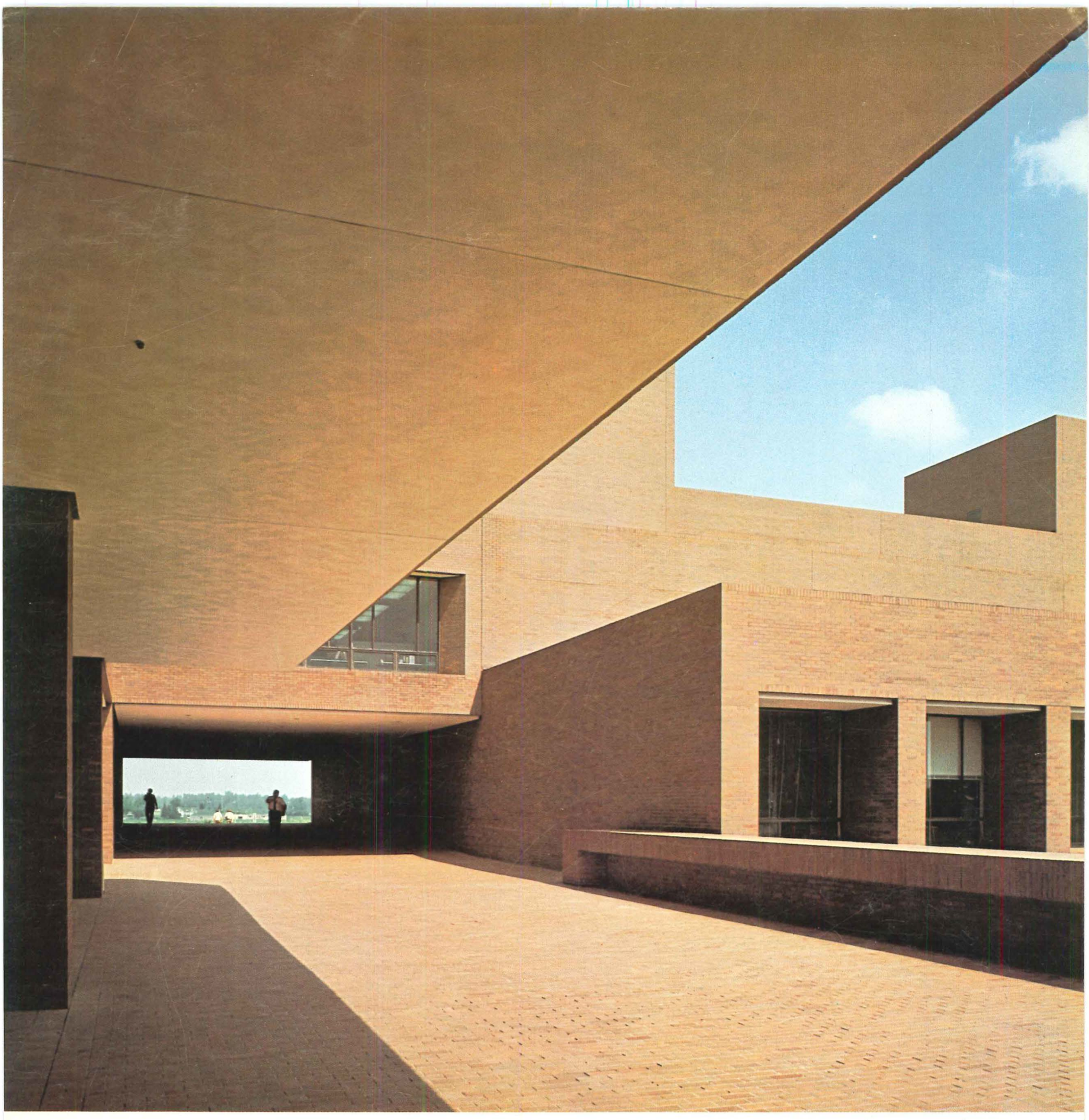

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ARCHITECTURAL RECORD

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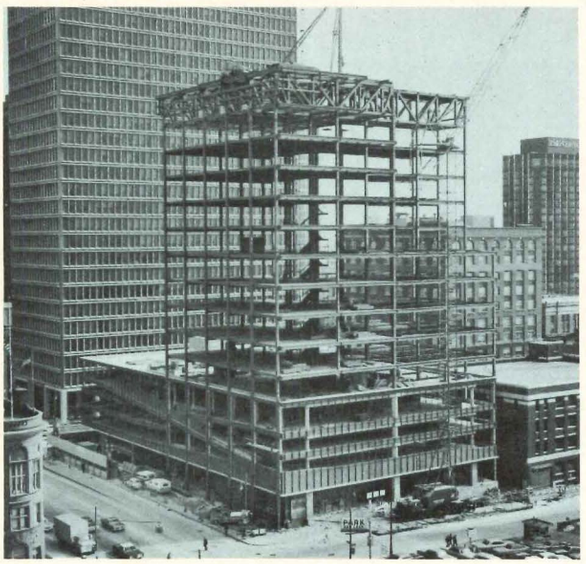
333 West Fort Street Building and garage features a 525-car, 9-level parking garage. The tower contains more than 132,000 net leasable square feet. Owners: 333 West Fort Corporation and Detroit Bank & Trust. Architect: Louis G. Redstone Associates, Inc. Consulting Engineers: Holforty Widrig O'Neill & Associates, Inc. General Contractor: Darin & Armstrong, Inc. Steel Fabricator: Taylor & Gaskin, Inc.

Suspended framing system provides maximum column-free space for 10-story office tower



This framing system shows how suspended intermediate columns help provide maximum column-free floor space in garage and first floor of the tower. Truss support is carried by the 12 exterior and 6 interior load-bearing columns.

The 10-story office tower at 333 West Fort Street in Detroit rises over a 9-level parking garage, three levels of which are below street grade.

In order to reduce the number of columns in the garage and the first floor of the office building, the designers used a system of hanging intermediate columns suspended from trusses. Six rows of built-up trusses span the building on 20-ft centers. Two rows of intermediate columns are suspended from mid-points of the trusses to the second floor of the office tower. Each column is fastened to the truss above with 80 A325 high-strength bolts. Twelve exterior and six interior load-bearing columns support the truss system. Some 1400 tons of Bethlehem structural steel was used in fabricating the building's frame.

The garage roof contains a landscaped terrace, 52 ft above street level. A restaurant and retail store are located in the main lobby of the parking garage.

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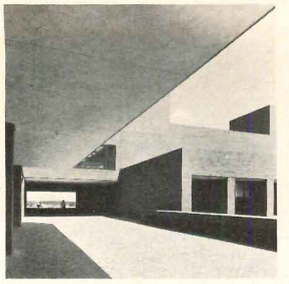
MECHANICAL/ELECTRICAL ENGINEERS: Frank J. Sullivan Associates, Washington, D.C.
CEILING SYSTEMS CONTRACTOR: Southern Floors & Acoustics, Merrifield, Va.



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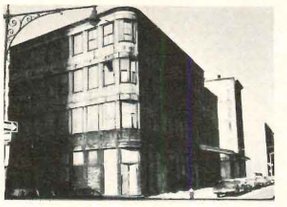

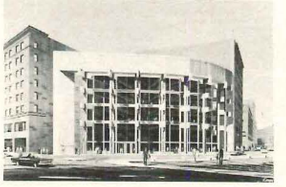

ARCHITECTURAL BUSINESS

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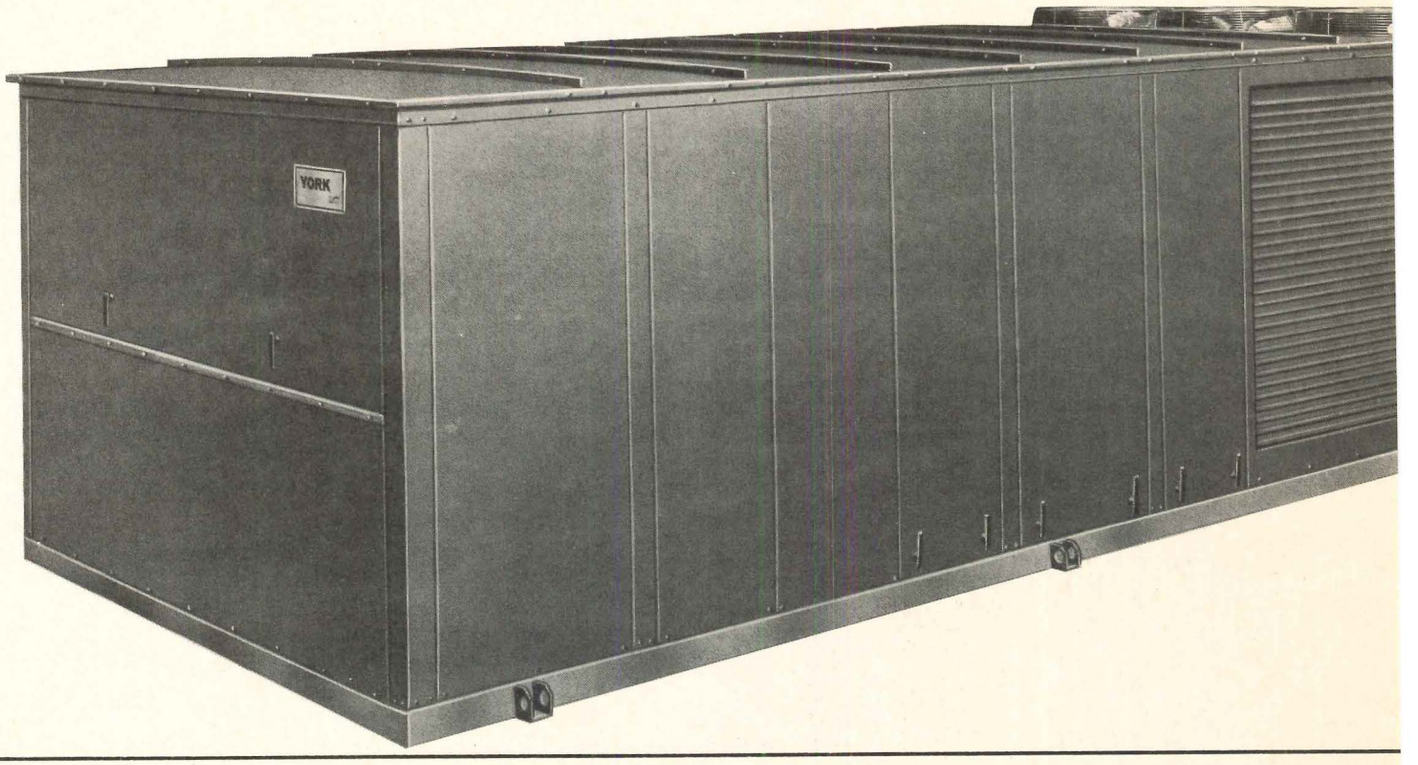

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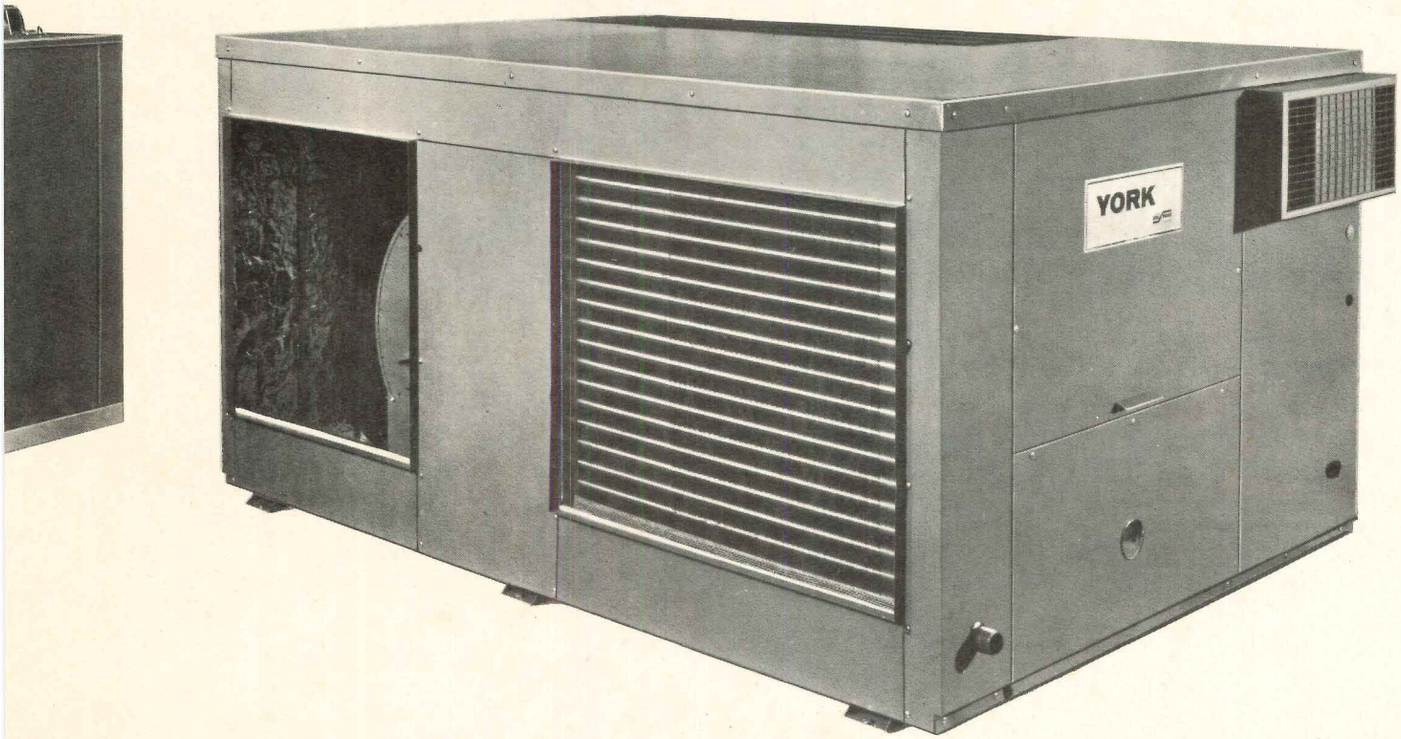

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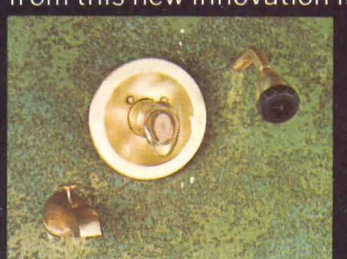

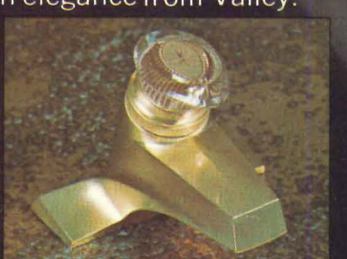

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The "building team"—and other ill-defined ideas

"Building team" is the new buzz-word. Everybody's talking about building teams, a lot of people want to be on one, a lot of other people are holding conferences that all members of the team can come to, a lot of "experts" are busily marketing the idea that they should be consultants to building teams.

Of course there's not much new about a building team. Except somehow it's become a buzz-word and everybody is interested to see if they can't somehow get a piece of the action whatever the action is.

I am not now, nor have I ever been, against building teams if they produce good architecture—with all that "good architecture" implies in terms of the client, the community, and in the broadest sense, a better environment for mankind.

In Mildred Schmertz's piece on "A New Professional Conscience" last October, she wrote: "Good architecture is still accomplished through the efforts of idealistic individuals. . . . Good architects are developing new processes through which to discover and fulfill a deeper scale of human needs within a broader scale of society. In their increasing awareness that architecture is really about everything and affects everything, these deeply committed designers are into more things . . . The tasks, more deeply perceived, have become more complex."

Do you believe that? Do you agree that "good architecture is still accomplished through the efforts of idealistic individuals"? Or do you think that good architecture is accomplished through the efforts of a team consisting of architect plus programming expert plus internal communications expert plus sociologist plus cost consultant plus special consultants on how to do it cheaper, argue with the owner that the architect should have specified a cheaper alternate, and beat subcontractors into bankruptcy?

No one is against architects working with consultants. There is nothing new (and it is certainly sensible and usually necessary) for an architect to work with engineers. Architects have for years called in experienced professional consultants in complex programming problems. At a time when all buildings "cost too much"—when general inflation and unprecedented wage settlements are routine news—it makes a lot of sense for an architect or client on a complex job to call in a cost consultant who spends all his time (as an architect or client cannot do) trying to anticipate what costs will be.

And so on, for whatever consultants—engineers, economists, accountants, construction experts, planners, sociologists, psychologists, or seers—can make a meaningful contribution to the architect's programming or design decisions. If that's a building team, fine.

But if a building team consists of a group of professionals and para-professionals who are not architects and do not really understand design, all checking up on each other and undercutting the architect's professional decisions on design concepts and product and material specifications—in short, advising the client on architecture—then I'm not for the building team.

As the old saw goes, you can always find someone who can tell you how to build something cheaper. (You want to bet that some construction-cost expert whispered to Pericles that he could save a bundle on the Parthenon if he made Ictinus straighten out the entasis in those columns?)

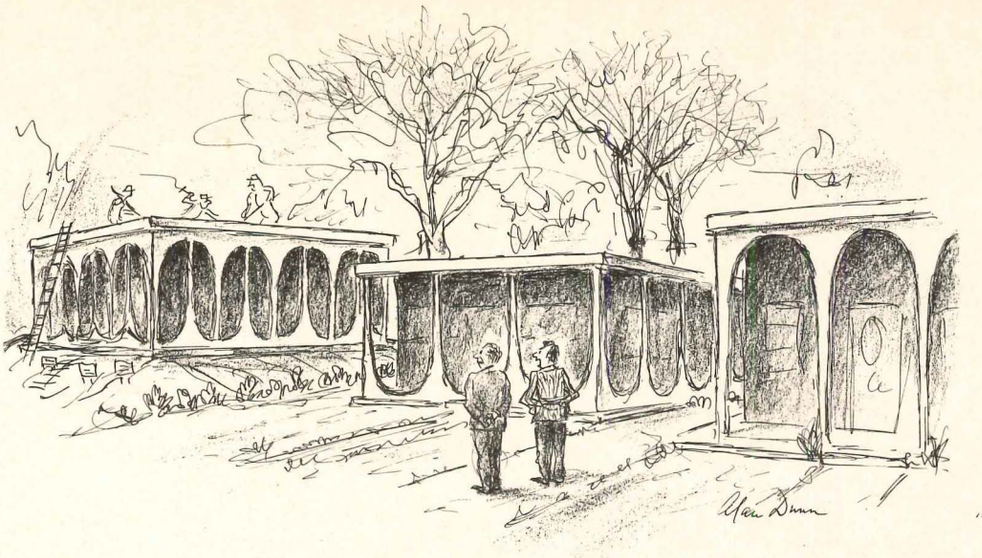
There's an ancient and not-too-honorable technique of management that suggests that if you surround yourself with enough experts you can remain safe and secure because you never have to make any major decisions—only a whole lot of little easy ones; and nobody can blame you if something goes wrong because you got a lot of expert advice.

If that's what a building team is about, then I'm not for it.

Architecture today must indeed be judged in relation to many complex and often conflicting program requirements—functional, social, financial, legal, esthetic. Those program requirements often require input from many kinds of experts, including architects. Many times this "programming team" is in effect the client. But again, the responsibility for reaching three-dimensional solutions must remain the architect's responsibility for one very good reason—he is the only expert whose area of expertise is *design;* the only professional whose concern is *architecture* with, again, all that implies.

The architect's—the professional's—role as agent for the owner in creating a new building—in creating architecture—is an ancient and honorable one. It ought to be given up by the architect and the owner alike very carefully and reluctantly. As "the tasks [of building], more deeply perceived, have become more complex" the owner's agent may wish more consulting help. But if he (the architect) becomes simply one of a group of agents (a building team of experts who borrow the architect's Sweet's to find a "just as good but cheaper" alternate), then a better environment for mankind—at least as it is affected by building—has had it. —*Walter F. Wagner, Jr.*

—Drawn for the RECORD by Alan Dunn



"Boy, did they pick our brains!"

More on architects and social responsibility

In February, I wrote an editorial on the plans and possible impact of the A.I.A.'s new Human Resources Council. Associate Editor Jim Morgan attended the first national meeting (in Omaha, February 27th). Here is his report:

The A.I.A. is fulfilling its 1969 promise to work actively for meaningful social change. The one hundred delegates from A.I.A. chapters across the country were given solid evidence of it at the first meeting of the Human Resources Council in Omaha. The accomplishments range from successful national money-raising efforts to accreditation of three black architecture schools to impressive achievements by local Community Development Centers.

The principal goal of the meeting, however, was to explain to the chapter representatives the relationship of the HRC to the Task Force on Professional Responsibility to Society. The TF/PRS, which was formed to pursue the A.I.A.'s promise of $15 million at the 1969 convention, was called at various times during the meeting the brains, heart, or conscience of HRC. It was more objectively described by Nat Owings, co-chairman of HRC (along with Bob Nash, A.I.A. vice-president), as the research and program committee of the Council. The sole purpose, said Mr. Owings, is to implement Task Force programs.

But the underlying sense of the meeting was not as unified as that statement would make it seem. Since the major financial backing for the national Council will be drawn from the largest architectural firms in the country (Owings is asking for pledges of $100,000 each, over four years from the top ten; has three now), the meeting brought together the most successful (in establishment terms) and the most active radical (many Task Force members) groups of the profession. Thus, the dynamic tension that has thrust the social consciousness of architects so far forward since the Chicago convention almost two years ago was as present in Omaha as in Boston.

Task Force members, largely new this year although still including Taylor Culver, the leading figure of the 1969 convention, seemed anxious not to relax the vigilance with which their predecessors had regarded the national organization's efforts to fulfill the Chicago promise.

Even the most modest expressions of doubt by TF people brought elaborate expressions of sincerity from the distinguished professionals who had made a special effort to appear at the session. Yet to many present, the most impressive fact was that the two extremes were trying so hard to understand each other. And the tension did not prevent the series of meetings and workshops (on how HRC works and what its goals are) from being generally useful and informative to the chapter representatives, many of whom had paid their own expenses to attend.

Each discussion of future plans for fund-raising was accompanied, from one side or another, by the plea that everyone go home and get his own community organization going. The national A.I.A. staff made a genuine effort to draw comments and questions from those present. In fact, many of the local representatives had more real experience in the problems of Community Development Centers to share than the experts from Washington. Yet explanations were very necessary. Almost no one, up to this meeting, had clearly understood the scope of the work HRC proposed to realize, both at the local and national level.

A concise working paper on the Human Resources Council had been prepared by Grady Poulard, administrator of the A.I.A. Community Services Department, and his staff. Three major areas of concern were outlined in the report: Education, Community Development Centers, and Constraints upon Building. Each of these was then described: the 1971 activities of the A.I.A. Community Services Department were listed; and a series of "Guidelines for Involvement at the Local Level" were included. Although everyone agreed that Constraints upon Building had to be given highest priority, it was obvious that CDCs were the main interest of most.

Eugene Brooks, director of the Urban Workshop in Watts and chairman of the Community Development Center Council of Seven (set up in November, 1970 to work with A.I.A. on legislation and program development for CDCs), presented a budget to the executive committee of HRC for $250,000: CDC immediate needs, $100,000; funds to match a ten-to-one million-dollar HUD grant, $100,000; and funds to prepare legislation seeking a five-year Federal grant of $8,000,000 annually for CDCs. This is a proposal to put the program on a strong financial basis for several years, drafted jointly by Bob Alexander, F.A.I.A. and Taylor Culver.

Many people at the conference felt that money is not the real problem CDCs face. They spoke, with enormous commitment, of the need to generate involvement in the local community and said that too much money might destroy that. But as Gus Baxter of the Architect's Workshop, Philadelphia, said, "In the United States, money is power and we [CDCs] will not be taken seriously by local governments until we have proper financial support." The conference ended on that dichotomy.

A few architects, who had hoped to get solid financial backing for their local work, came away feeling the meeting had just been more talk and no action. But the majority, it appeared, buoyed by the amount of accomplishment in the eighteen months since Chicago, left ready to work harder at finding support where they live. If this program continues to grow proportionately in the next eighteen months, the A.I.A. and architects everywhere will have made themselves, finally, a force for social action in this country. —*J. M.*

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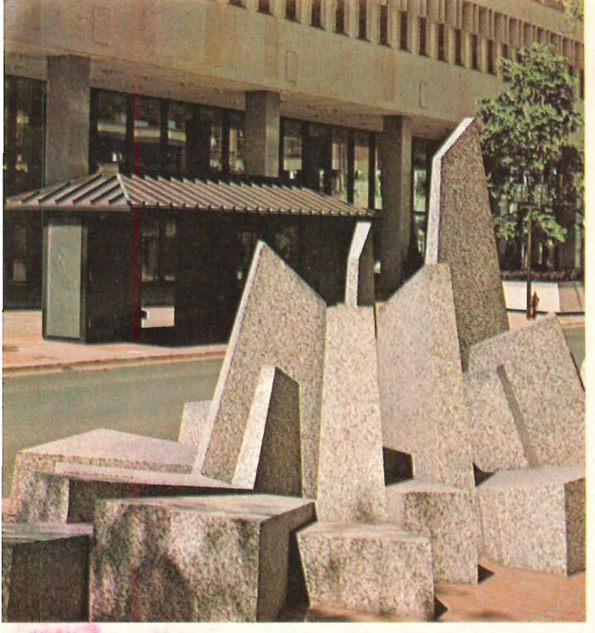

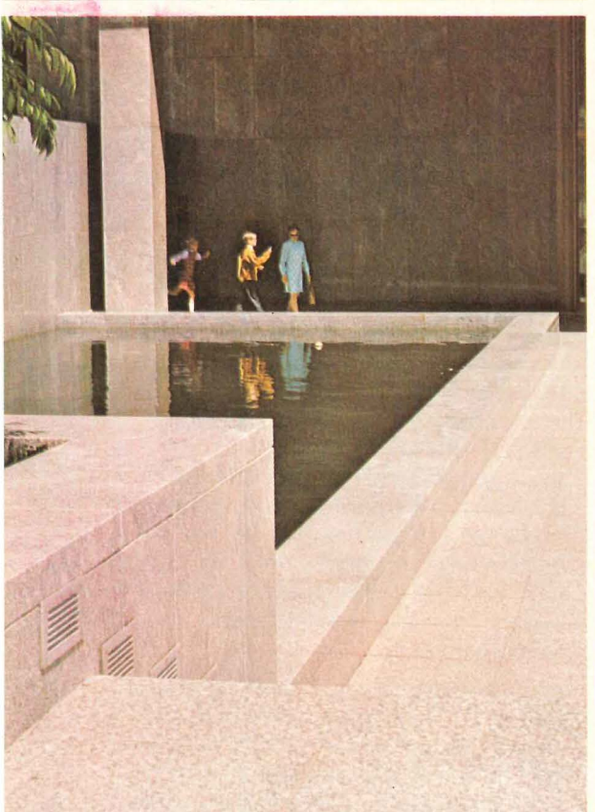

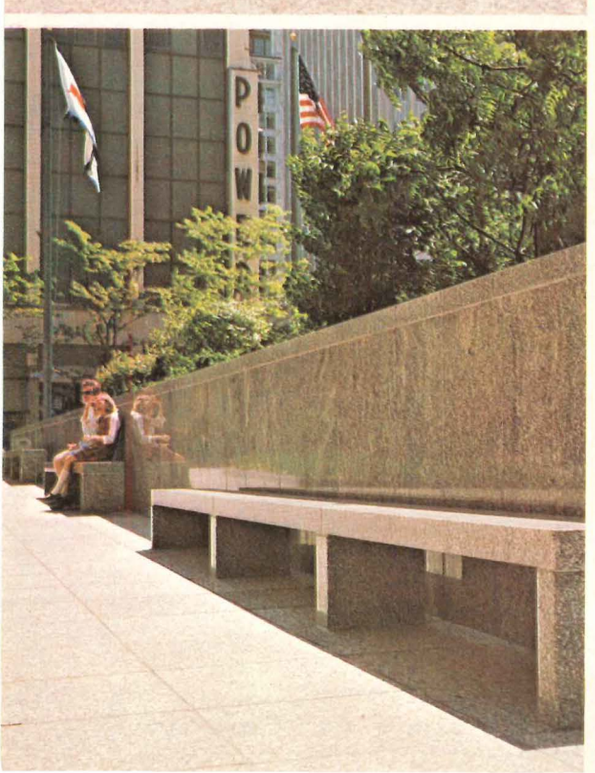
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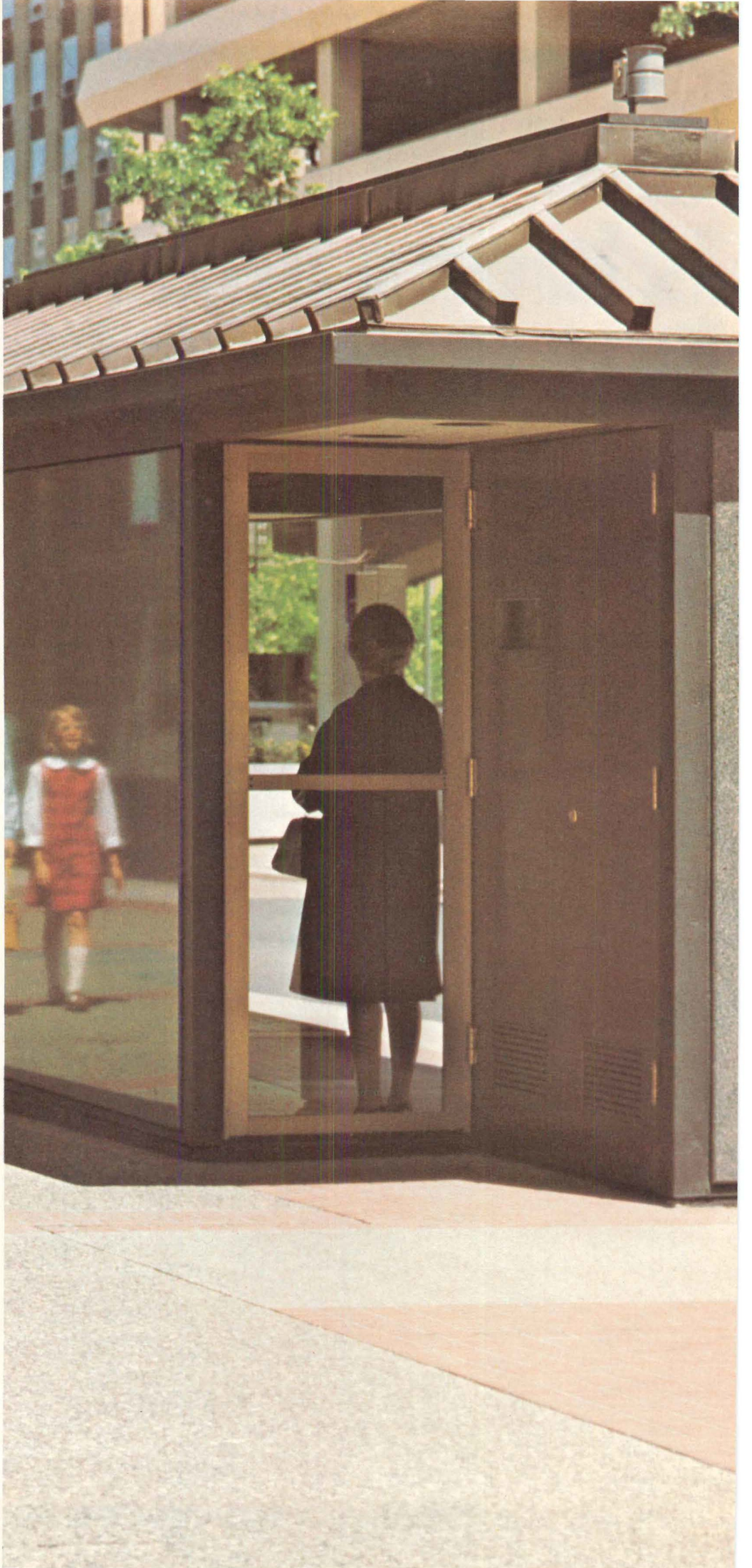

If granite is so expensive, why didn't someone tell the Minneapolis Downtown Council?

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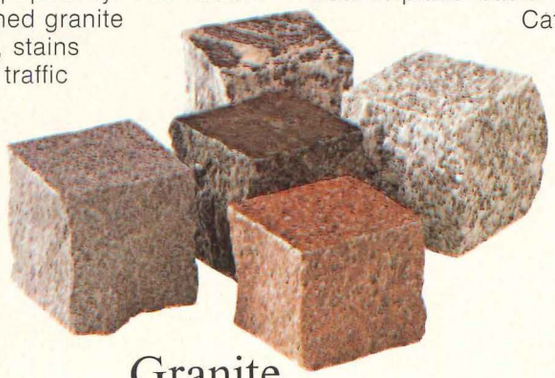

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This photograph taken with Daylight Kodachrome II®; no filters.

High noon in Cincinnati.

Even at night, it's like broad daylight in Cincinnati's new Riverfront Stadium. The field is lit up by 1,648 thousand-watt Sylvania Metalarc lamps.

It took a computer to figure out how to spread their high intensity light evenly over the field without blinding the players or fans. (Lighting levels are as high as 425 fc.) There are practically no shadows or hot spots on the field.

This uniform lighting is a necessity for color TV cameras, which aren't able to adjust to light and dark areas as they chase the players around the field.

The light is so natural that color TV cameras can operate as though they were under a sunny sky. In fact, Riverfront Stadium is the first big stadium to rely 100% on metal halide lamps. Usually, other lighting is needed to improve color rendition. Sylvania Metalarc lamps don't need any help.

They're exceptional in other ways, too: they have a rated life of 7,500 hours—about 7½ times the life of 1000-watt incandescent lamps. (That means less bulb changing—a big consideration when you're using 1,648 lamps.)

They have tremendous light output—

This photograph taken with Daylight Kodachrome II®; no filters.

High noon in Cincinnati.

100,000 lumens per lamp compared to 19,500 lumens for 1000-watt incandescents.

They have very high efficiency—100 lumens per watt compared to 20 lumens for incandescents. So it costs about a fifth as much to run them.

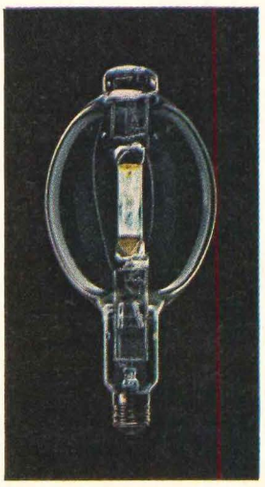
The stadium also has an installation of 80 Sylvania tungsten-halogen lamps to spread plenty of light around the grandstands. They're used for low-level illumination before and after the game.

And at one end of the field, there's a huge animated scoreboard. It's 100 feet long by 20 feet high and has 32,000 Sylvania 40-watt incandescent lamps. When it's not showing the score, it can run cartoons, messages and news.

Riverfront Stadium is not only a great showcase for great sporting events.

It shows what Sylvania might be able to do for you.

For more information see your Sylvania large lamp distributor or write to: Sylvania Lighting Center, Danvers, Mass. 01923.



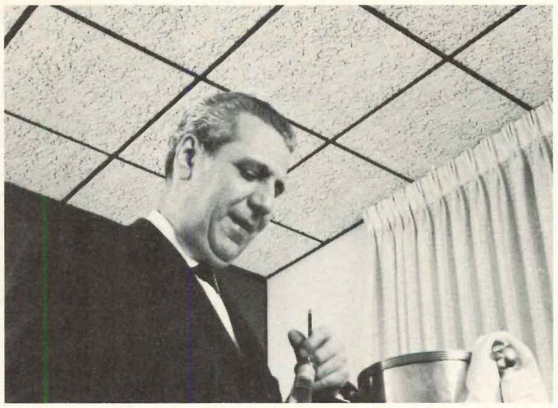
GTE SYLVANIA

Durasan panels are a beautiful way to save on maintenance costs.

Because each panel is vinyl-surfaced gypsum wallboard. Enduring colors and textures. Natural-looking woodgrains. All scuff and stain resistant. They wipe clean. Durasan costs less than building bare walls, and then covering them with vinyl. The gypsum-rock core is fire resistant. Available with finished vinyl edges for the modular panel look . . . or as Monolithic Durasan, the system that provides nearly invisible panel joinings. For details, write National Gypsum Company, Dept. AR-41G, Buffalo, New York 14225.

OTHER BUILDING IDEAS FROM NATIONAL GYPSUM, THE ANSWER PEOPLE.

Tonico® Cumulus Acoustical Panels help solve the problem of noise. They have an NRC of .65-.75 and a 35-39 STC range. They're noncombustible, and have a richly textured finish for any interior design.



Gold Bond Panel Vault Light Fixtures and Tectum® Acoustical Panels are the answer to a decorative ceiling, that is acoustically efficient and easy to erect. Panel Vault Light Fixtures are equally adaptable with any Gold Bond Acoustical Panel.

Contempo-Wall lets you divide space and rearrange space at will. Complete tenant flexibility! All components are demountable and reusable. Partitions come in four heights: floor to ceiling, cornice, bank rail, and low rail — all with Durasan vinyl surfaced gypsum wallboard.

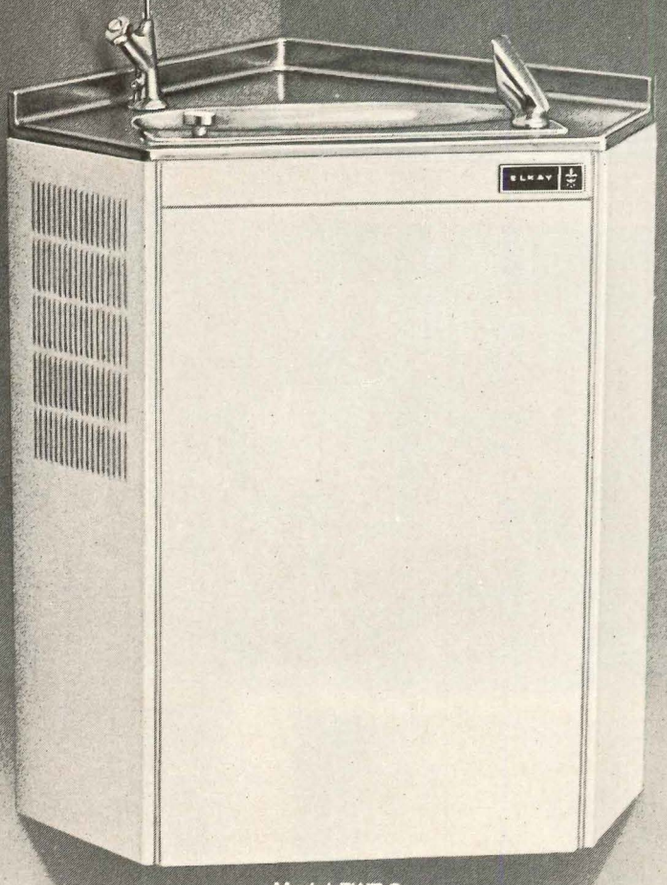
Gold Bond Metaledge Corewall™ is the answer to the fast, lightweight, low-cost enclosure of elevator shafts and stairwells. Two-inch thick, two-foot wide long-length panels of gypsum have metal edges for attachment, rigidity, and increased fire resistance.

Gold Bond®
BUILDING PRODUCTS

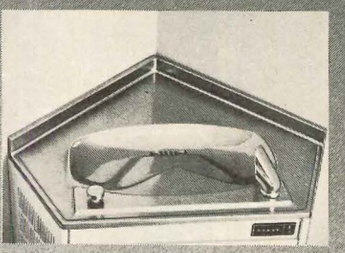
For more data, circle 7 on inquiry card

Elkay discovered how to turn a corner into useful space with this water cooler. Corner location keeps it out of the way of traffic and makes it more pleasant to use. It is designed to meet the standards of the Hill-Burton program for corridor safety in hospitals. Like all Elkay water coolers, the corner model has a unique cascade design, splash-proof, stainless steel basin with hooded stream projector and remote control. Interchangeable panels . . . nine colors in vinyl and two in baked enamel, available from stock at no extra charge, allow user complete decor flexibility. Stainless steel panels are also available at a slight extra charge. Elkay fills corners with a great idea in water coolers.

from the ELKAY® family of firsts



Model EWT-8



Stainless steel sink top incorporates cascade design basin and hooded stream projector. Protective apron for most stringent institutional needs.

our 51st year

For complete information write for Catalog No. DFC-4 or call Customer Service Dept., Area Code 312-681-1880. ELKAY MANUFACTURING COMPANY, 2700 S. Seventeenth Ave., Broadview, Ill. 60153

see our catalog in Sweet's (S)

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For more data, circle 9 on inquiry card

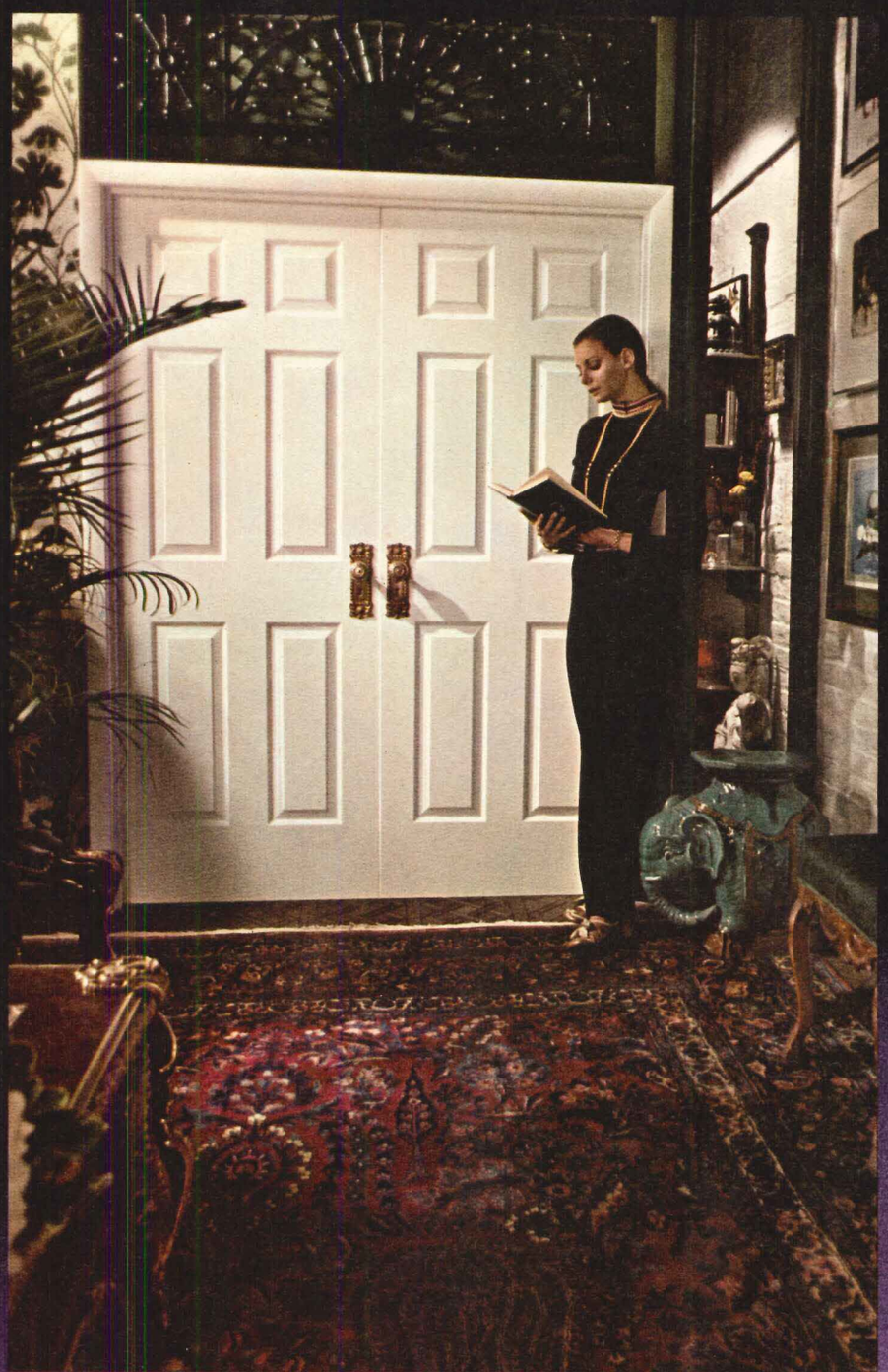
NEW FROM **CARADCO**–
A PROBLEM-FREE PANEL DOOR RICH IN ELEGANCE

As you can see, our new Molded Panel Door is an eyeful. Its deep-carved panels and wood-textured surface recall the handcrafted doors of bygone days. And it welcomes paint or pigmented stain.

Elegance aside, can a door look this good and also be practical? And how! In fact, the panels of this factory-primed door won't split, won't check, won't shrink, won't show paint lines. A tough, one-piece door face makes all those problems a thing of the past.

Total cost: less than conventional panel doors.

What more can we say, except that Caradco has a complete line of windows and doors every bit as good. Call or write.



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You can offer style to a fashion boutique with refreshing "April Showers/May Flowers" on the walls

You can offer practicality to a hospital lab with stain-resistant "Looma" on the walls.

You can offer good taste to a restaurant with spirited "Bourbon Street" on the walls.

Wall-Tex® GUARD®

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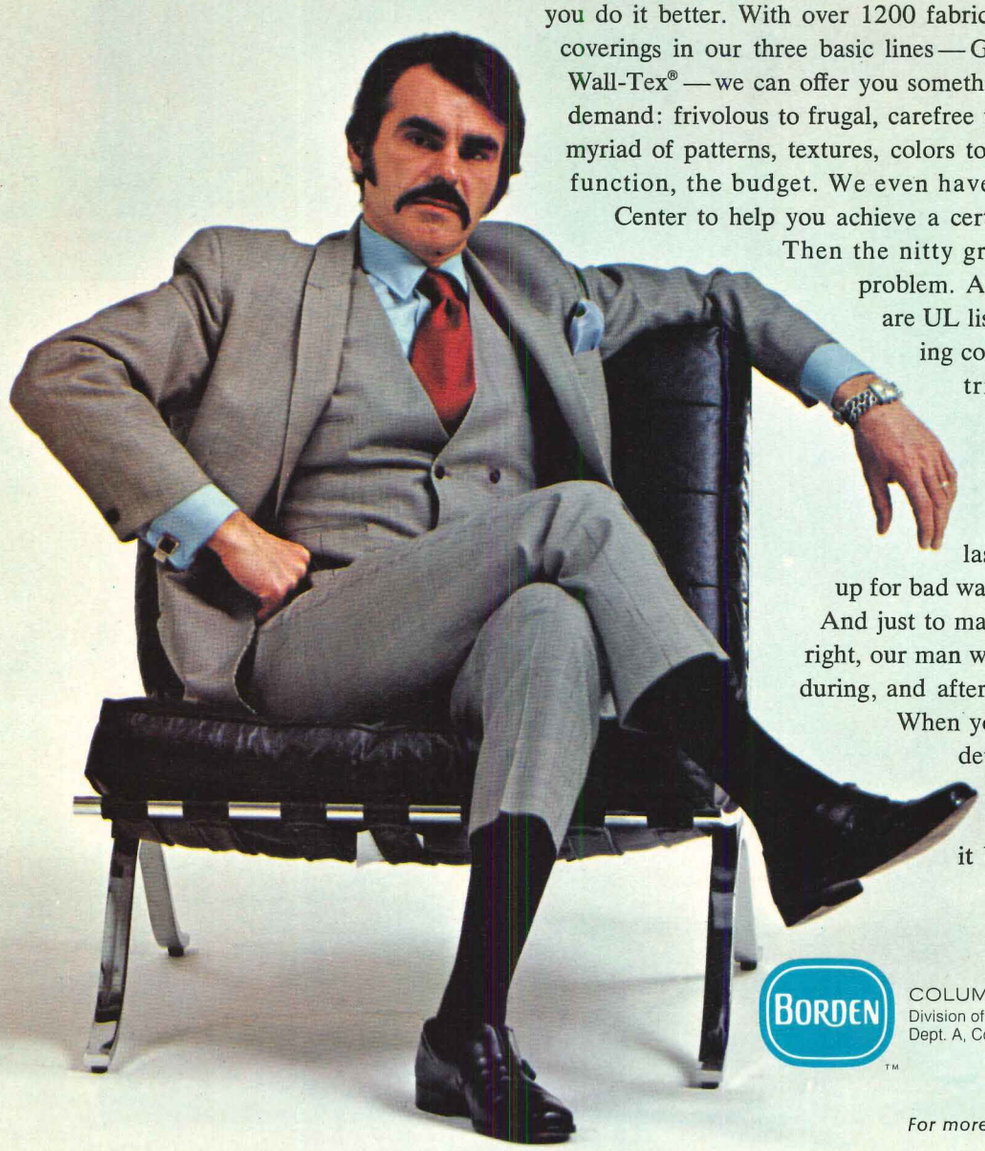
Our wallcoverings can offer your interiors style, practicality, good taste...and more.



No matter what an interior has to do, who it has to do it for, or where it has to do it, Columbus Coated Fabrics is there to help you do it better. With over 1200 fabric-backed vinyl wallcoverings in our three basic lines — Guard®, Satinesque®, Wall-Tex® — we can offer you something for any business demand: frivolous to frugal, carefree to careful. A virtual myriad of patterns, textures, colors to please the eye, the function, the budget. We even have a Custom Design Center to help you achieve a certain look you want. Then the nitty gritty problems? No problem. All our wallcoverings are UL listed, meet the building codes . . . and are pretrimmed for perfect matches, simple to hang, practically maintenance-free, easy to remove, long lasting, a good cover-up for bad walls when renovating. And just to make sure everything's right, our man will go on site before, during, and after installation. Write. When you see our complete details, you'll know we know what we're doing . . . and doing it best for you.

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Dept. A, Columbus, Ohio 43216

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Lennox gives offices private climates

Office spaces need the individual space-by-space control offered by Lennox air conditioning-heating systems. These spaces vary in size, exposure, occupancy, and heat gain from mechanical sources. Lennox provides this refinement of control and comfort—temperature, ventilation, humidity, air filtering—for occupants. And also serves the needs of the building designer and the building owner in special ways.

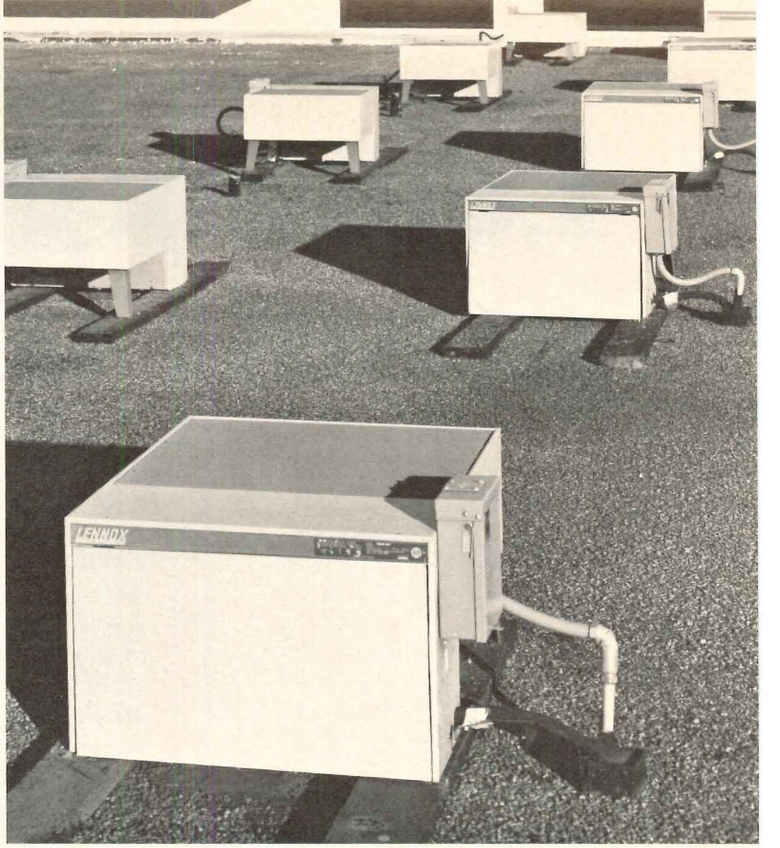
Rooftop systems save floor space, and permit complete design freedom. Distribution systems are available which permit walls to be moved, thus allowing change in the office spaces when desired. Occupancy can be progressive as the building is constructed. And a future expansion program requires only that new units be added as floor space enlarges.

(continued overleaf . . .)

The 2800 Center Building, an office building in Tulsa, Oklahoma, provides each of its 50 lease spaces with a private climate. And clients leasing several spaces have a series of individually controlled zones. Architect: Marion R. Stauffer; Owner/ Developer: Weir Construction Company.

The 24,000 square foot building of Cole & Weber, Inc., a Seattle advertising agency with a staff of 120. Three gas fired Lennox DMS1 units—with 66 tons of cooling—divide the first floor into 7 zones and the second floor into 9 zones. The DMS units are equipped with POWER SAVER (free cooling), ideal for Seattle climate. Also shown: conference room and reception room. Architect: Harris, Reed & Litzenberger, Inc.; Engineer: Arnold N. Bogue & Associates.

Tulsa's 2800 Center Building is heated and cooled by 50 Lennox blower-coil-filter units with resistance electric heating and . . .



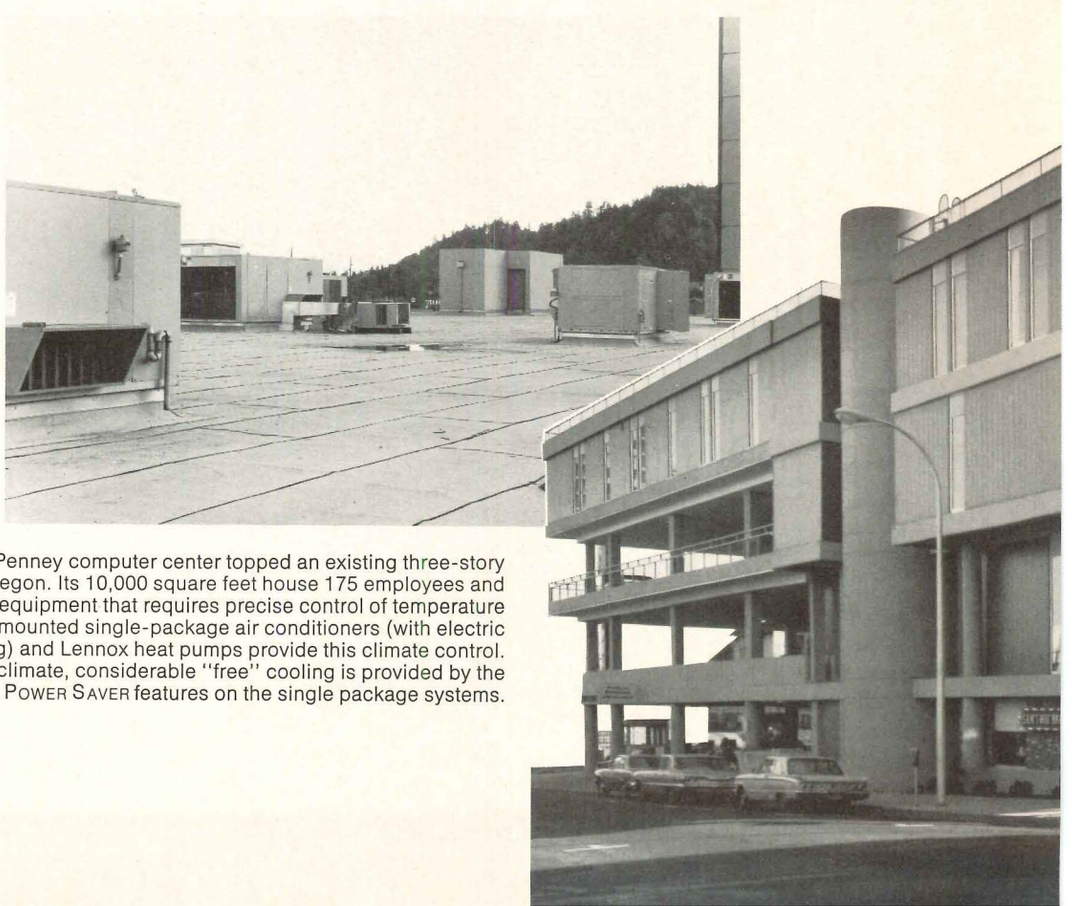
. . . remote Lennox condensing units located on the roof.

continued

private climates for offices...

All costs and performance characteristics are fully predictable from the earliest design stages. Lennox equipment is factory assembled, wired and tested, including electrical or pneumatic controls. A minimum of on-site labor is needed. The equipment is light, and low in profile. A flashed-in roof mounting frame insures a weather-tight installation. No concrete support pad is needed. And there is the security of *single source responsibility*.

Owning costs are predictable, too. Systems with POWER SAVER™ cool free whenever outside



This new J. C. Penney computer center topped an existing three-story building in Portland, Oregon. Its 10,000 square feet house 175 employees and delicate computer equipment that requires precise control of temperature and humidity. Lennox roof-mounted single-package air conditioners (with electric resistance heating) and Lennox heat pumps provide this climate control. Because of Portland's climate, considerable "free" cooling is provided by the Lennox POWER SAVER features on the single package systems.

Lew Williams Cadillac, in Portland, Oregon, uses a Lennox roof mounted, gas-electric, single package air conditioner to heat and cool this showroom and office.

temperature drops below 57°F. And with new Lennox multizone units, heat removed by refrigeration is recovered to reduce fuel costs. Routine servicing can be accomplished by maintenance staff. But service contracts are also available. There are more than 5,000 Lennox dealers authorized to serve you.

If you are planning an office building of any size, write us about the scores of ways Lennox systems can be tailored to the building's particular functions and environments.

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AIR CONDITIONING • HEATING

For details, see Sweet's 29A/Le—or write Lennox Industries Inc., 976 S. 12th Avenue, Marshalltown, Iowa 50158.

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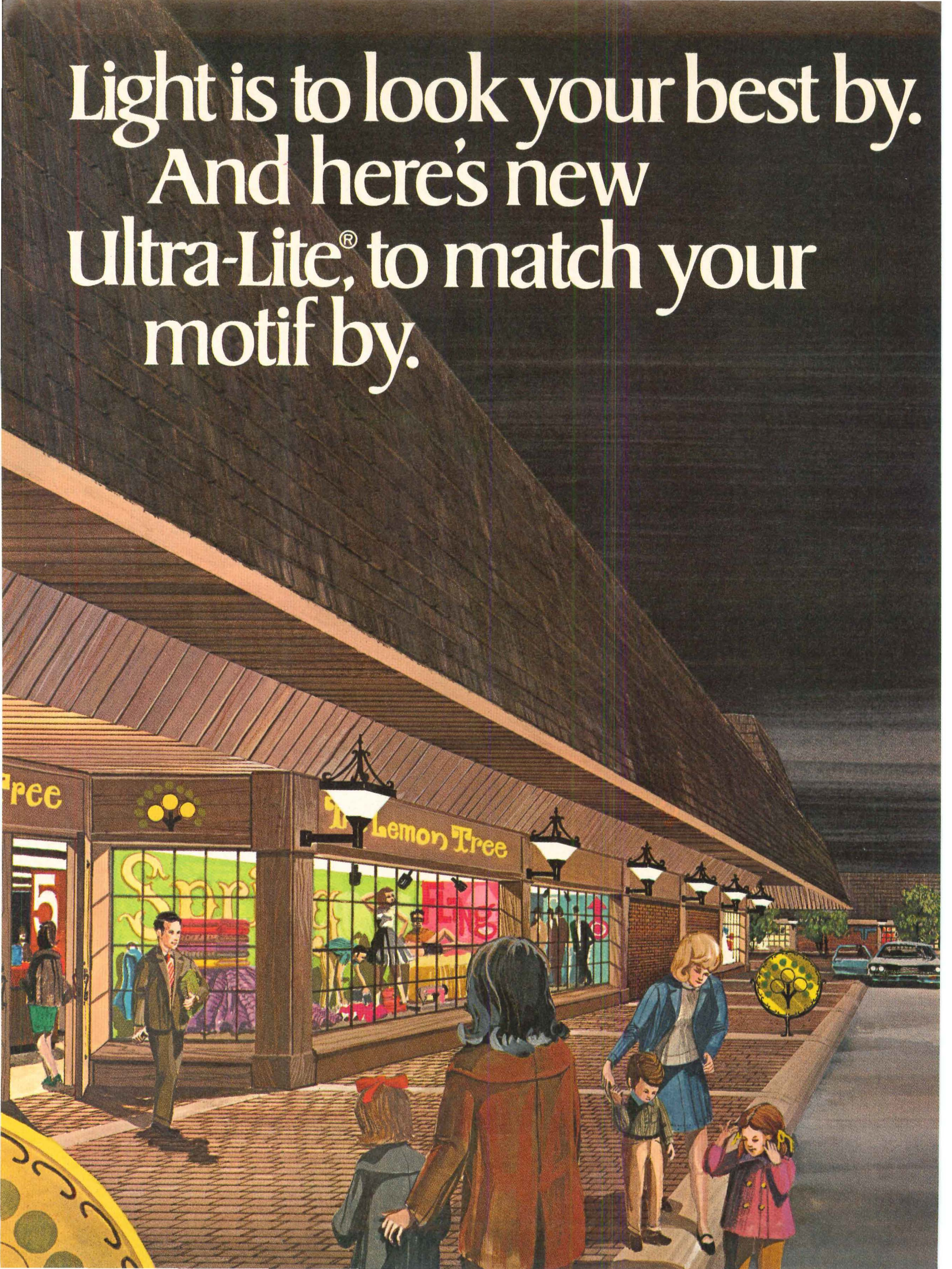
Light is to look your best by. And here's new Ultra-Lite® to match your motif by.



This distinctive luminaire gives you a big, bold say in customizing light to fit your scene.

In fact, you pick the siding. Cedar shakes. Clapboard. Vinyl cladding. Silk-screen signs or designs. Any color paint. Whatever you say to match your style.

Another choice, too, with Ultra-Lite. Straight or canted sides. Again to match your style.

Good light for customers to come into, of course. Four 1000-watt mercury vapor or metal halide lamps see to that. With light on the ground, not in somebody's eyes.

New Ultra-Lites. They're the newcomers among hundreds of light touches we can show you.

May we?

Just circle the reader service card. Call us. Or call your nearby Crouse-Hinds lighting sales agent. He's ready to do the analyzing, costing and comparing, with an assist from our home office computer.

Crouse-Hinds Company,
Lighting Products Division,
Syracuse, N. Y. 13201

For more data,
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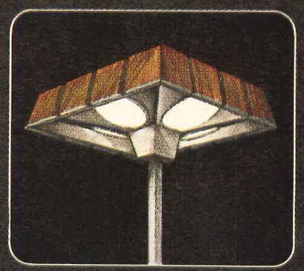
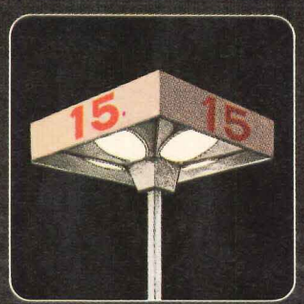
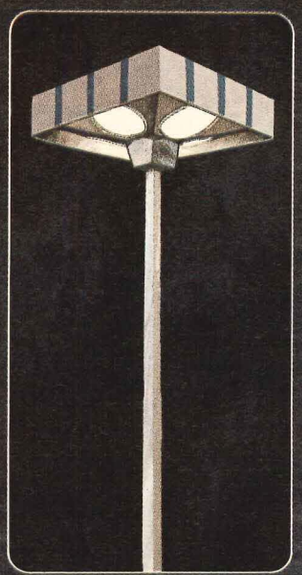
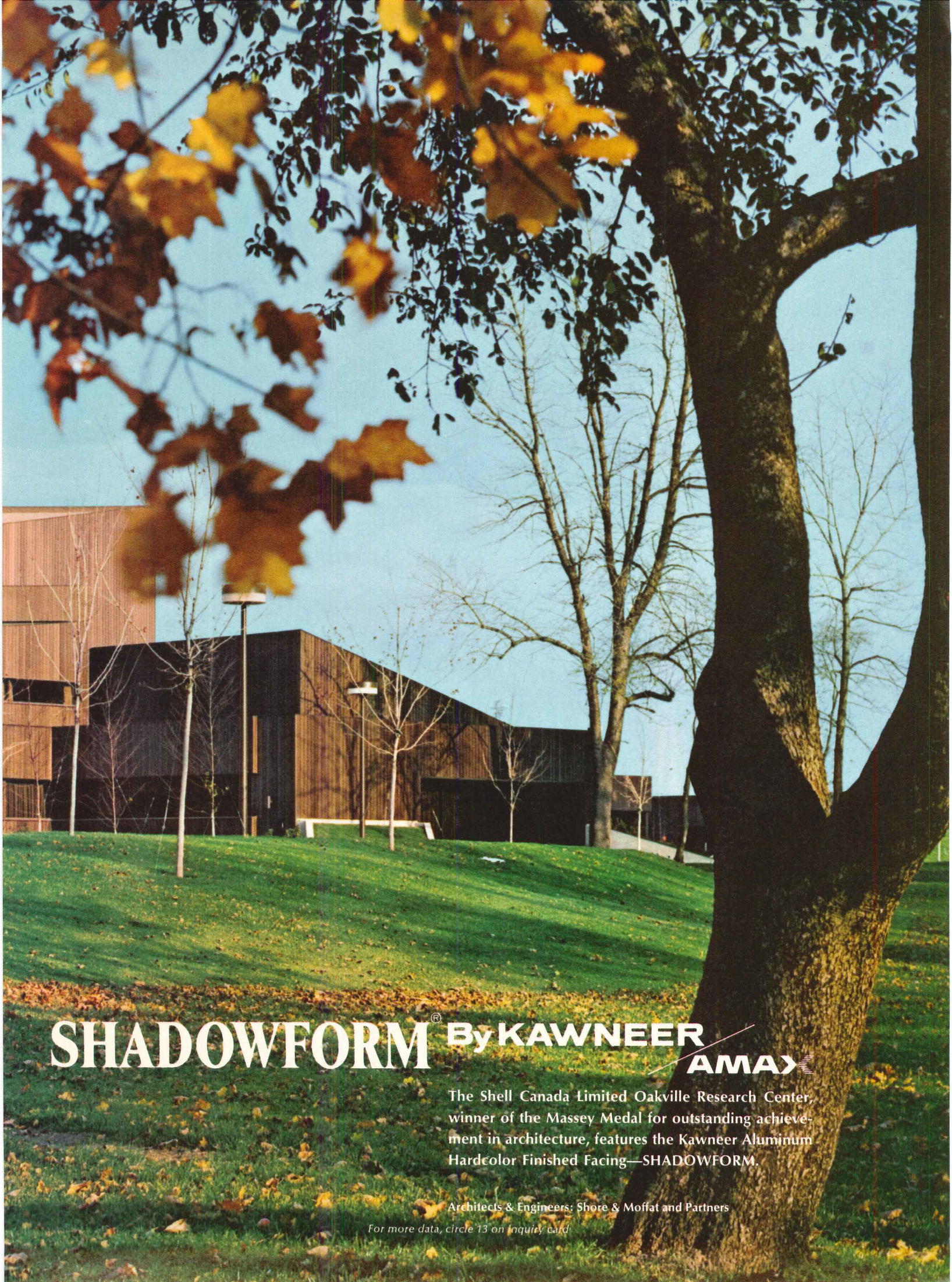






CROUSE-HINDS®

CROUSE-HINDS



SHADOWFORM® By KAWNEER AMAX

The Shell Canada Limited Oakville Research Center, winner of the Massey Medal for outstanding achievement in architecture, features the Kawneer Aluminum Hardcolor Finished Facing—SHADOWFORM.

Architects & Engineers: Shore & Moffat and Partners

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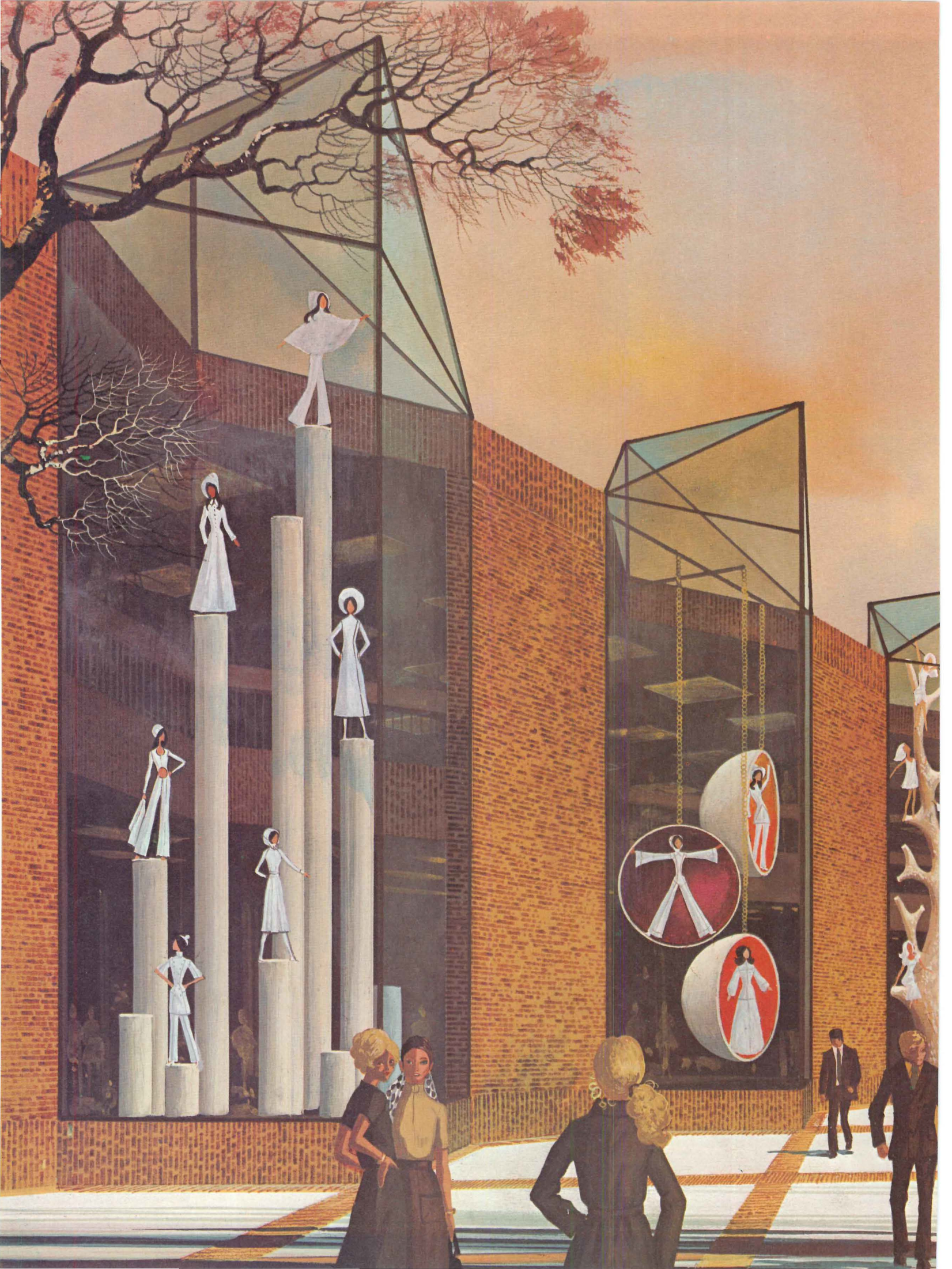

INNOVATION IN DESIGN. One of a series created for DAP Architectural Sealants. Design and rendering by Richard P. Howard Associates, Architectural Illustrators, Sylvania, Ohio. Harold R. Roe, A.I.A.

reliability

Depend on DAP '1231'® Flexiglaze® to withstand weather, temperature and vibration extremes when used for channel glazing and setting glass and curtain wall panels. This mastic compound is formulated with 100% pigment, natural and synthetic elastomer solids, assuring the adhesion, cohesion and flexibility called for by the demanding requirements of contemporary glazing practice. DAP '1231' adheres to wood, metal, stone, glass, porcelain.

For interior and exterior face glazing with metal sash, specify DAP '1012'® Glazing Compound. Its handling and knifing characteristics are excellent for aluminum, steel, stainless steel, bronze and bonderized galvanized steel sashes. Standard aluminum gray color blends well with aluminum sash without painting. Also available in natural and other colors. For catalog on full line of DAP Architectural Sealants, write DAP Inc., General Offices: Dayton, Ohio 45401. Subsidiary of *Plough, Inc.*

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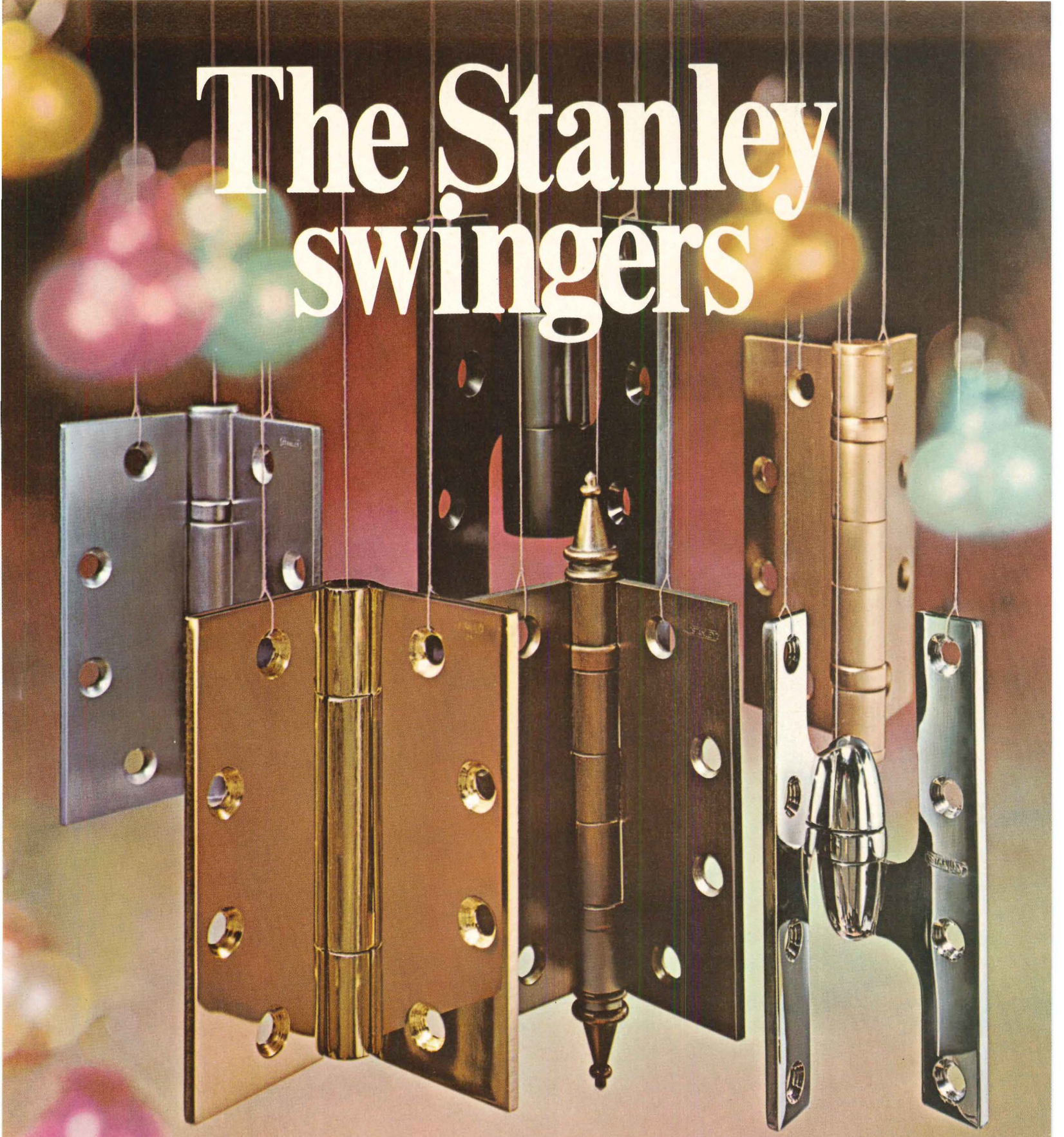
DESIGN CONCEPT. Dramatic two and one-half story, clear glass diamonds form high fashion display windows in this shopping center plan. Dark grey interior glass scheme provides backdrop for merchandise displays, yet admits light to second floor.

The Stanley swingers



Stanley, America's top architectural swingers! The hinges that set the standard for aesthetics, for smooth functioning design, for enduring, trouble-free quality. Choose from the widest line of ball bearing, contemporary paumelle, traditional olive-knuckle, chastely wrought steeple-tip and swing clear designs. All in an unequalled range of standard and custom finishes.

For the very latest, choose the CB1900 LifeSpan* (featured above) with the all-new LifeStan concealed bearing—guaranteed for the life of the building! Never needs lubrication. Slimmest three knuckle barrel and only two horizontal lines—an architect's dream!

For the exciting details on all of Stanley's swinging hinges, contact your Stanley distributor or write for "Architectural Hardware Fact File" to Stanley Hardware, Division of The Stanley Works, New Britain, Conn. 06050.

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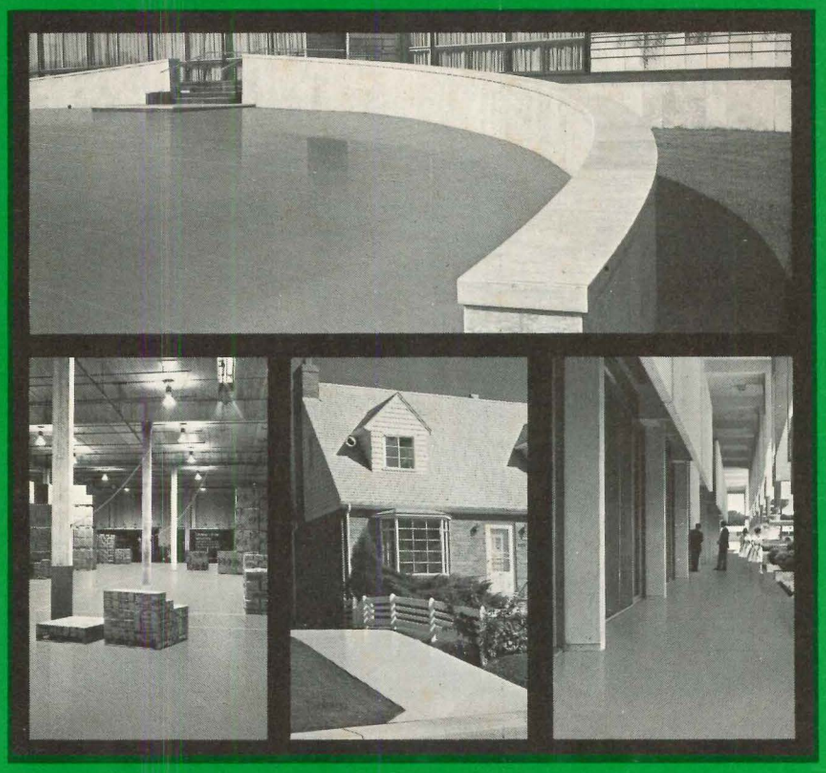

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- **High acrylic content.**
- **High or medium sheen as desired.**
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- **Highly versatile . . . seals, protects and beautifies concrete, terrazzo, slate, stone, exposed aggregate and other ceramic-type materials.**

. . . inside or outside, HIAC is a concrete sealer that provides excellent weatherproofing, stainproofing, sealing and dustproofing qualities. HIAC amplifies the natural beauty of concrete and masonry. It can be applied to provide the degree of sheen and protection desired . . . the more coats applied, the higher the resulting sheen of the protective film. The hard, smooth, clear HIAC protective film will not discolor or turn yellow.

The rugged, long-lasting HIAC film is highly resistant to stain . . . spills may be easily wiped up or merely hosed away. Offers excellent wearing qualities for foot and vehicular traffic.

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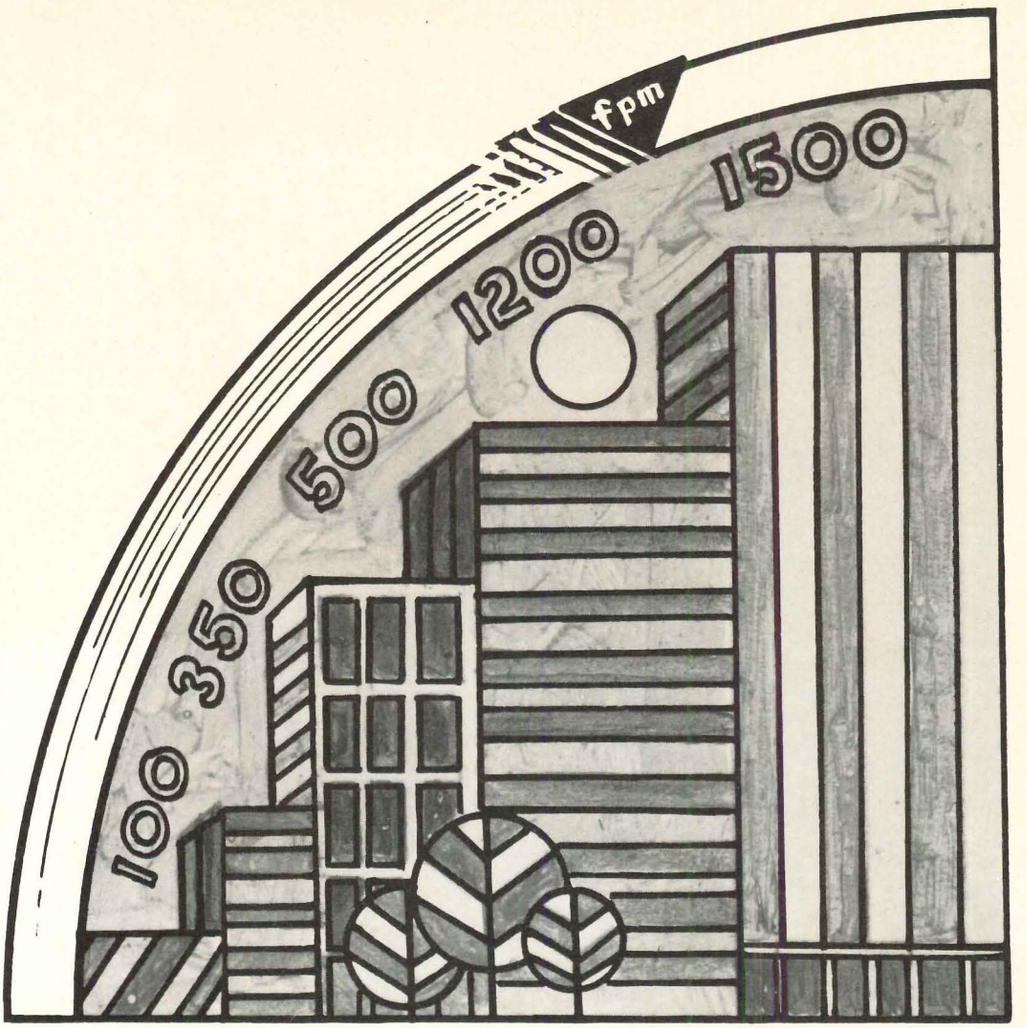

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News in brief

The Dodge index of architect-designed construction remained steady in January. On a new scale (1967 equals 100), January's 133 compares with 134 in December and 130 in November. Nonresidential building markets have stabilized and conditions are expected to improve by mid-year.

Proposed Federal legislation aims at greater compatibility between technology and building codes. The new draft bill would place responsibility on a National Institute of Building Sciences, a non-government body within the National Academy of Sciences. There would be inputs from all code groups and from industry. Similar legislation failed to reach the hearing stage in Congress last year, but with greater support in and out of Congress, it's expected to move farther and faster this time. **Another proposed bill would remove code impediments** to use of new technology in home construction. This would be part of the Housing Rights Act, re-introduced with stronger backing after failing to get through last year. The bill was introduced by Rep. Bob Wilson (R-Calif.).

400 architects and engineers convened in Washington recently for the Fourth Annual Public Affairs Conference. They heard several members of Congress discuss AE issues and then visited offices of their representatives on Capitol Hill to lobby for passage of legislation on a dozen principal subjects. The Brooks bill calling for a government-affirmed policy of AE selection on Federal construction according to qualification, not price submission, was considered of primary importance. The bill came close to passage in the final days of the last session. Speakers included Rep. Brooks (D-Texas), Sen. Jacob Javits (R-N.Y.) and Sen. Charles Percy (R-Ill.). Sponsors of the conference were the American Institute of Architects and the Consulting Engineers Council.

The Department of Architecture at Case Western Reserve University in Cleveland, Ohio, is in danger of being shut down unless new sources of money can be found. Alumni hope to raise $50,000 in an effort to keep the Department going, but unless the C.W.R.U. board of trustees changes its mind, the Department will be closed next year. In 1967, C.W.R.U. decided to phase out its traditional five-year architecture program and substitute a four-year undergraduate and two-year graduate program. Estimated five-year cost of the new program was $1.7 million, now considerably trimmed in hopes of saving the school.

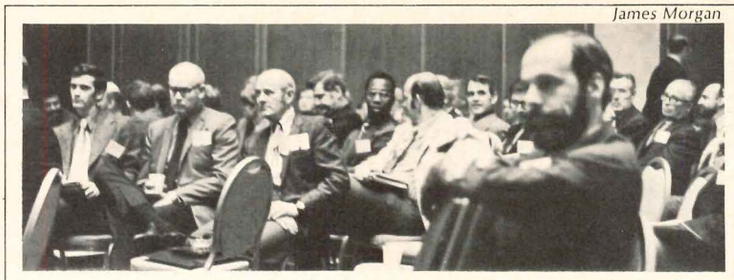
The American Institute of Architects has selected five honorary members who have made "distinguished contributions to the architectural profession, or to allied arts and sciences." They are Jeanne M. Davern, former RECORD managing editor; Lord Kenneth McKenzie Clark, British art historian; Pipsan Saarinen Swanson, industrial interiors designer; Donald E. Gibson, executive director of the Indiana Society of Architects; and Robert E. Koehler, editor of the *A.I.A. Journal*.

Pratt Institute, Brooklyn, N.Y., is looking for a new Architecture School dean. The Search Committee welcomes suggestions. Contact Warren Gran at 212-622-2200, ext. 308. **The new chairman of the Architecture Department at the University of California in Berkeley is Richard C. Peters,** an architect and teacher. He succeeds Gerald M. McCue, chairman for the last five years, who will continue on the faculty. **Charles Eames is the 1970-71 Charles Eliot Norton Professor of Poetry at Harvard.** He will deliver the last of six lectures April 26 and is affiliated with the Department of Visual and Environmental Studies while at Harvard.

The Seventh North American Conference on Campus Planning and College Building Design will be held at the University of Illinois, Urbana, April 18-21. **The annual Architects and Engineers Forum** will be held April 24, 1971 in Beverly Hills, Calif. Winners of its annual architectural design competition will be announced. The Forum is sponsored by the Los Angeles Department of Water and Power and Southern California Edison. **The C.I.B. 5th Congress,** sponsored by the Centre Scientifique et Technique du Batiment, will be held June 22 to 30 in Versailles. Title of the conference is "From research into practice—the challenge of application."

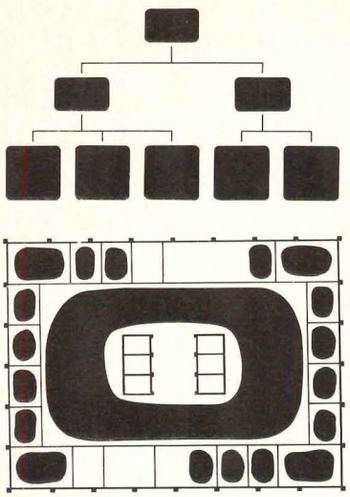
Russell Train and Paul Ylvisaker will speak at the American Institute of Architects' June Convention. Mr. Train is chairman of the Council on Environmental Quality and Mr. Ylvisaker (October, page 37) is Professor of Public Affairs and Urban Planning at Princeton University.

James Morgan

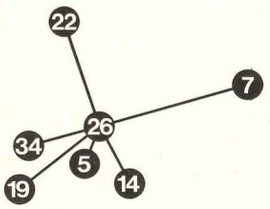


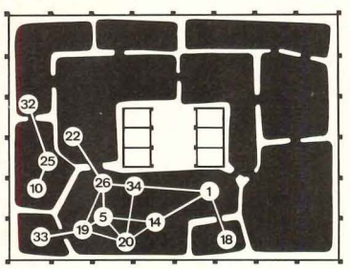
A.I.A. Human Resources Council meets in Omaha

The Human Resources Council of the American Institute of Architects (January, page 37) held its first national meeting in Omaha, Neb. last month. The Council is the A.I.A.'s attempt to carry out the programs of its Task Force on Professional Responsibility to Society. Community Design/Development Centers were a major topic. (For a detailed report on the meeting, see Perspectives, page 10 of this issue.)



Traditional hierarchy and resulting office floor plan (above); lines of communication and resulting floor plan (below).





Communications networks of organizations evaluated for planners

A service which gives management "a picture of what's really going on in an organization, as opposed to what the formal hierarchical organization chart assumes is going on" is being made available to business firms, architects, planners, and management consultants by Decision Resource Service, a new software department of Herman Miller, Inc., manufacturer of furniture and furniture systems.

A fourteen-point questionnaire is given to everyone in the organization. Examples: "Do you retain information received from this person for future use? Do you direct the course of this individual's administrative activity?" The information is then fed into a computer which is programmed to develop the real communications picture. Each response is compared with every other.

From the responses, the distinct pattern of communication for each person is identified. These individual patterns are then combined to form subsets of task-related groups linked by lines of communication, not departmental groups linked by lines of authority.

Facilities can then be laid out in accordance with the communications network. Areas can be developed on an individual basis, using the output from a companion program which measures the work activity of each individual and develops an equipment specification for him.

About 40 clients have used the service to date.

Architect designs play sculpture from demolition windfall

When a Brooklyn, N.Y. building was being demolished last year, the contractor asked architect Donald Kenneth Busch if he had any use for the building's 12- by 12-inch timbers. So Busch designed "a children's, and perhaps even an occasional uninhibited adult's, play sculpture" for Heckscher Park in Huntington, Long Island.

SOM plan for South Carolina shore region backs conservation

A development plan for the Port Royal Sound estuarial region in South Carolina, proposed by the Washington office of Skidmore, Owings & Merrill, has received strong support from conservationists in the area.

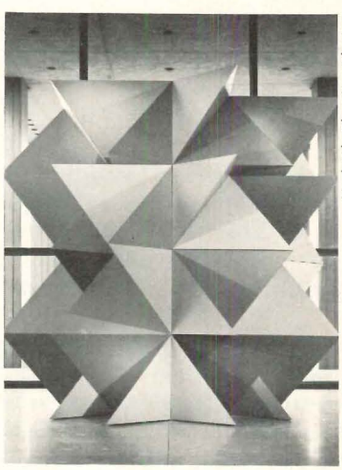
The plan was commissioned and financed by the Hilton Head Company, which owns 11,000 acres in the area. It argues that maximum effective use of a region's natural resources, not the creation of an artificial economy, is the key to ecological preservation. According to John W. Galston, associate partner and leader of the SOM task force which developed the plan, "the crucial factor is that once a coastline of estuarine area has been physically degraded or destroyed, it is virtually impossible to restore the natural environment."

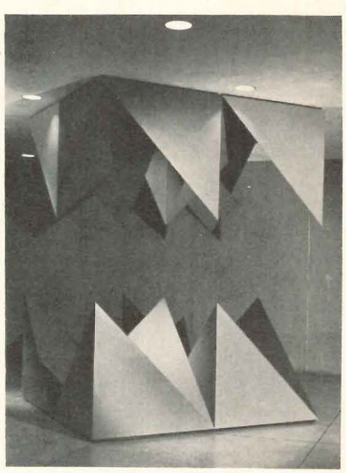
The plan recommends integrated agricultural, industrial and recreational development for the area. It suggests cooperatives would improve agricultural productivity. Light industry would process local agricultural products and marine foods, while Hilton Head Island would expand its recreation and tourist facilities.

Automobile travel would be discouraged in favor of boats for both business and pleasure.

Joe Browder of Friends of the Earth, as well as leaders of the Hilton Head Fishing Cooperative, have given their support to the plan. Along with the Hilton Head Company, they recently fought successfully to prevent the construction of a petrochemical plant in the Port Royal region.

Hedrich-Blessing Photos





Architect-sculptor designs permutable office tower sculptures

Two changeable modular sculptures (above) by Chicago architect and artist Stanley Tigerman have been constructed in the lobby of a new Chicago office building, 111 East Wacker Drive, designed by Mies van der Rohe. The multi-colored (mostly light green and red) sculptures are made of plastic modules consisting of "one eighth of cube-octahedrons." They were commissioned by Metropolitan Structures, developer of the building, and from time to time Mr. Tigerman will rearrange them in new configurations in different parts of the building or in other Metropolitan Structures buildings. He calls the design Moduscul p II. Moduscul p I, plastic modules "forming infinite configurations," is currently at Chicago's Museum of Contemporary Art.

Mr. Tigerman is also designing five polytechnic institute buildings for East Pakistan as well as several Federally-financed middle-income housing projects.

Young architects run public interest office in Washington, D.C.

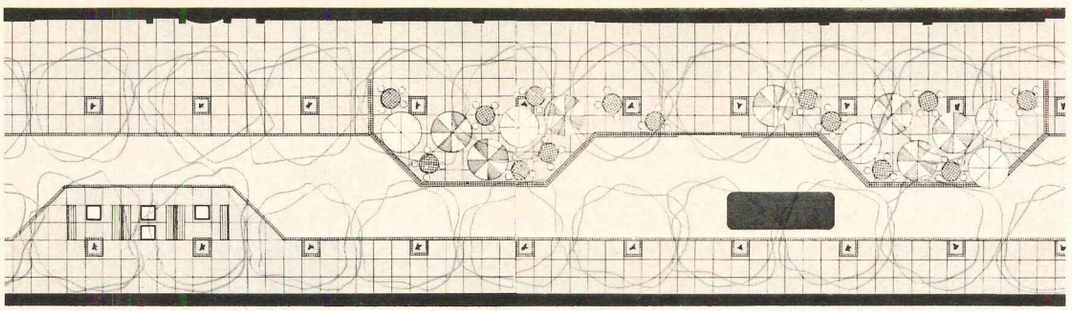
Three young Washington, D.C. architects are making a success of a "Nader-like pro bono" architectural, planning, graphics firm called October. The name comes from the month in 1969 when the firm was founded. Its three principals are Richard Ridley, 31, Robert Schwartz, 29, and Taylor Culver, 26. Taylor Culver is the ex-president of the Associated Student Chapters/American Institute of Architects who urged the A.I.A. into action to help blacks at its 1969 convention (August, 1969, page 35). His comment on traditional offices: "Stroking a pencil eight hours a day—that's how your work is measured in the star system. You only talk to architects."

By contrast, October is very flexible internally and has an informal design approach, according to Rich Ridley: "We're hired on a time basis, not on a project basis and we deal with people individually, almost the way you design a house with a client. It's the same in the office. We hire graphic designers and economists on an hourly basis. There's no extra staff or space." October would like to expand a little, enlarging its "network of talents," not adding to the permanent staff.

October Man

Current October projects include a study of the impact of rapid transit stations on Washington, D.C. neighborhoods and a "halfway house" for prisoners about to be released. October is now working on a Washington Parks Department plan to make inner city parks more useful to children. They are printing a comic strip about "Environman" as a pilot idea. October doesn't consider itself a local Washington firm, and plans to continue branching out to other cities.

October often represents groups who don't have money or power, but the firm is as pragmatic as it is idealistic. That is a major reason for being based in the capital. "We don't always deal with the system," says Bob Schwartz, "but we want the capability to be able to deal with the system anyway. We want to call the shots. We are interested in the kind of change that benefits society as a whole and not one small group."



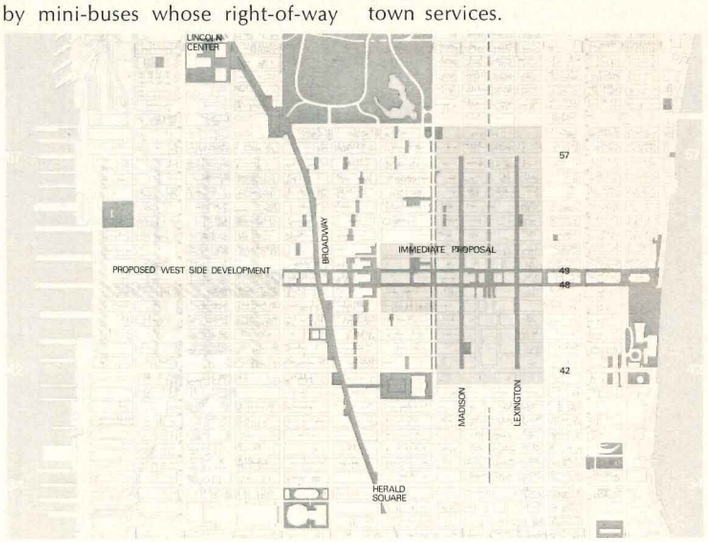
Major mid-Manhattan streets would be closed in N.Y.C. proposal

A study prepared in cooperation with New York City's Office of Midtown Planning and Development by van Ginkel Associates urges the immediate conversion to pedestrian streets of substantial sections of Broadway, Lexington and Madison Avenues and two smaller cross-town streets, 48th and 49th.

"Nowhere is the breakdown of the systems [upon which contemporary society depends] more in evidence than in the heart of the wealthiest city in the world—Midtown Manhattan," the report begins. "The systems we are continuing to build are self-limiting and we are near the end of that limit. . . . The real task is to make the city habitable and humane."

While admitting that only long-range measures will relieve the pressure on New York's systems, the report suggests short-term measures could create oases "in which the dependency on present systems is reduced, making possible the redesign and replacement of these systems."

According to the plan, changed traffic patterns and priorities in arteries on the periphery of midtown could make traffic flow more efficient and permit the opening for pedestrian use of several midtown streets. These would be serviced by mini-buses whose right-of-way would also be open to emergency vehicles (above). A network of pedestrian streets could also contain underground services, removing that disruptive element from major traffic routes; and large new peripheral roadways, as well as new mass transit lines, could substantially relieve the pressure on midtown services.



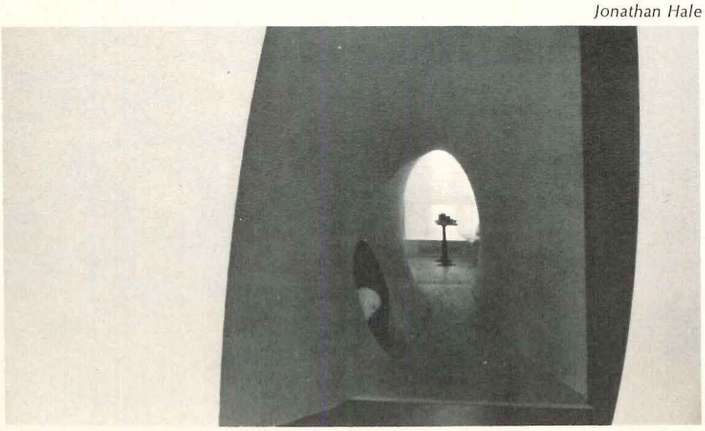
Artist creates a "space shelter for the senses"

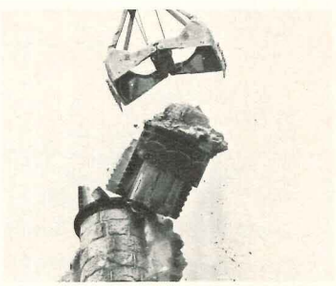
According to artist Alexandra Kasuba, "In our present housing, the 90-degree angle serves efficiency above all, steadily depriving the senses. The square silently orders behavior, mechanizes body movements. Recognizing that textures, pictures, ornaments and artifacts do not sufficiently camouflage the hostile neutrality of flat surfaces," she has constructed an experimental environment with no 90-degree angles in the walls.

The environment has stretched nylon walls, dividing a floor-through of a New York City brownstone into super-three-dimensional areas for working, playing and sleeping. The only right angles left are in ornate door and window frames, which appear to become embellishments.

As part of the experiment, groups and individuals will be invited to spend some time in the environment and then write their impressions, which will later be published in a book about environments.

Jonathan Hale





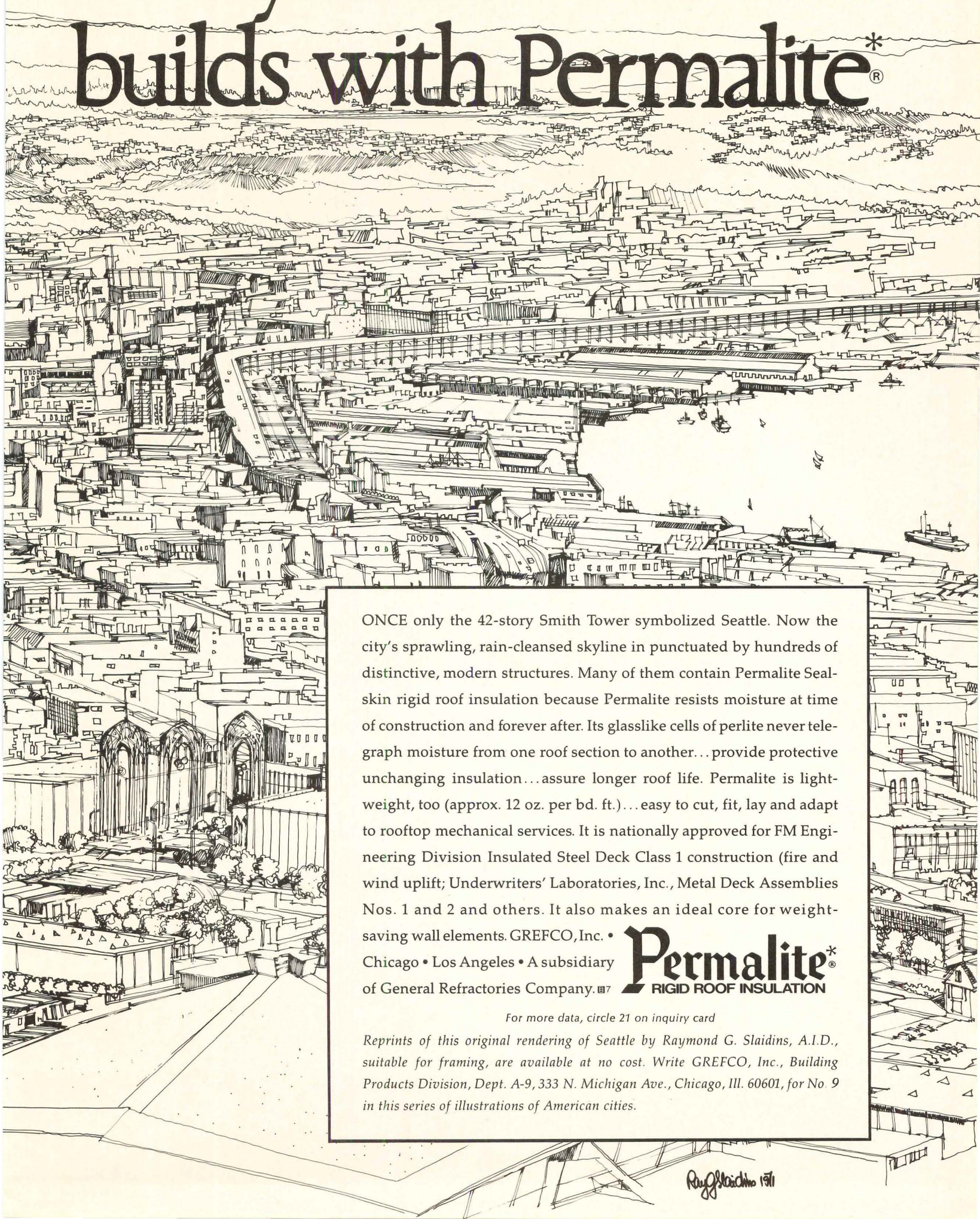
TV spot for preservation released

The first public service TV spot designed to dramatize the destruction of America's architectural heritage was released March 15 to some 300 TV stations across the country. The 60-second film was sponsored by the National Trust for Historic Preservation and made by Cinemakers, Inc., of New York City. Towers topple, majestic walls shatter, bricks cascade as such buildings as Sullivan's Garrick Theater in Chicago and McKim's Pennsylvania Station in New York are shown being demolished. Viewers are urged to write "Preservation, Box 2800, Washington, D.C." to find out what they can do to save buildings in their communities.

More on landmarks: see page 41.

Seattle weatherproofs

its skyline... builds with Permalite®*



ONCE only the 42-story Smith Tower symbolized Seattle. Now the city's sprawling, rain-cleansed skyline in punctuated by hundreds of distinctive, modern structures. Many of them contain Permalite Sealskin rigid roof insulation because Permalite resists moisture at time of construction and forever after. Its glasslike cells of perlite never telegraph moisture from one roof section to another... provide protective unchanging insulation... assure longer roof life. Permalite is lightweight, too (approx. 12 oz. per bd. ft.)... easy to cut, fit, lay and adapt to rooftop mechanical services. It is nationally approved for FM Engineering Division Insulated Steel Deck Class 1 construction (fire and wind uplift; Underwriters' Laboratories, Inc., Metal Deck Assemblies Nos. 1 and 2 and others. It also makes an ideal core for weight-saving wall elements. GREFCO, Inc. • Chicago • Los Angeles • A subsidiary of General Refractories Company. ▣7

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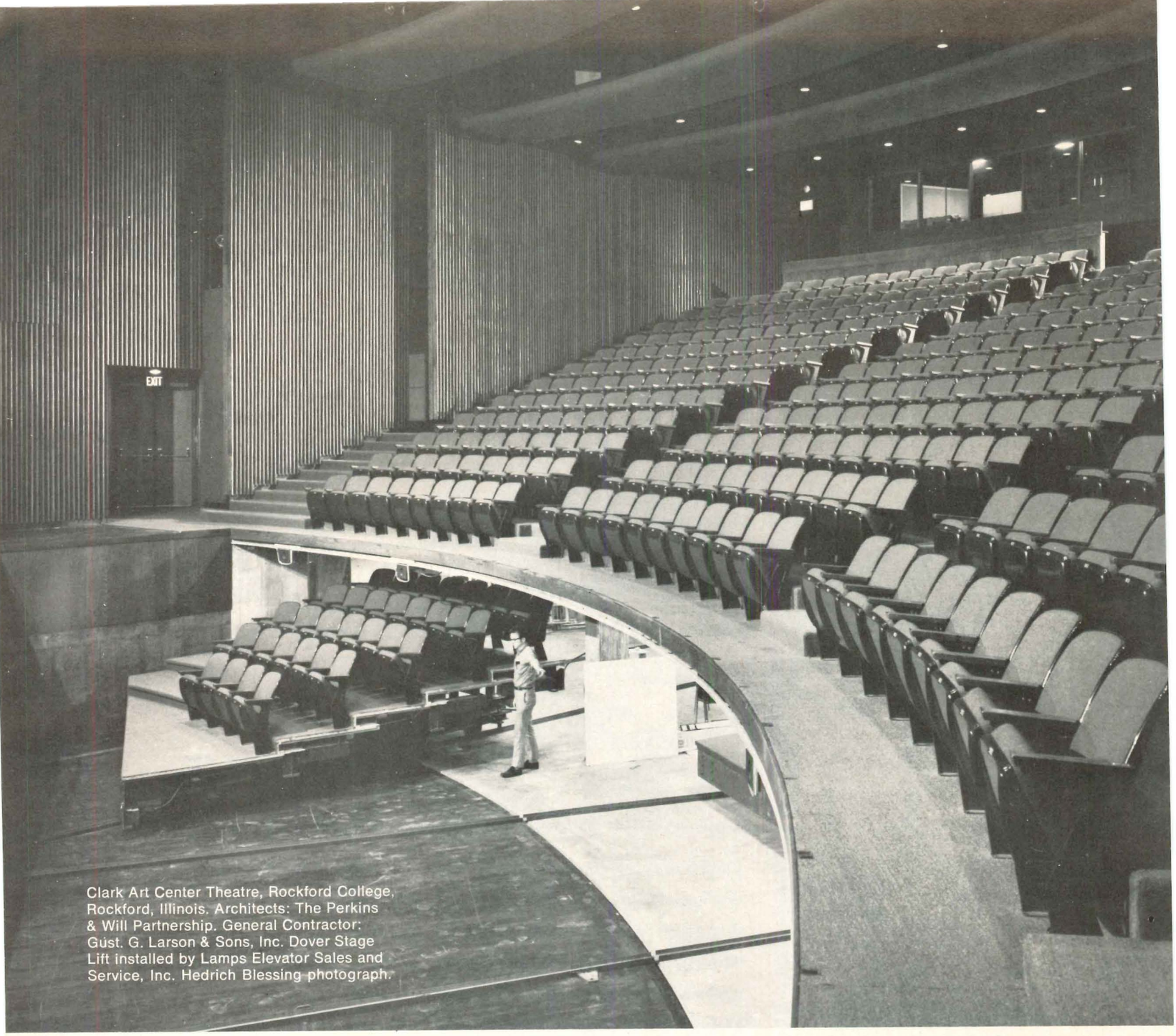
Reprints of this original rendering of Seattle by Raymond G. Slaidins, A.I.D., suitable for framing, are available at no cost. Write GREFCO, Inc., Building Products Division, Dept. A-9, 333 N. Michigan Ave., Chicago, Ill. 60601, for No. 9 in this series of illustrations of American cities.



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

Dover Stage Lift helps create a theatre for all seasons.

A college theatre should be able to handle many styles of theatrical presentations. Which is why so many new college theatres include a Dover Stage Lift in their plans.

For example, take a look at what the Dover Stage Lift does at the Clark Arts Center Theatre at Rockford College. This double-decked, 56′x18′ lift changes the stage from a regular proscenium set-up to a musical theatre with orchestra pit, or to a classical or thrust stage.

Dover has been making hydraulic stage lifts for over 25 years. We manufacture more of them than anybody else in the business. Dover Lifts are in the Metropolitan Opera House, New York; the Julliard School, New York; Harvard's Loeb Drama Center; the Santa Fe Opera House; and the Stardust Hotel, Las Vegas.

We custom-design every Dover Stage Lift to meet specific requirements, of course. Dover engineers have solved stage lift problems for buildings ranging from high school auditoriums to mammoth convention halls. They'll be glad to help you with design or engineering assistance.

For more information, see our catalog in Sweet's Files. Or write Dover Corporation, Elevator Division, Dept. A-4, P. O. Box 2177, Memphis, Tenn. 38102. In Canada: Dover-Turnbull.

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Landmarks: new ways to save them are sought as awareness increases

Jonathan Hale

New plan devised in last ditch effort to save Chicago landmark. Others in danger

Louis Sullivan's Chicago Stock Exchange Building (above) will be demolished this spring unless a newly-formed Landmarks Preservation Council can save it. The Council is a private group which includes architects, historians, lawyers, city planners, real estate and financial experts, and prominent citizens.

They propose a method by which the building could be acquired and restored without financial burden to the city or to its present owners. The City would acquire the building either through a negotiated purchase or through condemnation. The building would then be sold at fair commercial value to an organization which would preserve, restore and modernize it for commercial operation. (The Old Stock Exchange Building makes a steady profit even in its present unrestored condition.)

The City would retain all development rights with respect to the site and would sell them on an incremental basis under a proposal now before the City Council. In this way, the City would be reimbursed for the speculative redevelopment value of the site.

Those areas of the building having special landmark significance, such as the stock exchange floor, would be excluded from commercial operation, restored and opened to the public, possibly as a "Chicago School" museum.

The building was denied official landmark status last year on the grounds of financial burden to the owners, who could make a far greater profit from a new structure; but the newly-proposed development rights transfer has caused the Commission on Chicago Historical and Architectural Landmarks to re-recommend its designation. Beyond the new proposal, HUD will soon have substantial new funds for preservation.

The Preservation Council argues the present Chicago Landmarks law provides no real protection in the pinch. Many of the most important remaining buildings of the "Chicago School" are in the Loop, the area of highest real estate value. The Council doubts any of them will survive the next decade unless a program to compensate for lack of full redevelopment income is put through (February 1970, page 42; September 1970, page 35).

If the Old Stock Exchange goes, other famous landmarks, including the Monadnock Building and the Rookery will be extremely vulnerable, according to the Council.

Jonathan Hale

Early cast iron buildings to be rebuilt on new site

When James Bogardus' Laing Stores (below) were completed in New York City in 1849, it was commented that "They may be taken down, removed and put up again in a short time, like any other casting." But this is probably the first time it has been done, although Mr. Bogardus considered that possibility the most important aspect of his invention. And invention it was: the Laing Stores are believed to have had the first cast iron facades.

Jonathan Hale

The buildings were originally to have been demolished under an urban renewal plan. The City's Landmarks Preservation Commission (newly established at the time) stepped in to save them at the last minute. Now they will become part of the plan, relocated a few blocks north in a new community college being designed by architects Caudill Rowlett Scott. Their use has not yet been decided. Several other buildings in the same area are being restored or moved (July, page 37).

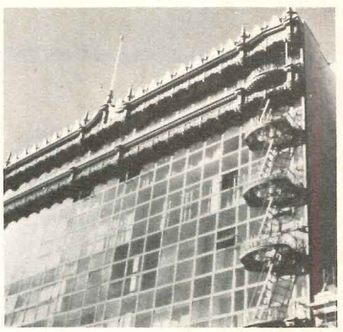
Saving the Laing Stores involved the co-operation of many government agencies and the revision or bending of many rules. For example, a special demolition contract was drawn up and was not awarded to the lowest bidder but to the best qualified firm. Architectural historian Winston Weisman was hired under the contract to supervise the demolition company's work. HUD has pledged substantial reimbursement in the City's first use of the new Historic Preservation sections of the Federal Housing Act.

The Landmarks Commission is storing several other cast iron facades under the Brooklyn bridge until new uses for them can be found. Any takers?

San Francisco's Hallidie Building gets protection

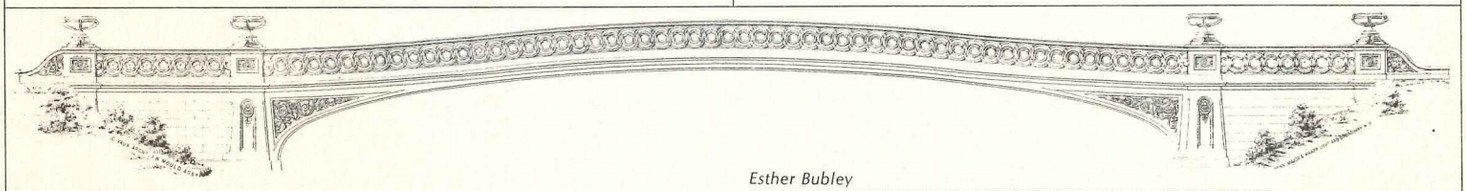
The first curtain wall building in the United States, the Hallidie Building (right) in San Francisco, has been declared an official landmark by the City's Board of Supervisors. It was designed in 1918 by Willis Polk. The decision was considered a test of the City's landmarks legislation, as the building's owners opposed the designation. This is also the first time San Francisco has acted to preserve an architecturally, rather than historically, significant building.

Elisabeth Kendall Thompson

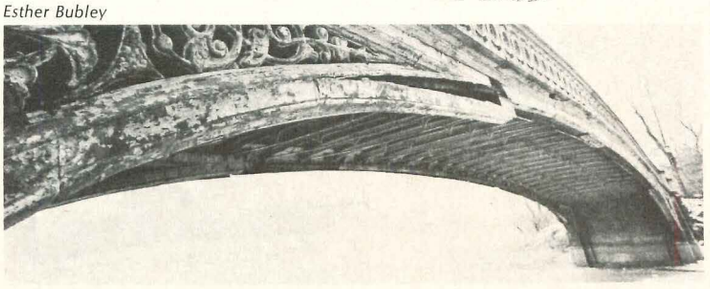


Early Wright work destroyed

What architectural historian Henry-Russell Hitchcock called "Wright's best house of the early nineties, remarkable for its premonitions of his mature Prairie houses of a decade later," the Harlan House (Chicago, 1891) has been demolished without warning.

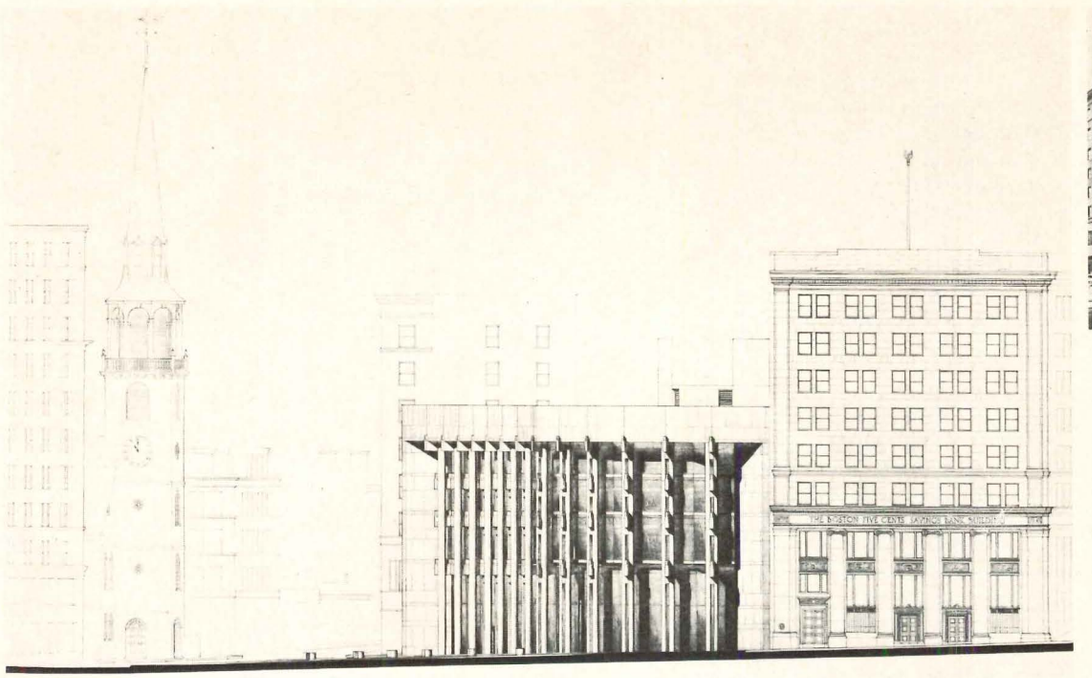


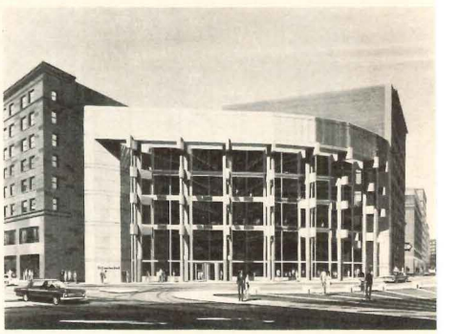
Esther Bubley



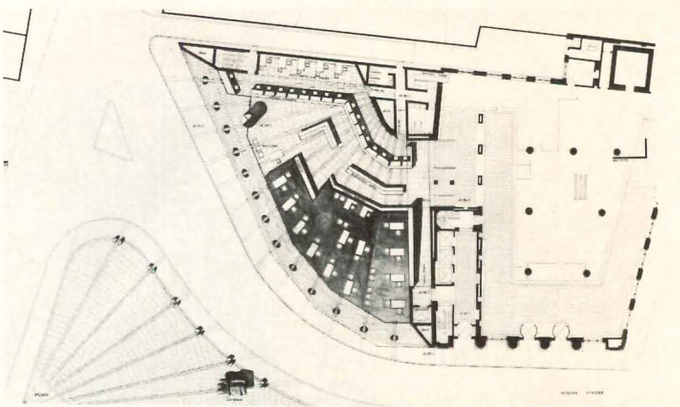
Central Park bridges endangered

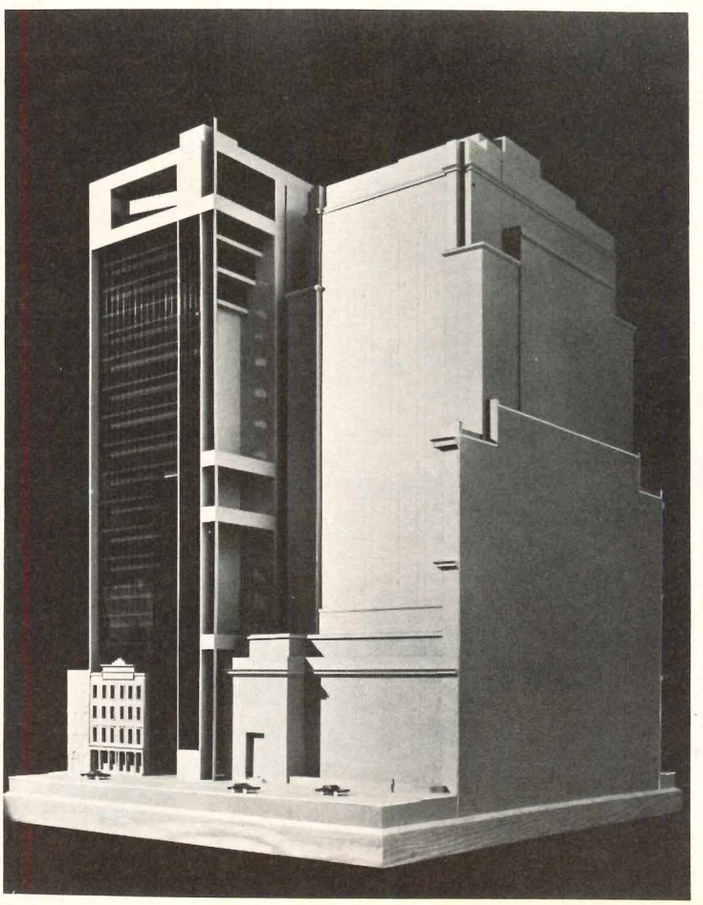
The Bow Bridge (1860 lithograph above) in New York City's Central Park is an old friend to many New Yorkers, who take it for granted. Calvert Vaux designed it in 1859. It may not survive another year, however, according to the Friends of Central Park. As the photo at right shows, the cast iron bridge is in bad condition. It has not even been painted in recent years. Several other equally beautiful, though less well-known, Vaux bridges are also in serious danger.

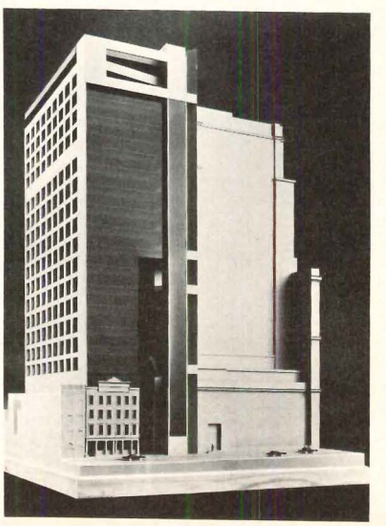




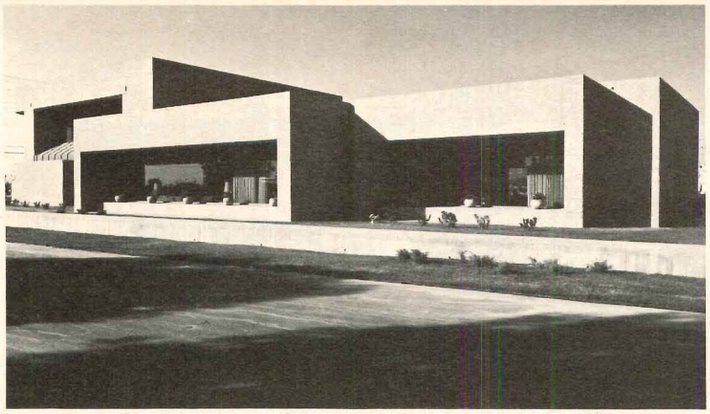
Boston Five Cents Savings Bank, Boston, Mass., Kallmann & McKinnell, architects, is constructed as a columnless banking hall and three floors of offices above. Cast-in-place post-tensioned beams radiate from the core and are gripped by five-story columns on the outside; these form a colonnade and help shelter the glass facade. The fan-shaped site and triangular park were created in an historic downtown area by the diversion of a street.



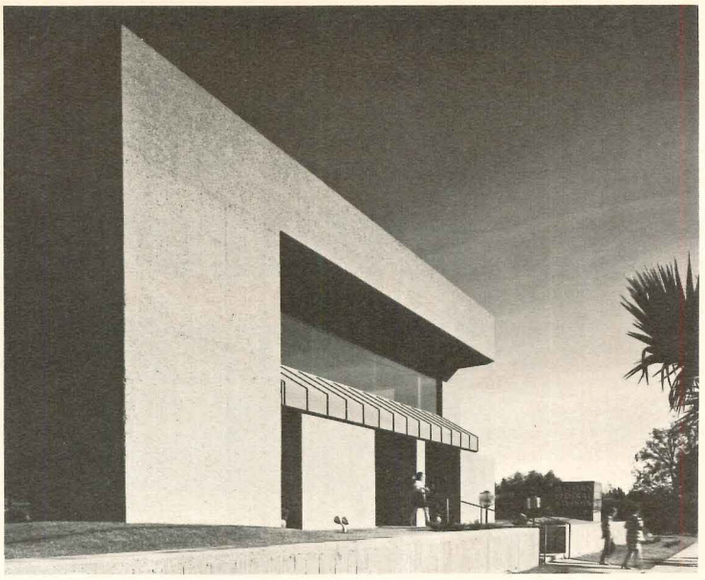




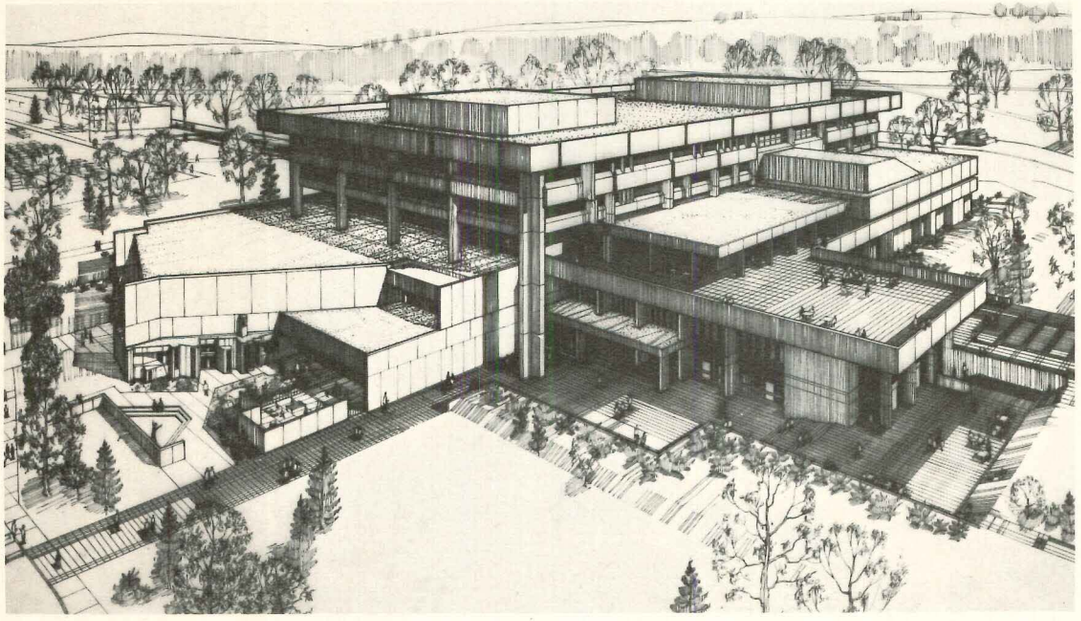
Penn Mutual Building, Philadelphia, Mitchell/Giurgola Associates, architects, will rise 21 stories across Washington Square from Independence Hall. The northern facade will have a "window wall" of reflecting glass. A glass-enclosed elevator will carry visitors to an observation deck. Windows in the eastern facade will be recessed in concrete frames and protected by diagonally-placed, tinted sun shields. The four-story facade of an existing early 19th Century Egyptian Revival building, designed by John Haviland, will be preserved, forming part of the lobby entrance. Interiors will be free of columns, providing a 70-foot clear span. Structure is steel and slip-formed concrete.



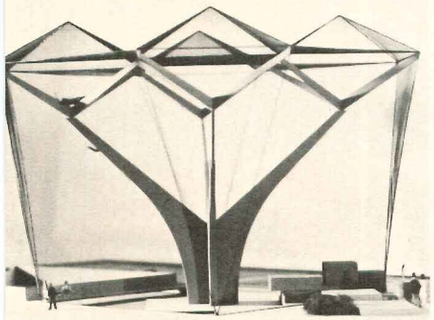
Wayne Thom photos



Western Federal Savings and Loan Branch, Orange, Calif., Dorman/Munselle Associates, architects, uses an exposed light-steel space frame to span the 60- by 60-foot main banking area. Exterior walls are of bush hammered concrete, wood, and terne. Cedar is used for the interior panelling, desks and tellers' counters. A community room, and an employees' lounge are also included.

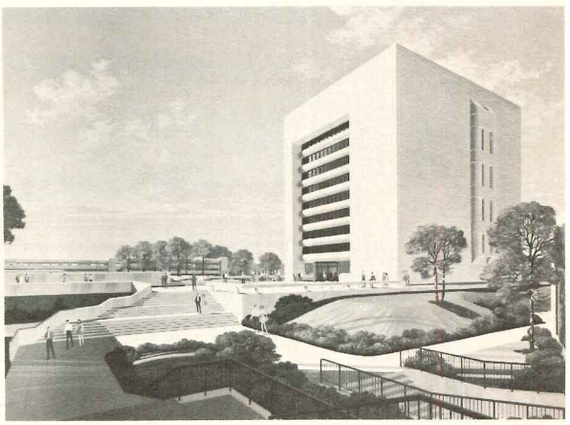


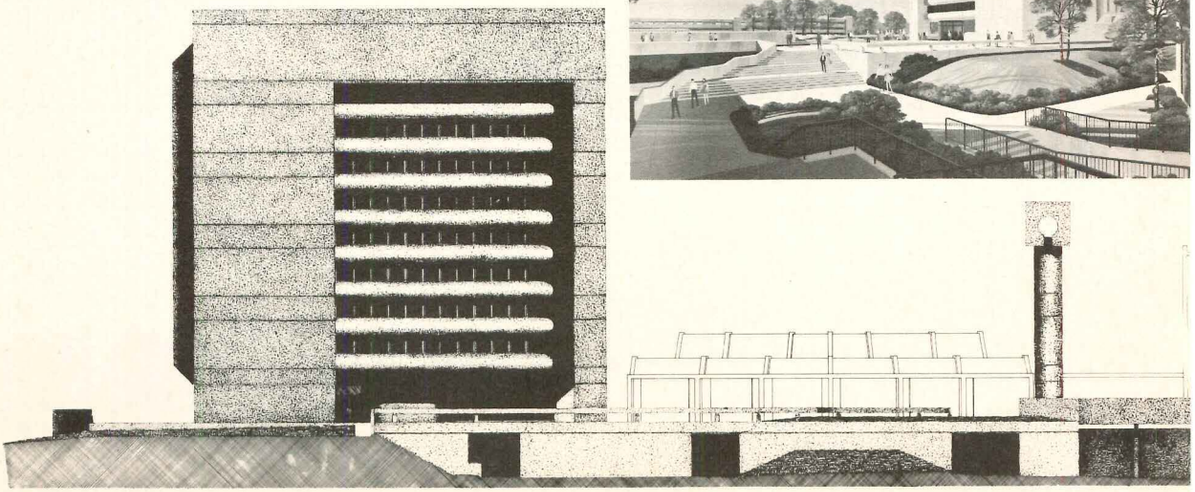
Arapahoe Community College, Littleton, Colo., Eugene D. Sternberg and Associates, architects, will house all educational, administrative and student facilities in one structure. Phase I (left) will contain about 230,000 square feet in a six-story concrete structure with a variety of surface finishes. Resource centers will house each department's material preparation, books and faculty, always available to students. In addition to labs and classrooms, student activity space and a nursery for students' children will be provided.



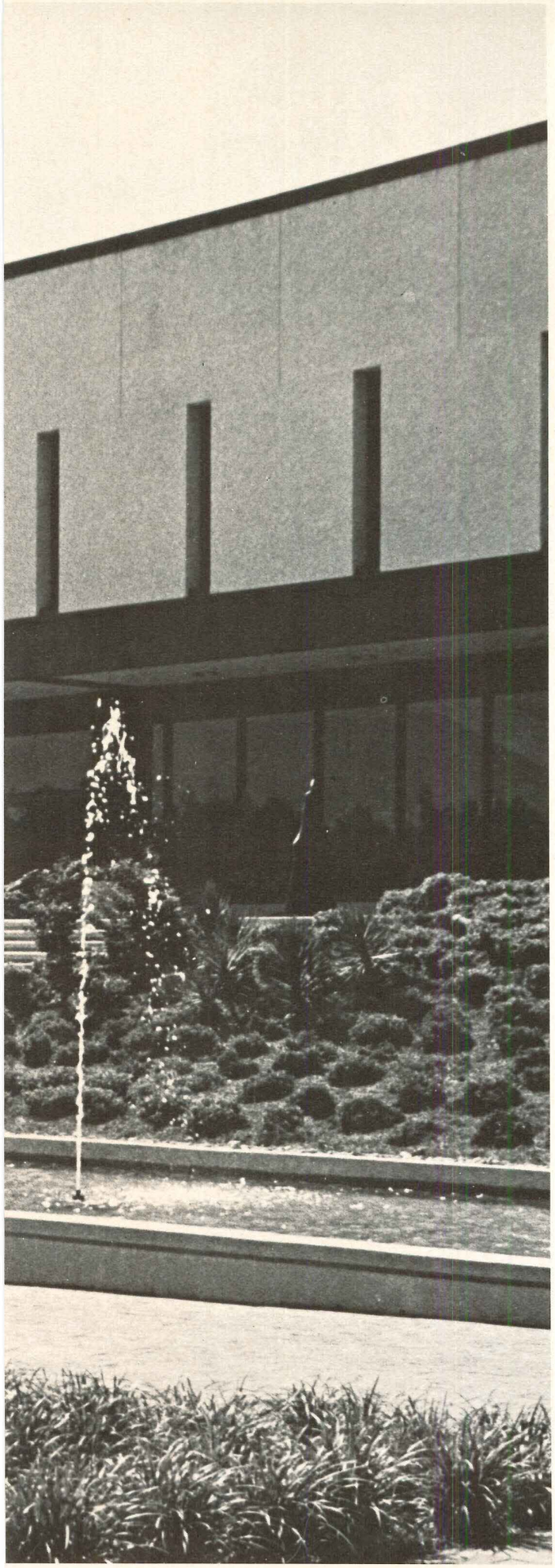
Columbus Zoo Eagle Aerie, Columbus, Ohio, Ireland/Associates, architects, has a structure of four standard, laminated wood church arches back-to-back with four four-piece clusters placed on their tips. Tension cables will hold the frame in place and Mylar netting will cover the whole. A concrete base will contain a pool for fish which the eagles will catch for themselves.

Agricultural Science Research Building Number Two, University of Kentucky, Lexington, Ky., Design Environment Group, architects, will be devoted to the animal sciences. It will contain five levels of laboratories and seven of offices in a structure of architecturally-finished reinforced concrete.





The electric climate is for architects who want unlimited design flexibility.



Read how it helped Odell Associates Inc., make 128,000 square feet of building deliver thousands of dollars in long range savings.

When the architects were designing the $3,500,000 Spring Mills Customer Service Center near Lancaster, S.C., they had two basic goals: First, a building that was distinctive as well as functional; and second, the best overall investment for their client. They achieved both goals when their plans specified *the electric climate.*

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Savings? The owners are saving over 6% a year compared to operating cost estimates! What's more, they save thousands of dollars in direct overhead, too! Because the Center has no large boilers or furnaces to maintain.

Before designing your next building, ask your electric utility company how *the electric climate* can help you save money for *your* client.

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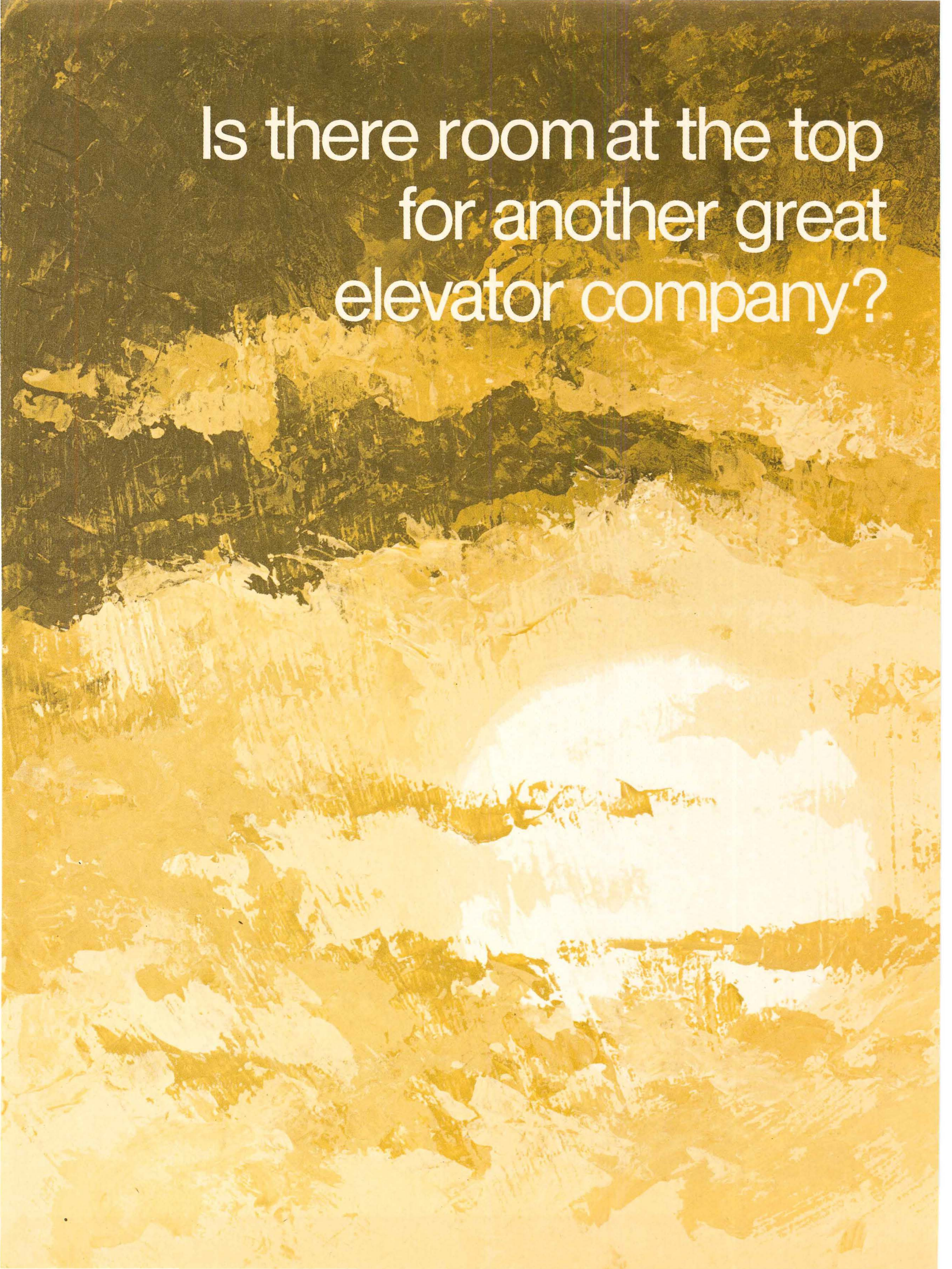
Is there room at the top
for another great
elevator company?

Quick! Name the top companies in the elevator business. Think hard. Well, we wouldn't be surprised if only two names come to mind. Even though there are many elevator companies in the country, there are just two way up there at the top. ☐ A few floors below and moving up fast, you'll find Armor. We have no quarrel with the leaders. They've earned their lofty positions. But Armor is ready to move right up there beside them. ☐ We've done a lot of growing in nearly forty years in the business. Today, we have five modern manufacturing facilities capable of making every component for gearless, geared and hydraulic elevator systems. Every component . . . from machines to call buttons and from cabs to controls. ☐ We have another important plus . . . the financial and research backing of A. O. Smith Corporation. A. O. Smith has been doing business for nearly 100 years . . . but it's full of young ideas, with 20 plants on three continents, and sales climbing toward the half-billion mark. ☐ Today, there isn't anything the leading elevator companies can do that we can't do. We've got the equipment and technical skills to take you as high as you want to go . . . in buildings of any size, shape or kind. And we're nationwide . . . right next door wherever you are coast-to-coast and throughout Canada. ☐ Is there room at the top? We're out to make room. Look out above . . . here we come! Armor Elevator Company, Inc. Plants in Louisville, New York, Los Angeles, Toronto and Vancouver. Offices everywhere. For more information write: 3533 N. 27 St., Milwaukee, Wisconsin 53216.

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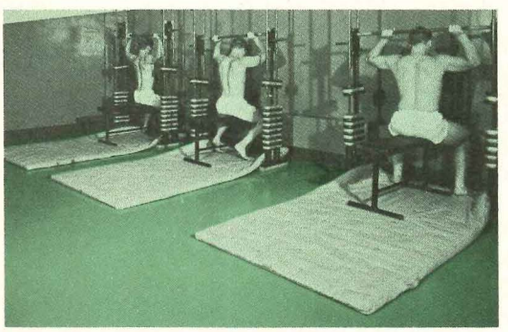
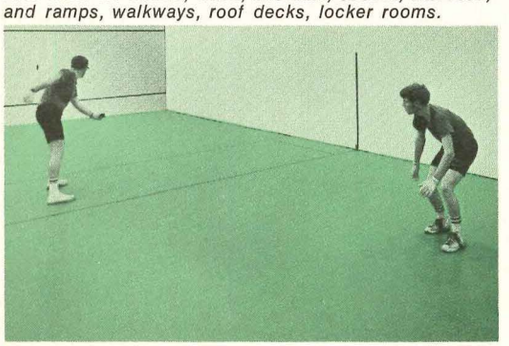
You were right to wait for Robbins SPORT-TRED



Also ideal for tennis, track, baseball, soccer, lacrosse; and ramps, walkways, roof decks, locker rooms.



Robbins' new indoor/outdoor synthetic floor can be customized to your own unique specifications for color, length, thickness and formulation. What's more, Robbins has solved many of the problems plaguing other synthetics. As the leader in athletic floors of all types, Robbins was determined to have the best synthetic, too. It takes a little longer to bring out the best, but the wait was worth it. New Robbins SPORT-TRED is solid vinyl. Unlike laminated vinyls and filled urethanes, it won't fade, change color, shrink, absorb stains or show undue wear patterns under normal use. Specially compounded paints stay on without scuffing or smearing.

Send coupon for full information.

Robbins SPORT-TRED, Box 397-M, Memphis, Tenn. 38101

Please send me full information on new Robbins SPORT-TRED customized synthetic indoor/outdoor athletic floors for . . . ( ) immediate consideration ( ) future reference.

Name_____

Position_____

School/Company_____

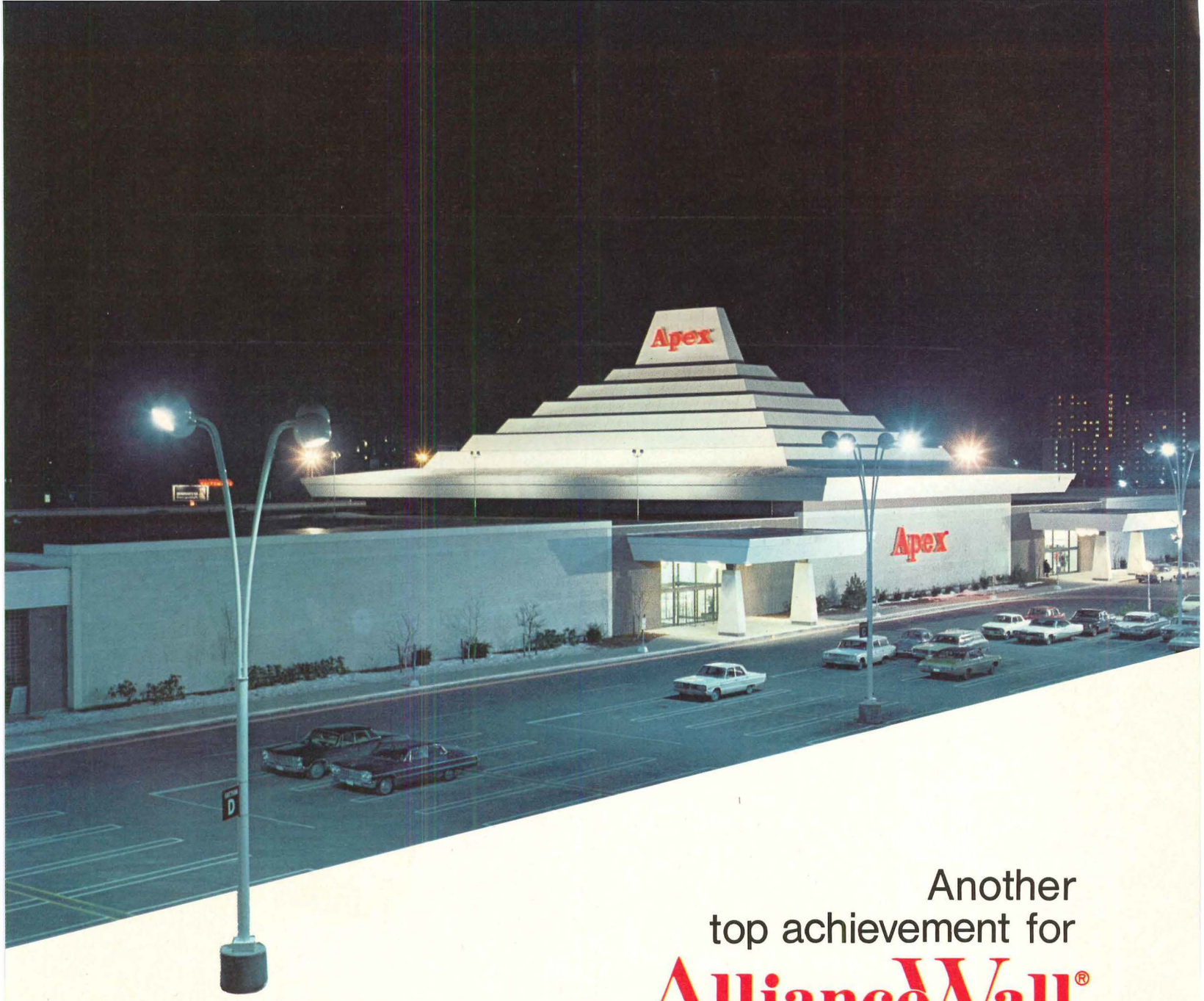
Address_____

City_____ State_____ Zip_____

Robbins FLOORS

World Leaders in Athletic Floors ci *Division of Cook Industries, Inc.*

For more data, circle 25 on inquiry card



Another top achievement for AllianceWall® porcelain-on-steel panels

PROBLEM: How to attract maximum attention for the new Apex Department Store against the relatively low skyline of Pawtucket, R.I. with an economical roof that requires no maintenance and never appears to age?

SOLUTION: Designers at Raymond Loewy & William Snaith Inc., of New York, decided upon a spectacular Pagoda-style supplementary roof constructed with AllianceWall porcelain-on-steel, self-cleaning panels. Using a #118 Matte White the roof was designed so it could be illuminated both from the interior and exterior to achieve dramatic effects and visibility. Also, to the surprise of management the price of AllianceWall panels was in line with competitive products considered for the project.

The self-cleaning AllianceWall porcelain-on-steel panels never require painting or other maintenance. Their smooth, non-porous surface will not retain dirt, grease or stains and will not be affected by the heavy smog of this industrial area. Panels are available in 107 colors.

Planners and Designers: Raymond Loewy/William Snaith, Inc. New York, N.Y.
Engineers: Strobel & Rongved, New York, N.Y.

For complete information
including specifications check
Sweet's File or write to:

AllianceWall Corporation
P.O. Box 247
Alliance, Ohio 44601

For more data, circle 26 on inquiry card

Peace-of-mind secrets revealed

Let's face it. Everyone worries about lockset security these days . . . whether he runs a plant, a school, an office building or any other building that must be kept under lock and key.

And if you are among those worriers, chances are you're insecure about two potential cracks in your security armor, namely key control and pick resistance of your locksets.

On both counts, the Sargent Maximum Security System offers reassuring news.

Take key control. The exclusive Sargent Maximum Security System key operates the lock cylinder by raising three rows of overlapping pins to a precise "shear" line. The key, unlike any ordinary key, has carefully milled depressions along its length rather than the typical serrations on its edge. Result: ordinary key cutting machines cannot duplicate this key, and you remain in control.

Now look at pick resistance. With three rows of pins, as shown in the cut-away cylinder above, instead of just one, the Sargent Maximum Security System cylinder all but defies picking or raking.

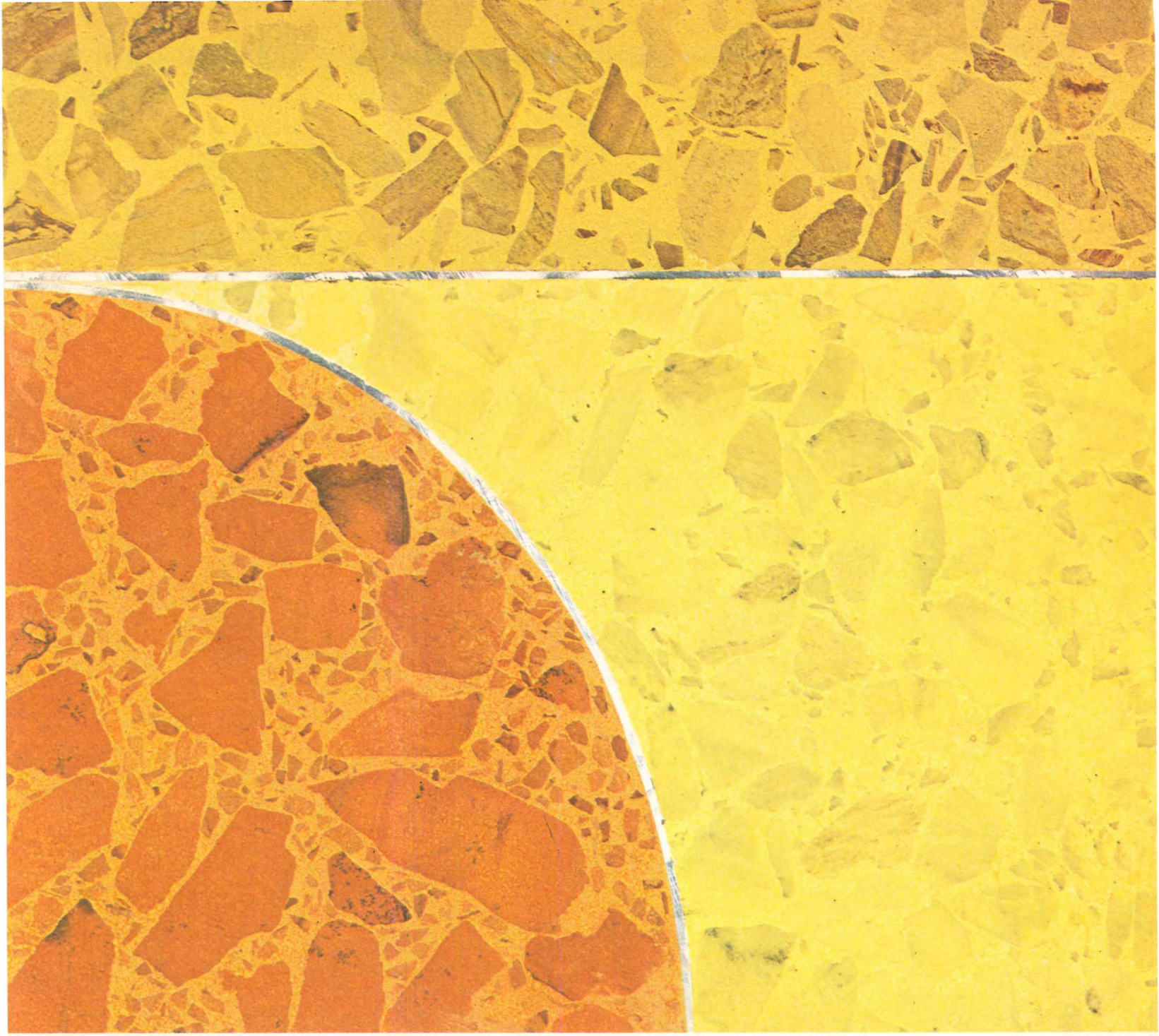
And the chance of any one key operating another lock cylinder by accident just doesn't exist. That's because there are 24,500 unduplicated key combinations available in any one system at even the master key level.

Look at it this way: when the Sargent Maximum Security System goes in, surreptitious entry is locked out. For full details, write to Sargent & Company, 100 Sargent Drive, New Haven, Conn. 06509 • Ontario, Canada. Member Producers' Council.

SARGENT®

A complete line of architectural hardware

For more data, circle 27 on inquiry card



Express Yourself in Terrazzo

Terrazzo offers absolute freedom of expression. A design in terrazzo may enhance, dazzle or blend unobtrusively into your building design. The beauty you create in portland cement terrazzo will live as long as the building. Traffic and age work in combination to produce terrazzo's characteristic deep, beautifully natural polish.

Expression in terrazzo is surprisingly economical due to its inexpensive maintenance. And portland cement terrazzo is completely fireproof.

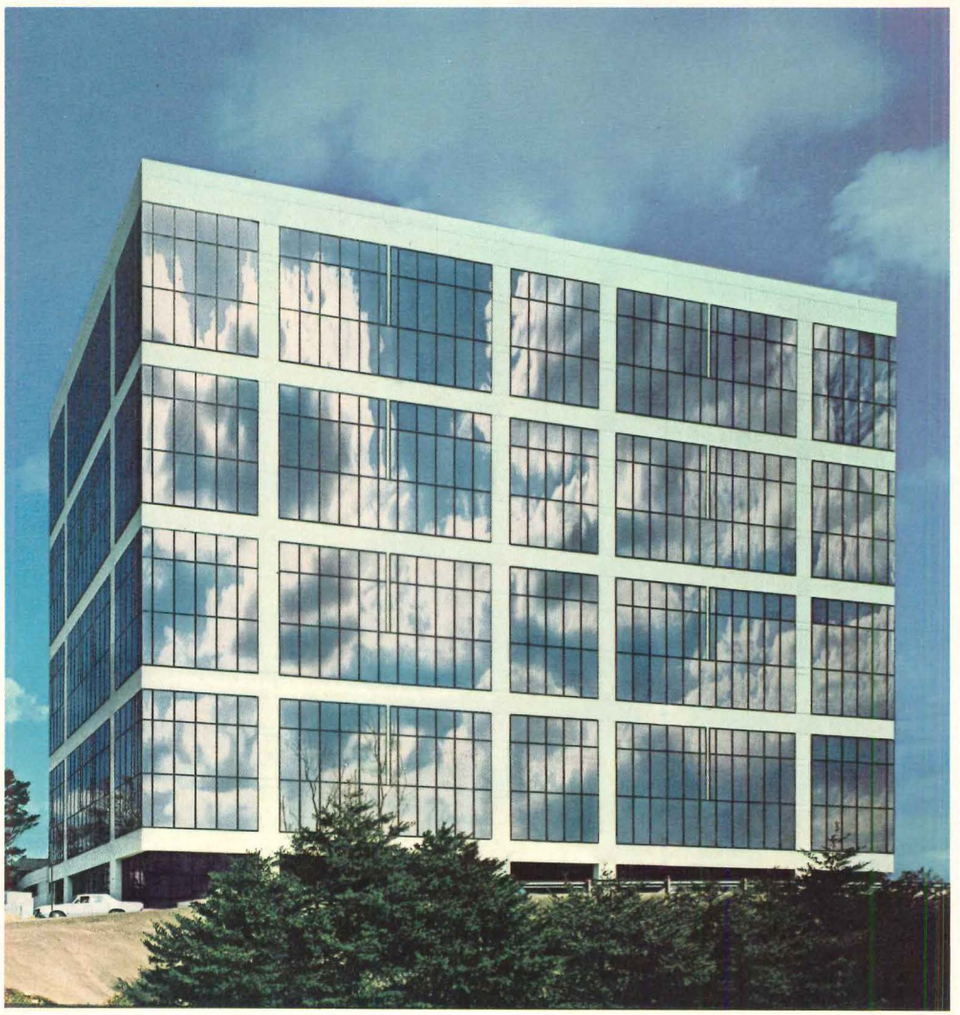
Consider terrazzo as a medium of expression. A terrazzo specialist would be delighted to assist . . . may we recommend one?

Trinity White Cement
Creativity in Concrete

General Portland Cement Company
Offices: Dallas • Houston • Tampa • Chattanooga
Fort Wayne • Kansas City, Kan. • Los Angeles

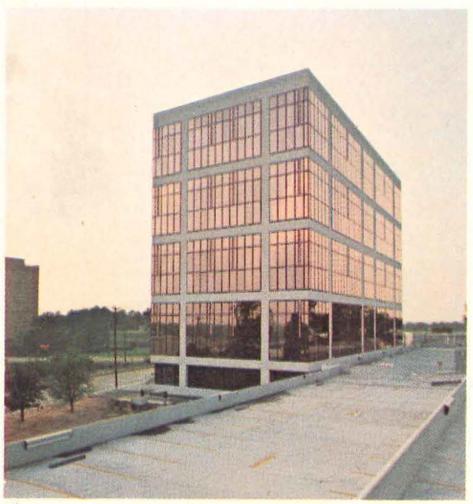
For more data, circle 28 on inquiry card

PPG Environmental Glass is highly reflective, visually exciting and ever changing.



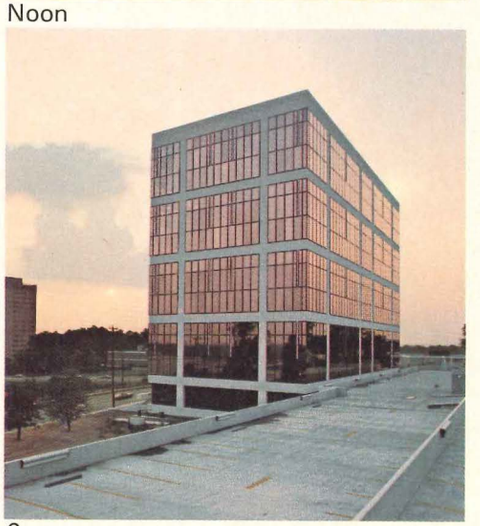
6 a.m.

Noon



4 p.m.

5 p.m.



6 p.m.

It could be the maximum design medium.

PPG Environmental Glass enabled the architect for Atlanta's Cities Service Building to give his structure a changing face of beauty.

He chose PPG's *Solarban® Twindow®* Unit, and used it as an active design medium. The reflectivity of the *Solarban Twindow* Units insures that the building facade will never be static. Its color, tone and reflective patterns will change as often as the sky tones, light intensity and cloud patterns change.

In addition, the architect and mechanical engineer found that the performance of the glass would offset its higher cost by contributing to savings in HVAC equipment and operating costs.

The architect attributes the design success of his building to the fact that he recognized this idea when he began: "Glass should not simply be something you use to see through. Glass is an active design medium."

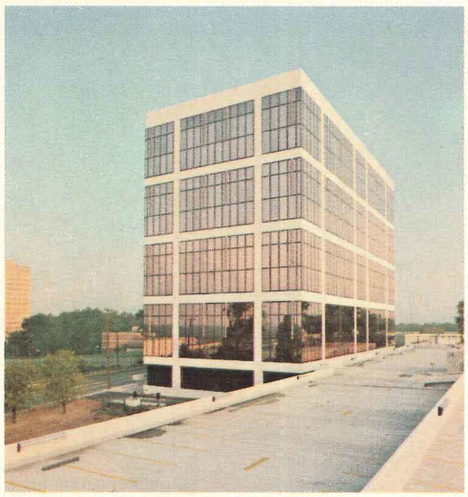
See PPG about *Solarban Twindow* Units—or the others in our family of Environmental Glass for your next building. Early in the design stages. There's a PPG Environmental Glass that you can use as an active design medium to meet any esthetic consideration, solve any environmental problem and provide a solid return on investment. Write PPG Industries, Inc., One Gateway Center, Pittsburgh, Pa. 15222.

PPG: a Concern for the Future

Developer: Office Planning Associates, a Division of Cousins Properties Incorporated, Atlanta
Architect: Toombs, Amisano & Wells, Atlanta

For more data, circle 29 on inquiry card

PPG INDUSTRIES



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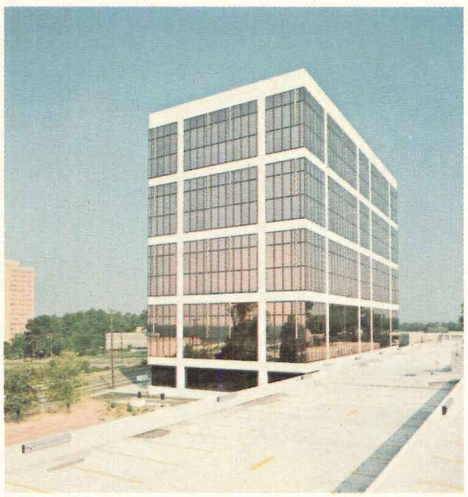

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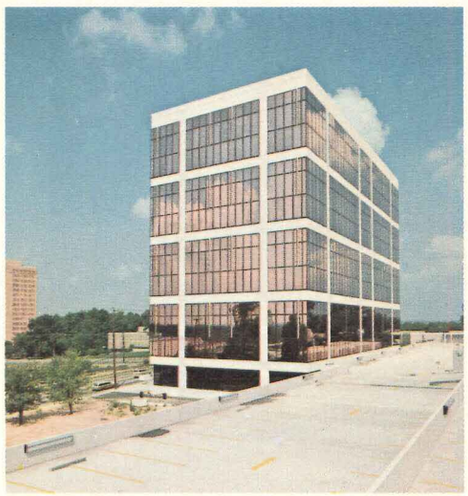

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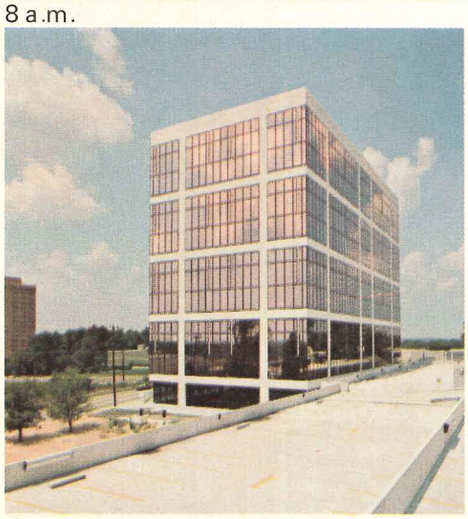
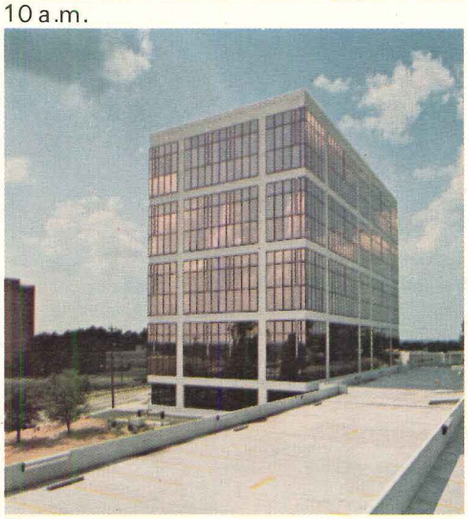
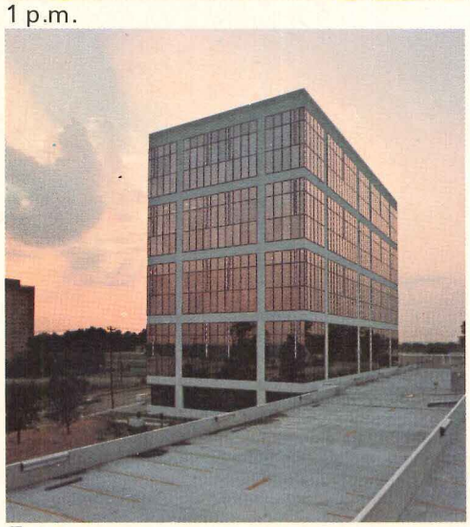


1 p.m.

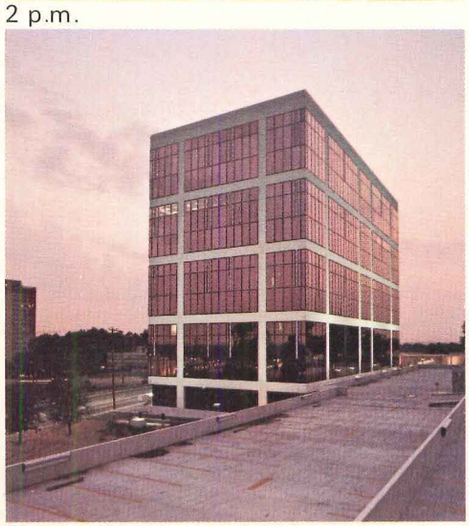


2 p.m.

3 p.m.



7 p.m.



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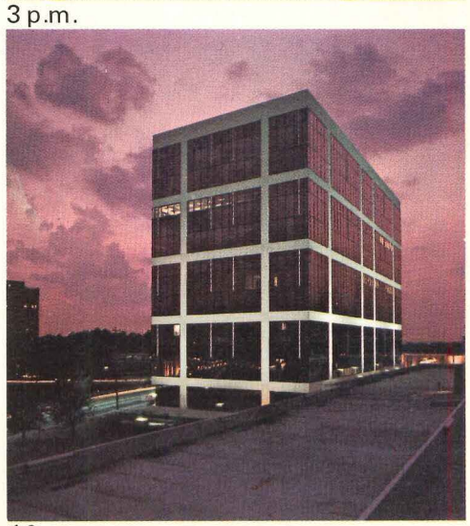

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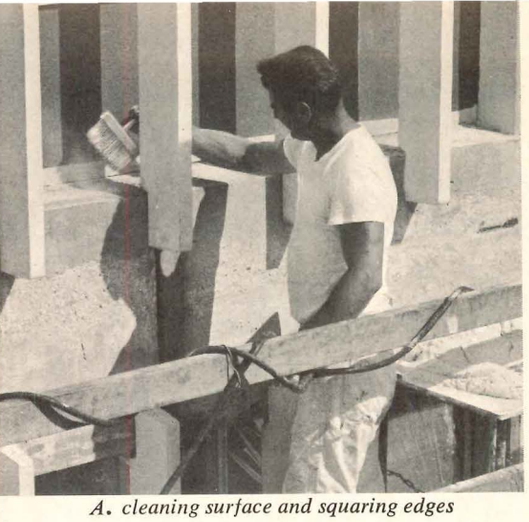
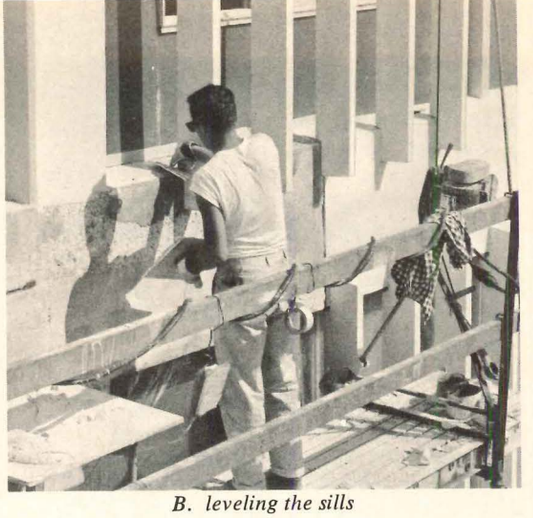
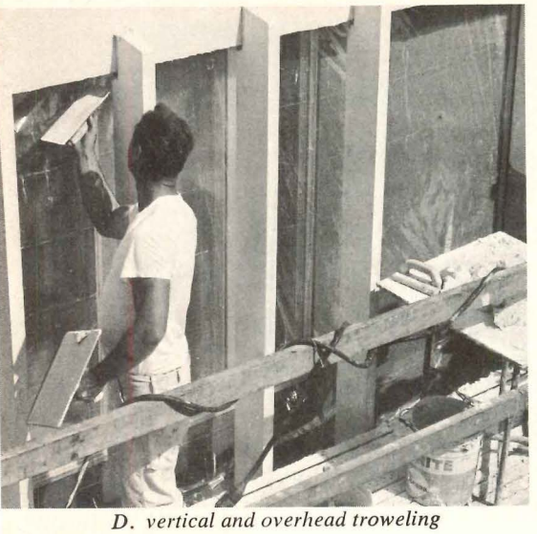


A. cleaning surface and squaring edges

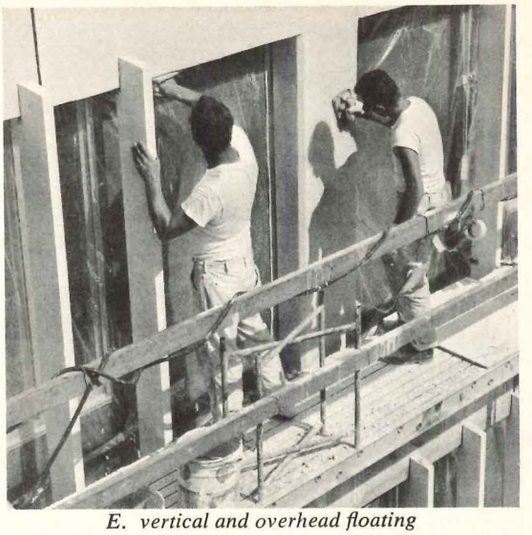


B. leveling the sills

C. troweling the surface



D. vertical and overhead troweling



E. vertical and overhead floating

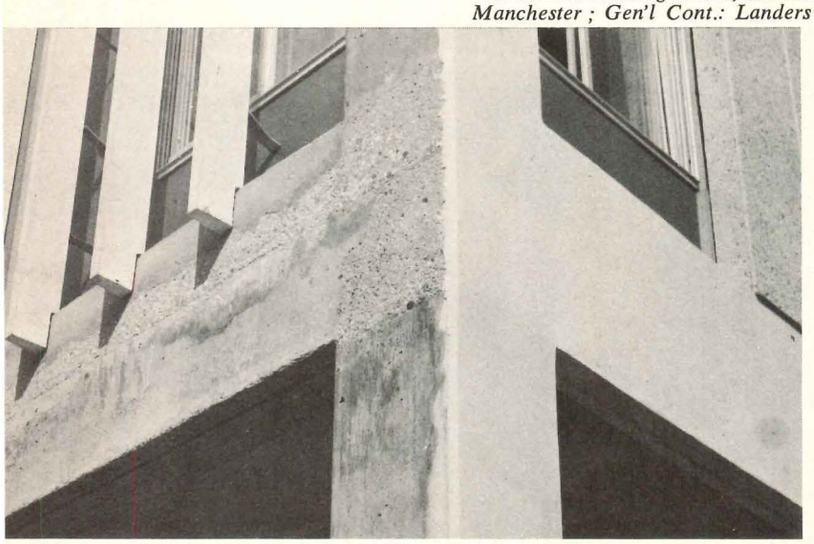
F. final touch up and cleaning of joints

Give concrete a natural uniform look

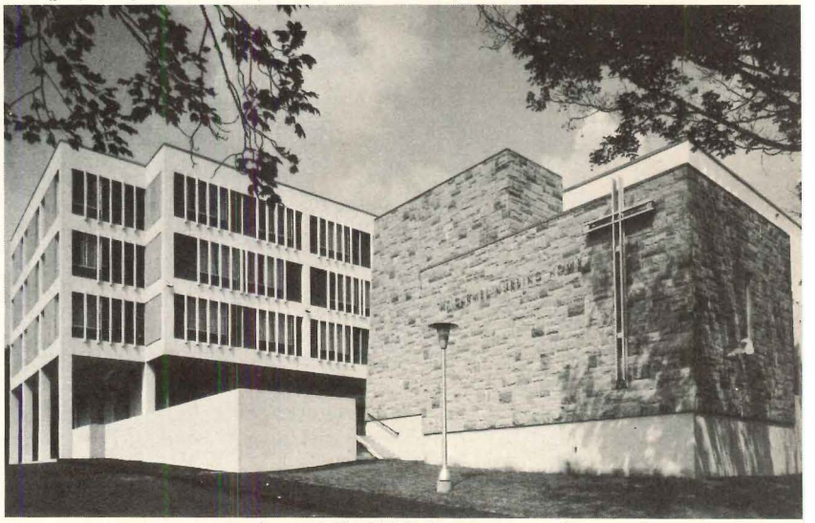
with waterproof THOROSEAL PLASTER MIX

Because THOROSEAL PLASTER MIX is a cement-base, waterproof coating, it solves many problems in finishing rough concrete, while retaining a natural concrete look. ACRYL 60 is added to the mix for a superior bond. Here is proof not only of the great economy of this finish, but the lasting beauty and protection it will give for years to come.

Mt. Carmel Nursing Home, Manchester, N. H. Arch.: Andrew C. Isaak, Manchester ; Gen'l Cont.: Landers & Griffin, Inc., Portsmouth, N. H.



G. section of building—before and after



H. beautifully finished and protected

S T A N D A R D D R Y W A L L P R O D U C T S , I N C .

DEPT. 71-AR-1 7800 N.W. 38TH ST. MIAMI, FLA. 33166

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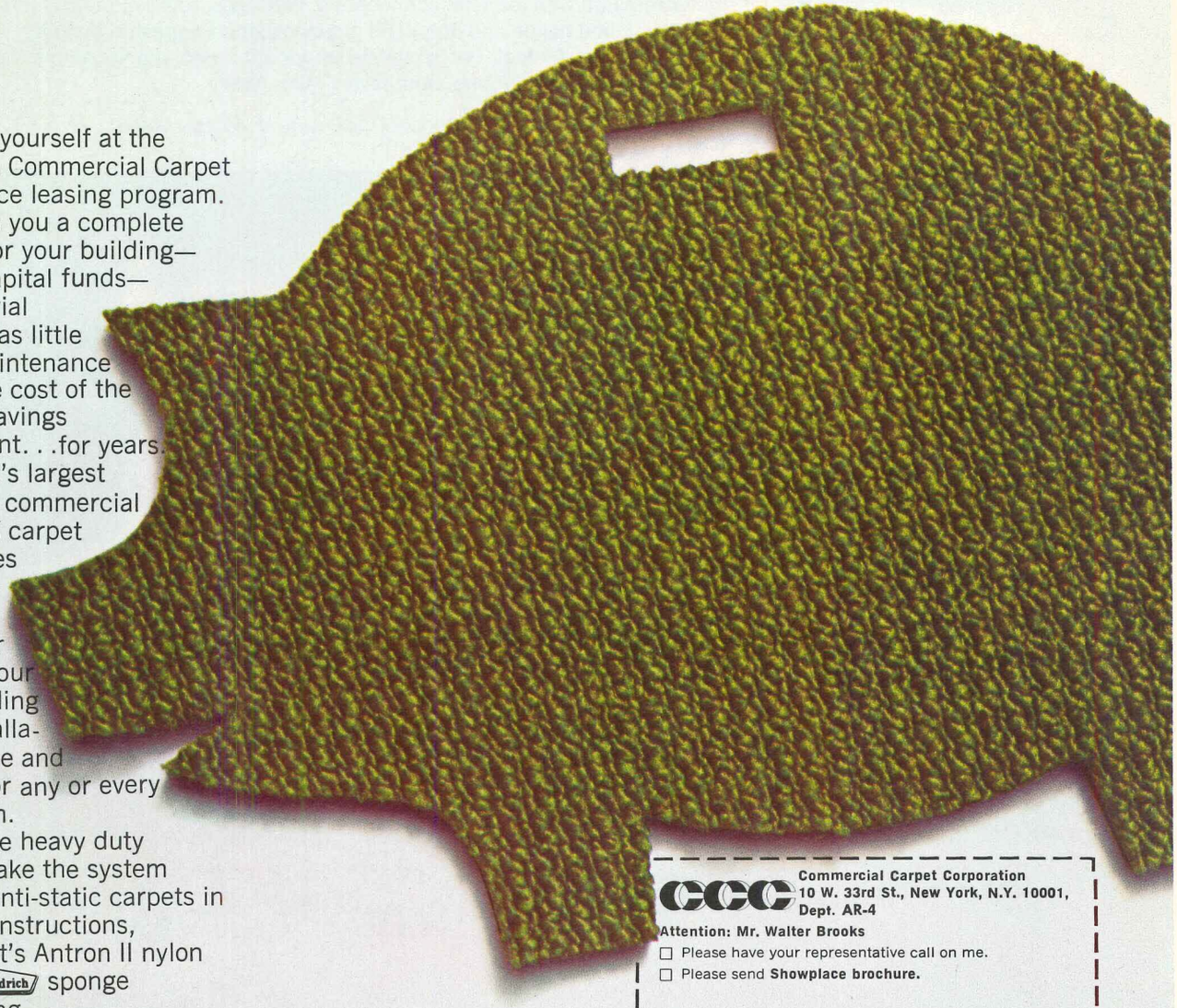
LEASED CARPET SYSTEMS- MONEY IN THE BANK!



Prove it to yourself at the bottom line with Commercial Carpet Corp.'s Showplace leasing program. Showplace gives you a complete carpet system for your building—without using capital funds—plus total janitorial maintenance. In as little as five years, maintenance savings fund the cost of the program. Then savings continue to mount. . .for years.

CCC, world's largest manufacturer of commercial and institutional carpet systems, provides nationwide, single-source responsibility for every phase of your program—including guaranteed installation, performance and maintenance. For any or every building you own.

We have the heavy duty products that make the system work: anti-soil, anti-static carpets in fire-retardant constructions, featuring DuPont's Antron II nylon and built-in B.F.Goodrich sponge rubber cushioning.

But it's the bottom line that counts. And our Showplace brochure documents how leasing will pay off for you. Send for it today.

CCC **Commercial Carpet Corporation**
10 W. 33rd St., New York, N.Y. 10001, Dept. AR-4

Attention: Mr. Walter Brooks

☐ Please have your representative call on me.
☐ Please send **Showplace brochure.**

Name _____
Title _____ Phone _____
Organization _____
Address _____
City _____
State _____ Zip _____

For more data, circle 31 on inquiry card

Landmark is coordination in lighting

This new contemporary post top luminaire is the ultimate in a well coordinated area light. Function and style are blended into a unit that meets the requirements of the engineer and pleases the esthetic considerations of the designer. Everything is new. Optical assembly is protected with the exclusive dacron polyester seal which permits circulation of filtered air within the optical assembly but restricts entry of contaminating elements such as dirt, moisture and insects. Hinged canopy, in choice of three styles, provides easy access. Ribbed cone mounting assembly adjusts to variable pole diameters. Luminaire is factory pre-wired with terminal connections. Wattages from 175 to 400 mercury vapor and metal halide and 300 watts incandescent. Suggested mounting heights are from 12 to 20 feet. For complete information and specifications, contact ITT Landmark Lighting, Southaven, Miss. 38671.

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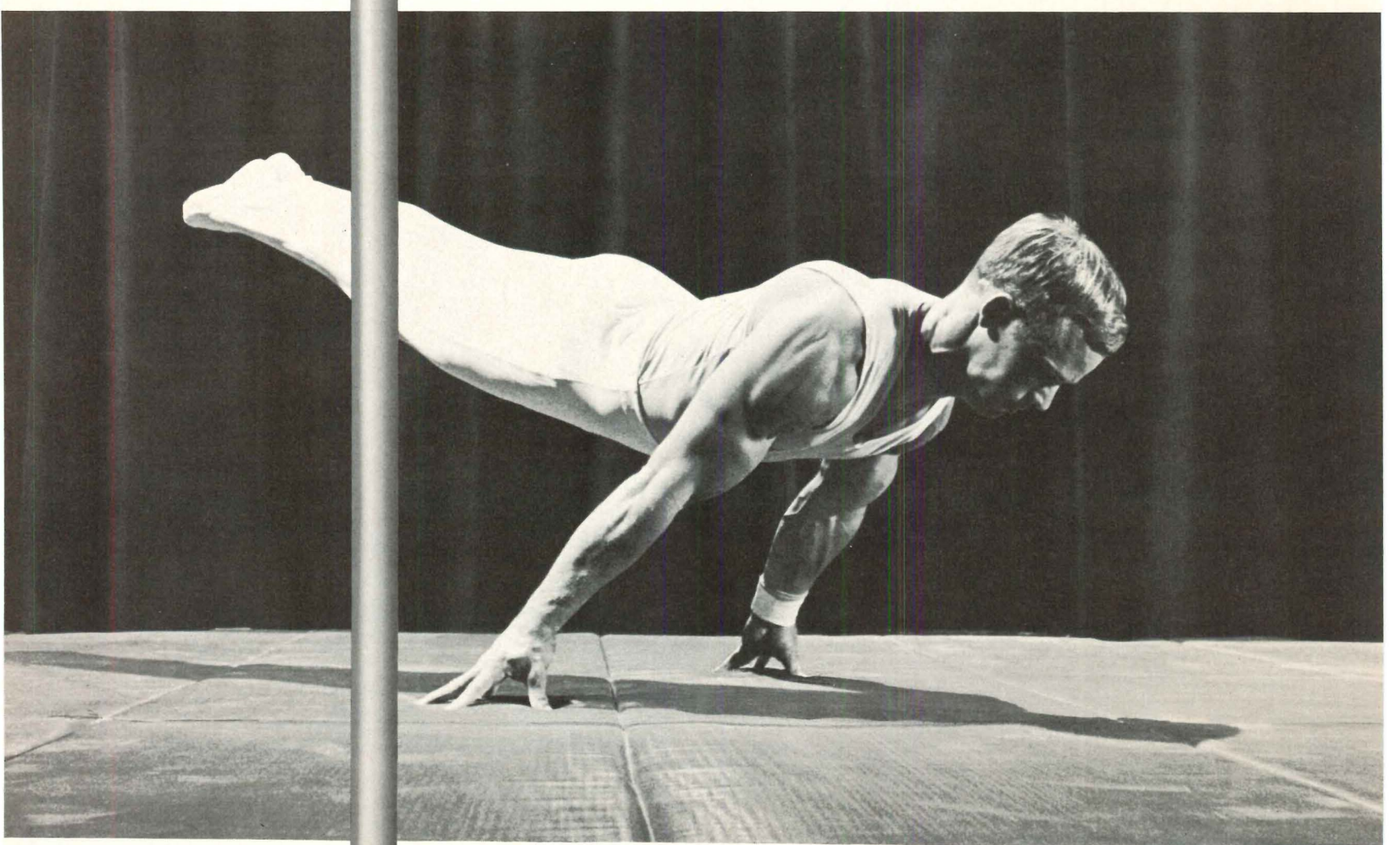

LANDMARK LIGHTING ITT

Plexiglas® Keeps the Sun in its place!

To have the sun's light and warmth on your terms, you need control. The best control is easy with transparent gray and bronze Plexiglas acrylic plastic—the "Solar Control Series".

There are five densities of both transparent gray and bronze Plexiglas to provide a scale of visible light and solar heat transmittance values. This range of transmittance values permits you to select the density of Plexiglas which most effectively satisfies the interrelated requirements for adequate illumination and control of glare and solar heat gain.

Besides effectively controlling the sun, Plexiglas offers light weight; high breakage resistance; economical formability; and freedom from thermal shock cracking. Plexiglas is a slow burning plastic that is widely approved under local building codes.

You can use the Plexiglas acrylic sheet "Solar Control Series" for window glazing, flat or formed sunscreens, and formed skylights and dome enclosures.

ROHM AND HAAS
PHILADELPHIA, PENNSYLVANIA 19105

Rohm and Haas Co.
Independence Mall West
Philadelphia, Pa. 19105. Att: R. Rorke, AR-71

Check Information desired:

- ☐ Solar Control with Plexiglas
- ☐ Sunscreen Design Data
- ☐ Standard Residential Skylights
- ☐ Window Glazing with Plexiglas

NAME

FIRM

ADDRESS

CITY STATE ZIP

PLEXIGLAS is a trademark Reg. U.S. Pat. Off.

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Stylable standard doors

personalize multiple dwelling.

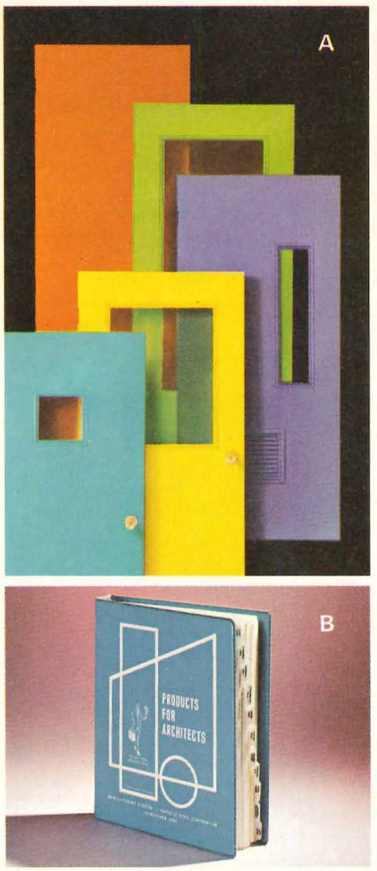
Personalized. But without the delay usually associated with "specials."

The exact light and louver treatments you wish applied right at a Republic warehouse in your area. Doors and frames designed just for you.

They rush to answer your invitation—delivery is fast. Time savings come from more than mass production, adaptability, and close location. There are time savings every step of the way from our plant into your new building.

Snap-in moldings. Efficient packaging. Efficient shipment. Dimensional exactness. Republic doors, frames, and Frame-A-Lite stick systems are delivered ready to hang or erect—not to be cut and tried on the job.

Our salesmen have a door and frame sample kit and a clever demonstration that puts it all together. To see it, check the Yellow Pages under "Doors, Steel" and call our nearest office. Or write for our architectural product manual. Republic Steel Corporation, Manufacturing Division, Youngstown, Ohio 44505.



A. Republic doors are available in eight standard styles. And unlimited styling possibilities.
B. Write for our architectural product manual.

Republicsteel*
Manufacturing Division

*A Trademark of Republic Steel Corporation

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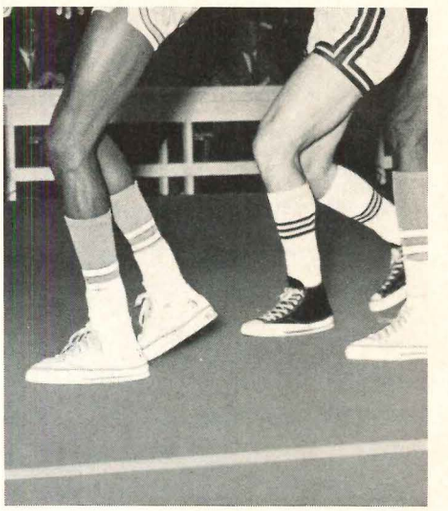
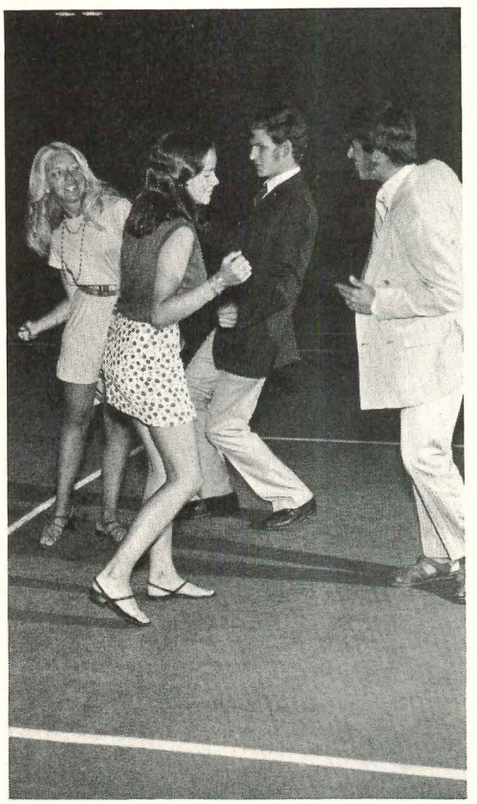
UNI-TURF®... quick change artist.

Sandwich a dance between today's basketball game and tomorrow's gymnastic meet. Schedule indoor tennis, band practice, and a calisthenics class all in the same day. You can . . . with Uni-Turf, the indoor and outdoor synthetic playing surface that lets you do what you can't do on a wooden floor or dirt base.

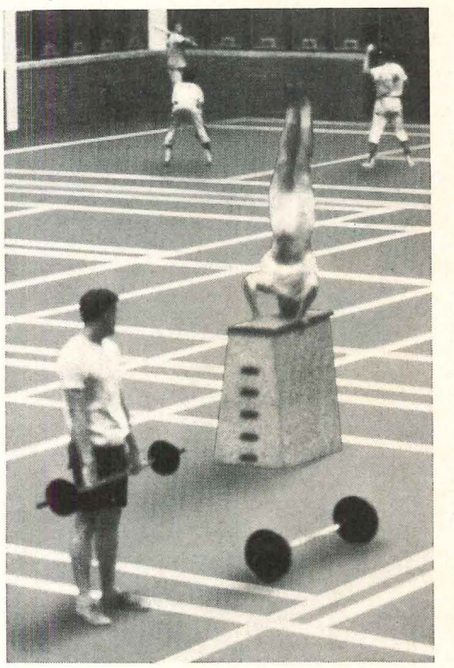
Uni-Turf is a unique resilient vinyl plastic material that sets new standards.





VERSATILITY

Easily installed over a solid base, Uni-Turf is ideal for a wide range of year-round sports and recreational activities, including tennis, track and gymnastics. Available in any combination of school colors.



DURABILITY

Uni-Turf far outperforms other playing surfaces; shrugs off rain, sun, heat and snow; won't rot, stain, fade or discolor; withstands wear or damage from spikes, cleats, pins, street shoes or roll-out bleachers and gym equipment.

PERFORMANCE

No dead spots with Uni-Turf. Exceptional uniformity and resilience guarantee true ball bounce. Sure-footed traction assures faster, safer play.

EASY MAINTENANCE

An important economical reason why Uni-Turf is the ideal choice for indoor/outdoor playing surfaces in schools, colleges, universities and other major installations.

There's so much to tell about Uni-Turf. You can learn it all by sending the coupon.

Please send brochure detailing complete information about: R
☐ Uni-Turf for Track, Tennis, Basketball ☐ Poly-Turf Synthetic Grass

NAME _____ TITLE _____

FACILITY OR INSTITUTION _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

RECREATIONAL SURFACES DEPT.
AMERICAN BILTRITE RUBBER CO., INC.
BOSTON, MASSACHUSETTS 02103

For more data, circle 36 on inquiry card

For more data, circle 37 on inquiry card

Our first major change since 30,000 B.C.

Featherock stones were created 30,000 years ago by volcanic action. Now we've created Featherock panels that can be installed with much the same ease and speed of interior wood panels. Featherock panels are for exterior use too; an economical way to dress up a conventional building, or to dramatize a multimillion dollar effort.

Here are the specifications

Size: 32" x 48 " or 48" x 96"

Colors: charcoal, silver gray

Finish: sawed face or natural bold

Weight: approximately 4½ pounds per square foot

Code Approval: I.C.B.O. approval #2478.

Composition: Natural stone set in fire resistant matrix (flame spread rate 30), bonded to ⅜" hardboard.

Installation: Screws or nails can be used to attach panels to most surfaces. Panels are easily sawed. No special labor skills are required.

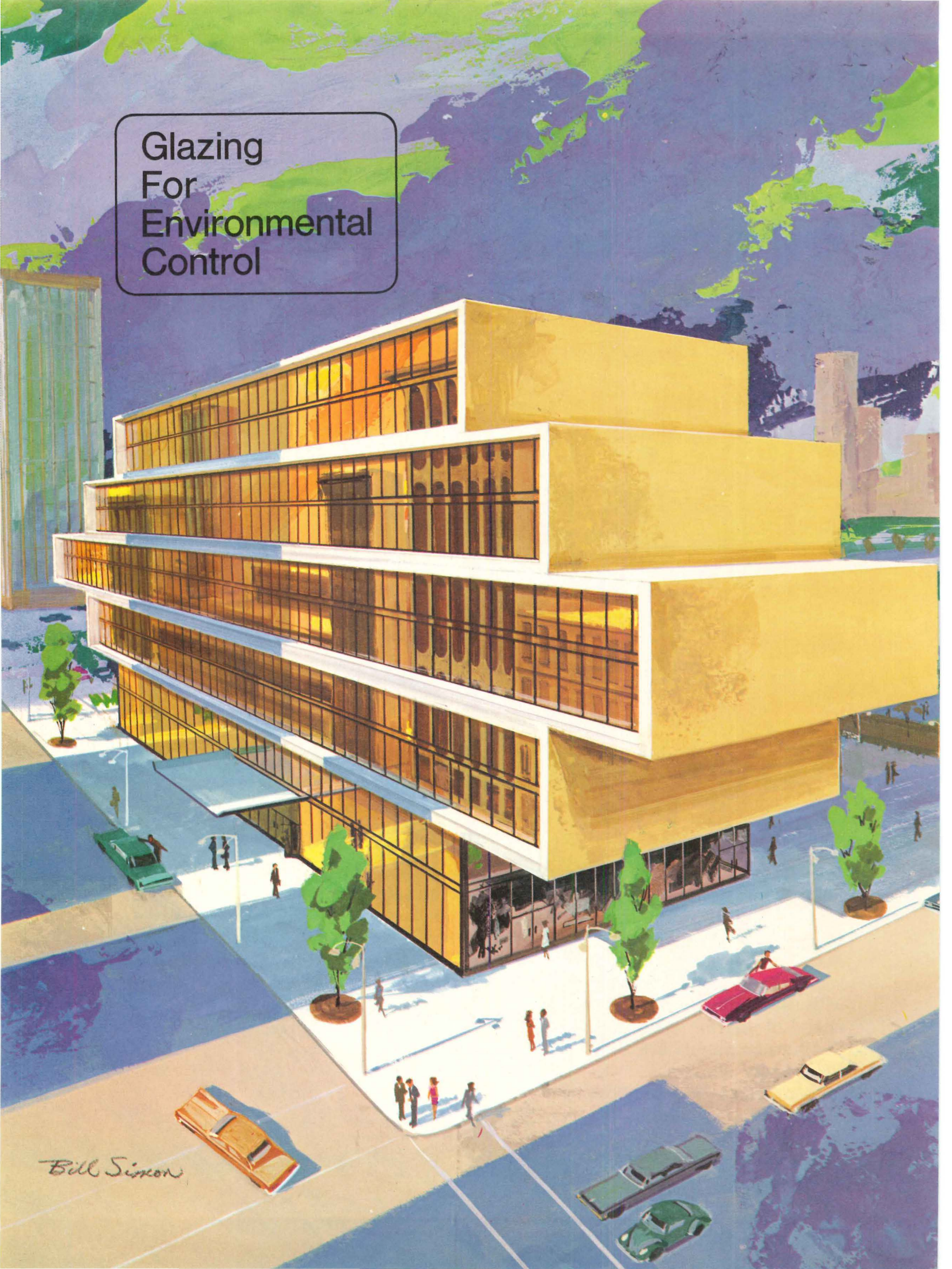
For ordering procedures, bids and installation specs for your project send details on your letterhead or call.

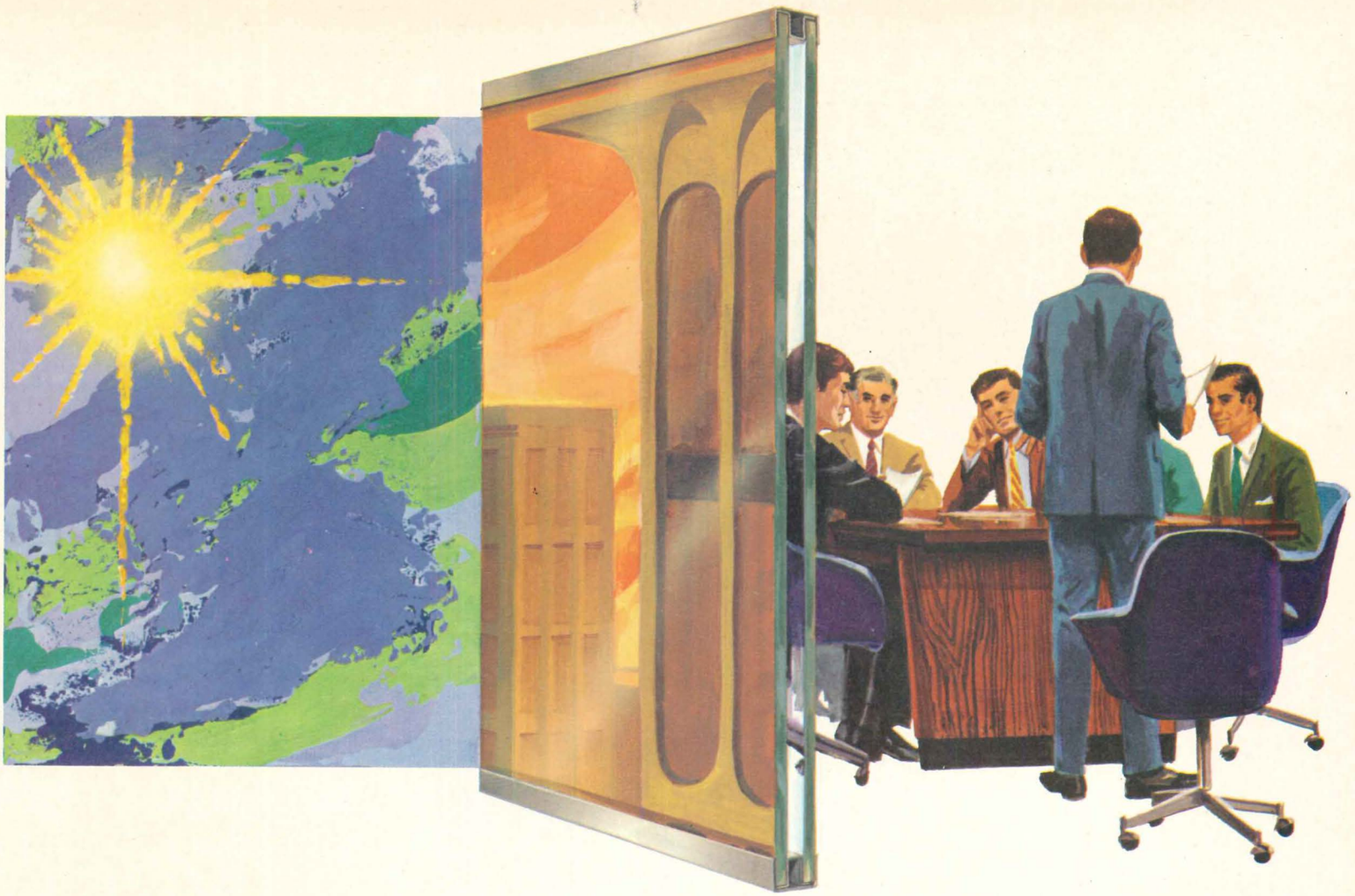
featherock®, Inc.

6331 Hollywood Blvd.
Los Angeles, Calif. 90028
(213) 463-1119

Company name
Your name
Address
City, state
Zip

Glazing For Environmental Control





The golden beauty is a bonus

polarpane® "20" STOPRAY solar insulating units

Let light in . . . keep heat out . . . yet give the privacy of a solid wall

This new reflective solar glass, manufactured by C-E Glass under license from Glaverbel, Inc., Brussels, Belgium, adds color and individuality to facades. But the unit's prime function is heat control. Stopray 3828 shuts out 72% of the solar energy and has a U value of .39; Stopray 2018 shuts out 82% of the solar energy and has a U value of .32.

The light transmitted—38% and 20% respectively—greatly reduces visual fatigue and softens daylight glare for interiors that inspire.

Stopray is a double-glazed insulating unit of plate or float, with the inner or sealed surface of the exterior lite permanently coated with thin, reflective metallic gold. This is separated from the companion clear plate by a cushion of filtered and dehydrated air. A treated steel air space separator, double butyl seal, and stainless steel edge channels hermetically seal the unit, assuring complete protection against condensation. Stopray units carry a 20-year warranty.

Send for our Stopray Solar Glass Brochure or consult C-E Glass specialists for advanced glazing methods and materials. C-E Glass, 825 Hylton Road, Pennsauken, N. J. 08110.

C-E GLASS

A SUBSIDIARY OF COMBUSTION ENGINEERING, INC.

For more data, circle 38 on inquiry card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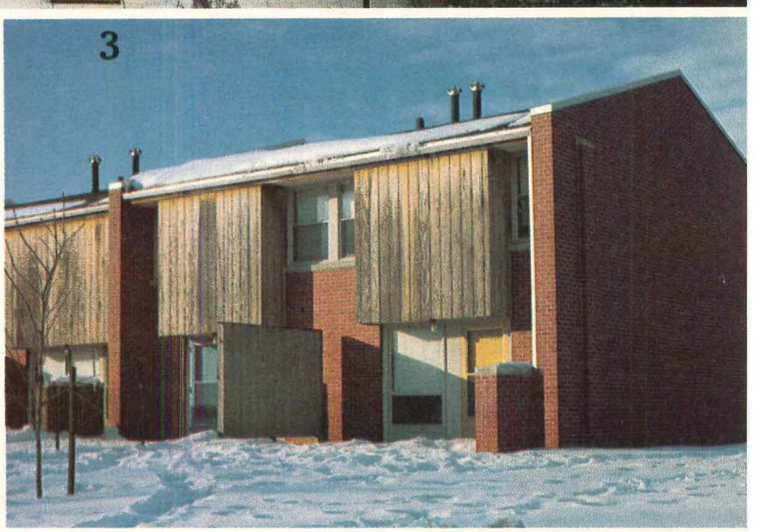
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4

Why high-quality Andersen Windows belong in low-income housing.

If you're planning a public housing project, Andersen Windows are more practical on a total cost basis.

Made in complete units, they cost less to install. And there's no on-site exterior painting when you specify our Perma-Shield® Windows. Made with a thick vinyl sheathing on the outside, these windows will save significantly on maintenance costs over the years. They won't need scraping, painting or refinishing.

Fuel costs are lower. Andersen Windows are made with a solid core of wood—one of nature's best insulators. Our weathertight construction and welded insulating glass (optional) complete the tight design against heat, cold, dust and drafts.

Andersen Windows will cost less over the long run, and their beauty lasts as long as the building. That's why it pays to specify the best.

1. Minneapolis Housing for the Elderly

The architects wanted to make this large, 290-unit housing project into a real "home" for the residents. So Bettenburg, Townsend, Stolte and Comb, Inc. created a living community with friendly courtyard and recreation areas.

Adding warmth and pleasantness to the surroundings are Perma-Shield Fixed and Casement Windows equipped with welded insulating glass which seals out cold Minnesota winters and keeps residents snug and warm.

2. Columbia Court Public Housing

Precast concrete "shadow panels" give this 90-unit complex in Muskegon Heights, Michigan its distinctive look.

The architects, Haughey, Black & Associates, designed special recesses into the panels where Perma-Shield Casement windows fit snugly.

The white vinyl sheathing on the outside blends well with the smooth-surfaced concrete. These windows can be opened straight out, allowing elderly residents to clean both surfaces from the inside—another cost-cutting benefit of Andersen Windows.

3. Family Housing Project

Hackner, Schroeder, Roslansky & Associates received an award from the Wisconsin Chapter of the A.I.A. for this series of townhouse groups in La Crosse, Wisconsin.

They were cited for the use of materials which added dignity and distinction to these low-cost dwellings. Among the materials used were Andersen Beauty-Line™ and Narroline™ Windows.

Beauty-Line windows combine a fixed upper sash with a ventilating, awning-style lower sash. They can be used singly or in groups, making them as versatile as they are attractive.

4. Award-winning Low-Rent Apartments

Located in Herman, Minnesota, this group of one-story 4-plexes received an award from the Minnesota Chapter of the A.I.A. for being the best representative example of the theme of "Involvement."

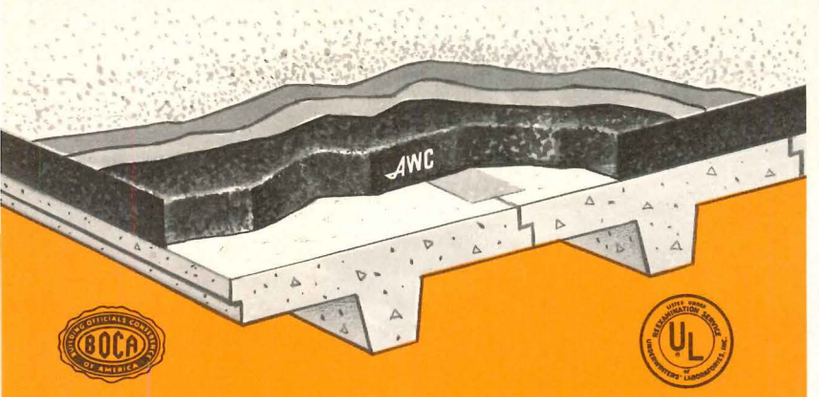
The architects, R. F. Ackermann and Associates, carried the residential character of the neighborhood into these apartments with a warm and simple design.

Adding to this feeling are graceful gliding doors by Andersen. They open onto comfortable, private decks. Andersen Beauty-Line Windows provide picture window beauty at a practical price.

For more information on Andersen Windows and Gliding Doors, check your Sweet's file or contact your nearest dealer or distributor.

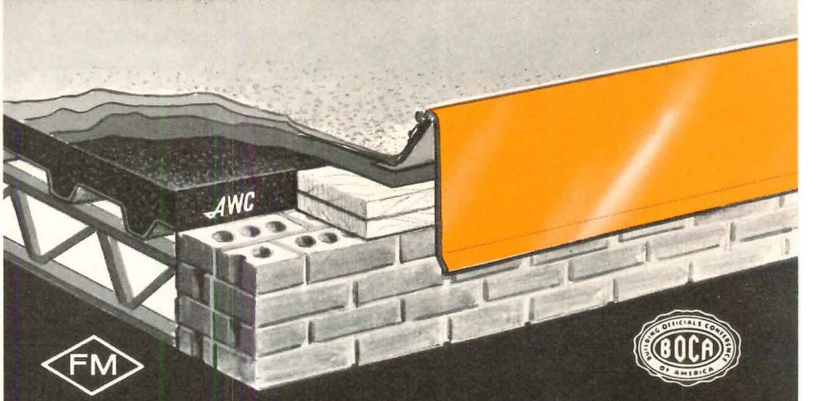
Andersen Windows™ AW®
Window beauty is Andersen. Andersen Corp., Bayport, Minnesota 55003

Four typical insulation systems that demonstrate All-weather Crete's multi-functional capabilities.



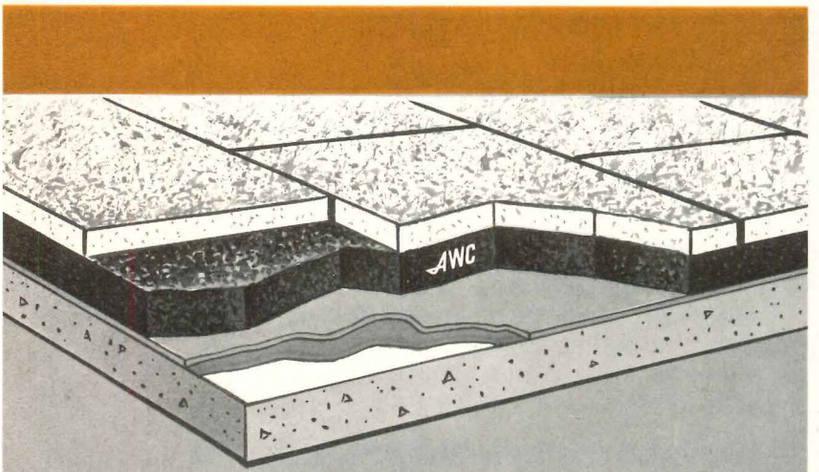
2 HOUR FIRE RATED ROOF DECK

All-weather Crete seamless insulation (K factor .40) is applied over pre-tensioned concrete units. U/L Design No. RC19. It can be sloped to drains, eliminates camber and uneven joints. This provides a smooth even surface for immediate conventional built-up roofing.



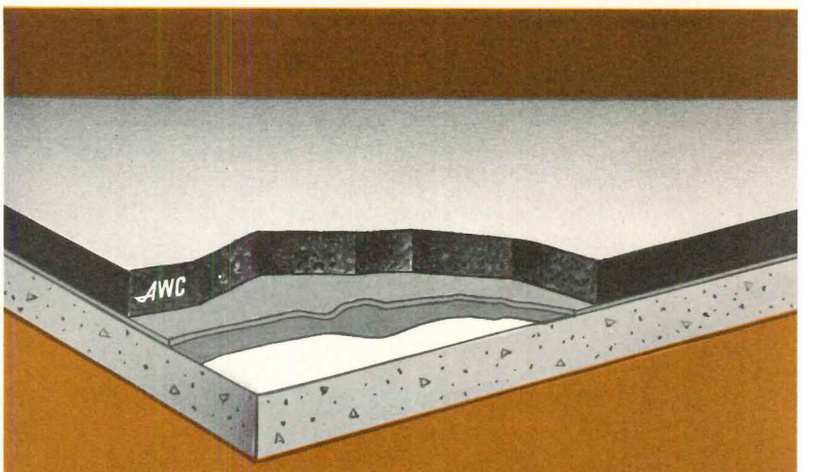
CLASS 1 METAL DECK CONSTRUCTION

This tested roof deck insulation system meets Factory Mutual requirements for fire hazard and wind resistance. With special Silbrico adhesive, it is an approved U/L deck (No. 360 R 13.15) The Silbrico Fascia System shown above also meets Factory Mutual roof perimeter flashing requirements of Data Sheet 1-49 to resist wind uplift of 60/Lin. Ft. of wall. The perfect combination for maximum protection.



PLAZA DECK

There are eight widely used All-weather Crete plaza systems. Not only does AWC provide the most effective available insulation, but it protects the water proofing membrane keeping it ductile and active for the life of the system.



ROOF DECK OF THE FUTURE

Over a decade of designing, testing and practical application have produced this new Silbrico system. All-weather Crete is placed over the water proofing membrane protecting it from severe thermal change and climatic elements which are the major causes of roof failure. All-weather Crete insulation has the properties of being unaffected by these severe conditions. Consult Silbrico Corporation regarding this new concept.

For complete information, specifications and detail diagrams regarding these and many other successful AWC systems, write Silbrico Corporation, 6300 River Road, Hodgkins, Illinois 60525. References: Sweets catalog and Spec Data.

SILBRICO

All-weather Crete®

For more data, circle 40 on inquiry cad

Keys to growth: quality, cost control and service

A young architectural firm that really believes the client's budget is all the money there is—and still provides both pre-design and post-construction services within the standard fee

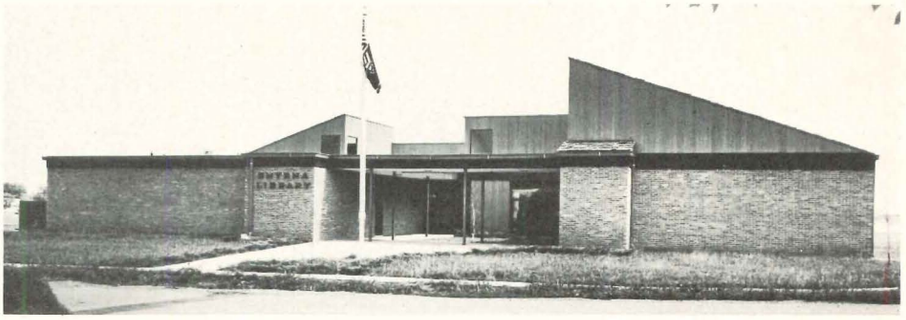
There is a firm of young men in Nashville, Tennessee, that has grown in eight years from a two-man architectural partnership to a thirty-one man corporation—still without in-house engineering. Yearwood & Johnson now has more than $51 million worth of work in progress, an education division that teaches teachers, a quantity purchasing service and a new development corporation headed by one of the principals of the architectural firm.

The growth of this firm springs naturally from the complementary fit of character in the two founding partners, each very different in outlook, but both committed to full-service architecture. Randall Nile Yearwood, now 38, and Ed Jordan Johnson, 36, had been lifelong friends and schoolmates. Following his own graduation in 1958 from Washington University's architectural school, Randall Yearwood kept in close touch with the development of Ed Johnson through final semesters of his 1960 degree in architecture from the same school. Johnson's capacity for absorbing and analyzing detail was recognized by both partners as an appropriate counterfoil to Yearwood's generalist and promotional proclivities. After both men had worked toward completing their requirements for registration and acquiring a little seed money for capital, they launched the Yearwood & Johnson partnership in September, 1962.

Commitment of the new firm to delivery of the best possible building quality within the strict limits of clients' budgets found unusual resources in the experience of Randall Yearwood's formative years. His father was for 33 years a Nashville contractor and, later, a mortgage banker. Randall Yearwood says, "I grew up in the contracting business. I had it for breakfast, lunch and supper. From that background grew my philosophy of what an architect really needs to be. It hammered home to me at an early age a simple lesson that

Frank Lotz Miller photos

The Baxter Elementary School (above and below right) was one of the early schools designed for team teaching methods and serves as a demonstration school for the area as described in the text. The school is laid out in four clusters of three paired rooms in clover-leaf arrangement with a central spine of ancillary spaces for dining, library, lavatories, offices and utilities. Folding partitions between each pair of rooms (top) permit opening into large demonstration spaces. Each cluster of six rooms has a central activity center. Music and gymnasium are separate from the central learning areas in adjoining buildings connected by passageways. The faculty, with in-service training by Yearwood & Johnson's education division, has helped demonstrate method to other schools.



The Smyrna Library (above and right), next door to the city high school, houses 20,000 volumes, generous reading areas, a children's library and a community room. To control noise, stack and reading areas (left of central court entrance in photo above) are separated from the school yard by the solid-walled community room and children's area. Roof pitched away from school yard augments the sound barrier and internal spaciousness while sustaining residential character.

Russel Ray Studio photos

many architects seem to learn with great difficulty. That is, when a client sets up his budget, the architect must work as though that is all the money there is to spend."

So one of the firm's early appointments was Ernest H. Soapes, who brought his many years of experience in construction supervision and cost estimating to bear not only at key points in design development, but also in field representation during construction. Cross-feed between these two roles has been found to be an effective way to keep both cost data and design implementation current and productive.

Design for all the firm's work is the responsibility of associate William L. Jordan, recruited in 1967 from Hellmuth, Obata & Kassabaum. Mr. Jordan recognizes the importance of communication with all disciplines affecting his options, but he insists they must be his options without compromise of quality.

School service division created to fill need

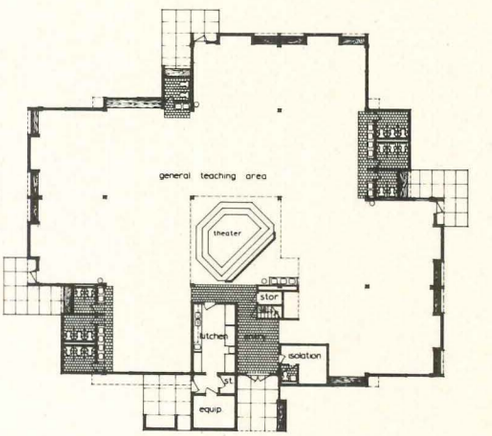
As early commissions for public schools in the surrounding counties of Tennessee developed, it became apparent that there was great diversity in the levels of sophistication in educational techniques. Few school boards were well versed in such techniques as team teaching or open planning or ungraded classes. Many were completely unaware of these trends in modern education. Inevitably, some were vocally hostile to them and others enthusiastic but uninformed. Yearwood & Johnson felt a professional responsibility to try to educate both themselves and the school boards so that new school buildings could be designed for emerging trends in educational techniques. They approached David Jack Owenby, Ed. D., associate director of the School Planning Laboratory at the University of Tennessee. Dr. Owenby had been active with the state education department in promulgating the ideas of modern educational techniques. He agreed to serve the firm as consultant and then (in 1969) to serve full time on its board of directors and as head of a new Education Division.

This division now works with the architects on all school-related projects, and Dr. Owenby serves on the firm's executive committee and conducts an organized program of instruction and training seminars teaching school principals and faculties how to use the buildings designed to accommodate the new techniques. These seminars were initiated because the architects had found (when they revisited their schools to see how the designs preferred by school-board clients were performing) that some school faculties were confused and even resentful of an open-plan building for which their own unaltered, conventional teaching programs were unsuited.

Part of Dr. Owenby's teacher-education program is to bring in nationally known consultants in the various associated fields such as in food service, material resource centers and libraries. This helps alleviate any anxieties of the teachers about the new method, and makes their own input to the architectural program more germane and supportive of the changing educational goals. If the school board and faculty choose to persist in their older methods despite the architect's and Dr. Owenby's efforts, the school is designed so that the room partitions which traditionally form the cubicles of the old method are never load-bearing. Thus, they can be removed in the event that the open plan methods of teaching are later adopted.

Another service of the Education Division that has long-range implications for school operating costs is a series of demonstrations conducted for the maintenance staff of each school. At these demonstrations a specialist in maintenance procedures shows custodians how to set up effective maintenance programs and how to use the proper cleaning agents on the various materials in the school. Further, the custodians are fully instructed in the operation and maintenance of all mechanical and electrical equipment in their buildings.

On staff with Dr. Owenby in the Education Division is Carl Owen, a former teacher, coach, principal, and administrator, and, prior to joining Yearwood & Johnson, a commissioner with the Tennessee State Education Department. Mr. Owen describes his role as one of continuing edu-



This child care center in Nashville was designed as a prototype center for American Child Care Centers Inc. Programming of the center was developed by the client's educational staff in a series of meetings with Dr. Jack Owenby and William Jordan. The open plan with super-graphics and bright colors can be flexibly rearranged by folding screens and movable cabinets. A mezzanine floor of offices overlooks the general area. Focal point is a miniature theater under the mezzanine.

Frank Lotz Miller photos

cation, both as an educator keeping up with developing trends in teaching method, and as a member of an architectural firm learning the ways in which changing method may affect building design.

Program and follow-up within standard fee

The physical output of the education division and its client conferences is a document called the educational specifications. The purpose of these specifications is three-fold. First is to enable the educational decision-makers to think constructively about the type of programs they wish to initiate. Second is to document the in-service training program for teachers and administrators to bring them up to date on the latest programs and methods in their area. Third is to provide the architects with the information they need for design.

The educational specifications contain not only program information of use to the architect but also general discussions of the learning environment and the effects of texture, color and lighting that can be comprehended by the client groups. As the client groups become better able to think about the needs of their own programs, the architect's task is greatly simplified.

This simplification of the architect's task occurs not only in the design phase through adequacy of the program but also in the post-design phase through training of the faculty and maintenance staffs. These training sessions greatly reduce the number of call-backs for such items as operation of the heating or cooling system. Although the programming and post-design services might conventionally be billed as extra services by the architect, they are, in fact, not so billed by Yearwood & Johnson, but are provided within the conventional percentage fee for the project.

Estimating and construction skills help designers keep on top

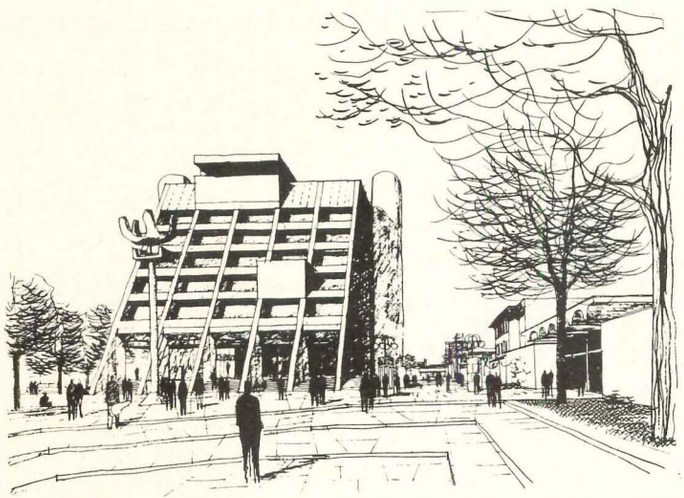
The cost estimating function at Yearwood & Johnson works closely in parallel with design development. A detailed cost estimate is prepared at the end of the schematic phase. Another more detailed estimate is made at the end of preliminary drawings and a still more detailed estimate at the end of working drawings. These estimates are used to help the design architect keep on the budget target as the design develops. Yearwood points out that when a building goes over the budget at bidding time, and the architect has to negotiate the scope of the work, the contractor may reduce the over-all bid amount by the costs of labor and materials in any item that is omitted, but he seldom deducts the amount of profit he has put onto those original items in the first place. The contractor then makes a profit on work he doesn't really do. The consequence of constant interplay between the designer and the estimator during design development is to eliminate those opportunities for hidden profit.

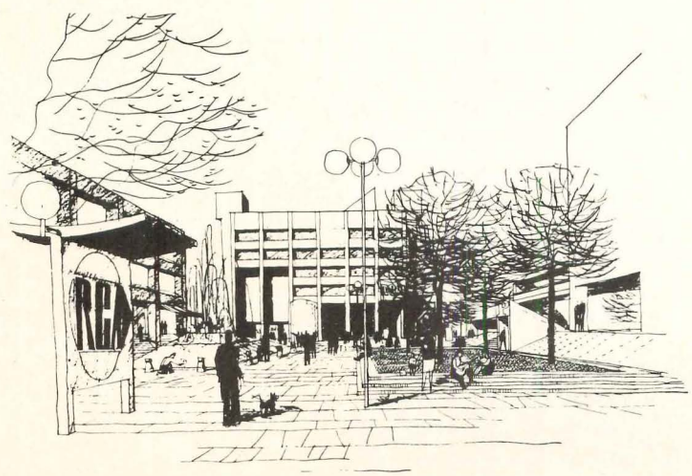
Only five, out of well over three hundred, projects of this firm have come in over the budget at the bidding time. And in those cases, when the contractor's estimate has been compared item by item with the architect's estimate, trouble spots have been readily determined and adjustments negotiated. Further, the architect's familiarity with the costs of labor and materials involved in any omitted items has enabled him to negotiate also for the contractor's profit that had been applied to those items.

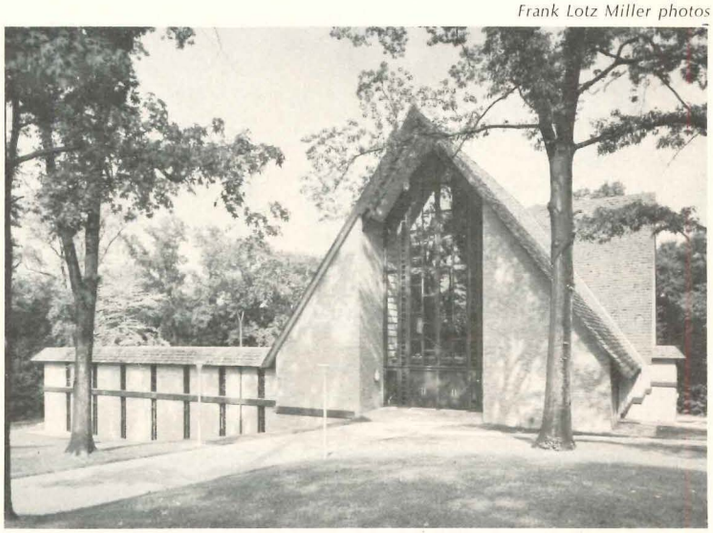
Yearwood's familiarity with the construction world had led him to insist upon and recruit a high order of field supervisory skills from among construction superintendents of large contractors. Their function is one of construction supervision and management in the professional sense of the terms, and the word *supervision* is used without any of the fears that have been raised by liability decisions of the courts in recent years.

Contractors should never feel that the architect's representative on the job is a policeman who is there merely to see that provisions of the drawings and specifications are fulfilled, says Yearwood. There should be a three-way team among the owner, architect and contractor, and the only way this can be made effective is when the architect's field representative

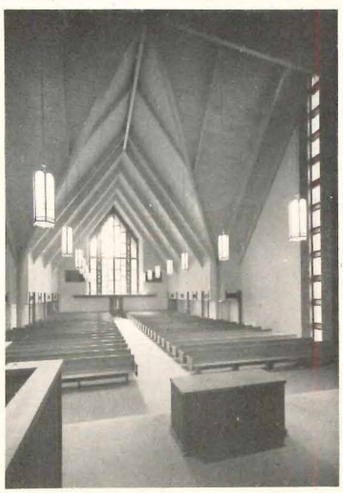
Frank Lotz Miller photos







Music City, U.S.A., one of the best known country music recording centers in the world, is an undistinguished collection of buildings within an area of about a dozen blocks. The Nashville Chamber of Commerce commissioned Yearwood & Johnson to study traffic and zoning controls. Sketches at left indicate the character of a stroll through their proposed mall solution.



Laurel Church of Christ in Knoxville (above and right) is typical of several small churches that have been designed by Yearwood & Johnson. This one takes advantage of a sloping site to provide on-grade access to community facilities on the lower level.

has the technical knowledge and speaks the language of the contractor in a way that helps him get the job done.

The Yearwood & Johnson field operation has been recently reorganized to fulfill some of the professional roles of construction management as the term is now coming to imply. That is, the field supervisor is both advisory and instrumental in solving some of the contractor's problems in the scheduling of trades and the delivery of materials. He does not attempt to interfere or direct the contractor in the detail or technique of performing the work. Thus, the architect's field man can communicate with the contractor's superintendent on an equal and friendly basis as among peers. The architect himself visits the site only to resolve questions that affect the design.

The field supervisor at the same time is cautioned against carrying his friendly attitude so far that it becomes difficult for him to insist on the necessary quality of work. He must be able to tell the contractor when work is faulty, insist that it be torn out and re-done, or apply whatever management disciplines his role implies. One of the ways to sustain this aloof discipline is to rotate the supervisory staff from job to job so that personal relationships are not so easily formed. That is one of the reasons, says Yearwood, that his firm does not recommend to the client that a third party construction management agency be commissioned by the client.

The whole firm goes to school

Education of the firm takes place at two levels. First is the process of revisiting schools to find out, as Yearwood puts it, "what mistakes we have made and how to correct them." The second level of education of the firm is through a regular series of seminars on the last Friday of each month. All employees of the firm attend these seminars at which the issues pertaining to current work are discussed. Mr. Owen told one of the recent seminars about developing trends in young-child education. Another seminar might be on methods of project cost control. Outside speakers on various topics are invited occasionally. The purpose and result has been an increased feeling of participation on the part of all employees and an upgrading of the role of all employees as representatives of the firm in all of their outside contacts, both business and social.

Diversity of projects is a deliberate goal

Although the strength of the Yearwood & Johnson organization in providing services to educational clients in Tennessee has been a factor in generating a great deal of "repeat business" in counties throughout the state, the growth projections of the firm show no sign of the building type specializations that have resulted from that kind of success in other young firms. Diversity of building type has been a deliberate goal of their development, and they have done considerable work out of state.

Some of these out-of-state projects include: a factory in Texas, a health spa in North Carolina, apartments, shopping centers and office buildings in Indiana, a shoe store in Atlanta and various other projects in West Virginia and Kentucky.

Yearwood has already taken the first steps to organize and incorporate a development corporation in which his father's experience as both contractor and mortgage banker will be available at the top executive level, and in which Randall Yearwood will serve as president. His first proposal will be to develop, design and build an apartment house for his own account. Such a development, he says, would be for sale upon completion if anyone wants to buy it, but in any case the firm would build it with all the quality and marketability that they would want as owners.

Mr. Yearwood envisions for his firm a whole panoply of services including educational consultation, feasibility studies, maintenance programs, financial advisory services, materials and furnishings purchasing, real estate evaluation, and even actual construction contracting services for his own account as developer when his development corporation is in full operation. He considers all of these services to be contributory to the role of the architect as the essential coordinating presence.

Frank Lotz Miller photos

Diversity of building types and inter-state distribution of practice characterizes the Yearwood & Johnson pattern. In addition to the substantial backup of the education division in their schoolwork, the firm gives equal attention to such buildings as those shown here. The Robertson County Jail (above left) and the Smyrna County Hospital (above right) represent some of that diversity in the types of buildings the firm has been planning.

Within the cost constraints of the usual industrial building is the Southern Shoe Machinery Company building (above) in Nashville.

Manchester City Hill (above) is one of several municipal buildings designed by the firm in the Tennessee region. It combines municipal administration, fire station and police department. Such combinations of function are common in the medium cities of Tennessee which usually face stringent budgets.

The McGuggin Athletic Center at Vanderbilt University in Nashville (right) provided opportunities for massing and scale not always available to architects of the mid-Tennessee area.

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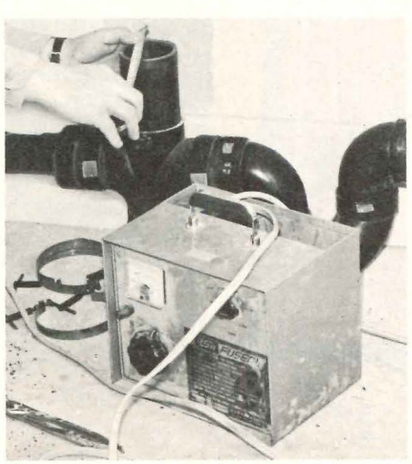

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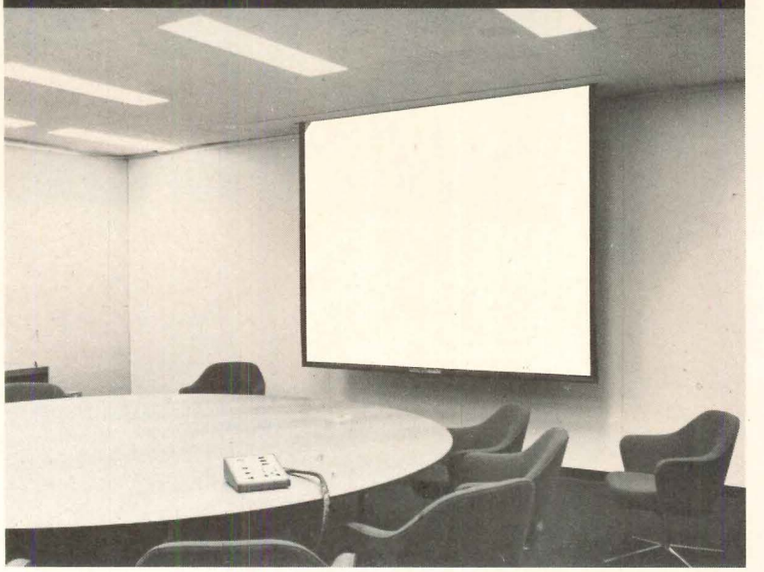

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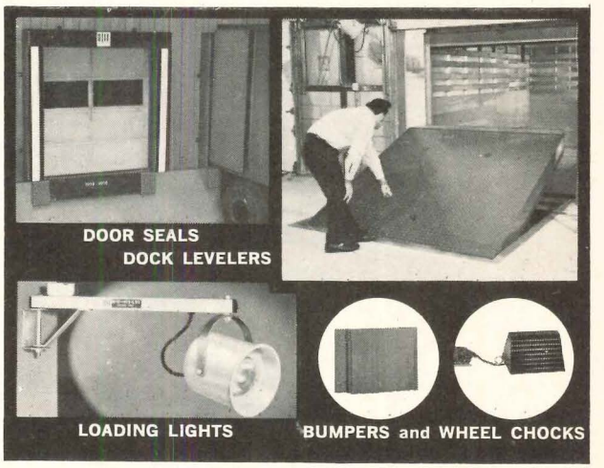

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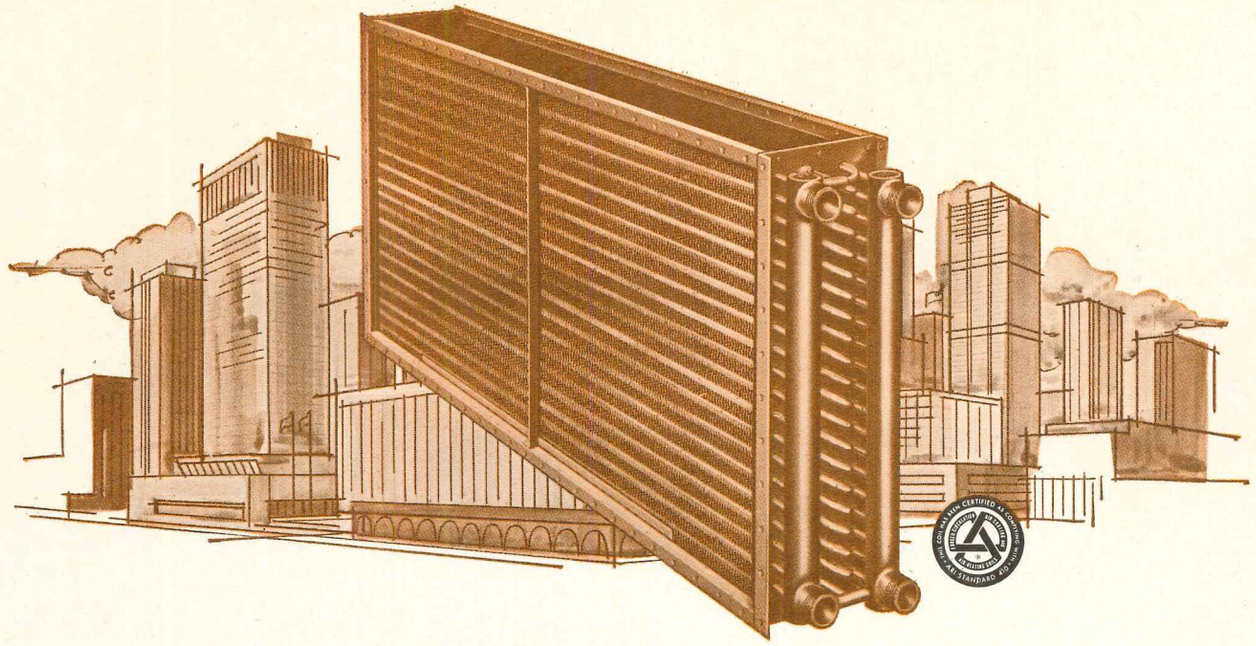

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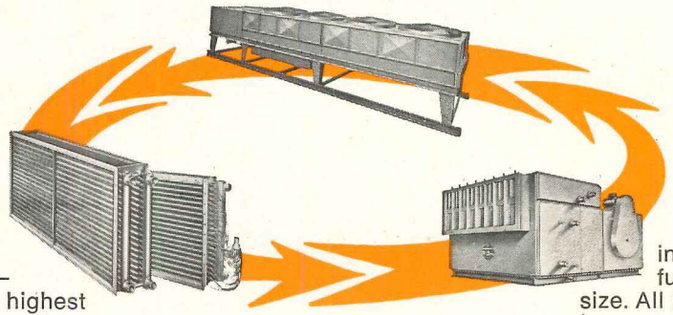

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The McQuay line of cooling coils, both water cooling or evaporator, offers unsurpassed flexibility with a wide variety of standard fin spacing and circuiting. Standard fin lengths range from 12″ to 120″, heights from 12″ to 42″—both in 3″ increments. There are standard coil depths of 3, 4, 5, 6, 8 and 10 rows with other depths available upon request. In fact, as the leader in the coil field, McQuay can furnish coils of virtually any size. All McQuay water cooling coils have vents and drains for total drainability. Both water cooling and evaporator coils are counterflow circuited for maximum performance.

For assured capacity, specify ARI Certified coils. Ask your McQuay representative for new Hi-F® 5 cooling coil Catalog #408. Or write: McQuay, Inc., Box 1551, 13600 Industrial Park Blvd., Minneapolis, Minnesota 55440.

Look to the systems leader . . . McQuay®

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South Senior High School, Minneapolis, Minnesota
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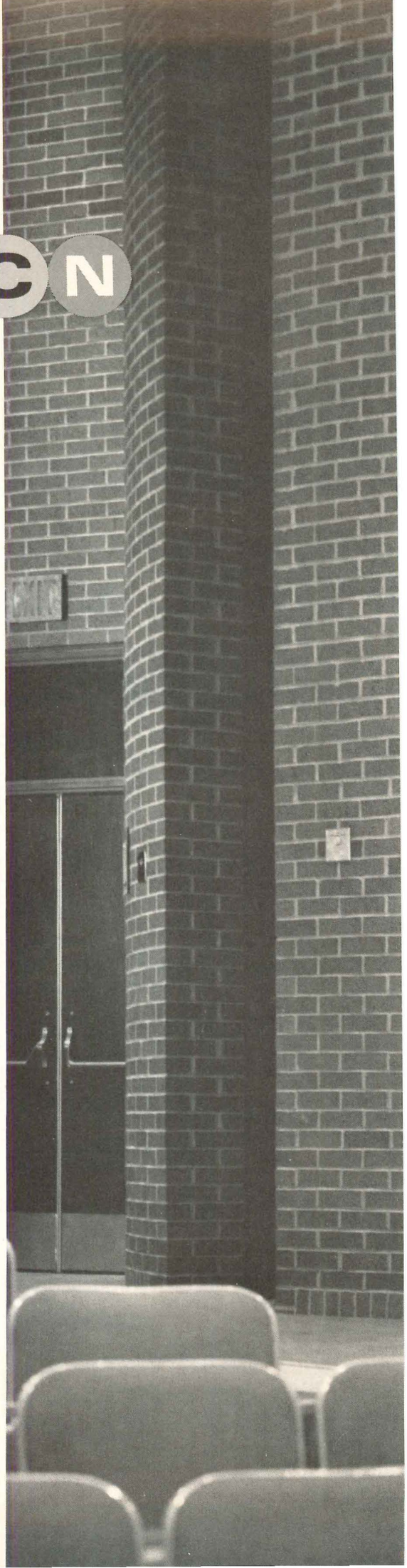
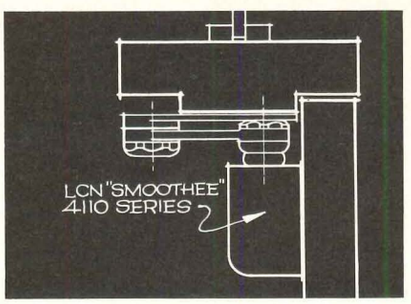
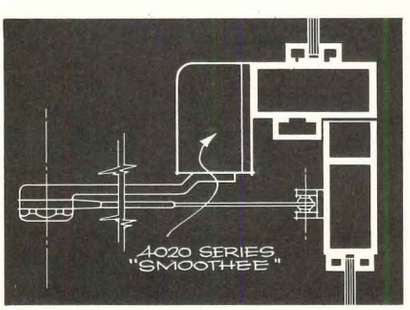
LCN



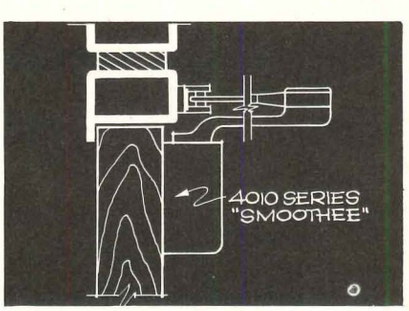
SMOOTHEE® 4110 SERIES AS SHOWN IN PHOTOGRAPH (RIGHT) MOUNTED ON STOP FACE OF DOOR.



"SMOOTHEE" 4020 SERIES MOUNTED ABOVE DOOR ON TOP JAMB.



"SMOOTHEE" 4010 SERIES FOR USE ON HINGE FACE OF DOOR.



door closer notes...

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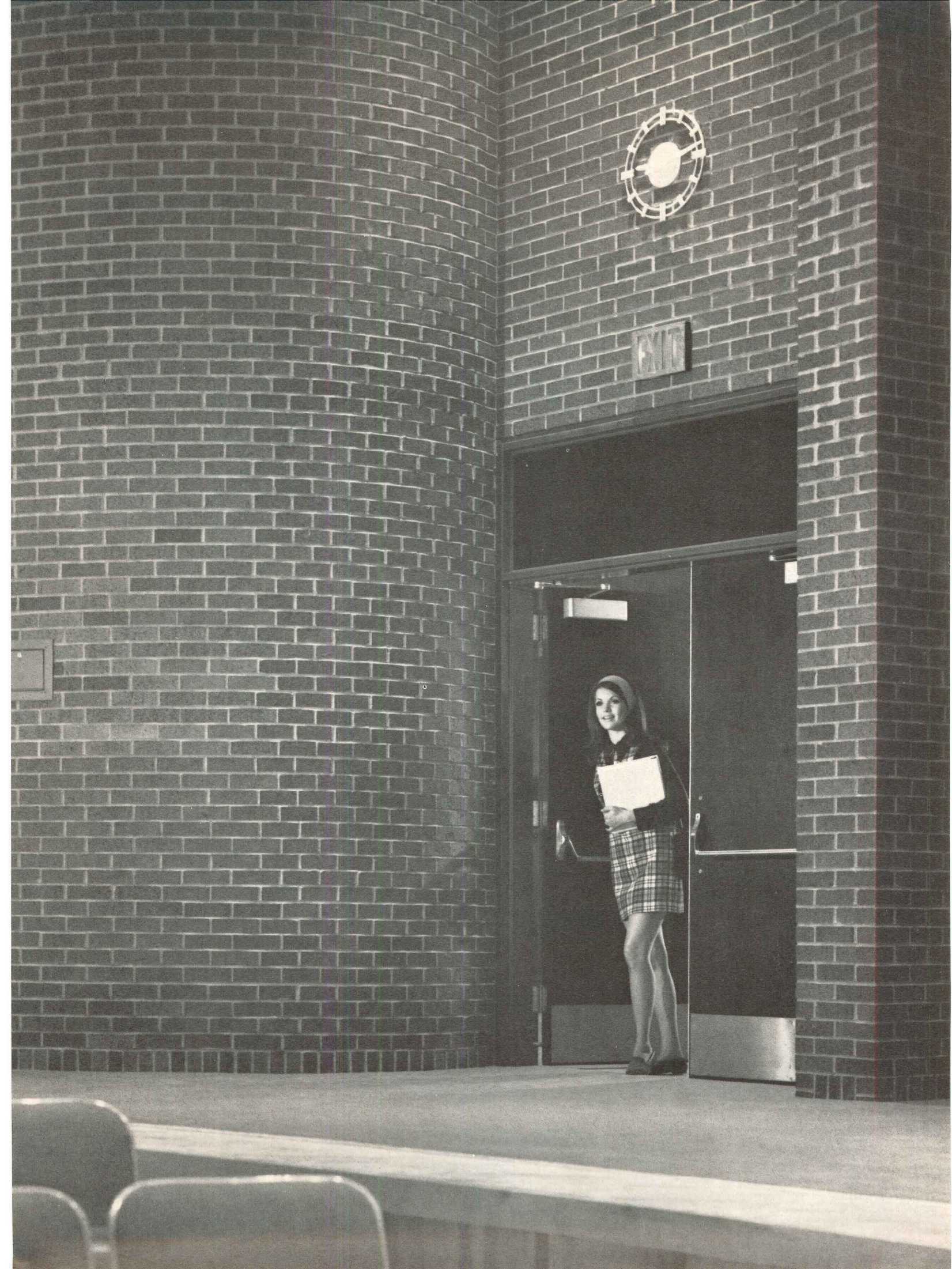

EXITS

CURRENT TRENDS IN CONSTRUCTION

George A. Christie
Vice President and Chief Economist
McGraw-Hill Information Systems Company

Construction outlook: 1971 first update

The time has come for the first of the regularly scheduled updates of last November's Dodge Construction Outlook for 1971. No major changes are called for yet—only a few minor adjustments here and there to bring things into line with the way 1970 finally came out, and to evaluate some new information such as the President's recent messages on the state of the economy.

These annual budget and economic messages added some new contradictions to the already existing ones in the Administration's program. The economic message, brimming with optimism about renewed growth and reduced unemployment, was offered as a "target" rather than as a forecast of the year's developments—an important distinction. And the new budget, which is in large part the master plan for achieving this target, failed to show the necessary fiscal thrust to do the job.

The new Federal budget has been offered as an activist program which in official language is "intended to help move the economy toward higher employment and production." Actually, it differs little—except semantically—from the way the previous budget worked out. The new budget, like the last one, contains another $16 billion spending increase (to $229 billion) and another large deficit. The only difference (if it is a difference) is that this time around the Administration is planning on a sizeable deficit—last time it planned on a balance and got a deficit instead. The current strategy is unquestionably aimed in the right direction (since any attempt to achieve balance by holding down spending would only further depress the economy), but it is relatively weak stuff. It doesn't provide the stimulation to carry GNP to the $1,065 billion target without a big assist from the monetary authorities.

A key part of the plan is to enlist the Federal Reserve System to expand the money supply by as much as eight per cent this year to help the private economy respond to fiscal stimulation from the public sector. Herein lies one of the pitfalls. Inflation, already a chronic problem even in recession, would almost certainly be further aggravated by that degree of monetary expansion. And Federal Reserve Board Chairman Burns staunchly insists that it's confidence, not more money, that is the missing ingredient.

The Fed doesn't want to play the Administration's game unless assured that there will be some compensating step toward general wage/price restraint; so far, the Administration remains dogmatically set against this type of action, but it may modify its position later.

In the unlikely event that the Fed goes all the way and greatly expands the money supply, the Administration's target $1,065 billion GNP falls within the upper limit of possibility, although most of the gain would consist of just more inflation. If, instead, the Fed plays it close to the vest, the result could come out much like the lackluster scenario depicted last fall by the majority of private economists: slow recovery, continued high unemployment, and gradually diminishing inflation.

The best bet at this point: something closer to the soggy forecast of the private sector than the wishful thinking of the government economists—a GNP of about $1,050 billion and continued inflation along with it unless some form of control is brought to bear.

At this point, only minor changes are needed to bring last November's outlook for construction contract value up to date. The year 1971 still shapes up very big for housing. Nonresidential building markets, still carrying some of last year's sluggishness into 1971, will show quarter-by-quarter improvement this year.

Total construction contract value, now estimated at just over $75 billion, will be up by 10 per cent this year, with most of the gain taking place in the Northeast and the South.

Non-residential buildings—Prospects for an early recovery of industrial construction have diminished over the past six months as the expected business recovery stalled late in 1970. The outlook for commercial building remains a trade-off, however, with a good gain in stores offsetting some further decline in office buildings. After a sharp spring break, institutional building rebounded as interest rates came down during 1970's second half. It is now expected to hold its current level through 1971.

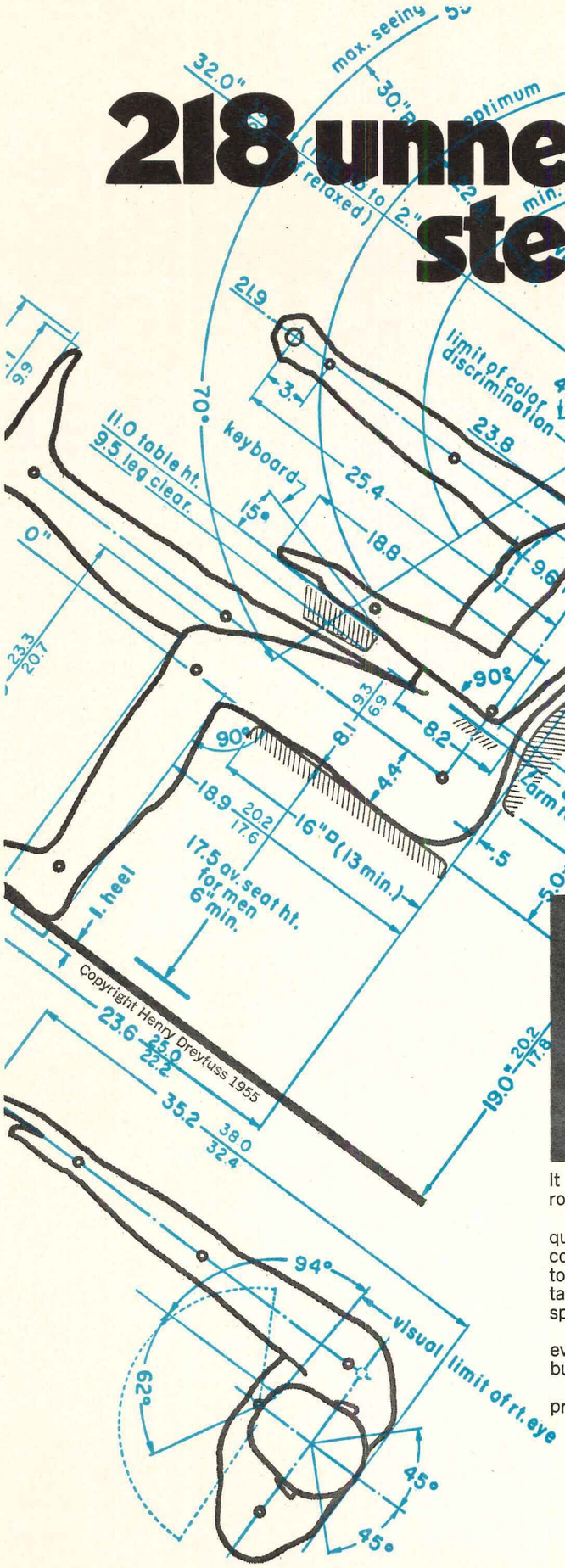
Housing—The $29 billion contract value now forecast for new residential units reflects two adjustments of the earlier estimate. The number of dwelling units for 1971 has been increased by 100,000 to a total consistent with 1.8 million housing starts (1.0 million one- and two-family homes, and 0.8 million apartment units). Information gained during the final months of 1970, when the proportion of low-income subsidized housing rose sharply, indicates a slightly smaller size and value per unit than was forecast.

Nonbuilding Construction — After 1970's large (12 per cent) gain, 1971 will be bringing a mixed pattern. Highways, the biggest category, are slated for only moderate growth; utilities, one of 1970's big gainers, will ease back a bit; sewer and water facilities, hottest of all the categories in this group, are headed for another good gain.

NATIONAL ESTIMATES

construction contract value (millions of dollars)		1970 actual	1971 forecast	per cent change
non-residential buildings	commercial	$9,091	$9,300	+ 2%
	manufacturing	3,614	3,275	− 9
	educational	5,233	5,500	+ 5
	hospital/health	2,823	3,225	+14
	public	1,016	1,200	+18
	religious	582	625	+ 7
	recreational	1,137	1,200	+ 6
	miscellaneous	940	1,075	+14
	TOTAL	$24,436	$25,400	+ 4%
residential buildings	one- and two-family homes	$15,531	$18,675	+20%
	apartments	7,854	10,450	+33
	nonhousekeeping	1,409	1,600	+14
	TOTAL	$24,794	$30,725	+24%
	TOTAL BUILDINGS	$49,230	$56,125	+14%
nonbuilding construction	streets, highways and bridges	$7,545	$7,800	+ 3%
	utilities	4,058	3,800	− 6
	sewer/water supply	3,255	3,600	+11
	other nonbuilding construction	3,848	3,725	− 3
	TOTAL	$18,706	$18,925	+ 1%
TOTAL CONSTRUCTION		$67,936	$75,050	+10%
DODGE INDEX (1967=100)		123	135	

218 unnecessary steps



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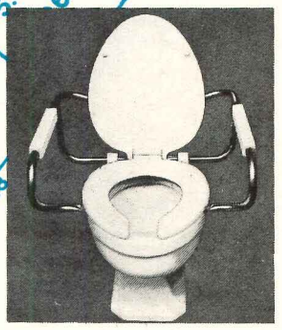
We were designing the first bathroom seat for the physically handicapped. We tested for support strength, long-lasting usage, and portability. In fact, we tested for 2½ years and added our own research and engineering skills. The result? The simplest, most functional and durable self-aid bathroom seat ever engineered, Sheltering Arms®.



Sheltering Arms, providing self-help and safety in the bathroom for elderly, infirmed, paralytic, post-operative and other physically handicapped persons.

Modern and hygienic, Sheltering Arms is built to scientifically determined specifications. It assures a safe grip for standing, sitting or rising and easily rotates up to the urinal position.

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Sheltering Arms. The original and foremost device for every type of user in a hospital, nursing home and public building installation.

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San Francisco, Toronto, Paris

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We took a leaf from the auto industry's book to bring you a new line of roof-top gas/electrics with an ignition system that is virtually immune to the weather.

These units will never be "down" because of a blown-out standing pilot light. Because they don't have a standing pilot light.

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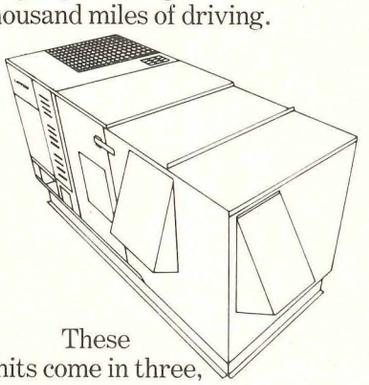
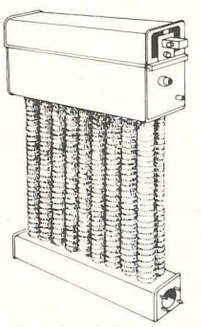
And this plug lasts. It fires four to six times per start, which in twenty years would be only about as much use as the spark plug in your car gets in several thousand miles of driving.

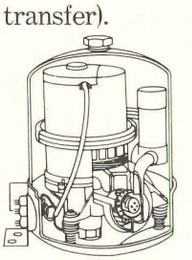


These units come in three, four, five, seven-and-a-half, and ten ton sizes. This gives you great flexibility for installation where you want gas heating and electric cooling in one compact package.



Of course, our new gas/electrics have lots more going for them than the spark plug ignition system.

They've got our new Multiloy™ Spine Fin heat exchanger (stainless steel tubes with serrated steel fins for superlative heat transfer).



They've got GE's famous Climatuff™ compressor— with a remarkable record of reliability in over 300,000 installations.

They've got flat-top design, roof-mounting frames and curbs.

They're approved by the National Roofing Contractors Association.

They can be had with a wide choice of accessories, so they can be used in the widest variety of applications.

And they're approved by the American Gas Association as well as certified by the Air-Conditioning & Refrigeration Institute.

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GENERAL ELECTRIC

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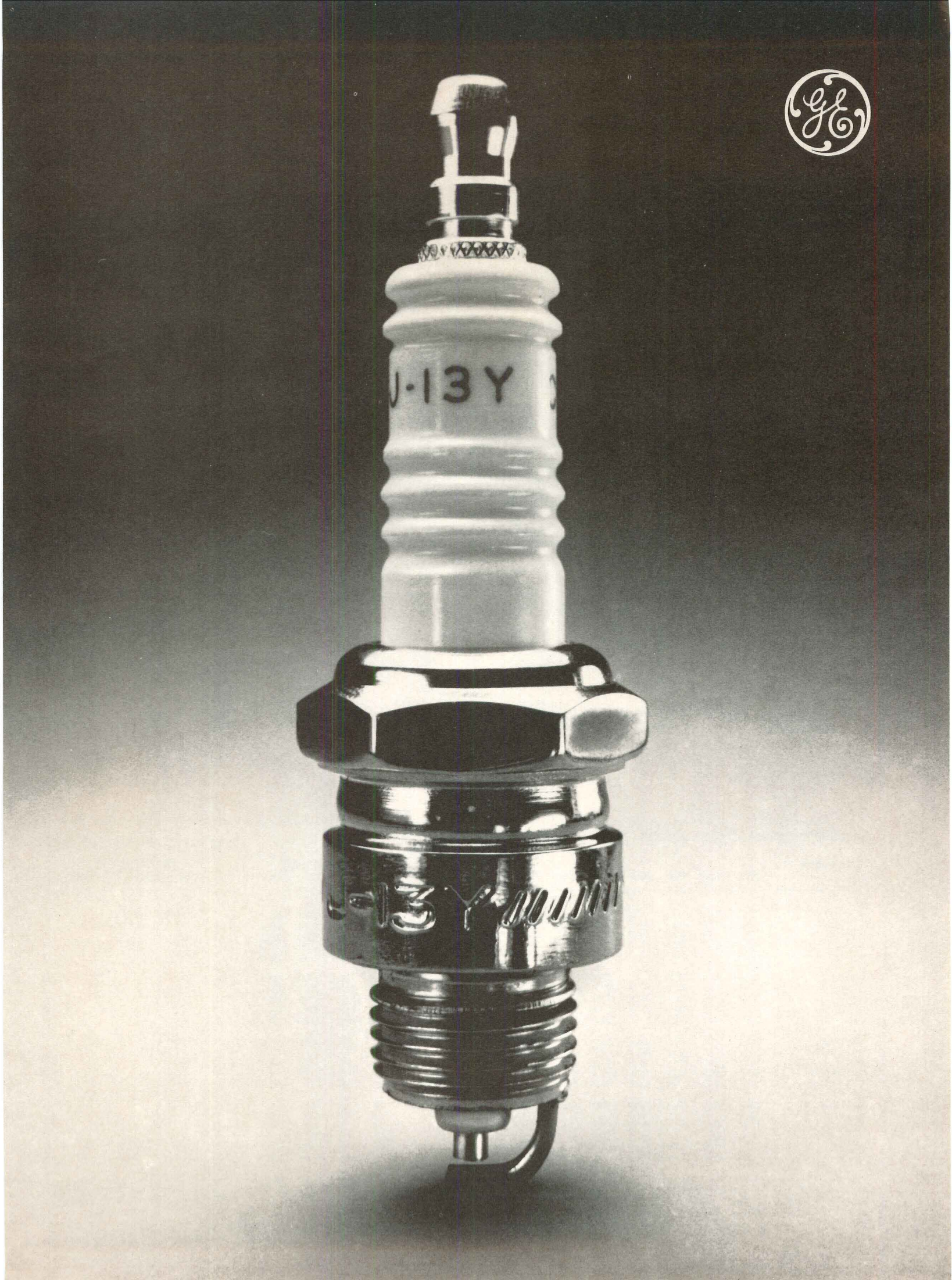
J-13Y

INDEXES AND INDICATORS

William H. Edgerton
Dodge Building Cost Services
McGraw-Hill Information Systems Company

PROJECTING 1980 COSTS

With building cost increases today of 5 to 15 per cent a year, what will they be in 1980? Our crystal ball (no more accurate than others) says: Annual increases through 1973 will hold at the present rate and in the mid and late 1970's begin to level off. This may happen sooner with wage or price controls on the industry. But the day will come in most of our life-times when average buildings will cost as much as $100 per square foot.

Building cost indexes

The information presented in the tables indicates trends of building construction costs in 33 leading cities and their suburban areas (within a 25-mile radius). The table to the right presents correct cost indexes for non-residential construction, residential construction, masonry construction and steel construction. Differences in costs between two cities can be compared by dividing the cost differential figure of one city by that of a second city.

The table below presents historical building cost indexes for non-residential construction; future costs can be projected after examining past trends.

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

1941 average for each city = 100.00

APRIL 1971

Metropolitan area	Cost differential	Current Indexes non-res.	residential	masonry	steel	% change year ago res. & non-res.
U.S. Average	8.5	340.1	319.4	333.4	326.3	+ 5.72
Atlanta	7.8	429.5	404.9	418.3	412.8	+ 6.03
Baltimore	7.9	356.6	335.2	335.3	347.4	+ 8.22
Birmingham	7.2	314.9	292.9	307.9	302.2	+ 2.34
Boston	8.7	334.6	316.1	331.5	322.5	+ 9.82
Buffalo	9.2	383.0	359.6	376.6	366.1	+ 7.52
Chicago	8.8	393.5	374.1	381.2	375.8	+ 7.04
Cincinnati	9.0	354.9	333.9	349.3	341.0	+ 5.17
Cleveland	9.8	387.3	364.4	379.9	372.0	+ 6.09
Columbus, Ohio	9.0	370.1	347.5	360.8	354.4	+ 7.49
Dallas	7.7	331.9	321.4	324.0	318.4	+ 5.86
Denver	8.4	374.1	351.9	371.5	359.1	+ 7.66
Detroit	9.5	383.5	365.3	382.6	369.8	+ 6.70
Houston	8.1	328.9	308.8	321.8	315.6	+ 4.41
Indianapolis	8.8	314.5	295.3	308.7	302.1	+ 2.89
Kansas City, Mo.	8.2	321.0	303.3	313.8	308.1	+ 4.90
Los Angeles	8.1	371.1	339.8	360.3	354.7	+ 4.91
Louisville, Ky.	8.1	333.3	313.0	326.6	320.3	+ 4.82
Memphis	7.8	327.3	307.3	320.0	313.4	+ 6.26
Miami	8.6	359.3	342.3	352.5	344.9	+ 4.88
Milwaukee	9.2	395.6	371.5	391.6	378.8	+ 4.08
Minneapolis	8.9	367.0	345.3	361.3	351.8	+ 6.18
Newark	9.0	342.7	321.7	337.2	328.9	+ 8.03
New Orleans	7.9	324.9	306.6	320.1	313.1	+ 4.91
New York	10.0	376.5	350.5	364.2	356.8	+ 4.73
Philadelphia	8.5	352.2	335.5	345.7	337.5	+ 5.81
Phoenix	8.2	188.7	177.2	182.6	181.1	+ 5.56
Pittsburgh	9.1	332.6	312.9	328.1	319.8	+ 3.72
St. Louis	9.2	350.7	331.0	347.6	336.1	+ 3.19
San Antonio	8.0	140.2	131.6	137.3	133.7	+ 8.06
San Diego	8.2	139.2	130.7	136.6	133.5	+ 7.02
San Francisco	9.0	477.5	436.5	470.9	457.7	+ 2.50
Seattle	9.0	352.6	315.5	350.5	336.2	+ 5.50
Washington, D.C.	7.7	314.3	295.1	307.4	301.2	+ 6.32

Cost differentials compare current local costs, not indexes.

HISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL BUILDING TYPES, 21 CITIES

1941 average for each city = 100.00

Metropolitan area	1962	1963	1964	1965	1966	1967	1968	1969	1970 (Quarterly) 1st	2nd	3rd	4th	1971 (Quarterly) 1st	2nd	3rd	4th
Atlanta	298.2	305.7	313.7	321.5	329.8	335.7	353.1	384.0	399.9	406.2	408.1	422.4	424.0			
Baltimore	271.8	275.5	280.6	285.7	290.9	295.8	308.7	322.8	323.7	330.3	332.2	348.8	350.3			
Birmingham	250.0	256.3	260.9	265.6	270.7	274.7	284.3	303.4	303.5	308.6	310.2	309.3	310.6			
Boston	239.8	244.1	252.1	257.8	262.0	265.7	277.1	295.0	300.5	305.6	307.3	328.6	330.0			
Chicago	292.0	301.0	306.6	311.7	320.4	328.4	339.5	356.1	362.2	368.6	370.6	386.1	387.7			
Cincinnati	258.8	263.9	269.5	274.0	278.3	288.2	302.6	325.8	332.8	338.4	340.1	348.5	350.0			
Cleveland	268.5	275.8	283.0	292.3	300.7	303.7	331.5	358.3	359.7	366.1	368.1	380.1	381.6			
Dallas	246.9	253.0	256.4	260.8	266.9	270.4	281.7	308.6	310.4	314.4	316.1	327.1	328.6			
Denver	274.9	282.5	287.3	294.0	297.5	305.1	312.5	339.0	343.4	348.4	350.3	368.1	369.7			
Detroit	265.9	272.2	277.7	284.7	296.9	301.2	316.4	352.9	355.2	360.5	360.6	377.4	379.0			
Kansas City	240.1	247.8	250.5	256.4	261.0	264.3	278.0	295.5	301.8	306.8	308.8	315.3	316.6			
Los Angeles	276.3	282.5	288.2	297.1	302.7	310.1	320.1	344.1	346.4	355.3	357.3	361.9	363.4			
Miami	260.3	269.3	274.4	277.5	284.0	286.1	305.3	392.3	338.2	343.5	345.5	353.2	354.7			
Minneapolis	269.0	275.3	282.4	285.0	289.4	300.2	309.4	331.2	341.6	346.6	348.5	361.1	362.7			
New Orleans	245.1	284.3	249.9	256.3	259.8	267.6	274.2	297.5	305.4	310.6	312.2	318.9	320.4			
New York	276.0	282.3	289.4	297.1	304.0	313.6	321.4	344.5	351.1	360.5	361.7	366.0	367.7			
Philadelphia	265.2	271.2	275.2	280.8	286.6	293.7	301.7	321.0	328.9	337.7	335.7	346.5	348.0			
Pittsburgh	251.8	258.2	263.8	267.0	271.1	275.0	293.8	311.0	316.9	321.6	323.3	327.2	328.7			
St. Louis	255.4	263.4	272.1	280.9	288.3	293.2	304.4	324.7	335.2	340.8	342.7	344.4	345.9			
San Francisco	343.3	352.4	365.4	368.6	386.0	390.8	402.9	441.1	455.4	466.9	468.6	465.1	466.8			
Seattle	252.5	260.6	266.6	268.9	275.0	283.5	292.2	317.8	325.4	335.1	336.9	341.8	343.3			

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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Breakthrough for Beauty and Service

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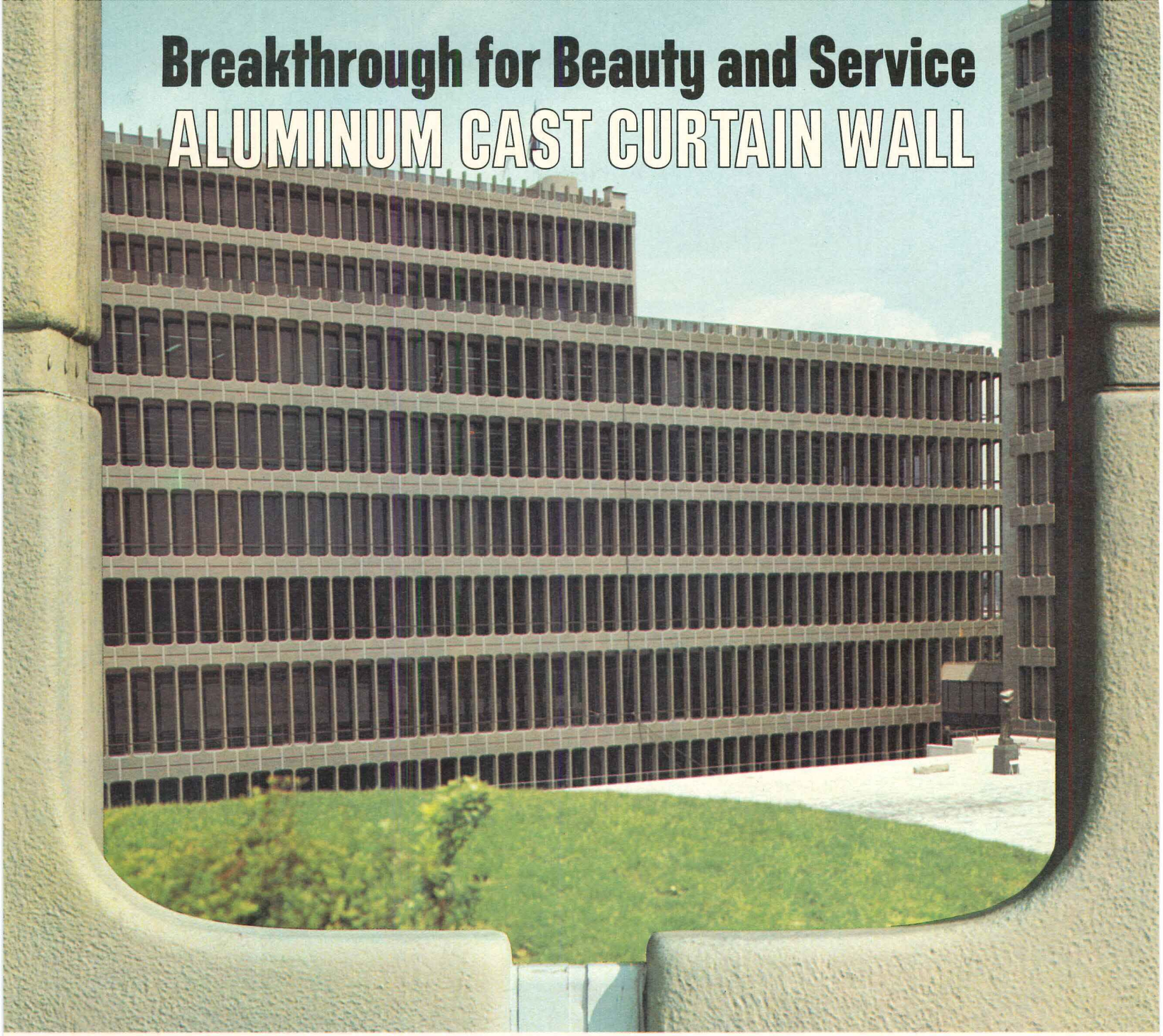

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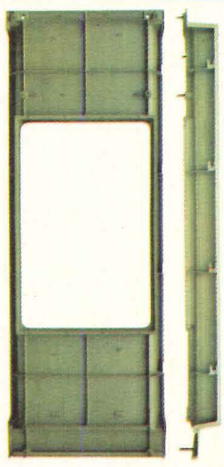

Surface treatments include regular painting, electrolytic coloring, enamelling and others, for great durability.

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Only one process is required to make Al-Cast in large, complicated forms. This single unit system with very precise detail means that a watertight wall with very few joints can be designed.

Easy Installation
Al-Cast is dimensionally shaped to the exact image of the designer, and cast as a single unit at the factory, so various parts do not have to be assembled at the construction site. This makes installation easy, precise and rapid.

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The Basic Necessities Giant

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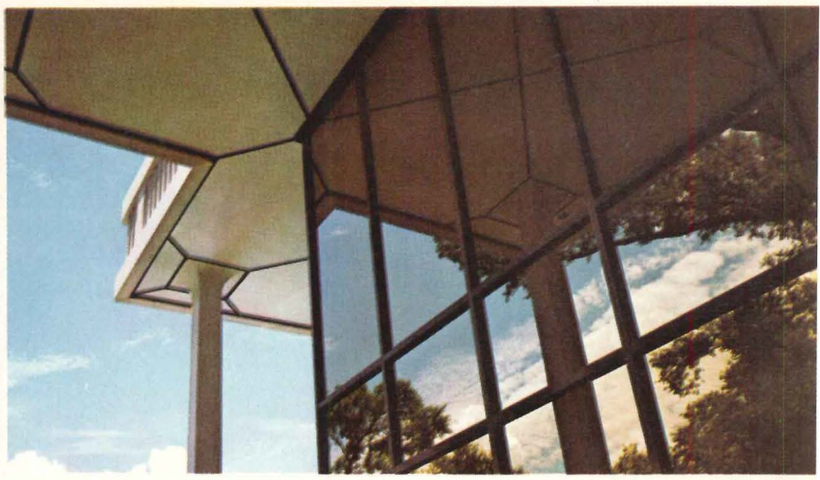

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For more data, circle 54 on inquiry card

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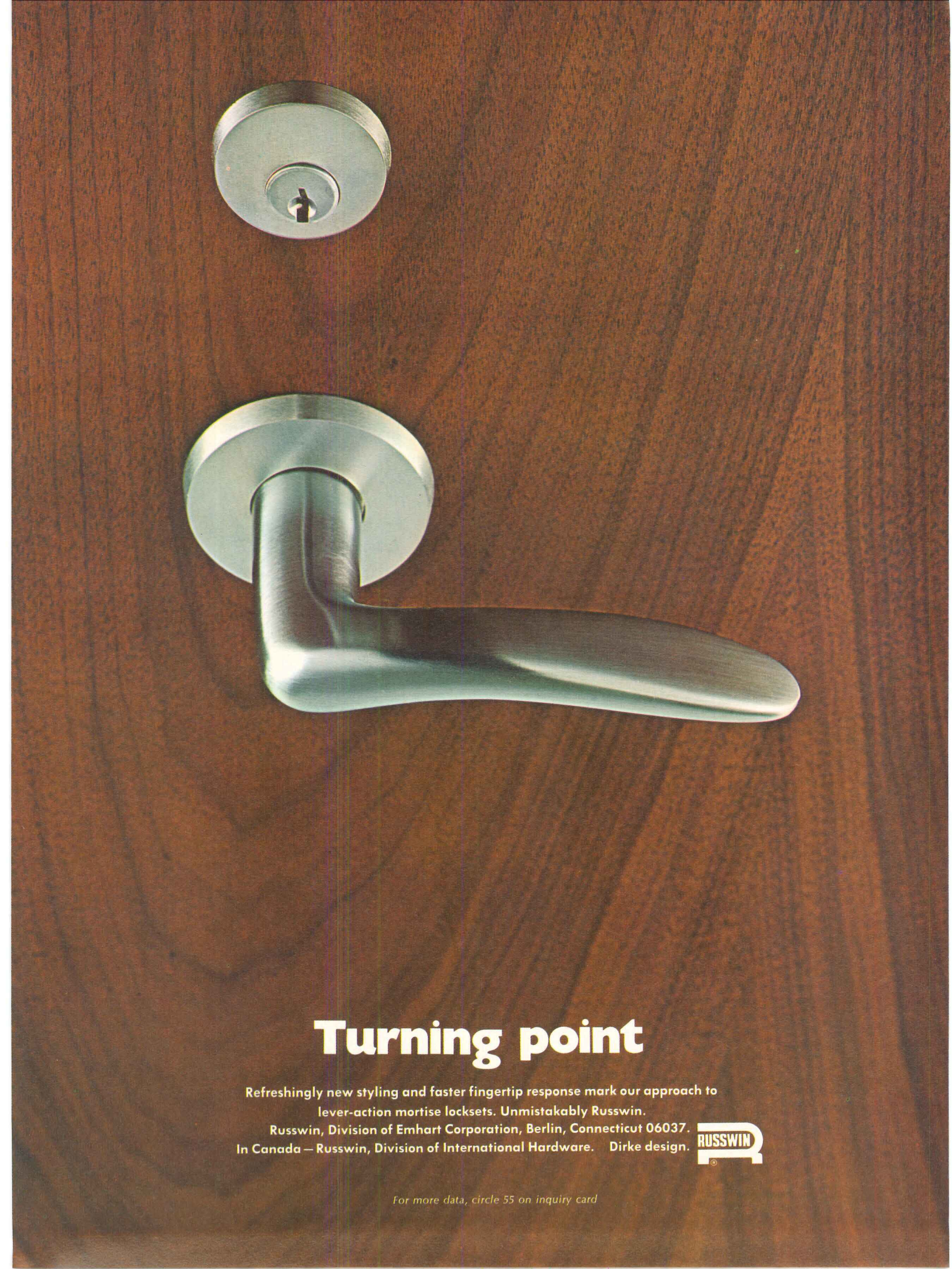
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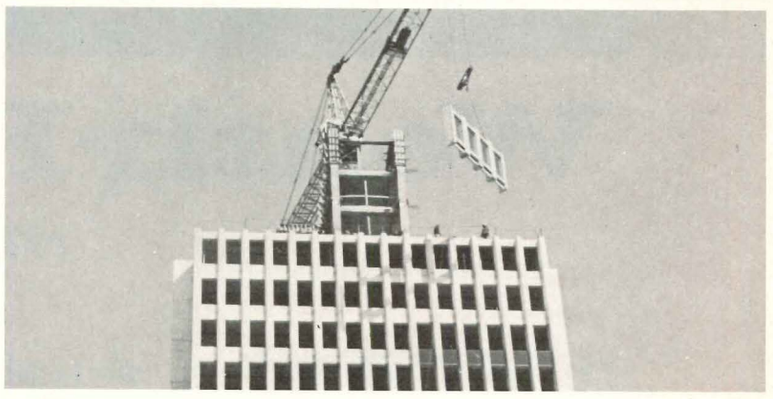

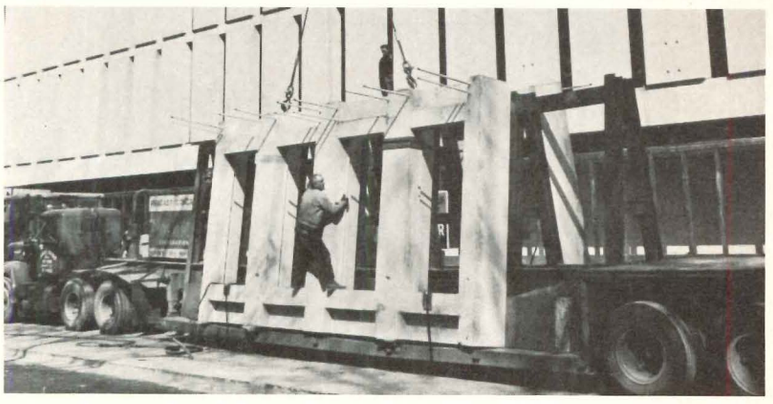

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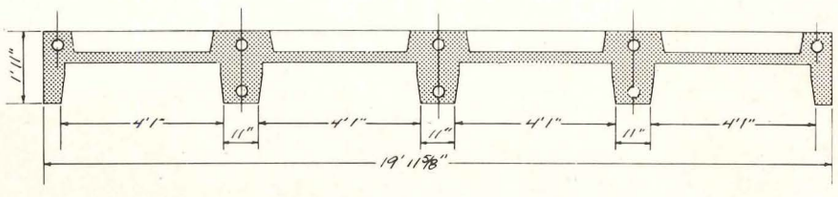

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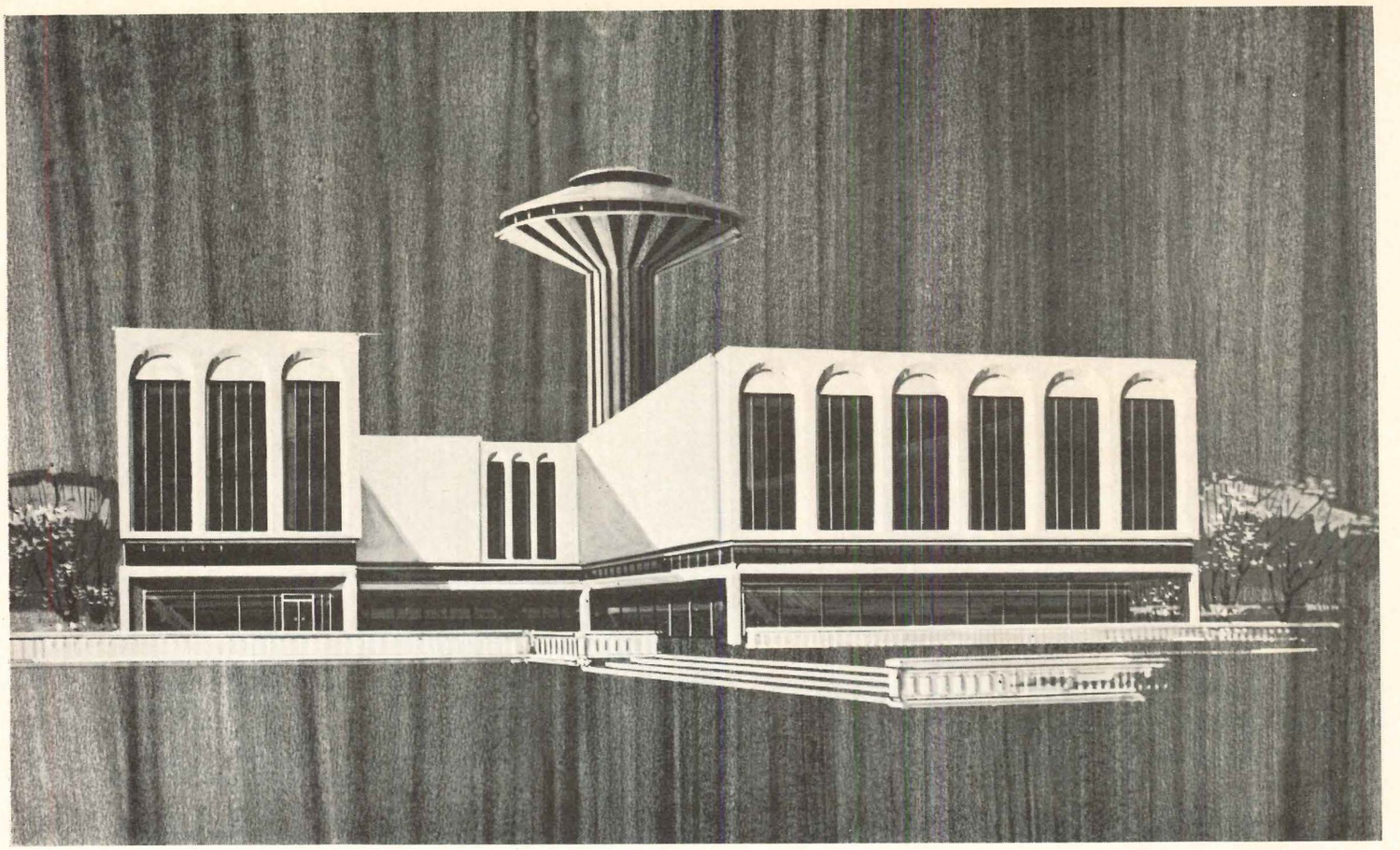

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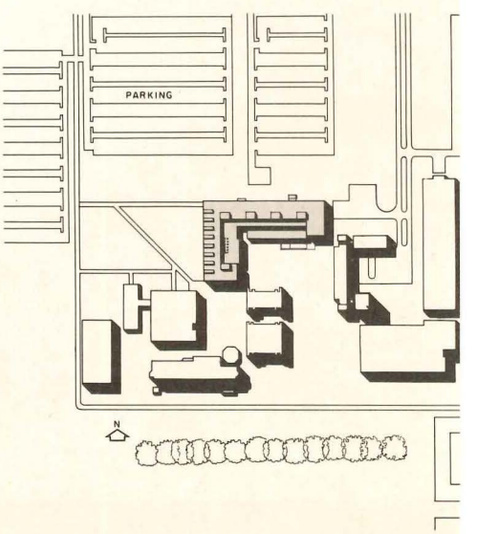
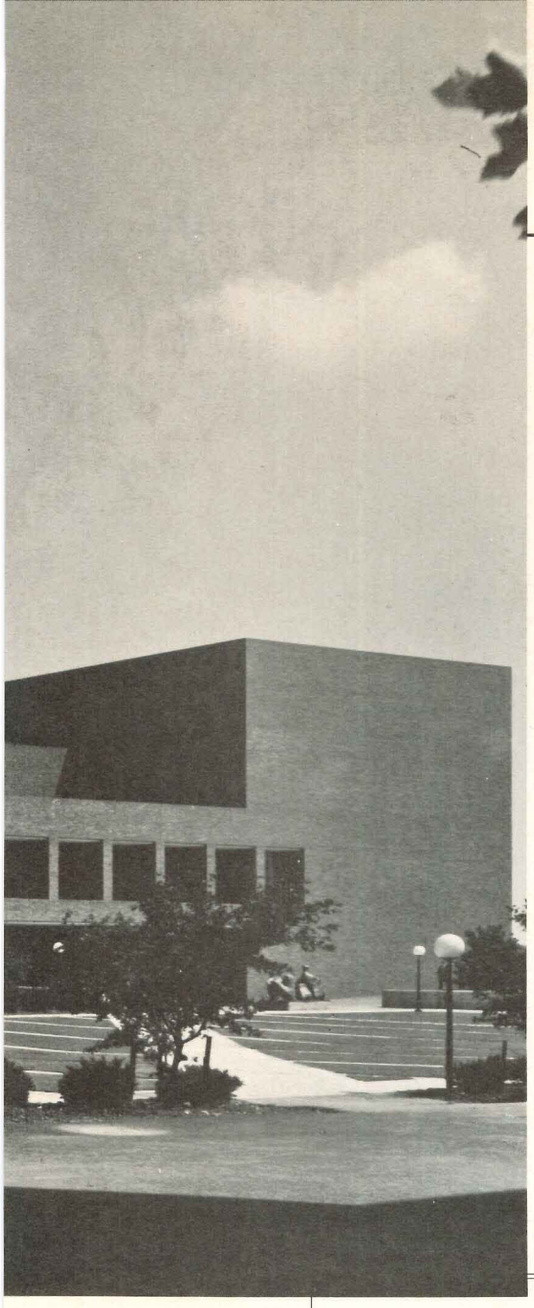
A COLLEGE ARTS COMPLEX SHAPED BY A STRONG MASTER PLAN

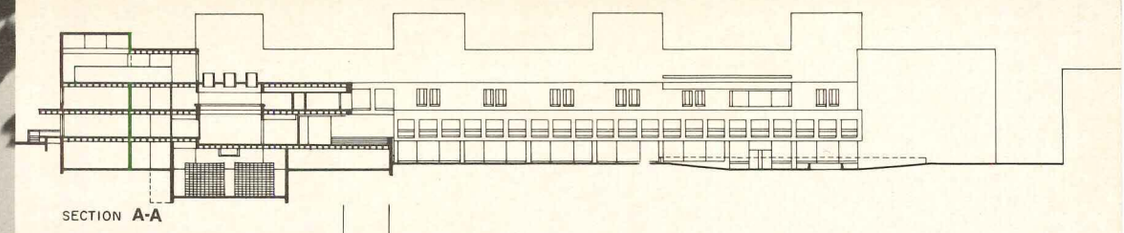
Designed by Hugh Stubbins and Associates, this combined College of Fine and Applied Arts and College of Graphic Arts and Photography for Rochester Institute of Technology in Rochester, New York, has been spatially organized not only to serve the functions which it contains, but to act as an "anchor building" within the academic core. Because of its key position in the master plan, its organization of elements, circulation and massing are highly unusual for a building of this type, yet admirably functional and handsome.

One of the largest academic buildings in the State of New York, this L-shaped structure housing Rochester Institute of Technology's College of Fine and Applied Arts and College of Graphic Arts and Photography is part of the Institute's new 1,300-acre campus south of the city of Rochester. The entire campus is a unique design collaboration among five architects—Lawrence Anderson, Edward Larrabee Barnes, Kevin Roche, Hugh Stubbins and Harry Weese—working together with landscape architect Dan Kiley. It has been featured in RECORD (November 1968, pages 123-134) as an important achievement in the arts of architecture and planning. Said the RECORD: "In addition to functioning well in the practical sense, [the campus plan] becomes the framework for bold compositional effects, great vistas, beautifully scaled courtyards which will become settings for sculpture, and broad playing fields, incorporated within the campus fabric . . . Further, these architects have collaborated to establish and work within a common esthetic, which includes a shared vocabulary of structure, scale and materials to achieve a campus as unified as a medieval city."

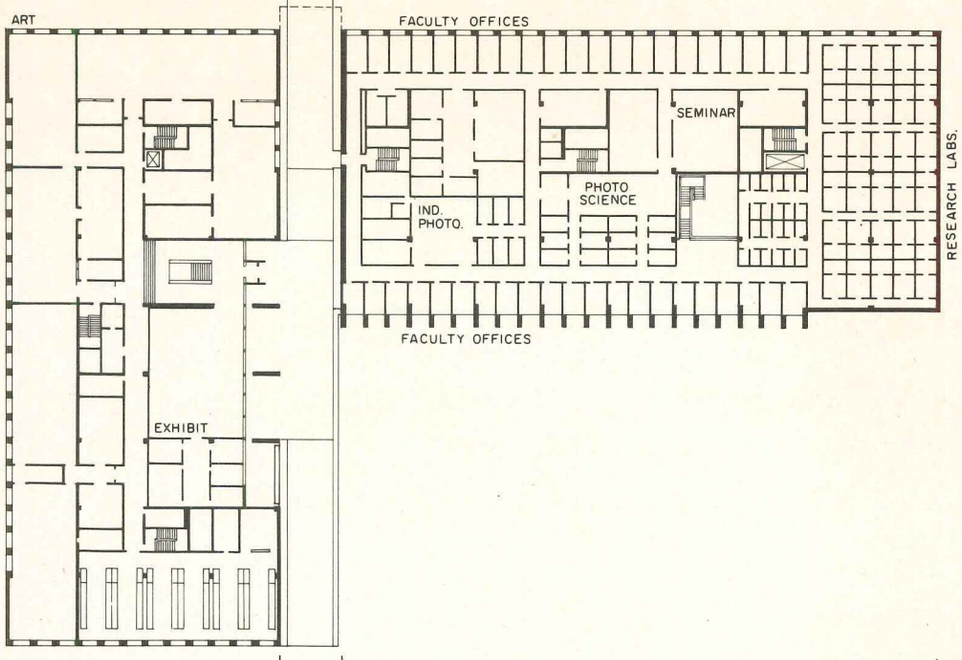
As the partial campus site plan showing the academic core (right) indicates, the structure designed by Hugh Stubbins and Associates is one of the largest in the group in terms of land coverage. It is also one of the largest volumetrically, and includes approximately 425,000 square feet of offices, laboratories, studios, workshops, press-



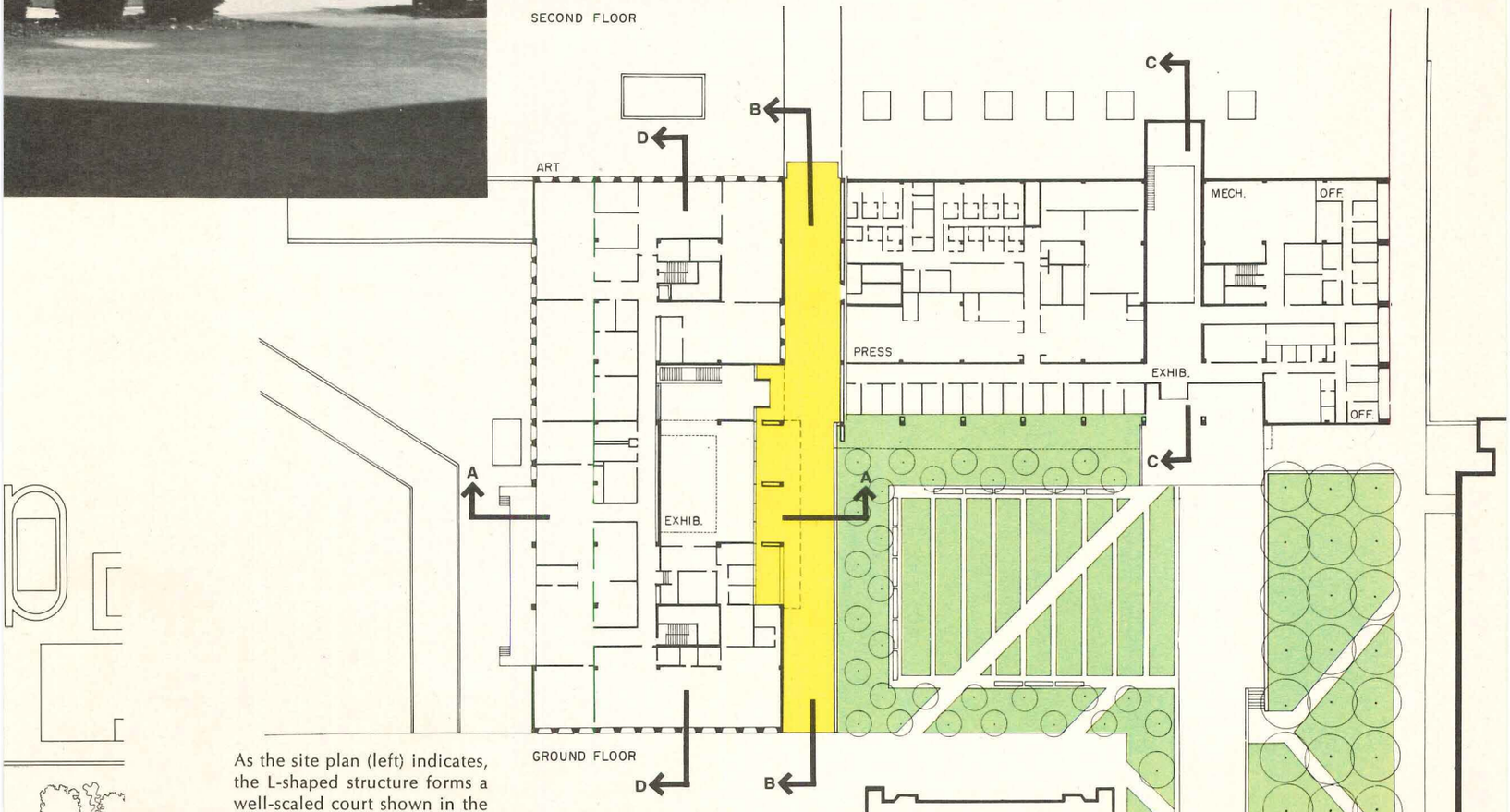




SECTION A-A

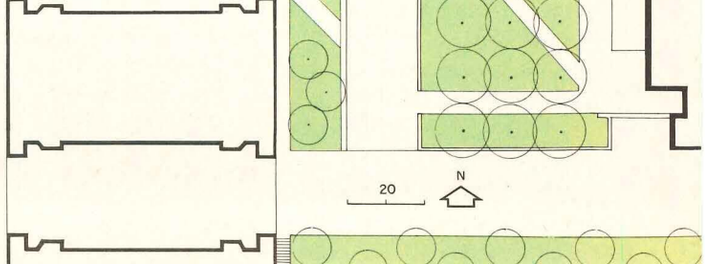


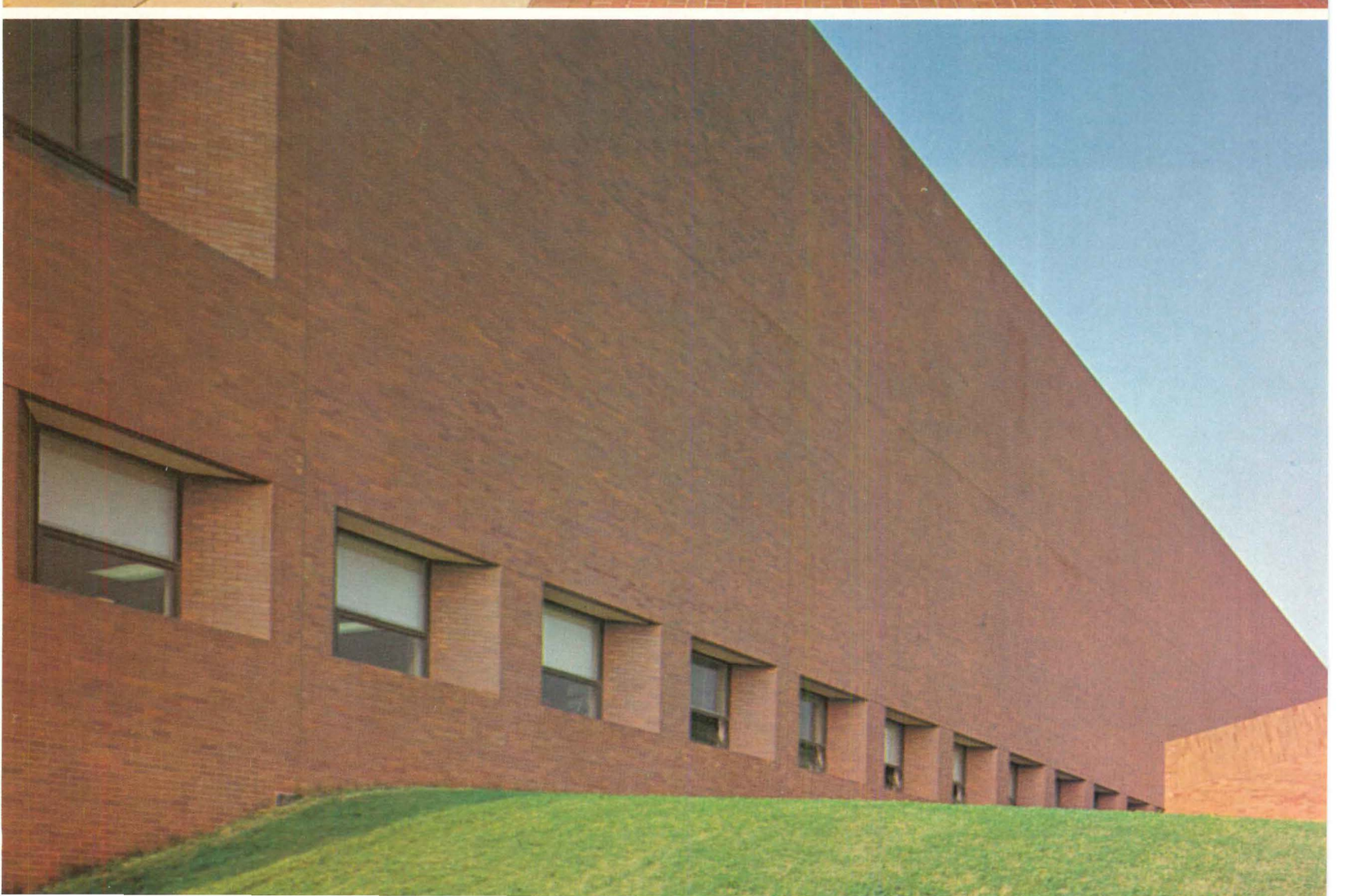
SECOND FLOOR

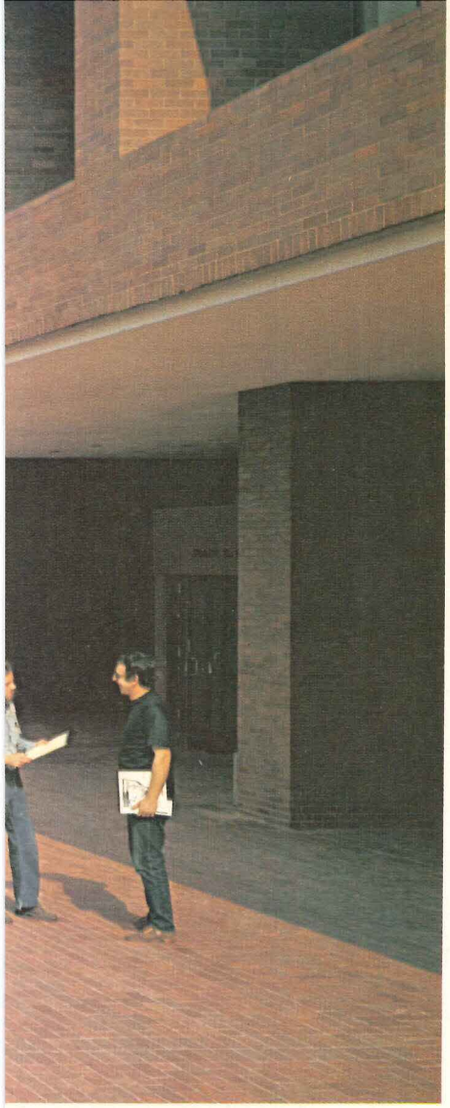


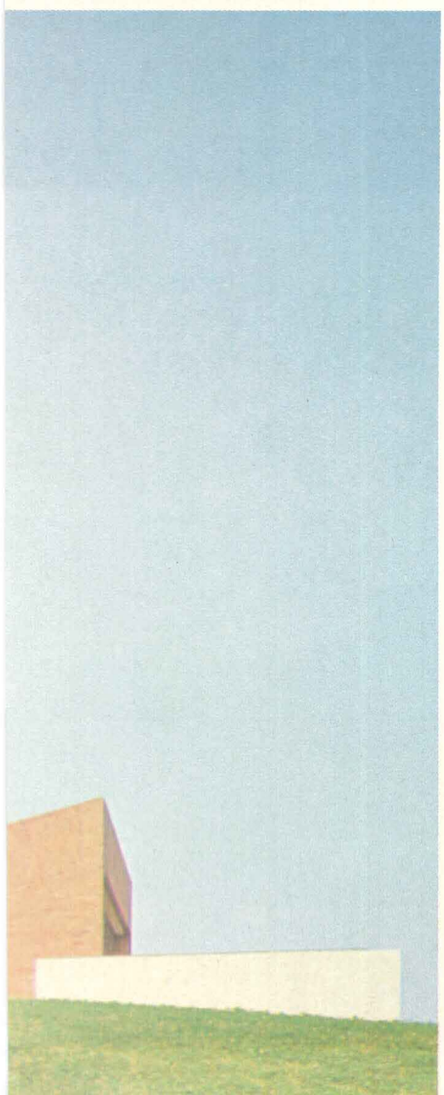
GROUND FLOOR

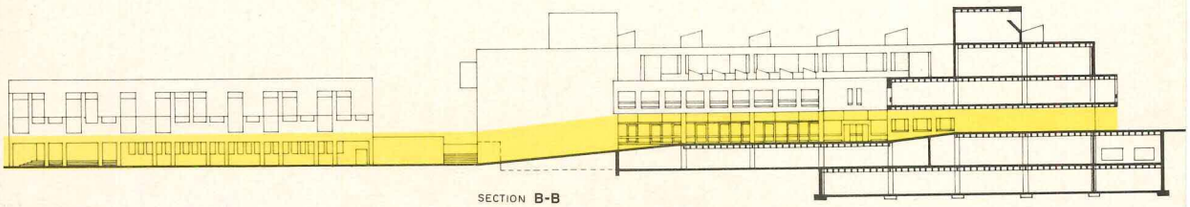
As the site plan (left) indicates, the L-shaped structure forms a well-scaled court shown in the photo and the ground floor plan. A broad and handsome pedestrian walk indicated in color is a major circulation element through which students gain access from the parking lot to the campus.



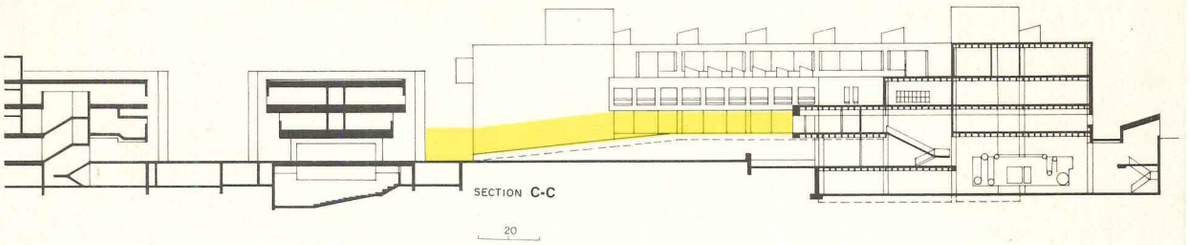








SECTION B-B



SECTION C-C

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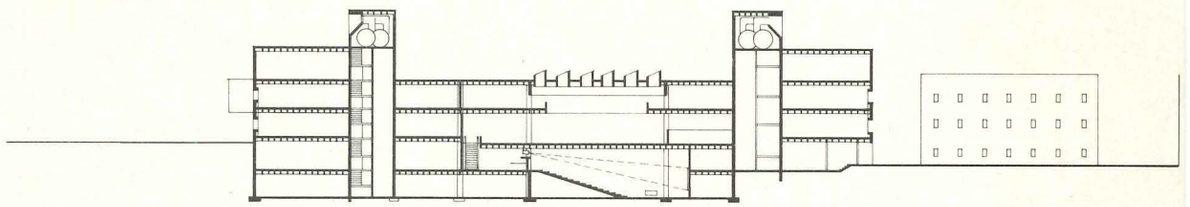


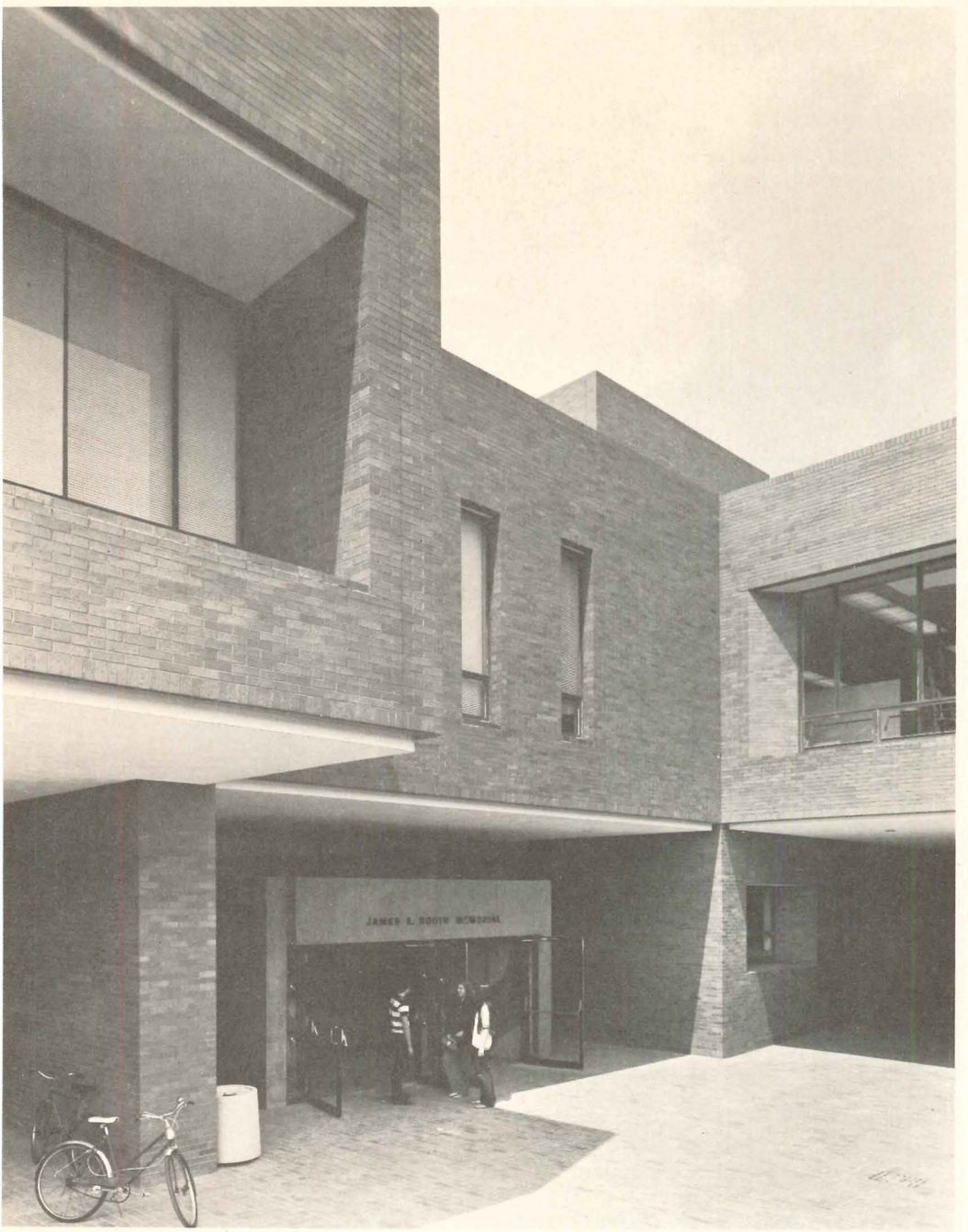
SECTION D-D

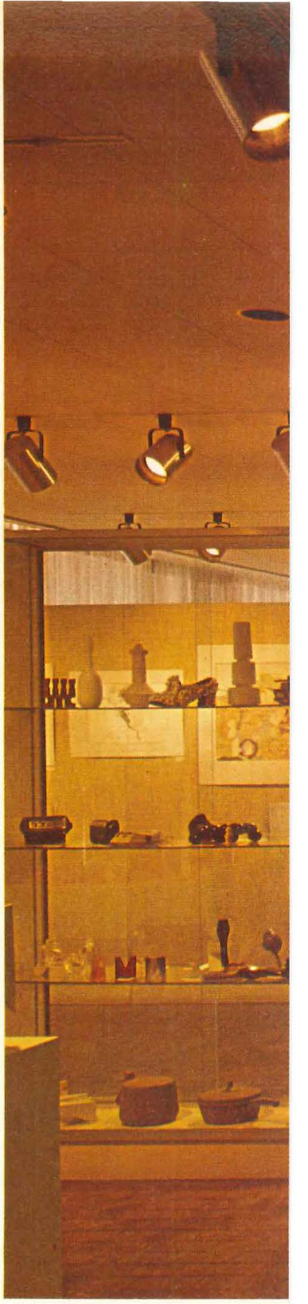
rooms and exhibition spaces. To reduce its apparent scale, the building has been conceived as a series of terraces which border the central academic quadrangle, on a major pedestrian circulation route from the north parking area.

The building's forms, proportions and details blend harmoniously into the overall campus design. The L-shaped structure defines a spacious courtyard which functions as the center of the academic core of the campus. The main pedestrian axis of the academic core is parallel to the principal axis of the arts complex.

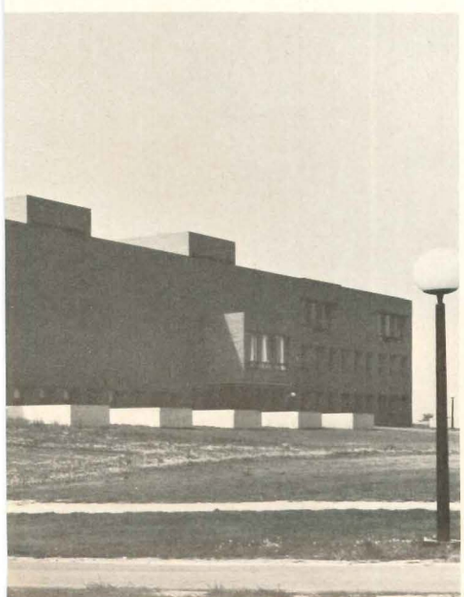
The five-level building forms the west and north enclosing walls of the academic quadrangle. The College of Fine and Applied Arts is to the west, with the College of Graphic Arts and Photography to the north. The photograph (top left) was taken facing west showing the former at the end of the vista and the latter to the right. The great expanse of continuous wall (left) forms part of the outside perimeter to the north of the academic core parallel to the parking area. A portico between these two colleges serves as an important gateway to the campus from the north parking area as shown in the sections (above), and in the photographs on the preceding pages and on the cover. Exhibition spaces are located along this highly traveled pedestrian route to draw attention to the work being done in these colleges.

While the colleges are interconnected, they maintain individual identities ex-





The Bevier Gallery (right), visible and accessible from the pedestrian spine, displays student and faculty work produced in the studios and workshops of the College of Fine and Applied Arts. The photograph (below) shows the arts complex as it appears from the north parking lot. Seen from this angle it is clear that the building has been designed to serve as a great perimeter wall defining the campus core. The building has been carefully detailed as the photo (left), showing an entrance, indicates.



pressed by separate entrances and exhibition areas. Both have been planned for maximum flexibility, and to this end have been organized around a system of large structural bays 34 by 34 feet square. The College of Graphic Arts and Photography has its photography laboratories and studios on the upper floors, administrative and faculty offices near the main entrance, and the printing and graphic arts research departments on the lower two floors because they contain heavy equipment and require direct access to service and receiving areas.

In the College of Fine and Applied Arts, all studios and workshops are organized around a sky-lighted two-level exhibition space (above).

In order to keep within a tight budget, the Stubbins firm relied on the use of modest materials together with standard construction techniques. The structural frame is poured-in-place concrete with brick cavity walls. The ironspot brick used on the exterior is part of the vocabulary of materials established for the entire campus. The interiors are well lit, simple, and practical.

COLLEGE OF FINE AND APPLIED ARTS and COLLEGE OF GRAPHIC ARTS AND PHOTOGRAPHY, Rochester Institute of Technology, Rochester, New York. Owners: *Dormitory Authority of the State of New York*. Architects: *Hugh Stubbins and Associates—partners-in-charge of design: Hugh Stubbins and Peter Woytuk; project manager: Edwin F. Jones;* structural engineers: *Le Messurier Associates, Inc.;* mechanical and electrical engineers: *Greenleaf Enginers;* acoustical consultants: *Bolt, Beranek and Newman, Inc.;* general contractor: *Foster-Lipkins.*

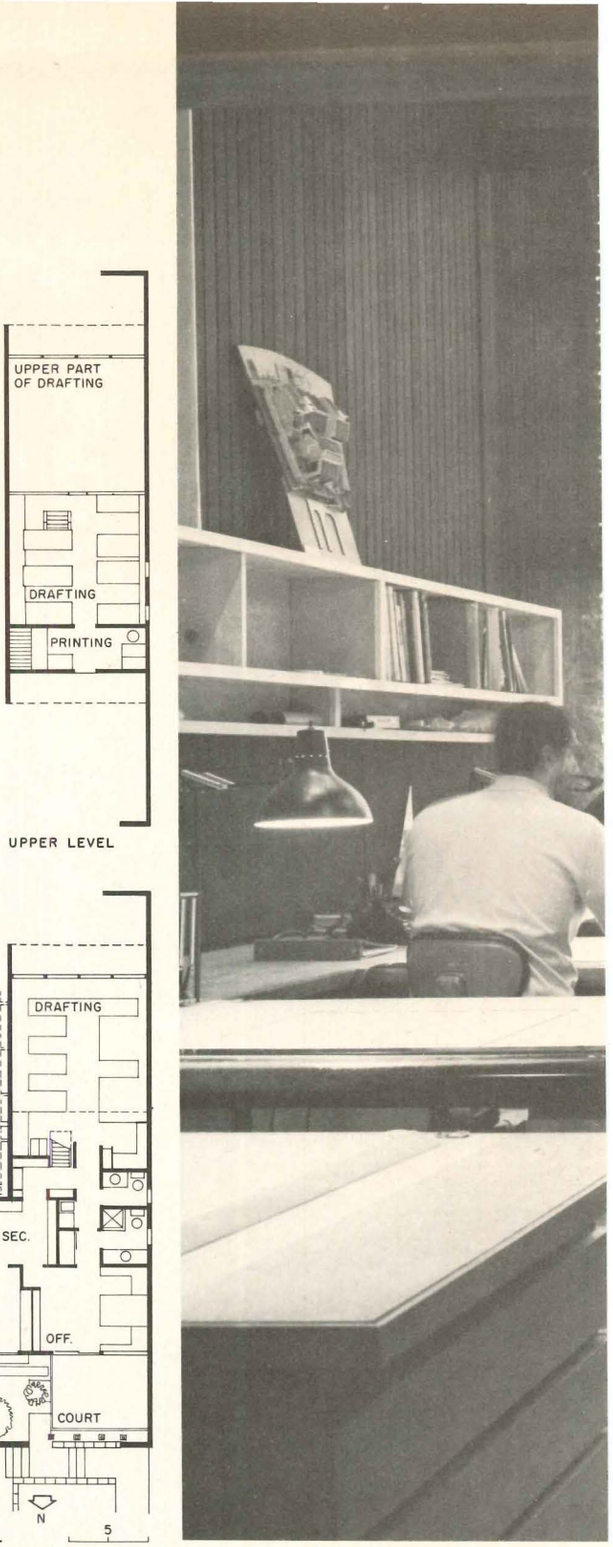
ARTS COLLEGE FOR R.I.T.

The College of Graphic Arts and Photography contains a good-sized printing plant (below right) clearly visible through a plate glass window from the building's main entrance lobby. The painting studios (above) are well lit. The auditorium (below) is located in the College of Fine and Applied Arts.

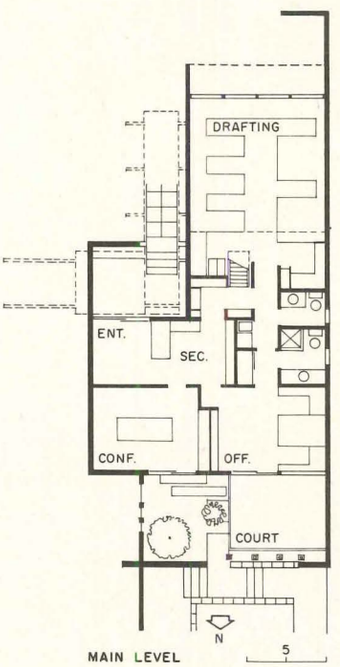
Robert Perron

WHEN THE ARCHITECT DESIGNS HIS OWN OFFICE

the results are usually personal . . . sometimes self-conscious . . . always revealing. Where he works is often as important as what he does with his space. In the four offices that follow, two are conversions from historic buildings originally designed for other uses (see photo above and page 108); two are offices located in structures the architect himself designed. Each is different in character, in emphasis, and in the kind of visual signals it transmits. But each, in its own terms, is a success.—*Barclay Gordon*



UPPER LEVEL



MAIN LEVEL

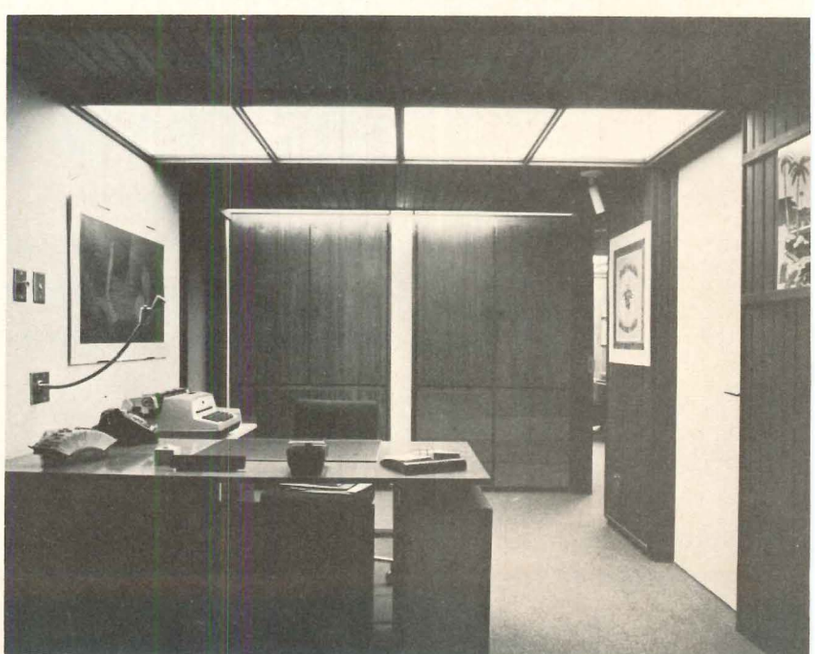
SOUND PLANNING AND RICH DETAILING:

A RECIPE FOR EXCELLENCE Black, Pagliuso, Kikuchi & O'Dowd, a small West Coast firm with a growing reputation for good design, rents space in a low-rise commercial complex they designed in Palos Verdes several years ago. In planning their own office, the architects had two crucial concerns. The floor area was not generous, so no space could be squandered. Just as important, the office had to quietly embody a design philosophy that was personal but more than just the cultivation of a private vision.

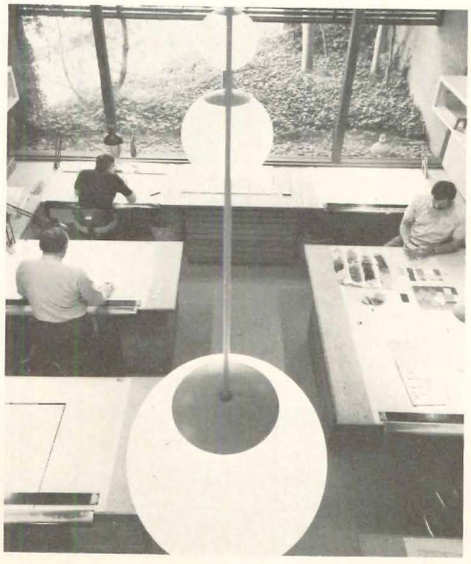
These considerations have resulted in a varied and carefully modulated series of volumes. Reception area, conference room and partners' offices are low-ceilinged and efficiently planned. A window wall and small court beyond provide the partners with a strong visual release as well as usable outdoor space (photo right). The heart of the scheme, the space to which all the others defer, is a double-height drafting room with its own release upward to a partial mezzanine that provides additional drafting positions. Both drafting areas overlook a landscaped yard.

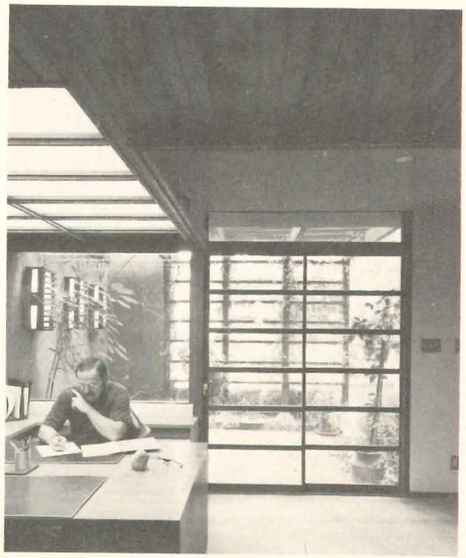
This sequence of spaces reveals an economical and consistent use of materials and a clear sense of when and how to change from one material to another. These changes give free expression to the firm's impulse toward thoughtful detailing. The results, evident in all the photographs, are eloquent and appealing.

OFFICE OF BLACK, PAGLIUSO, KIKUCHI & O'DOWD, Palos Verdes, California. Architects and engineers: *Black, Pagliuso, Kikuchi & O'Dowd;* contractor: *Bruscho Construction Company.*



The development of small courts in and around this tight space, combined with the variety of spatial volumes, contributes to making the office seem larger than it is. Lighting, both artificial and natural, has also been carefully studied and integrated by various means into the design concept. Storage for drawings and supplies, always a problem in small offices, is handled economically and simply either at the drawing tables or in drawers and cabinets at the rear of the drafting room. The choice of furnishings and appointments, whether contract or designed by the architects, shows the same sensitive concern for consistency and detail. Strong graphics, used to lend impact, are distributed throughout the office. Brilliant hues are used sparingly throughout to accent a scheme that draws the most from the natural colors of its building materials.





Wayne Thom photos

THREATENED LANDMARK FINDS AN UNEXPECTED AND CONTEMPORARY USE

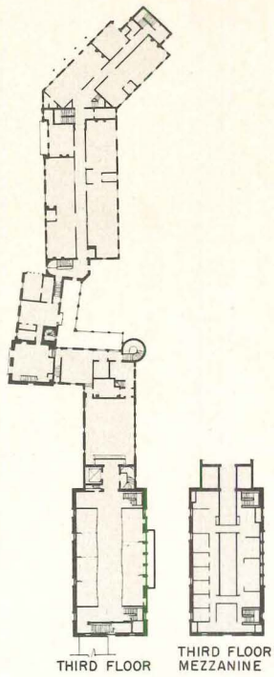
Its builders named it "La Puerta del Sol." Constructed in 1925 at the height of Florida's land boom, the picturesque structure (below) was the hinge in millionaire-developer George Merrick's dream for Coral Gables. Merrick envisioned the arched opening as the gateway to the city, and the surrounding complex of towers and terraces, colonnades and winding stairs as a high-style residential and cultural community. Only the great arch was built. The Depression splintered the rest of Merrick's dream. During the lean years of the 30's, the apartments were abandoned one by one. Pigeons claimed the clock tower. Three decades of quietude followed as the stream of Coral Gables life flowed elsewhere.

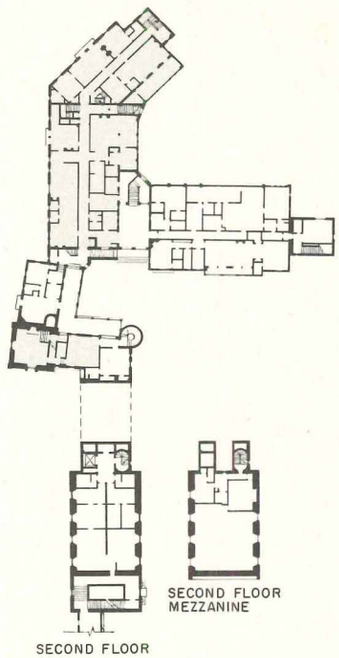
In the late 1960's, a corporation was hurriedly formed to buy the arch (now called Douglas Entrance) because it had fallen to real estate interests whose intention was to demolish it to make way for a supermarket. When the corporation appeared unable to save the structure, the architectural firm of Ferendino/Grafton/Pancoast purchased the property independently and began converting it for their own use.

Ferendino/Grafton/Pancoast, it should be said, were most assuredly conscious that in acquiring the Douglas Entrance they were preserving an important Coral Gables landmark. But they ventured into the project only after satisfying themselves that it represented a sound financial investment. Thanks to depreciation, and in spite of extensive restoration and landscaping, long-term costs will be appreciably less than for comparable new space. Whatever efficiency is lost to sprawl is more than compensated by the richness and variety of architectural ornament and spatial experience.

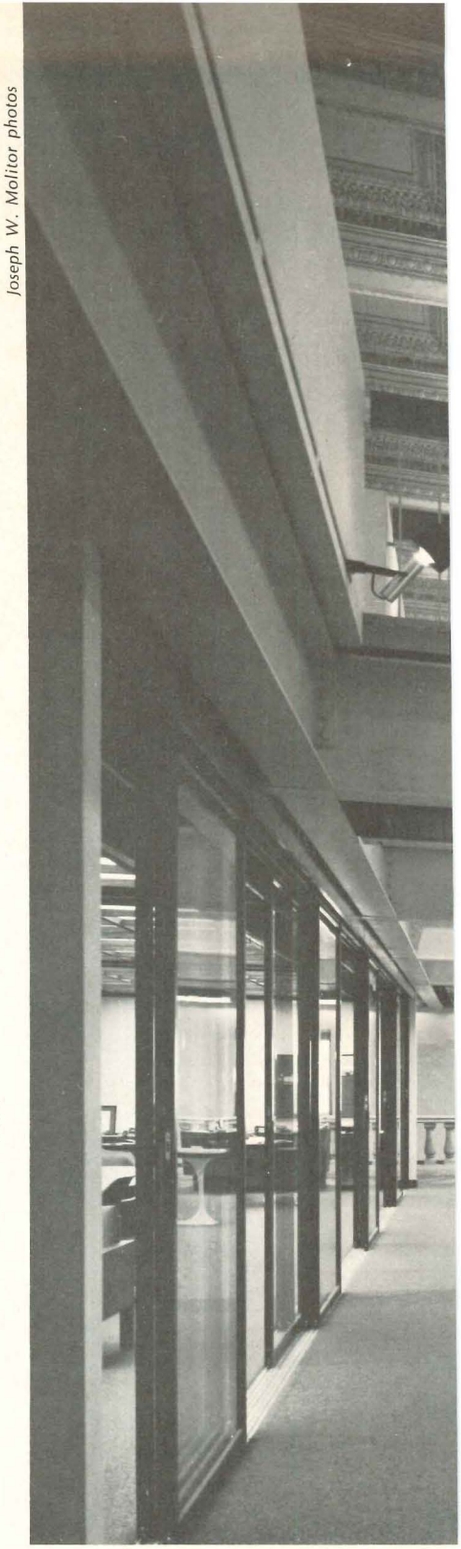
It is particularly gratifying to see the private sector giving new life to an architectural monument—and making it pay.

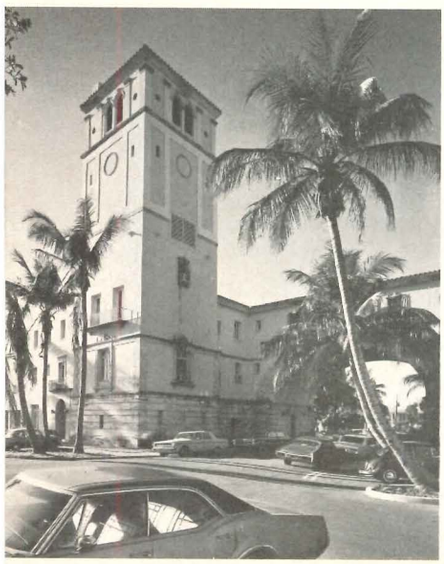
OFFICE OF FERENDINO/GRAFTON/PANCOAST, Coral Gables, Florida. Architects and engineers: *Ferendino/Grafton/Pancoast*





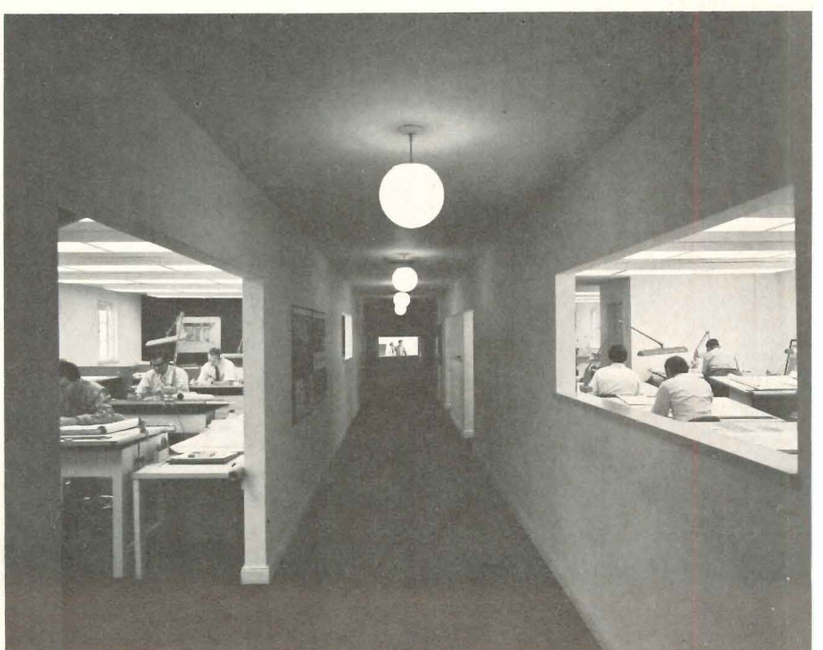
Joseph W. Molitor photos

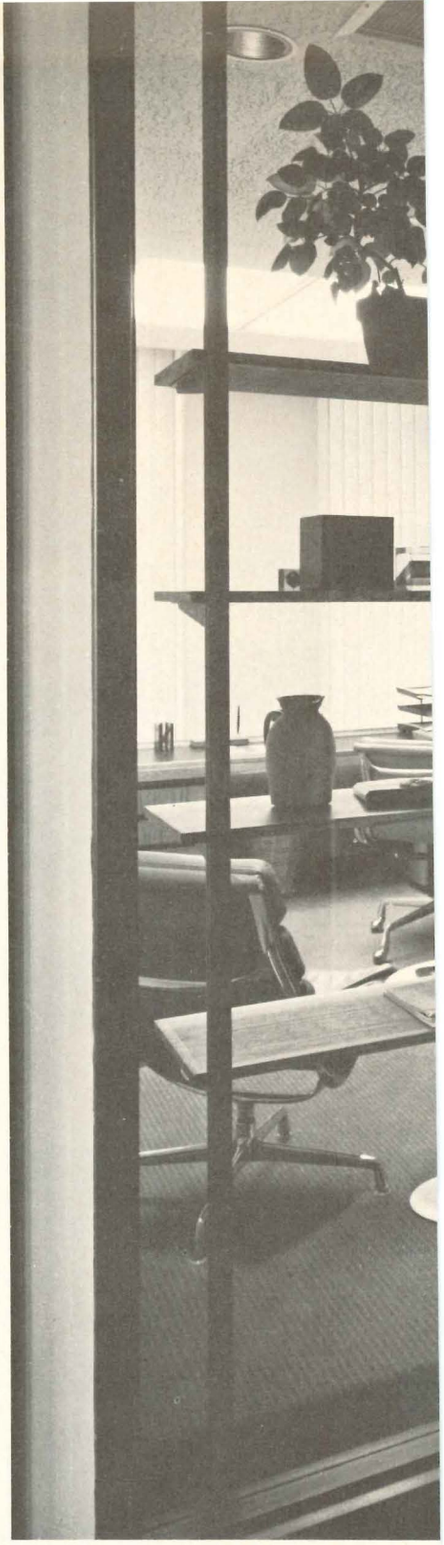




The great double height ballroom (above) has become office space for the firm's principals. Tucked under the splendid ornamental ceiling, a mezzanine houses accounting and administrative functions. Across the elevator lobby, in the space over the arch, the architects are installing an audio-visual center for client presentations. Drafting and design teams are grouped in several of the old apartments reached by a third floor colonnade and the firm's engineers occupy space on the building's first and second floor. Both Grafton and Ferendino sold their homes to take apartments in the structure. Grafton apartment (left) looks out over landscaped court.

Much of the first and second floor space outside the tower is now rented to professional tenants who form, with the architects, a sympathetic community.



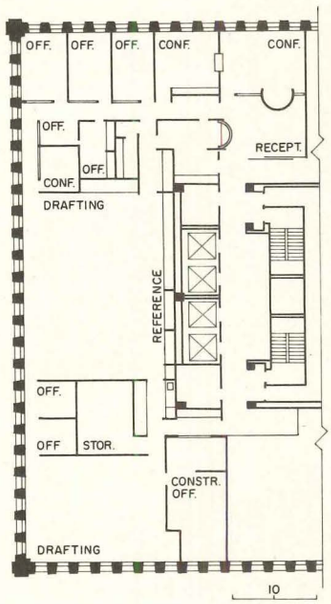


STRONG COLORS, USED SPARINGLY, PERSONALIZE A MODULAR SPACE

Like most other architects, the Atlanta firm of Jova/Daniels/Busby wanted to give their new office its own identity. But because they occupy half a floor in an office building of their own design, they recognized the importance of using the building's basic systems rather than introducing a special vocabulary. Within these constraints, the architects have created a series of personal spaces that are animated and expressive. The practical requirement for acoustical privacy and the desire for openness were met simultaneously with the use of glass partitioning for principals' offices (photo center) and conference rooms.

Privacy was also a consideration in laying out the drafting rooms (photo below). Each man is provided with his own space defined by five-foot-high-panels which, additionally, serve to break down the scale of a large space. Each such unit contains display board, storage and shelves. Additional reference areas are developed along interior partitions. Project teams are grouped in adjacent units to facilitate communication and interaction.

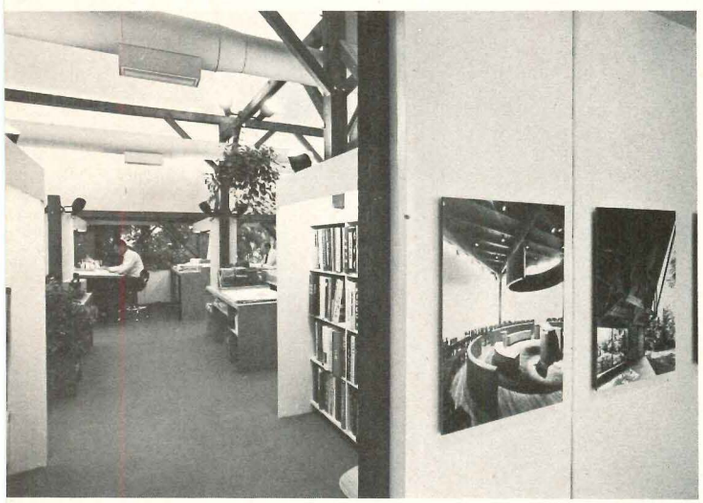
Color has been limited to a few areas but used decisively. Hues are vivid—acid green, magenta, red and ochre. This bright pallette, employed to define specific forms, is contrasted with a generally neutral background of white walls, black trim and natural wool carpeting. Lighting is building standard augmented for display purposes by overhead light tracks.



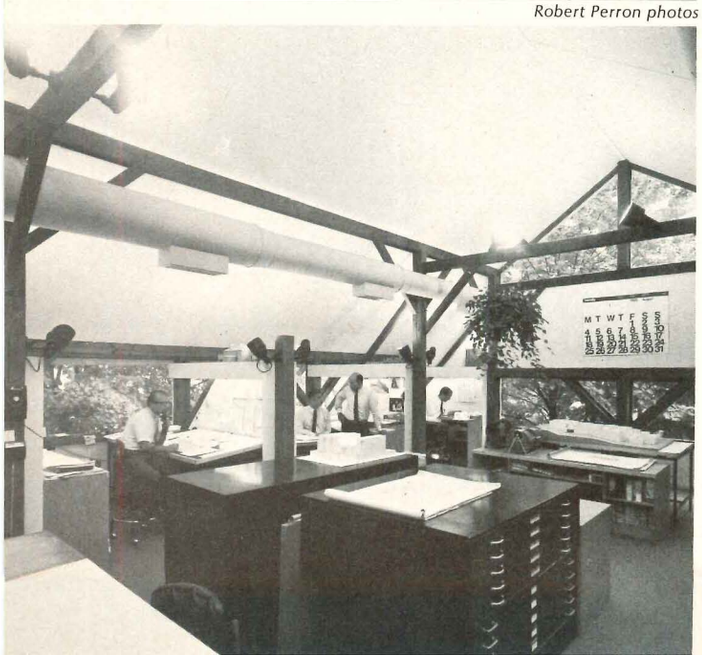
OFFICE OF JOVA/DANIELS/BUSBY, Atlanta, Georgia. Architects: *Jova/Daniels/ Busby, Joseph C. League, Jr.,* job captain; structural engineers: *Prybylowski & Gravino;* mechanical and electrical engineers: *Newcomb & Boyd;* graphics consultants: *Hauser Associates;* cabinet work and custom furniture: *Murphy and Orr Company.*

Reception area (photos right) focuses on semi-circular enclosure for secretary-receptionist. Lighting is generally subdued except for accents, and furnishing are selected for comfort and consistency. Much of the cabinet work is custom-designed. Detailing throughout is carefully conceived and demonstrates the flexibility within the building standard. Nothing seems accidental or left to chance. The over-all effect is vibrant, consistent, persuasive and controlled.

Clyde May photos



Robert Perron photos



FROM VERNACULAR BARN TO ARCHITECT'S OFFICE: A NATURAL AND CONVINCING TRANSITION

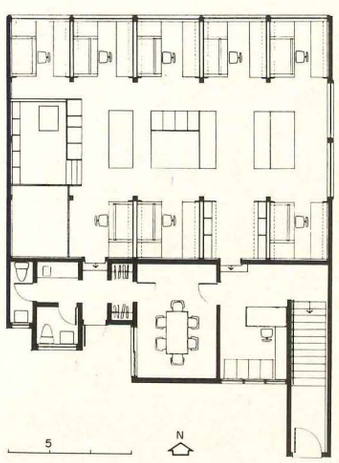
When Eero Saarinen moved his office to Hamden, Connecticut in the early 1960's, Harold Roth and Edward Saad, both Saarinen employees, took a liking to the area at once. An opportunity to open their own practice presented itself in 1965 so Roth and Saad took space on the second floor of a Hamden barn built in 1910 at the edge of a large pond. The pond had been used for many years as an ice quarry by surrounding communities and the barn for ice storage. More recently the structure had become an annex to a public restaurant.

In converting the upper level to their own use, the architects retained the main structural framing including 6-by-6 wood columns and main carrier beams, knee-braced and joined by wood-dowelled mortise and tenon connections. New window openings were cut to fit between the main structural members. The remaining wall and ceiling surfaces were insulated and covered with white tackboard. Floors were carpeted and indirect lighting was introduced in the form of mercury vapor lamps turned upward toward the ceiling. Drafting tables and reference desks were designed by the architects. Toilets, kitchenette, conference room and reception area were provided in a single addition when the architects moved in.

Roth and Saad have a general practice. Saad explains, "We want to be regarded as good thinkers, not specialists in one building form or another." This concern, perhaps implicit in the choice of an old barn over more orthodox rental space, is clearly expressed in the simple but imaginative way that the practical problems of restoration and conversion have been confronted, studied and solved.

OFFICE OF HAROLD ROTH-EDWARD SAAD, Hamden, Connecticut. Architects: *Roth and Saad;* mechanical engineers: *Hubbard, Lawless & Osborne Associates Inc.;* lighting consultants: *Sylvan R. Shemitz & Associates;* contractor: *Donovan Brothers.*

The allocation of space was governed in large part by the exigencies of structure. A pair of column lines (see plan) suggested the development of windowed drafting carrels along the outside walls and the central floor area was then available for files and general reference. The total floor area is approximately 1,400 square feet with a personnel capacity of twelve.



Gorchev & Gorchev

A library designed for intensive community use

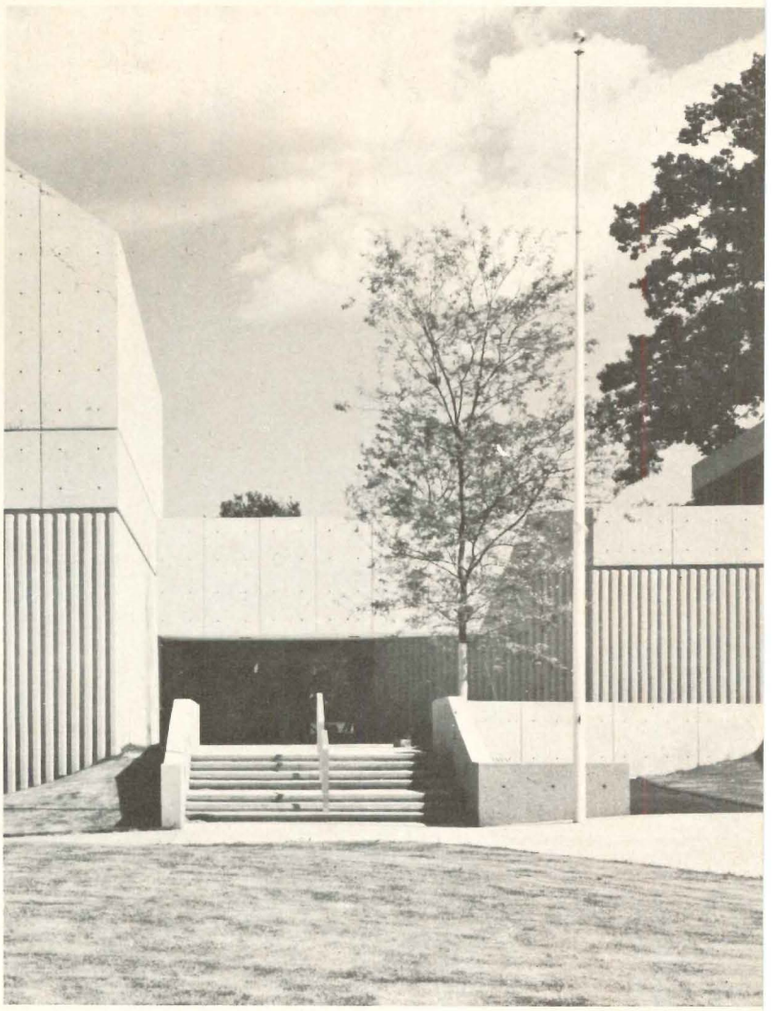
The Brighton Branch Library, designed by The Architects Collaborative Inc., is the first to be completed in a group of regional libraries planned for the Boston Public Library system. As such it offers more substantial services to a greater number of patrons with more demanding reading and reference interests than the typical neighborhood branch library can provide. New in its concepts of library function, it is appropriately original in plan and fresh and attractive in its architectural expression.

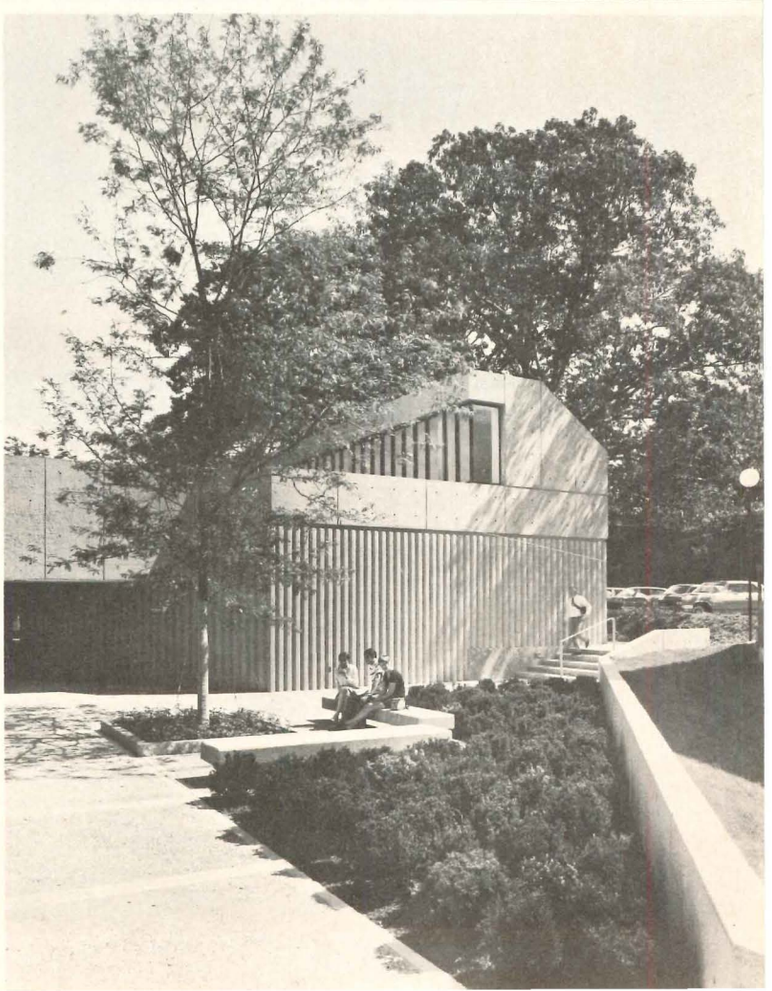
Phokion Karas

A SMALL BRANCH LIBRARY

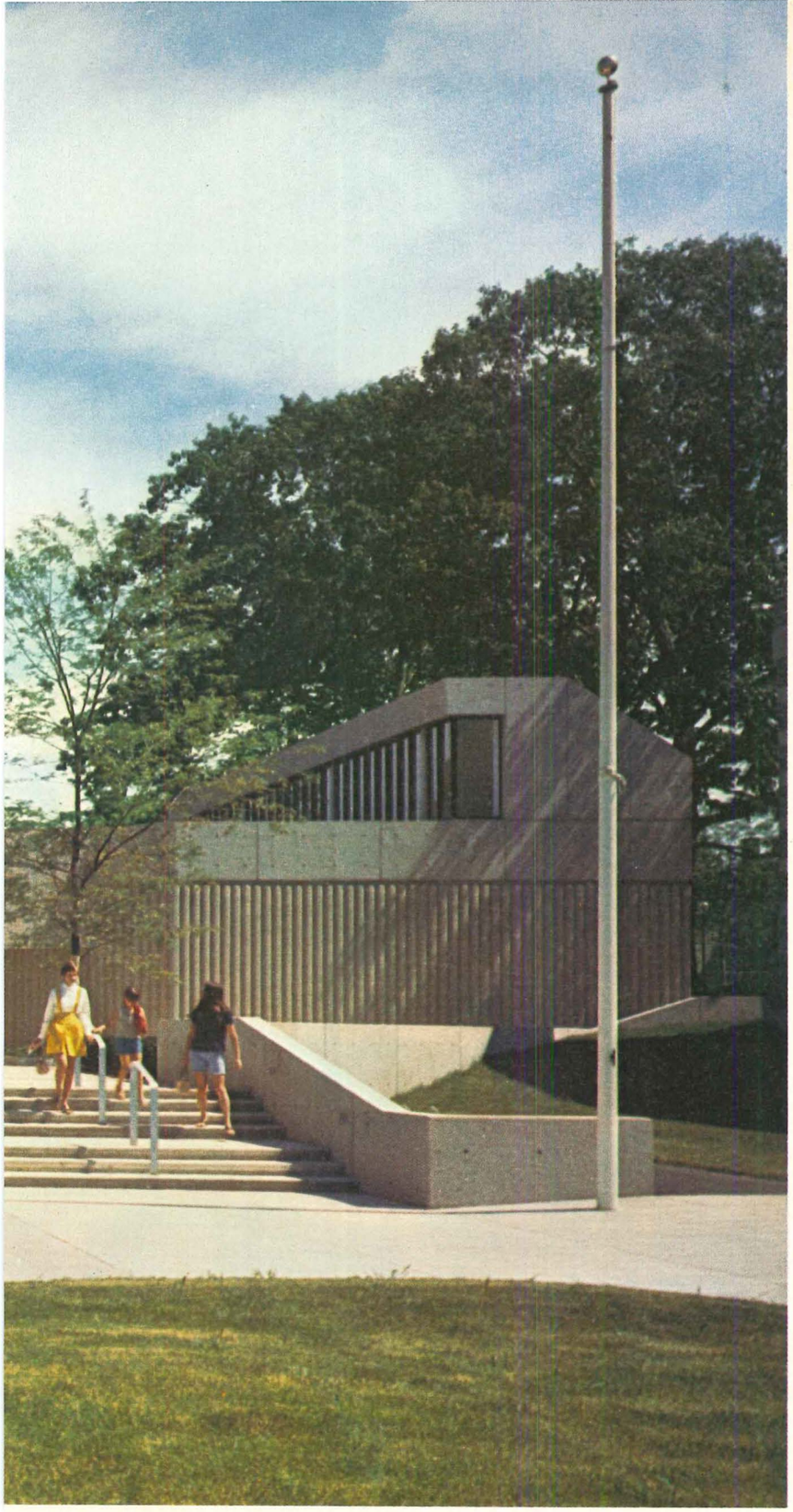
The building is composed of three wings—adult, children and community service—on three levels conforming to the natural contours of the sloping site. The three areas are connected by a ramp system which eliminates the need for stairs and open onto a central entrance lobby and control point. The adults' and children's areas as well as the stacks are daylighted through clerestory vaults of unequal size, both of which appear in the photos (above and right). As can be seen in the plot plan, the three separate wings define three corresponding outdoor courtyards. One serves as an entrance court, another is an extension of the children's wing and the third located just beyond the lobby adds to the pleasantness and openness of that space.

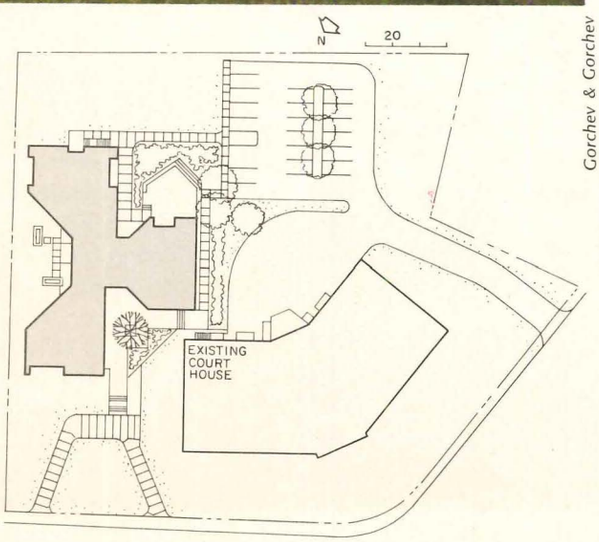
Gorchev & Gorchev

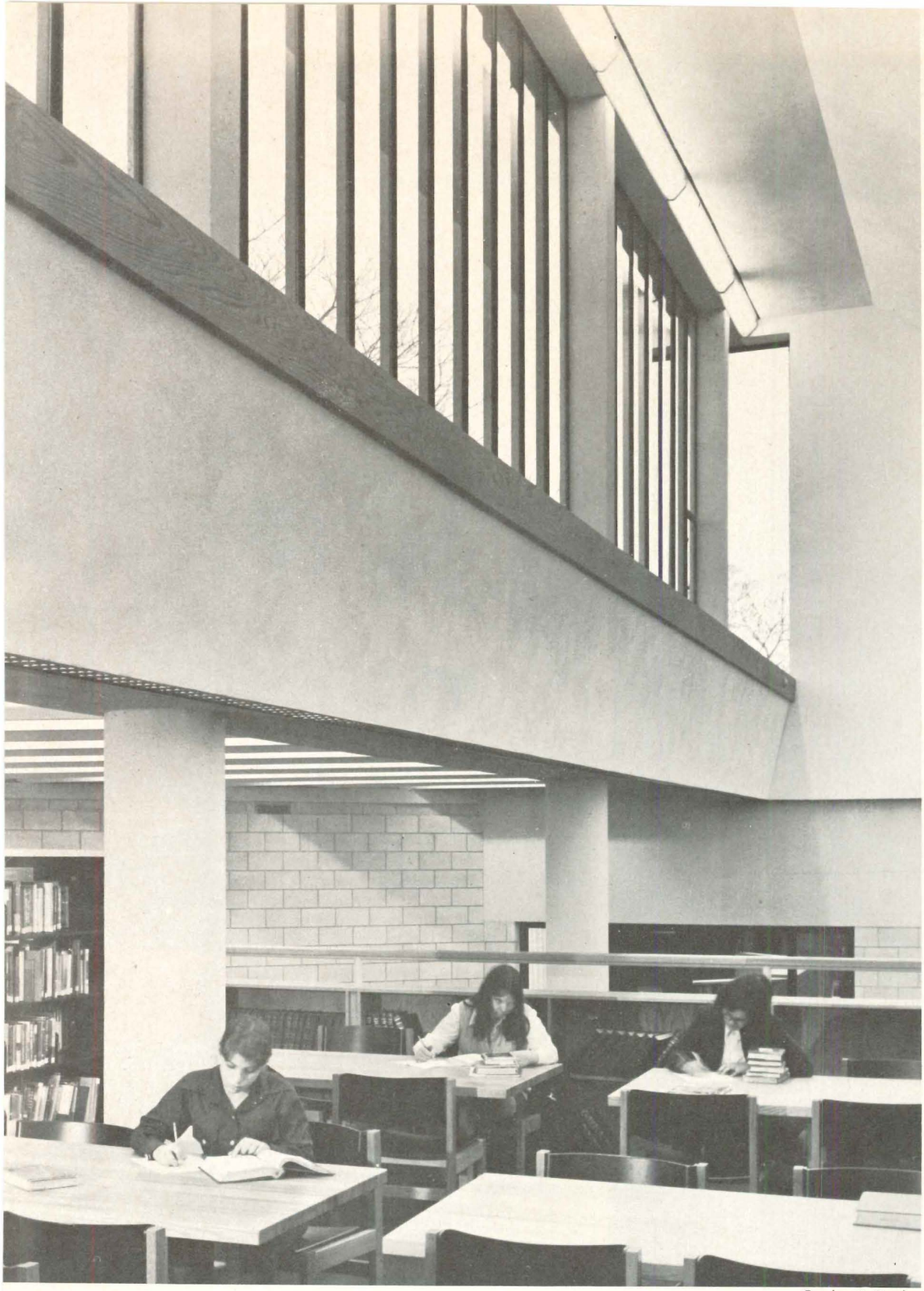


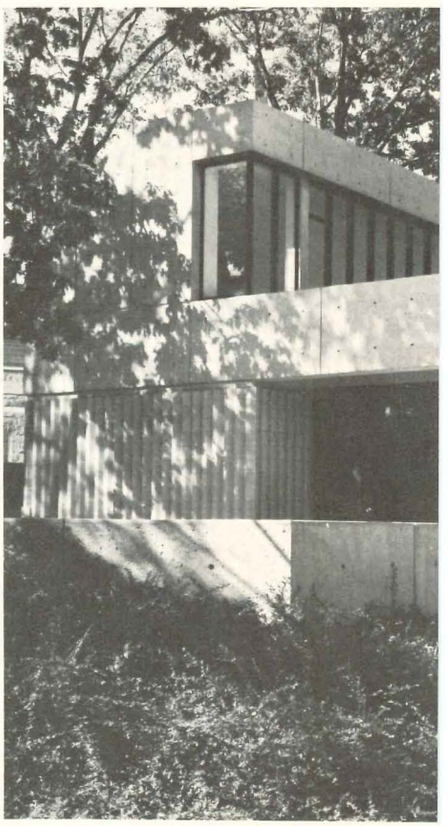


Gorchev & Gorchev







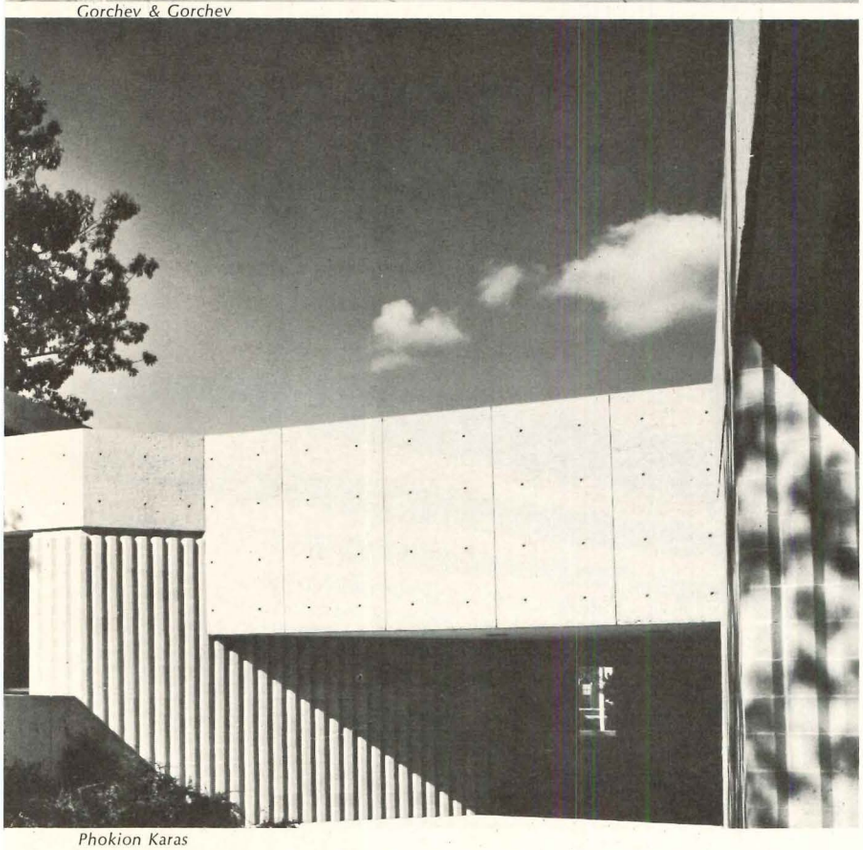


Gorchev & Gorchev

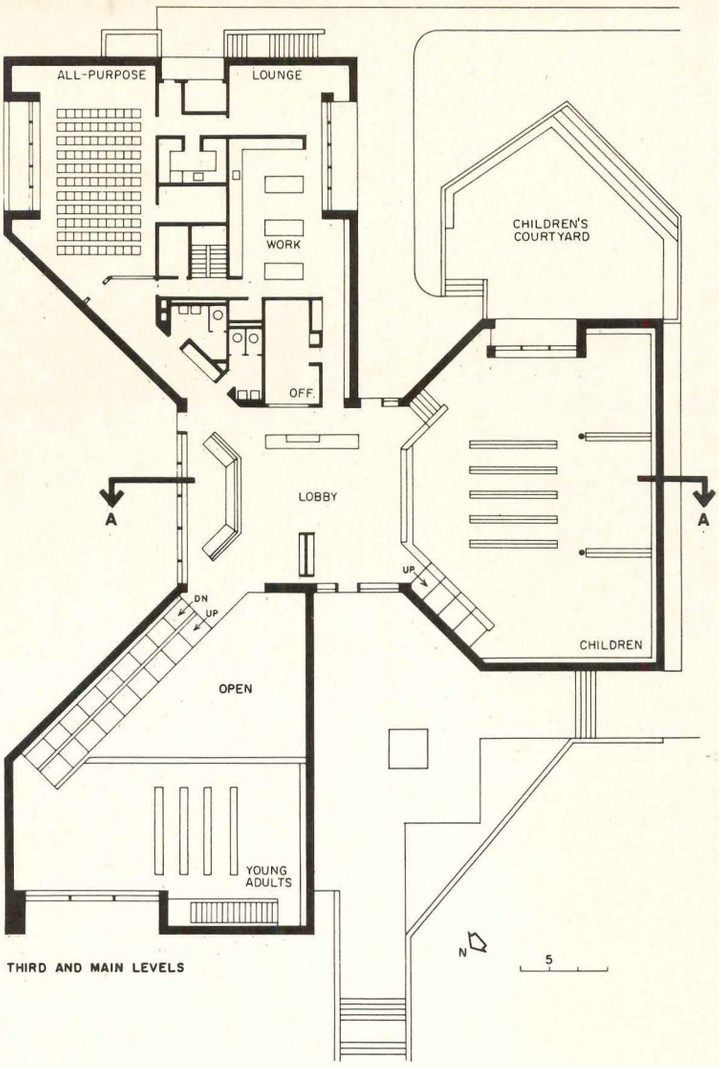
A SMALL BRANCH LIBRARY

The new library shares its site with a neo-classical courthouse and special attention was given to the problem of coordinating scale, color and materials with the older structure. It was considered of particular importance that the library not only relate to the residential character of the neighborhood, but that it not appear too large in relation to the courthouse and crowd it. The architects also hoped to conserve as much of the site as possible for lawns and courtyards. To conserve space and reduce the apparent size of the building the wing designed to house facilities for young adults, adults and stacks has been organized in three tiers at the portion of the site which slopes downward, as shown in the plans and section (right).

Gorchev & Gorchev

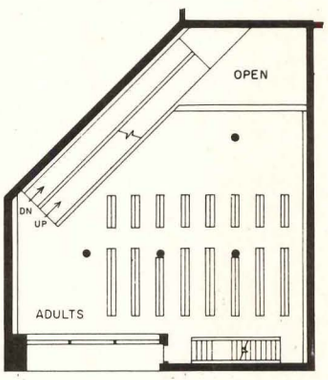


Phokion Karas

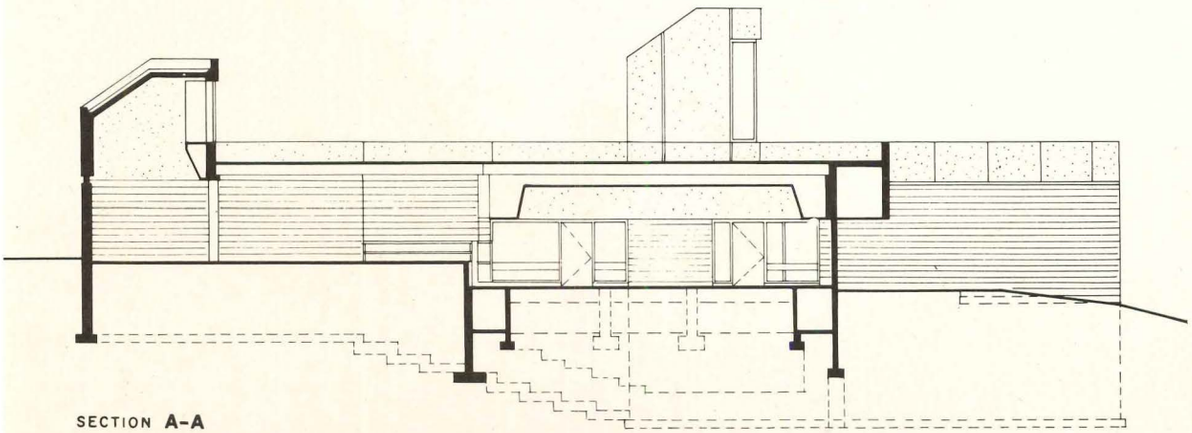


THIRD AND MAIN LEVELS

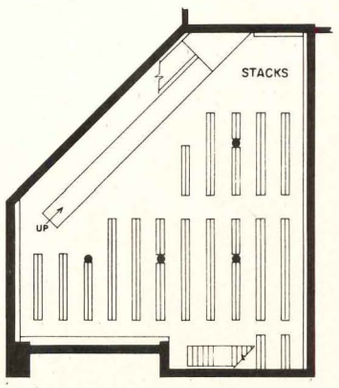
Construction is exposed concrete pan system throughout with cavity block walls. To hold costs down, concrete block is exposed on the interior, the air space is insulated and hexagonal profile block is used on the exterior. The roof monitors are exposed concrete on the exterior and sand finished plaster on the interior. The entrance lobby has a low ceiling (above) which accentuates the contrast between its scale and that of the polygonal wings which radiate from it. The low ceiling also dramatizes the entrance (left). The clerestory (opposite page) can be seen above the three-storied wing.



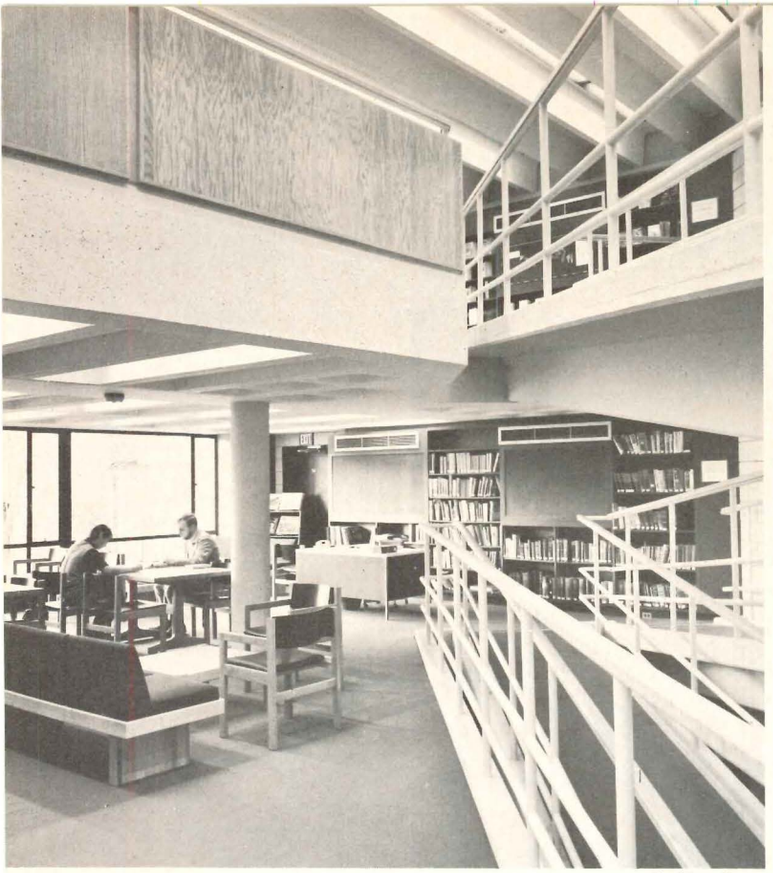
SECOND LEVEL



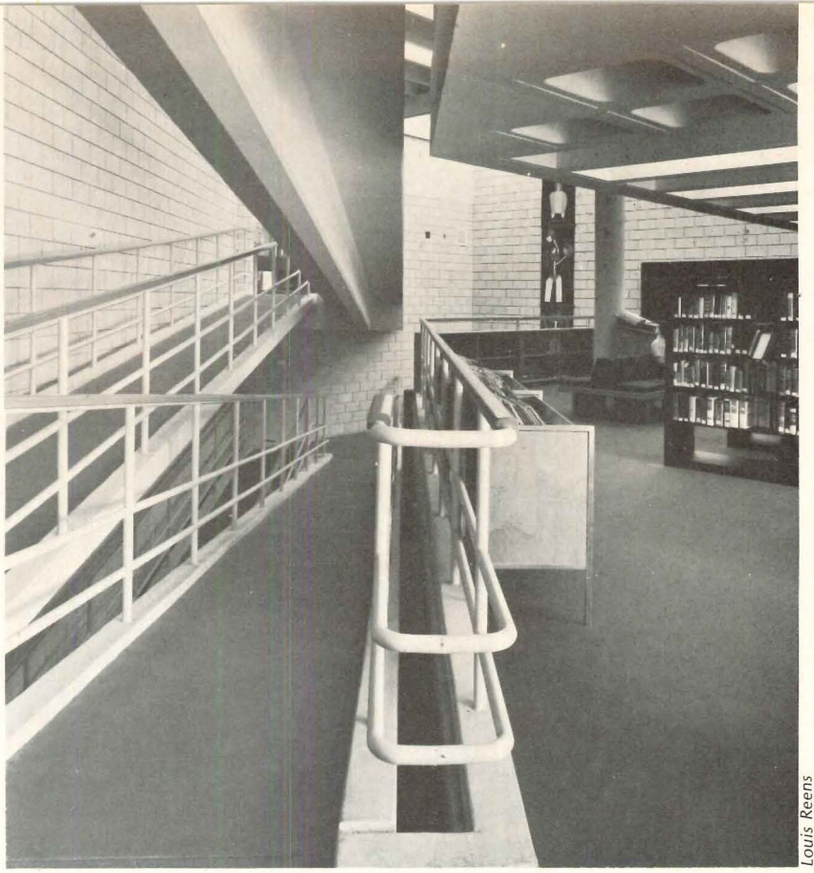
SECTION A-A



FIRST LEVEL



Phokion Karas



Louis Reens

A SMALL BRANCH LIBRARY

Shown above is the ramp system in the three-tiered wing. The children's wing (below) overlooks the lobby-control area. Well scaled, it occupies an entire polygonal wing, and has its own reading or story telling court. The entire library, including the adult and young adult section and the stacks has a 79,000-volume capacity. The total building cost was $596,000.

BRIGHTON BRANCH LIBRARY, Brighton, Massachusetts. Owner: *Boston Public Library*. Architects: *The Architects Collaborative Inc.—principal-in-charge: Norman Fletcher; associate-in-charge: Michael Prodanou;* structural engineers: *Souza & True;* mechanical engineers: *Reardon & Turner;* electrical engineers: *Verne Norman & Assocs.;* contractor: *Michael Racioppi Inc.*

Louis Reens

Within the design of urban housing, three broad categories of processes act together to affect and regulate the patterns we can eventually see in our cities; they are building technologies, the accumulation of money to pay for housing, and the allocation of land to put it on. Changes in these processes are occurring, and architects, who find themselves involved more and more in the design of housing, will be affected by these changes.

- Innovations in our housing technologies are not just underway, they are here. It has always been just a matter of time before factories for the production of large-scale modular and panelized housing systems were built here, and their first units erected. The three industrialized housing projects shown on pages 116-123 are nearly complete, and more will surely follow.
- Money patterns are being shifted slightly, but the established system of loans at market interest rates from private banks, meeting the private goals of the borrower, are still with us. Question: is it the most legitimate system; certainly no new major techniques for financing housing have been clearly established yet, though some tentative changes are worth noticing.

Federal government housing subsidy programs finance a larger and larger percentage of the total units built each year. The use of "turnkey" methods (contracting for the purchase of completed new housing from private developers or builders) by our long-established public housing authorities is one new financial program, and it places a large amount of responsibility and control within the jurisdiction of the architect or the contractor, if either is willing to assume the role of developer.

Federal 235 and 236 programs have stimulated housing in the last two years, as they were intended to do. Neither of these programs encroach at all on the traditional roles of private banks (rather, they seem to reinforce the power of banks) so they are not threatening established financing systems. They simply make it possible for a developer to pay less interest on the money he borrows, thus making the apartments that he builds cost less to the tenants.

The most promising and potentially important change in financing is reported upon here: The New York State Urban Development Corporation, pages 124-131. The UDC may be seen as a prototype; it could be reproduced by other states or nationally, and every architect interested in housing should understand its mechanisms.

- For possible indicators of future urban land policies, there are almost no exploratory actions to mention; we must search for ideas. If we want techniques for improving city housing and/or city life, then our system for controlling city land must be thought about as an obvious prerequisite; the first two cannot be examined without examining the last.

Professor Edward Higbee, an urban geographer at the University of Rhode Island, is one of the people who has comprehensively questioned our urban land policies, and suggests alternatives. In his book titled *A Question of Priorities* (William Morrow Co., 1970), Professor Higbee says: "Present conditions have been brought about by the fact that urban land is bought and sold in thousands of little pieces to individuals and corporations, with no prospect whatever that they might get together for the best interests of the community. This is not antisocial behavior or selfishness at all. It is playing the game according to the rules as they were set up in the agrarian past, when land was the prime source of wealth. Because city revenues are tied to the property tax, city government as a rule goes along with almost any proposal to increase property values regardless of what happens to the city's total activity pattern." Arguing that the symptoms require strong medicine, Professor Higbee says: "The most effective way out of this bind is to take urban land off the market entirely. Possibly what cities need are powerful investment combines which will buy up all the urbanized and urbanizable lands, consolidate them, and manage them as monopolistic public utilities."

Professor Higbee uses, as an example of how his public land utility might work, the Irvine Ranch Company, which owns about 150 square miles of vacant land on the southern edge of Los Angeles. Rather than sell its land in little pieces at large profits, the company has decided to retain title to all of it, and sell 75-year leases to developers. Lease maturity dates will be staggered, but after 75 years, control of a portion of the land will return to Irvine each year, and it can change uses or continue uses according to a comprehensive plan. Of course, Irvine does not have to acquire its land from private owners, as a city would, and it will act ultimately in its own private interests, rather than in a more difficult-to-determine and generalized public interest, as a city would. But the grain of a technique for changing urban land from a speculative commodity to a public utility is there, according to Professor Higbee's convictions.

The visionary scheme by Michael Reynolds that we show on pages 136-138 will depend on something like this kind of transformation in the ownership of city land if it is ever to be built, as would many of the more comprehensive visionary schemes architects are producing today, like Paolo Soleri's remarkable works. But the unlikely prospect that our present land habits will be changed very soon is one reason why such schemes must be classified as visionary in the first place. —*Robert Jensen*

URBAN HOUSING

Industrialized systems, new economic and political processes, and exploratory design ideas are enlarging the consciousness of both the architects and the builders of urban housing. And they are enlarging the scope of actions available to lenders and to all levels of government, as our aspirations begin demanding that populations have better places to live. It is not only a matter of housing, of course —the whole city must be reclaimed for people.

Technologies in housing: The first projects of several modular and panelized building systems are nearing completion—systems designed on this side of the Atlantic to be compatible with our own techniques of contracting and fabrication. They are handsome, flexible and can provide a comfortable margin of freedom for personal design expression. These technological changes may bring new involvement of architects in housing around our cities, where we need the ability to increase unit production significantly, and where there is dwindling room for tract housing.

Eigger & Forer Inc. photos

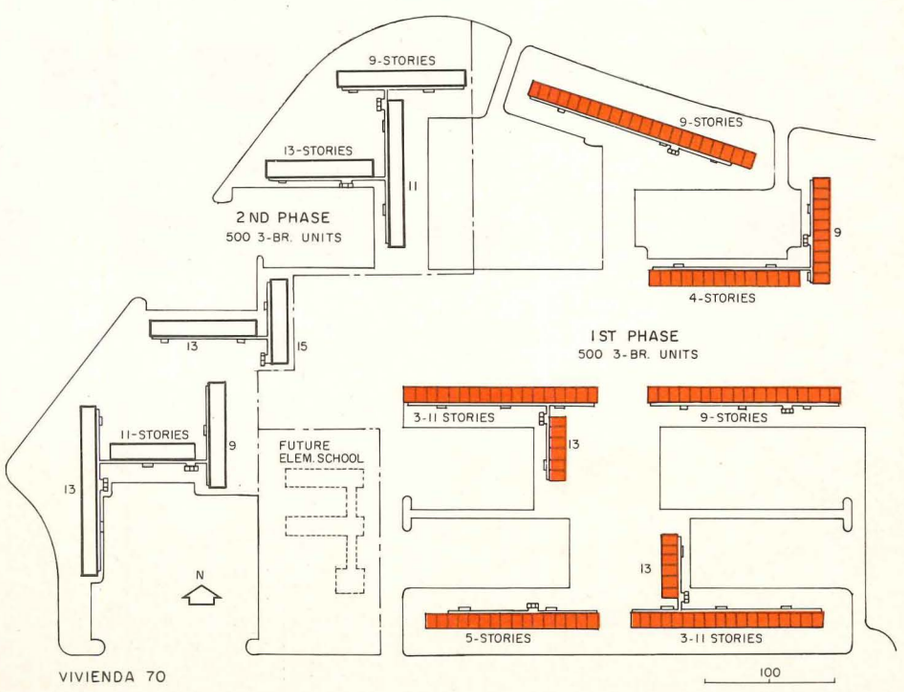
1 Vivienda '70 in Puerto Rico: Shelley System's first project is nearly

■ One of the most believable of the Federal government's 22 Operation Breakthrough winners last year was Shelley Systems Inc., because they had a stacked modular high-rise project actually under construction, and they could show pictures of it. Now that project is nearly complete, as shown on these pages. Vivienda 70 is the first factory-produced stacked concrete box project to be built on this side of the Atlantic since Habitat 67 in Montreal. It has 500 units nearly complete in its first phase (shown in color at right) and will have an equal number of units in the second phase, now in working drawings and shown unshaded. All of Vivienda 70's apartments are identical three-bedroom, one bath plans, and they will be sold outright as condominiums to "moderate income" families (between low income and middle income) in Puerto Rico. Right now it is estimated that the units will sell for $14,000 apiece, unfurnished.

In the Shelley System, the cast building modules are fitted together in checkerboard fashion, providing spaces between modules that are approximately as wide as the module itself. These spaces are used as living areas, after enclosure on their ends, and they eliminate duplication of walls and slabs. The inventor of this "checkerboard modular" concept is Mr. S. W. Shelley and he is chairman of the board of Shelley Systems Inc. Mr. Shelley worked as an engineer, designer, and contractor in various parts of the world before coming to Puerto Rico in 1961, setting up his own engineering/builder firm there, and eventually evolving his housing system.

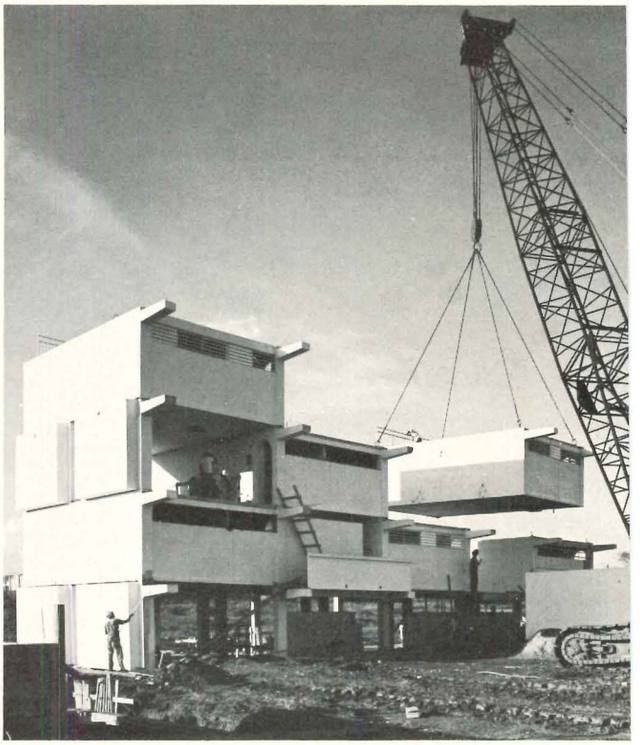
The boxes for Vivienda 70 were cast in an on-site factory which can be seen in the upper-right portion of the aerial photo above. This factory will be dismantled after the third stage of Vivienda 70 is complete, and at that time the project should contain 1,500 units. That is the number originally calculated to make the fabrication and operation of the box molds

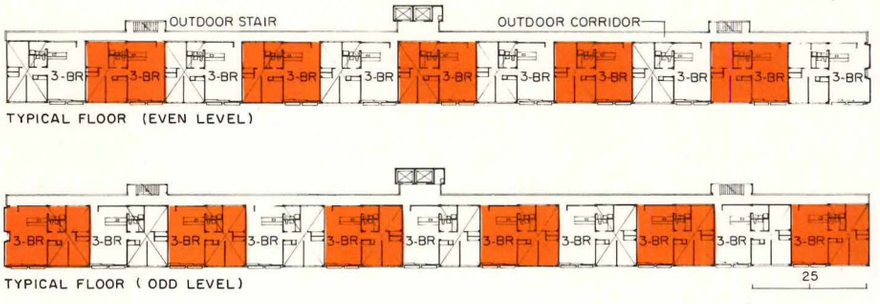
complete



VIVIENDA 70

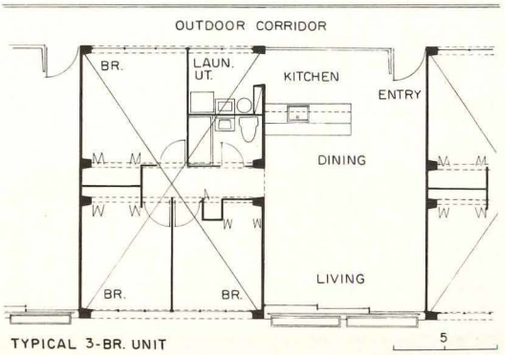
These photos show several modules on the ground, waiting to be set in place by crane. Simple jalousie windows are installed on the modules at the factory; they are placed high on the wall at the corridor side, and occupy the whole wall surface on the "view" side. The curving corridor elements of Vivienda '70 (left and right) occur at the meeting of one "slab" of units with another one, running at 90 degrees to the first. This occurs three times in the first stage scheme, and will be repeated more often in the second (see site plan, preceding page).



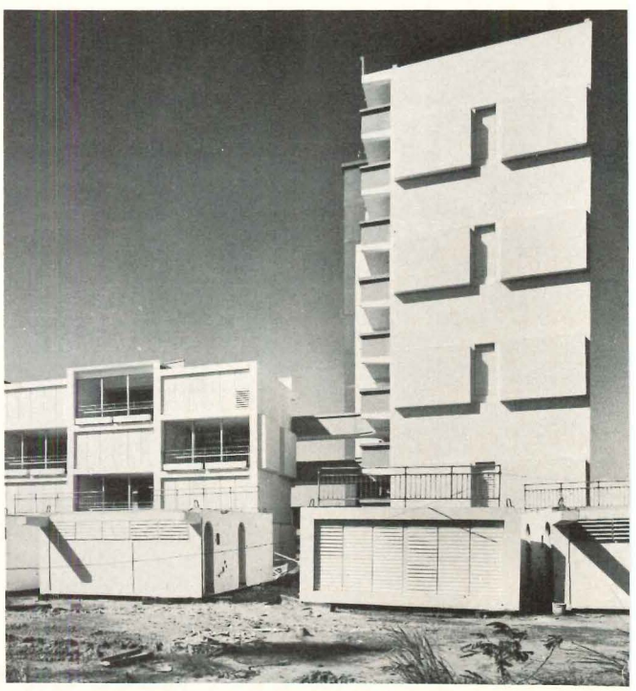


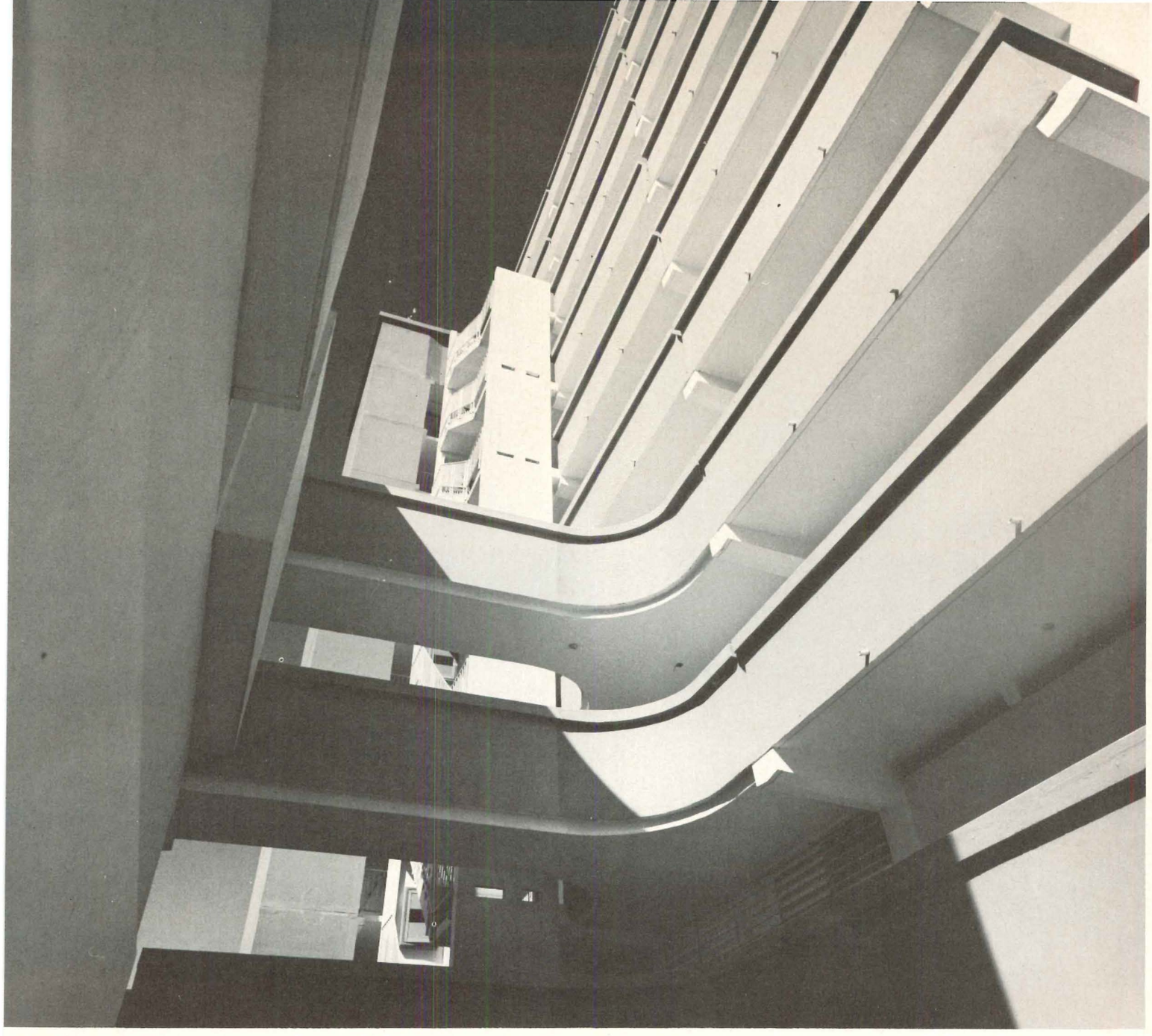
TYPICAL FLOOR (EVEN LEVEL)

TYPICAL FLOOR (ODD LEVEL)



TYPICAL 3-BR. UNIT





profitable, and the industrialized processes less expensive than conventional construction. Only two molds were originally built for casting the boxes (one left-hand- and one right-hand-version of the same three-bedroom—one-bath units) and the factory could make two complete boxes per day, one from each mold. As the project progressed, two more identical molds were added, so the site capacity is now four units per day. In the plan at left, each section marked with an "x" is a cast box, and a complete unit is shown in color.

The overlapping edges of the checkerboard modules allow chases for utilities to be aligned vertically within the building. The boxes are cast with load-bearing columns and thinner walls, reducing their weight. A typical building can be erected with conventional equipment to 22 stories, and the post-tensioning of modules one to the other greatly increases stability.

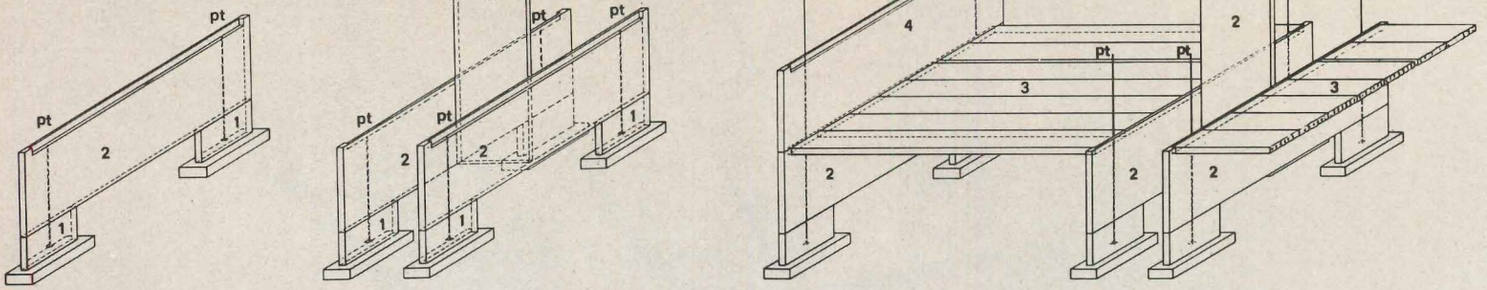
Vivienda 70 is financed by the Puerto Rico Urban Renewal and Housing Corporation, which was consolidated in 1957 from four housing authorities that have been building various subsidized projects in Puerto Rico since 1938. Vivienda 70 has been built with money from bonds guaranteed by the Commonwealth Government rather than the Federal Government, whose housing money is also available in Puerto Rico. It is estimated that Puerto Rico has some 400,000 families whose incomes are too high to be classified as "low income" (thus eligible for Federal subsidies) and too low for them to purchase adequate housing on the private market. Vivienda 70 is designed for this group, and it is interesting to compare Vivienda 70 with the low-rise projects next to it, shown in the aerial photograph on the preceding page. These are also moderate income units, built within the last five years.

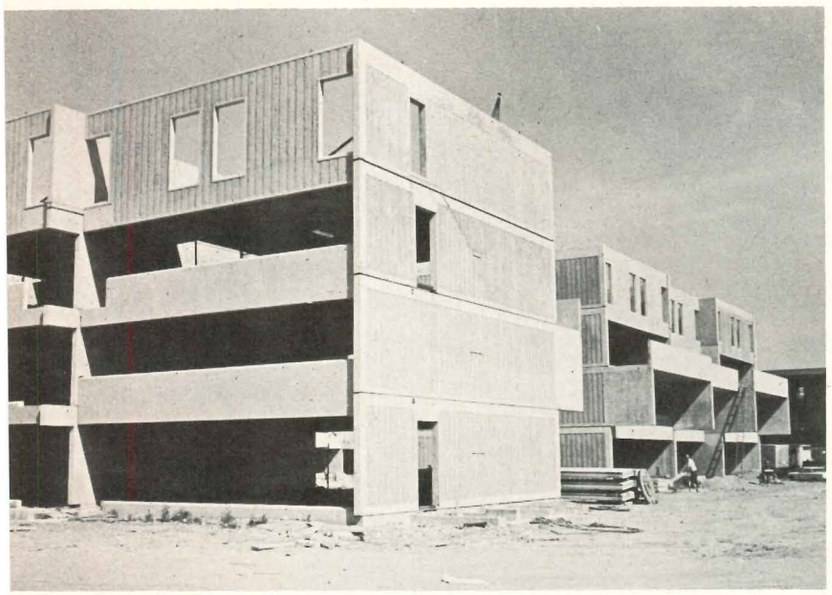
Vivienda 70, according to the Shelley Systems people, cost about $9.50 a square foot to build, not counting the cost of land and landscaping. This compares well to the $12.00 a square foot that a conventional housing project costs in Puerto Rico, without land or landscaping. These are extraordinarily low compared to mainland costs, but labor is cheaper in Puerto Rico, and the housing has no heating, air conditioning, or insulation; that's the way you can build in tropical climates.

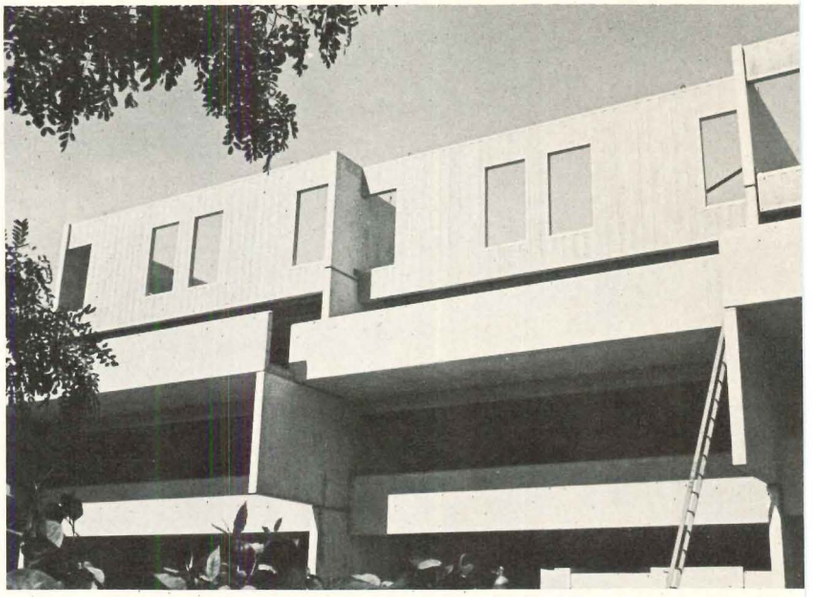
Shelley Systems now has a New York City office, and they are planning several projects in the Northeast that they hope will be made final early this year. The system is also under construction at the Memphis, Tennessee, Operation Breakthrough site, so we should be seeing more of Shelley's housing quite soon.

VIVIENDA 70, Santurce, Puerto Rico. Architect: *Shelley Systems, Inc.; S. W. Shelley,* inventor, contractor, and developer; *I. Herman Bassin,* operations and construction; *Andrew Gyimesi,* chief structural engineer; *Dr. August B. Komendant,* structural consultant.

The typical Sepp Firnkas system uses the procedure and components at right, while allowing for a variety of shapes and dimensions. After footings are poured, precast foundation walls (1) are set in place up to grade and post-tensioned to the footings. Then the first-floor bearing partitions are placed, (2) as much as 32 feet apart, and post-tensioned to the foundation walls. Bearing partitions can be set vertically as shear walls for the whole building, at stairs, elevators, or mechanical equipment shafts. Finally, the floor slabs (3) are placed, the second floor partitions are set over them, and the whole is post-tensioned to the preceeding work, squeezing the floor slabs between the walls in a rigid bond. Floor slabs can be standard concrete planking of any thickness.







2 North Harvard in Boston: a concrete panel system improves with age

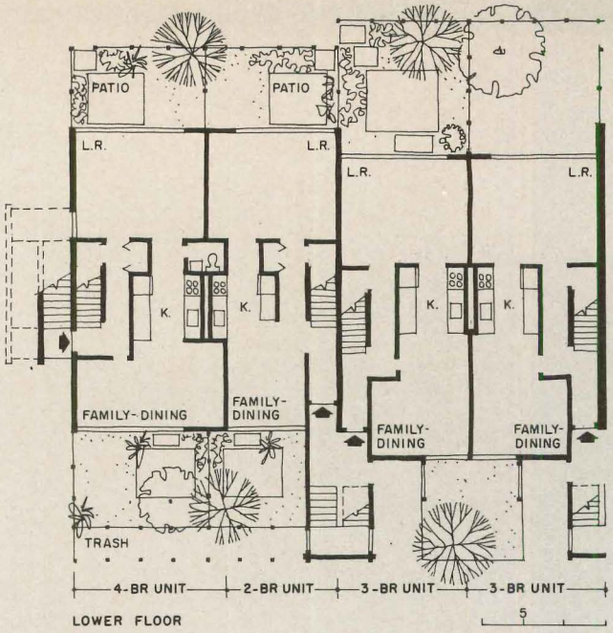
■ The precast panel system shown here has been used to create over 2,000 completed units of housing in various projects since 1967, so it is one of the "oldest" of the modular systems designed in the United States. It is not a patented system, having been developed first for the 1967 Roxbury housing project in Boston (see RECORD March 1967, pages 187-194) at which Carl Koch was the architect, Sepp Firnkas was the structural engineer, and San-Vel was the concrete precaster. Each rightly claims a share of the credit for the system's creation. Since that time, it has been continued by Carl Koch as Techcrete, and by Sepp Firnkas as the Sepp Firnkas System. Firnkas is the engineer on North Harvard so we may properly call this the Sepp Firnkas System. It is easily changeable to meet the special conditions of a site, or the special tastes of a designer, and in the hands of the PARD TEAM architects of Boston, in the North Harvard housing project on these two pages, it exhibits a remarkable visual and technical versatility.

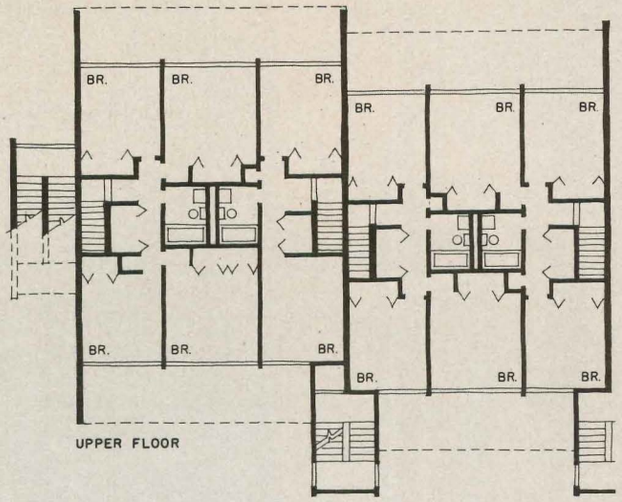
Sepp Firnkas sees North Harvard as the best "second generation" use of his system to date. One principal difference in North Harvard over previous designs is the use of spandrel beams to stiffen the edges of each floor slab (standard prestressed concrete floor planks are used throughout the system), and the use of an "overlap" detail in the joints between panels, to improve casting. With these additions, the established erection sequence and parts of the Firnkas system remain in use at North Harvard, as explained in the three-stage diagrammatic sketches above.

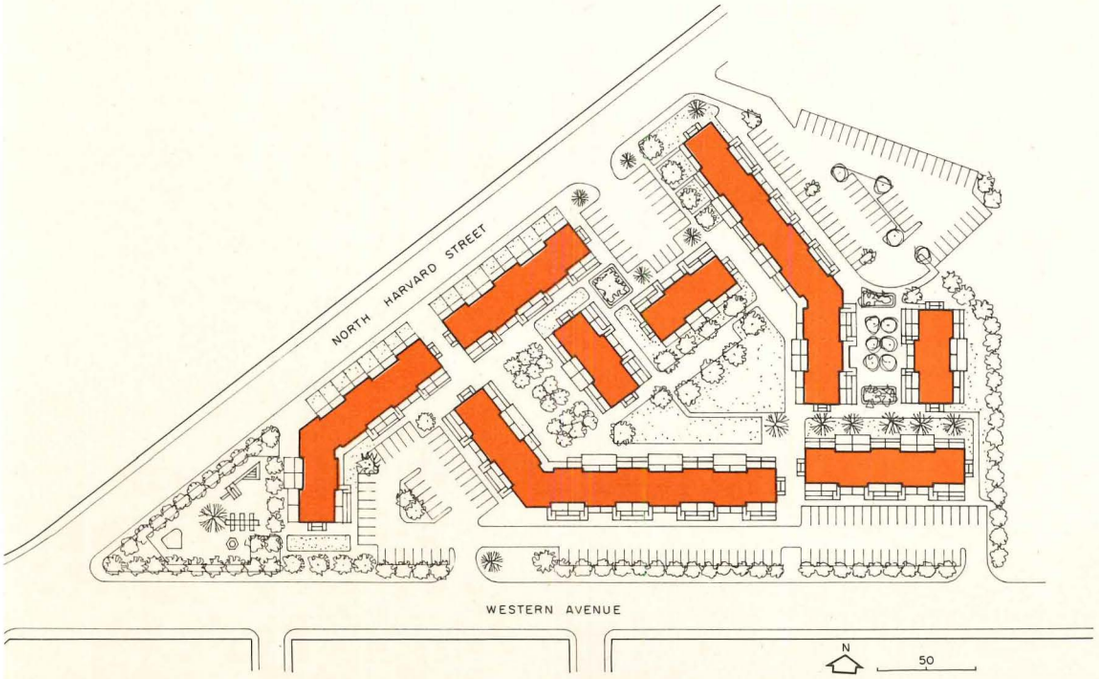
The North Harvard site has been controversial since its initial clearing, when local citizens resisted being removed from their housing. The Boston Renewal Authority originally had planned a high-rise apartment structure on the site, but after objections, the residents of the area formed a non-profit corporation called Charlesview Inc. to develop the site using Federal 221(d)3 financing, and hired the PARD TEAM as their architects.

All of the apartments are duplexes, and each one has either an enclosed garden area on the ground floor or a full-width balcony at the third floor. The balconies are carried by extending the bearing wall partitions between apartments out in a six-foot cantilever, and leaving these thin partition extensions a full eight feet deep. These extensions become rhythmic screen walls for the second floor windows, as shown in the photos above. On the opposite side, the stair towers make an equally powerful rhythm along their facades.

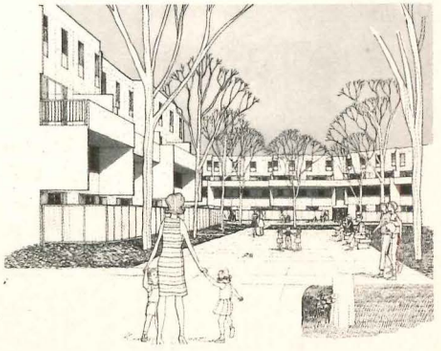
NORTH HARVARD PROJECT, Boston, Massachusetts. Architects: PARD TEAM Inc.; *Samuel E. Mintz and Fernando Migliassi,* principals; *Joseph Guerino,* associate. Structural engineer: *Sepp Firnkas;* mechanical and electrical engineers: *R. G. Vanderweil Inc.;* general contractor: *Vappi and Company;* precast contractor: *San-Vel Concrete.*



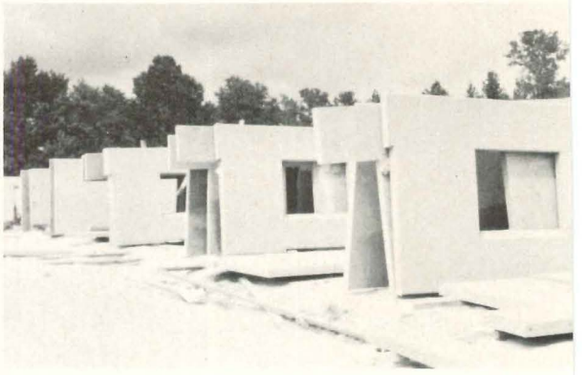




The North Harvard site plan (left) has been arranged to give closure from the street on three sides of the project, with a major space in the center. There are no other residences adjacent to North Harvard, so this "closed" arrangement provides a sense of neighborhood cohesiveness. The city required 100 per cent parking capacity on the site, and a 50-foot setback along Western Avenue. There are 72 one bedroom units, 40 two bedroom, 60 three bedroom, and 40 four bedroom units on the 5.7 acre site.



The photograph at left, taken in February of this year, shows the almost completed Luther Towers. There are only two kinds of apartments —efficiency and one-bedroom— in the building, organized along the usual double-loaded corridor system. In this building, plumbing was installed after the service modules were in place, but in future ones, fixtures and plumbing (or whatever the core modules contain) can be installed in the shop. The efficiency units, designed to maximum FHA dimensions, seem unlivably small. This is the fault of Federal standards, not the building system, and it would not be inappropriate to push for changes in the standards that dictate such spaces. The four photos below show stages of the work in progress on the site.



3 Luther Towers in Memphis: the MLS concept is one of the most sophisticated to date

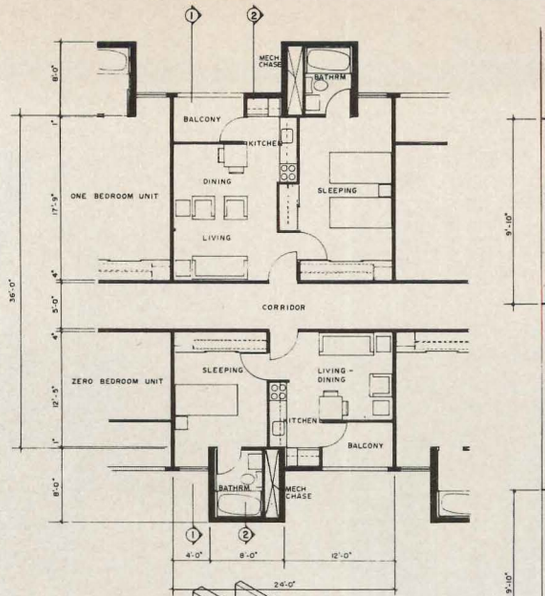
■ Luther Towers has gone up in Memphis, Tennessee, without fanfare, and it is in fact similar at first glance to the many other high-rise housing projects for the elderly that Federal housing agencies have been producing all over the country. But Luther Towers is the first completed project constructed using the Mah-LeMessurier building system—a system that in many ways is more flexible and efficient architecturally than any that have preceeded it here or in Europe. The MLS concept is explained in detail on pages 139-144 of this issue; it is sufficient here to point out that it is a combination panel and "box" system in concrete, that it can be fabricated by almost any precast concrete firm presently working, without need of any special forming machinery or techniques, and that it is remarkably efficient in the amount of concrete it uses per cubic feet of space enclosed.

Luther Towers is a FHA subsidized 236 project for elderly low-income citizens, sponsored by the Lutheran Services of Tennessee. It creates 196 new units on 13 floors, and should be ready for occupancy June 1st of this year. Walk Jones and Francis Mah are the architects, and the system itself is named for Mr. Mah and for the Boston engineer William LeMessurier, who played key roles in its development. Actual work on Luther Towers began August 1st of 1970, and this ten-month-construction-time compares well with the 18 to 20 months needed for similar projects in the Memphis area.

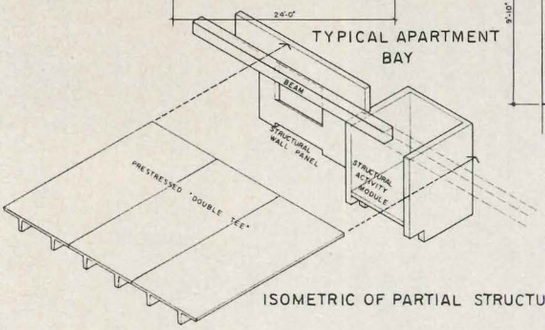
The key to Luther Towers are the U-shaped channels called "service modules," which contain all the bathroom facilities for each apartment, plus the vertical plumbing chases, and are the principal structural supports for the building. In other designs they may also contain kitchens, mechanical equipment, or stairs. Horizontal beams span between the service modules as shown in the Luther Towers mock-up at right, and these beams carry the horizontal floor system of prestressed "double tees". The exterior panels are then applied between the service module towers, and outside the flooring system.

According to Walk Jones, Bill LeMessurier was the first engineer to whom they showed their scheme who said positively it would work, and who showed some enthusiasm for further developing the details. Now there are patents pending on MLS; it is encouraging to see an architectural and an engineering firm involved aggressively in the design, development, and sale of a whole system, not just one building.

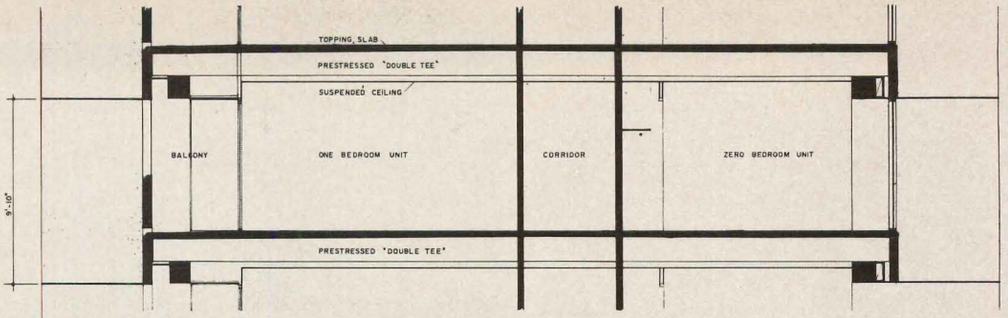
LUTHER TOWERS, Memphis, Tennessee. Architects: *Walk Jones + Francis Mah, Inc.* Structural engineers: *William J. LeMessurier & Associates;* electrical engineers: *Walk Jones + Francis Mah, Inc.;* mechanical engineers: *Ellers, Reaves, Fanning and Oakley;* contractor: *Alodex Construction Co.;* precasters: *White Stone Co. and Shelby Precasting Co.*



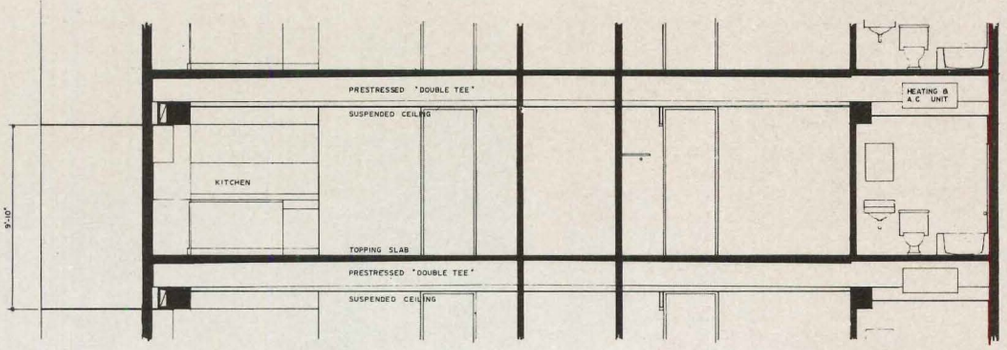
TYPICAL APARTMENT BAY



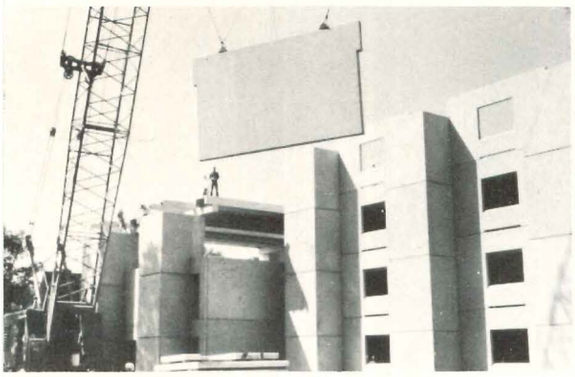
ISOMETRIC OF PARTIAL STRUCTURAL BAY

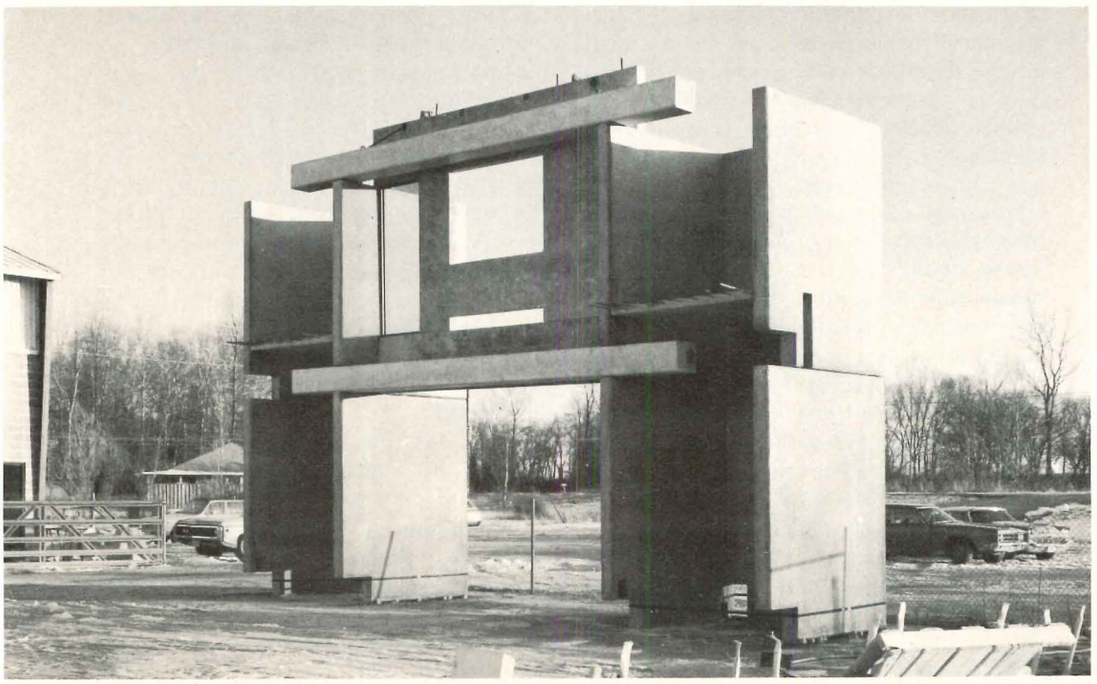


SECTION 1

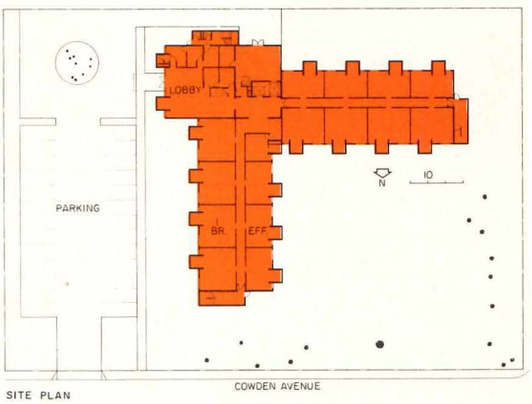


SECTION 2





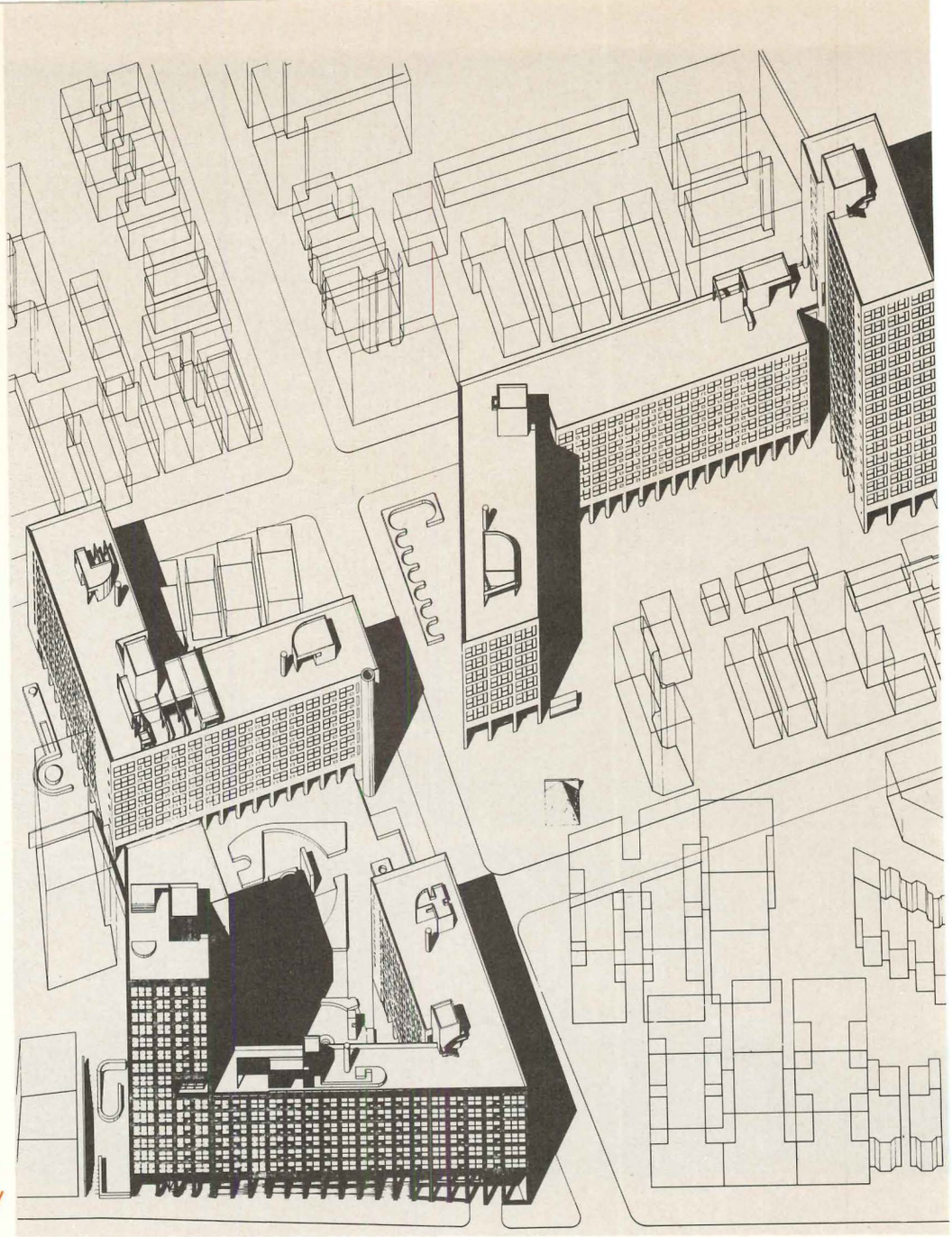
Otto Baitz photo



SITE PLAN

Note: The Mah-LeMessurier Building System on these pages is explained in more detail on pages 139-144 of this issue, in the Architectural Engineering *section.*

Economics and politics in housing: New York State's Urban Development Corporation is using revolutionary mechanisms to provide new housing all over the state.
The mechanisms of direct land purchase, private property condemnation, the overriding of local codes, and the power to issue independent bonds, are techniques that could be applied nationwide to provide housing for those who need it.
And with the Urban Development Corporation, there is a commitment to good architecture expressed dramatically in their first projects.



■ Most of the roadblocks to adequate housing for our urban populations are not technological; far from it. They are financial and political, and they affect the practice of architecture and engineering every day by blocking needed housing before it can even get so far as a first sketch. Just as we are now completing the initial projects of several newly devised technical systems for housing in the United States, we are beginning to slowly draw the outlines of how this country's financing and political structures can be shifted to give people housing they are pleased with at a price they can pay.

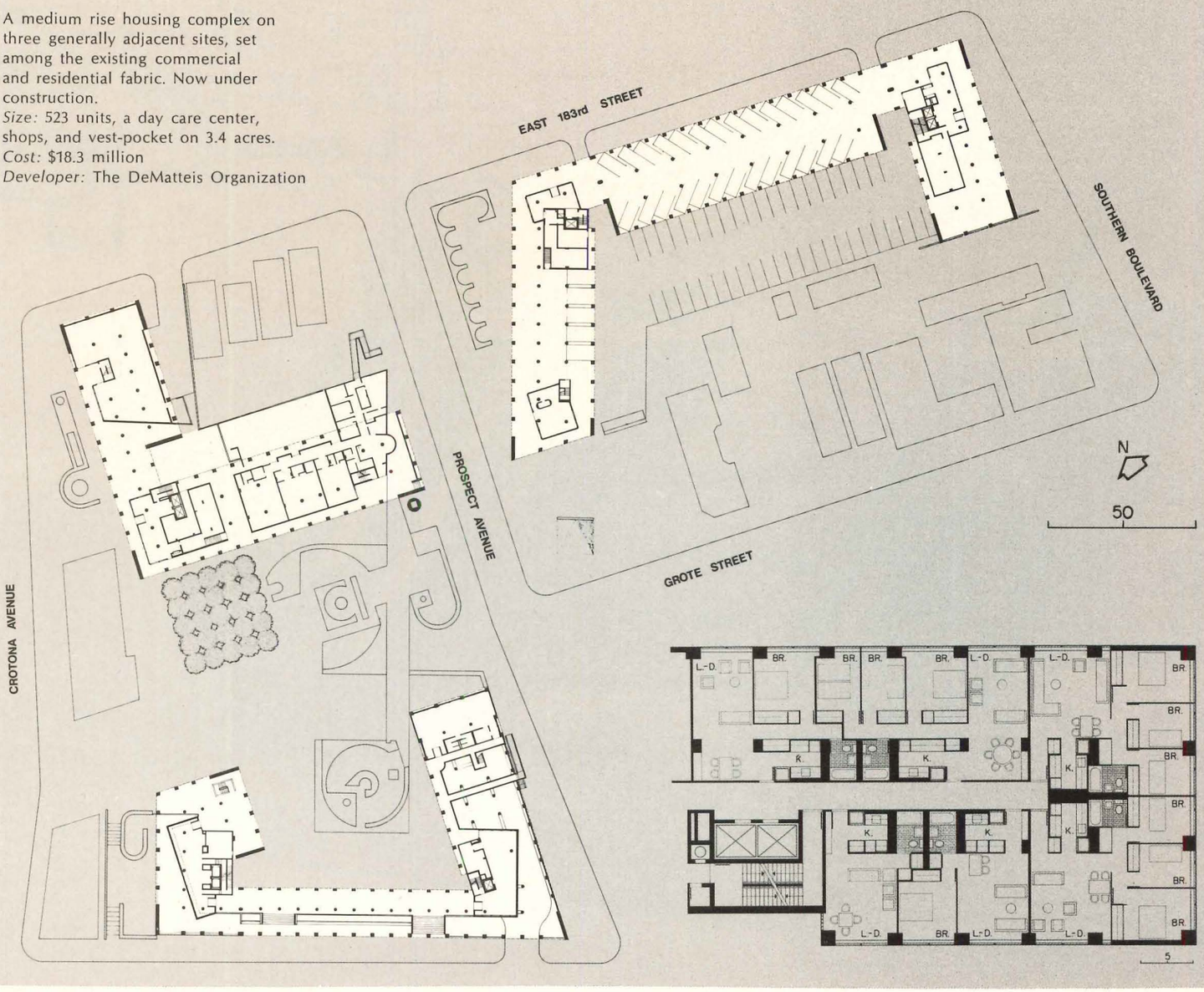
There aren't many such shifts underway, but one of the most effective and promising to date has been the creation of the New York State Urban Development Corporation, in April of 1968. This state organization, headed by Edward Logue, is directing nearly all of its efforts toward creating new housing in New York where that housing is needed most: near the largest urban centers of the state, for its middle and lower income people. As other regions of the country begin developing their own tools and housing, they will be discussed; for now, New York State appears to be the first to move decisively, and its system could be applicable to the country as a whole. The UDC has an extraordinary commitment to good architecture, as indicated by its first projects shown on the following eight pages, and it has the kind of financial and political muscle we must attempt to understand, and to use.

Exceptional political powers have been given to UDC

The UDC has had some unusual abilities granted to it by the New York State Legislature; these abilities are essentially political, and they are powerful, useful tools. First the UDC has the power to condemn private property, subject to the general condemnation laws of New York. It has yet to use this power, but in foreseeable cases it could require, if the UDC believed the housing

The UDC's Twin Parks Northeast project in the Bronx; Richard Meier Associates, architects.

A medium rise housing complex on three generally adjacent sites, set among the existing commercial and residential fabric. Now under construction.
Size: 523 units, a day care center, shops, and vest-pocket on 3.4 acres.
Cost: $18.3 million
Developer: The DeMatteis Organization



needs of a community to be critical, that privately held slums or commercial property be sold to the UDC at an agreed price. Second, it may override or ignore any building code or local ordinance in the state that the UDC believes unduly restricts its ability to provide adequate housing. This power has been used in several projects already, and the UDC reports that only in one instance were there any objections. So far, most local officials have been impatient for progress on long-stalled projects, and are willing to see the restrictive codes ignored if it means at last getting something built, particularly in urban renewal sites. Third, they may buy, hold, or sell land on the open market, without being subjected to the usual time-consuming checks on their decisions. This is a common ability in private enterprise, but not in government. While these powers are extraordinary, their usefulness—so far—lies as much in their simple existence as in any direct exercise of them. When negotiating with local politicians or land-owners for a necessary housing project, it is helpful to negotiate from strength.

The ultimate source of UDC's power is its independent financial strength

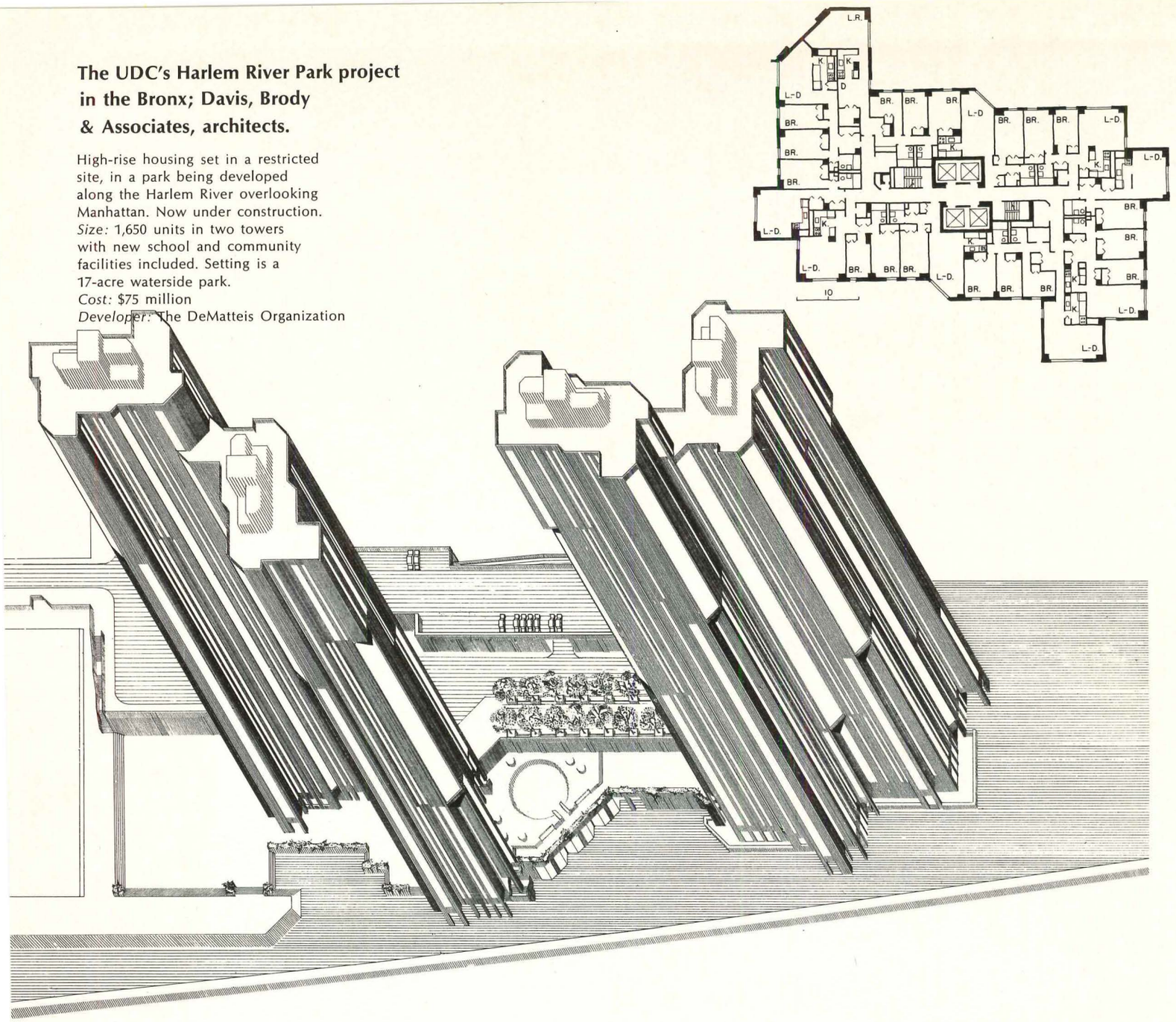
The UDC is financed by its granted ability to issue bonds on the open market. New York State has given the UDC the power to sell up to one billion dollars in corporation bonds, backed by the good faith and security of the state itself. The state's debt service reserve fund is obligated to cover any deficiencies in the UDC's ability to cover debt obligations on the bonds it has issued. The private buyer of UDC bonds thus has the state's word that his money is secure. Bonds sold by the UDC were recently declared exempt from Federal income tax by the United States, making them even more attractive to private investors.

This power to issue bonds is the UDC's primary means of funding, and it doesn't come out of taxes. They had their first bond issue ($250,000,000) early in 1971, and they sold out quickly at a good price (6.6 per cent rate of return). The money on which the UDC has operated from its beginning until this first bond issue, however, did come out of the New York State Treasury, mostly in the form of "first-instance appropriations." These are loans from the state to the UDC; interest-free, but repayable when the UDC begins gathering its own money through its bonds. So far, the state has lent the UDC about $80 million and directly appropriated to them about $8 million; together, this has paid for the costs of designing and beginning construction on the projects we see on these pages, plus the other work underway, the office rent, and administrative salaries.

As for spending, rather than income, the UDC pays for its various projects in about as many ways as a combination private mortgage bank and private developer might pay for the projects it undertakes, but the UDC is not in it to make a profit, and it can do things private-enterprise could

The UDC's Harlem River Park project in the Bronx; Davis, Brody & Associates, architects.

High-rise housing set in a restricted site, in a park being developed along the Harlem River overlooking Manhattan. Now under construction.
Size: 1,650 units in two towers with new school and community facilities included. Setting is a 17-acre waterside park.
Cost: $75 million
Developer: The DeMatteis Organization



never do. It buys property on the open market, clears the land, and may put up the project it has decided upon. Or it can buy or negotiate a lease on a piece of state, city, or county property that the UDC and the current owner/agency believe needs developing, in any way agreed upon. It can buy undeveloped land and hold that land for future development, from new towns to individual buildings. And the UDC itself pays the architectural and professional fees involved in any of its projects.

Besides the bond sales, money to carry any project to completion comes from the same Federal or state housing subsidy programs that are available to the private construction industry. The UDC pursues FHA 236 housing subsidy funds to the full extent those funds are available, as well as other Federal housing subsidy programs (such as Turnkey III) and state funds (such as the Mitchell-Lama Middle-Income Housing Program for limited-profit developers). The Federal 236 program, of course, provides substantial amounts of money nationally, in the form of interest subsidies on bank loans, to builders of middle-income, multi-family housing projects. Seventeen out of the eighteen UDC projects now under construction are partially financed by 236 mortgage money.

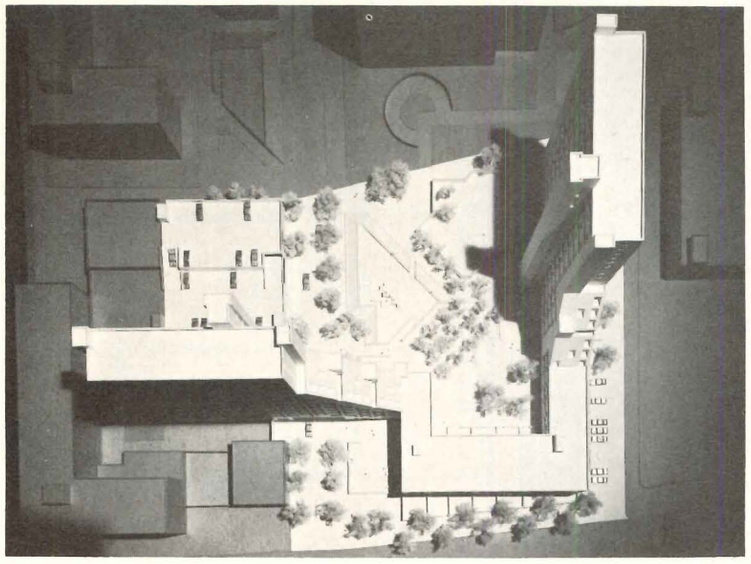
The financing of a typical UDC housing project might be proportioned in the following ways:

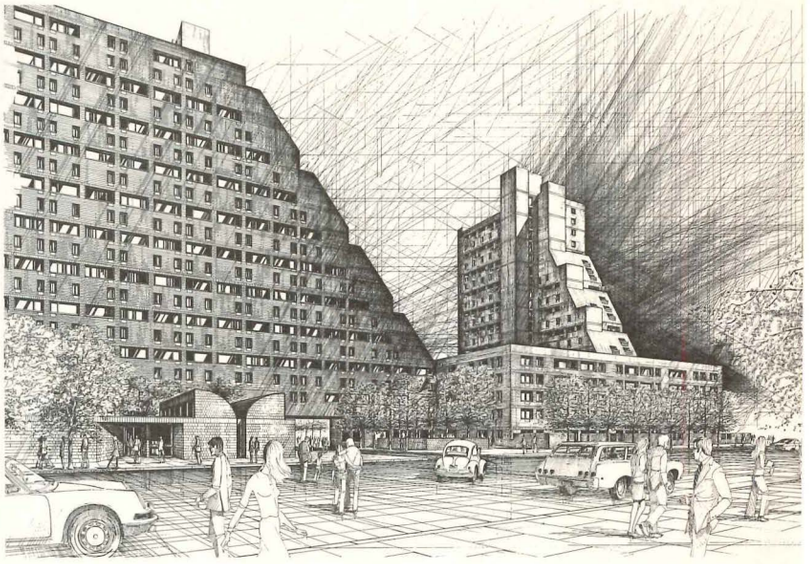
- Initially, the project would be granted a direct loan of UDC funds from its power to issue bonds, at an interest rate below that of the private market. This money, similar to Mitchell-Lama funds, is designated for "middle income" projects, and achieves housing in the $55-$70 per room rental range. (The "middle income" classification in Mitchell-Lama means a family of three may have an income of $12,000 to $18,000 a year and still qualify to live in the project, depending on where that project is located).
- The FHA 236 Program is then used to reduce mortgage interest payments by subsidizing interest rates down to as little as one per cent. Rents can thus be reduced from the $55-$70 range to $30-$40 per room range, enabling Federally classified "moderate income" tenants to meet their monthly rent payments. (FHA's "moderate income" classification can be between $10,800 and $12,000 per year for a family of five, depending on where in the state they live.)
- In addition, those units occupied by "low-income" tenants, and by elderly persons, receive assistance either by the Federal government paying a portion of each tenant's rent directly to the owner, or if the tenants are leasing their apartments with help from the local housing authority, the Federal government will pay part of that tenant's lease payments to the housing authority. A family of five might earn as much as $7,000 per year and still be considered "low income," depending on where they live.

In summary, "low-income" housing, at $18-$20 a room, utilizes direct Federal subsidies, paid either through a local public

The UDC's Coney Island Vest Pocket Housing, sites 5 and 6, in Brooklyn; Hoberman and Wasserman, architects.

High-rise housing with on-site parking garage, near the famous beach area. Final design is slightly altered from the rendering. Now under construction.
Size: 1,000 apartments, two day care centers, and commercial space on 3.3 acres
Cost: $14,363,000
Developer: Starrett Brothers & Eken





housing authority or to a housing owner as rent supplements. "Moderate-income" housing, at $30-$40 per room is produced by Mitchell-Lama financing with the aid of FHA 236 mortgage interest reduction subsidies. "Middle-income" housing means State Mitchell-Lama housing with tax exemption, in the rental range of $55-$70 per room per month.

When a project is complete, or as soon as practically possible, the UDC will sell that project. The buyer might be a private group interested in making a profit from the newly developed property, or it might be a limited-profit management agency, or it could even be sold to newly arrived tenants of the housing project. Whoever the buyer, the UDC's price will have been sufficient to pay its own operating costs, overhead, and to pay the debt service on its bonds, plus the construction costs of the project itself. In this way, the UDC will be self-supporting from project to project, but it will have no need to show a profit from year-to-year, and it does not intend to collect a large inventory of completed housing projects around the state.

There are a broad range of projects underway and envisioned

The law authorizing creation of the UDC talks as much about developing under-utilized industrial capacity as it does about building new housing, but the overwhelming thrust of UDC's work to date has been residential. "Our basic mission is to improve the physical environment for low- and moderate-income families, and to improve their job opportunities" is the way UDC has described its goal for the last two years. They now have 18 projects under construction in communities all over the state, including the six projects shown on these pages, and they have "hard" financial commitments or working drawings underway on an additional 32 projects. No UDC project is finished yet, but the first one complete is likely to be Wright Park Manor in Rome, New York, shown on page 131.

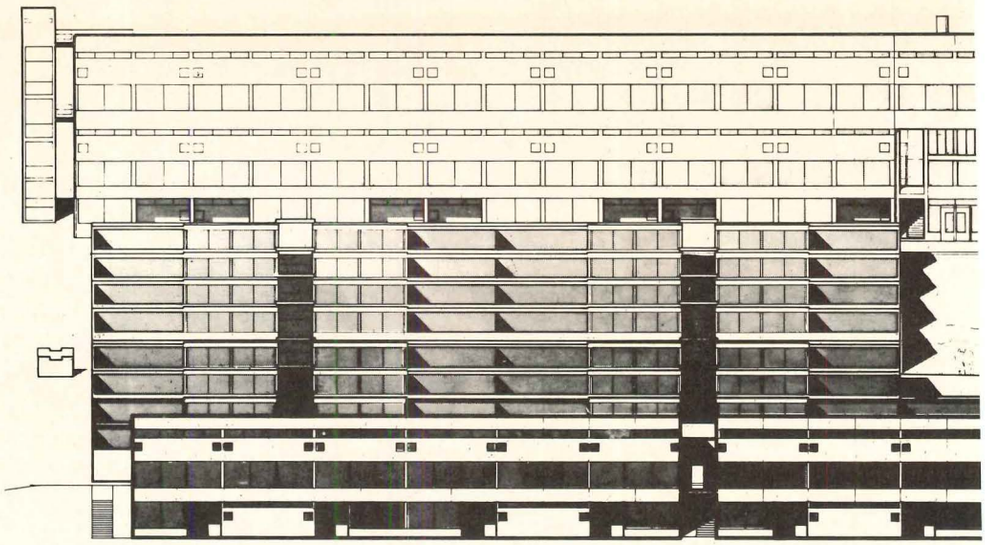
Three projects scheduled to begin construction in 1971 can be accurately described as "new communities." They are:

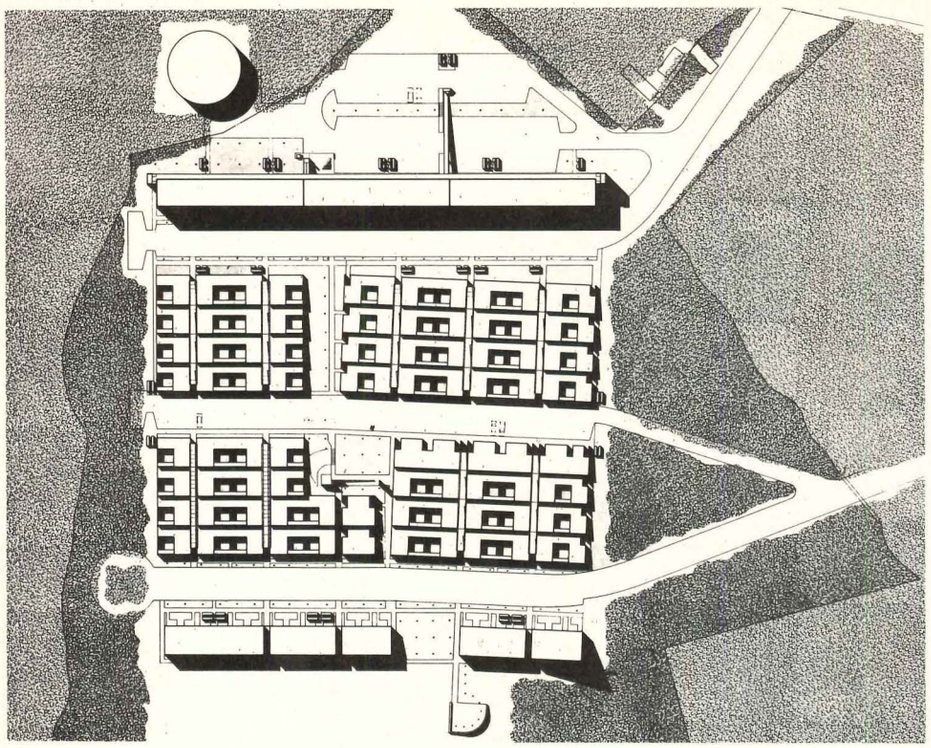
1) Amherst, an area east of Buffalo being developed by the UDC in conjunction with a new campus of the State University System (see RECORD, January 1971, pp. 124-128). UDC's part of Amherst comprises 2,400 acres, includes the building of 8,400 new dwelling units along with 1,300,000 square feet of commercial space, and its total finished cost is estimated at $500 million.

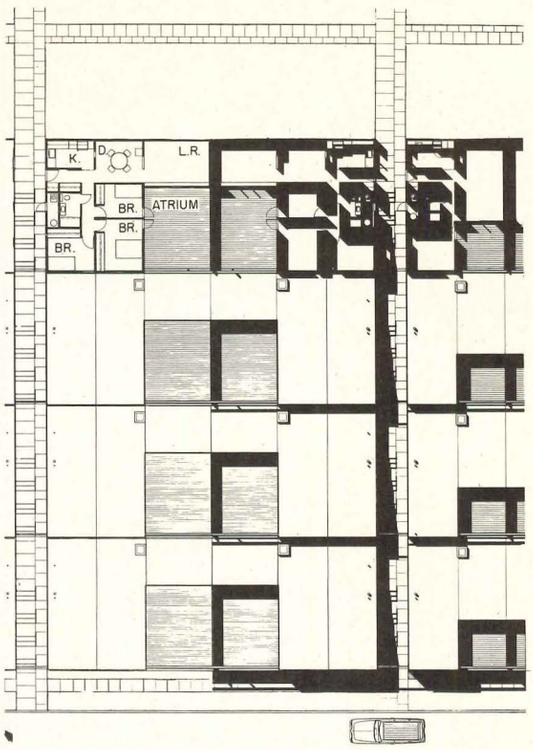
2) Lysander, a "new town" north of Syracuse, is to be developed on 2,700 acres of what is now rolling, wooded farm land. The tract was last used as the site of an Army ordnance plant in World War II. The latest draft of the plan calls for a residential community of 5,000 homes. Some 795 acres would be earmarked for industrial development, which could provide up to 16,000 jobs. Lysander is estimated to cost $350

The UDC's Elm-Maple Street Housing in Ithaca; Werner Seligmann and Associates, architects.

Two heavily wooded sites in the hills overlooking Ithaca are developed with a long five-story apartment building at the top, and one-story atrium units with private gardens sloping down the hill to take advantage of the views.
Now under construction.
Size: 300 units on 4.8 acres
Cost: $6 million
Developer: D. M. Abbott Investors Corp.







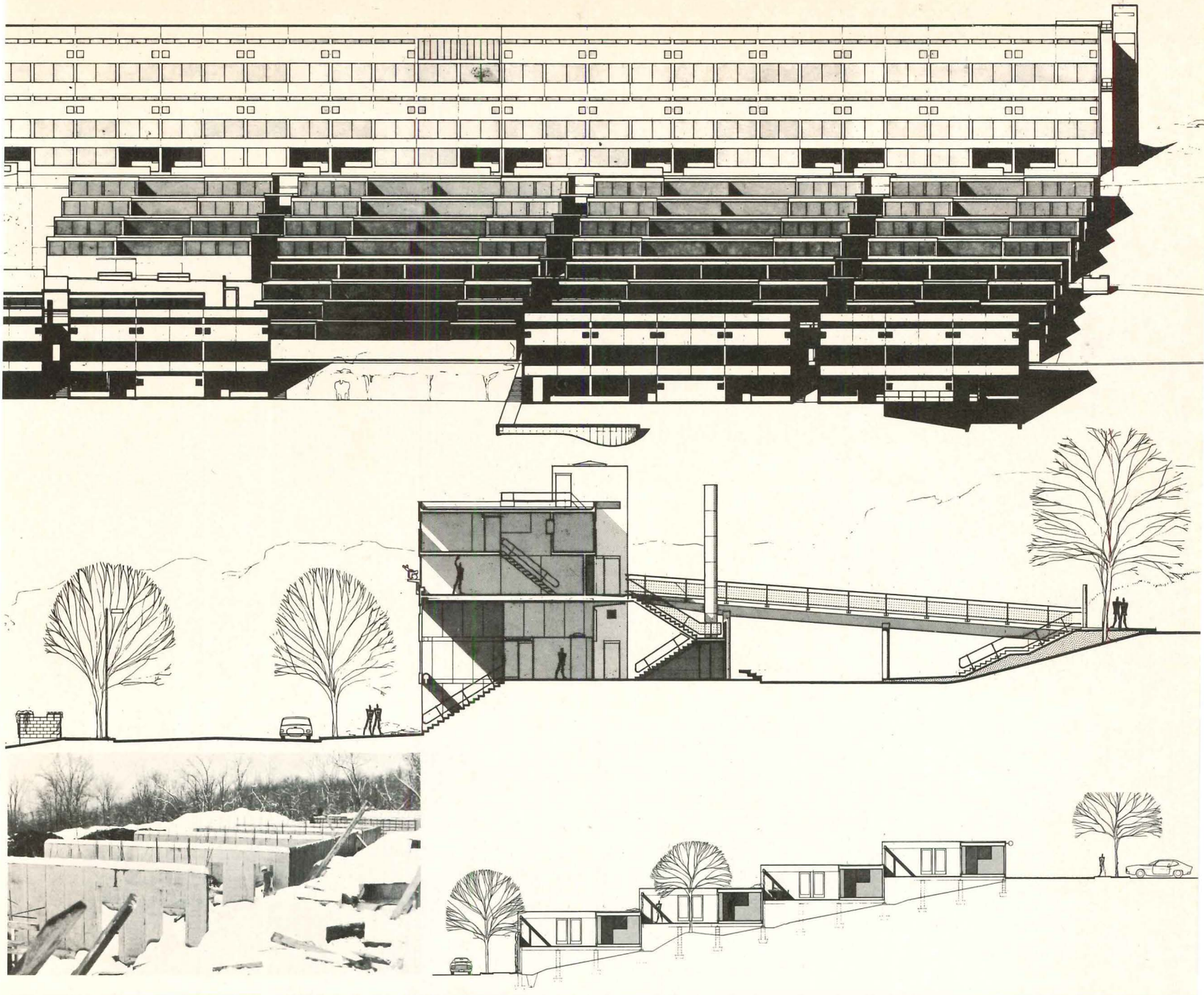
million when complete.

3) Welfare Island is a 147-acre island in the East River adjacent to Manhattan, and is still largely unbuilt. This project appears to be moving quickly ahead, and will eventually create 5,000 new dwelling units inside New York City, along with commercial and recreational space, at an estimated cost of $250 million. Two high density residential areas, North Town and South Town, are to be separated by the Town Center and a small park. Larger parks flank the housing and the two existing City hospitals, which will remain and continue to function. Historic buildings, which will be preserved, are scattered throughout the development. A promenade around the periphery of the island will provide excellent views of Manhattan's skyline. The island is to be free of automobile traffic; a new subway line, now under construction, will stop in the Town Center.

At a more normal scale, the 18 projects now under construction range from a modest 204 new units in the Niagara Falls, New York Unity Park rental project, to the large Harlem River Park towers in New York City —1,655 new units which will overlook Manhattan from the Bronx (see page 126). None of these projects are for low-income families exclusively, although a portion of each is reserved for people from the lowest income strata within that particular community. The UDC has set up a formula which it is attempting to follow: 70 per cent of the new units in any one project go to people of middle or moderate income, 20 per cent of the units go to people with low incomes, and 10 per cent go to low-income elderly (people over 65). Edward Logue does not believe in exclusively low-income housing projects: "While our lowest income families have the greatest need for housing, in today's market an acute need also exists for families with moderate and middle incomes. However, even if only low-income families required assistance, it is our view, based on long American experience, that developments which cater exclusively to low-income families are undesirable. They will likely produce large-scale, institutionalized, apartheid projects, of questionable value either to society as a whole or to the low-income families so housed."

The UDC has not contracted to build any single-family detached housing in suburban areas, although there is no reason why it could not. It is simply that this middle income (and increasingly restricted to upper-middle income) market is satisfactorily served by private developers. The UDC will provide and locate 57 mobile home units in Brooklyn, New York, as temporary housing for people being displaced by new construction, but mobile homes in Brooklyn, it should be repeated, will be temporary.

The other UDC goal of providing new jobs for people has been achieved only indirectly, through the construction generated. They have not made the progress hoped for in increasing minority group representation in New York State's construction



industry, though they continue to develop leverage with labor unions, as the number of UDC projects grows. This strength from volume will not only be useful in creating new jobs for minorities, it will be useful in creating new technologies as well.

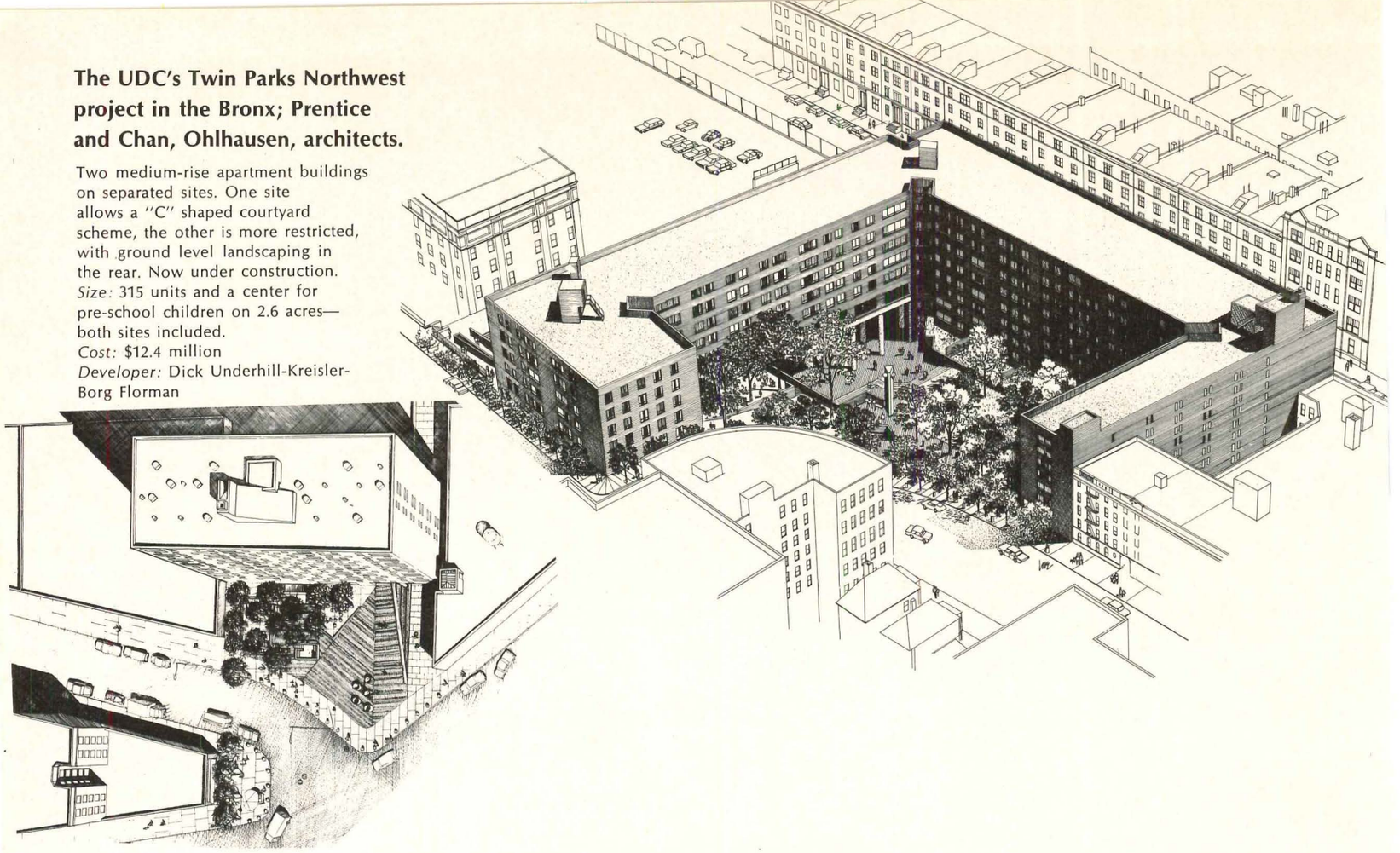
Technical innovations can be introduced through market strength

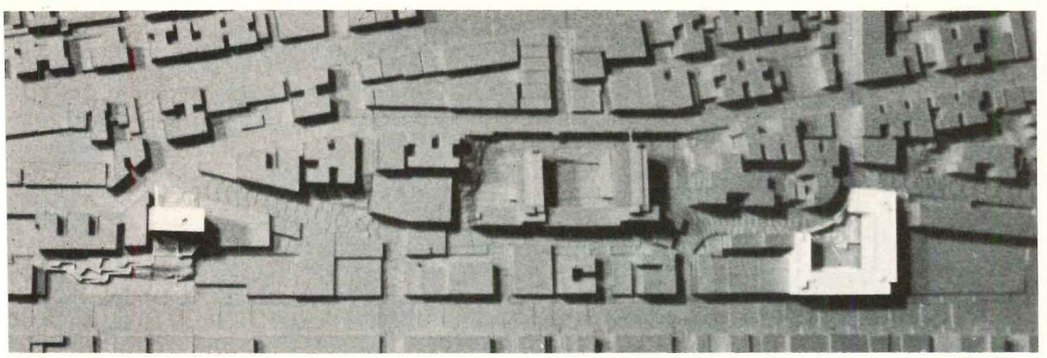
The UDC has assumed as one of its special concerns the development of more efficient technologies for housing in general. As two-thirds of the original cost of each project the UDC (or most anyone else) initiates lies in its actual construction, it is to their advantage to decrease that cost in any way they can. David Pellish, who is an architect and formerly was an assistant director with the National Commission on Urban Problems, heads a special group within the UDC charged with investigating technologies, and they have been kept very busy. The technology section of UDC is charged with three duties: 1) it looks at all the separate projects the UDC is beginning to fund—sites, intended materials, contracting methods—with an eye to introducing new technologies into them, 2) it evaluates proposals for new and more efficient ways of building, independent of any particular project, and 3) it tries to develop mechanisms for getting new technologies produced.

The UDC's efforts at technical innovations and efficiencies have produced some results already. For instance: In the design development stage of the Welfare Island project, the UDC got agreements—from the six separate architectural firms involved—on two design criteria that could be made common to the separate projects of each architect. This was an agreement to use common components in separate complexes of buildings—common prefabricated stairs, windows, and plumbing walls, specifically—and an agreement to base all designs on a common dimensional grid, both horizontal and vertical. The six firms—Philip Johnson & John Burgee; Conklin & Rossant; John M. Johansen; Kallmann McKinnell Russo & Sonder; Mitchell/Giurgola, and Sert Jackson Associates—were given separated parts of the total project to design in the beginning, each worked to a certain point on these, and then the system of common parts and dimensions were agreed upon by the architects and the UDC. Further design development can proceed from this base, and final building procedures should be more economic and efficient because of it. In two initial projects upstate—Townsend Towers in Syracuse, and housing on the urban renewal site in Utica, the UDC convinced the architects, code officials, and contractors to try an unfamiliar prefabricated plumbing system in each building. The SOVENT system, developed in Switzerland, eliminates the need for vent pipes to the roof, thus saving materials. The UDC believes that by using it on two projects instead of just one, they will save enough in plumbing costs in each building to pay for the total cost of one additional apart-

The UDC's Twin Parks Northwest project in the Bronx; Prentice and Chan, Ohlhausen, architects.

Two medium-rise apartment buildings on separated sites. One site allows a "C" shaped courtyard scheme, the other is more restricted, with ground level landscaping in the rear. Now under construction.
Size: 315 units and a center for pre-school children on 2.6 acres—both sites included.
Cost: $12.4 million
Developer: Dick Underhill-Kreisler-Borg Florman





ment per building.

The UDC has some special leverage that makes technological innovations more easily accomplished than they are in the "private" sphere. With careful coordination, the UDC can provide a large aggregated market for innovative products or systems. It is this lack of sure market (as the Operation Breakthrough proponents keep insisting) that keeps potentially dramatic innovations in housing from being introduced more quickly in the country as a whole. With the large amounts of housing the UDC will be financing in relatively short periods of time, it can introduce innovations, generate acceptance of them by the public, and provide a market of adequate size for manufacturers to tool up. The UDC's emphasis, with all the new technologies it has been investigating, is placed on implementation now: it is looking for new modular systems, new components, and new fabrication techniques that are ready to be used quickly to build housing in cities.

It is a good client for the private architect

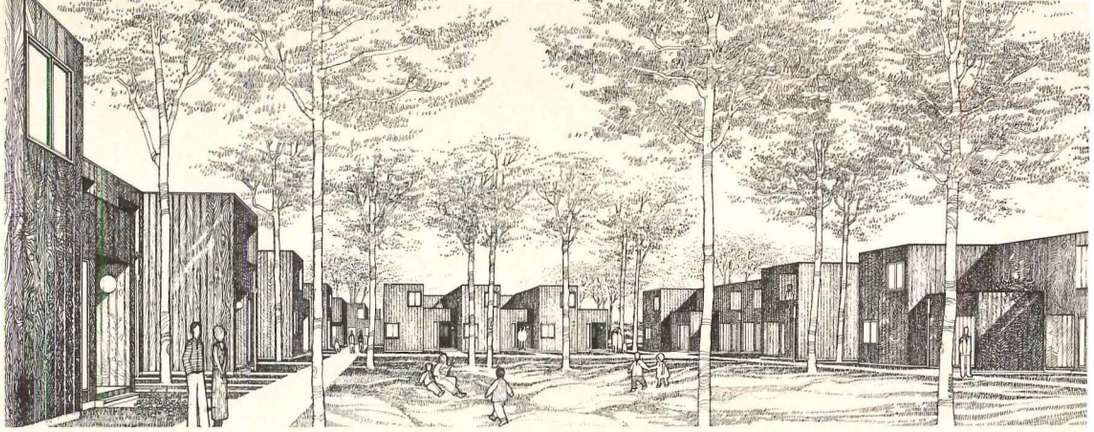
An organization like the UDC is significant to the profession of architecture—that is obvious—and the architects they have commissioned have opinions about them. Their opinions are generally favorable, and they provide a fresh, reinforcing evaluation of the UDC's potential. Architects believe the UDC is genuinely looking for innovative ways to make things better, and this is tied closely to one other commonly expressed compliment: individuals on the UDC staff are competent; they understand architecture in theory and in practice, and are confident enough of their abilities to make decisions. Architects are happy with the UDC financially; they get a contract early, and they get paid on time. Fees are set on a normal percentage-of-the-project basis, and they are adequate, with provisions made for unforeseen architectural costs to be paid as these occur. The principal of one firm said that the UDC was gradually beginning to learn the *real* cost of good architecture, that it is different from what they *thought* it would cost in the beginning, and that they are now able to *reduce* with accuracy estimates of what each project will cost.

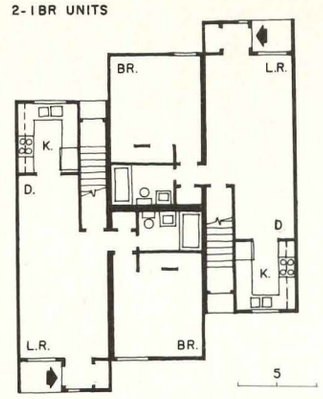
Architects also have some criticisms of the UDC, of course. One is the speed at which they have been forced to design. The UDC has been under political and social pressure to get something built quickly, and this has been translated into shortened design time, in some instances. Another criticism is less important, but almost universal; the calculations by which an architect arrives at how much he is owed by the UDC at any stage of a project, and the paperwork that accompanies these calculations, are unnecessarily confusing; "labyrinthine," as one architect put it. "When it is difficult for an architect to determine exactly what the UDC owes him, that architect gets nervous . . ." said another practitioner.

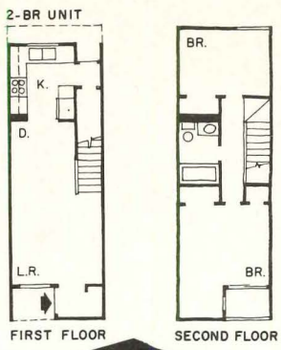
Another criticism often heard is that "the developer and the UDC changed details in the building without consulting me

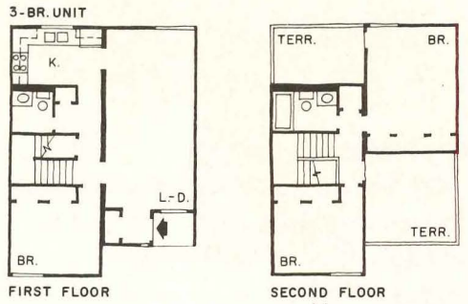
The UDC's Wright Park Housing in Rome, N.Y.; Max Wechsler and Associates, architects.

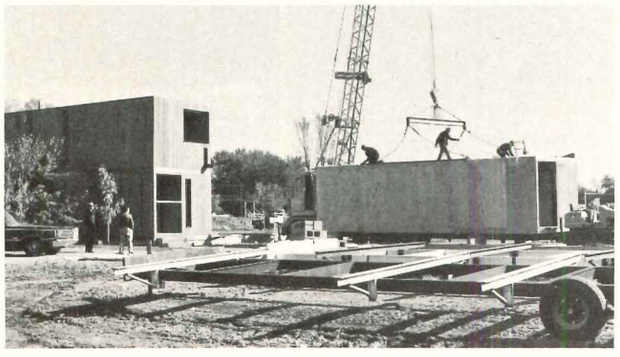
The first UDC project using factory produced units, which arrive at the site complete and ready for stacking. Two- to three-story row housing provides one- to four-bedroom units in cedar-sided wood construction.
Size: 200 units now underway, 300 units planned, on a 12.5 acre site.
Cost: $4.2 million
Developer: Starrett Brothers & Eken

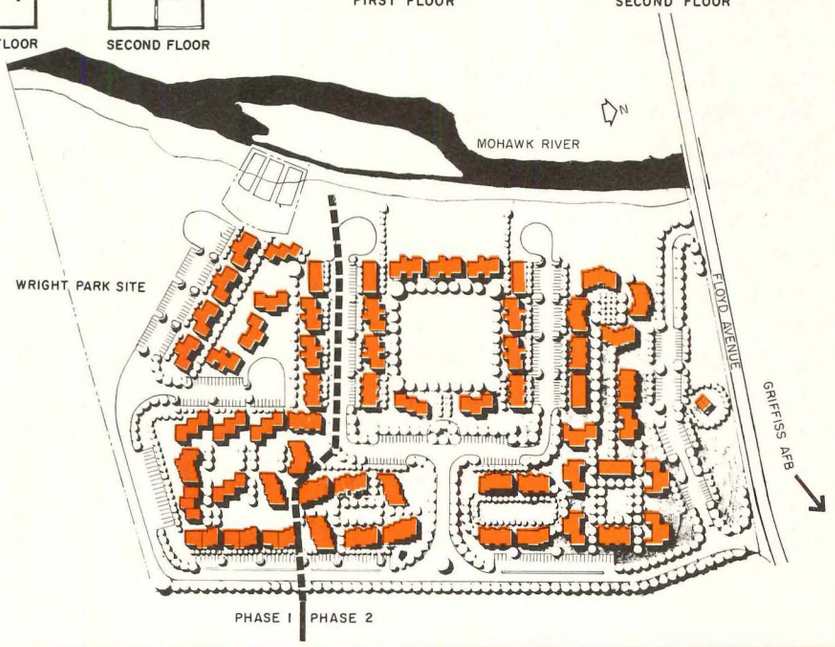










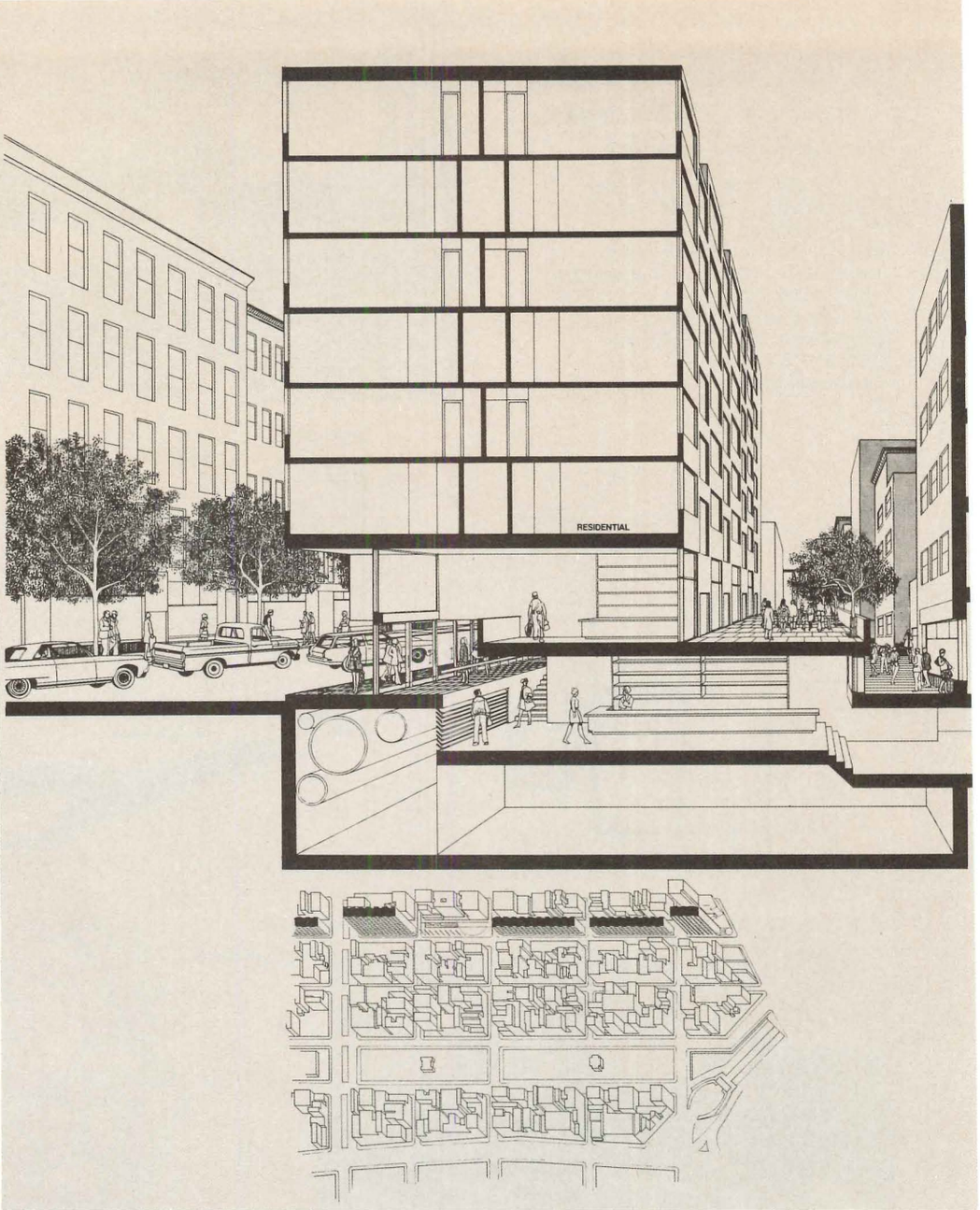


first," or that ". . . the contractor/developer was not selected early enough; . . . it would have been useful to consult with him on needs and/or procedures during design". These are similar to complaints architects have voiced for years about encroachments into their decision-making power and their control over projects, and they bear on one of the issues implied by this Building Types Study as a whole. Unless architects are willing to learn about financing procedures for construction, are willing to develop and *control* new technologies, and are willing to get involved with the local communities that will be the users of housing, then their control over projects will inevitably be eaten away and eroded by those who *are* willing. The UDC, for its part, has yet to have an architectural firm request that they be named developer (for the UDC, the developer finds outside investors for a project, finds a contractor, or performs both roles himself) as well as architect, and it is proper to ask, why not? Such a combination of architect/developer would violate nothing in the A.I.A. code of ethics, and if becoming a developer is profitable for some financers or housing corporations, then it should also be profitable for some architects. Building should be arranged to represent a culture's highest values, and architects have the most explicit training for that work. They should try to control what affects that work.

Public corporations must express our public values

Many people in this country, especially those living in the marginal areas of our large cities, have come to mistrust programs (or branches of government) created to "renew our cities." They are wary of endless bureaucracies, and housing red tape, such as Model Cities and our public housing authorities have created. Most such agencies are governed by elaborate checks and balances on their power—on just how far they can go without checking with someone else first—and it is part of the reason they have not accomplished much physically and have so frustrated those people who try to deal with them. The UDC on the other hand, has been granted several significant spheres of unrestrained power, in the hope it can do better than what preceded it. This lack of constraints on the UDC is as alarming to some people as the inefficient unproductiveness associated with earlier tries. It may well be necessary to raise the alarm in the future, but it is too early to do so yet. The UDC, in fact, shows signs of being as effective as it was devised to be, without having to step much on anyone's toes, because we need so badly what it has to offer. As long as the public values the housing that the UDC creates, there will be very little pressure from the public to curtail the UDC's power, though there might be such pressure from private interests. In the end, it is a matter of meeting the *values* of a society; and an adequate place to live for *all* citizens is beginning to be recognized as one of our achievable values now.

Exploratory schemes: Three-dimensional visions of how things might be done are useful because they broaden our concepts of what is possible in city life, thus broadening, in time, what we do. One of the housing schemes on the following seven pages is an architectural expression of our need to deal creatively with the existing codes and rules, to get better housing now. The other scheme is an architectural expression of how things might be done if a lot of existing rules were removed; a land-use scheme for developing whole blocks of any city into better places to work and live.



1 Urban Design Group: better housing within existing rules

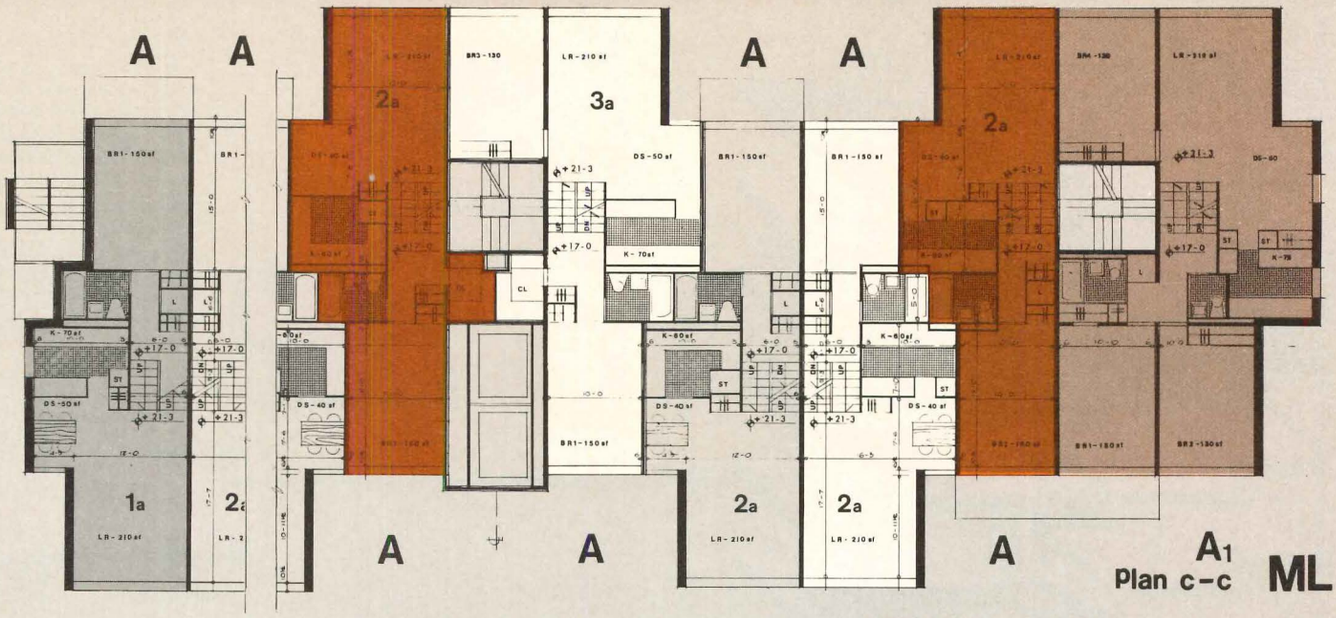
■ The perspective section and the bird's-eye city plan above show a street in New York City's Lower East Side, and how that street might be redeveloped down its now-vacant center island with a special "vest pocket" housing project. This represents one possible application of a sophisticated factory-produced housing scheme created in the offices of the Urban Design Group of the New York City Planning Department.

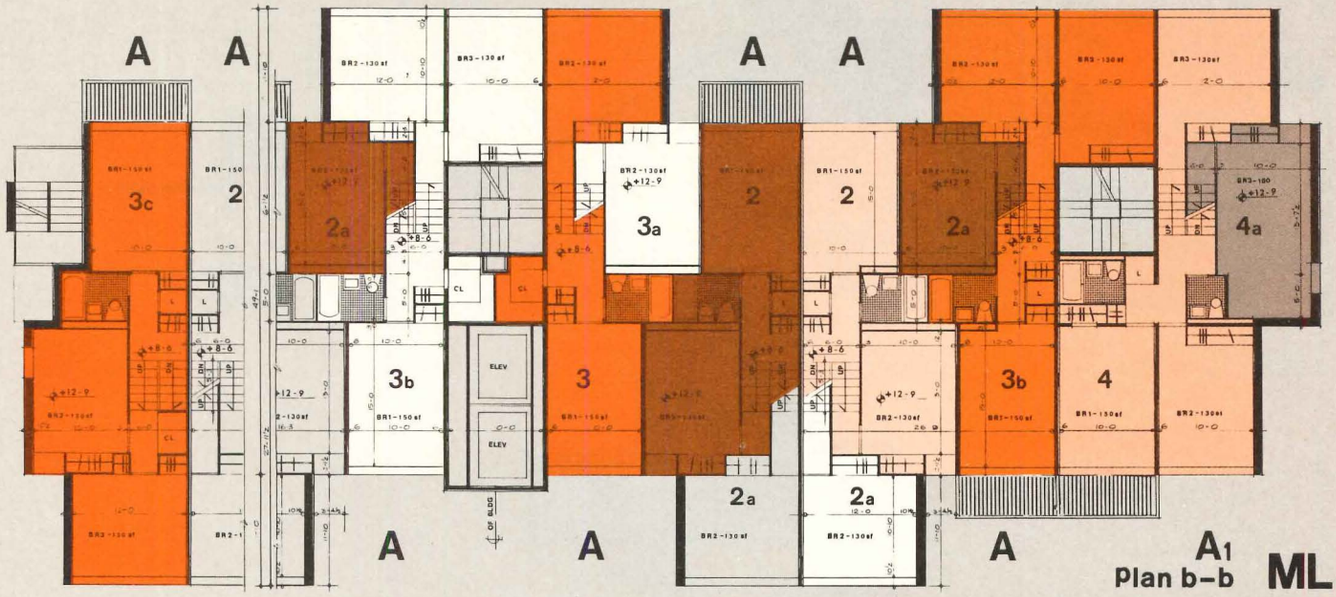
The generalized problem that the Urban Design Group is tackling by developing this housing scheme is a very real one. The conventional building types used in publically-assisted housing were usually developed ten or twenty years ago for use on large open sites—either vacant land or land cleared by urban renewal. New York, and many other cities, are running out of such large sites, and at the same time will no longer engage in massive clearance projects, because they disrupt peoples' lives. Housing programs now include a considerable number of smaller "vest pocket" sites which are planned for small pieces of left-over land, such as the Lower East Side site, or are slipped in to replace unsound buildings without clearing the whole neighborhood.

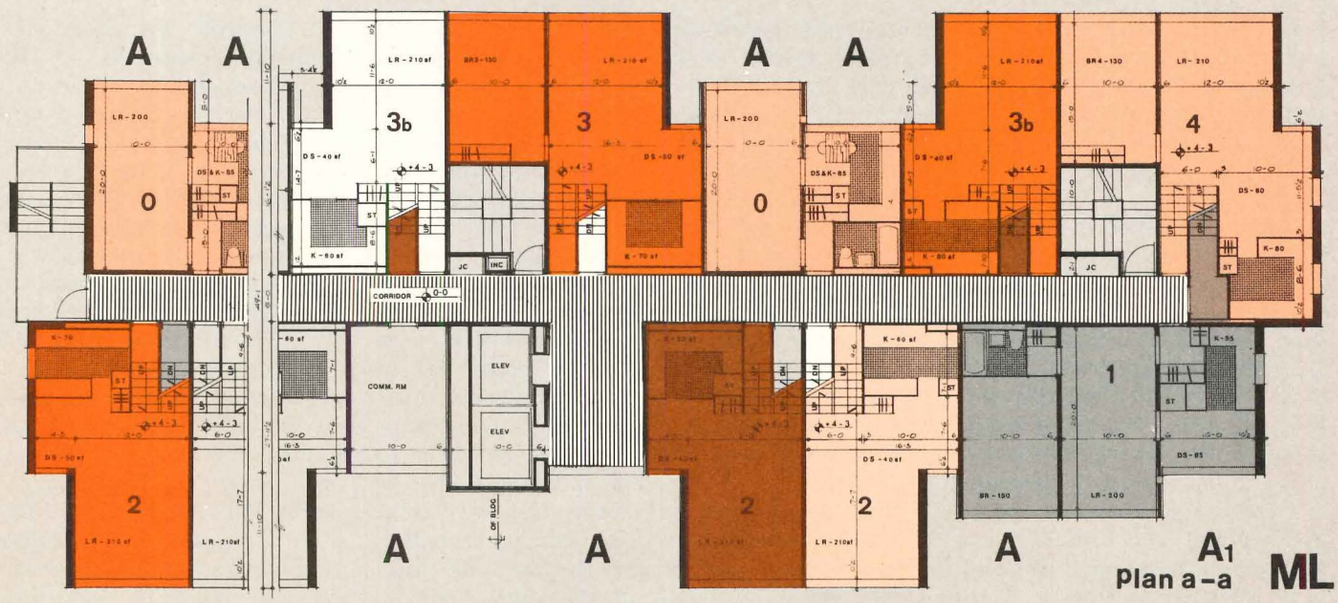
The Urban Design Group thus began a research program to study the special problems of vest pocket sites, so the city might have an alternate to conventional buildings. The scheme they were looking for had to match these criteria:

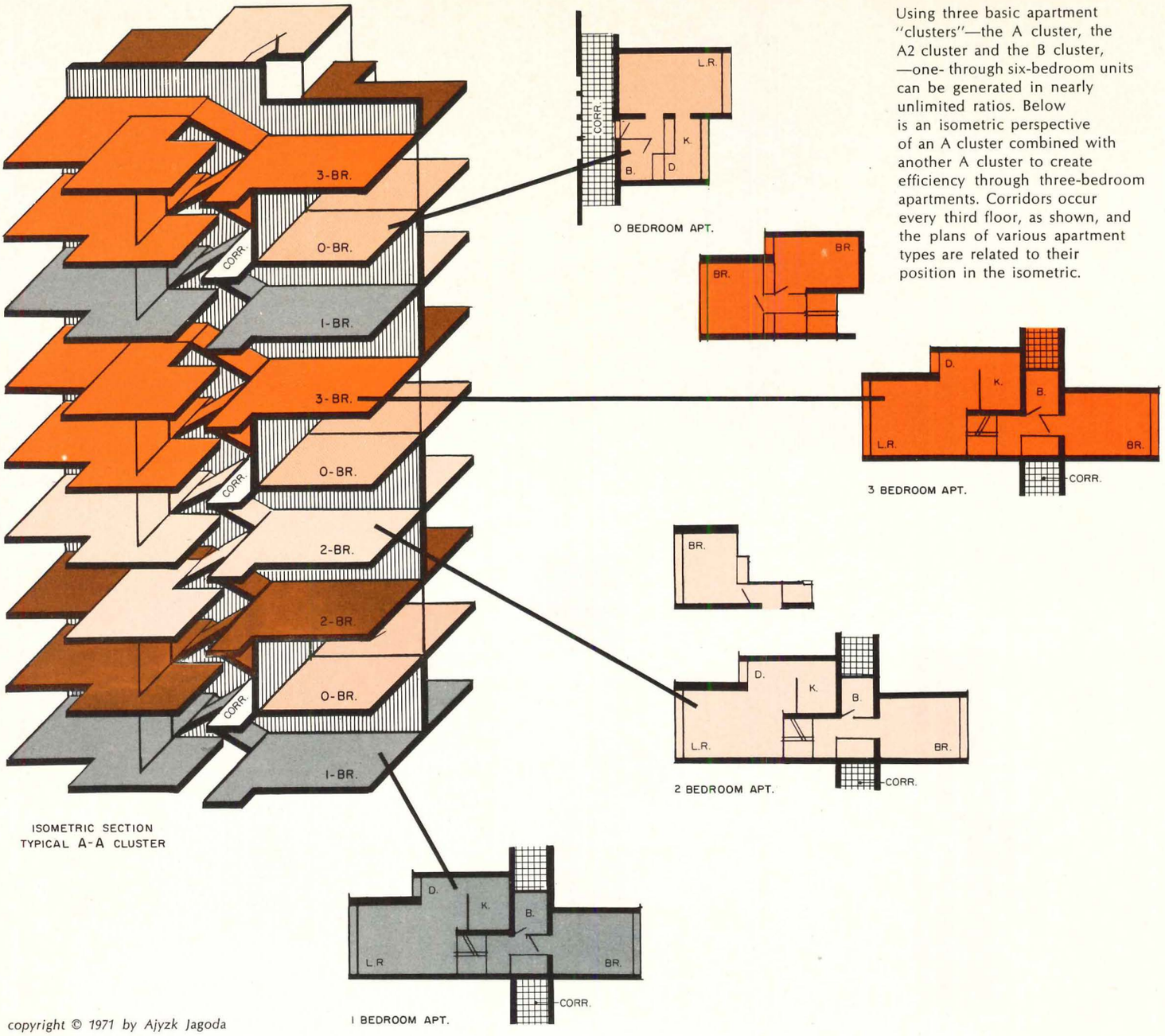
1. Must meet all state and Federal requirements for room sizes, etc., in subsidized housing programs.
2. Must meet local codes.
3. Should be adaptable to both conventional and systems construction, and use existing technology.
4. Must be able to produce a desirable urban environment.

The Urban Design Group systems building on these pages is the result. It is a precast concrete scheme capable of being built using the simple and proven Tracoba sys-









Using three basic apartment "clusters"—the A cluster, the A2 cluster and the B cluster, —one- through six-bedroom units can be generated in nearly unlimited ratios. Below is an isometric perspective of an A cluster combined with another A cluster to create efficiency through three-bedroom apartments. Corridors occur every third floor, as shown, and the plans of various apartment types are related to their position in the isometric.

tems techniques first developed in France, and responsible for over 200,000 finished units there. The design was under the direction of architect Ajyzk Jagoda, and it carries on work which Mr. Jagoda had begun some years ago as an architect in private practice.

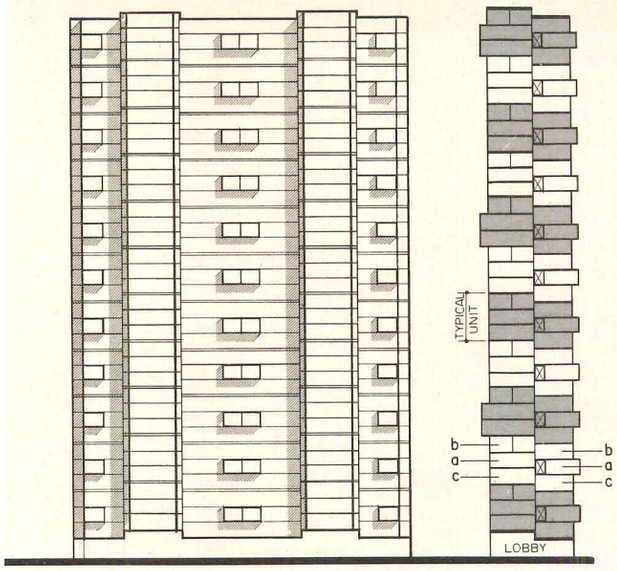
The idea behind the system is simple, but it generates apartments and spaces very difficult to represent graphically in two dimensions, because the floor level shifts one-half of a level (about four and one half feet) quite often; a maximum of three times within one apartment. But this level shift is the key to the design's efficiency, and it is also the key to the design's architectural and spacial excitement.

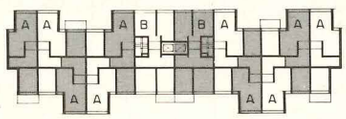
The design is created with a series of standardized floor and wall panels (the normal Tracoba system), with the addition of a minimum number of "half-height" bearing wall panels. The horizontal floor panels vary in area, but 12 feet by 20 feet could be considered most usual. Floor and wall panels are fitted together using the patented Tracoba jointing system to create the basic shell of the apartment building.

The three plans on the previous page, and the isometric perspective above, show the configuration of apartments within the shell. The scheme can systematically generate any kind of apartment, from an efficiency to a three-bedroom-unit all on one level, to one-through six-bedroom-units on as many as three levels. Circulation corridors occur only on every third floor—one key to the scheme's high percentage of rentable square footage compared to total square footage. This is known as the skip-stop system in elevatoring, and John A. VanDeusen of Joseph R. Loring & Associates, consulting engineers, has investigated the efficiency of this system for handling traffic circulation. He says the triple skip-stop arrangement of circulation floors is the most efficient scheme possible, fully utilizing the elevator's capabilities.

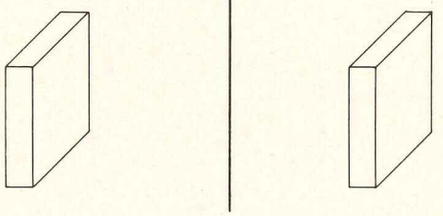
Professor Mario Salvadore of Columbia University has been the consulting structural engineer on the Urban Design Group's system. He says there is no doubt of the scheme's adaptability to the Tracoba panel system, and of its economical production. Mr. Salvadore and Mr. Jagoda have presented the scheme to audiences of architects and developers, and have found enthusiasm for its advantages.

Of particular importance, of course, is the scheme's "fit" with the two principal minimum standards codes under which New York City housing is built; the Federal and city FHA standards for public housing, and the state Mitchell-Lama standards for housing. The individual room sizes (kitchens, bedrooms, living rooms, etc.) generated by this scheme, along with such issues as corridor widths and ceiling heights, conform in every case with these two minimum standards codes. The total structure creates about 25 per cent less gross cubic feet of building than do "normal" corridor-every-floor projects having the same number and

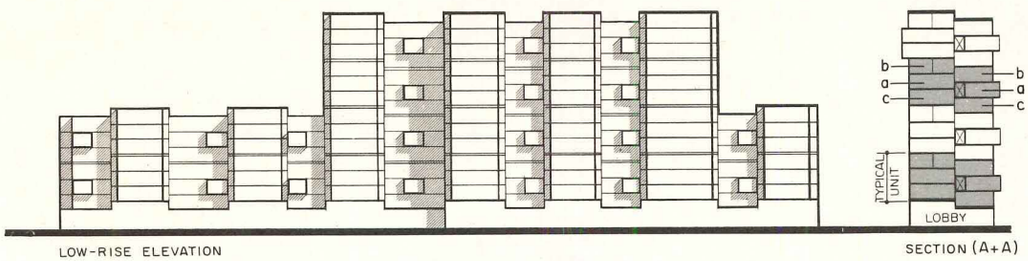


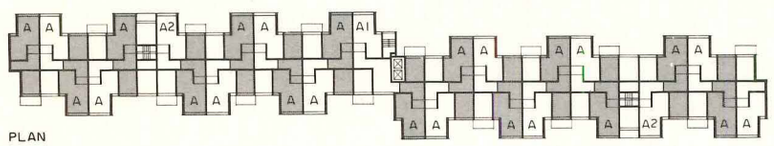


PROJECT	CONVENTIONAL
200 S.F / R.R.	250 S.F. / R.R.
$\frac{250}{200}$ X 100 = 125 D.US	100 D.US



APARTMENT TYPE	L.R. & D.S.	KITCHEN	1ST BR.	2ND BR.	3RD BR.	4TH BR.	TOTAL ROOM AREA	R.R.	GROSS AREA / D.U.	
									PROJECT	CONV.
0 BR.	200	85	–	–	–	–	285	2 1/2	500	625
1 BR	220	60	150	–	–	–	430	3 1/2	700	875
2 BR	250	60	150	130	–	–	590	4 1/2	900	1125
3 BR	270	70	150	130	130	–	750	5 1/2	1100	1375
4 BR	290	75	150	130	130	130	905	6 1/2	1300	1625



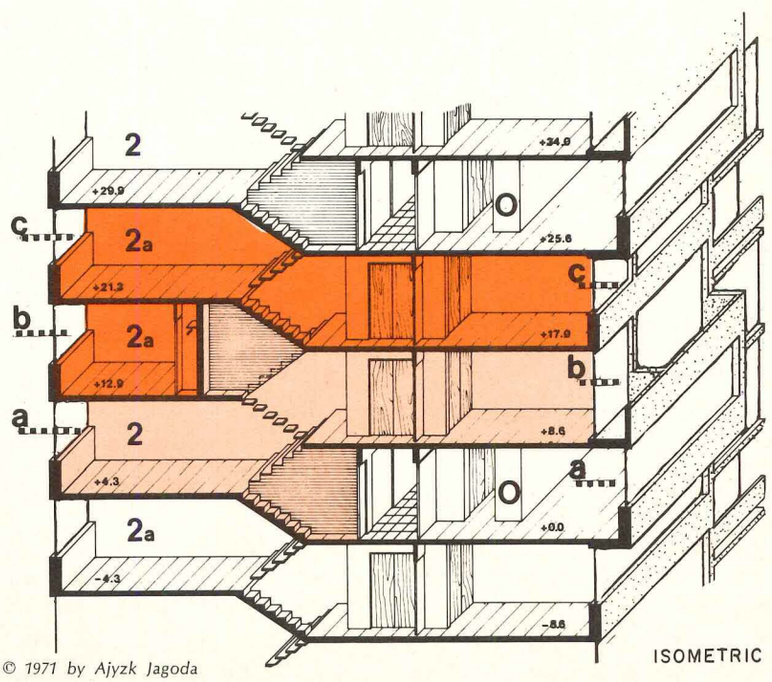


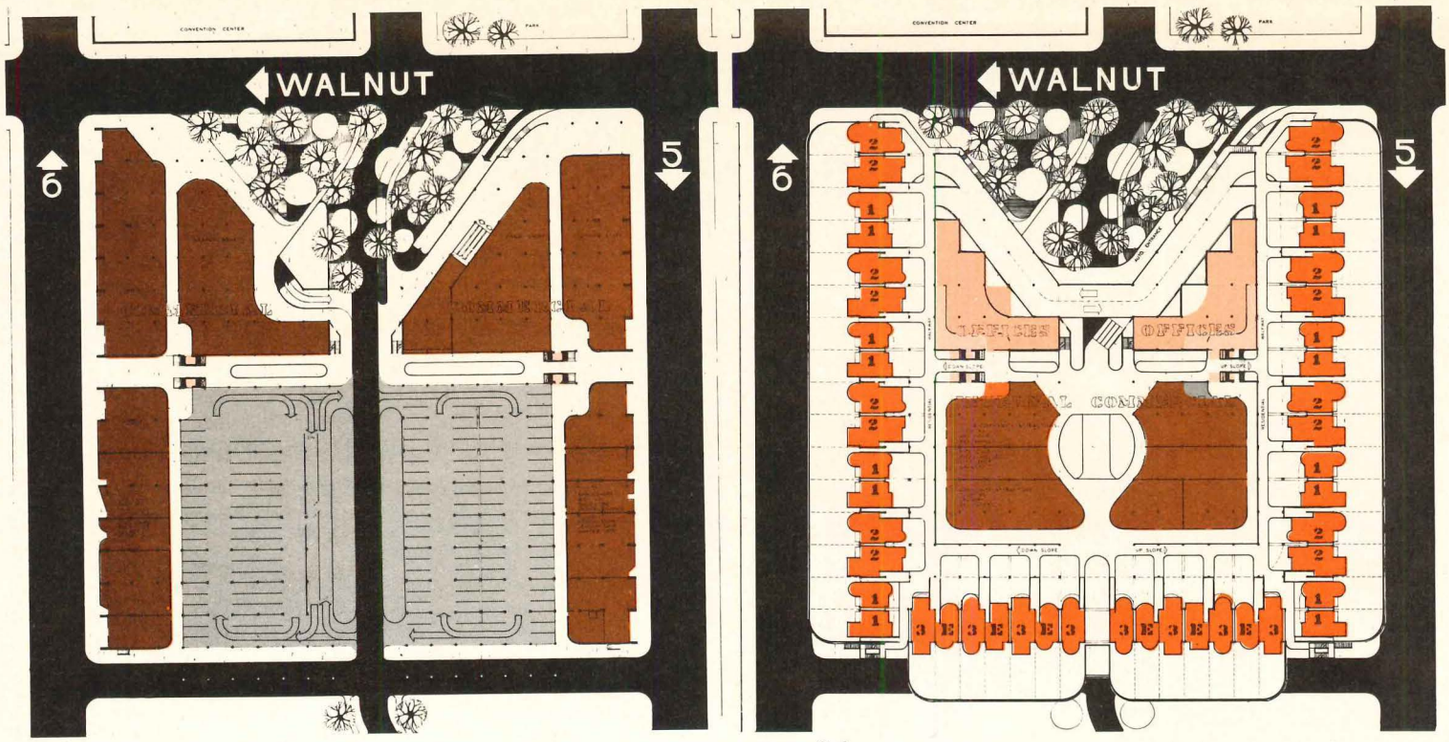
The two sets of elevations and sections at left illustrate a generalized high-rise building that might be built with this system, and a generalized low-rise building. The shaded areas of the plans marked A, A2, and B, illustrate the three basic and repetitive "clusters" out of which the buildings can be generated. The A2 clusters contain the vertical transportation, either stairs or elevators. The small a-a, b-b, and c-c plan marks on the sections refer to the plans a-a, b-b, and c-c on page 133, showing where those plans are located. The chart is a statistical comparison of a typical urban design group system apartment building with a similar conventional building.

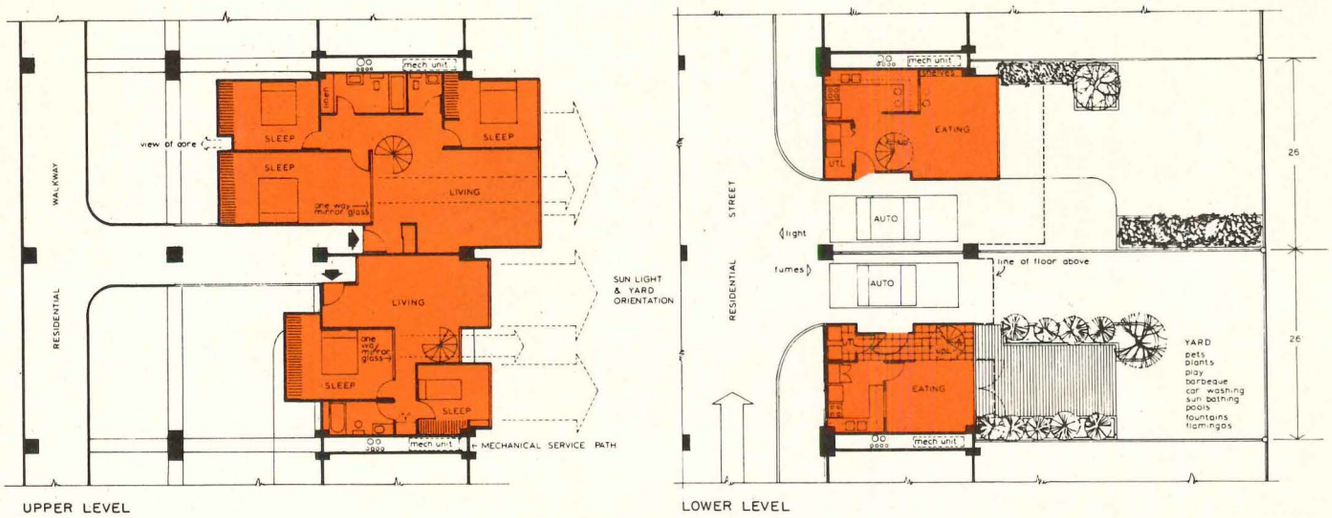
size of apartments.

Using about 11 different elements per apartment, (an element is a part or group of parts that can be conveniently handled in one crane lift) the Urban Design Group system can generate one-through six-bedroom apartments of unlimited "mix," in either high-rise or low-rise arrangements. And unlike some project housing, the apartments themselves look like they would be fun to live in, and the possible facade expressions look anything but dull.

URBAN DESIGN GROUP SYSTEMS BUILDING, The Urban Design Group of the New York City Planning Department: *Jonathan Barnett, A.I.A.*, director of design; *Ajyzk Jagoda*, principal urban designer and architect. Structural consultant: *Mario Salvadore;* mechanical consultant: *Joseph R. Loring Associates; John A. Van Deusen,* transportation systems. Drawings by *Martin Dorf*, assistant urban designer, and *Paul Wang;* rendering by *Roy Lordahl.*







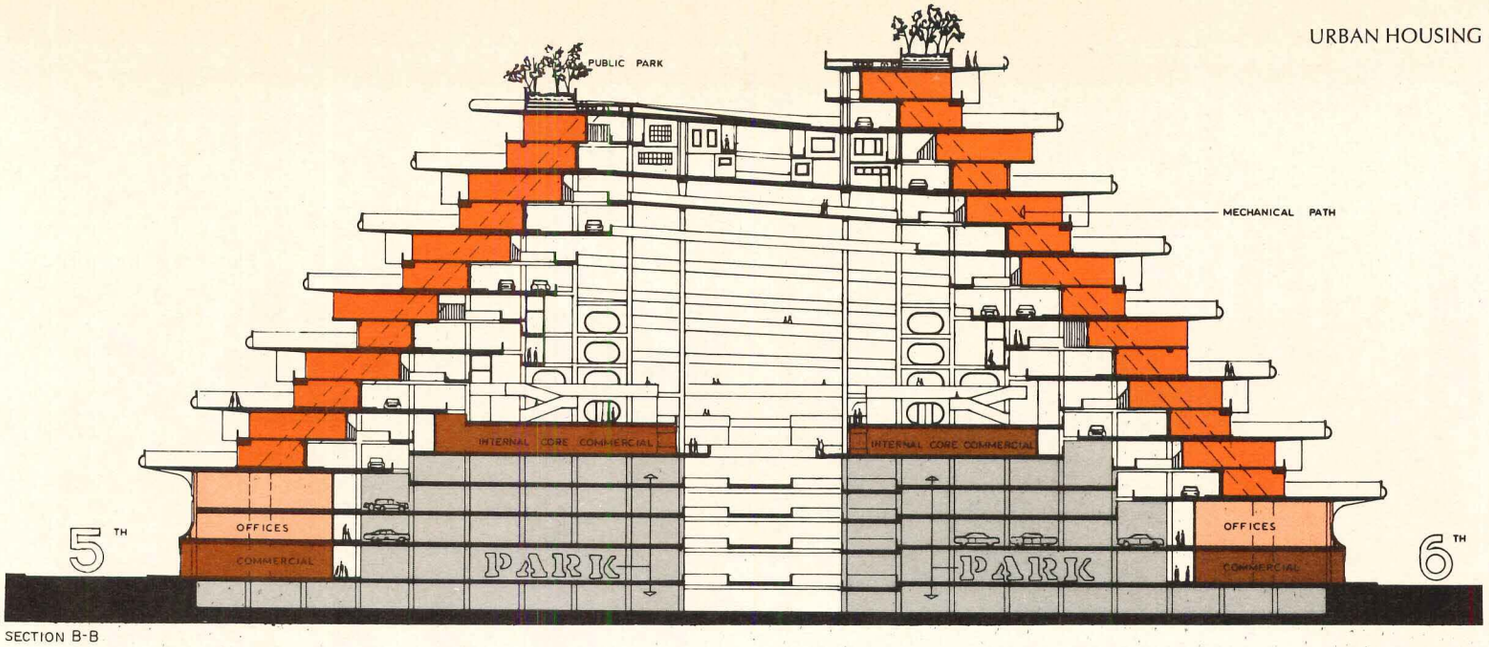
2 Residential blanket scheme: rethinking the city's architecture, and adding to its land

■ The scheme shown here is a proposal for new ways to work *and* live in the city. Its basis is a permanent, pyramidal platform system—a "land assemblage"—established over full square blocks of our densely populated downtown cores. Or perhaps they are not so densely populated: the downtowns of some of our cities are becoming mainly parking lots, geared to the worker in suburbia.

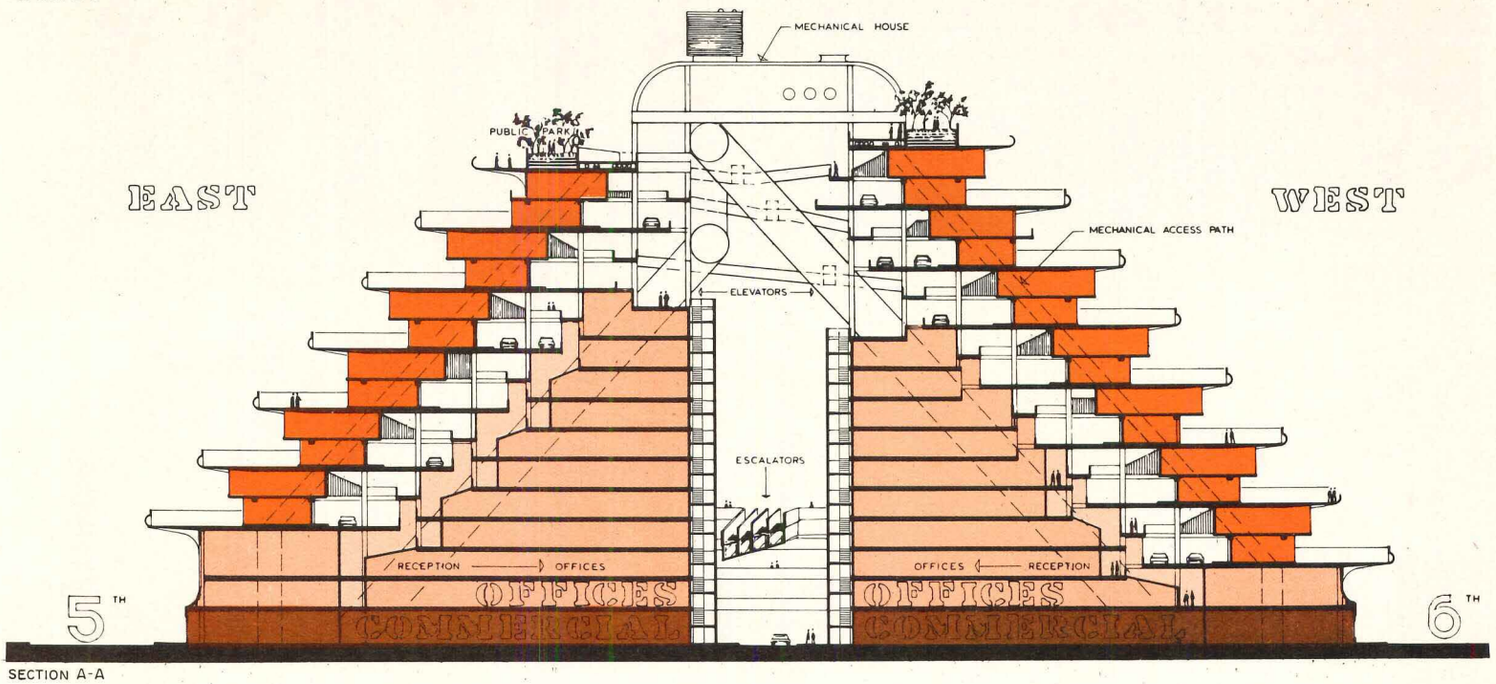
The scheme is the work of a young designer named Michael E. Reynolds, who now lives and works in Taos, New Mexico. He is trained as an architect, and he has been refining his drawings and ideas about cities for several years. His ideas here are frankly visionary; that is, they take as their goal the creation of a better way for people to live in a high-density environment, and disregard all of the existing building codes, banking systems, patterns of private ownership, and transportation techniques that restrict that vision. But at the same time, it does not override *all* that man has built lately, as we could perhaps describe Paolo Soleri's arcologies as doing. This scheme resembles Soleri's work in its vision and in its goals, but not in its scope and breadth. Reynolds' land assemblage describes a way of improving existing cities, proposes that their existing rectilinear block patterns be retained, and most of all, provides a central position for the automobile. It attempts to make the United States system of individual, private transportation capsules that can go anywhere anytime, work in a more humane way.

The drawings on this page describe one possible form of his residential blanket in its "land assemblage" framework, and the series of sketches on the following page illustrates the rationale he has followed. But let Mr. Reynolds speak for himself: "I am proposing a housing scheme that will provide surburban amenities such as an exterior yard, auto parking next to your door, freedom to change your living space, psychological distance from the city, and community identity. These amenities will be within walking distance of the activities of city life such as entertainment, shopping, employment, cultural concentration and civic exchange.

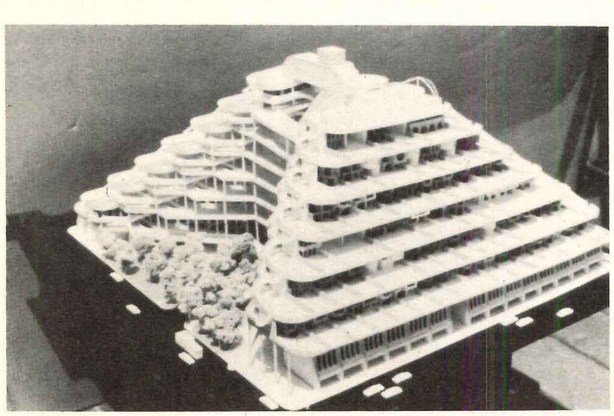
"The commercial potential of a square block of any city is too valuable to be replaced with a residential complex. At the same time, however, the commercial potential of a city core would be greatly increased if the residential complex were there to make use of it. As it is now, the existing residential areas are providing their own commercial facilities in our suburbs. These suburban cities compete with and weaken our existing city cores. As a result, our city cores are losing their strength symbolically and physically. Therefore, I am proposing a *residential blanket* over a commercial complex in the city core. This residential blanket would increase the usable land area by creating land areas stacked or overlapped above ground. They would be assembled in such a way that

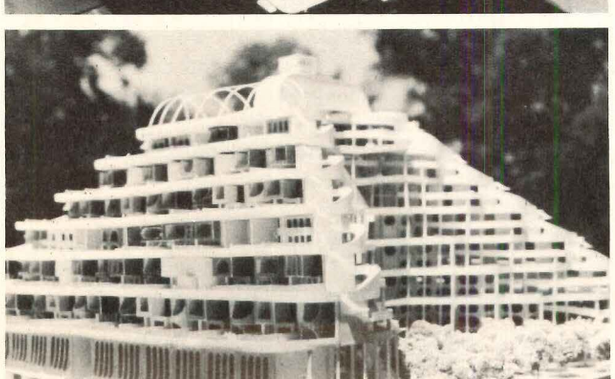


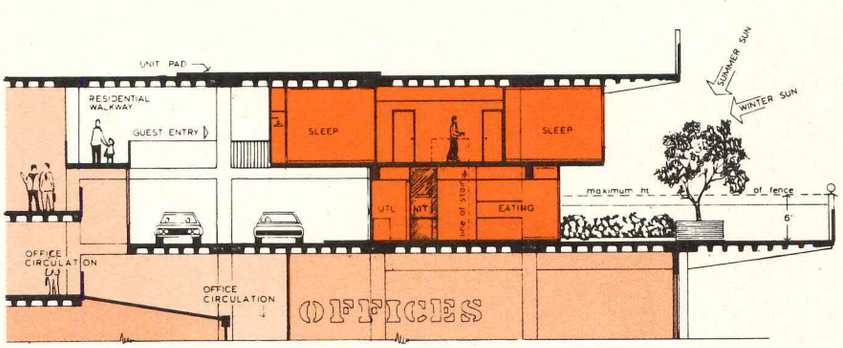
SECTION B-B



SECTION A-A

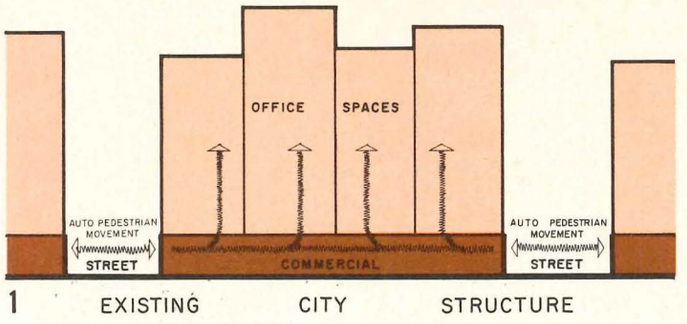




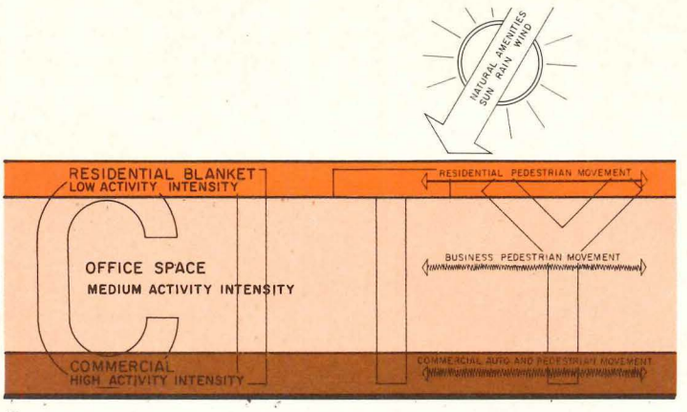


SECTION THROUGH UNIT ON FIRST ROW

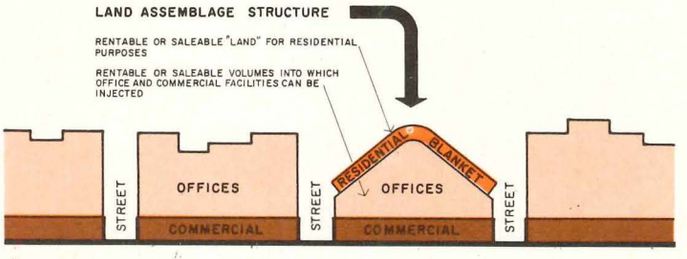
The two photos at left are shots of the model built to illustrate the land assemblage superstructure. Above is a section showing a typical residential unit, on two floors with its private garden. Automobile circulation is separate and enclosed from pedestrian circulation.



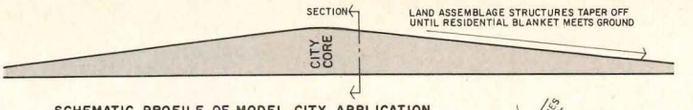
1 EXISTING CITY STRUCTURE



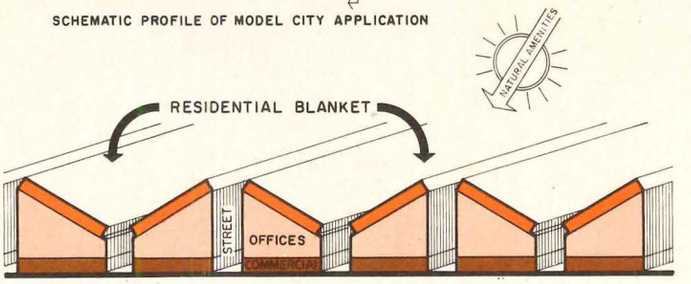
2 CITY STRUCTURE ABSTRACTION
WITH APPLICATION OF RESIDENTIAL BLANKET



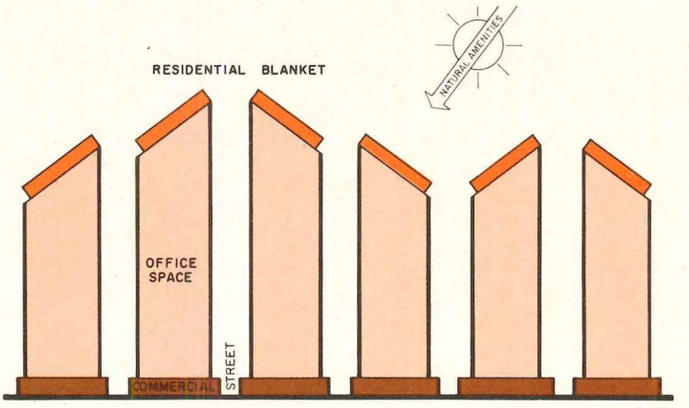
3 SINGULAR APPLICATION
TO ONE CITY BLOCK



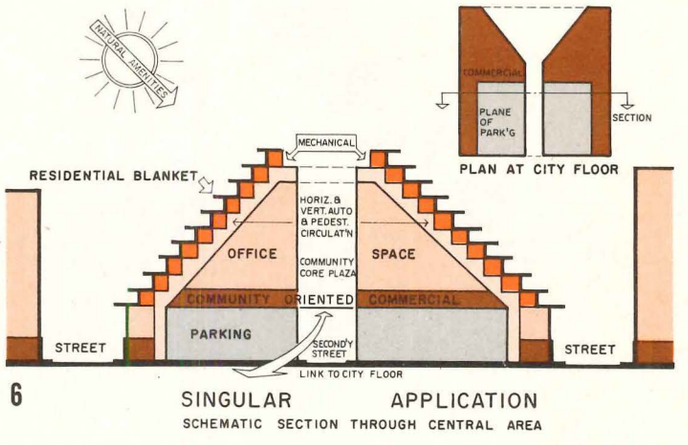
SCHEMATIC PROFILE OF MODEL CITY APPLICATION



4 MODEL CITY APPLICATION



5 HIGH-RISE BLANKET



6 SINGULAR APPLICATION
SCHEMATIC SECTION THROUGH CENTRAL AREA

they would still receive sunlight, rain and breezes. The structure would provide the necessary utilities and auto/pedestrian access ways that suburban developments do.

"Into this residential blanket, low-, medium- or high-income housing types of either portable or permanent status could be injected. The units could be singularly built, totally individual homes with the same freedoms of building as on a rural or suburban site. However, if the need required meeting a large-volume demand, or providing for the poor, mass-produced units could be injected. These would need to meet certain specifications but would still allow individual freedom within and without. The exterior flexibility would come about largely as a result of the 1,100 square feet of exterior 'yard' that would go with each unit.

"As the needs and times change, the original housing could be torn away and new housing erected, re-using the original structure. This structure for the residential blanket can thus be called a *land assemblage* superstructure and would be re-used in the same way as land: It would be designed with a permanence which is not practical for housing itself today. Housing is becoming a consumer product and should be allowed to change as people and times change.

"If this scheme were used on a large-scale in several cities, the original superstructure or various forms of it could be identically repeated in each city without becoming monotonous or stereotyped. This is true because the type and character of the housing that is injected into the residential blanket would determine the final appearance of each community.

"In addition to residential sites being sold or leased individually, 'land parcels' from the residential blanket or the commercial volumes below could be sold or leased in any quantity to private developers. This concept simply increases the permanent re-usable land area available to the public. The permanent and re-usable qualities of the land assemblage would insure its eventual increase in valuation, as the permanence of natural land insures its eventual increase in valuation.

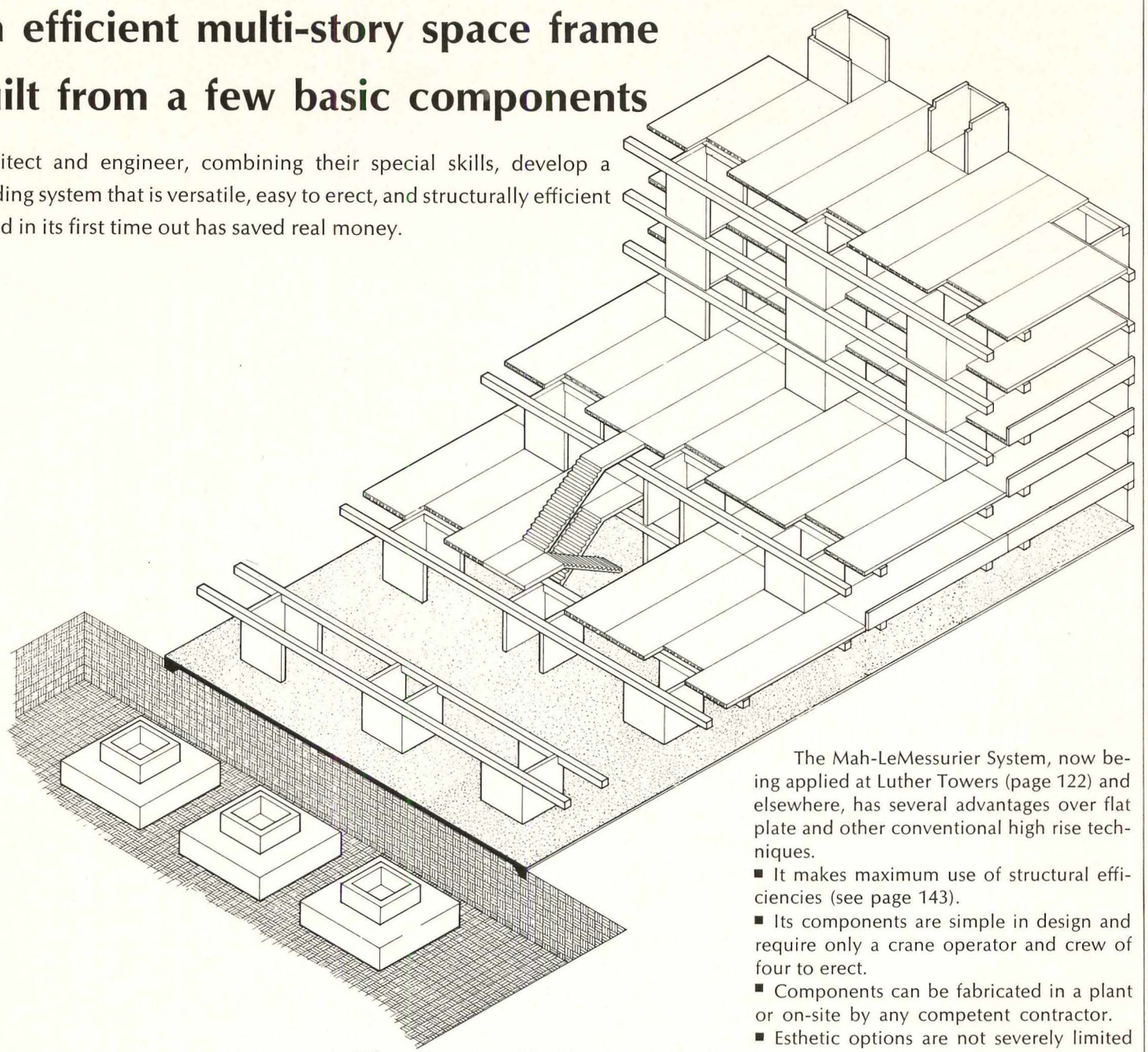
"The value of the initial land parcel (which is determined by its location) will greatly effect the dividends reaped by the entire complex. While this housing concept is needed in cities of all sizes, it would obviously pay for itself faster in a large city where rents can be higher. The office and commercial space as well as parking are intended to bear the majority of the burden of cost return.

"If this housing unit system were to become a reality, the supporting superstructure could take on a wide variety of forms in addition to the blanketed pyramid shown here."

THE RESIDENTIAL BLANKET, an exploratory scheme for city living. Developed, designed and drawn by *Michael E. Reynolds*

An efficient multi-story space frame built from a few basic components

Architect and engineer, combining their special skills, develop a building system that is versatile, easy to erect, and structurally efficient —and in its first time out has saved real money.



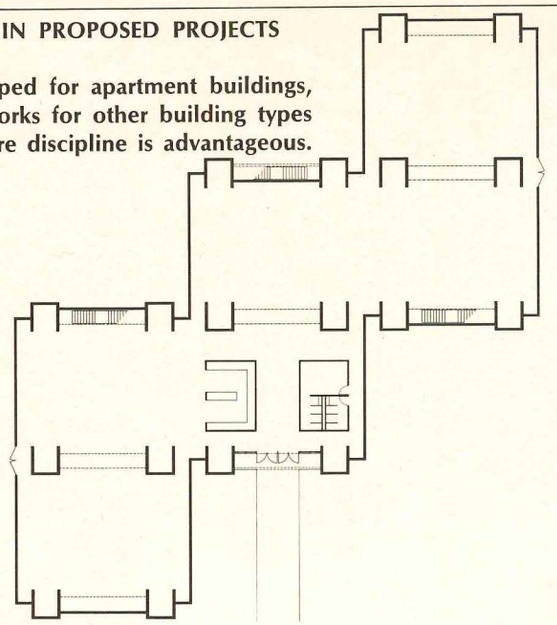
When the Memphis Housing Authority, under instructions from HUD, directed the firm of Walk Jones and Francis Mah, Inc. to redesign and take new bids on their apartment project for the elderly, the architects turned frustration into serious research. The firm began to examine prefabricated concrete building components and assembly procedures with a view toward simplification. From this research, which lasted several years, Mah developed the nucleus of a building system that he took to William LeMessurier, Boston structural engineer. LeMessurier quickly saw the system's potential and sought ways to exploit it.

The Mah-LeMessurier System, now being applied at Luther Towers (page 122) and elsewhere, has several advantages over flat plate and other conventional high rise techniques.

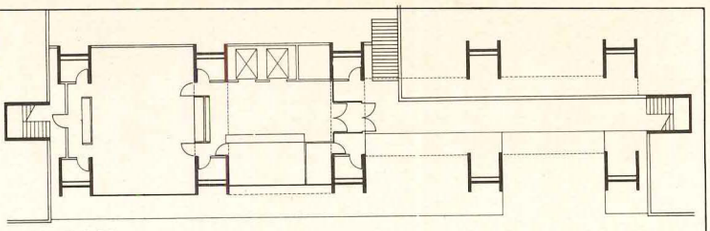
- It makes maximum use of structural efficiencies (see page 143).
- Its components are simple in design and require only a crane operator and crew of four to erect.
- Components can be fabricated in a plant or on-site by any competent contractor.
- Esthetic options are not severely limited by component design.
- Savings in construction time up to 50 per cent have already been realized. This means earlier occupancy and, in the case of rental buildings, earlier cash flow.
- Savings in construction cost have ranged between 8-12 per cent for low rise; 18-27 per cent high-rise (see page 144) over flat plate construction because flat plate is more complicated to build. Reinforcement has to be installed in the field and a lot is required for the columns. The precast system, by contrast, uses its structure efficiently and reinforcing is done in the plant. Post-tensioning, in the field, is simple and inexpensive.

THE SYSTEM IN PROPOSED PROJECTS

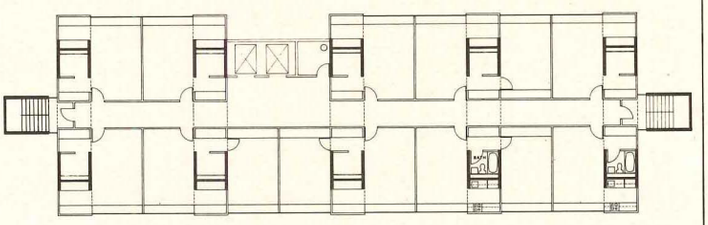
While developed for apartment buildings, the system works for other building types where the core discipline is advantageous.



BALMORAL PRESBYTERIAN CHURCH

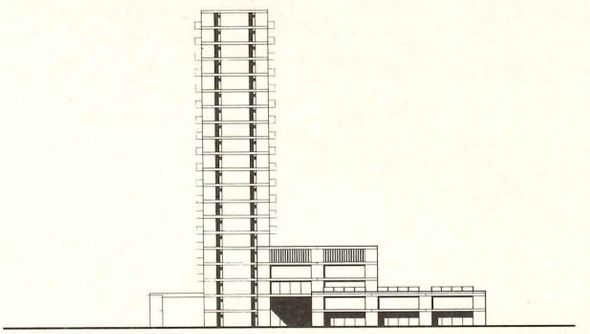


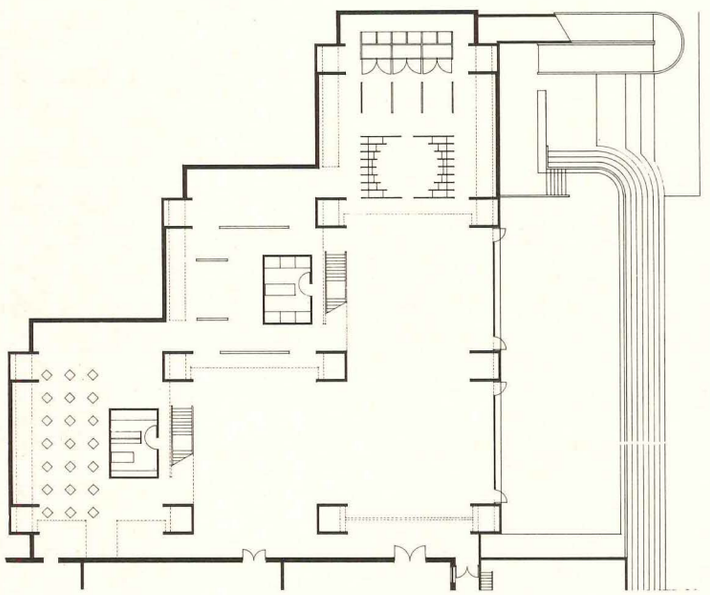
FIRST FLOOR

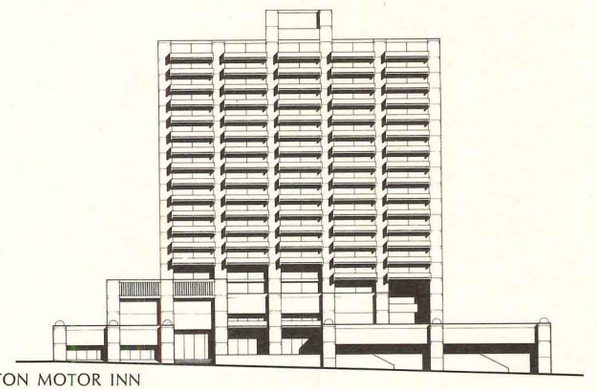


TYPICAL FLOOR

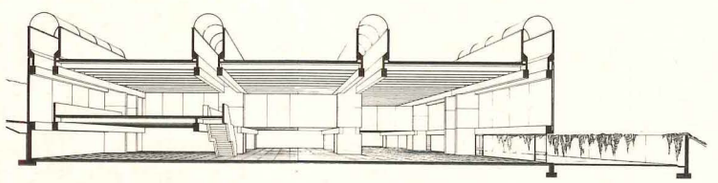
10





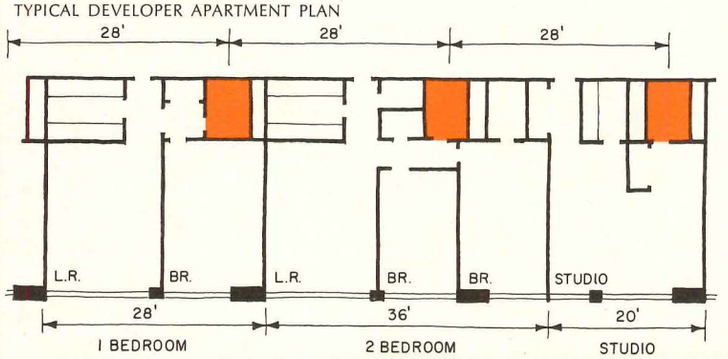


SHERATON MOTOR INN



ADDITION TO BROOKS MEMORIAL ART GALLERY

TYPICAL DEVELOPER APARTMENT PLAN



Since its first application at Luther Towers (see page 122), the architects have been exploring the system's potential for other building types. These include a major addition to an existing art museum, a church, a motor inn (drawings this page) and others. The system works to best advantage in buildings of modular design with strongly repeating forms and functions—apartments, hotels, hospitals—and where the core unit's container capacity can be efficiently utilized.

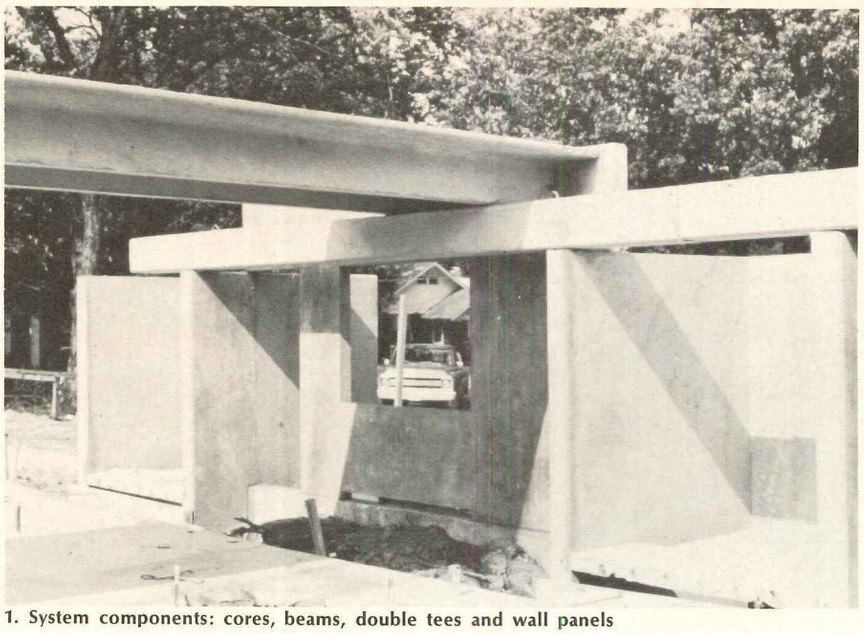
The system's most structurally efficient use is in buildings that range between 5 and 25 stories—the zone in which the concrete works most intensively. With design modifications, this upper limit can be extended. Below 5 stories, the economic advantage over conventional construction is sharply reduced.

When the service cores are stacked on the outside wall, the elevations that result have a strong vertical accent. When cantilevered balconies are allowed to project (see drawing above), vertical is suppressed in favor of a horizontal emphasis. Wall panels can be glass, wood, metal or brick or any combination of these. Spacing of core units is a variable function of acceptable beam depth, spanning capacity of floor system and function to be enclosed. The system's full potential is only beginning to be understood. Says LeMessurier, in assessing this potential, "We learn something new about this system every day."

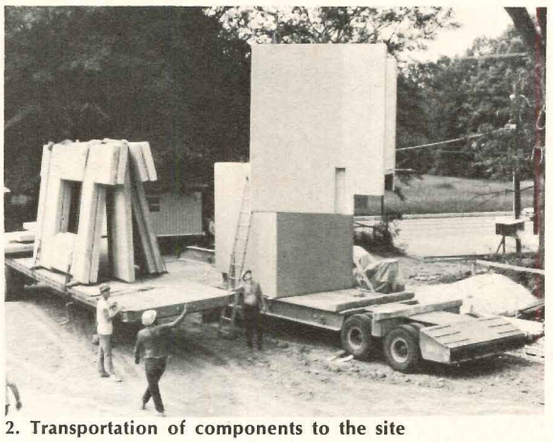
In a hypothetical developer-sponsored apartment plan (sketch at left), service cores have been moved from the outside wall to a position next to the corridor; the mechanical chases allow back-to-back plumbing. In this example, the structure at the outside wall need only resist gravity forces because the service cores and their floors provide a moment-resisting frame to take the wind loads (see drawings pages 143 and 145).

HOW THE SYSTEM GOES TOGETHER

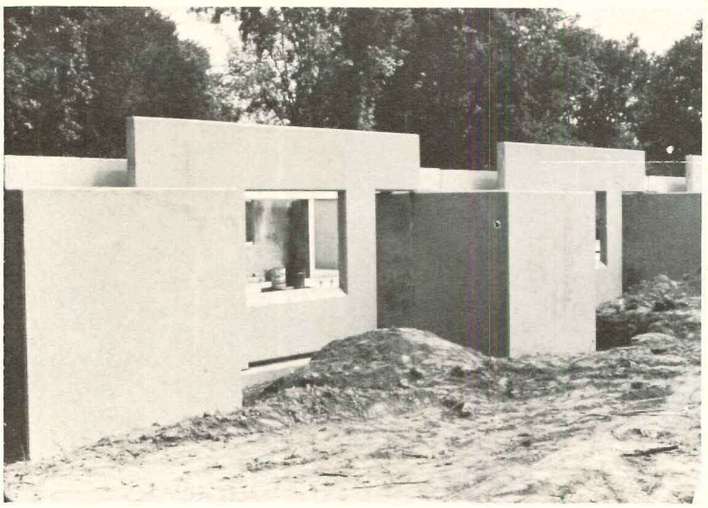
The basic components and the details were kept simple, but they perform sophisticated functions.



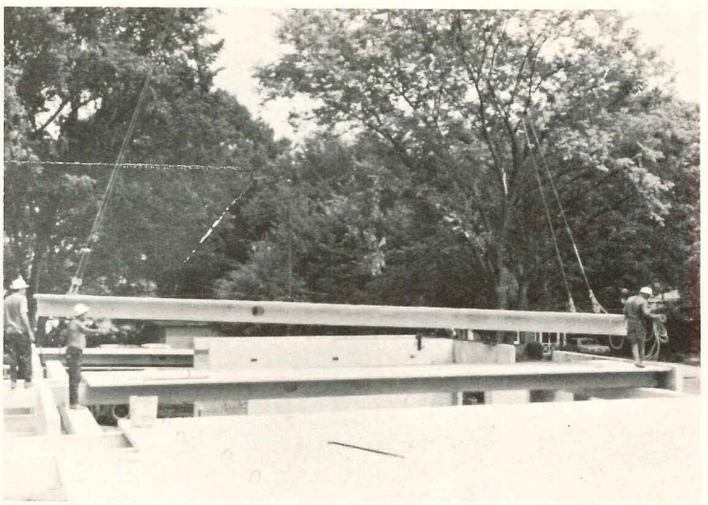
1. System components: cores, beams, double tees and wall panels



2. Transportation of components to the site



3. Early construction stage, wall panels hanging from cores

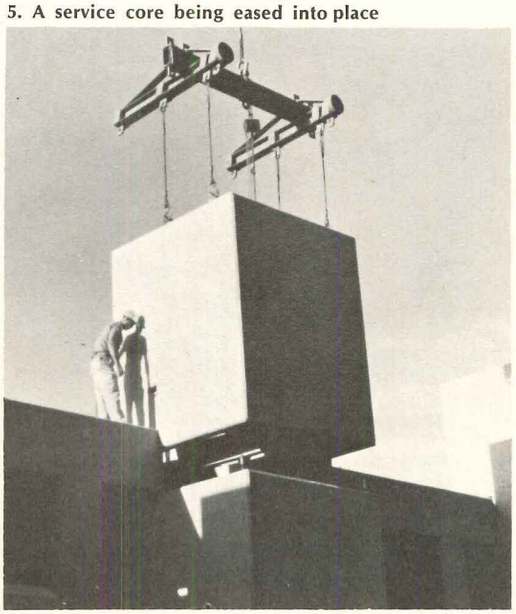


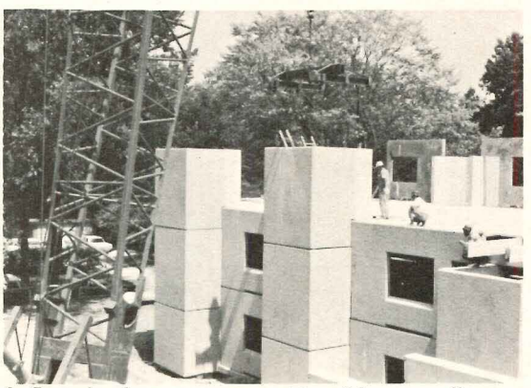
4. Double tees being placed for one of the floors

The "working" structure that takes both gravity and wind loads is comprised of the "U"-shaped service core units, supporting 24-ft-long beams which carry 38 ft. 6 in. double tees. A very effective space frame is obtained from precast elements by making one of them—the core unit—of a much larger scale than conventional vertical supporting elements. The 8-ft-wide core units fit on the flat bed of a truck. Their size, however, was determined by the length of a bathtub plus the width of space required for a mechanical chase. The double tees in Memphis came 8-ft wide, but floor structural elements could just as well have been 4-ft wide, fitting the modular dimension of the core.

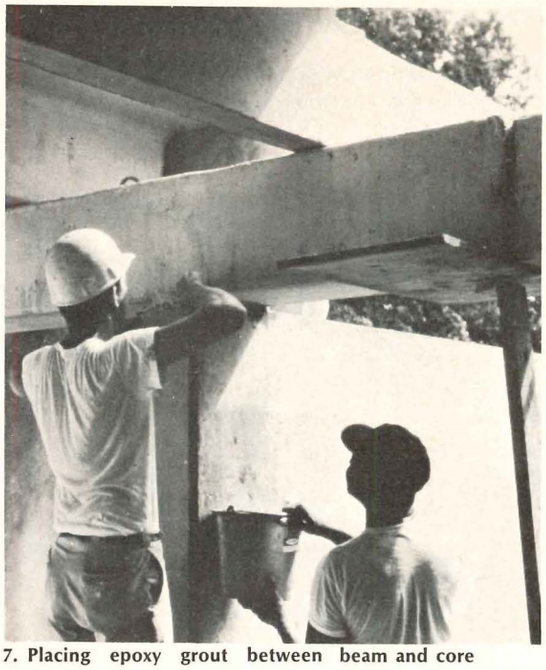
The structure goes together as simple as one, two, three. The core units are grooved to engage the top of the T-shaped wall panels, and are notched for the beams to go through. The core units are post-tensioned vertically, clamping beams between them.

5. A service core being eased into place

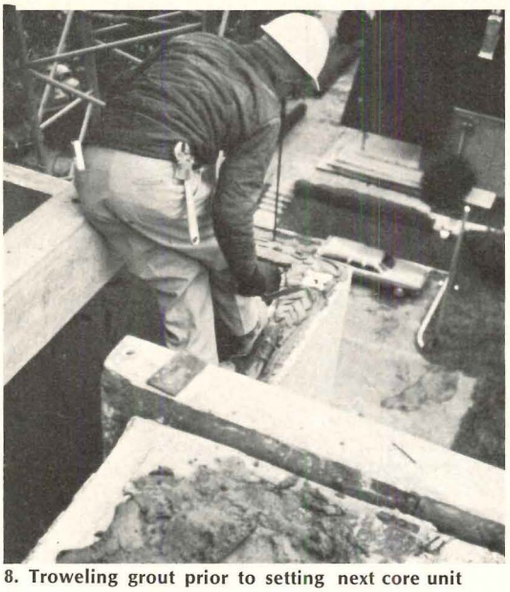




6. Cores in place; grooves on sides slide over walls



7. Placing epoxy grout between beam and core



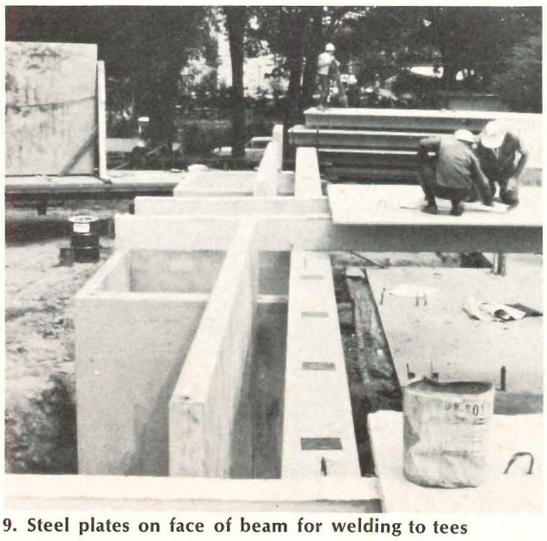
8. Troweling grout prior to setting next core unit

Post-tensioned cores work as one of the three elements in a wind-resistant frame. To ensure that the prestressing force would be distributed evenly, it was necessary for grout to be applied to the top edges of the cores. Metal shims are placed at corners of cores for leveling. Neoprene pads also are used there to prevent local stress concentrations at the shims when prestressing is applied. The pads also keep grout from being squeezed out as core units are set.

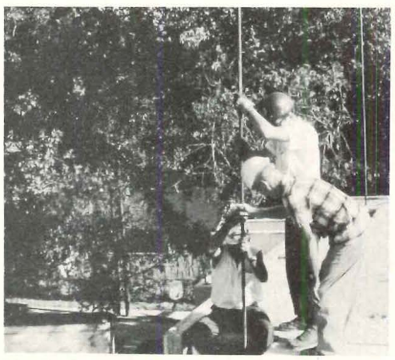
Stems of all double tees have steel plates set in them where they rest on the beams, and these are welded to companion steel plates on the top face of the beams.

Core units are prestressed by means of steel rods, the post-tensioning operation being performed every three floors with hydraulic jacks. Rods are joined to one another by means of threaded connections.

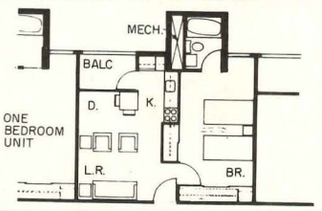
Where ends of beams abut, a shear connection is made so that the beams work in a wind resistant frame in the longitudinal direction of the building.



9. Steel plates on face of beam for welding to tees

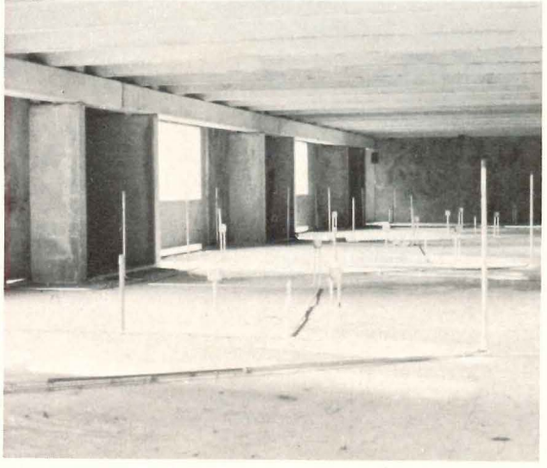


10, 11. Post-tensioning of core units



13. Luther Towers, Memphis, Tennessee

12. Finished floor with conduit set atop tees

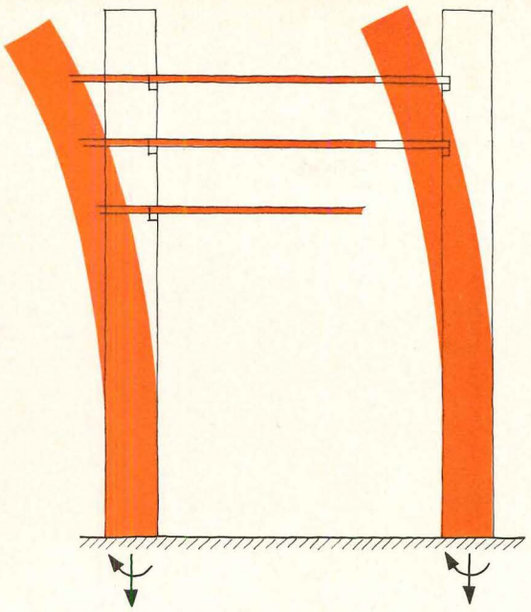


LeMessurier's calculations showed that overturning moments of the cores induced by wind would be too large if the floors were only simply supported. To remedy this, he developed an ingenious arrangement in which the cores, the double-tees and the beams structurally complement one another.

For those double tees that span between core units, a shear connection is made between the ends of the stems of the tees and the core units. When the cores try to bend in the wind, the cores tend to rotate the tees. This rotation throws bending moments into the double tees, a lever arm having been formed between the shear connection and the point of support of double-tee on the beam. By this means only a shear connection is needed at the ends of the tees. In effect, rigid frame action has been achieved without moment connections.

In a somewhat similar fashion, the beams and cores resist wind load in the longitudinal direction.

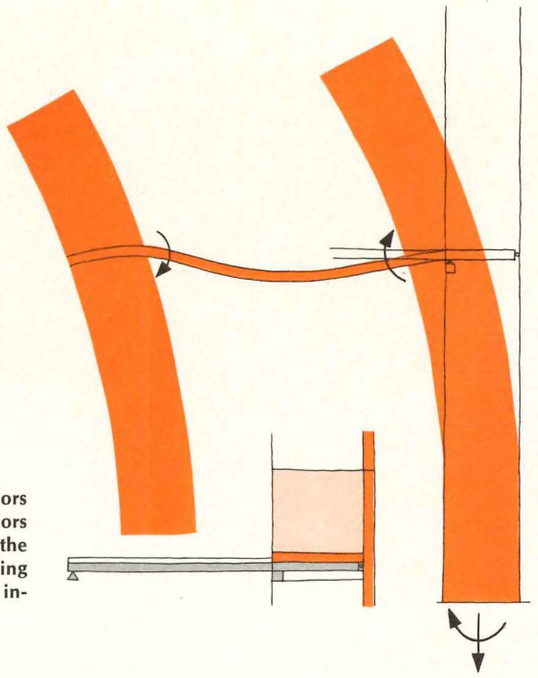
Structural behavior is shown in the drawings at right.

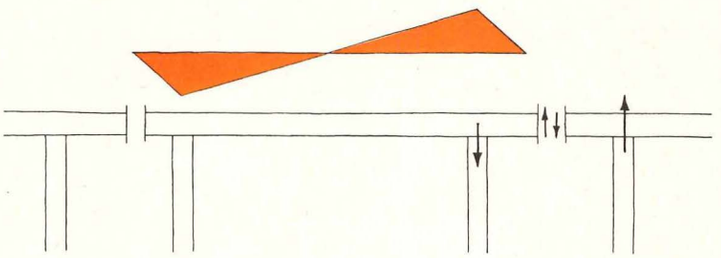


Overturning moment of cores is too large when floors are only "simply" supported. Translation of floors takes place (above). But with this new system, the engineer designed restraint into the system by utilizing the moment resistance of the floors (right). Only inexpensive shear connections were required.

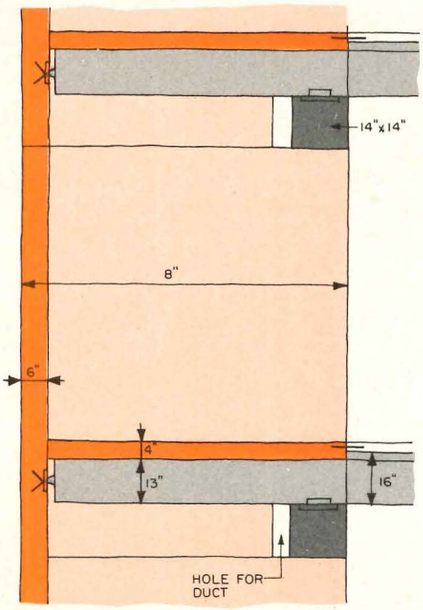
HOW THE STRUCTURE WORKS

The inherent structural capabilities of an efficiently shaped core, beams and tees are exploited utilizing connections that are simple to make and are inexpensive.

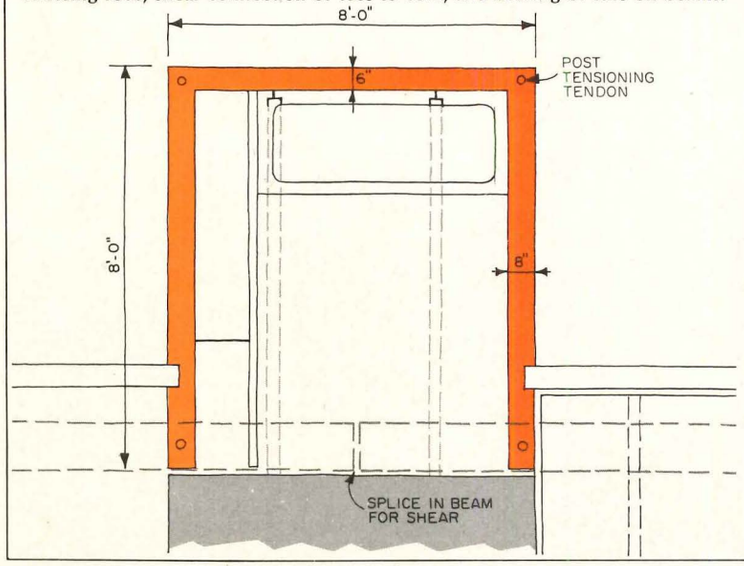


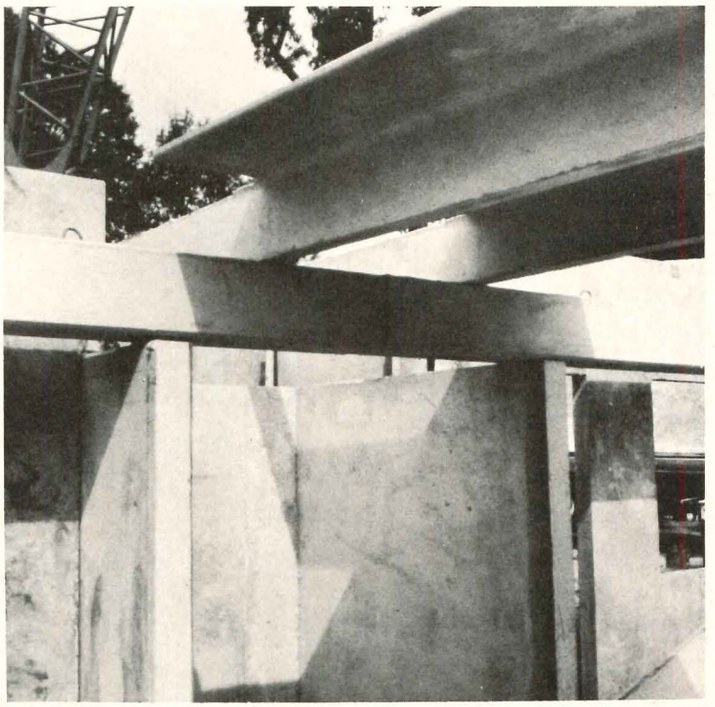


Moment resistance of beams is utilized in the longitudinal direction of the building to provide wind resistance.



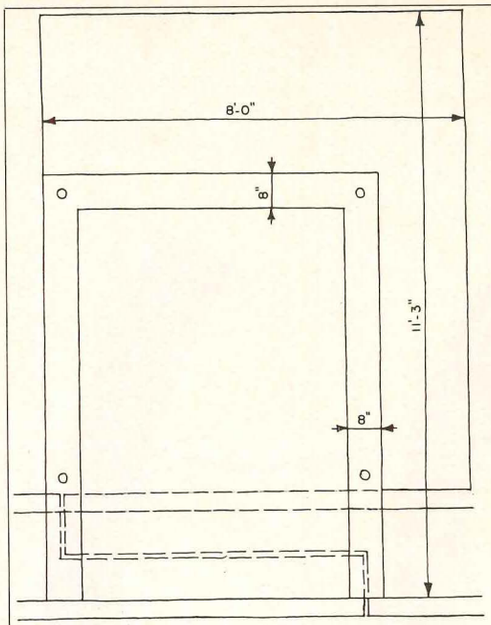
Section and plan of core, beams and ends of tees showing location of prestressing rods, shear connection of tees to core, and bearing of tees on beams.



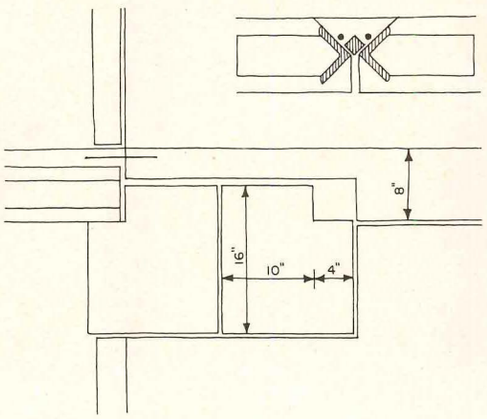


THE SYSTEM ALSO WORKS WELL WITH CONVENTIONAL PLANS

The cores can be moved to the interior for planning reasons, but structurally they function in the same way



Plan of the core unit showing location of holes for post-tensioning rods, and beam shear connections.



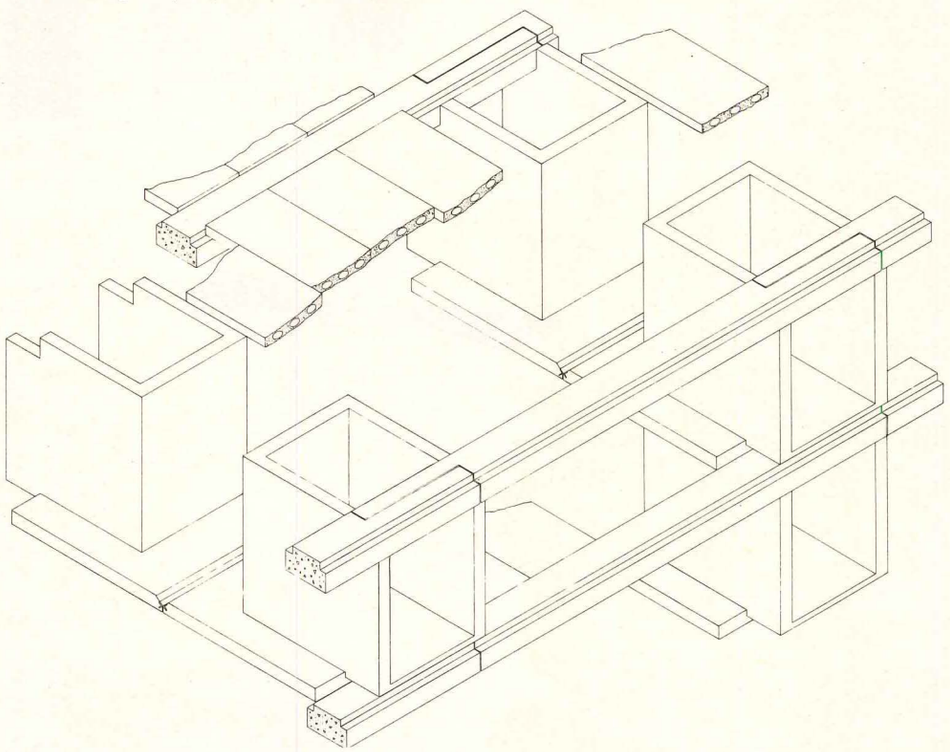
Section through center of core unit and beams

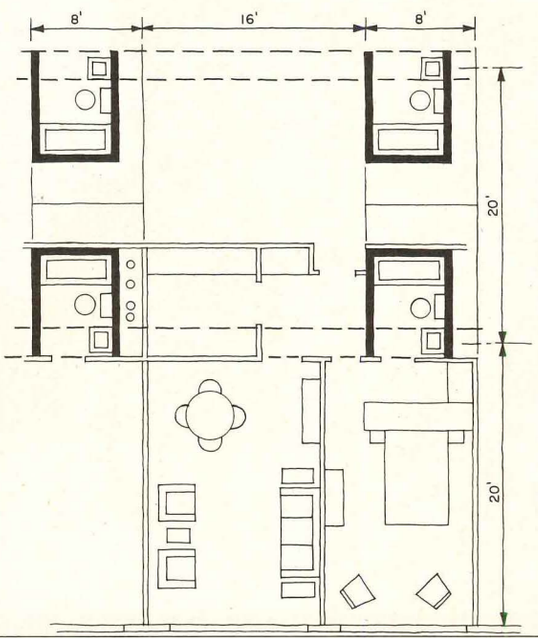
The drawings on this page show some modifications from details presented earlier, intended for application in a conventional 60-ft wide high-rise apartment building, with bathrooms pulled in next to the corridor. The beams now span 20 ft rather than 16 ft, so they are joined in a shiplap configuration to provide greater restraint for gravity loading. Because the span of floors between beams is less than 20 ft prestressed hollow-core slabs or precast slabs with ordinary reinforcement can be used. The same is true of span between core beams and spandrel beam at the outside wall.

In this modified design, the post-tensioning rods are spaced equidistant from the centroid of the core, avoiding eccentric loading of the core.

In this suggested design the cores have a larger area floor slab poured integral with them, forming the floor slab of the corridor.

Resistance to wind load is provided by the cores in conjunction with the bending resistance of the floor slabs of the core. Slab connection detail is shown inset in right-hand drawing above.





Structural elements of the system for a conventional high-rise apartment building. Note that core is notched to receive the ends of contiguous beams. Floor slab poured integral with the core extends out on either side of the core and also extends back.

The cost picture

Cost studies have shown that the structure for this system can run from 15 to 25 per cent less than that for flat plate construction—the most commonly used concrete system for high-rise apartments.

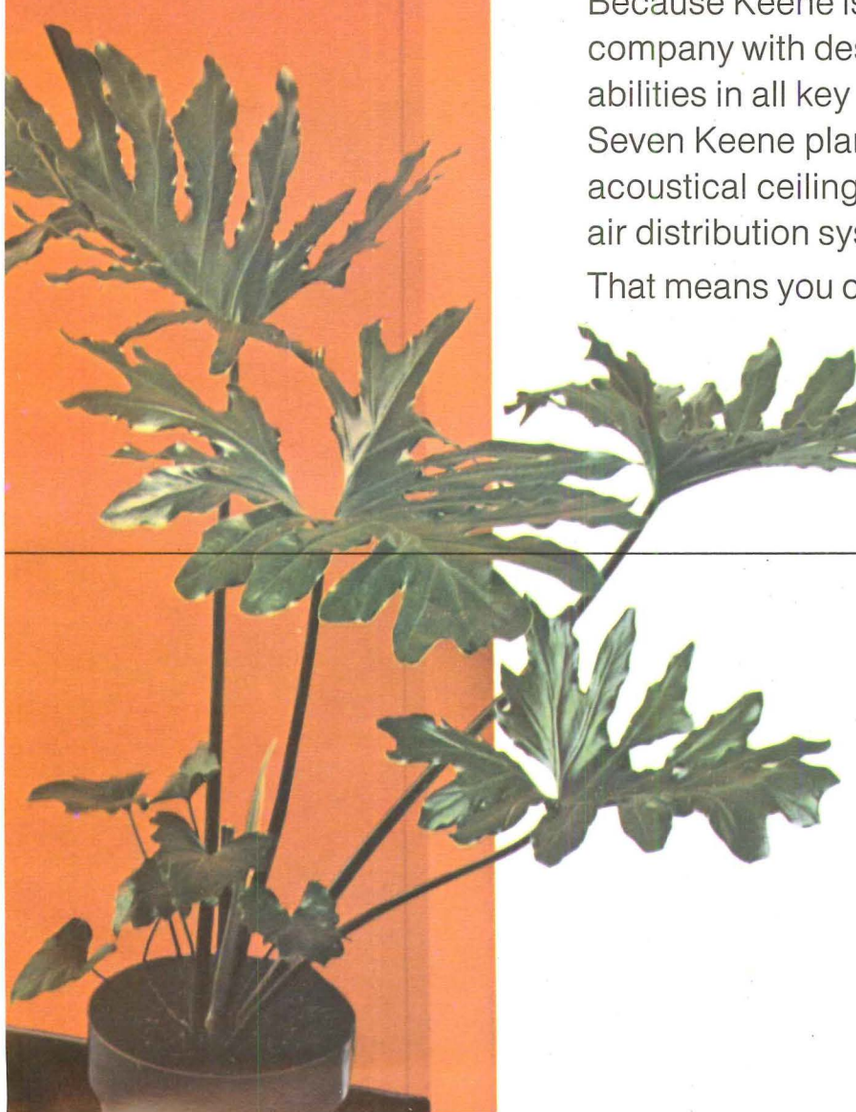
The results of actual bids:
Barry Homes Housing
for the elderly*

Flat plate design—183 units
bid spring 1966 $2,627,701
or $14,300/unit
escalated (1966-1970) at
34 per cent = $19,200/unit

ML System—195 units
Bid fall 1970 $2,538,000
or $13,000/unit

Construction time estimate
Conventional 18 months
ML System 10 months

*This project was designed prior to Luther Towers



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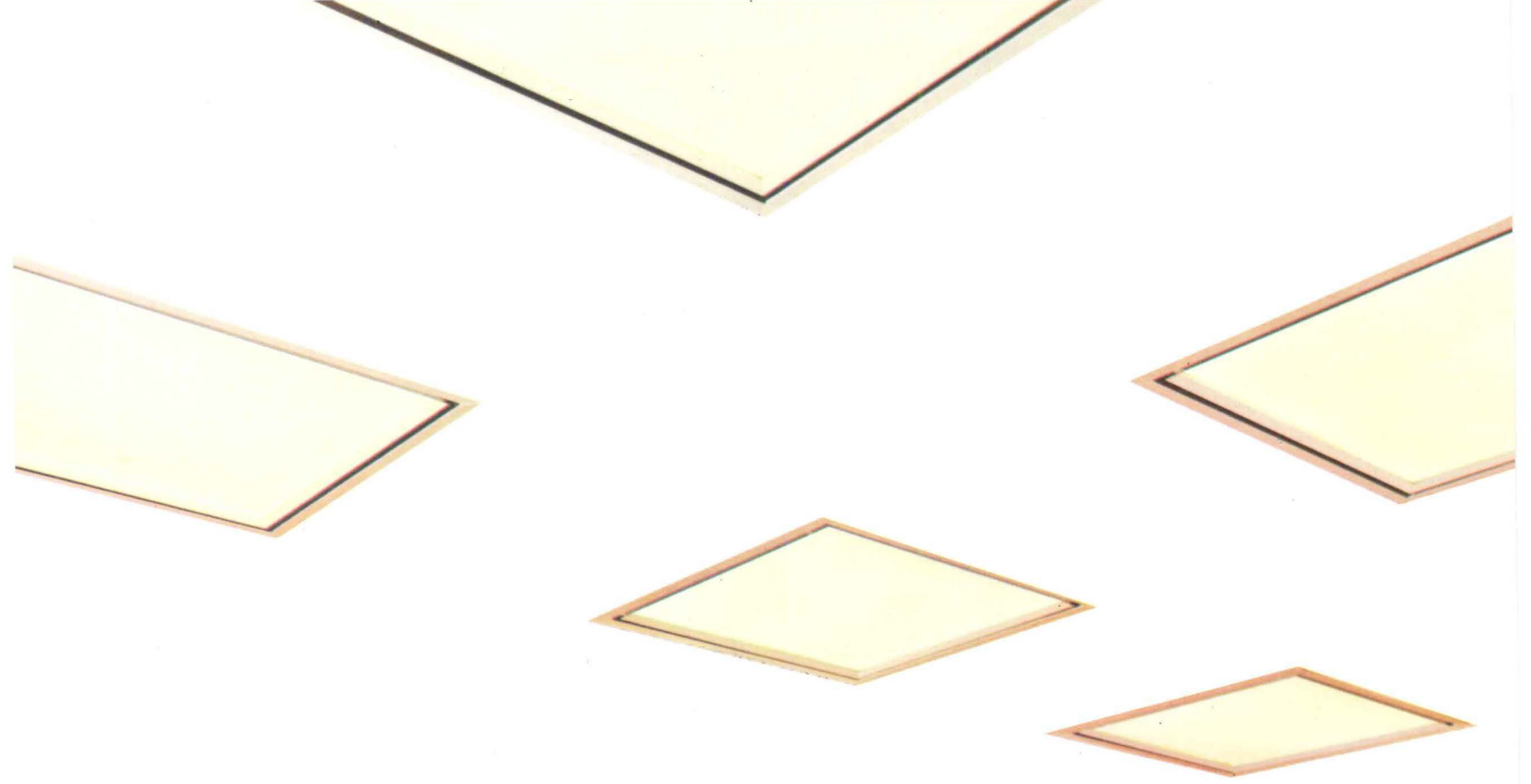
It starts with empty space... when your building is still a blueprint, or at most an empty shell—that's the time to call in Keene.

Because Keene is the only major national company with design and manufacturing capabilities in all key areas of interior construction. Seven Keene plants produce integrated lines of acoustical ceiling products, lighting and air distribution systems, and movable walls.

That means you can specify any or all your interior products from Keene, and be sure of compatible, dependable performance.

Here's how Keene's interior products all fit together to serve you...



Keene lighting fixtures.

How can you be sure of lighting fixtures that will be completely compatible with your ceiling system and interior decor? Keene is making the choice a lot easier. We're now one of the major manufacturers of commercial lighting fixtures, able to offer you an unlimited range of fixtures tailored to the design and illumination needs of every interior.

Pendant and surface fluorescents... air-handling troffers... recessed aperture units... Keene makes them all, in hundreds of contemporary styles and finishes, from custom designs for special applications, to standard specified fixtures at all price levels.

For descriptive data on the kinds of lighting you need, write to:

Keene Corporation
Sechrist Lighting
4990 Acoma Street
Denver, Colorado 80216

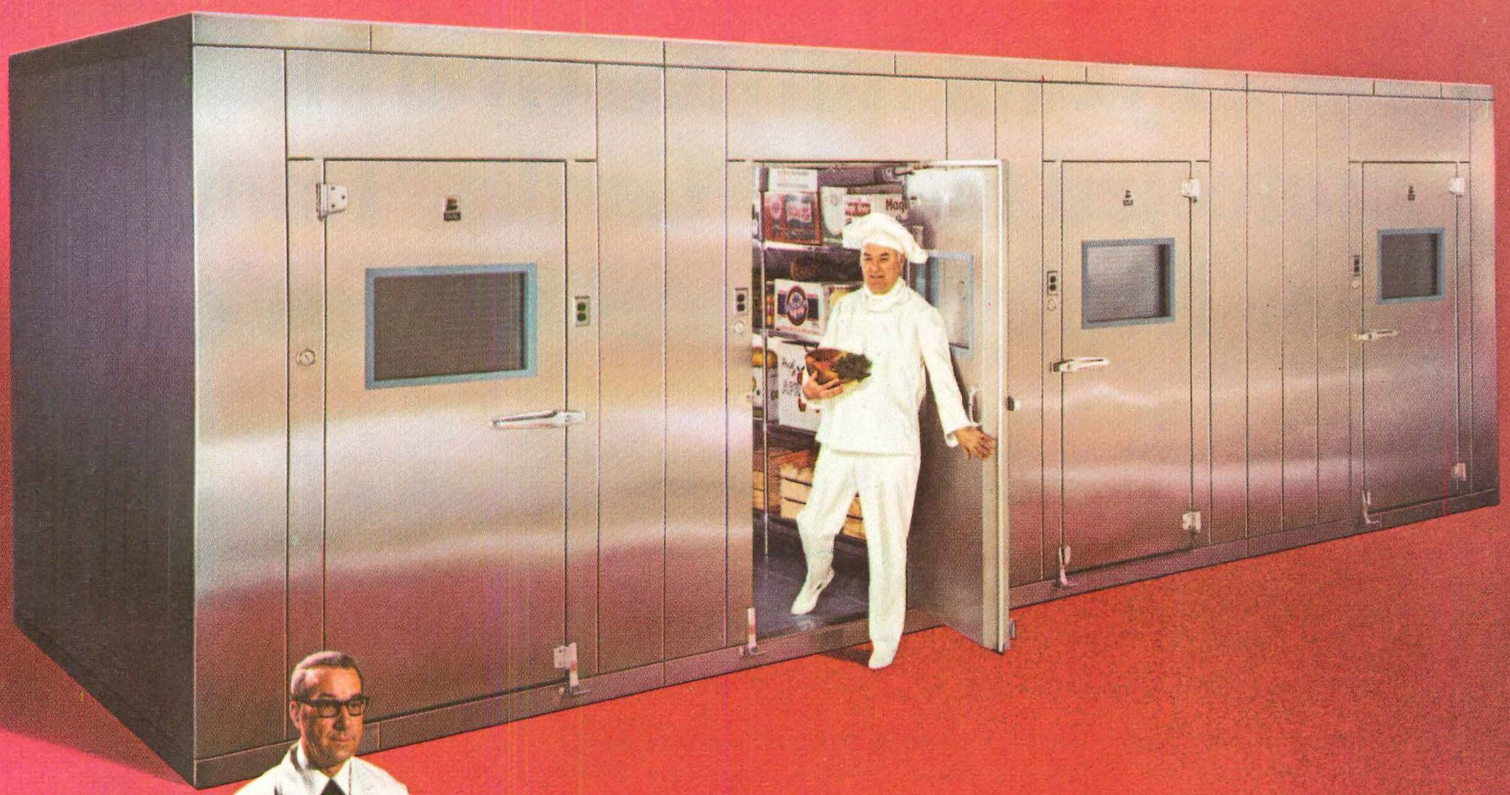
(full line of commercial lighting fixtures, plus custom design capability for special applications)

Keene Corporation
Smithcraft Lighting
Industrial Way
Wilmington, Massachusetts 01887

(broad line of architecturally specified lighting fixtures, standard and special)

Keene Corporation
L&P Lighting
Olive Branch, Mississippi 38654

(competitively priced commercial lighting fixtures)



In hotels and motels everywhere Bally Prefab Coolers and Freezers are accepted as the standard for walk-in refrigerated storage

Bally Prefabs can be assembled in any size for indoor or outdoor use from standard panels insulated with four inches of urethane foamed-in-place. Easy to add sections to enlarge . . . easy to relocate. Factory refrigeration systems for every temperature from 35° cooling to minus 40° freezing. Stainless steel, patterned aluminum or galvanized finishes. Subject to fast depreciation. (Ask your accountant.) Write for 28-page booklet and urethane wall sample. Bally Case and Cooler, Inc., Bally, Pennsylvania 19503.

There's an evolution in the kitchen

Bally®

Write Dept. AR-4

For 25 years Hillyard Gym Finishes protected the old "Garden" floor. Now Trophy enhances the new one.

During thousands of tournament and regular games, Hillyard Gym Finishes worked for the basketball floor of the old Madison Square Garden. So when the new Garden was built, only one finish was specified —Hillyard TROPHY Gym Finish.

Hillyard floor seals and finishes are wise choices for specification on every type of floor in every type of structure. They provide (1) better, longer-lasting protection for the surface; (2) enhanced appearance; and (3) easier, more economical maintenance.

Write for Up-Dated Specifications

A Sweets Architectural Catalog; Spec-Data sheets on seven widely specified products; and a treatment folder for every type floor. Write for these on your letterhead.

Hillyard architectural consultants are ready to recommend proper, approved treatments for the floors you specify; and to supervise application at the job site.

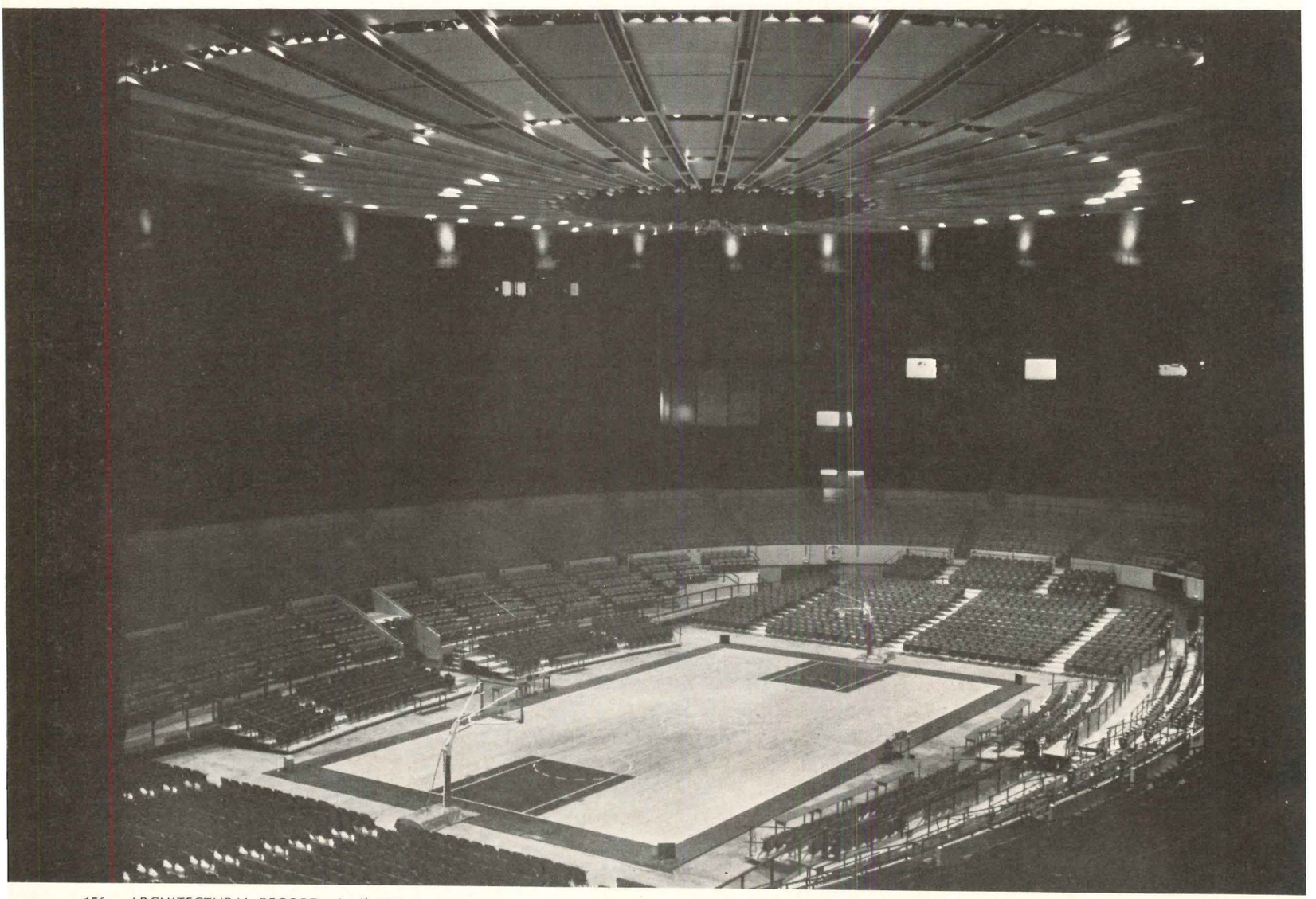
Madison Square Garden
Architects: Charles Luckman Associates

HILLYARD
FLOOR TREATMENTS
ST. JOSEPH, MISSOURI U.S.A.
Totowa, N.J. San Jose, Calif.
Minneapolis, Minn. Dallas, Tex.
Boston, Mass.
IN CANADA: Calgary, Alberta
London, Ontario

SINCE 1907

The most widely recommended and approved treatments for every surface

For more data, circle 63 on inquiry card



The $1200 face lift

Here's how M. Arthur Gensler, Jr. & Associates, Architects, lifted 60 years off the appearance of the Hearst Building in San Francisco. Instead of making costly structural changes, they used canvas to cover the multiple store signs that cluttered the street floor. The result: a fresh, clean, unified look in keeping with the character of the fine old building.

Steel tubing with welded connections provides all the support needed, so there's greater design freedom at far less cost than with heavier building materials. The fabric is a 10.10 ounce, all-cotton army duck, acrylic painted and treated to weather any outdoor job.

Whenever one of your remodeling projects calls for a complete face lift, talk it over with a canvas products manufacturer. He has what it takes to handle the whole operation without a wrinkle.

AMERICAN CANVAS INSTITUTE, Memphis, Tennessee

For more data, circle 64 on inquiry card

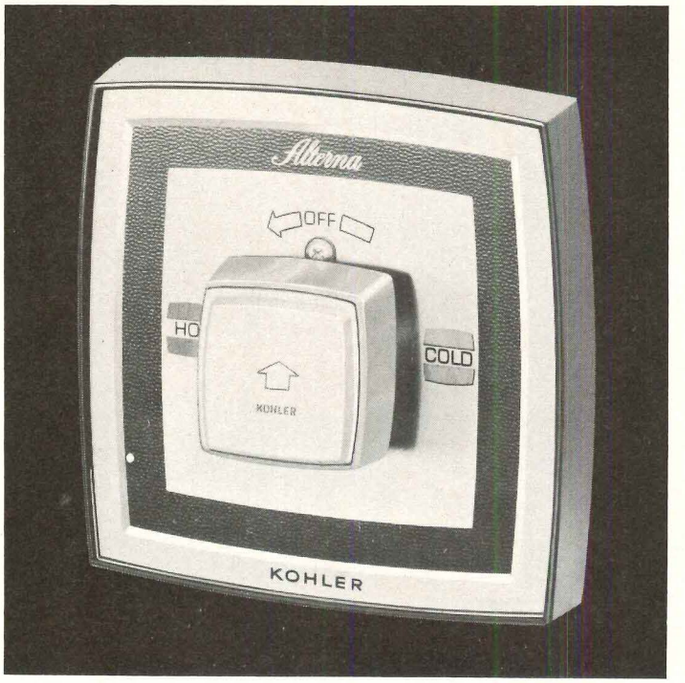
Fine-tunes the water temperature, then locks it in.

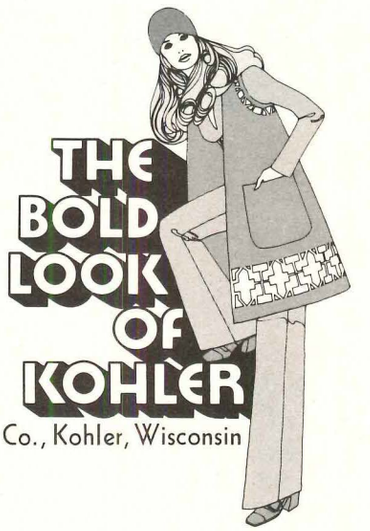
That's Rite-Temp—new from Kohler. A pressure balance mixing valve that does away with sudden bursts of hot and cold water caused by fluctuations in water pressure.

With Rite-Temp you simply adjust the single control to mix hot and cold to the desired temperature ... and regardless of pressure changes in the water supply, Rite-Temp maintains your selected temperature.

Rite-Temp—for easy installation, just one hole to cut; low maintenance; constructed to combat "lime" build up; closes with water pressure for positive shut off.

Pictured. Rite-Temp in Alterna, in polished or brushed chromium or gold electroplate. Also available in Triton II. For more information, write Rite-Temp, Kohler Co., Kohler, Wisconsin 53044.





Kohler Co., Kohler, Wisconsin

For more data, circle 65 on inquiry card

For beautiful protection against sun and corrosion—

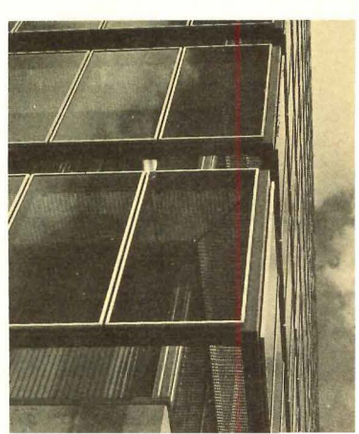
this building wears "Sunglasses"

Municipal Office Tower, Norfolk, Va.
Architect, Vincent G. Kling, FAIA
Photo by Lawrence S. Williams

ZN-454

with galvanized steel frames.

—and the galvanized steel has already survived five years in the combined marine and industrial atmosphere of Norfolk, Virginia with no sign of corrosion. ☐ The "sunglasses" consist of an outer wall of brown-tinted windows which filter out solar heat and glare. A 280 ton framework of hot dip galvanized steel holds the windows 3 feet out from their clear glass counterparts in the face of the building. ☐ For aesthetic reasons the framework was painted olive green. This provides a bonus in corrosion resistance because the combination of the zinc coating with a paint top coat has a proven synergistic effect which assures longer life than the sum of the two systems used individually. ☐ No other material gives you the combination of strength, corrosion resistance and economy you get from galvanized steel. ☐ St. Joe supplies quality zinc—American industry puts it to work.



ST.JOE
MINERALS CORPORATION

250 Park Avenue, New York, New York 10017, Tel. (212) 986-7474

Second East Hills Park, Pittsburgh, Pa.
Architect: Tasso G. Katselas. Photographer: Marcel Proulx.

Make Your Residential Advertising Dollars Work Harder Longer

A strong recovery in the housing market is under way and large gains are in the cards for the coming months. According to F. W. Dodge, 1971 should show a 17.5 per cent increase in housing units over 1970—with the apartment segment of the total due to increase by 22 per cent.

In mid-May Architectural Record's "Record Houses and Apartments of 1971" offers a timely opportunity for manufacturers of quality residential building products to exert year-long influence on those architects and builders who are at the forefront of this booming market. It will reach all major groups of specifiers and buyers in the housing market:

- over 40,000 architects and engineers who are verifiably responsible for over 87 per cent of the dollar volume of all architect-planned residential building.
- the nation's 20,000 foremost builders qualified by Sweet's on the basis of annual building activity to receive the Light Construction File.
- (at your option) 5,000 leading interior designers qualified by Sweet's to receive the Interior Design File.
- in addition, bonus bookstore distribution to an important segment of the house building and buying public.

"Record Houses and Apartments" offers you two unique advantages:

- *Makes your dollars work longer.* "Record Houses and Apartments" has the longest working life of any issue of any architectural magazine. Of those architects who received the first "Record Houses" annual 15 years ago, nearly half still refer to it!
- *Makes your dollar work harder.* Advertisers in "Record Houses and Apartments" earn a lower rate for all their advertising in regular issues of Architectural Record. And in many cases the new McGraw-Hill Market-Directed® Rate Incentive Plan allows an advertiser to add "Record Houses and Apartments" to his regular schedule at surprisingly little extra cost.

Ask your Architectural Record representative to show you how to get greater mileage out of your residential advertising dollars in America's most influential housing annual.

ARCHITECTURAL RECORD
330 WEST 42ND STREET
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DIVISION
OF McGRAW-EDISON
COMPANY

Send this coupon for a free brochure which can help you plan a laundry facility. Room layouts, equipment sizes, wiring and venting are discussed.

Mr. E. W. Jess,
Manager, Commercial Department
Speed Queen, Ripon, Wisconsin 54971

AR-4

Gene, please forward your laundry room design brochure.

☐ Please send me the name of the Speed Queen Route Operator nearest me.

☐ I would like a Speed Queen representative to call.

Name and title_____

Firm name_____

Address_____

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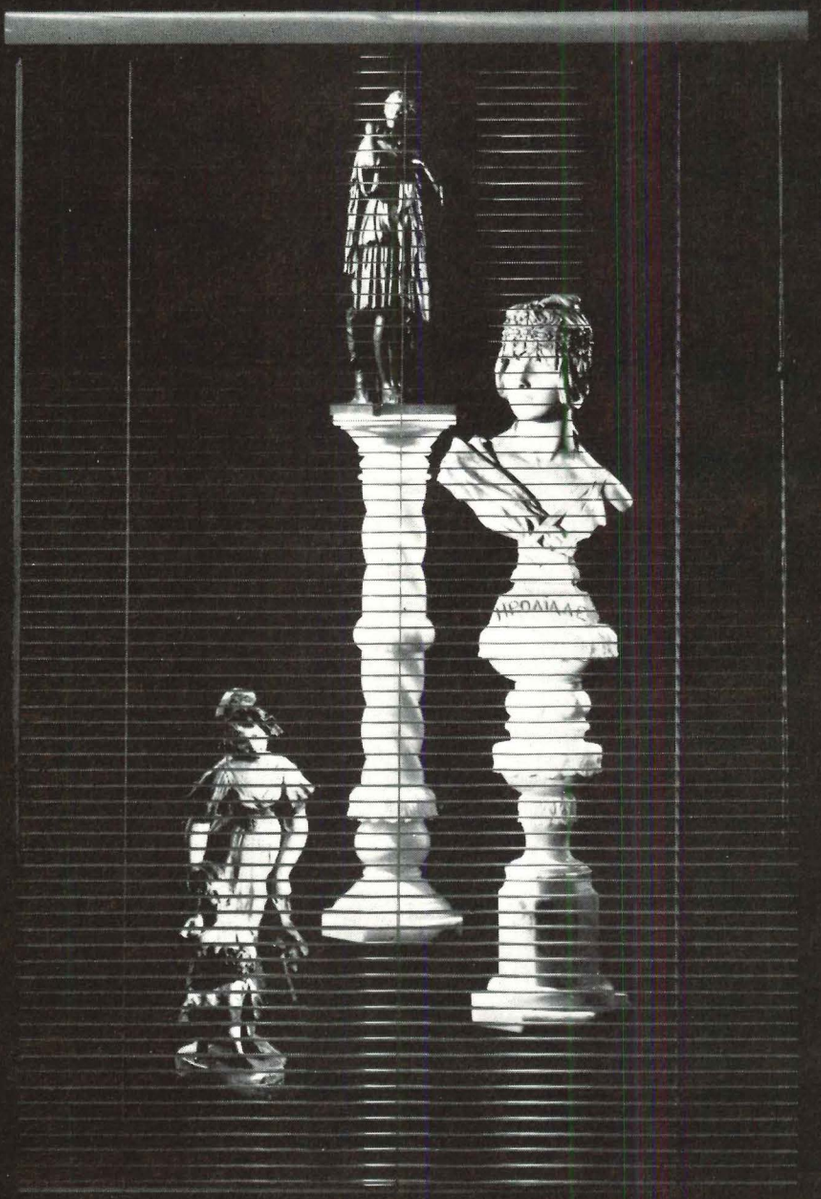
And that can mean everything.



One of the requirements of good building design is that it be left alone. Inside and out. Flexalum Venette® 1-inch louvers do just that. They're functional without being obvious. Open, they virtually disappear. Closed, they give you complete privacy. In between, they control light with unprecedented subtlety and comfortable diffusion.

And the Venette is strong. Its spring tempered louvers are made of a special aluminum alloy for extra strength and resiliency. A rigid torque-tube head, aluminum wand tilter and polyester cable ladders help make this blind last longer—look newer longer.

The Venette—truly a classic in its own time—everything you'll ever want in a blind. Now. For more information write, Alcan Aluminum Corporation, Building Products Division, 100 Erieview Plaza, Cleveland, Ohio 44114

ALCAN

Cataloged in Sweets, Spec-Data and IDAC.

For more data, circle 68 on inquiry card

Plate 613

It's Terra Vitra.

You know Terra Vitra.® The famous architectural tiles from the kilns of American Olean. They're the natural thing for floors and walls, for all the reasons you like natural things; beauty, permanence, honesty.

Well, Terra Vitra comes in ten great new indoor-outdoor sculptures.

There are low and high reliefs, overall, directional and accent patterns, even some with which you can develop continuous designs.

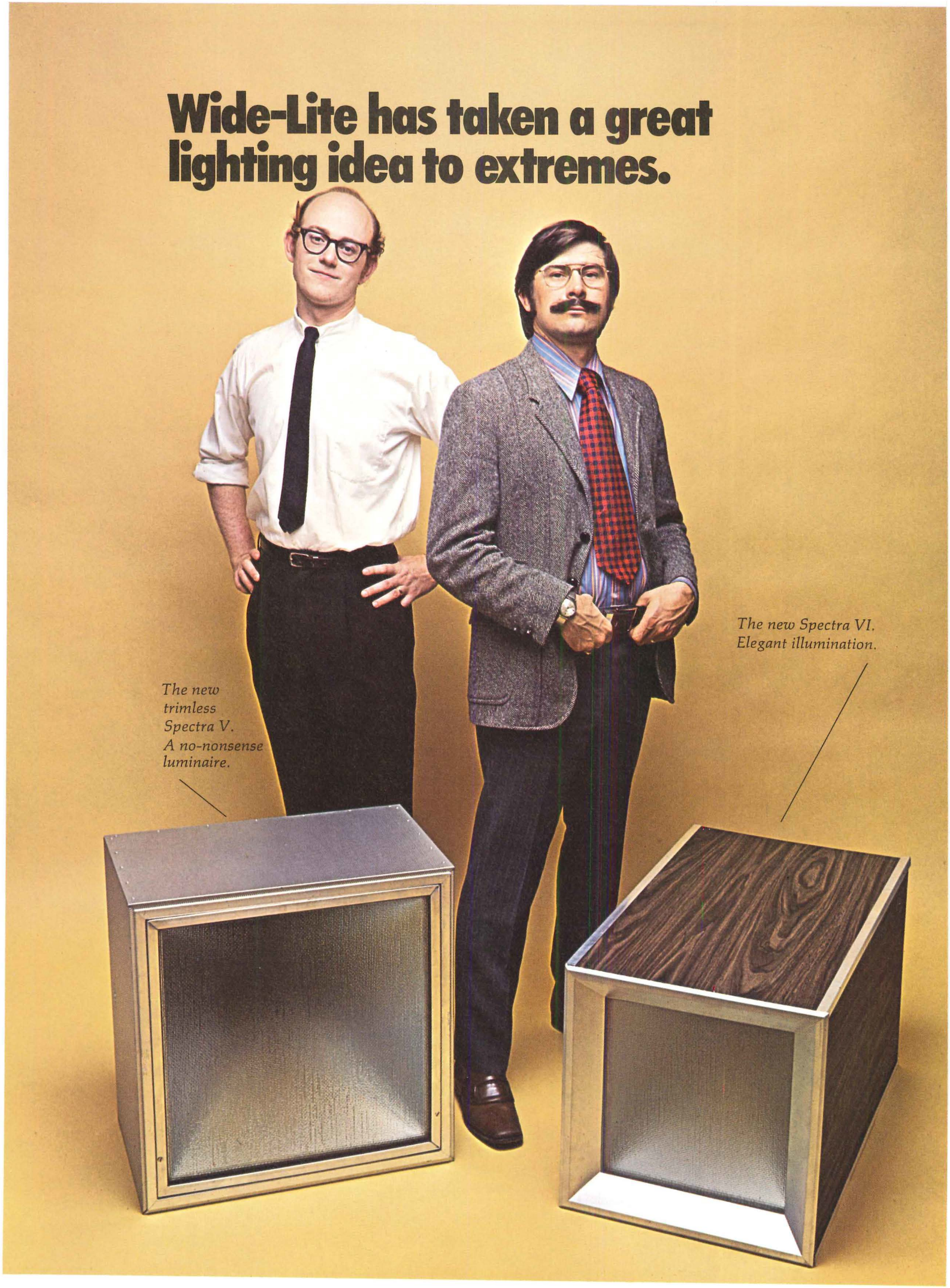
And the glaze! More textured, yet more transparent, in handsome new colors.

Write for a Terra Vitra brochure showing all the news. American Olean Tile Company, 1528 Cannon Ave., Lansdale, Pa. 19446.

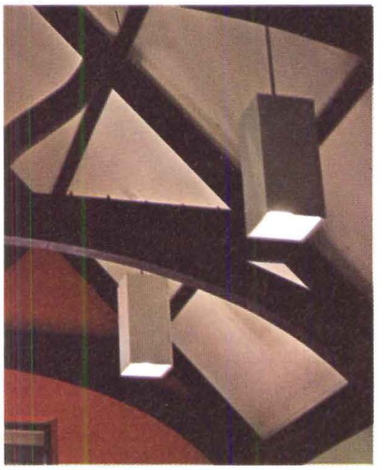
CERAMIC TILE
American Olean
A Division of National Gypsum Company

For more data, circle 69 on inquiry card

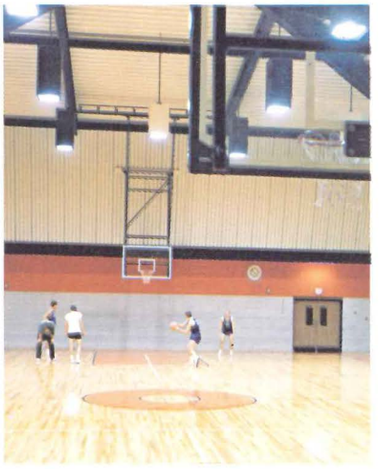
Wide-Lite has taken a great lighting idea to extremes.



Plain or fancy, Spectra indoor luminaires by Wide-Lite are better lighting by design.



The drama of Spectra VI pendants create their own design statement in this Minneapolis library. Their geometric forms blend gracefully with a classic Gothic ceiling.



Twenty Spectra VI pendants provide an average 81 footcandles of uniform lighting in this gym. These rugged but handsome fixtures are available in 400 and 1000 watt models.

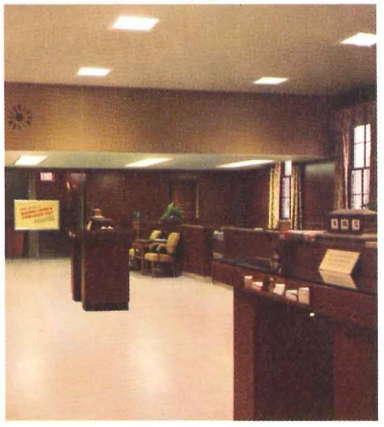
Take your choice. The new Spectra V all-aluminum recessed fixture without frills, but with countless application possibilities. Or the new Spectra VI, a dramatic pendant. Both give you proven Wide-Lite* design superiority.

Both feature such "Wide-Lite" exclusives as dustproof construction, encapsulated SilentGuard ballasts for easy installation and exceptionally quiet performance, and higher levels of maintained light at lower cost.

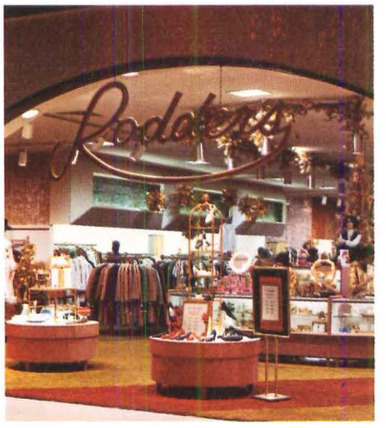
New Spectra V's all-aluminum housing and integral, encapsulated ballast make for quieter operation than comparable luminaires. This recessed ID features a new reflector design which assures remarkable control of the light source. And dustproof construction keeps lighting levels high, maintenance costs low.

The trimless Spectra V comes in two models. The High Efficiency version yields maximum utilization of the light source with efficiencies as high as 70%. Ideal for most commercial applications: supermarkets, department stores, etc. If brightness must be rigidly controlled for critical visual tasks (in classrooms, for example) there's the Low Brightness model.

When lighting should make its own dramatic statement, choose new Spectra VI. It, too, offers Wide-Lite's proven design features, so you get the lowest cost per maintained footcandle. Its handsome geometric styling is a flattering compliment to today's architecture. Spectra VI side panels are available in simulated wood-grain or five baked enamel colors, letting you match or contrast this pendent luminaire with the interior.



Spectra V luminaires for this savings and loan office. The 400 watt luminaires were easily installed in the T-bar suspended ceiling. For visual comfort Low Brightness models were chosen. Recessed or surface-mounted units available.



Fifty-one recessed ID's, lamped with 400 watt metal halide, invite customers from the mall to this women's clothing store. Twenty-one such installations are planned, all with "Wide-Lite" fixtures. (Also available in 1,000 watt models.)

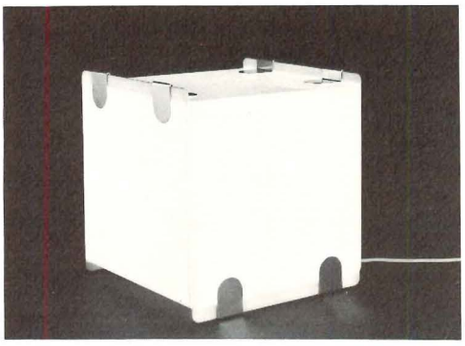
Whether you demand a plain or fancy luminaire there's a Spectra design to meet your needs. Or your budget. Both offer a great lighting idea. Call your "Wide-Lite" representative today. He's in the Yellow Pages under Lighting. And ask him about the LiteMatic emergency/auxiliary lighting option available for Spectra V and VI. It's another exclusive from Wide-Lite.

The Spectra series for Mercury Vapor, Metal Halide, and High Pressure Sodium lamps.

Wide-Lite®

P. O. Box 191, Dept. AR-1055-4/71
Houston, Texas 77001
Also manufactured in Australia, Belgium, Canada, Mexico and Great Britain
A division of Esquire, Inc.
*Trademark of Wide-Lite Corporation

continued from page 153



LAMP / Designed for atmospheric lighting, this table lamp features decorative chrome clips joining its Plexiglas sides. ■ George Kovacs Lighting, Inc., New York City.

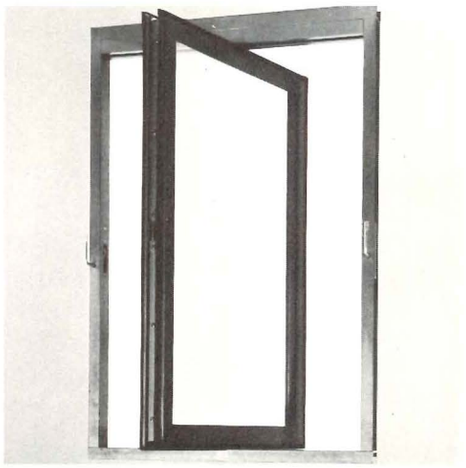
Circle 305 on inquiry card

PANELING / In this commercial waiting room, the richness of walnut paneling is contrasted with the more vibrant shades of colored planks used to create geometric wall designs. ■ Masonite Corp., Chicago.

Circle 306 on inquiry card

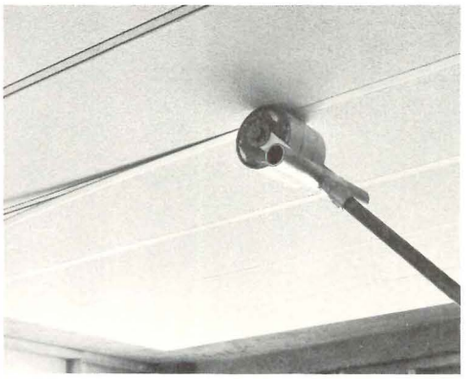
CARPET / Manufactured by a patented flocking process, this carpet reportedly has a 27 million fiber-per-sq-yd density. It is said to be extremely wear-resistant, with unusual acoustical properties. The carpet is suited for indoor and outdoor use. ■ Floor Crest, Inc., Massapequa, N.Y.

Circle 307 on inquiry card



REVERSIBLE WINDOW / Manufactured from solid, hot-rolled steel sections, the window accommodates insulating glass up to one-in. thick. The ventilator rotates 180 degrees. The windows are available in a variety of finishes. ■ Hope's Windows, Jamestown, N.Y.

Circle 308 on inquiry card



CEILING SYSTEM / Designed especially for mobile homes, these ceiling panels fit into place without visible fasteners. Panels are stapled in place, then color-matched plastic strips are pressed into double grooves at 16-in. centers. The strips can be removed and replaced after installation. ■ Simpson Timber Co., Seattle.

Circle 309 on inquiry card

For more data, circle 72 on inquiry card

For more data, circle 71 on inquiry card ◀

For more data, circle 73 on inquiry card ▶

OFFICE LITERATURE

For more information circle selected item numbers on Reader Service Inquiry card, pages 229-230.

FURNITURE/EQUIPMENT / A 32-page guide features a line of commercial and institutional furniture and equipment ranging from conference tables to trophy cases. Included are teacher, dining, classroom and specialty chairs, trapezoidal tables for hard-to-fit areas and juvenile furniture. ■ Alfax Mfg. Corp., New York City.
Circle 400 on inquiry card

SEALANT / Descriptive literature introduces a vinyl and acrylic polymer sealant reported to have excellent adhesive qualities when used with concrete, glass, metal, wood, and most plastics. ■ Protective Treatments, Inc., Dayton, Ohio.
Circle 401 on inquiry card

PASSENGER BUS SHELTERS / Nine standard models are described in a 4-page brochure, all constructed of aluminum sections and glazed with acrylic panels with roofs of fiberglass laminated plywood sandwich panel. There are models with open and closed configurations designed for both narrow and wide sidewalks. ■ Columbia Equipment Co., Richmond Hill, N.Y.
Circle 402 on inquiry card

PREDICTION OF EARTHQUAKE EFFECTS / A technical bulletin describes a methodology for predicting ground motions due to earthquakes. The company believes the procedures will significantly advance technology for design of earthquake-resistant high-rise buildings. ■ Computer Sciences Corp., Los Angeles.
Circle 403 on inquiry card

CERAMIC TILE / A complete line of floor and wall tile for residential, commercial and institutional use is described in a 20-page catalog. More than 160 colors and over 100 patterns and color combinations are illustrated. The company's custom design service is explained in brief. ■ U.S. Ceramic Tile Co., Canton, Ohio.*
Circle 404 on inquiry card

WATER TREATMENT UNITS / A 2-page bulletin describes an electronic water treatment unit which removes excess salts and minerals from 500 to 12,000 gallons of water per day without heat, chemicals, or high pressure. The unit produces potable water from brackish or highly mineralized sources, or demineralized water from normal municipal and industrial supplies. ■ Ionics, Inc., Watertown, Mass.
Circle 405 on inquiry card

FIREPROOFING / An asbestos-free fireproofing material which can be sprayed directly to virtually any type of steel column, floor and ceiling construction is described in a 4-page bulletin. Technical data, UL ratings and specifications are given. ■ United States Mineral Products Co., Stanhope, N.J.
Circle 406 on inquiry card

LIGHTING / An aluminum luminaire for lamps is presented in a technical bulletin describing the fixture's reflector design which provides direct and primary reflected light transmission from the lamp for increased luminaire efficiency. Two models are available. Specifications are included. ■ Wide-Lite Corp., Houston.
Circle 407 on inquiry card

** Additional product information in Sweet's Architectural File.*

more literature on page 186

For more data, circle 73 on inquiry card

For more data, circle 74 on inquiry card

Bradley has more than

900 bright ideas. For just one reason.

So you'll never again have to rely on scattered sources to get everything you need in washroom equipment.
Instead, you can now specify on a convenient, time-saving systems basis.
Everything from washfixtures.
And showers.
To contemporary design-coordinated washroom accessories.
Bradley's bright ideas for plumbing fixtures and accessories are just about all you'll ever need or want. From a single source.

And they're built the only way we know how to build things. To last.
For example, the Cole valve mechanisms on our Bradpack wash centers are designed never to leak. Or wear out. Ever.
Bradley. The washroom systems specialists with the most complete line of washroom fixtures and accessories.
For just one reason.
So you can eliminate a lot of needless bother by selecting your equipment on a convenient, time-saving systems basis.

Leader in Washroom Fixtures and Accessories

BRADLEY WASHFOUNTAIN CO.
9109 Fountain Boulevard
Menomonee Falls, Wisconsin 53051

BRADLEY

For more data, circle 75 on inquiry card

MICROZINC 70
the new pre-weathered titanium alloy architectural sheet metal.

L. S. Ayres & Company department store, Greenwood, Ind.
Architect: James Associates, Indianapolis, Ind.
Roofing & Sheet Metals: Henry S. Smither Roofing Co., Indianapolis, Ind.

Microzinc 70 gives the architect a new esthetic dimension in commercial and institutional roofing design. It's pre-weathered—the natural oxidation has been accelerated. The beautiful non-reflective grey patina complements wood or masonry.

You don't have to paint Microzinc 70. The natural, non-corrosive film makes it especially resistant to sea air and industrial atmospheres. It heals itself if scratched or marked. The coating is not artificial and therefore will not peel, crack, blister, chalk or fade.

Microzinc 70 cannot stain and therefore will not produce run-off blemishes as do many metal roofing materials.

This new zinc-titanium alloy can be used in direct contact with mortar or concrete without special protection. It is easily formed and soldered using standard sheet metal practices.

And to top it off, Microzinc 70 is less expensive than most of the other quality, long-life roofing metals.

Write for the new Microzinc 70 booklet which includes comparative properties plus design details for batten and standing seam roofs, valley flashing, gutters, fascias and gravel stops. We will also send you a sample of the pre-weathered metal so that you can examine the color and finish of Microzinc 70 for yourself.

Ball

BALL METAL & CHEMICAL
DIVISION OF BALL CORPORATION
GREENEVILLE, TENN. 37743

For more data, circle 76 on inquiry card

Why own your phone system?

Owning your own telephone system lets you turn telephone expense into a capital asset and avoid the uncertainty of equipment rate increases. UBC provides everything from basic PBX's to complete network switching on a purchase or lease basis. Our nationwide network of sales and service offices is waiting to solve your telephone communication problem. For details on owning your own telephone system, write: General Sales Manager, United Business Communications, Inc. Dept. AR-2-4 6405 Metcalf Ave., Shawnee Mission, Kansas 66202.

UBC

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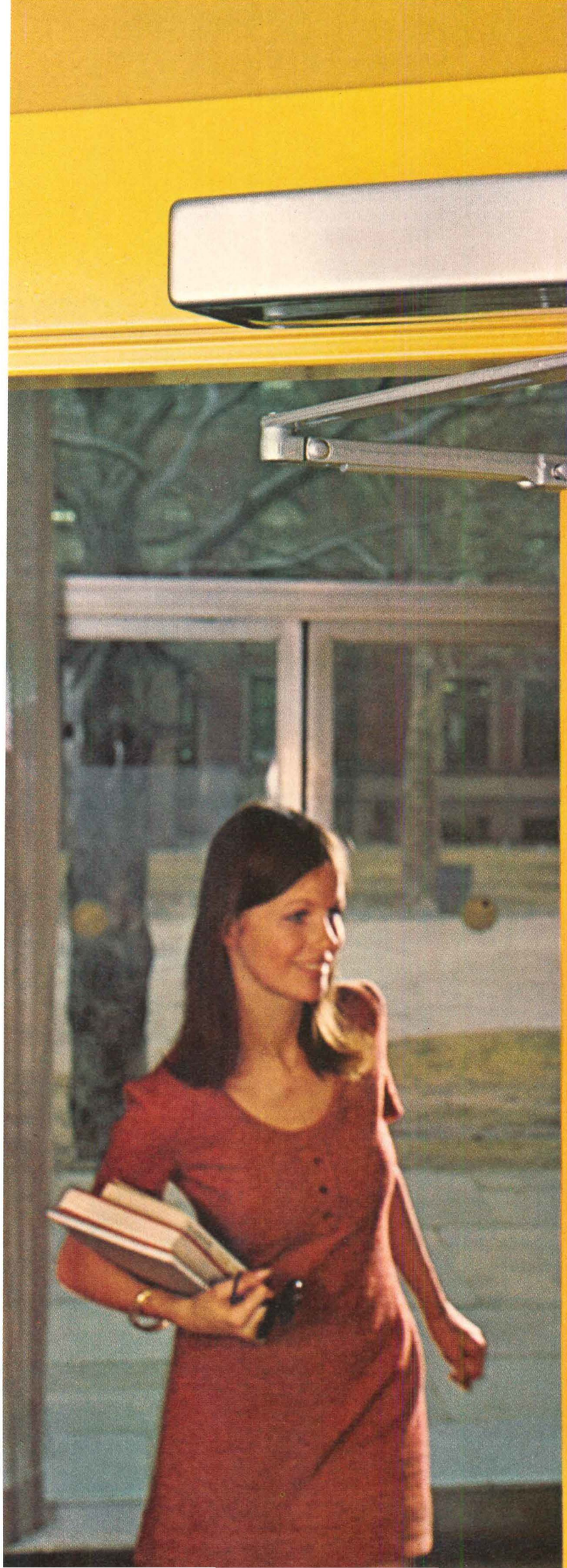
For more data, circle 78 on inquiry card



110 Corbin... where performance takes honors

When you graduate to Corbin, you'll have the highest degree of safety. Corbin door closers are renowned for combining dependable, efficient control under the most adverse conditions with design leadership second to none. For further information and service, contact a Corbin distributor or write P & F Corbin, Division of Emhart Corporation, Berlin, Connecticut 06037. In Canada, Corbin Lock Division.

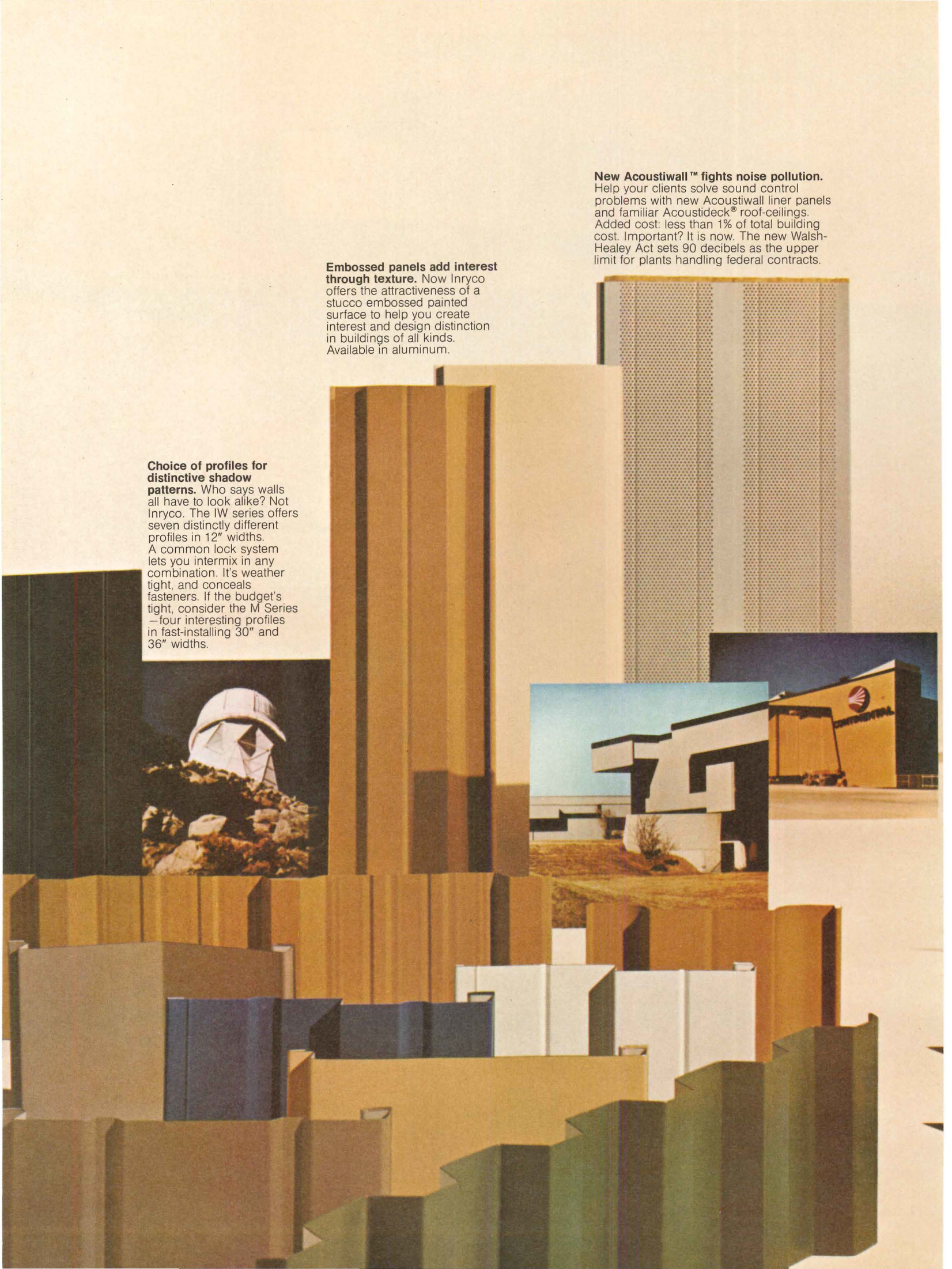
For more data, circle 79 on inquiry card

CORBIN

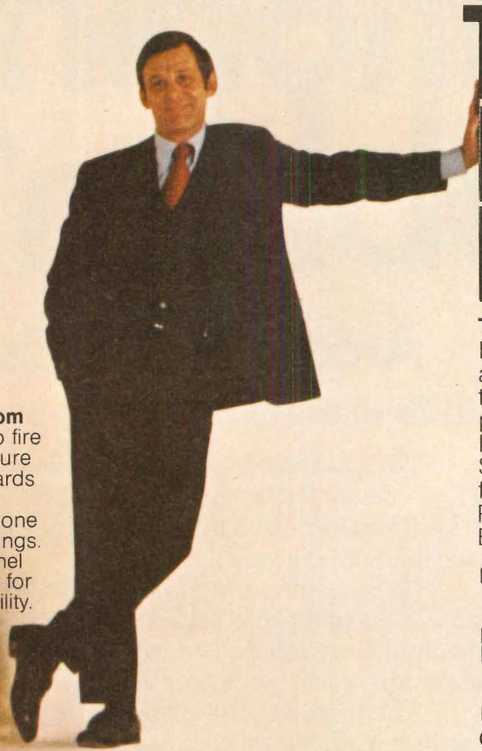
New Acoustiwall™ fights noise pollution. Help your clients solve sound control problems with new Acoustiwall liner panels and familiar Acoustideck® roof-ceilings. Added cost: less than 1% of total building cost. Important? It is now. The new Walsh-Healey Act sets 90 decibels as the upper limit for plants handling federal contracts.

Embossed panels add interest through texture. Now Inryco offers the attractiveness of a stucco embossed painted surface to help you create interest and design distinction in buildings of all kinds. Available in aluminum.

Choice of profiles for distinctive shadow patterns. Who says walls all have to look alike? Not Inryco. The IW series offers seven distinctly different profiles in 12″ widths. A common lock system lets you intermix in any combination. It's weather tight, and conceals fasteners. If the budget's tight, consider the M Series —four interesting profiles in fast-installing 30″ and 36″ widths.



INRYCO™: MORE THAN JUST ANOTHER WALL.



To keep a fire from spreading. Inryco fire wall panels measure up to rigid standards of Underwriters' Laboratories, for one and two hour ratings. No other wall panel surpasses Inryco for fire protection ability.

Talk it over with your Inryco wall panel man. He's a specialist, ready to help you with additional information. And he'll follow through on any inquiry you make with a prompt reply. For complete information on Inryco Wall Systems see our catalog in Sweet's Architectural File, Section 7 or write for Catalog 22-1. Inland-Ryerson Construction Products Company, 4033 West Burnham Street, Milwaukee, Wis. 53201.

INLAND RYERSON

General Offices: Chicago, Illinois

A member of the INLAND steel family

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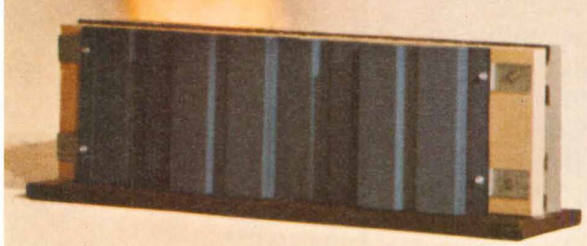
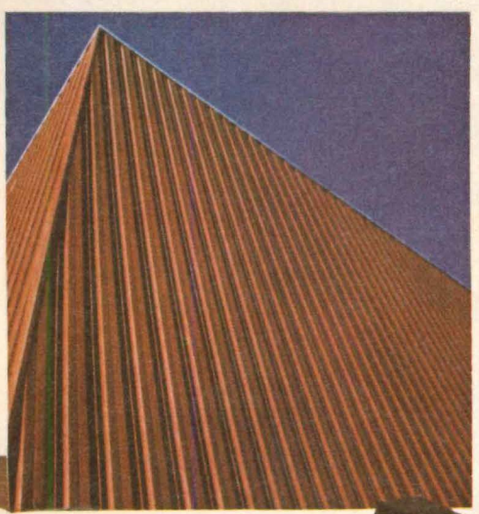


Long-lasting finishes in a spectrum of colors. Duofinish 500™ resists corrosive smog. Sheds dust, smoke, abrasives, airborne particles. Color stays true for 20 years or more. For extra economy, specify Duofinish,™ the hard, weather-resistant surface that keeps its color 10 years and longer.



COR-TEN panels: long-lasting good looks with no maintenance. Exposed to the elements, COR-TEN weathers to a rich, deep tone that's both protective and attractive. Complements a wide variety of other finishes and materials. Panels available in 12 different profiles.

Film to protect panel surface. To guard against damage in transit and on site, you can specify Inryco MW panels with a protective plastic film that is easily removed during installation.

A1-22-1

Is noisy air conditioning your problem?

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The sound barrier has really been broken by The Problem Solvers at American-Standard. With Thru-the-Wall units that have the lowest possible sound levels.

Many engineering features make this possible. Like polypropylene housings and wheels on the dual roomside fans. And larger air passages to permit smoother, lower velocity air flow.

And these are the simplest units to install in the industry. There are only two major sections. So installation costs are cut.

Noise is just one problem solved by The Problem Solvers. So if you're looking for the best possible climate for commercial, industrial or residential buildings, let us know. Drop a line to "The Problem Solvers," American-Standard, Commercial Air Conditioning Division, 1300 Federal Blvd., Carteret, N.J. 07008.

AMERICAN STANDARD

The problem solvers.

For more data, circle 81 on inquiry card

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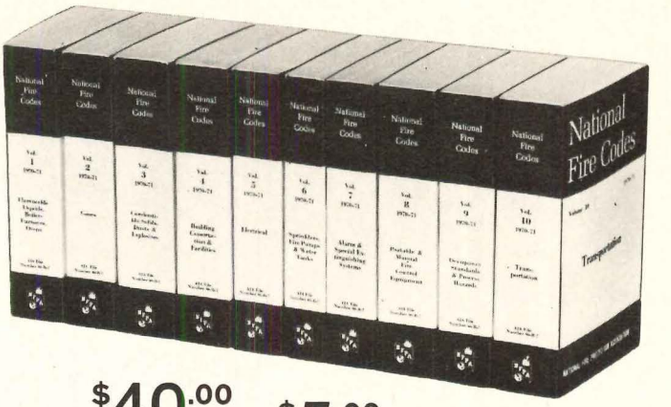

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Antron®. It makes a carpet grow up and act like a floor.

It used to be, only a floor (the hard, shiny kind) could stand up to the day-in, day-out punishment of the workaday world. Until Antron* nylon. A carpet with pile of "Antron" performs so well you can put it almost anywhere you would have put hard surface.

"Antron" meets the strict specifications U.S. Steel set up for every building material that went into their new Pittsburgh headquarters. "Antron" has soil hiding so efficient, maintenance costs can be cut in half. Durability so great installations six years old have shown no significant wear. Cleanability so high that even extensive changes in floor plan leave no telltale tracks behind. Aesthetics that are second to none. Maria Bergson, design consultant for U.S. Steel, said only "Antron" met her standards for wearability, practicality and attractiveness, without sacrificing one for another.

Before you decide what your floors should be made of, find out more about "Antron". Write Du Pont Carpet Fibers. Contract Carpet Specialist. Centre Road Building. Wilmington, Delaware 19898. Your floors may never be floor again.

*Du Pont registered trademark.
Du Pont makes fibers, not carpets.

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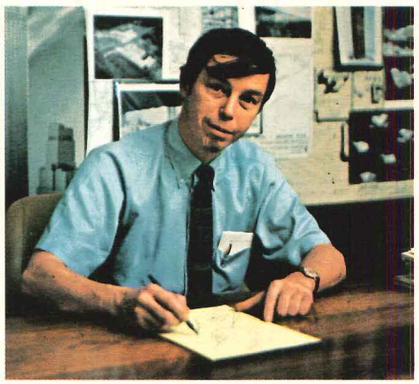
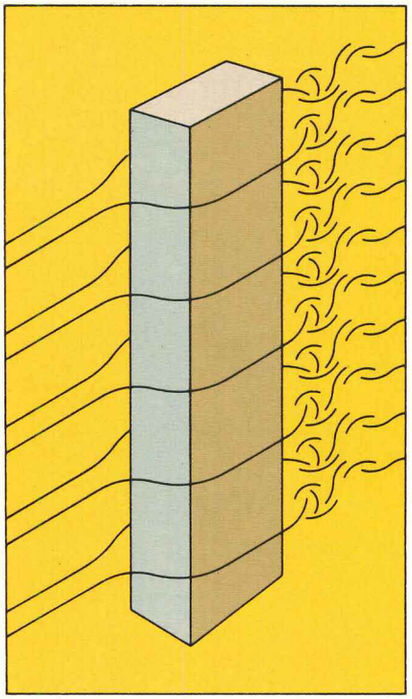
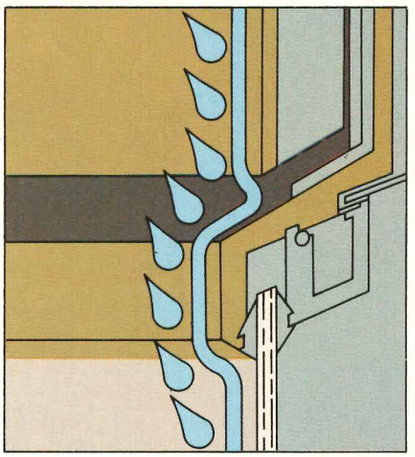




Wind-loading criteria for the wall system of the World Trade Center was established by the consulting engineers based on anemometer readings on other Manhattan high-rise buildings.

The pressure equalization "slot" was the key to a wall design for extreme wind-and-water conditions of up to 150 miles per hour.



Structural engineer, Les Robertson (Skilling, Helle, Christiansen, Robertson) discusses the World Trade Center wall system:

"We recognized early in the game that the critical problem was wind load . . . because a 110-story building is not only *subject* to unusual wind forces and turbulences, but also *causes* an unusual wind environment. Thus, the wind forces, rather than the dead load, became the principal thought in our minds.

"We began with a statistical analysis of all the weather bureau data available, installed anemometers on two Manhattan buildings, arrived at a technique for determining the wind environment . . . and then simulated it in wind tunnels. We actually developed a *specific wind environment* for the Trade Center. Then we presented our conclusions to Yamasaki.

"He evaluated our conclusions, weighed them from all angles and finally accepted them and made them part of his performance specifications: The World Trade Center curtain wall would have to withstand the loads from winds of up to *150 miles per hour.*

"These criteria—including the specification that the curtain wall would have to withstand the 150-mile-per-hour wind—became the basis of an early involvement of the manufacturer in the design of the wall system and the solution of its many-faceted technological problems. For example, the pressure-equalization feature, which allows the wall system to handle extreme wind-and-water loads, was a major contribution of the fabricator's research and product-development personnel.

"All of which highlights the importance of involving people with special capabilities *early*. On the Trade Center, it was invaluable."

The World Trade Center is a project of the Port Authority of New York. Engineering and development work was carried out under the direction of the Authority's World Trade Center Planning and Construction Division.

Change for the better with Alcoa® Aluminum

ALCOA

OFFICE LITERATURE

continued from page 171

PNEUMATIC TEMPERATURE CONTROLS / Equipment ranging from dampers to air compressors is briefly described in an 8-page specification guide. Other items described include temperature and humidity sensors and controllers, thermostats and a line of mixed-air, load and hot-water controllers. ■ Honeywell's Commercial Div., Minneapolis.

Circle 408 on inquiry card

URBAN LIGHTING / "See Your City in a New Light," a 20-page booklet, explains how lighting can provide solutions to some of the nighttime problems of a city. Subjects discussed include security lighting for institutional and apartment buildings, functional and esthetic floodlighting of buildings, lighting for residential and business streets, expressway interchanges, alleys and parks. ■ General Electric Co., Cleveland.

Circle 409 on inquiry card

ROOF SYSTEMS / A 12-page booklet shows a variety of applications for a line of structural systems including drive-in restaurant canopies, protective covers for walkways, and carports for apartment units. Available in both aluminum and steel decking, these roofs feature interlocking construction to ease installation. Specifications are included. ■ Metal Awning Components, Inc., Clawson, Mich.*

Circle 410 on inquiry card

FLOOR SURFACE / A 4-page brochure describes a floor surfacer designed for industrial flooring use. The brochure states that *Stonclad* is highly resistant to corrosion by acids and chemicals which destroy concrete floors. ■ Stonhard Corp., Maple Shade, N.J.

Circle 411 on inquiry card

FURNITURE / A double-shell chair series is presented in a 12-page brochure. The chairs feature an inner shell of super-impact polystyrene which supports most of the load while a lightweight outer shell gives additional strength, comfort and protection. The series is available with or without arms in four styles: swivel tilt, fixed pedestal base, swivel and return-swivel bases. Fabric, expanded vinyl and leather upholsteries are available. ■ Steelcase, Inc., Grand Rapids, Mich.*

Circle 412 on inquiry card

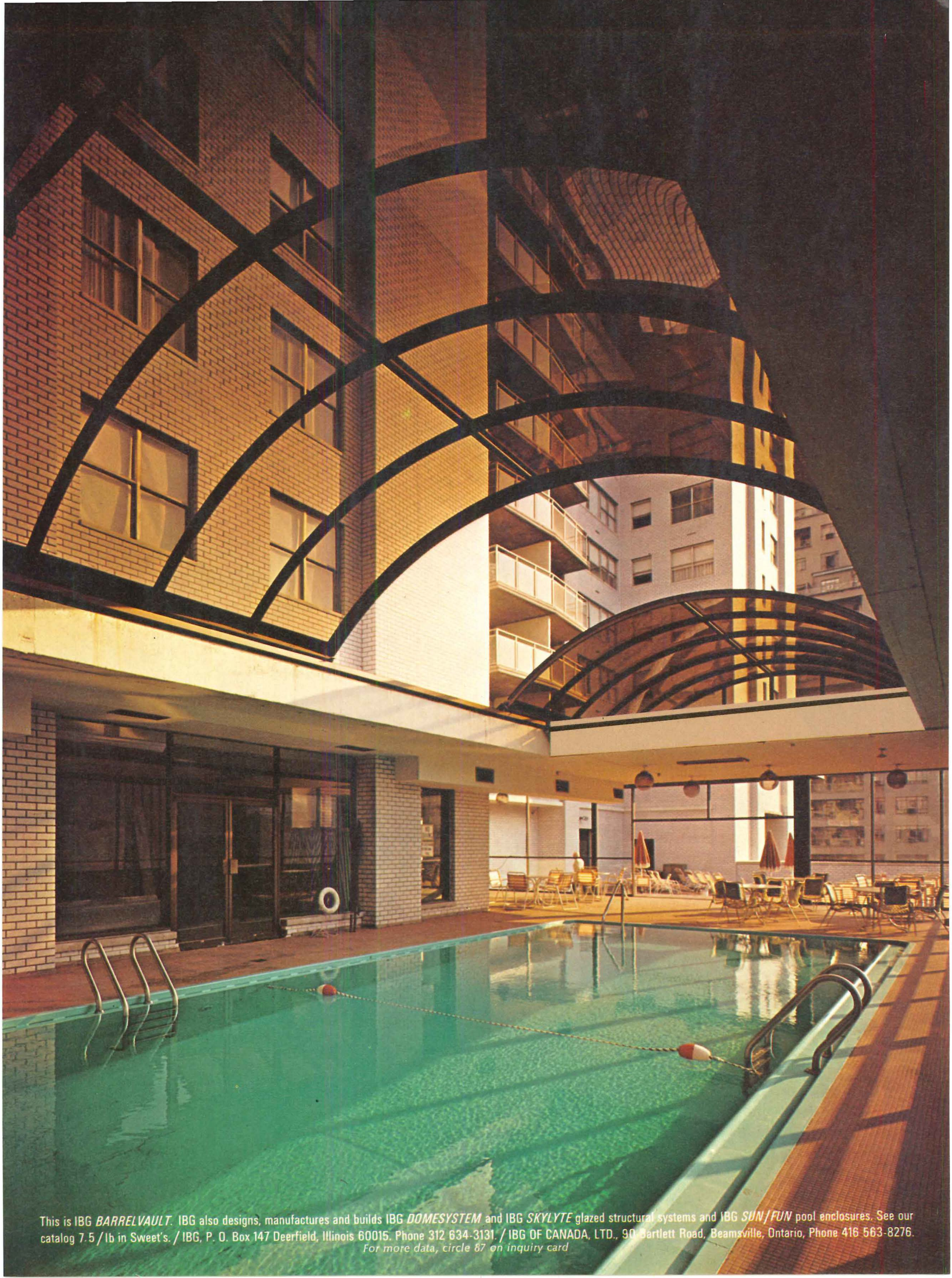
FINISHES / A 4-page study compares a silicone polyester copolymer finish based on the manufacturer's silicones with other fluoropolymer, vinyl and acrylic finishes. It is reported that the silicone coating had a gloss retention of 87 per cent. Gloss retention of other finishes tested reportedly ranged from 20 to 79 per cent. ■ General Electric Co., Silicone Products Dept., Waterford, N.Y.*

Circle 413 on inquiry card

SIDING / A specification sheet describes an exterior, overlaid particle board available in several textured surfaces and standard patterns including smooth, ribbed, board and batten, rough-sawn and shutter. It is reported to hold paint longer while eliminating checking and grain rise. Complete specifications and finishing recommendations are included. ■ Georgia-Pacific Corp., Portland, Ore.*

Circle 414 on inquiry card

**Additional product information in Sweet's Architectural File*



This is IBG *BARRELVAULT*. IBG also designs, manufactures and builds IBG *DOMESYSTEM* and IBG *SKYLYTE* glazed structural systems and IBG *SUN/FUN* pool enclosures. See our catalog 7.5/Ib in Sweet's. / IBG, P. O. Box 147 Deerfield, Illinois 60015. Phone 312 634-3131. / IBG OF CANADA, LTD., 90 Bartlett Road, Beamsville, Ontario, Phone 416 563-8276.

For more data, circle 87 on inquiry card

For the past 17 years, LP® polysulfide polymer and the Lever House have been through a lot together.

720.29 inches of rain. 508.30 inches of snow. 7 air pollution warnings. And a trillion jarring vibrations.

But through it all, the two have stuck together. The result: everything's warmer in the winter, cooler in the summer, and drier all year long at 425 Park Avenue, New York.

That's because LP polysulfide polymer has sealed this skyscraper tighter than a drum.

In spite of the chemical pollutants in the city air. The savage storms. The baking sun. And the eternal rumbles of the BMT Subway.

Because of its consistent performance over long periods of time, a sealant based on LP polysulfide polymer is a sealant you can depend on.

To prove the point, The Grenadier Corporation recently removed a sample of the sealant at the Lever House. And the results were excellent.

It still had excellent elasticity. For instance, it could be twisted 180 degrees around a ½" spike without snapping.

If you want this kind of long life protection, always insist on sealants bearing Thiokol's Seal of Security. It's your assurance of product performance. Thiokol Chemical Corporation, P.O. Box 1296, Trenton, N.J. 08607.

Thiokol

For more data, circle 88 on inquiry card

Introducing an *exclusive 5-Year Warranty** for Onan standby power systems (engine, generator, controls). Another first from the world's No. 1 builder of standby power. Only a company that really has confidence in its products would dare make such a commitment.

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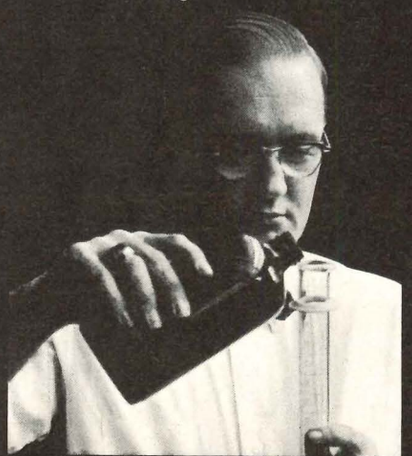
For more data, circle 89 on inquiry card

The laundry planning help you'll need in the '70's has already been done at American.

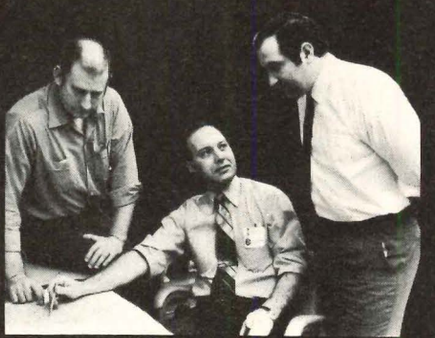
The laundry and dry-cleaning industry has witnessed sweeping changes in recent years—changes which will also effect the captive facilities in projects you design.

New synthetic fabrics have called for new methods of processing. And rising costs have signalled a need



for greater degrees of automation.

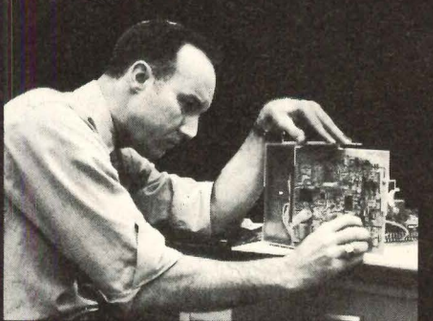
Anticipating these changes and engineering new methods and equipment



to accommodate them has been the works of a far reaching R&D program at American Laundry Machinery Industries. And from it has emerged many new and improved machinery designs for every step in the laundry process.

This kind of thinking ahead makes us especially well-equipped to assist you in planning the "new" laundries you'll need in the years ahead.

We can help with complete floor plans, equipment recommendations, flow diagrams, capacity and personnel data—anything you need to provide the most efficient facility for the purpose. Because, after all . . . The thinking has already been done.



Ready now for the needs of the '70's are...

The American Industrial Drycleaning System for Blends

The 6044 Cascadex Washer-Extractor

The Super Thermatic Drying and Conditioning Tumbler

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The Foltronic Primary Folder

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The Formatic Steam Finisher

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For more data, circle 90 on inquiry card

To Paint or not To Paint.

The beauty in shapes and textures is undeniable. But a life without the full expression of color is not life. Color infinitum. Paint is the one medium that offers the individual in his environment the choice of nature's completed spectrum. With all its subtleties. With all its explosiveness. It is the only medium that encourages the total exploration of color. Paint is freedom. Let paint be part of your creative decision. And when it is, let it be the finest. Pratt and Lambert. The paint.

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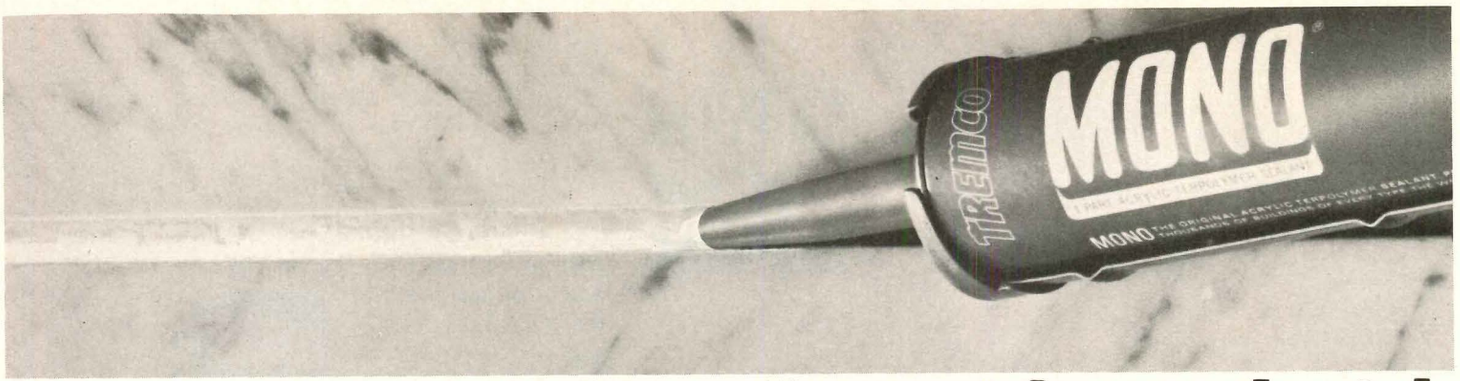

Tremco has one thing that sticks to the job better than MONO.

The man who sells it.

When you order MONO construction joint sealant, you get a lot more than a great product in a tube. ☐ You get a Tremco Representative . . . a sealant specialist whose only job is to make sure you get permanent, weather-tight joints. And his way of "making sure" is to help you every step of the way . . . including on-the-job instruction. ☐ Most often, the Tremco man will recommend MONO. Because MONO penetrates dust and moisture to get a solid grip on joint faces . . . and gives you a tight, permanent bond under less-than-ideal conditions. ☐ But if MONO isn't the right sealant for your job, the Tremco man will tell you. And he'll help you select one of the 14 other Tremco sealants that will do the job. ☐ So call your local Tremco man. With him sticking to your job, you can be sure the sealant will, too. ☐ The Tremco Manufacturing Company, Cleveland, Ohio 44104, Toronto 17, Ontario.

TREMCO
The water stoppers

For more data, circle 91 on inquiry card

Quieter design by Lyon says you care!

People respond to the rich serenity of Lyon steel office furniture. Just thump any flat surface. Hear the muffled sound of double-wall construction, lavish use of honeycomb filler. See how desk drawers float soundlessly on smooth, DuPont Delrin™ glides. See how softly they close against cushiony rubber bumpers. Here too, is *personalized* comfort. With Lyon modular design, you join basic components to suit the *individual.* And whatever your choice, fresh clean lines express beautiful taste. What's more, the exclusive Lyon "lock-in-top" controls *all* desk drawers. And the smooth, lustrous finish is 100% acrylic enamel. See your Lyon dealer. Hear the sound of elegance!

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We're out to change your mind about Tyler Pipe.

A lot of you think of us as the leading source for cast iron soil pipe and fittings. ℄ No-Hub® couplings and TY-SEAL®gaskets. And you're right.

Others think of us as a full-line source for DWV system specification products under our Wade name. You're partly right, too.

Many of our customers know us as a supplier of quality ABS plastic fittings.

Still others of you think of us as a leading supplier of waterworks and municipal fittings. You're on the right track but you're not getting the whole picture.

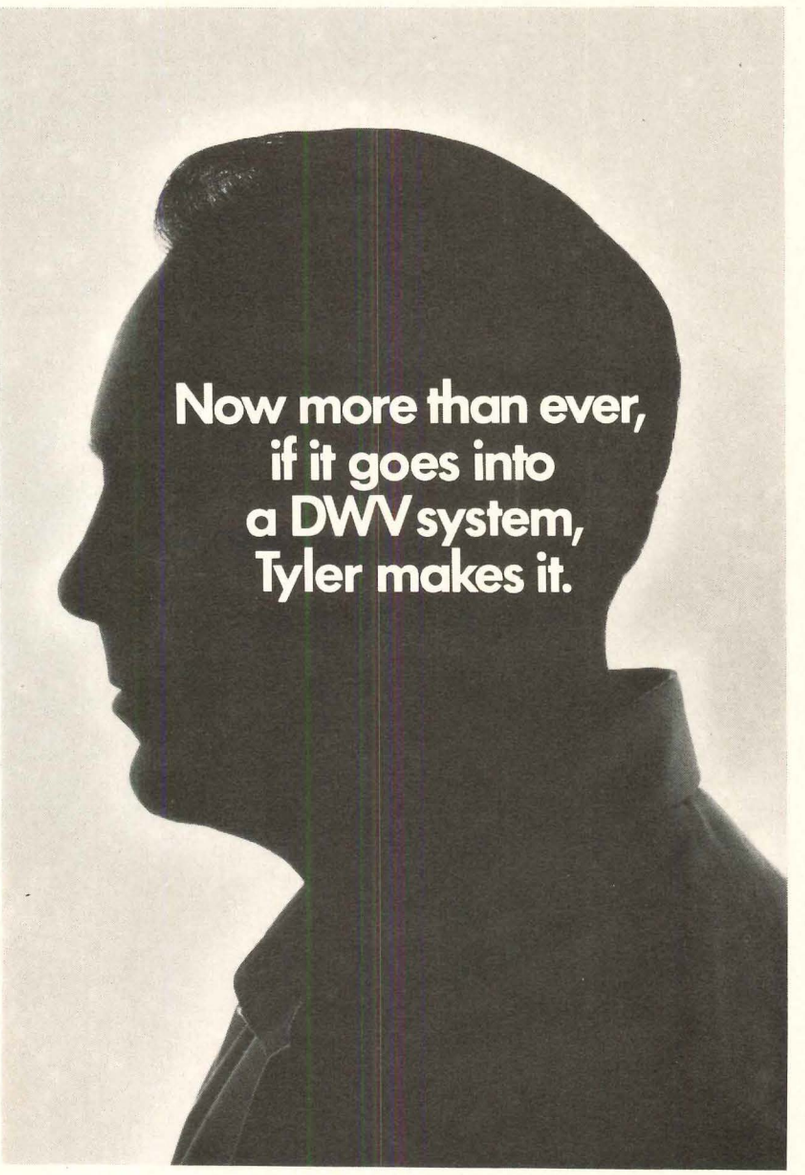
And that's why we're out to change your mind about us.

Tyler Pipe is all four of the things just mentioned.

That's a good point to remember because it means you can come to just one source for everything you need, for any DWV system requirement.

So think of Tyler Pipe as one company, one source and your one major supplier for a complete line of DWV system products. For the complete story, write P. O. Box 2027, Tyler, Texas 75701.

Now, more than ever...if it goes into a DWV system, Tyler makes it.



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We consider an elevator shutdown in a hospital to be a lot more than an inconvenience. At Otis Elevator Company we specialize in custom designed elevator, escalator and dumb waiter systems for hospitals.

And we have the largest maintenance organization in the world to keep our equipment running.

Otis Maintenance is a program of manufacturer's preventive maintenance with Extended Coverage, that continually checks every part of an Otis machine to avoid shutdowns before they happen and to assure maximum safety. Preventive maintenance is the only prescription against emergencies when you move more than 400 million people a day. Hospitals can't take chances. That's why so many hospitals trust Otis.

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When it comes to hospitals Otis realizes that elevators can be a matter of life...

PPG offers the first "25-rated" spray foam insulation

Now with an Underwriters' Laboratories flame spread rating of only 25, PPG's SELECTROFOAM® spray foam lets you spray on insulation for roofing and re-roofing quickly and economically while meeting the stringent building codes of most major cities. It's the first spray urethane foam awarded this UL rating.

Easily applied by one man, SELECTROFOAM spray foam covers any shape or surface after only minimal surface preparation. SELECTROFOAM spray foam forms a strong, lightweight, monolithic surface with nearly twice the insulation value of the same thickness in the next best materials.

Its adhesion is excellent. Used as recommended in roofing systems having adequate drainage, it's an enduring, fire-retardant insulating material.

Offer your customers all the advantages of spray-on insulation with this low flame spread material. Get details from your PPG SELECTROFOAM Spray Foam Distributor, or write Resins Manager, PPG INDUSTRIES, Inc., Dept. 16W, One Gateway Center, Pittsburgh, Pa. 15222.

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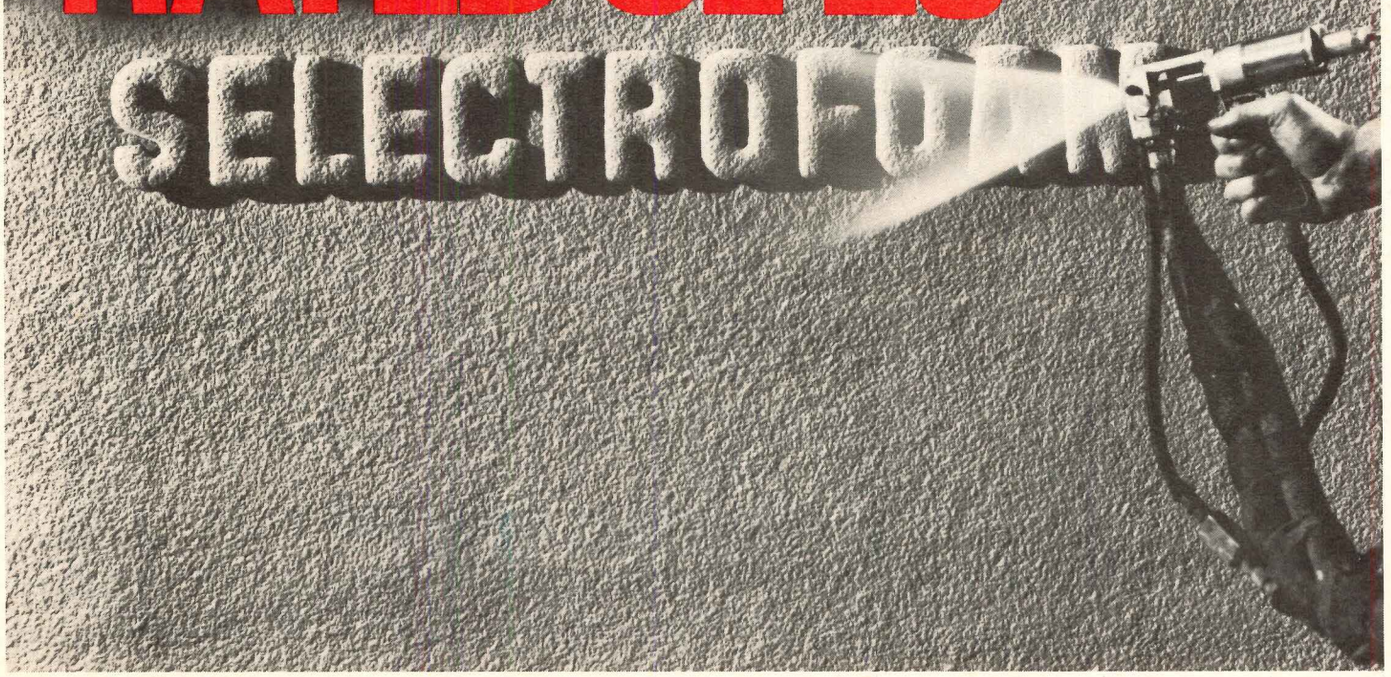
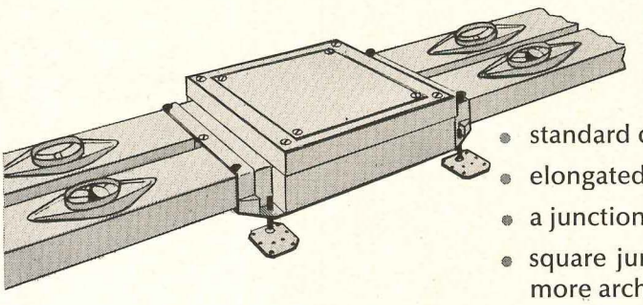


For more data, circle 95 on inquiry card

Whatever your underfloor raceway requirements, we have what you need



UNDERFLOOR DUCT

All underfloor duct systems are not alike.
Square D gives you these extra advantages:

- standard duct lengths of 5, 6, 10 and 12 feet
- elongated inserts that simplify fishing and pulling
- a junction box that can be adjusted easily after the concrete is set
- square junction box tops for easier tile and carpet installation—more architecturally pleasing
- tile trims that are part of the box itself, eliminating extra pieces and parts
- feet on all leveling legs (both boxes and support) for nailing and fastening to forms, pans and rough slabs

HEADER DUCT

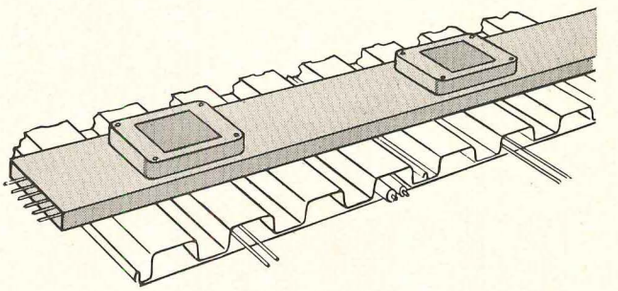
Square D offers real flexibility in design with two types of Header Duct:

separate access units

- units can be installed on cells on any centers desired
- interconnect between units with blank header duct
- compensates for irregularities in cell centering during construction

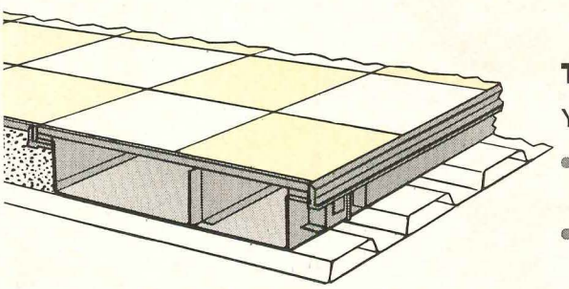
attached access units

- access units factory-installed on duct on predetermined centers
- lengths available up to 12 feet



standard with both types of header duct

- after-set inserts that require no special tools to install
- square access unit tops for easier tile and carpet installation

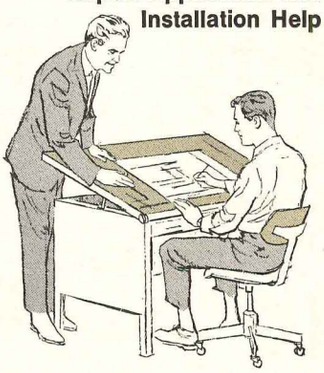


TRENCH DUCT

You get better trench duct from Square D. We give you:

- cover plates and trim assemblies that are supported by the concrete. Once installed, they won't move
- tile trims that can be installed without removing cover plates

Expert Application and Installation Help



We will make an installation drawing for any job, large or small, at no charge. We have a staff of qualified layout men who will make recommended layouts on very short notice. Our product specialists are available to travel anywhere to help—not to mention more than 400 local field men. So bring your underfloor duct problems to Square D. We're in business to help you.

For detailed information, *contact your Square D distributor or field office*
Or write Square D Company, Dept. SA, Lexington, Kentucky 40505

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Wherever Electricity is Distributed and Controlled

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All-Steel®

Who said all contemporary office furniture looks alike? All-Steel design versatility and depth of line individualizes small, private work stations and dignifies an executive wing. All-Steel Equipment Inc., Aurora, Illinois 60507. Showrooms: New York, Chicago, Los Angeles, Aurora. In Canada: B. K. Johl, Inc., Montreal, Toronto, Vancouver. One of the C.I.T. Companies.

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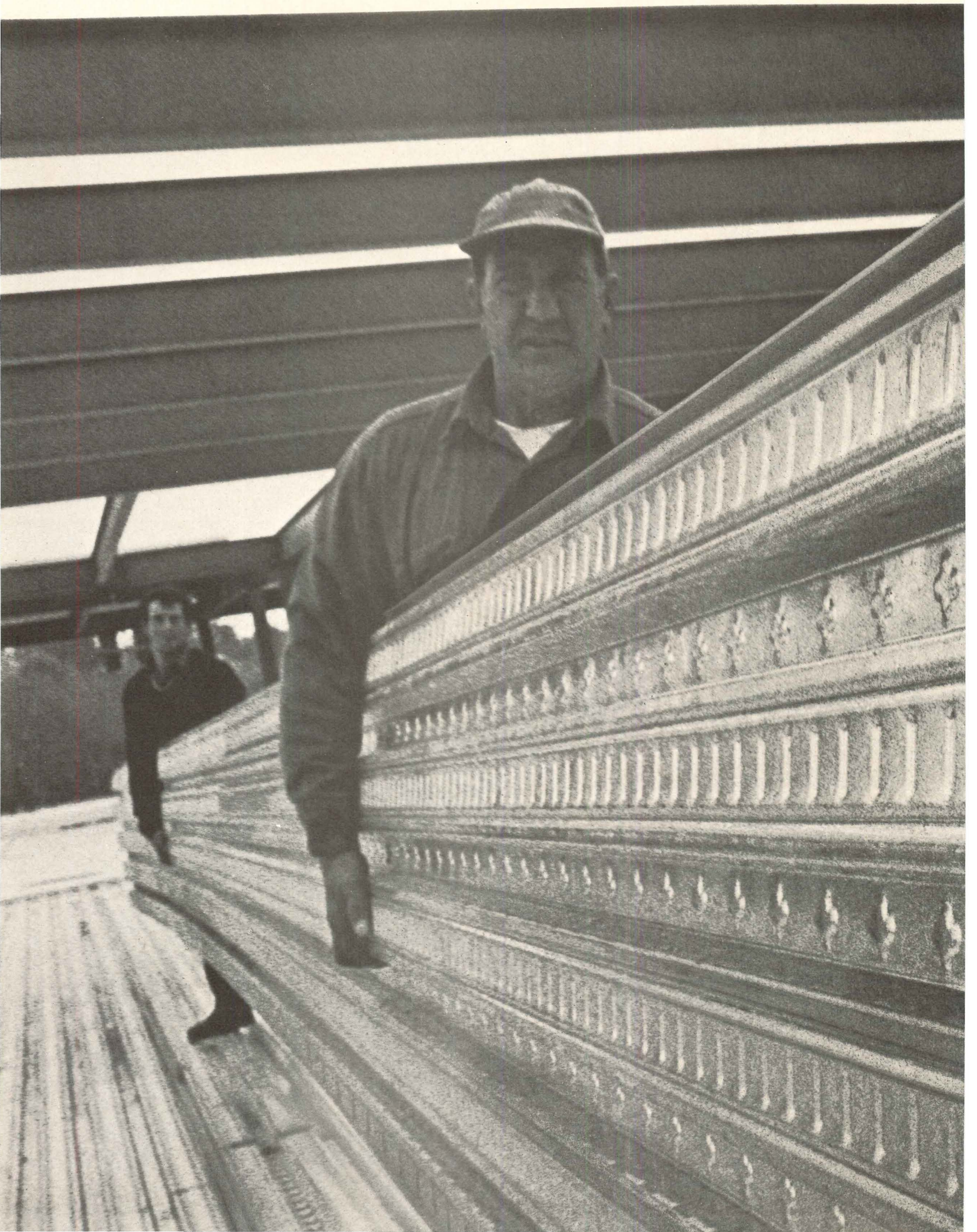
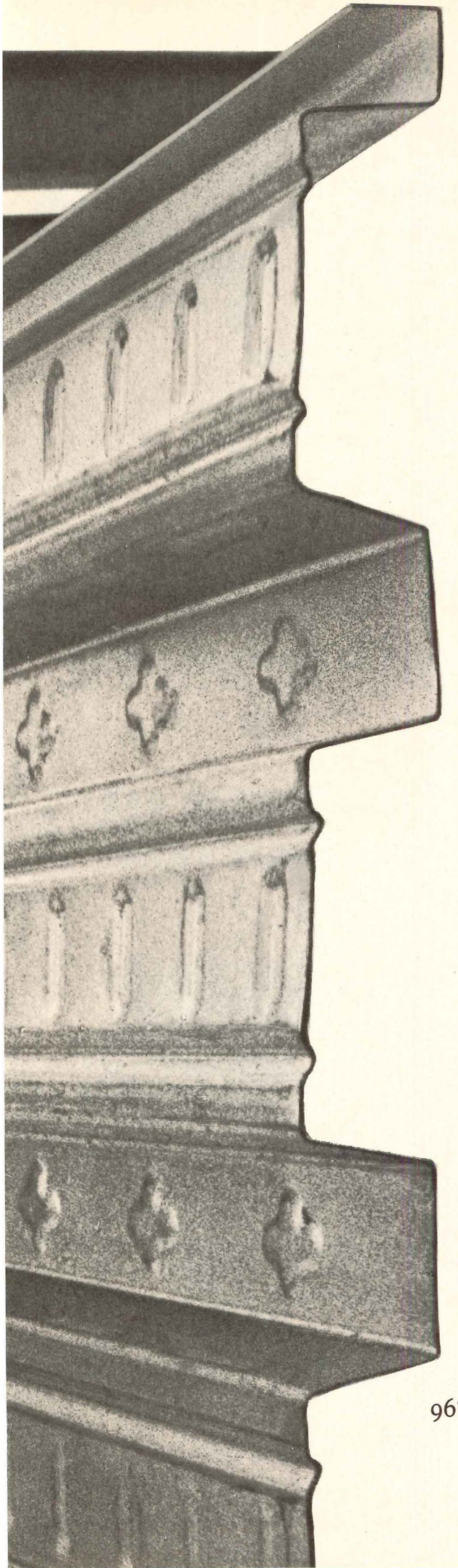




Our bumps make the grind easier.

In the face of rising costs, tough design requirements, and a poor site, our bumps helped make the grind easier for the architect and engineer of the New Bedford (Mass.) High School.

They wanted the strongest, lightest and least expensive structure. So they chose a composite system, using 200,000 sq. ft. of our SUPERBOND BC Composite Deck.

Our deck is unique because it has embossments (bumps) on every surface–more bumps than any other–for greater shear-bond resistance. Locked together by the bumps, steel and concrete perform as a composite unit under load.

BC Deck helped them bring in the design almost $500,000 under budget. As a structural component used with composite beams, up to 15% less steel is used in the entire structure.

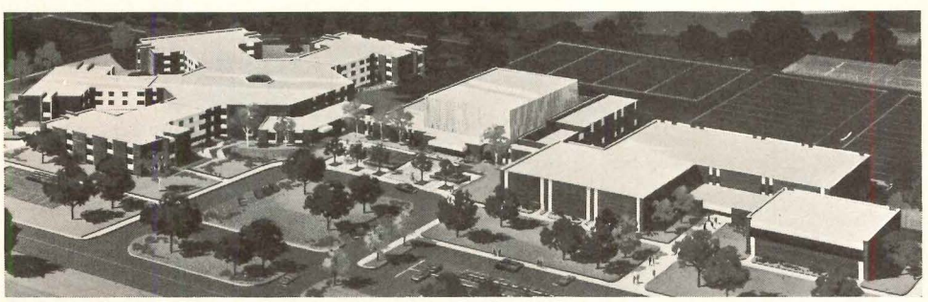
The shallower composite beams gave them more usable space by cutting down on floor-to-floor height. In addition to reducing the overall height, it gave them the lightest structure per sq. ft. without losing any strength. (Foundation load was critical because of poor drainage on the site.)

Finally, the deck met their performance specs for construction loads as well as dead load, without shoring.

SUPERBOND BC Deck comes in light-weight galvanized coating, 1-1/4 oz. galvanized coating and prime coat painted. For more information, write for our free brochure WC-450.

Today the bumps are in school.

Tomorrow they can go anywhere.



Architect: Owen F. Hackett, Jr. & Associates, New Bedford, Mass.
Structural Engineer: MacLellan, Dormer, Mulcahy, Inc., Providence, R.I.
General Contractor: Perini Corp., Framingham, Mass.

Wheeling Corrugating Company
A DIVISION OF WHEELING–PITTSBURGH STEEL CORPORATION

96% of what we make builds highways, buildings and reputations.

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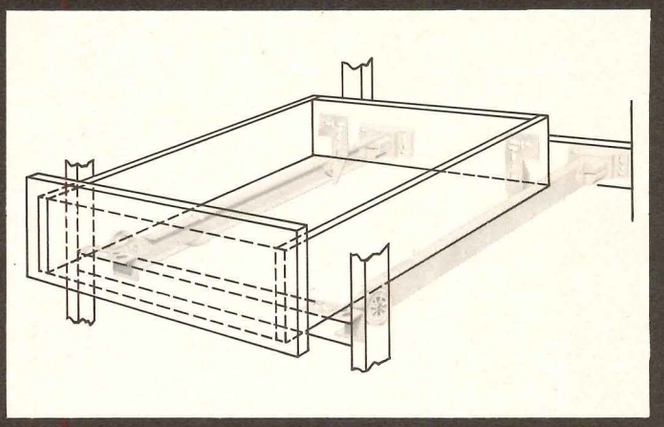
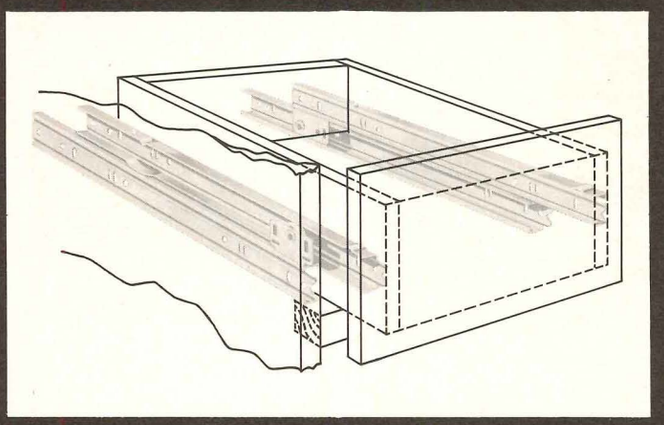
#200 Drawer Slide ■ four point suspension with smooth, quiet Delrin rollers ■ minimum drawer side play ■ zinc plated construction ■ easily installed ■ stock sizes 22 7/16 and 23 3/16



roll out the smooth and quiet



#400 Drawer Slide ■ zinc plated steel construction ■ nylon ball bearing rollers, prelubricated and sealed ■ minimum drawer side play ■ for drawers as shallow as 2 1/4" ■ stock sizes 16, 18, 20, 22, 24 and 26 inches

Complete 52-page catalog sent upon request
See Sweets' Catalog Arch. File and Lt. Const. File

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From the GRAPHICS 1000 SYSTEM, fresh letter styles never before available for engraved signs. Select a type face to complement your interior themes in schools . . . hospitals . . . office buildings. For beauty and permanence, the letter color is achieved by filling the routed-out letters with any one of hundreds of enamel colors available. Your choice of sign color, too, in any of the high pressure laminated plastics.
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5975 Armour Drive P.O. Box 15282 Houston, Texas 77020

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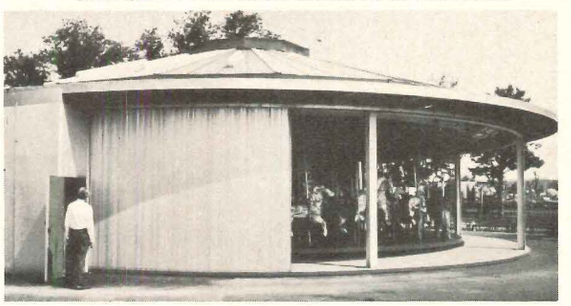
J. G. WILSON SPIRALL CONSTRUCTION

DESIGNED FOR SIDE COILING OPERATION



Four Spec-Chart Spirall Models A1042-AA-MO enclose this carousel on New York's Fair Grounds.

Spec-Chart Spirall Closures

material		spirall grilles	spirall midget slat closures	spirall rolling service doors
galvanized steel		A4100-GS	A1042-GS	A1043-GS
aluminum	mill finish	A4100-AM	A1042-AM	A1043-AM
	anodized	A4100-AA	A1042-AA	A1043-AA
stainless steel	mill finish	A4100-SSM	A1042-SSM	A1043-SSM
	No. 4 fin.	A4100-SS4	A1042-SS4	A1043-SS4

NOTE: Add the following code to Model Number for Type of Operation: SC — Self-Coiling; KG — Crank Gear; MO — Motor.

EXAMPLE: Galvanized Spirall Midget Slat Closures, motor operated — A1042-GS-MO.

Now you can turn-around or turn-the-corner with sturdy side coiling Spirall construction for Grilles, Midget Slat Closures, and Flat Slat Service Doors.

OTHER PRODUCTS:
Standard Rolling Service Doors • Wilson Weather Doors • Underwriters' (Label) Service Doors • Midget Slat Closures • Overhead Doors • Rolling Wood Closures • Tee-M Containers • Special Products

The J. G. WILSON Corporation
PRECISION ROLLING DOORS SINCE 1876
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A.I.A. File No. 16-D Sweet's 17L Wil 8 SPECIAL DOORS coiling

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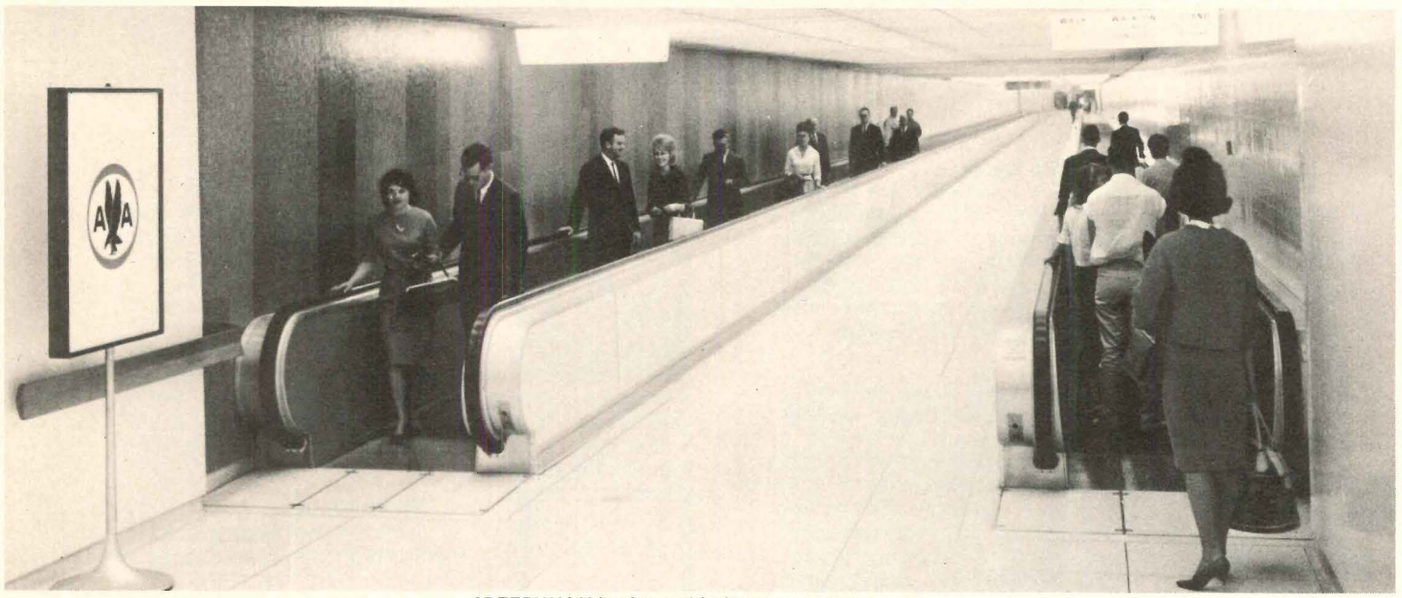
Take the long walk out of your building plans

Goodyear Speedwalk and Speedramp systems carry over 100,000 people every day



SPEEDWALK horizontal belt passenger conveyor

SPEEDWALK® and SPEEDRAMP® systems are the proven way to move people. They're used today in air terminals, shopping centers, stadiums, industrial complexes, and other applications.

SPEEDWALK is a horizontal passenger conveyor system that lets people step on, put down their bags, and ride to the end at up to 180 feet per minute. Or walk on the belt at their normal speed—plus 180 fpm.

A SPEEDWALK system can provide controlled movement of pedestrian traffic. Reduce walking time and distance by 40% for airline travellers moving from an air terminal entrance to the boarding gates. It can direct "through traffic" from one major store to another in a big shopping center. It can keep crowds moving to prevent congestion in a stadium or amusement center.

However you use it, there's no waiting, no need for operators, and almost no maintenance.

And it's just as easy to move people between levels, with a SPEEDRAMP system. SPEEDRAMP is the multi-level passenger conveyor system with no steps to cause problems for people with baggage, carts, strollers or wheelchairs.

SPEEDWALK and SPEEDRAMP systems are surprisingly low in cost. And they're on line now, ready for delivery whenever your plans call for them.

For our new brochure, write Goodyear, Transport Systems, Akron, Ohio 44316.

SPEEDRAMP incline belt passenger conveyor

New Speedwalk and Speedramp installations under construction at...

Louisville, Ky. Delta Airlines, Standiford Field. Completion, May, 1971

Cleveland, Ohio Cleveland Hopkins International Airport. Completion, June, 1971

Meriden, Conn. The May Company, Meriden Mall. Completion, July, 1971

Speedwalk/Speedramp systems keep you ahead of the crowd

GOODYEAR

For more data, circle 103 on inquiry card

The Architect's Guide to Blinds.

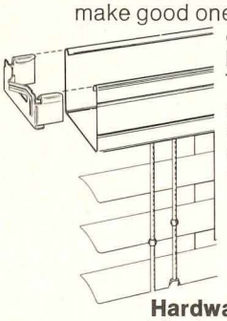
In this chapter: How much there is to know; the quality of blinds; hardware and slats; size of slats; a word about versatility; A-frame blinds; hi-lo blinds; what to do for more information.

How Much There Is to Know.

The subject of blinds is a complex one. It's a subject that we at Levolor live for. We are specialists, and in this series of ads we're trying to convey a little bit of our specialty to the architects we serve. Please feel free to call on us for any advice you might need about blinds. And mail the coupon at the bottom of this ad for more information and reprints of this series.

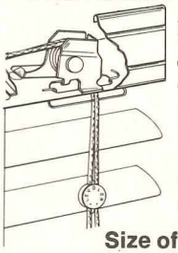
The Quality of Blinds.

Blinds, like any other fixture you can specify, can be well made, or poorly made. At Levolor, we only make good ones, since good blinds are our life, and our reputation depends on them. A good blind has a head channel made of .025 inch Tomized steel, for strength. (Galvanized and bonderized for high rust resistance and then painted.) It has an end brace (with adjusting tabs) that adds rigidity to the head, insures safe installation. The installation brackets are of special, heavy-gauge .042-inch thick Tomized steel with a baked finish to match the color of the head.



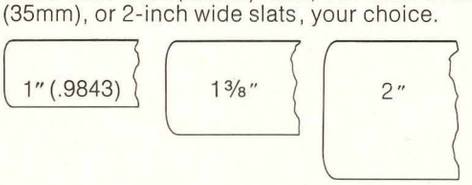
Hardware and Slats.

The hardware used in the construction of a blind should be treated to prevent corrosion. All Levolor blinds have this kind of hardware. The cord lock, which raises the slats, is securely fastened to the head. And Levolor blinds have a cord separator to prevent twisting and jamming at the cord lock. The slats themselves are constructed of virgin aluminum, alloyed with a high percentage of magnesium, to insure maximum resistance to corrosion. They have a plastic-type finish coat applied under pressure and at high temperature.



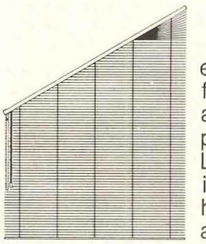
Size of Slats.

A lot of architects write us inquiring if we have blinds with different sized slats. We do. The Riviera model, considered practically tapeless, comes with 1-inch-wide (25mm) slats, 1⅜-inch-wide-slats (35mm), or 2-inch wide slats, your choice.



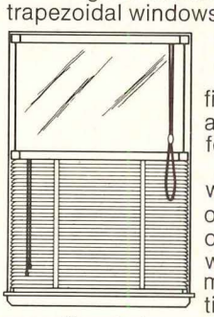
A Word about Versatility.

Many architects are unaware of the versatility of the blind. The fact is that blinds are available to fit almost any size and shape window you can think of. And they fit comfortably into areas that other window coverings just can't make use of.



A-Frame Blinds.

The A-Frame is a good example of an unusual window shape for which blinds are the ideal coverings, and which has grown tremendously in popularity in the past few years. Levolor's A-frame blind is as easy to install as a conventional blind—the head parallels the angle of the soffit, and the slats are horizontal except that each is progressively shorter where it meets the angled head. And variations of this blind are available for triangular windows, double-triangular windows, and trapezoidal windows, be they wide or narrow.



Hi-Lo Blinds.

Not only are blinds available to fit unconventional window shapes, there are also some unconventional blinds for the ordinary windows, as well.

For example, in a school or hospital, where you might want the lower half of the window covered by a blind some of the time, and the upper half or entire window covered at other times, Levolor makes the hi-lo blind. Of course, the slats tilt too. It's hard to imagine a more versatile window covering than that one.

What to Do for More Information.

For more information, mail the coupon. We'll put your name on our bulletin list, or we'll send you technical specifications on our blinds, or we'll send you a book about window covering that a lot of decorators have found useful (Window Magic). Or if you have a specific question, call or write the Levolor Blind specialist near you.

Levolor Blinds

WE MAKE YOUR WINDOWS LOOK GOOD.

Levolor Lorentzen, Inc., 720 Monroe Street
Hoboken, New Jersey 07030

Gentlemen of Levolor:

I want to know more, please send me

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☐ Window Magic,
a booklet about creative window coverings.

☐ Color chips.

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Title_____

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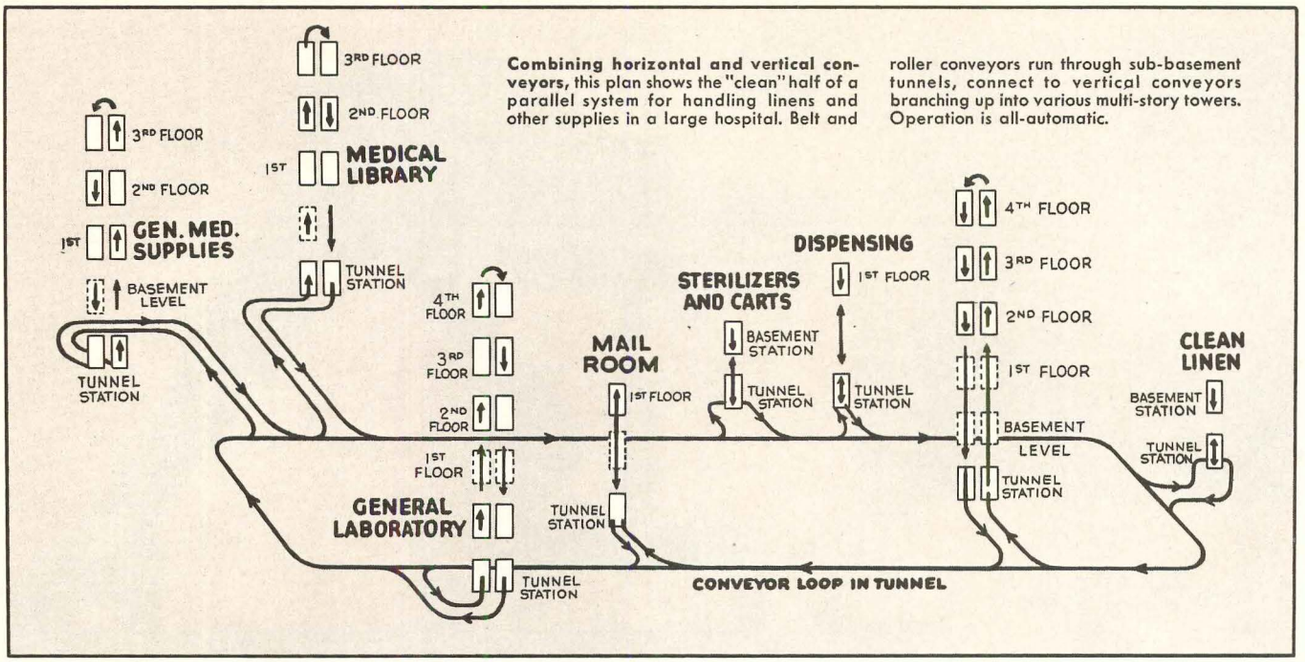
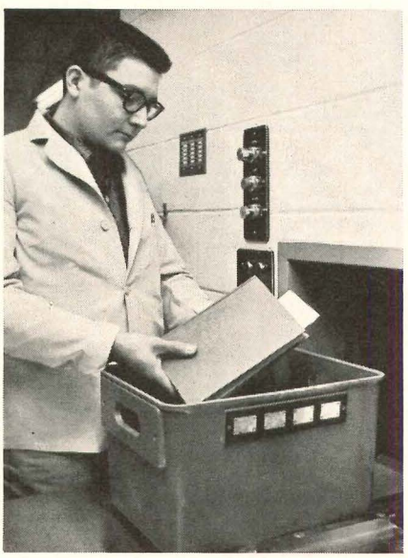
A-4



Combining horizontal and vertical conveyors, this plan shows the "clean" half of a parallel system for handling linens and other supplies in a large hospital. Belt and roller conveyors run through sub-basement tunnels, connect to vertical conveyors branching up into various multi-story towers. Operation is all-automatic.

Pushbutton conveyor system speeds hospital supplies to any of 17 stations



Automatic control is an integral part of a Recordlift System. It employs the magnetic tab principle of conveying encoded digital information—one of the most reliable, economical, maintenance-free systems devised.

Operation is fast and automatic. Operator simply loads the basket, places it on the loading station, pushes the proper button for the desired destination—and away it goes!

PLANNING for materials handling in multi-story buildings can become an easy matter—when you specify a STANDARD CONVEYOR *Recordlift* System.

A *Recordlift* System *unifies* a building. General supplies, mail, records, files and other materials go up, down, and throughout the building at the push of a button. The cost and congestion of interfloor messengers is saved—speed and efficiency are gained.

Ideal for hospitals

Widely used in office buildings, banks, libraries, etc., *Recordlift* Systems have long proved ideal for handling hospital supplies.

The plan above, for example, shows the "clean" portion of an extensive double *Recordlift* System being designed for a new 700-bed hospital.

Has two-lane traffic

Two separate horizontal-vertical conveyor systems will run side-by-side throughout the building complex. One will handle clean linen; the other, soiled. The systems will also handle mail, books, records, forms, publications, medical supplies, instruments and lab specimens.

There are 17 pushbutton stations on the clean system, 14 on the soiled. The entire double system has about 4,300 feet of conveyor—3,000 feet horizontal. The vertical footage includes 8 *Recordlifts* and 12 reciprocating lifts.

Provisions are included for adding 7 more stations to the clean system and 8 more to the soiled.

Dispatching is simple

Any station can send to any other station in each separate system. For reasons of cleanliness, the two systems do not connect at any point.

Dispatching is simple, fast and selective. The operator merely loads the 20½" x17½"x10" container (2 will hold a complete change of linen for 3 beds), pushes the button for the proper station, and the system delivers it.

Write for data file

If you are concerned with multi-story buildings which call for streamlined distribution of everyday supplies, be sure to investigate STANDARD CONVEYOR *Recordlift* Systems.

Write today for an illustrated data file. Or simply clip this ad to your letterhead and mail it.

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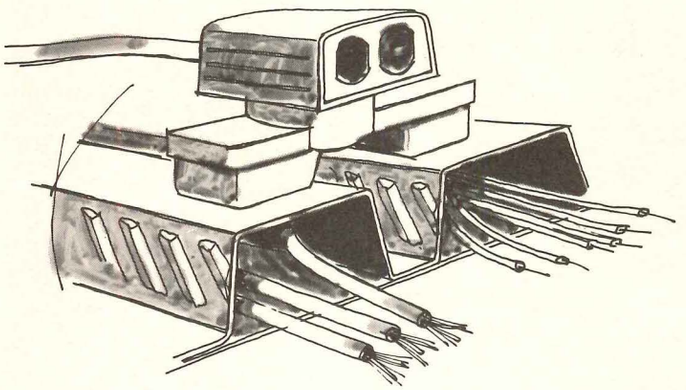
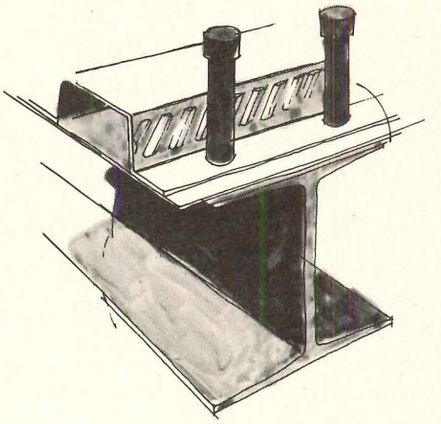
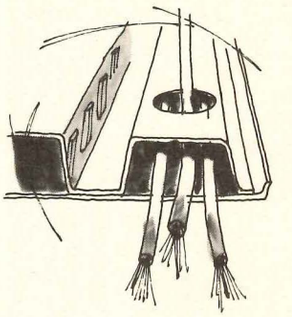


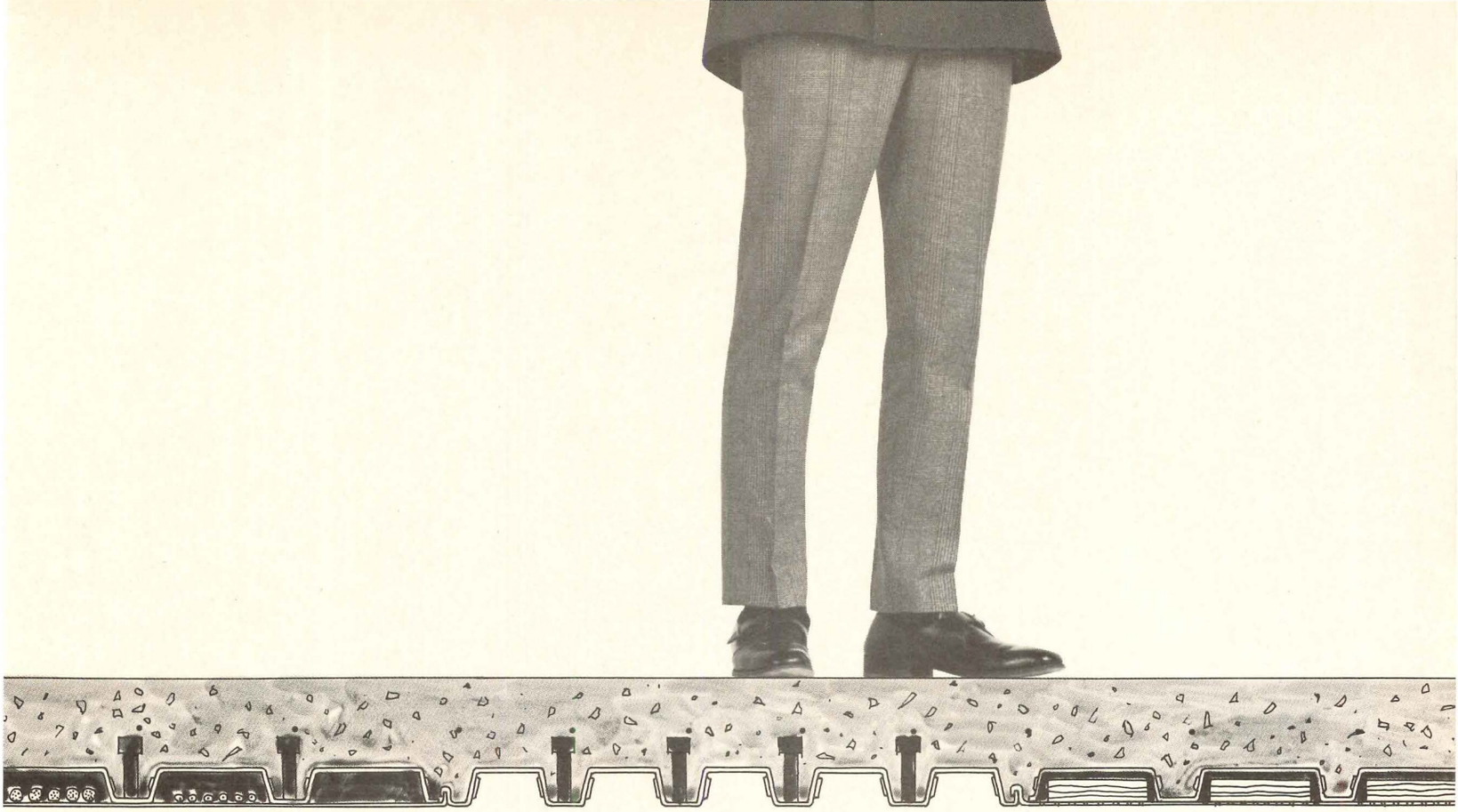
PRE-SET INSERTS
Eliminate costly drilling and installation...one fixture for both power and telephone.

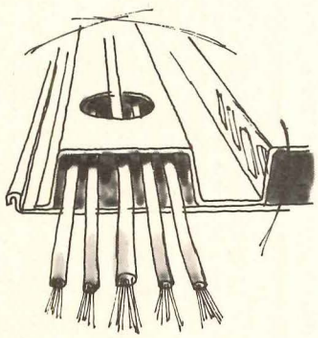


COMPOSITE BEAM DESIGN
Hi-Bond® lugs, special side lock designs...comprehensive design data and assistance.



You'll find us in Sweet's Architectural Catalog, Section 5.





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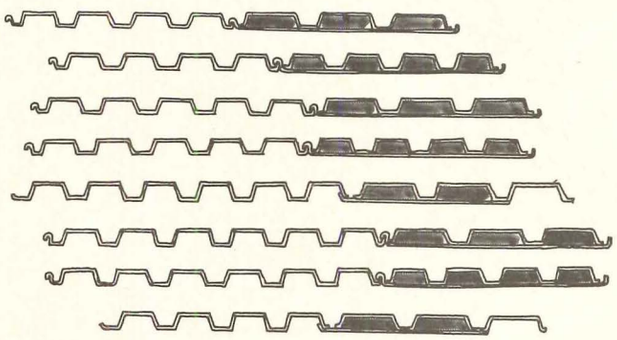
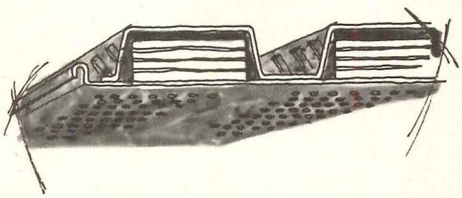
Provides 66% more wiring space per cell... many more Celluflor profiles to choose from.



BLENDS MEET ANY MODULE
Mix Celluflor® and non-cellular decks... provide economical electrification to meet any architectural module.



ACOUSTIFLOR™
Doubles as structural floor and acoustical ceiling... eliminates separate suspended ceiling.

Whatever your floor system requirements, there's an Inland-Ryerson floor deck specialist to help you. He's backed by an engineering department known for its ingenuity and ready to provide assistance in testing and specialized design. To contact him, and for a copy of Catalog 21-1, write Inland-Ryerson Construction Products Company, Department D, 4033 W. Burnham St., Milwaukee, Wis. 53201.

INLAND-RYERSON

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A member of the INLAND steel family

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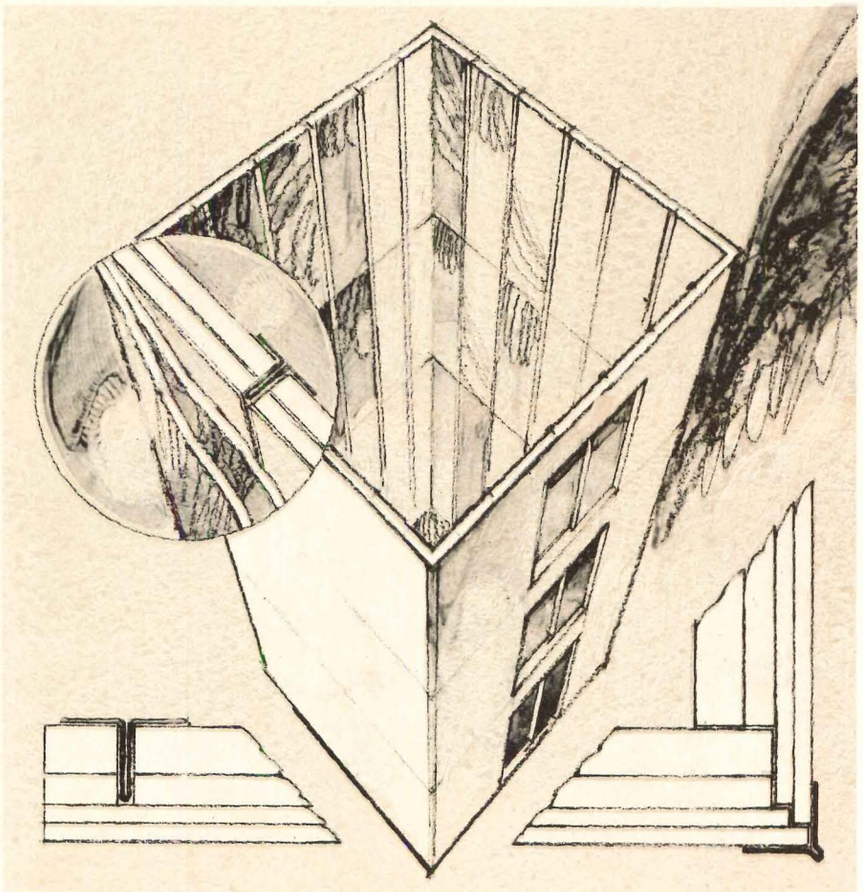

G-P introduces a Shaft Liner System that weighs only 10.5 lbs. p.s.f.

Stop specifying masonry for shaft enclosures. And start using Georgia-Pacific's new Shaft Liner System. It weighs only 10.5 lbs. p.s.f. compared to 34 lbs. p.s.f. or more for masonry shaft walls.

Georgia-Pacific's new system is a solid gypsumboard system. Prelaminated panels are easily installed in top and bottom runners with a T spline placed between panels. What's more, it installs from one side speeding up construction. Temporary shaft enclosures are eliminated.

With G-P's Shaft Liner, you get a 2-hour fire rating. It gives you good sound control. And it resists uniform wind loads.

All in all, you won't find a shaft enclosure that saves you more time. Space. Labor. And materials. Anywhere! Better see your G-P representative soon. Or write:

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GYPSUM DIVISION, PORTLAND, OREGON 97204

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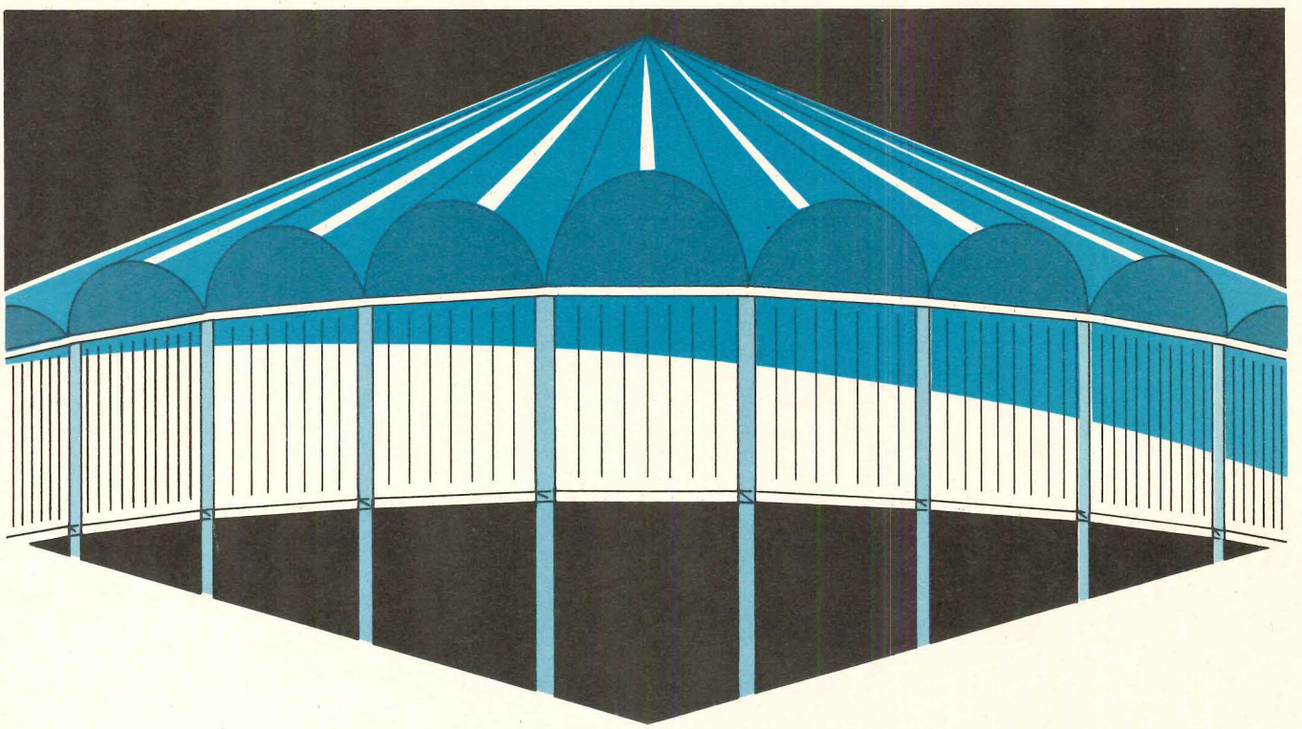
UPJOHN'S URETHANE INSULATION GIVES YOU UNLIMITED SCOPE IN DESIGN



SPRAY Upjohn's Urethane foam can be sprayed directly on the job. Inaccessible areas become easy to insulate . . . regardless of configuration.

POUR OR FROTH Upjohn's Urethane foam can be poured or frothed into any shaped cavity. Foaming and fabrication become one, efficient, economical operation.

SLAB Ready-formed panels of Urethane are easy to apply. They are available in many sizes and can be shaped with ordinary hand tools.

All available in KODE 25™ UL listed materials.

Upjohn Urethane has the lowest K-factor and frees you from the limitations of other insulating materials.

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Name, Position

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Upjohn

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This is *Focus.* Spare. Clean. Rhythmic. A future classic. Chrome plated frame. Side or armchair. And, like all Thonet furniture . . . built to endure. See all the new excitement in contract furniture at a Thonet Center of Design. New York. Chicago. Los Angeles. San Francisco. Dallas. Miami. Or write Thonet Industries, Inc., One Park Ave., N.Y., N.Y. 10016.

THONET
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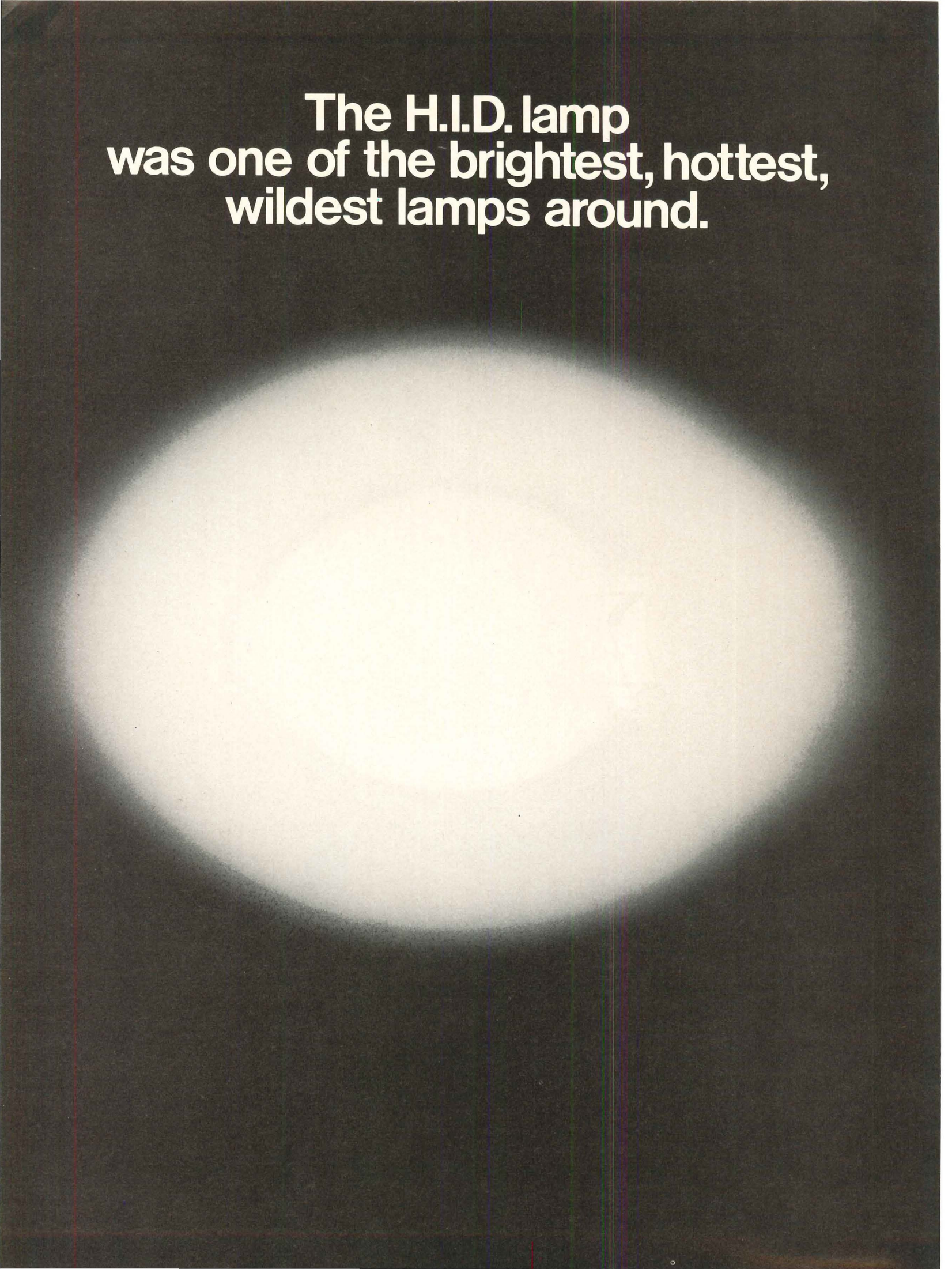
The H.I.D. lamp was one of the brightest, hottest, wildest lamps around.



Until our Merculume 2000 tamed it.

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DESIGNER: PAUL STRAHL

Think of high intensity discharge lamps and you probably think of outdoor lighting. Or of the intense lighting found in an industrial environment.

Now you can bring the advantages of H.I.D. mercury and metal halide lamps into the more sophisticated environments of commercial applications.

You still get the output that H.I.D. lamps are known for. Only now the light is softer, more subdued, more comfortable. Merculume 2000 gives a natural 3-dimensional effect that makes people and things look the way they're supposed to look.

Merculume 2000 looks the way a commercial luminaire is supposed to look, too. It will harmonize with the most tastefully designed interior.

And because of the high output, you'll need fewer luminaires. One 2′ x 2′ Merculume unit replaces 20 square feet of fluorescent fixtures.

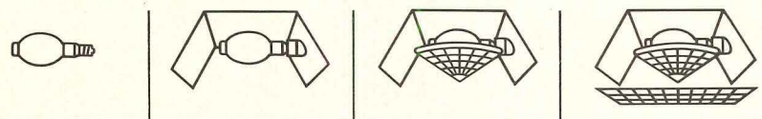
Merculume also accommodates a variety of built-in air handling systems – for supply, return or both. That means still less ceiling clutter.

Merculume's snap-in mounting makes for fast, easy installation.

And the long life of H.I.D. lamps makes for low maintenance.

For more information, please write us. Dept. AR-4, Holophane Company, Inc., 1120 Ave. of the Americas, New York, N. Y. 10036

How we tamed a wild lamp.



1. We took the light from an H.I.D. lamp.

2. Directed it with a precisely angled reflector.

3. Spread it with a prismatic glass refractor.

4. And distributed it softly, without glare, through the precise optical prisms of our Controlens®.

Now you know our secret.

Holophane

For more data, circle 112 on inquiry card

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PPG
INTRODUCES
Solarban® 550 Twindow®
reflective insulating glass.

So now you can have a building facade with neutral gray tones.

Solarban 550 *Twindow* Glass is a new reflective insulating glass from PPG. It can bring unique beauty, comfort and gray reflectivity to any building facade.

Solarban 550 *Twindow* Units help increase occupant comfort, because they possess excellent winter insulation and summer heat reduction performance values. *Solarban* 550 *Twindow* Units are available with 20% or 14% light transmission values.

Solarban 550 *Twindow* Units are available *now*, on normal delivery schedules.

Solarban 550 *Twindow* Glass is the newest addition to PPG's family of Environmental Glasses. And only PPG has it.

Look into it for your next building. Ask your PPG Architectural Representative or send the coupon for more information.

PPG INDUSTRIES, Inc., One Gateway Center, Pittsburgh, Pa. 15222.

PPG: a Concern for the Future

PPG INDUSTRIES

P. B. Obbard, Manager
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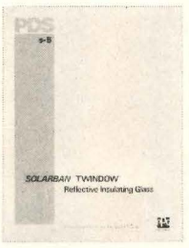
Pittsburgh, Pa. 15222



Gentlemen:
Please send me your literature on *Solarban* 550 *Twindow* reflective insulating glass.

Name_____

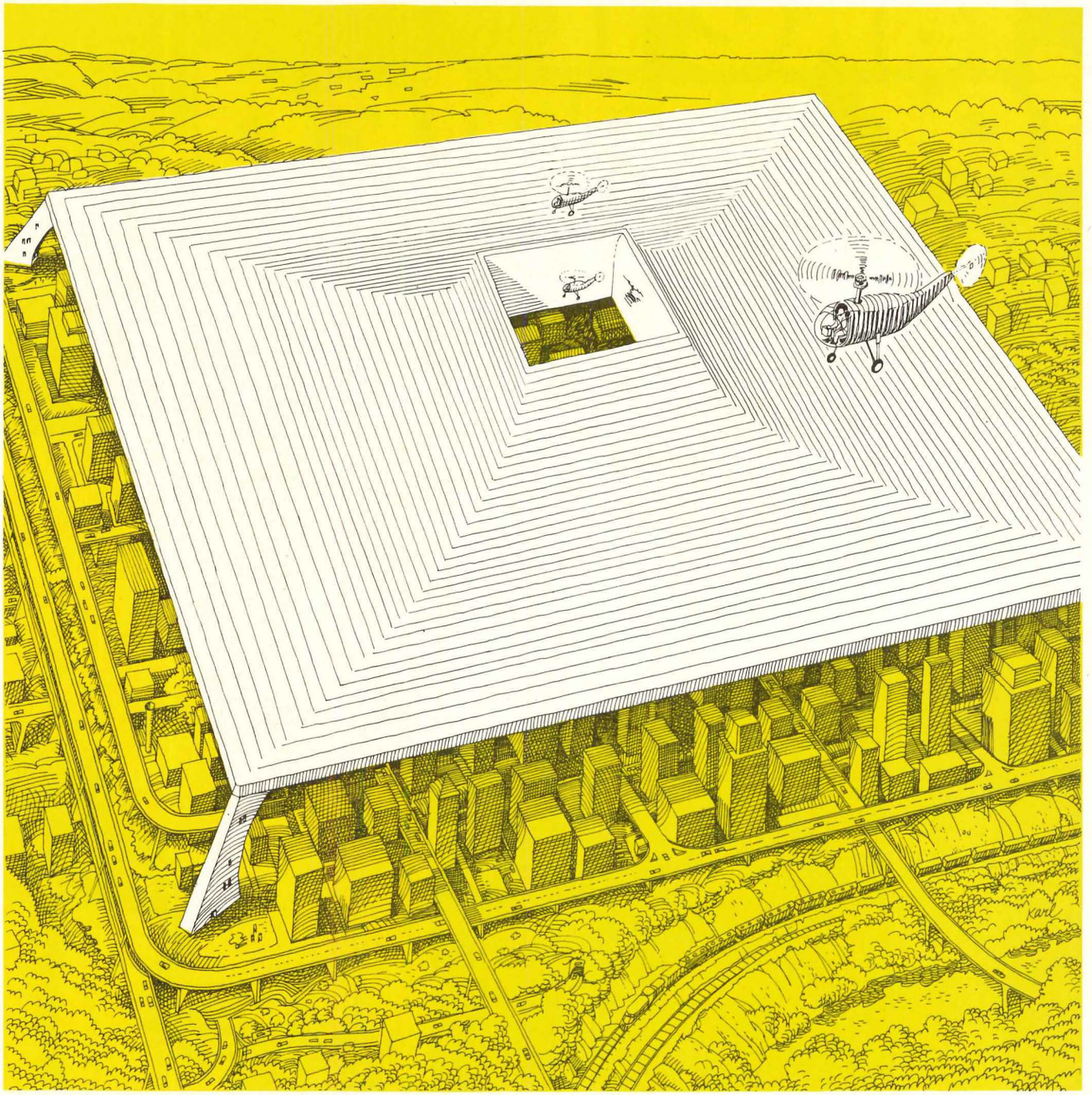
Firm_____

Address_____

City_____State_____Zip_____

For more data, circle 114 on inquiry card

We're known as difficult people.



We do the difficult metal roof jobs.

Maybe you'll never be asked to design a city-sized snow shelter, but you may be interested in some of our smaller jobs. We've been putting roofs over people's heads for more than 80 years now and have covered up more things than the CIA.

We offer a 20-year warranty against leakage on any roof erected under our supervision. All Overly roofs are metal, and none of them are dependent on sealants of any kind. All joints are designed around a mechanical interlocking system which permits expansion and contraction even during extreme weather changes. In short, we believe water is for drinking, not for dripping.

The next time you're asked to cover something up, give us a call. At Overly, one of our favorite games is "Can You Top This?"

Overly Manufacturing Co., Architectural Metal Division, Department 10D Greensburg, Pa. 15601.

Overly
MANUFACTURING COMPANY

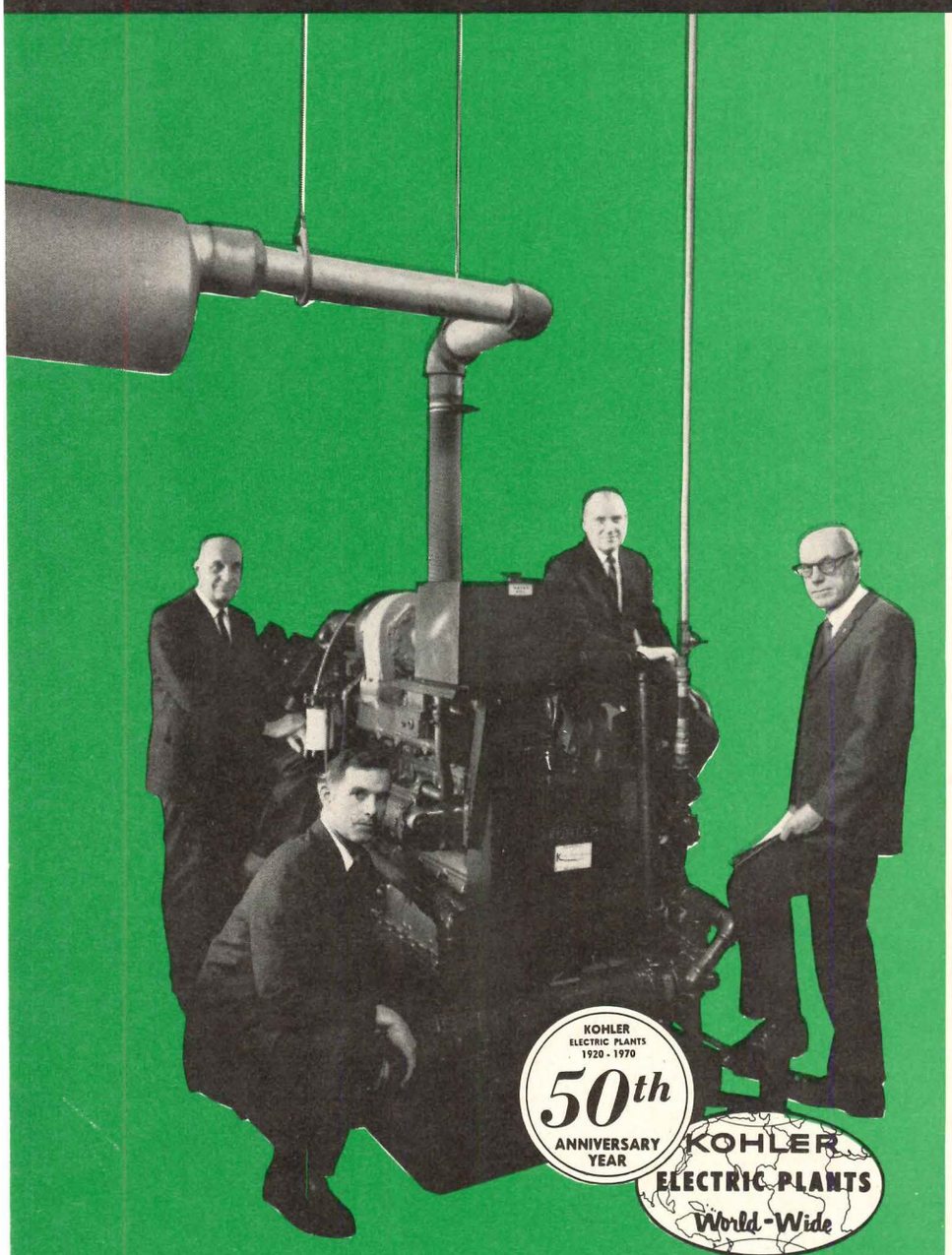
For more data, circle 118 on inquiry card

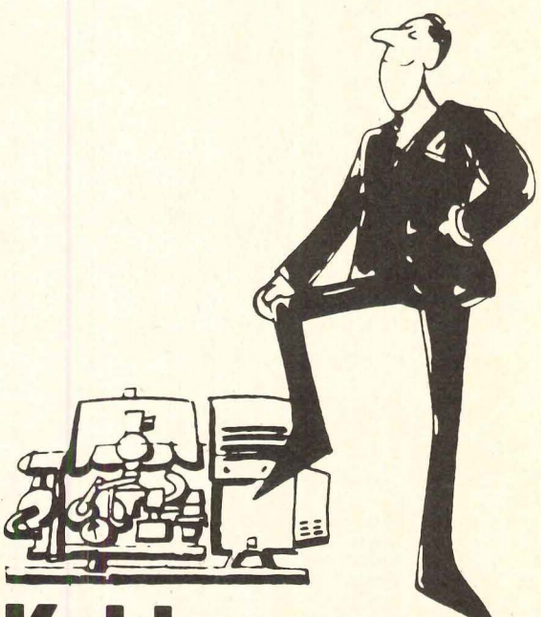
Take it for granted.

Job-matched dependability. That's why you can take a Kohler standby electric plant for granted. It starts with basic design. Rugged. Built to perform—every time. Kohler distributors and representatives take it from there. They help you determine size and type of unit, plus accessories that tailor it to the job—completely.

What's standard? Exclusive solid state static exciter for quick response, steady power under high loads. Kohler-designed cooling system. Elastomeric coupling between engine and generator and flexible mounts between plant and base which virtually eliminate vibration and torsional disturbances. Other features and options including automatic takeover.

You get one-source responsibility, Kohler service nationwide. For complete information, write Kohler Co., Kohler, Wisconsin 53044.



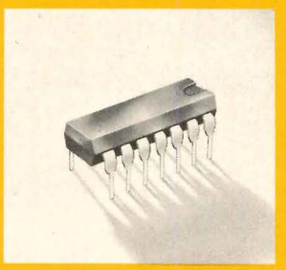


Kohler Electric Plants. We work hard to make them hardly noticeable.

Kohler Co., Kohler, Wisconsin 53044

For more data, circle 119 on inquiry card

small wonder



the fastest passenger service ever known is delivered by the new HAUGHTON 1092-IC elevator control system!

That "small wonder" holds an array of the microminiature integrated circuits that enable Haughton 1092-IC to achieve faster, more flexible passenger service than any other control system.

The interval from pressing a call button to arrival at the destination floor—Passenger Destination Time—is shorter than was ever before possible. That's because 1092-IC, alone, is packed with enough electronic logic to supervise and weigh *every* factor affecting service. Others can deal with less than half of them.

In milliseconds, 1092-IC allots and reallots calls to cars; constantly adjusts to all changes in load, location, calls, commands and delays—as quickly as they happen. The entire elevator plant becomes more efficient than ever before, because now any car can be deployed anywhere to streamline passenger traffic. And it's accomplished in less than the former space, with greater reliability.

To learn more about this new concept of better service for elevator passengers, write us for your copy of the new HAUGHTON 1092-IC brochure—or call your nearest Haughton office.

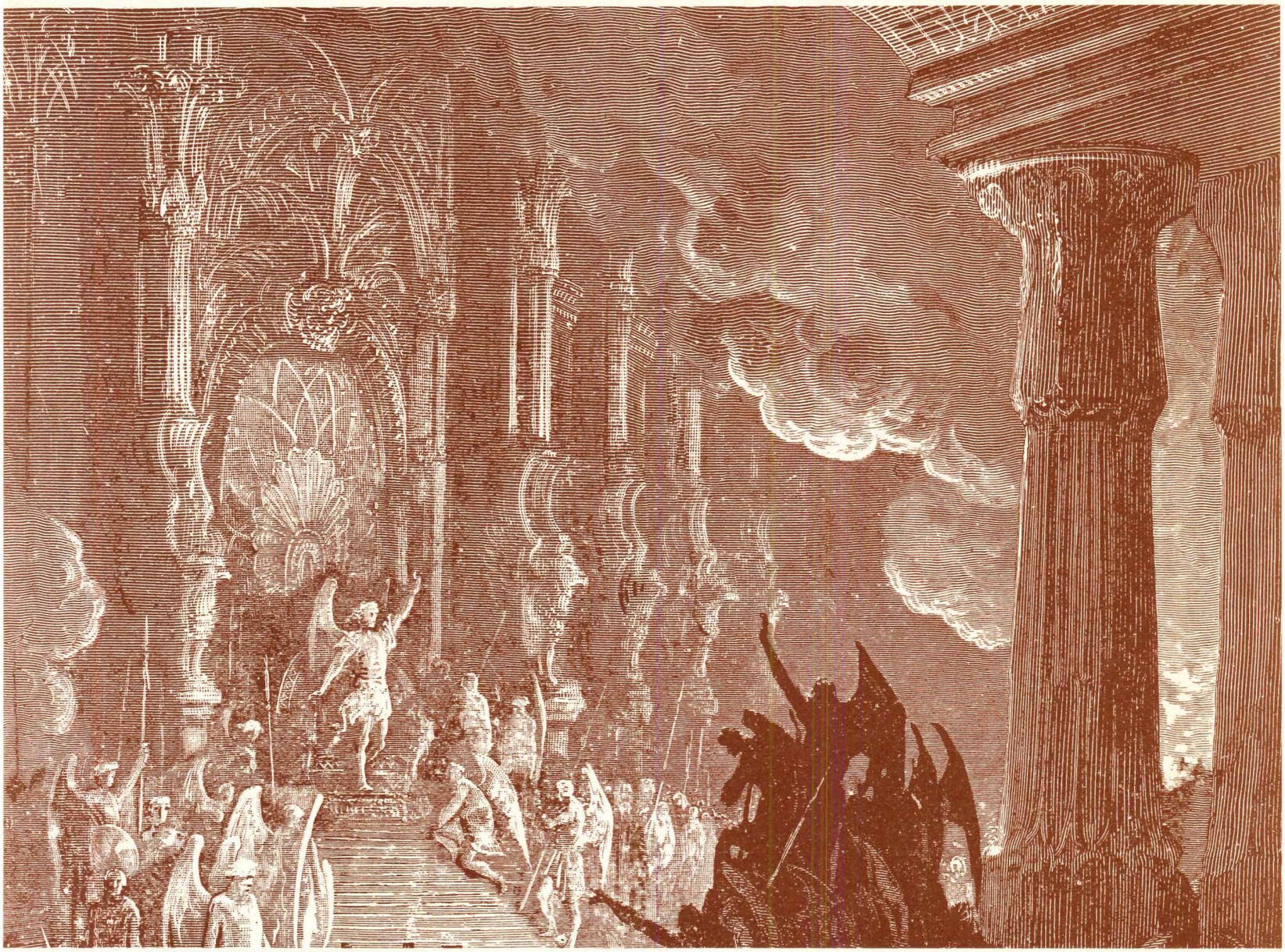
RELIANCE ELECTRIC COMPANY

HAUGHTON ELEVATORS

P.O. BOX 780, TOLEDO, OHIO 43601

For more data, circle 120 on inquiry card

Whatever the premises, Zonolite roof decks will keep the heat in.



ENGRAVING COURTESY THE BETTMANN ARCHIVE.

The Zonolite® Dyzone™ roof deck system produces "U" factors as low as .05.

Dyzone is a combination of vented polystyrene board and Zonolite insulating concrete, applied over a structural base of concrete or metal. Two great insulations that make one great roof deck.

Zonolite roof decks are permanent, lightweight, and firesafe. They provide positive venting and slope-to-drains. Because they're monolithic, they eliminate heat-leaking seams.

On top of all this, they're applied by approved applicators, and certified. For our latest roof deck catalog, see your Zonolite man, or write to Construction Products Division, W. R. Grace & Co., 62 Whittemore Ave., Cambridge, Massachusetts 02140.

GRACE ZONOLITE

Just say Grace!

For more data, circle 121 on inquiry card

ANNOUNCING: A PUBLIC AND PROFESSIONAL SERVICE BY ARCHITECTURAL RECORD

(Reprinted from the February 1971 issue.)

A memo to architects and engineers from the publisher

Subject: **PROJECT AIR RECLAMATION**

When an entire nation sees, smells and inhales a problem, the need for publicizing that problem becomes secondary to devising solutions to it—and communicating them to the right people.

Impetuous promptings to do something about pollution are understandable as it finally dawns upon an unsuspecting populace that unless effective action is taken, accelerating technical progress promises at best a poisonous prosperity. What the situation now demands, however, is more enlightenment on products and systems, available or under development, for protecting and reclaiming our environment.

In this regard it would be a most constructive development if architects, and the engineers who work with them, were more fully informed on anti-pollution systems and equipment designed for use in all types of buildings.

Architect and engineer expertise is essential to equipping new and existing buildings to meet anti-pollution standards. Moreover, architects and engineers bring to private projects a deeply reflected sense of responsibility to the public and the environment. As professionals they are the primary advocates of quality design solutions to quantitative building problems. Today, backed by clearly foreseeable legislative action and the pressure of public opinion, they are in a better position than ever before to persuade their clients to invest in the most efficient anti-pollution systems.

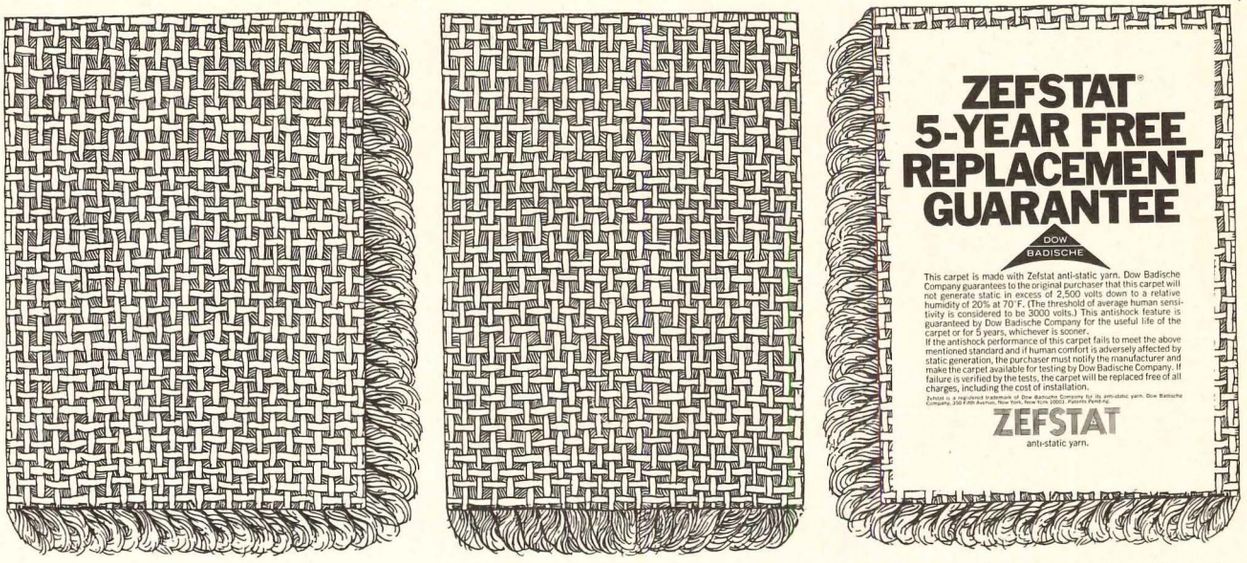
Unfortunately, effective dissemination of needed information to the design professions—and the stimulus that would provide to the introduction of effective anti-pollution systems—is dependent to a degree on editorial and advertising budgets. Therefore, with the hope of rendering a public and professional service, Architectural Record is offering upon application to the publisher one full black and white page free to any manufacturer of equipment specifically designed to reduce outdoor air pollution on the following conditions:

1. The manufacturer must feature a comprehensive solution to an air pollution problem in a building and, where applicable, include test data relating to prevailing standards and codes. (Note: components are not eligible unless presented as part of a total system and specialized process equipment is excluded.)
2. The manufacturer will assume full responsibility for the accuracy of all statements.
3. The manufacturer has national distribution and agrees to supply promptly to architects and engineers full information on his system.
4. The publisher of Architectural Record may designate the issue in which the message will appear.
5. All copy will be subject to review and approval by the editors of Architectural Record.
6. The offer may be terminated by the publisher of Architectural Record at any time and without condition.

Blake Hughes

PUBLISHER

Only one anti-static carpet yarn is backed by a guarantee.



We guarantee that a carpet made with Zefstat® will reduce static below the level of human sensitivity for the useful life of the carpet or five years. Or else: we replace the entire carpet, free of all charges, including the cost of installation.

Dow Badische is the only carpet fiber producer to guarantee its product in end use. If anyone else could solve the problem of static as effectively as Dow Badische, how come they're not willing to put it into a written guarantee?

Maybe they're not as confident about theirs as we are of ours. And for good reason.

We originated and developed the concept of turning metal into soft textile yarns more than twenty years ago. And when the need for some form of anti-static control device for carpeting became evident, we applied our knowledge into making an anti-static fiber for carpets.

The result was Zefstat, a specially treated strip of aluminum we turned into a fine, soft textile yarn with the strength and other physical properties necessary for processing, wearability and cleaning.

It seems almost a shame that after we spent so much time and effort developing Zefstat, it should remain hidden. Because you can't see Zefstat in the finished product. Zefstat is blended into our carpet yarns, acrylic or nylon, during yarn production. Blended either by us or by you with our assistance. As little as two-percent of Zefstat, properly blended, can dissipate static electricity, almost as fast as it is generated, over an entire carpet.

Can we guarantee Zefstat for you?

Dow Badische Company, 350 Fifth Avenue, N.Y., N.Y. 10001.

DOW
BADISCHE

Zefstat is a registered trademark of Dow Badische Company for its anti-static yarn.

For more data, circle 122 on inquiry card

This advertisement has no headline. It is merely a factual statement, but one that we believe is of vital import to every architect and engineer.

TCS is stainless steel coated on both sides with a terne alloy of 80% lead and 20% tin.

TCS has no equal among standard architectural metals in resistance to atmospheric corrosion.

TCS solders perfectly without the need for expensive pre-tinning, acid fluxes or neutralizing agents.

TCS weathers naturally to a uniform dark gray.

TCS provides built-in safeguards against failure which no competitive roofing or weathersealing material can match.

TCS is a product of the Follansbee Steel Corporation, Follansbee, W. Va.

For more data, circle 123 on inquiry card

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Pre-filed catalogs of the manufacturers listed below are available in the 1970 Sweet's Catalog File as follows.

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I Industrial Construction File (blue)
L Light Construction File (yellow)
D Interior Design File (black)

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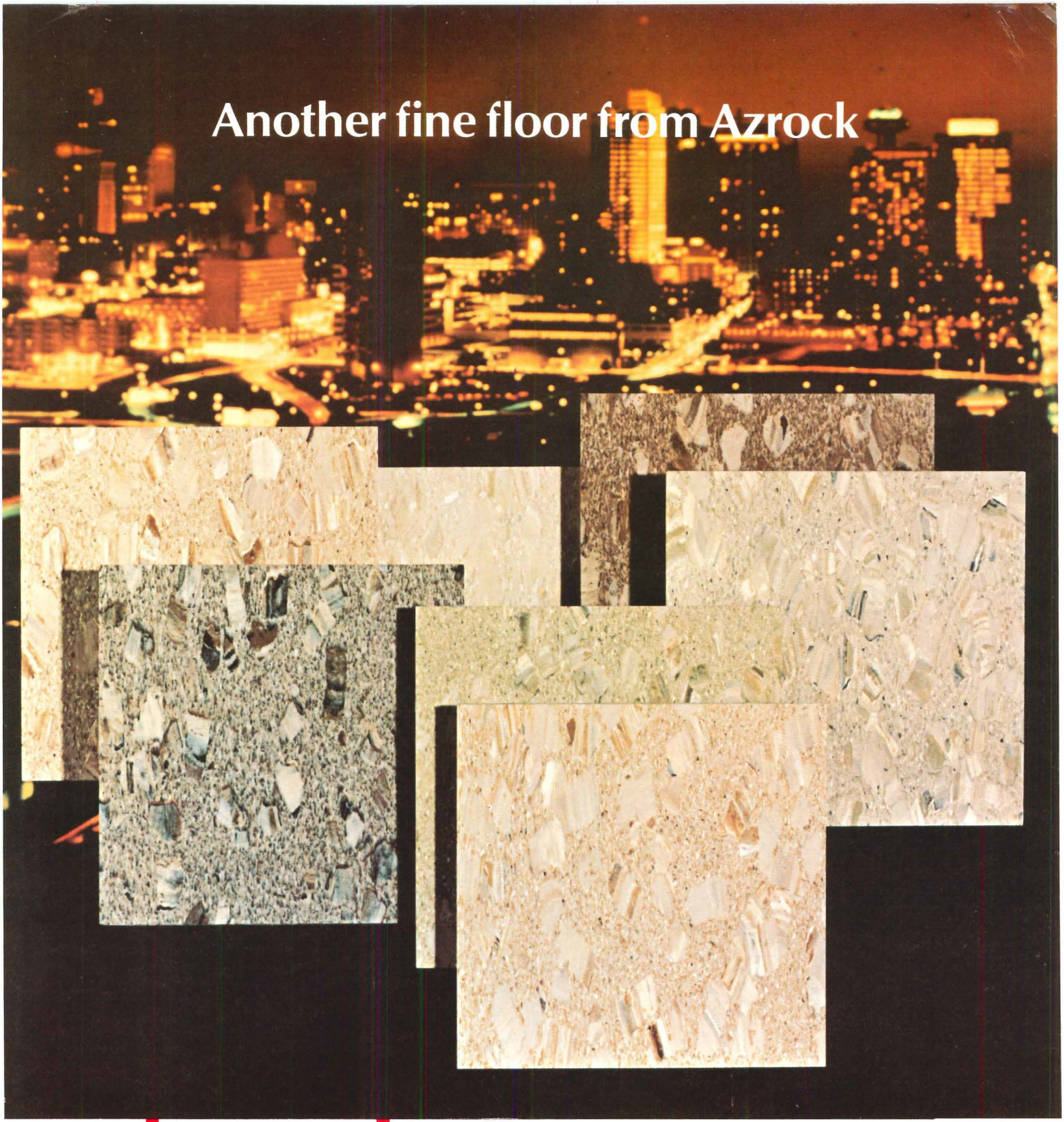

alvarado
vinyl asbestos floor tile

Alvarado's look of true Venetian terrazzo adds a touch of elegance to your floor designs. It can be used in institutional, commercial, and residential installations. Alvarado is made with bold chips of translucent vinyl encasing fine particles of actual marble deeply inlaid on a backing of tough vinyl asbestos tile. 1/8" gauge. 12" x 12" size. Seven decorator colors. For quality and beauty you can count on, specify Azrock Alvarado.

an original floor styling by AZROCK®

Consult Sweet's File or write for samples.
Azrock Floor Products, 556A Frost Bldg., San Antonio, Texas 78205

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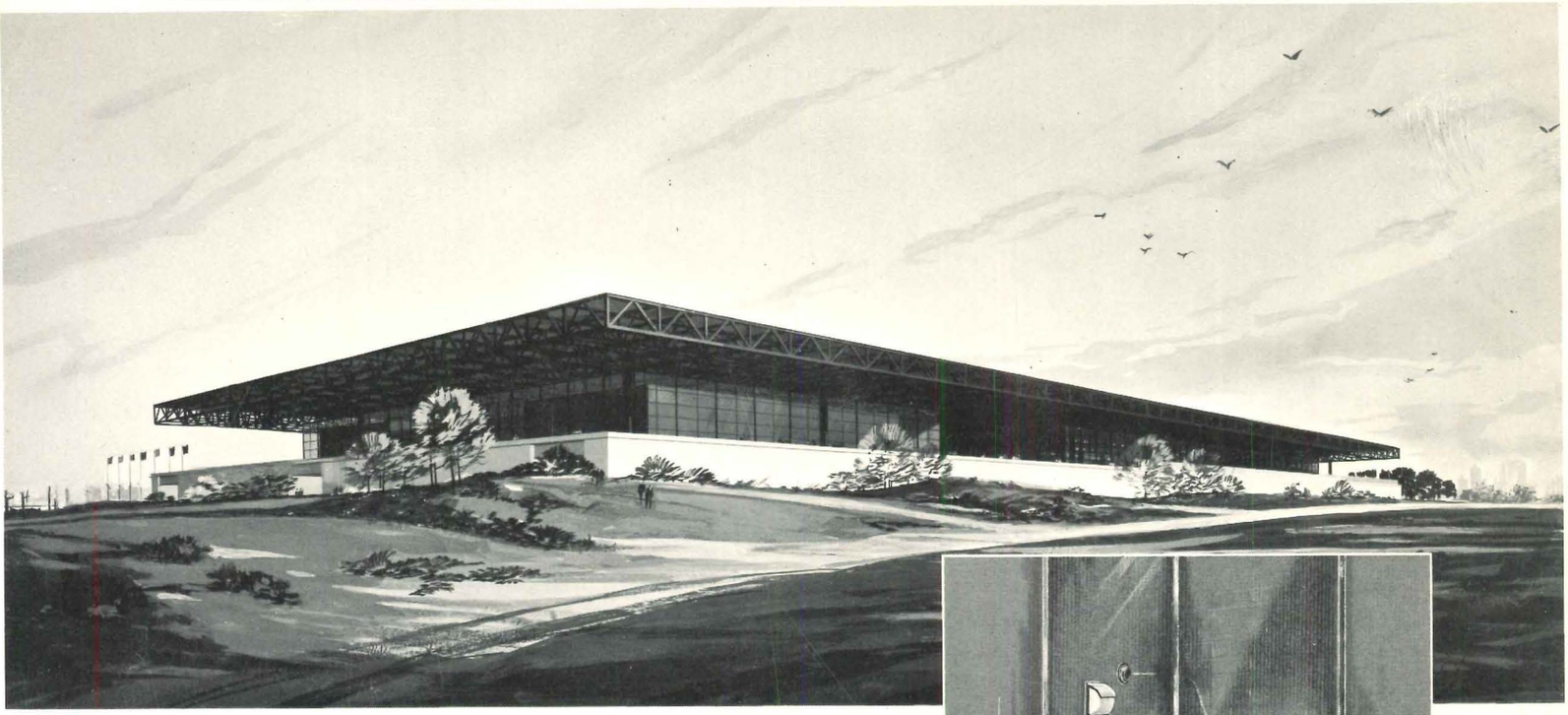

Chicago's New McCormick Place Acclaimed

SLOAN'S "PUSH TO FLUSH" IS ***NEW*** —A ***FIRST*** FOR McCORMICK PLACE

"Most Usable Exposition Center of all Time!"

With more than a half million square feet of exhibit space on two levels—32 meeting rooms—six theatres—eight restaurants—and 20 banquet rooms, Chicago's new McCormick Place is the world's newest, most modern, and most complete exposition center.

Stretching over two city blocks beside Lake Michigan, this 95 million dollar structure has risen phoenix-like from the ashes of the first McCormick Place destroyed by fire four years ago.

Though actually a third larger than its predecessor, the new structure manages to create an atmosphere of warmth and intimacy unique in so massive a building. This illusion stems from the Architect's ability to design the lobby, corridors and other public areas as a series of elements rather than as a formidable, overwhelming monolith.

The Sloan Flush Valve installation in McCormick Place is unique and completely new. In step with space age design, the concealed closet flush valves are *remotely* controlled by "Push to Flush" buttons conveniently located in the toilet stall partitions. Concealed urinal flush valves are similarly controlled by "Push to Flush" buttons in the wall immediately above each fixture.

Early patrons of the new McCormick Place have already expressed enthusiastic acceptance of this new Sloan Flush Valve installation, one of several new Sloan ideas. We invite you to discuss your flush valve installations with Sloan to help make your proposed building as new as tomorrow.

For more data, circle 125 on inquiry card

SLOAN VALVE COMPANY
4300 West Lake Street • Chicago, Illinois 60624