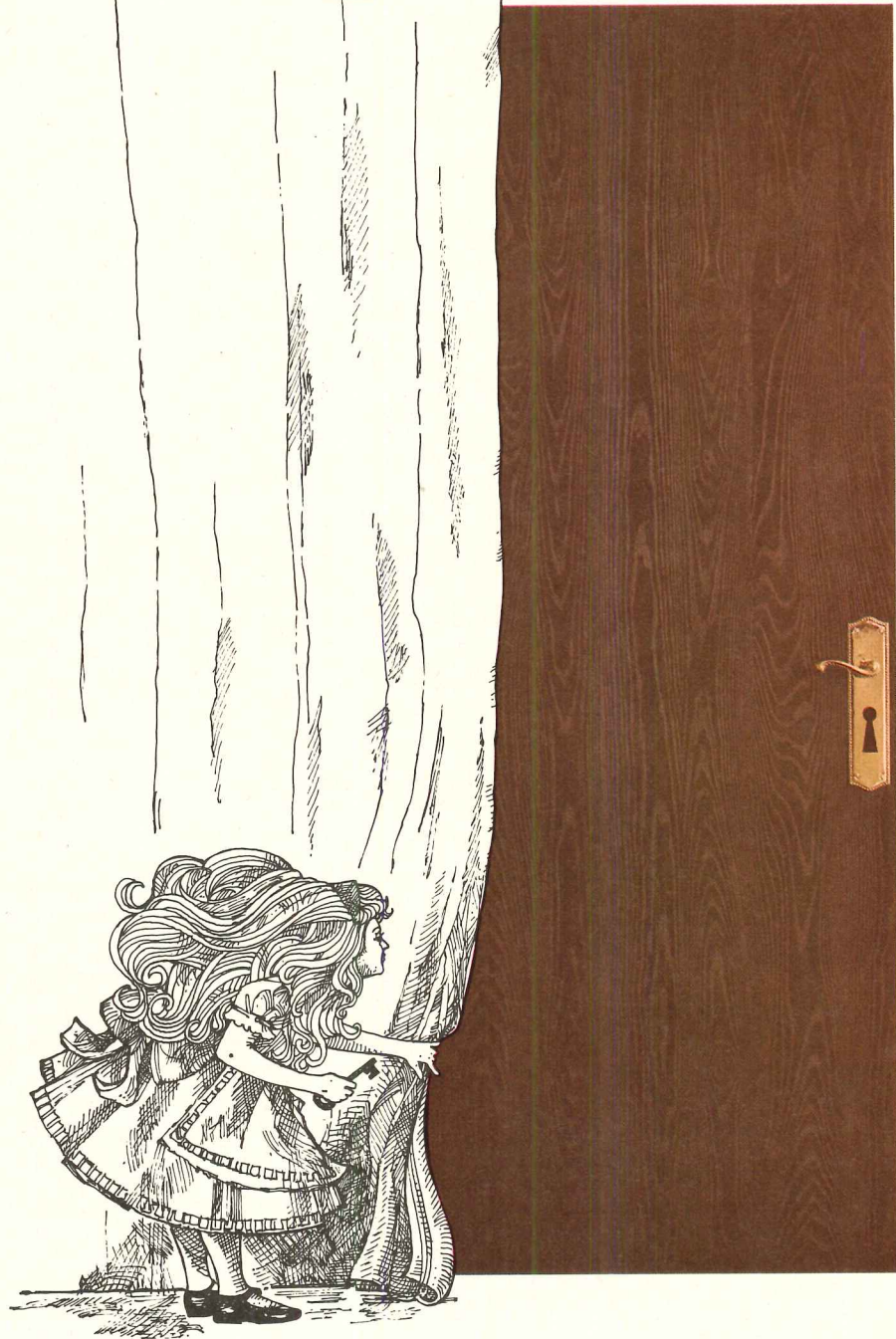
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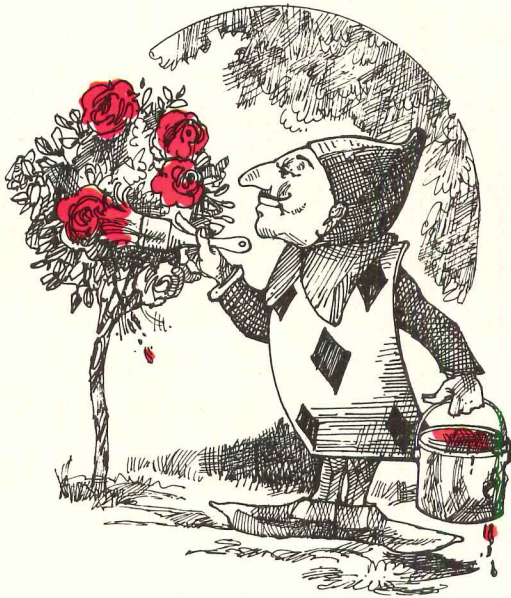
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Salesmen probably tell you a dozen times a day that their items will make your designs sell like hot cakes. On and on, they paint their roses red. But just consider this: Legacy doors work for you in *every* room of the structure. Its rich, deep-embossed grain on hardboard so delights the eyes and hands that few people can walk by one without running a hand over its surface.

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You'd be mad as a hatter if you chose doors that just looked good but couldn't take the abuse of day to day use. No worries; Legacy is tough. It's 50% again as dense as natural wood and is prefinished with a highly stain and mar resistant coating. Legacy looks good a long long time. Maybe forever.

All of Which Means Legacy Stands Alone



Oak-tone



Walnut-tone

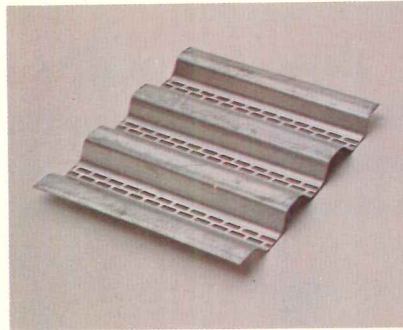
It was true when we first introduced Legacy; it's still true today. Oak-tone or walnut-tone, Legacy's deep embossed grain is unmatched. Priced well below solid real wood doors and just a bit above lauan and unfinished birch, Legacy puts a touch of Wonderland into every room at a cost that will make both you and your clients smile like Cheshire cats.

For the names of quality door manufacturers using Legacy write: Masonite Corporation, 29 North Wacker Drive, Chicago, Illinois 60606. Or consult your Sweet's 1976 File.

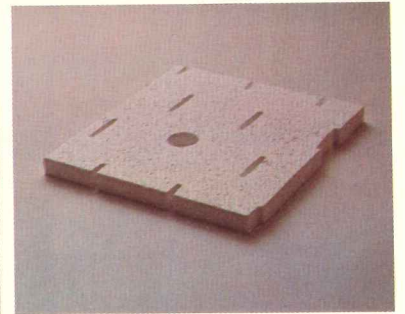
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1. Slotted Metal Base

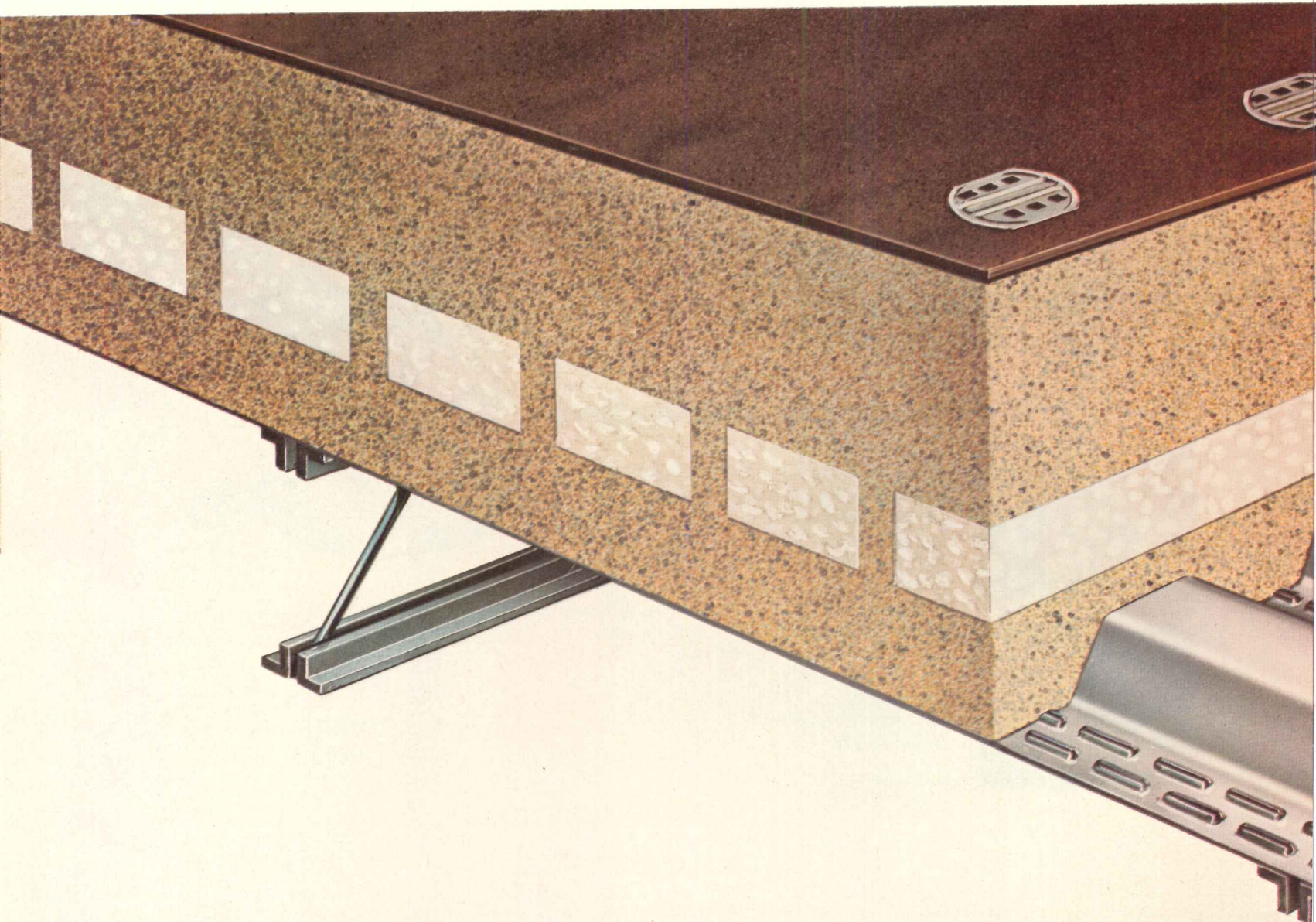


2. Insulperm™ Insulation Board



3. Zonolite Base Ply Fasteners

Three design improvements tops in performance,



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

A new Slotted Metal Base, the first improvement.

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

New Insulperm™ Insulation Board, the second improvement.

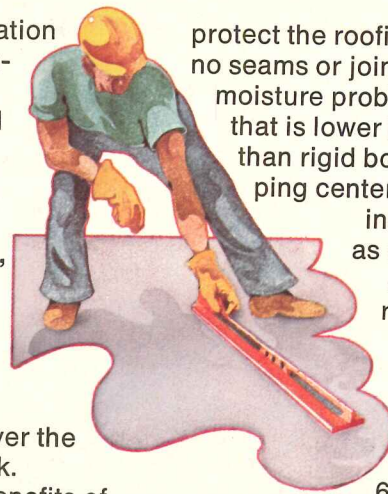
Insulperm board is slotted to promote fast, complete drying and venting and also ensures maximum shear strength in the insulation sandwich. One of the finest insulating materials known,

Insulperm board, in combination with Zonolite Insulating Concrete, makes Zonolite Roof Decks the most efficient and economical way to achieve today's insulation criteria of .10 U or less.

Zonolite Base Ply Fasteners, the third improvement.

These new fasteners provide a strong, mechanical bond of the base ply of built-up roofing while allowing the venting of air over the top of the Zonolite Roof Deck.

Take a new look at the benefits of Zonolite Roof Decks. Insulation that meets strict new U value requirements, reduces energy consumption, cuts heating and cooling costs. A roof deck that has earned Factory Mutual's Class I rating for fire and wind resistance. A roof deck with a firm base to



protect the roofing membrane, with no seams or joints to fail and cause moisture problems. And a roof deck that is lower in cost for most jobs than rigid board decks. On shopping centers, warehouses and

industrial plants as well as schools and churches.

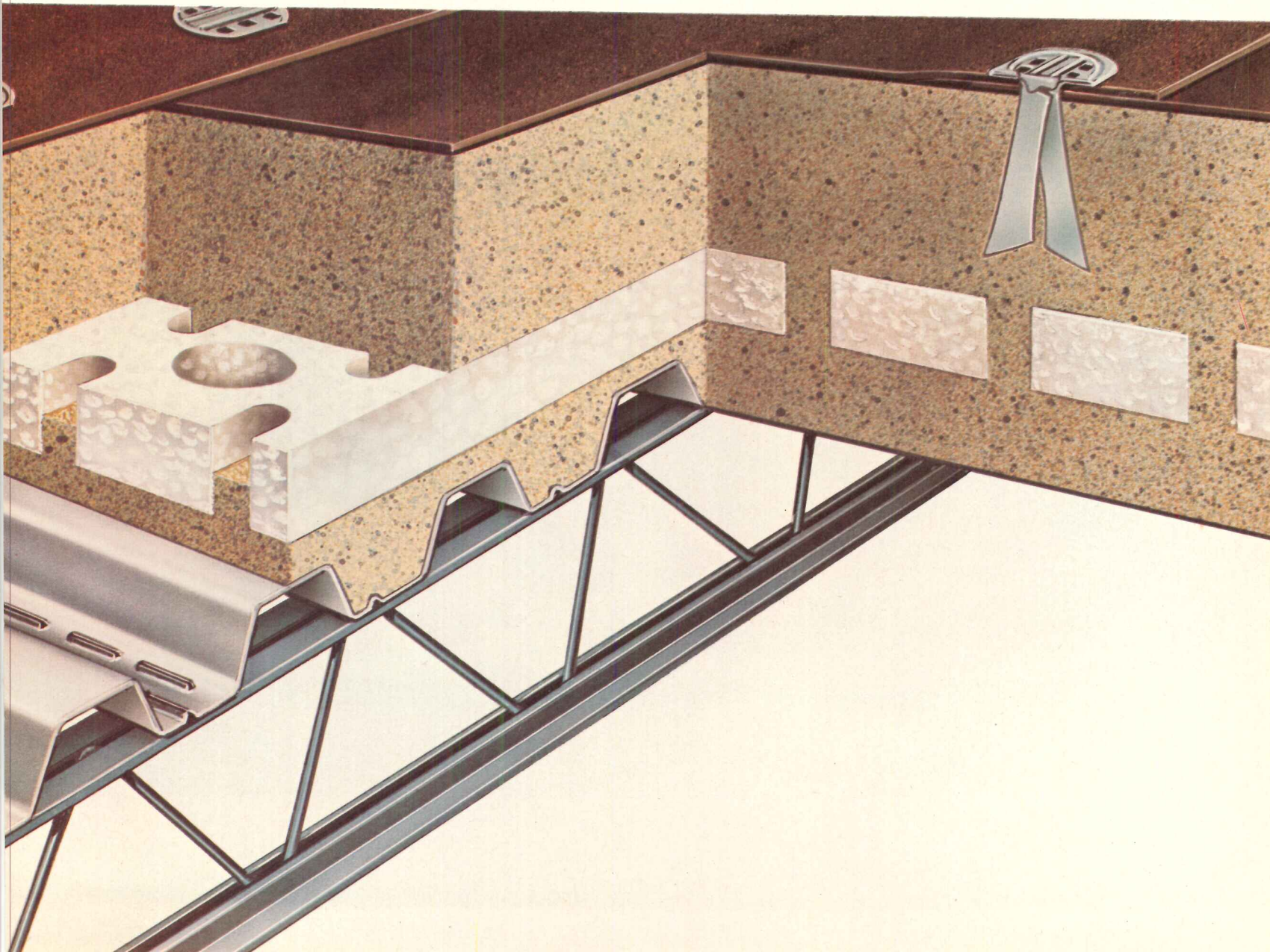
Ask your Zonolite representative to give you all the facts on new, improved Zonolite Roof Decks. Or write

W. R. Grace & Co.,
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GRACE

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make Zonolite® Roof Decks lower in cost.



LOF TAKES THE H



Owner: F. D. Stangl Construction Co., Salt Lake City, Utah. Architect: Architectural Associates, Salt Lake City, Utah.

EAT OFF THE I.R.S.



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But the savings didn't stop there. A shading coefficient of .56, without drapes or blinds, helped this LOF glass reduce solar heat gain. This resulted in lower air conditioning costs when compared to $\frac{1}{4}$ " tinted glass performance.

Depending on the specific project, you can choose bronze or grey tint as a regular or heavy-duty glass in either monolithic or Thermopane® insulating units.

If you want to save energy with the right glass, one of our architectural representatives will be glad to help you. Or you can write Dick Keough, Libbey-Owens-Ford Company, 811 Madison Avenue, Toledo, Ohio 43695.

LOF

If we tried to solve all your material-handling problems with a single system, it would be like trying to fit square pegs into round holes. So we developed a wide range of systems, to fill the needs of virtually any hospital.

And we back our products with expertise that helps us tailor our material-handling equipment to your building instead of requiring that you plan your building to fit our systems.

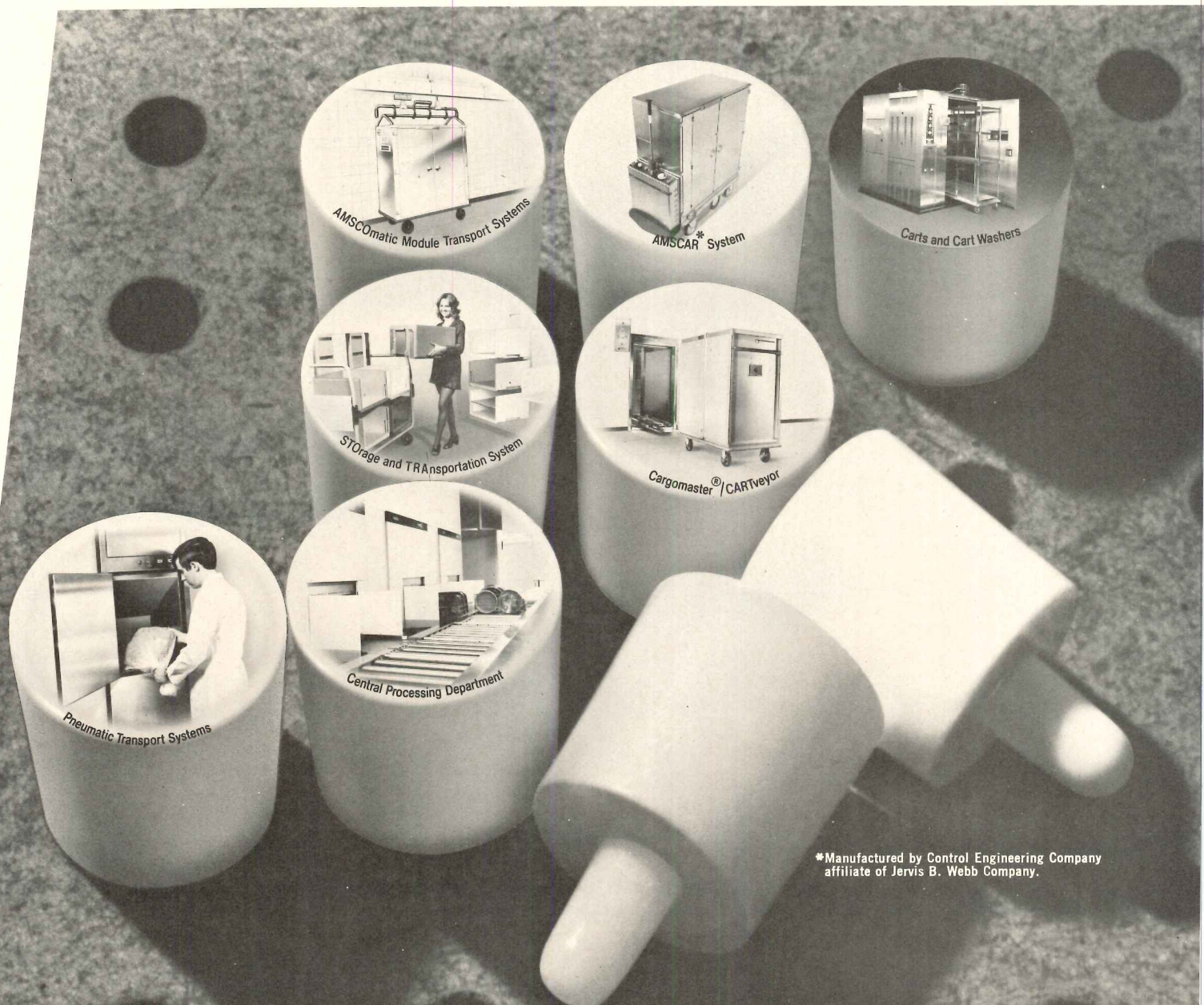
We work with you to determine the best system or combination of systems for the job you want done. We gather facts and figures on costs and cost-savings. We design the system down to the last

nut and bolt — and can even employ computer simulation to prove that our plans will work as well in actuality as they promised to on the drawing board.

We provide full installation if required . . . train hospital personnel in proper and efficient use of the system . . . and remain on hand during start-up and operation to make sure all the bugs are out. To assure that they stay out, AMSCO offers you a nationwide network of service technicians for preventive maintenance or repair.

When it comes to material handling for hospitals, we may not have all the answers. But we're working on them.

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The New AMSCAR System — with shuttle and power-assisted load/unload capabilities — now provides even greater benefits to both new and existing hospitals! Using the automated shuttle technique, hospitals can achieve cost effective horizontal movement. New load/unload capability adds an even higher degree of cost-saving automation. Result? An even greater quantity of supplies are now distributed by AMSCAR — and distributed more efficiently . . . distribution life-cycle costs are even further reduced . . . personnel are freed for their most important job: improved patient care.



**AMSCO
SYSTEMS**

Division of American Sterilizer Company

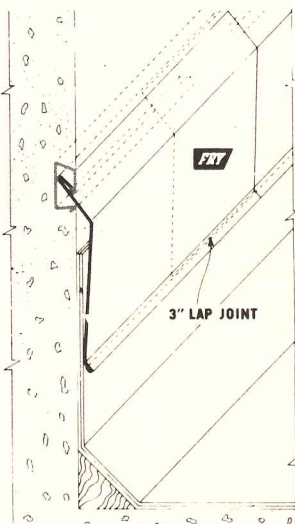
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on the move



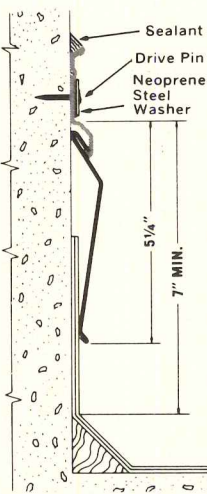
FRY SPRING-LOK PERMANENT FLASHING SYSTEMS

CONCRETE FLASHING SYSTEM Type CO



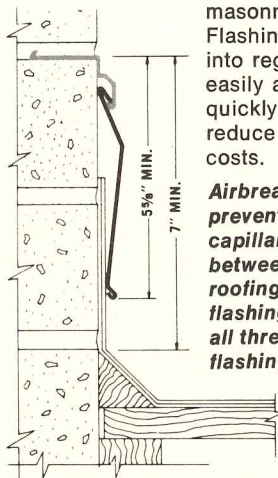
Reglet is designed especially for placing in concrete to take roof flashing. Taped to prevent invasion of grout. Flashing snaps instantly into reglet without screws after roofing is applied. Flashing is easily removed from reglet for re-roofing.

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

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

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71 black-and-white photographs and line drawings

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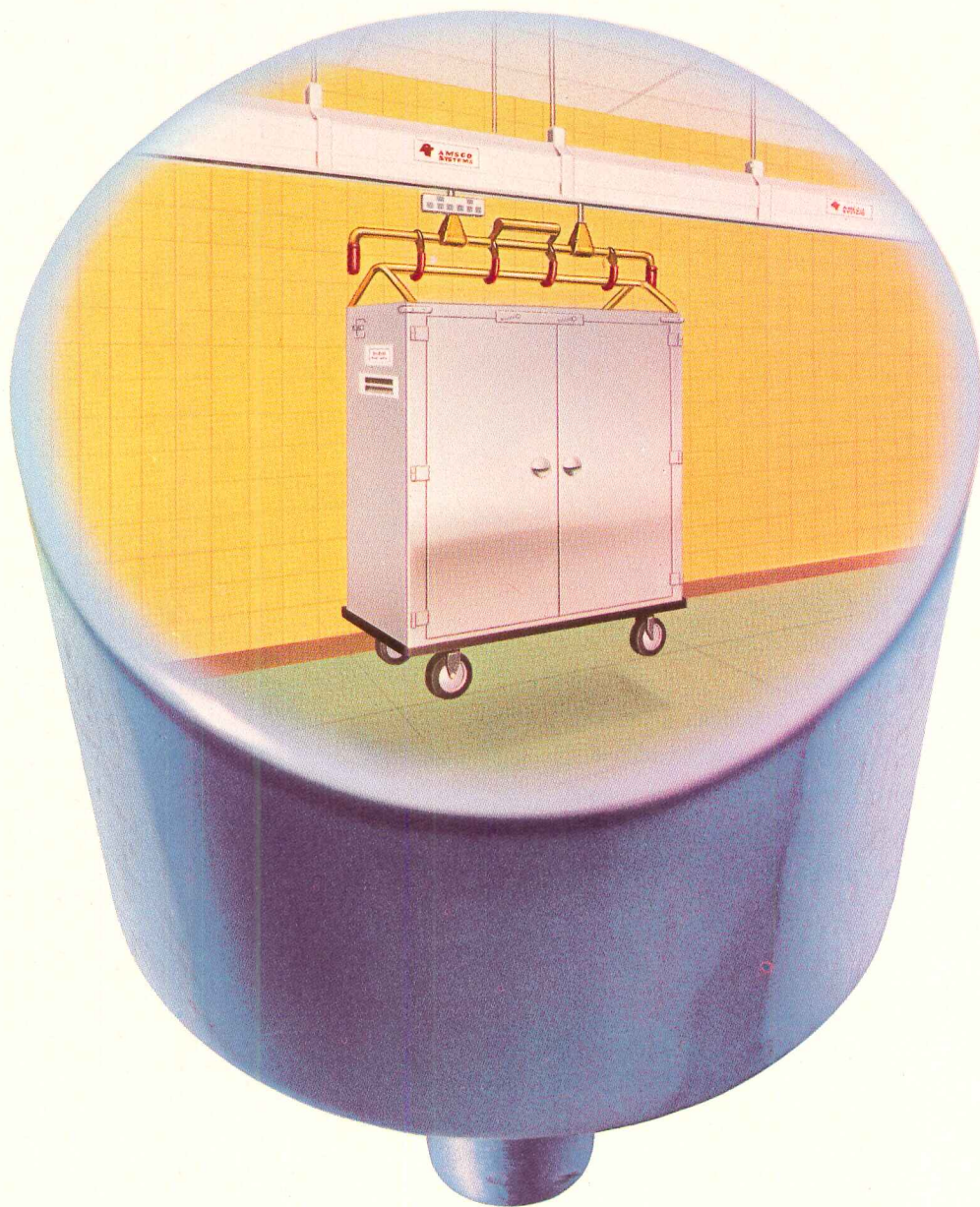
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**AMSCO
SYSTEMS**

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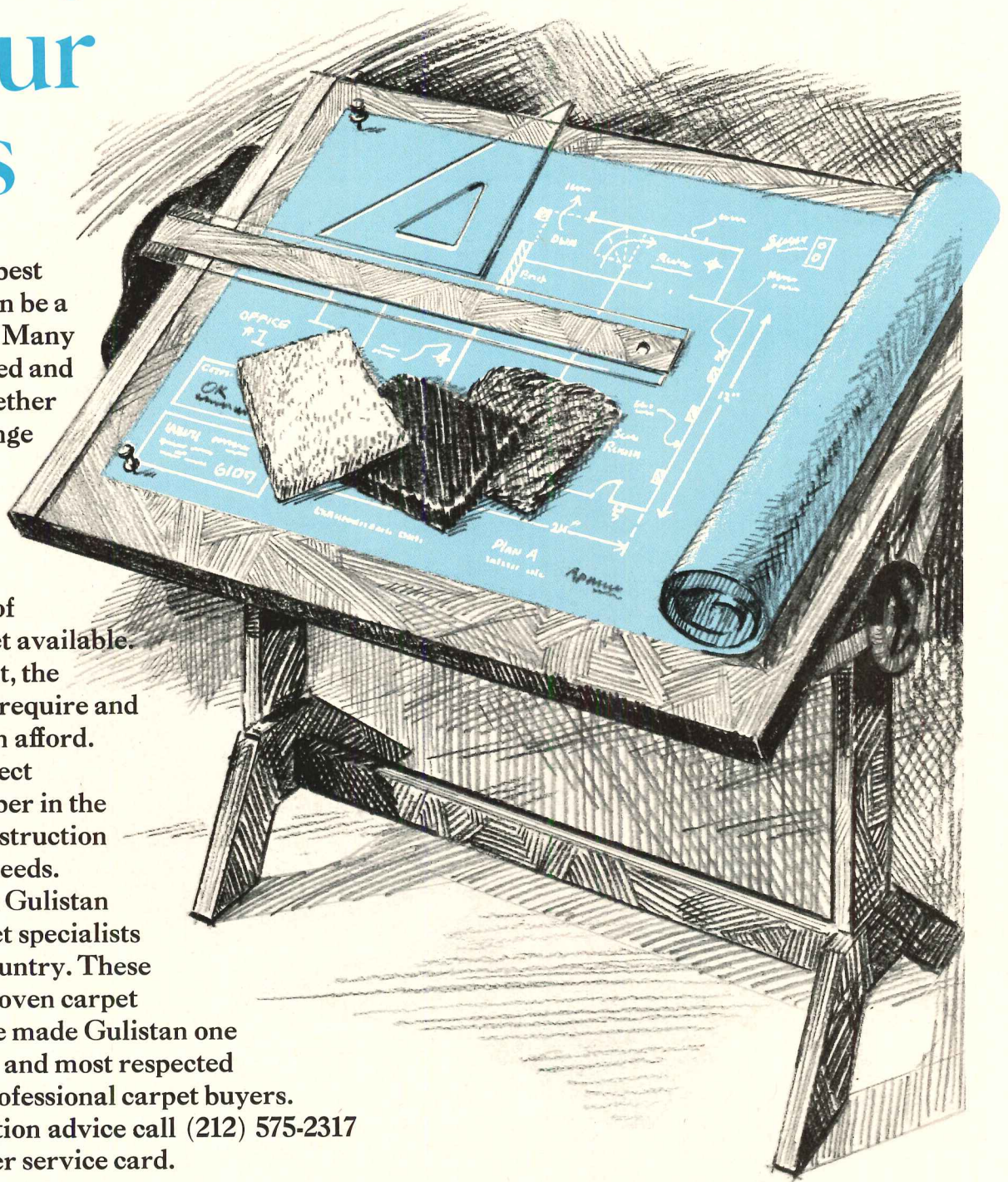
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Drinking fountains and safety showers, eyewashes.

Washfountains in new shapes and materials.

Plus Duo Washfountains and Bradpack® preassembled wash centers.

So come see the people with the products that serve many, save money and give you more room when you need it.

Bradley.

From the Washfountain to a lot of other bright ideas.

Write: Bradley Corporation, 9107 Fountain Blvd., Menomonee Falls, WI 53051.

Bradley 



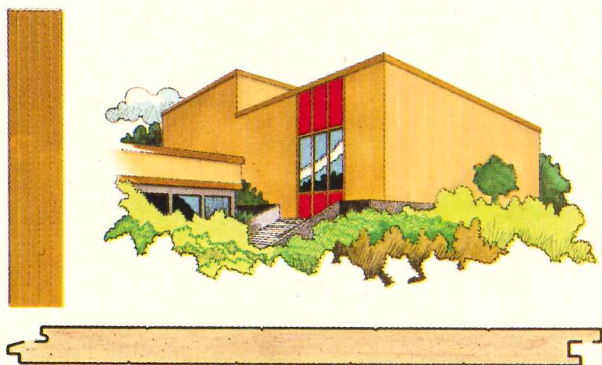


**Bradley can give
people showers,
wash and dry
their hands,
give them a drink,
look good on a sink
and collect the trash
when they're done.**

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Pre-insulated Inryco

1



Inryco/wall PS Pre-insulated Sandwich Panel

30" wide, U-value: .080.

A one-piece, complete wall section that reduces field erection steps to a minimum. No wall system has fewer parts or can be installed faster. Isocyanurate insulation properties are excellent, and there is no metal-to-metal contact between inner and outer faces. Factory-installed seals at panel joints keep the weather out. Exterior appearance: attractive, flush, monolithic; eight long-life colors in Duofinish 500™ Interior: bright, reflective, flush, white surface in Duofinish 100™

Three new options for energy-saving design in wall construction

There is no single solution. The designer needs flexibility to meet the requirements of different structures. Inryco/wall's three versions help. Each type greatly increases a building's energy-conserving properties, but each permits a different approach to construction.

All Inryco/wall panels share one vital advantage over others: the excellent thermal values of foamed-in-place isocyanurate, a second generation, 93% closed-cell material that outperforms conventional, flame-retarded urethanes while equalling their strength and insulating qualities.

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We've prepared information that describes these three new Inryco/wall panels in greater detail. Get yours from your local Inryco sales engineer or send in the handy coupon.



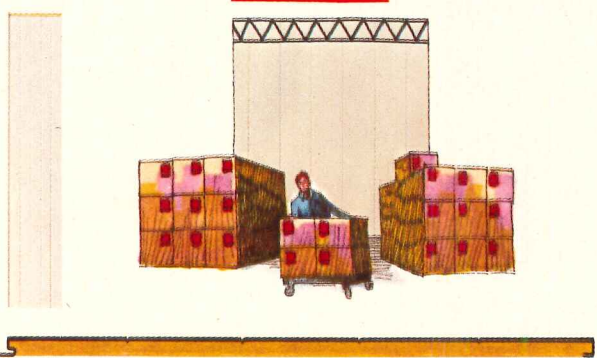
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General Office, Melrose Park, Illinois

O/wall™

2

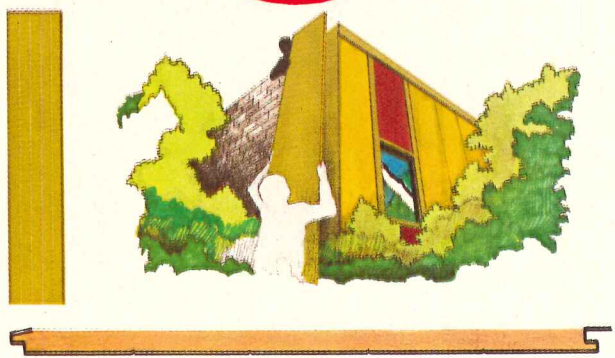


**Inryco/wall PL
Pre-insulated Liner Panel**

30" wide, U-value: .15.

For field assembly in combination with conventional exterior wall panels. Liner creates a flush, easy-to-clean interior wall surface with a long-life Duofinish 100™ white coating that enhances lighting levels. Erection is greatly speeded because factory-installed insulation eliminates the step of insulating in the field. Panels are strong, rigid, easy to handle. For the exterior, the designer can choose any panel from Inryco's broad line of conventional wall systems.

3



**Inryco/wall PF
Pre-insulated Face Panel**

30" wide, U-value: .12.

Two ways to upgrade both the appearance and the energy-saving properties of older masonry or block structures. Face panel can be used either on the exterior or interior of a building. Used outside, the panel creates a contemporary, flush look with a choice of eight long-life Duofinish 500™ colors. Used inside, it covers unsightly wall conditions with a neat, flush surface and boosts lighting levels with its Duofinish 100™ white coating.

INRYCO, Inc., Dept. A, 4033 West Burnham St., Milwaukee, WI 53201

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Natural choice
for beautiful interiors.

Redwood.

Redwood is elegance, warmth, radiance.

And so much more.

Redwood defies time, retards flame spread.

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Redwood—in narrow, wide and random widths,
rough and smooth faces, handsome patterns.

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Redwood — a renewable resource

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NEWS REPORTS
BUILDINGS IN THE NEWS
HUMAN SETTLEMENTS
REQUIRED READING

October contracts for future construction dropped 12 per cent, roughly a billion dollars down from a year ago, for a total of \$7,766,585,000, according to the F. W. Dodge Division of McGraw-Hill Information Systems Company. Says chief economist George A. Christie, "Just about all of the latest month's billion dollar gap was concentrated in the single category of electric power plants." Encouragement was seen, however, in October's residential contracts: the total value of \$3,189,101,000 represents a 33 per cent improvement over last year. Single-family homes were up 41 per cent, while apartment construction showed a "small but welcome gain." Nonresidential contracts, at \$2,628,647,000, held barely even with last year's figure.

American business plans a 9 per cent increase this year over last in spending for new plants and equipment, according to the McGraw-Hill Fall Survey of preliminary plans for capital spending in 1976-77. Companies responding to the survey project expenditures of \$123.45 billion in 1976, and \$127.76 billion in 1977.

The Kennedy Library and Museum has found a site at the Dorchester campus of the University of Massachusetts, as the Kennedy family and the library corporation abandoned plans to build at Harvard University. The corporation has commissioned I.M. Pei & Partners to design the Presidential memorial for the new location. Details on page 34.

The long Canadian mail strike, now settled, has delayed judgment in the IAF International Design Competition for a large housing community in Manila. The jury will now meet February 1-8. Submissions were required to bear a postmark of October 15, and entrants whose material may have been returned are urged to re-mail it in the original, postmarked wrappings. Details on page 36.

The Province of Quebec assumed responsibility for construction of Olympic facilities in Montreal when the city confessed that facilities, which have been beset by construction delays and cost over-runs, might not be ready for the opening of the Games July 17. Details on page 36.

The Atlanta mayor's "preference" for minority ownership participation in city-contracted design and construction has stimulated spirited discussion on the nature of joint-venture partnerships and on the procurement of professional services. Details on page 35.

The Illuminating Engineering Society seeks nominations for its 1976 Lighting Design Awards Program. Jurors in this year's program for national awards include Thomas Geismar, Aldo Giurgola, FAIA, Richard Kelly, FIES, Jack Kilpatrick, FIES, Joseph R. Loring, FIES, John F. Maguire, IES, and Warren Platner, FAIA. Rules and nomination forms for the awards program, which closes February 1, can be obtained from Sarah Karl, IES, 345 East 47th Street, New York, New York 10017.

ASHRAE has expanded its series of two-day seminars on New Techniques for Life and Fire Safety in Buildings. The schedule of the new meetings: January 14-15, Royal York Hotel, Toronto; February 12-13, Hyatt Union Square Hotel, San Francisco; February 25-26, Ben Franklin Hotel, Philadelphia; March 10-11, Statler Hilton Hotel, Dallas; March 24-25, Holiday Inn Downtown, Cleveland. Registration fee is \$295 for ASHRAE members, \$340 for non-members. Information is available from MCI Symposia, Inc., 51 Bank Street, Stamford, Connecticut 16901 (203/359-4166).

Louis Sullivan's Bayard-Condict Building has been designated a New York landmark by the Landmarks Preservation Commission. The Manhattan building, which is faced with terra cotta ornament designed by Sullivan and George Elmslie, is New York's only example of Sullivan's work.

Nominations of architectural teachers are sought for the ACSA/AIA Award for Excellence in Architectural Education, sponsored by the Association of Collegiate Schools of Architecture and the American Institute of Architects. Forms, available from ACSA, 1735 New York Avenue N.W., Washington, D. C. 20006, must be submitted by February 1.

A Justice Department action against pharmacists' associations that forbid members to advertise is being watched for implications for other professional societies. Details on page 34.

The Conference Board's Economic Forum expects "a careful, deliberate recovery" of the economy in 1976—but no boom. Gross National Product is expected to reach \$1,651.5 billion, up 12 per cent from 1975. But only half this growth, about 5.8 per cent, will be real; the remainder will represent inflation. The Economic Forum predicts that consumer and wholesale prices will climb 6.6 per cent this year. Although this is down considerably from the better than 9 per cent rates of 1975, it means that inflation will still remain at historically high levels.

Architect I.M. Pei has been elected to the American Academy of Arts and Letters, as have sculptor Naum Gabo and writer Ralph Ellison. Members of the Academy, limited to 50, are chosen from its parent organization, the National Institute of Arts and Letters.

Kennedy Memorial Library moves from Harvard to UMass

The John F. Kennedy Library and Museum, for more than ten years a source of contention between Harvard University and the citizens of Cambridge, Massachusetts, seems to have found a home at last—and not at Harvard.

On November 24, the John F. Kennedy Library Corporation, meeting at the New York offices of architect I.M. Pei, selected a site on the Dorchester campus of the University of Massachusetts.

The corporation also announced that I. M. Pei & Partners, who were the architects of two earlier, aborted projects for the Harvard site, have been commissioned to design a building for the new site. The UMass project will accommodate both the Presidential archives and a Kennedy Museum. Design and working drawings are scheduled for completion within six months.

The immediate site for the new building is a point of land directly on the water, commanding what architect Pei calls a "spectacular" view across Boston Harbor and an intimate connection with the sea to which the President was so attached.

The Columbia Point site is also

expected to stimulate the redevelopment, already under way, of a decayed neighborhood.

The controversy over the earlier designs rose chiefly over Cambridge's fears that the museum would attract a great many tourists, whose numbers would overwhelm available parking and pedestrian space in an already crowded area (see RECORD, December 1974, pages 98-105.)

More recently, it had been reported that the Kennedy family and other members of the corporation contemplated the separation of the archives and the museum, with the archives going to Harvard and the museum going elsewhere.

The acquisition of the Kennedy project for the University of Massachusetts was widely regarded as a personal triumph for the school's president, Robert Wood. In an energetic campaign to enlarge the prestige of the university, Mr. Wood had hired architect Hugh Stubbins to complete a feasibility study and preliminary building design for the site (see story below) and had actively lobbied the corporation members.

Stubbins's Kennedy Library design was part of UMass campaign

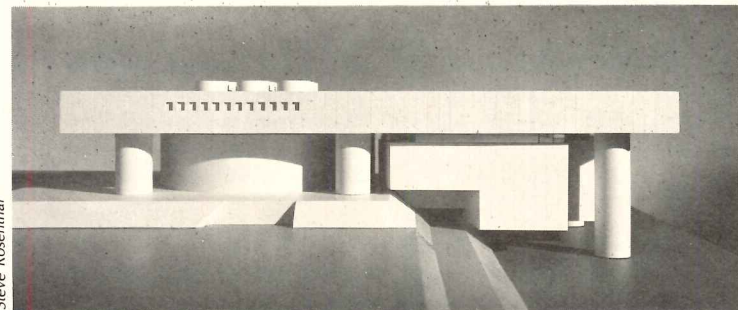
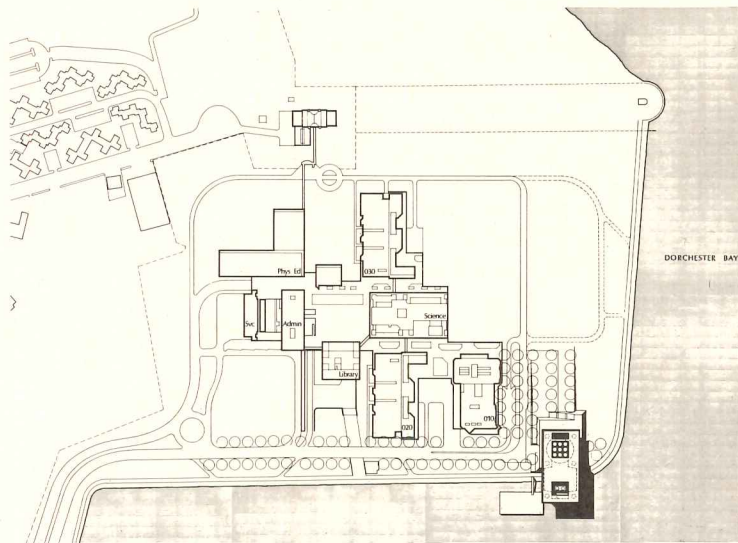
At the request of the University of Massachusetts, which successfully sought to persuade the John F. Kennedy Library Corporation to relocate its project at the school's Dorchester campus (see above), Hugh Stubbins and Associates, Inc., designed a building to incorporate both the Kennedy archives and a museum.

The structure is a long truss canopy extending well over the harbor and supported by six cylindrical

"super columns," two of them sunk in the waters of Dorchester Bay.

A large circular rotunda would provide formal exhibition space, while a more informal museum would be suspended from the truss to overhang the water.

UMass officials presented the Stubbins concept, along with cost estimates, to the Library Corporation a few weeks before it selected the new site.



NYC crisis spurs concern for other hard-up cities

The largest default in financial history almost happened in December before Washington held it at bay with loans to New York City. But given the preoccupations of Election Year 1976, it doesn't look as if politicians in the capital will do much to remedy the municipal problems that could send other cities down the same path as New York.

There are three directions in which Congress and the White House could move to grapple with the deep-rooted ills that led to New York's spectacular financial woes. The odds are low to very low that not much will be accomplished in any of them. Thus it is possible that new municipal emergencies will burst loose this year and later, and that, until they do, Washington will not go far to address urban issues.

At the moment the most promising outlook for Washington help is in the area of increasing accuracy and candor of disclosure in municipal bookkeeping. This is a key development, since institutional investors are likely to be cautious in buying municipal securities from many big issuers until the cities' credibility gap, exacerbated by New York's disgrace, narrows.

Bills in both houses of Congress would remove the 1933 Securities Act exemption which municipalities have from registration of their securities with the Securities and Exchange Commission. The Treasury Department favors greater disclosure. However, putting local governments under the same strict disclosure requirements that now apply to corporations would be too great a shock for many cities to bear. Their capital programs would have to be ruthlessly chopped to show legitimately balanced books. So Congress won't move too far too quickly in this direction.

Hard-up cities have been forced into financial subterfuges by a vicious spiral of rising costs and falling revenue bases. Given the huge Federal deficit, just about the only way Washington could move fast to pump in enough money would be to change the system of doling out revenue-sharing money—from giving equal hunks for each political jurisdiction to favoring those jurisdictions most in need. No one in Washington is talking about such a shift—indeed it isn't clear that revenue sharing will be renewed when it lapses at the end of this year. Liberals in Congress talk about helping cities by federalizing welfare costs. But only New York City, Washington, D.C., and a few other major cities pick up the tab on welfare.

The third direction in which help could come to municipal finances is by Congressional action to bolster the borrowing market for municipal debt issuers. One measure already proposed to offer that kind of help is a ban on future pollution-control bond issues. These are nominally offered by

municipalities in the tax-exempt market, but the actual benefit is to industrial corporations, and there are charges that these issues are swamping the municipal debt market with a glut of excess supply. Secondly, municipal issuers could be offered the right to sell taxable bonds Federally subsidized. This would help because the market for taxables is larger than the tax-exempt market. But resistance by environmental groups and from some state and local governments themselves apparently renders the odds very long against either of these actions being taken.—Stanley Wilson, *World News, Washington*.

Professional ban on ads attacked by government

Societies representing construction design professionals are watching two developments that could have major impact on the practices of architects and engineers.

In the first, the Justice Department has instituted legal action against associations of pharmacists which have ethical codes banning advertising by their members. This is seen as the beginning of an assault on all professional groups discouraging advertising.

In this specific case, the suits involve the American Pharmaceutical Association and the Michigan State Pharmaceutical Association. According to the complaints, an advertising prohibition imposed by an association on its members is in effect a conspiracy in violation of Section 1 of the Sherman Act. The design societies, in any event, feel certain that Justice's suit is just a curtain raiser and that the trustbusters will get around to them in time.

The design societies are taking the initiative in the second action. They have plans for encouraging Congressional approval of a law that would federalize Workers' Compensation coverage, now the sole responsibility of the states.

Increasingly, designers find themselves defendants in liability suits filed by construction workers injured on job sites, or by the families of workers killed. The present-day state-administered Workers' Compensation laws limit damages against contractors, subcontractors and building owners.

But juries, in many recent cases, have assessed large damage settlements against the designers. The architects and engineers reason that so long as Workers' Compensation is state-administered, any legislative redress they win must come through encouraging new laws through all state legislatures. But if the program was Federally administered, a single bill could relieve the designers of what they see as an unfair impact on their operations. Builders and contractors are bitterly opposed to the federalization move. The designers' activity in favor of federalization is led by the American Institute of Architects.—William Hickman, *World News, Washington*.

Atlanta's use of joint ventures to encourage minority participation in construction raises many issues—and hackles

Maynard Jackson, the black mayor of Atlanta, has expressed a strong "preference" that firms seeking city contracts for building design and construction include minority ownership participation.

The issue has been a source of controversy in the city since June, when architects and engineers already under contract for the design of an up-to-\$400 million expansion at Hartsfield International Airport took on joint venture minority partners. Pressure from the Mayor's office for inclusion of minorities at one point in the controversy elicited a charge of "blackmail" from an architect involved in the project, and a Federal grand jury is investigating the controversy for possible criminal violations.

Jule Sugarman, chief administrative officer for the city, says that he is drafting replies to letters from Atlanta architects, engineers and subcontractors regarding city policies on the controversial subject. In the area of non-bid contracts, such as for professional services, Sugarman says, the city has not "had to face up to the issue in any specific way since our discussions around the airport contracts."

Elements of the policy, however, he says, are the desirability of affirmative action and minority participation as a goal, and this must be accomplished "in a framework of competence," with price a factor as well as a determination that a potential contract is large enough to justify using more than one firm.

Finally, Sugarman says, "I'd say that we believe that joint venture is only one way of achieving affirmative action and minority participation. There are other ways, such as subcontracting portions of the work, such as diversifying your own labor force to

involve more minority people."

Sugarman says that the city has not reached a point in non-bid areas of declaring that firms without minority ownership participation will not be considered: "All of the city's feelings on this are expressed as preferences and not as requirements. Each situation would have to be considered on its merits."

In the area of how the city will apply the policy to contracts let for bid, Sugarman says the city has not gone beyond a document issued in November for guidance to contractors seeking the Hartsfield work, but that he does not think future policy will be greatly different. In the November document, the city listed as an "expectation" of the general contractor a preference that it be a joint venture between local minority and majority firms, and in the section on "prequalification of bidders" noted that any contemplated joint venture should be limited to two firms, each of which should be capable of being bonded to the extent of its participation. "It is preferred," the document continued, "that the minority partner participate to the maximum extent possible, preferably not less than 20 to 25 per cent." The guidelines also stated, however, that "the city will award the general contract to the lowest and/or best bidder and will require the general contractor to follow the same policy on subcontracts."

Asked how the city planned to enforce its "preference" for minority participation in the face of commitment to "lowest and/or best bid," Sugarman replied, "The problem is that we cannot enforce it. We are bound by the requirement of the Georgia Constitution and state law which says that lowest and best bid is the policy."

Mayor Jackson made similar observations on November 18 in reiterating the city's inability legally to force joint ventures. But he is committed to encouraging greater minority participation. In August, after signing a resolution by the City Council approving the revised design contracts for the airport expansion, he declared, "I intend, as a matter of general city policy, to encourage the use of joint ventures whenever it will contribute to equal employment opportunity goals and can be expected to result in the efficient production of work and service to all citizens of Atlanta."

The Atlanta Chapter of the American Institute of Architects on November 10 wrote Jackson, who has since met with the architects, making six specific recommendations for city policy. Signed by chapter president M. Garland Reynolds, the letter observed: "As you are aware, the unfortunate publicity given the airport joint venture aroused the concern of not only design professionals, but the business community in general. The term 'joint venture' immediately became synonymous with forced partnerships between blacks and whites, and it was assumed by many that such partnerships would be required in all of the city's contracts."

Recommendations made in the AIA letter were:

1. Strong efforts should be made to distribute city design contracts equitably, requiring joint ventures only on projects of such size that joint ventures normally would be required;
2. On projects where the city desires joint ventures, the joining of the firms should be accomplished before work begins in view of the legal burdens that require professional judgment in choosing associates;

3. All architectural firms considered for city work should have affirmative action plans, but, because of the scarcity of black professionals, should not be ineligible for city contracts because they have no minority staff;
4. The city should state its commitment to using local architectural firms in view of present professional unemployment that would be aggravated by bringing in outside firms;
5. Special emphasis should be given to small local architectural firms hardest hit by the current economy;
6. A committee should be established to work out procedures for the selection of architects for all city work.

Airlines using the airport allege that the delay in design incurred while the architects and engineers sought minority partners caused the loss of the 1975 construction season in the face of cost escalations placed as high as \$1 million a month. The airlines, which must underwrite the cost of the expansion, are studying the revised cost estimates and have not yet given their go-ahead.

The original architectural joint venture consisted of Stevens & Wilkinson, Atlanta, and Smith, Hinchman & Grylls, Detroit. The firm added to the joint venture is Minority Airport Architects & Planners, which is made up of Allain and Associates, Fry & Welch Associates, J. W. Robinson and Associates, and McDuffie and Associates. Fry & Welch, based in Washington, is the only non-local minority firm.

During the same period, Atlanta Airport Engineers—itsself a joint venture composed of Robert & Co. and Howard, Needles, Tammen & Bergendoff—took as an additional partner Ewell W. Finley, P.C., New York, a minority firm.—*Stan Fisher, World News, Atlanta.*

Smoke control discussed at ASHRAE conferences

How to control toxic smoke in a burning high-rise by using the building's own central air-conditioning system is the theme of a series of conferences being held throughout the country by the American Society of Heating, Refrigerating and Air-Conditioning Engineers. Lending urgency to the problem, says Dr. Anne Phillips of the Harvard Medical School, and executive director of the Smoke, Fire and Burn Foundation, is that as much as 45 per cent of all deaths related to fires are attributable to smoke inhalation.

At a conference in Washington, D.C., in early December, Dr. Phillips predicted that with the increasing use of plastic building materials and furnishings, which produce large amounts of highly toxic smoke when burned, the problem will grow.

Air-conditioning systems by their very nature contribute to the spread of fire because they require penetrations through fire-rated partitions, walls and floors. They can also be used, however, to keep refuge areas and exit

routes clear of smoke to allow safe evacuation and access to firefighters.

The new "pressurization" method requires no more than a building's normal air-handling system equipped with smoke detectors (preferably on each floor), which automatically activate fans and smoke dampers. In the event of fire, air is supplied to exits and refuge areas or areas adjacent to the fire, and exhaust ducts are closed. At the fire zone the reverse process is set in motion: air supply is cut off, while the exhaust runs full force. This creates a pressure toward the fire and away from safety zones.

The pressurization method is not meant for total smoke removal, says Dr. Francis C. W. Fung of the National Bureau of Standards. Dr. Fung says that its main usefulness is in the "early phase of fire control, when the fire does not involve the air-handling equipment," and maintains that the technique should be used in conjunction with a sprinkler system.—*JoAnn Tosetti, World News, Washington.*



Japanese firm will issue new architectural journal

A new architectural magazine, *Nikkei Architecture* will make its first appearance April 5. The publishers are Nikkei-McGraw-Hill, Inc., a joint venture of McGraw-Hill, Inc., and Nihon Keizai Shimbun, a Japanese publisher.

As part of the magazine's pre-publication activities, RECORD publisher Blake Hughes, seen here with *Nikkei Architecture* publisher Fumiro

Murobuse, traveled to Japan to inform manufacturers and advertisers on American experience with business papers and on effective techniques for advertising to a professional audience.

The editor of the biweekly, Japanese-language journal is Masao Hachiya. Offices are in the Nikkei Annex Building, 2-1-2, Uchikanda, Chiyodaku, Tokyo, Japan.

Construction delays, cost over-runs and scandal threaten Montreal Olympics

Construction for the 1976 Olympics in Montreal has been plagued by staggering cost over-runs, by labor troubles, by public outcries against both the cost and the quality of the design—and by delays that threaten completion of facilities in time for the opening of the Games July 17. On top of all these, financial scandals have emerged.

In mid-November, when Montreal city officials and COJO (*Comité Organisateur des Jeux Olympiques*), the Olympics organizing committee, confessed that the project was a month behind schedule and that funds were just about exhausted, the Quebec provincial assembly rushed into law the establishment of an Olympics Installation Board, approved a \$50-million fund for the new board to continue construction, and assumed responsibility for the project. Claude Rouleau, an engineer and former deputy minister for public works and transport, was named board chairman.

When Montreal Mayor Jean Drapeau announced in 1973 that Montreal would entertain the 1976 Games, he envisioned a "modest, self-financing Olympics," costing the city about \$250 million. The city's expenditures now come to about \$835 million, while other installations, such as Olympic Village and some sports facilities outside Montreal, have raised the

total to more than \$1 billion. This sum includes a reported \$40 million fee to Parisian architect Roger Taillibert, who designed the main stadium (original estimate \$100 million, current estimate \$564 million) and the adjacent Velodrome for bicycling events (original estimate \$10 million, current estimate \$59 million) (below, bottom).

Persistent labor strife has been a factor in construction delays. On October 21, 3,500 workers walked off the job to protest a police blacklist barring "troublesome workers" from the site and requiring the issuance of identification cards. The walkout lasted a week. Tension had been building for some six months before this as Quebec Federation of Labor members complained repeatedly of police surveillance, forced overtime, arrogant company foremen, speeded-up production schedules and safety hazards. A seven-man board including the unions and the city has since been formed to deal with conflicts.

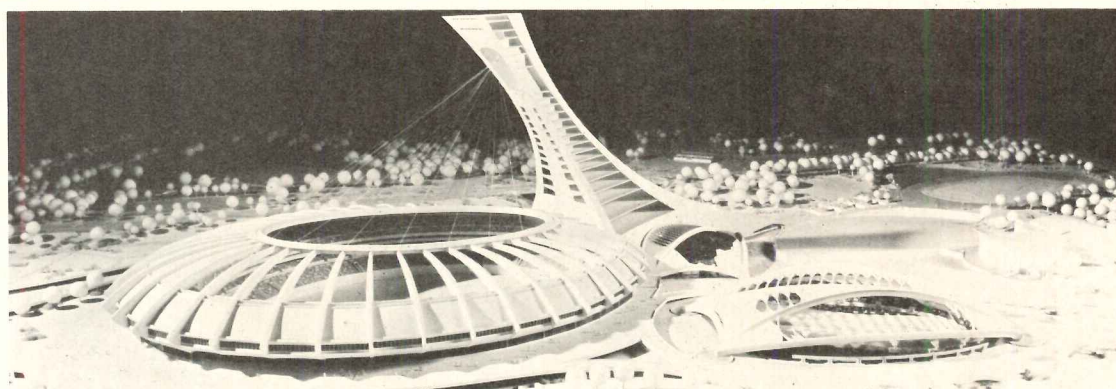
Construction delays have hit chiefly the stadium, Velodrome and swimming facilities at Olympic Park. Olympic Village, two large pyramid-shaped buildings designed by architects Roger D'Astous and Luc Durand to house athletes during the Games and to be converted to apartments thereafter (below, top), is on schedule, though costs are running three times

above the original \$30-million estimate.

The stadium, however, is way behind schedule. The structure was estimated to be about 85 per cent complete at the end of October, with enclosure expected to take another five months. Observers are guessing that plans for the stadium complex will be drastically curtailed, eliminating the tall mast and a retractable roof.

Meanwhile, at Olympic Village—a separate part of the Olympics building project but also taken over by the provincial board—a financial scandal that brewed for months finally erupted. On November 25, the Quebec Provincial Police and the Royal Canadian Mounted Police executed Operation Hermes, a series of raids on the offices and books of the partners in Les Terrasses Zarolega, Inc, a consortium formed to build the Village. The raids, conducted without prior knowledge of the Montreal police, were the culmination of an investigation begun last July, and charges are promised against anyone involved in alleged kickbacks.

Mayor Drapeau selected the Zarolega consortium to finance and build the housing complex. Members of the group include Joseph Zappia, the chief contractor, Rene Lepine, overseer of design, Gerald Robinson, in charge of subcontracts, and Andrew Gaty, treasurer.



Canadian mail strike delays IAF judging and National Gallery competition

The prolonged mail sorters strike in Canada, which ran from October 20 to December 3, has altered the schedules of two major design competitions.

The International Design Competition for the design of a large housing community in Manila originally called for submissions to be postmarked no later than October 15. About 350 submissions were received before October 20, but competition officials realized that many submissions were

caught in transit and have postponed judgment from mid-December to February 1-8.

Competitors whose submissions were returned are urged to re-mail them with the original, postmarked wrappings. (The International Design Competition, conceived by RECORD and *L'Architecture d'Aujourd'hui*, is sponsored by The International Architectural Foundation, a non-profit corporation.)

Similar difficulties arose in the Canadian government's professional competition for a new national gallery to be built in Ottawa. Architects—the competition is limited to Canadian architects—were required to submit applications for consideration by November 7. The mail strike thus prevented completion of the selection of competitors by the Department of Public Works and the Royal Architectural Institute of Canada.

"Policy" criteria proposed for Federal designs

Agencies responsible for Federal construction will be required to evaluate building plans against specific design objectives, if a draft design policy issued by the General Services Administration is adopted.

The proposal was sent to all Executive Departments and professional organizations involved in design and construction for comment to prepare for a public design forum scheduled for this month.

The draft recommends a 14-member national design council with top-level representation from the Federal government and professional organizations with impact on the Federal building process. The council would approve policy, monitor compliance, issue guidelines and conduct public hearings to carry out the six major areas of the proposed design policy order. Identification and evaluation of every building project's effect in each of these would be required.

The proposed policy areas are:

- Natural Environmental Policy, under which agencies would be required to determine the quality of the environment of proposed facilities and set standards to preclude detrimental effects. Every effort to protect the environment during all phases of the construction process would be required.
- Resource Management Policy, under which agencies would be required to use efficiently existing resources such as facilities, land, materials, energy and time, before new resources are tapped. Facilities would be designed to meet energy goals.
- Fiscal Management Policy Area, which would require evaluation of a facility's function in terms of cost and worth. Efforts would be made to find alternative ways to satisfy required functions, and life-cycle cost calculations and economic analysis would be conducted on alternative solutions.
- Socio-Economic Policy Area, which would require priority support by Federal construction of community renewal, planned growth and redevelopment programs. A facility's impact on the public services in a community would be evaluated to identify potential demands.
- Cultural Policy Area, which would require preservation of the community image and encourage art and cultural enhancement in Federal buildings. Priority would be given to adapting existing facilities to satisfy Federal space needs, particularly those with architectural or historical significance. Facilities would be located where they would avoid historic sites, or protection and preservation of these sites would be assured before construction.
- Human Factors Policy Area, which would open the Federal planning processes for new construction to local participation. Agencies would minimize use of ground-floor space and encourage community and commercial use to benefit the building's occu-

pants. Facilities used by the general public, particularly those in urban locations, would enhance and protect the area with a lively pedestrian setting in and around them.

A copy of the proposal may be obtained from any of GSA's 13 Business Service Centers or by telephoning the office of special studies and programs in GSA's Public Buildings Service at 202/343-7525.

Building figures sought for profile of industry

An influential council of trade and professional organizations is asking the Federal government to gather a set of economic statistics that will permit the preparation of an economic profile of the construction industry.

The National Construction Industry Council, the "single-voice" organization for 24 associations and societies, has hopes that the statistics will reveal that the construction industry is a large and important sector of the economy with unique problems.

This information, Council leaders predict, will aid in convincing Federal officials to give more deference to construction in future legislation.

The Council decided to make the request after hearing a report from its officers, who reported that Ford Administration figures continued to dampen hopes of support for a Federal Office of Construction, a prime goal of the Council.

Instead of a formal construction bureaucracy in government, Administration leaders are suggesting that the Council make "specific" requests of the Administration to see if the existing bureaucracies can help solve their problems in government dealings.

Industry officials began their campaign for both an Office of Construction and better construction statistics in August 1974. At that time, early in the Ford Administration, it became clear that top Federal officials had little appreciation of the nature of the industry.

This was dramatized during economic recovery debates when government officials proposed the solving of construction's problems through steps designed for the homebuilding industry. Construction officials point out that homebuilding is only a portion of construction.

NCIC wants the government to determine the following: construction's percentage of gross national product, including the value of actual construction and the value of material and equipment; construction's percentage of the total labor force, including those manufacturing construction products and in the design professions; the total employment dollars; the employment history of members of the design professions, subcontractors and allied members of the industry; and an indication of the over-all impact of each building dollar on the economy.—William Hickman, *World News, Washington*.

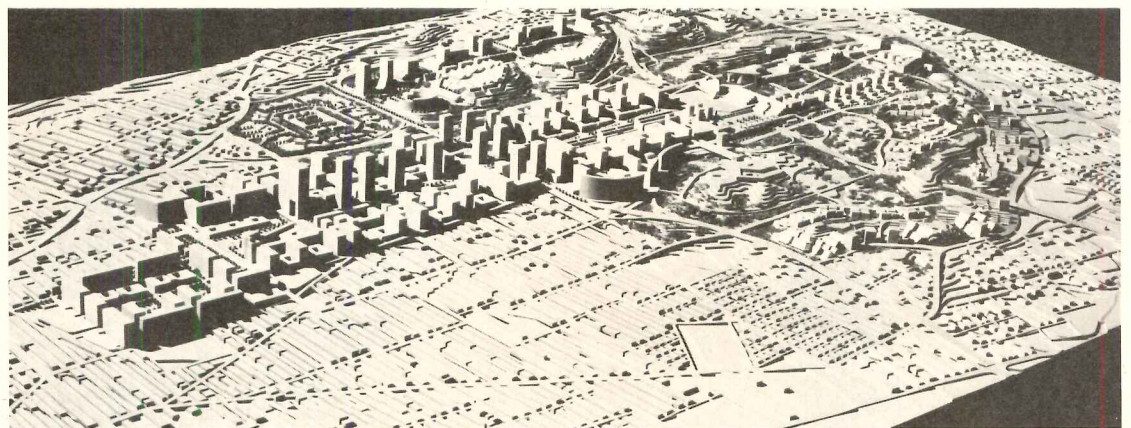
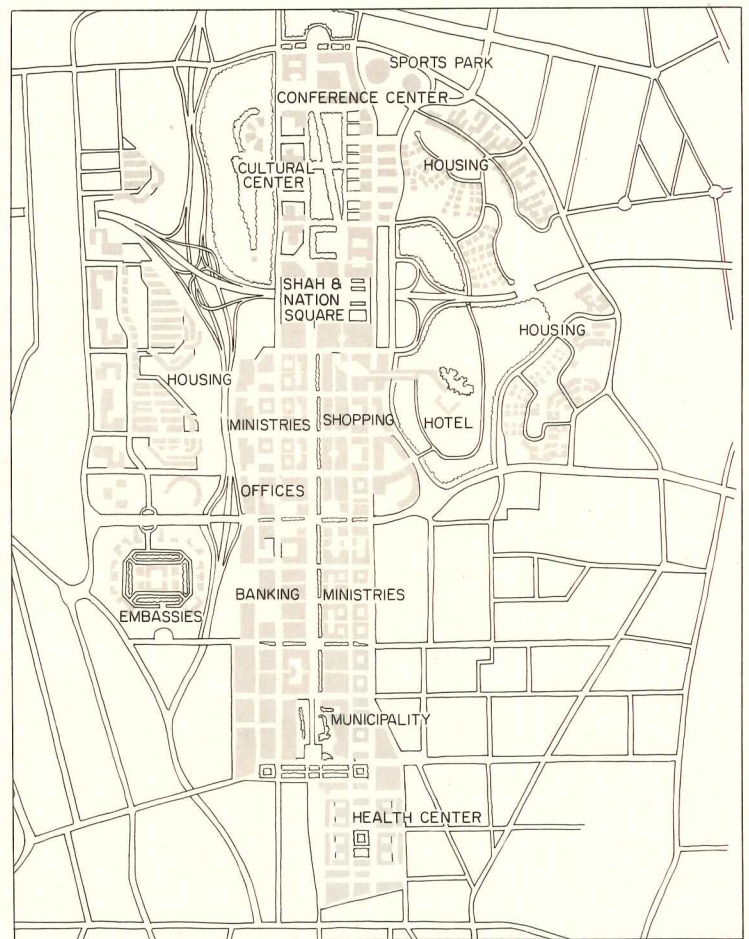
Shah of Iran breaks ground for 1,400-acre new town in Tehran

In a ceremony celebrated with trumpets and the release of 700 white doves, the Shah of Iran broke ground for a major urban development, Shahestan Pahlavi, to be built in Tehran.

The 1,400-acre city center, planned by Llewelyn-Davies International, will include governmental, commercial and residential building, as well as a cultural center that will contain an opera house, museum, a Royal library and multi-use halls. About a third of the area will be left as open space to accommodate a large plaza—Shah and Nation Square—a Garden Park in the cultural center, a Municipality Park near the square, and an extensive network of greenways.

About 12-14,000 housing units are planned for a projected resident population of 40-50,000. The projected working population is 175-200,000. It is estimated that the total public and private investment over the ten years needed for the development of the area will be on the order of 250 billion rials (\$3.7 billion).

Shahestan Pahlavi, which is being developed within the framework of the Tehran Master Plan, is a key element in the city's efforts to provide Tehran with suitable attractive public spaces and to decentralize and decongest the old downtown by creating a new core more centrally located.



International conferences open to city planners

The New York Metropolitan Association of Urban Designers and Environmental Planners (MAUDEP) has offered a list of international conferences for which it intends to offer low-cost programs to American and Canadian participants if a sufficient number of qualified professionals respond. Among the conferences listed:

- The 1976 Hyogo International Conference of the International Federation for Housing and Planning, "The Role of Local and Regional Government in Improving the Environment for Human Settlements." The conference, open to members and non-members of the IFHP, will take place May 18-22 in Kobe, Hyogo Province, Japan. Professional excursions in the Far East, possibly including mainland China, are projected.

- Habitat, The UN Conference and Exhibition on Human Settlements, to take place May 31-June 11 in Vancouver, British Columbia. This conference is intended for the participation of representatives of governments, UN agencies, and intergovernmental and non-governmental organizations. A parallel conference, Forum, will be held for other interested groups and associations under the supervision of the Canadian hosts.
- The 1976 IFHP International Congress for Housing and Planning, to be held in Helsinki August 7-15. The conference is open to both members and non-members of IFHP, and professional excursions to Eastern Europe, Scandinavia, and possibly the Soviet Union and Poland are projected.

Interested architects and planners should write MAUDEP, P.O. Box 722, Church Street Station, New York, New York 10008.

Vancouver asks Canada to cancel Habitat

In protest against the United Nations General Assembly resolution defining Zionism as racism, the Vancouver city council, with a vote of 10-1, petitioned the Canadian government to cancel UN's Habitat conference on human settlements, to be held May 31-June 11 in Vancouver. The conference will be open to delegates from the Palestine Liberation Organization.

The Canadian government declined last July to play host in Toronto to a UN conference on crime prevention because of objections to PLO attendance. In the case of Habitat, however, the government has declared it will not cancel the conference.

Vancouver also objected to the cost of security arrangements, which the city will have to bear and which it estimates may total \$1 million.

TWO MORE PLYWOOD ROOF SYSTEMS.

U. of Idaho truss-arched roof spans 400 feet, built in 26 days, saves millions.

Estimates for doing this stadium job in concrete and steel ran \$10-\$12 million.

Concrete was ruled out because the job had to be done in phases.

Steel contractors were hedging because of cost limitations and material availability.

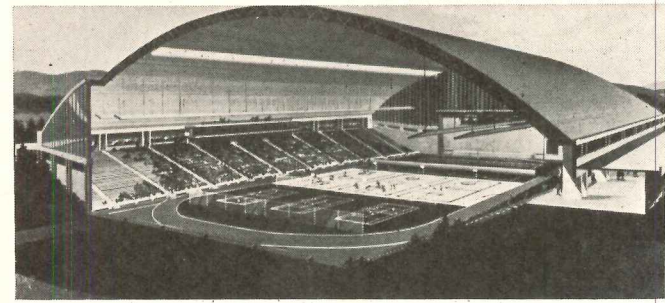
Used: a wood and steel-trussed

arch system with plywood decking. The system was invented by Trus Joist Corporation and designed by KKBNA Consulting Engineers, Denver, Colorado.

Cost: \$7.4 million (\$4.2 million for roof and end walls, including mechanical and electrical).

The stadium roof was designed for heavy snow loads and high wind conditions. The arch spans 400 feet with a rise of 100 feet from the spring line to reach a maximum height of 150 feet over the playing surface.

The truss system is a stressed skin composed of solid top and bottom wood decks of 1 7/8-inch Micro-Lam billets 24 in. wide, con-



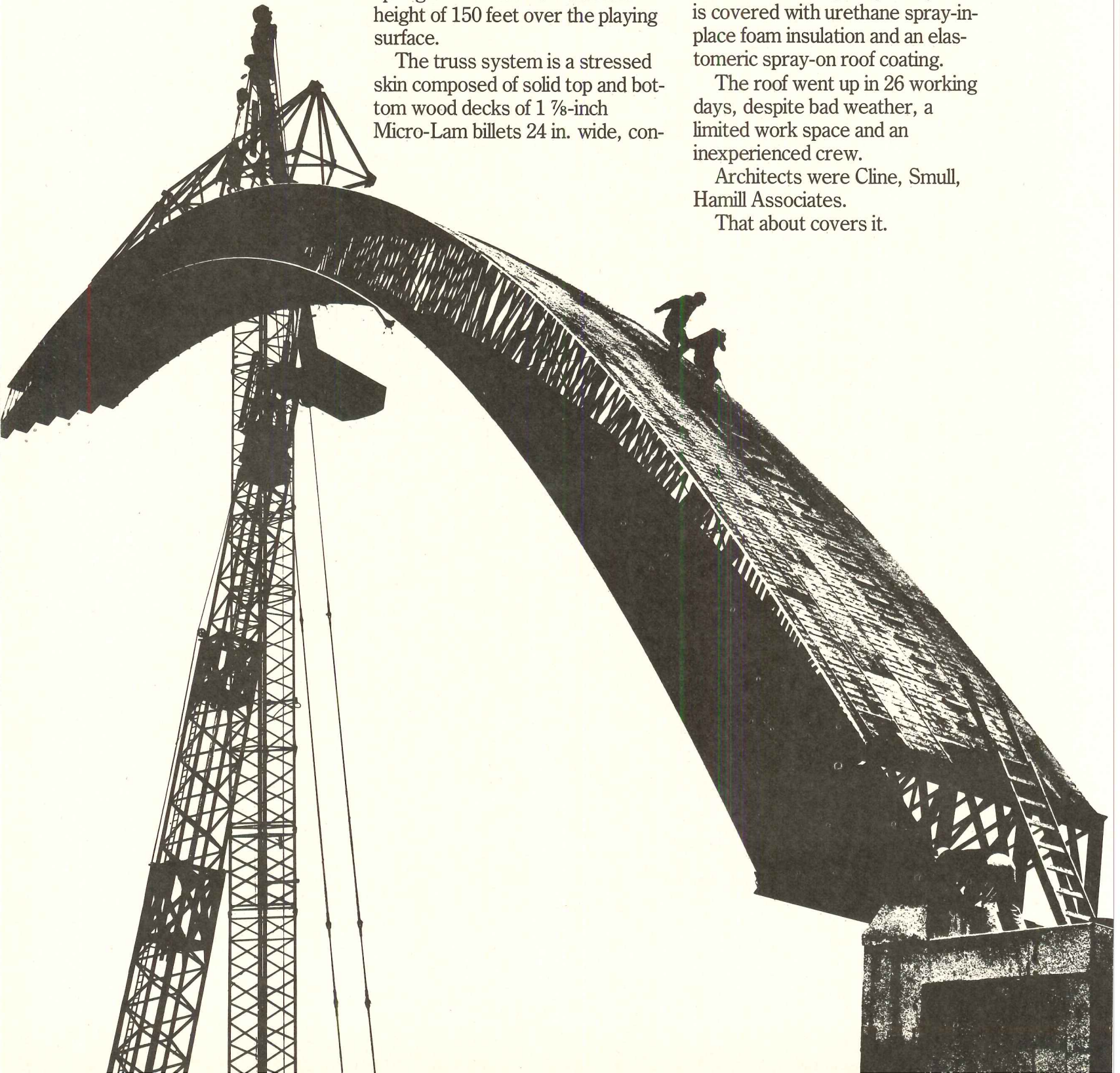
nected by tubular steel webbing.

Roof deck is 3/8-inch plywood in a herringbone pattern which acts as the structural diaphragm. Plywood is covered with urethane spray-in-place foam insulation and an elastomeric spray-on roof coating.

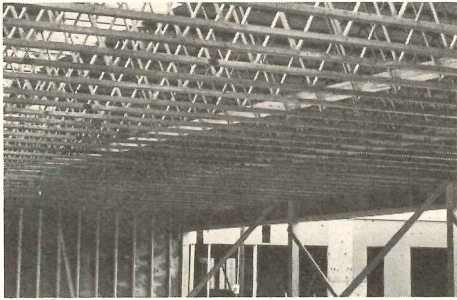
The roof went up in 26 working days, despite bad weather, a limited work space and an inexperienced crew.

Architects were Cline, Smull, Hamill Associates.

That about covers it.



FOR STEEL LOVERS WHO CAN'T AFFORD STEEL.



Michigan elementary school: 1974 plywood roof deck at 1970 prices.

"We specified plywood roof decking for two reasons: 1) uncertain delivery of steel in the Detroit area, and 2) the cost of plywood was half the cost of steel." Said George Craven, T.R. Jahr Associates, Dearborn architects.

"Essentially the Romeo School District wanted to duplicate an existing structure we had designed for them in 1970," he said.

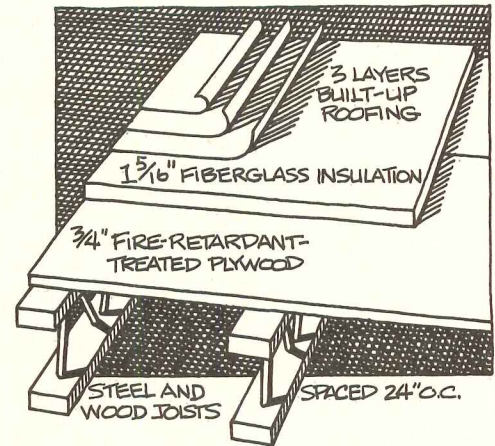
No one was more surprised than

the architects when the bids came in: Low bid for the 44,000 sq. ft. Fire-Retardant-Treated (FRT) plywood roof deck was \$11,000.

That was less than half the \$28,500 low bid received four years earlier for the previous steel and gypsum roof system.

E. Gilbert and Sons, Utica, built the roof deck of 5/8-inch plywood over Trus Joists® 24-in. o.c. Specs called for 1-5/16 inches of fiberglass insulation with a 3-ply built-up roof.

Both the plywood deck and Trus Joist chords were pressure treated with fire retardants. (FRT wood



gets a flame spread rating of 25 or less when tested in accordance with the ASTM E84 test method.)

Total cost for the Romeo Elementary School project: \$29.10 per square foot.

For more data, circle 25 on inquiry card

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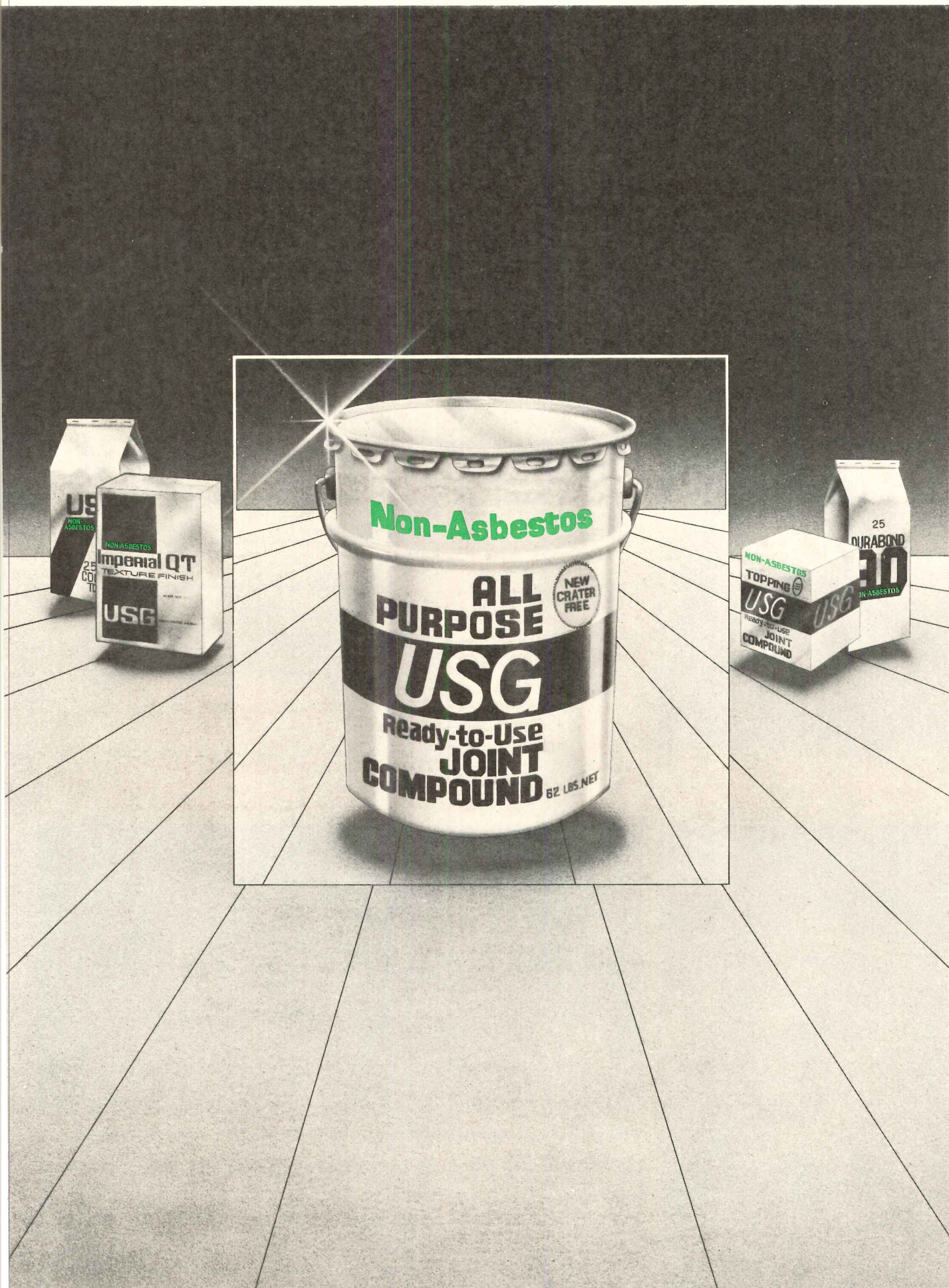
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field-tested nationally for a full year to merit your confidence. New asbestos-free texture finishes are the perfect companion products to meet your job requirements on walls and ceilings. Get all the details on this new generation of joint compounds and texture finishes from your U.S.G. Technical Representative. Or write to us at 101 S. Wacker Drive, Chicago, Illinois 60606, Dept. AR-16

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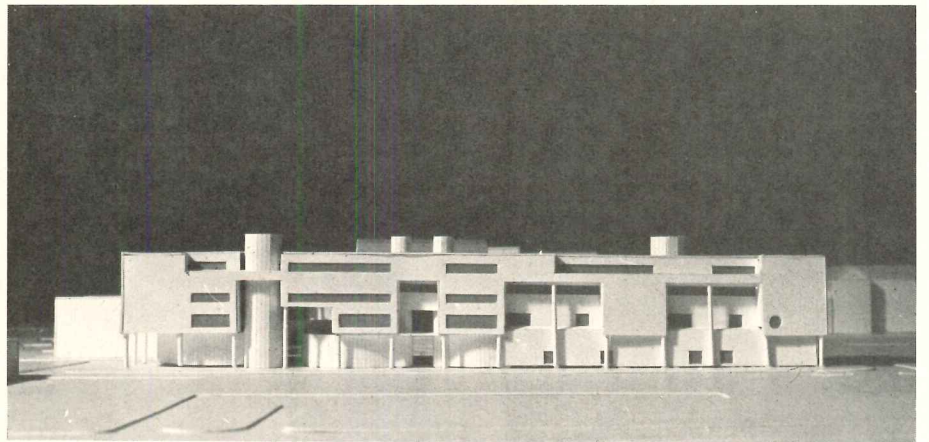
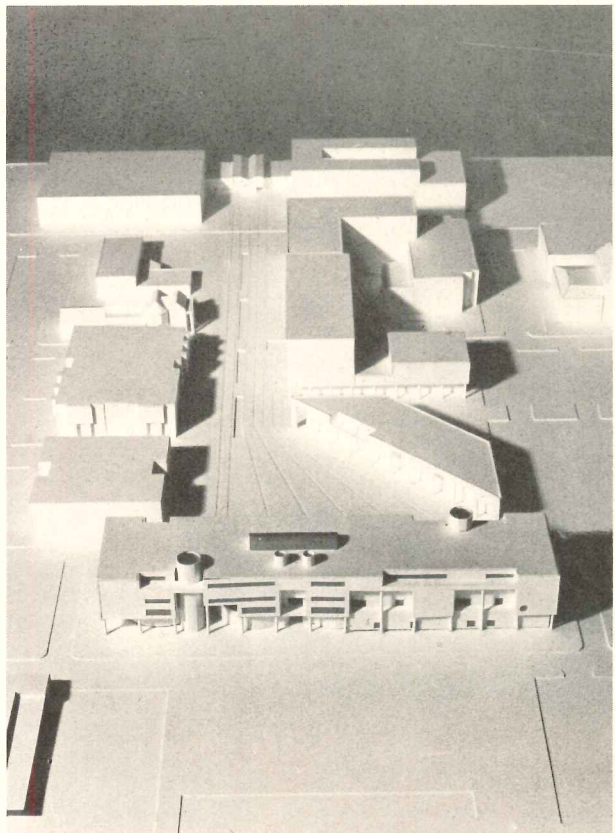
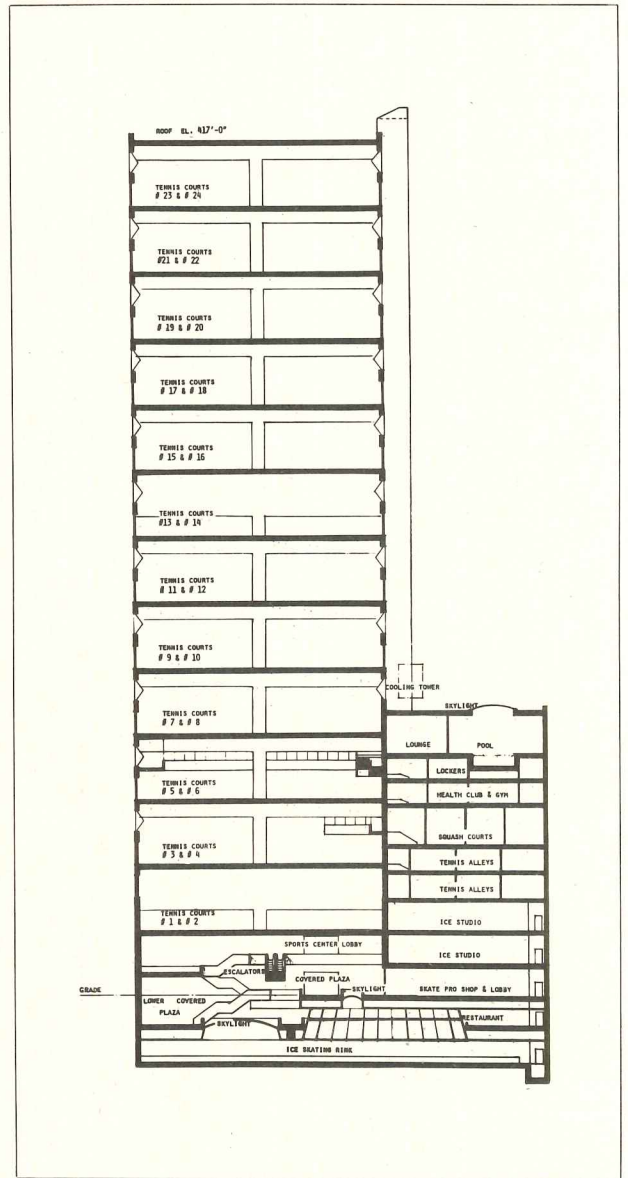
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NON-ASBESTOS



High-rise tennis facilities planned for Manhattan

The national tennis craze has spawned a high-rise indoor facility, the New York Sports Center, to be built in midtown Manhattan. The new center, equivalent in height to a 45-story building, will house 24 tennis courts, 14 tennis alleys, seven squash courts, a large ice rink, two studio ice rinks, a swimming pool, health club facilities, sports shops, and a 13,000-square-foot pedestrian plaza. (A tennis alley is a lane 11 feet wide and 65 feet long equipped with a ball-throwing machine.) The facilities, being developed by Madison Equities, are intended for both private clubs and public use. The tower, designed by Brodsky, Hopf & Adler, architects and engineers, will have bands of reflective glass set at inverted angles at the ceiling line of the tennis courts.

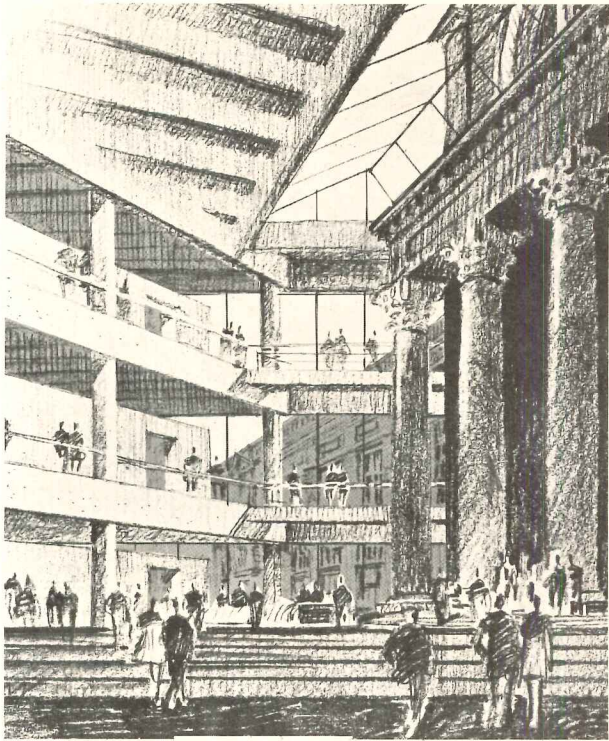


Weese designs Municipal Building for Middletown, Ohio, redevelopment

On Bicentennial Independence Day, Middletown, Ohio, will open its new Municipal Building, designed by Harry Weese & Associates. The concrete building will house the city commission chamber, city manager's offices and offices for a number of municipal agencies, as well as the police department, two

courtrooms, and a 37-cell detention facility. As a major element in the city's downtown urban renewal area, the new building will close the north end of a pedestrian mall that debouches into the new Civic Center Plaza, also designed by Harry Weese & Associates. The plaza will occupy a triangular

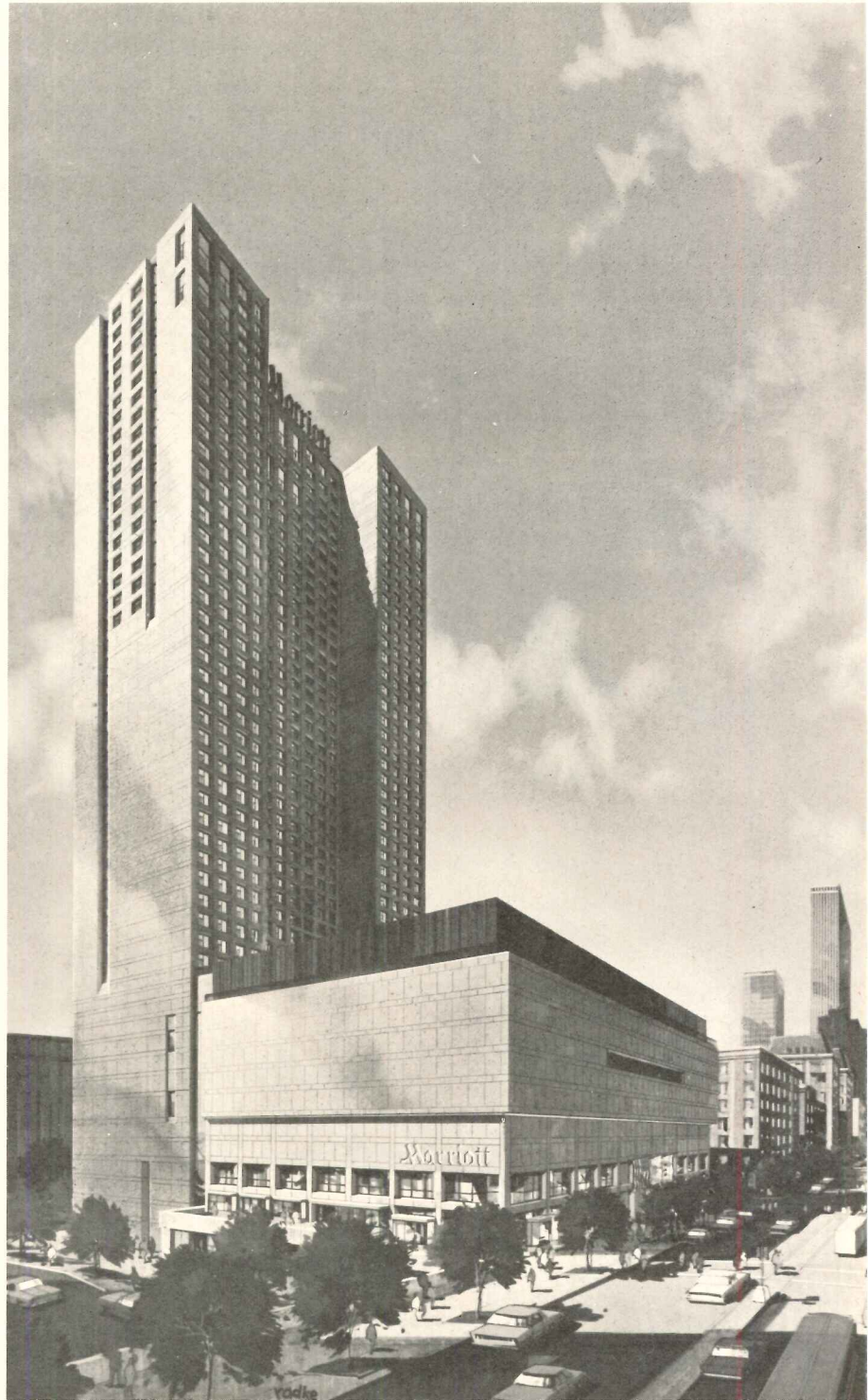
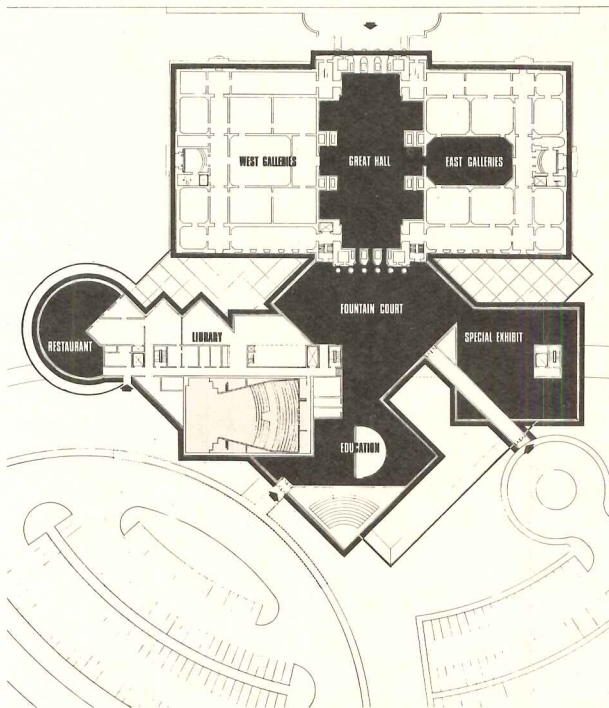
area bounded on one side by existing buildings and on another by a proposed library. The building's main entry faces a sunken court, 180 feet square, to the north. Turner Construction Company, Cincinnati, is the general contractor and construction manager for the building.



New St. Louis museum encloses Cass Gilbert facade

Construction has begun on a long-range building plan, designed by Hardy Holzman Pfeiffer Associates, for the St. Louis Art Museum. The plan calls for sizable additional spaces, to include galleries, educational facilities, administrative offices and public dining room, as well as environmental control systems and extensive site work. A major new public space will be the central Fountain Court (above), a volume 50 feet high that will enclose Cass Gilbert's 1904 colonnade. (The legend on the entablature reads ART STILL HAS TRUTH, TAKE REFUGE

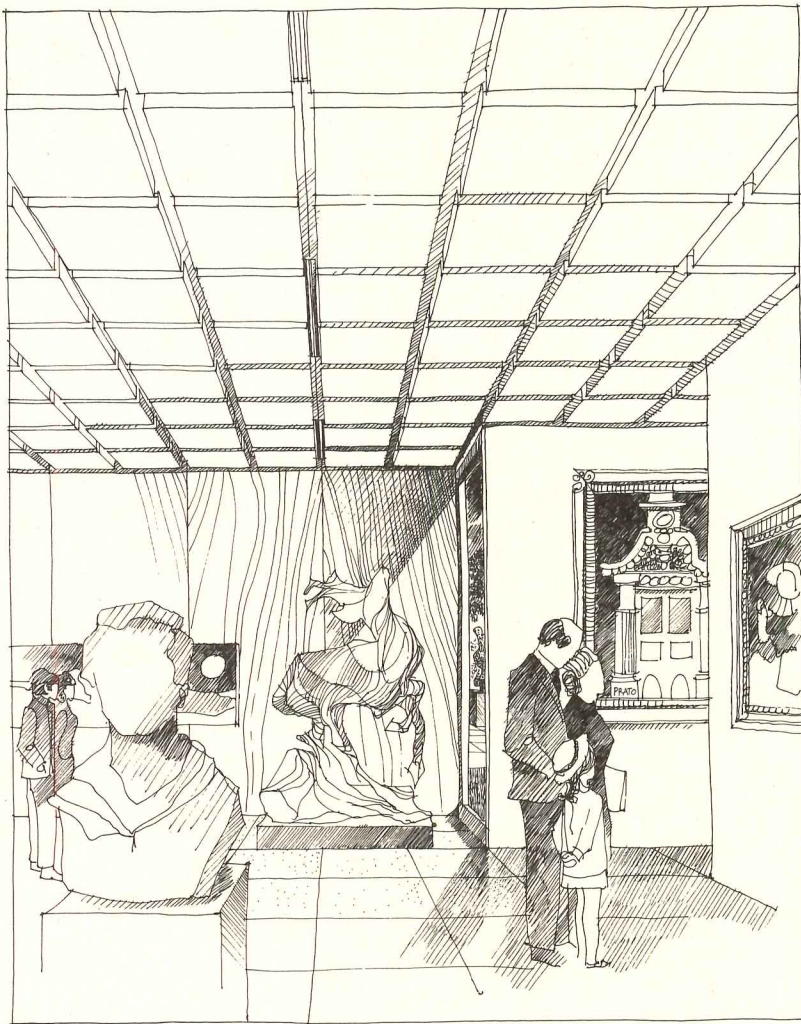
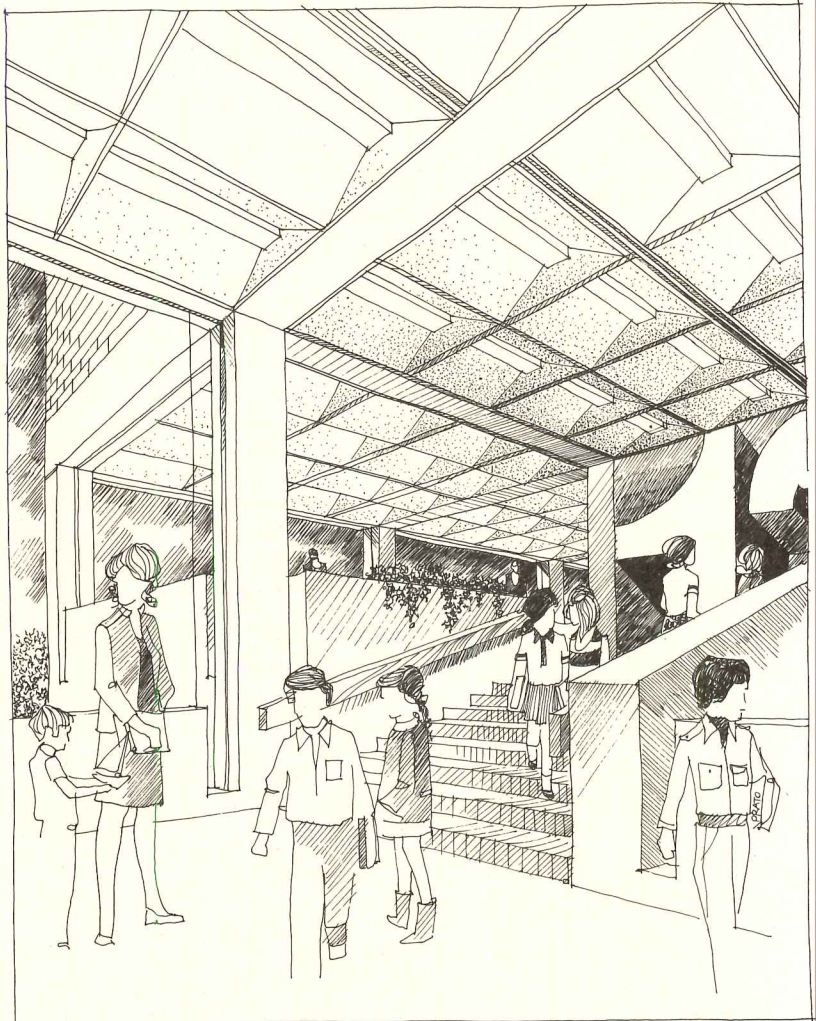
THERE.) Modern galleries on the upper levels will open on balconies overlooking the courtyard. The new facilities will be set at 45 degrees to the old building, partly as deliberate contrast to its Beaux-Arts axiality, and partly to exploit the flexibility and diversity of exhibition spaces offered by an asymmetrical plan. The building program, which will be completed in incremental stages, will cost an estimated \$13.5 million; Phase I, the restoration and reconstruction of the Gilbert galleries, will be completed in spring of 1977.



Chicago's Michigan Avenue will get 45-story Marriott Hotel

A new Marriott Hotel, designed by Harry Weese & Associates, will be built on Chicago's Michigan Avenue, the city's prime retail area. The new building will have two sections—a seven-story block directly on Michigan Avenue, and a 45-story tower behind it. The Michigan Avenue block, which the architects kept low in conformity with the height of older buildings in the area, will house retail space on the lower three floors

and meeting rooms and other hotel facilities above. The lower block will be steel framed, the tower concrete framed, and both sections will be faced with cast-in-place concrete. Construction, which will cost an estimated \$40 million, will begin in four to five months, and completion is scheduled for spring of 1978. The developers are the Marriott Corp. and the Michigan Square Venture, a Chicago-based investment group.



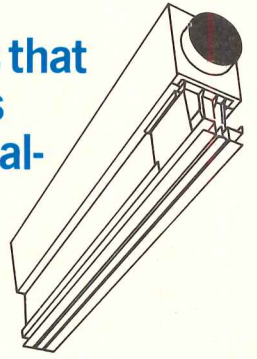
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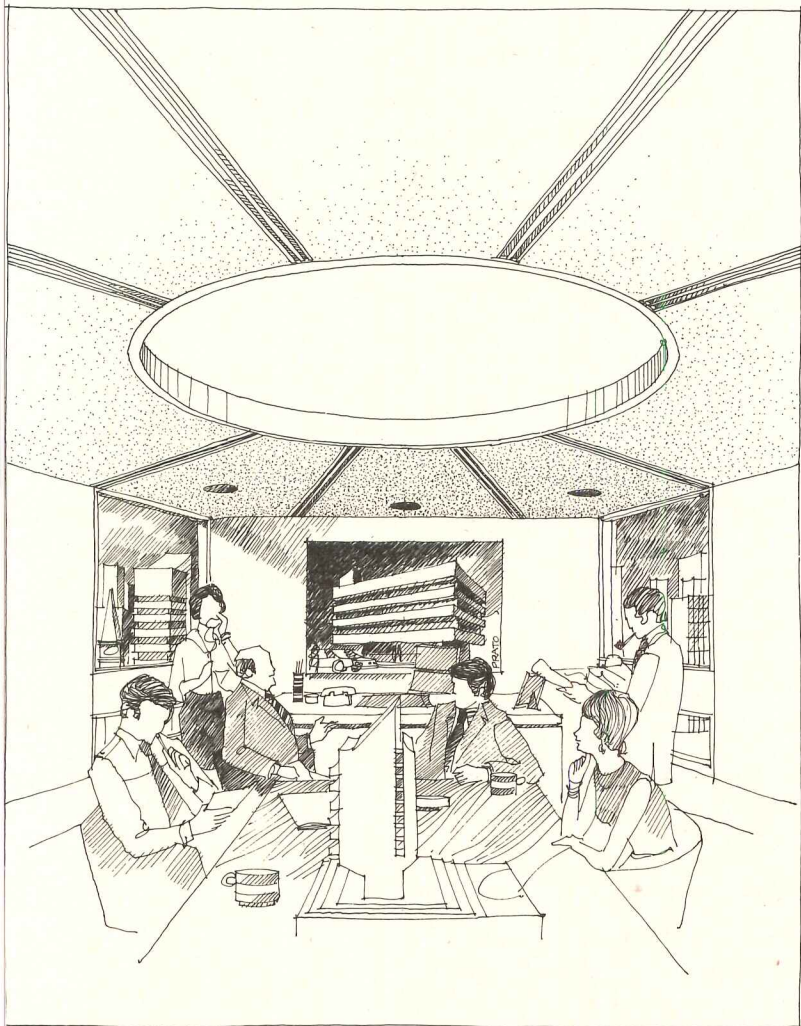
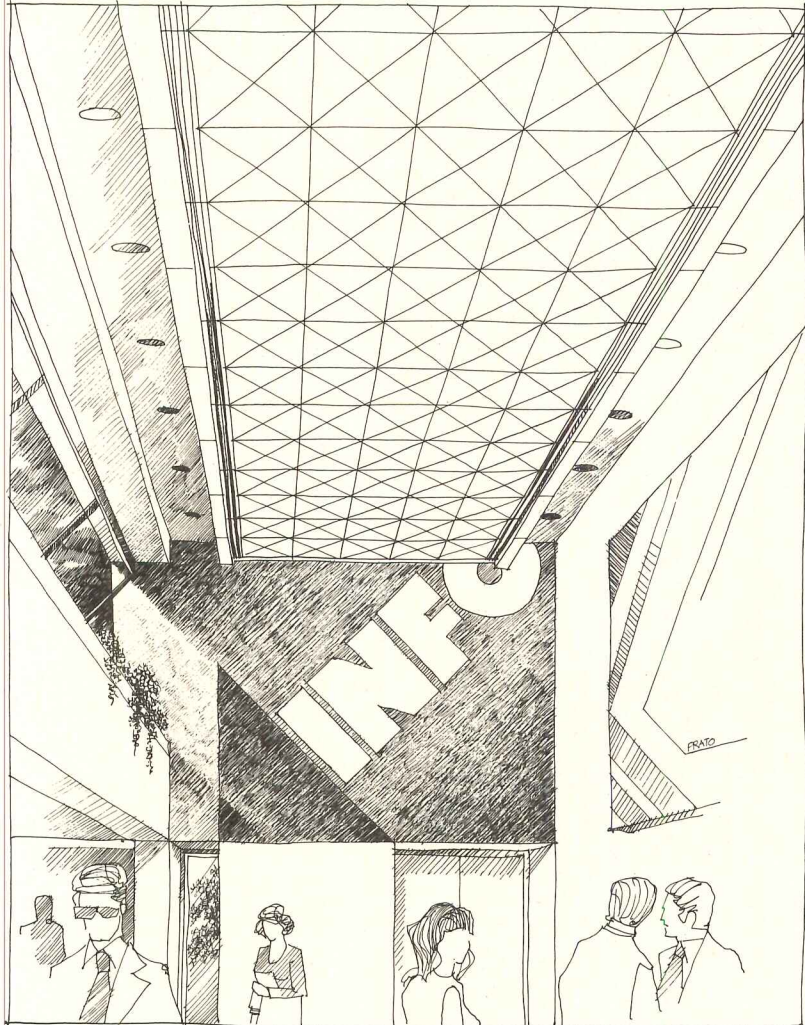
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People and the money market

HOUSING AND THE MONEY MARKET, by Roger Starr; Basic Books, New York, 1975, 250 pages, \$10.95.

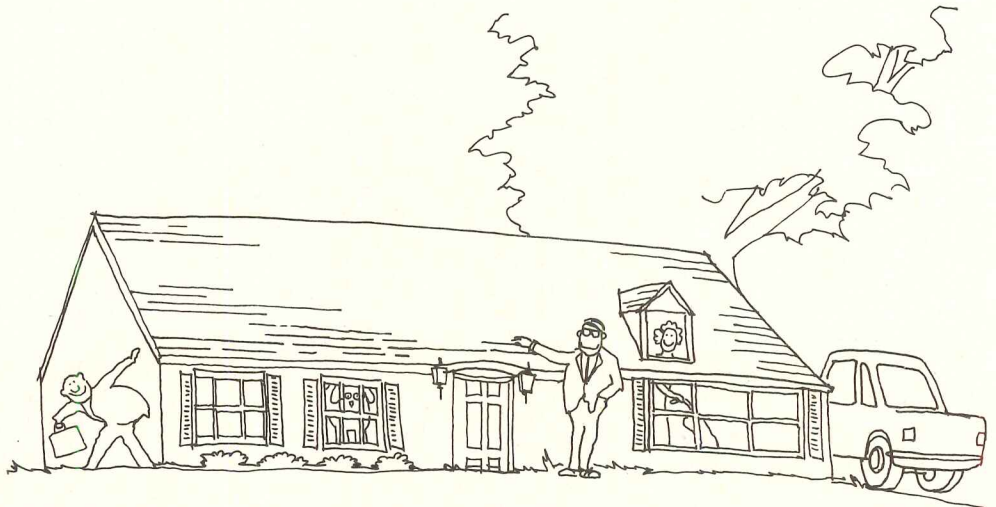
Reviewed by Robert L. Miller

According to HUD Secretary Carla Hills, home ownership for poor people never was a good idea: You practically give them a house through mortgage subsidies, and what do they do? They just let it run down. Without minimizing the plight of citizens thus cut off from their piece of the American pie, it is worth pointing out that in the last several years we have all become more cut off from the chance of owning a good house, and many of us are having to rationalize that we never wanted one to begin with, or, in the case of architects, that we never wanted to design them. Blamed for this are scarcities in every quarter—of materials, of skilled labor, of land (at least in the right place) and of existing housing. The shortage of money, however, is the problem that most vividly grabs the imagination. If a need and to a lesser extent a market for housing exists, why can't mortgages at reasonable rates be made available?

This is the question to which Roger Starr addresses himself in *Housing and the Money Market*. Starr, who brings to the task experience as Administrator of New York's Housing and Development Administration (and as Adjunct Professor of Architecture at both Pratt and CCNY), answers by giving us a tour of the system of banks, life insurance companies and government agencies which comprise the "money market," a seeming entity which (like everything else connected with the housing industry) is really a loose and shifting aggregate, the softest of software. To his great credit, Starr manages to take such a subject, plow it into neat rows, sort it out with jargon-free clarity, and wring from it all the incisiveness and humor one could fairly expect from topics like, say, the history of mutual savings banks. While Starr perhaps writes with New York City too specifically in mind, this is a book that anyone interested in housing and how it gets built ought to read.

It is not, as you may have gathered, a book primarily about housing; it is a book about money, although a new edition called *The Money Market and Housing* is about as likely to hit the stands as *The Seven Dwarfs and Snow White*. The connection between the

Robert L. Miller, who works in the office of Arthur Cotton Moore/Associates in Washington, writes architectural criticism in the form of extended Letters to the Editor (See RECORD, September 1975, page 4), and he also draws cartoons (above).



Creative Approaches to Cheaper Housing I: "The Lowered Ranch"

money marketers and the people who live in, build, service or design housing is, we are made to feel, minimal in the extreme.

Well and good, says Roger Starr: we cannot and should not expect bankers to promote social or architectural goals at their own expense, but rather should let them go on in that detached, even-handed way that New Yorkers have lately come to find so irritating. In fact, of course, those who control purse strings can never aspire to neutrality. Lenders, like the rest of us, are both more and less conscientious socially and aesthetically. Abuses like the "red-lining" of entire neighborhoods clearly go beyond anyone's idea of fiscal prudence into the very subjective realm of gross prejudice. The "gentlemen's agreement," as Oscar Newman calls it, which says that public housing must always look like public housing, even though it is often built better or at least more expensively than comparable private housing, certainly includes investors as well as politicians among those agreeing.

Starr mentions, but does not pursue, the broader question of the mortgage banker's inhibiting influence on opportunities for architectural innovation. The equation on the part of some bankers of brick veneer and fake Colonial with fiscal conservatism is well known to architects, but there is less general awareness of the ways in which fundamental social and technological advances in housing are continually discouraged by lending policies, resulting in some backward architectural programs to which eighteenth-century forms might be a perfectly fitting response.

The foregoing attitudes on the part of bankers may not suggest malice, however, so much as insularity. To say that a book like Mr. Starr's is much needed is also to notice that those who make up the community of interest in housing—lenders, producers, government officials, architects and planners and consumers—don't any of them do much communicating among themselves.

Roger Starr does seem to convey at least one message from the lending institutions to the design profession, however. First, we are told that the money market is a fragile, imperfect but basically many-splendored thing, not to be messed with (especially not by the Federal government), and that while there may be a few legitimate strategies for lowering interest rates and accumulating more mortgage money, the most important thing is to make housing using fewer resources. "Fine," we say, "does that mean we won't have any more trouble financing those zero-lot-line houses with the slightly freaky-looking solar collectors?" "Well, maybe," we are told, "but what we really had in mind was just to lower technological and space standards a bit." In other words: make smaller houses.

For those of us who may have cheated and skipped entire chapters of financial explanation in a rush to get to the book's conclusion, the benign simplicity of this suggestion should be a breeze. All of our problems can be solved, really, by following the lead of lumber producers and establishing nominal sizes for everything while gradually shrinking the actual sizes: six foot eight inch doors will become actual six foot two inch doors, then six feet; eight-over-eight windows will become seven-and-a-half-over-seven-and-a-half.

Of course, Mr. Starr's suggestion is much more reasonably presented than I have made out, and it will surely seem reasonable to the person living in a grossly substandard apartment who is rigidly denied the chance of a moderately substandard apartment. As a generalization, though, it is in the same category as the notion that overpopulation can be counteracted by breeding smaller people. While none of this diminishes the value of this book as a definitive, up-to-date guide to understanding the money market in housing, some readers may conclude by wishing that the money market had an equally good understanding of them.

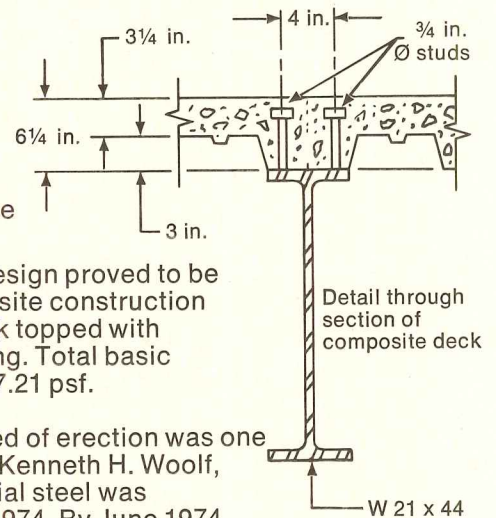
depend on Bethlehem

Preliminary frame analysis pinpoints most economical steel frame

A preliminary frame analysis, conducted by Bethlehem's Sales Engineering Buildings Group helped the owners of this Pensacola office building achieve optimum steel frame economy. The project's structural engineers, Phillip R. Jones & Associates, Inc., requested the computer analysis be based on a structure having 5 supported levels.

The analysis considered four basic framing schemes employing ASTM A36 steel in composite and non-composite construction; ASTM A572 Grade 50 high-strength steel in composite and non-composite construction.

The most economical and efficient design proved to be a high-strength steel frame in composite construction with a 3-in. composite steel floor deck topped with 3¼-in. of lightweight concrete topping. Total basic steel frame weight was estimated at 7.21 psf.



Designed and built in 9 months. Speed of erection was one of the primary reasons the architect, Kenneth H. Woolf, A.I.A., favored steel framing. The initial steel was delivered to the site in mid-January 1974. By June 1974 the office was completed and occupied. Fast-track construction minimized the effects of escalating costs. Steel framing easily accommodated changes during the design/construction phase with the erection schedule closely following the finalization of floor plans.

Steel framing also permitted generous spans ranging from 26 ft, 9 in. to 32 ft. The increased strength achieved with composite construction allowed the steel beams to be spaced 10 ft on center.

Early involvement helpful. Our preliminary frame analysis program can be most beneficial to you and your client if the study is conducted before finalization of architecture parameters. This way, our Buildings Group and your structural engineer can develop an optimum frame design with minimum restrictions.

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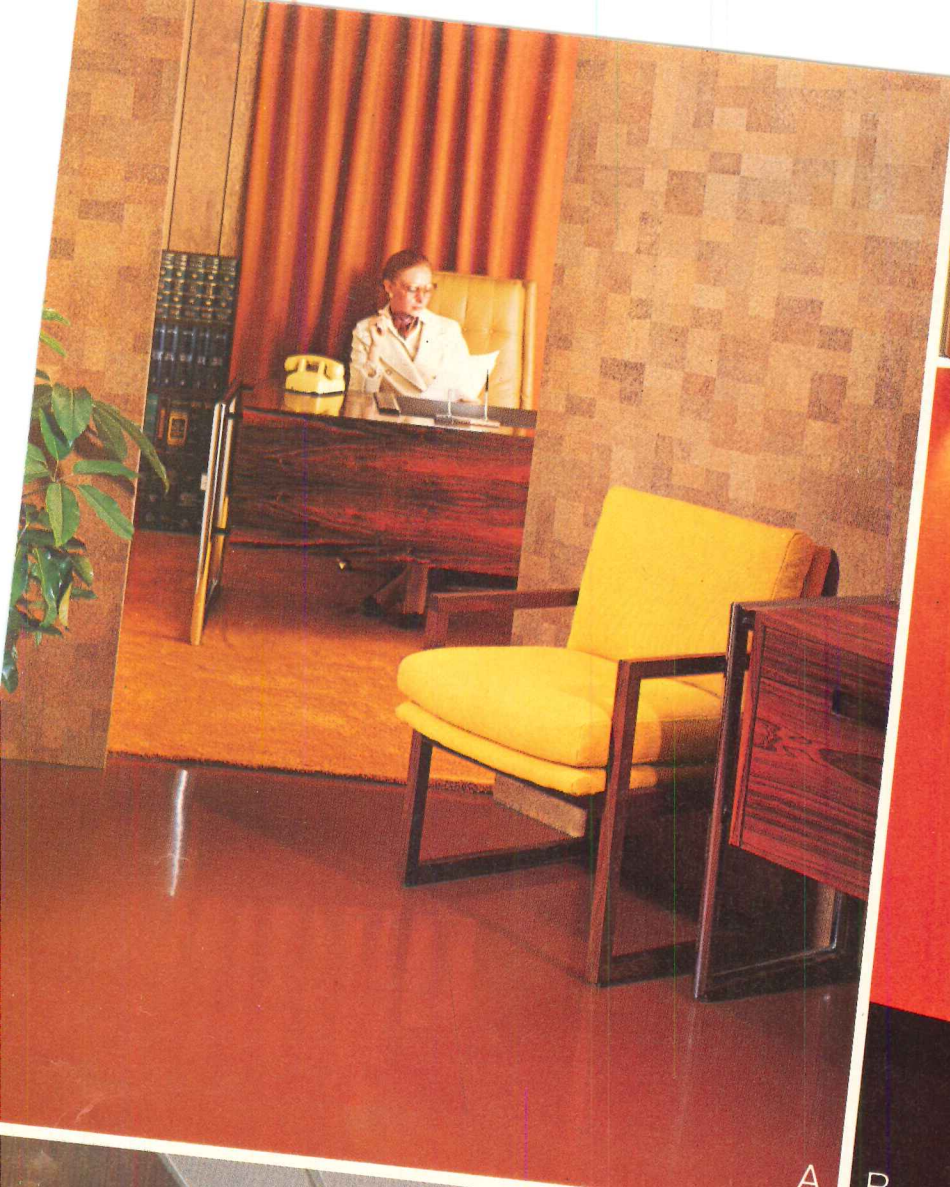


A photograph showing three men in an office setting. One man in a light blue shirt stands on the right, looking at a large architectural plan spread out on a table. Two other men, one in a white shirt and one in a patterned suit, are leaning over the table, also examining the plan. The scene is brightly lit, suggesting a window nearby.

The project's architect (right) reports,
"The steel framing was quickly erected,
easily plumbed, and by pouring one
floor each day, the building was ready
for the mechanical work within a week.
We were delighted with the economy
and speed of erection."

Owners: Baptist Hospital, Inc.;
Architect: Kenneth H. Woolf, A.I.A.;
Structural Engineer: Phillip R. Jones &
Associates, Inc.;
Fabricator: Bell Steel Company;
General Contractor/Erector: Dyson &
Company.
All of the firms are located in
Pensacola, Fla.





A



B



C



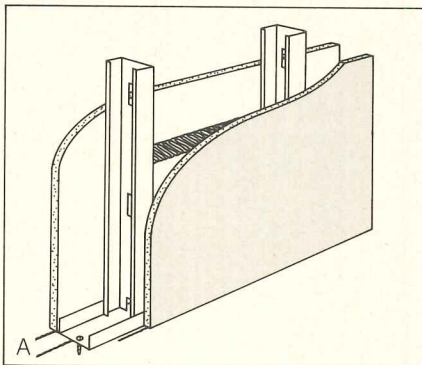
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Durasan.

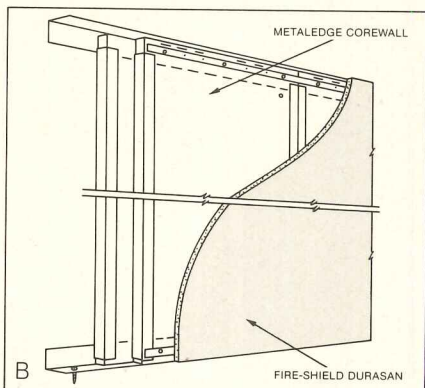
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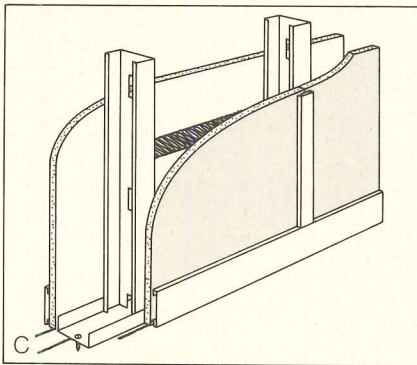
Four examples of Durasan's versatility.



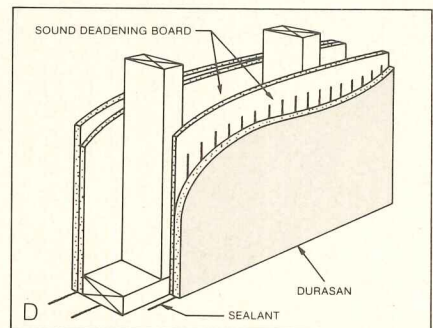
A. Upper left, the look of cork and the wearability of vinyl. Mediterranean Parquet® Fire-Shield Durasan panels over steel studs with 2½-inch Fiberglas in cavity. Sound Transmission Class 45, Fire Resistance Rating 1 hour.



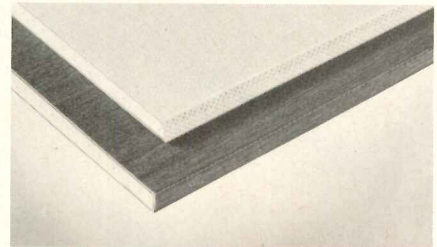
B. Upper right, 1/2-inch Fire-Shield® Durasan is applied with batten-covered screws to 2-inch Gold Bond Metaledge Corewall in the elevator area. Fire Orange Burlap is shown. Durasan is particularly effective in high traffic areas such as this. STC 36, Fire Rating 1 hour.



C. Lower left, 5/8-inch Fire-Shield Durasan in a woodgrain pattern with matching battens is used in the demountable Contempo-Wall® system. Durasan over steel studs with 3-inch Fiberglas in cavity. STC 49, Fire Rating 1 hour.



D. Lower right, 1/4-inch Gypsum Sound Deadening Board base layer is nailed to wood studs. Face layer of 1/2-inch Fire-Shield Durasan is laminated with beads of Joint Compound, nailed top and bottom only. STC 45, Fire Rating 1 hour.



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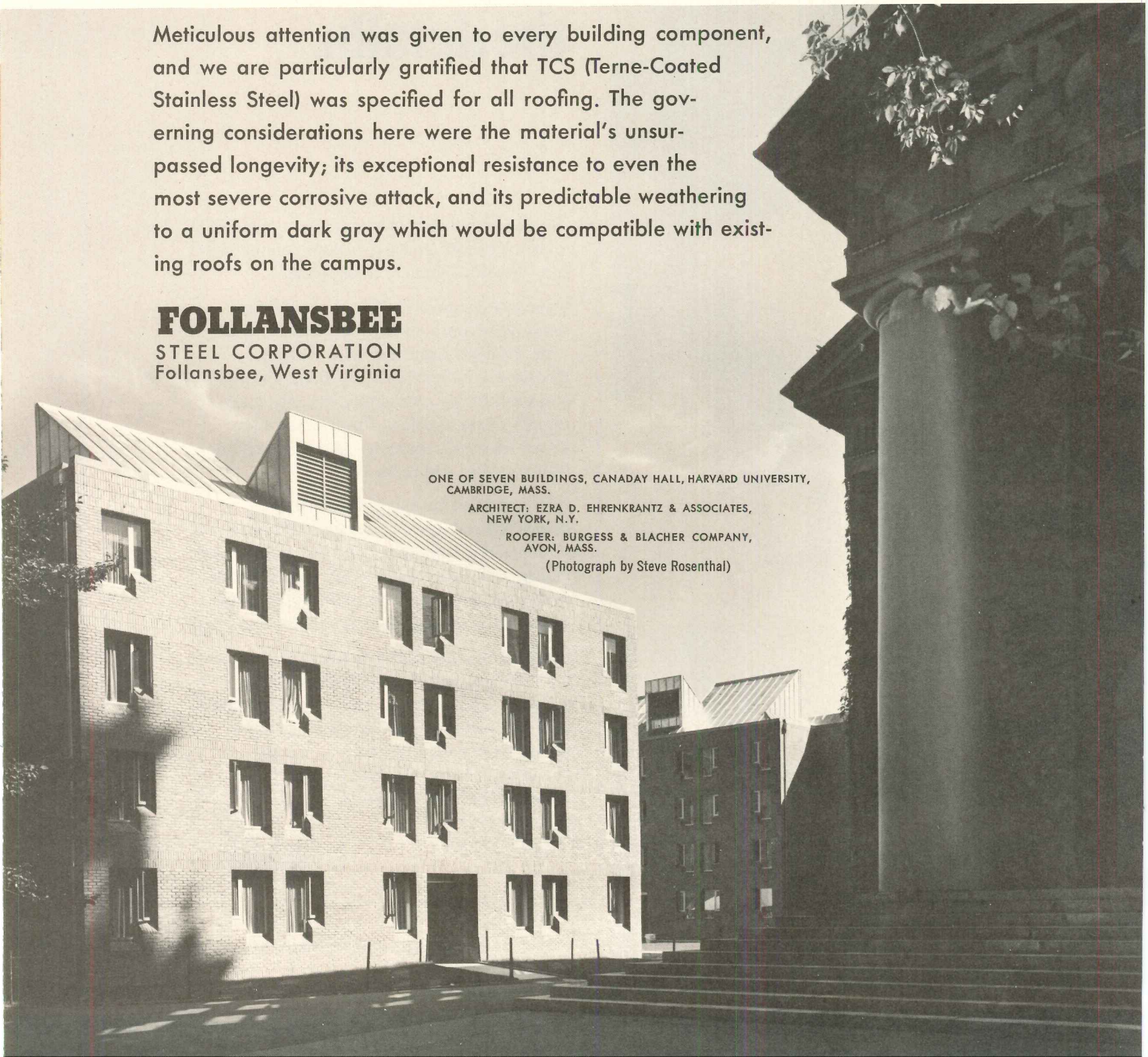
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ONE OF SEVEN BUILDINGS, CANADAY HALL, HARVARD UNIVERSITY,
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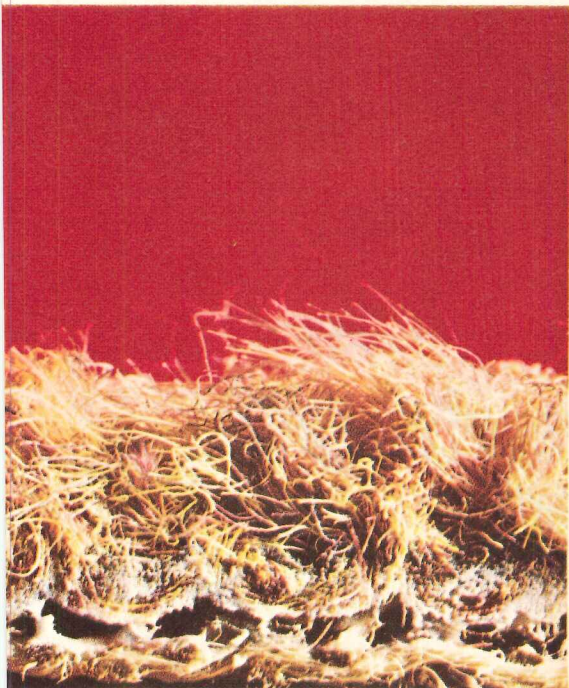
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(Photograph by Steve Rosenthal)



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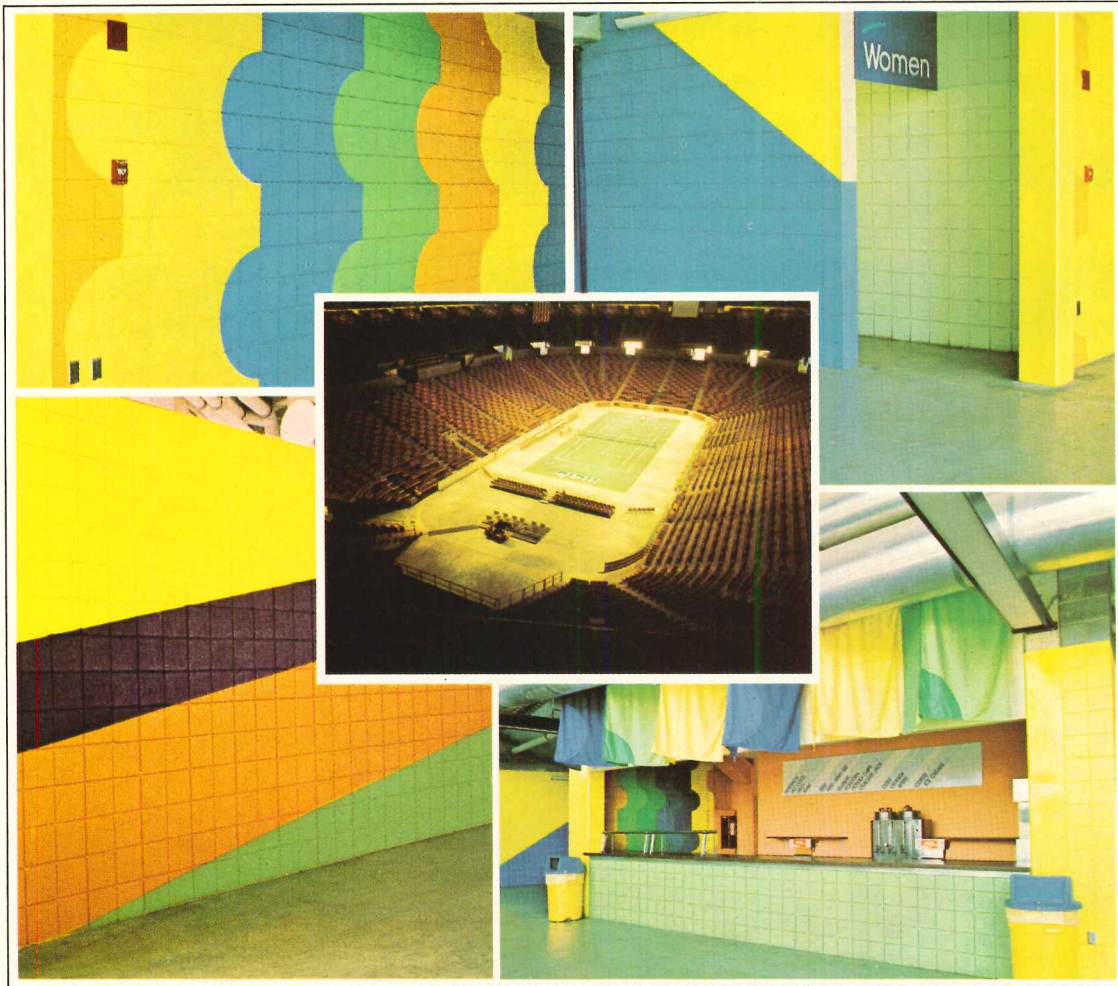
Sample “A” – which was not protected by latex foam – lost 40% of its original weight. Sample “B” lost 27%. But sample “C”, with 38 ounces of high density foam backing,

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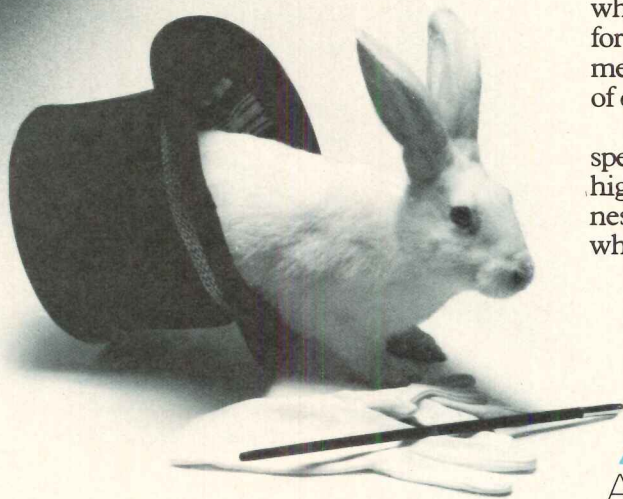
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The Shaw Festival Theater in Niagara-on-the-Lake, Ontario, Canada, has one quality many theaters, large or small, lack: intimacy. None of the 830 seats is more than 63 feet from the 5,000-square-foot stage, and the balcony is near the stage and wrapped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

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

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

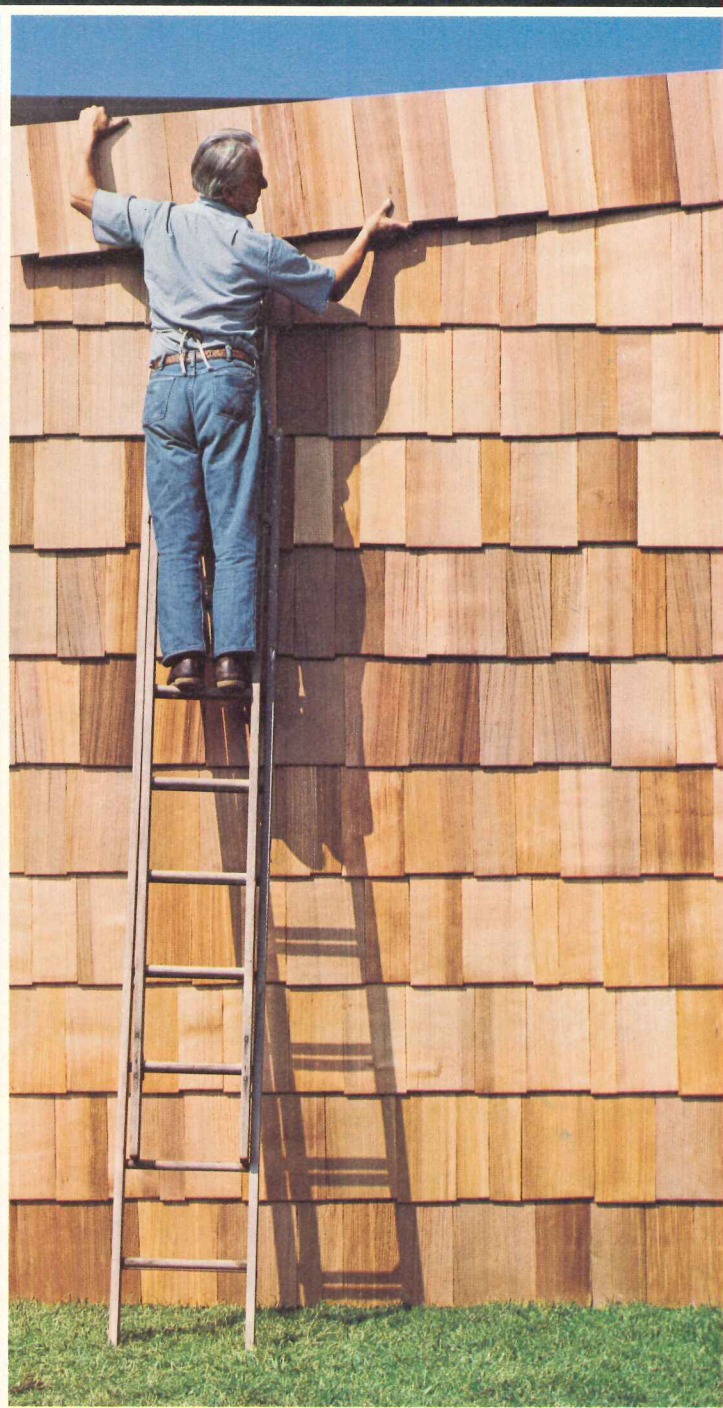
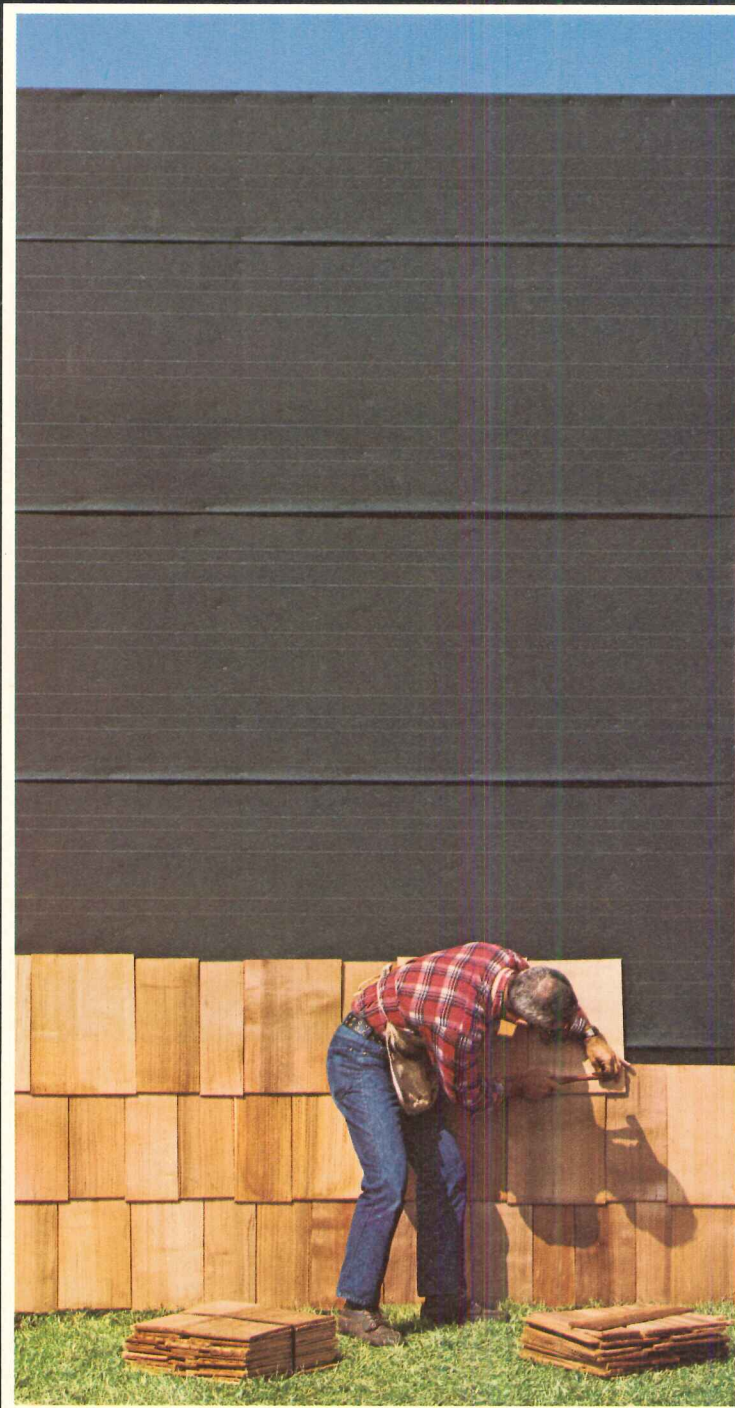
For more information on our capabilities, see us in Sweet's Catalog or write Overly Manufacturing Company, 574 West Otterman Street, Greensburg, Pa. 15601.

overly
MANUFACTURING CO.
DOES WHAT OTHERS DON'T

For more data, circle 34 on inquiry card

For more data, circle 35 on inquiry card ◆

Shakertown Panels win the cedar shake sidewall race.



What's the fastest way to install cedar shakes and shingles? With Shakertown Panels.

In fact, you can apply Shakertown Panels on sidewalls as much as 70% faster than individual shakes and shingles. But that's where the difference ends.

Because once they're in place, they look, last and insulate just like individual shakes and shingles. That's

because 8 foot long Shakertown Panels are made of #1 grade shakes and shingles permanently bonded to a wood backing.

With Shakertown Panels you get all the things you like about individual shakes and shingles. Of course, there's one thing you won't get, and that's high labor cost. So why not find out more? Write us.



Shakertown® Panels

Box 400 Winlock, Washington 98596

(206) 785-3501



Outside, one of 11 colors available in our low maintenance, acrylic coated aluminum exterior.

Pella Clad Wood Windows overcome, beautifully, two common objections to weather-shielded wood windows. Lack of color choice. And lack of design freedom. In a Pella Clad window, all exterior wood surfaces are covered with an acrylic coated aluminum skin. A well-known and well-respected outside finish. Available in three standard (a) and eight special colors. On our Contemporary and Traditional Double-Hung, Casement, Awning, Fixed and Trapezoidal Windows. And Pella Sliding Glass Doors.



(a)

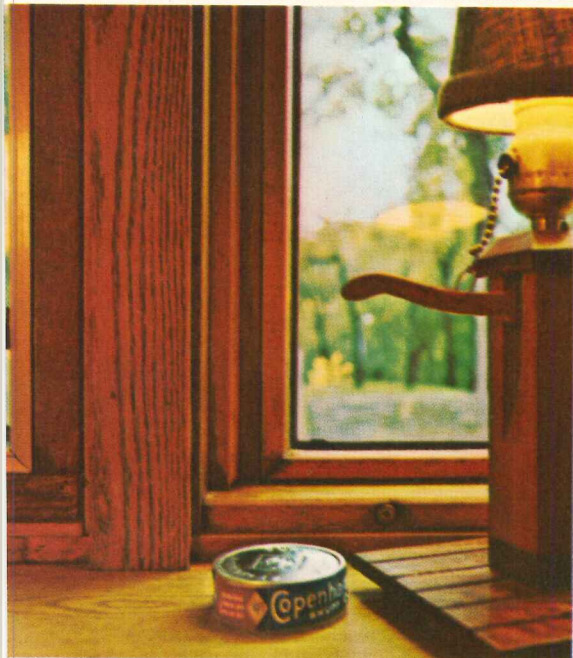
Inside, the unspoiled beauty of a carefully-crafted wood window.

Wood windows are known for their warmth. Visually. And because of their natural insulating value. And in designing the Pella Clad Wood Window, we left both of those properties unchanged. The exterior aluminum skin does not penetrate the frame or sash (b). Nor is it visible anywhere on the inside of the window. We recognized the need for a weather-resistant, low maintenance window. But seeing no reason to compromise the natural warmth of a wood window, we very carefully avoided doing just that.



(b)

**At the Minnesota Veterans Home,
this Pella Clad window system
adds a warm touch,
inside and out.**



Architect: S. C. Smiley & Associates Builder: Arkey Construction Company Windows: Pella Clad Fixed Units and Contemporary Double-Hung

In between, the built-in flexibility of Pella's exclusive Double Glazing System.

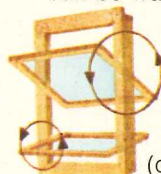
The removable inside storm panel gives you any number of interesting options. Like using our unique Slimshade® (c) to control sunlight, privacy and solar heat gain and loss. Housed between the panes, this fully adjustable blind remains virtually dust-free. The system also accommodates our snap-in wood muntins, and the selective use of privacy panels. But flexibility is not the system's only strong point. The 13/16" air space between the panes does a better job of insulating than welded insulating glass.



(c)

Afterward, the ease of washing a counterbalanced, pivoting sash double-hung window.

Window cleaning is another maintenance factor that must be considered. And here again, Pella design makes an easy job of it. Our Double-Hung Window has a spring-loaded, vinyl jamb liner which allows the sash to pivot. So the outside surfaces can be washed from inside the building. And because each sash pivots at its center point (d), the weight of the sash is counterbalanced. Which makes the whole job just that much easier. Reglazing can also be accomplished from inside, along with sash removal.



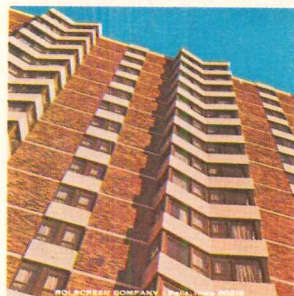
(d)



OUR 50TH YEAR

For more detailed information, send for your free copy of our 24-page, full-color brochure on Pella Clad Windows & Sliding Glass Doors. See us in Sweet's Architectural File. Call Sweet's BUY-LINE number or look in the Yellow Pages, under "windows", for the phone number of your Pella Distributor.

**CLAD WINDOWS
SLIDING GLASS DOORS**



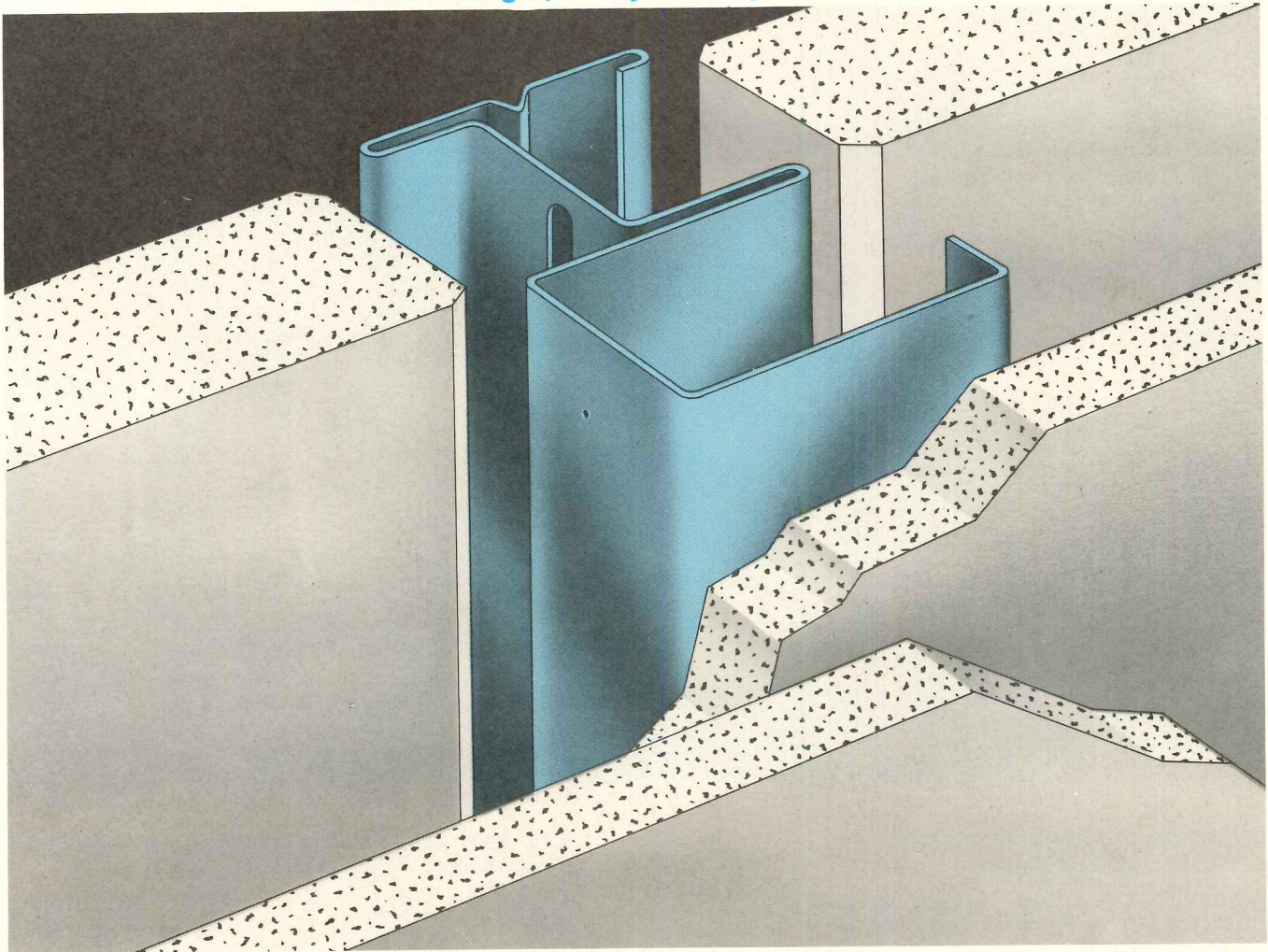
Please send me your 24-page brochure on Pella Clad Windows & Sliding Glass Doors. I am specifically interested in: Double-Hung Windows, Casement Windows, Awning Windows, Sliding Glass Doors, Wood Folding Doors.

Name _____
 Firm _____
 Address _____
 City _____ State _____ ZIP _____
 Telephone _____

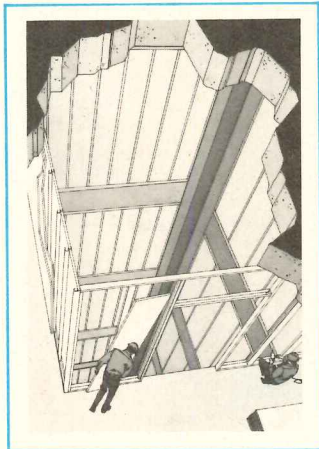
Mail to: Pella Windows & Doors, Dept. T31A6 100 Main St., Pella, Iowa 50219.
 Also Available Throughout Canada This coupon answered within 24 hours.

New lower cost USG® Shaft Wall meets all structural requirements.

Unique C-H stud system is 15% lighter,
delivers strength, safety and in-place savings.



Now, there's an even greater money-saving version of the original gypsum shaft wall from the people who started it all! And it's tested and proven to meet requirements of working shaft walls. The key component is our new C-H stud which permits use of 1/2" SHEETROCK* FIRECODE*C Gypsum Panels, instead of the customary 5/8" SHEETROCK FIRECODE-C Gypsum Panels. The result is a system that reduces weight by up to 15%, trims dead load to save on structural steel. Yet,



with all this timely economy, the C-H shaft wall provides 2-hour fire and from 39 to 50 STC sound ratings, and air pressure loadings of from 5 to 15 lbs. psf. And benefits don't stop there. Because it utilizes lighter-weight, lower-cost materials, the C-H system installs easier and faster, gets elevators running sooner than other shaft walls. See your U.S.G. Representative for specifics. Or write to us at 101 S. Wacker Dr., Chicago, Ill. 60606, Dept. AR-16.

*Reg. U.S. Pat. & Tm. Off.

UNITED STATES GYPSUM
BUILDING AMERICA

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**These skycap's shoes have lumbered across
The New Orleans International Airport for over a year.**



**Good thing the floors are carpeted with Anso[®] nylon.
It's guaranteed for 5 years.**

Thousands of people – with thousands of valises – keep this large airport pretty jammed, and the skycaps pretty busy.

That's why the New Orleans International Airport and their architects specified this tightly woven level-loop of Anso nylon. It can take the abuse that trampling feet – and laden luggage carts – can give.

Anso nylon is the second-generation, anti-soil nylon that comes with the toughest fiber wear guarantee in the industry. The **Guarantesth[®]**: the guarantee with teeth. It promises that if *any* portion of the carpet wears more than 10% over five years, Allied Chemical will replace it free.

Anso nylon was the right choice for the New Orleans International Airport and it could be the right choice for you. Discover why it's the fastest growing contract carpet nylon in America. For information phone or write: Allied Chemical Corporation, Fibers Division, Contract Department, 1411 Broadway, New York, New York 10018. (212) 391-5069.



The executive look from **ALL-STEEL**

All-Steel's new 1600 Series Panel Desks and Tables offer you the opportunity to specify *steel* with the executive look. Prestige one-piece back panels available in choice of recessed or flush design. Specify with double, single, or no pedestals. Concealed wiring channels

hide telephone and machine cords. Flush bases in mirror or brushed chrome. A natural move up for mid-management applications. Compatible with the popular All-Steel cube concept. Write for more on the 1600 Series: All-Steel Inc., Aurora, Illinois 60507

For more data, circle 39 on inquiry card



New Year resolution for A-E's: update your SF 254

In this department last month (page 50), we published "A Proposal for Competitive Architect-Engineer Selection" written by Walter A. Meisen, Assistant Commissioner for Construction Management, Public Buildings Service, General Services Administration. Although the bulk of that document describes the new A-E procurement process now used by some agencies and departments of the Federal government, the appendix that we are reprinting here in an abridged version, deals with the new two-form system used by architects and engineers to apply for Federal work. Standard Forms 254 and 255, which became effective October 30, 1975, are the subject of this second article on working for the Federal client. We also wish to draw your attention to the A-E Federal Programs Conference agenda following this article, on page 69.

It is said that the hardest thing to change in Washington, D.C., is a government form. However, early in 1975, one of the government's best known Architect-Engineer forms, the Standard Form 251, was phased out to make room for not one, but two, new forms: the SF 254 and SF 255. Standard Form 251, the "U.S. Government Architect-Engineer Questionnaire" has been in use since June 1961, and has come to be as well-known among architects and engineers as the 1040 and 1040A are known to taxpayers. It has also come to be widely accepted by local and state agencies.

For many large firms, the Standard Form 251 has evolved over the years into several hundred-page brochures, complete with photographs, long lists of projects dating back to the 40's and 50's, and full-color illustrations promoting everything from the officers' professional society committee appointments to the fact the firm is an equal opportunity employer (a standard requirement of all Federal contractors). Undoubtedly, the revision of this form will have significant impact upon practitioners.

Legal requirements for A-E qualification data

Public Law 92-582 encourages firms lawfully engaged in the practice of architecture, engineering and related services to submit annually statements of qualifications and performance data. Agency heads, or their designees, are to evaluate these qualification submissions, as well as any other performance data they may have on file in their agency. Agency heads may also request additional information for submission in connection with proposed projects.

After reviewing all pertinent information, the agency head is required to select a minimum of three firms and to conduct discussions regarding their anticipated concepts and the relative utility of alternative methods of approach for furnishing required services. The agency head shall then select, in order of preference, no less than three firms on the basis of qualifications and criteria established and published by the agency. The agency head shall negotiate a contract with the highest qualified firm for architectural and engineering services at compensation that the agency head determines is fair and reasonable to the government. Should the agency head be unable to negotiate a satisfactory contract with the firm considered to be the most qualified, negotiations with that firm should be formally terminated, and the agency head should then undertake negotiations with the second most qualified firm, etc.

Why two forms: SF 254 and SF 255?

An ad hoc committee of Federal contracting officials and representatives of the design professions determined that the former SF 251: 1) Lacked specific project-oriented information that agencies need to properly evaluate a firm's capabilities for an identified project. 2) Failed to adequately reflect capabilities of related professionals, such as planners, landscape architects, construction managers, etc. 3) Contained superfluous and irrelevant information infrequently used by the agencies and omitted other data desired by Federal contracting officials. 4) Lacked flexibility to cover the diversity of architect-engineer and related services as reflected in today's large, multi-discipline firms. 5) Was not readily adaptive to computerization for data retrieval purposes. 6) Lacked specific information required by some agencies. This had necessitated adoption by a few agencies of supplemental forms such as VA Form 08-6293, NAD Form 788, AID Supplement 1420-5, etc. 7) Did not result in uniform submission, since many A-E firms, in an effort to fully reflect their competence in a wide range of disciplines, might publish 200-page, hard-bound brochures, while other firms simply photocopy the 9-page government form.

It was determined, therefore, that two forms were needed. The first new form will provide agencies with general information, most of which can be computerized (if desired) for fast and comprehensive data retrieval. The second form is designed to provide agencies

with detailed information regarding a firm's interest and capabilities to perform a specific project.

Standard Form 254: the first step

The new "Architect-Engineer and Related Services Questionnaire," SF 254 (shown in part, left, on the next page), is seven pages in length plus instructions (as compared to the nine pages required for its predecessor, SF 251), and there is more space on the SF 254 for insertion of names and projects. The new form can be easily programmed for data retrieval.

All information being sought on the new form should be no older than five years. Questions cover professional services other than architecture and engineering, making it equally applicable for firms that specialize in related services, and the information being sought is more attuned to the desires of Federal contracting officials. Expensive brochures are discouraged by the new qualifications questionnaire since most agencies intend to restrict responses to only that data that will fit in the spaces provided on the form.

The new SF 254 contains information concerning the utilization of the form by Federal agencies and all the necessary definitions and instructions for completion. In addition to the usual name and address, questions 2-6 (Figure 1) will provide the procuring agency (state and local agencies are also using the form) with basic information regarding a firm's makeup and background. Questions 7, 8 and 9 are intended to provide the government with information on a firm's size and capabilities. Questions 10 and 11 (Figure 2) cover projects and experience and will show whether a firm is highly specialized or widely diversified. These questions will also provide information as to size of projects a firm has undertaken.

Experience counts: outstanding expertise should be detailed

Considerable effort has gone into the development of the "experience profile code list" utilized on Questions 10 and 11. A joint committee of Federal officials and representatives of the A-E professions considered more than 280 different types of services or projects for inclusion in such a listing, now pared to 117, plus room for five write-ins. While the listing is limited, every effort has been made to cover the broad range of professional services normally handled by architects, engineers, planners, surveyors, etc. (Figure 3).

STANDARD FORM (SF) 254 Architect-Engineer and Related Services Questionnaire	1. Firm Name / Business Address:	2. Year Present Firm Established:	3. Date Prepared:																																
	1a. Submittal is for <input type="checkbox"/> Parent Company <input type="checkbox"/> Branch Office	4. Type of Ownership: 4a. Minority Owned <input type="checkbox"/> yes <input type="checkbox"/> no																																	
5. Name of Parent Company, if any:		5a. Former Firm Name(s), if any, and Year(s) Established:																																	
6. Names of not more than Two Principals to Contact: Title / Telephone																																			
7. Present Offices: City / State / Telephone / No. Personnel Each Office		7a. Total Personnel _____																																	
8. Personnel by Discipline:																																			
<table border="0"> <tr> <td>___ Administrative</td> <td>___ Electrical Engineers</td> <td>___ Oceanographers</td> <td>_____</td> </tr> <tr> <td>___ Architects</td> <td>___ Estimators</td> <td>___ Planners: Urban/Regional</td> <td>_____</td> </tr> <tr> <td>___ Chemical Engineers</td> <td>___ Geologists</td> <td>___ Sanitary Engineers</td> <td>_____</td> </tr> <tr> <td>___ Civil Engineers</td> <td>___ Hydrologists</td> <td>___ Soils Engineers</td> <td>_____</td> </tr> <tr> <td>___ Construction Inspectors</td> <td>___ Interior Designers</td> <td>___ Specification Writers</td> <td>_____</td> </tr> <tr> <td>___ Draftsmen</td> <td>___ Landscape Architects</td> <td>___ Structural Engineers</td> <td>_____</td> </tr> <tr> <td>___ Ecologists</td> <td>___ Mechanical Engineers</td> <td>___ Surveyors</td> <td>_____</td> </tr> <tr> <td>___ Economists</td> <td>___ Mining Engineers</td> <td>___ Transportation Engineers</td> <td>_____</td> </tr> </table>				___ Administrative	___ Electrical Engineers	___ Oceanographers	_____	___ Architects	___ Estimators	___ Planners: Urban/Regional	_____	___ Chemical Engineers	___ Geologists	___ Sanitary Engineers	_____	___ Civil Engineers	___ Hydrologists	___ Soils Engineers	_____	___ Construction Inspectors	___ Interior Designers	___ Specification Writers	_____	___ Draftsmen	___ Landscape Architects	___ Structural Engineers	_____	___ Ecologists	___ Mechanical Engineers	___ Surveyors	_____	___ Economists	___ Mining Engineers	___ Transportation Engineers	_____
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___ Architects	___ Estimators	___ Planners: Urban/Regional	_____																																
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___ Civil Engineers	___ Hydrologists	___ Soils Engineers	_____																																
___ Construction Inspectors	___ Interior Designers	___ Specification Writers	_____																																
___ Draftsmen	___ Landscape Architects	___ Structural Engineers	_____																																
___ Ecologists	___ Mechanical Engineers	___ Surveyors	_____																																
___ Economists	___ Mining Engineers	___ Transportation Engineers	_____																																
9. Summary of Professional Services Fees Received: (insert index number)		Last 5 Years (most recent year first)																																	
Direct Federal contract work, including overseas		19__	19__																																
All other domestic work		19__	19__																																
All other foreign work*		19__	19__																																
*Firms interested in foreign work, but without such experience, check here: <input type="checkbox"/>		Ranges of Professional Services Fees Index: 1. Less than \$100,000 2. \$100,000 to \$250,000 3. \$250,000 to \$500,000 4. \$500,000 to \$1 million 5. \$1 million to \$2 million 6. \$2 million to \$5 million 7. \$5 million to \$10 million 8. \$10 million or greater																																	

Figure 1

10. Profile of Firm's Project Experience, Last 5 Years										
Profile Code	Number of Projects	Total Gross Fees (in thousands)	Profile Code	Number of Projects	Total Gross Fees (in thousands)	Profile Code	Number of Projects	Total Gross Fees (in thousands)	Profile Code	Number of Projects
1)			11)			21)			31)	
2)			12)			22)			32)	
3)			13)			23)			33)	
4)			14)			24)			34)	
5)			15)			25)			35)	
6)			16)			26)			36)	
7)			17)			27)			37)	
8)			18)			28)			38)	
9)			19)			29)			39)	
10)			20)			30)				
11. Project Examples, Last 5 Years										
Profile Code	"P", "C", "JV", or "IE"	Project Name and Location	Owner Name and Address	Cost of Work (in thousands)	Completion Date (Actual or Estimated)					
	1									
	2									
	3									
	4									
	5									
	6									
	7									

Figure 2

Experience Profile Code Numbers for use with questions 10 and 11		
001 Acoustics; Noise Abatement	041 Graphic Design	083 Power Generation, Transmission, Distribution
002 Aerial Photography	042 Harbors; Jetties; Piers; Ship Terminal Facilities	084 Prisons & Correctional Facilities
003 Agricultural Development; Grain Storage; Farm Mechanization	043 Heating; Ventilating; Air Conditioning	085 Product, Machine & Equipment Design
004 Air Pollution Control	044 Health Systems Planning	086 Radar; Sonar; Radio & Radar Telescopes
005 Airports; Navais; Airport Lighting; Aircraft Fueling	045 Highrise; Air-Rights-Type Buildings; Parking Lots	087 Railroad; Rapid Transit
006 Airports; Terminals & Hangars; Freight Handling	046 Highways; Streets; Airfield Paving; Historical Preservation	088 Recreation Facilities (Parks, Marinas, Etc.)
007 Arctic Facilities	047 Hospitals & Medical Facilities	089 Rehabilitation (Buildings; Structures; Facilities)
008 Auditoriums & Theatres	048 Hotels; Motels	090 Resource Recovery; Recycling
009 Automation; Controls; Instrumentation	049 Housing (Residential, Multi-Family; Apartments; Condominiums)	091 Radio Frequency Systems & Shieldings
010 Barracks; Dormitories	050 Industrial Buildings; Manufacturing Plants	092 Rivers; Canals; Waterways; Flood Control
011 Bridges	051 Hydraulics & Pneumatics	093 Safety Engineering; Accident Studies; OSHA Studies
012 Cemeteries (Planning & Relocation)	052 Industrial Processes; Quality Control	094 Security Systems; Intruder & Smoke Detection
013 Chemical Processing & Storage	053 Industrial Waste Treatment	095 Seismic Designs & Studies
014 Churches; Chapels	054 Interior Design; Space Planning	096 Sewage Collection, Treatment and Disposal
015 Codes; Standards; Ordinances	055 Irrigation; Drainage	097 Soils & Geologic Studies; Foundations
016 Cold Storage; Refrigeration; Fast Freeze	056 Judicial and Courtroom Facilities	098 Solar Energy Utilization
017 Commercial Buildings (low rise); Shopping Centers	057 Laboratories; Medical Research Facilities	099 Solid Wastes; Incineration; Land Fill
018 Communications Systems; TV; Microwave	058 Landscapes Architecture	100 Special Environments; Clean Rooms, Etc.
019 Computer Facilities; Computer Service	059 Libraries; Museums; Galleries	101 Structural Design; Special Structures
020 Conservation and Resource Management	060 Lighting (Interiors; Display; Theatre, Etc.)	102 Surveying; Plating; Mapping; Flood Plain Studies
021 Construction Management	061 Lighting (Exteriors; Streets; Memorials; Athletic Fields, Etc.)	103 Swimming Pools
022 Corrosion Control; Cathodic Protection; Electrolysis	062 Materials Handling Systems; Conveyors; Sorters	104 Storm Water Handling & Facilities
023 Cost Estimating	063 Metallurgy	105 Telephone Systems (Rural; Mobile; Intercam, Etc.)
024 Dams (Concrete, Arch)	064 Microclimatology; Tropical Engineering	106 Testing & Inspection Services
025 Dams (Earth, Rock); Dikes; Levees	065 Military Design Standards	107 Traffic & Transportation Engineering
026 Desalination (Process & Facilities)	066 Mining & Mineralogy	108 Towers (Self-Supporting & Guyed Systems)
027 Dining Halls; Clubs; Restaurants	067 Missile Facilities (Silo; Fuel; Transport)	109 Tunnels & Subways
028 Ecological & Archeological Investigations	068 Modular Systems Design; Pre-Fabricated Structures or Components	110 Urban Renewal; Community Development
029 Educational Facilities; Classrooms	069 Naval Architecture; Off-Shore Platforms	111 Utilities (Gas & Steam)
030 Electronics	070 Nuclear Facilities; Nuclear Shielding	112 Value Analysis; Life-Cycle Costing
031 Elevators; Escalators; People-Movers	071 Office Buildings; Industrial Parks	113 Warehouses & Depots
032 Energy Conservation; New Energy Sources	072 Oceanographic Engineering	114 Water Resources; Hydrology; Ground Water
033 Environmental Impact Studies; Assessments or Statements	073 Ordnance; Munitions; Special Weapons	115 Water Supply; Treatment and Distribution
034 Fallout Shelters; Blast-Resistant Design	074 Petroleum Exploration; Refining	116 Wind Tunnels; Research/Testing Facilities Design
035 Field Houses; Gyms; Stadiums	075 Petroleum and Fuel (Storage and Distribution)	117 Zoning; Land Use Studies
036 Fire Protection	076 Pipelines (Cross-Country - Liquid & Gas)	201 _____
037 Fisheries; Fish Ladders	077 Planning (Community, Regional, Area-wide and State)	202 _____
038 Forestry & Forest Products	078 Planning (Site, Installation, and Project)	203 _____
039 Garages; Vehicle Maintenance Facilities; Parking Decks	079 Plumbing & Piping Design	204 _____
040 Gas Systems (Propane; Natural, Etc.)	080 Pneumatic Structures; Air-Support Buildings	205 _____
	081 Postal Facilities	

Figure 3

Firms completing SF 254 may show themselves as qualified in no more than 30 categories. It is important to note that government contracting officials are seeking the best firms in specific fields of practice. By limiting responses to 30 experience areas, Federal agencies are assuming that few architectural-engineering or related services firms are eminently qualified in more than that number of technical disciplines. Professional service firms are, in fact, encouraged to list only those project areas in which they have outstanding qualifications and experience. Firms may, if they choose, indicate competence in only one or two areas of A-E specialization and utilize all of the 30 spaces provided in question 11 to show projects they have performed which demonstrate competence in just those fields.

A-E's and related professionals may also, if they desire, tailor their SF 254 to different contracting agencies. For example, they may emphasize their abilities to handle design of airports, terminals and hangars to Federal agencies specializing in Air Force projects, while listing work performed on television, microwave and telephone systems in forms submitted to other agencies with responsibilities in the communications fields.

Like the old SF 251, the new SF 254 should be submitted at least annually to agencies for which an A-E firm is qualified to perform work. Forms should be updated annually to reflect changes related to the firms' qualifications, experience, manpower, ownership, location and other pertinent data.

Standard Form 255 applies to specific projects

The SF 255 (portions shown right), "Architect-Engineer and Related Services Questionnaire for Specific Project," introduces not only a new form but a new procedure to Federal A-E procurement. In addition to submitting the general qualification form (SF 254) once a year, design firms will normally be requested to complete a statement of experience and performance for each project for which they are interested and qualified to perform. The SF 255 is designed for that purpose.

SF 255 should be filed by an architect-engineer or related-services firm when invited to do so through a formal public announcement or when requested by an agency. Virtually all projects are announced under Section R of the *Commerce Business Daily*. (Annual subscriptions, \$75.00 plus an additional \$66.90 for air-mail service. To order *CBD*, send remittance with full mailing address to the nearest Department of Commerce Field Office or the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.)

The purpose of the SF 255 is to provide government clients with the information regarding architectural, engineering and related-services firms' ability to perform a specific project. Only firms qualified to perform the particular type of work being sought should respond to an announcement regarding that work.

The SF 255 was specifically designed to provide responding firms with an opportunity to independently express interest in a given

job; to indicate names of other firms they propose to collaborate with in performing the work; to show the background and training of key personnel who will be assigned to the project; to discuss prior experience on similar jobs; and to provide data on other capabilities, talents, or equipment that the firm feels particularly qualify it to undertake the project.

The SF 255 is not intended as a substitute for "discussions with no less than three firms" as required by P.L. 92-582, but an initial screening of respondents will be made based on the information contained on the form.

Benefits of the SF 255:

A-E's can supply most pertinent data

The new form is expected to eliminate a number of problems inherent in the former A-E procurement process. Principally, agencies will no longer be required to examine thousands of SF 251's for each A-E procurement. While contracting officials will continue to review all SF 254's, such reviews will be augmented by the SF 255 forms furnished in response to published requests for specific qualifications statements. (In other words, the A-E has the primary responsibility to make sure his firm is considered for *specific* jobs.) Submission of an SF 255 will assure that a firm will be considered on the basis of data pertinent to the project in question. From the government's standpoint most of the new SF 255's, once reviewed and evaluated, can be discarded. Only the forms submitted by firms which become finalists in the selection and negotiation process will be retained in the formal project file. However, all SF 255's submitted by firms interested in performing the work will be given careful and thorough attention.

The new form is expected to upgrade Federal A-E procurement. It will discourage the "shotgun approach" used by some A-E's in submitting SF 251's for virtually every job within a certain geographical area. The SF 255 will not be conducive to standardization. Each submission should be oriented to reflect capability to perform a specific job. The new form will be keyed to projects and, as such, will be more useful as well as closely examined by Federal officials. From this standpoint, new, small or highly specialized architects, engineers and other professional service firms will be afforded greater opportunity, and all firms will be assured more equity when being considered for Federal work.

Additional information, photos, descriptions or promotional materials issued by a firm should *not* accompany submission of the Standard General Qualifications Forms 254 since respondents are limited to providing only the information called for on that form. Everything entered on the 254 must fit into the spaces provided, and additional or supplementary sheets will not be accepted.

Photographs, brochures and testimonials may, however, accompany SF 255 submissions when authorized or requested by that agency in its invitation to submit qualifications. Respondents are *not* limited to the spaces provided on the SF 255 and may attach supplementary sheets, if needed, to properly respond.—Walter A. Meisen

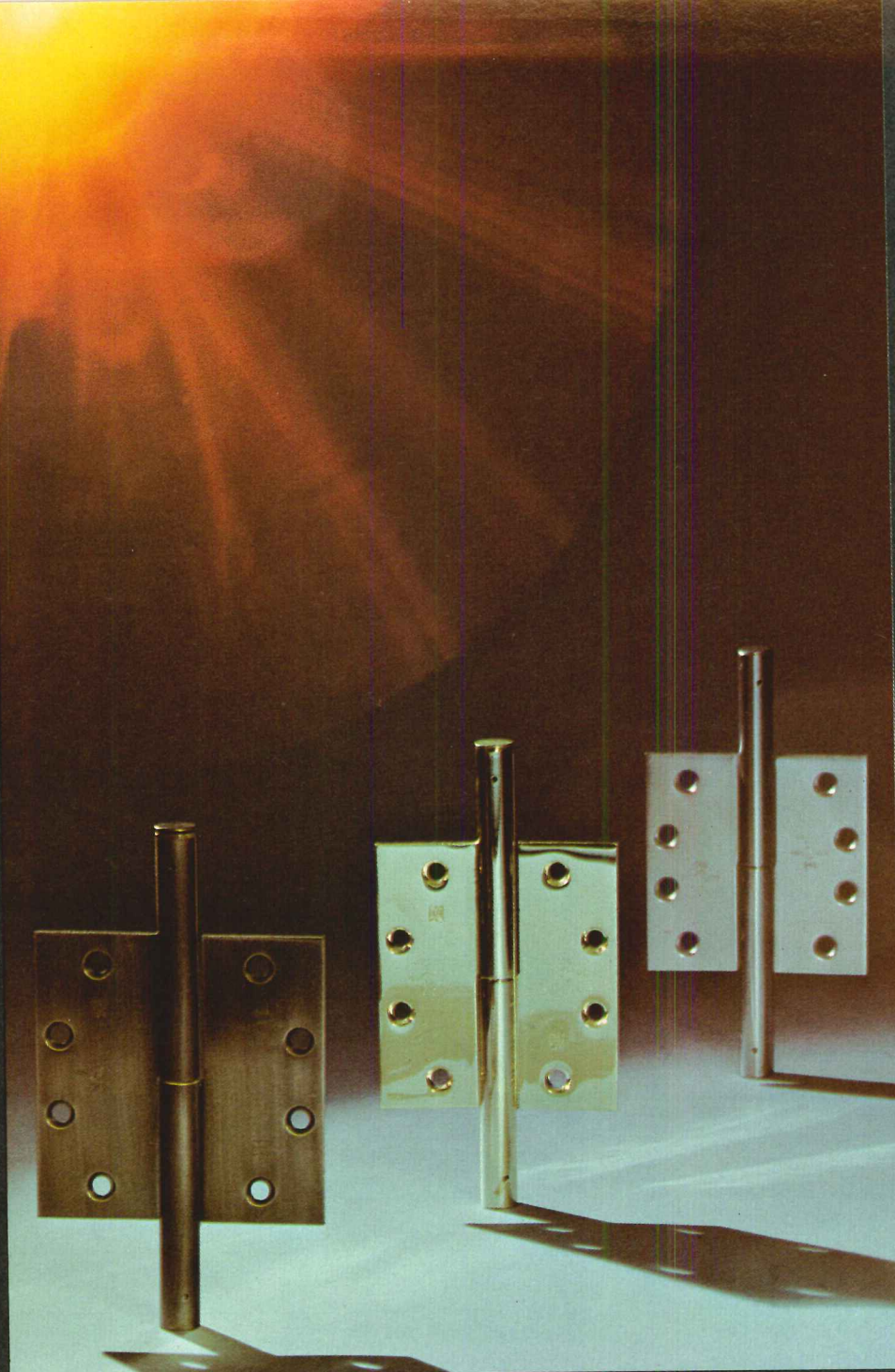
STANDARD FORM (SF) 255 Architect-Engineer Related Services for Specific Project	1. Project Name / Location for which Firm is Filing:	2a. Commerce Business Daily Announcement Date, if any:	2b. Agency Identification Number, if any:																																
	3. Firm (or Joint-Venture) Name & Address		3a. Name, Title & Telephone Number of Principal to Contact																																
		3b. Address of office to perform work, if different from Item 3																																	
4. Personnel by Discipline: <table border="0" style="width:100%"> <tr> <td>___ Administrative</td> <td>___ Electrical Engineers</td> <td>___ Oceanographers</td> <td>___</td> </tr> <tr> <td>___ Architects</td> <td>___ Estimators</td> <td>___ Planners: Urban/Regional</td> <td>___</td> </tr> <tr> <td>___ Chemical Engineers</td> <td>___ Geologists</td> <td>___ Sanitary Engineers</td> <td>___</td> </tr> <tr> <td>___ Civil Engineers</td> <td>___ Hydrologists</td> <td>___ Soils Engineers</td> <td>___</td> </tr> <tr> <td>___ Construction Inspectors</td> <td>___ Interior Designers</td> <td>___ Specification Writers</td> <td>___</td> </tr> <tr> <td>___ Draftsmen</td> <td>___ Landscape Architects</td> <td>___ Structural Engineers</td> <td>___</td> </tr> <tr> <td>___ Ecologists</td> <td>___ Mechanical Engineers</td> <td>___ Surveyors</td> <td>___</td> </tr> <tr> <td>___ Economists</td> <td>___ Mining Engineers</td> <td>___ Transportation Engineers</td> <td>___ Total Personnel</td> </tr> </table>				___ Administrative	___ Electrical Engineers	___ Oceanographers	___	___ Architects	___ Estimators	___ Planners: Urban/Regional	___	___ Chemical Engineers	___ Geologists	___ Sanitary Engineers	___	___ Civil Engineers	___ Hydrologists	___ Soils Engineers	___	___ Construction Inspectors	___ Interior Designers	___ Specification Writers	___	___ Draftsmen	___ Landscape Architects	___ Structural Engineers	___	___ Ecologists	___ Mechanical Engineers	___ Surveyors	___	___ Economists	___ Mining Engineers	___ Transportation Engineers	___ Total Personnel
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___ Ecologists	___ Mechanical Engineers	___ Surveyors	___																																
___ Economists	___ Mining Engineers	___ Transportation Engineers	___ Total Personnel																																
5. If submittal is by Joint-Venture list participating firms and outline specific areas of responsibility (including administrative, technical and financial) for each firm: (Attach SF 254 for each if not on file with Procuring Office.)																																			
5a. Has this Joint-Venture previously worked together? <input type="checkbox"/> yes <input type="checkbox"/> no																																			

6. Outside Key Consultants/Associates Anticipated for this Project (Attach SF 254 for Consultants/Associates Listed, if not already of file with the Procuring Office)		
Name & Address	Specialty	Worked with Prime before (Yes or No)
1)		
2)		

7. Brief Resume of Key Persons, Specialists, and Individual Consultants Anticipated for this Project	
a. Name & Title:	a. Name & Title:
b. Project Assignment:	b. Project Assignment:
c. Name of Firm with which associated:	c. Name of Firm with which associated:
d. Years experience: With This Firm ___ With Other Firms ___	d. Years experience: With This Firm ___ With Other Firms ___
e. Education: Degree(s) / Year / Specialization	e. Education: Degree(s) / Years / Specialization
f. Active Registration: Year First Registered/Discipline	f. Active Registration: Year First Registered/Discipline
g. Other Experience and Qualifications relevant to the proposed project:	g. Other Experience and Qualifications relevant to the proposed project:

8. Work by Firm or Joint Venture Members which Best Illustrates Current Qualifications Relevant to this Project (List not more than 10 Projects)					
a. Project Name & Location	b. Nature of Firm's Responsibility	c. Owner's Name & Address	d. Completion Date (actual or estimated)	e. Estimated Cost (in thousands)	
				Entire Project	Work for which Firm was/is responsible
(1)					
(2)					
(3)					

9. All work by firms or Joint Venture members currently being performed directly for Federal agencies					
a. Project Name & Location	b. Nature of Firm's Responsibility	c. Agency (Responsible Office) Name & Address	d. Percent complete	e. Estimated Cost (in Thousands)	
				Entire Project	Work for which firm is responsible



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Federal Programs Conference 1976: new directions in A-E contracting

This month, January 29-30, architects and engineers will have the opportunity to attend the fourth national conference held for the express purpose of meeting with U.S. government officials responsible for Federal construction. Prior conferences have been attended by nearly 2000 A-E's from the private sector, and numerous Federal officials and members of Congress. Focusing on "New Directions in A-E Contracting," this Federal Programs Conference will be held at the Hotel St. Francis, San Francisco, and promises to target the Federal agencies and departments, plus the issues, important to the design community.

Currently, the Federal government spends approximately \$10 billion per year on construction projects. Although there is a tendency on the part of smaller A-E firms to perceive the Federal client as too large, too complicated and therefore reliant on larger, multi-discipline A-E firms, many high government officials (all approachable) will attend this conference to provide individual guidance and encouragement to all types and sizes of firms. In these times, this should prove a popular invitation.

Part of the program will be devoted to military and civil works programs, with participants from the Department of Defense, the Navy, Army and Air Force. The Department of Defense currently spends between \$1.5 and \$2 billion annually on construction, most of it requiring professional design services, according to Sigmund I. Gerber, Director for Construction Standards & Design, in the office of the Secretary of Defense. Approximately 60 per cent of the work involves new construction of housing and barracks, medical facilities and training facilities. Forty per cent of DOD work is in rehabilitation and modernization of existing facilities. As with most Federal clients, it is the policy of DOD to spread the work around as much as possible, to permit small, new or minority firms to share in the work awarded by the various construction agencies of the Navy (NAVFAC), Army (Corps of Engineers) and Air Force. The DOD policy for A-E selection is detailed in its publication, "Armed Services Procurement Regulations," but this conference affords the opportunity to discuss DOD work with the policy makers.

Also attending will be the United States Postal Service, a multi-million dollar client with building needs ranging from facilities for a quarter of a million dollars to 60 million dollars. Coming to the conference will be Assistant Postmaster General for Real Estate and Buildings Alfred C. Maevis, whose two-year outlook includes a \$992.8 million budget for the year 1977.

The registration fee for the conference is \$110, covering receptions, luncheons, and all handout material. Advance registration will be accepted until January 20, and registrations after that date will be accepted at the conference location. The full fee (checks payable to COFPAES) should accompany your registration, directed to: Federal Programs Conference 1976, 1735 New York Avenue, N.W., Washington, D.C. 20006. (202) 785-7300.

Conference program

Thursday, January 29, 1976

9:00 A.M. *Welcome, Call to Order & General Conference Overview*, **William A. Carlisle** (moderator), Chairman COFPAES.

9:15 A.M. *The Federal Design Market: What it has been, where it is going, and will you be there?* Speaker: **William L. Slayton**, Executive Vice President, The American Institute of Architects.

9:30 A.M. *New Directions in A-E Procurement: A Panel Discussion*, **Larry N. Spiller** (moderator), Director, Governmental Affairs, The American Consulting Engineers Council; **Alvin L. Alm**, Assistant Administrator for Planning and Management, EPA; **Sigmund I. Gerber**, Director for Construction Standards and Design, DOD; **Walter A. Meisen**, Assistant Commissioner for Construction Management, GSA; **George Williams**, Manager Building Branch Office of Building Analysis and Design, Real Estate and Building Department, USPS.

10:45 A.M. *Military and Civil Works Programs*, **Irvan F. Mendenhall** (moderator), Director, The American Society of Civil Engineers. Speakers: **Perry J. Fliakas**, Deputy Assistant Secretary for Installations and Housing, DOD; **Rear Admiral A. R. Marschall**, Commander, NAVFAC; **Major General Robert Thompson**, Director, Directorate of Engineering and Services, U.S. Air Force; **Major General Ernest Graves**, Director of Civil Works, Office of the Chief of Engineers, Department of the Army; **Major General Bates Burnell**, Director of Military Construction, Office of the Chief of Engineers, Department of the Army.

12:45 P.M. *Luncheon*, **Louis de Moll** (moderator), President, The American Institute of Architects. Invited Speaker: to be announced.

2:15 P.M. *Energy Research and Development Administration: A New Face in the Federal Community*. Speaker: **Samuel Hack**, Director, Division of Construction, *National Aeronautics and Space Administration*. Speaker: **James Bayne**, Director, Programs and Engineering Division, NASA.

3:00 P.M. *Soil Conservation Service*. Speaker: **Neil Bogner**, Director, Engineering Division, SCS. *Veterans Administration*. Speaker: **Viggo P. Miller**, Assistant Administrator for Construction, VA.

3:34 P.M. *Agencies Across the Table: Representatives from all agencies making presentations earlier in the day addressing questions from conference registrants*.

Friday, January 30, 1976

8:35 A.M. *U.S. Postal Service: Outlook for*

1976 and 1977. Speaker: **Alfred C. Maevis**, Assistant Postmaster General, Real Estate and Buildings.

9:15 A.M. *Environmental Protection Agency: A \$5 Billion Per Year Program*. Speaker: **John T. Rhett, Jr.**, Deputy Assistant Administrator, Water Program Operations.

10:15 A.M. *General Services Administration*. Speaker: **Nicholas Panuzio**, Commissioner, PBS.

11:00 A.M. *Department of Transportation: Gearing up for America's Transportation Needs*, **James A. Caywood** (moderator), President, American Road Builders Association, Planning and Design Division. Speakers: **Angello P. Pacillo**, Chief, Facilities Management Division, Installation and Logistics, DOT; **William B. Boswell**, Associate Administrator, Office of Administration, Urban Mass Transit Administration; **Frank E. Hawley**, Regional Federal Highway Administrator, Federal Highway Administration; **William V. Vitale**, Deputy Director, Airport Service, Federal Aviation Administration.

12:45 P.M. *Luncheon*, **Harry Bovay** (moderator), President, National Society of Professional Engineers. Speaker: **The Honorable Jack Brooks**, U.S. Representative (D.-Texas), Chairman, Committee on Government Operations, U.S. House of Representatives.

2:20 P.M. *Department of Health, Education, and Welfare*. Speakers: **Gerrit D. Fremouw**, Director Facilities Engineering and Property Management, HEW; **Robert Blake**, Director, Office of Planning Development, HEW.

2:50 P.M. *Farmers Home Administration*. Speaker: **Denton E. Sprague**, Assistant Administrator, Community Programs, FMHA. *Department of Housing and Urban Development*. Speaker: **David O. Meeker**, Assistant Secretary, HUD.

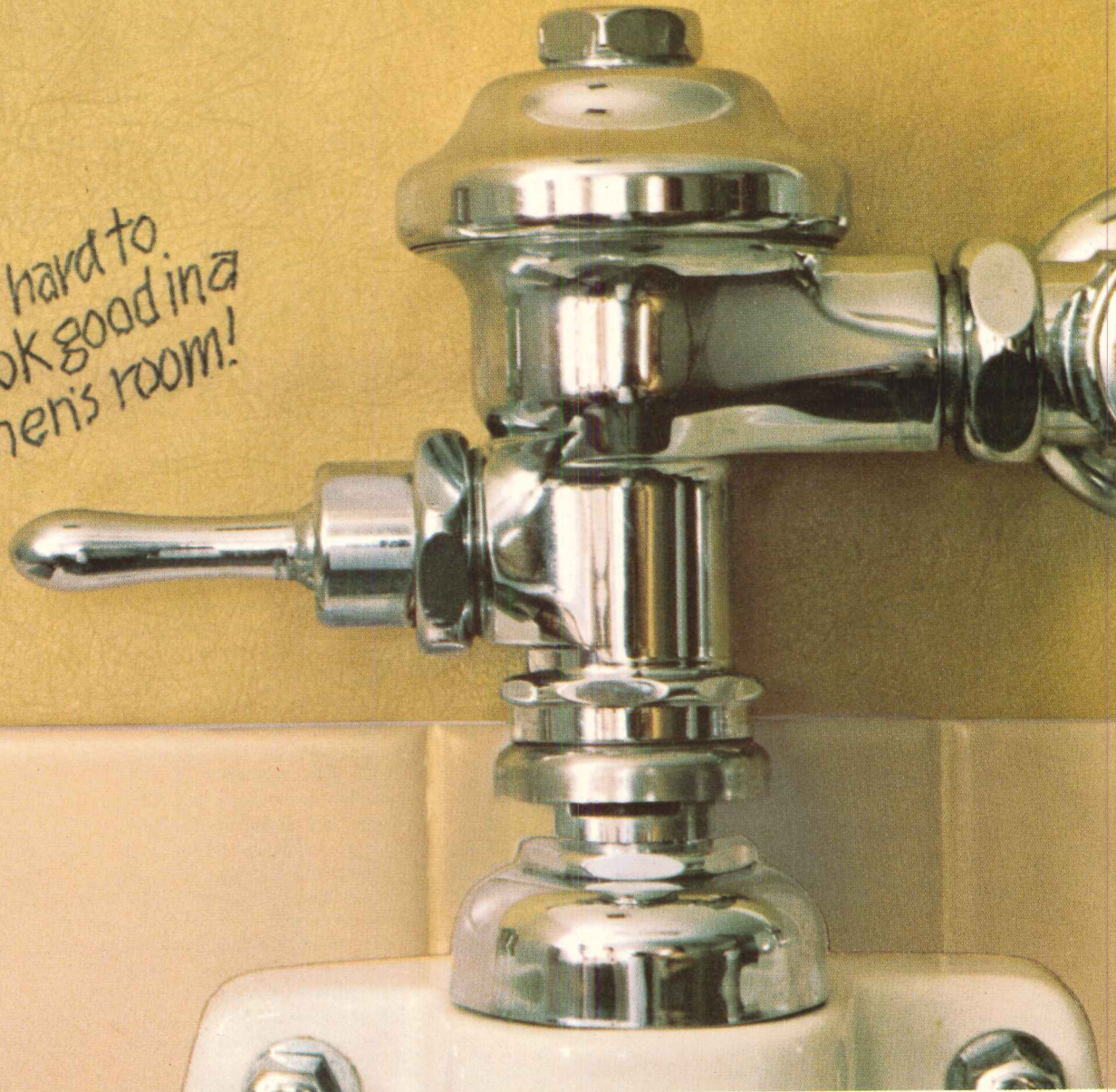
3:20 P.M. *Federal Insurance Administration*. Speaker: **Mel Crompton**, Chief, Engineering and Hydrology Division, FIA. *Opportunities in the International Market*. Speakers: **Merten M. Vogel**, Director, Office of Engineering, Agency for International Development, Department of State; **Jack Wilson**, Industrial Officer, Treasury Department, Saudi Arabian Economic Commission.

4:05 P.M. *Agencies Across the Table: Representatives from all agencies making presentations earlier in the day addressing questions from conference registrants*.

4:45 P.M. *Questions and proposals for action directed at the professional staff of the sponsoring societies*. *Summation of Meeting*, **William A. Carlisle** (moderator), Chairman, COFPAES.

5:00 P.M. *Conference Adjourns*.

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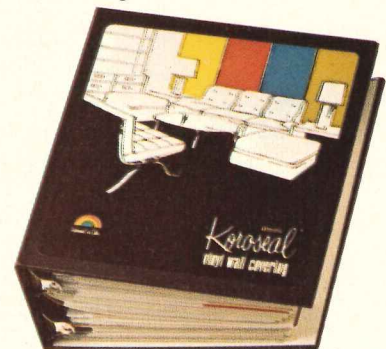
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Over-all, 1976 may show some light at the end of the tunnel

The current conditions in the building construction market have led to the lowest prices we have seen in years. These low prices are a direct result of the intense competition for whatever work exists. There has been a drastic reduction in contractors' profit markup.

We expect inflation to be about 5 per cent for the year 1976. Material prices and labor rates—two extremely critical factors—have stabilized considerably. Most major construction material manufacturers are caught with significant inventories on hand in 1976, and until these inventories are depleted, we will see stable prices. Labor, however, continues to pose a problem. The open-shop contractor is successfully competing on a national scale, because, while union tradesmen press their demands despite poor market conditions, the open-shop contractor has had more success keeping his labor costs stable, and even some union tradesmen are working for significantly less than the posted union scale.

Looking at 1976, we can see a significant recovery in the housing market. Along with this upsurge in the construction of new housing units, we expect to see the remodeling /rehabilitation field remain strong. Commercial industrial and public buildings are expected to remain at about the level of 1975. These building types were the last to experience the building cycle crunch and are expected to be the last to recover.

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

Metropolitan area	Cost differential	Current Indexes				% change last 12 months
		non-res.	residential	masonry	steel	
U.S. Average	8.5	521.0	478.6	513.2	500.5	+ 9.6
Atlanta	7.5	606.4	571.8	597.6	586.8	+ 4.1
Baltimore	8.5	591.5	556.2	582.6	565.7	+ 8.7
Birmingham	7.3	455.2	423.4	423.9	437.6	+ 6.5
Boston	9.0	520.4	491.7	523.0	505.1	+10.9
Buffalo	9.1	579.2	527.9	570.7	553.9	+10.0
Chicago	8.3	556.3	522.4	548.1	541.3	+ 5.7
Cincinnati	8.8	554.0	509.0	546.4	533.5	+10.0
Cleveland	9.0	537.4	493.2	529.5	516.4	+ 4.2
Columbus, Ohio	8.2	535.6	488.0	527.7	512.0	+ 5.9
Dallas	7.9	503.2	477.4	498.2	488.1	+ 4.5
Denver	8.4	558.7	514.9	552.1	540.8	+ 8.5
Detroit	9.8	624.2	569.6	616.8	590.8	+10.9
Houston	7.4	487.0	449.2	479.8	471.3	+13.6
Indianapolis	7.8	459.8	421.9	453.0	442.6	+ 7.5
Kansas City	8.7	513.4	476.6	506.3	497.4	+14.4
Los Angeles	8.5	603.4	541.1	589.9	578.6	+11.7
Louisville	7.6	499.3	459.7	491.9	482.3	+ 6.9
Memphis	8.4	534.9	492.2	527.0	516.4	+11.6
Miami	7.9	564.1	524.6	556.9	543.6	+15.1
Milwaukee	8.7	612.9	556.7	603.9	584.1	+16.0
Minneapolis	8.9	546.8	502.5	540.3	527.8	+10.1
Newark	9.0	499.6	455.9	492.2	478.3	+ 6.3
New Orleans	7.5	501.7	464.7	494.8	485.5	+11.8
New York	10.0	547.3	498.1	534.5	523.2	+ 3.5
Philadelphia	9.1	580.2	537.3	573.3	557.3	+ 9.4
Phoenix (1947 = 100)	8.2	299.0	274.8	294.6	288.3	+11.4
Pittsburgh	8.9	520.0	473.9	513.9	497.7	+ 9.4
St. Louis	8.7	540.4	498.6	533.0	520.9	+10.9
San Antonio (1960 = 100)	7.6	199.9	183.9	197.0	192.9	+ 9.2
San Diego (1960 = 100)	8.7	222.0	202.8	218.7	212.7	+10.9
San Francisco	9.6	777.4	691.3	760.0	739.2	+12.0
Seattle	8.6	536.1	462.8	522.1	503.5	+14.4
Washington, D.C.	8.4	524.5	478.4	516.8	501.9	+11.7

1941=100.00 (except as noted)

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

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

Metropolitan area	HISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL NON-RESIDENTIAL BUILDING TYPES, 21 CITIES																
	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974 (Quarterly)				1975 (Quarterly)			
										1st	2nd	3rd	4th	1st	2nd	3rd	4th
Atlanta	321.5	329.8	335.7	353.1	384.0	422.4	459.2	497.7	544.8	555.2	556.7	573.5	575.0	583.8	585.3	597.2	598.7
Baltimore	285.7	280.9	295.8	308.7	322.8	348.8	381.7	420.4	475.5	516.3	517.8	532.8	534.3	538.7	540.2	579.6	581.1
Birmingham	265.9	270.7	274.7	284.3	303.4	309.3	331.6	358.3	402.1	405.5	407.0	419.7	421.2	438.6	440.1	447.4	448.9
Boston	257.8	262.0	265.7	277.1	295.0	328.6	362.0	394.4	437.8	455.1	456.6	461.0	462.5	484.1	485.6	511.7	513.2
Chicago	311.7	320.4	328.4	339.5	356.1	386.1	418.8	444.3	508.6	514.2	515.7	528.1	529.6	539.2	540.7	558.6	560.1
Cincinnati	274.0	278.3	288.2	302.6	325.8	348.5	386.1	410.7	462.4	484.5	486.0	498.6	500.1	518.0	519.5	549.1	550.6
Cleveland	292.3	300.7	303.7	331.5	358.3	380.1	415.6	429.3	462.2	490.3	491.8	508.0	509.5	516.6	518.1	529.5	531.0
Dallas	260.8	266.9	270.4	281.7	308.6	327.1	357.9	386.6	436.4	453.7	455.2	476.4	477.9	488.3	489.8	498.1	499.6
Denver	294.0	297.5	305.1	312.5	339.0	368.1	392.9	415.4	461.0	476.1	477.6	508.5	510.0	530.4	531.9	552.1	553.6
Detroit	284.7	296.9	301.2	316.4	352.9	377.4	409.7	433.1	501.0	519.5	521.0	537.2	538.7	554.4	555.9	596.0	597.5
Kansas City	256.4	261.0	264.3	278.0	295.5	315.3	344.7	367.0	405.8	435.6	437.1	443.4	444.9	481.1	482.5	507.6	509.1
Los Angeles	297.1	302.7	310.1	320.1	344.1	361.9	400.9	424.5	504.2	514.3	515.8	531.3	531.8	546.7	548.2	592.6	594.1
Miami	277.5	284.0	286.1	305.3	392.3	353.2	384.7	406.4	447.2	467.6	469.1	484.6	485.5	499.5	501.0	557.4	558.9
Minneapolis	285.0	289.4	300.2	309.4	331.2	361.1	417.1	412.9	456.1	469.7	471.2	487.1	488.6	513.9	515.4	536.5	538.0
New Orleans	256.3	259.8	267.6	274.2	297.5	318.9	341.8	369.7	420.5	437.5	439.0	440.6	442.1	463.5	465.0	493.2	494.7
New York	297.1	304.0	313.6	321.4	344.5	366.0	395.6	423.1	485.3	497.4	498.9	513.8	515.3	524.1	525.5	532.0	533.5
Philadelphia	280.8	286.6	293.7	301.7	321.0	346.5	374.9	419.5	485.1	495.7	497.2	517.0	518.5	531.5	533.0	566.0	567.5
Pittsburgh	267.0	271.1	275.0	293.8	311.0	327.2	362.1	380.3	424.4	443.7	445.2	464.1	465.6	475.2	476.7	508.0	509.5
St. Louis	280.9	288.3	293.2	304.4	324.7	344.4	375.5	402.5	444.2	458.7	460.2	475.2	476.7	497.5	499.0	527.4	528.9
San Francisco	368.6	386.0	390.8	402.9	441.1	465.1	512.3	561.0	632.3	647.1	648.6	671.0	672.5	716.0	717.5	751.8	753.3
Seattle	268.9	275.0	283.5	292.2	317.8	341.8	358.4	371.5	424.4	437.8	439.3	448.7	450.2	472.5	474.0	513.6	515.1

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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Another carpeting success story from Monsanto. Six years ago Acrilan® acrylic carpet was installed on the concourse of San Jose Airport, the nation's 10th busiest airport. In that six years, Acrilan® Plus carpet on the concourse received 20,000,000 traffics and exposure to heavy soiling. Three years ago, Acrilan® 2000+ carpets were installed in the baggage and car rental areas. Areas where 20,000,000 traffics have occurred in three years. Acrilan 2000+ carpet was also installed on the observation deck. In those three years the observation deck has withstood both rain and sun. Just how well Acrilan Plus and Acrilan 2000+ carpets held up in these four areas under all these demands can be seen in the pictures above.

Acrilan 2000+ carpets used in the baggage claim, car rental and observation deck areas are especially engineered to withstand the punishment of day-to-day airport activity. They're made from a solution-dyed fiber which makes them colorfast. That means they can withstand the rain and harsh California sun without noticeable signs of fading. In fact, Acrilan 2000+ carpets are 35 to 50 times more lightfast than the industry standard. And because they're fade resistant, they're exceptionally cleanable too. In most instances, simple cleaning aids are all it takes to remove stains and spots. But for more stubborn stains, harsher solvents can be used effectively without destroying the color of the carpet or the fiber tenacity. When backed with a man-made backing, Acrilan 2000+ carpets aren't even faded by 100% bleach.

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Construction and fiscal crisis—New York and beyond

In a series of cliffhangers this year, New York City appears to have avoided default, while continuing to keep paying its employees (at least those who remain on the payroll), and maintaining whatever passes for "minimum services." But lost in the daily drama of whether and when the Federal government—like the cavalry in a grade-B movie—would come to the rescue, has been the effect of the city's crisis on a matter important to the design professions and the construction industry: the plight of publicly-financed building.

One of the earliest casualties of budgetary discipline, public construction of most kinds in New York City is at a virtual standstill. This "panic stop" of city building has several dimensions. How much work is involved? How much of the cutback is traceable to the city's financial woes, as separate from the construction industry's general recession? Is there likely to be a domino effect—how many other cities are seriously close to the brink of the New York syndrome? And finally, when will it be reasonable to expect a resumption of public building in New York?

When it comes down to the choice of paying a policeman, teacher, or sanitation worker for their services or building a new municipal building, the answer is self-evident. One is postponable; the other is not. So it was hardly surprising that construction projects were among the first to go in the city's attempt to bring its spending into line with shrinking tax revenues. The stringencies imposed on New York City by the Emergency Financial Control Board led to the shelving of nearly \$400 million of new construction planned for the next three years (and that doesn't count the cessation of work on numerous school, library, and hospital projects already in various stages of completion around the city). A few revenue-producing projects survived the axe, but there's no doubt that most of those jettisoned jobs were victims of the budget crisis, and only indirectly affected by the broader problems of the recession.

New York has become the quintessential urban problem

There are many Americans outside New York City, and some within the city itself, who agree with President Ford and Secretary Simon that the city's problems can be attributed to fiscal mismanagement by a succession of administrations. There are as many others who refuse to accept such a simplistic explanation. Hardly anyone would give New York's present or past

few mayors straight A's for enlightened financial management, but just the same, it is questionable whether even the best management could have accomplished more than to postpone the inevitable breakdown more than a few years. And if that's so, is New York merely the first of many major urban centers to be forced to choose between self-destructive austerity and default?

New York's well-known socio-economic trends, along with its extraordinary size, have made the city the quintessential urban problem. Out-migration of its upper- and middle-income population and a substantial portion of its businesses to the adjacent states of New Jersey and Connecticut has decimated the city's tax base. The people who stayed, and those who migrated to the city, have been ones whose need for public services is greatest. Providing more services from shrinking revenues is frustrating enough under normal conditions, but when compounded by gross inflation of the cost of services, the worst recession since the 1930's, and staggeringly high borrowing costs, frustration escalated to crisis.

While New York may be suffering a more acute case of urbanitis than the nation's other big cities, most other urban areas—particularly the older ones in the Northeast and Midwest—are showing the early symptoms. The six largest cities in the Northeast (after New York) have all experienced declining populations since 1960. In the Midwest, five of the seven largest cities have lost population. Even in the South and the West—the nation's growth regions—cities like New Orleans and Seattle have seen movement to the suburbs. In fact, throughout the entire nation, only Houston and Los Angeles, among the top two dozen cities, showed significant population gains during the past 15 years.

A trend to urban bankruptcy is not necessarily implied by New York's crunch

So far, at least, these other cities are still making it, while New York isn't. And there are some reasons to believe that rather than setting a trend to urban bankruptcy, New York's fiscal crunch might even have the opposite effect. In a couple of important ways, New York's situation is sufficiently different from that of most other major cities to give it "special case" status. Sheer size is one thing to consider. No other city budget comes even close to New York's need to raise \$12 billion annually. The next largest budget, that of Washington, D.C., is only one-eighth that amount. Maybe more

important is the fact that most cities have the ability to extend their taxing powers beyond the narrow limits of the central city boundaries and chase their out-migrants into the suburbs. New York's island geography simply doesn't permit this.

And then there's the structure of New York City's debt—the cause for most of the criticism heaped on its recent administrations. Over the past decade, all major cities have had to do a lot of borrowing to finance the construction of schools, hospitals, and other public buildings as well as for sewer, water, and transportation facilities. But unlike the others, New York has resorted increasingly to short-term debt to cover its consistent operating deficits, and that's not considered good financial strategy. (Operating budgets, unlike capital budgets, are supposed to balance annually.) With nearly one-quarter of its obligations subject to constant rollover, New York was especially vulnerable to 1975's deadly combination of recession and high interest rates.

There are signs indicating some relief to all cities' fiscal woes

Recently there have been signs of change that ought to bring some relief to the fiscal problems of all cities, New York included. The recession of 1974/75, which was an important factor in precipitating New York's crisis, has bottomed out and recovery is now in progress. An improving economy with rising employment helps both ends of any city's problem by reducing the need for welfare and raising tax revenue simultaneously. Too, there is the probability that the worst of inflation is behind us, and as cost increases begin to lessen, so will the burden of providing municipal services.

Conventional wisdom has it that New York will need up to three years of austerity to get its budgetary affairs in order—which means three years of the most careful scrutiny and painful decision-making about funds to be committed for public construction. (During that period, it wouldn't be a bad idea if the Federal government's General Services Administration made an extra effort to speed up anything it might have planned for the New York area in the next five years.) And if preventing New York's default means heading off a future epidemic of municipal bankruptcies around the nation—which it probably does—then all the tightrope walking of November will have served a purpose well beyond the concrete canyons of Manhattan.

—Henry C. F. Arnold



**Omni International Complex,
Atlanta, Ga.**

Developer:
International City Corporation

Architects:
*Thompson, Ventulett & Stainback, Inc.,
Atlanta, Ga.*

General Contractor:
Ira H. Hardin

Curtain Wall Contractor:
F. H. Sparks Co. of Maryland, Inc.

Glass Contractor:
ACD Glass & Mirror Co.

6 Amarlite products specified for Omni International Megastructure

Omni International is a city within a city. Located on 5½ acres, the megastructure covers approximately 2,000,000 square feet devoted to work, sports, leisure, corporate offices, business facilities, retail shopping, dining, exhibitions, international banking, sculpture, hotel space (500 rooms), cinema and world trade.

The following Amarlite Aluminum architectural products were specified for this ultra contemporary structure: 245 exterior sliding doors (No. 703) which combine beauty with smooth operation and excellent weathering; 4-inch flush glazed glass holding system for entrance framing, ground floor, shops, etc.; 43 La Vista maximum vision doors;

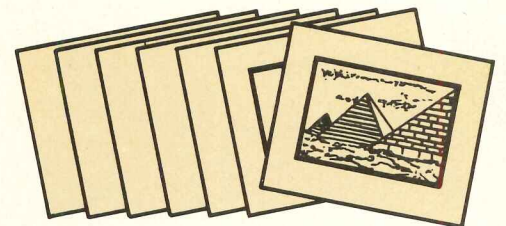
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PBS-380 on lower floors — a dry glaze system with a highly efficient thermal barrier and the PBS-383 which can be glazed from the interior; and the BTI-680, a stick system designed for high rise applications on which the architect desires a vertical accent and thermal insulation.

The Omni International is a kaleidoscope of activity within an environment unlike anything you've ever seen. The depth of the Amarlite line gave the architects, contractors and developers the peace-of-mind that comes with single source responsibility for the 6 Amarlite products specified.

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A DWV System for the Hyatt Regency, Dearborn, Michigan.

The Requirements:
A custom DWV system to meet close tolerances for above the floor rough-ins.

The Answer:
Tyler's RufWall® units with multi-outlet starter fittings.



Tyler's RufWall cast iron with No-Hub couplings was chosen for the DWV system on the basis of cost analysis and the system's ability to meet the space requirements.

A significant advantage of RufWall is installation simplicity. **No scaffolds were required and only minimum support, without hangers, was needed.** Plumbers worked at waist-level and positioned the DWV units in open chaises.

The Hyatt Regency is a 17-story, 800-room hotel, featuring a 14-story lobby. The entire structure curves around a mammoth entry. Tyler's RufWall units were used in 792 rooms as RufWall typicals. All units connected with floor-mounted back-outlet water closets. With RufWall, the installers stayed above the floor and in the wall. The entire system was installed exactly as designed. Another plus for RufWall

is installation speed. Plumbing crews maintained a schedule of one floor every two weeks even though there were 72 tubs, 72 water closets and 144 lavatories on each floor.

For complete information on the Tyler No-Hub and the RufWall system, write Engineered Products Department, Box 2027, Tyler, Texas 75701.

Tyler Pipe

Subsidiary of
Tyler Corporation



For more data, circle 44 on inquiry card



Developer:
Ford Motor Land
Development Corporation,
Detroit, Michigan.

Architect:
Charles Luckman
Associates,
Phoenix, Arizona.

Consulting Engineer:
Ayres & Hayakawa,
Los Angeles, California.

General Contractor:
Del E. Webb Michigan, Inc.

Mechanical Contractor:
Lorne Company, Division of
Limbach Company,
Pontiac, Michigan.

Wholesaler:
Nelson Company,
Royal Oak, Michigan.

Here's what the mechanical contractor has to say about Tyler's RufWall:



Roy Lair,
Executive Vice
President,
Lorne Company.

"The simplicity of the RufWall system first caught our attention, but versatility put the system on this project. Aside from our need for compactness, we had to have a unit which could adjust to the angles of the building. You see, from end to end for 14 floors and more than 1400 ft., this job is one big curve."

The consulting engineers' report:



W. T. Hagen,
Ayres & Hayakawa.

"The project was designed to utilize the shaft between the typical guest toilet rooms for exhaust, primary air ducts, chilled water and plumbing piping. The configuration of the mechanical services within this space required custom DWV piping fabricated to close tolerances for back-outlet water closets and above the floor bathtub traps. Tyler's RufWall units with multi-outlet starter fittings provided the answer."



Tyler RufWall installed in open chaises. Harold Korte, plumbing foreman, designed a dual bracket which supports both waste and vent lines to make a compact installation in minimum space.

Great Ideas in Inner Space: A moveable tool that works for the workers.



The Westinghouse ASD Group has probed deep into the traditional problems of work and developed an open office system which provides a space for everything. And when everything changes, it quickly fits all the people and their things into a new, neat comfortable configuration without a lot of fuss and expense.

The modular components fit together to provide an organic versatility for worker, architect or designer. You can change it all with an allen wrench. This kind of flexibility saves money and motivates people.

The Westinghouse ASD Group gives every person freedom to adjust the components in his work station in his own inimitable style, and this includes the manager who discovers he needs a few changes after the new layout is done.

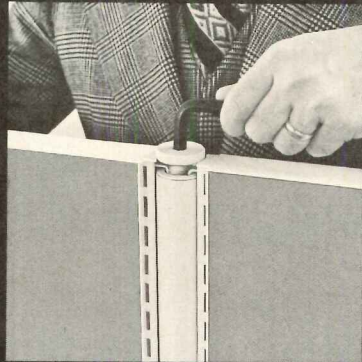
Quite simply, Westinghouse ASD Group gives you an office which is an extension of your

needs, not a rigid container which you must function within.

But, don't believe us, go ask N.C.R., Stanford University, A.A.A., Florida Power Corporation, Northrup, Borg-Warner, General Motors, or other installations which we will be very willing to give you.

Or, come visit our showrooms in Chicago, Dallas, Grand Rapids, L.A., or New York where we can demonstrate our ASD Group plus our chair group, our desk group, and our table group.

Or, for more information contact:
Westinghouse
Architectural Systems Division
Marketing Communications Department
4300 36th Street, S.E.
Grand Rapids, Michigan 49508
616 949.1050



Above:
An allen wrench loosens post cap so panels can be moved, added or subtracted. Walls provide grid or free form layouts.



Left:
Flipper door cabinets come in 36", 48", 60", 72" lengths. Completely accessorized. Patented hinge prevents binding or racking of door.



Above:
This 6" box drawer is part of the ASD Pedestal Drawer system. There are 3", 6" and 12" drawers which are interchangeable. All drawers have a unique combination lock and come in eight decorator colors.



Left:
Triplex electrical outlets hook into slots on every wall panel for light or machine power. Wires to outlet are hidden in the wire manager.



Westinghouse

ASD Group

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Simultaneously, he is building all five.

Engineered loadbearing masonry walls provide structure, finish and enclosure, all in one fast, money-saving package. Building many one-story buildings atop each other, the bricklayer needs no costly outside scaffolding. And he clears the way for other trades to begin work on the floors beneath him—a step toward early occupancy and

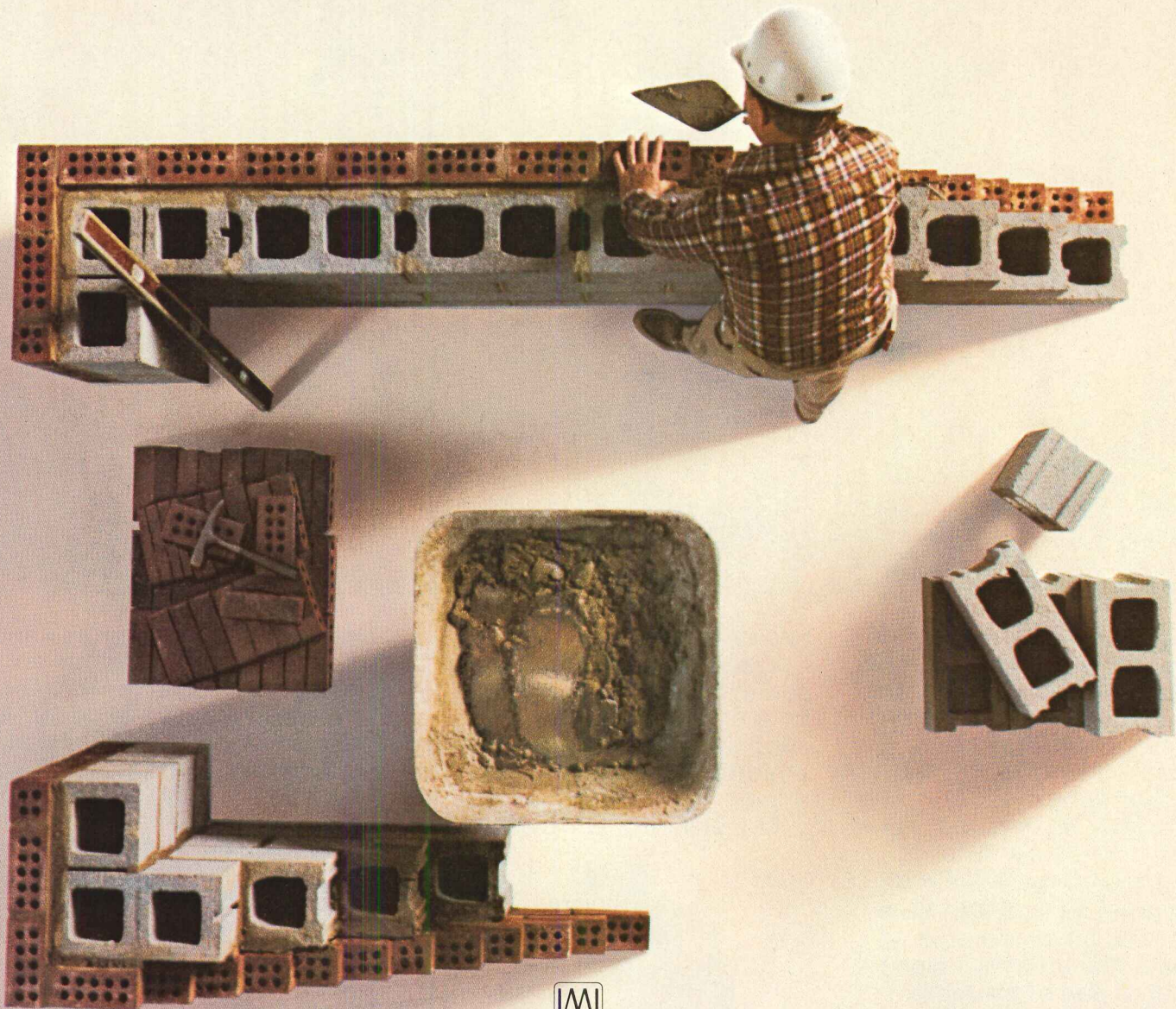
lower interim financing.

He's providing masonry's superior sound control. And, of course, he's building fire control—protecting your investment and often lowering insurance rates.

Engineered loadbearing masonry can save you 10% or more on your next building. It bears the load. You don't.

Is this man building:

(A) a structural wall (B) a finish wall
(C) an enclosure wall (D) a sound control wall
(E) a fire control wall?



INTERNATIONAL MASONRY INSTITUTE

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Suite 1001, 823 15th Street, N.W., Washington, D.C. 20005. (202) 783-3908.

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Introducing the **CLEANLINE[®]** Sprinkler.

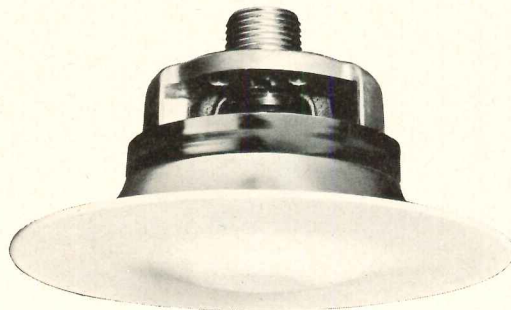
A beautiful way to help save lives.

Now there's a new way to design in fire protection for life safety in modern high rise and other buildings without intruding upon design aesthetics. Grinnell's new CLEANLINE[®] Recessed sprinkler is so unobtrusive, so trim and compact, once it's installed you'll hardly know it's there.

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exposing the *fast-response* Duraspeed sprinkler. As a second predetermined temperature is reached, the sprinkler activates, distributing a uniform water spray to put down a fire.

The standard finishes



available are satin chrome and white. CLEANLINE Sprinklers are also offered in a variety of finishes to match any decor. All metallic finishes are UL-listed.

There's a lot more to tell about CLEANLINE. For more information and complete specifications, call your nearest Grinnell district office listed in the Yellow Pages, or write Grinnell Fire Protection Systems Company, Inc., 10 Dorrance Street, Providence, Rhode Island 02903.



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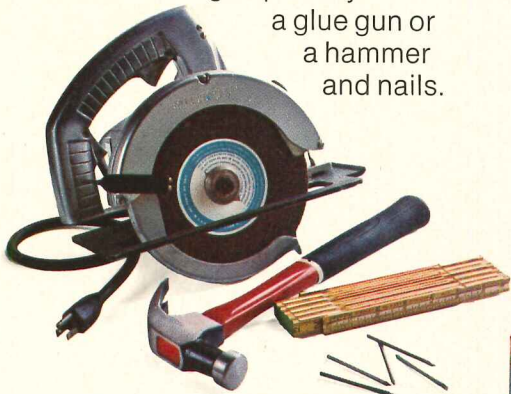
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You have a beautiful alternative. Sanspray®. A plywood siding with decorative stones bonded onto it.

So you can forget about cement trucks or heavy pre-cast panels. Sanspray is light and easy for men to handle and install on the job site. Sanspray panels cut readily with a power saw and they go up easily with a glue gun or a hammer and nails.



Sanspray is durable. The substrate is 3/8" exterior grade plywood. (Sanspray Shadowline™ is bonded to 5/8" plywood.) In fact, it meets the requirements of FHA/HUD and the major codes for single-wall applications.

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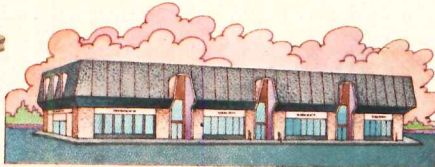


tested it in all kinds of climates for ten years.)

Sanspray comes in Regular, Large and Jumbo size aggregates. And Sanspray Shadowline, which is a regular aggregate panel with vertical grooves spaced eight inches on center.

It comes in eight rich colors. Like Salt and Pepper, Gaelic Green, Monterey Sand and Tangerine.

So it gives you a lot of ways to make a lot of things beautiful.

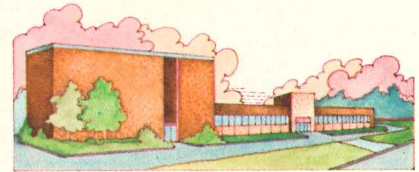
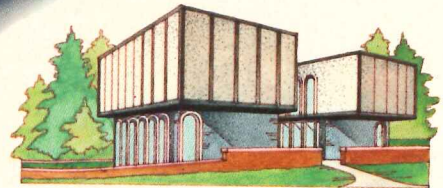


Homes for instance. (It's a natural for a Tudor.) Townhouses and condominiums. Stores and shopping centers. Factories and

industrial complexes.

Medical centers and hospitals. Schools and universities.

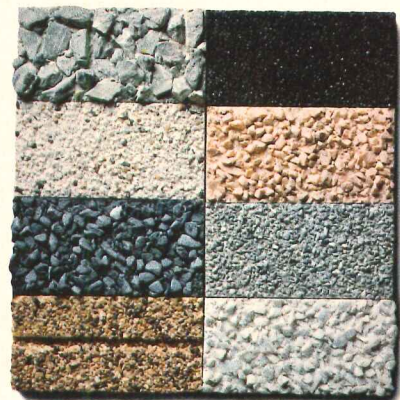
Use it outside. As a siding, skirting or facade. Or use it



inside. In lobbies, waiting rooms and public rooms.

In fact, for just about anything you want to make beautiful, you should use Sanspray, the beautiful alternative.

Find out more about it at your U.S. Plywood Branch Office.



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And equally important is the ability of this earth-tone to bring out the low maintenance advantages of Perma-Shield rigid vinyl.

So you not only have windows with color, but long-life windows designed not to chip, blister or peel. Not to rust, pit or corrode.

And, unlike leaky, drafty windows, Perma-Shield Casement and Awning Windows in Terratone are designed to save on owner heating bills.

Beneath their rigid vinyl sheath lies a wood core, one of nature's best insulators.

And they're built two times more weathertight than recognized air-infiltration standards. To help seal out drafts and dust, help save on heating and cooling costs.

With optional double-pane insulating glass, they provide a major part of the fuel-saving benefits of storm windows, without the bother.

And inside, there's Andersen wood trim that can be stained or painted to match any decor.

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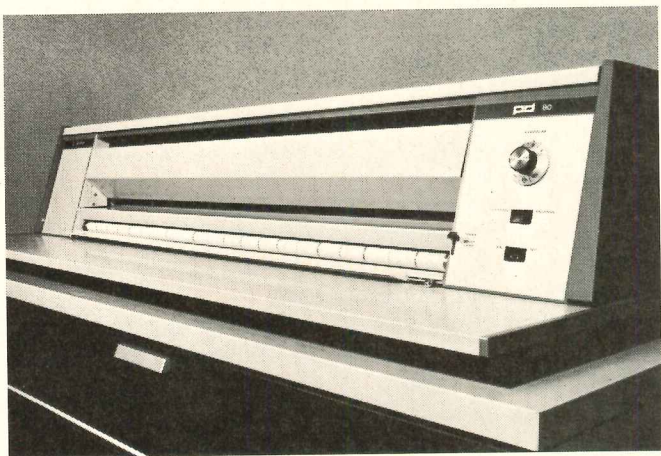
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A change for the better.

Nothing is more constant than change. Buildings change to meet the times. And the products that create change become different too. That's what's happening in remodeling today. Even change is no longer the same. Today's remodeling is a matter of architectural revision, requiring the knowledge and creativity of good design minds.

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Kawneer Architectural Products offer a wide range of remodeling ideas in aluminum for new design opportunities. This variety includes the exclusive I-line series framing, featuring the very narrow 1" sightline. Kawneer facings provide a complete spectrum of textures and profiles needed to create exciting and tasteful exteriors and entrances. These pages contain just a few examples of how times are changing.

A renaissance in remodeling by Kawneer

And for more about the renaissance in remodeling, write for our new brochures, *Remodeling with Kawneer*. It can be a big help with clients who are ready to make a change. Write Dept. C. Kawneer Company, 1105 North Front Street, Niles, MI 48120.

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ARCHITECTURAL PRODUCTS

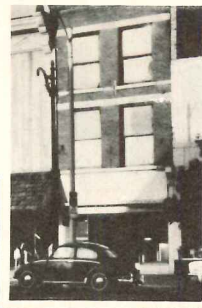
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Recycling: A Specialty

As times change, specialty buildings often outlive their intended uses. So, today many people are coming up with new ideas for outmoded specialty buildings. They also have to come up with a complete plan of architectural revision. Kawneer Architectural Products can provide a complete selection of framings, facings and entrances for the recycling of an old specialty into a new prospect.





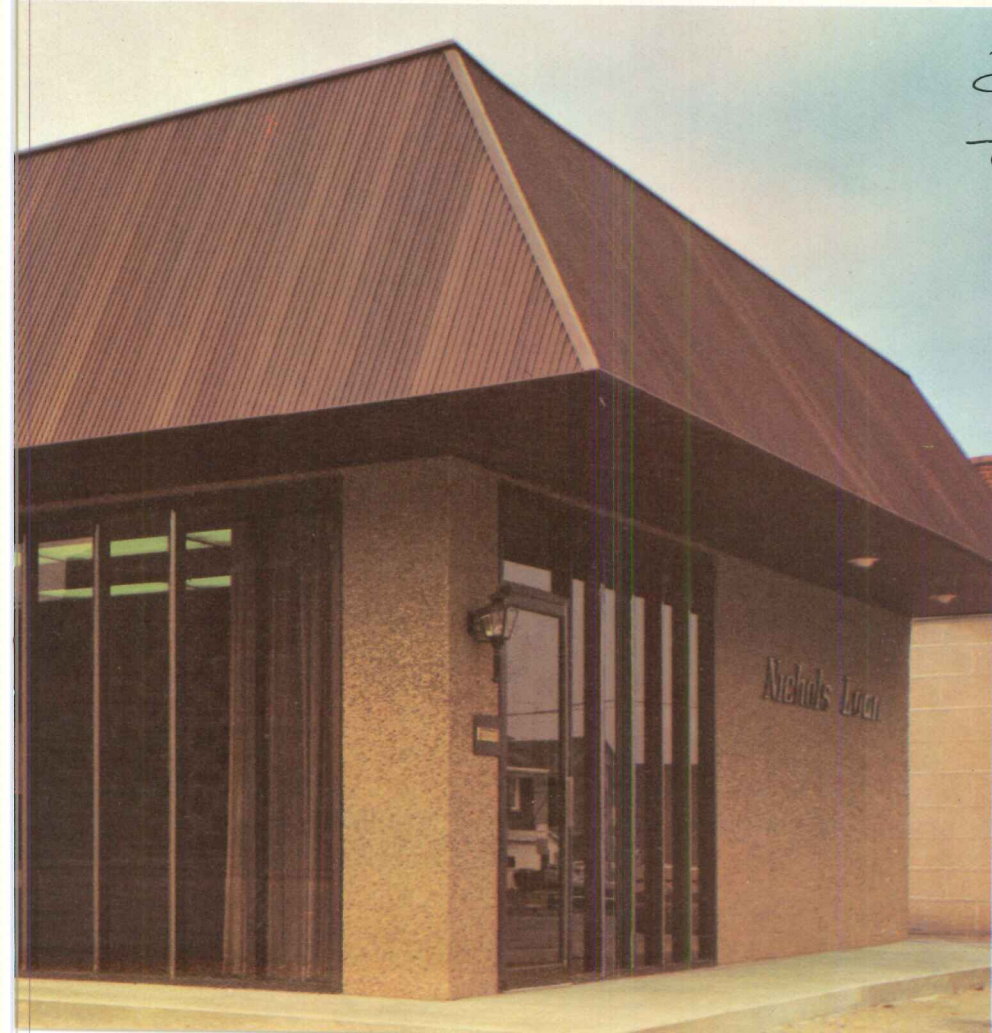
Improved Real Estate

Many businesses are right where they want to be. Their location is a valuable asset. But they need to make a change to meet a changing business world. And, they want to continue doing business as they change. Remodeling with new ideas in aluminum from Kawneer is a good solution. A new look. Continuous operation with minimum interruption. A change for the better. Done better.



Reflections of the present

Customers see a company from the outside in. To them what's out front is what's inside. Reason enough for any business to consider putting on a new face as people and times change. Suddenly, a retail merchant can step out of the past into a visually exciting and appealing present.



Pleases the eye, soothes the ear.

The Rosemount/85 screen has 7 layers of acoustical materials. Covering is 100% modacrylic fabric woven with irregular yarn to create a homespun look.

The center of the core is $\frac{3}{4}$ " thick fiberglass, sandwiched between two sheets of perforated hardboard.

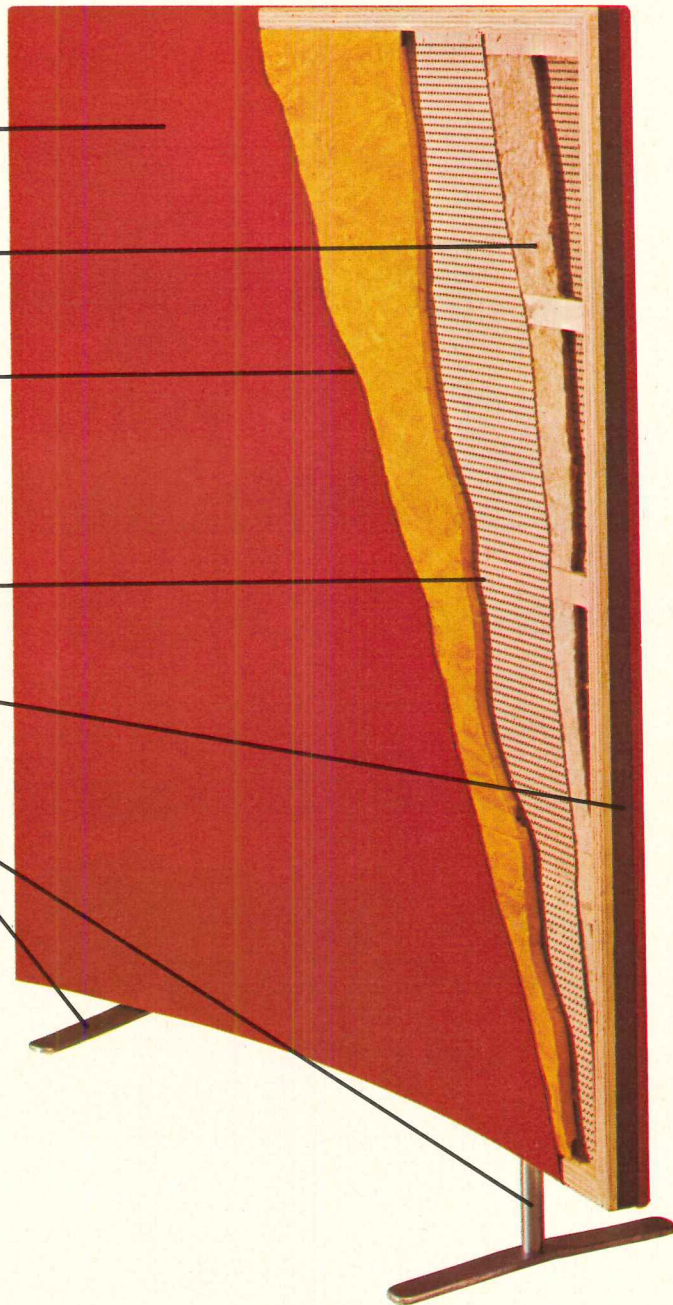
No problems with sagging or pillowing! The fiberglass behind the face fabric is rigid, not bat-type — and, on all inside curves, the fabric is bonded to the fiberglass.

Flat or curved. For standard heights and sizes, see chart, below.

Inch-thick rigid fiberglass is placed over the perforated hardboard on both sides of the Rosemount/85 screen.

Choice of edge trims: Oak, Walnut, or Fabric — or your choice (optional).

Legs may be easily adjusted to compensate for unlevel or unequal floors. Floor opening may be varied from 0" to 7". (Base closure optional.)



Here's a new panel to use in your job of helping people enjoy their work.

The Rosemount/85 is a free-standing, furniture-quality screen with an NRC rating of 0.85 (hence, its name).

For example, you'll want to be sure the face fabric will never sag or pillow. It won't on the Rosemount/85 because we use a rigid, not a bat-type, fiberglass behind it.

Then — on the insides of curves — we bond the fabric to the fiberglass.

ROSEMOUNT/85	FLAT	CURVED (96" Radius)
WIDTHS:	48" 60"	48" 60"
HEIGHTS:	56" 66" 72" [±]	56" 66" 72" [±]
OPTIONS:	Closed base, satin chrome legs, special edge trim.	

*Specials Available

Named for its NRC: The "85"

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Sometimes a reader service card takes 2 or 3 weeks. But you can call our toll-free number and have us rush your Rosemount/85 literature to you.

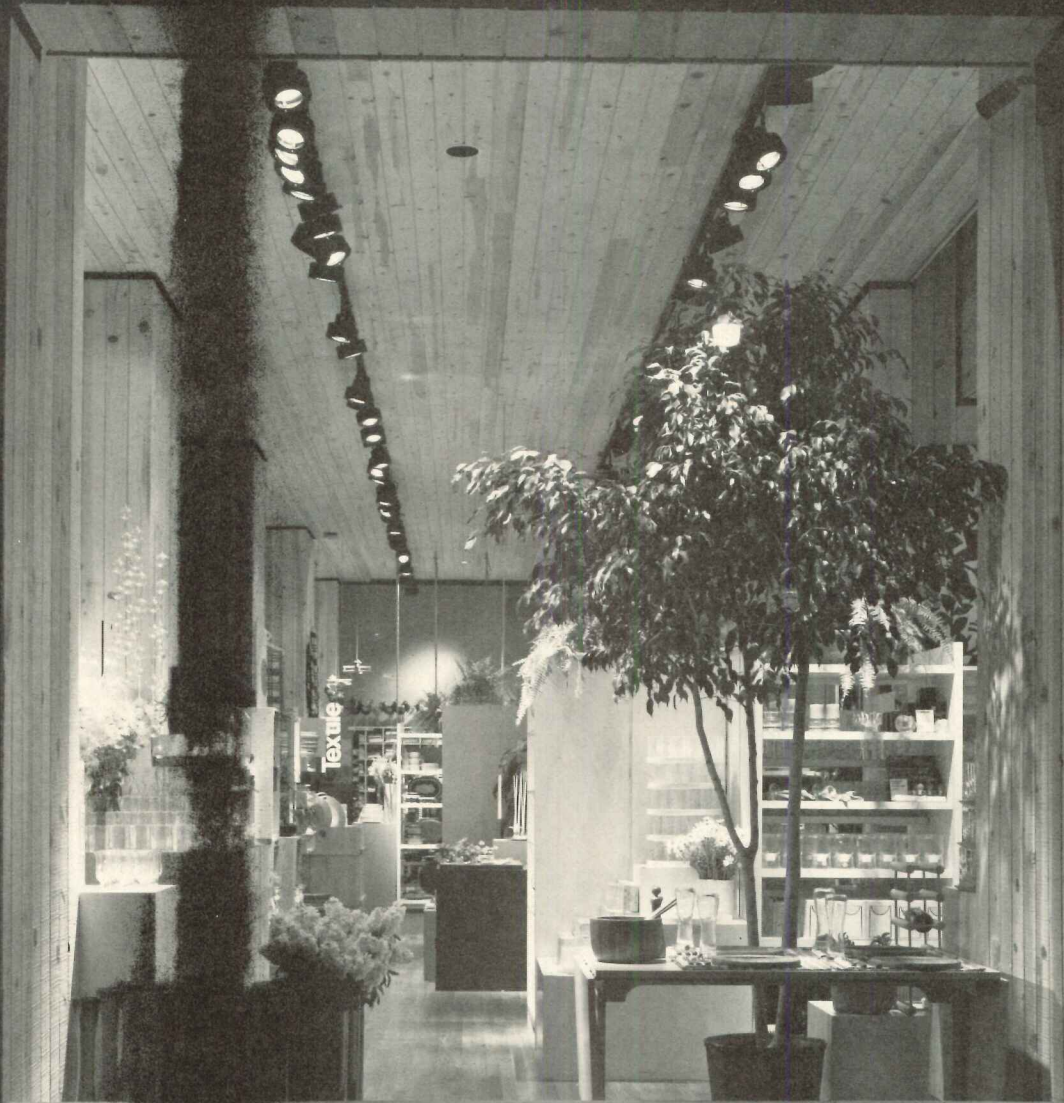
Or write: Rosemount Partitions, Inc., Box D, Airlake Industrial Park, Lakeville, MN 55044.

Rosemount

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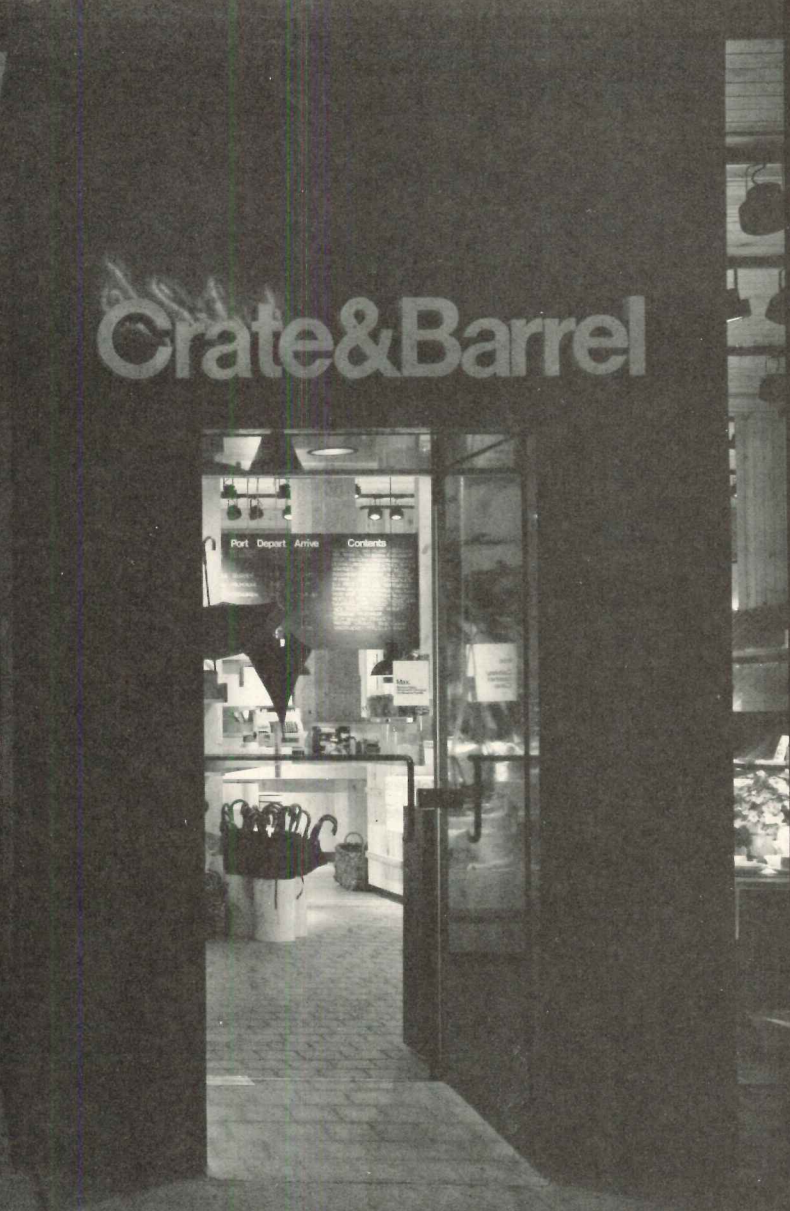
RECORD INTERIORS OF 1976

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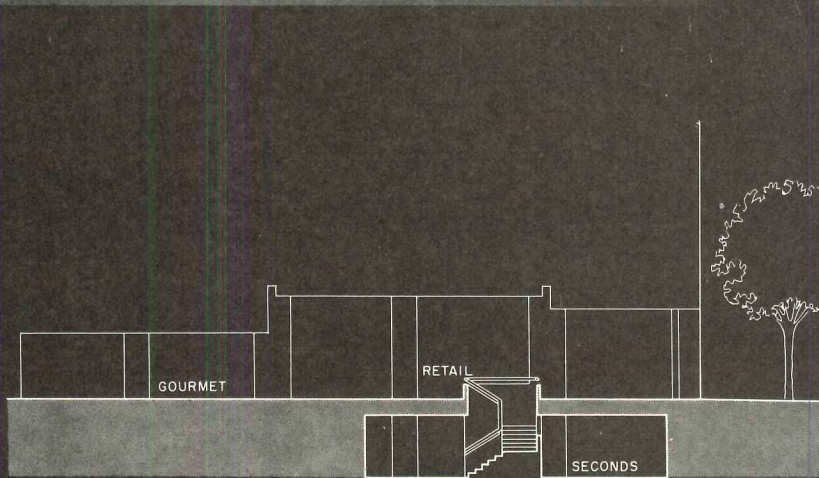
Record Interiors was inaugurated in 1970 in response to the architects' increasing involvement in interior design. Because this involvement has continued not just to grow, but to accelerate, this year RECORD has expanded this presentation of our awards program to 28 pages. In these pages, the reader will find eleven architect-designed interiors that comprise what we believe is the richest, most varied, most inventive group we have published to date.

CRATE & BARREL
 CHICAGO, ILLINOIS
 BY GARUFO ROBERTS
 IN ASSOCIATION WITH
 BONESZ, MAAS, BUCCOLA



At street level on Chicago's Michigan Avenue, a new Crate & Barrel outlet continues the traditions of tasteful display and high quality design that have characterized this merchandising chain from the beginning. Opening to the street through floor-to-ceiling windows glazed in 1/2-inch tempered glass, the whole interior seems to be on display from the sidewalk. Walls, ceiling, columns and casework are sheathed in pine boards; floors are white oak or quarry tile. The simple range of

finishes not only unifies the whole design, but provides a warm background against which the merchandise is a forceful contrast. Displays are lighted from overhead tracks. Architects: *Garufo Roberts Associates and Bonesz, Maas, Buccola*. Engineers: *George Kennedy & Associates* (structural); *Precise Temperature Engineering* (mechanical). Consultants: *Lon Habkirk and Michael Scimandle* (interiors). Contractor: *Sinclair Construction Company*.





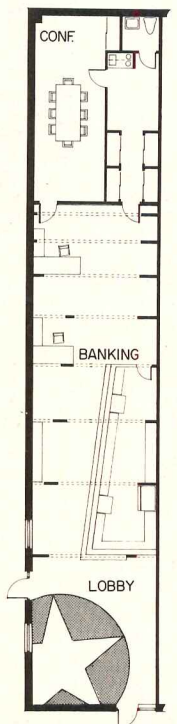
**COUNTY FEDERAL
SAVINGS BANK
GREENS FARMS,
CONNECTICUT
BY MOORE
GROVER HARPER**

The present impact of this bank interior belies the routine, awkward shopping center stall with which the architects began. Moore Grover Harper, P.C. (formerly Charles W. Moore Associates), in designing this branch of the County Federal Savings and Loan Association, accepted the tunnel-like space, but enriched it with an illusion of flexure, and vivid colors.

The banking room is divided across the narrow dimension by parallel partitions (see plan) into which are cut irregular openings. Taken together—visually superimposed—the openings appear in graceful rotation as one looks toward the mirrored rear wall of the room. Single six-foot, warm-white fluorescent tubes with integral ballasts provide general illumination and further the effect of the partitions.

The corner space includes windows fronting on a main thoroughfare. Through the windows, nighttime passers-by glimpse a giant neon star (see cover), the bank's logo, which is repeated in specially cut vinyl floor tile in red and white. This contrasts to the royal blue carpeting surrounding it, and the red ceiling.

Architects: *Moore Grover Harper, P.C.*
Interiors: *Moore Grover Harper, P.C.*
and *Mary Ann Rumney*. Associate architect: *Richard Oliver*. Lighting: *Moore Grover Harper, P.C.* Graphics consultant: *Mary Ann Rumney*. Contractor: *Gene Schmid*.



Robert Perron photos

McDONALD'S RESTAURANT,
SAN FRANCISCO, CALIFORNIA
BY EPR ASSOCIATES

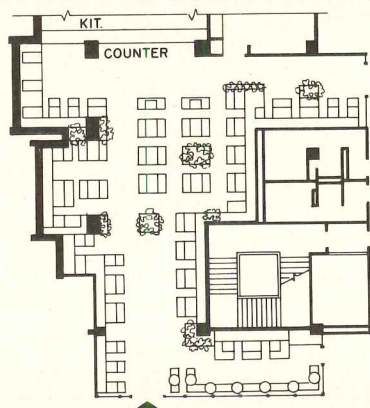


Jeremiah O. Bragstad photos

Seating for 155 is provided at just under \$22 per square foot in this new installation in San Francisco's Embarcadero Center. Not only were construction costs within the fast-food chain's typical limits, but architects EPR Associates worked with their clients' own standards for equipment relationships, seating patterns and traffic flow. What is surprising therefore is how completely the architects made over the typically chaotic and much-criticized McDonald's look by careful

detailing and a tight range of finish materials. The principal materials are quarry tile for floor and bases; treated elm for partitions, banquette seating and hung ceilings; and resin-based red-orange table tops. These materials create a gracious, inviting—even elegant—surrounding for fast food.

Architects: *Environmental Planning & Research*. Engineers: *GFDS* (structural); *Glumac & Webster* (mechanical). Contractor: *Arne Falk Construction*.



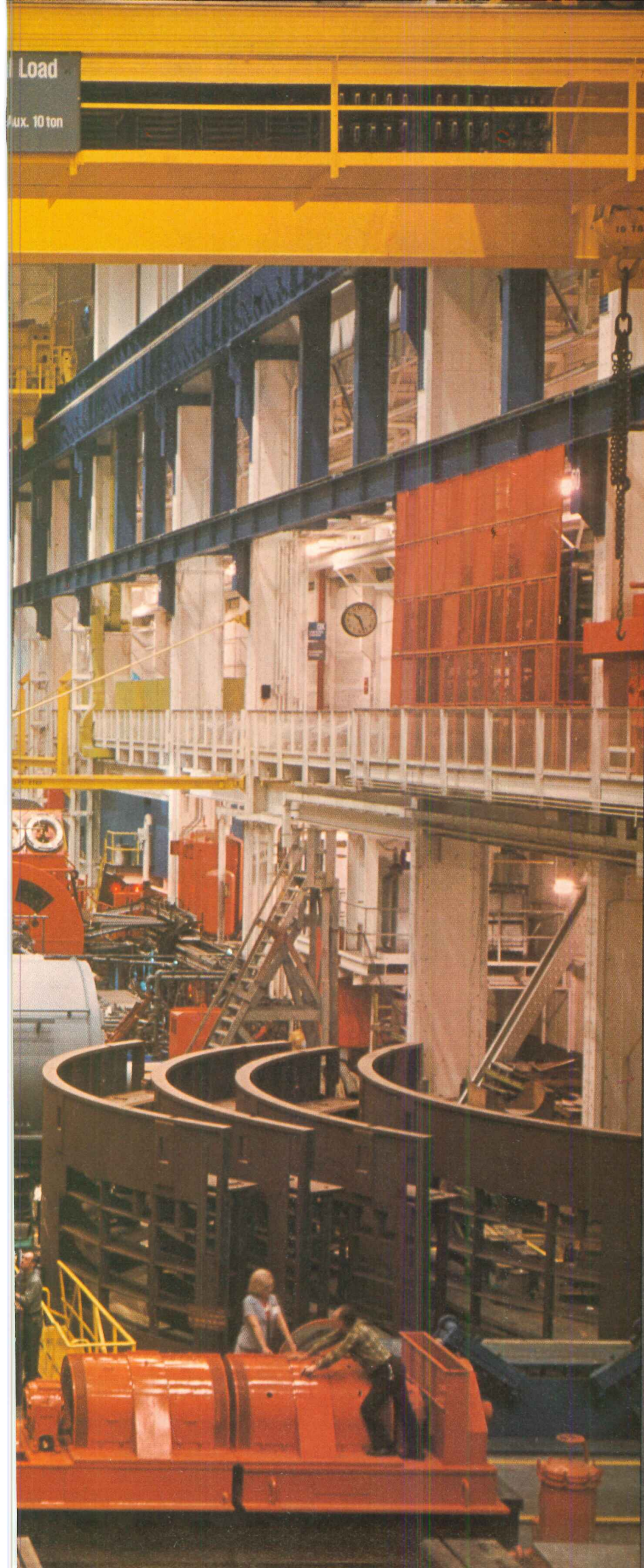


DX6 Maximum Ton
50 Ton
Trolley 1 Main 50 to



M. K. G. A. H. DX3
Maximum Ton
50 Ton
Trolley 1 Main 50 to

APY TON



Semarco photos

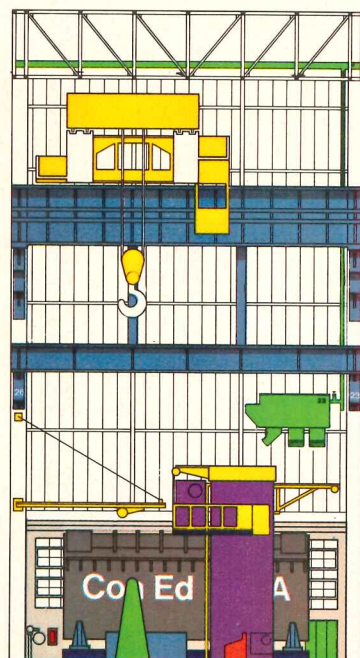
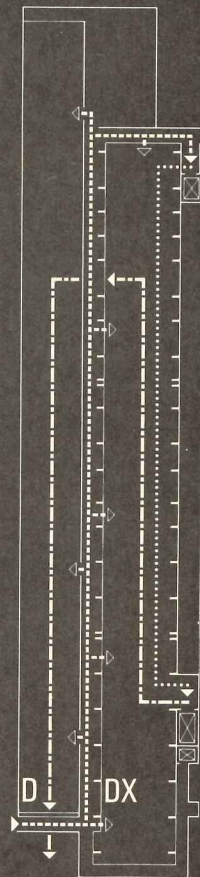
WESTINGHOUSE LARGE GENERATOR ASSEMBLY AISLE EAST PITTSBURGH, PENNSYLVANIA BY HOBART BETTS ASSOCIATES

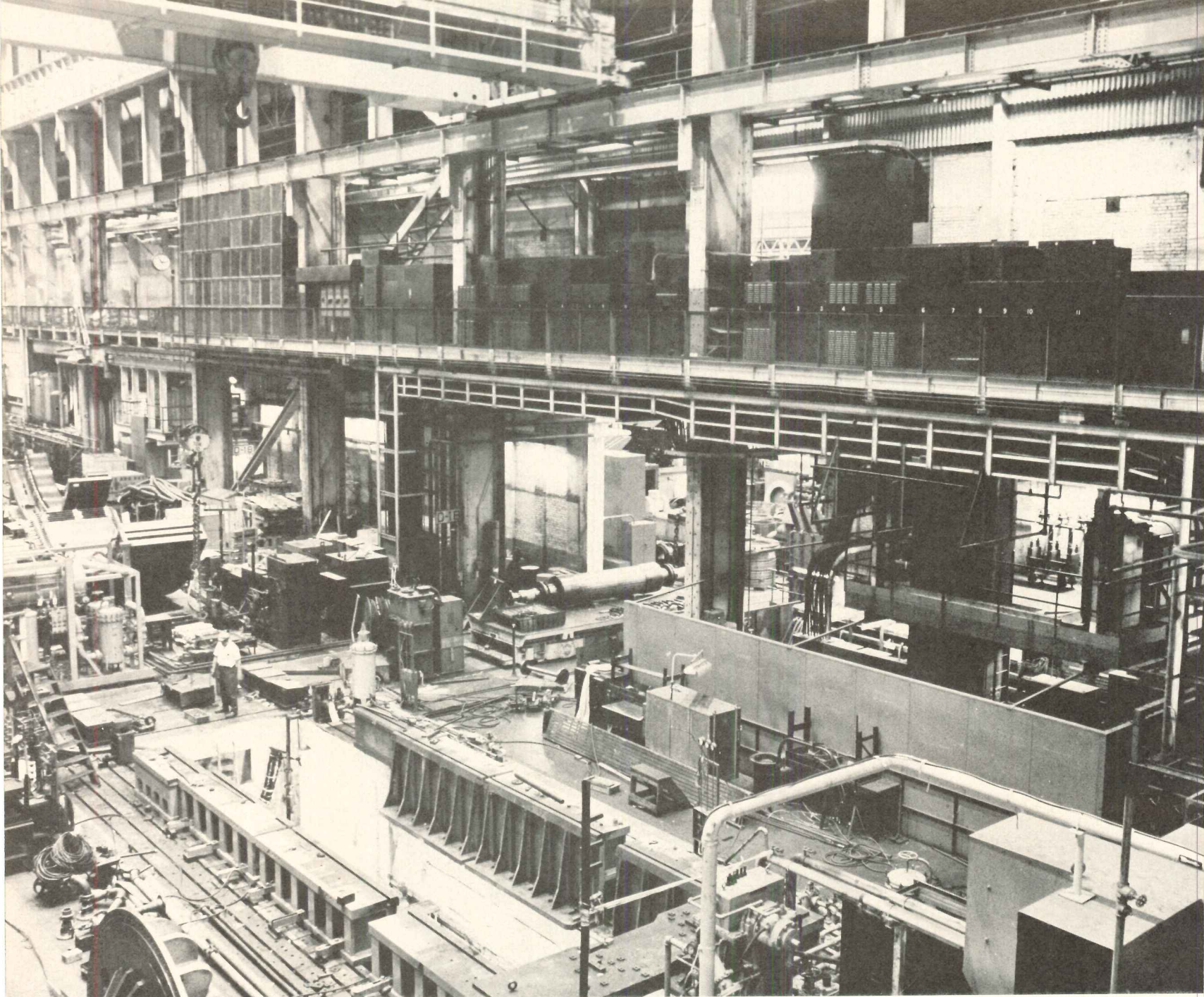
Environmental improvement, visitor and employee circulation and graphic identification were the three principal design objectives in Hobart Betts' renovation of this Westinghouse manufacturing facility in East Pittsburgh. The whole renovation had to be completed within the seven day shutdown period allowed.

Although some equipment was relocated for increased efficiency, the most striking change was the introduction of a palette of bright colors selected to identify individual equipment and locations as well as to brighten the entire space. To reduce operating costs and improve color quality, mercury-vapor lighting was replaced by sodium-vapor. By opening the balcony to visitors for its entire length, a much improved tour route was provided for prospective customers—an important feature of the Westinghouse sales effort.

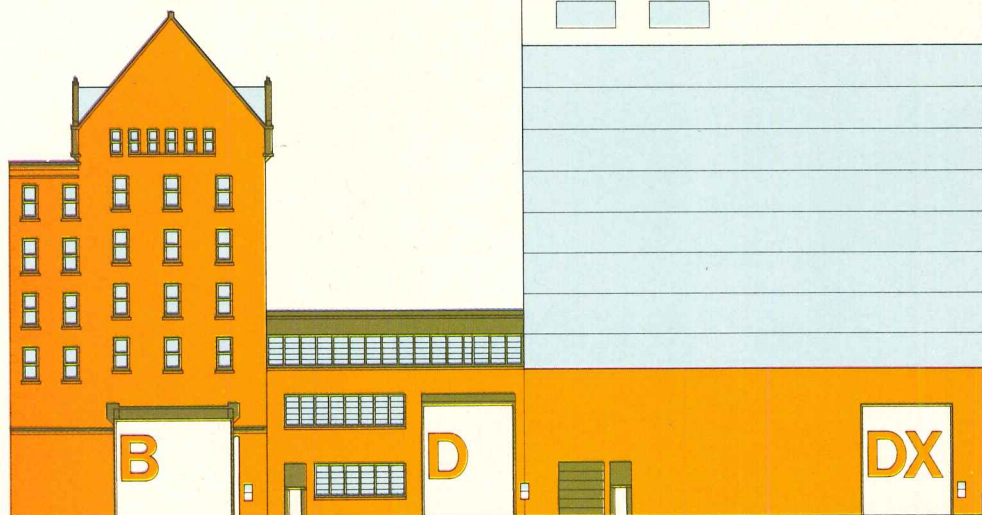
What the architect and his client achieved here will be measured both in terms of increased sales and employee attitudes. Each is attributable to the conversion of a gray and scaleless workspace into an environment that is visually ordered, lively and functionally expressive.

Architects: *Hobart Betts Associates*, design and graphic coordinators: *Westinghouse Corporate Design Center*.





BEFORE



In this renovation, the selection of paint colors was critical for it had not only to fit into a functional color hierarchy within the Aisle but to conform to OSHA standards as well:

1. Spectrum yellow: All cranes, rails, ladders, movable equipment carts and lifting beams.
2. Poppy: All major test equipment including water coolers and electrical cabinets.
3. Calibrated red: Sprinkler systems and standpipe risers.
4. Vivid blue: Small parallels, jacks, supports and hydrostatic test plates.
5. Lambert blue: Large parallels, bases, cradles and strong backs.
6. Gray stone: All platforms.
7. Greenella: Personnel lockers, open storage racks, and chain racks.
8. Tender green: All tool lockers.

A complete signage program, right, is under continued study.



AFTER

F Large Motors
Coils, Light Fabrication and Assembly

B Large Motors
Machining, Winding, Assembly and Test

E Large Motors
Coil Manufacturing

➔ D
DX
E3I
Switchgear Division
➔ B
F

D Large Generators
Machining, Rotor Assembly and Processing

DX Large Generators
Stator Machining, Assembly and Test

DX Large Turbine Generators
Frame Machining Center

D Large Generators
Machining

DX Large Turbine Generators
Stator Winding

D Large Turbine Generators
Rotor Machining

DX Hydro Generators
Stator Winding

DX Large Turbine Generators
Stator Core Building

DX Hydro Generators
Stator Core Building

DX Large Turbine Generators
Development Generator

DX Large Turbine Generators
Assembly and Test

D Large Turbine Generators
Rotor Processing Pit

D Large and Medium Turbine Generators
Rotor Winding

DX Large Turbine Generators
Test

E3I General Office

IO Frame Machining Center

I2 Stator Winding

I6 Stator Core Building

I8 Assembly and Test

Visitors 

E3I Large and Medium Turbine Generators
Factory in the Sky

E3I Large and Medium Turbine Generators
Materials

E3I Large and Medium Turbine Generators
Strand Assembly

E3I Large and Medium Turbine Generators
Coil Forming and Taping

E3I Large and Medium Turbine Generators
Coil Impregnation and Curing

Large Rotating Apparatus Division
Switchgear Division

MERCANTILE BANK,
KANSAS CITY, MISSOURI
BY ABEND SINGLETON ASSOCIATES

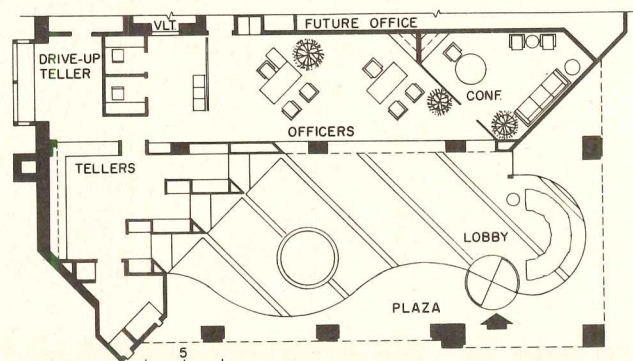


Paul Kivett photos

Abend Singleton Associates made free use of mirrors that reflect the images of street activity and animate this small Midwestern banking interior. These mirrors, combined with a serpentine glazing line installed without mullions on the street facade, provide a pleasant spatial ambiguity—an ambiguity that detaches the banking space visually from the strict rectilinear geometry of the existing building form. An appropriate personal design note is the

use of an old vault door, covered in glass, to create a check writing table. The louvered hung ceiling over the officers' area, the brick pavers, the red oak for trim contrast effectively.

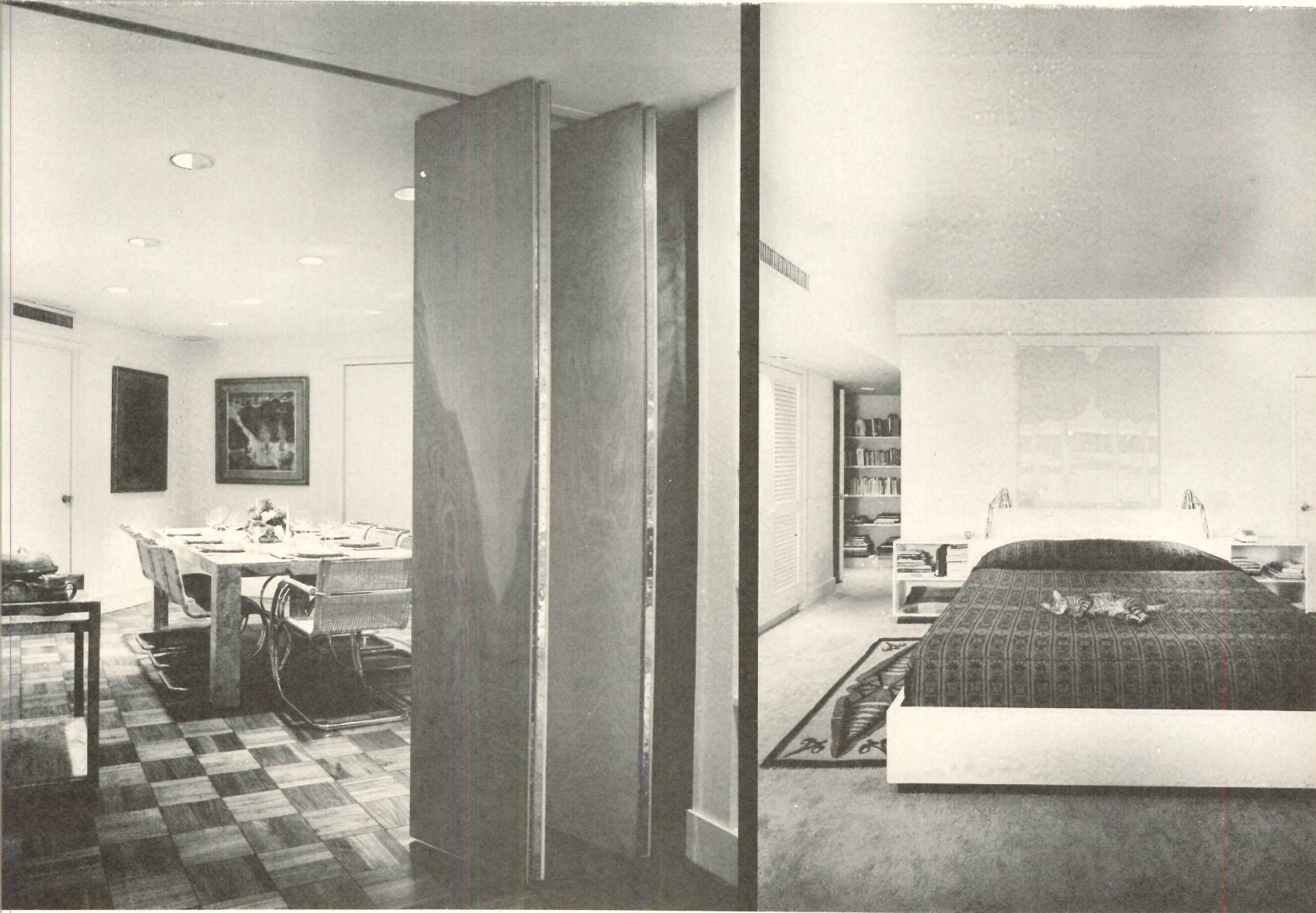
Architects: *Abend Singleton Associates*. Engineers: *Bob D. Campbell & Co.* (structural); *Associated Engineering Consultants, Inc.* (mechanical). Contractor: *D. F. Cahill Construction Co.*







PRIVATE APARTMENT,
NEW YORK, NEW YORK
BY RICHARD DATTNER & ASSOCIATES

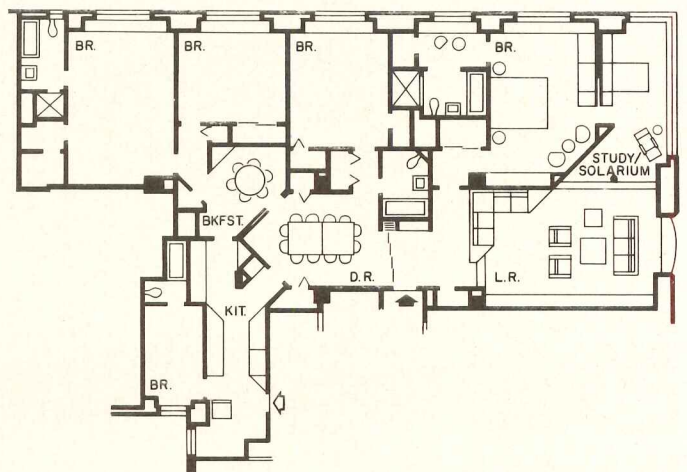


Norman McGrath photos

What was originally a three-bedroom Central Park West apartment has been renovated to create a fourth bedroom, to expand the foyer into a dining room and to create a separate breakfast room off the kitchen. In addition, the living room and the solarium were functionally connected by removing a corner of the master bedroom.

The result, as the photos amply indicate, is an apartment that is economical in its use of space, fresh in its images, and designed to take maximum advantage of spectacular views toward Central Park.

Architect: *Richard Dattner*. Engineer: *Seymour Berkowitz* (mechanical). Contractor: *Winmar Construction*.



VALLEY CENTER,
PHOENIX, ARIZONA
BY WELTON BECKET AND ASSOCIATES



Marvin Rand photos

Valley Center, a high-rise office building consisting of three connected glass towers and an elevator/service core, all different heights, offers a variety of spaces for headquarter bank operations and the public, including a number of colorful restaurants.

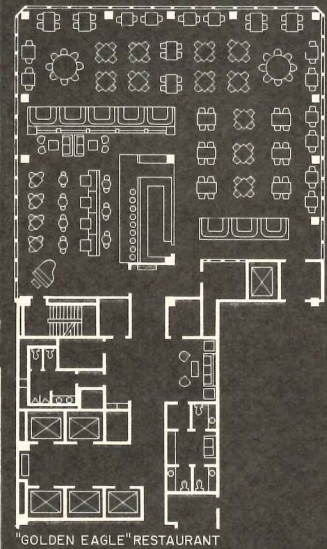
The most dynamic public space is a two-story atrium, created by combining the sunken concourse level with the plaza level, and lighted by large clerestory windows. Escalators

help move people to and from the plaza level, which is composed of elevated "bridges" leading to building entrances and main elevator lobby. Adjacent to the atrium is a spacious branch bank (with sunken waiting and information area), shops and restaurants. The building's configuration allows for a variety of spaces for any size tenant; and an open floor plan, with glass-enclosed offices on the periphery, permits spectacular views

from this the tallest office building in the Phoenix area.

Architects and engineers: *Welton Becket and Associates—Robert Mathews, project director; Louis Naidorf, project designer.* Consultants: *Guirey, Srnka, Arnold and Sprinkle, Architects; W. A. DiGiacomo Associates, Inc., Engineers.* Landscape architects: *Cornell, Bridges, Troller and Hazlett.* Contractor: *Henry C. Beck Company.*



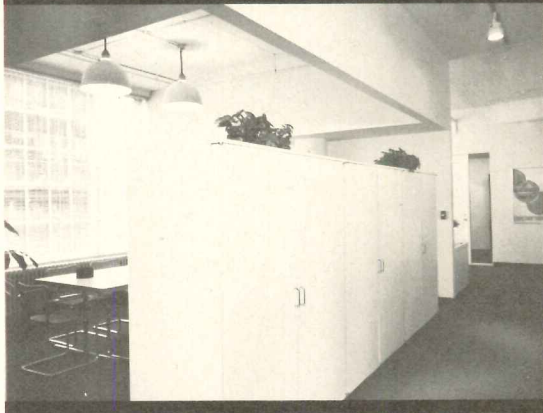
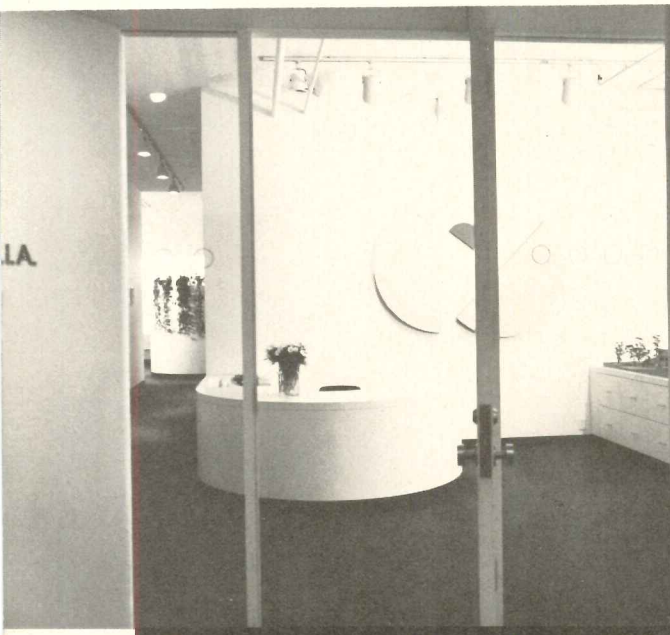


With the use of vibrant colors and interesting spaces, the architects designed a variety of atmospheres in restaurants and bars. The employees' cafeteria, the "Coin Room" (upper left), on the concourse level, was planned for flexibility and is adjacent to employee library/lounge. Also on concourse level, the "Prime Interest" has two distinct sections: an open area with booths (center left), piano bar and glassed-in kitchen; and a smaller, enclosed bar (lower left). Contemporary graphics are used on walls and glass booth partitions throughout. The top floor of one tower accommodates two restaurants and a bar. Above the "Eagle's Nest" bar, extending over a portion of the "Golden Eagle" restaurant (right), is the bank's executive dining room. An open walkway on its perimeter overlooks the main section of restaurant which experiences the full 23-foot ceiling height.



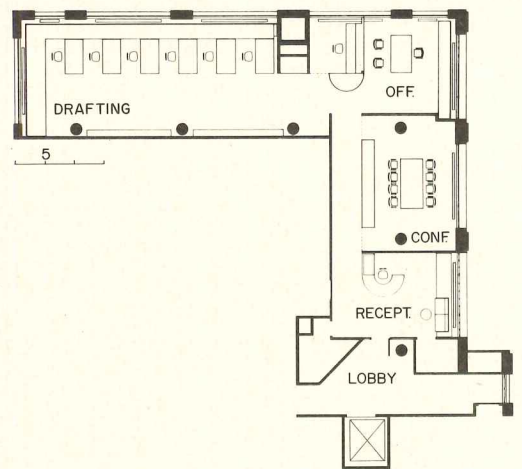


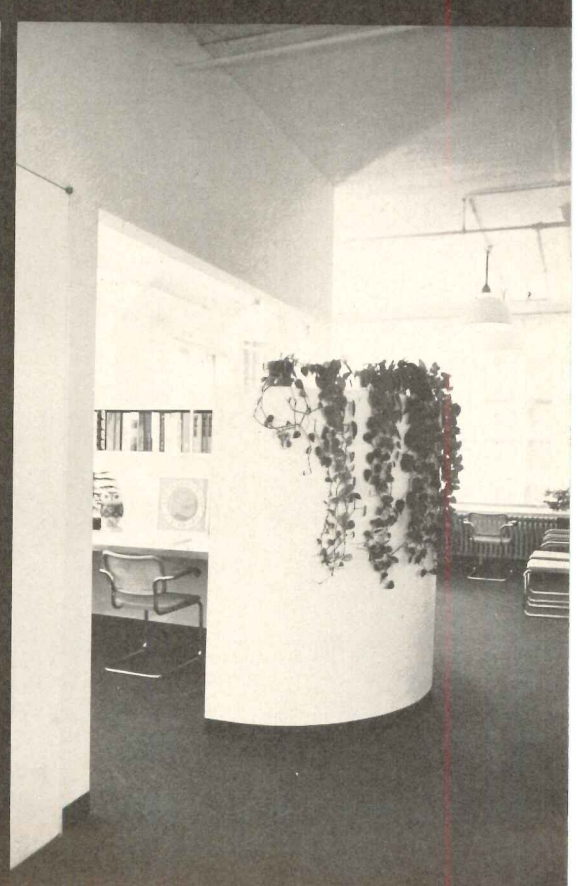
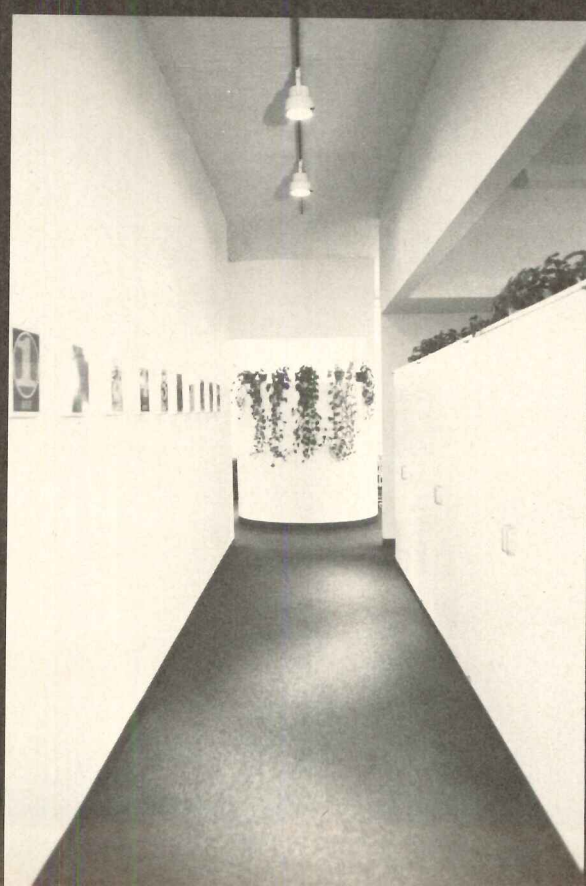
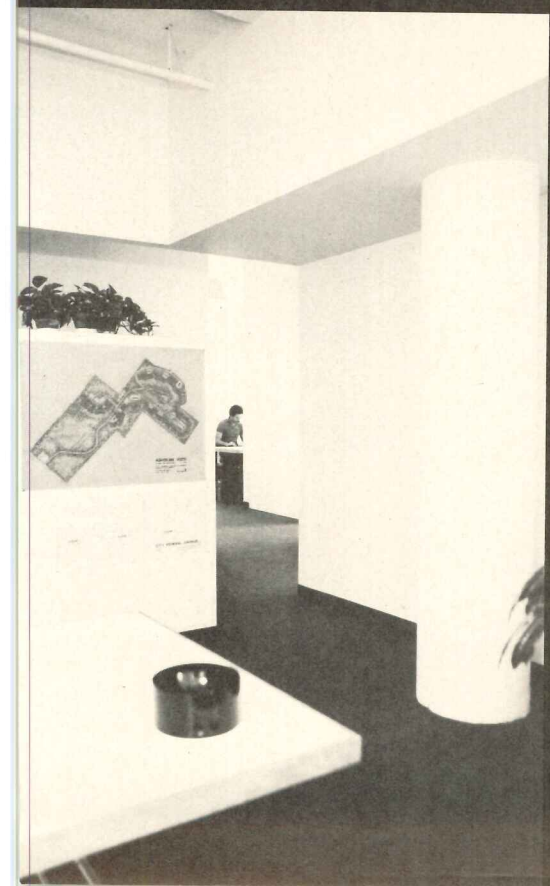
OFFICE OF JACK L. GORDON
 NEW YORK, NEW YORK
 BY JACK AND ROSANNE GORDON



Designs that look simple are, of course, very difficult to accomplish. In this office for their own firm, architects Jack and Rosanne Gordon have accomplished not just simplicity but an economical kind of elegance using an easy to comprehend plan, modest materials, hardware, and furniture—and very careful detailing. The L-shaped loft space, with its tall industrial windows, was stripped bare to the walls and concrete ceiling. Spaces are now defined—except for two wall planes defining but not enclosing the conference room—by freestanding storage units. The pervasive form of the existing mushroom columns was echoed in the lamps throughout the space, in the divider at the intersection of the office/drafting spaces, in the reception desk, and in the bright construction (by the architect) hanging over the desk. The white walls and dividers and charcoal carpet establish a stunning background for spare decoration provided by art, planting, and the models and drawings of work in progress.

Architects: Jack L. Gordon Architect, P.C., A.I.A. — project team: Jack Gordon and Rosanne Gordon. Custom woodworking: Unicorn Woodworking, Ltd.





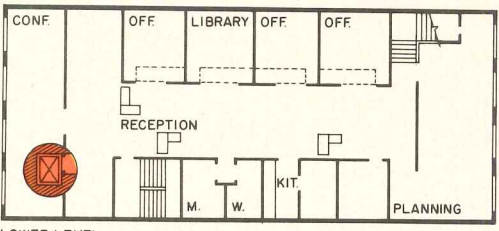
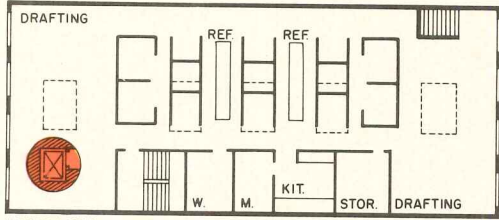
ARCHITECTS' OFFICES
SAN FRANCISCO, CALIFORNIA
BY EPR ASSOCIATES

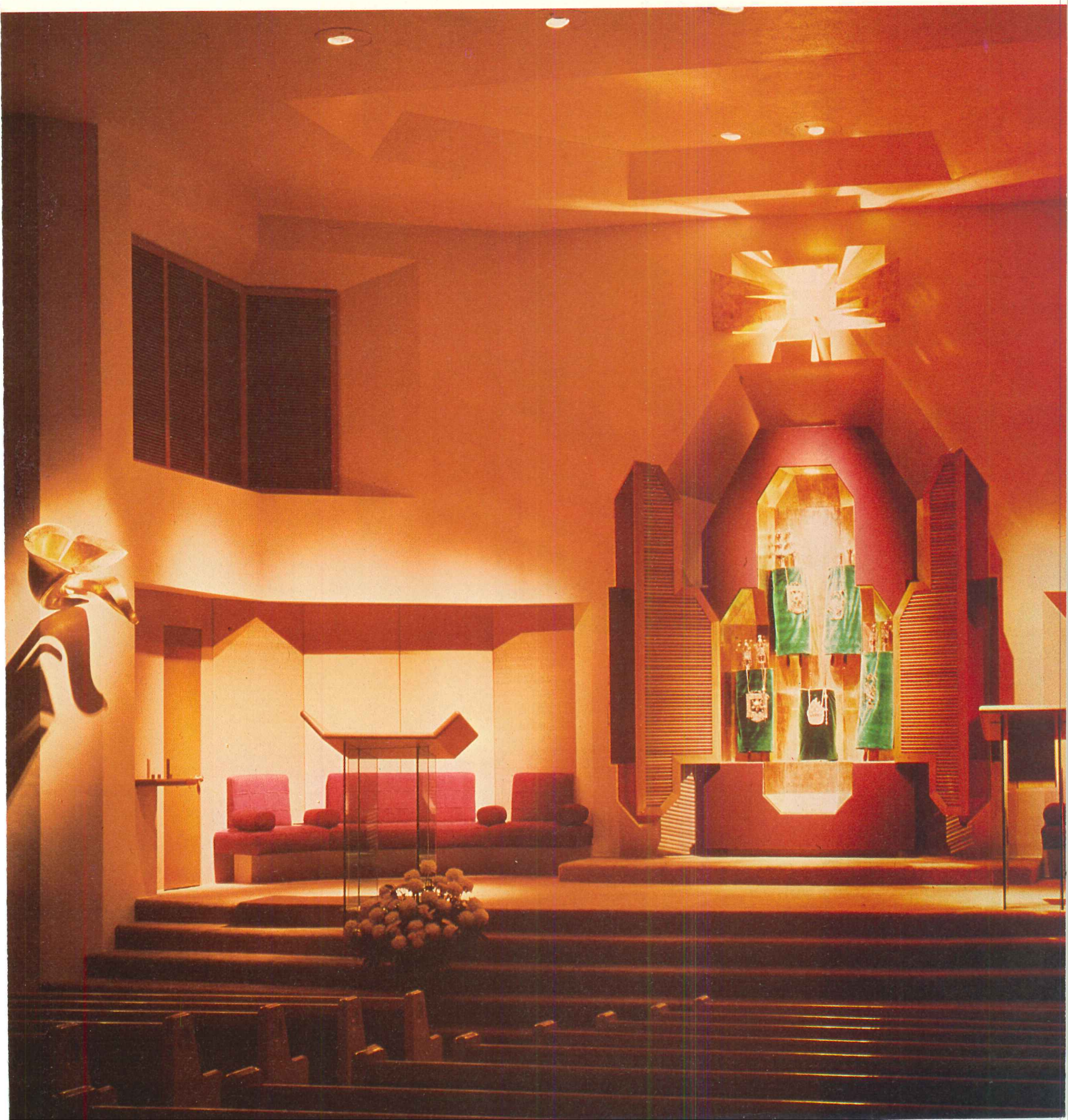
The EPR offices occupy the top two floors of a three-story building. In order to capitalize on light from five large existing skylights, three light-wells were cut, bringing natural light directly into second floor offices, library and corridor. Exposed fluorescent lights recessed between open joists augment this light and form a rhythmical light pattern at ceiling height. On the third floor, individual work stations are separated by large tables, reference library and three small conference tables, each located under a skylight and next to a lightwell. All production areas were open planned to allow views to the

park across the street. A glass enclosed conference room permits these views on the second floor. Brick walls and heavy timber beams are offset by brightly-colored kitchens, restroom entrances and an orange cylindrical elevator shaft.

Architects: *Environmental Planning & Research, Inc.*—*Darryl T. Roberson, Charles R. Bowman, principals-in-charge; Harold Kallaway, Joseph Chance, Allison Lasley, project team.* Engineers: *GFDS Engineers* (structural), *Vann Engineering* (mechanical). Lighting consultant: *Glumac & Webster.* Contractor: *Jacks & Irvine, Inc.*







SINAI TEMPLE,
 SPRINGFIELD, MASSACHUSETTS
 BY WARREN PLATNER

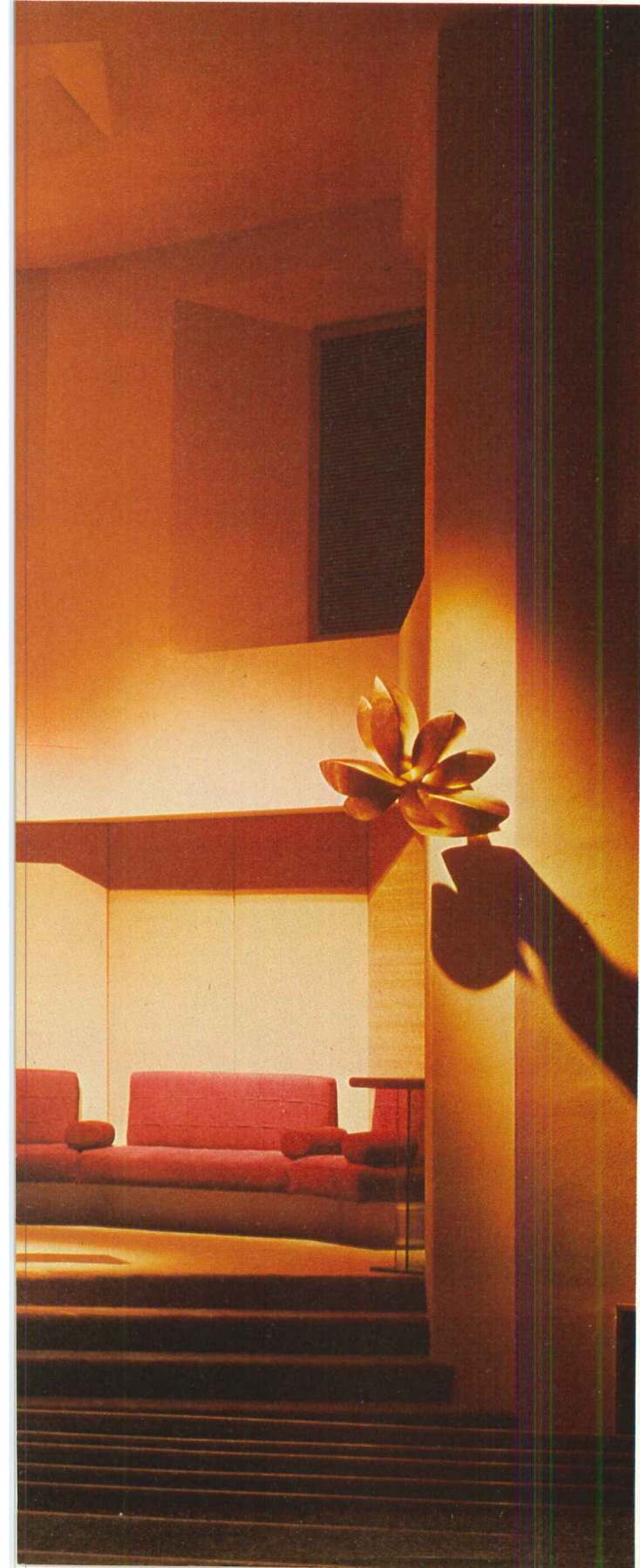
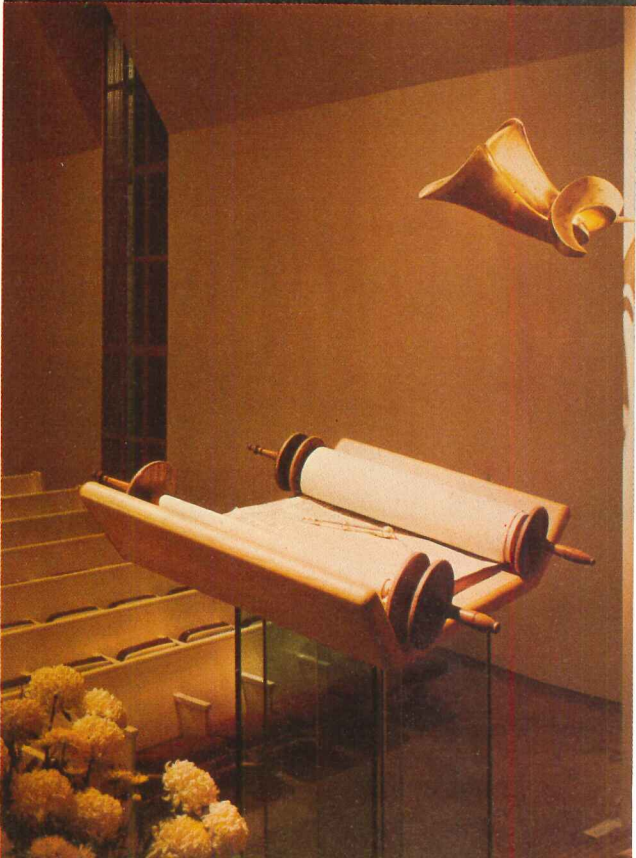
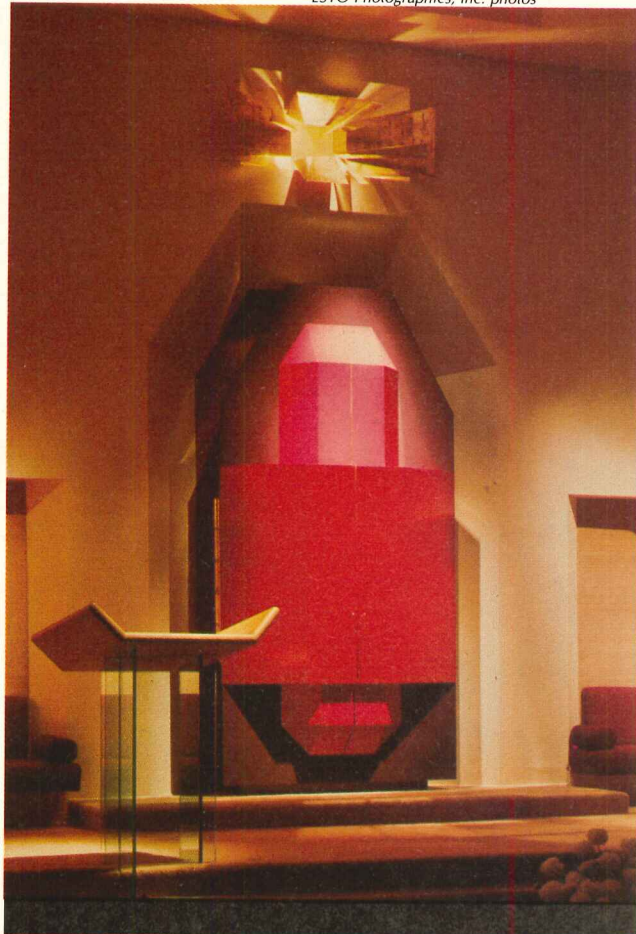
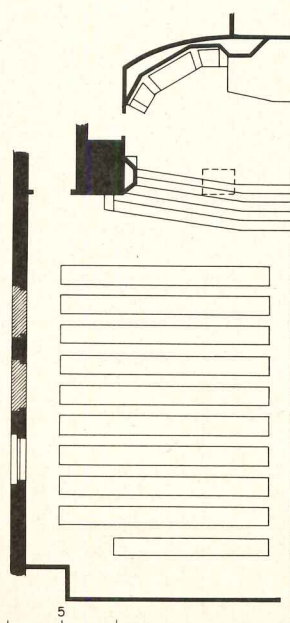
©ESTO Photographics, Inc. photos

Dramatic, carefully detailed elegance—long a hallmark of Warren Platner's work—is as evident in this relatively low cost (\$100,000 including art work and fees) remodeling as in his more lavish interiors.

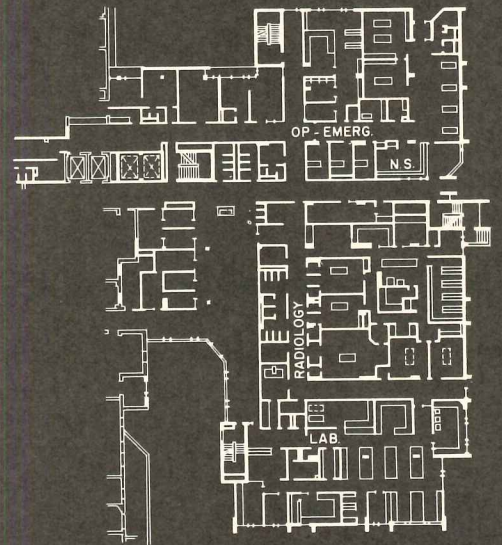
Commissioned to "create a new Sanctuary out of the old," Platner concentrated his design efforts in the area of the raised bema and the Ark. The remainder of the space was simplified a bit: all windows but one were removed, and the opening for that enlarged; painted aluminum grates were fitted into existing light fixtures and a dimmer installed; existing pews were refinished and reupholstered.

To articulate and enrich the space around the Ark and the elements essential to the service, Platner created a plaster "shell" with deeply revealed niches to contain the specially designed Ark, choir and organ lofts, seats, and religious symbols. Color and special lighting is concentrated in this area—strongest at the central Ark. The furniture at the front of the bema is clear glass so it won't obscure seating.

Architects: *Warren Platner Associates; Nicholas Pyle and Ronald Grantham, associates on this project.* Contractor: *Desrosiers & Sons, Inc.*



ANNA JAKUES HOSPITAL,
NEWBURYPORT, MASSACHUSETTS
BY PAYETTE ASSOCIATES

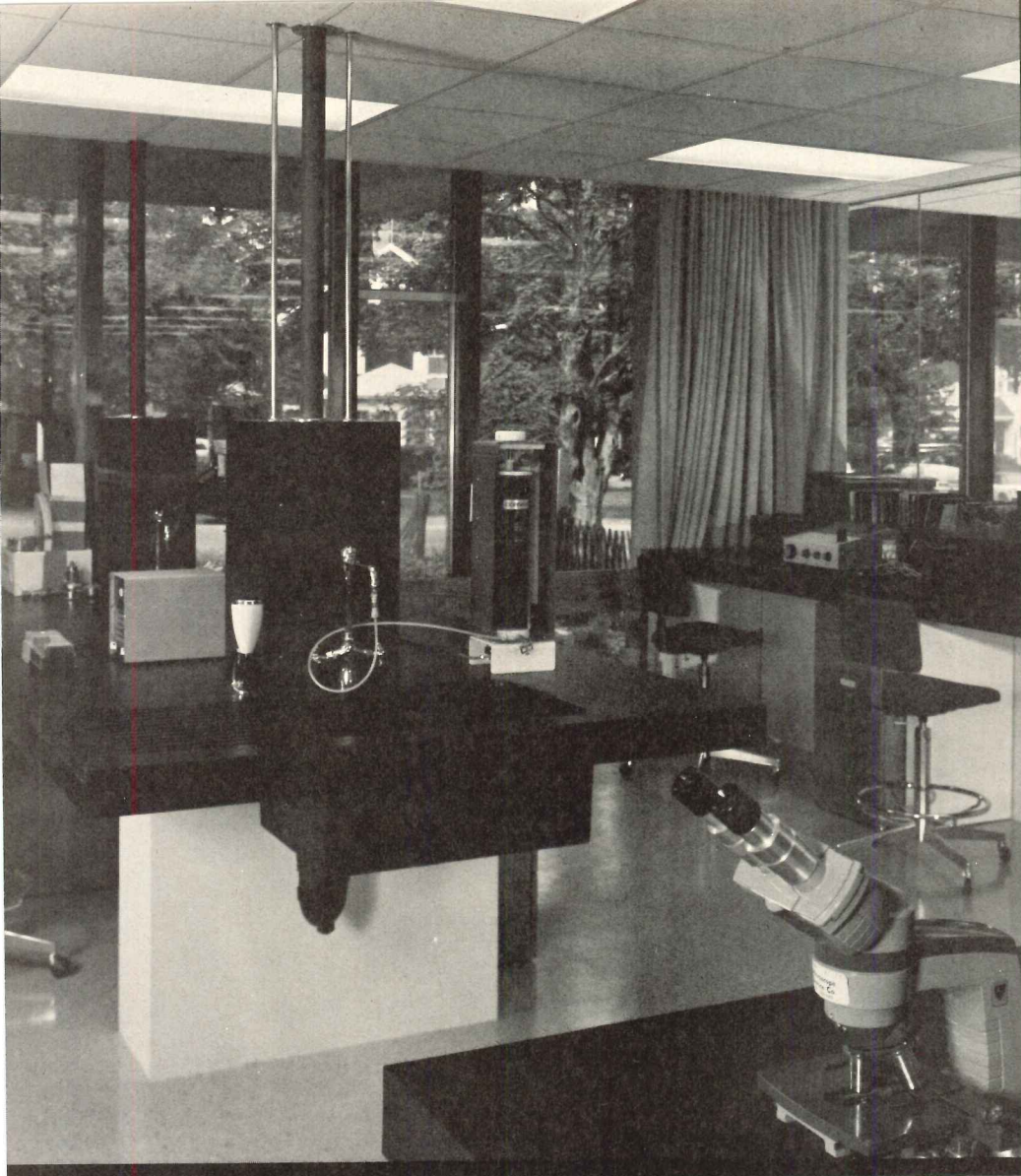


This traditional old Yankee community, planning carefully for its future health-care needs, commissioned Payette Associates to design, as Phase I of its master plan, an addition to the existing hospital plant. Some residents voiced concern when the design of the new facility departed radically from the brick-and-small-window vocabulary of the existing hospital. But these fears were put to rest when the finished product emerged and when both doctors and their patients were attracted to the new wing. The warm earth colors, the floor-to-ceiling glazing and the generous doses of daylight admitted through clerestories all contribute to a cheerful, non-institutional atmosphere. Completed for just over \$4 million, the new wing is designed and detailed without losing sight of human needs in the maze of critical functional requirements.

Architects: *Payette Associates Inc.*—
Gary Lahey, project architect; *Gary Brigadoi*, interior designer. Engineers: *Simpson, Gumpertz & Heger* (structural); *Dellea Engineering, Inc.* (mechanical/electrical). Contractor: *Turner Construction Co.*

Nick Wheeler photos



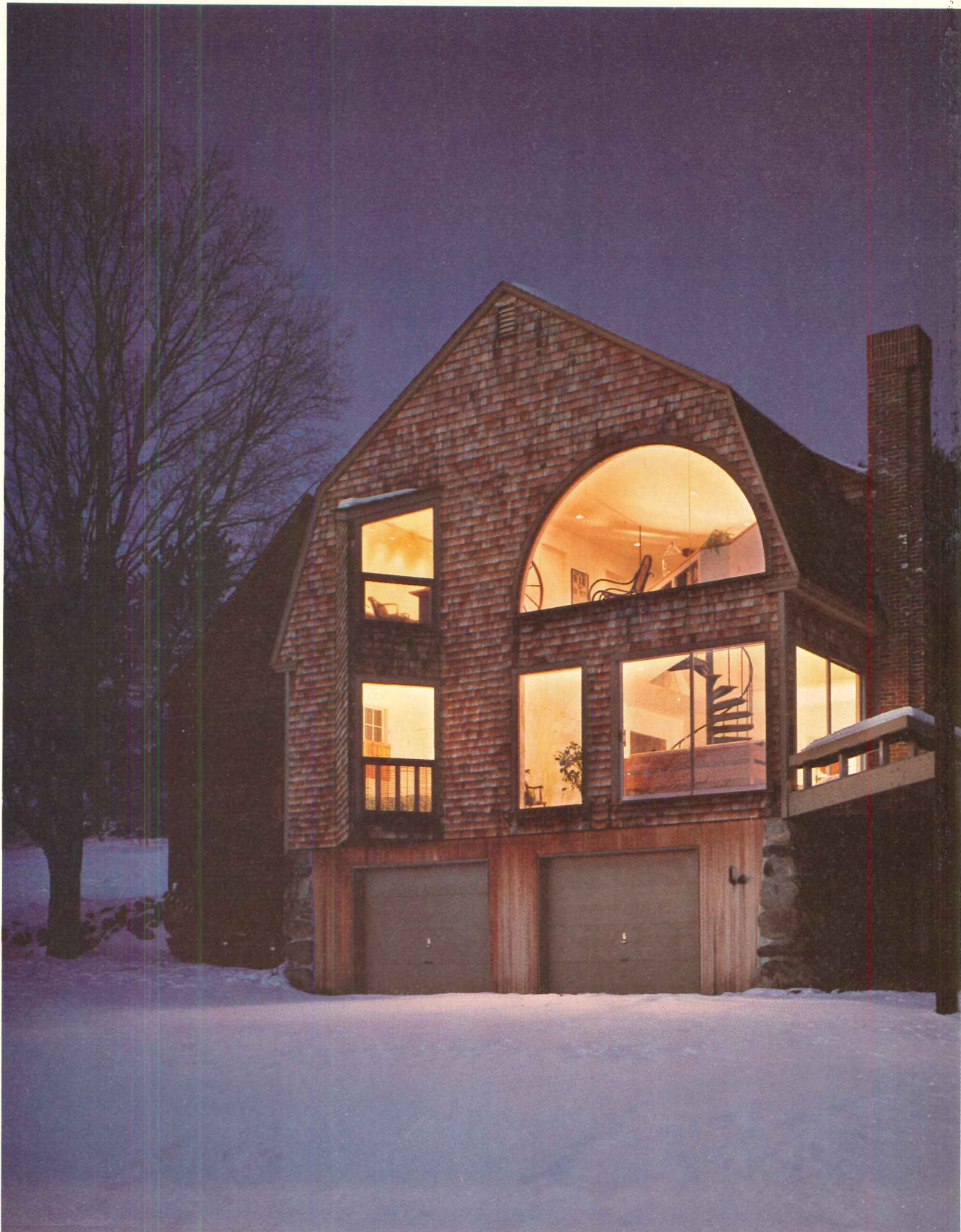


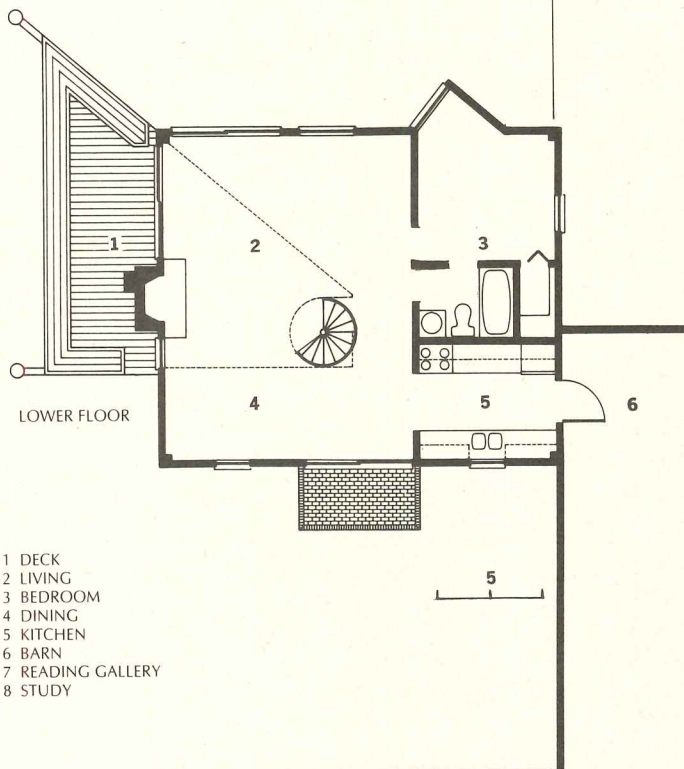
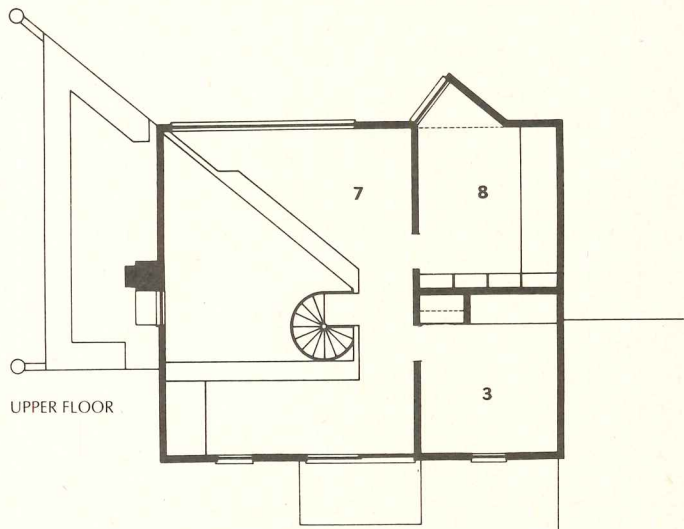
Patient rooms and support spaces (photos left and below) indicate that the concern for human users extends in undiminished form beyond the lobby. The same earth tones continue and the level of finish is not debased. The architect's conviction that hospital graphics should be minimal and absolutely clear shows here and on the preceding pages.



NEW LIFE FOR AN OLD CARRIAGE HOUSE

A small turn-of-the-century carriage house has been transformed by architects Crissman & Solomon into a study and laboratory for its owner—and can serve as a self-sufficient guest house. Within the small building the architects have created an environment of great distinction and warmth.





- 1 DECK
- 2 LIVING
- 3 BEDROOM
- 4 DINING
- 5 KITCHEN
- 6 BARN
- 7 READING GALLERY
- 8 STUDY



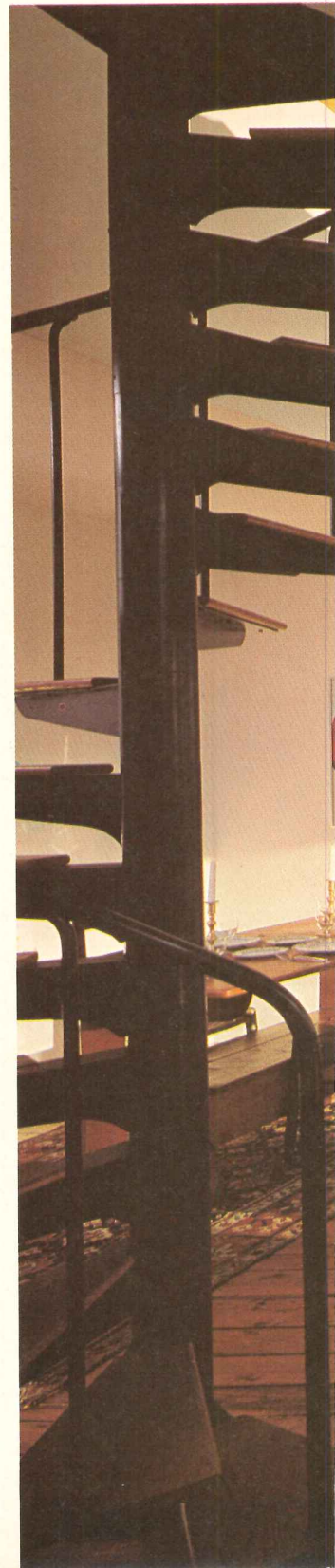
This renovated 60-year-old carriage house has been opened up to the west to afford its owners one of the most spectacular views in the greater Boston area. A very small building, only 25 by 30 feet, its lowest level is used as a garage and mechanical space. The main floor, which is at the same level as the barn floor with which it connects, has been transformed into a comfortable guest house with a living-dining area, a bedroom and a kitchen.

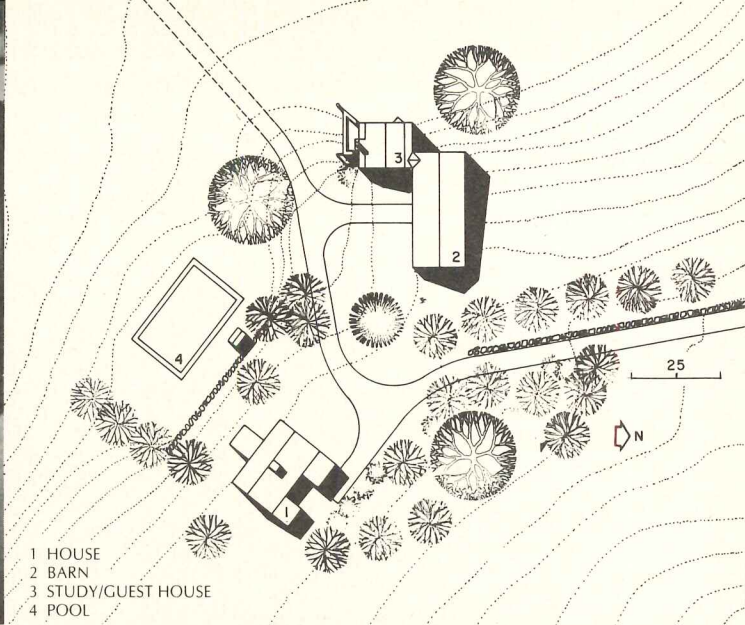
The second floor has become a mezzanine through the subtraction of a wedge-shaped portion. This judicious paring away adds to the volumetric complexity of the living-dining area, affording views upward to the roof and from the mezzanine downward to the main floor.

This solution was made practical by the existence of a solid wood beam, approximately 8 by 10 inches, which bisects the structure in the east-west direction and supports the second floor. It serves as the anchor for one end of the steel rod that became the necessary means of tying the south wall to the rest of the structure after the wedge-shaped portion of the floor had been removed. A vertical tie rod from which this beam is hung is part of the old structure and is connected to the trusses of the gambrel roof. Both the horizontal and vertical rods can be seen in the photographs opposite. The location of this beam determined the placement of the circular floor landing.

The old wood flooring which was removed was used for patching in the renovated areas. All the finished wood floors are made up of the old planks.

As the plans indicate, the south and west elevations were opened up as much as possible with the two-story living space and deck facing the view, and the smaller spaces arranged along the barn side of the building. The major view is captured from the study and the first floor bedroom by means of the angled windows which project from the west facade. The entire building was reclad in cedar shingles, except for the roof, which had been asphalt-shingled before the restoration. The cost without furniture was \$20 per square foot.







CRISSMAN HOUSE RENOVATION

The railing of the newly formed mezzanine is a continuous bookcase (see plans overleaf), which transforms the adjacent space into a reading gallery. The top of this bookcase serves as a useful ledge for plants and books as the photo (below) indicates, and also provides reference space. Opening off the reading gallery is the owner's study (left), with custom-built bookcases, files and a work ledge neatly fitted into the gambrel roof. From this study window the owner enjoys a magnificent view of the entire Boston skyline.

CARRIAGE HOUSE RENOVATION, Andover, Massachusetts. Owner: *Mr. and Mrs. John W. Kimball*. Architects: *Crissman & Solomon*. Structural engineer: *Eugene Hamilton*. Contractor: *Fitzgerald Henderson Porter Inc.*

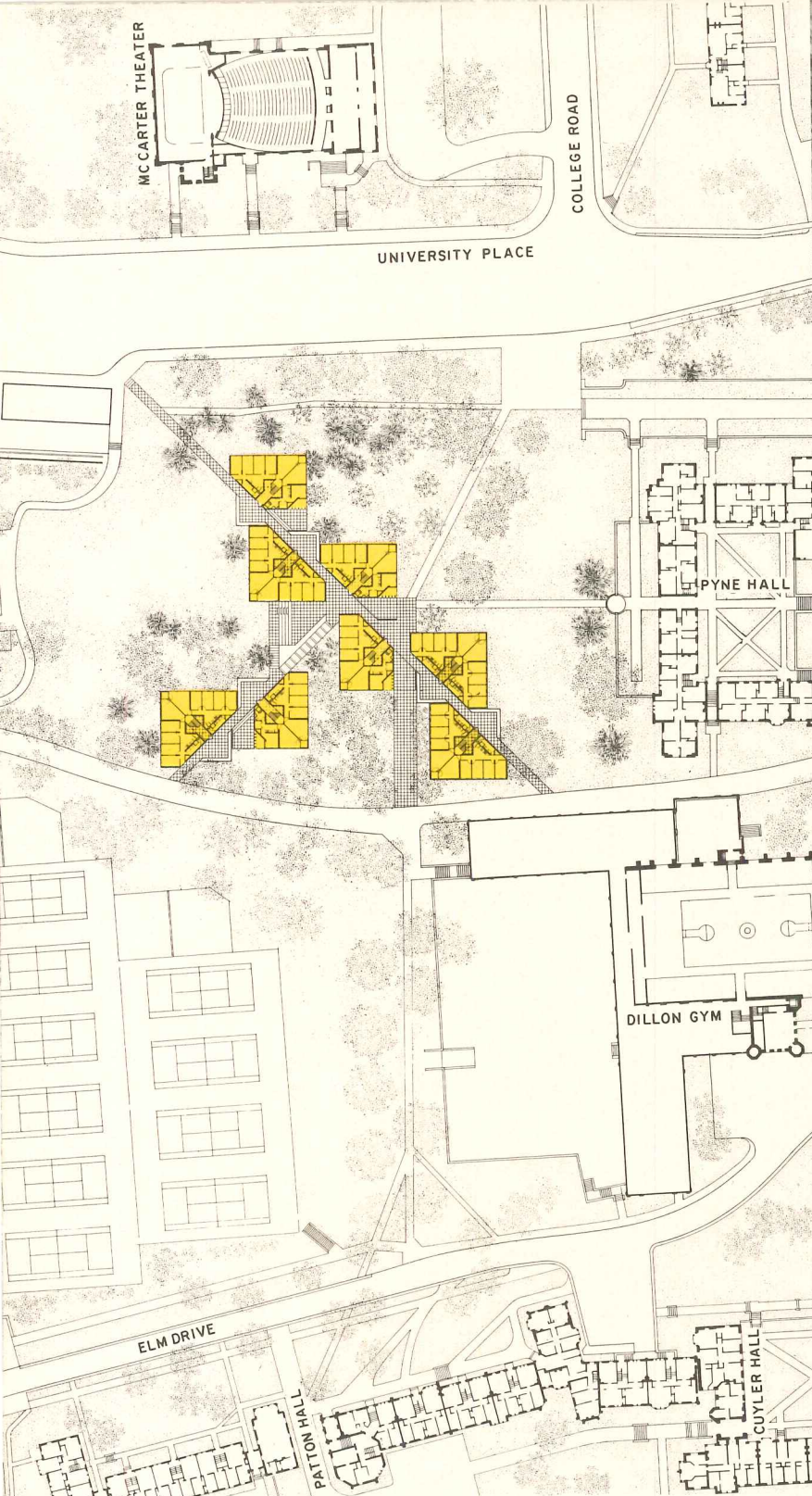




PEI AT PRINCETON

Spelman Halls, which was built in honor of Laura Spelman Rockefeller, houses some 220 men and women students. It consists of eight prism-like structures of precast concrete, each triangular in plan, and these are set along either side of a system of walks. Spelman is now in its fifth semester of use, or (considering students' housekeeping habits) of ordeal, which makes the Halls about as old as Princeton's tradition-breaking move to take in women. But the University itself has seen some 440 semesters go by. Stone buildings edge quadrangles. The spaces through which one saunters are sequentially compressed and protective, released and impelling. Old walks thread through these spaces. Connection is the theme conveyed, and continuity—rather like Coleridge's "eternal sense of becoming."

Spelman takes Princeton up on this theme and gives back an architecture, by the firm of I. M. Pei & Partners, that breaks tradition in the process of affirming tradition. For this southern New Jersey cyno-



sure of cerebral carryings-on is a charming conceit. One must understand this to understand its architecture. People are private but, in their way, effectively let one *know* they are. Tradition matters immensely, but behind the sedate facades it is tacitly understood that tradition may be blown to bits as long as the sound is muffled or the satisfaction concealed. Professorial tenure, like some gnarled and knowing elm, is rigidly protected by everyone including that unsuspected bookish young buck in ritualistic tweeds, who now and again sticks it to the system according to immutable laws that are, even in matters of heresy, strictly stuck to. Buildings here are expected to behave similarly—and should they stand out, as some of recent smooth-finished vintage do, they are looked upon as piteously incompetent, as deliberately unkempt wretches making fun of polite society. Spelman Halls, with 60,000 square feet of good manners, does not stand out this way. It stands in. And set amongst clumps of trees including, each May, a

blast of magnolia blossoms, it has an unprepossessing poise.

Things may indeed be jumping in the Groves of Academe, but the intrigue of subtle or even sedate expression is that one never really quite knows. One only senses that, as at Spelman, the whole thing has been brought off with great class, which, being truly great, makes even its scruffy aspects important—rather like the time when F. Scott Fitzgerald showed up at a formal affair wearing a crisp blazer and T-shirt because he had forgotten to launder the others.

The people living here have taken to it and, with most of the furnishings provided by the University with no design control by the architects, the spatial geometry of the 58 housing units has been overwhelmed by the chummy kind of chaos you get when people room together—the kind that architects hate to have photographed. But these unlauded aspects, the ways in which buildings show the ordeal of use, are basic to understanding the full value of this one—a



Nathaniel Lieberman

blazer and T-shirt structure fit for people who frankly don't have much time to think about spatial relationships or decorating to please someone's idea of photographic coverage. So while contextual considerations, formal properties, and structural method are well articulated here, Spelman is a success because of the things that could not be articulated so precisely—the practical human things that people do in the course of making a building their own without a thought to whether or not they are living in someone's "masterpiece."

So immediately, speaking of the interior layout of the eight Halls, one understands that it is impossible to speak about it without speaking of the exterior as well. What has been called a pedestrian street—pedestrian jargon—swings through the cluster of buildings. But more than swinging through them, it is swung up into them and takes the form of the full-height skylit entranceway and stairwell. This street, linking up with many other older beaten paths leading from and to

elsewhere on the campus, provides a feeling that Spelman is, so much more than the dumb and numb boxes students usually have to put up with, a kind of lively locus, a telling point of orientation which, in the bargain, just happens to shelter people. While the entrance and stairs, repeated in each of the Halls, are the definitive thematic as well as dominant circulation elements, they are all the more so because in effect they take that shoulder-squeezing street outside, thread it through the doors, run it vertically behind huge sheets of glass that encase the stair and, hovering above the top floor corridor, thread it horizontally once again.

Looking out from the stairs or its landings, the place one happens to be seems of a piece with the entire spatial procession. People just passing through from, say, the quadrangles to the north, to, say, Princeton Inn area at the foot of University Place off which Spelman is located, cannot help but have a sense of participation.



George Cserna

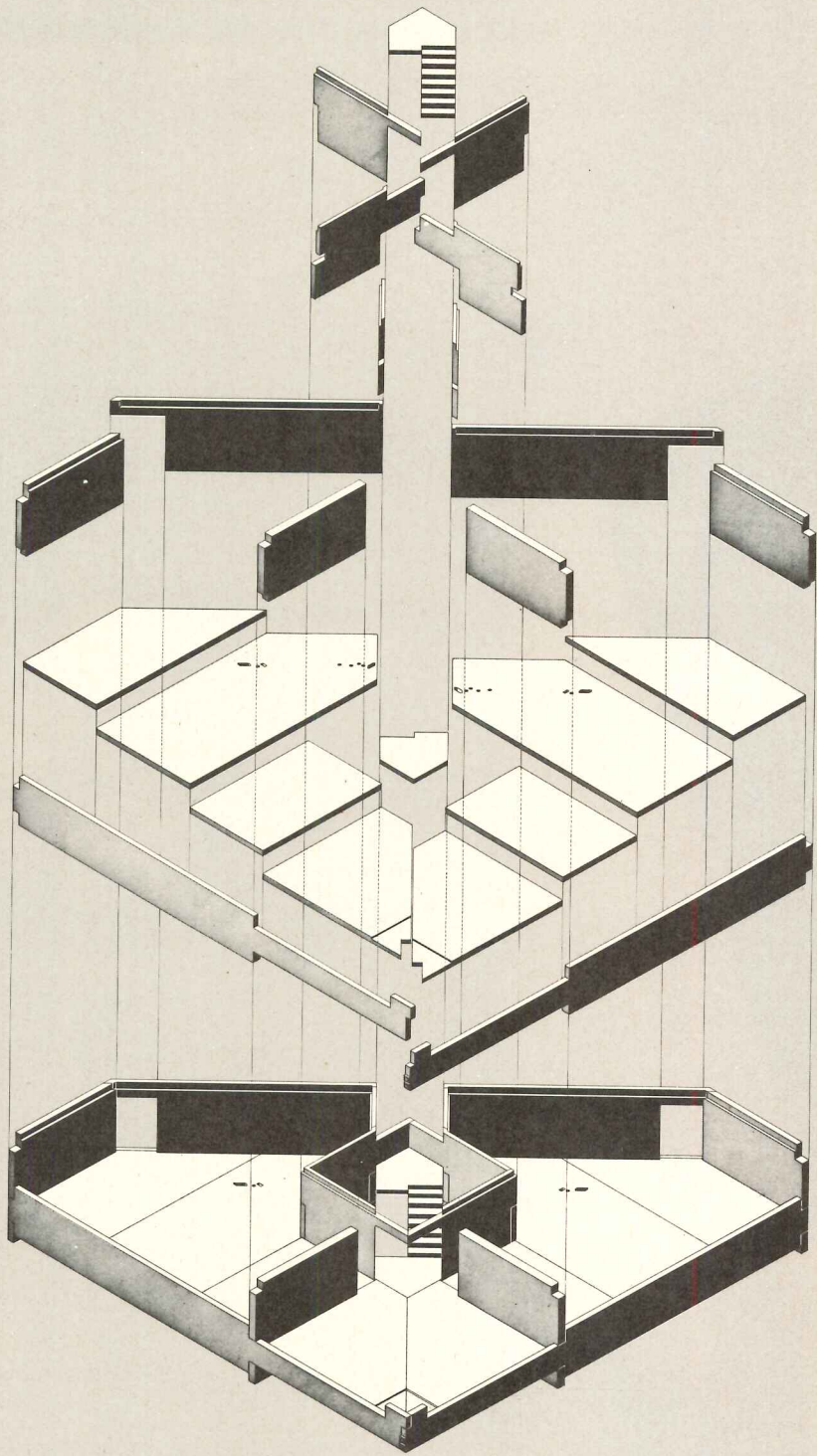
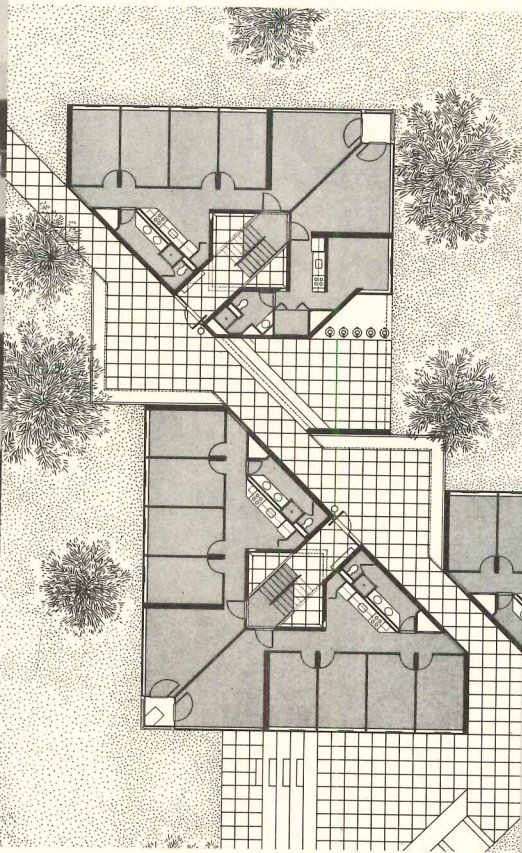
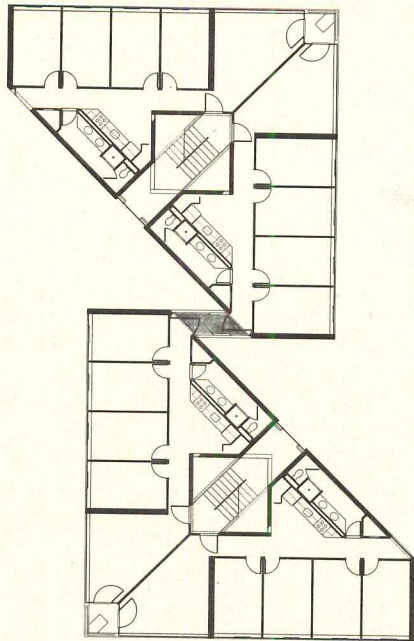
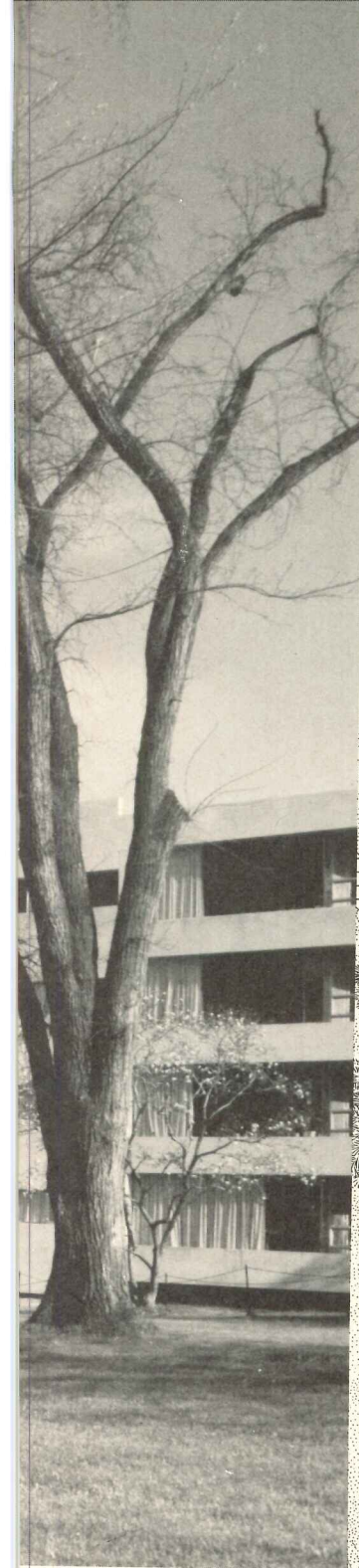
There is a true place-style at Spelman, up and beyond the spatial configuration which enables it, and this stems from the fact that its street-style is oriented purposefully with other points of activity and destination a few minutes walk away with the result that people almost *must* trek around or through it.

The apartments inside are complete living units seeing amply to both the intensely private and routinely shared needs of students. Each apartment has a living room, an outside balcony with big tubular railings of metal, neat views every which way, a full kitchen with, invariably, dirty dishes stacked to the ceiling, a space for dining, a bathroom, and for sleeping or studying four private spaces where students can slam the door. Thus each apartment is conceived as a little community in itself though, in practice, the apartment doors are frequently left open with the result that the communities sort of overlap and slosh out down the corridors in the form of one constant houseparty. In addition

to this typical layout, there are, just off the pedestrian streets, six one-bedroom apartments for married students.

As adroit as the handling of external and internal space is, one can see from the diagram of Spelman's structure that the material and methodological aspects of this were as carefully conceived. Although estimates were taken on a masonry bearing wall system, concrete was finally chosen because it seemed as compatible with the masonry walls and trim of the older campus architecture. The main reason, however, was, of course, economic, and the need to remain within the established budget of three million dollars. Both poured-in-place and precast concrete were evaluated, the latter finally being chosen because the work could be achieved, and was, in something less than 13 months as compared to the usual, costly, two years.

Just as Spelman's interior and exterior spaces are of a piece, so are its structural components. The challenge was to come up with a



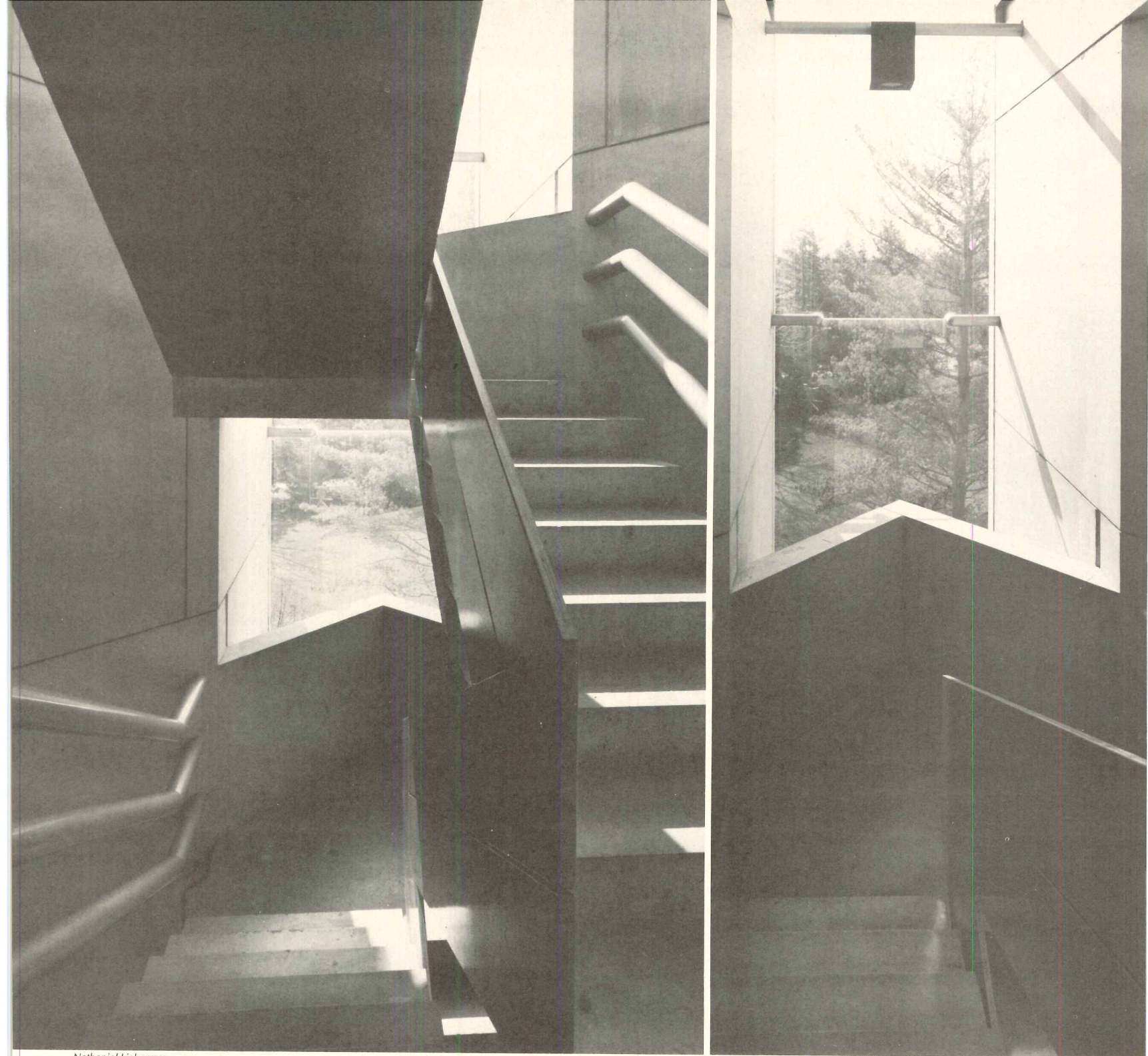
quick way of assembling a minimum number of panels for the floors and walls. The number turned out to be precisely 979. These vary in dimension up to 57 feet in length and weigh up to 38,000 pounds. The major structure, the members of which are exposed both inside and out, consists of long girders running in pairs for the full 57 feet; back spans that are 34 feet long and six feet deep; and cantilevered spans that are about 21 feet long and three feet deep. One of the girders is post-tensioned at its cantilever end. The second girder, simply supported, is brought into equilibrium with no deflection. The girders, which are eight inches wide, have wide bottom flanges to support the floor panels, the last being pretensioned. Grouted tendons made up of two dozen quarter-inch stress-relieved wires thread through these girders and, on the cantilevered corners, the tendons are in effect capped with a pewter-color metal detail. Thus a necessary handling of the nuts and bolts of engineering becomes a minor, but never-

Andrew Gorczynski





George Cserna



Nathaniel Lieberman

theless telling, esthetic feature. The floor and wall panels are eight inches thick, a good dimension for field handling, because a certain heft is necessary to counteract those touchy tensions that are set up by torsional motion when such pieces are lifted. Put into place, this system expresses a smooth texture because the plywood and steel forms for the concrete were lined with polyurethane. Moreover, the tensile qualities of concrete are pointed up by the almost plastic expanses of material, enhanced by the fact that form joints were completely eliminated.

It would be possible to construct a 15-story Spelman instead of the low-scale, low-ceilinged version shown here. But what really commends special study is the way in which a serious concern for the campus environment and the design concept deferring to it were so basic to the nature of the engineering solution. If this configuration of streets of an intimate nature, apartments, and structural pieces can

enhance this context, it is a template that might be useful, in attitude if not in exact approach, in building facilities that fit into rather than foist themselves upon existing circumstances.

Much like the old Princeton train station just down the hill, Spelman Halls is not so much a "to place" as it is a "through place," and it is such because people experience it as a place to live for a couple of semesters or a couple of years, as well as a rather convenient shortcut to other parts of the campus. But these kinds of way stations are among the most telling places in human life, places from which to look down the tracks and sense something of the future. This particular way station is a roll-up-the-sleeves kind of building, and yet arresting in its elegance. Fitzgerald would have admired it, but so would Booth Tarkington who, living here once, hated facades that weren't honest about what was going on behind them. The fact about Spelman is that the facades were never even drawn.

—William Marlin



Nathaniel Lieberman

SPELMAN HALLS, Princeton University, Princeton, New Jersey. Owner: The Trustees of Princeton University. Architects: *I. M. Pei & Partners*. Engineers: *LeMessurier Associates (structural); Flack and Kurtz (mechanical/electrical)*. Landscape architect: *Clarke & Rapuano*. Contractor: *Lewis C. Bowers & Sons, Inc.*



Nathaniel Lieberman



George Csereza

Beaux Arts or "Bozarts"?

by Jean Paul Carlhian

"The rendering has been given—and still is in critical appraisals of *Ecole des Beaux Arts* architecture—a totally unwarranted importance. . . ."

"The Architecture of the Ecole des Beaux Arts," the exhibition which has just closed its doors at New York's Museum of Modern Art, was a dazzling show. While its brilliance has attracted wide national attention and almost universal praise, the reviews were inconclusive about its significance, and there was also some understandable bewilderment at the fact that the exhibition was organized by the Museum of Modern Art—an institution that spent the first ten of the last 40 years attacking the *Ecole*, ten more years ridiculing it, and 20 more ignoring it entirely.

That the exhibition took place at this time is not surprising. The Bauhaus has been running out of steam after 30 years of supremacy in architectural education, and the student revolutions of the '60s didn't help keep it alive. The American Bicentennial hullabaloo, moreover, has attracted people's attention to bygone things and may have kindled a nostalgic return to the past.

But in all that was shown (and in most of what was written about what was shown), there was very little significant attempt to describe what the *Ecole des Beaux Arts* really represented, aside from the ability to make beautiful renderings, and what the qualities of *Beaux Arts* architecture really were—qualities that have recently made more than one notable critic look back on them from the vantage of the late 20th century with the melancholy of Paradise Lost.

In particular, there was no attempt to end the confusion between the teachings of the *Ecole des Beaux Arts*, an institution that found its final form around 1820 and lasted for a century and a half, and "Bozarts" a term widely used by historians of the Modern Movement to describe everything that went wrong with American architecture after the 1893 World's Columbian Exposition—a term synonymous with gratuitous symmetry, indiscriminate use of historical motifs, blatant disregard for function, undue expense, nonsense or just plain stupidity.

Disciplined freedom

The administrative structure of the *Ecole des Beaux Arts* was one of beautiful checks and balances,

designed to preserve the student's freedom within a rigidly organized framework. As is well known, 40 students who had been admitted to the *Ecole* could form an *atelier* and select a master, a *patron*, of their own choice. The *patron* automatically became a member of the jury, the body which graded the student and regulated his progress through school. *Ateliers* thus formed were incorporated into the school system. Offering a balance to these were three *ateliers* whose masters were appointed by the *Ecole*.

The work load consisted on the one hand of historical and technical lecture courses offered by the *Ecole* itself and, on the other, of more or less monthly architectural problems or competitions (*concours d'émulation*) on programs initiated by the *Ecole* but developed within the *atelier*. The problems were carefully scheduled to avoid conflicts between advanced (*première classe*) and more elementary (*seconde classe*), thus encouraging collaboration among the students of any given *atelier*, who were of various abilities, artistic inclinations and ages (from about 15 to over 30).

Such a system relieved the *patron* from wasting his time with trivia and from being absorbed in repetitious individual explanations. All of these necessary aspects of an education were handled by the other students.

The teacher's crit (*la correction du patron*)

The *patron* visited his *atelier* on the average of once a week and stayed for two hours at the most. He invariably displayed an optimistic attitude towards the program at hand, characterizing its parts as "*beau*," "*bon*," "*difficile*" and so on. All the sketches would be hanging on the wall, and he would address himself to their own merits or defects, never to the author, who usually remained anonymous among the crowd of listening students. He would utter aphorisms intended to stress the essence of the problem: "*Une école c'est une cour*" (A school is a playground), "*Un bar c'est des bouteilles*" (A bar is bottles) or "*Un restaurant c'est la cuisine*" (A restaurant is cooking.) As

the problem developed he would select significant approaches and dwell deeper on their merits. Very seldom did he sketch, and almost never did he suggest a solution. He would drop in very briefly at the end of a problem to memorize his *atelier's* submissions in order to recognize them at the jury.

The *patron* never pretended to be an educator; he did not address himself to the student as a person needing help or requiring personal coaching. He stuck to the project itself, exposed publicly for all to see, examine and criticize. *The drawing was the thing*, not the good intentions.

The sketch (*l'esquisse*)

Each problem began with a sketch. Isolated in a booth (*en loge*), each student tore open an envelope containing a one-page program, identical for all. He was given eight hours to sketch out his solution on the assigned piece of land—inevitably a rectangle with never any reference to slope or orientation and seldom the indication even of access points. The result of this exercise, the *esquisse*, was left with the *Ecole*, and the student retained a copy to serve as a guideline for further development at the *atelier* during a period of six weeks or so.

The importance of this process cannot be stressed too much. It taught the student how to read a program, dissect its parts, discern its essential elements, assign to these an order of priority and disregard the trivia. Transposing these considerations into architectural terms, the student had not only to organize them in his mind, but to put them down on paper in a clearly legible manner. The fact that he was alone during this process was the best guarantee that his very own talent would be given free rein, and the *esquisse* that resulted became a precious talisman which nobody would be allowed to violate.

Because any significant departures from it would disqualify the student, this fact prevented him from constantly changing his mind as he went along. Should the idea prove unworkable, he had the choice of either abandoning it, knowing that another problem would come up the following

Jean Paul Carlhian studied architecture at the *Ecole Nationale Supérieure des Beaux Arts* from 1937 to 1948, with a two-year interval at Harvard under Walter Gropius from 1945 to 1947; he is a partner in the firm of Shepley Bulfinch Richardson and Abbott in Boston.

"In the United States the *Ecole des Beaux Arts* found an exceptionally rich field for the application of its principles. . . ."

month, or modifying it, running the risk of failure by disqualification: *hors de concours*.

While students soon learned how to produce a noncommittal *esquisse*, they also discovered that such a procedure would never lead to the coveted prize, which was bestowed by the jury only upon those submissions that showed a forceful and clearly expressed intent in the sketch, accompanied by an appropriately brilliant development.

All solutions had to be presented on a sheet of mandatory size in a technique that required the use of the student's own hand. No collages, no montages, no photographs were tolerated.

All of the problems called for a plan (not usually more than one), a section (emphasized in certain projects) and one elevation (sometimes receiving priority in problems involving the expression of character). No perspectives or models were required.

The plan

Small wonder, then, that the plan received foremost consideration, and the first quality to impart to any plan was clarity. The main idea of the whole design had to be expressed in the plan so it could be caught at a glance. Next its elements had to be effortlessly identified or "read." Finally, an order of priority had to be assigned to each.

Such a sorting-out process called for the introduction of circulation spines to tie all the elements together, and crucial parts of these spines deserved particular treatment: crossing points, turning points and funneling elements received special articulation, according to a firmly held belief that the most important element in the whole plan should be arrived at last, after appropriate and judicious initiation.

The result of such a procession, sometimes described as "*la marche*" (a kind of parading), is the placement of the main element at the top of the plan. That the secondary elements of the composition most often (but not always) end up on either side of "*la marche*" can come as no surprise.

Careful examination of typical *Ecole* plans, however, reveals

that the absolute mirror image solution is the exception rather than the rule. That it was sometimes used is probably the result of the necessity of covering a large sheet of paper intelligently in the minimum amount of time: candidates were soon to discover the magic properties of the double-faced sheet of carbon paper.

The area to be covered by the plan drawn at the required scale, nevertheless, always turned out to be much smaller than the prescribed sheet. Students therefore began annexing surrounding areas of white paper and developing it for their own purposes. Vistas terminated colonnades, terraces opened onto elaborate gardens and approaches became embellished with ramps and stairs. (No wonder that this unconsciously-acquired talent—*l'art des entourages*—resulted in the *Ecole* architect thinking he was landscape architect as well.)

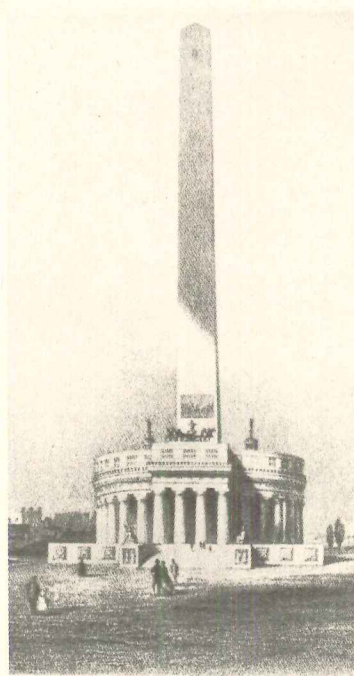
Furthermore, the area required to present the plan on the sheet was always larger than that for the section and elevation, and this led the students to express variations in volume by judicious manipulations of wall thicknesses (the *poché*), since in bearing-wall architecture the thicker the wall the greater the height. The particular form that these manipulations took also allowed the skillful students to express the character of a building in its plan. Niches, pilasters and detached columns articulated "art" buildings, while "army barracks" rated only plain, straight walls.

The section

The section came next as a direct elevation of the plan. Since the sites offered in the programs were flat, variations in volume were expressed in section by manipulating ceiling heights rather than floor levels. Unless otherwise specified, the section was longitudinal rather than transversal, to complement rather than reiterate the elevation.

The elevation

Usually only a front elevation was required, and the progression from plan (with its dominant element at the top) to section (taken longitudinally along "*la marche*")



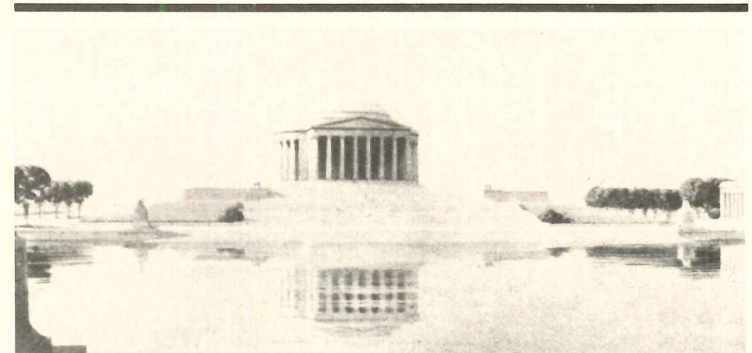
In its final, built form the **Washington Monument** is one of the greatest architectural achievements of all times—and it embodies some of the native qualities that American students took with them to the *Ecole des Beaux Arts*. For truly American it is. Who else in the world would have thought of taking an obelisk (which in its monolithic form had never risen much more than 100 feet) and building it bit by bit, stone by stone, to 555 feet—27 feet higher than Ulm Cathedral and 75 feet higher than the Great Pyramid? Who else would have realized that the little temple at the base of the monument in Robert Mills's original design (shown on the left) was beside the point, and omitted it?

Sited with an abandon that is absolutely incomprehensible to a European, the monument misses its alignment not only with the White House, but with the axis of the Capitol as well. Bereft of Mills's original *entourage*, at its base, it stands there in splendid isolation, vast height and, the most extraordinary simplicity.



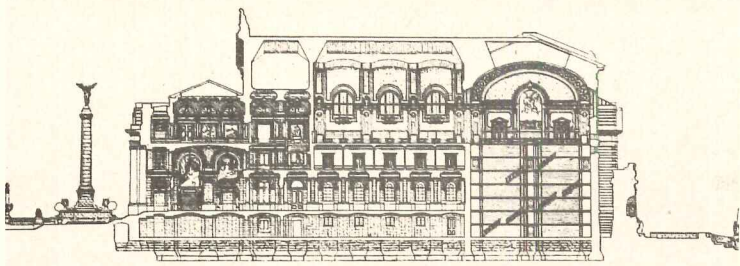
The **Lincoln Memorial**, unlike the Washington Monument, had very specific requirements—a statue, texts, murals and a given number of columns (one for each state). Its architect, Henry Bacon, imbued with *Ecole* principles, was also thoroughly American. Any Frenchman who had chosen to design a temple would have, with due respect to Ictinos, made a rectangular building with twice as many columns

(plus one) on the long side as on the short, with a gable roof and with an entrance under the resulting pediment. Not so with Bacon, who used a flat roof with skylights and placed the entrance on the long side. From the Greeks he borrowed columns, from the Romans an attic, from the *Ecole* an elaborate *entourage* and (it seems) from Chichen Itzá the steep stairs that lead arduously up to the entrance.

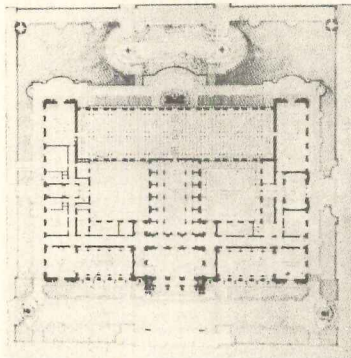


Often called an exemplary *Beaux Arts* building, the **Jefferson Memorial** really seems less good than the monuments to Washington and Lincoln. Its site is naturalistic, but also on axis with the White House. The memorial reflects this ambiguity, using a form borrowed from the Pantheon—a building frequently admired at the *Ecole* for its drum but not for its awkwardly juxtaposed portico. The Jefferson Me-

morial has the same problem as its historical model, and it adds some additional ones. The choice of Ionic columns (with their directional capitals) is strange for a curving colonnade, and the statue in the center, lit artificially, seems too big for the interior space and not big enough to be seen from outside. At the Lincoln Memorial the breaking of rules had some point; here it looks more like ineptitude.



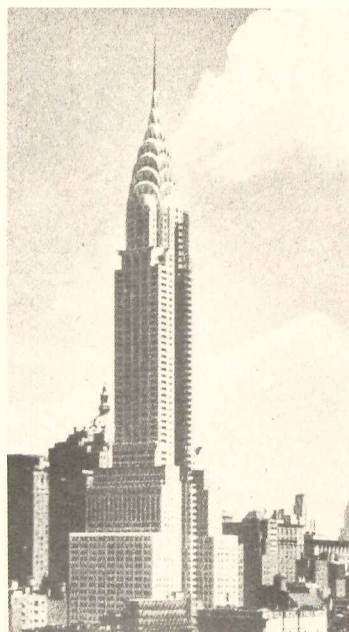
The **New York Public Library**, seen on the right in plan and above in section, is a clear illustration of *Beaux Arts* design principles—with one elegant variation: the most important element, the Main Reading Room, is not just at the top of the plan but at the top of the building as well. Therefore the progression from the entrance to the most important element (“*la marche*”) involves not only moving from front to back, but up and around a series of carefully modulated stairs, through a sequence of architectural spaces that prepare the visitor for his ultimate arrival at the climactic space in the building.



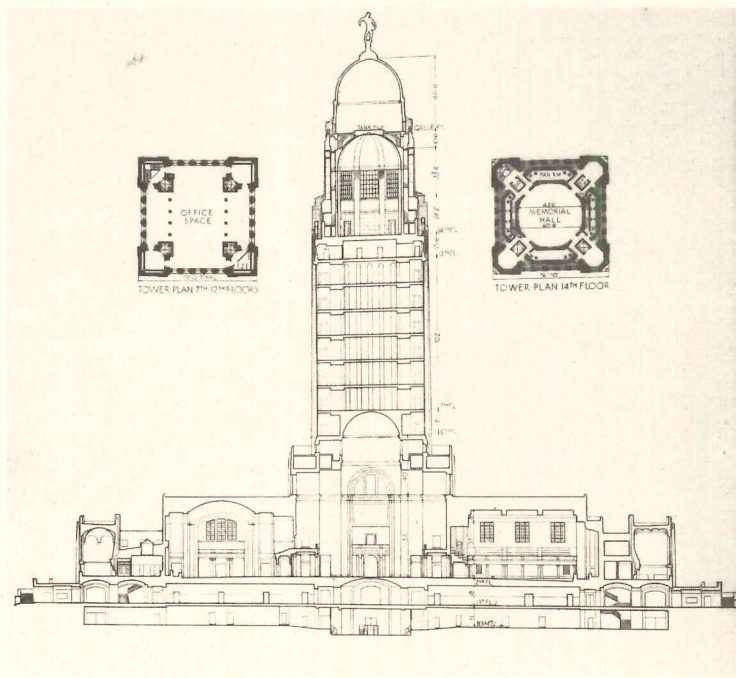
The **Woolworth Building** by Cass Gilbert was completed in 1913 and dubbed a “Cathedral of Commerce”—an epithet that catches the ambivalence of its architectural inspiration. Rising from an understated base dictated by the constraints of the site, the building rises 792 feet to the richest of crowns, befitting a Gothic cathedral (and in fact inspired by the “*Tour de Beurre*” of the cathedral of Rouen). Thick piers around the columns proclaim the steel frame, while the sense of uninterrupted verticality is further accented by a second order of thinner piers, the window mullions. American is the use of materials, the free-from-precedent handling of the details, the irreverent borrowing from a Gothic masterpiece and the no-fuss massing. The Woolworth Building seems to say that mere functionalism is inadequate for expressing the role of business in the life of the city, and so it adds more portentous architectural elements imported from afar to proclaim its civic function, and to clad its essentially simple form.



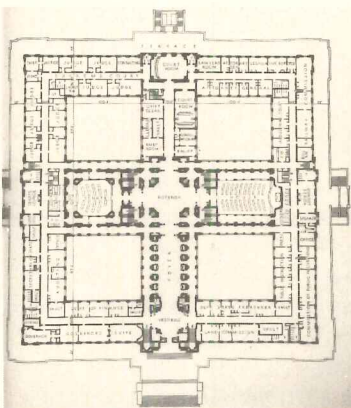
The building shown on the left was designed for the University of Pittsburgh by Charles Klauder to house a whole university in a single, simple package; it was immediately dubbed the “**Cathedral of Learning.**” Rising from a gentle knoll, the building claws the ground with pedestal-like projections (that house classrooms too large to fit into the tower); its inspiration might be Gothic, but the details are convincingly devoid of any fussy reminiscences. It is the clarity of the idea, the willful expression of intent, the division of the building into parts (base, shaft and cap) and the general restraint of the whole that identify this building with the *Ecole’s* principles. The idea, however, is totally and purely American. Who on the continent would have thought of that? And who, thoroughly versed in Gothic, would have treated such a sacred form with such firm irreverence?



Designed by William Van Allen (a graduate of the *Ecole*), the **Chrysler Building** is the most complete large-scale example of an Art Deco style imparted to all its aspects, carried out with a rare degree of consistency right down to the minor details. While the style of the building is not that of the *Ecole des Beaux Arts*, the mastery with which it is handled is—for *Ecole* students, through their exposure to a multiplicity of exercises covering a wide range of aspects related to architecture, were well prepared to (and in this case proved most able to) carry out a design concept totally. Thoroughly American, however, is the willingness to tackle the problem of translating industrial design concepts into architectural solutions. Nothing now remains of the 1925 *Exposition des Arts Décoratifs* in Paris; but in New York its lessons are enshrined with a quality found nowhere else.



The **Nebraska State Capitol** by Bertram Goodhue is one of the last capitols to be designed and one of the few that do not rely on the use of classical Orders for their expression (and one out of the five that do not have a dome). The problem of doing justice to two main elements—chambers for the Senate and House of Representatives—was the kind of thing the *Ecole*, with its notion that all plans should have only one “head,” taught how to solve in one of two ways. Either add a third element, or subordinate one of the two. Goodhue opted for the first course. The two legislative chambers are disposed symmetrically on either side of the main axis. A processional wing of great importance, announced by a grand portal, leads to a central space, a distribution element. This space is then topped by a high tower, which ties all the elements together in a single statement.



"While it was the French who invented the *Ecole des Beaux Arts*, it was the Americans who demonstrated the effectiveness of its methods . . ."

to elevation (taken perpendicular to the section) resulted in an elevation that displayed all the elements of the composition. It was essential, of course, for the dominant element in the elevation to be furthest away (else it would obscure all the others), and this reaffirmed the initial decision to place the most important element at the top of the plan. On its own, the elevation achieved a progression, with minor elements disposed on either side of the main axis, the farthest away to left and right being the least important.

The facade shown in elevation had to be given a certain scale, and here the Orders became handy. The bay (*la travée*) with its pilasters and columns, and with its spacing, which was limited by its implied ability to support a masonry arch, became a basic indication of scale, as did steps, balustrades and other elements directly connected with human use.

Finally there remained the problem of "character," and here again historical elements became useful. A "gothic" character was perhaps appropriate for religious programs. "Art" called for a judicious use of Orders rhythmically placed against a plain background. "Justice" was Doric (preferably Tuscan or even Greek), while festival buildings were definitely Corinthian.

The rendering (*le rendu*)

At this point, all that remained was to present the design in the best possible light to the jury. Clouds were drawn in to fill the space above the elevation; trees and shrubs became handy for hiding defects; statues and vases and other decorative elements were sprinkled around and figures introduced for scale.

The rendering, this very minor element of the student's total effort, has been given (and still is in the critical examination of the Museum of Modern Art Show) a totally unwarranted importance. In the first place, the amount of time devoted to this exercise (and exercise is what the students thought it was) never exceeded a few hours—four or five at most, the last moments before the problem was due. Second, the

author, having most probably stayed up all of the preceding night, was in no shape to handle the brush with the delicate touch or the necessary boldness that was required. Such tasks were often entrusted to a fresh crew of specialists in the *atelier*, who went from project to project practicing their skills at the expense of the author (if they were inexperienced) or showing off their talents (if they were experts).

The *Ecole* and the American student

To be a student at the *Ecole des Beaux Arts* was not just stimulating, it was exciting. With all of its rigid requirements, the *Ecole* managed to develop alongside its spirit of fierce competitiveness a kind of team spirit among students differing widely in background, age and experience, who nevertheless learned to work for and with each other in pursuit of a set of known and mutually agreed upon architectural objectives.

In the American student, the *Ecole* found an especially well-suited receptor of its teachings, and in the United States an exceptionally rich field for the application of its principles.

Following the illustrious (and isolated) examples of Richard Morris Hunt in 1846 and H. H. Richardson in 1862, American students came to the *Ecole* in increasing numbers. There were eight graduates in 1888, 22 by 1895 and from then until the outbreak of the First World War about 20 each year. Their names, of course, are familiar: Sullivan, McKim, Carrère, Maybeck, Warren, Zantzinger, Pope, Delano, Aldrich, Hood, Howe, Kahn, Holabird, Root, Van Allen.

Their presence coincided with the pedagogical peak of the *Ecole des Beaux Arts*. They were special men, blessed with a driving spirit, education and dedication to make the trip to a country that spoke a foreign tongue and counted in meters. These men, moreover, were free of architectural prejudice. They were citizens of a country whose concern for its past could not compare with France or England's. What architectural heritage America had at that point tended to be ig-

nored, and remnants of another era were readily demolished to make room for new and bigger and better buildings.

So in Paris the Americans, unlike their European counterparts, were fearless; they approached the study of architecture in a kind of innocent state. No one had driven into them the notion that civilization had descended from the pyramids via Ictinos and his Parthenon, Hadrian and his Pantheon, Bramante and his *Tempietto*, Bernini and his colonnade, Mansart and his *Invalides*—and, just as importantly, no one had taught them that such monuments were inviolate and that what Vitruvius and Alberti and Palladio had said was the gospel truth. They approached the study of architecture with a special common sense that stood them in good stead when they returned home.

And home they did return. As soon as they set foot back on American soil they found jobs, and they began to build. Time was short. Solutions had to be found—just what the *esquisse* had prepared them for—and they produced. They formed architectural firms—a true American invention, even though based on the model of the *atelier*: Adler and Sullivan, McKim, Mead and White, Carrère and Hastings, Delano and Aldrich, Holabird and Root, Hood and Fouilhoux.

Competitions were plentiful in America, and for them the training at the *Ecole* was preparation without peer. *Ecole* architects, with their competitive spirit sharpened to the hilt, their well-tested ability to reduce the most intricate program to its essence and their well-developed skills at presentation easily licked their rivals and walked away with every major prize. In New York alone, the Public Library, the Municipal Building, the Post Office, Grand Central Station were all competitions—and all of them were won by architects trained at the *Ecole*.

The American architect, unlike his French colleague, had the work. In 1870, it should be remembered, the Franco-Prussian War—the first of three devastating conflicts—had brought down the Second Empire and effectively put an end to the construction boom

in France of the Haussman era. It took the French a generation to recover from their stinging defeat, and even by the '90s they were not building much, and certainly not much new (save the engineering feats of the 1890 fair and the extravagances of the 1900 one). After that came the First World War, with its decimation of the French population, and after that the Second World War.

So while French architects were still drawing palaces, academies, monuments and embassies (and building none of them), the Americans quietly put up between 1886 and 1936 no less than 24 State Capitols. To take another example, the program for the *Grand Prix de Rome* in 1891 was for a railroad station. By then all main railroad stations in Paris (except the *Gare d'Orsay*) had already been built. But the Americans had yet to design and build Grand Central and Pennsylvania Stations in New York, Washington and Chicago's Union Stations, and a host of others. The same can be said of libraries, art museums, court houses, churches and many other buildings—sometimes at unprecedented scale (like Pennsylvania Station) or in an altogether new form (like the skyscraper).

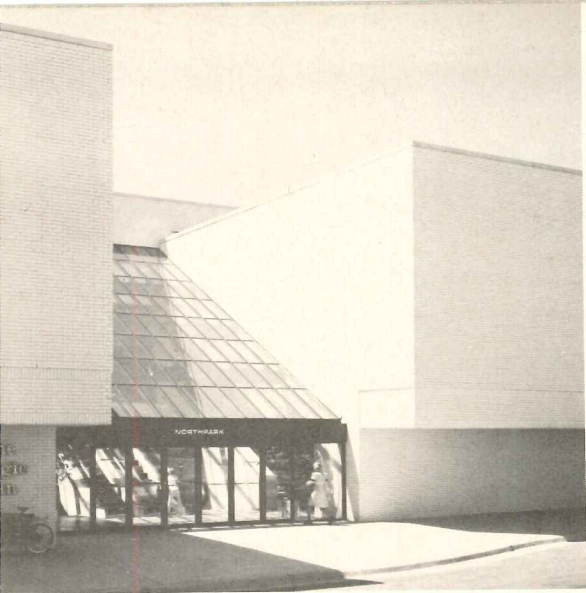
It has been said that American architecture of the late 19th and early 20th centuries—"Bozarts"—was only a thin version of the real French thing. But in fact it is hard to escape the conclusion that, in terms of built buildings, the architecture of the *Ecole des Beaux Arts* in fact was American architecture. To be sure, it was less academic, less "correct" than the French version, but the fearlessness and inventiveness that American graduates of the *Ecole* showed not only allowed them to tackle new and unorthodox problems, it imparted to what they built a strength and vitality that was too often lacking in the European counterparts. So while it was the French who invented and perfected the educational techniques of the *Ecole des Beaux Arts*, it was in fact the Americans who splendidly demonstrated the effectiveness of its methods, as they built a set of buildings that are still among our most valuable possessions.

NORTH PARK

ONE OF THE COUNTRY'S MOST SUCCESSFUL AND BEST DESIGNED REGIONAL SHOPPING CENTERS UNDERGOES A VAST EXPANSION—AND EMERGES AS A STRONGER AND EVEN MORE INNOVATIVE PROJECT.



Mike Haynes



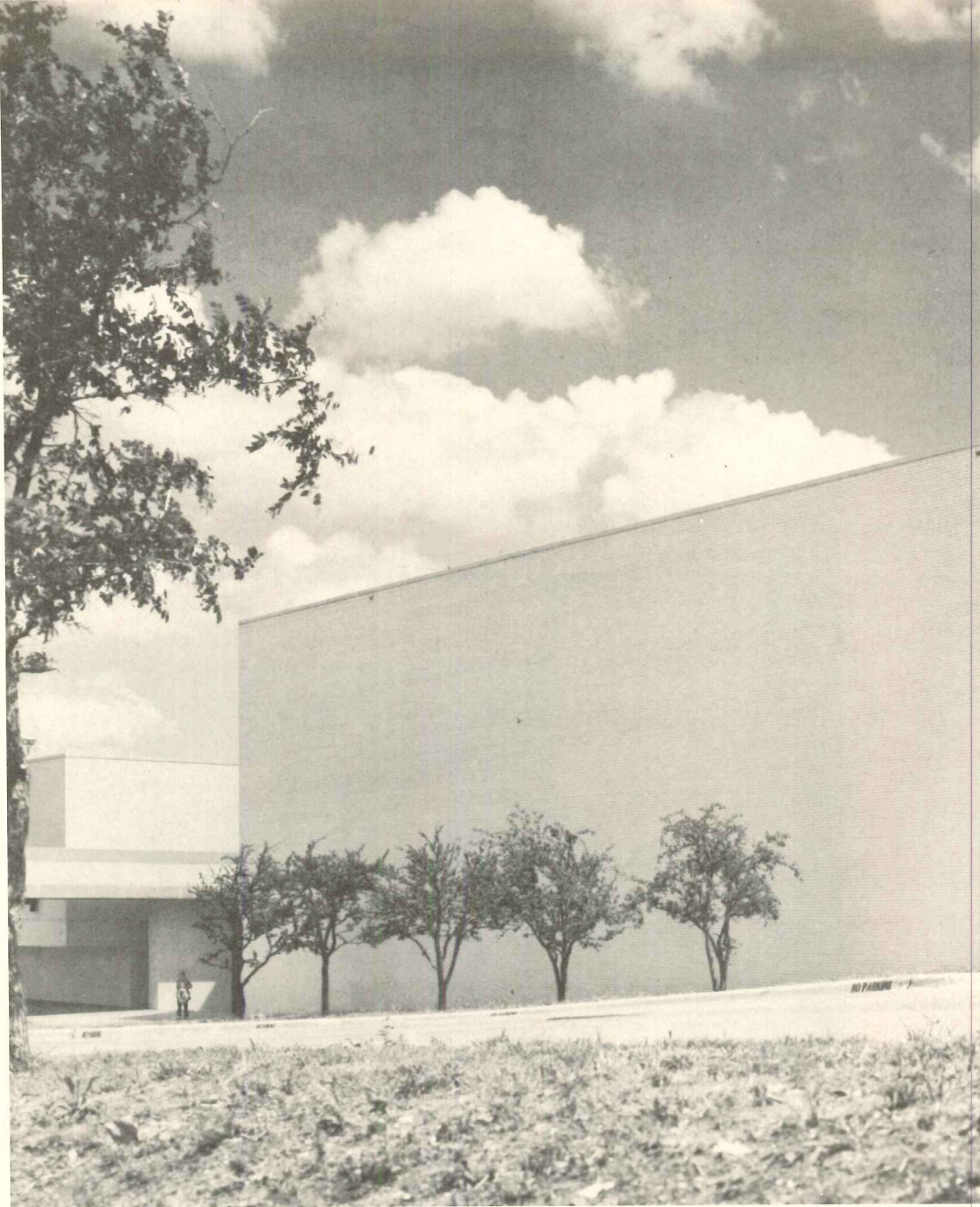
Geoff Winingham

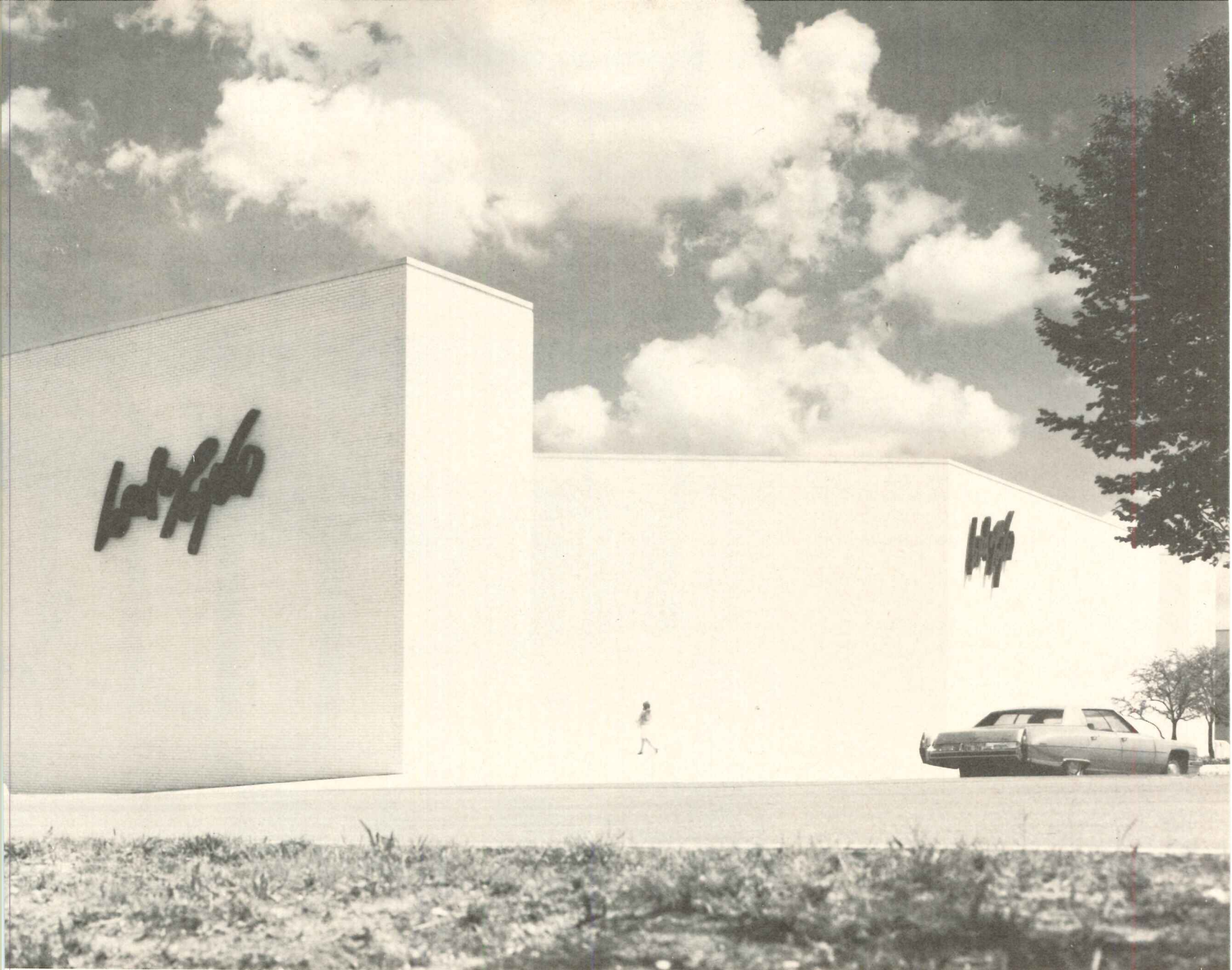
Almost ten years ago (*RECORD*, April 1966), the North Park shopping center in a suburb of Dallas was cited as a "culmination of the horizontal concept of varied but visually unified retail stores in a single building."

The enormous development then consisted of well over a million square feet of enclosed retail area designed by architects Harrell + Hamilton (now called Omniplan) with Eero Saarinen & Associates, who designed the Neiman-Marcus store. The site consisted of nearly 100 acres. Three large department stores (Neiman-Marcus, Titcher-Goettinger and J.C. Penney) were established here, and served to attract endless shoppers to the numerous smaller outlets stretched along the enclosed—and innovatively skylit—malls and plazas between the "anchors". On the negative side, the otherwise distinguished and strongly massed building was predictably isolated from the neighborhood by a "sea" of parking lots, which had already become standard for such developments. (The architects had relieved the visual impact by trees and separating levels.) The grassed portion on the northeast corner of the site was to be completed with commercial and residential structures.

Instead, the enormous success of North Park called for expansion of the retail space, and the site has now been completed—by Omniplan—with over 300,000 square feet of new retail space—and new parking structures at the perimeters, which serve both the new and older stores.

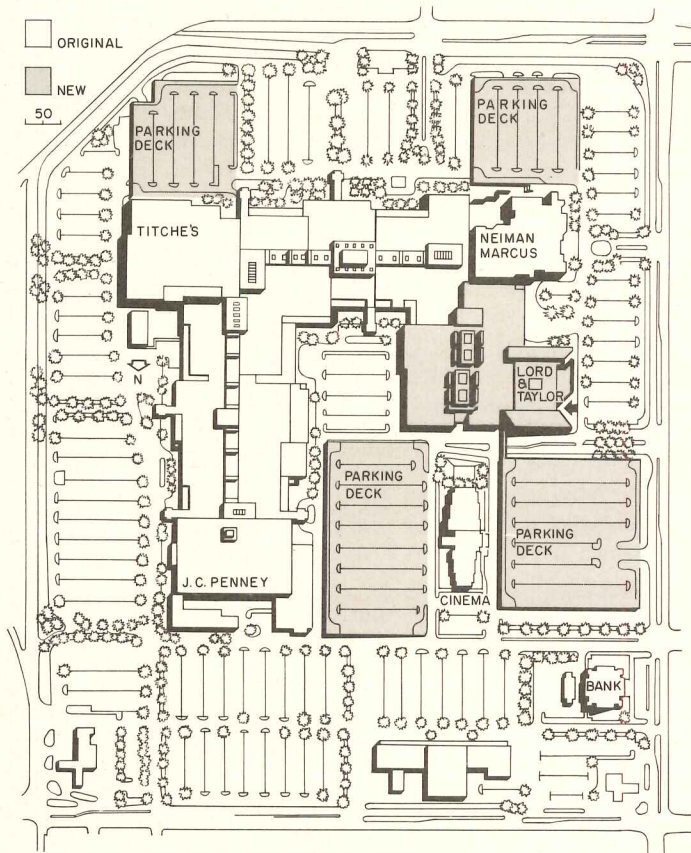
In the 1966 article, *RECORD* stated that "the next phase of evolution after North Park will almost surely be the vertical shopping center with layered parking because of the increasingly high cost of land." At North Park itself, that evolution has come about. And the new multi-layered parking structures have wed the existing complex to the neighborhood that surrounds it by creating physical presences that both "define" the surrounding public streets and visually break the former expanse of flat parking areas. Each parking structure takes advantage of changes in grade levels by offering direct access to upper and lower decks without ramps (see photo, right). The decks are precast-concrete plank on poured-in-place columns and were erected very quickly (one of them in six weeks) to avoid interference with the shopping at a peak season. They are faced with white brick.





The expansion of North Park continues the successful original formula of placing the department stores in prominent positions at the corners of the over-all massing. The new Lord & Taylor boldly solves the visual problems of windowless structures by appearing to be a gigantic sculpture of folded planes at a comfortable scale for the large site. It is entered from a new parking structure by a bridge and—from the ground—by doors within the angled recesses.

Geoff Winningham





The basic problem of multi-level shopping malls is creating equal exposure for all of the stores. To encourage pedestrian traffic on both levels at North Park, the levels were set half a story above grade and half a story below, and the entrance arrangement of a central escalator up and side stairs down (large photo), encourages shoppers to go up to the "problem second level"—as does the direct bridge-entrance from the second level of the adjacent parking structure. Visual contact between both levels is encouraged by the double-height mall and glass railings on the upper story's access galleries and bridges.

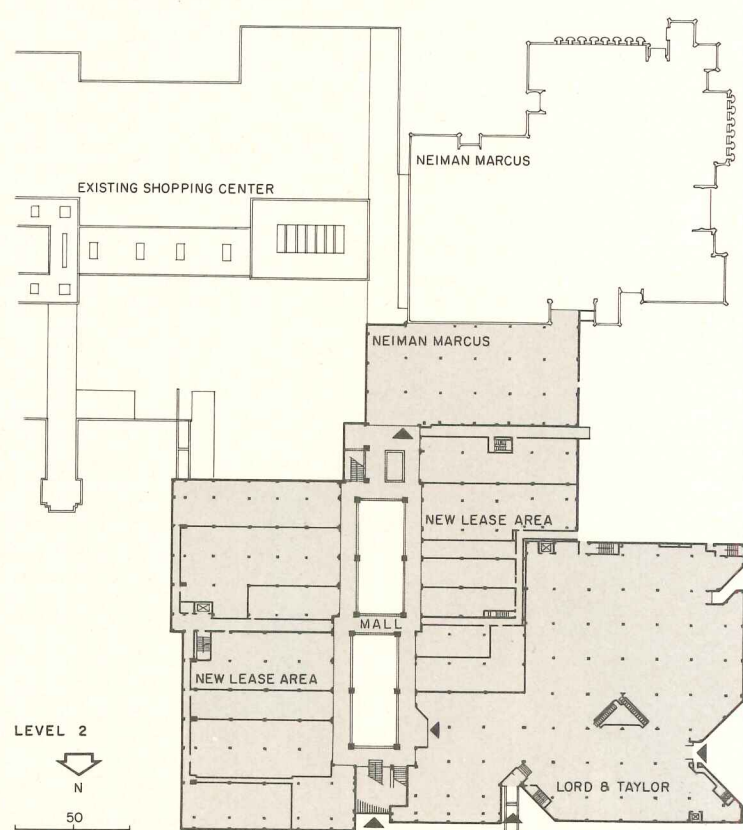
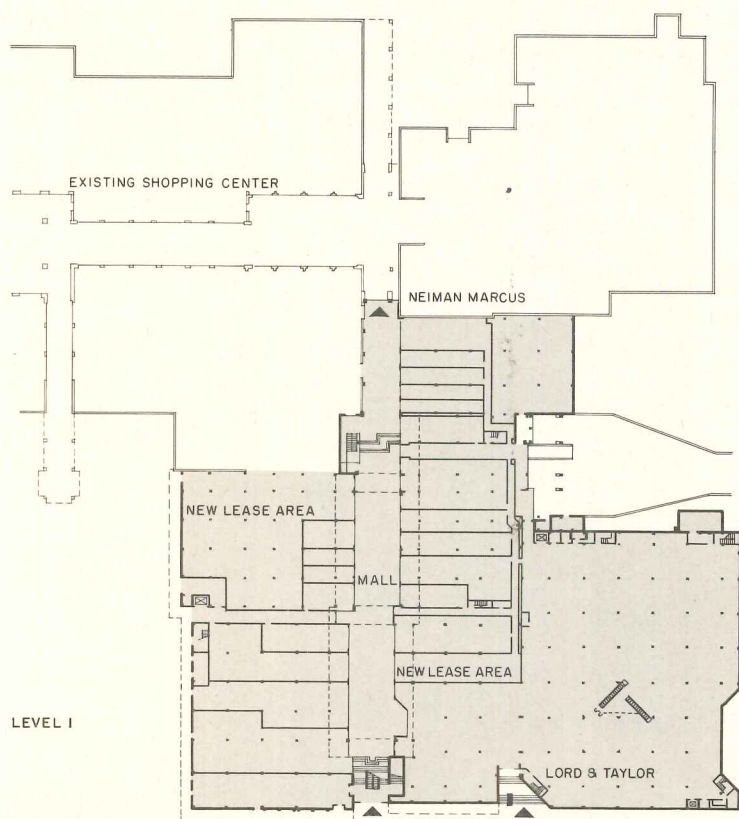
In a section of the country noted for personal independence, North Park was one of the first major shopping centers to demand control over stores' graphics (by a review board of representatives of both the developer and the architects). While the concept was difficult to enforce in the beginning, the popularity of the center has largely erased resistance. In the malls, the diverse storefronts are further unified by a strong visual framework of sandblasted white brick, which has been carried over from the center's exterior cladding. Natural light is provided by translucent skylights placed above deep beams to reduce glare. These supply most of the mall illumination required during the day, though this natural light is supplemented by photocell-controlled artificial lighting. The concept was an energy conserving "first" with the original building. Stairs and escalators have been deliberately kept out of the center of the mall to eliminate what the architects call a busy space full of "things". While the building was built of concrete, the new extension—for construction speed—has been built of steel with precast concrete decks. Here, ground floor tenants were able to start finish work while construction at the second level was being completed. The lease area and mall were completed last year for under \$15 per square foot.

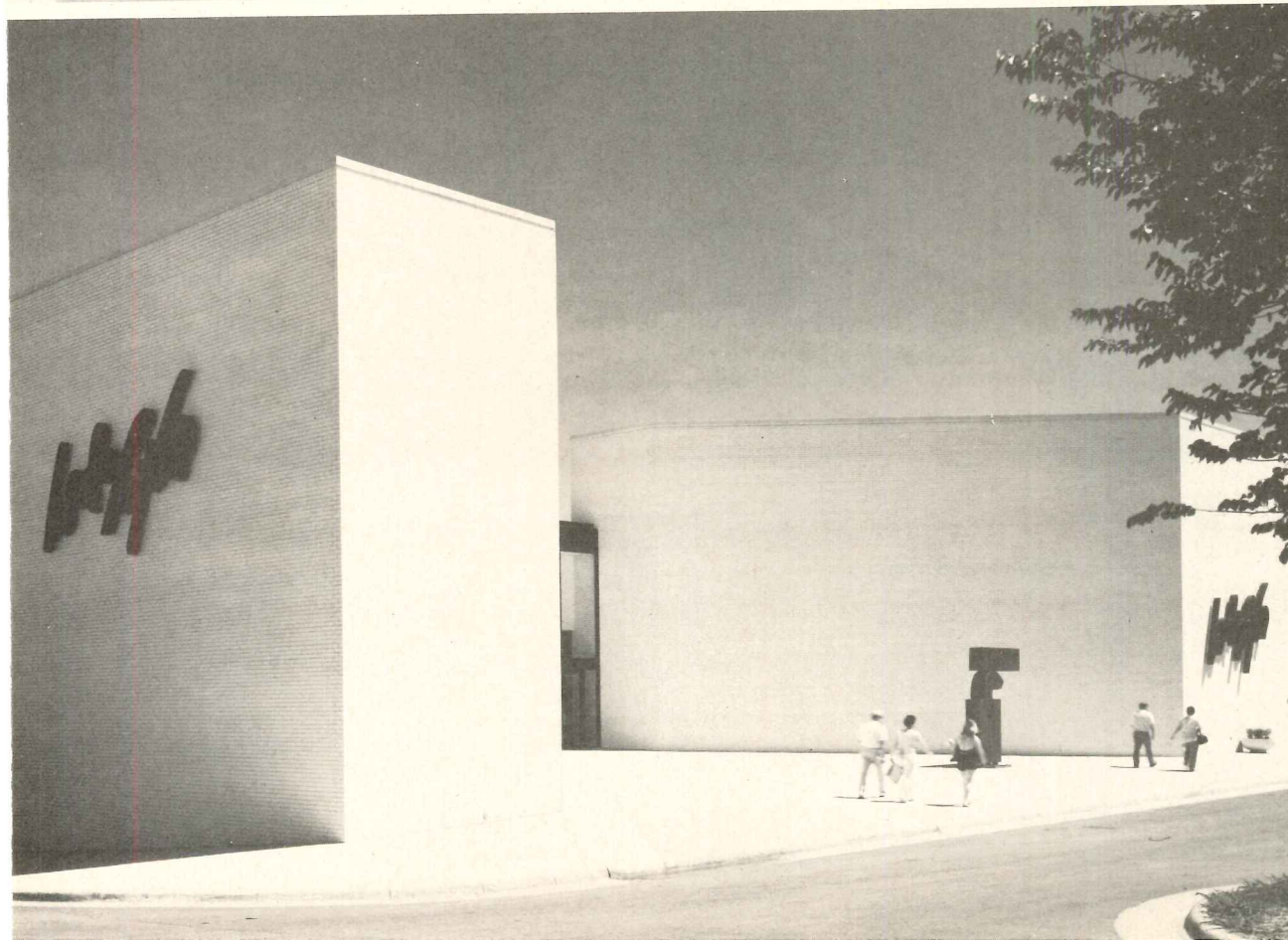
NORTH PARK, Dallas, Texas. Developer: *Raymond Nasher Company*. Leasing agents: *Coldwell/Banker*. Architects: *Omniplan Architects*—principal-in-charge: *E.G. Hamilton*; project architect: *Steven Winslow*. Engineers: *Datum, Inc.* and *Conrad Associates* (structural); *William Hall* (mechanical/electrical). Consultants: *R.H. Pratt & Associates* (traffic); *Richard Vignolo and Myrick, Newman & Dahlberg* (landscape); *Construction Consultants, Inc.* (roofing). General contractor: *H.C. Beck Company*.





Francisco & Booth





North Park's extension exhibits an even greater manipulation of bold forms and planes than the original, but is unified with the 10-year-old section by a single material both outside and in. While the architects had hoped for the development of fountains at the Lord & Taylor entrance (below), the present simplicity is almost monumental and certainly pleasing.

A profile of the two largest air-supported roofs

Because they cost substantially less than rigid roofs of the same span, they were affordable, and year-round occupancy and revenue was obtained for a college stadium and for the new home of the Detroit Lions football team. They were affordable because of an unusual combination of engineering finesse, expertise in materials technology, and inventive construction talent.

In September and November last year, the two largest cable-restrained, low-profile air-supported roofs were inflated: Pontiac (Michigan) Metropolitan Stadium, covering 10 acres of clear-space, and UNI-Dome at the University of Northern Iowa, covering 4.1 acres. For scale comparison, the U.S. Pavilion at Expo '70 in Osaka was one-fourth the area of Pontiac.

Substantial savings in roof construction costs and time were achieved with Pontiac and UNI-Dome. Cost of the roofs, including compression rings, was \$11-\$12 per square foot of enclosed area. The roof for UNI-Dome took only four weeks to erect. The Pontiac Metropolitan Stadium roof, more than twice the area, took close to four months, though it could have gone faster if there had not been interruptions resulting from the Detroit Lions' games.

Sophisticated engineering and sophisticated materials made these domes possible

These permanent structures could not have been built at the costs they were without the engineering principles developed by engineer David Geiger or the fabric and panel construction developed by a collaborative group of manufacturers. A unique structural concept was first demonstrated in the Osaka structure based upon the principles of skewed symmetry—whose application to air-supported and arched structures has been patented by David Geiger. With a skewed criss-crossing of cables rather than a rectilinear grid, and the use of superellipse geometry for the compression ring (obtained with exponents larger than 2.0 in the ellipse equation), cable tonnage can be reduced by one-third, and bending of the compression ring caused by pressurization force on cables can be reduced to zero. Some bending can occur when there are unbalanced cable forces caused by wind loads, but application of skewed geometry substantially reduces ring costs.

After Osaka a new fabric was developed for greater permanency. The Osaka structure was covered with vinyl-coated fiber glass. Because ultraviolet rays degrade vinyl, the life expectancy of the fabric is about 10 years. The new fabric—*Fiberglas* fabric coated with *Teflon* fluorocarbon resin—has a number of properties essential for permanent structures:

(text continued on page 144)



UNI-Dome, University of Northern Iowa

Robert E. Fischer

Pontiac, Michigan Metropolitan Stadium



Birdair Structures, Inc. photo

UNI-Dome, University of Northern Iowa

Area (excl. ring) 168,000 sq ft
 Area (incl. ring) 190,000 sq ft
 Roof rise 48 ft
 Costs per sq ft of plan area inside ring:
 ring \$2.89
 roof 9.07
 total \$11.96
 (July 1974)

The dome consists of 29 fabric panels, 25 rectangular and four triangular, and 12, 2 $\frac{7}{8}$ -in. diameter stranded steel cables. The roof at the center is 125 ft above the floor. The roof is double-layered for about 60 per cent of the area, the lower layer being acoustical panels that also provide a plenum space for moving warm air under the roof during a heavy snow fall. When deflated the lowest cable is 18 ft above the floor. Flap-covered holes in the roof are for drainage in the deflated condi-

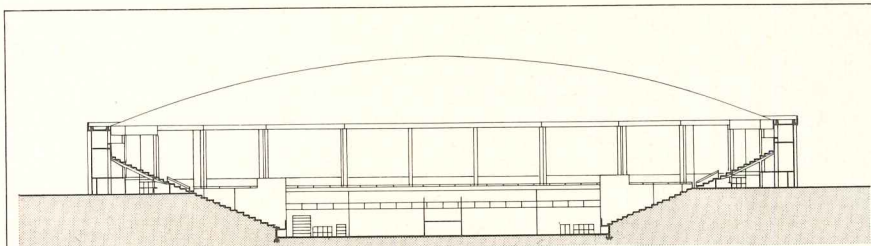
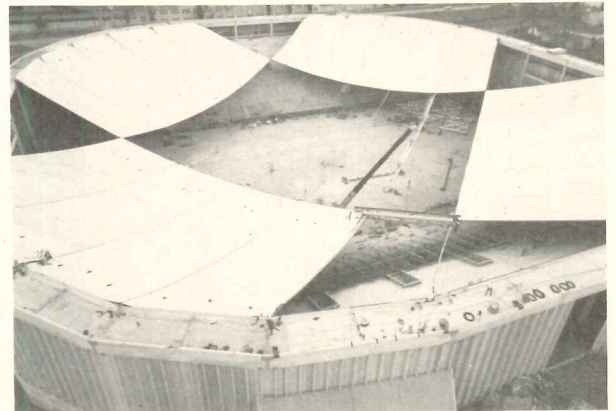
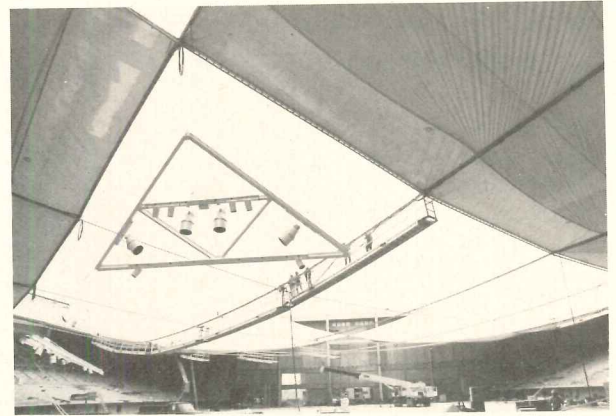
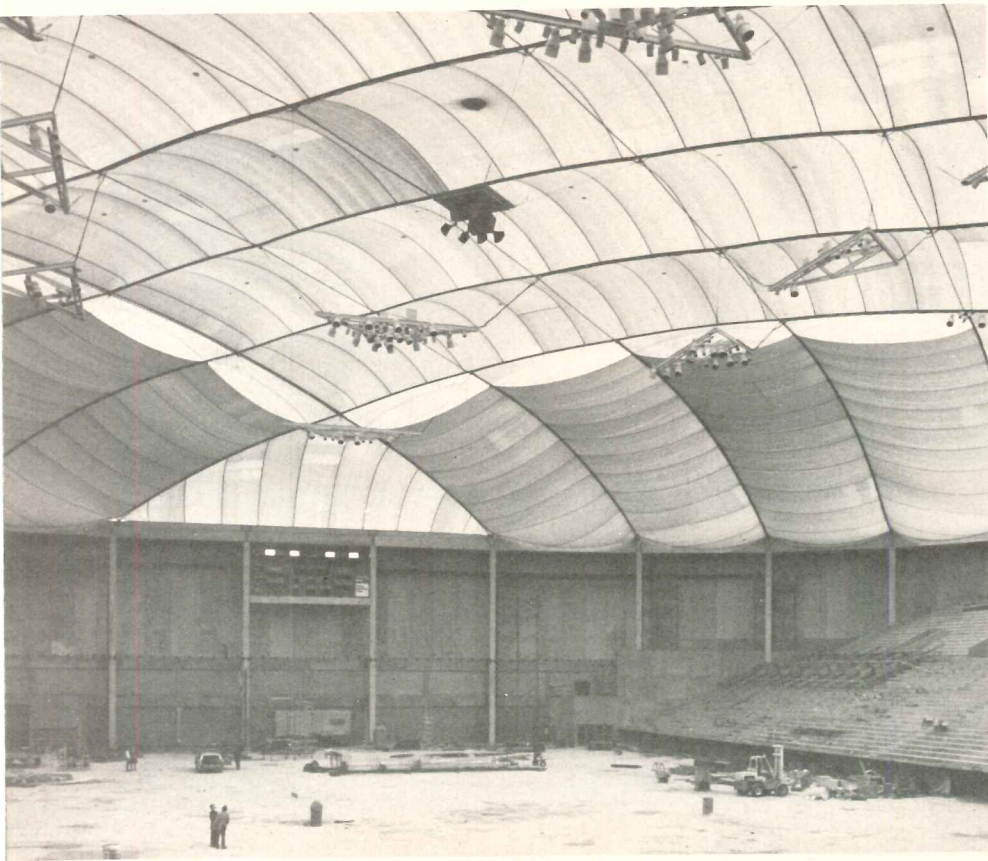
tion. Though low spots are determined by computer, location of pooled water varies according to loading.

The compression ring is made of precast sections, the longest being 53 ft. Epoxy grout was used for horizontal joints and vertical joints were poured concrete. The box section is used as the supply-air plenum for the stadium.

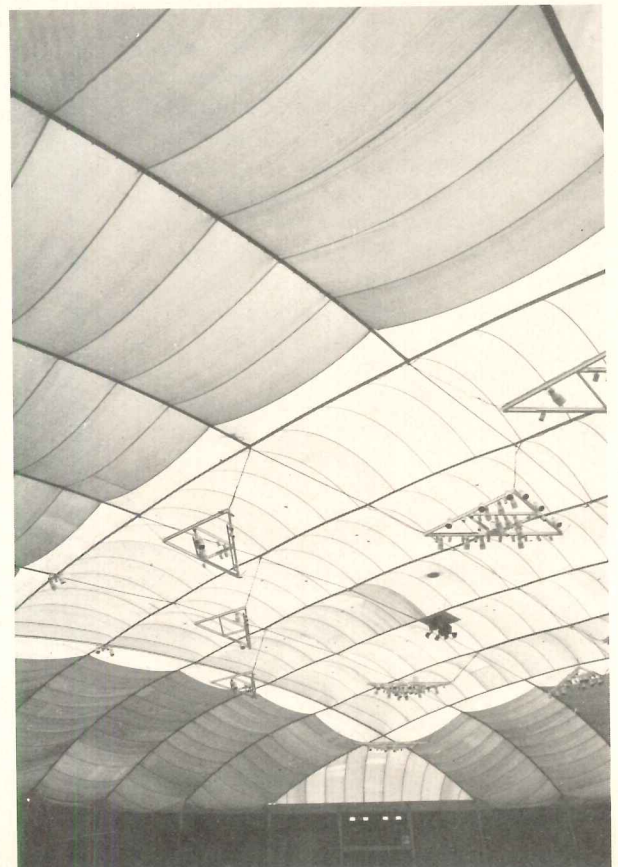
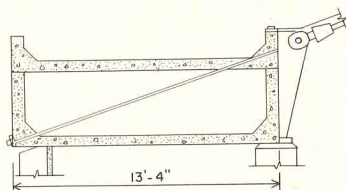
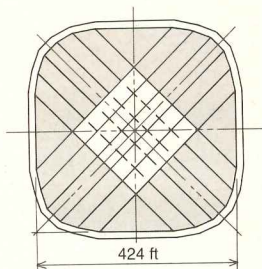
The ring is supported by precast double tees, which also serve as the exterior wall, and by interior precast columns (see detail below).

The wall was not high enough to permit lighting to be installed around the ring and avoid glare, so the fixtures were mounted on steel-frame triangles and hung from the roof cables, though engineer David Geiger would prefer, as much as possible, to avoid concentrated loads on the cables.

The panels were erected with a crane to hoist rolls of fabric, and with workers guiding the fabric from platforms hung from the roof cables and the roof itself.



Gray tone indicates coverage of acoustical panels. Cables shown with dashed lines are not attached to panels.



**Pontiac, Michigan
Metropolitan Stadium**

Area (excl. ring) 376,000 sq ft
 Area (incl ring) 430,000 sq ft
 Roof rise 50 ft
 Costs per sq ft of plan area inside ring:
 ring \$4.00
 roof 7.27
 total \$11.27
 (Feb. 1974)

The dome consists of 100 fabric panels—64 diamond-shaped, 32 rectangular, and four triangular—and there are 18, 3-in. diameter steel cables. The roof at the center is 202 ft above the floor. The roof has a single layer; sound absorption is provided by tufted acoustical baffles hung vertically from the cables.

The compression ring consists of 6-ft deep plate girders and poured-in-place concrete, which is prestressed transversely to obtain horizontal shear

transfer from the concrete to the plate girder shear studs. The ring is supported by steel columns and angled struts.

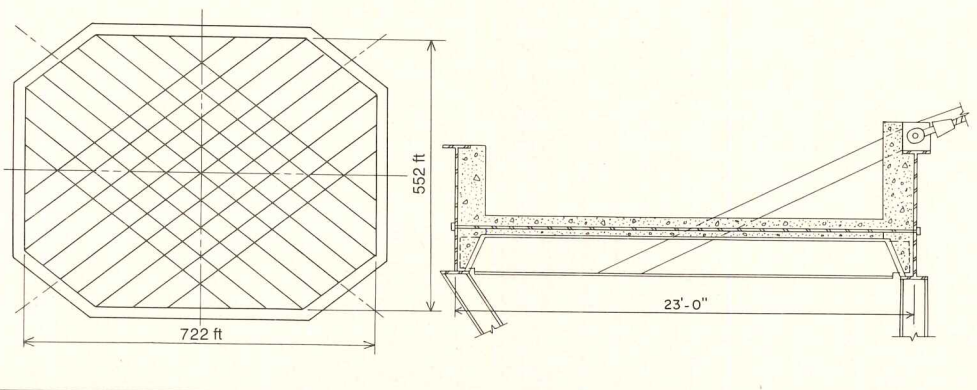
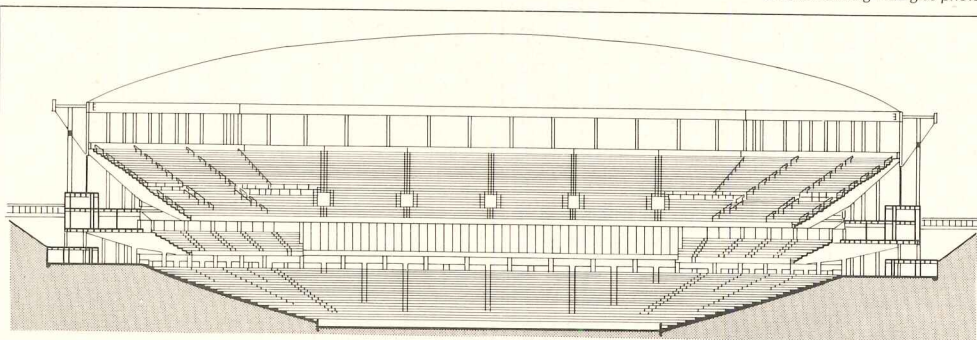
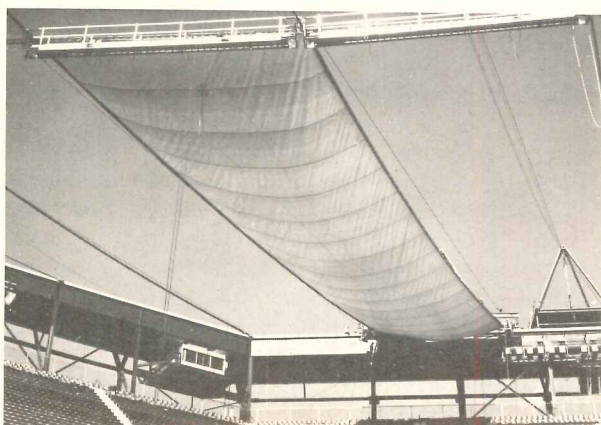
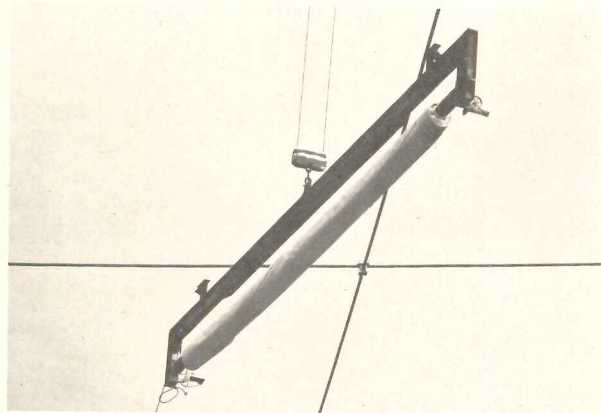
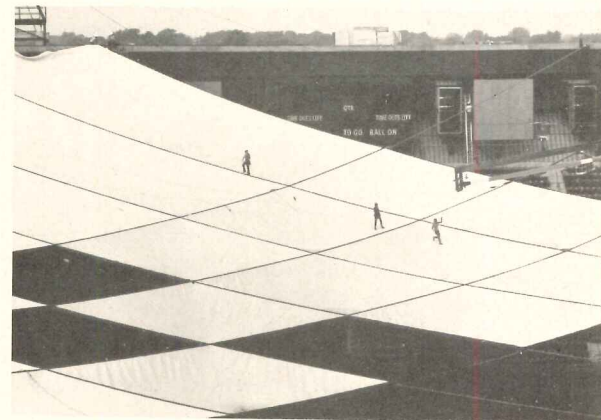
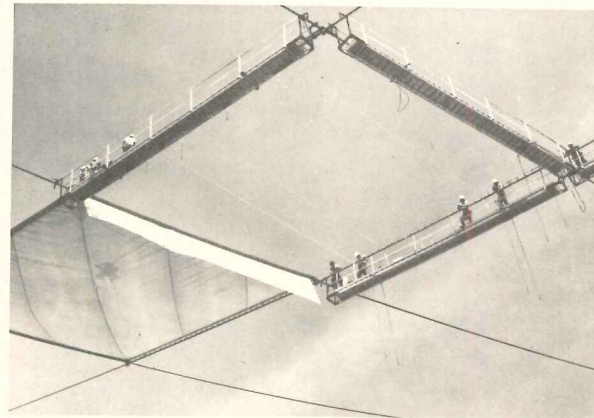
The fabric panels were installed in two phases. The diamond-shaped center panels, in rolls, were hoisted by movable crane. Workmen used U-shaped clamps to attach them to the cables. Panels have nylon-rope edges. First the U-clamps were bolted to the cables. Then the panels were clamped between a sandwich of neoprene waterproofing strips and aluminum plate

strips at the roped edges.

The diamond panels were hoisted by a movable crane alone. Hoisting of the long panels was accomplished, on the other hand, by use of two pairs of unique, movable A-frame towers. The towers traveled on rails mounted atop the compression ring. In each pair, one tower had a gasoline-engine winch, while the other was used as a dummy for balance; a movable hoist was installed on cables strung between opposite towers.



Owens-Corning Fiberglas photos



long life (estimated to be more than 25 years), fire-safe attributes, and high strength. The fabric will not support combustion (tested by the ASTM Oxygen Index method, an atmosphere of more than 95 per cent oxygen would be required to sustain combustion).

One unusual property of the fabric is that dirt does not stick to it, so it is self-cleaning. Another unusual property is its translucency, which can be varied from opaque to 14 per cent light transmission (reflectance is 75 per cent and absorption, 11 per cent). Much of the time, therefore, electric light is not needed.

Two different formulations of *Teflon* are used, the final coating allowing high-strength, heat-sealed seams for fabricating larger panels from 12-ft wide material. Strength of the 0.032-in.-thick fabric permits spans of 40 ft or so, but panels may be as long as is convenient for construction (at Pontiac, the longer panels ranged from 115 to 190 ft). The fabric for Pontiac and UNI-Dome was woven, coated and pre-stretched by Chemical Fabrics Corporation, and was made into panels by Birdair Structures, Inc.

Apparently, stability must be considered during construction as well as afterward

Many safeguards have been built into the design of these air structures to make sure they will withstand the rigors of weather and be fail-safe in terms of human occupancy. What was not foreseen before these two structures were built, however, were problems—some merely a nuisance, others potentially more serious—that could occur with construction not fully completed. Experience with harsh November weather in Cedar Falls, Iowa, and Pontiac underscored the fact that the pneumatic system (fans and air-tight structure), the snow melting system, and backup system (standby power) need to be working as designed.

At the uncompleted UNI-Dome, for example, some fabric panels had to be replaced because during a violent storm on November 9, which included tornado activity, lightning ripped one panel, and the roof deflated during a power outage (standby power was not yet in operation and lightning arresters had not yet been installed). Before the panel could be replaced, 50-mph winds later in the week damaged seven more rectangular panels as they were buffeted. On the other hand, the *inflated* roof at Pontiac stadium took gusts as high as 75 mph from the same wide-area storm with no trouble at all.

Later that month, though, on Thanksgiving Day, a wet snow at Pontiac caused several panels to invert, and melted snow dripped through the drain holes in the roof onto the playing surface. The primary reason, according to the engineers, was that the mechanical system was incomplete and the 10 direct-fired blowers used for snow melting were inoperative. The four indirect blowers (which only recirculate air) worked but could not, alone, prevent snow buildup. In addition, the internal pressure could not be increased to design level because some garage-type doors in the building need to be reinforced for the 12 psf top pressure intended for snow loads.

There are four modes of operation for cop-

ing with snow loads: 1) the snow can be melted, 2) the pressure can be increased up to the maximum of 12 psf, 3) if these two modes fail, individual panels can deflate and emergency drains located only over the playing field open, 4) if still greater load accumulates due to snow, the roof can handle loads in a deflated condition (12 psf for Pontiac and 30 psf for Iowa).

Experience in erecting the roofs of these two stadiums has shown that during construction high winds buffeting the long panels can damage them (diamond and triangular panels have not been affected.)

Because pressurization gives stability, Geiger intends to require in new projects that air pressurization and standby power systems be fully operable before any panels are erected. Furthermore, to ensure roof stability both during erection and in the remote event of freak, catastrophic damage, the long-rectangular-panel areas will need to be pressurized during panel erection and in case of openings that could result in deflation. This will be accomplished by "buttoning up" the acoustical panels on all edges so that the two skins can be inflated by fans.

Lower first cost made the difference in having a roof over one's head

Architects for Pontiac Metropolitan Stadium, O'Dell/Hewlett & Luckenbach, Inc., turned to the air-supported roof as the only viable alternative for a weather cover in view of the limited budget. The original price for a stadium with a steel-vault roof was higher than allowable financing. Furthermore, subsequent legal entanglements on financing delayed the bond issue while building costs kept inflating.

Having given up on a conventional roof, the architects initially proposed an air-supported roof as a future add-on roof. But soon after, the city of Pontiac lent the stadium authority additional money so the roof could be included in initial construction.

The basic stadium design was modified accordingly. A compression ring was incorporated into the design, and the plan shape was adjusted from 45- to 37-degree corners so that the principles of skewed symmetry could be applied. Even so, some bending results in the ring because the plan has truncated corners and is not a superellipse (though the so-called funicular curve, or pressure line, does fall within the width of the compression ring). The design for bending of the compression ring made it cost somewhat more per square foot of plan area than UNI-Dome. A compensating factor, however, was the ability to mount the blowers with their direct-fired heaters on the ring platform.

Initial cost also was an important factor at the University of Northern Iowa because the UNI-Dome is being financed entirely by student fees and by donations. Architects were Thorson-Brom-Broshar-Snyder. Besides serving as a facility for varsity and intramural sports, the UNI-Dome will host variety shows, concerts, conventions and many other events.

Cost of the UNI-Dome roof plus ring is 31 per cent of the building total (\$6.5 million). The ring cost was about \$½ million and the

roof cost (fabric and cables) about \$1.5 million.

Cost of the Pontiac stadium roof plus ring is 10 per cent of the building total (\$41.9 million). The ring cost \$1.5 million and the roof cost was \$2¾ million. Cost of the ring per square foot of covered area was about 40 per cent higher than the ring at UNI. Because it is 100 ft above grade, it had to be designed so that the formwork would be self-supporting. Plate girders 6 ft deep at the outer and inner circumferences of the ring serve as forms, and also as tension steel for the horizontal bending of the ring.

Cost of the roof for the UNI-Dome is about 25 per cent higher per square foot of covered area than Pontiac stadium because it has a greater curvature and because about 60 per cent of the roof has a double layer. The second layer, also *Teflon*-coated *Fiberglas*, but lighter in weight and porous, is multifunctional. First, it is an acoustical fabric—i.e., it is a sound absorber, having a noise-reduction coefficient of 0.65 as it is mounted. Secondly, it forms a plenum for warm air to melt snow if it collects on the roof. Thirdly, it forms an insulating boundary of air ($U=0.60$).

Just a few horsepower of fan capacity are needed to keep the roofs airborne

When the Pontiac Metropolitan Stadium is unoccupied, only two of the 29 fans are required for air-pressure support. Because the Pontiac stadium is ventilated, not cooled by refrigeration, and because smoking is allowed, a large fan capacity was needed to move sufficient air. For this reason also, the translucency of the panels was kept at 8 per cent, rather than the 14 per cent used at UNI-Dome.

The 80,000-seat Pontiac stadium has twice the plan area and about three times the volume of UNI-Dome. The Iowa stadium with a maximum seating of 25,500 for concerts and convocations has two 40,000 cfm (15 hp) fans that circulate air and maintain pressure when only the field level is in use. Additionally, there are two 135,000 cfm (125 hp) fans that are used during inflation of the roof, for mass exiting from the building, during heavy snow fall for aid in snow melting, and during spectator events for heating and cooling the entire space.

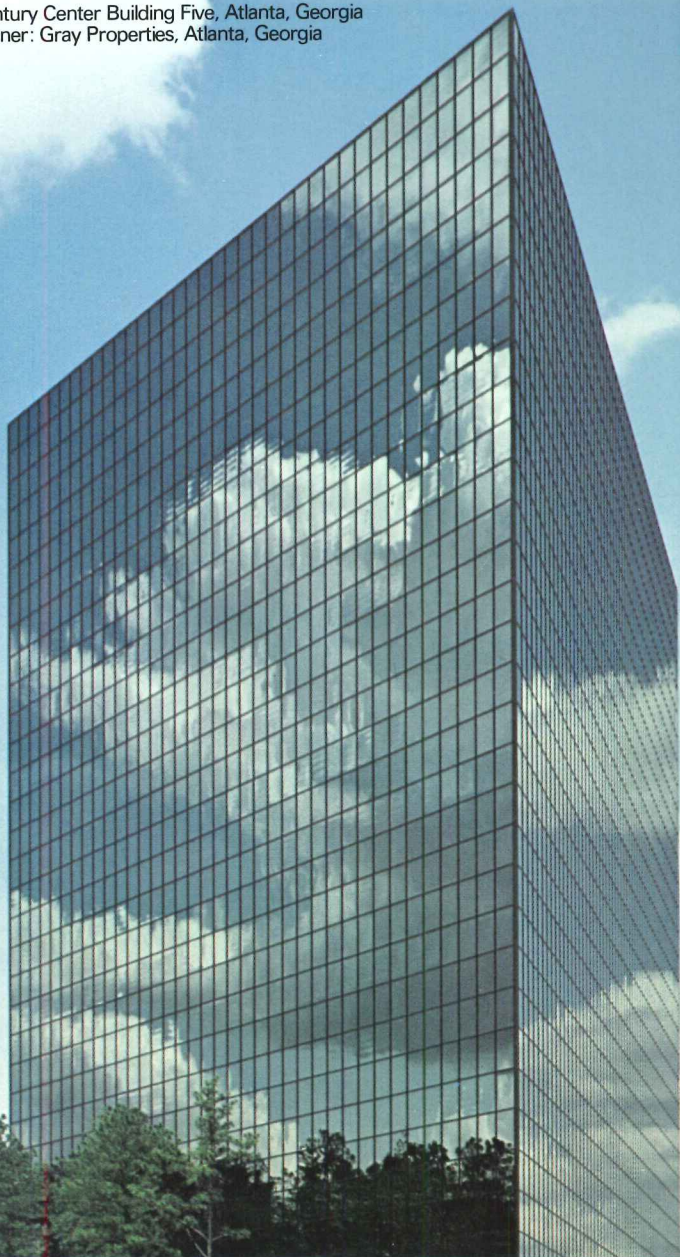
UNI-DOME, Cedar Falls, Iowa. Owner: *University of Northern Iowa*. Architects: *Thorson-Brom-Broshar-Snyder*. Engineers: *Geiger Berger Associates P.C. (structural and mechanical)*; *Flack & Kurtz (electrical)*. Consultants: *Ranger Farrell & Associates (acoustical)*. Contractors: *John G. Miller Construction Company (general)*; *Owens-Corning Fiberglas Corporation, Construction Services Division (roof)*.

PONTIAC METROPOLITAN STADIUM, Pontiac, Michigan. Owner: *Pontiac Stadium Building Authority*. Architects: *O'Dell/Hewlett & Luckenbach, Inc.; Kivett and Myers (consulting architects)*. Engineers: *Geiger Berger Associates, P.C. (structural for roof, mechanical for covered stadium)*; *McClurg & Associates, Inc. (structural for stadium)*; *Hoyem Associates, Inc. (mechanical and electrical)*. Consultants: *Sasaki, Walker Associates (site planning and landscape architecture)*; *Coffeen, Anderson & Associates, Inc. (acoustical)*. Construction manager: *Barton-Malow Construction Management Services*. Roof contractor: *Owens-Corning Fiberglas Corporation, Construction Services Division*.

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Century Center Building Five, Atlanta, Georgia
Owner: Gray Properties, Atlanta, Georgia



101 Marietta Tower, Atlanta, Georgia
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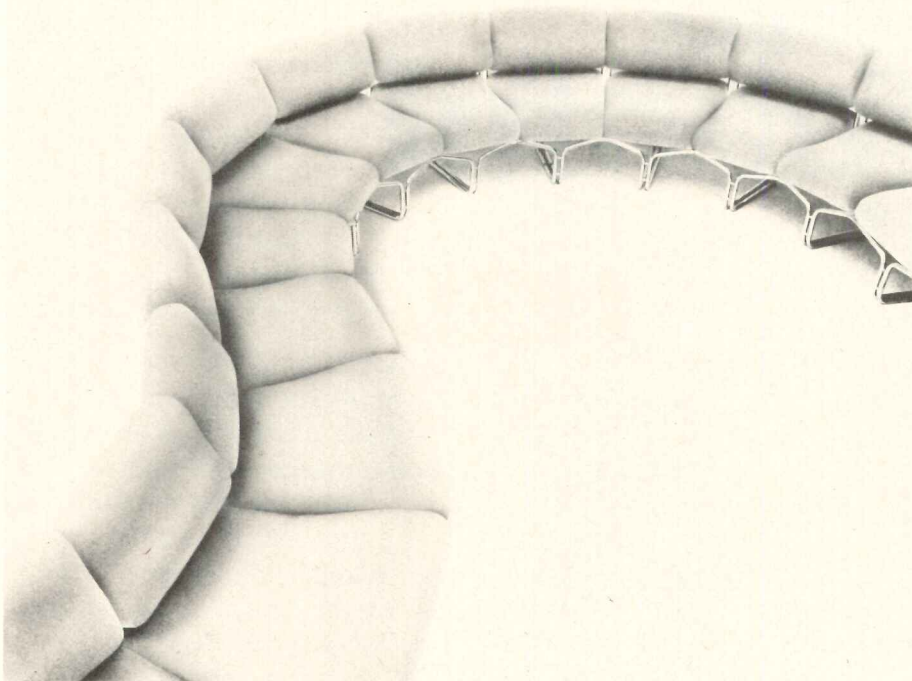
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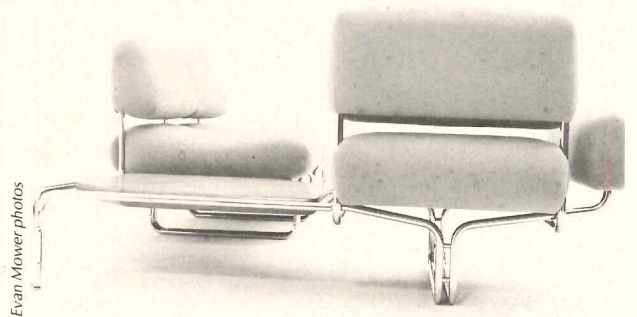


Lounge seating system includes tables, planters

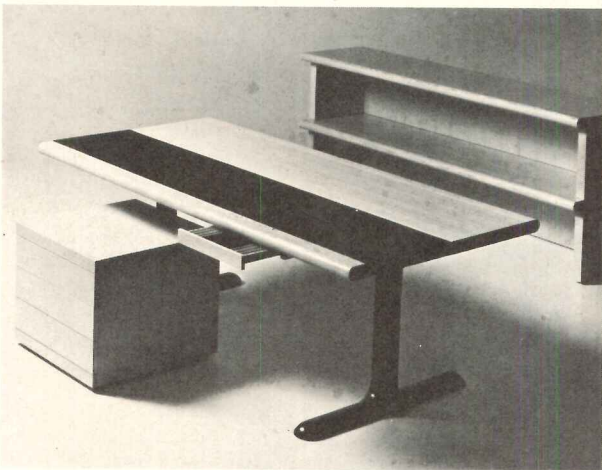
Designed by Roger Kenneth Leib, the seating is based on a 24-in. module with seating units that extend in straight lines, form curves (convex or concave), or turn 90-degree corners. Backs, arms, tables and planters may be placed at any point in the arrangement. Contoured urethane cushions are said to meet new California flammability regulations, and

feature cleanable, replaceable covers available in company textiles or COM. The base is 14 gauge steel tubing, with hand-polished mirror stainless chrome finish. Tables come in matched veneers of high-pressure laminate with solid hardwood bullnosing in white oak or walnut. ■ Add Interior Systems, Inc., Los Angeles, Calif.

Circle 300 on inquiry card



Evan Mower photos



Giovanni Carini designs the "Marcatre Executive"

This collection in wood includes table/desks and conference tables, some with pedestal bases, some with end-panel supports. Various storage cubes, accommodating executive filing, a stacking library system with shelves, credenzas and space dividers, also appear in the line. The company states that high density wood cores have ashwood veneers, laminated top and bottom, with solid ash edges. The wood may be ordered natural or tinted black; both finishes are glossy. It

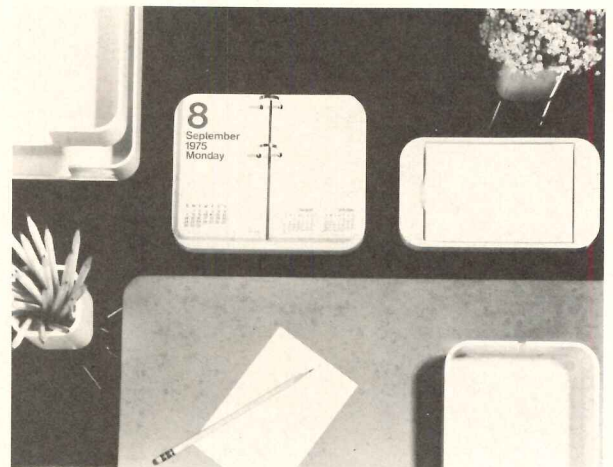
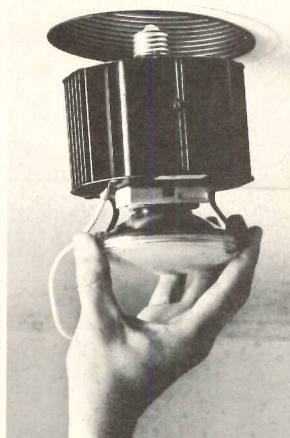
is also possible to specify the inlaid leather for various writing surfaces. Also new from the company, but not shown, is seating designed by architect Mario Bellini, consisting of generously padded and upholstered single seats that may be grouped. The same designer is responsible for an unusual table in travertine, fashioned in the form of two low open steps suitable for end table or coffee table use. ■ Atelier International, Ltd., New York City.

Circle 301 on inquiry card

Incandescent-to-mercury conversion

The *Powermiser* unit converts existing interior incandescent fixtures to energy efficient, high illuminating mercury vapor lamps, according to the company. It will fit any 120 volt open incandescent downlight rated at 150 watts or more with a 5¼-in. diameter opening and a 7-in. depth. Installation involves simply screwing in the unit, which offers a built-in reflector and ballast. ■ Crouse-Hinds Co., Syracuse, N.Y.

Circle 302 on inquiry card




Radius One accessories now come in hard plastic

Molded of hard plastic—epoxy coating). The ash trays come in two sizes: 4½ in. square and 6 in. square. The letter trays are available as individual or tiered units and have non-skid rubber feet to prevent slipping. The two types and sizes of desk pads include one with black linoleum with felt backing, measuring 18 by 24 in. The other, measuring 20 by 34 in., features leather textured vinyl. ■ Smith Metal Arts Co., Inc., Buffalo, N.Y.

Molded of hard plastic—epoxy coating). The ash trays come in two sizes: 4½ in. square and 6 in. square. The letter trays are available as individual or tiered units and have non-skid rubber feet to prevent slipping. The two types and sizes of desk pads include one with black linoleum with felt backing, measuring 18 by 24 in. The other, measuring 20 by 34 in., features leather textured vinyl.

■ Smith Metal Arts Co., Inc., Buffalo, N.Y.

Circle 303 on inquiry card
more products on page 153



It's the pay-off end of a Halsey Taylor water cooler. Our exclusive double bubbler—the only twin stream projector in the business.

Sure, it gives fuller, more generous gulps of cold water. But it also identifies the cooler beneath it as the one specified more often than any other. Simply because architects rely on it. From past experience.

Old faithful

We pay a lot of attention to product appearance, of course. And we produce the widest selection of models and colors in the industry—to give you the greatest possible design latitude.

But performance is what we're really hooked on. So we use the finest quality materials and components, assemble them scrupulously, test them thoroughly and turn out coolers that give year after year of maintenance-free service. Depend on it. Old Faithful won't let you down.

If you'd like to have our new catalog, write to HalseyTaylor Division, 1554 Thomas Road, Warren, Ohio 44481.

For more data, circle 57 on inquiry card

Halsey Taylor[®]
KING-SEELEY **KST** THERMOS CO.

For more information, circle item numbers on
Readers Service Inquiry Card, pages 209-210.

PRESSURE-TREATED WOOD / Pressure treatment of wood with creosote and specifications for pressure-creosoted wood products are described in this brochure. Titled "Creosote Makes Wood Permanent," the eight-page brochure identifies the use of pressure-creosoted wood products in utility and transportation applications, and commercial, agricultural and marine construction. Included in the technical notes to specifiers are the lumber species and recommended AWWPA specifications for creosote and creosote solutions. ■ Koppers Co. Inc., Pittsburgh, Pa.

Circle 400 on inquiry card

THERMAL WINDOWS / Literature available from the company describes an aluminum horizontal rolling window that exceeds the energy saving qualities of most wood windows, the material says. The key is a closed vinyl foam insulating agent that is able to resist extreme temperature changes. The new material provides the thermal barrier between the inside and outside frames of the "E-600" series windows. ■ Capitol Products Corp., Mechanicsburg, Pa.

Circle 401 on inquiry card

FINNISH PLYWOOD / The 1975 Finnish plywood brochure (Technical Bulletin No. 2-1975) is a 12-page, color booklet detailing both "Combi" birch-faced and "Finply" all-birch film overlaid plywood especially suited for concrete formwork. Stress factors, strength values, section properties and loading tables are illustrated in charts and graphs. ■ Finnish Plywood Development Assn.-USA, Falls Church, Va.

Circle 402 on inquiry card

ELECTRIC BOILERS / An illustrated four-page bulletin giving application and specification details on electrode steam boilers is now available. They are suitable in places where fossil fuels are in short supply and/or where local codes may favor electrically operated equipment to eliminate air pollution, according to the company. Models are available from 20 to 1200 KW at pressures up to 800 psi and voltages up to 600 volts; and from 550 to 50,000 KW at pressures up to 400 psi and voltages between 4160 and 16,000 volts. ■ Hydro Steam Industries, Inc., Alexandria, Va.

Circle 403 on inquiry card

FIR-HEMLOCK DOORS / Two brochures on wood panel doors, one depicting stock designs and the other offering tips on installing and finishing, are available. "Lasting Impressions" pictures ten ornamental entrance doors, intricately carved panel doors in 18 designs and a dozen traditional styles, all offered as stock items. "Care & Handling of Fir & Hemlock Doors" lists tips for handling, fitting and hanging, and finishing. ■ Fir & Hemlock Door Assn., Portland, Ore.

Circle 404 on inquiry card

ALUMINUM CEILING GRID / The folder photographically depicts several typical applications and details the variety of functional ceilings for offices, reception areas, public buildings and commercial structures. Full structural data for both standard and custom grid configurations and a complete description of colors, shapes and finishes available are also presented. ■ Howmet Corp., Magnolia, Ark.

Circle 405 on inquiry card

HOT WATER HEATING / An eight-page color brochure, describing a full line of electric hot water heating and steam processing boilers for commercial and industrial applications, is immediately available. ■ Bryan Steam Corp., Peru, Ind.

Circle 406 on inquiry card

AIR SYSTEMS EQUIPMENT / Literature documenting the company's full line of industrial heating, cooling, ventilating and make-up air equipment illustrates and describes the firm's standard products and provides application information. ■ Applied Air Systems, Inc., St. Paul, Minn.

Circle 407 on inquiry card

WINDOW BLINDS / A guide to the professional use of a variety of window treatments offers illustrations, schematic diagrams and specifications for 1-in. "Riviera" blinds as well as the conventional 2-in. blinds. Specialty blinds for triangular, trapezoidal, skylight and other unusual windows are also described in detail, and sections on such applications as motorized tilt blinds with cut-outs and "hoist" blinds (which open from the top) are explained. Questions answered include those on product options, sun control, heat gain and loss and maintenance costs. ■ Levolor Lorentzen, Inc., Hoboken, N.J.

Circle 408 on inquiry card

PRECAST DESIGN / The Prestressed Concrete Institute announces this new book, authored by 15 consulting engineers, and containing design procedures (in accordance with the ACI and Uniform Building Codes) for a high-rise, precast, prestressed concrete building, from concept to final construction. This fully-indexed volume is priced at \$10, and should be ordered from Prestressed Concrete Institute, 20 North Wacker Drive, Chicago, Ill. 60606.

GUTTER DESIGN / A booklet provides descriptions and specifications on "Omni Facade," a rain carrying system that provides both gutter and fascia in a single piece of aluminum, which is also channeled to hold the soffit. The channel readily accepts both the continuous and the pan types of soffit. ■ Omni Products Co., Addison, Ill.

Circle 409 on inquiry card

GLULAM / A 40-page product description and technical design information catalog for structural glued laminated timber (glulam) covers a range of structures, including industrial, commercial, religious, recreational and agricultural projects, as well as bridges. Technical design information includes data such as stress tables, section properties, simple span beam tables, cantilever beam design tables, arch tables, panelized roof grid systems, and decking systems. ■ American Institute of Timber Construction, Englewood, Colo.

Circle 410 on inquiry card

ARCHITECTURAL COATING / A four-page color chip brochure, presenting the new color line for Fluropon architectural coating, incorporates 34 color swatches for coil coating applications on steel and coil or spray coating applications on aluminum. ■ DeSoto, Inc., Des Plaines, Ill.

Circle 411 on inquiry card

SANITARY CEILING TILES / Acousti-Clad ceiling tiles specially designed for environments where cleanliness is critical are described in this new eight-page brochure. Illustrated with four-color photography, the publication contains close-ups of the tiles, showing their virtually maintenance-free surface that never needs painting; various commercial and institutional applications are also illustrated. The brochure says each tile is composed of a sound-absorbent core and cladding made from aluminum. Three types of cores are available to meet specific criteria for sound attenuation, moisture resistance and fire protection. The aluminum cladding comes in three patterns and a variety of colors. ■ Johns-Manville, Denver, Colo.

Circle 412 on inquiry card
more literature on page 205

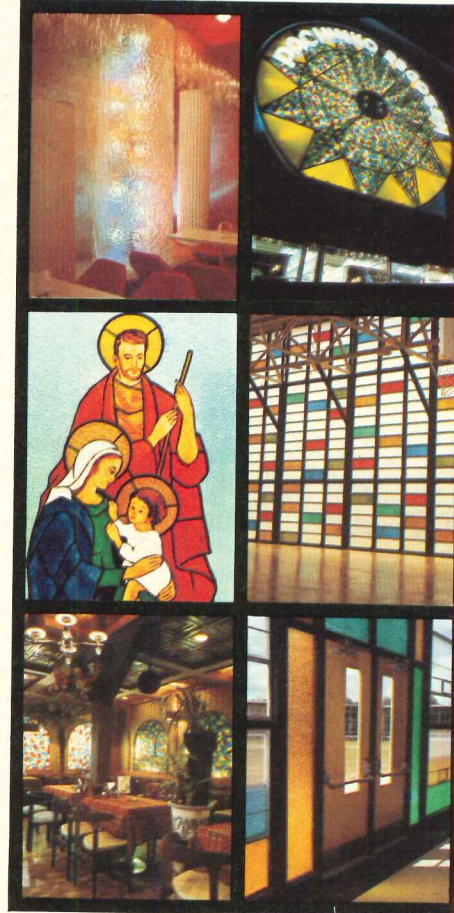
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For more data, circle 58 on inquiry card



In Norfolk's Skyline:

A decade of Ceco formwork

Contractors and owners coast to coast save on forming costs with Ceco services

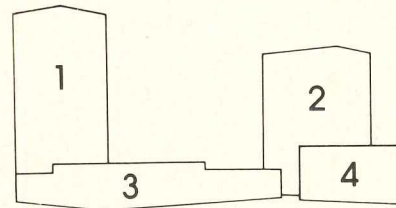
Impressive architecture in concrete is adding excitement to Norfolk's modern, growing skyline. These four projects are typical of Ceco's concrete formwork in Norfolk over the past decade.

With Ceco services you get simplicity, speed and reliability.

— And a firm contract price that represents cost savings to contractors and project owners.

— And performance by formwork specialists who take pride in getting the job done right.

Ceco offers economical and time-saving formwork for rib-slabs, waffle-slabs, flat-slabs, columns and beams. Services are nationwide on a local basis. For more facts, please see Sweet's or contact your nearest Ceco office.



1. Virginia National Bank Building (1965)
Skidmore, Owings & Merrill, *architects*
Williams and Tazewell & Associates, *architects*
Weiskopf & Pickworth, *structural engineers*
Basic Construction Co., *contractors*

2. United Virginia-Seaboard Bank Building (1968)
Vlastimil Koubek, *architect*
Baskam & Chester, *structural engineers*
Thorington Construction Co., *contractors*
L. J. Martone and Associates, *concrete contractors*

3. I.C.C. Office Building (1975)
Toombs, Amisano & Wells, *architects*
Harald Nielsen & Associates, Inc.,
structural engineers
Batson-Cook Co., *contractors*

4. First Virginia Bank Building (1975)
Dudley, Morrisette, Cederquist & Associates,
architects & engineers
Basic Construction Co., *contractors*



CECO concrete forming services

The Ceco Corporation • General Offices
5601 West 26th Street • Chicago, Illinois 60650

For more data, circle 59 on inquiry card

SKID-PROOF PANEL / A non-skid panel for horizontal surfaces that combines the look of crushed stone with the structural properties of exterior-grade plywood is a super-fine version of the company's stone-aggregate "Sanspray" siding. "Texdeck" can be face-nailed to lumber framing, and panel edges are sealed with a factory-applied paint primer. Though designed specifically for such exterior horizontal surfaces as balconies, patios, boat docks, pedestrian walks and swimming pool aprons, "Texdeck" is not limited to these applications and can include any interior flooring installation calling for a textured surface. Standard size panels are 4 by 8 ft in a $\frac{3}{8}$ -in. thickness. • U.S. Plywood, Stamford, Conn.

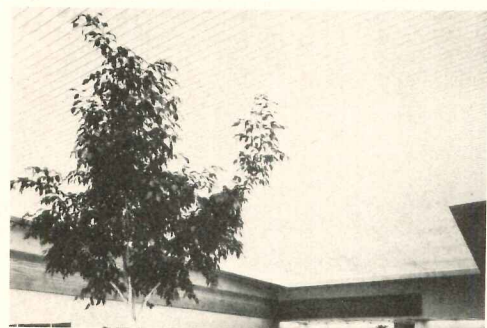
Circle 304 on inquiry card

CLUB HOUSE CARPET / "Fore" carpeting is made to take spiked golf shoes without showing wear, making it suitable for locker rooms, pro shops, bar areas and lounges, according to the company. "Fore" carpeting is made of 100 per cent continuous filament olefin pile on a reinforced non-stretch vinyl back. The product is stain-resistant, fade-resistant, and skid-resistant. Eight colors are available, ■ Crown Industries, Div. of Ludlow Corp., Fremont, Ohio.

Circle 305 on inquiry card

AISLE LIGHTING / This mercury vapor aisle light is recessed, with a heavy die cast aluminum face plate, die cast louvers and a stepped baffle effect in the scoop faceplate area. A $\frac{3}{16}$ -in.-thick tempered glass panel behind louvers is set in silicone to provide a positive weather-tight seal. ■ Prescolite, A U.S. Industries Co., San Leandro, Calif.

Circle 306 on inquiry card



LINEAL CEILING SYSTEM / Because the system does not achieve full closure, it allows utilities to be installed above the ceiling panels. The "Plenum Mask Ceiling System" consists of aluminum ceiling panels with a face width of 4 in., and carriers suspended from wires to which the panels are attached. Panel spacing can be 2, 4, or 6 in. on center, and panels are finished in baked enamel on both sides. ■ Alcan Building Products, Div. of Alcan Aluminum Corp., Warren, Ohio.

Circle 307 on inquiry card

HOT-APPLIED WATERPROOFING / Tremproof Bemalastic 150, a one-part hot-applied rubberized asphalt formulation is suited for weatherproofing structural concrete above, on, or below grade such as two-course concrete slab construction in plaza decks, parking garages, roof terraces, pedestrian concourses or podiums, and bridge decks. It is also recommended for single-course construction such as tunnels, foundation walls, reflective pools and cavity walls, according to the company. It can be applied to horizontal and vertical surfaces. Recommended application thickness of $\frac{1}{8}$ -in. to $\frac{3}{16}$ -in. will not crack or become brittle and will span structural cracks up to $\frac{1}{16}$ -in. ■ Tremco, Inc., Cleveland, Ohio.

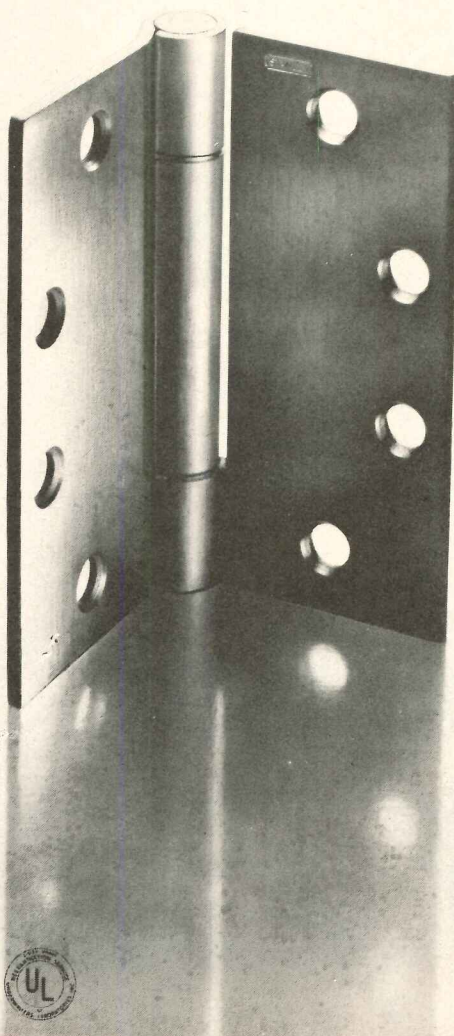
Circle 308 on inquiry card

GRILL-RANGE / Freestanding and drop-in electric ranges bake with conventional radiant heat, but convert (at the flip of a switch) to a "Convected Heat" oven that cooks roasts, turkeys and hams at 50-deg-lower temperatures with cooking time reduced as much as 30 per cent, according to the company. Other features include the "convertible cooktop" concept in which twin-element glass-ceramic or conventional-element cooktops are built into plug-in cartridges. These cooktop cartridges are replaced in seconds by a plug-in char-flavor grill. ■ Jenn-Air Corp., Indianapolis, Ind.

Circle 309 on inquiry card

more products on page 155

You've got codes to cope with. Stanley's new spring hinges cope.



Building codes can be a problem. But with our new spring hinges: No problem. They answer codes requiring self-closing doors on hotels, motels, apartments, institutions and office buildings.

Now available in sets.

New sets #2051 and #2052 combine spring hinges #2050 with springless hinges that look alike for just the right closing power.

A new adjustable model too! Where it is impossible to predict the closing power required, the new adjustable #2060 does the trick.

To cope with codes, write: Stanley Hardware, Division of The Stanley Works, New Britain, Conn. 06050. In Canada: The Stanley Works of Canada, Ltd.

STANLEY helps you do things right.

For more data, circle 60 on inquiry card

Our new 22 families of color put the spectrum at your fingertips

We call this new, beautiful modern selection of paint colors the *DesignaColor*™ System. We think you'll call it the most practical approach to the selection of architectural-maintenance paint colors that has ever been devised.

In this new *DesignaColor* System Pittsburgh Paints gives you a full spectrum of modern colors — 792 from which to select. They're — the "in vogue" hues — clean, clear paint colors — plus deep-tones and accents. All are arranged into 22 families so that the various shades in each color are grouped together and presented in an effective, pleasing, easily distinguished, practical arrangement.

The whole thing sounds so simple you would hardly think it was new and exciting. But it is. Just wait till you see how easy it is to match a Bird's Egg Blue, a Lush Orange . . . or even Grape Hyacinth!

A Pittsburgh Paints Sales Representative will be happy to tell you more about this new *DesignaColor* System. Give him a call or drop us a note. PPG Industries, Inc., One Gateway Center, 3W, Pittsburgh, Pa. 15222

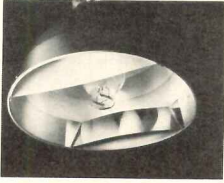
PPG: a Concern for the Future

PITTSBURGH® PAINTS



For more data, circle 61 on inquiry card

STORAGE AREA FIXTURES / A high-intensity discharge (HID) fixture specifically designed to light warehouse and other storage areas directs light all the way up high-stack storage areas and down long aisles at the same time. The reflector and two mirror-specular reflector inserts "shape and fan out" the light vertically up the tall stacks and down the aisles, which can range from 8 to 15 ft wide, according to the company. ■ Keene Lighting, Keene Corp., Union, N.J.



Circle 310 on inquiry card

WALL SYSTEM / "Econoline" partitions can be used as a wall to make rooms or flowing spaces, or individually as dividers. Each panel is tilted out at the bottom while the top of the panel is inserted into a ceiling mounted channel. An inward swing on the lower part of the panel locates it in a rigid, vertical position. No floor channel is required on carpeted floors since the bottom of each panel has a shaped extrusion that holds the panel in place. Partitions are available in a variety of panel surfaces including laminated plastic, vinyl wallcoverings or carpet wallcovering. An unfinished surface is available for painting or vinyl fabric application. ■ Kwik-Wall Co., Springfield, Ill.



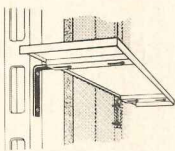
Circle 311 on inquiry card

SELF-CLOSING TOILET SEAT / The seat closes automatically after the toilet is flushed. This seat is molded of high-impact polystyrene with a low profile, and its adjustable design fits virtually all regular and elongated tank-type toilets. ■ Polite Seat Co., White Plains, N.Y.



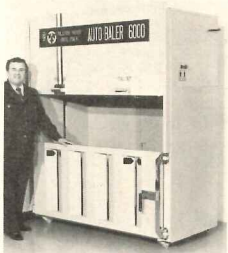
Circle 312 on inquiry card

STAINLESS STEEL SHELF / The "B-2950" stainless steel shelf for commercial washroom and hotel guest bathroom use is 5-in. wide and constructed of satin finish 18 gauge, type 304 stainless steel with 3/4-in. return edge. The shelf comes in a variety of one-piece standard lengths. Concealed brackets are made of galvanized steel. ■ Bobrick Architectural Service Dept., New York City.



Circle 313 on inquiry card

BALER / The "Pollution Packer Auto-Baler 6000" has a 60-in. wide baling chamber. Once the baler is loaded, the operator pulls the handles out and down closing the loading door and starting the compacting cycle. At the end of the compacting cycle the loading door automatically opens to receive more waste. Baled material is forced out of the baler onto a waiting cart or pallet. The exterior and interior finish of the unit is baked textured vinyl. ■ The Tony Team, Minneapolis, Minn.



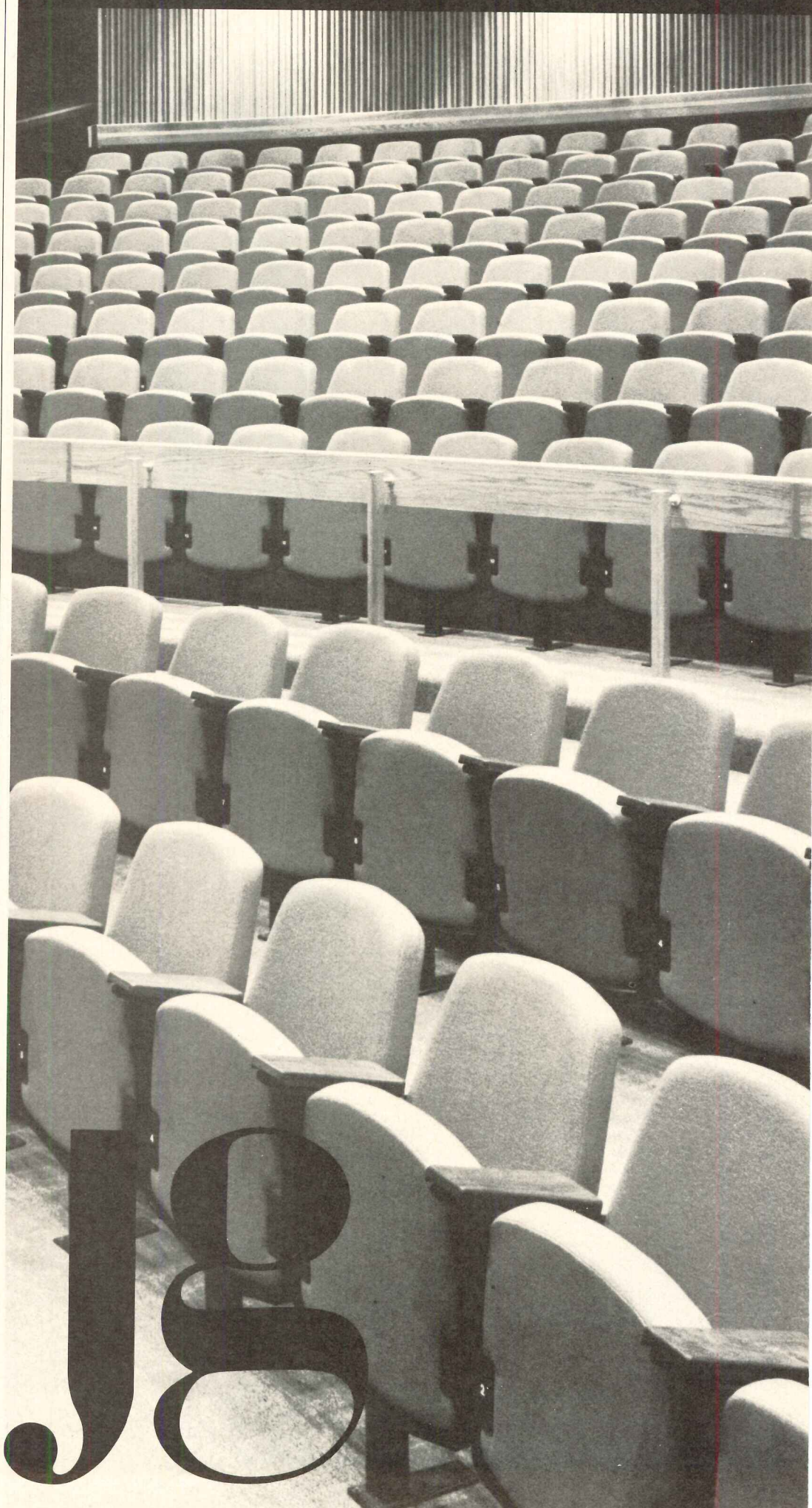
Circle 314 on inquiry card

more products on page 157

62-63

JG Furniture Company, Inc. 121 Park Avenue
Quakertown, Pa. 18951

Auditorium seat designed by Peter Dickinson
Installed at the Jennie King Mellon Library,
Chatham College
Johnstone, McMillin and Assoc., architects,
Pittsburgh, Pa.
Kilham, Beder and Chu, Consulting architects
for design, NYC.





A spectacular motor hotel.

ELEVATORS BY DOVER

The stunning new Stapleton Plaza Motor Hotel in Denver is built around a soaring atrium-lobby. Glass-enclosed elevators silently speed guests to and from their rooms, and give them a fascinating view of the lobby and its activities. For information on Dover Elevators write Dover Corporation, Elevator Division, Dept. A, P.O. Box 2177, Memphis, Tn. 38101.

Stapleton Plaza Motor Hotel.

Architects: Paul R. Reddy, Denver, Colorado.

James Ream and Associates, Inc., Design Consultants, San Francisco, California.

Contractor: Hensel Phelps Construction Company, Greeley, Colorado.

A distinctive Howard Johnson facility developed, owned, and managed by First Financial Management Corporation, Denver, Colorado.

Three Dover geared traction passenger elevators and one Dover Oildraulic® passenger elevator installed by Dover Elevator Company, Denver, Colorado.

DOVER

For more data, circle 63 on inquiry card

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Should you be reading . . .

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Engineering News-Record's Newsletter of Construction, Planning, Finance and Design

EGYPT - A THIRD SUEZ FERTILIZER COMPLEX is undergoing engineering feasibility study

BRAZIL - AIRPORT AUTHORITIES TO START calling for feasibility studies for air-
terminal after June. The

SOUTH KOREAN DREDGING AND PORT CONSTRUCTION includes some opportunities for inter-

IRAQ - BAGHDAD AIRPORT DECISION MAY COME this week, more likely the week after. That's the expectation of two of the five contending combines. Everyone's guessing

It's a new service for international construction executives by the editorial staff of ENGINEERING NEWS-RECORD . . . It gives specifics on foreign opportunities and risks . . . explores feasibility studies . . . informs you of engineering and construction problems, prospects.

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Please enter my subscription and send my 52 weekly issues by fastest mail at the \$475 annual rate.

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Please send me a complimentary copy for 4 consecutive weeks. Then I'll decide whether to subscribe.

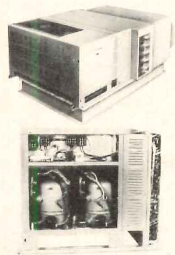
Name _____

Title _____

Organization _____

Address _____

SINGLE-PACKAGE ROOFTOP UNITS

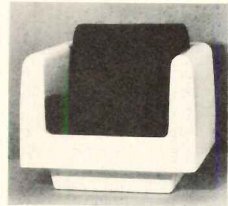


Single-package cooling and heating/cooling units with dual compressors and dual refrigerant systems are said to provide capacity modulation where cooling loads are subject to significant variation. The 7½- and 10-ton TC electric cooling and YC

gas/electric heat-cool systems can be staged in 50 per cent increments by selecting the appropriate indoor thermostat for a particular application. The new units are shipped suitable for operation down to 20°F outdoors. To simplify installation, zero clearance to combustible material is permitted. ■ General Electric Co., Central Air Conditioning Dept., Louisville, Ky.

Circle 315 on inquiry card

FIBERGLASS CHAIR

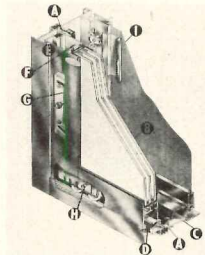


A fiberglass furniture line includes this 32-in. chair available in 16 colors. Any Naugahyde fabric is included in the list price. Also available in the line are sofas, tables and a bar table; the entire line is available fire retardant.

■ Pouliot Designs Corp., Savage, Minn.

Circle 316 on inquiry card

TRIPLE-GLAZED WINDOWS

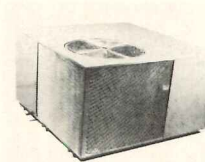


Aluminum windows and doors designed to ensure energy conservation and significant savings in fuel costs in all types of buildings feature a structural thermal barrier to stop heat flow and a mylar fin seal to stop drafts. The "Series 1200 InsulDOR" is available in white or

bronze painted standard finishes with patented security and position locks. The window units come in white or bronze painted standard finishes with fin frame standard. In addition, masonry frames and security locks are available. ■ Acorn Building Components, Inc., Detroit, Mich.

Circle 317 on inquiry card

PACKAGED CENTRAL COOLING UNITS



A series of packaged central cooling units with an EER rating of 7.0 to 7.5 is UL-approved for outdoor installation and is available in 2½, 3, 4, and 5 tons. The low silhouette units (32-

in.-high) can be slab-mounted or roof-mounted and can be used for residential or small commercial applications. ■ Westinghouse Central Residential Air Conditioning Div., Norman, Okla.

Circle 318 on inquiry card

RIGID/SWING GOOSENECK

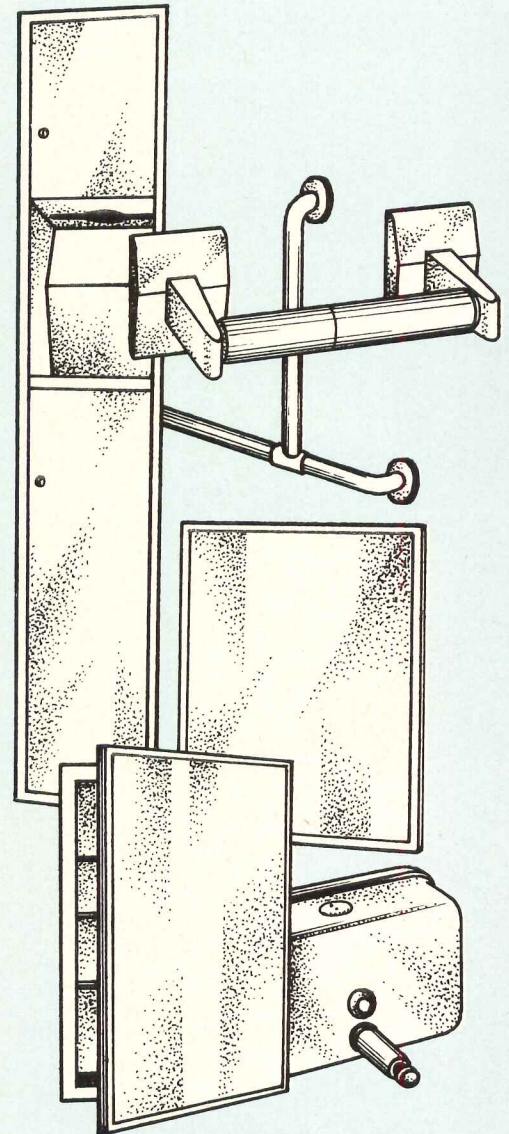


A field-convertible gooseneck, which can be installed either as a swing or rigid spout, can be converted to either a rigid or swing spout by the addition or removal of a gasket. ■ The Chicago Faucet Co., Des Plaines, Ill.

Circle 319 on inquiry card

more products on page 159

we wouldn't hand you a line... if we didn't have a complete one.



accessories
mirrors
grab bars
soap dispensers
cabinets

the
Parker Family
of washroom equipment

charles S parker

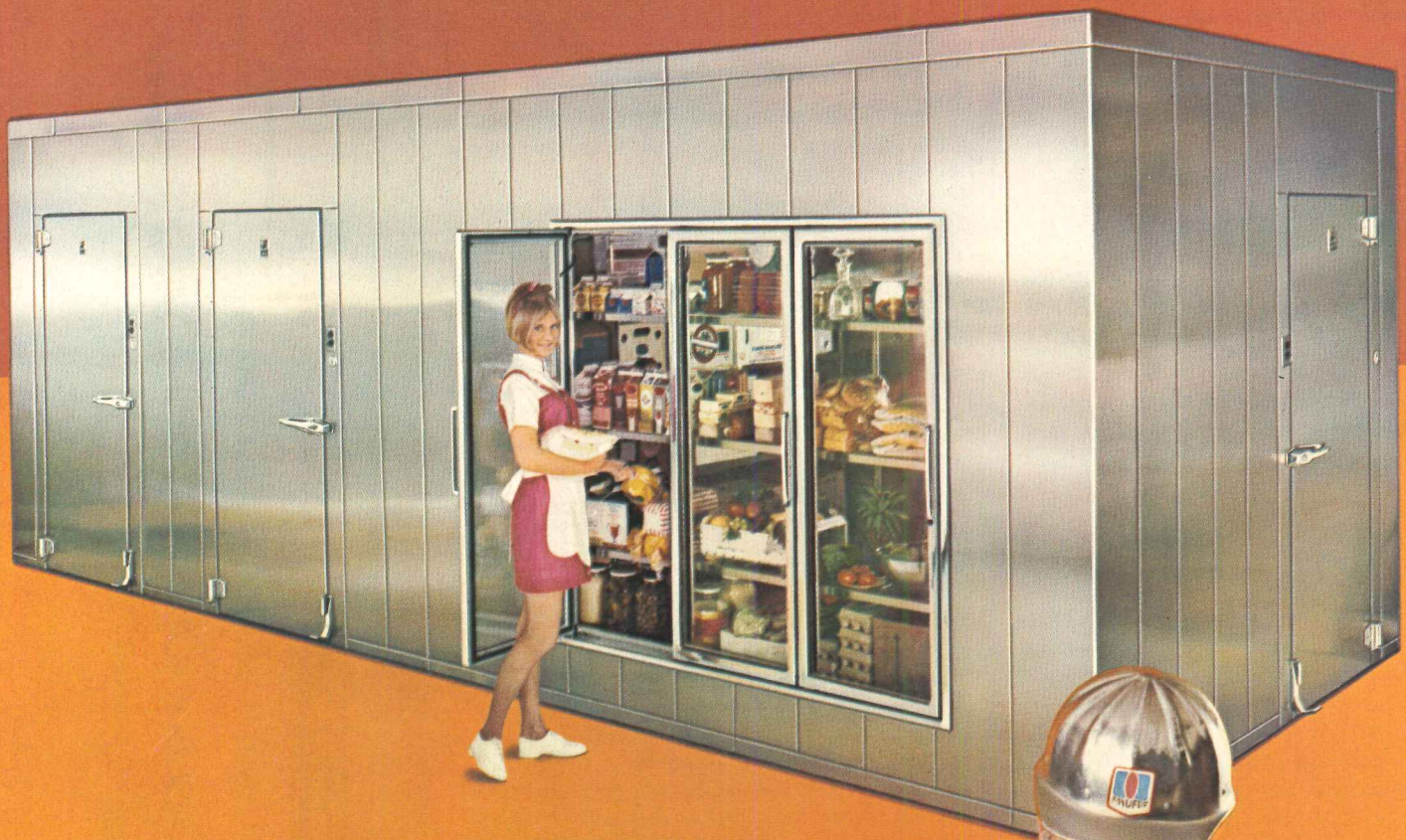
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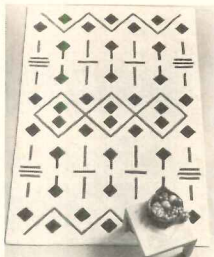
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AREA RUGS / Rugs made in Greece, Belgium and the Philippines are available in patterned geometric and flowing designs, and textured flokati (all-wool). Colorations show either vibrant contrasts or monochromatic combinations emphasizing earth tones. The "Pacifica" group (Moroq pattern shown) is hand-tufted and handsheared in acrylic fiber. Custom sizes on all rugs are available. ■ Cado/Royal System, New York City.

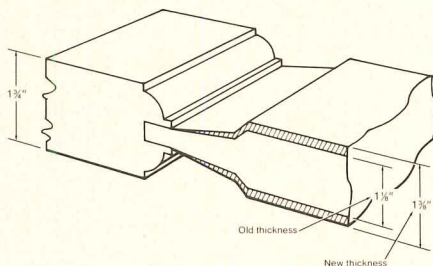


Circle 320 on inquiry card

SELF-SERVICE LAUNDRY / The "D-21" dryer consists of two regular-size commercial clothes dryers stacked one on top of the other. Each unit has a single washload capacity and can be operated independently from side-mounted control panels. A typical large dryer occupies about 10 sq ft of floor space and requires a minimum of 4 sq ft of space for service access at the back. The "D-21" requires only 7 sq ft of space totally, or half the amount needed for a large, multi-load dryer, according to the company. The dryers are available in both gas and electric models and can be either coin or ticket-operated. ■ The Maytag Co., Newton, Iowa.

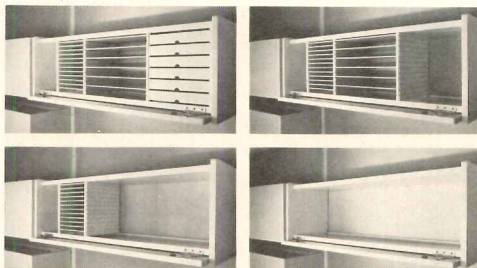


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CARVED PANEL DOORS / Effective immediately, raised and carved panels in the "International" entrance door series will be increased from 1 1/8 in. to 1 3/8 in. in thickness. Increased insulating qualities and weatherability result from the added wood, according to the company, and there will be no increase in price. ■ Simpson Timber Co., Seattle, Wash.

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CABINET STORAGE SYSTEM / This inner cabinet storage system handles: mail sorting; computer read-out paper; stationery; filing; books; loose-leaf manuals, drafting tools, etc. Composed of vertical and horizontal parts, each ICS system can be arranged to suit the specific needs of the user. The system begins with a molded ABS plastic vertical panel with dimensioned slots on the sidewalls, designed to accept a variety of steel shelves and drawers of varying widths, depths and heights. ■ Westinghouse Architectural Systems Div., Grand Rapids, Mich.

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THE Stemwinder

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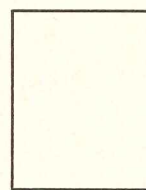
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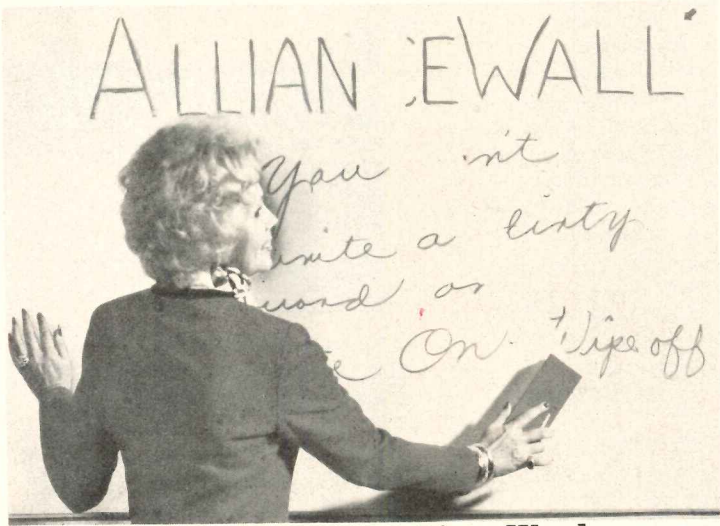
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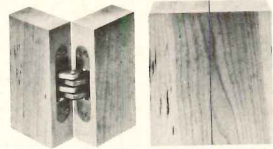
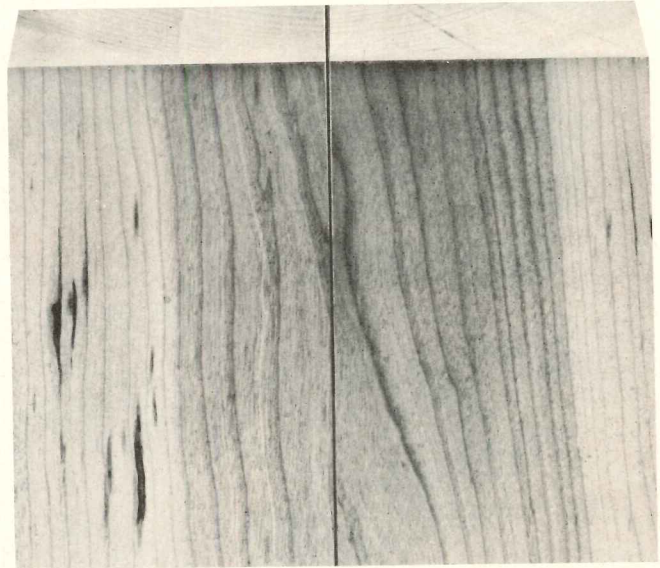
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The hinge that hides

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

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

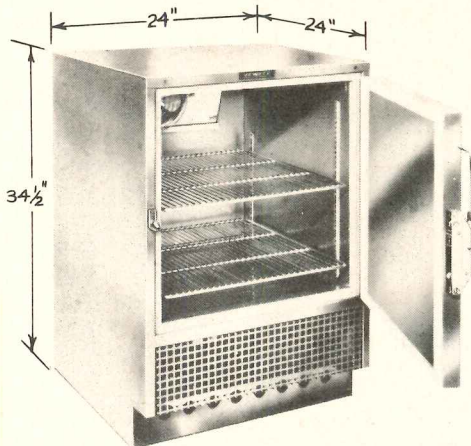
Choose from 18 models and four finishes. All models open 180° and disappear when closed.

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

the SOSS
Invisibles

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when it comes to lab design we fit in



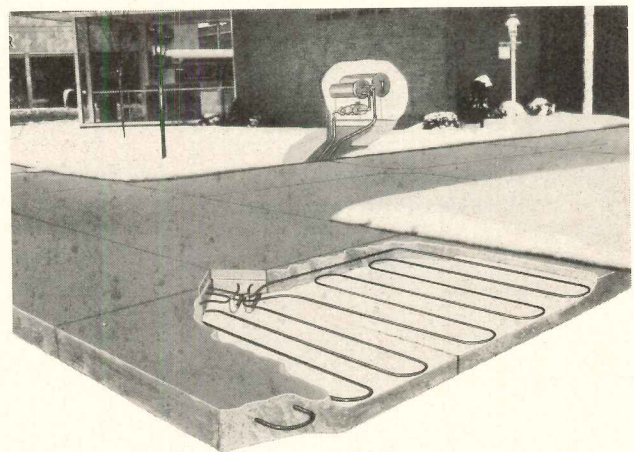
Under the counter or over, Jewett's lab refrigerators are dimensioned to fit into casework modules. Exteriors are of polished stainless steel or can be finished to your specifications. Explosion-safe, and total explosion-proof construction optional.

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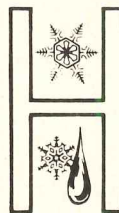


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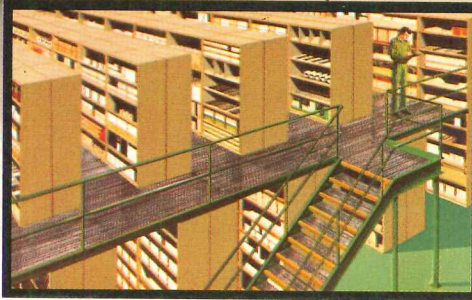
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Model ECT 120-1

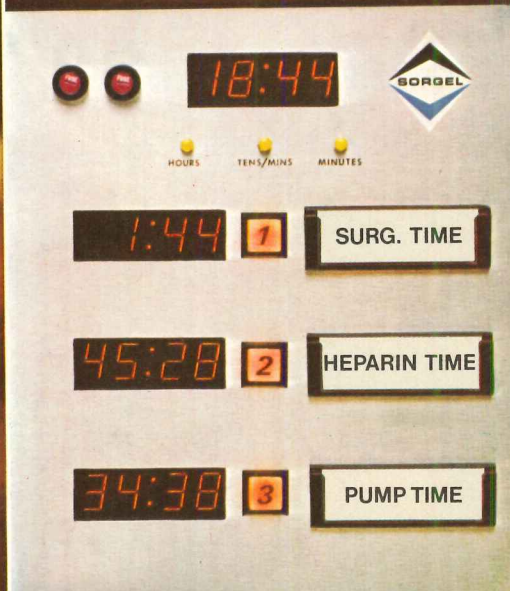
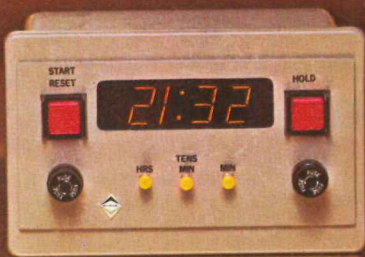
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- Combined clock/elapsed timer. Push of button starts elapsed time indicator. Can be held, re-started. Re-set returns clock to correct time.
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- The day the Eiffel Tower was topped out
- The day Stanford White was shot by his mistress's jealous husband
- The day Marie Antoinette's architect got the axe
- The day "Galloping Gertie" collapsed
- The day H. H. Richardson limited his staff to 1-hr. lunches

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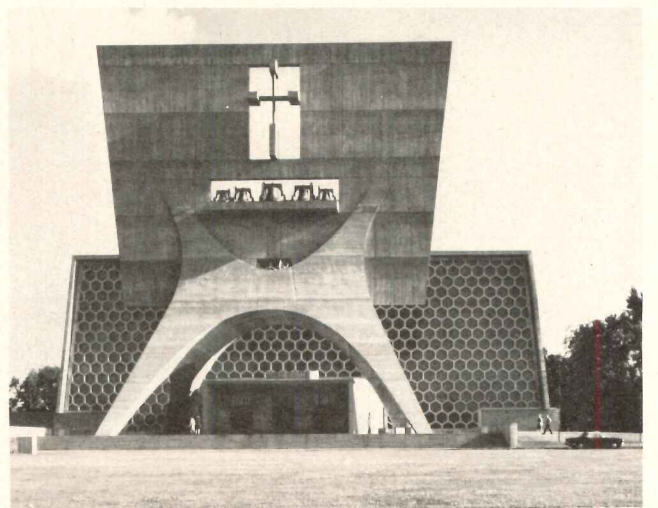
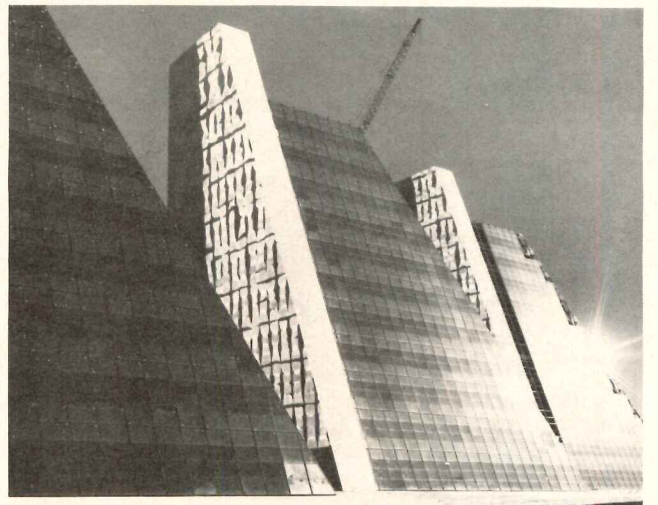
AR-1



Benetton-Rain Book and Manufacturing Library, 1961. New Haven, by Gordon Bunshaft of SOM. Published in the Nov. 1963 issue of *Architectural Record*. The mirror was described as "a spectacular showcase glowing with light and kaleidoscopic color".

september

sunday	monday	tuesday	wednesday	thursday	friday	saturday
			1 1837 F. L. W.'s Imperial Hotel survived Tokyo earthquake	2 1666 Great Fire destroyed London	3 1856 American architect Louis H. Sullivan born	4 1866 American city planner Daniel Burnham born
5 1887 American architect Rufus Schickler born	6 1475 Renaissance architect Sebastiano Serlio born	7 1936 Boulder (New Haven) Dam opened	8 1847 Belgian architect Victor Horta died	9 1937 American architect & educator Wm. Roring died	10 1753 British architect Sir John Soane born	11 1884 American architect William H. Murray born
12 1933 American architect Charles Adams Platt died	13 1729 Scottish architect Colin Campbell died	14 1808 American architect Charles Follen McKim died	15 1963 German architect Eric Mendelsohn died	16 1726 Baroque architect Johann Friedrich died	17 1846 American architect & author Claude Bragdon died	18 1793 G. Washington laid cornerstone of U.S. Capitol
19 1714 British architect Sir John Vanbrugh knighted	20 1933 German architect Hans Scharoun born	21 1868 World of U.S. Capitol collapsed, engineer killed	22 1942 American architect Ralph Adams Cross died	23 1914 Commission on U. S. Union Station, Chicago	24 1717 British architectural amateur Horace Walpole born	25 1887 Professor exploded under bombardment by Turks
26 1909 F. L. W.'s Unity Temple dedicated	27 1579 Renaissance architect Giorgio Sansovino died	28 1973 Sydney Opera House dedicated	29 1838 American architect H. H. Richardson born	30 1868 Work began on Third Abbey Church, Chely		



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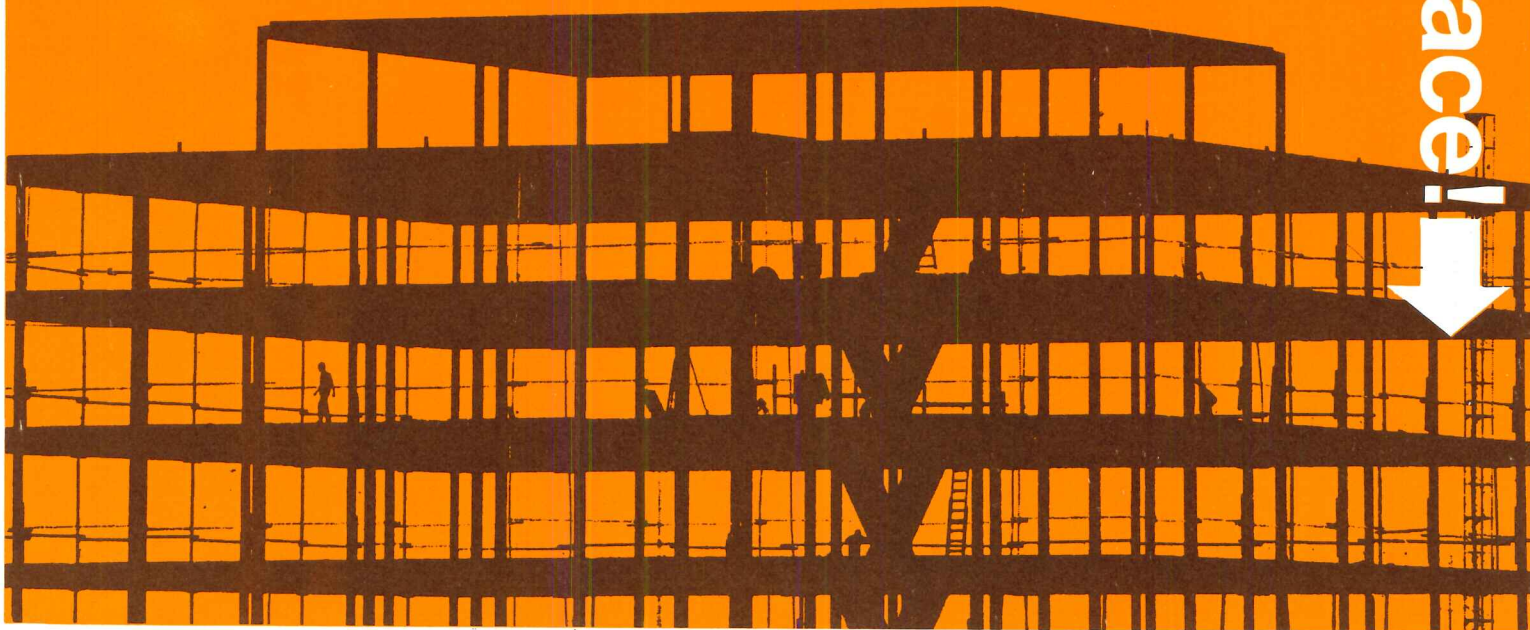
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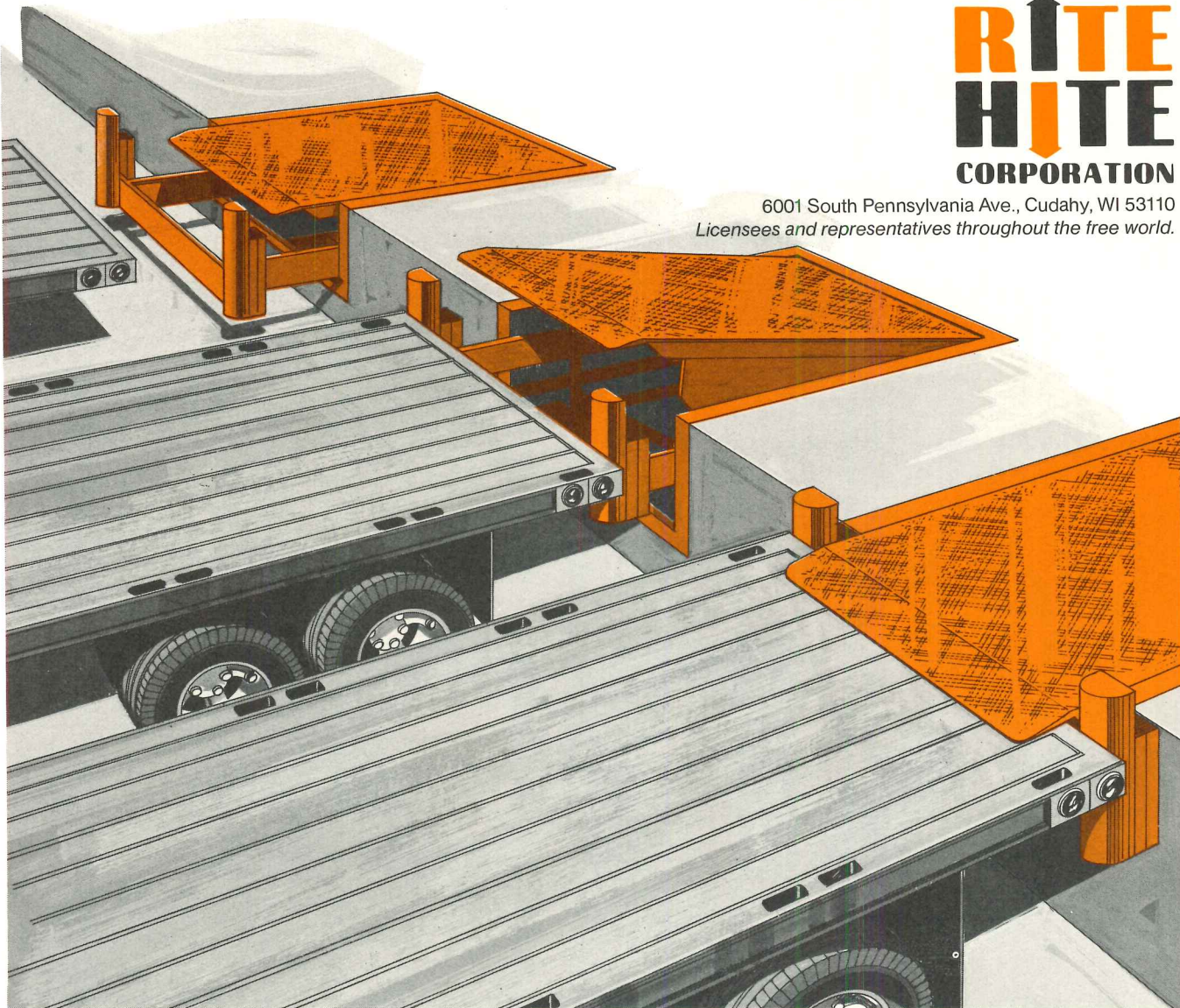
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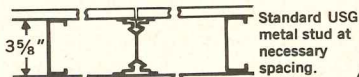
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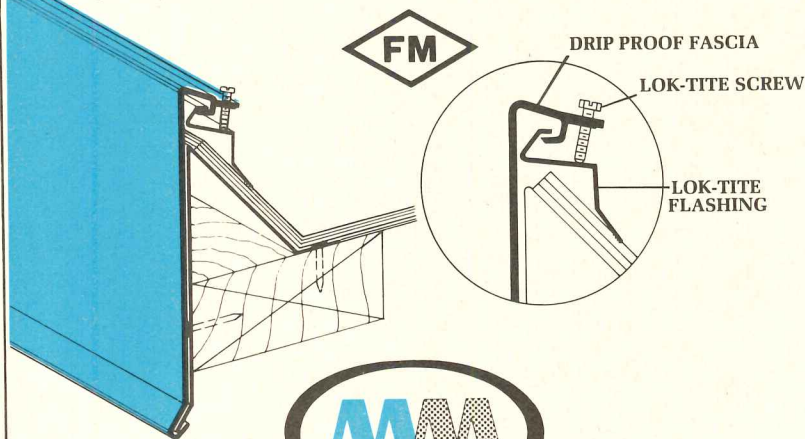
Haws
WATER COOLERS

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

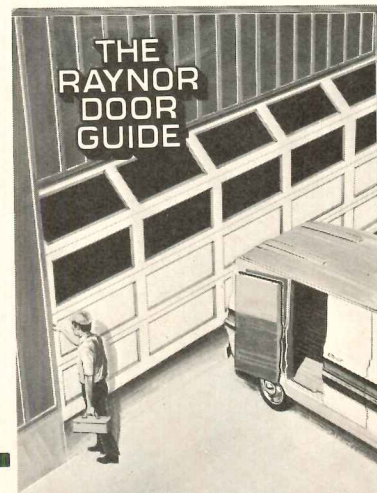
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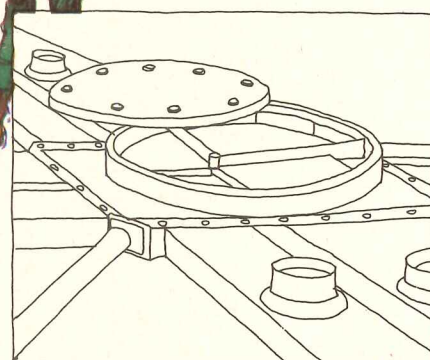
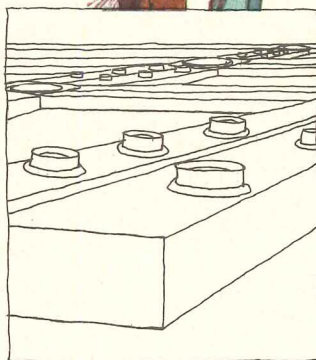
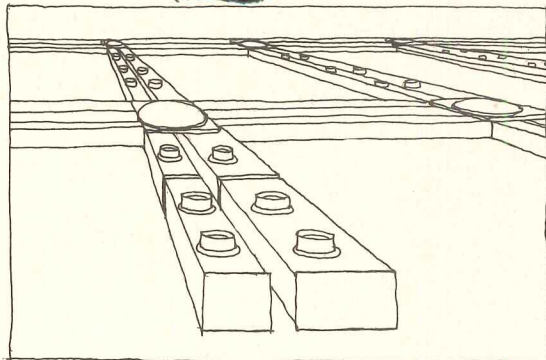


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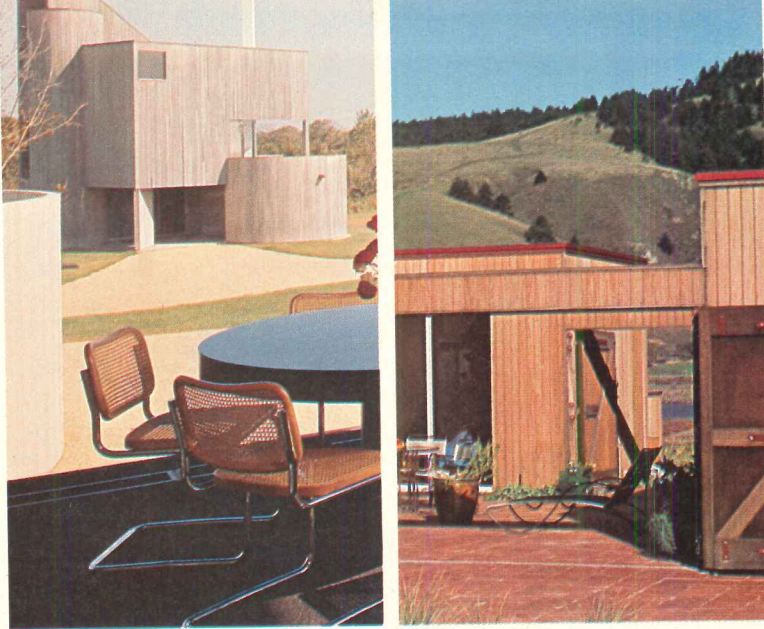
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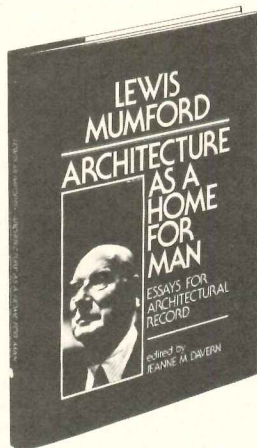
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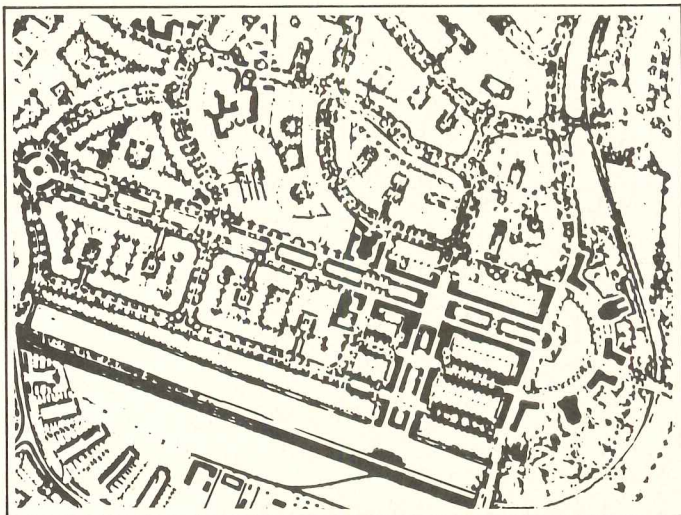


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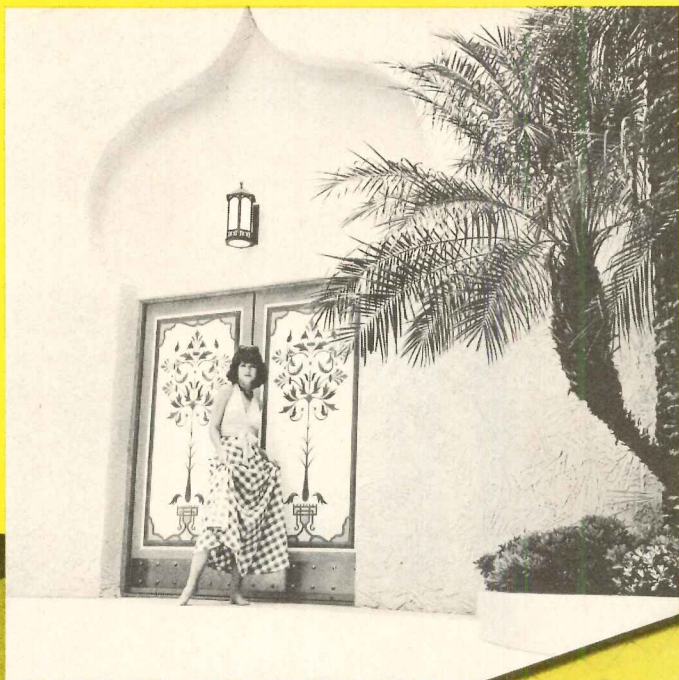
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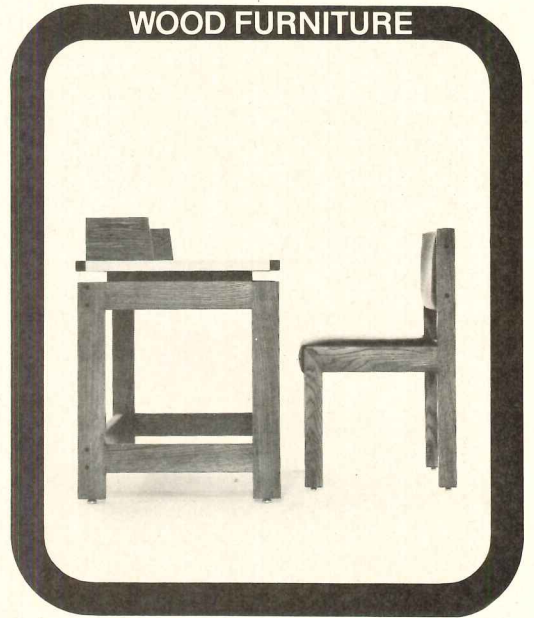
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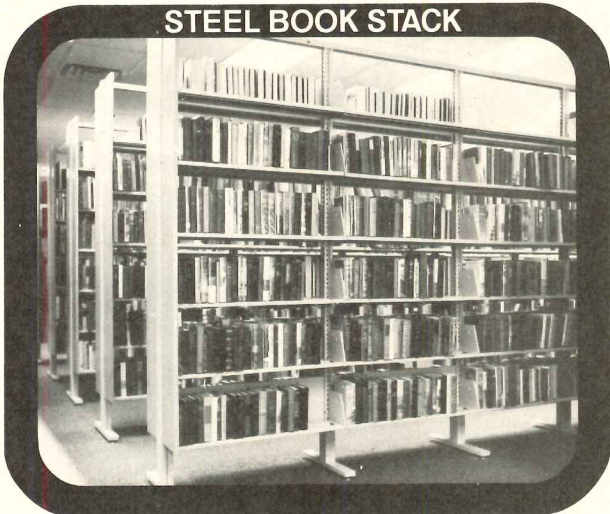


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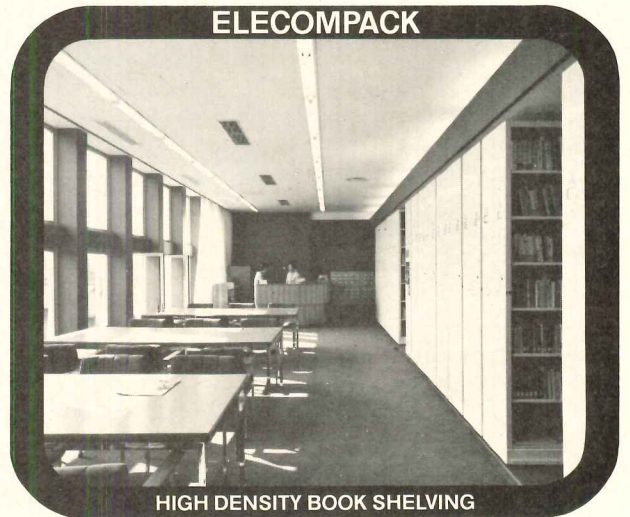
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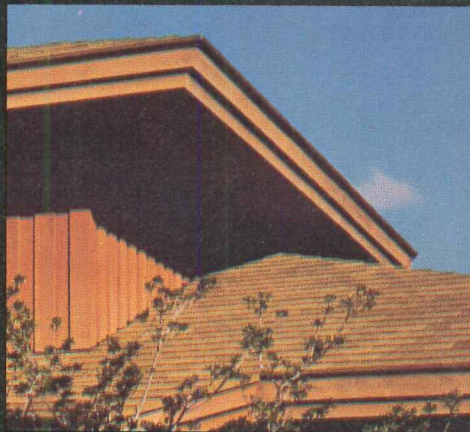


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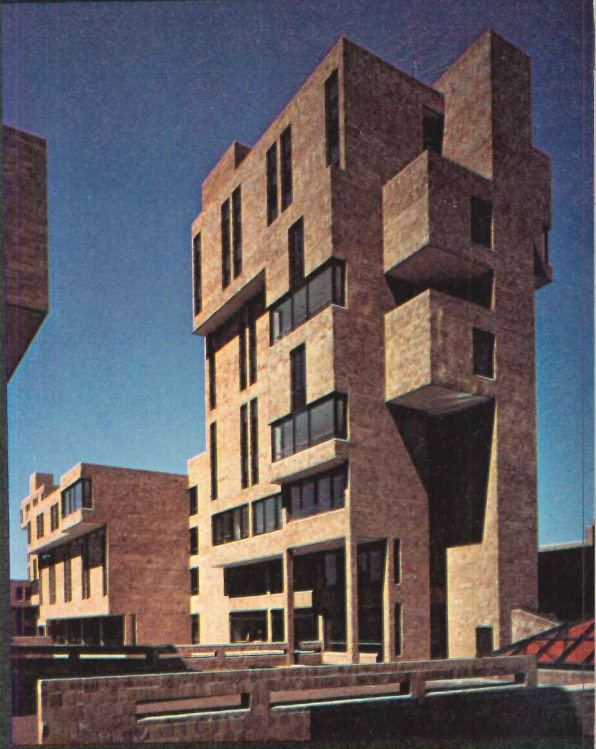
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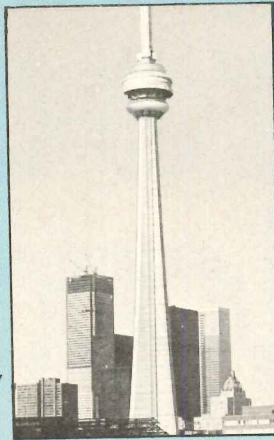
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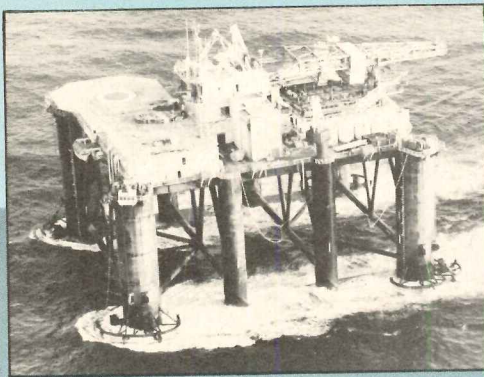
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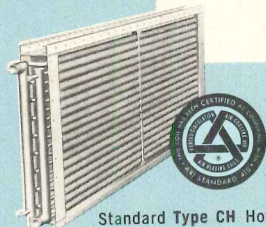
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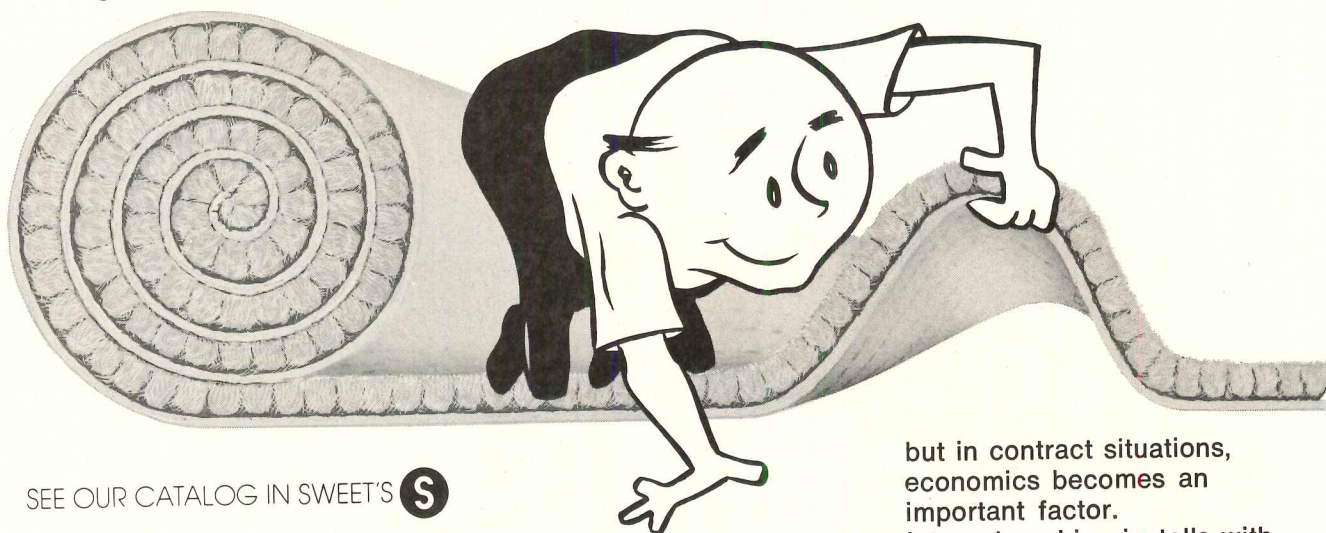
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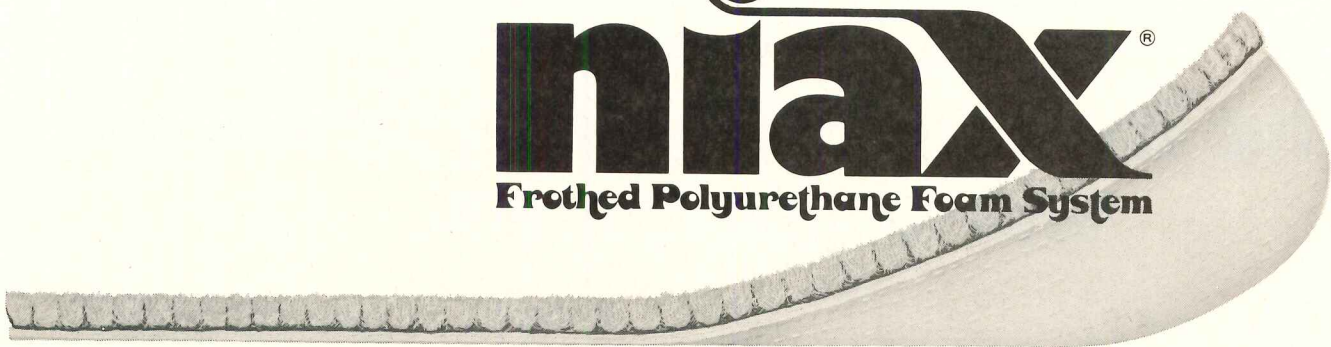
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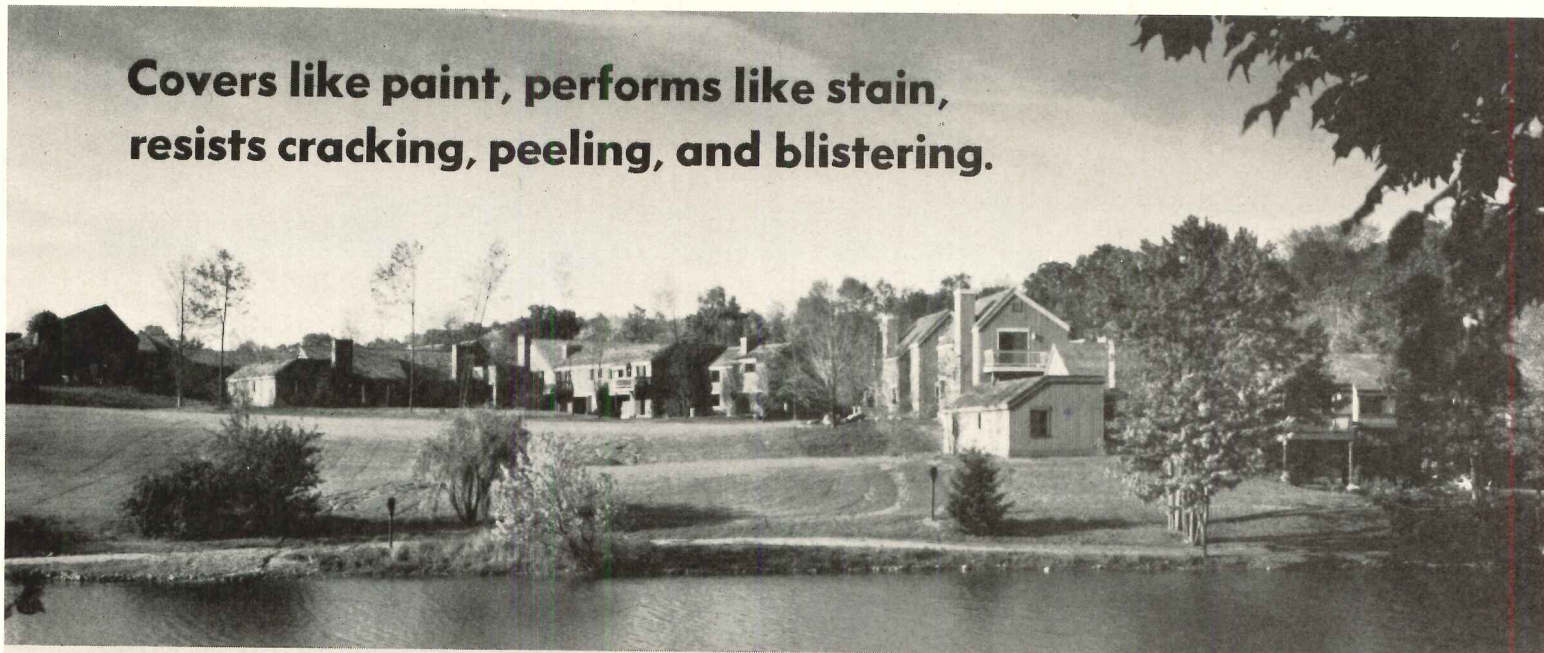


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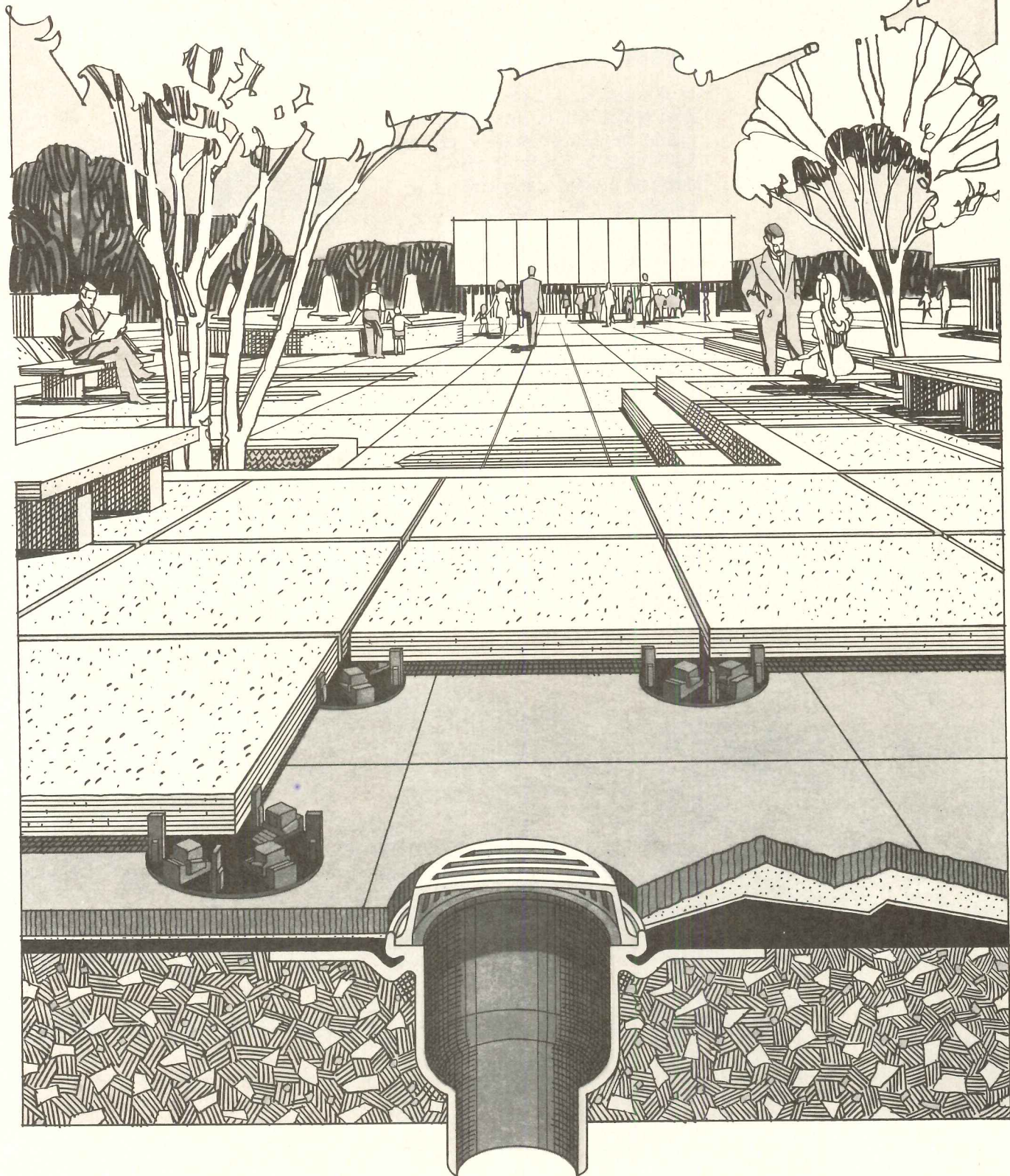
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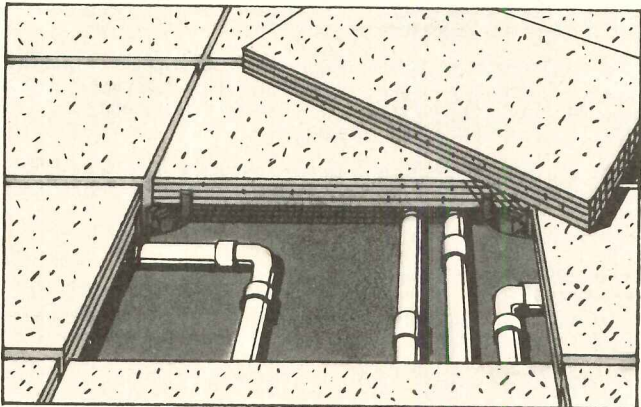
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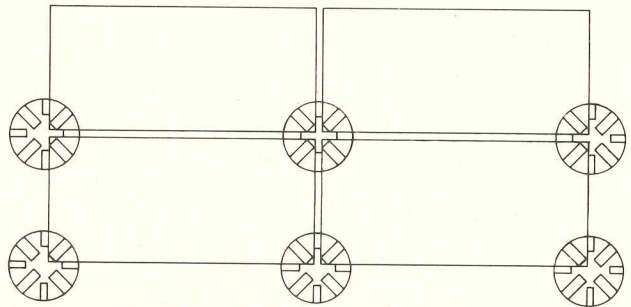


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How the system works.

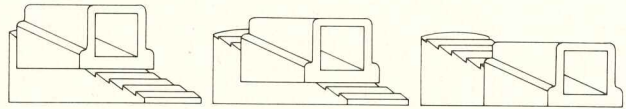
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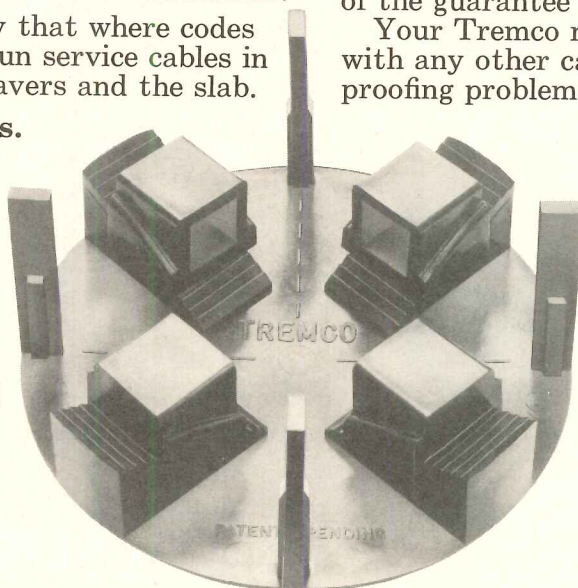
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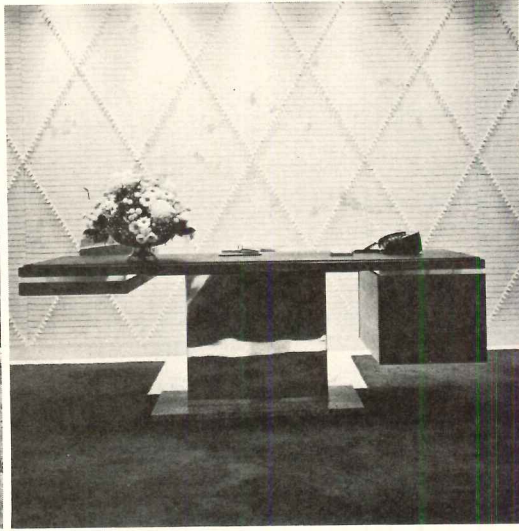
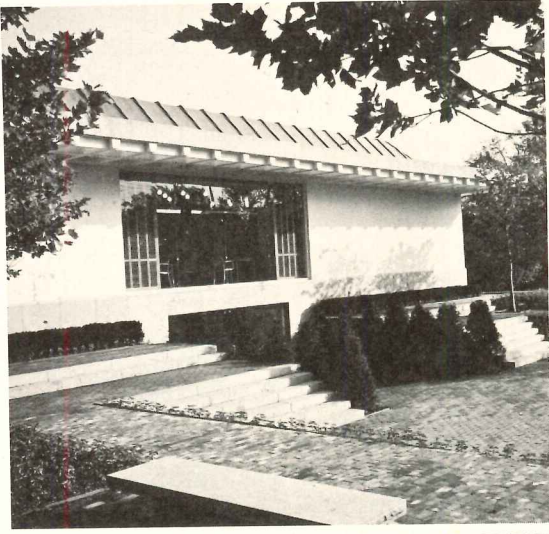
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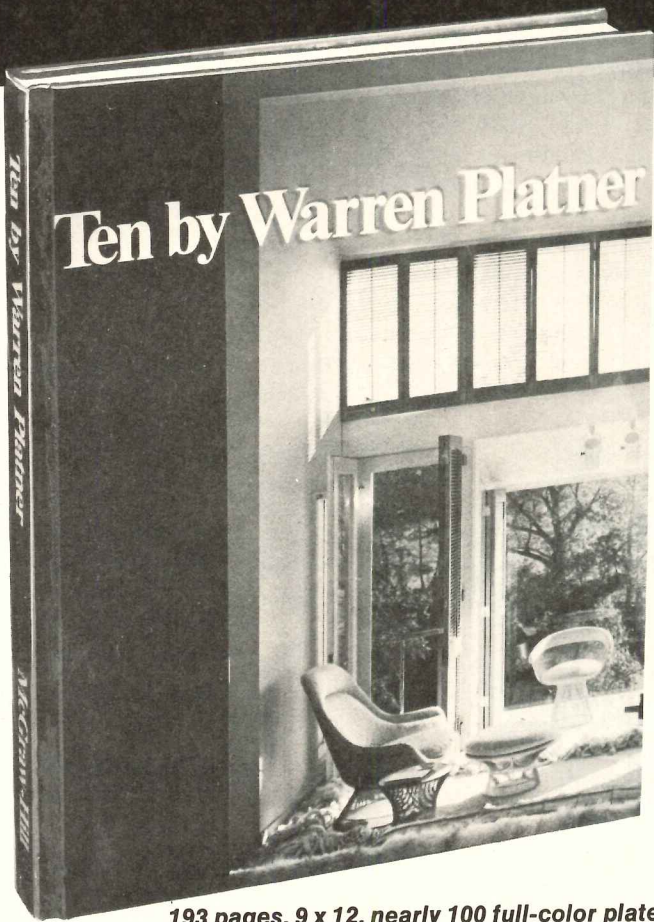


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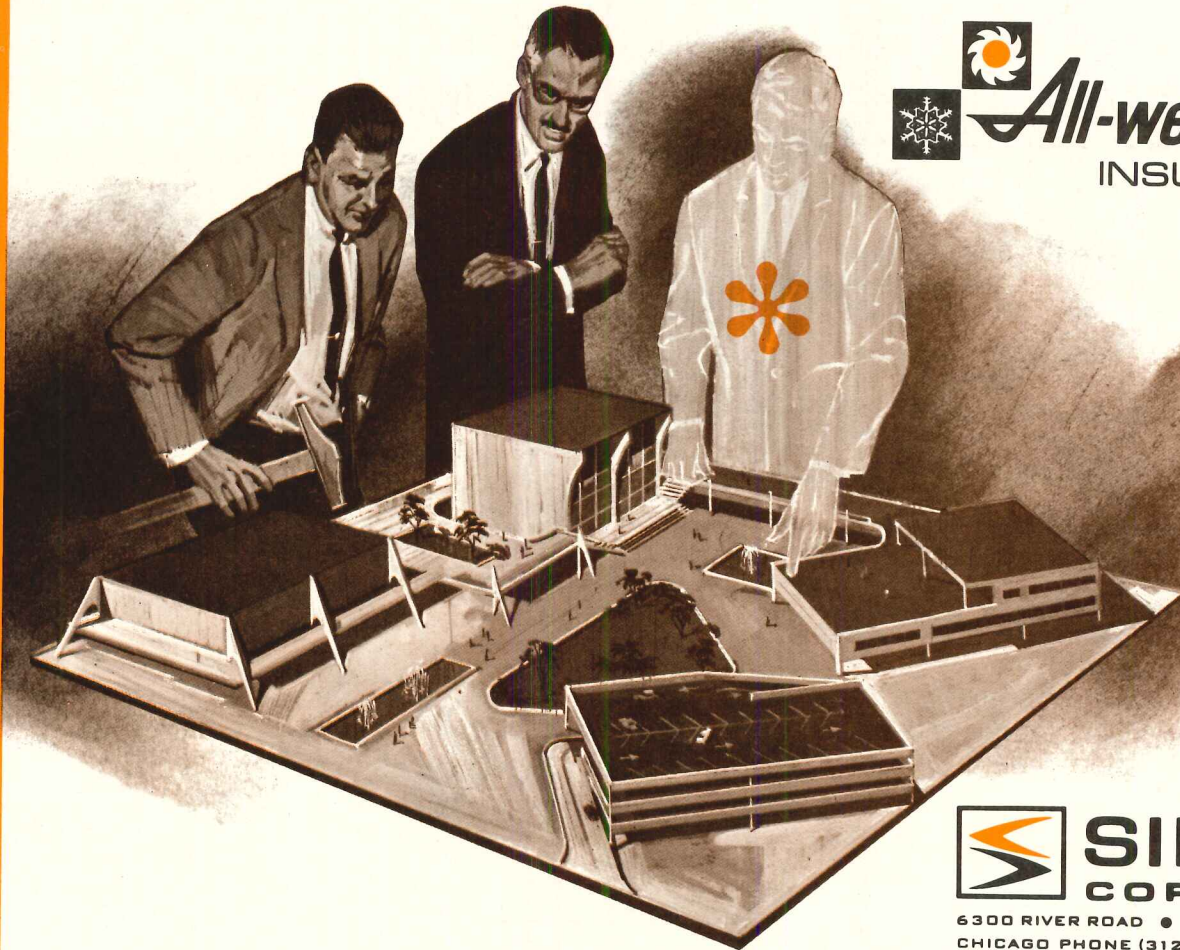
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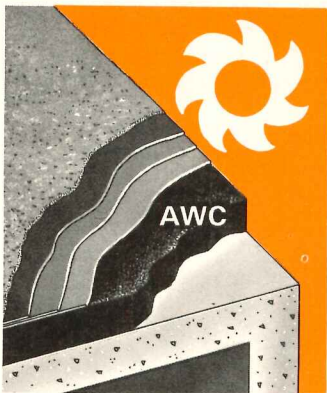
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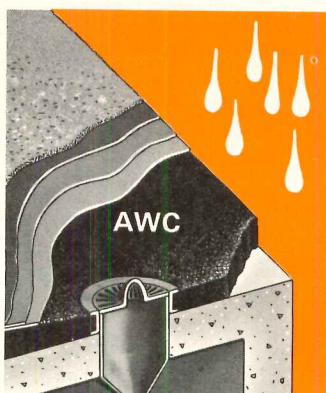


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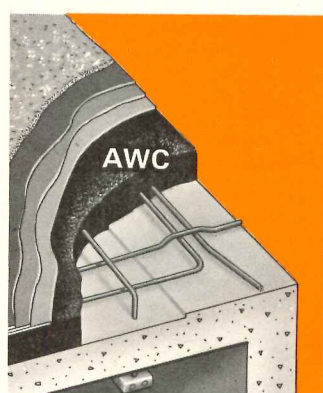
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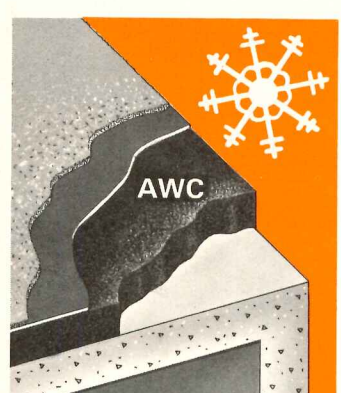
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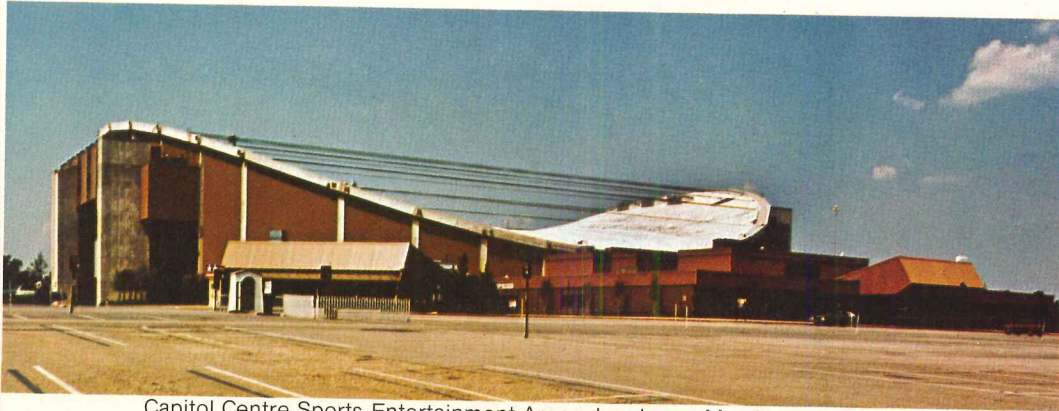
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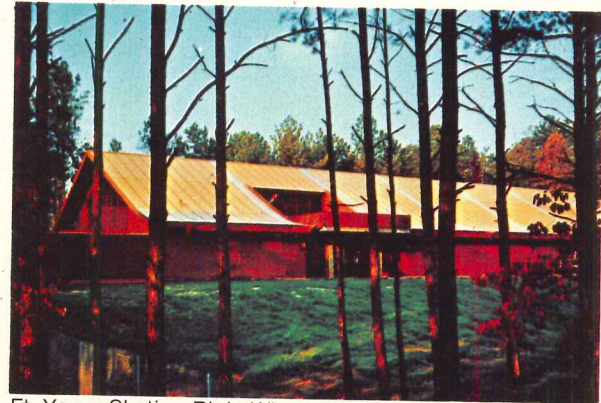
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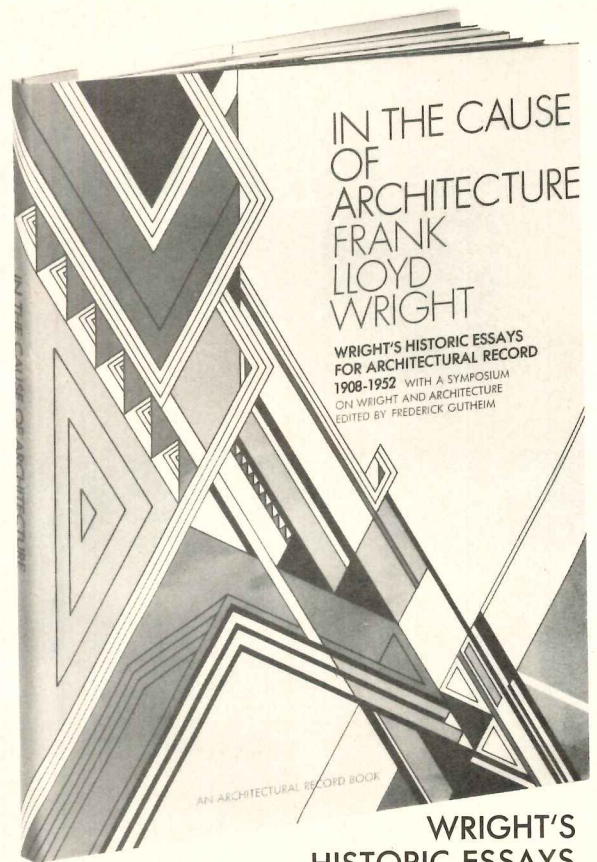
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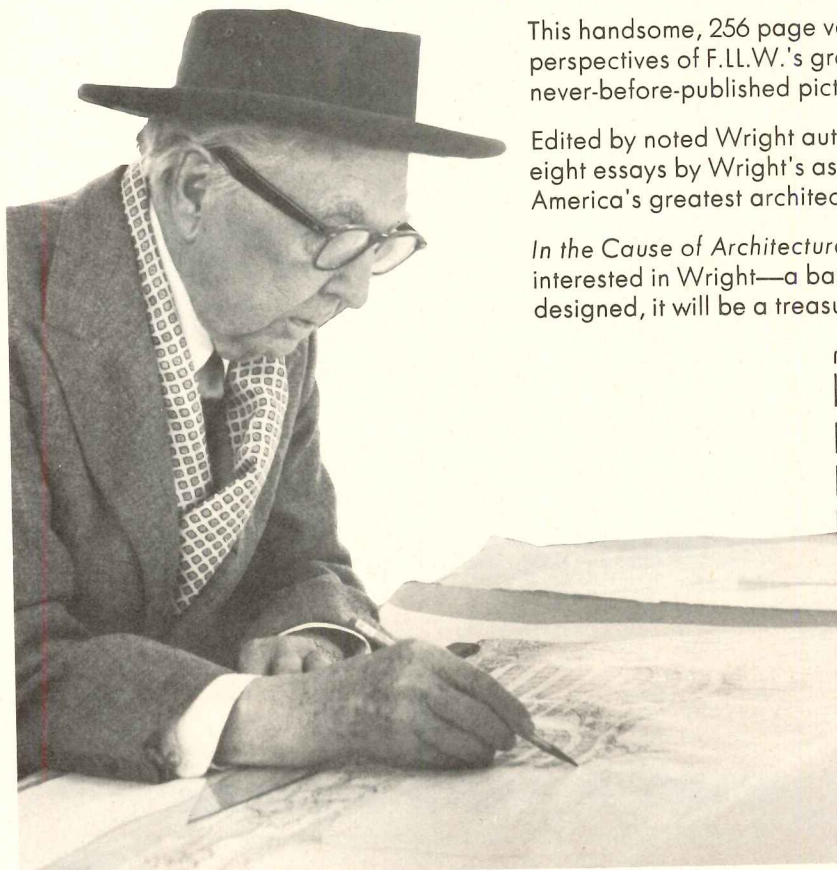
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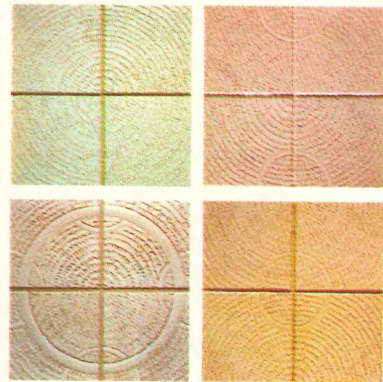
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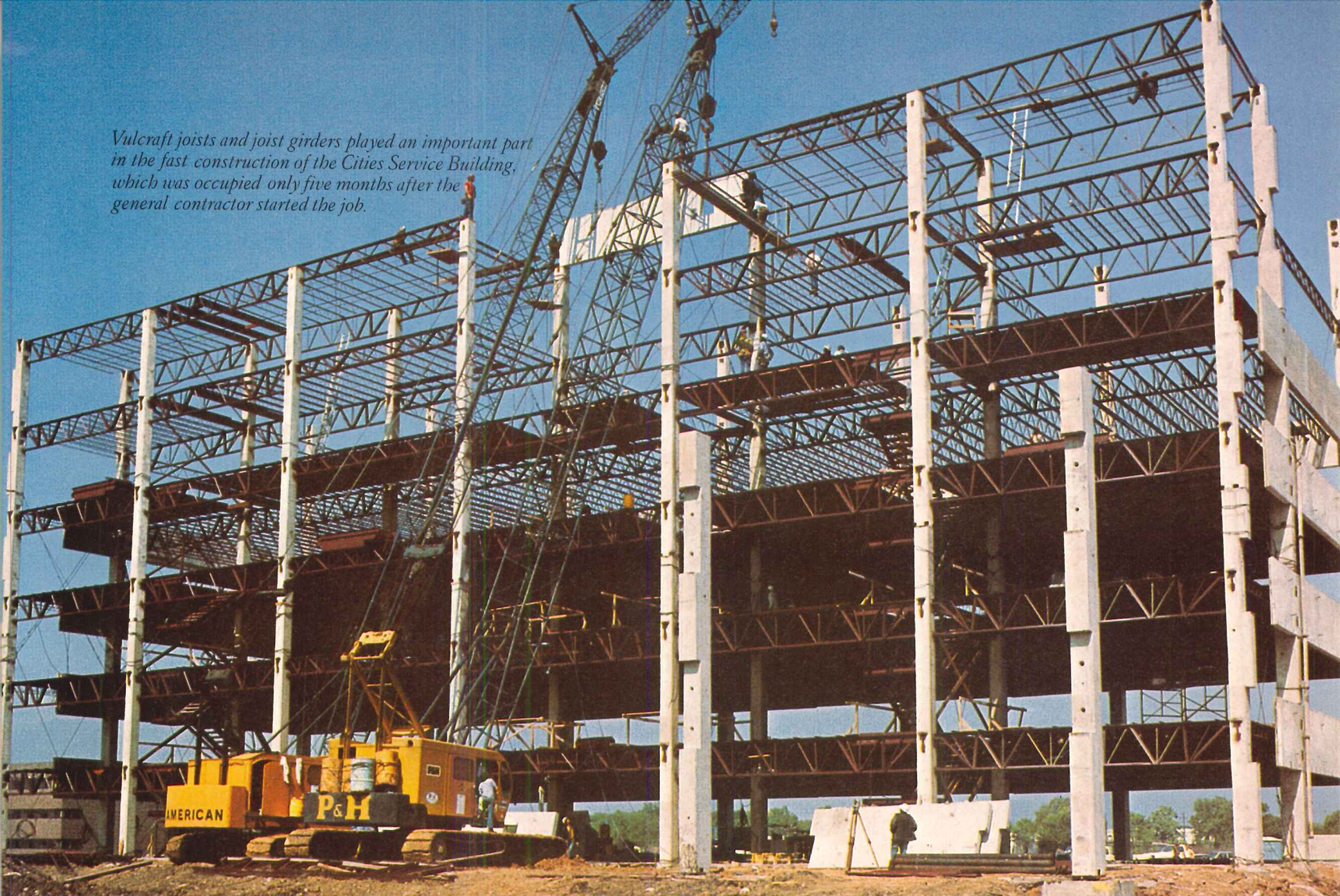
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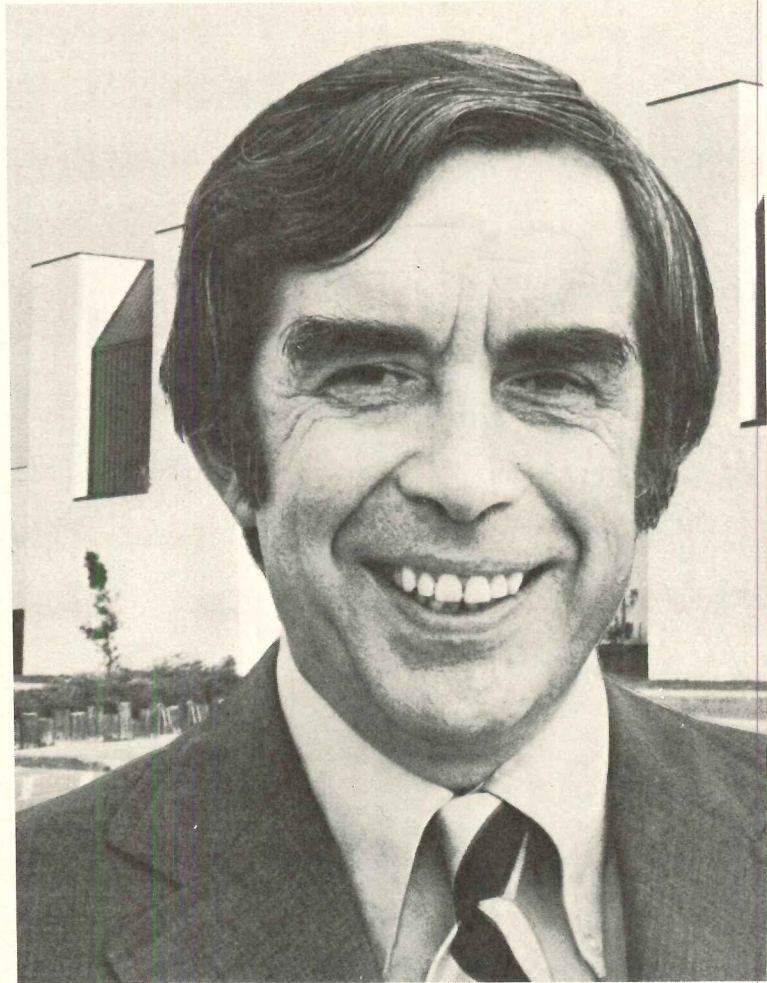
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Ken Miller and the Westwood Fashion Place Mall in Houston, Texas. Mall covers 750,000 square feet.

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STEEL DECKING / This catalog is intended as a reference and selection guide for architects, engineers and contractors interested in steel floor systems and steel roof decks. Product features, design tables and specifications are included for the selection of correct floor units or roof decks. ■ Roll Form Products, Inc., Elk Grove Village, Ill.

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PUBLIC ASSEMBLY FACILITIES / Financial and administrative trends in over 200 public assembly facilities in the United States and Canada have been compiled by the International Association of Auditorium Managers in a recently released supplement to the Association's 1974 Industry Profile Survey. The four-chapter, coded supplement augments and expands on the comprehensive data contained in the original Survey—a 210-page computer-processed manual of vital statistics on size, operations, rental rates and services and facility features at auditoriums, arenas, stadiums, performing arts centers and convention/exhibit halls across the continent. ■ International Association of Auditorium Managers, Inc., Chicago, Ill.

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ARCHITECTURAL LEAD / The Lead Industries Association (LIA) has announced the availability of two publications which detail the use of lead in building applications for architects and specifiers. "Lead Roofing and Flashing" is a 16-page brochure on tested methods for forming and joining lead for roofing and flashing applications. The brochure includes complete specifications and diagrammatic drawings. "Lead in Building" is a four-part data sheet discussing the use of lead for waterproofing, sound barriers, roofing and flashing, and anti-vibration applications. ■ Lead Industries Association, Inc., New York City.

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EMERGENCY-TRACK LIGHTING / The brochure details a combination of emergency lighting and display/accent lighting. An AC emergency power system is used with three-circuit track lighting. ■ Dual-Lite, Newton, Conn.

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SNOW MELTING / The 16-page bulletin gives complete engineering specifications and design details for using mineral insulated cable in exterior snow melting and indoor comfort heating applications. ■ Emerson-Chromalox, St. Louis, Mo.

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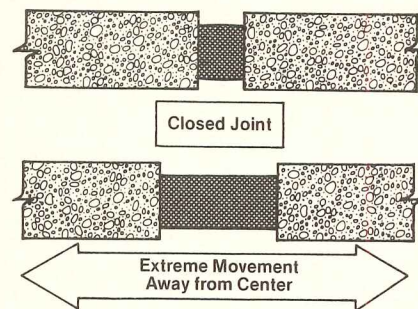
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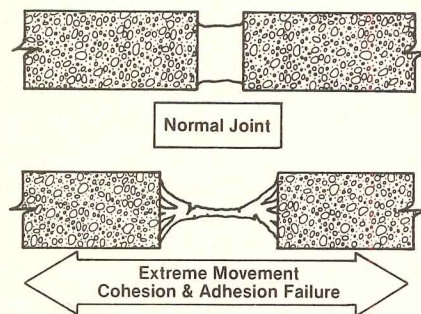
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