ARCHITECTURE USSR; 18TH-CENTURY RUSSIAN CHURCHES UNDER RESTORATION

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BUILDING TYPES STUDY: VOCATIONAL SCHOOLS

FULL CONTENTS ON PAGES 4 AND 5

ARCHITECTURAL RECORD

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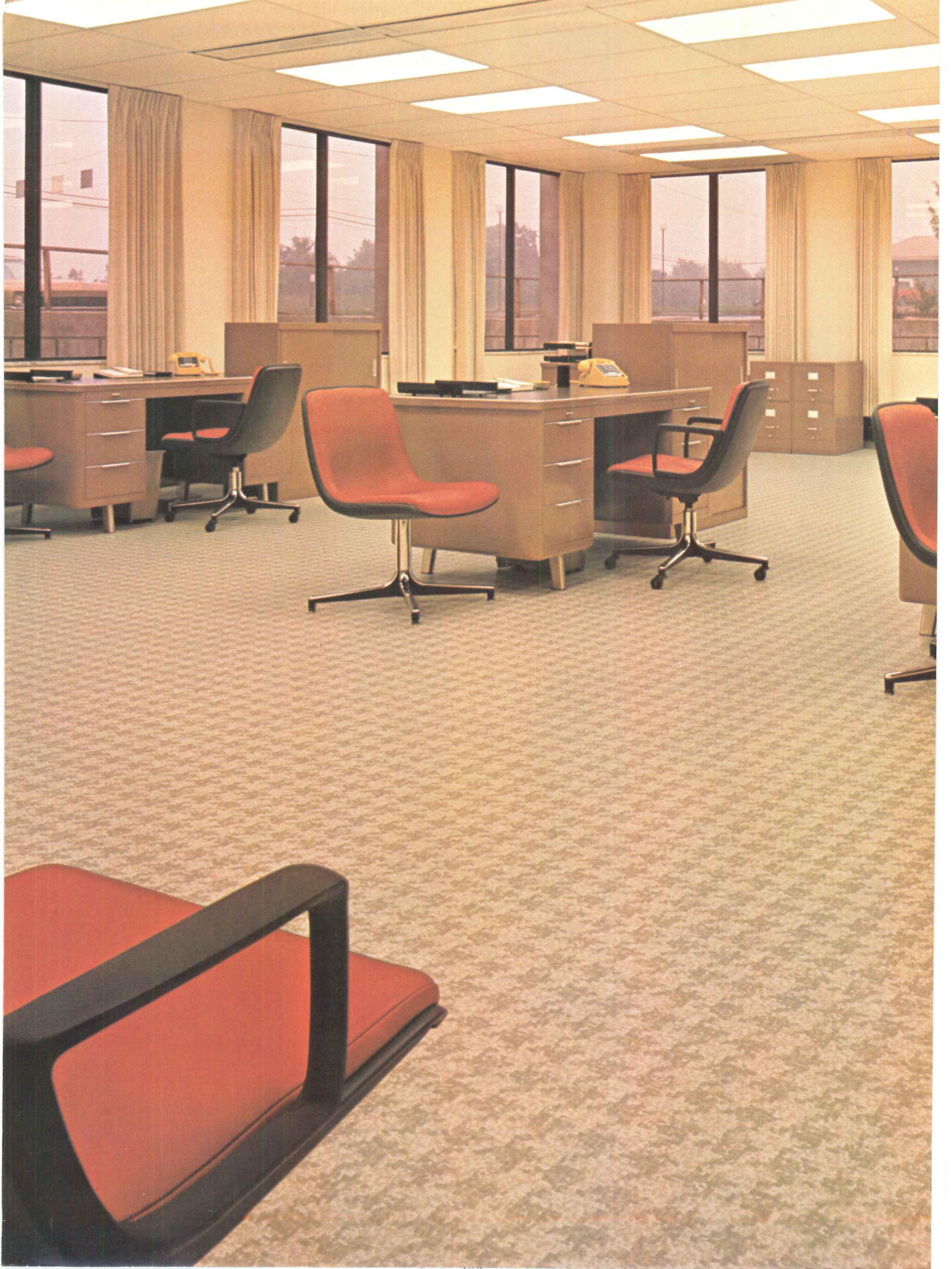

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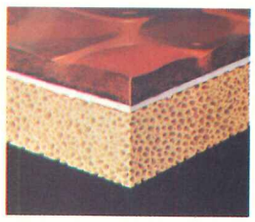

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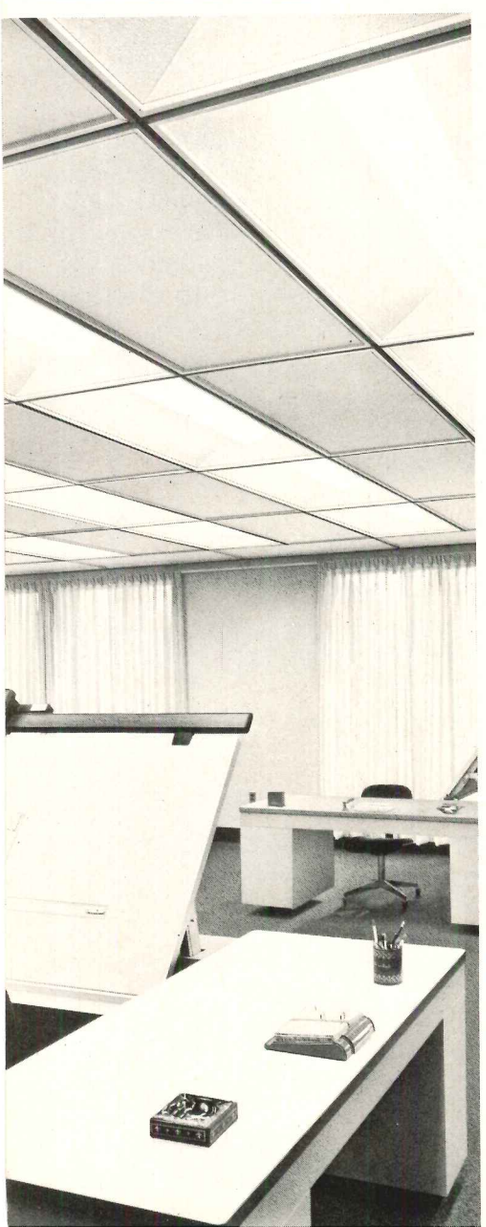

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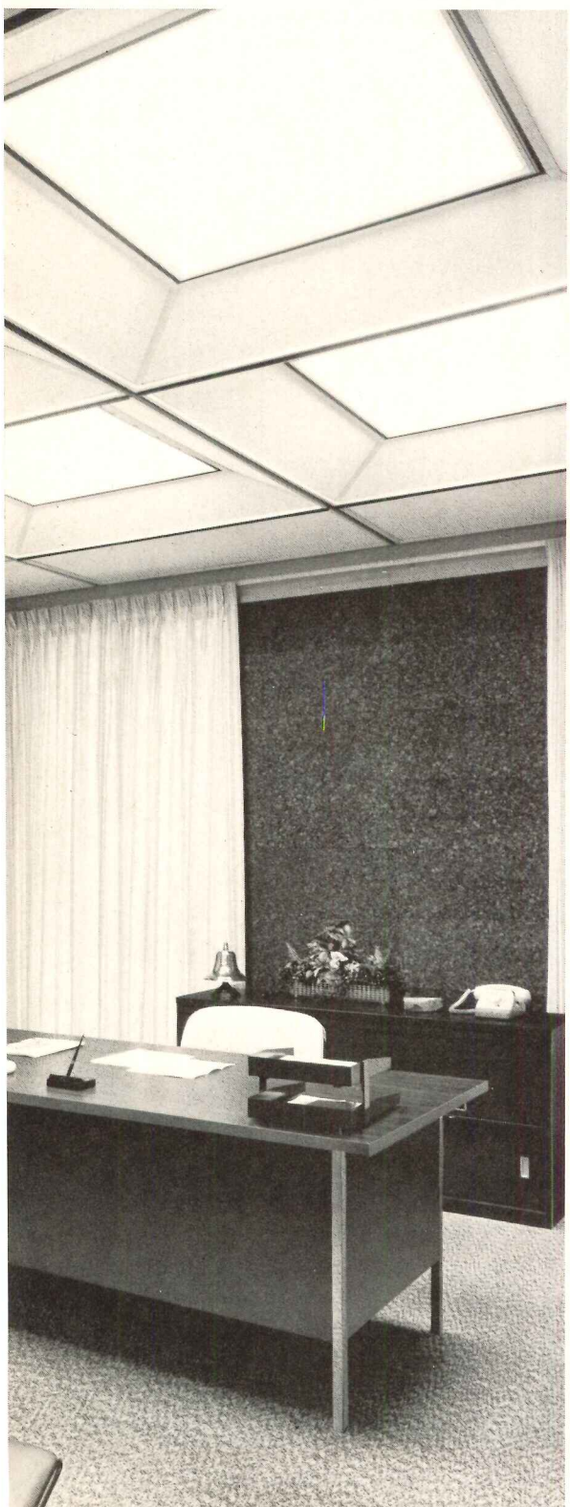
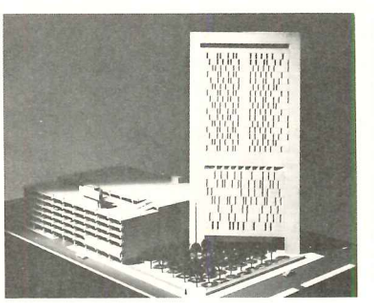
CITY OF ADRIAN CITY HALL, Adrian, Michigan
ARCHITECTS-ENGINEERS: Vander Meiden, Koteles & Associates, Grand Haven, Michigan
GENERAL CONTRACTOR: Midwest Construction Co., Jackson, Michigan
CEILING SYSTEMS CONTRACTOR: Ann Arbor Ceiling & Partition Co., Ann Arbor, Michigan



Cover: 18th century Russian churches
under restoration in Suzdal
in the region of Moscow, USSR
Photographer: Mildred F. Schmertz

THE RECORD REPORTS



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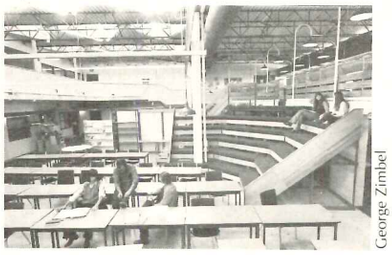
BUILDING TYPES STUDY 444



George Zimbel

ARCHITECTURAL ENGINEERING

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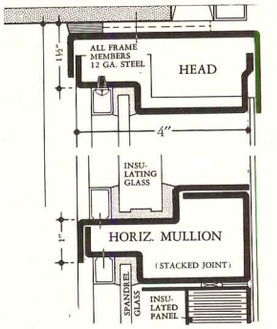
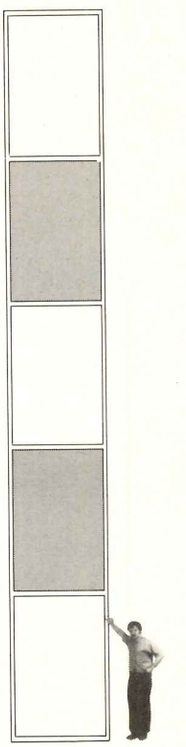
HOPE'S

How Hope's Serves the Creative Architect

This three-section building for Standard Oil Company (Indiana) typifies the large scale, highly specialized project on which Hope's reputation for quality custom work has been built. Wigton-Abbott Corporation, designers and constructors, specified installation of more than 180 monumental size steel custom windows by Hope's. Constructed of 12-gauge pressed steel members, the fixed windows are 30 to 35 feet high and over five feet wide. The installation provides an intriguing example of pressed metal's broad adaptability; steel was chosen for its strength, durability, rigidity, and economy. Note that the detail of the horizontal mullion is designed to accommodate two different thicknesses of glass in the same member, while keeping the outside glass surfaces in the same plane. The attractive apppearance is enhanced by finishing frames, beads and panels each in a different color, with Hope's unusually durable Ultra-Coat finish.



The Hope's pressed steel subframes used in the Standard Oil research center were installed in five sections to accommodate three sections of clear glass, interspersed with two of opaque spandrel glass. The vertical unit, with spandrel surface covering structural framing as well as ceiling and floor construction, functions as both window and window wall. The frames, formed in a tubular shape, provide the glass with a third-dimensional framing effect. The installation typifies the individual choices available to the architect using Hope's pressed steel subframes. They are custom made to suit the requirements of each installation, offering the designer broad versatility. Frames can be designed to accommodate: ventilated or fixed windows, panels, doors, grilles, louvers and all types of glass. Ask Hope's engineers to work with you on your forthcoming construction plans. Your creative ideas provide a challenge they welcome. Hope's Windows, Jamestown, New York 14701.



WIGTON-ABBOTT CORPORATION DESIGNERS and CONSTRUCTORS PLAINFIELD, NEW JERSEY
RAGNAR-BENSON GENERAL CONTRACTOR PHOTO BY HEDRICH-BLESSING

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ooo WALLS

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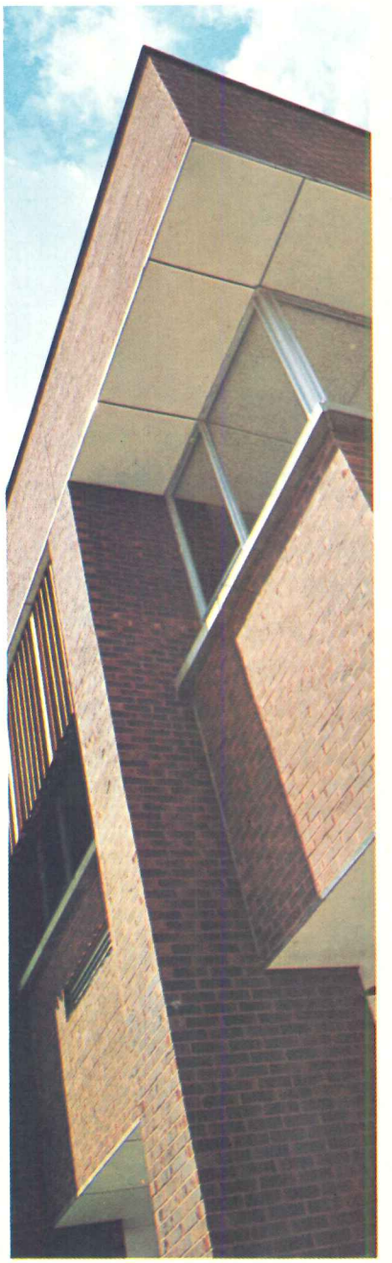
How much reinforcing is needed? What type of masonry reinforcing is most desirable?

Are small twisted reinforcing wires superior to larger single wires?



KEYWALL®

multi-bond masonry reinforcement provides more bonding surface with the mortar, more inches of anchorage to the block and more complete distribution of stress resulting from temperature changes.

One measure of the effectiveness of reinforcement is the amount of metal in surface contact with the mortar. For example, a pair of 9 gauge wires provides 11.2 square inches of bonding area per block foot. A pair of 3/16″ wires, 14.2 square inches. KEYWALL gives 22 square inches. That's approximately 96% more bonding surface than the 9 gauge, about 55% more than the 3/16″.

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There's good news and there's bad news

Every editorial writer in the country must now be virtually overcome with the desire—taking one hand or the other—to comment on the changes the new Administration is making in areas of especial interest to his especial readers. As faithful readers of this page will know, we've been generally critical of Mr. Romney's conduct of HUD; but I read the daily developments—the confirmation of Mr. Lynn, the moratorium on new starts of subsidized housing, and the continuation of controls on construction—with a kind of contained despair. I see in front of us a small cold shining scoop of hope, being liberally sundaeed over with a thick syrup of what looks like disregard for the real needs of people who need housing and need it now and can't afford it; with sprinkles of efficient management and saved tax money that look pretty but don't taste right somehow.

Sure there have been scandals in FHA programs; sure there have been failures of planning and design; sure a lot of subsidized housing costs more than it should; sure everybody is as frustrated as they can be. But is the solution to stop?

The Winter 1972 issue of *City,* published by the National Urban Coalition, contained a thoughtful article by M. Carter McFarland, long-time HUD official and now director of urban affairs and housing programs for the AIA. Written before it became clear that Secretary Romney would be bowing out, Mr. McFarland made a key point: "Good housing cannot do it all." He argued that "It is about time we recognized what good housing can accomplish and what it cannot accomplish. It is about time we turned our energies seriously to finding remedies for the deep-seated problems of poverty and slums. It is about time, too, that we recognized that providing everyone with a decent home in a decent environment is an impossible dream—and an expensive one too—until we find solutions to the more fundamental causes of slums of which bad housing is only the most visible symptom." How sound a comment! Yet the proposals so far seem to be directed not at attacking that problem forthrightly; but ignoring it.

Well, it is (as this is written) too early in the game to make lasting judgments, or even very informed judgments, so I'll cease and desist with the thought that this new reorganization of HUD and new attitude of the Administration (to which even Congress has not yet had much chance to react) must be studied carefully. On other pages of this issue (see News Reports, page 34; and Architectural Business, page 59) you'll find the news as it has developed further since this was written. Part of that news is—say those who just got back from the NAHB Convention—is that most homebuilders don't seem too uptight about the moratorium. You could be confused about that until you realize that only a small percentage of them build public housing, or for that matter low- and middle-income housing; and that, therefore, most of them are totally unaffected by the moratorium on Federal funds; most of them have long been using nice, simple, red-tape-free private money in their work.

But if the moratorium does turn out (again, it's too early to tell for sure) to make things more efficient at the expense of the people who most need better housing, let's hope the architects—individually and through their new-found lobbying voice—stand up and allow themselves to be counted. There could scarcely be a better cause.

More next month.

To change the subject: news on new land-use concepts

If I'm so smart, why ain't I rich? Last month on this page, talking about the massed opposition of the suburbs around New York to the development of low- and middle-income housing by the Urban Development Corporation, I argued that "I'd like to see whether the opposition to new residents couldn't be quieted by linking to that new housing sufficient classrooms and teachers to educate the children who would move into the new housing . . ."

Well, it turns out that that oldest of big builders, Levitt, has already begun trying that route. According to *Land Use Digest,* excellent newsletter of The Urban Land Institute: "Levitt Residential Communities, Inc., has announced a new cost formula which, if accepted in areas where there is opposition to new residential areas, may permit development. . . . The firm, which has had a major dispute over its request for zoning for a $135-million new town in Loudoun County, Virginia, says it will pay the County $1,533,000 over a 10-year period, if it receives the zoning. This will make up the difference in taxes between what the new town will pay, and what already established taxpayers in the county otherwise would have to pay for new schools and other community facilities."

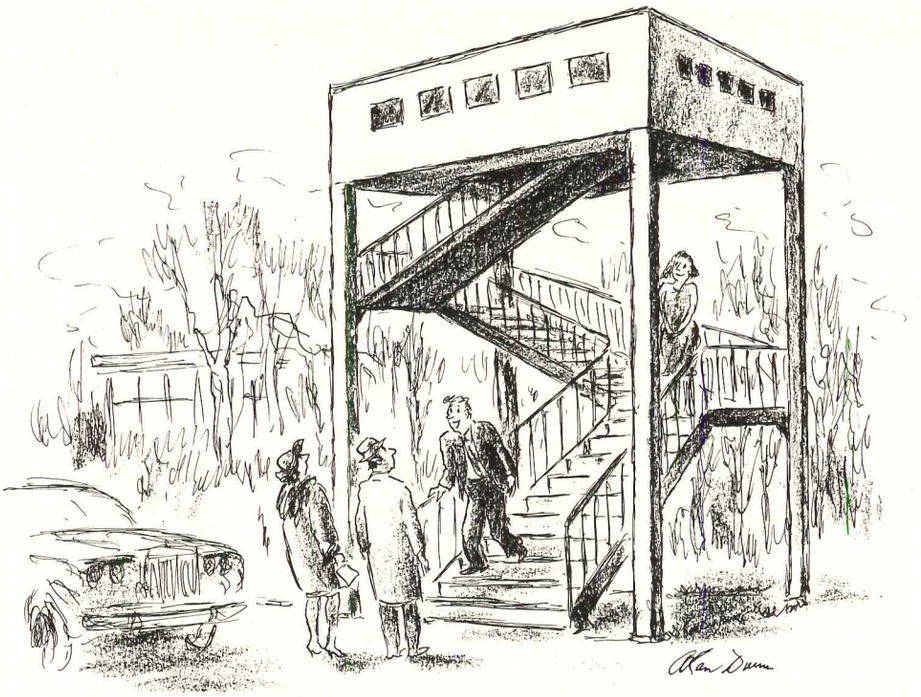
Makes, it seems to me, pretty good sense.

To change the subject again: energy conservation stays in the news

Two things this month keep my hopes high that concerns of energy vs. environment—first aired in RECORD a year ago January—remain on the front burner.

- The General Services Administration is getting on with that prototype energy-conserving building. Specifically, the consulting engineering firm of Dubin-Mindell-Bloome Associates has been retained by GSA to prepare an energy conservation building program for a Federal building to be constructed in Manchester, New Hampshire.

The structure, which will be used by



—Drawn for the RECORD by Alan Dunn

"It's part of his design vocabulary—to leave a lot unsaid."

various governmental agencies for normal operations, will serve as a demonstration project to monitor, record and provide information on the relative effectiveness of a large number of energy conservation "systems" to be designed into the building.

To be studied on a cost vs. effectiveness basis: building configuration, various exterior and interior materials, glass-to-wall ratios, thermal insulating values; as well as more than 200 suggestions made to or developed by the GSA in heating, ventilating, air conditioning, lighting and power and plumbing. Fred Dubin, partner-in-charge of the project for the New York City-based firm, has announced that his firm is soliciting ideas from any source for analysis.

▪ Former Interior Secretary Walter J. Hickel is back in the news, forecasting "a whole new energy frontier." He proposed last month that the government invest $685 million in a 10-year research and development program on geothermal energy (i.e., the heat of the earth's core). In a report of the Battelle Research Center, Mr. Hickel writes: "From our current perspective, geothermal energy promises to be perhaps the most acceptable of all new energy sources from an environmental standpoint."

Pointing out that geysers, hot springs, and volcanoes form only a tiny fraction of the resource base, he forecast that 132,000 megawatts of electric power could be operating by 1985 if his request was funded. Year 2000 goal: 395,000 megawatts; or more than the entire existing generating capacity of the country. Further, he testified at a Senate committee meeting that geothermal plants now in place 35 miles north of San Francisco cost only $120 per kilowatt; perhaps a fourth of the cost of a nuclear plant.

Sounds too good to be true.

More land-use ideas: recycle suburbs instead of spoiling the countryside

In an article written for the *Los Angeles Times,* Edgardo Contini (a senior partner of Gruen Associates) makes an intriguing and impelling argument for re-using the millions of acres of land around our cities—the land that is now "urban-sprawled." He points out that our early suburban developments are now—shocking thought—getting old; and points out that "given an economic life of 40 to 50 years for a single-family dwelling, an average of two to two-and-a-half per cent of all urban land now in low-density residential use will become available for recycling every year during the coming decades. Even assuming that as much as 50 per cent of this land could be recycled at its original density, that 20 per cent were dedicated to new in-town parks, and that as little as 30 per cent were redeveloped with low-rise apartments or townhouses at densities of 12 to 15 units per acre, the entire estimated growth of the urban population could be accommodated in the land being so recycled without need of further outward expansion.

"Conversely," Mr. Contini argues, "if we continue to encourage and subsidize outward expansion, there will not be enough urban population growth to support both expansion and recycling. Thus, the older portions of suburbia will wither, lose population, create severe economic and social problems, and will replace automobile junkyards as the symbol of a culture that carries wasteful consumption to unprecedented lengths."

It's not as simple as that, of course. Lots of houses don't "wear out"—in the manner of the one-horse shay—on a regular time schedule, no matter what their average economic life is. Some of those houses, while they may become substandard, will nonetheless not be obsolete if they have been carefully maintained or added to; and even if a house is obsolete, if its owner does not wish or cannot afford to move on, its land is not available for "recycling." Finally, houses do not "wear out" in convenient size blocks or tracts suitable for redevelopment at higher density.

Nonetheless, Mr. Contini has made an important point; if he does not have a complete answer, he has raised an important question. And since we have moved (and continue to move) people farther and farther from the city with our existing subsidy programs, perhaps we can devise incentives that will make this recycling of valuable, close-in land not just possible—but attractive to the city and the affected homeowner alike.

On technological change: construction is not too exciting

The McGraw-Hill Publications Company Economics Department—Douglas Greenwald proprietor and chief economist—recently published a survey of technological developments anticipated in various fields. As I read the results, I had the feeling—once again—that construction just isn't up there swinging.

▪ In the medical field, a general question on "a cure for cancer" resulted in a breakthrough date of 1980, with economic feasibility by 1985 and widespread application by 1988. By comparison: "A breakthrough in the use of variable transmission glass for buildings will occur by 1975, with economic feasibility by 1980 and widespread application by 1984."

▪ In electronics: "The capability to establish a cashless and checkless society—with computer hookups to banks, employers, stores, government, etc. is already here. Economic feasibility: 1978; widespread application: 1985." By comparison: "Thermoelectric heating and cooling of buildings will be technically possible by 1983, economical by 1987 . . ."

▪ The plastics industry researchers are confident that they will develop inexpensive plastics which are stronger and lighter than metals by 1975; and edible, nutritional plastics by the mid-1980s. You may properly ask of the latter "Why?"—but it sounds pretty exciting compared to this, for example, comparable news from the construction industry: "Substitution of plastic drain waste and vent piping will occur within the next few years, with widespread application by 1978."

Well, enough. The picture is clear. The expectation of research in most fields seems to make our expectations in construction seem, well . . . zzzzzz . . . zzzzzz . . . zzzz.

—Walter F. Wagner Jr.

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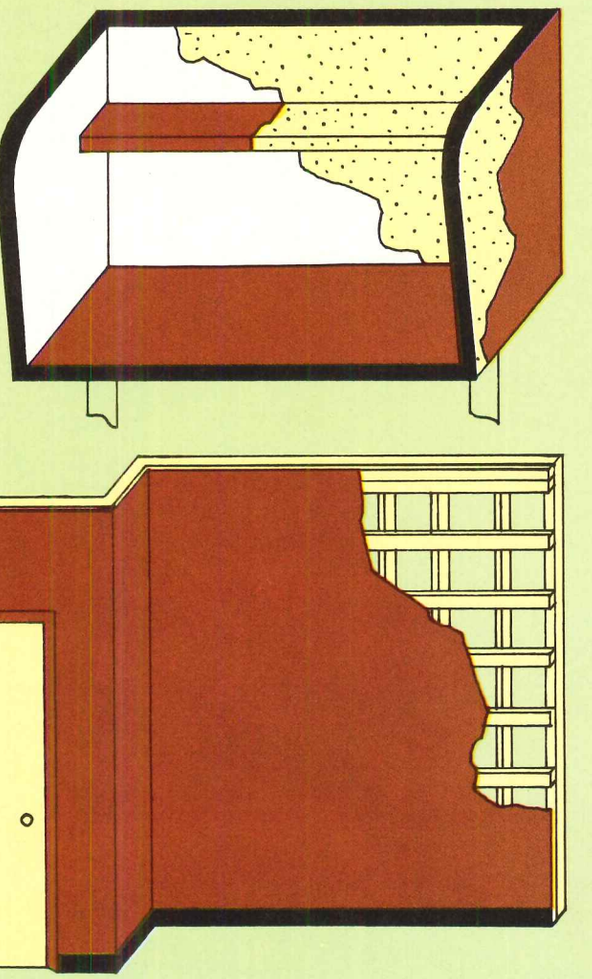

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«Herman Miller Hospital»

(a Co/struc demonstration model)

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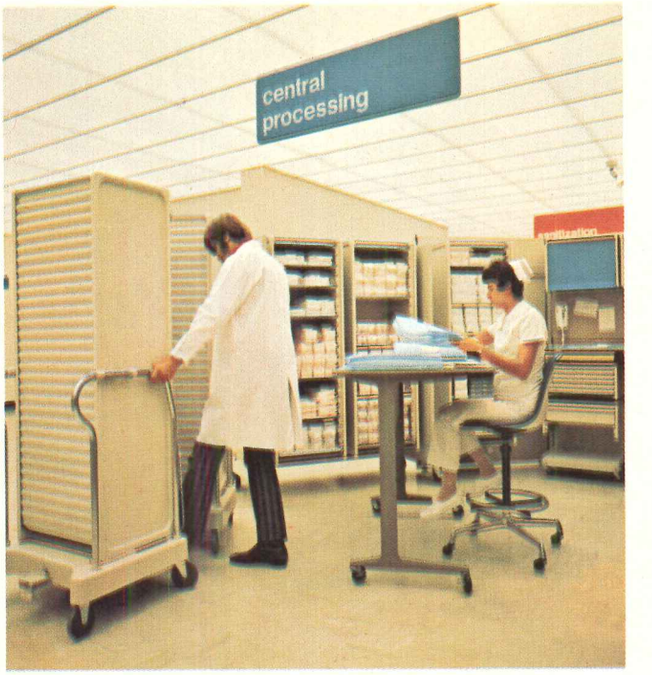
3



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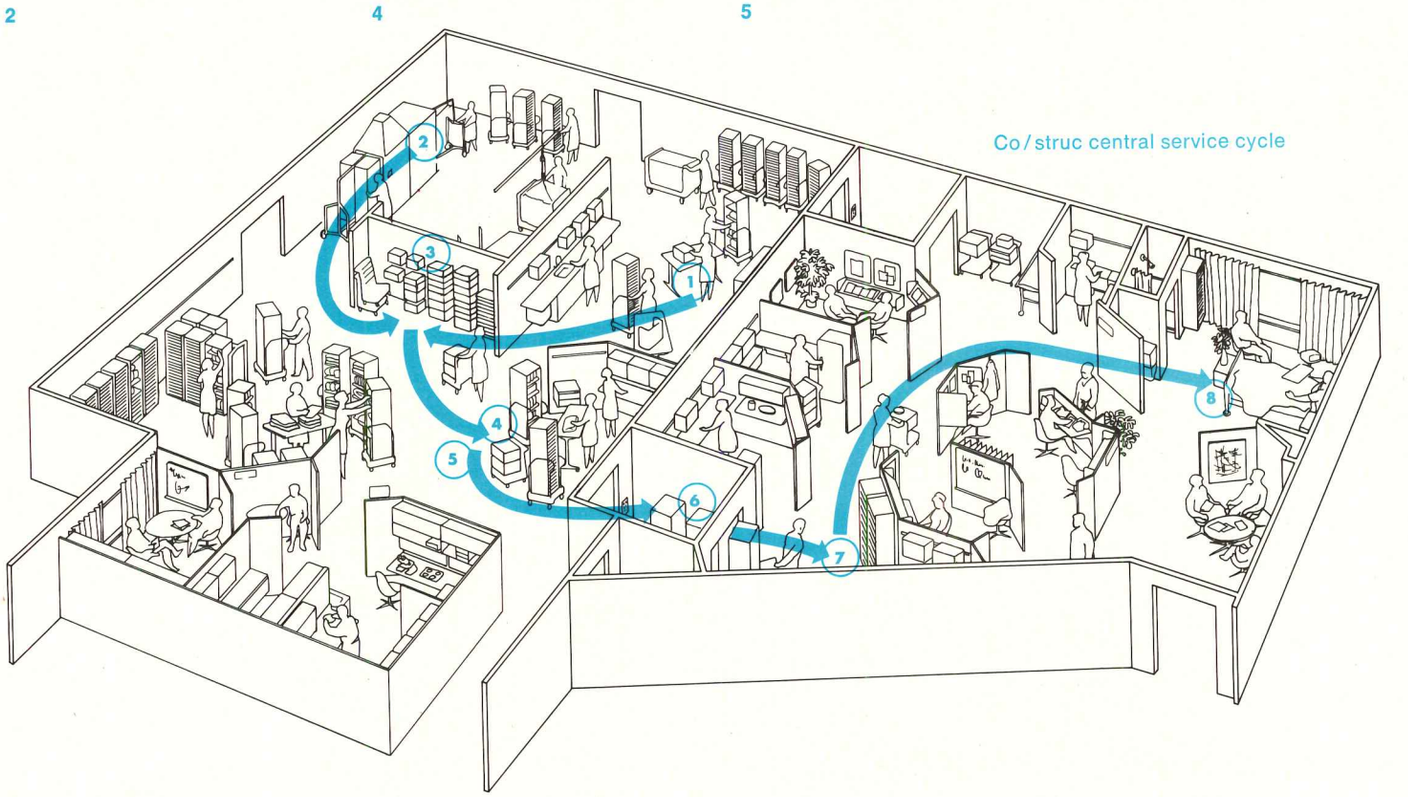
4

5

Co/struc central service cycle



When we put it together, we leave out the trouble.

Because we leave out the washer.

Sooner or later any compression washer wears out. The faucet drips. And it's a headache.

That's why we took the washers out of Delta faucets. We replaced them with a patented rotating valve that, tests show, lasts about 7 times longer.

We made Delta faucets easy to install, too.

For instance, Delex Scald-Guard™ bath units can be put in back-to-back, without worrying about any "wrong side." Both valves connect to the same risers. Just flop the valve 180 degrees and hot stays on the left, cold on the right.

That saves on installation time and crosspiping costs.

Specify Delta single-handle and Delex two-handle faucets in your buildings. Leave out faucet trouble.

They're styled to look good and to work even better. Turned on or turned off.

For illustrated literature, write Delta Faucet Company, A Division of Masco Corporation, Greensburg, Indiana 47240, and Rexdale, Ontario.

Delta Faucets.

Washerless. To work as good as they look.

New PD-80 engineering convenience copier.

Convenience is what the fast, high-quality PD-80 is all about. Install it right in your drafting area, turn it on, feed tracings at once, and get finished prints in seconds. It's the most reliable odorless engineering convenience copier: no ammonia, no venting.

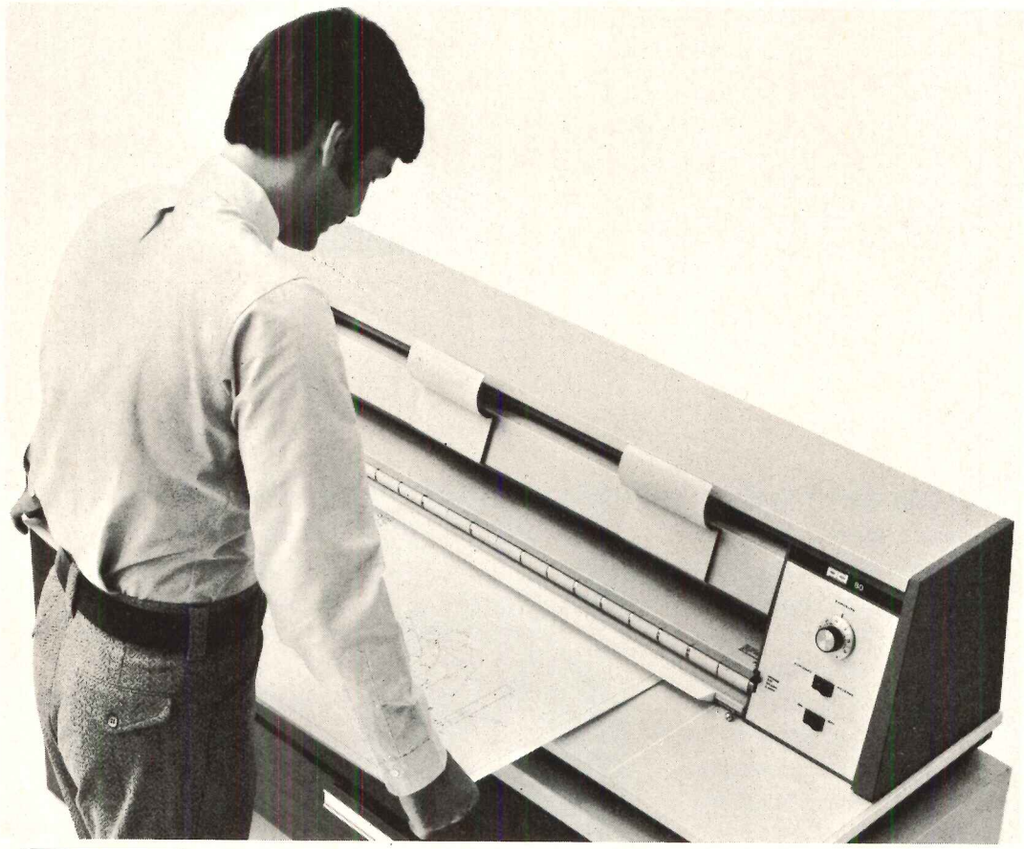
What more can we say? Except that we can set it up and demonstrate it in about the time it takes to read this.

So, call your local Bruning man. He's ready to show you how you can make quick check prints right where you make your drawings, with the PD-80. And this cost-cutting machine can go to work for you on an attractive rental plan. No capital investment, no long-term commitment. Like all Bruning products, the PD-80 is backed by the famous Bruning tradition of service and support to the engineering profession.

Your drafting department just has to see this one. Call your Bruning man. Or write Bruning, 1834 Walden Office Square, Schaumburg, Ill. 60172.

Your single best source in engineering graphics.

No odors. No waiting.



BRUNING

DIVISION OF ADDRESSOGRAPH MULTIGRAPH CORPORATION

For more data, circle 9 on inquiry card

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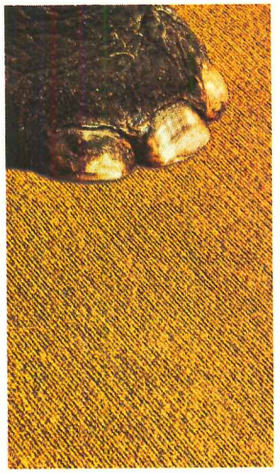
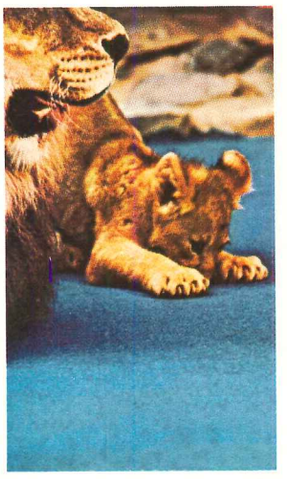
Ozite carp



CRUSH RESISTANCE

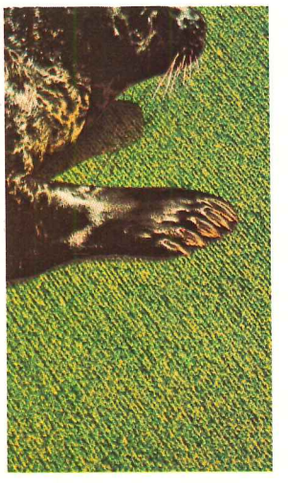
Ozite carpeted the Baltimore Zoo with its new Colony Point carpet of HERCULON* olefin fiber. First came the elephant test. Result . . . not even 7,000 pounds of pachyderm could make a lasting impression on Colony Point's tightly packed pile of HERCULON. So bring on the heavy furniture!

*Hercules registered trademark



SNAG RESISTANCE

We even threw Colony Point carpet to the lions. But it took it all in stride, without a snag. Because of Colony Point's revolutionary new no-snag construction, even the king of beasts couldn't unravel its textured beauty. So why worry about little kids?



Ozite® "Colony Point" made with pile of HERCULON.® A

ets a zoo.

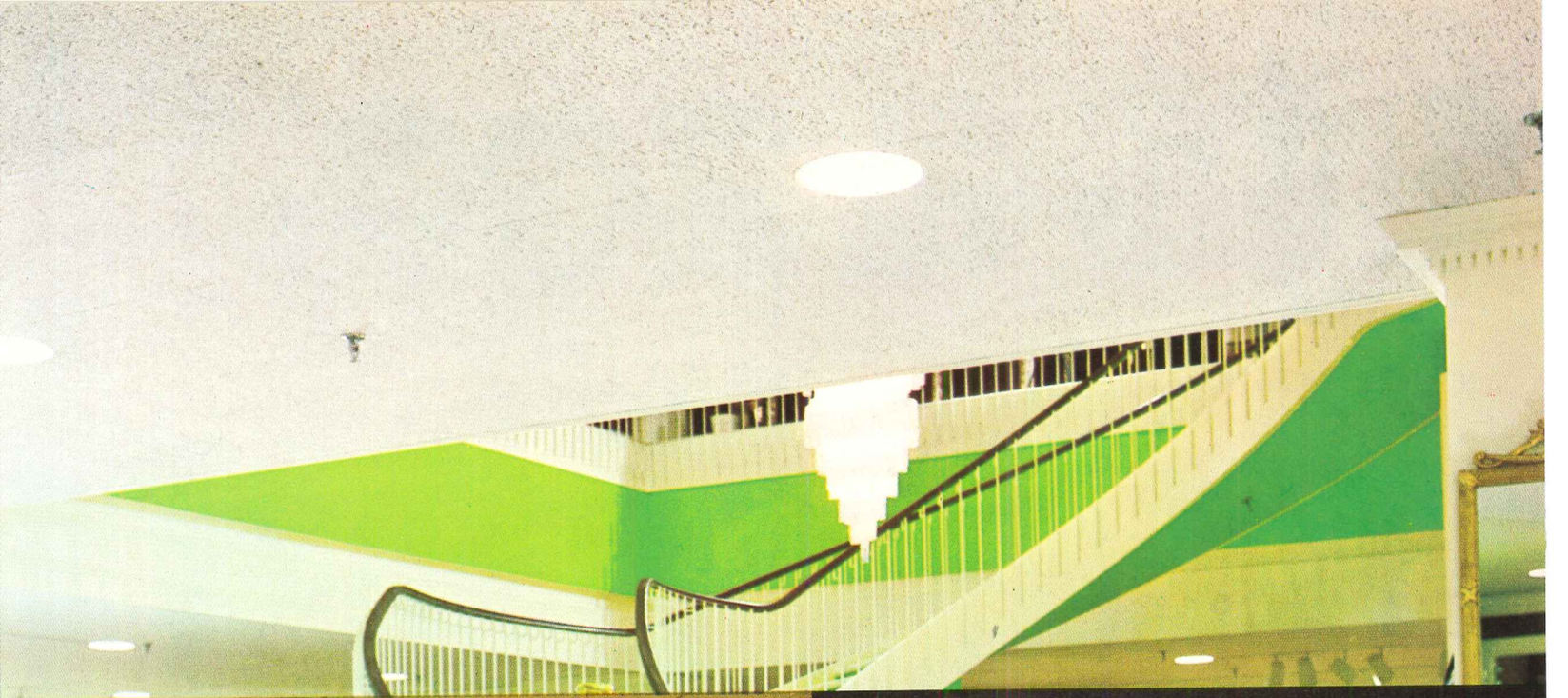
MOISTURE RESISTANCE
We let a group of happy, fish-loving seals throw a picnic on new Colony Point carpet of HERCULON. But it was easy come . . . easy go. HERCULON resists moisture, so all kinds of messy stains clean up fast.

BEAUTY
The resident peacock was justly proud of his wide range of colors. Until Colony Point's dazzling array of carpets and carpet tiles put him to shame. That may be a mean way to treat a peacock . . . but what a beautiful way to treat your installations . . . indoors and out.

Ozite's new textured Colony Point carpet held up beautifully at the Baltimore City Zoo. Isn't that the kind of carpet you want when specifying for schools, hospitals, office buildings and other installations that demand extraordinary toughness and good looks?

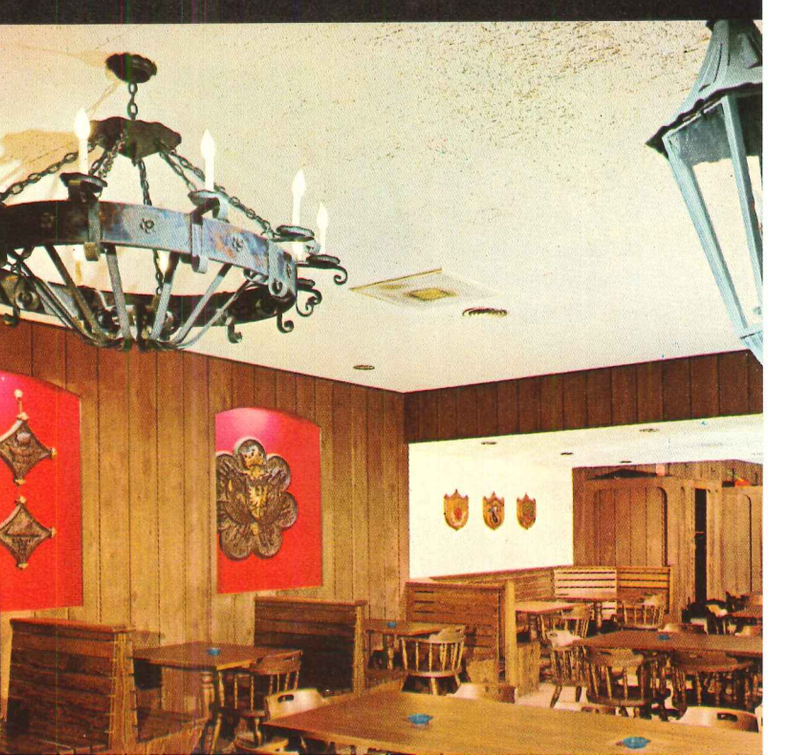
Contact Ozite for samples and details.
Ozite Corporation
Libertyville, Illinois 60048

whole new way of looking at indoor/outdoor carpet.



The adaptable acousticals.

Celotex acoustical ceiling products and systems. Adaptable enough to meet design requirements of imaginative architects. Choose from an almost endless variety of tile and panel textures and patterns...from bold to subtle design effects. Select from a wide range of performance



requirements . . . NRC's to .90 . . . UL time-rated design assemblies of 1, 2 and 3 hours . . . plus Vari-Tec* luminaire lighting units with optional air-handling systems as well as acoustical control benefits. Celotex ceiling systems are created with you in mind.

Isn't it time you adopted our adaptables?

Celotex*

BUILDING PRODUCTS

Celotex understands the man who builds.

THE CELOTEX CORPORATION / TAMPA, FLORIDA 33622
SUBSIDIARY OF JIM WALTER CORPORATION

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*TRADEMARK

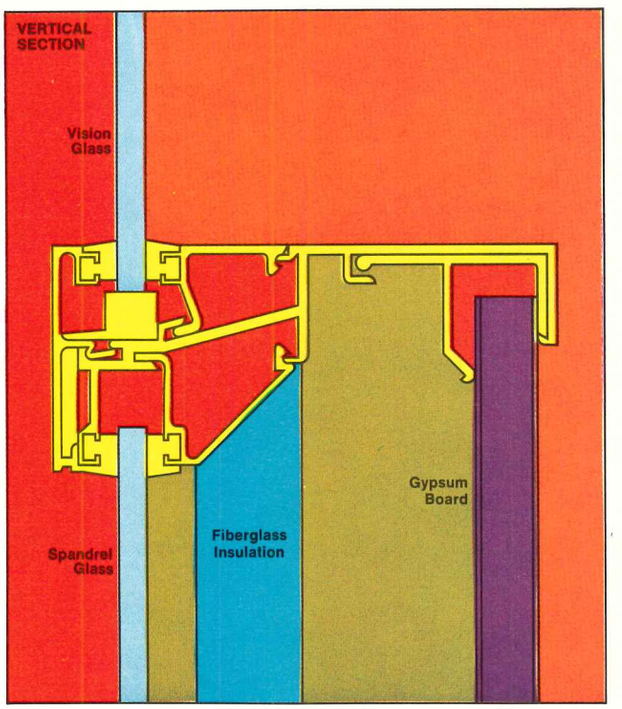
High-rise or low-rise. Alcoa knows the best approach to curtain-wall problems.

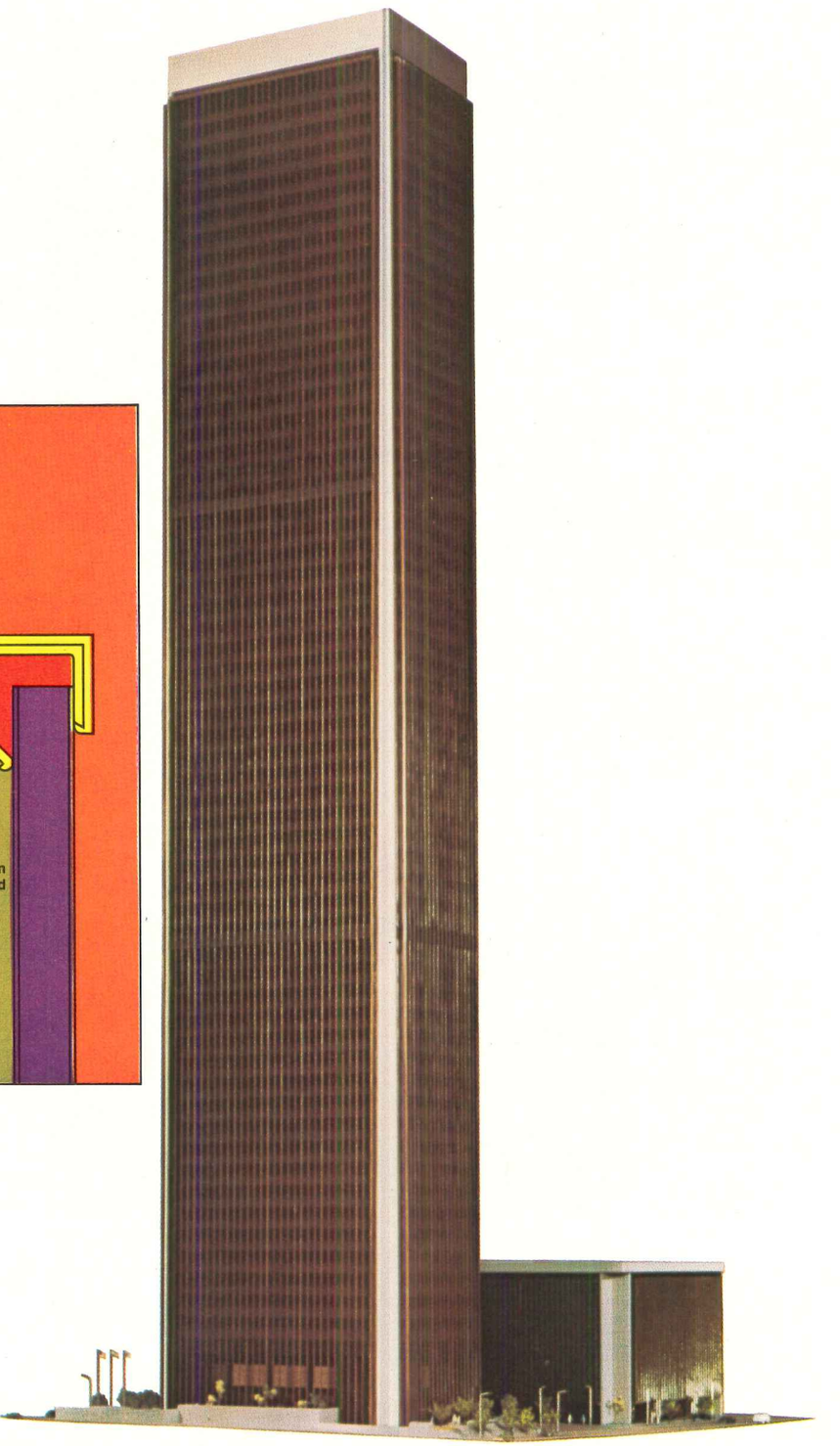
The team approach . . . a curtain-wall team of owner, architect, contractor, fabricator and curtain-wall erector. Highly successful throughout Alcoa's 25 years of construction experience, the curtain-wall team is again proving its effectiveness on the new United California Bank tower now rising in the Los Angeles central city.

The UCB team is giving this 62-story high-rise an aluminum wall system that will combine bronze-hued solar glass with an aluminum grid finished in a Duranodic* coating, medium bronze #312, and Alcoa® Alumilite* beige on the four tapered corners. Behind this rich-looking exterior will be a system of triple protection against thermal conductivity. Backing the spandrel glass will be both fiberglass and gypsum board insulation blankets.

Any way you add it up, Alcoa's curtain-wall team approach is good to have on your side. On a high-rise like the United California Bank, or a low-rise, like the headquarters of Combustion Engineering, Inc., Windsor, Connecticut. Here the curtain-wall team used an Alply® wall system to create

High





Architect: Charles Luckman Associates
Los Angeles, Calif.
Engineering & curtain-wall subcontractor:
Northrop Architectural Systems
Los Angeles, Calif.
Contractor: C. L. Peck—
Diesel Contractors
Los Angeles, Calif.

a high-performance insulating wall at minimal material and installation costs. Composed of a polyurethane core, sandwiched between finished interior and exterior facings, each Alply panel† is an integral, economical, prefabricated unit, containing insulation and a vapor barrier. The architect was able to achieve a compatible appearance with an existing concrete building by selecting an off-white Fluropon‡ finish for the new metal wall building.

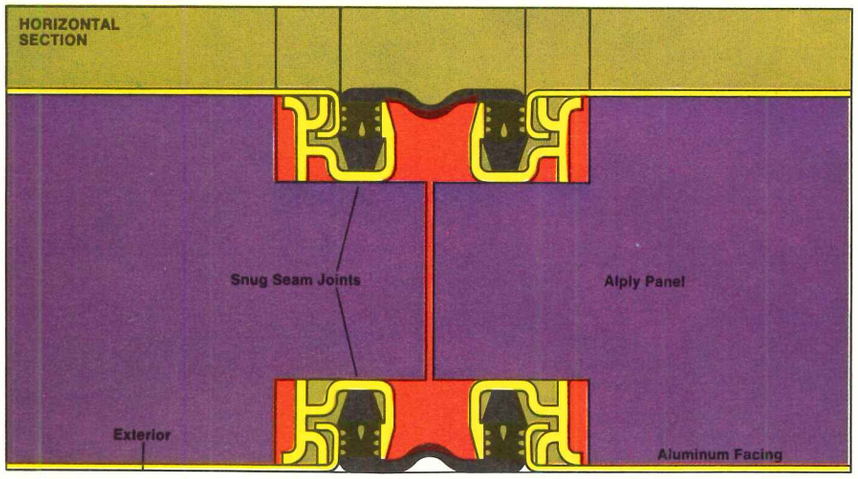
Architects, designers and owners should know about the network of Alcoa wall systems contractors. These curtain-wall fabricators and erectors are experienced in the erection of Alcoa wall systems and assume full responsibility for the curtain-wall "package," from design through erection. You can benefit from working with Alcoa wall systems contractors.

High- or low-rise, Alcoa's curtain-wall team approach is available to you. Remember that Alcoa aluminum can make as significant a contribution to your suburban office building or industrial plant as it is now making to the imposing UCB tower in Los Angeles.

*Trade Name
†For additional information about Alcoa wall systems, see Sweet's Architectural or Industrial File, or circle Reader Service Card.
‡Tradename—Desoto, Inc.

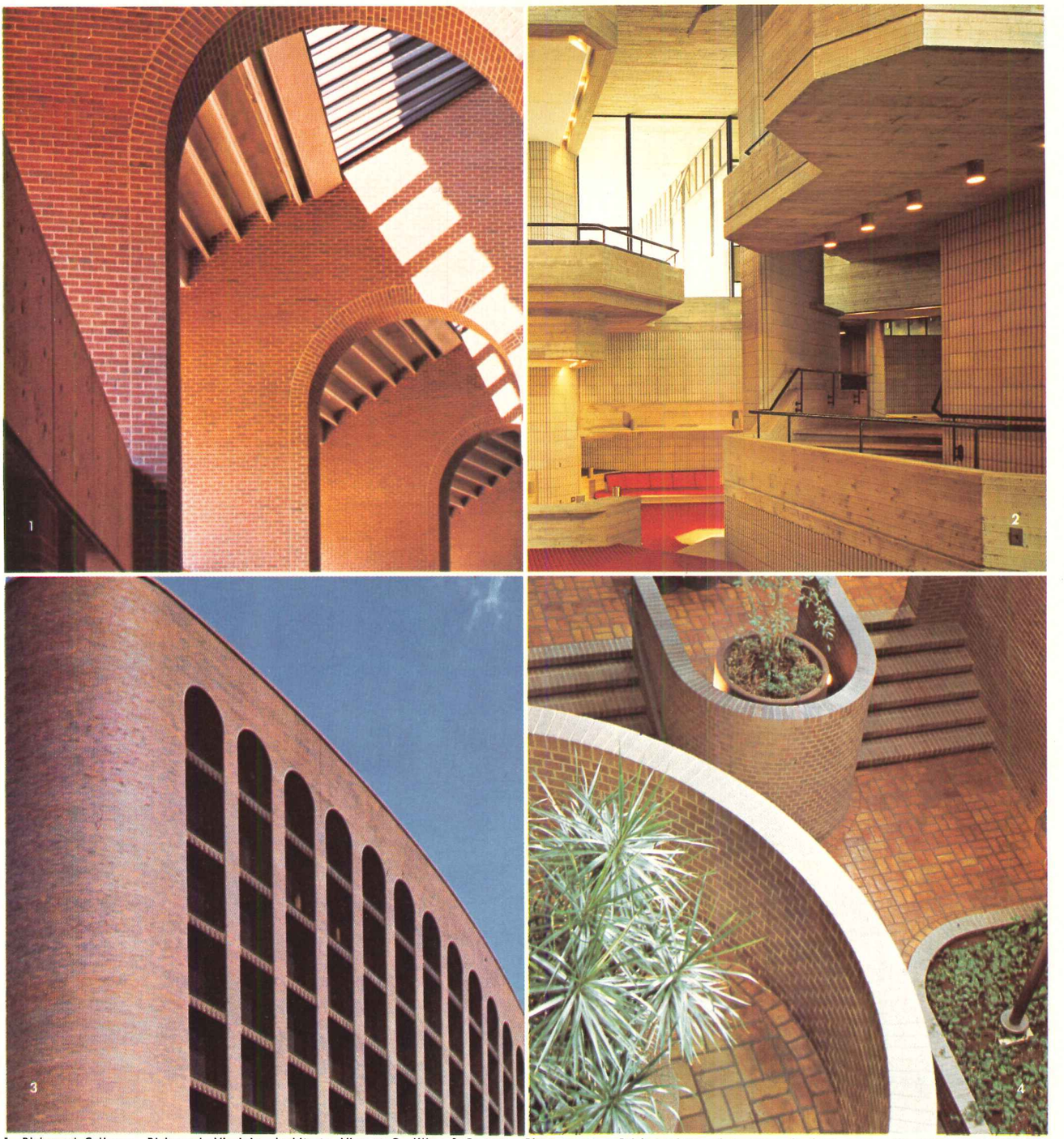
Low

Architect: CE Maguire, Inc.
Waltham, Mass.
Contractor: The H. Wales Lines Co.
Meriden, Conn.
Curtain-wall Fabricator and Erector:
Whelan Manufacturing Company
Trenton, N. J.



Change for the better with Alcoa Aluminum

ALCOA



1. Richmond Coliseum, Richmond, Virginia. Architects: Vincent G. Kling & Partners. Photo courtesy Brick Institute of America. 2. Southeastern Massachusetts University, Arts and Humanities Building, North Dartmouth. Associated Architects: Desmond & Lord, Inc., and Paul Rudolph, FAIA. Interior Consultant: Bill Bagnall Associates, Inc. 3. Public Service Alliance of Canada Building, Ottawa. Architects: Schoeler Heaton Harvor Menendez Associated Architects. Photo courtesy Brick Institute of America. 4. Executive Headquarters and Nassau Center Office. Hempstead Bank, Garden City, Long Island. Architects: Bentel & Bentel, AIA.

RUMORS THAT THERE ARE BUILDING SYSTEMS MORE VERSATILE THAN MASONRY ARE TOTALLY WITHOUT FOUNDATION.

INTERNATIONAL MASONRY INSTITUTE

Suite 1001, 823 Fifteenth Street, N.W., Washington, D.C. 20005

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Now you can specify "fail-safe comfort"

Our multizone rooftop units assure you're never without heating or cooling.

That's because Modine's larger, most popular multizone HVAC Rooftop units have two independent heating systems and two independent cooling systems.

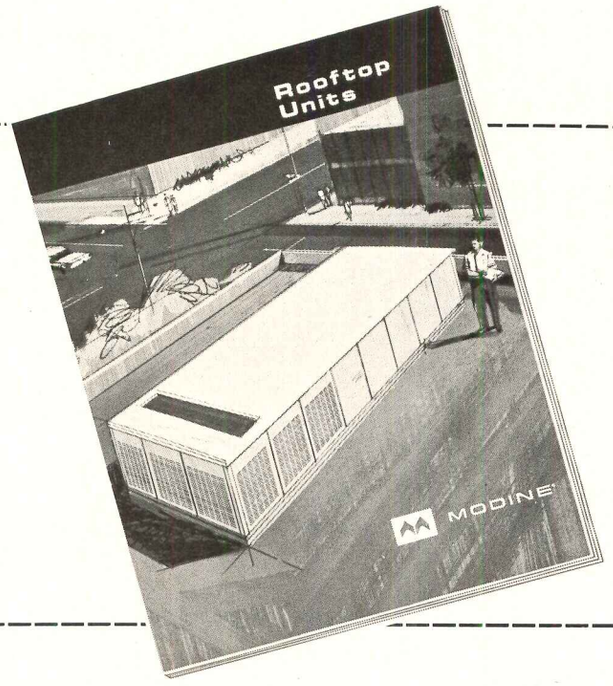
Under normal weather conditions, one system easily handles your heating and cooling needs. When extremes occur, the second heating or cooling system also goes to work automatically.

Most important, should one system fail, the other takes over to make sure you'll never be without heating or cooling. In extremely cold weather, the dual heating system guards against building freeze-up. During hot weather, the dual cooling system protects you against total loss of comfort.

Fail-safe heating and cooling is only one of the many reasons why Modine multizone rooftop units are so reliable. The owner also gets a big saving of up to 50% in cooling costs and "free heat" when the weather is mild. The architect and engineer get satisfied clients and the installer has fewer call backs.

There's a lot more to tell about the Modine rooftop unit. Under its weatherproof shell are other top performance features you would expect to get in a rooftop unit designed to last as long as the building. Just clip and mail the coupon to get the complete Modine rooftop story.

MODINE®



Send detailed information on reliable Multizone ☐, Singlezone ☐ rooftop units made by Modine for:

☐ electric heating
☐ gas heating
☐ hot water heating
☐ electric cooling
☐ gas heating/electric cooling
☐ electric heating/cooling
☐ hot water heating/ electric cooling

Have your Modine representative arrange an appointment.

Name_____

Title_____ Firm_____

Street_____

City_____ State_____ Zip_____

Mail to: Modine, 1510 DeKoven Avenue, Racine, Wisc. 53401

RTMZ-M-11162

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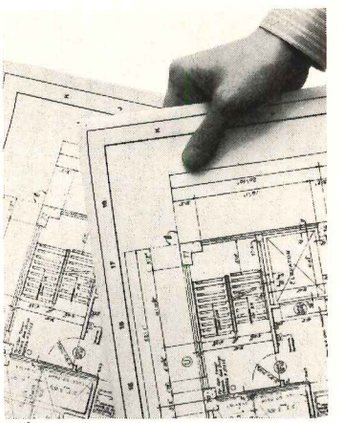
The New Threedom.



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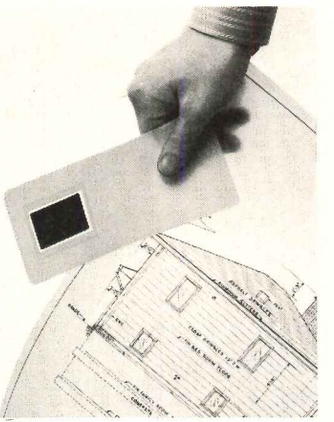

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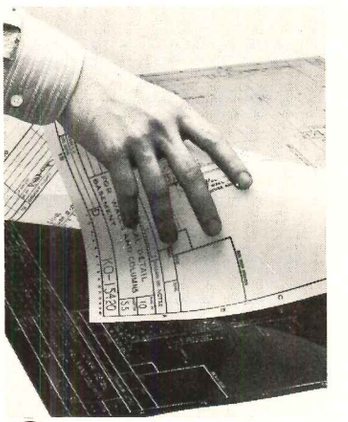

3. Contact.

Kodak now has three KODAGRAPH Wash-Off Films that can save you hours of redrawing time.

1. Now you can enjoy the benefits of KODAGRAPH Wash-Off Films for more of your drafting room work. With the new KODAGRAPH Wash-Off AUTOPOSITIVE Film, you get a positive reproduction from a positive original. Like all KODAGRAPH Films, it gives you high-contrast prints that make excellent second originals.

2. When you need a size-change of a drawing, or an enlargement from an aperture card, just ask for it on the new KODAGRAPH Wash-Off Projection Film. You can count on getting a sharp, positive reproduction. And, as with other KODAGRAPH Wash-Off Films, you'll like its wet-erasable photo lines and excellent dimensional stability.

3. You probably know already what KODAGRAPH Wash-Off Contact Film can do for your designs. You may even be specifying it regularly to obtain high-quality, positive reproductions from intermediate negatives of your drawings. It produces intense black lines on an outstanding drafting surface that takes either pencil or ink, just like the other KODAGRAPH Wash-Off Products.

Get the facts.

For additional information on The New Threedom, write Eastman Kodak Company, Business Systems Markets Division, Dept. **DP824**, Rochester, N.Y. 14650.

Kodak

Products for drawing reproduction

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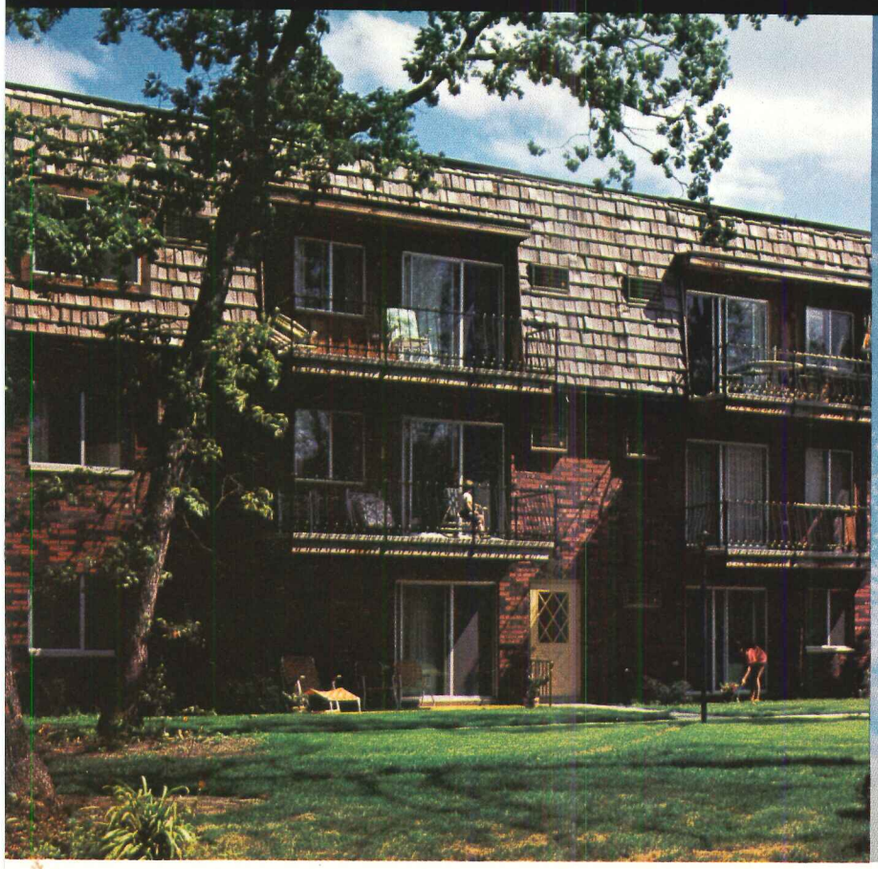

The Mansards, Griffith, Indiana

"The whole idea of "The Mansards" is to provide gracious living accommodations in a natural setting of trees and water. The convenience of city living is combined with the graciousness of country living here. We have put top quality into "The Mansards" and that extends to our coin-operated laundry equipment. We chose Speed Queen for one simple over-riding reason—it's the best we could get."

Duane J. Hicks, Jr., General Manager

Lake Point Tower, Chicago, Illinois

"Lake Point Tower represents a new kind of urban life—a completely self-contained city at the edge of Lake Michigan. We appeal to individuals and families of middle and upper income. They expect and get the best at Lake Point Tower. That's why we chose Speed Queen equipment for our laundry facility. Speed Queen represents quality which will be on the job—not out of order.
And I understand the Stainless Steel feature is a real plus when laundering durable press fabrics."

Robert E. DeCelles, Building Manager

"We chose Speed Queen laundry equipment for one simple reason–it's the best we could get."

Let SPEED QUEEN and your SPEED QUEEN COMMERCIAL ROUTE OPERATOR help you plan coin-operated laundry facilities

SPEED QUEEN®
Ripon, Wisconsin 54971
a McGraw-Edison Company Division

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FORM NO. 5541C

AR-2

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

Gene, please forward your laundry room design brochure.

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

☐ I would like a Speed Queen representative to call.

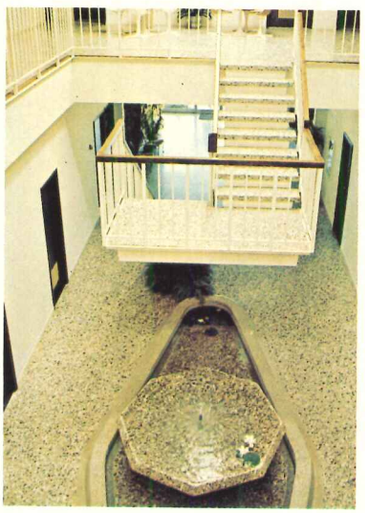
Name and title_____

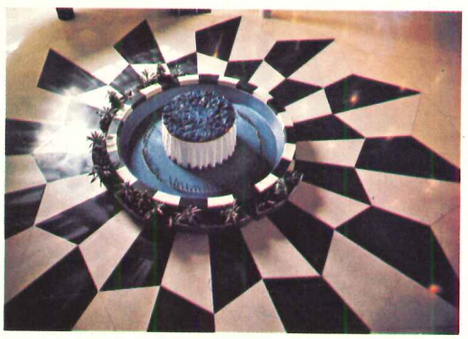
Firm name_____

Address_____

City_____ State_____ Zip_____

terrazzo





the excitement of texture.

Add excitement outdoors to building entries, plazas, terraces, swimming pools. Beautify downtown sidewalks, malls, public transportation areas and platforms. Attractively. Safely. All with Rustic Terrazzo—the carefree enhancer. □ Add adventurous accents on any and all surfaces, horizontal and vertical. With subtle blends of texture and color, or striking contrasts. Combinations of materials and color as infinite as your imagination. Outdoors —and indoors—Rustic Terrazzo adds more than beauty. Its attractive texture means surefooted safety for sure, everywhere it's used underfoot. □ If it's been a long time since you talked to a terrazzo contractor, you may have been missing a lot. The ancient art has been changing, and there's more to terrazzo today as a design material than meets the eye. Circle the number for a copy of our colorful brochure. For technical assistance, or a copy of new Terrazzo Design Data, containing 125 true-color terrazzo reproductions, contact Derrick Hardy, Executive Secretary, **Terrazzo, 716 Church Street, Alexandria, Virginia 22314. (703) 836-6765.**

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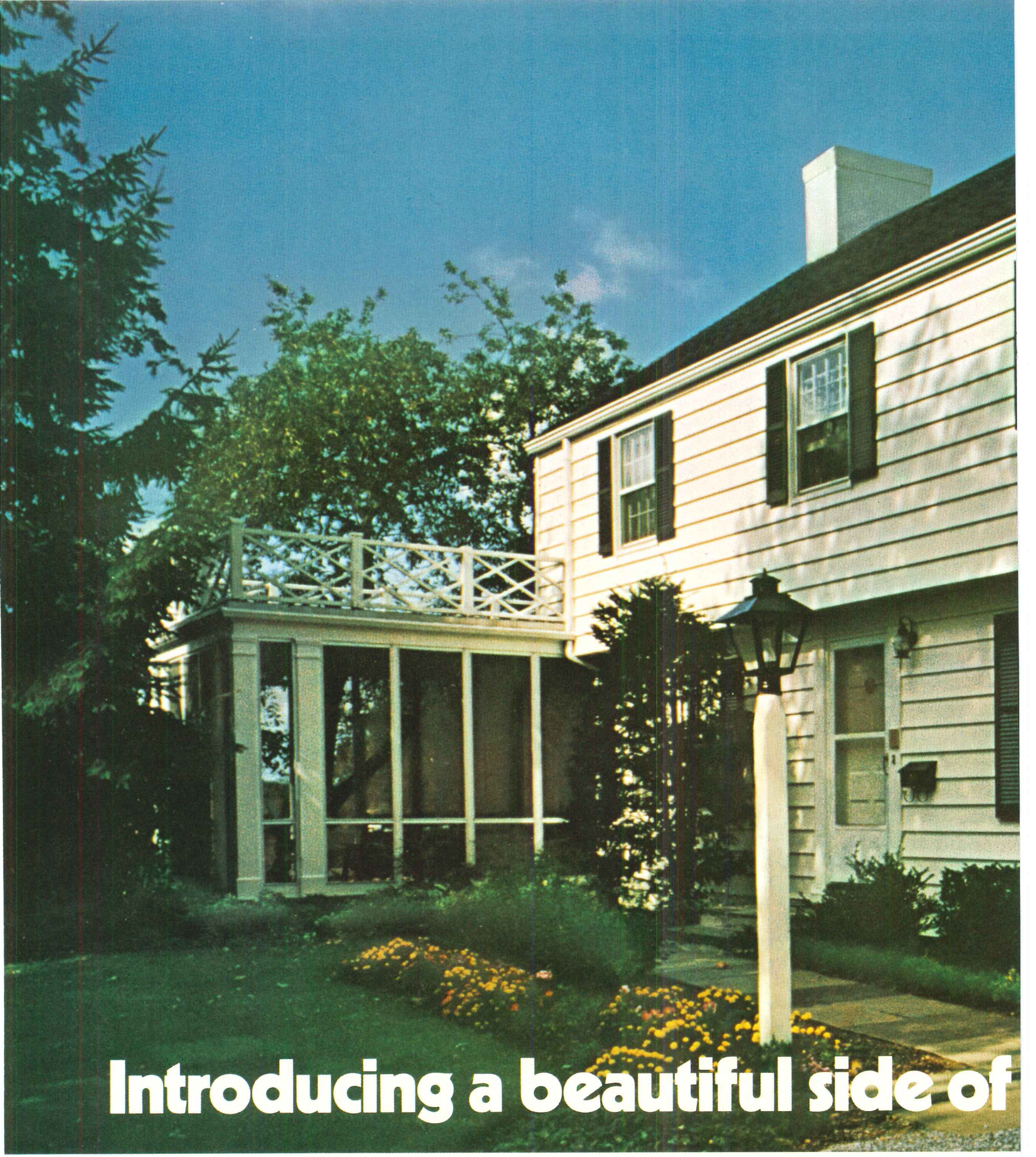

Introducing a beautiful side of

We don't have to tell you about GAF's existing roofing, flooring and siding products. Judging from the way you've accepted them, we know they've done a good job.

That's why we think you'll be pleased to hear that GAF is now in the vinyl siding business.

The name of our vinyl siding is Vanguard™. And that means leader.

Unlike non-vinyl sidings, Vanguard keeps its good looks all by itself.

That's because the colors, (there are 4 of them) go clear through the vinyl. So Vanguard won't show scratches, and never needs painting or finishing.

And since it's weather resistant, it won't rot or corrode either. Which means it'll last as long as the house you put it on.

What's more, Vanguard's lightweight panels are much quicker and easier to install than most other types of siding. They can be cut and worked with ordinary tools. Special nailing flanges and preformed nailing slots help you put it up quickly and neatly. And, of course, there's no on-site painting or finishing for you either.

Finally this great new siding comes with GAF's 20 year warranty against manufacturing defects.

Vanguard Vinyl from GAF. We think you'll be glad to have us on your side.

For further details, call your GAF Building Products distributor or write: GAF Corporation, Building Products Division, Dept.AR–23,140 West 51 St., New York, New York. 10020

gaf® Vanguard™ Vinyl Siding

What makes this All-Steel chair so comfortable?

An inner steel "H" frame in back and seat has been designed into the new 200 Series chair to give you back support and comfort where you need it most, in the lumbar area. This unique structural design also provides added strength and rigidity for years of dependable chair service. 20 models. Choose from a wide selection of colorful fabrics and expanded vinyls.
For more information write: All-Steel Equipment Inc., Aurora, Ill. Showrooms in New York, Chicago, Los Angeles, Aurora. In Canada, B. K. Johl Inc., Montreal, Toronto, Vancouver.

All-Steel®
one of the CIT companies

200 SERIES

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News in brief

As expected, the Commission on Government Procurement, now reporting to Congress, recommends removal of the 6 per cent fee limitation for architect and engineer commissions on Federal projects. The recommendation comes on the heels of the new law assuring present methods of obtaining architectural and engineering services.

Architectural and engineering services required by the Federal government will be carried in *"Commerce Business Daily,"* published by the Commerce Department. Under the new A/E procurement law, Federal agencies are required to publicize all design service requirements. Write Government Printing Office Bookstore, 1421 Federal Building, Denver, Colo. 80202.

Larry F. Roush, 33, has been appointed Acting Commissioner of the Public Buildings Service and Deputy Administrator for special projects of the General Services Administration. He will be responsible for 1500 construction projects valued at $1.5 billion.

A one-day seminar on fire safety in buildings will be held February 28, 1973 at the Statler Hilton, New York City, sponsored by the New York Chapter, Society of Fire Protection Engineers. Fire safety designing in a variety of building types will be discussed and featured speaker will be Richard E. Bland, chairman, National Commission on Fire Prevention and Control. For reservations, contact Mr. W. Robert Powers, N.Y. Board of Fire Underwriters, 85 John Street, New York, N.Y. 10038.

Three bills introduced in Congress by Sen. Edmund Muskie (D-Me.) open battle over distribution of money for highways and mass transit. The proposed legislation would permit highway trust fund support for mass transit and is tied closely to air pollution considerations, cars being a chief cause.

General Electric's Lighting Institute, Cleveland, has scheduled a three-day lighting conference for architects, electrical engineers and contractor executives, February 26-28. Current lighting research, design considerations, economics of lighting and integration of lighting systems will be discussed. Tuition is $60 and for registration, contact the Lighting Institute, GE, Nela Park, Cleveland, Ohio 44112.

"Strategies for Success in Industrialized Building" is the theme of the third annual Housing Research Inc. conference, March 29 and 30 in New York City. Panel sessions will discuss industrialized building in new town development, modular housing marketing strategies, the success of mobile home manufacturers, and new developments in the use of materials and components in industrialized building. Top executives from all segments of homebuilding and construction industries will speak on strategies behind various company programs. For further information contact Housing Research Inc., 320 Fallow Field Road, Fairfield, Conn. 06430.

Applications for the $8,500 Rotch Travelling Scholarship must be in by March 22, 1973. Eligibility rules require applicants to be U.S. citizens under the age of 31 on March 10, 1973, whose architectural record includes study of required times and degree in Massachusetts. Full eligibility rules and application forms may be obtained from: Hugh Stubbins, Rotch Travelling Scholarship Committee, 1033 Massachusetts Avenue, Cambridge, Mass. 02138, before March 8, 1973.

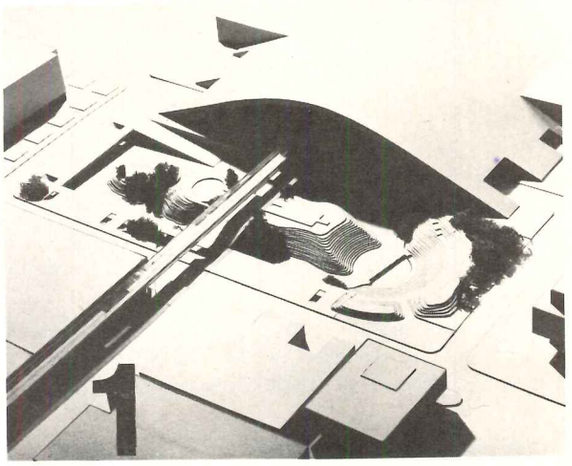
An Awards Program for Utility Design has been announced to recognize design excellence in completed electric generating stations; transmission lines and structures; distribution lines and structures; substations and electric utility buildings. Participating are the AIA, AIP, ASLA and ASCE. Deadline for submissions is March 1, 1973 and applications are available from: American Public Power Association, 2600 Virginia Avenue, N.W., Washington, D. C. 20037.

Good examples of converted railroad stations are needed by the firm of Hardy Holzman Pfeiffer Associates who are preparing a report supporting current legislation on the use of existing stations for cultural, educational and community purposes. The report, funded by the National Endowment on the Arts and the Educational Facilities Laboratories, will be available this spring to interested parties and will outline pitfalls and procedures in acquiring and converting stations, along with funding methods. Direct examples by April 1, to: Hardy Holzman Pfeiffer, 257 Park Avenue South, New York, N. Y. 10010.

Federal legislation of major concern to U.S. architectural and engineering firms will comprise the agenda for the 6th Annual AIA-CEC Public Affairs Conference, March 19-20, 1973, at the Mayflower Hotel in Washington, D. C. All U.S. architects and consulting engineers are invited to hear Congressional leaders speak on Federal competition, energy, transportation, rural and urban development, OSHA, the Omnibus Housing Bill, codes and other key issues.

Real estate development for architects will be discussed in a two-day seminar, at the University of Wisconsin, March 1-2. Case studies by architect-developers will be presented. Fee is $95. For further information, contact Raymond C. Matulionis, University of Wisconsin-Extension, 432 North Lake Street, Madison, Wis. 53706.

A training program for volunteer architectural guides has been announced by the Chicago School of Architecture Foundation, Illinois Arts Council and the National Endowment for the Arts. The tuition-free program will be held Saturdays from February 24 to April 14 at Glessner House, in Chicago. Over 50 guides currently conduct tours of Chicago's renowned architecture. Chicago architectural scholars will conduct the training course. Contact: Chicago School of Architecture Foundation, 1800 South Prairie Ave., Chicago, Ill. 60616.



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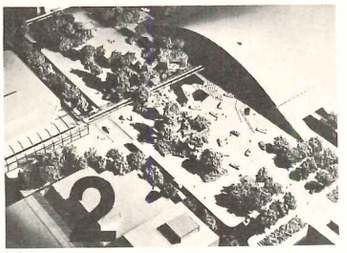

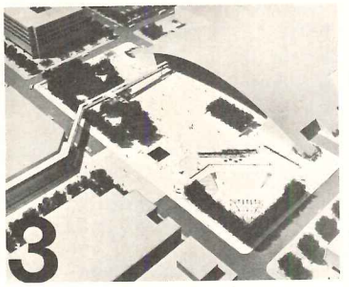

2

1

RAINBOW CENTER PLAZA COMPETITION WINNERS ANNOUNCED

A competition for the design of a five-acre plaza fronting the Niagara Falls International Convention Center (under construction) has resulted in the selection of Abraham Geller, Raimund J. Abraham and Giulino Fiorenzoli as architects for the project.

The New York firm's design features an oval-shaped, carved-out plaza with two islands in the center, reached by a bridge complete with display areas. The lower level, enclosed by exposed natural rock, is used for wind-sheltered pedestrian areas including restaurants and shops and other summer and winter activity facilities (photo above).

At the southern end of the plaza, a 3,000-seat amphitheater will be carved from the rock. An enclosed bridge will connect the pedestrian mall with the Convention Center, designed by Johnson and Burgee.

The competition, co-sponsored by the city of Niagara Falls, N.Y. and the New York State Urban Development Corporation, drew a total of 292 entries from all the provinces of Canada and 266 firms from 33 of the United States were represented. The jury of nine was chaired by Pietro Belluschi, dean emeritus of the School of Architecture and Planning, MIT.

The second prize of $10,000 went to Dean Abbott of New York, while third place and $7,500 were awarded to Tarapata, MacMahon, Paulsen Corp. of Bloomfield Hills, Mich. Honorable mentions went to: Clampitt, Lesser, Roman of Cambridge, Mass.; Cunningham, Richter, Savoie of Blacksburg, Va.; Gerald Englar, Toronto; The Hodne/Stageberg Partners of Minneapolis; Steve Holl, San Francisco; and John L. Lantzius, Tom Walgamuth and Alan Rogers of Muncie, Ind.

A $4 million budget limitation was imposed on the design. An additional stipulation included the plaza's ability to adapt to year-round activity and meet the needs of 5,000,000 annual tourists.

OAE SUFFERS SETBACKS IN UNIONIZING COAST OFFICES

The Organization of Architectural & Engineering Employees (name now includes engineers) which last year affiliated with the United Brotherhood of Carpenters and Joiners, reports recent setbacks in its attempts to widen collective bargaining in West Coast firms.

Latest activity involves the San Francisco architectural firm of Hertzka & Knowles, scene of OAE's first victory a year ago when the firm's employees elected to "certify" OAE as their bargaining representative; a year of negotiations has produced little, and in December employees voted to reject the union which attributes the change in employee attitude to turn-over in personnel.

At Rex Allen and Associates, negotiations have been broken off due to a reduction in personnel and a lack of employee interest.

OAE has also withdrawn from Wurster, Bernardi & Emmons; Skidmore, Owings & Merrill; Howard Friedman & Associates; and Fisher-Friedman.

In dealing with the firm of Gwathmey, Sellier, Crosby in San Francisco, OAE had filed charges with the National Labor Relations Board that the firm failed to negotiate in good faith. However, Harold Crosby, principal in the firm, says OAE has now filed a "disclaimer" to the effect that OAE is not interested in representing the firm's employees for a minimum of six months.

Employees at Welton Becket & Associates, San Francisco, vote this month on whether to certify OAE as their bargaining agent.

NSPE ANSWERS JUSTICE DEPARTMENT ANTI-TRUST CHARGE

Coming as no surprise, the National Society of Professional Engineers last month answered a Justice Department charge that its code of ethics, in part, violates price provisions of the Sherman Anti-trust Law.

The NSPE answer, filed in U.S. District Court for the District of Columbia, relies on the argument that the 67,000-member organization's code applies to a "learned profession"; and that does not constitute commerce within the constitutional grant to Congress of authority to regulate commerce among and between states.

The answer contains a counter-accusation that professional engineers are being denied equal protection under the law since similar code provisions applicable to lawyers, doctors and others have been well-known to the Justice Department for years. So goes the latest battle between the Justice Department and the design professions over alleged restraint of trade.

2

NAHB SHOW: ROMNEY BOMBSHELL TAKEN IN STRIDE

If George Romney's pronouncement on the end of subsidized housing (see page 59) wasn't the high point, neither was it the low point of the 29th annual convention of the National Association of Home Builders last month in Houston.

Perhaps the bad news was somewhat tempered by fast-following reports from FNMA and GNMA that they will be able to supplement the mortgage market in 1973. In general, mortgage money is expected to still be around in ample supply and even the limited effects of the HUD freeze are not expected to be felt until 1974. One of the programs was even titled "Before you say good-bye to government programs . . ." which covered lesser-known, but highly profitable government housing programs; so it would hardly be appropriate to say HUD's news cast an immediate pall upon the Houston Astrohall where the five-day show was held. If anything it was the unseasonable weather (in the 30's and 40's) and the lack of taxis that got people down.

However, the 56,000 attendees—4,000 more than last year—had really come to see 178,000 sq ft of homebuilding products exhibited by some 500 manufacturers from the U.S., Canada, Europe, Japan and Mexico.

Sixty-four individual programs explored subjects relating to the balanced growth movement; moratoria and other building stoppages; rising lumber costs; apparent efforts to boost interest rates and money costs; innovative products developed to conserve natural resources and combat rising labor costs; and efforts to stimulate consumer confidence—weighty subjects that point to the increasing sophistication of the homebuilding industry.

A well-attended seminar featured architects Edward H. Fickett, Abba I. Polangin and Robert W. Hayes (shown above) who showed just what can be achieved with teamwork between architects and builders. When the effective slide presentations were completed, one impressed builder from the audience asked the inevitable: "What does it cost?" To which the architects replied, that a rule of thumb would be 3 per cent of the total cost of the projected development, the fee covering the usual design services. The fee negotiation process was discussed.

Other architects presenting to the builders were David Pellish of New York's Urban Development Corporation and John Chapman of Chapman, Phillips, Brandt & Associates who spoke on "the whole new ballgame of design," examining today's trends in site and building planning.

No breakdown on the number of architects present is available, but there did not appear to be many—somewhat surprising, since the latest RECORD research shows that of the 2,100,000 housing units started in 1972, 1,127,439 were architect-planned.

The potential of the builder as client or employer was apparent to some non-manufacturing exhibitors such as one West Coast A/E firm, and several colleges. Texas A & M took a booth, as did Trinity University and Michigan State University, the latter two promoting graduates of four-year degree programs in home building. The programs include study in architectural design, interior design, construction methods, business manage-

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ment, drafting, business law, land use and more. The enterprising students from MSU were there on their own, having sent representatives to this show for some years without any backing from the University.

Next year Houston again hosts the "most lavish and colorful show in the world."

CONGRESS EXPECTED TO ENACT LAND-USE POLICY LEGISLATION

After three years of courting national land-use policy legislation, Congress may be ready to enact a measure recently introduced by Sen. Henry M. Jackson (D-Wash.) who is confident of positive action this year. His $170 million assistance-to-states program passed the Senate last year but was not reported out of a House Committee. Now it will be up to the Interior and Insular Affairs committee which has not as yet scheduled hearings.

Known as the Land-Use Policy and Planning Assistance Act of 1973, the plan would develop information on social, economic, environmental and recreational needs, as well as encourage states to assume their own jurisdiction over land-use planning in these areas: (1) beaches, flood plains and historic sites; (2) major airports, highway interchanges, solid waste and sewage treatment, frontage access highways, electricity generation and transmission, and recreational facilities; (3) areas of regional significance; and (4) large-scale housing and industrial developments.

The Federal legislation proposes a national policy, set by a Presidential commission of experts, allowing states to develop their own laws under the national criteria, which would be enforced as the present water quality and OSHA safety standards are.

AIA, OTHERS CONDEMN HOUSING SUBSIDY FREEZE

In a letter to President Nixon, AIA president S. Scott Ferebee Jr. expressed "grave concern" over the Administration's decision to put a temporary hold on subsidies for new housing. (See Editorial, page 9.)

"We believe this action . . . can prove catastrophic in terms of both human and economic stability," Ferebee said. Recognizing that the present system of assisting production of moderate- and low-income housing has come under serious criticism, Ferebee countered that these criticisms have been exaggerated and tend to obscure the contributions of the programs to better housing.

Elsewhere, a coalition of some 50 national organizations—housing, government, civil rights, labor and private interest groups—urged Congress to delay confirmation of key Presidential appointees until the Administration rescinds the freeze. The coalition is also considering taking legal action to compel full use of funds authorized and appropriated by Congress for low- and middle-income housing, according to the National Association of Housing and Redevelopment Officials.

However, the Senate committee on Banking, Housing and Urban Affairs voted 12 to 4 to confirm the nomination of James T. Lynn as Secretary of Housing and Urban Development, succeeding George Romney. The full Senate is expected to confirm Lynn. Voting against the confirmation were Sen. William Proxmire (D-Wis.), Harrison Williams (D-N.J.), Joseph Biden (D-Del.), and William D. Hathaway (D-Me.).

Peter J. Brennan, Mr. Nixon's nominee for Secretary of Labor, has also been confirmed.

3

ARCHITECTS DONATE $20,000 TO FLOOD-DAMAGED COLLEGE

To help repair the extensive water and mud damage that King's College suffered in last June's floods in Wilkes-Barre, Pa., the firm of Burns & Loewe donated 25 per cent of the fees it received for that unusual recovery work just completed. (Before and after shown above.)

The Scranton-based architects, who designed the campus over the past eight years, pledged $20,000 towards restoring the buildings, ravaged in the floods generated by tropical storm Agnes. It is estimated that the valley area suffered over $1 billion in damages. King's College sustained more than $4 million in damages to its $14 million campus.

The clean-up operations, which began the day after flood waters receded sufficiently, involved hundreds of volunteers to dig out of tons of mud and rebuild in time for reopening the school for fall semester.

4

AISI SPONSORS HOUSING DESIGN PROGRAM FOR STUDENTS

How do you envision housing and what designs and techniques would you employ to meet the housing needs in the year 2000?

The question was posed by the American Iron and Steel Institute's Residential and Light Construction Task Force to a group of senior industrial design and architectural students at the Universities of Cincinnati and Auburn (Ala.). In conjunction with the department chairmen at both schools, AISI, as part of the over-all curriculum for senior students, is sponsoring a college design program focusing on the multi-family housing needs of the US at the turn of the century.

The students, who have been working on the problem since the beginning of the current school year, are divided into teams that will develop design solutions based on their conceptions of how changing life styles and new products and materials will affect the way Americans will be housed in the future.

The students' work will be shown at the 1973 Apartment Show in Miami Beach, April 2-4, when some students will present their work on the formal program.

NIXON BUDGET ELIMINATES HILL-BURTON HOSPITAL FUNDS

President Nixon's determination to reduce Federal spending and turn much decision-making back to the states is reflected decisively in his fiscal 1974 budget submitted to Congress last month. The proposals strike at many Federal programs involving the services of private architects—Hill-Burton, housing aids and civil works among them—but the full effects will not be felt in the coming fiscal period.

Backlogs supported by pipeline funds will be worked off with substantial outlays shown in fy 1974 but with budget authority often pared down, indicating curtailment in following years.

The H-B program, initiated in 1947, phases out and will not continue in 1974. The Administration says hospital facilities are overbuilt and the effort is not needed. Despite the quick demise, H-B outlays for health facilities construction will amount to $187 million next year compared to $200 million in fy 1973. But only $3 million is set for new budget authority. Outlays for total hospital and health facility construction in the new budget year are $696 million as against $687 million for this fiscal term.

Administration plans for subsidized housing assistance are illustrated in the absence of any requests for annual contract authority. The programs have been stopped; their future is uncertain. Public works outlays go up five per cent.

5

CHICAGO CONFERENCE PROBES BARRIERS TO HANDICAPPED

A one-day conference to explore the problems that architectural barriers present to physically handicapped and elderly persons concluded by adopting a resolution stipulating that accessibility should receive attention equal to other environmental matters in the design of facilities used by the public.

The December meeting also called on the Illinois Attorney General to rule whether architectural barriers constitute a discriminatory practice with respect to equal employment. Joseph F. Fitzgerald, Chicago Building Commissioner, disclosed that the city is working on extensive amendments to its building code that would require owners and developers to make buildings accessible to the handi-

Continued on page 48

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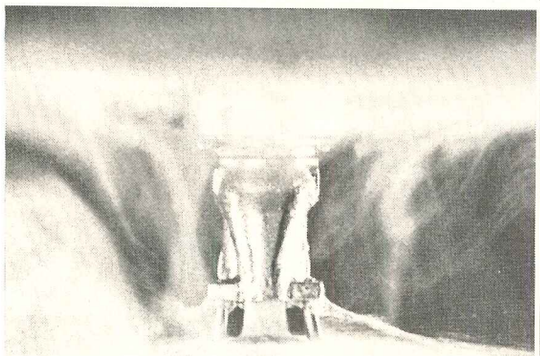

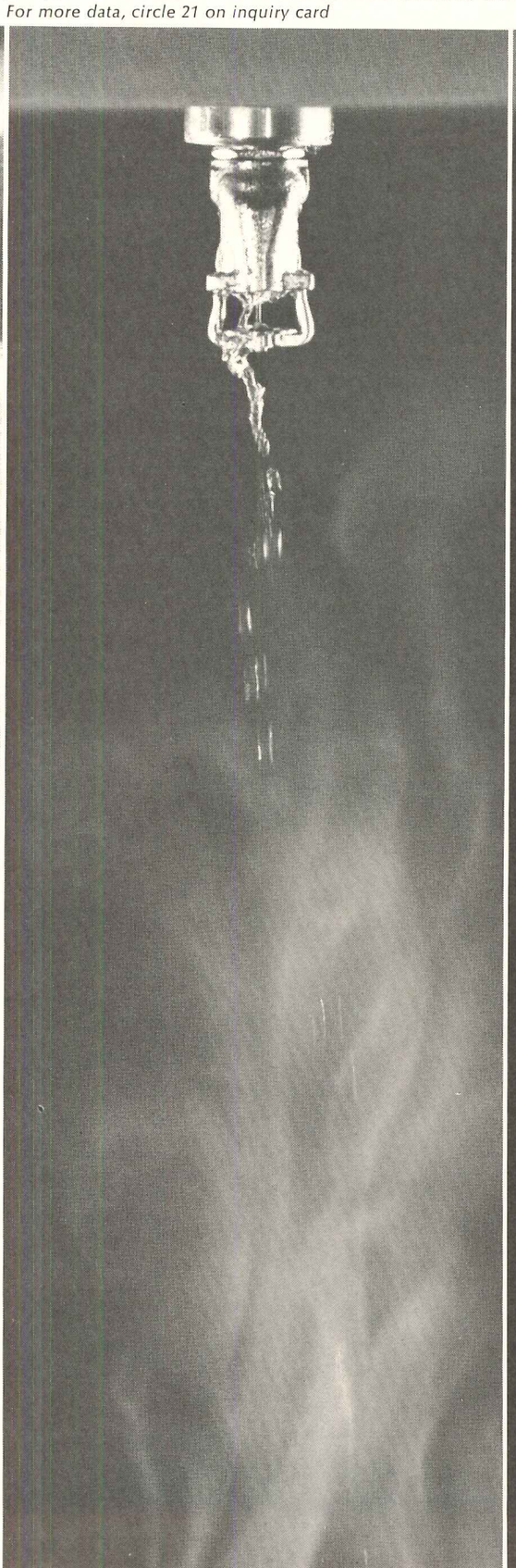

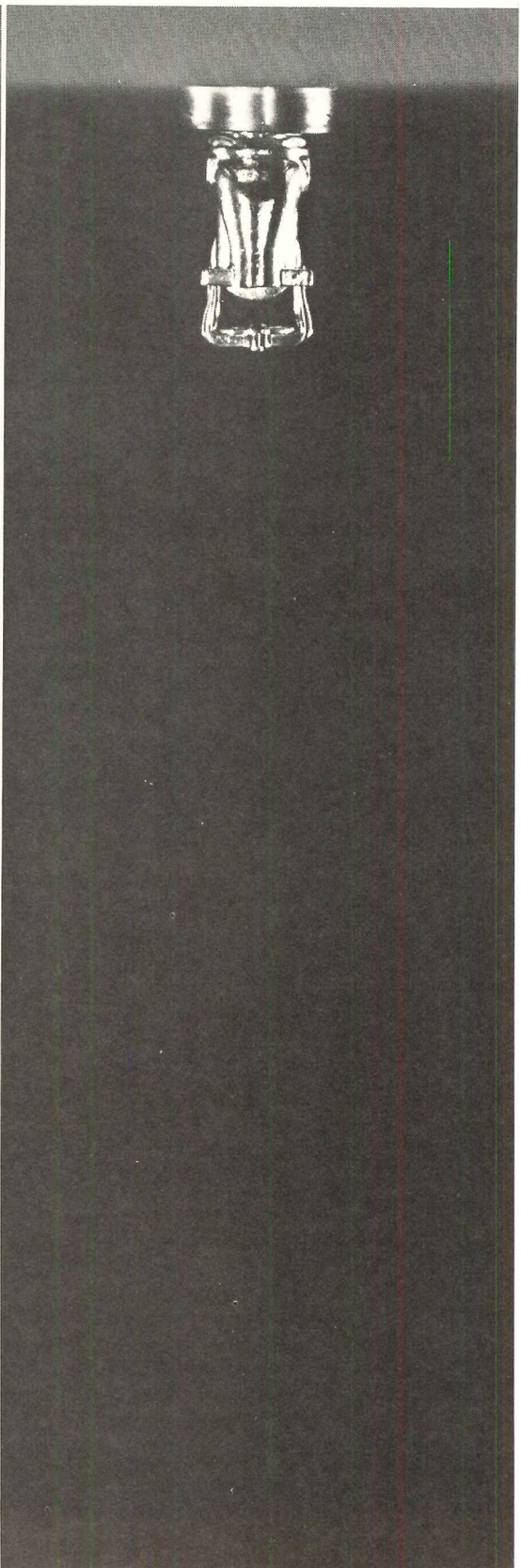

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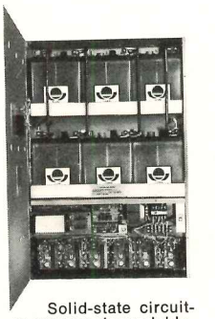

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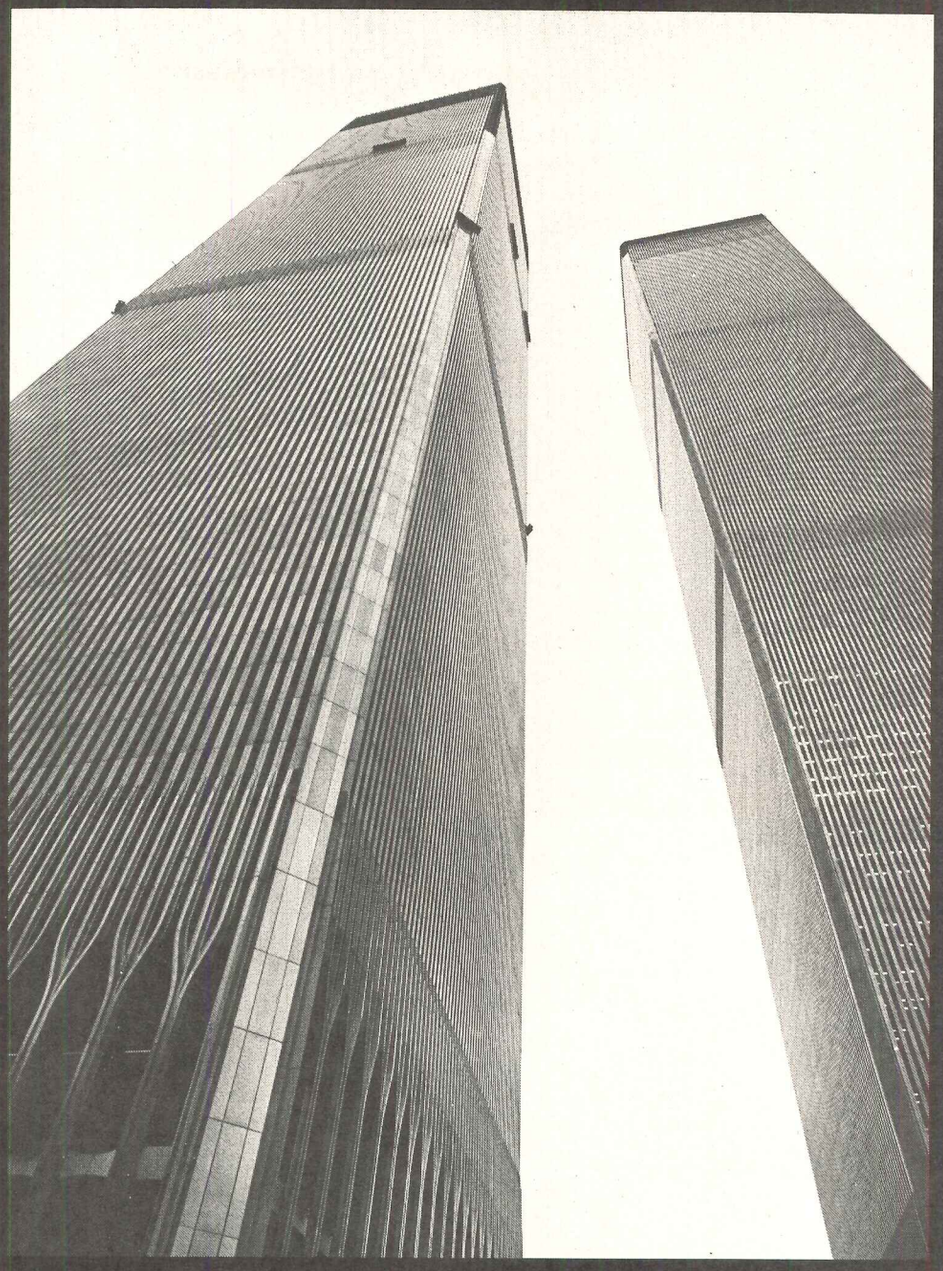

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For more information, including detailed comparisons between sealants based on Thiokol's LP® polysulfide polymer and eight other kinds of sealants, write: Dan Petrino, Thiokol Chemical Corporation, P.O. Box 1296, Trenton, N.J. 08607.

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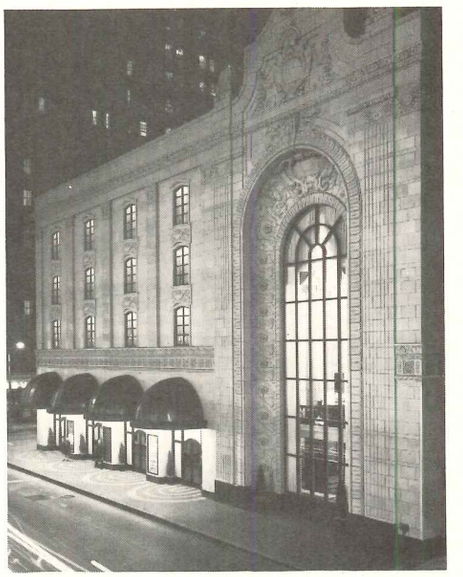
Dover Stage Lift helps recycle an old movie palace

In a Cinderella-like transformation, the old Penn vaudeville and movie theater in Pittsburgh has become a showcase for the arts.

Now known as Heinz Hall for the Performing Arts, this unique building is not only the new home of the Pittsburgh Symphony, Pittsburgh Opera, Civic Light Opera, Pittsburgh Ballet and the Pittsburgh Youth Symphony, but also offers complete theatrical and film facilities for international attractions.



Much of the neo-Baroque opulence was retained in the multi-million dollar renovation project. But extensive revamping was necessary for conversion of the old movie palace into a building that functions efficiently and beautifully for its diverse new tenants.

A major addition was a Dover Stage Lift, 14′ x 54′ in overall dimensions. Raised, it provides a needed extension of the stage area; lowered, it serves as an orchestra pit.

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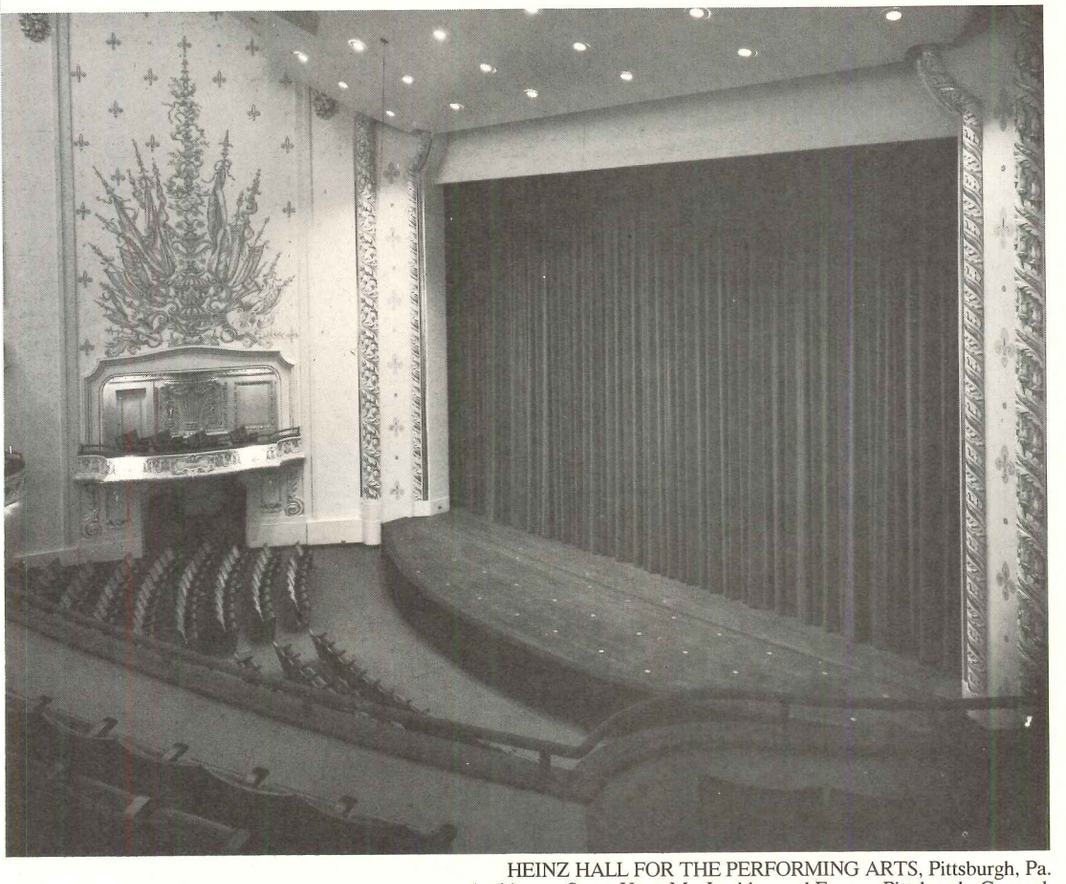

HEINZ HALL FOR THE PERFORMING ARTS, Pittsburgh, Pa. Architects: Stotz, Hess, MacLachlan and Fosner, Pittsburgh. General contractor: Mellon-Stuart Co., Pittsburgh. Acoustical and stage lift consultant: Dr. Heinrich Keilholz. Engineers: George Levinson, Inc. (structural); Meucci Engineering Inc. (mechanical); Hornfeck Engineering, Inc. (electrical). Interior designer: Verner S. Purnell. Dover Stage Lift installed by Marshall Elevator Company, Pittsburgh.

GSA bestows honors on 15 Federal buildings

Architects responsible for designing 15 Federal construction projects around the nation were honored last November by the General Services Administration, an $842-million client during the last 18 months. The winning designs were selected from 65 projects submitted. Any structure developed for GSA and for which the contract documents were completed within the previous three years was eligible. The winners illustrate GSA design policy and vary in size and dollar value.

The Design Awards Program was initiated in June of 1972 by the acting administrator of GSA, Arthur F. Sampson, in order to recognize distinguished architectural work done within the Public Buildings Service design and construction program. Judging the entries were six architects from GSA's national public adivsory panel on architectural services, and the Public Buildings Service's assistant commissioner for construction management. They were: F. Talbott Wilson, of Wilson-Crain-Anderson, Houston; Kenneth C. Black, Kenneth C. Black Associates, Lansing, Mich.; William J. Caudill, Caudill Rowlett Scott, Houston; Grant Curry, Jr., Curry & Martin, Pittsburgh; D. Kenneth Sargent, Sargent, Webster, Crenshaw & Folley, Syracuse, N.Y.; Harold T. Spitznagel, The Spitznagel Partners, Sioux Falls, S.D.; and Walter A. Meisen, Public Buildings Service, GSA.

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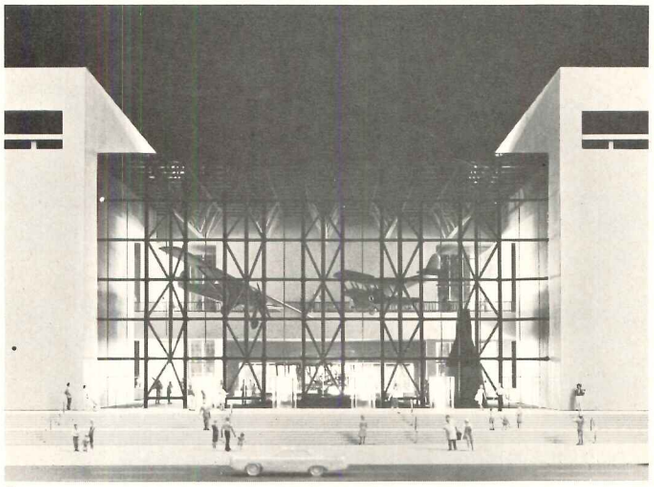

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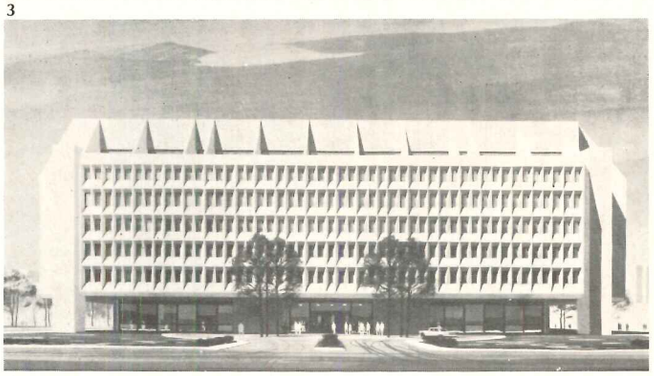

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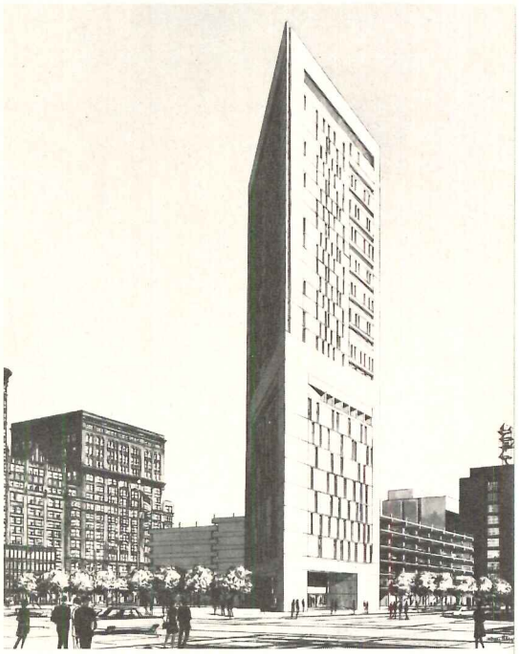

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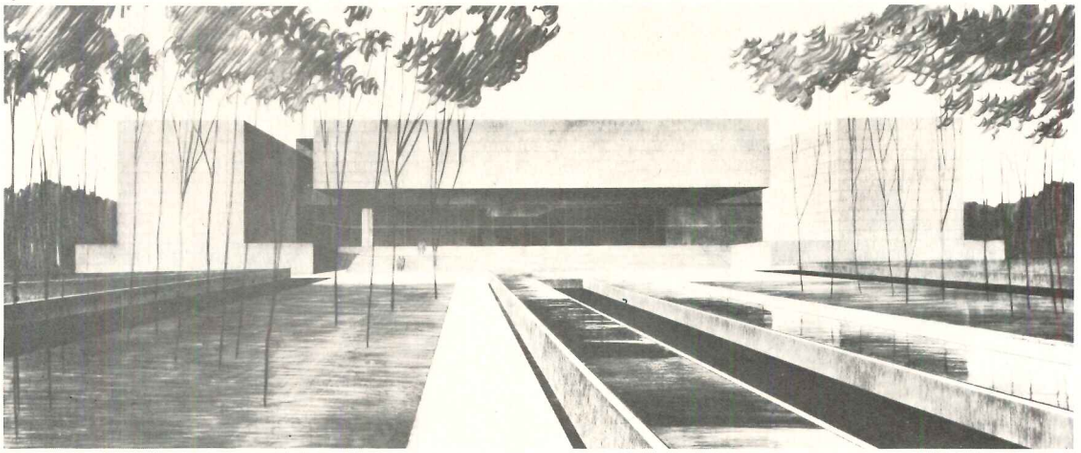

Honor Awards

1 National Air and Space Museum, Washington, D. C. Architects: Hellmuth, Obata and Kassabaum, Inc. Structural engineers: LeMessurier Assoc., Inc. For: The Smithsonian Institution. The jury was impressed with the straightforward design, consisting of high-ceilinged galleries (shown) on one side and low-ceilinged spaces on the other. (More details on page 41, RECORD, December 1972).

2 Federal Correctional Center, Chicago. Architects: Harry Weese and Associates. Structural engineers: Severud, Perrone, Sturm & Bandel. For: The Bureau of Prisons. The triangular tower provides a transitional facility for downtown Chicago, while returning precious open space to the city through good site planning. An efficient, yet humane structure that responds to current prison reforms.

3 South Portal Site Federal Building, Washington, D. C. Architects: Marcel Breuer and Associates; Nolan-Swinburne and Associates. Sturctural engineers: Sverdrup Parcel. For: The General Services Administration. An air-rights structure built over highway tunnels, its interior floor spans are suspended from roof trusses. Overhanging exterior bays are supported by tension cables from exterior trusses. Exterior is precast concrete.

4 United States Tax Court, Washington, D. C. Architects: Victor A. Lundy; and Lyles, Bissett, Carlisle and Wolff. Structural engineers: Severud Assoc. For: United States Tax Court. The jury commended the design for its welcome departure from typical capital architecture. Granite cladding and bronze-tinted glass form the exterior.

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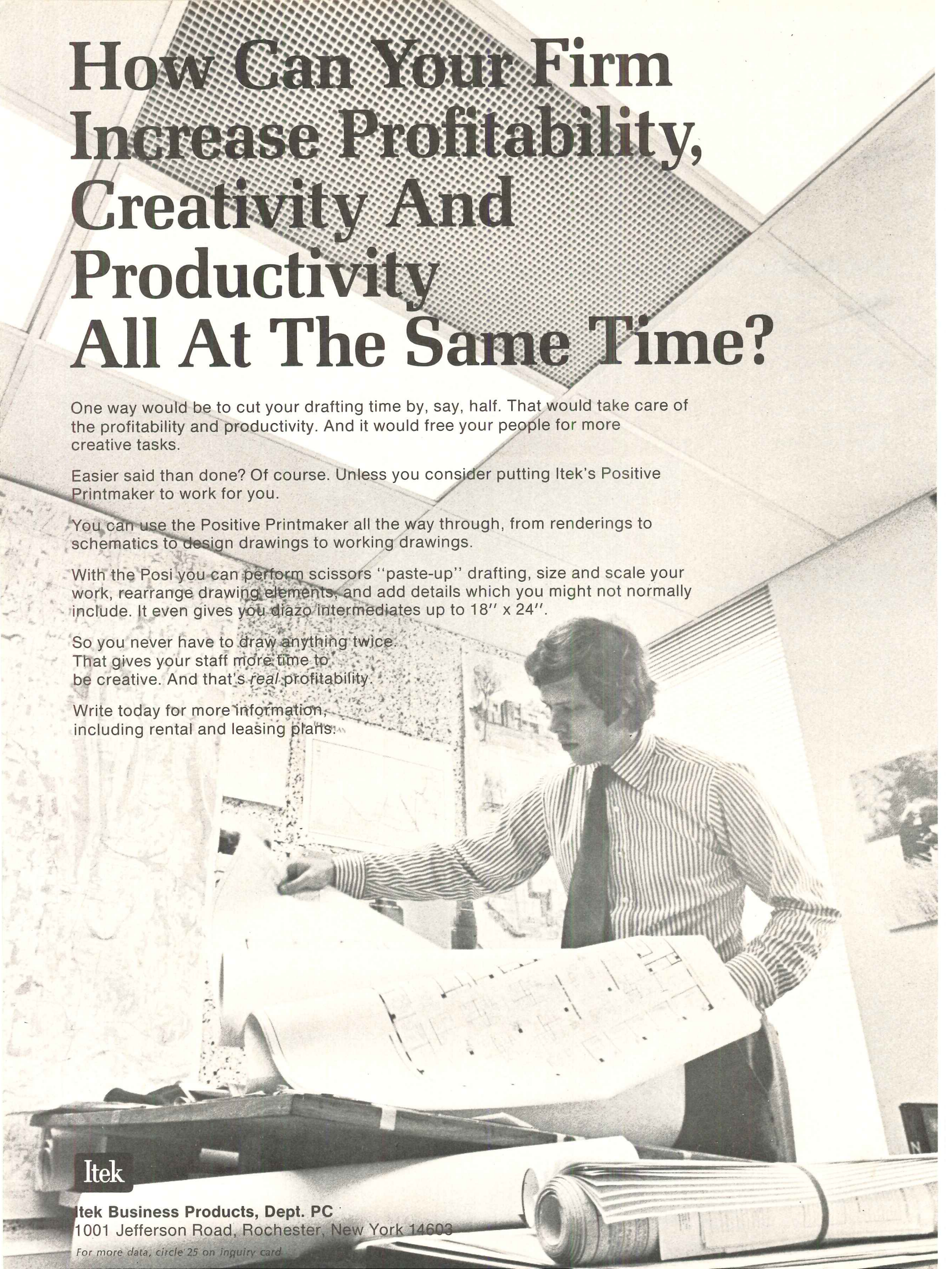

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Awards of merit

5 Social Security Administration District Office, Camp Springs, Md. Architects: Sullivan & Associates. Structural engineer: Allison/Meyer. For: The Social Security Administration.

6 Courthouse and Federal Building, Akron. Architects: Tuchman and Canute. Structural engineers: R. M. Gensert Assoc. For: GSA.

7 Federal Building, West Los Angeles. Architect: Charles Luckman Associates, Inc. Structural engineers: King, Benioff, and Steinman. For: GSA.

8 Border Inspection Station, Calexico, Calif. Architects: Bryant, Jehle and Associates, Structural engineer: Design Services Inc. For: GSA.

9 Federal Building, Chicago. Architects: Schmidt, Garden and Erikson; Office Of Mies van der Rohe; C. F. Murphy Associates; A. Epstein & Sons, Inc. Structural engineers: A. Epstein & Sons Inc. For: GSA.

10 Federal Building, Tucson. Architects: Cain, Nelson, Wares, Cook and Associates. Structural engineer: Rod J. Gomez. For: GSA.

11 Bioscience Laboratory, Beltsville, Md. Architects: Rogers, Taliaferro, Kostrisky and Lamb. Structural engineer: Van Rensselaer P. Saxe. For: Department of Agriculture.

12 National Archives and Record Center, San Bruno, Calif. Architect: McCue-Boone-Tomsick. Structural engineers: John A. Blume & Assoc., For: GSA.

13 Social Security Administration District Office, Pontiac, Mich. Architects: Tarapata-MacMahon-Paulsen Corp.

14 National Institute of Child Health and Human Development Research Laboratory, Bethesda, Md. Architects: The Architects Collaborative. Structural engineer: Le Nessurier Assoc. For: The National Institute of Health.

15 Bird Banding Record Center, Bureau of Sport Fisheries and Wildlife, Laurel, Md. Architects: Meyer, Ayers, and Saint Stewart. Structural engineer: Van Rensselaer P. Saxe. For: Department of the Interior.

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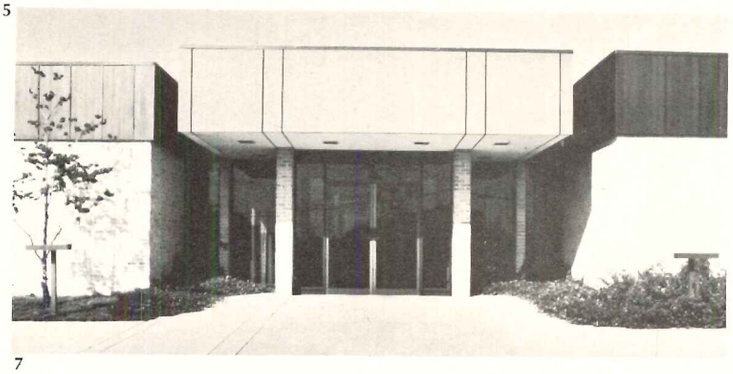

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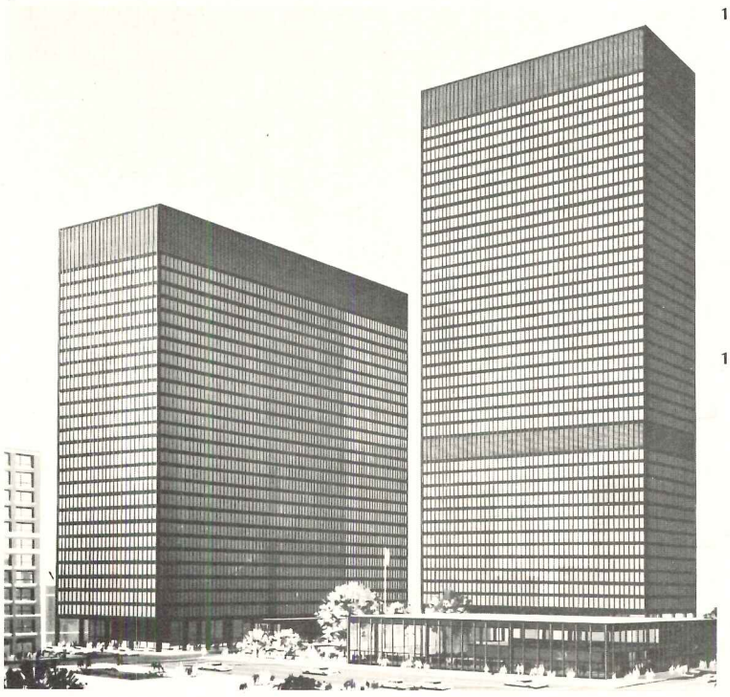

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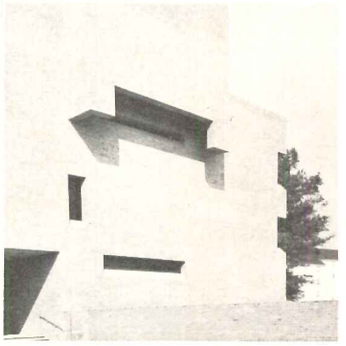

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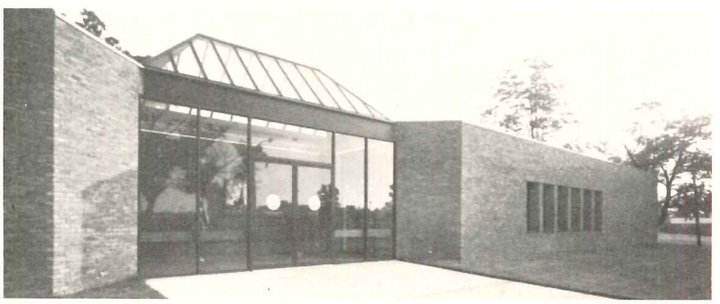

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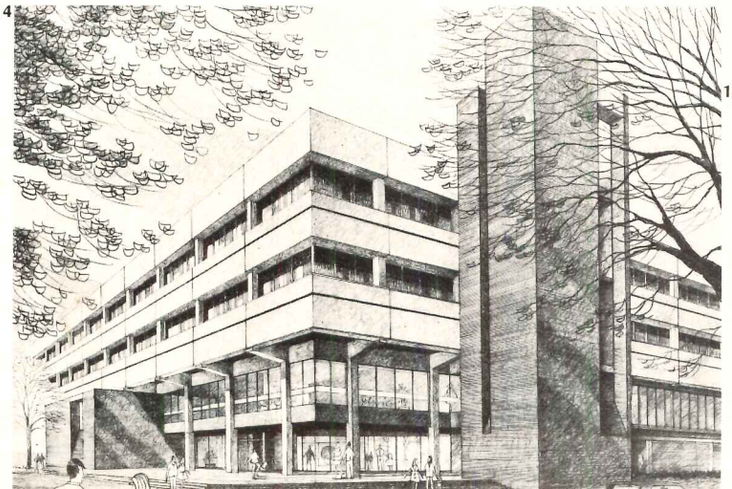

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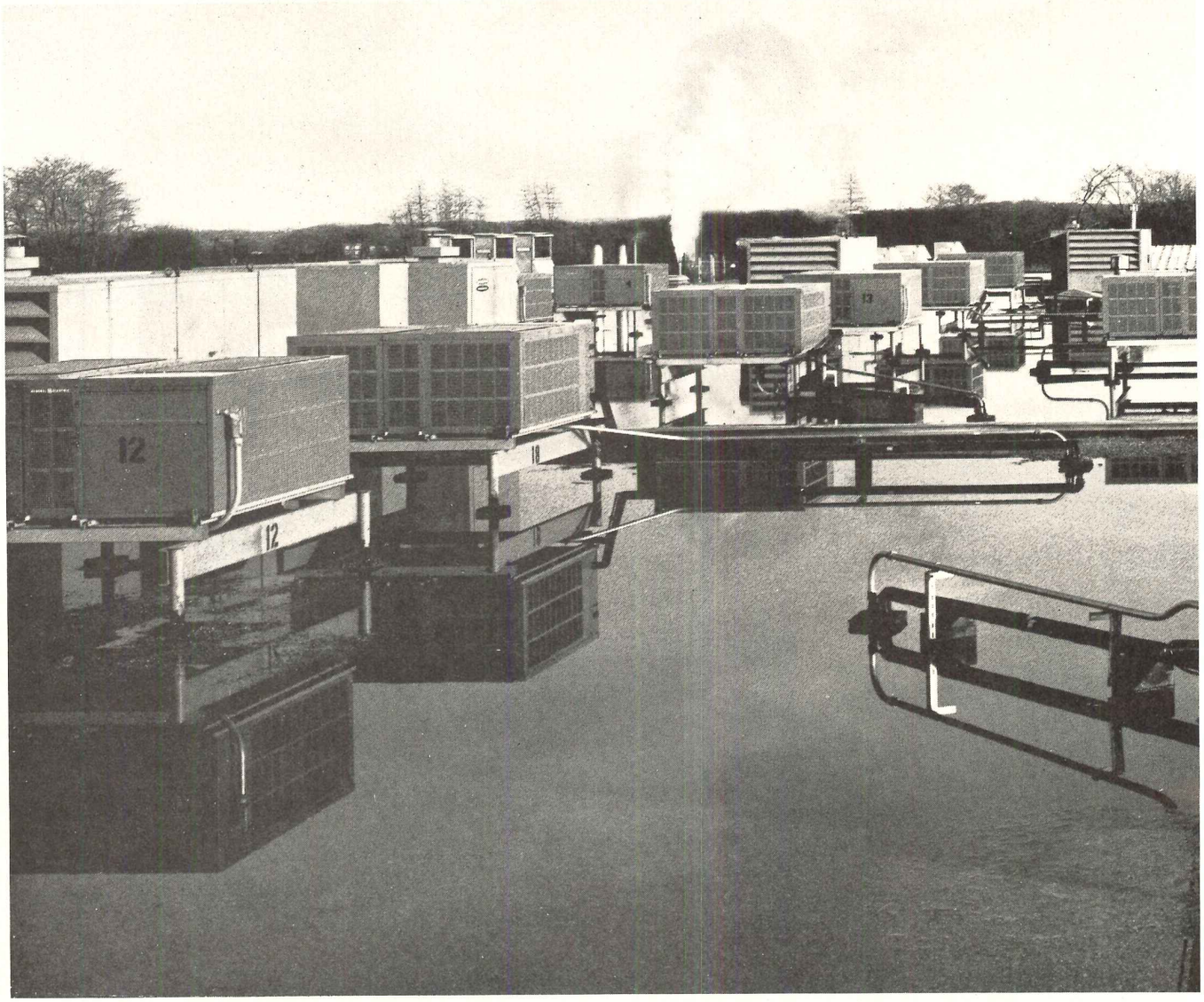
"705 tons of General Electric Stouffers Bakery

Joseph H. Gauss, Vice President and General Manager,



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split system cooling helped build a better cupcake."

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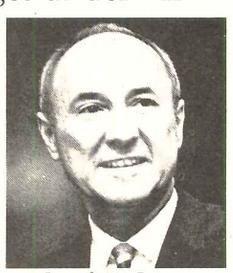

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continued from page 35

capped. These amendments are to be considered possibly this month by the City Council.

Peter Lassen, national architectural coordinator of the Paralyzed Veterans of America cited Minneapolis, Indianapolis and Omaha as having "fairly good" laws regarding building access (he believes Minneapolis has the most effective law).

In mass transit, San Francisco's BART rapid transit system was commended for its extensive provisions for accessibility to the handicapped and elderly. Harold Willson, a planning consultant, said the cost of making the $1.5 billion system barrier-free was $8.5 million.

ARCHITECT'S RIGHT TO SPECIFY SELECTIVELY UPHELD IN COURT

The *AIA Memo* of November 22, 1972 reports a recent South Carolina court case which upheld an architect's right to prepare specifications reflecting his discretion in choosing reliable sources of materials and designating whom he wishes to perform the work.

A South Carolina architect had written elevator specifications which restricted potential bidders to firms which were "manufacturers of major components," the reasoning being that the client would be best served by a single party, responsible for the entire unit and its service.

The plaintiff, who sold, erected, repaired and maintained elevators—but did not manufacture them—contended that this restriction intended to foreclose competition among bidders, and sued the architect for an alleged violation of anti-trust laws.

However, the plaintiff was unable to prove these allegations, and admitted that it is common practice for elevator manufacturers and suppliers to assist architects in preparing elevator specifications. The court held that the architect could limit the firms which would be eligible to provide the elevators for the project as long as this did not result in a restrictive trade practice.

AIA ANNOUNCES 1973 PROGRAMS

At their December meeting, the AIA board of directors approved a program of legislative priorities to work toward in the 93rd Congress which convened last month.

In summary, some of the areas where action will be initiated are:

- Community services: 1) To seek legislation providing adequate funding for the design and planning assistance program administered by the Office of Economic Opportunity (program just terminated in the President's budget); 2) To seek legislation extending the four-year limit for Educational Opportunity Grants to enable disadvantaged students pursuing graduate professional degrees to receive such assistance.
- Education and research: 1) To support legislation strengthening the Federal government's civilian socially oriented research capacity so as to achieve substantial parity with defense research and development; 2) To support legislation establishing a National Institute of Building Sciences, which would consolidate present standard-setting and research pro-

continued on page 69

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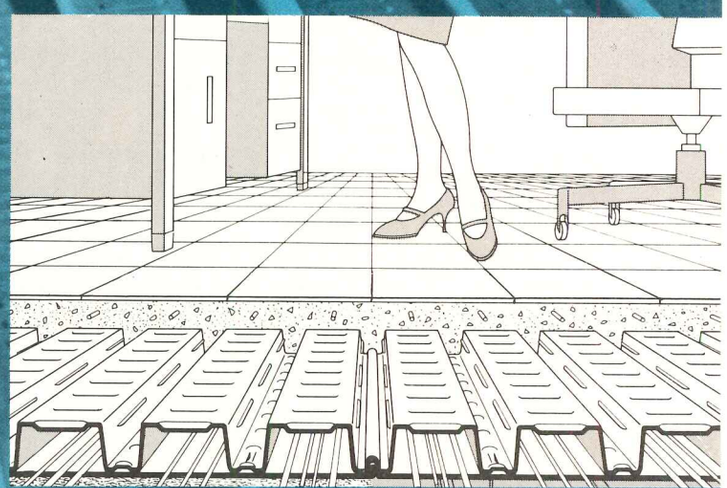

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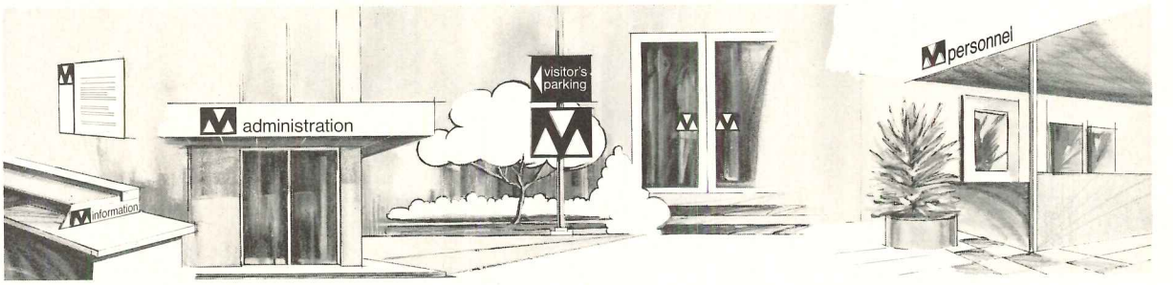

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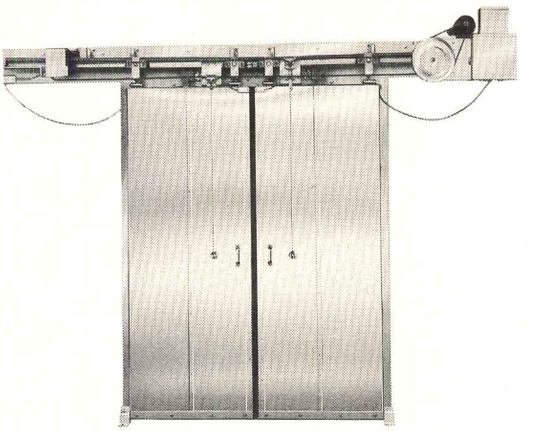

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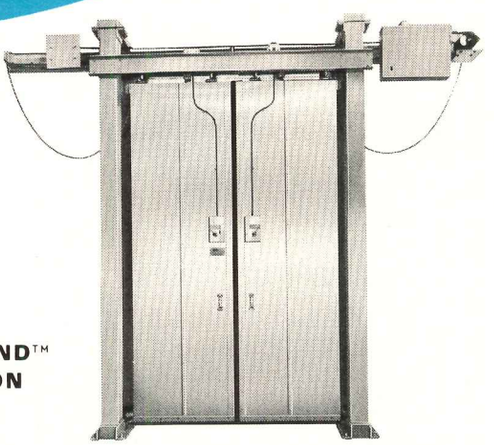

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Easy to install Mono-Flat® fronts are standard on these panelboards. They are good looking, mount flush to the wall and are people-proof to discourage tampering!

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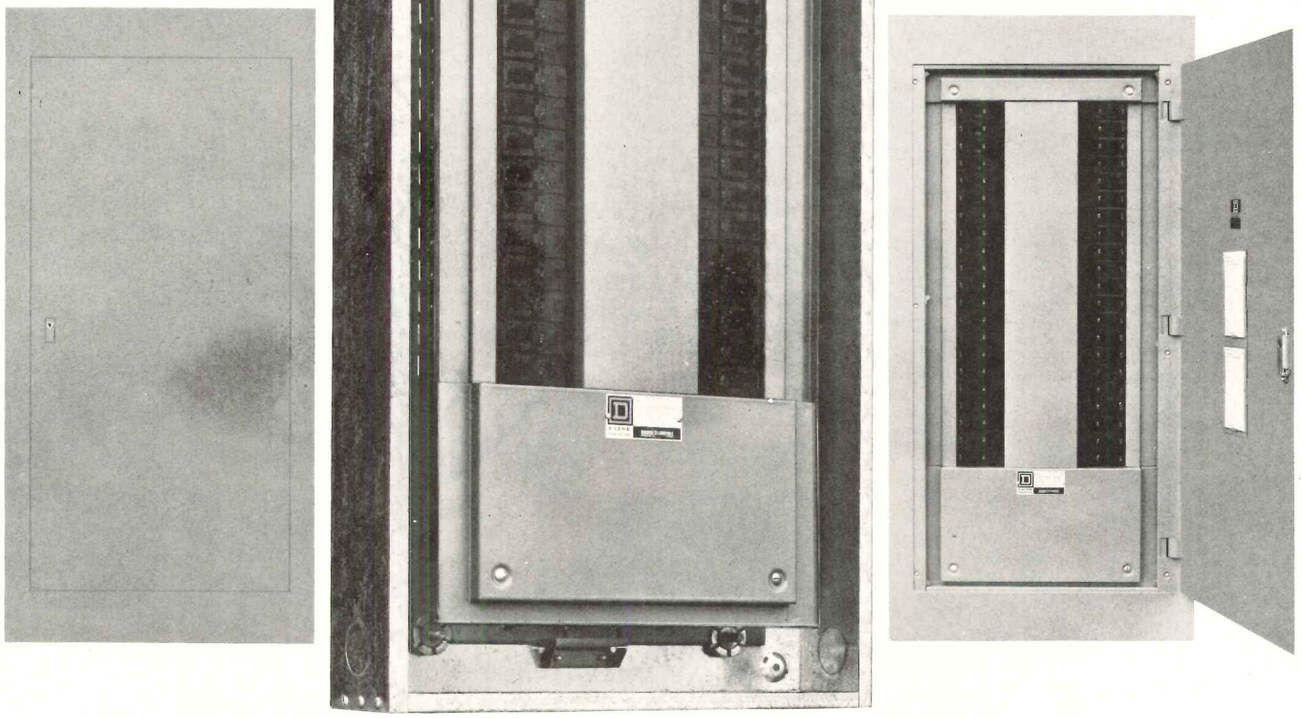

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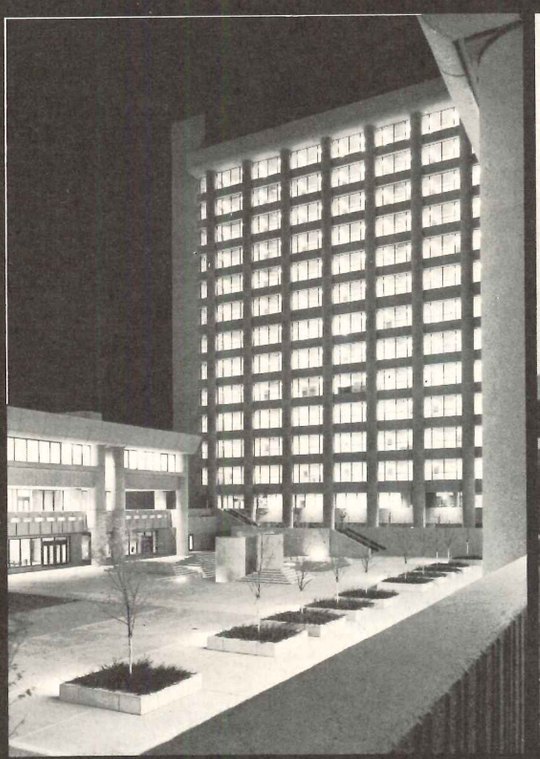
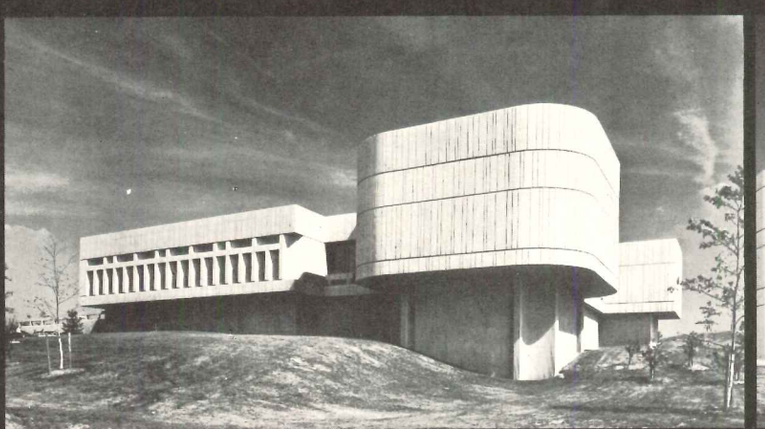


Left: University of Louisville Health Sciences Center, Louisville ■ Architects, Engineers and Planners: Smith, Hinchman & Grylls Associates, Inc., Detroit ■ Associated Architects & Engineers: Arrasmith, Judd, Rapp & Associates, Louisville ■ Associated Architects & Engineers: Louis & Henry Associates, Louisville ■ Associated Engineers: E. R. Ronald & Associates, Louisville ■ Contractors: Struck Construction Co.; Whittenberg Engineering & Construction Co.; George M. Eady Co., Louisville. ■ **Right:** Bethesda Hospital North, Montgomery, Ohio ■ Architects, Engineers and Planners: Smith, Hinchman & Grylls Associates, Inc., Detroit ■ Associated Architects and Engineers: Sullivan, Isaacs & Sullivan, Cincinnati ■ General Contractor: Dugan & Meyers Construction Co., Cincinnati.



Left: Detroit Edison Co./ Consumers Power Co. Electric Power Pool Control Center, Ann Arbor ■ Architects, Engineers and Planners: Smith, Hinchman & Grylls Associates, Inc., Detroit ■ Contractor: Darin & Armstrong Inc., Detroit ■ **Right:** Michigan Bell Telephone Co. Plant Office and Garage, Detroit ■ Architects, Engineers and Planners: Smith, Hinchman & Grylls Associates, Inc., Detroit ■ Contractor: Darin & Armstrong Inc., Detroit.

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Urban renewal: Where speed – and every dollar – count.

Faced with the assignment of designing a health facilities/educational complex in the heart of Louisville, the architects turned to versatile, expressive reinforced concrete. The columnar design scheme they devised unified the four structures in the project: medical school, dental school, library, and research tower. And reinforced concrete, with its inherent fire-resistant properties, was a natural for the University of Louisville Health Sciences Center, with its many laboratory and library areas. Throughout the project, concrete reinforced with grade 60 rebar made for speed amid the congestion of urban renewal.

The right prescription for economical creativity.

When building design bespeaks the character of the activity within, the effect is striking. Progressive medical care was to be the philosophy of Bethesda Hospital North in suburban Cincinnati. The architects executed their design in reinforced concrete, giving the 150-bed facility a handsome exterior facing without extra cost. Columns and mullions frame the recessed windows, adding strength to a building that contrasts with its rather commonplace surroundings. And reinforced concrete with Grade 60 rebar permitted the builders to meet the stringent fire ratings for hospitals.

A powerful concept in reinforced concrete.

Detroit Edison/Consumers Power Co. wanted a highly specialized structure that would be multifunctional and a showcase to the onlooker. The sculptural quality of reinforced concrete enabled the designers to create the required monumental look. And the versatility of reinforced concrete was again proved in its ability to provide in one monolithic structure many discrete functions: power pool control center; computer and telemetry rooms; fallout shelter; and an auxiliary generating station. Reinforced concrete, using grade 60 steel, made it all possible within the limits of budget and construction schedule.

There's always a call for downtown drama on a budget.

What was essentially a utilitarian building assignment—a garage—was realized in a structurally dramatic way for Michigan Bell Telephone Co. in downtown Detroit. The site chosen was at the highly-visible edge of a major expressway. With reinforced concrete as their building material of choice, the architects strikingly expressed the functions of the building in architectural terms. Vehicle ramps, stairwells, garage levels, and the separate office areas became visually arresting parts of the whole. Obviously, the fire-resistant properties of Grade-60 reinforced concrete were of vital importance in a garage. And reinforced concrete permitted the use of minimum floor-to-floor heights in the garage area itself.

Grade 60 rebar makes creativity less costly.

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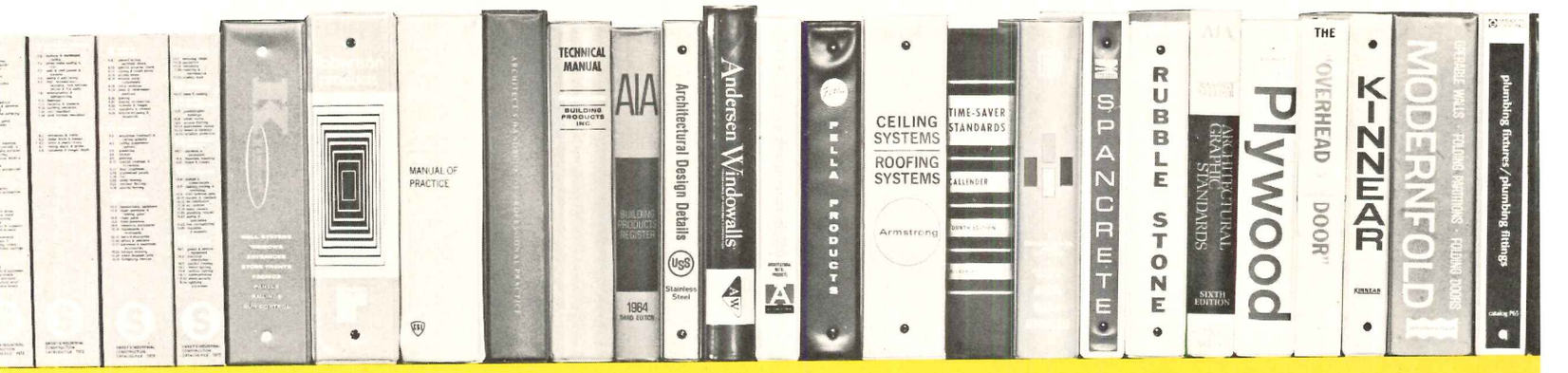

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A plethora of pundits looks at subsidy cutbacks, Phase 3 and new business

The cries of anguish out of Houston, when HUD Secretary George Romney announced to the National Association of Home Builders the President's decision to cut back on Federal housing subsidies, were echoed by builder groups throughout the nation. There was dismay also among some architects who make a specialty of low-income housing. Although Mr. Romney was quick to point out that projects already "in the pipeline" would not be affected retroactively, architect Robert Wilson (RECORD, January 1973), attending the Houston convention, expressed fears of bankruptcy. He explained that he has been designing about 1500 subsidized units that are not yet approved by HUD and thus are not considered to be in the pipeline.

The effect of the subsidy cutback on architectural business in general comes into less alarming perspective when it is recalled that subsidized housing is (alas) a small portion (10 per cent, according to Carlson, page 64) of total housing units and a correspondingly small fragment of total architectural design in terms of dollar volume of business. This is not to belittle Mr. Wilson's dilemma, but may sustain the hope that he will find alternatives.

It will be recalled that much of the dismay attending the President's announcement of a 75 per cent cutback in Federal construction (RECORD, October, 1969) proved premature in the light of subsequent modifications.

Phase 3 bypasses construction industries

Hard on the heels of the subsidy cutback was the announcement of Phase 3—the end of mandatory wage-price controls except in food, health and building fields. While it was much too early at press time to assess the consequences of Phase 3, the mixed reaction in all sectors of the economy seemed to support the notion that hesitation in what appears to have been a construction surge would be less than catastrophic. The retention of construction among fields in which controls remain portended at least the possibility of maintaining the status quo. Some labor sources have pointed out, however, that inflationary consequences in other fields might seriously affect the cost of living and hence the willingness of construction labor to abide by the leftover guidelines. There may be some cause for optimism in the return of labor leaders like George Meany to the council tables of the economy and the appointment of construction-sophisticated John T. Dunlop as new head of the Cost of Living Council.

Construction contract rise expected to continue

Some indication of reasonable health in the construction and architectural business is contained in an early January release by the F.W. Dodge Division of McGraw-Hill Information Systems Company pointing to a very strong flow of new construction contracts during closing months of 1972. November contracts were 13 per cent above the 1971 figure, and the total at the end of 11 months of 1972 was $85 billion, a 15 per cent gain over the same period a year earlier.

Architects themselves were optimistic in their estimates of future business. With the exception of a few eastern locations, regional year-end reports to the American Institute of Architects were hopeful for the coming year based on encouraging levels of activity in 1972.

The regions generally reported a better climate last year for architectural practice than in 1971. In California, for example, considerable activity has been experienced in the housing field (subsidized and otherwise) and in commercial projects.

Rising construction costs were cited as inhibitory by some, as was the lumber supply situation; although the enforced roll-back on prices of at least one lumber manufacturer (based on IRS records of profit margin) was viewed with some satisfaction. There was some dilution of joy with apprehension at the increasing "big-brother" role of IRS in this and other Phase 3 matters.

The influence of environmental impact rulings figured in the assessment of local conditions, particularly in the reports from California and Florida, two states particularly hard hit by findings in the courts. In the western state, some court decisions have been tantamount to moratoriums on construction and the situation continues to be confused; Florida says its record growth rate of the past year is threatened by legislative mandates prohibiting certain sewer connections. Money seems to be no problem there, however.

Illinois reports an improvement in economic health in most of its areas. Political policies have reduced planning and construction activity somewhat, it reports, but money is firm and AIA state officials are said to be showing greater effectiveness in their legislative activity work.

Package dealers and pre-engineered construction continue to pose problems for the midwesterners, they said.

Down in Texas, volume continued at adequate levels with the work well distributed over the region and well diversified by type. And in New England architectural activity appears to be on the increase. Optimism for next year's business volume is strong.

Industrial and educational activity responds to local conditions

The New York State region reports that the economic health of A/E offices there has stabilized but at a point well below that of two and one-half years ago, with reductions in major state construction programs limiting new contracts. It was noted that the New York State Council on Architecture, though on limited funds, has become increasingly influential in establishing excellent architectural standards and in coordinating state construction program activities.

The Michigan region finds general business activity improved considerably over last year but an unemployment rate above the national average. AIA chapters are active there and memberships are increasing.

A short rundown on Western Mountain conditions shows most architectural offices to be busy and seeking employees. Competition from government agencies has not been as critical in 1972 as in past years.

The architects' economic health in New Jersey was said to be only a little better now than last year. Tax problems tend to hold down capital expenditures.

The report from the Northwest region tells of mixed conditions throughout that vast area, economic situations running from excellent to poor. This region continues its intensive work on methods of compensation on a man-hour rather than a percentage basis.

A survey of the South Atlantic AIA region finds volume of work relatively high and the outlook for 1973 generally good.

Without exception the regions are telling AIA headquarters that the general health of the architectural profession is good.

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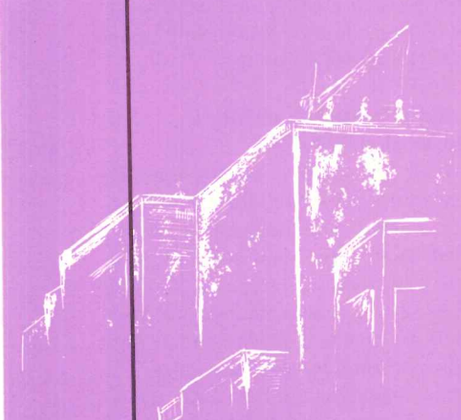

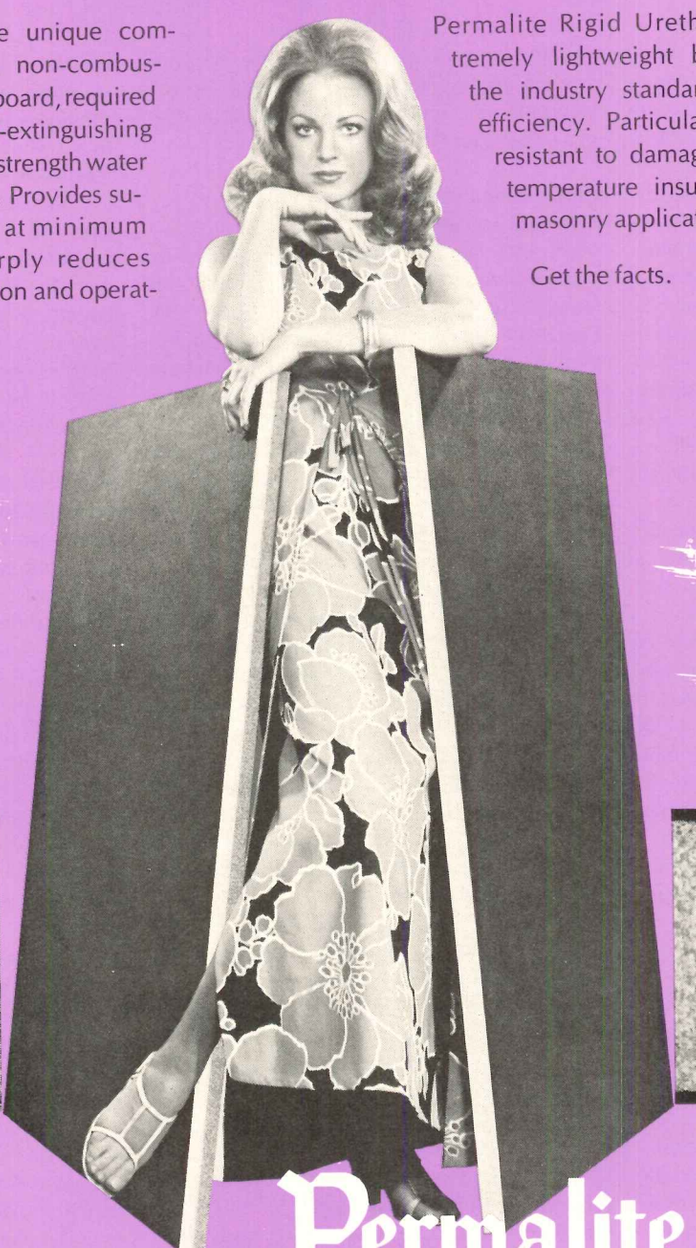

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James E. Carlson
Manager, Economic Research
McGraw-Hill Information Systems Company

The year that was: 1972 in review

On this page a year ago, I remarked that "an annual gain of 15 per cent or more in the value of total construction contracts doesn't occur in the industry very often. You have to go all the way back to 1955 to find the last time that it happened." This statement was a way of highlighting the exceptional performance of the construction industry during 1971. Well, the wait for the next gain of that size hasn't been very long at all. The nation's construction industry increased by 14 per cent in 1972—and with a lot of the same plays that worked so well during 1971.

Another comment in that article was that, "gains of 40 per cent or better in the housing segment of contract construction are even rarer. You have to go back five years further, to 1950, for the last increase of this magnitude." Here, the reference was to housing's soaring increase during 1971. Unfortunately, we can't say that it attained a 40 per cent gain again in 1972. But, the 30 per cent gain it did record is nothing to be ashamed of. The value of contract awards for residential buildings stood at $25 billion in 1970, according to our F. W. Dodge Division's statistics. 1972 came within five billion dollars of doubling the 1970 level. Some $45 billion worth of residential buildings were contracted for last year.

For residential building, 1972 was virtually a continuation of 1971's trend of sharp month-to-month advances. The pace did slow down somewhat during the first half, though, as single family housing paused temporarily to regroup. Of the two major components of the residential category (houses and apartments), apartments, ahead nearly 35 per cent, turned in the larger gain. Like 1971 before it, 1972's residential building advance reflected the interaction of a pressing need: a critical shortage of good housing, with the means to satisfy that need: the availability of mortgage funds.

Subsidized housing already a shrinking segment

One interesting aspect of the 1972 residential building picture that made it different from 1971's was the role of government subsidized housing. The strong base of government support that the industry enjoyed since 1970, was eroded last year. In percentage terms, the Department of Housing and Urban Development's subsidized units declined in 1972 by just as much as the nation's dwelling unit total gained—30 per cent. The figures fell from 355,000 units in 1971 to 250,000 in 1972. (The government's figures were bolstered somewhat by a 15,000 unit gain in homes subsidized under the Department of Agriculture's program, though.) Accounting for fully one-fourth of all dwelling units started during 1970, HUD subsidized units shrank to little more than 10 per cent of the dwelling unit total last year. And with outgoing HUD Secretary Romney's January freeze on any new subsidized housing approvals, this figure will be even smaller in 1973.

Nonresidential building gain shows shift in pattern

In the nonresidential building area, 1971's gain and 1972's gain were nearly the same, five vs. six per cent. This surface sameness masks some pretty important changes that were taking place down a few fathoms among the components, however.

Perhaps, the greatest contrast occurring in the nonresidential components between the two years was the behavior of industrial building. Down nearly 30 per cent in 1971, contracts for manufacturing plant facilities of all kinds pushed ahead 15 per cent last year. But, at that, plant contracting is still a billion dollars below 1969, the peak year of the last period of economic expansion. Plant capacity utilization rates are just now reaching a point in most industries where decisions to expand are becoming critical ones. As healthy as last year's gain was, the best of the current business expansion's round of industrial construction still lies ahead of us.

Although commercial building recorded an increase of seven per cent in 1971, the 1972 gain was more than twice as large. Stores led the way pushing ahead by nearly one-third last year, close to three times the 12 per cent 1971 increase. The continuing housing boom and the return of general economic prosperity were primarily responsible for last year's large gain in this component.

Office building was also stronger last year than in 1971, (plus 12 per cent vs. plus 3 per cent), but, in neither year did it show any real balanced growth. Ever since the Northeast peaked out in 1969, it's been the South, and to a lesser degree, the West, that have been contributing what growth there has been.

To come out with nearly equal percentage gains in the national nonresidential total in both 1971 and 1972, there have to be some "downs" to balance off the "ups." The major "down" category of 1972 was educational building.

The loosened credit situation that set housing off and running in 1971 had a similar impact on educational building. Like housing, it, too, is sensitive to credit conditions. But, unlike housing, which entered 1971 with a huge backlog of demand, the pent-up demand for educational structures, was far from massive. While housing responded to credit ease with a 40 per cent contracting gain in 1971, educational building responded with one of eight per cent. Though small by comparison with some of the percentage gains we've been talking about above, this was the best performance since 1966 for contract activity in educational building.

Faced with declining enrollments in the elementary grades, and a sharp slowdown in the growth rates at the secondary and college levels, school construction has been unable to sustain any prolonged expansion. The 1972 figure was off by a full 15 per cent.

Public buildings, ahead close to 50 per cent in 1971, dropped into the red by exactly two per cent last year. Declines were also evident in two other nonresidential building areas during 1972, social and recreational building and the miscellaneous category. Both of these components had turned in quite strong gains during 1971.

Like 1971 before it, then, 1972 was housing's year. It was a year when housing surged ahead by almost one-third, while nonresidential building managed to grind out only a six per cent gain, and nonbuilding construction declined by about that amount despite some gains in sewage and water treatment facilities.

What's ahead for 1973?

This year, the script is going to be quite a bit different. The acceleration in general economic activity anticipated for 1973 will mean good things for the business-related building types like industrial and commercial building. And, with the exception of schools, gains are anticipated for most of the other nonresidential building types too.

Housing has crested, however, and is in for a period of adjustment in 1973. This is true primarily because of demand conditions, as rising vacancy rates point to a softer market ahead. But, general economic expansion also means some restrictions in the credit markets as funds are bid away to competing uses. And, in this respect, Phase III is not going to help very much. With wage and price controls now more "voluntary," the government is going to be relying more and more on "conventional" methods to control inflation. And, we all know that one of those conventional methods is a restrictive monetary policy.

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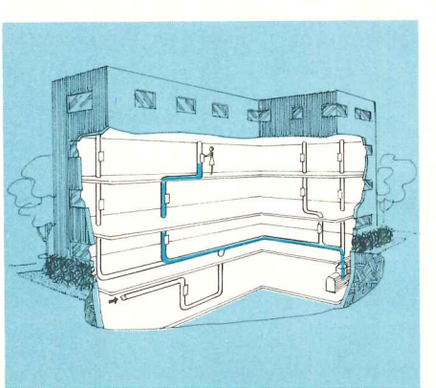

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BUILDING PRODUCT COSTS MAY STABILIZE AS PROFITS RISE

A continuing heavy demand for building materials plus stability of unit costs combined to boost profits of building product manufacturers to a new high in last year's third quarter, according to George A. Christie, vice president and chief economist of the F.W. Dodge Division of McGraw-Hill Information Systems Company.

The strength of the quarter was due to sustained housing demand, general recovery of the economy and relatively stable unit labor costs over the past year. Labor costs per dollar of output increased only 0.8 per cent over the year, compared with 4 per cent for the previous year. Factors affecting stability were: rapid increase in sales which allows costs to be spread over a larger base; slower growth in wage rates, and, of course, increase in productivity.

A recent survey of about 25 building products manufacturers shows that expected sales volume for the next several months is upward in every case. The respondents were about evenly divided between predictions of a small increase and those expecting sizeable or very large increases. The projections for the next three months show slightly greater expected increases than those for six months ahead. Three firms expect very large increases in both periods, whereas five expect sizeable increases in the next three months compared with four expecting sizeable increases over the next six months. The difference is scarcely enough to represent a statistical surge. The overall effect, however, seems to support a prognosis of price stability.

1941 average for each city=100.00 (except as noted)

December 1972 Metropolitan area	Cost differential	Current Indexes non-res.	residential	masonry	steel	% change last 12 months
U.S. Average	8.3	392.3	368.5	384.2	374.3	+ 6.56
Atlanta	7.9	504.7	476.0	490.7	480.0	+ 8.44
Baltimore	8.2	428.5	403.0	418.2	404.9	+10.21
Birmingham	7.4	363.9	338.6	351.5	346.6	+ 8.13
Boston	9.1	400.5	378.5	397.5	384.8	+ 9.03
Buffalo	9.0	432.1	405.8	426.9	413.1	+ 3.73
Chicago	8.4	451.5	429.4	437.8	429.2	+ 6.16
Cincinnati	8.6	417.0	392.5	405.4	395.4	+ 6.44
Cleveland	9.3	436.3	410.7	425.4	415.4	+ 3.37
Columbus, Ohio	8.3	413.0	387.9	400.7	393.2	+ 4.39
Dallas	7.7	391.1	378.7	383.5	375.4	+ 8.10
Denver	8.2	421.0	396.1	416.1	401.8	+ 5.80
Detroit	9.5	438.9	418.2	440.5	423.2	+ 5.78
Houston	7.5	370.6	348.1	362.1	353.4	+ 4.82
Indianapolis	7.9	364.8	342.6	355.7	348.2	+ 6.27
Kansas City	8.2	372.7	352.3	363.3	353.7	+ 6.55
Los Angeles	8.2	434.6	397.6	421.9	413.4	+ 5.96
Louisville	7.7	391.0	367.3	381.6	372.8	+ 7.72
Memphis	7.6	370.9	348.4	358.1	352.3	+ 8.23
Miami	8.0	412.3	392.8	401.2	393.4	+ 5.72
Milwaukee	8.4	441.0	414.3	434.8	422.3	+ 4.12
Minneapolis	8.8	418.4	393.8	412.1	400.3	+ 4.16
Newark	8.7	382.0	358.8	376.6	367.3	+ 4.12
New Orleans	7.4	375.4	354.5	368.9	360.4	+ 8.24
New York	10.0	433.8	403.5	421.3	410.4	+ 7.02
Philadelphia	8.9	425.1	405.1	421.1	409.4	+11.97
Phoenix (1947 = 100)	7.8	224.1	210.5	216.5	212.6	+ 7.71
Pittsburgh	8.8	385.4	362.7	379.5	367.9	+ 5.10
St. Louis	8.7	408.7	385.9	402.0	390.7	+ 7.26
San Antonio (1960 = 100)	7.5	151.7	142.6	148.0	144.3	+ 4.98
San Diego (1960 = 100)	7.9	154.3	145.0	150.9	147.6	+ 5.76
San Francisco	9.4	574.5	525.0	568.8	551.2	+ 9.62
Seattle	8.5	382.1	342.1	378.5	363.8	+ 3.74
Washington, D.C.	7.9	374.5	351.8	362.7	355.2	+ 7.80

Cost differentials compare current local costs, not indexes.

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

1941 average for each city = 100.00

Metropolitan area	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971 (Quarterly) 1st	2nd	3rd	4th	1972 (Quarterly) 1st	2nd	3rd	4th
Atlanta	298.2	306.7	313.7	321.5	329.8	335.7	353.1	384.0	422.4	424.0	445.1	447.2	459.2	472.5	473.7	496.1	497.7
Baltimore	271.8	275.5	280.6	285.7	280.9	295.8	308.7	322.8	348.8	350.3	360.5	362.5	381.7	388.1	389.3	418.8	420.4
Birmingham	250.0	256.3	260.9	265.9	270.7	274.7	284.3	303.4	309.3	310.6	314.6	316.4	331.6	340.4	341.6	356.7	358.3
Boston	239.8	244.1	252.1	257.8	262.0	265.7	277.1	295.0	328.6	330.0	338.9	341.0	362.0	377.3	378.5	392.8	394.4
Chicago	292.0	301.0	306.6	311.7	320.4	328.4	339.5	356.1	386.1	387.7	391.0	393.2	418.8	422.8	424.0	442.7	444.3
Cincinnati	258.8	263.9	269.5	274.0	278.3	288.2	302.6	325.8	348.5	350.0	372.3	374.3	386.1	399.9	401.1	400.1	410.7
Cleveland	268.5	275.8	283.0	292.3	300.7	303.7	331.5	358.3	380.1	381.6	391.1	393.5	415.6	415.2	416.4	427.7	429.3
Dallas	246.9	253.0	256.4	260.8	266.9	270.4	281.7	308.6	327.1	328.6	341.4	343.4	357.9	364.9	366.1	385.0	386.6
Denver	274.9	282.5	287.3	294.0	297.5	305.1	312.5	339.0	368.1	369.7	377.1	379.1	392.9	398.3	399.5	413.8	415.4
Detroit	265.9	272.2	277.7	284.7	296.9	301.2	316.4	352.9	377.4	379.0	384.6	386.8	409.7	416.9	418.1	431.5	433.1
Kansas City	240.1	247.8	250.5	256.4	261.0	264.3	278.0	295.5	315.3	316.6	329.5	331.5	344.7	348.7	349.9	365.4	367.0
Los Angeles	276.3	282.5	288.2	297.1	302.7	310.1	320.1	344.1	361.9	363.4	374.2	376.4	400.9	407.8	409.0	422.9	424.5
Miami	260.3	269.3	274.4	277.5	284.0	286.1	305.3	392.3	353.2	354.7	366.8	368.9	384.7	391.5	392.7	404.8	406.4
Minneapolis	269.0	275.3	282.4	285.0	289.4	300.2	309.4	331.2	361.1	362.7	366.0	368.0	417.1	401.7	402.9	411.3	412.9
New Orleans	245.1	284.3	240.9	256.3	259.8	267.6	274.2	297.5	318.9	320.4	327.9	329.8	341.8	350.9	352.1	368.1	369.7
New York	276.0	282.3	289.4	297.1	304.0	313.6	321.4	344.5	366.0	367.7	378.9	381.0	395.6	406.5	407.7	421.5	423.1
Philadelphia	265.2	271.2	275.2	280.8	286.6	293.7	301.7	321.0	346.5	348.0	356.4	358.4	374.9	394.2	395.4	417.9	419.5
Pittsburgh	251.8	258.2	263.8	267.0	271.1	275.0	293.8	311.0	327.2	328.7	338.1	340.1	362.1	364.5	365.7	378.7	380.3
St. Louis	255.4	263.4	272.1	280.9	288.3	293.2	304.4	324.7	344.4	345.9	360.0	361.9	375.5	385.5	386.7	400.9	402.5
San Francisco	343.3	352.4	365.4	368.6	386.0	390.8	402.9	441.1	465.1	466.8	480.7	482.6	512.3	535.3	536.5	559.4	561.0
Seattle	252.5	260.6	266.6	268.9	275.0	283.5	292.2	317.8	341.8	343.3	347.1	349.0	358.4	363.0	364.5	369.9	371.5

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

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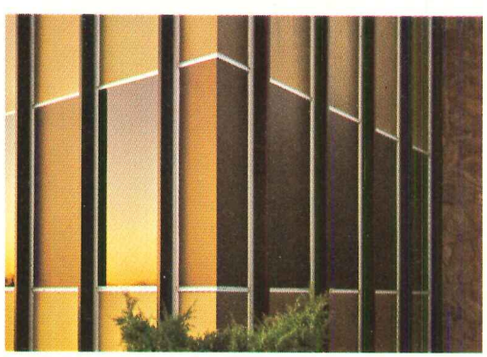

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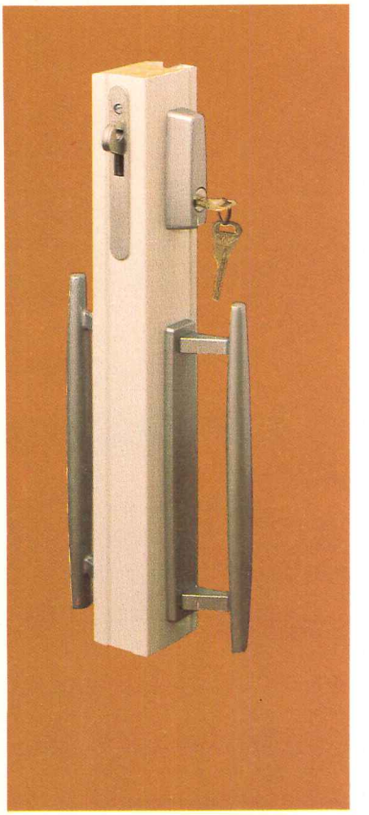

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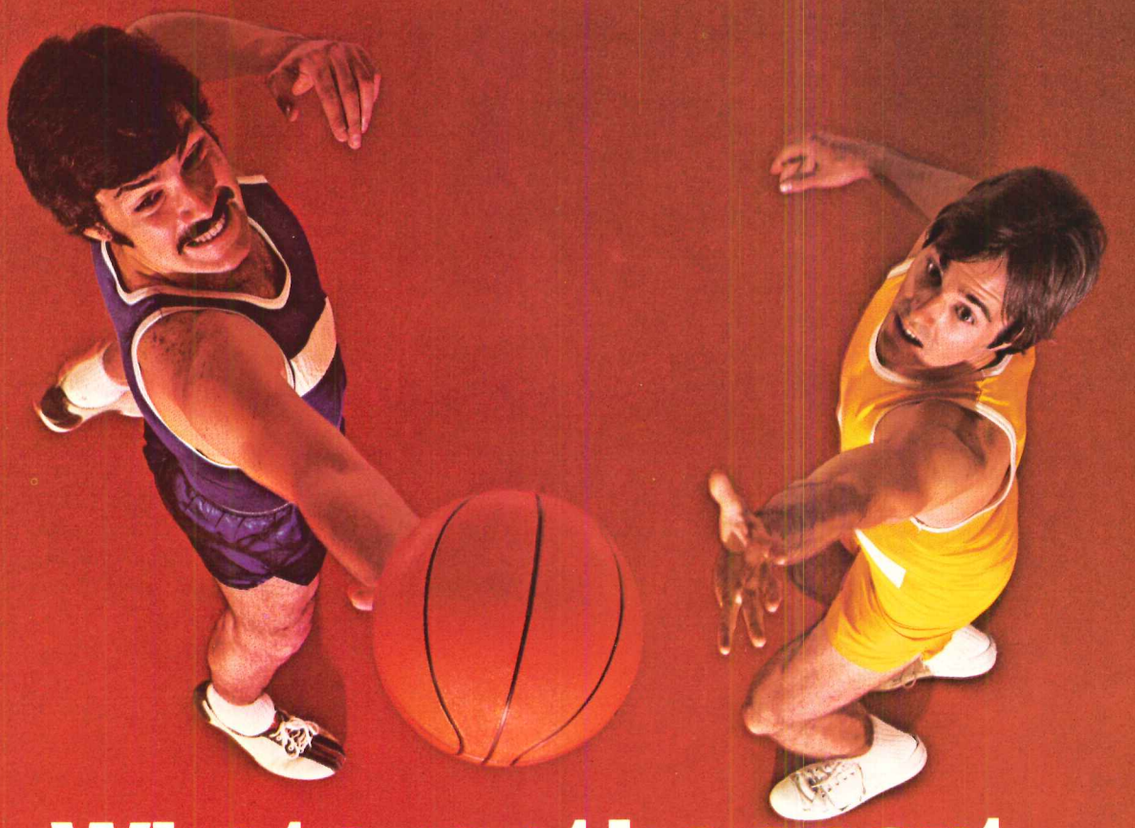

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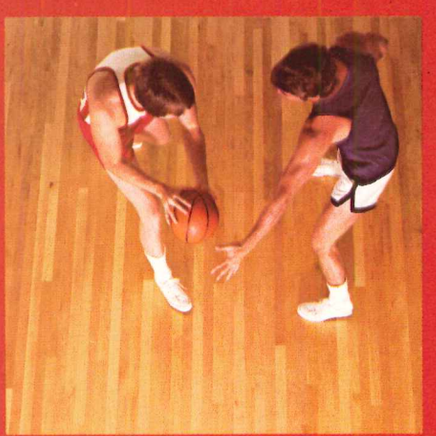

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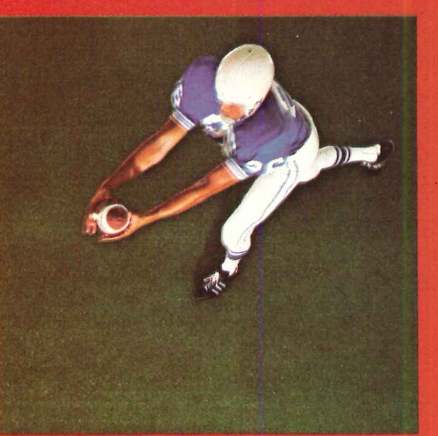

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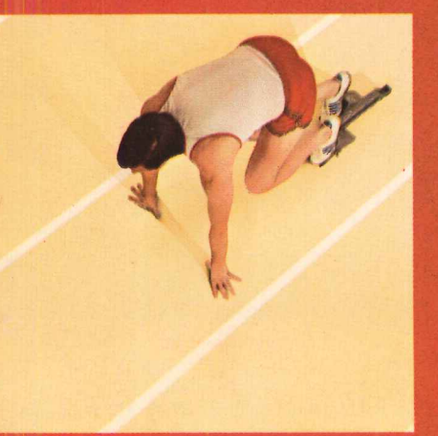

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Washington
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Craftsman Floors, (Man.), Ltd.—Winnepeg
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Northern Flooring Company, Ltd.—Weston
Quebec
Northern Flooring Co , (Quebec), Ltd.—Montreal
Saskatchewan
Allied Tiling & Floors, Ltd.—Regina
Craftsman Floors, (Sask.), Ltd.—Saskatoon

continued from page 48

grams in the construction field, with emphasis on placing a design professional on the NIBS Board of Directors.

- Environment and design: 1) To seek legislation implementing the Report of the Institute's National Policy Task Force; 2) To support legislation establishing a national land use policy and state planning programs with incentives and penalties encouraging state plans to be considered with the national policy; 3) To support legislation improving key housing and community development programs and increasing their funding (undoubtedly affected by subsidy freeze); 4) To support legislation making money from the Highway Trust Fund available for mass transit; 5) To seek legislation improving the historic preservation program of the Department of the Interior and increasing its funding; 6) To seek legislation improving the design and planning of facilities financed by Federal funds, with emphasis on education, health and correctional facilities.
- Professional Practice: 1) To review recommendations of the Government Procurement Commission regarding the selection of architectural services for government contract work and develop necessary legislation ensuring compatibility with the Institute's policy; 2) To seek legislative or administrative action requiring OSHA to refrain from adopting standards more appropriately covered in state and local building codes; 3) To support legislation providing an orderly and coordinated conversion to the International Metric System in the United States.

The $5 million AIA budget approved by the Board is aimed at helping the architect fulfill two fundamental roles: environmental leadership and professional competency. AIA's Government Affairs staff and newly-created Environment and Design Department will concentrate on influencing Federal and state policies necessary to implement the AIA report on urban growth.

In 1973, AIA efforts to recruit minorities to the profession will be stepped up, with local design and development centers for up-grading low-income communities and a program for minority scholarships the principal means.

The AIA budget also includes continuation of a national advertising campaign to promote the architect's capabilities in meeting demands for far-sighted construction and complex regional planning.

For local chapters, the AIA will continue the design assistance team program, providing technical advice on regional and urban design where it is requested by the chapters and community leaders. This year, special emphasis will be given to areas that have suffered natural disasters.

ERRATUM

The RECORD regrets that in its coverage of the proposed California City Civic Center (Buildings in the news, December 1972, page 41), the name of Konrad Wachsmann, designer of the project, was omitted. Mr. Wachsmann is Director of the Building Institute at the University of Southern California.

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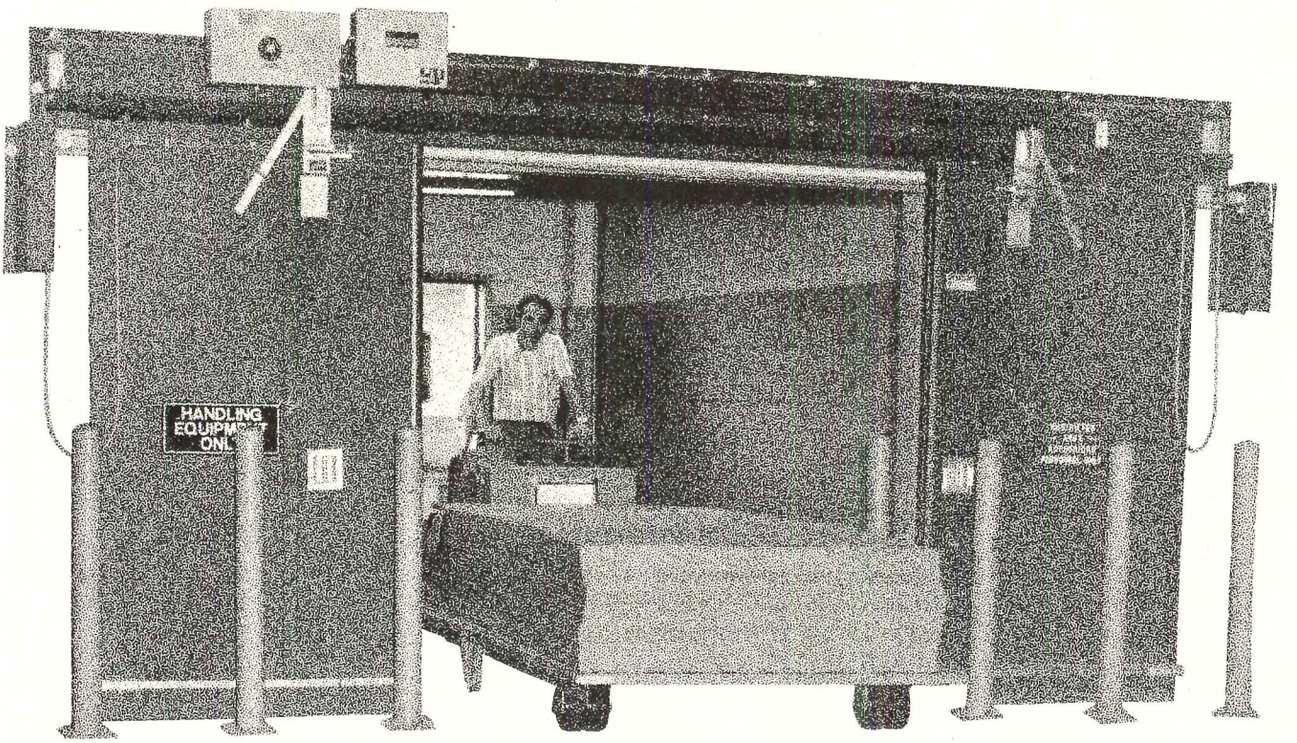

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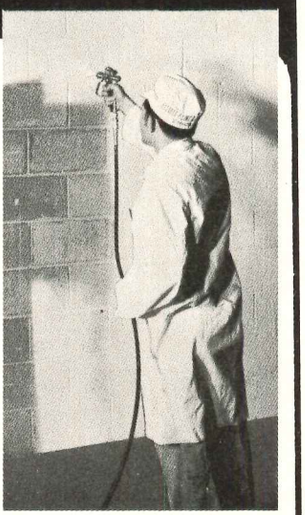

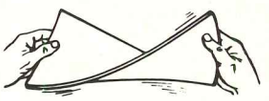

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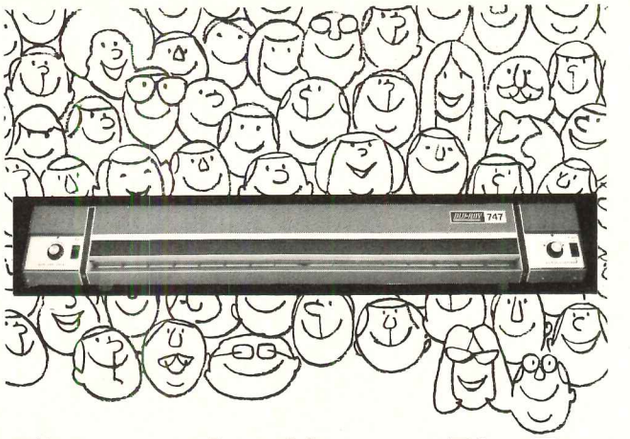

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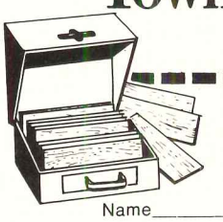

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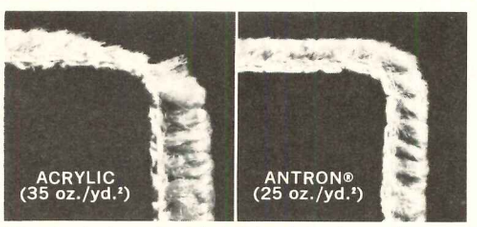
It was to be installed throughout most of the building, including offices, corridors, bookstore, library, storage, printing and graphic areas. The final selection: a woven cut/uncut construction with pile of Antron* nylon.

"Antron" scored high because of its unique hollow filament structure which optically screens out much of the appearance of soil. Instead of appearing as spots, soil concentrations tend to blend in with the overall color and texture of the carpet.

"Antron" also has exceptional durability (see stair edge test) and resiliency. This, together with its superior soil-hiding, keeps carpet of "Antron" looking fresh longer.



Abrasion test on simulated stair edges shows pile wear in level-loop carpets after equal exposure.

And maintenance costs with carpet of "Antron" are minimized by the need for fewer wet cleanings than with carpets of other fibers.

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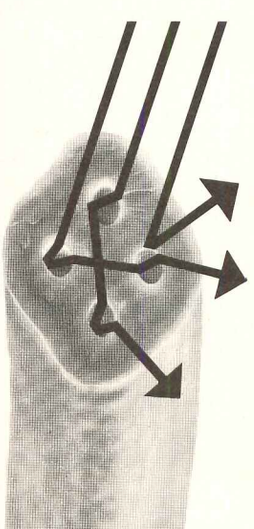

How "Antron" hides soil. Its filament structure is unique, as shown in this magnified (650 ×) cross-section. The four precisely-placed holes in each filament scatter light like the facets of a diamond to minimize the dulling effect of soil, while helping to retain color clarity and luster.

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

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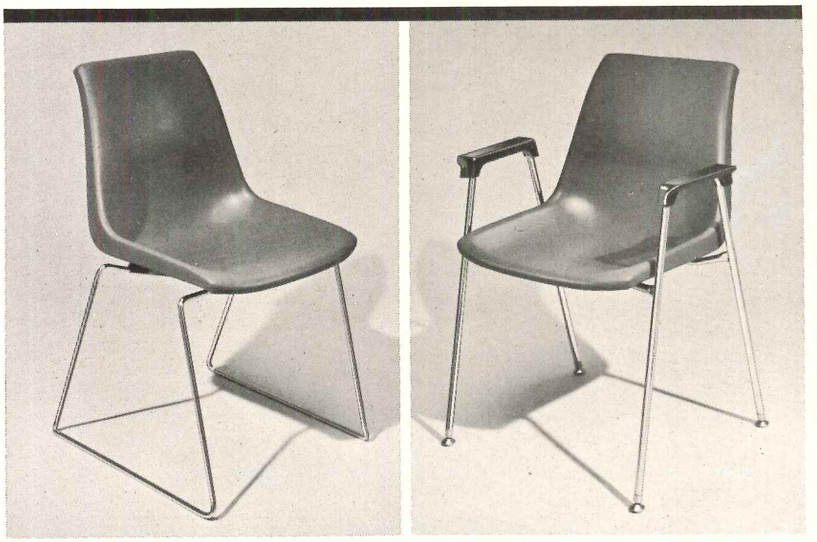

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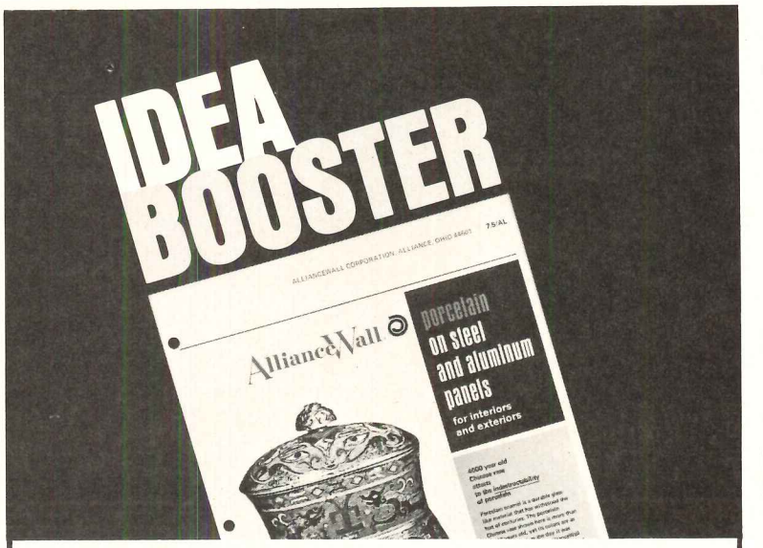

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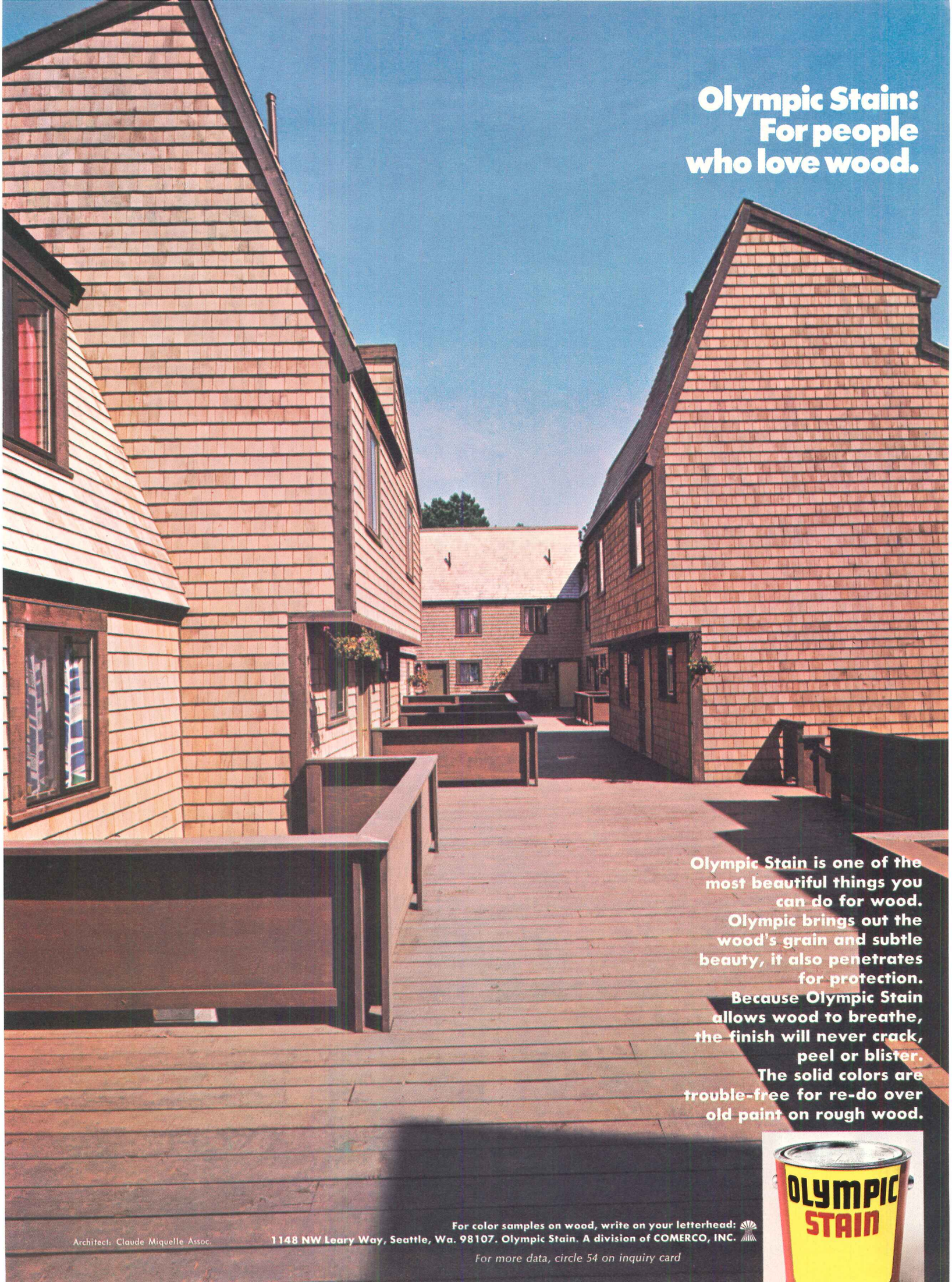
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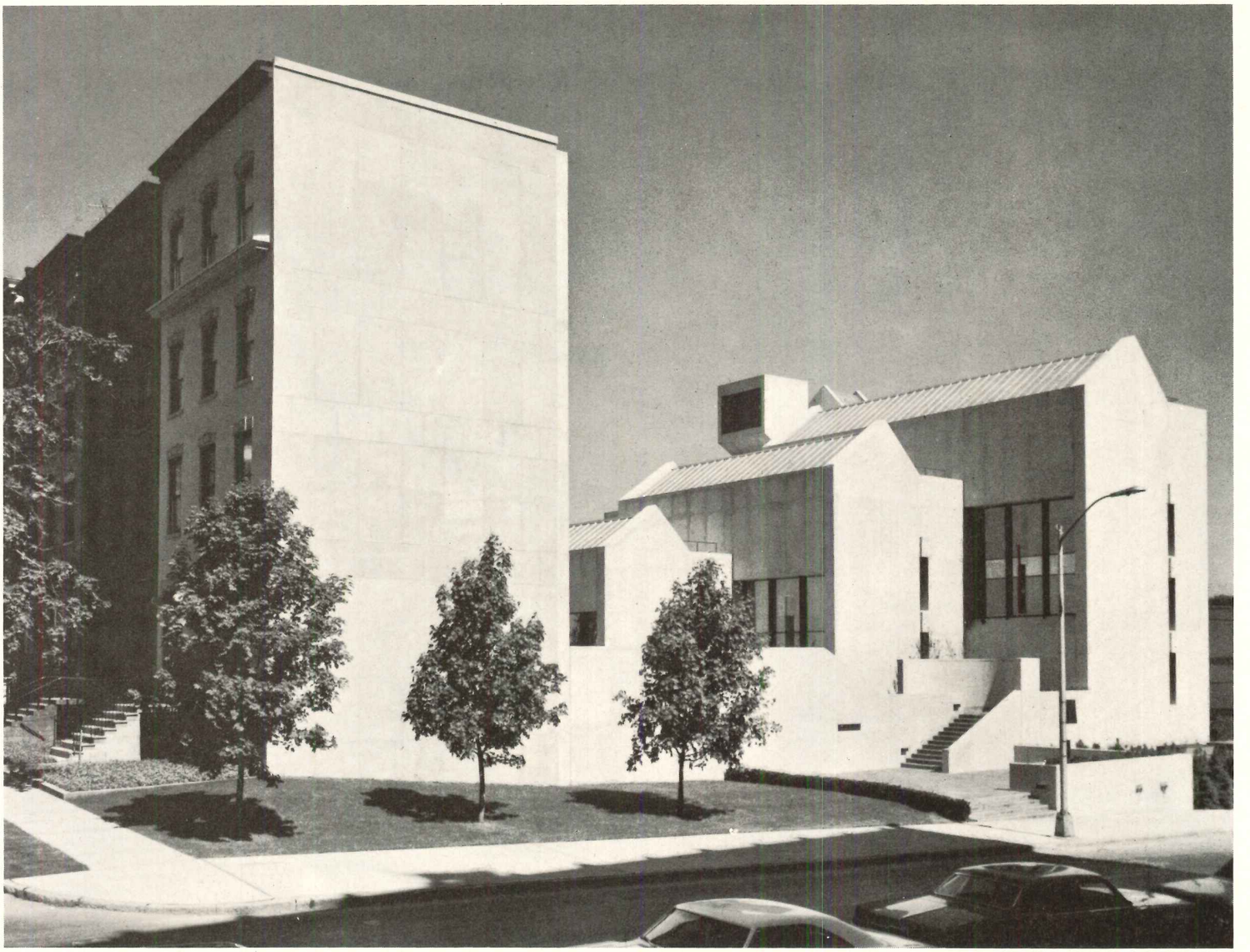

Headquarters, New York State Bar Association, Albany, N.Y. Architects: James Stewart Polshek and Associates, New York, N.Y. Photographer: George Cerna

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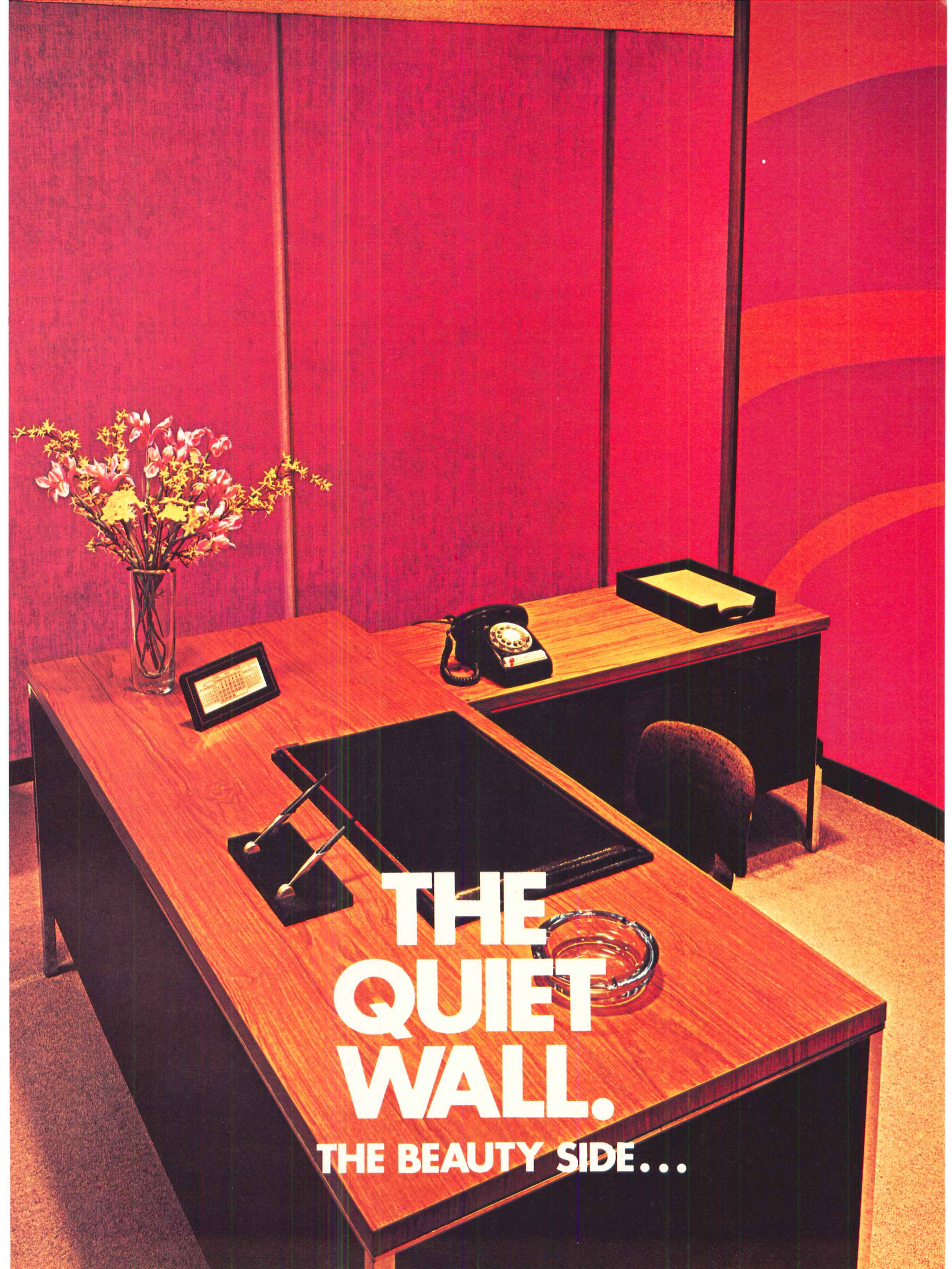
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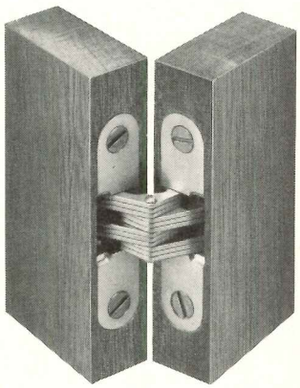

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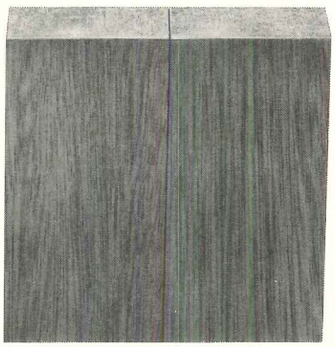

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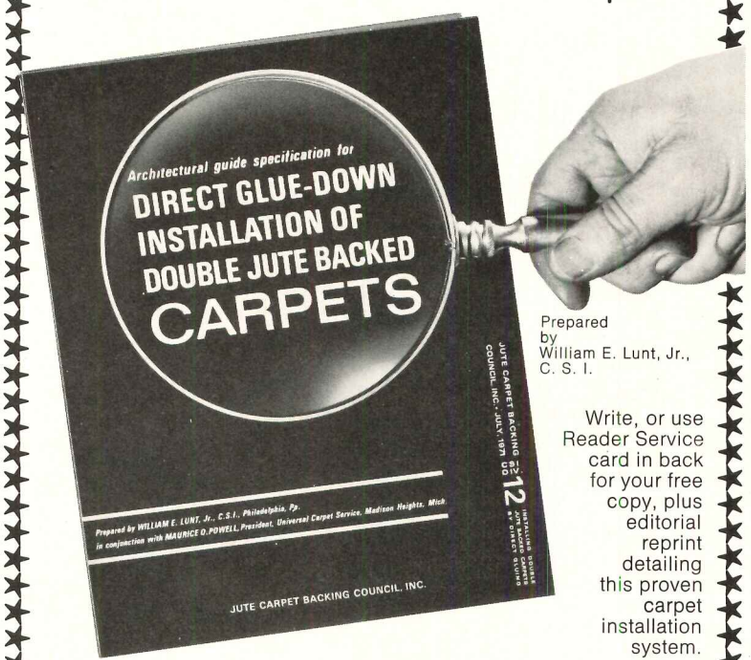

Prepared by William E. Lunt, Jr., C. S. I.

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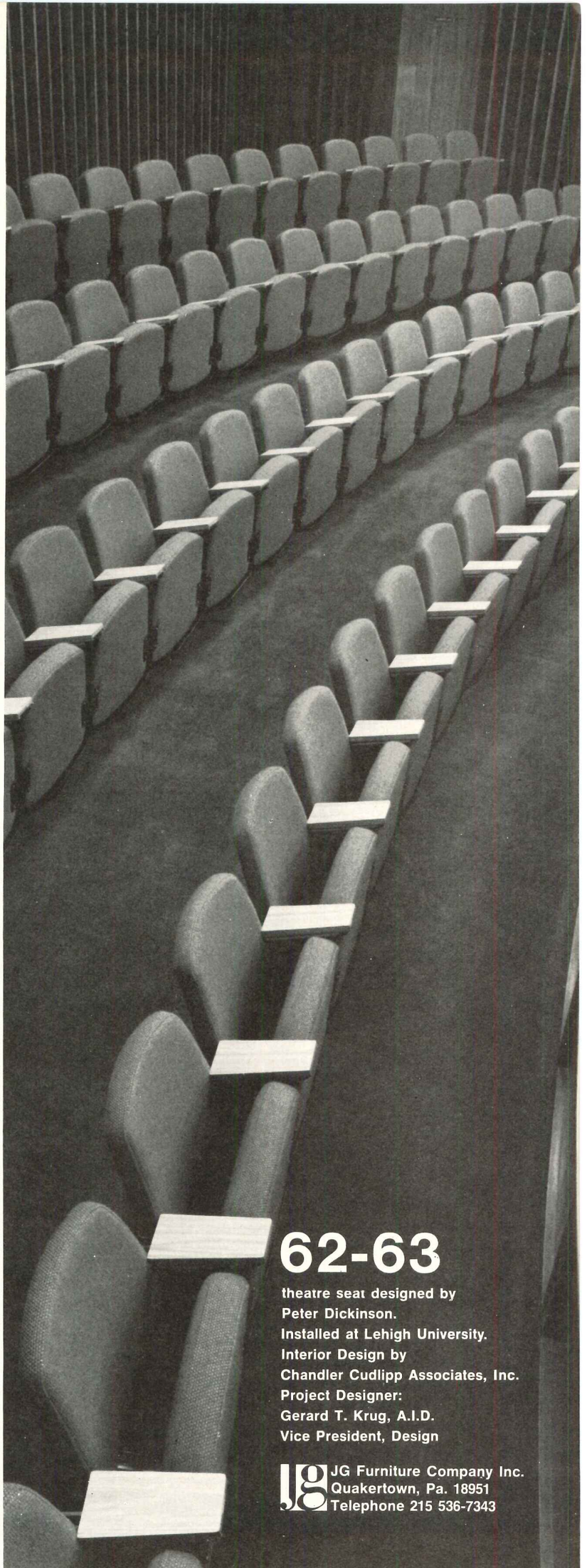

62-63

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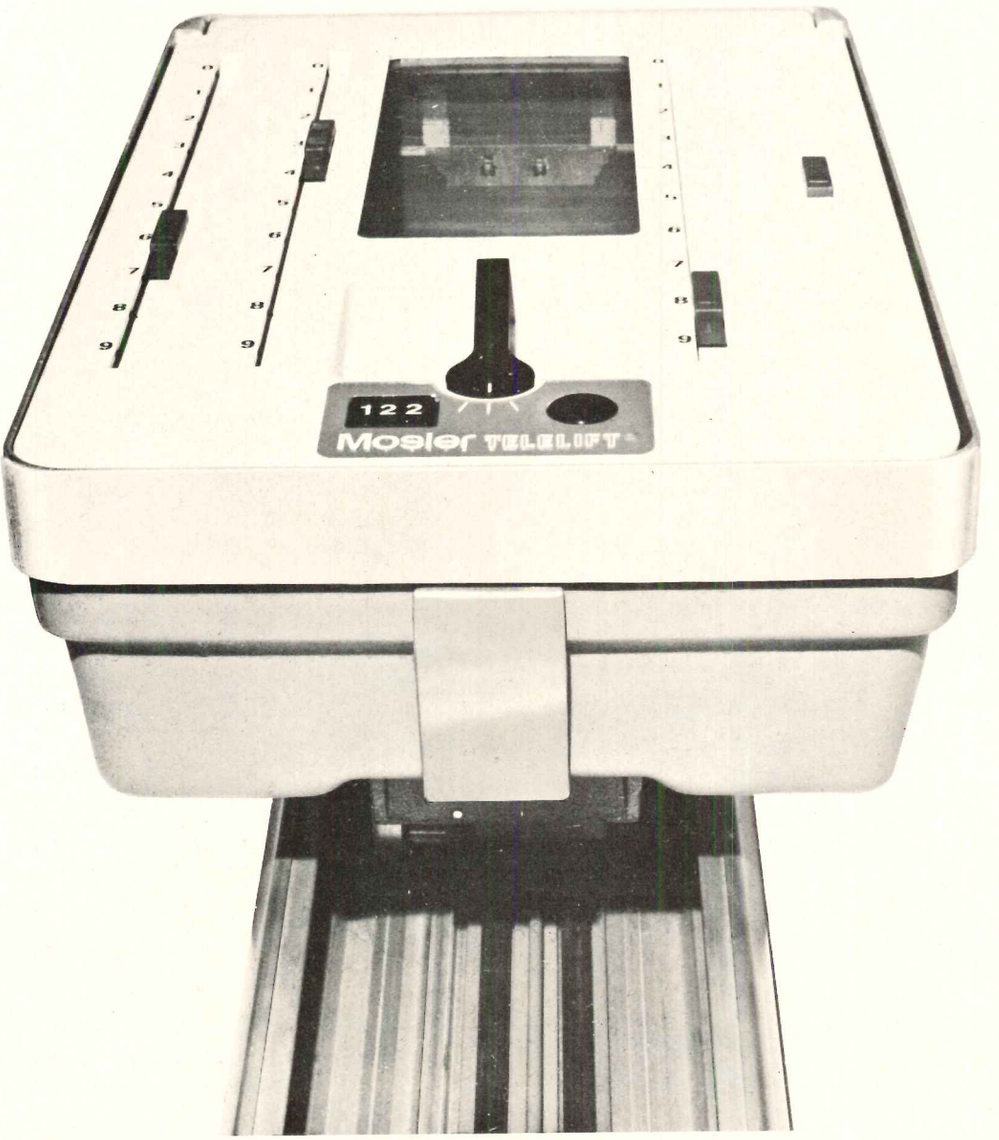

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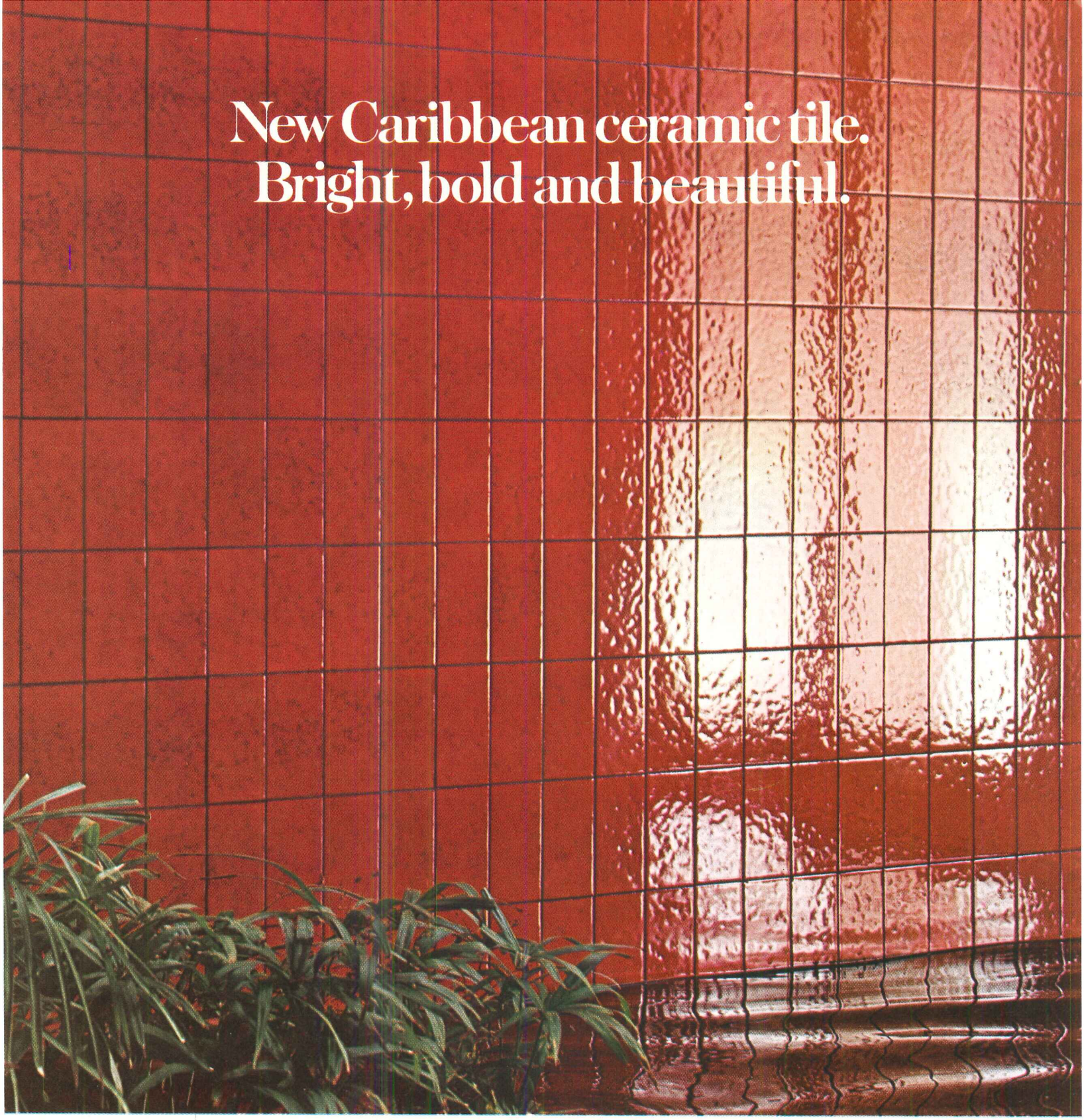

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АРХИТЕКТУРА СССР

by Mildred F. Schmertz

Monument to Karl Marx in Tashkent, courtesy Novosti Press Agency

Although we realize that not all our readers know the Cyrillic alphabet, we hope that the image of Karl Marx will be familiar and that by now it is evident that ARCHITECTURAL RECORD has been to the Soviet Union. For those of you who are still baffled, the headline translated is: ARCHITECTURE USSR. Senior editor Mildred Schmertz recently returned from a three-week tour as one of four U.S. architects who were guests of the Union of Architects of the USSR as part of a cultural exchange program initiated by the Soviet architects and responded to by the American Institute of Architects. The four visited Moscow, Leningrad, Tallinn, Kiev, Tbilisi, Tashkent and Samarkand. Miss Schmertz speaks only for herself in this report on Soviet architecture and planning and her opinions do not necessarily reflect the views of the three U.S. architects who accompanied her, nor is she writing as a spokesman for the AIA.—Walter F. Wagner

Soviet architects and planners have long been disadvantaged by government sanctions against travel and association with foreigners. This imposed isolation has adversely affected their work—as they are the first to realize. Now there is a new cultural climate in the USSR. Architects and planners from all the Soviet Republics travel to the United States to meet their fellow professionals here.

Last year, for an example, four Soviet architects—two from Moscow, one from Estonia, and one from the Ukraine—came to the United States for a three-week tour as guests of the American Institute of Architects. They visited New York, Boston, Chicago, St. Louis, San Francisco, Houston and Washington, D.C.

Last October four U.S. architects—S. Scott Ferebee Jr., from Charlotte, North Carolina, then president-elect and now president of the American Institute of Architects, Frank L. Hope, Jr. from San Diego, California, John M. McGinty from Houston, Texas and myself—went as guests to the Soviet Union. We visited Moscow, Leningrad, Tallinn, Kiev, Tbilisi, Tashkent and Samarkand. This cultural exchange program was conceived at the highest levels of the Soviet government and implemented by the Union of Architects of the USSR, the Soviet professional organization which corresponds to our AIA.

The four of us had a remarkable, if exhausting experience. Of most value to me was the opportunity, still denied the ordinary foreign traveler in the USSR, of actually associating with Russian, Estonian, Ukrainian and Uzbekistan people—all architects and planners to be sure, but in many ways typical Soviet middle-class citizens.

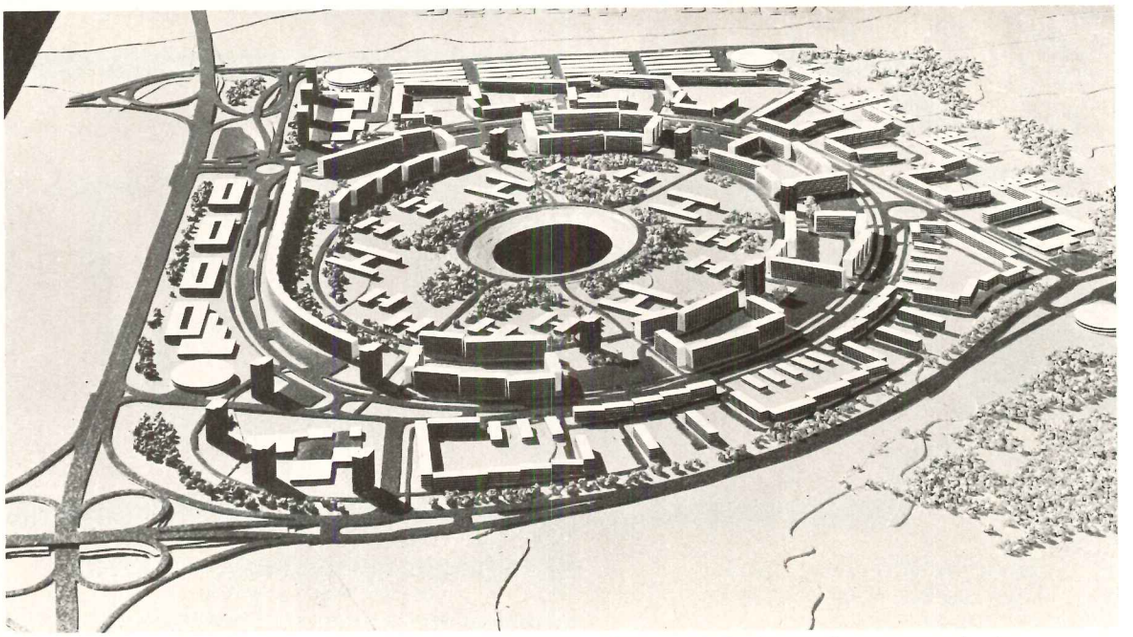
They could not have been kinder to us. It was clear that they were as excited and curious about us as we were about them. They were determined to show us everything—not only the work of which they were justifiably proud—such as the Moscow city plan, the Palace of Culture in Kiev, the gardens and tea house in the housing development in Tbilisi, the magnificent restoration work in Leningrad and Suzdal—but the work which they regret, and much in between.

We visited Soviet homes, architectural clubs, city and regional planning boards, housing bureaus, and the Soviet's leading architectural school—the Moscow Architectural Institute. We were conducted through housing developments, a collective fishery in Estonia and two open air museums, one in Estonia and the other in Georgia where ancient vernacular buildings are being reconstructed.

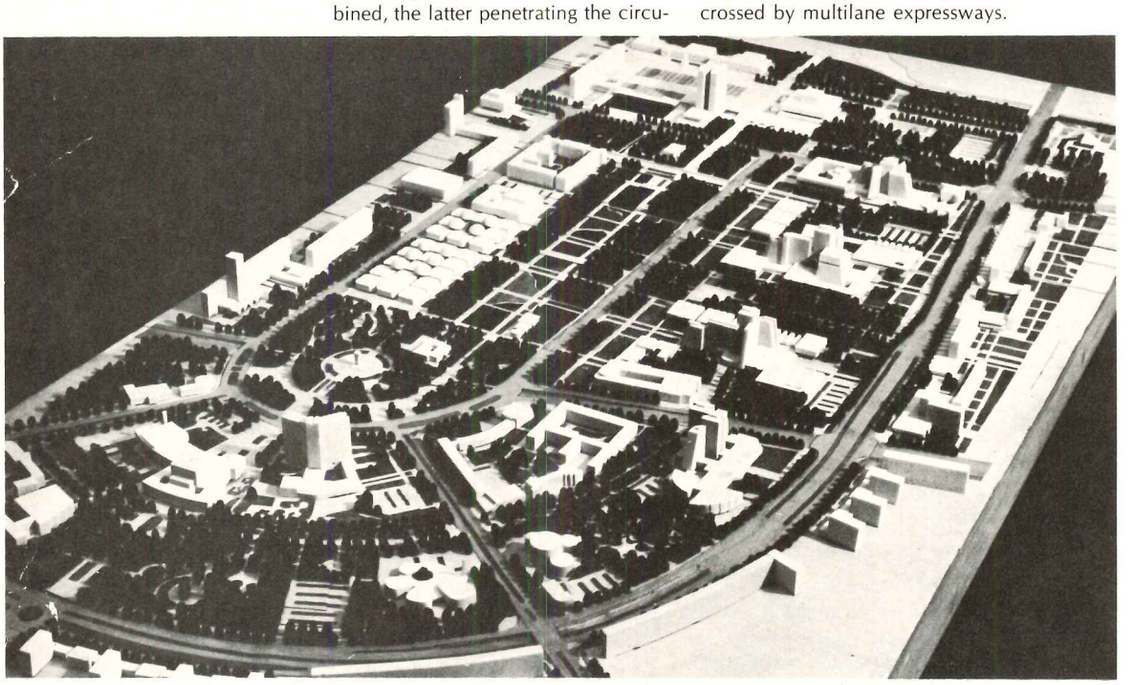
On our first day in Tbilisi, the Georgian architects, assuming correctly that at this late stage of the trip we might be a bit tired from intensive indoctrination, whisked us off to the mountains for a day of rest. On this great day, we visited remote and beautiful 17th century stone churches of an architectural style which I, at least, had never seen before (page 101). We shared lunch with about twenty Georgian architects in a courtyard garden under a trellis covered with fall leaves.

Evenings were an unending round of dinners, ballet, opera, the Moscow Circus and later parties. And we ate our share of za-

Soviet urban design keeps the best and the worst of the



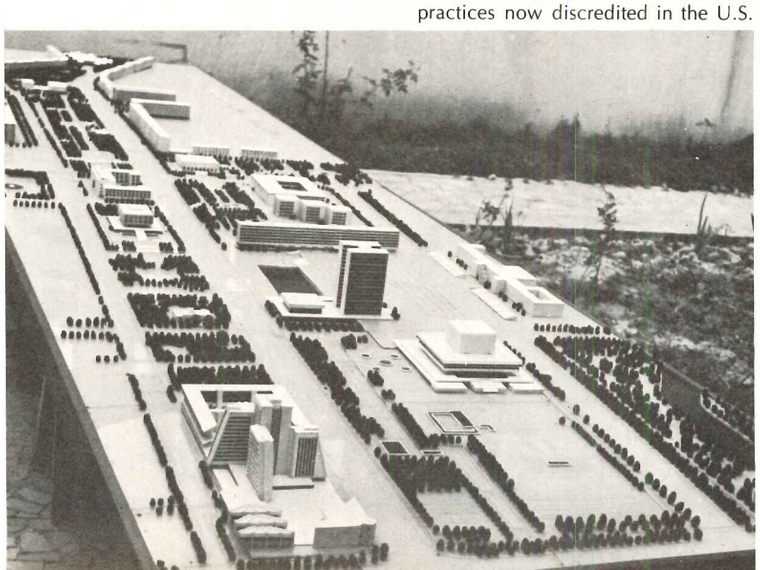
At their best, Soviet master planners can produce such promising schemes as "Väike Öismäe" (above), a new urban housing area for 35,000 people designed by Mart Port and Malle Meelak, to be constructed near Tallinn, Estonia. Although it may look somewhat overscaled and trapped within too rigid a geometry—ponder the vast round, hard-edged lake at the hub—nonetheless it is a bold conception. High- and low-rise are combined, the latter penetrating the circular park. Here the open space has been aggregated and has a potential for successful recreational use. High-speed traffic has been relegated to the perimeter. The plan is a great improvement over the typical Soviet housing site plan in which endless straight rows of 12-story apartment buildings appear to march off like dead souls to eternity, reducing the violated land to shapeless, unlandscaped strips now and again crisscrossed by multilane expressways.



Tashkent in the Republic of Uzbekistan was severely damaged by an earthquake in 1966, giving its planners the opportunity to start almost from scratch. The current master plan for the heart of the city (above and at right) was developed in the office of the chief architect of Tashkent, and accommodates planned growth up to 1990. Civic structures now complete include the Lenin Museum, the Tashkent Palace of the Arts and other civic and office buildings (pages 94-95). The plans' obvious faults include the placement of housing units on the perimeter of the city, isolating them from civic buildings and places of work, the overscaled and rigidly formal parks and plazas, and the excessively broad and straight avenues. The plan is at odds with the still vital Uzbekistan village life style which survives in the neighborhoods that withstood the earthquake. On the plus side, an underground metro is being constructed throughout the city.

Beaux Arts mannerisms alive

At their worst, Soviet planners repeat mistakes being made a little less often now on our side of the Iron Curtain. In Tbilisi (above) planners propose to further destroy the fabric of the town by adding additional lanes to a street which borders a tree-lined river-edge promenade. The new expressway will form a V with another route and create an isolated and marooned little recreational island. The parklike promenade will be destroyed. New Yorkers and San Franciscans fight to keep highways out of their parks and occasionally win. Soviet citizens appear not to give their planners this kind of trouble. This is unfortunate because so far there seems to be no effective way of preventing repetition of planning practices now discredited in the U.S.



kusky, pelmeny, pirozhky and bliny, not to speak of black Volga caviar, borscht, chicken Kiev, shashlik, Uzbekistan yoghurt and melons. And we drank. Russians, Estonians, Ukrainians, Uzbekistans and Georgians—and particularly the Georgians—are distinguished drinkers. So were we. There was the Georgian who urged me to have a little more wine with my fish. "He should float in your stomach," said Tengis, "as he did in his natural habitat."

The trip had its challenges. There were the various Soviet customs which outsiders find quaint. Quaintest of all to us were the accommodations on night trains. The Soviets routinely sell individual bunks in tiny four-person compartments to strangers of both sexes. On the night train from Leningrad to Tallinn, the Russians didn't require us to sleep with strangers but thoughtfully arranged for us all to be together. In the morning on the train platform, wearing the clothes I had slept in, I was handed a bunch of roses by the leader of the welcoming delegation. This most generous courtesy, by the way, occurred without fail upon arrival at every city.

And then there was Aeroflot. Except for the night train, we went everywhere on the Soviet Union's only airline. Their planes are designed to double as military planes and the cabins are not well pressurized or soundproofed. Worse, Aeroflot does not weigh the passengers' carry-on luggage, and the passengers—mainly peasants—stuff the overhead racks and the aisles with their belongings as if they were on a country bus. So loaded, the planes seem to take forever to get up and away. They are also known to crash rather more often than planes of other airlines (there were two major air crashes in the Soviet Union while we were there). Some of our group, as a regular practice, simply arranged to pass out immediately after boarding. If the worst happened, they would have been the last to know.

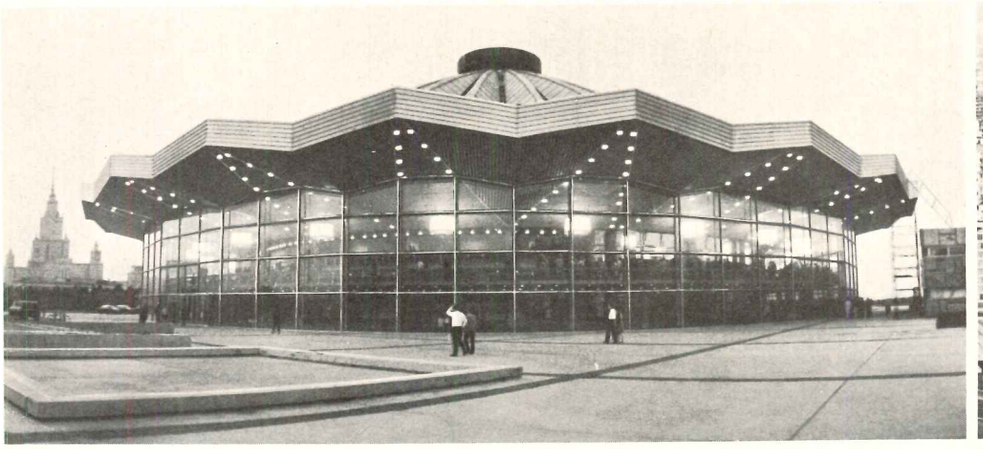
The trip also challenged our tact, for much that we saw we did not like. The Soviet architects and planners welcomed our criticism, however, and were quite aware themselves of the deficiencies and shortcomings which we pointed out. It is my belief that architects in the USSR are not sufficiently involved in the design and improvement of industrialized housing, although they certainly wish to be and may become more so. Except for major civic buildings and restoration projects which show the hand and concern of talented architects, most construction looks as though it just happens, particularly the housing. The vast apartment building developments look as if some force, out of control, keeps erecting the endless rows of apartment blocks without regard for anything. Even the most recently built apartment buildings have the look of having been designed long ago, the details tentatively worked out but never improved. Failures appear to be subsequently uncorrected. As an example, for years the Soviets have been using a factory-produced panel covered with small tiles. Apparently some of the tiles get knocked off in transit, others fall off as the panel is hoisted, and once it is in place more come loose because of freezing and thawing. No architect or anyone else seems to be in the position to get the tiles eliminated from the fabrication process.

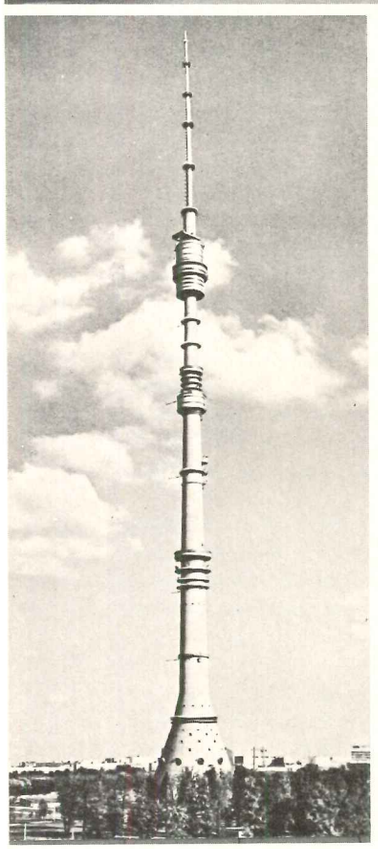
The important civic buildings which call for a measure of architectural expression and skill are few and far between, and the superb restoration work is done by specialists, so the question is inevitable—what does the architect do in the USSR? Well he works for the government, that is clear, and is a bureaucrat. And that government, through his efforts and also in spite of them, is building an unbelievably ugly country.

In setting priorities, the Soviet rulers put the construction of public buildings, housing and restoration well down on their list. At the top is the further development of their industrial base and defense spending. The Soviet citizen is deprived year after year of essential consumer goods including housing. Many still live one family to a room in small apartments where several families share common bath and kitchen facilities.

The government is now trying to give each family an individual housing unit in a 9-, 12-, or 16-story-high building. Although until recently most apartment units were smaller, the present norm is 160 square feet per person. The Soviets hope to raise this to 205 square feet in 20 years. As with

Soviet architects are proud of these civic and cultural buildings, ranking them

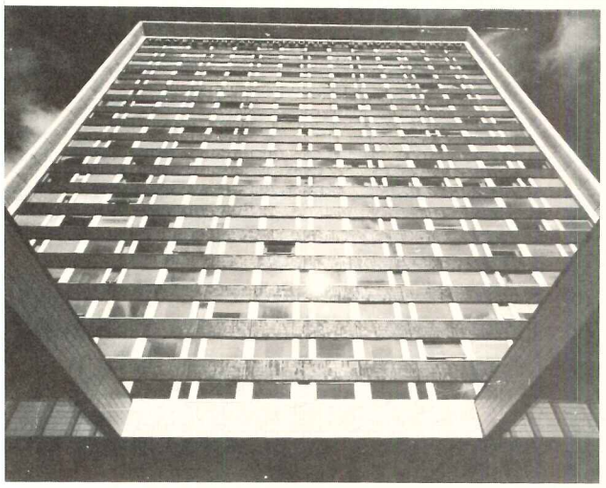


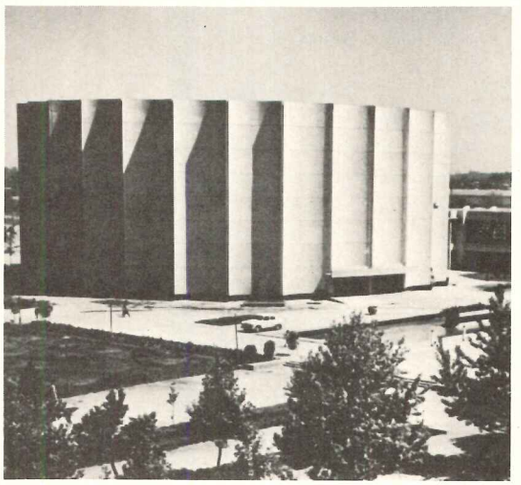


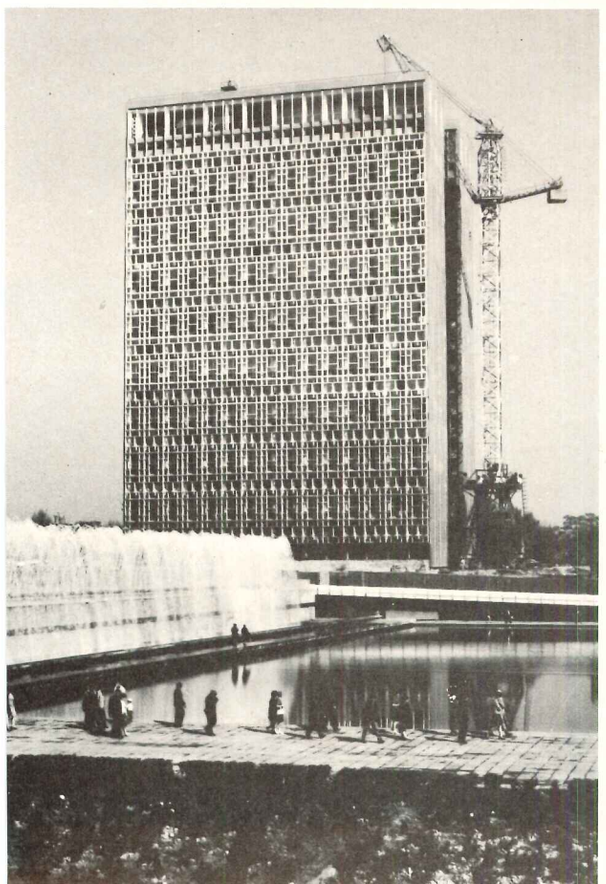
Considering qualities of form alone, not taking into account superior U.S. workmanship, materials and mechanical systems, the Soviet top design performance compares favorably with U.S. second rate work. Only the very best architects in the States design better big buildings than these. Among the architects whom, for better or worse, the Soviets attempt to emulate with varying degrees of success are Edward Durrell Stone, Minoru Yamasaki, early Gordon Bunshaft, Mies van der Rohe and Marcel Breuer. In this, they are not unlike the many second string designers in big U.S. offices who turn to these particular architects for inspiration. The Soviets seem unaware of the formal significance in the work of such architects as Louis Kahn, Philip Johnson, Kevin Roche, Edward L. Barnes and Walter Netsch. On the whole, they display a total lack of knowledge or understanding of the more advanced esthetic, social and technical ideas shared by leading architects and planners outside the Soviet Union. This can be attributed to the cultural and physical isolation imposed upon them by their government, which includes sanctions against travel abroad and association with foreigners.

Moscow architects admire the Moscow State Circus building (top left), the CMEA building (top right, this page), the Ostankino TV tower which they consider an engineering marvel (middle left) and the TV building which functions with the tower (middle top). The latter building appears to be almost venerated by those who planned our itinerary. Although our stay in Moscow was brief, our hosts allocated a half day for our study of this structure inside and out. This was three times as long as our eventual visit to Red Square and the Cathedrals of the Kremlin. Kiev's "Ukraina" Palace of Culture (above), designed by the noted woman architect Yevhenia Marinchenko, has a 4,000-seat concert hall with excellent sight lines and acoustics. Unlike most contemporary Soviet buildings it boasts a very high standard of materials and craftsmanship. The government office building in Tashkent (left) is located in the city's vast new urban center.

among their best work







Tbilisi's Palace of Culture designed by M. Berdzenitz, was completed in 1971 and is well sited on a broad plaza. The Hotel Viru in Tallinn (middle left) was built by a Finnish contractor with Finnish materials and fixtures. The work of Sepman, Port, Tamm, Asi and Randsepp, it was the best contemporary building we saw in the USSR in terms of design, detailing, materials and workmanship. The Palace of the Arts (above photo courtesy of Novosti Press Agency) the government office tower (left) and the Lenin Museum (bottom) are part of Tashkent's new urban center.

salaries, the Soviets have ways of getting around these minimums for people in an upper status category. Scientists, doctors, actors, architects and artists are considered to be creative people and as such require additional room in which to think. For this they are permitted to receive an additional 80 square feet. The average, however, is far below the new norm of 160 square feet. For example, our interpreter, an architect with 4 members in his family is entitled to 720 square feet. He is living, however, in an apartment with 300 square feet, an average of 75 feet per person, less than one-half the current norm. Efforts to reach the new minimum standard are progressing slowly.

Each time we asked why Russian housing construction was so shoddy, the Soviet architects reminded us of the great housing shortage and the need to build perhaps too quickly to meet the yearly quotas set by the government. They did not add that this shortage is as much the result of years of past neglect of the problem as it is the natural consequence of population increase, migration to the cities and the destruction of housing in the Second World War.

Besides having a relatively low priority, the type of construction with which architects are typically involved is affected by bureaucratic incompetence, and the unavailability of building materials, products, systems and mechanical and electrical equipment. Because there is no economic competition, there are no incentives to invent better products and systems or improve old ones. The architect within the Soviet bureaucracy is not in the position to select or reject products. He must work with the little which the society produces.

As an architectural journalist frequently accused of helping to create and perpetuate "architect heroes," instead of properly ignoring what should be allowed to become a dying breed, I naturally hoped to meet some great "form-givers" in the Soviet Union. Some of my readers will be happy to hear that in the USSR they don't exist. Form-giving costs money, whether it be for houses, office towers, schools or civic buildings, and this is money the Soviet Union does not choose to spend. In addition, the repression, isola-

tion and poverty of Soviet life in general makes the USSR an unlikely spawning ground for master architects of the kind which have flourished in the U.S. Such men require the very opposite—a society which offers freedom, the opportunity to travel and some wealth—to thrive.

Not only is contemporary architecture as art dead in the Soviet Union, but all the arts appear to be embalmed. True enough the ballet is great because the dancers are superb, but the choreography, however skillfully recreated, remains locked in the 19th century. Parallels could be drawn in the other arts. Art in the USSR is not creative, apparently because today's art is fundamentally anarchic and a nation which cannot tolerate even minor dissent is not likely to put up with any vanguard art movements.

Perhaps this accounts in part for the Soviet expenditure of vast sums on the restoration and recreation of their magnificent artistic heritage. The USSR leaders may think that by reviving the past they fill the need of the masses for art and can therefore afford to continue to repress contemporary, and to them dangerous, artistic strivings. There are other reasons for the emphasis on restoration. It is possible that the Soviet leaders take great pride in their heritage and identify with the autocrats they replace. It is likely, too, that the Soviets wish to encourage tourism in their country to obtain foreign currency. Knowing that the world's genuine art lovers willingly undergo every hardship and discomfort to visit marvels from the Tsarist era and before, they may reason that if these are maintained and some comfortable hotels added, even ordinary fun-loving tourists may find their way to the Soviet Union. In the suburbs of America, Kizhi, Nizhni-Novgorod, Pskov and Pereyaslavl may become household words.

For whatever combination of reasons, restoration was going on as fast as possible in every city we visited. The Soviet architects responsible told us that only a shortage of materials and skilled workmen slows it down.

Every city we visited in the Soviet Union also has a master plan. The Soviet planner, supported by a government which tolerates no opposition, should be the envy of the doctrinaire U.S. planners of the fifties and early sixties, because Soviet citizens, rich or poor, never rise to protest his schemes. If he rams a six-lane highway down the center of town, or ruins a riverfront, or fills a vast swamp to create a housing site as is presently being done in Leningrad, no one appears to publicly question the rightness of his policies and actions.

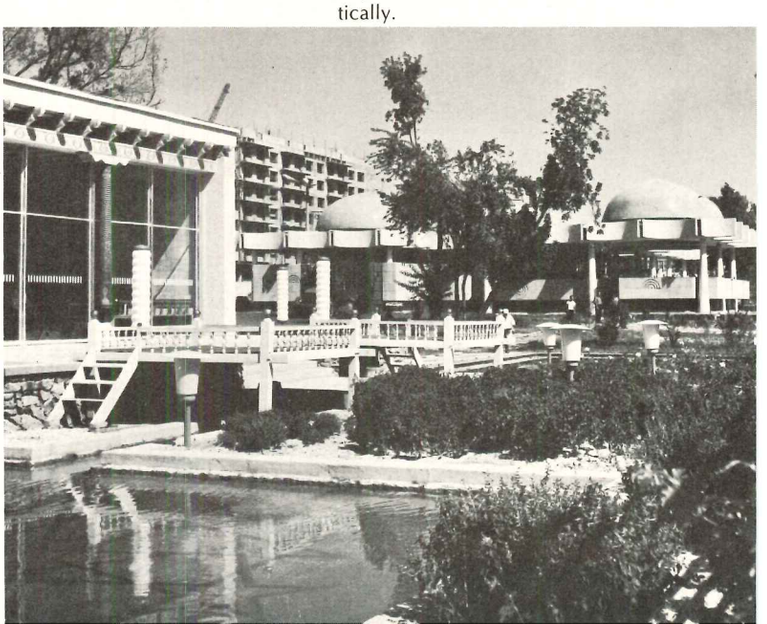
In Leningrad, about 9,900 acres of additional land for housing is being obtained by reclaiming swamp land and filling in the Gulf of Finland. About 1,480 acres of the new land will be taken from the Gulf, the rest from the swamp. The scheme includes a dam for flood control which will be 15.5 miles long. A highway will be constructed on top of the dam which will form part of a future transportation ring. This vast project, when complete, will open the seafront of the city creating over 18 miles of new shoreline for public use.

When we asked the Leningrad planners if they had considered the ecological effects of this vast swamp reclamation, they did not seem to comprehend the question. It may have been, as too often appeared to be the case, that our translator did not comprehend the question. In communicating with all the Soviet architects and planners we met throughout the trip, with the help of the translator assigned to us and other translators assigned to the various bureaus we visited, it seemed to me, judging from the answers we received, that our requests for factual information were getting through and being responded to, but our questions pertaining to relative values were not.

After much pressing of the ecology question on our part, the Leningrad planners finally replied that of course they were taking care of the balance of nature. Madame Iraida Shishkina, vice-president of the Union of Soviet Architects, was present at the meeting in the Leningrad planning bureau, and wouldn't let it go at that. "By creating new land for housing from the swamp, we save agricultural areas which is more important," said she. It was impossible not to suspect that the Russian equivalent of the word "ecology" is seldom heard in Soviet planning circles. Perhaps only democracies struggle with the agonizing alternatives posed by our

Some claim that Soviet mass housing

All that New York's Co-op City has in common with Soviet housing is that it is almost as bleak to look at. Co-op City is not as densely populated per acre as the typical USSR housing development in Kiev (above), the buildings are taller, and provide much larger apartments than the present Soviet allotment of 160 square feet per person. In the USSR, newly-built apartment units for a family of four contain 640 square feet. This allowance is below the U.S. minimum for public housing. There is an important difference, furthermore, between the U.S. system which provides people with options as to how they live—Co-op City, in-town apartment buildings, townhouses, garden apartments, or single-family houses—and the Soviet policy which forces people to live in high-density housing or live nowhere. Unlike Co-op City, Soviet housing is for the most part factory-built and assembled on the site. With few exceptions it is badly constructed, shoddy and destined for a short life, but Soviet architects are searching for ways to improve it, both esthetically and practically.

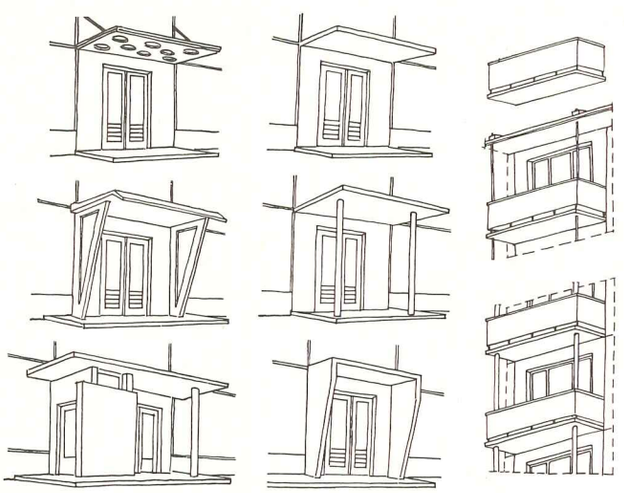


is really no worse than Co-op City and they may have a point, but—

Novosti Press Agency

Immense cranes hoisting panels for housing are to be seen from one end of the Soviet Union to the other as in Tashkent (above). Although we traveled great distances (over 5,530 air miles) to visit five Soviet republics, each conspicuously different with its own geography, climate and regional and ethnic characteristics, much of the new construction which we saw looked alike. Tashkent was an exception. Here the Uzbekistan architects have designed some buildings that are appropriate to their warm climate and also evoke in certain superficial ways the traditional art and life style of their people (right). And within a vast Tashkent housing development there is a beautiful garden and tea house (left).

The entrance, window and balcony details (right) are from a current Soviet manual of housing standards, and represent a well-meaning attempt to bring a little variety to individual apartment buildings. The actual execution of these modest, undemanding little designs is atrocious. The entrance porches are uneven and rough. Nothing is plumb or in line. The overhangs sag, the balconies tilt, the doors and windows don't fit their frames, and the frames themselves crack away from the surrounding plaster. Weatherproofing and caulking is slapped on and left that way and pipes and switch gear are exposed in the entry ways. Although craft skills are declining in the U.S., our workmen are consummate artists in comparison to their brothers in the Soviet Union. It is difficult to see how this handicap can be overcome, but it must be.



M. Schmertz

growing awareness of the impact of necessary technological growth on the balance of our vital environment.

If planning appears simplistic in the Soviet Union, it is because government planners can get away with it being so. The system is in their favor. All land in the USSR without exception is owned by the government. All cooperatives and similar organizations rent land from the government at a very low cost, but never own it. This gives the government control over the location of industry, housing, new cities and the expansion of present cities. Growth limits have been established for all major cities and the land which surrounds them has been conserved for agriculture. (A relatively small proportion of the vast area of the Soviet Union consists of tillable soil. Much of it is frozen tundra). To conserve farmland, among other reasons, all new housing in the larger cities must be in tall apartment blocks.

The growth of cities is controlled through the authorization and establishment of new industry. Cities which have reached their assigned growth are given no new industries which cannot be classified as essential support for the city itself. This total control of land use makes it easy to develop and implement city and regional master plans.

At the metropolitan and regional scale the system works well. Planners can surround Soviet cities with greenbelts, locate heavily polluting industries far from the urban centers, bypass cities with ring roads.

Moscow, for example, has a master plan which appears to be quite sound in its over-all concepts. Formally adopted by the 24th Communist Party Congress last July, it will limit the city's population growth to 8 million, its area to its present size of 2.3 million acres, and preserve the ancient city at its core. Surrounding the core will be seven self-sufficient communities of 1-million people each. Every one of these districts will have, in addition to housing, its own recreational and cultural center, shops, hotels and restaurants and subway and highway links to the major downtown cultural institutions. All industries which could pollute will be relocated elsewhere, and the existing greenbelt of parks and wooded areas will be extended into the city by means of a finger system separating the various districts.

Such total control of land use also makes it possible for Leningrad to keep its magnificent 18th century city intact. No tall buildings are allowed to be built within the boundaries of what was once St. Petersburg.

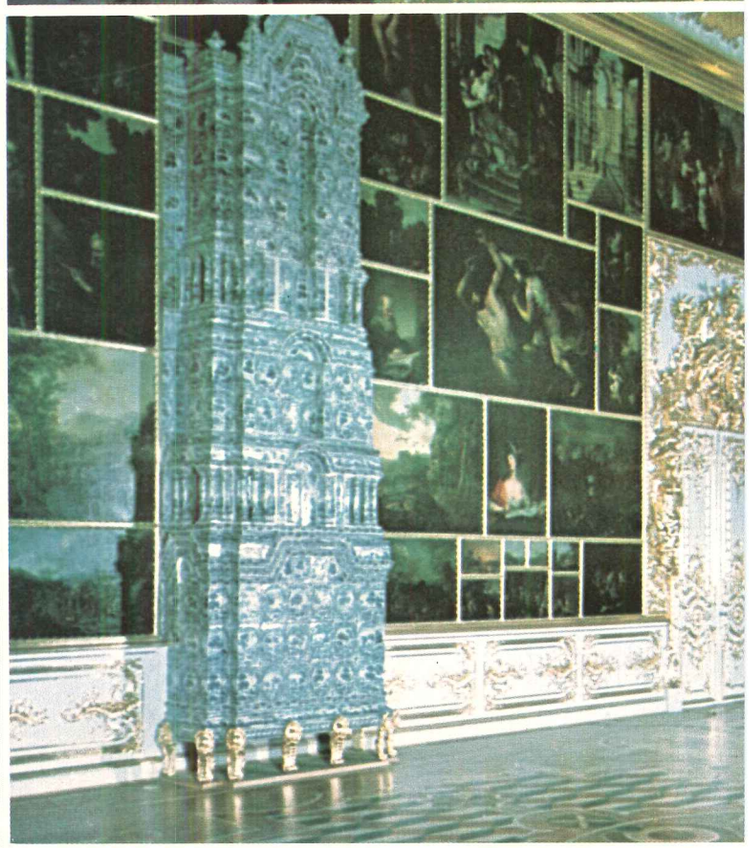
Government ownership of land has the additional advantage of facilitating the development of new towns. Fifteen to twenty of these are begun each year. Located for the most part in the Ural Mountains, in northern areas and in Siberia (areas which are currently not urbanized) their sites are chosen in terms of the availability of food and raw materials for processing by industry.

Soviet planners have the power to control the growth of automobile use, but unfortunately choose not to do so. The planners of Moscow are projecting 40 cars per 1000 people by 1980 and 150 by the year 2000. All the cities we visited are being planned for many more automobiles and the major new streets are wide multilane divided boulevards. At present, the Soviet Union is not yet blighted by the automobile. In the Moscow region there are 10 cars per 1000 people, which contrasts rather dramatically with the present U.S. ratio of 430 cars per 1000 persons.

Where Soviet planning fails most seriously is at the local or community scale, in the design of neighborhood parks, plazas and the open spaces within housing developments. This is really not the fault of the architects and planners but of the Soviet economic system. For public urban open spaces to really work, they need shops and restaurants and terrace cafes and fountains and pools. These amenities seem to occur only in vital consumer-oriented economies. Attractive landscaping costs money. At this level of design Soviet architects and the people they plan for (not with) are defeated by the fact that their government economic priorities are elsewhere.

These men and women labor under far more severe handicaps than do their counterparts in the United States. To sum up what I have said so far, this is chiefly because of conflicting government priorities, bureaucratic inefficiency (not unique!), poverty

In Leningrad, Russians spend as much



as 150 million rubles per year restoring the art and architecture of their past

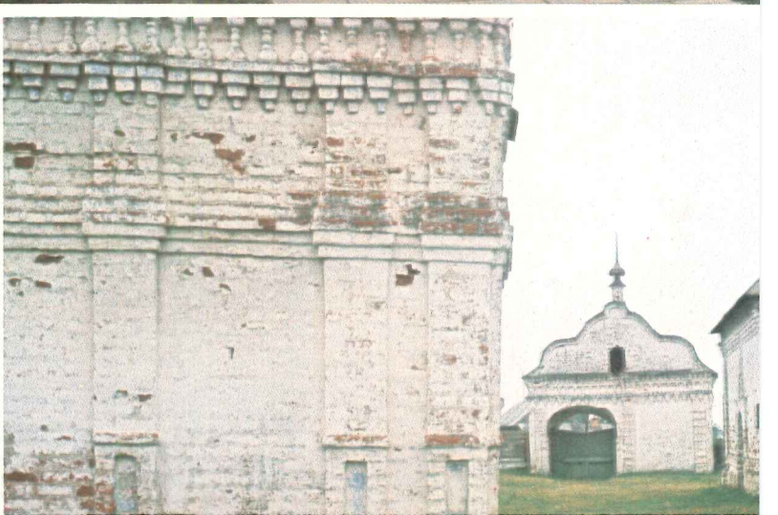
Photos of Catherine Palace interiors courtesy Novosti Press Agency, exteriors by M. Schmertz

It is a paradox that since 1945 Leningrad has spent as much as one-half of what it spends per year for housing, in restoring churches and monasteries to their former beauty while at the same time repressing religion; and recreating the palaces of the aristocrats whom the Bolsheviks murdered or drove from the country. The last Tsar and Tsarina and all their children were

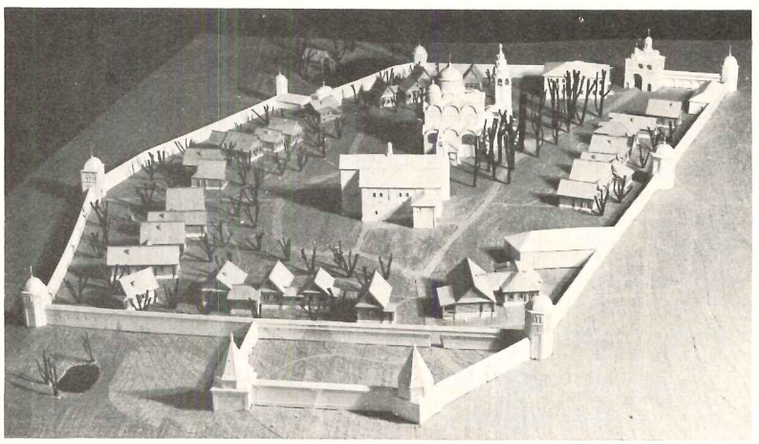
shot, bayoneted and thrown into an old mineshaft, but the 18th century rococo palace of that unfortunate Tsar's brilliant forebear Catherine II, at Pushkin, has been recreated with unsurpassed skill after having been almost completely destroyed in World War II. It is a final paradox that the Soviet Union which is producing what are surely the world's worst craftsmen, is also the homeland of the world's best. Shown are the Catherine Palace exterior (top left), the "Art Hall" and its parquet floor (above and top right) and the main stairway (right). The elegant Cameron Gallery (left) near the palace has also been sensitively restored as well as the gardens, pools, fountains, pavilions, loggias and fields and woodlands of this great estate.

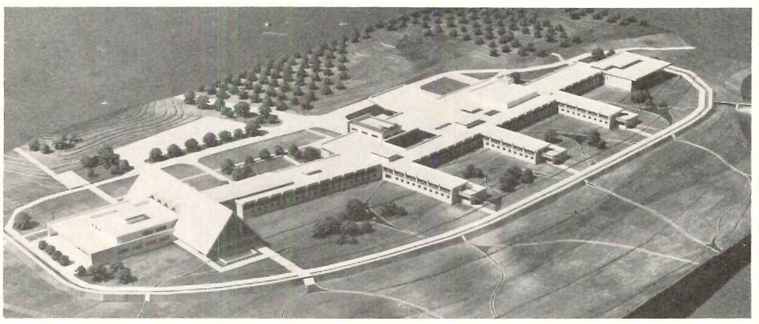
Soviet restoration includes entire towns such as Suzdal near Moscow, and

The architecture of Suzdal covers a span of seven centuries, the 12th to 19th, and is noted for its cathedral and archbishop palace (bottom left), the architectural ensemble at Kideksha (below and bottom middle), the fortified walls of the Spaso-Yevfimiev Monastery (right), the Convent of the Intercession (above), splendid 17th century wooden churches (see cover), and many other matchless buildings.

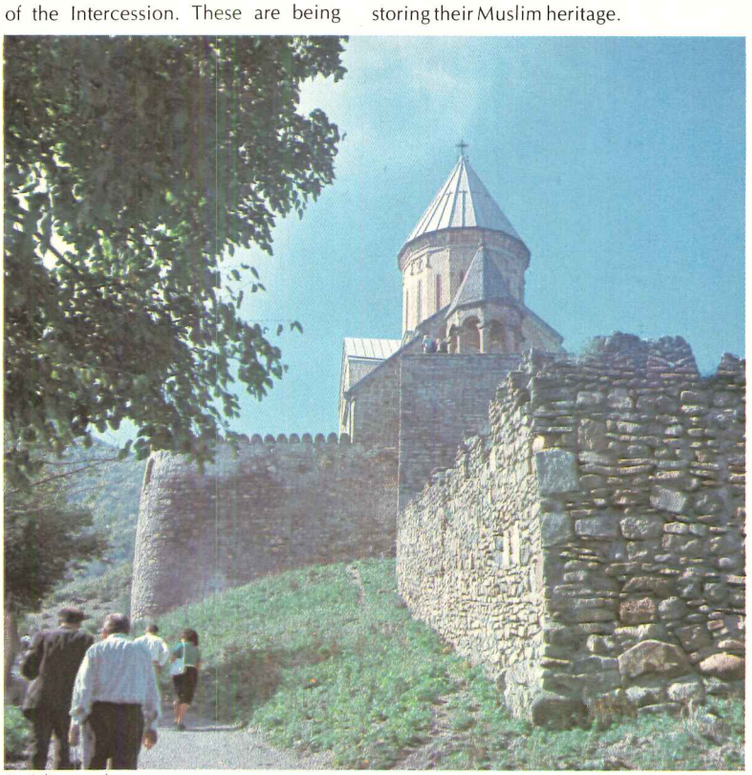


remote Georgian churches as well





Suzdal is one of a group of ancient cities in the Moscow region notable for its artistic treasures. The group forms what the Russians call the "Golden Ring" and includes the marvelous towns of Vladimir, Pereyaslavl-Zalesky, Rostov, Zagorsk and Yaroslavl. Under the direction of architect Mark A. Orlov, head of the Central Research Institute for Commercial and Welfare Buildings and Tourist Center Experimental Design, these towns will be restored and tourist facilities built. The model (top) shows wooden houses of the type which originally existed within the walls of the Convent of the Intercession. These are being rebuilt for tourists and will provide 120 beds. Major tourists complexes like the one for Suzdal (above) will be located outside of the old towns in an effort not to spoil them. The model shows a hotel for 440 beds, a restaurant, a cinema and concert hall of 500 seats each and a swimming pool. All the Soviet republics including Georgia are actively restoring their pasts. The 17th century Church at Ananuri (below) is one of many remarkable religious buildings being renewed in this republic. Tallinn is reconstructing its medieval churches and city walls and Tashkent and Samarkand are restoring their Muslim heritage.



M. Schmertz photos

(also not unique!), the low level of workmanship available to them, and the lack of good building materials, products and systems with which to build. Underlying these reasons is the quality of Soviet society itself. Architecture always expresses the nature of the society which creates it and much that we saw could only have been created by a totalitarian system. The architects and planners working within this system operate within a different scale of values than their counterparts in the United States. Many that we met appeared to believe that they were accomplishing a great deal, and without knowing all the obstacles they face, one can believe that on their own terms this is so.

It will be hard to forget the pride of Yevhenia Marinchenko the night she accompanied us to a performance of the ballet in the theater and concert hall which she designed for the city of Kiev. She wore her gold medal—the highest award for artistic achievement that can be earned in the Soviet Union—and she deserved it. It was clear that the Ukrainian Republic had decided that no expense was to be spared in the construction of their Palace of Culture, that it was to be perfect. U. S. architects have built so many performing arts centers in the past decade that an enormous expertise has developed in the realm of acoustics and theater mechanics, none of which was directly available to Miss Marinchenko and her team. (She did visit theaters outside the USSR, she told me, but they were all on her side of the Iron Curtain). Under these circumstances, the design of an elegant building which works well is an incomparably more difficult task in the USSR than it would be in the United States, thus Kiev's Palace of Culture is truly noteworthy. It would have been even better, however, and easier to design, had its architectural team been able to visit the United States, or if U.S. consultants had been invited to advise.

Now that the USSR has begun to permit selected architects to travel abroad, freely show their work to foreign visitors and seek architectural and planning advice from the other side of the Iron Curtain, architecture and planning in the Soviet Union can only improve.

I am indebted to Scott Ferebee for this description of the Soviet architects professional organization, the state-controlled bureaus for which he works, his income relative to other workers, and what he typically does with it.—M.S. The men and women we met were all members of the Union of Soviet Architects of the USSR. This is the professional organization of architects which has about 12,000 members, roughly one half of the architects in the Soviet Union. An architect must have achieved a certain status in terms of buildings worked on before being able to join the Union. Each major city has a local branch. There is no contest for the election of officers at either the national or the local level and those in power may keep it for many years.

Dues amount to 13 rubles a year, which on the world money market is about $4 dollars. The professional organization's principal source of income, however, are fees from the government-operated design organizations. Each pays 7 per cent of all its architectural fees to the Union. This amount appears to be adequate for the organization's needs. The Union maintains and operates architectural clubs in each major city and several country dachas for rest and recreation (below). The clubhouses, often former aristocratic mansions, and country houses, which are also fine old buildings, are provided by the government and no rent is paid by the architects who use them.

All architecture in the Soviet Union is state-controlled and operated. There is no private practice as we know it. The major cities have Institutes of Design for various types of construction. The bulk of the work is done by Institutes for Civil Architecture which design most of the housing, educational and commercial facilities. In very large cities, such as Moscow, there may be a number of these design offices. Some have as many as 1500 to 2000 employees. The Institute for Civil Architecture in Tallinn, capital of Estonia and a city of approximately 350,000 people has 700 employees.

Top architects, along with doctors, are paid 250 rubles a month by the government. The chief architect of Tbilisi, a town of 850,000, receives 300 rubles a month, while the head of the 700-man design firm in Estonia is paid 275 rubles a month. By comparison, a Moscow bus driver is paid 250 rubles a month, miners are paid 300 rubles a month and sea-going Estonian fishermen in a collective fishery we visited are paid 400 rubles a month. Unskilled labor, such as street cleaners receive 80 to 100 rubles a month.

These figures are misleading, however, as doctors are permitted to earn extra money through private practice on the side. Architects also may supplement their income by taking part in competitions, teaching, writing, producing films and by serving as consultants to design institutes in other cities.

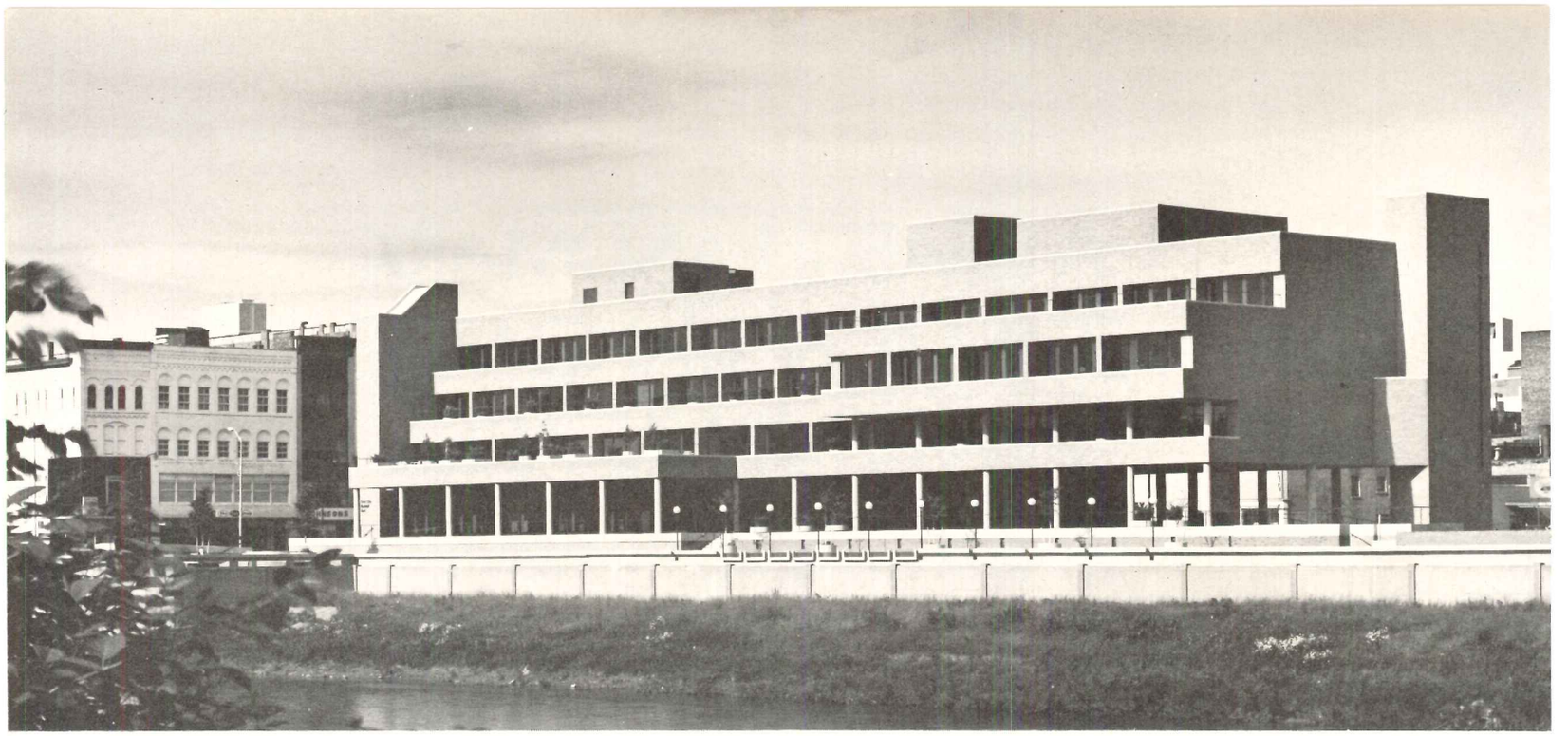
Our interpreter, Elgen Grigoriev, is a young man with a master's degree in architecture. He is Chief of the Department of Theory and Methodology in Computerized Design, an agency which he states is at a fairly high level in the central government. Because of his work in computer design, he has a scientific classification and is paid 320 rubles a month, a fairly high salary for a man of his age. Although most wives in the Soviet Union work, he and his wife have decided that she will not work until their two children are older.

Although his apartment is provided free, he pays 15 rubles a month for maintenance and utilities. Food costs him about 160 rubles a month, or one-half of his total income. He can buy a monthly card for 6 rubles which permits him to ride as often as he likes on the buses and metro of the city of Moscow. After food, housing, maintenance and transportation, he has approximately 150 rubles to cover other costs. From this he may purchase insurance, and must pay for all recreation, travel, clothing and consumer goods such as furniture, television, books and housewares. If he can accumulate enough money, about 5,000 rubles, he may buy an automobile.

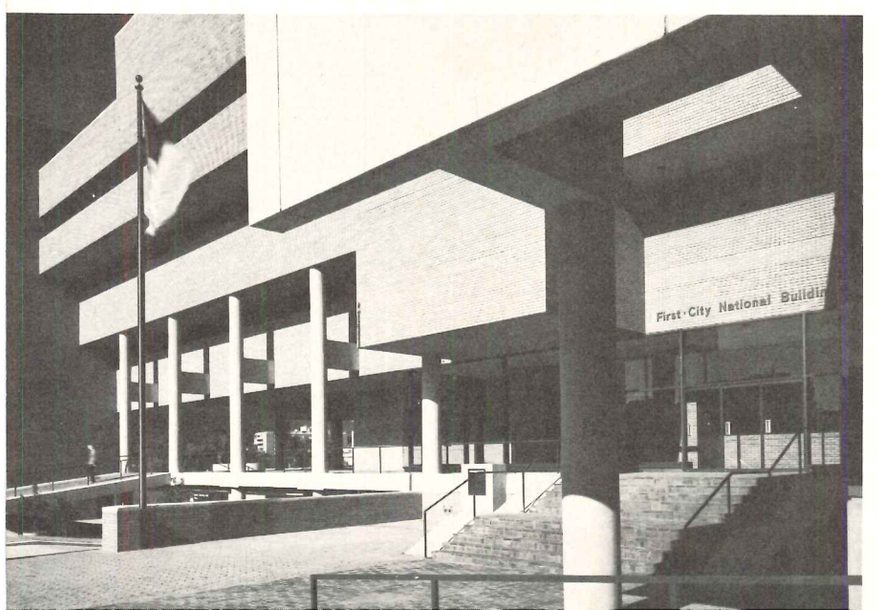
In the Soviet Union architects as a group, like other categories of workers, have their own exclusive resorts for rest and recreation. We were invited to the country dacha enjoyed by the architects of Leningrad and to beautiful Soukhanova (this page), the former country palace of a noble Muscovite, where the architects of Moscow relax from their labors.

A USABLE LANDMARK SETS HIGH STANDARDS IN A RENEWAL AREA

On a site of exceptional potential, in a renewal area of downtown Binghamton, New York, Ulrich Franzen has designed a building whose quality, scale and character set the tone for further development and make a major contribution to the life of the community.

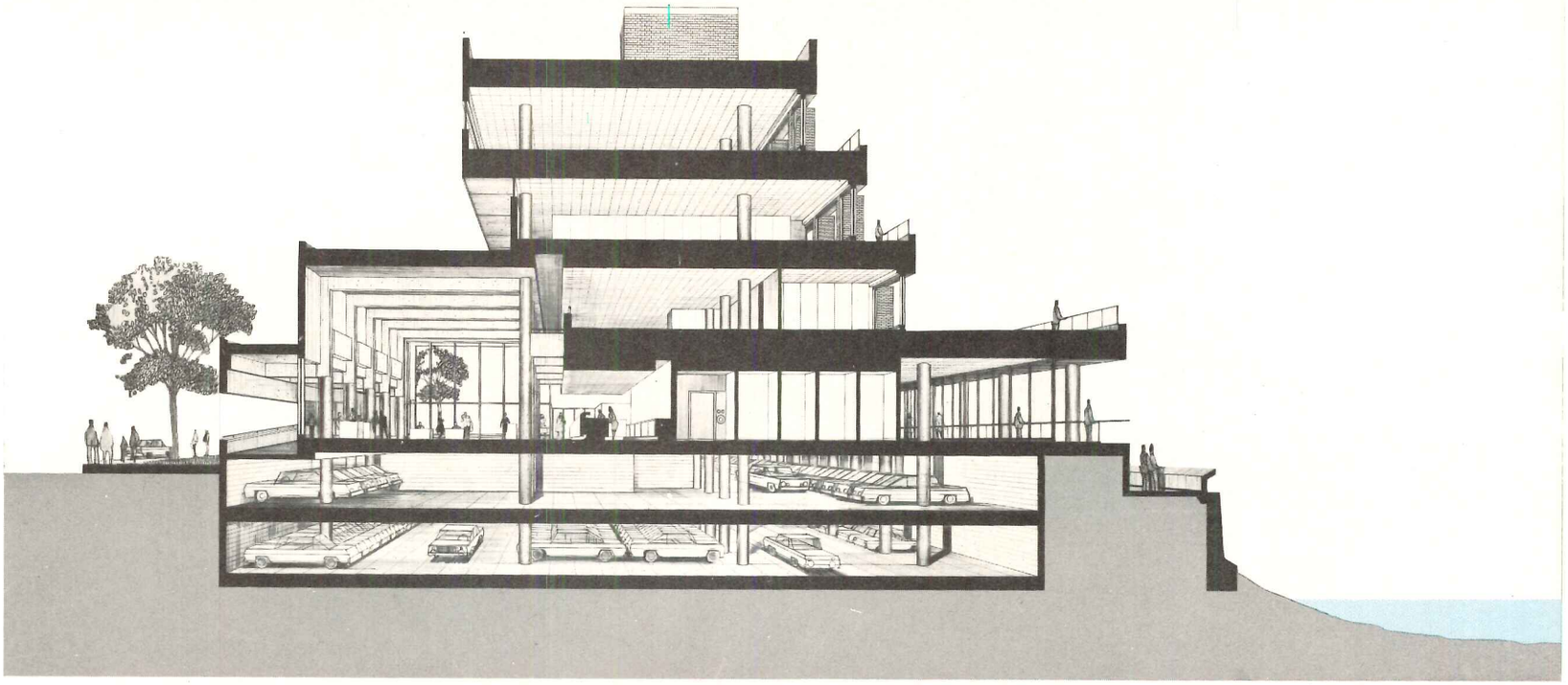


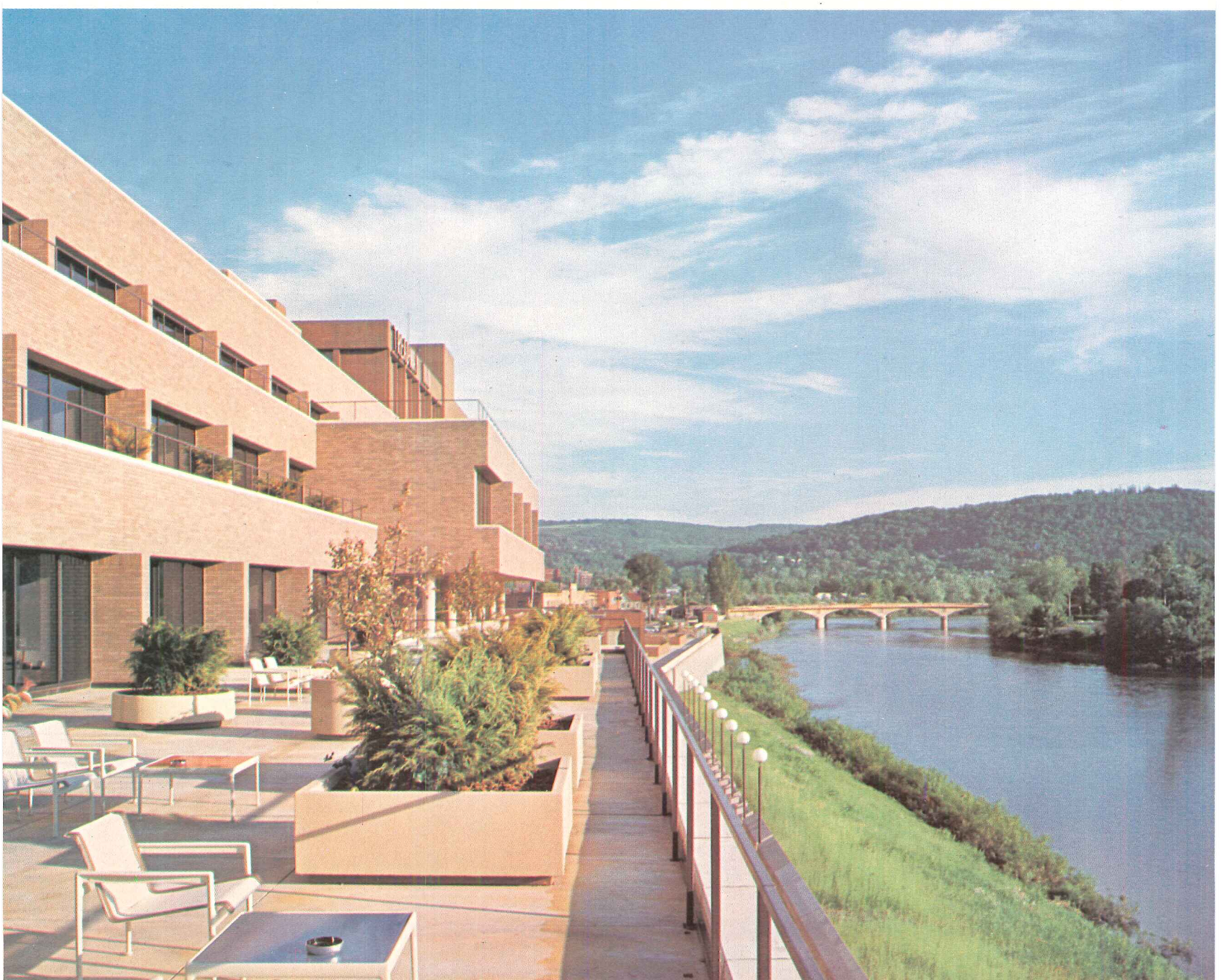
Ezra Stoller © ESTO photos

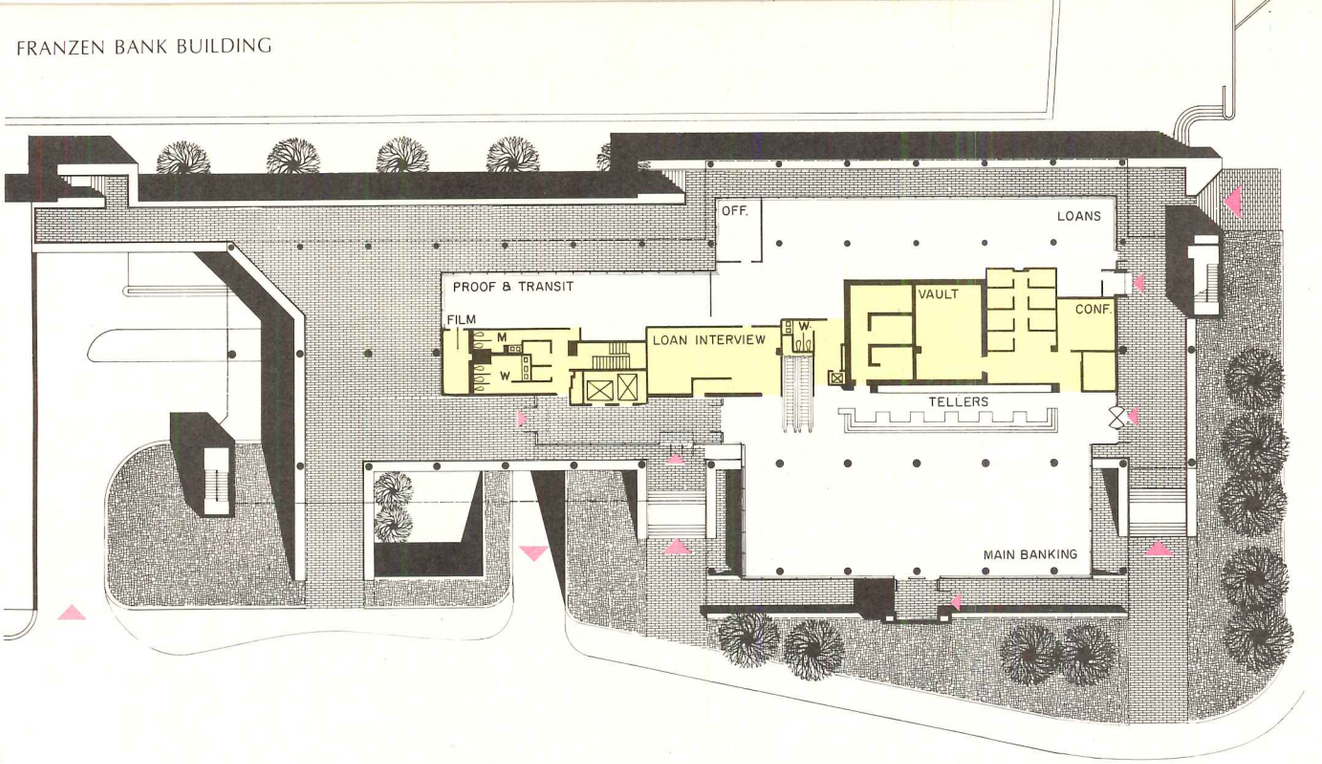


The strong horizontality of this new headquarters building for the First-City National Bank in Binghamton, New York, agrees with the scale and tone of the city, and relates pleasantly to the river along whose banks the building is disposed. That such a site with such a river frontage was available in the downtown business district made its attractions more compelling than its disadvantages, among which was a less-than-desired amount of foot traffic on the street side of the building. To overcome this problem, the building is designed as a welcoming environment, inside and out, for both customer and employee. The main banking room is raised half a floor above street level to make it a very "visible destination" for pedestrian and vehicular traffic. There are four entrances to the building, one of which is a ramp. The executive floor above the banking room opens onto a wide terrace, below which are a public terrace and a path along the river.

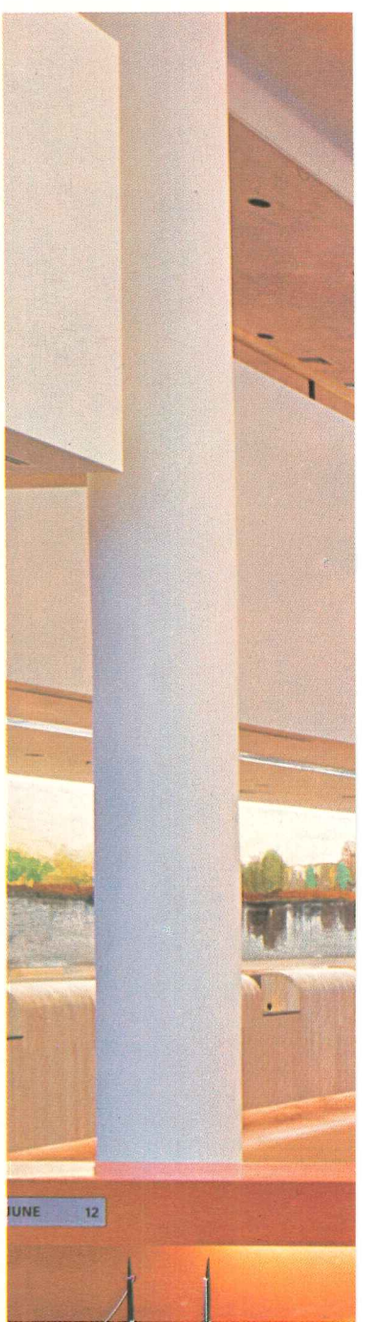
FIRST-CITY NATIONAL BANK BUILDING, Binghamton, New York. Architects: *Ulrich Franzen & Associates—Samuel Nylen, associate-in-charge;* engineers: *Aaron Garfinkel & Associates,* (structural); *Aaron Zicherman Associates,* (mechanical/electrical); *Joseph F. Ward & Associates,* (foundation); cost consultants: *John O. Meadows & Associates;* landscape, interior design and graphics: *Ulrich Franzen & Associates;* contractor: *HRH Construction Corporation.*







The combination of handsome buff-colored brick exterior, elegantly appointed interiors, and landscaped public terraces with connecting walks make First-City National's new building a significant and sensitively conceived addition to the city. The building organizes similar functions and similar structural requirements so that there are just two basic elements to the concept: the garage and terrace levels, and the office floors. By raising the main banking room above street level, basement parking and drive-in teller service become visible from the street, and traffic flow for pedestrians and vehicles is simplified. It also permits a shorter ramp distance from street to basement. Although there are a number of ways into the banking room, there are two principal entrances to the building, both on the street side, one by gently sloping ramp, the other by broad steps beside the banking room, with a fine view into this handsome high-ceilinged space, highlighted by an enormous tapestry by Helena Hernmarck. From the public lobby, elevators connect with the two upper floors, and with the parking garage below.

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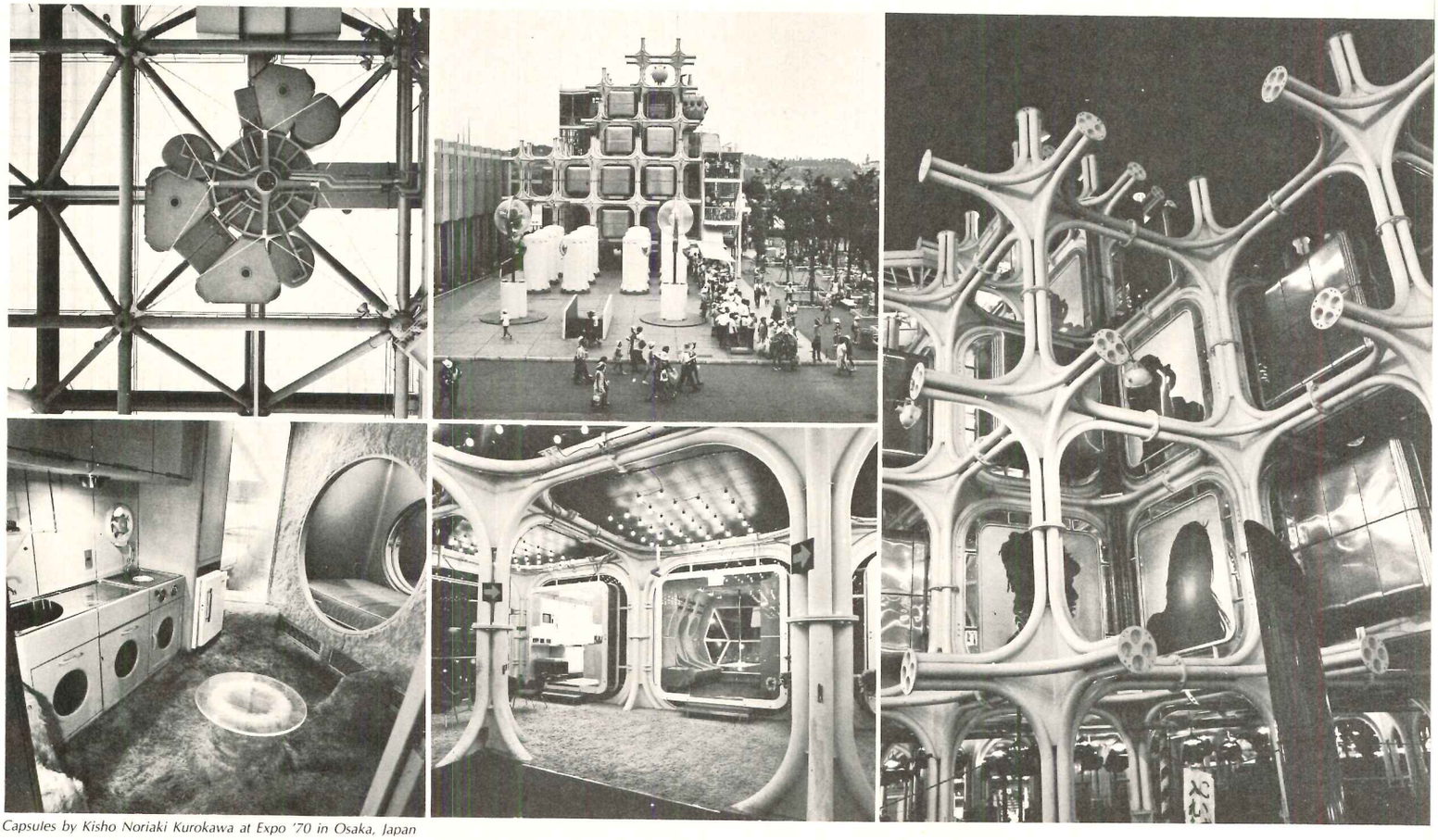
An important aspect of the design concept was the interplay of interior spaces, particularly in the banking area. Here the high ceiling of the banking room makes it possible for the executive area of the second floor to open to the banking floor below, making a visible connection between the two parts of the banking operation. Important loan officers' desks are located in an area near the elevators, where they are easily accessible to customers. The only other department used by the public, the trust department, is also located near the elevators, Other departments can be reached by employees without traversing the executive or trust areas. In these areas, the bands of windows which are so important a part of the building's horizontal appearance provide exceptional daylighting.

KUROKAWA AND HIS CAPSULES

by Paolo Riani



Capsules by Kisho Noriaki Kurokawa at Expo '70 in Osaka, Japan

It is difficult for me to write a critical appreciation of Kurokawa as it is always difficult to be objective about a friend, especially about an old one with whom I have spent some years playing with the same ideas. Anything I could say about Kurokawa will not concern the results he achieved, but rather the "becoming" of his work. In spite of the fact that our cultural backgrounds are so different and we haven't always reached the answers, our struggles and interests are very similar . . . or at least they were.

I remember Kurokawa in his small studio in Sendagaya, surrounded by a few crew-cut young architects who were working on plans. There were books all over the place and hanging from the ceiling in a basket were the Helix City models, looking like *origami*. Kurokawa, barefooted in the Japanese tradition, perched upon a pile of books, looking like a Samurai, was talking about metabolism and projects he had been working on for the last five years.

It was 1964. Kurokawa had just come out from under the sphere of Tange's influence and had begun to become a superstar of architecture. Since then his career has been sensational. His charm has made him an extremely popular personality—indeed a poll taken by the Japanese edition of *Playboy* found him the third most popular man in his country after Jukyo Mishima and the top Japanese baseball player. In August 1969, he covered the moon landing for 100,000,000 television viewers in Japan.

During the following years Kurokawa designed several buildings and joined many competitions. Although his entries were of high quality, they did not yet exceed the level of the work of the best Japanese architects of his generation.

One follows the stages of his development toward architectural maturity through his competitions for the Kyoto International Conference Hall (1963), through the buildings for Tel Aviv City Center (1963), the Children's Land (1964); the Hishino and Isogo new towns (1964), the Sagae City Hall (1966), the Ya-

Paolo Riani is a young Italian architect and planner, now working in the United States, who is a member of the teaching staff of Columbia University's School of Architecture and professor in the School of Architecture of the University of Florence. He has lived and worked in Japan, also lecturing at the urban engineering department of Tokyo University. In 1969, Riani published "Contemporary Japanese Architecture" *and* "Kenzo Tange" *and in 1971 was co-author with T. Valle of* "Angkor, principles of Khner Architecture."

mayata Hawaii Dreamland (1967), the Sakura City Plan (1967), and the Pavilions for Expo '70.

Today Kurokawa employs almost 100 people in his office, which is divided into three sections: architecture, town planning and social engineering (a concept he has developed for dealing with city problems).

Kurokawa continues to surprise us with the inventiveness of his latest work. His study of capsules—finally executed in the Ginza Building (opposite page and overleaf), and the "Moving Core" (page 114) acquire polemical value as well as contributing to the interpretation of urban design.

The theory underlying his latest work is summed up in his eight "Laws of the Future," which follow, in which he shows his confidence in technological solutions. This confidence might sound naive even remembering we are only judging a manifesto.

Metabolism, metamorphosis, spatial structure, capsule, joint. It would seem logical, indeed a necessarily organic sequence: the sum of the phenomena of assimilation and elimination that constitute nourishment and organic replacement, the alteration of these biological operations as they develop in time, the occupation of their space by structural parameters, well-defined in outline, the production of self-contained cells and organs, and their reciprocal connection through a particular kind of joint.

The various arguments which have been stated so forcibly by Kurokawa are presented casually in his two latest books (*Metabolism and Metamorphose,* and *Architecture of Metabolism: Kisho N. Kurokawa,* Nobel Shobo). This casualness in itself is not a fault because the root of all Kurokawa's work is of an experimental kind. He is still a young architect going through a period of extrordinary creativity. The meaning of his contributions will evolve out of his future work. It seems neither logical nor legitimate to expect a systematic discussion in two books containing only pictures and which are merely figurative representation of Kurokawa's thought. Kurokawa at work evokes the image of a volcano that, combining its energies with the magma of history, violently and by chance spews forth shapeless material, from macro structures to miniature joints.

The concerns expounded by Kurokawa are those of present Japanese architecture, which in their relationship to the historical and contemporary worlds could be grouped under three subdivisions: problems of method, form, and content.

As for method, it is all too obvious that his argument is derived from a reversed concept of time. If one thinks of the centuries that were necessary for the coming of age of the Japanese house and of the equal number of centuries it has maintained its stability, the present continuum of overcoming—which should not always be read as a renewal—that Kurokawa and other Japanese architects have proposed turns out to be largely ahistorical.

If we add to this concept of time the desecrating effect of technological civilization on that social fabric, where once almost all human manifestations operated between contemplation and exaltation, the result cannot be anything but a dissociated form; an end in itself. Attempts to renew form; translating too simply mature wood technology into concrete; referring superfically to the iconography of the past; are not valid in establishing that connecting link by which form is an expression of content and not a provocation of it.

Assuming that the content and values of architecture are ultimately traceable to man himself, his position here is compromised.

After thousands of years of intimate rapport with nature, treading the face of the earth, arranging light, shadow and stone according to metaphysical laws, employing natural products as material for his own activities, the man who once lived in spaces that integrated him with family, community, nature, and life is found today inside a box where instead of windows there are membranes between outside air and the air-conditioned interior. Sealed in a plastic shell, one human space is heaped upon another like the grains in an antibiotic capsule.

All this has been made sufficiently tragic by an over-optimistic Japanese technology which quite unlike utopian architecture permits a direct passage from the idea to the realization.

Moral—no one likes to make one. And this is no time to be a moralist. We, finding ourselves in the eye of the hurricane, in the middle of an exploding crisis, can only hope that—having helped produce the hurricane and the crisis—we will be able to draw from both enough elementary principles to create something closer to man. —*P.R.*

Kisho Noriaki Kurokawa's laws of the future

1. "Capsules" will conform to futuristic architecture. By going beyond humans and machines and air, a new order can be formed. As if making an order which is neither human nor machine by replacing human organs with artificial ones, capsules can go beyond man and equipment. Architecture will surely follow the road toward greater application of modern equipment. This equipment as a tool would not be equipment, but instead something within the life line and would exist as an entity.

2. "Capsules" will provide living quarters for a moving populace. The residential turnover in metroplitan America exceeds 20 per cent. In Japan, exceeding the 20 per cent line is not far off. Metropolitan strength is an index which shows the actual state of living, not by the night time populace but by the difference between night time and daytime populace and by the path traced during 24-hour activity. In the future, people will cease desiring immovables such as land and estates and find ways and opportunities to move freely. "Capsules" would provide a release from fixed structures and herald the coming of the movable structure era.

3. "Capsules" will point the way to a diverse society. Our goal is a society which gives the maximum in freedom and grandness offering a wide range of selection. System infrastructures must form the physical atmosphere of the metropolis. "Capsules" in the form of living units would express the individuality of individuals. "Capsules" would be the individual's challenge against the system, and the individualistic rebellion against conformity.

4. "Capsules" will lead the way toward establishment of a new family image entered on the individual. "Capsules" will destroy the living unit centered on the husband and wife alone, with the household relationship between parents and children re-appearing in the form of "docking" of the various individuals.

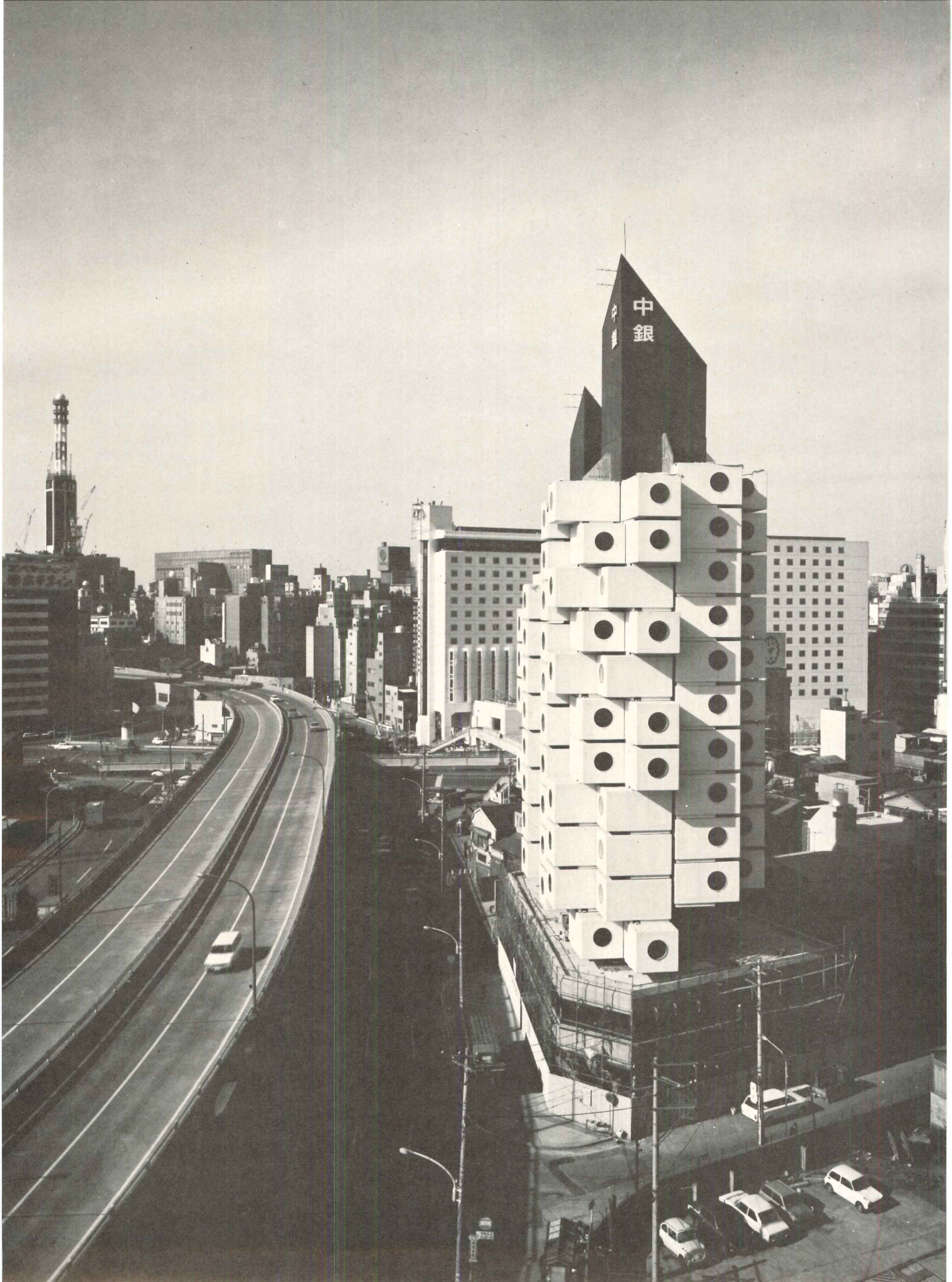
5. "Capsules" will provide a metropolis of home towns. If intercapsule "docking" were in the form of households, the state of "docking" between the capsules and common space in society would form the social "air". Religious atmosphere, authoritative symbols, and commercialism would crumble and community space would stem from psychological origins within the individual.

6. "Capsules" will become feedback link in a data-conscious society and in some cases a device which would block data. The present society would be transformed from an industrial society into a data oriented one. Production patterns now forming the nucleus of industry would become patterns of data production centered on knowledge, education, research, printing, advertising, leisure, etc. In this manner, living within a vast sea of data would occur, unless there were a feedback mechanism and data destruction mechanism for protecting individualism, as the runaway appearance of data would be a one-way street. The "capsule" would form space in which the individual could maintain his individuality in a data society.

7. "Capsules" will give a finalized form of existence to prefab and industrial architecture. Industrialization of architecture will become possible when architectural production processes have been isolated from the present architectural industry. Industries which would serve as forerunners would be those of the rail coach, aircraft, and motor vehicle. As the Model-T Ford was the forerunner for mass production, the "Capsule" would make possible a quality turnabout of the industrialization of architecture. As Ford demonstrates with mass Mustang production, mass capsule production would not be found in specifications and extensive mass production methods, but rather in selective mass production methods derived from combining parts. Mass production would not be something which demands specified formats. Instead an era of diversity in mass production would appear.

8. "Capsules" will bring an end to stereotyped ideals, and these will disintegrate. A new language will be understood, and the transformation to capsules complete. One word, one name would spread, change form, permeate, stimulate, forming a truly grand era. Architecture would be subdivided, incorporating capsules as functional units. Architecture would then be defined as numbers of capsules in the state of "docking."

Nakagin Capsule Tower Building, Ginza district, Tokyo, Japan.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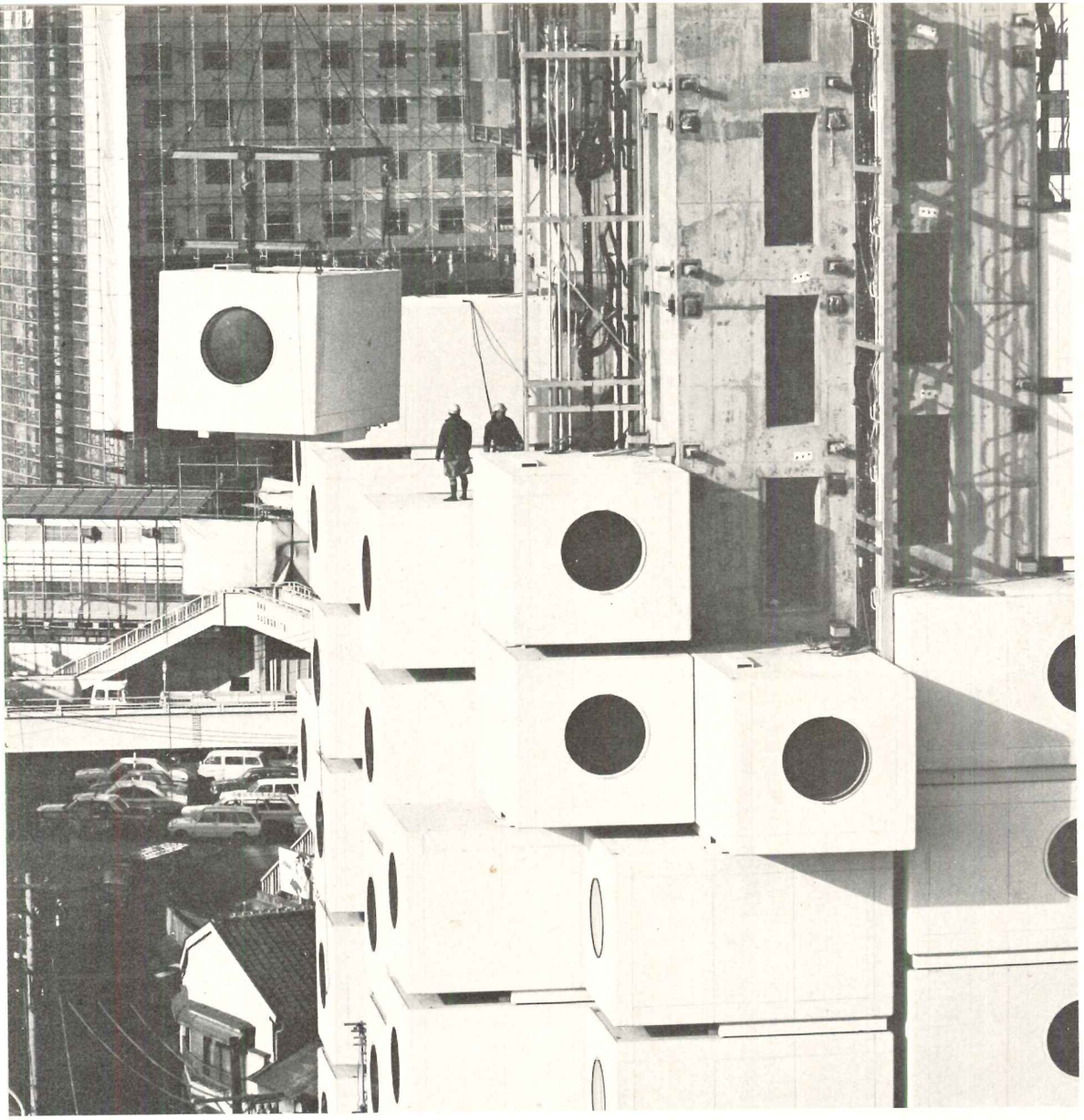

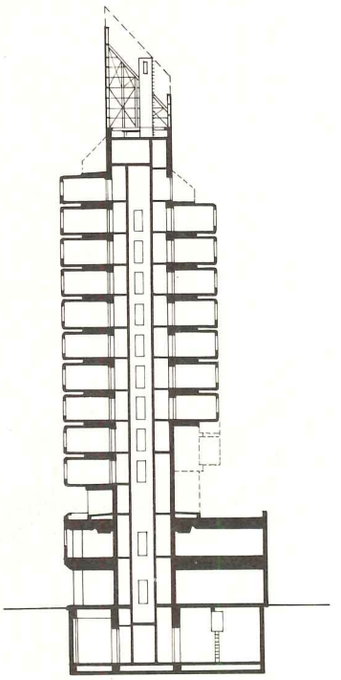

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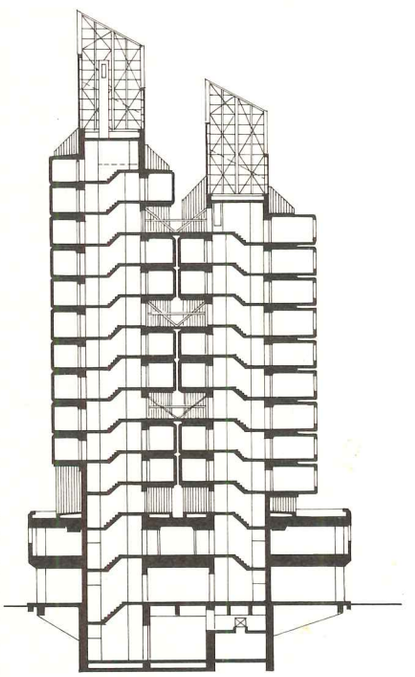
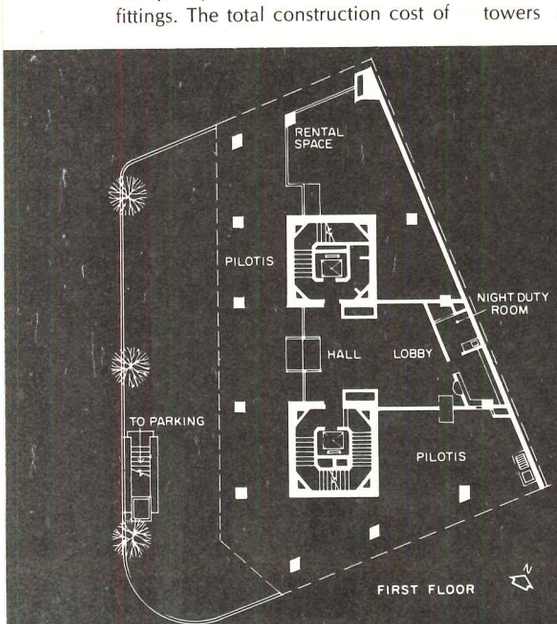
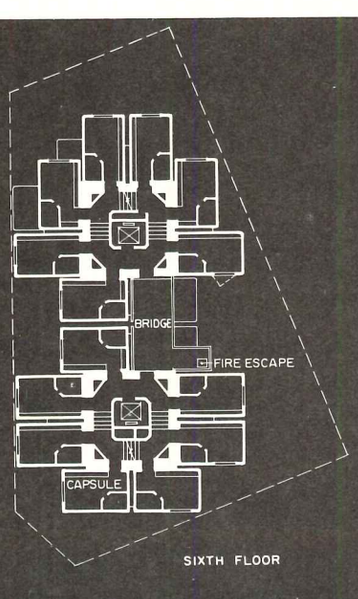


SECTION

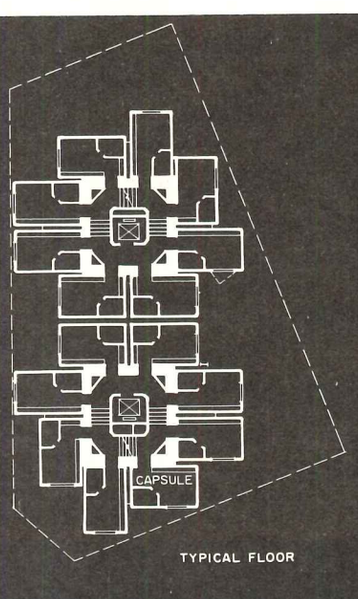
Each of the little boxes shown being hoisted into place is now occupied by a single individual, usually an executive on a business trip to Tokyo. As the photo (overleaf) indicates, the total complex is now finished, all of the 140 capsules are now in place and every one of them has been sold. The buyers, individuals or corporations, paid prices ranging from 13,000–16,000 dollars, depending on the capsule's location within the complex and the quality of its interior finishes and fittings. The total construction cost of the Nakagin Capsule Tower Building, including all the capsules was $1.2-million. The entire complex provides general housekeeping and hotel services, and judging from the speed with which the units have been sold, is ideal for the needs of the Japanese business man. The first floor of the complex consists of an entrance lobby and a restaurant. Business offices for capsule owners are located on the second floor. The capsules are attached in the form of a spiral to two towers of a steel-frame and reinforced-concrete rigid-frame structure. The capsules are of lightweight steel frame covered with panels of galvanized steel. Air conditioning within the individual capsules is provided by means of a fan coil unit. The general contractor for the entire complex was Taisei Construction Co. Ltd. Structural design was by Gengo Matsui and the ORS office. Planning for disaster protection (mainly the prevention and detection of fire) was done by Kurokawa's office in collaboration with the Hoshino Laboratory.



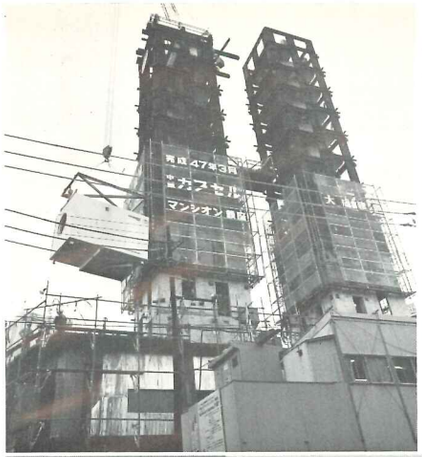
FIRST FLOOR

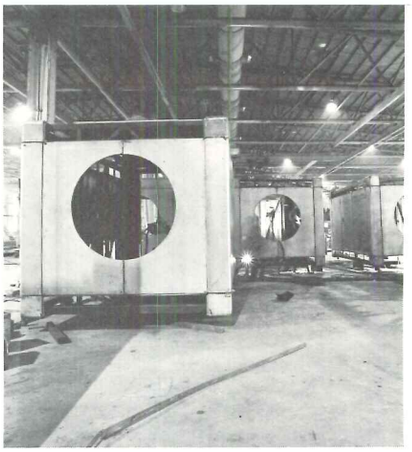


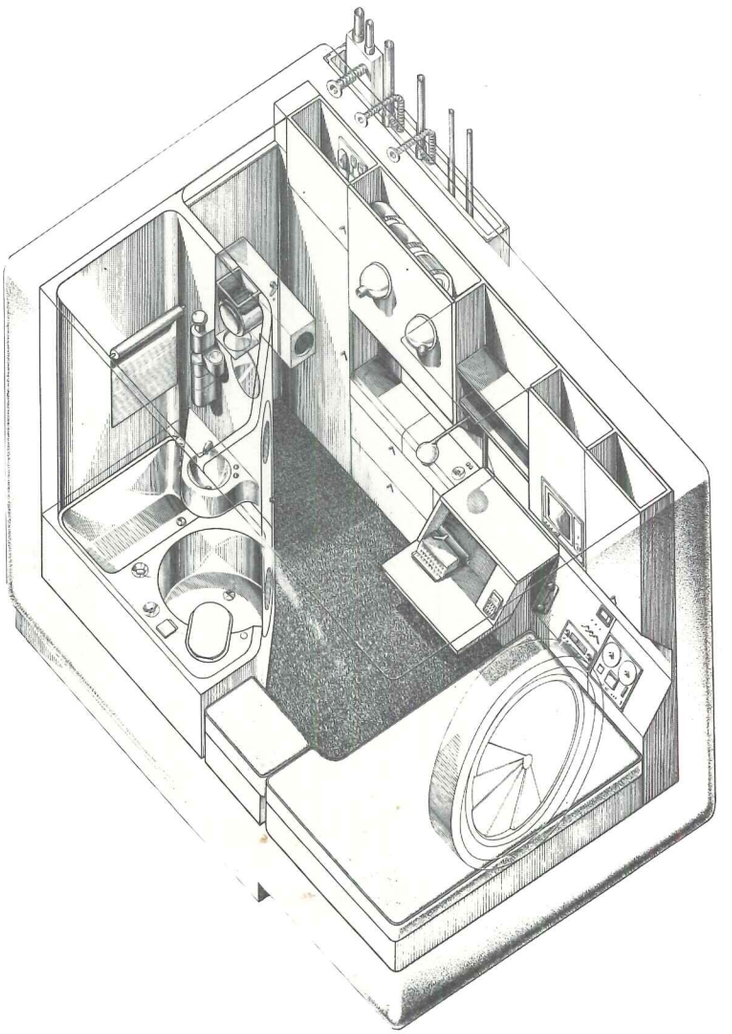
SIXTH FLOOR



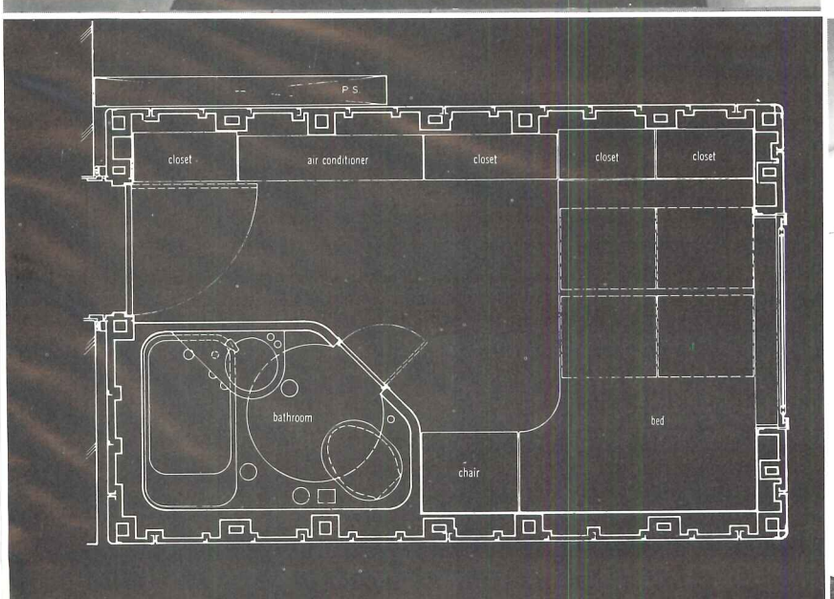
TYPICAL FLOOR

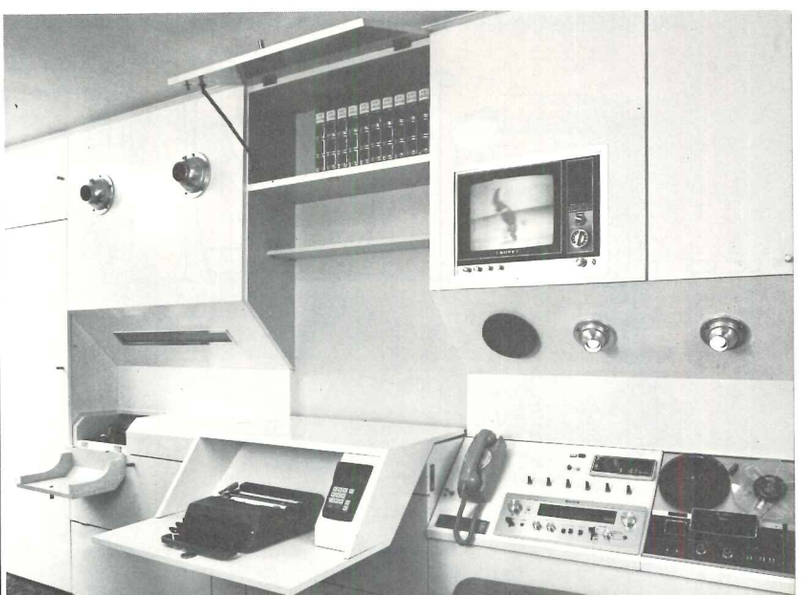






Capsule furniture was manufactured in units. It includes a closet, the air-conditioning unit, desk unit, overhead console unit and a bed. The fan coil unit is fitted into the upper part of the air-conditioning unit, and the lower portion is used for storage. The refrigerator and sink are optional. Storage is provided above and below the desk, and a portion of the bed can be pulled out and used as a chair. The overhead console unit doubles as a headboard for the bed. It may include audio-visual equipment.

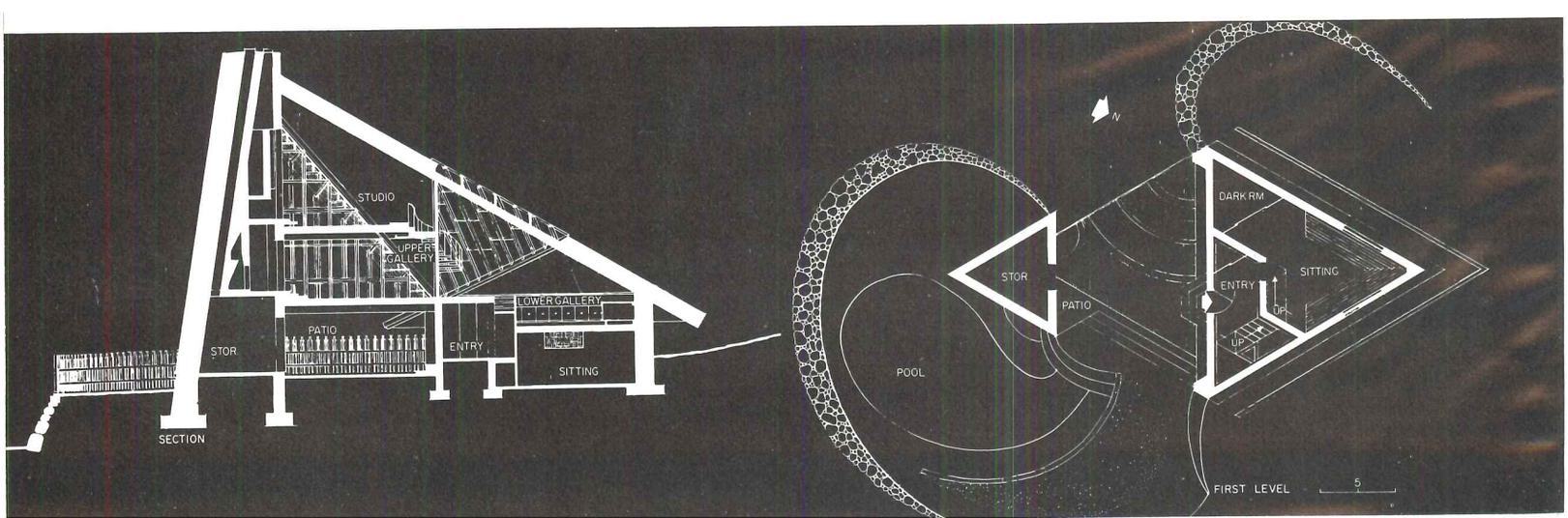


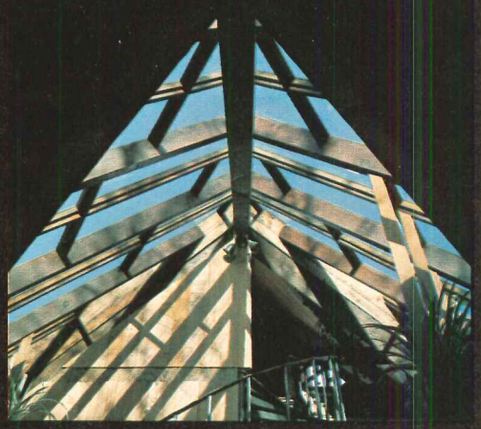


collection of paintings by her husband, Petras Kiaulenas, who died in 1955. She wanted it to be a place where he might have loved to work. His large handsome representational paintings in strong frames are hung everywhere about the house. They sometimes seem at odds with the openness of the house (right), which is anything but a museum. It is a dilemma not unlike that posed by the Guggenheim Museum. Here, too, the vigorous Wrightian idiom, responding as it does to the dynamics of nature, overpowers the static canvasses hung there.

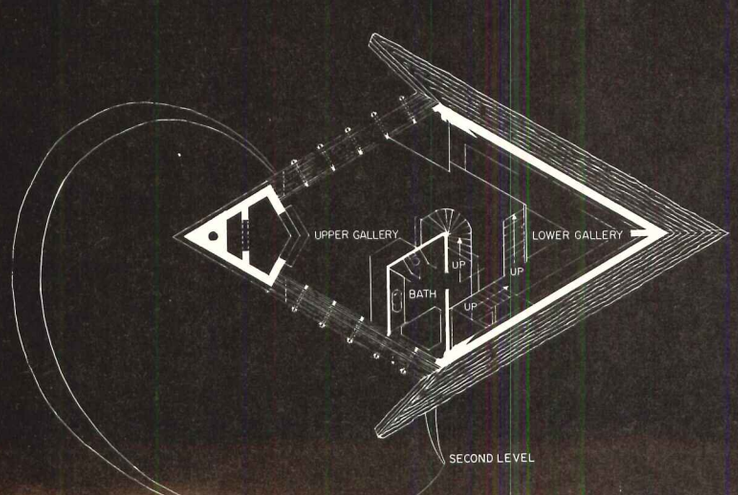
It is that tension, however, that gives the house its exceptional vitality. The architect also needed to make an expression of on-going life. Her design and her commitment to seeing it completed bespeak extraordinary optimism. Soon after her husband's death, she found the site, then part of an abandoned overgrown estate. By 1959 the design was complete and she was ready to build. Bids on the erection of the 12 main beams that make up the structure were much higher than expected—$7-8000. It was the connections between beams which bothered potential erectors; after Mrs. Kiaulenas took two days to detail the cuts required for each joint, the price dropped to below $1200, and she was able to proceed. The contractor, Gustav Poerschke, was a great admirer of Frank Lloyd Wright and attacked the job with pleasure. He built the masonry tower and raised the beams but then he too died. There was no other contractor to be found and it was then in 1962, at her daughter's suggestion, that the two began to build it themselves, coming out from New York City on weekends to pursue the work.

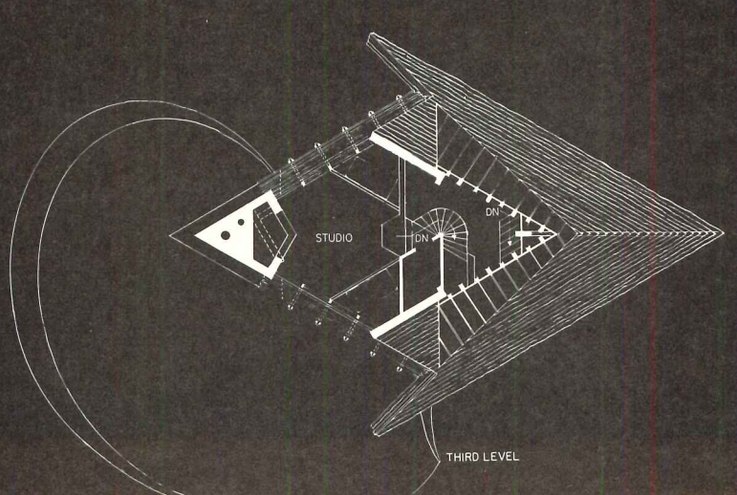
The next two years were the crucial ones for the whole project. While Mrs. Kiaulenas and her daughter, who was beginning her architectural studies at Cooper Union, were enclosing the structure with roofing and the skylight and windows with temporary sheets of building board, the community was responding with peti-





Based on a trapezoidal plan, the structure consists of a two-piece ridge beam which bears at its upper end on a masonry tower. Four smaller beams frame the large acrylic skylight over the kitchen and dining room. Except for the masonry and the 12 beams that make up the basic structure, the two women did all the work themselves. All parts of the house are open to nature: the lower rooms through the skylight and the upper ones through glazed walls which have views of Long Island Sound over the roofs of the recently-built development houses. A small swimming pool nestles at the base of the tower, protected by a delicate curving fence of lumber atop a retaining wall.





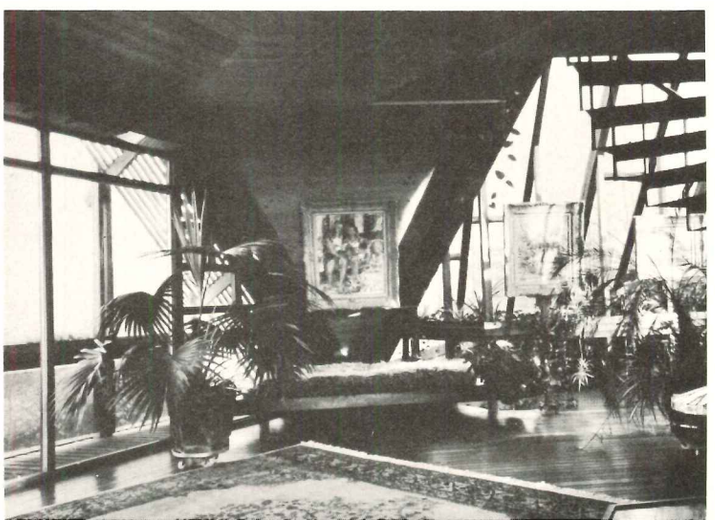
The paintings, plants and rich carpets complement the carefully-detailed interior of the house. Most of the surfaces, unfinished redwood, are articulated with small repetitive elements cut from stock lumber using bevels and kerfs in a Wrightian manner. Flooring and ceiling patterns echo the triangular plan of the house. The kitchen (left) has parquet counters and panelled doors of alternating beveled squares of sapwood and heartwood. Two huge fireplaces, almost large enough to walk into, dominate the upper rooms. At the entry, a mirrored wall turns the tiny plant-filled space into a bright and welcoming introduction to the dramatic volumes above.

tions to have the house demolished and continuing acts of vandalism.

At the same time, a developer proposed to subdivide the estate surrounding the knoll on which the house stands. Mrs. Kiaulenas responded by preparing for the Town Board a comprehensive plan covering an area of 25 square miles (a three-year volunteer effort) that proposed recreational uses for the nearby land since it contained attractive lakes and hills which neighboring colleges could use. The plan was accepted virtually unaltered after a series of political confrontations. The only major alteration to the plan was that the land immediately next to her property was allowed to be used for a housing subdivision! To make matters still worse, both mother and daughter had serious accidents in 1964.

Somehow the misfortunes did end. The two women continued their weekend labors. Stairs, plumbing, cabinet work, panelling all were completed over the next six years.

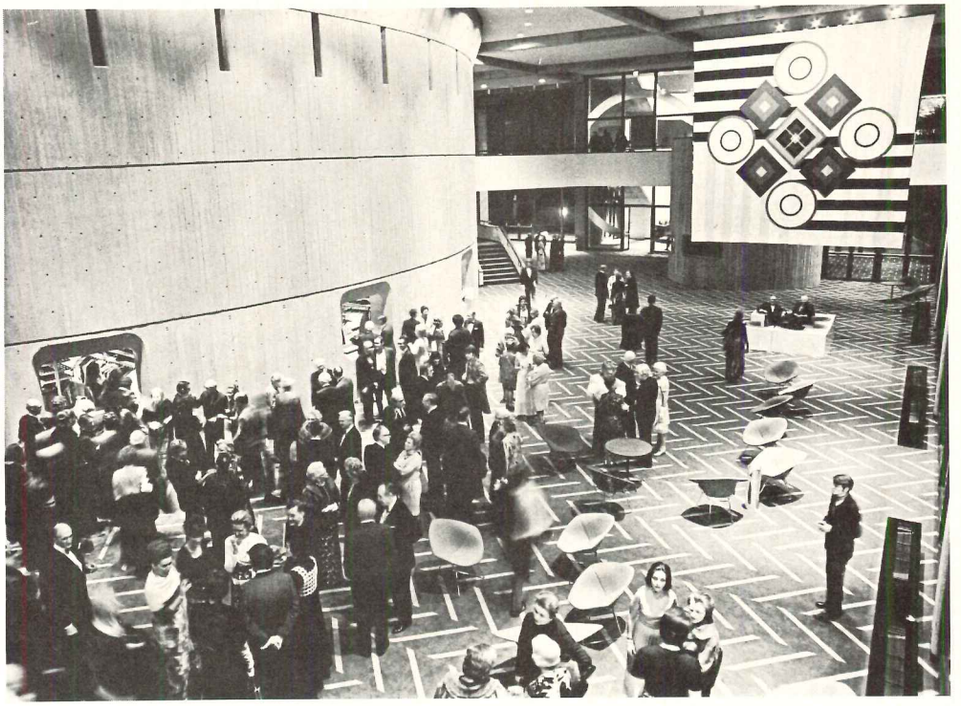
"But no moment gave me such delirious joy," says Mrs. Kiaulenas, "as the day I hung the paintings. As far as I can remember it was the first day that I sat doing nothing. Nothing but looking at the paintings and the trees through the windows and skylight and the plants under the paintings. Every bad memory was swept away." *—Jim Morgan*

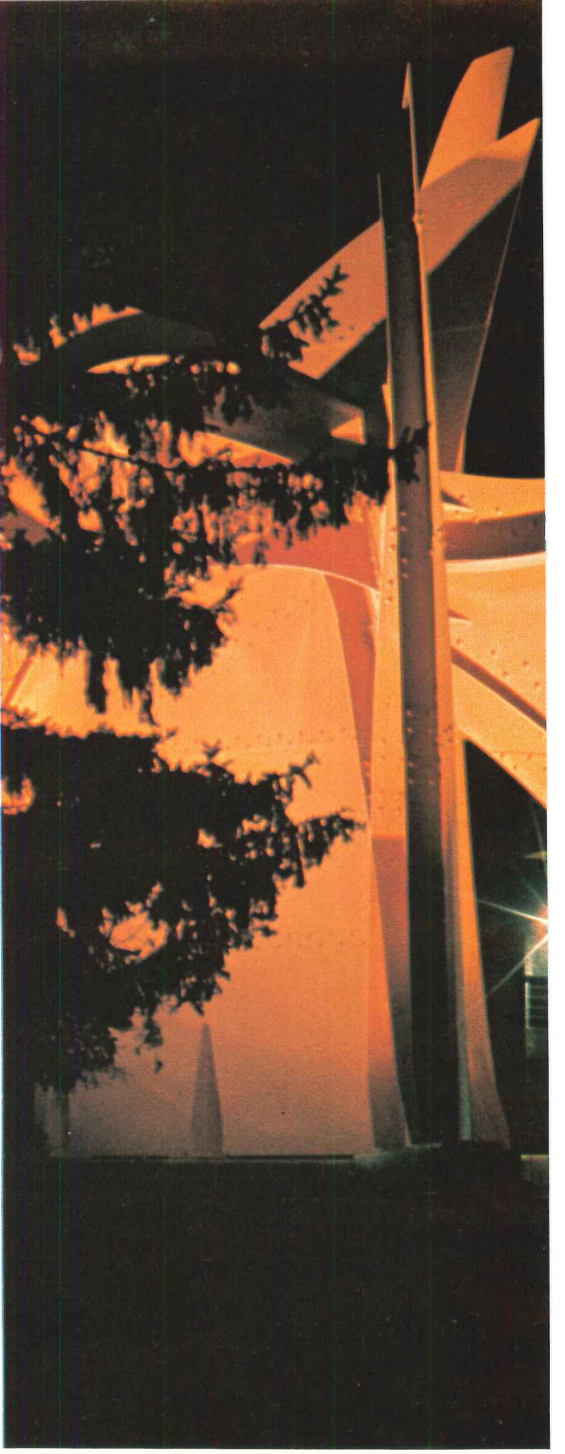


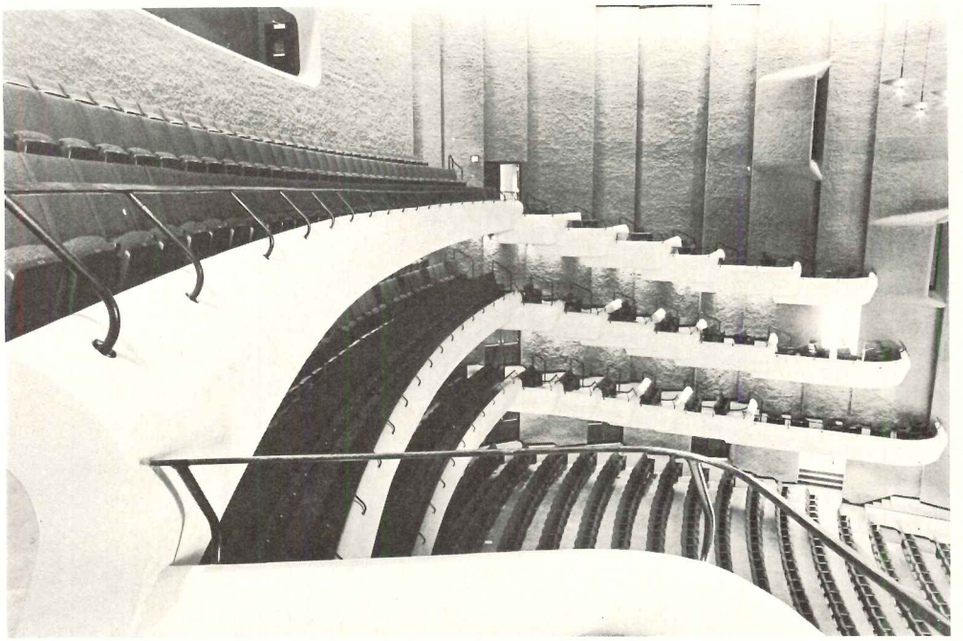
Balthazar Korab

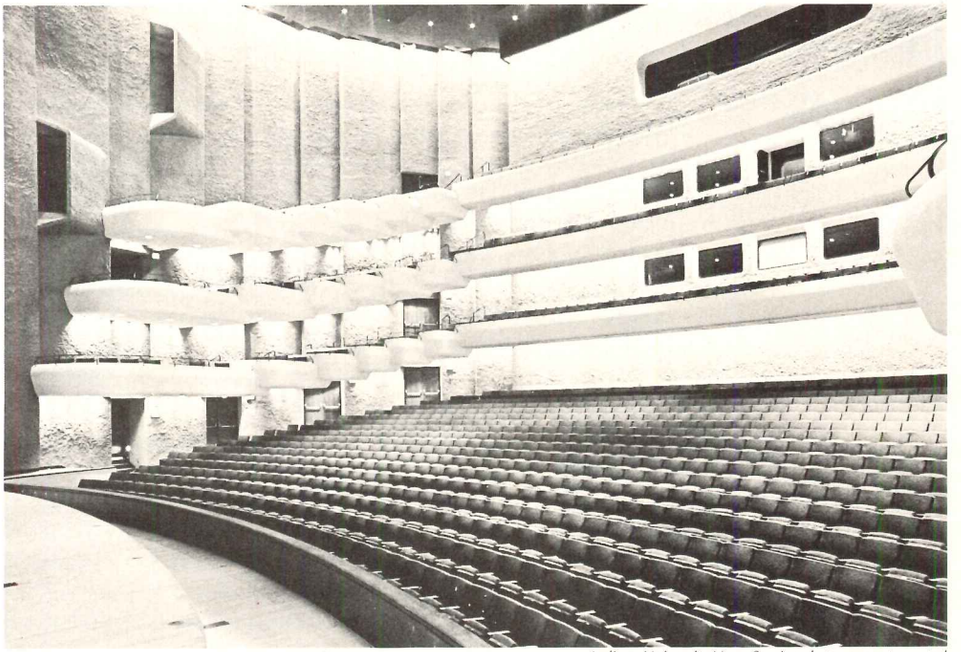
INDIANA'S ELEGANT NEW "OPERA FACTORY"

As in every other art form today, there are those involved in opera production who are searching for a new expression and others who seek to refine the classical approach. The new Musical Arts Center at Indiana University in Bloomington certainly represents the latter. As a performing environment it hews strictly to the pattern set by the Teatro alla Scala in Milan which opened in 1778. But wrapped around the opera house is a set of flexible lofts for teaching in which Woollen Associates of Indianapolis, the architects, have striven to maximize the process of teaching opera, thus its characterization by Evans Woollen as an "opera factory." The architects considered the possibility of an asymmetrical form for the building. They soon decided that since the side stages had to be equal, the enormous fly loft centered, and the house of traditional form, any major attempts at informal massing would not only be less economical than the built scheme but would seem unnecessarily contrived. Thus the off-center marquee and the reveals in the fascia above it are the only genuflections to the major approach which is from the left (above). The 39-foot-high Calder stabile is an effective foil to the main entrance and helps to give a sense of place









Indiana University News Service photos except as noted

to the building. Although the concrete structure is beautifully detailed and executed, to some there is a disturbing sense of its being over-designed—too muscular and assertive—for its function. Students, ever alert to suspected pretense, have named it "Fort Bain" after the dean of the music school, Wilfred C. Bain, who was largely responsible for bringing the school both to its present eminence and the funds for its new teaching and performing facility.

The hall is small, and acoustically excellent

The house of the new music center is much smaller than any commercial operation could afford to be, seating 1460 people. The main reason for that decision was that student voices, less mature than those of professionals, would be more comfortable in intimate surroundings. It is interesting to compare La Scala's horseshoe

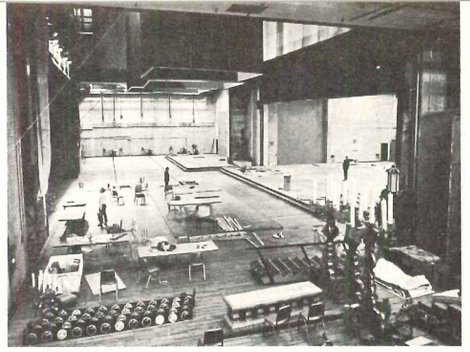
Balthazar Korab

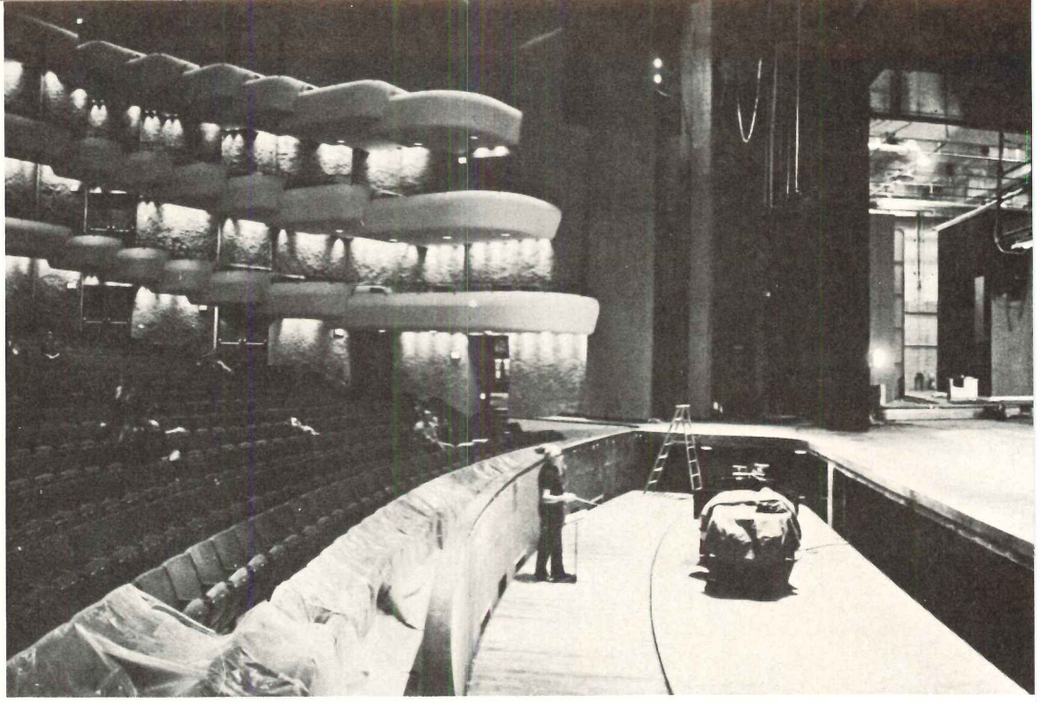
shape with the flatter, broader shape used by Woollen Associates (comparative plans, page 123). Not only are the back seats closer but the balconies and boxes (left) in the new house work far better than those in the European counterpart. The acoustics are excellent. Speaking of Bolt, Beranek and Newman's work, Harold Schoenberg wrote in the New York Times, "Whatever they did, it has turned out magnificently. As an acoustic installation, the Musical Arts Center ranks with any in the country. There is an even throw, the bass is full and resonant, everything has a natural quality. The reverberation period is, at a guess, rather short—say around 1.6 seconds. That is ideal for opera, and the Musical Arts Center was designed primarily for opera." The latter is of course what made it an acoustician's dream: not only is the audience much smaller than normal and the room unusually tall for its depth, but it was designed for a single purpose—unlike most auditoriums which try to accommodate uses which have conflicting acoustical demands.

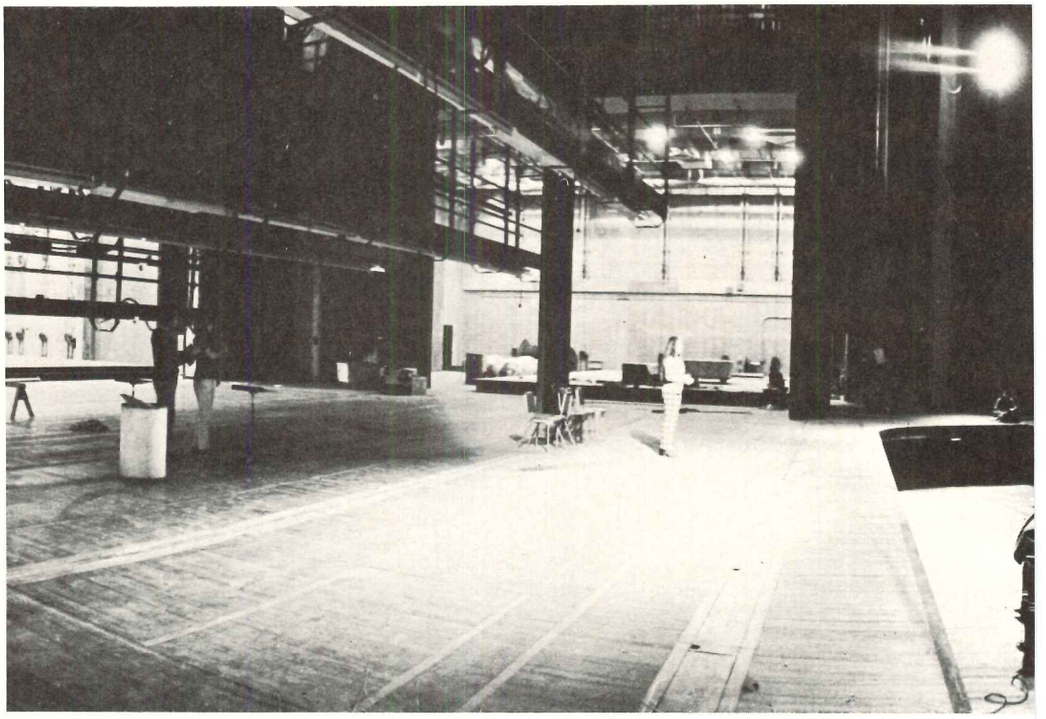
The continental seating arrangement—without aisles—is another way in which this opera house differs from La Scala. After taking into account the problem of late-comers who must pass everyone on their way to the seats in the middle, the architects note that for houses where the acoustical and visual sources and requirements are fixed, the system works well because it allows the audience to be closer to the stage (there are 19 rows of seats in the orchestra, the farthest row is 80 feet from the stage). It encourages a cohesiveness of response since audience reaction can spread unbroken by aisles which often serve as "firebreaks" to dampen the effect of the dramatic ambience. Finally, not only does continuous seating promote greater safety in emptying the hall during emergencies, but because seats are farther apart than usual, it also promotes comfort for long-legged people. Where the seats in La Scala average 29 inches row-to-row, at the Musical Arts Center they are 40 inches on center.

Production areas are spacious and well-equipped

Although the Musical Arts Center has fewer than 40 per cent of the Metropolitan Opera's 3800 seats (RECORD, September 1966), its backstage area is approximately 80 per cent of the New York building. And while the total distance at the Met across the stage including side stages is 40 feet greater, the actual playing stage is only 12 feet wider. Furthermore, the Met proscenium width is fixed at 54 feet while that at the Musical

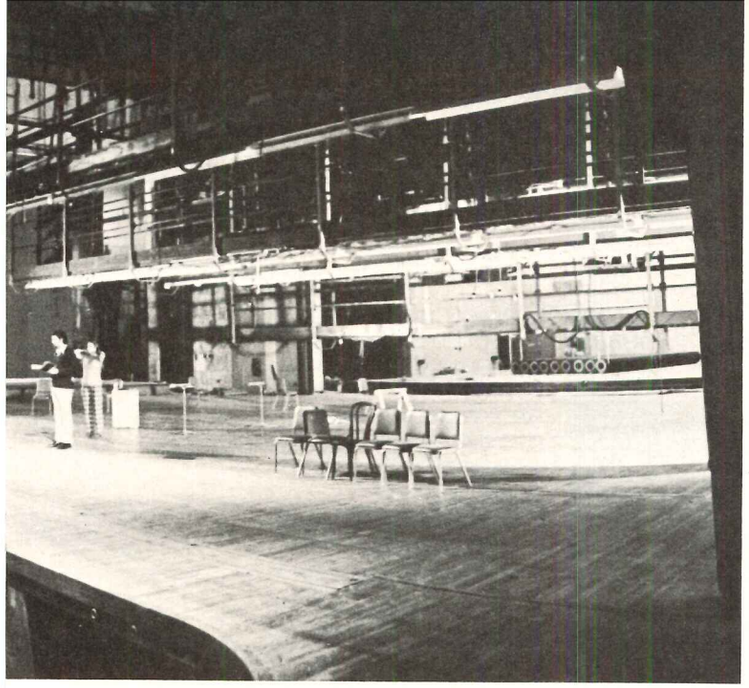


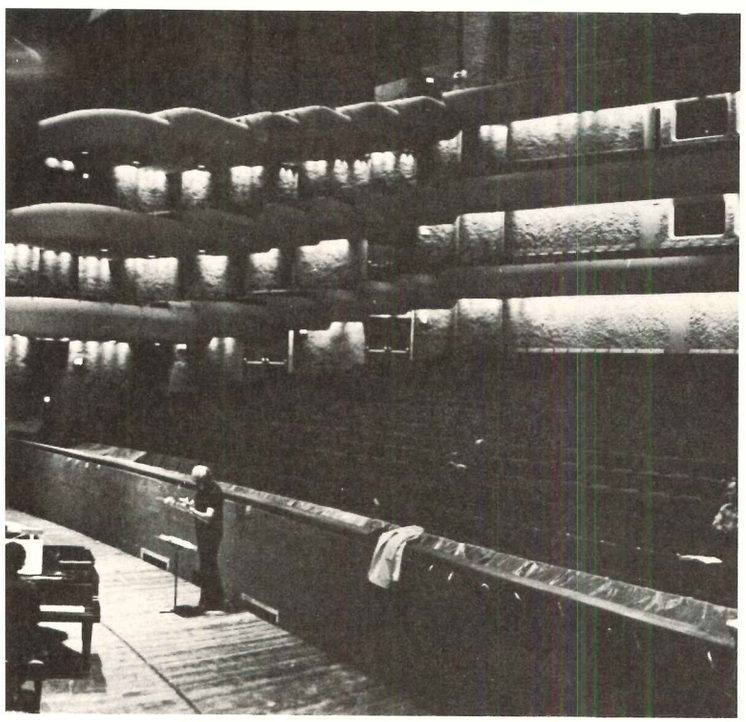


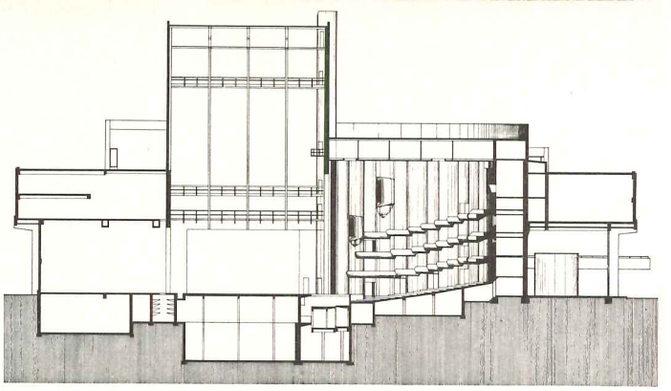


Arts Center can vary from 48 feet to almost 70 feet. It is the hope of the designers that this feature will encourage future experiments in non-traditional opera staging. The orchestra pit has two levels, allowing the stage to be extended when a small orchestra is involved. The huge side and rear stages, as at the Met, each contain rolling platforms—stage wagons—on which scenery can be built and quickly moved into place. In addition, the rear stage wagon has a 48-foot diameter turntable which also can be used for set changes or other dramatic effects. The gridiron in the fly loft is 110 feet above the main stage and has 66 sets of counterweights as well as four light bridges that can be lowered to the stage floor for rigging and adjustment. The lighting controls are, naturally, very sophisticated and offer 200 preset combinations from the 288 circuits on the stage and in the house as well as automatic fading and other options.

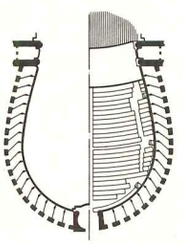
Even though the building has the best theater technology available, Evans Woollen sees the challenge of the job not in organizing that, or in designing the stage areas, but rather in providing the most flexible environment for training the 1600 future musicians and technicians doing their major work in the school. Thus the design of the ballet rehearsal rooms below the rear stage were as important to him as the performing spaces. Classroom and other instructional spaces occupy nearly two-thirds of the area of the building. The circulation between all these is clearly organized (right). It was the intention of the designers to mix the public and the students wherever possible throughout the building. The four semi-circular stairwells thus serve students as well as visitors about to see one of the 700 performances given each year.

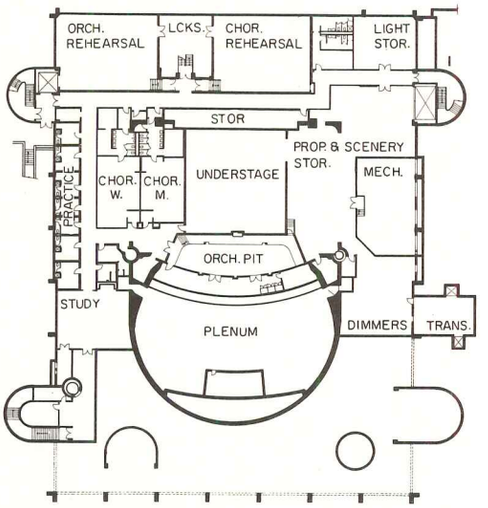




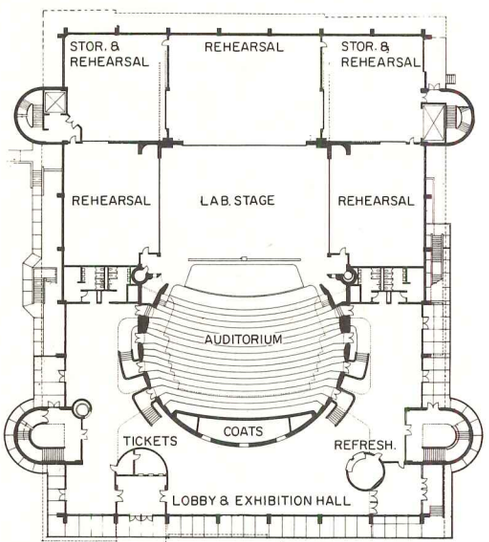


The backstage areas of the Musical Arts Center are spacious and extremely well equipped. The unusual proportion of stage to house is evident in the drawings and two panoramic photos (left) of the relationship of stage to house. The stage itself (top, far left) is 190 feet wide and 118 feet deep, about four-fifths the size of the Metropolitan Opera stage. The scenery production shop (middle, far left) and one of three ballet rehearsal rooms (bottom, far left) are typical of the generous loft-type teaching areas. The plan of La Scala (below), shown at the same scale as the other plans, is from "Music, Acoustics and Architecture" by Leo Beranek (Wiley). La Scala seats 2135, fifty per cent more than the Musical Arts Center in the same amount of space.

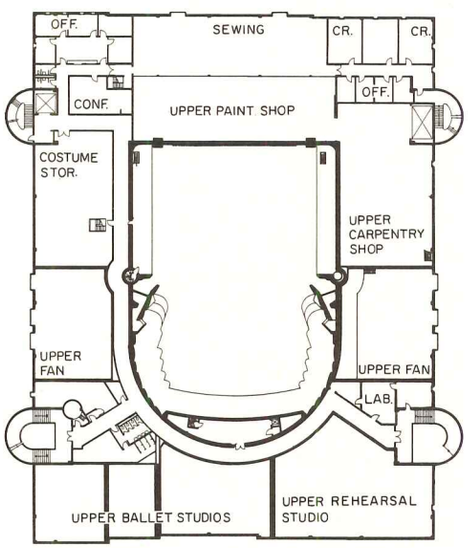




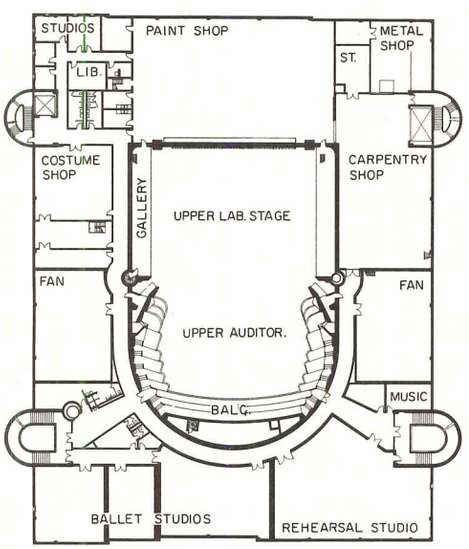
BASEMENT FLOOR



FIRST FLOOR



FOURTH FLOOR



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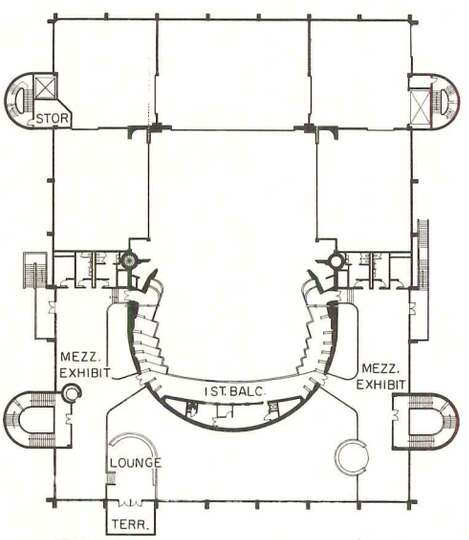
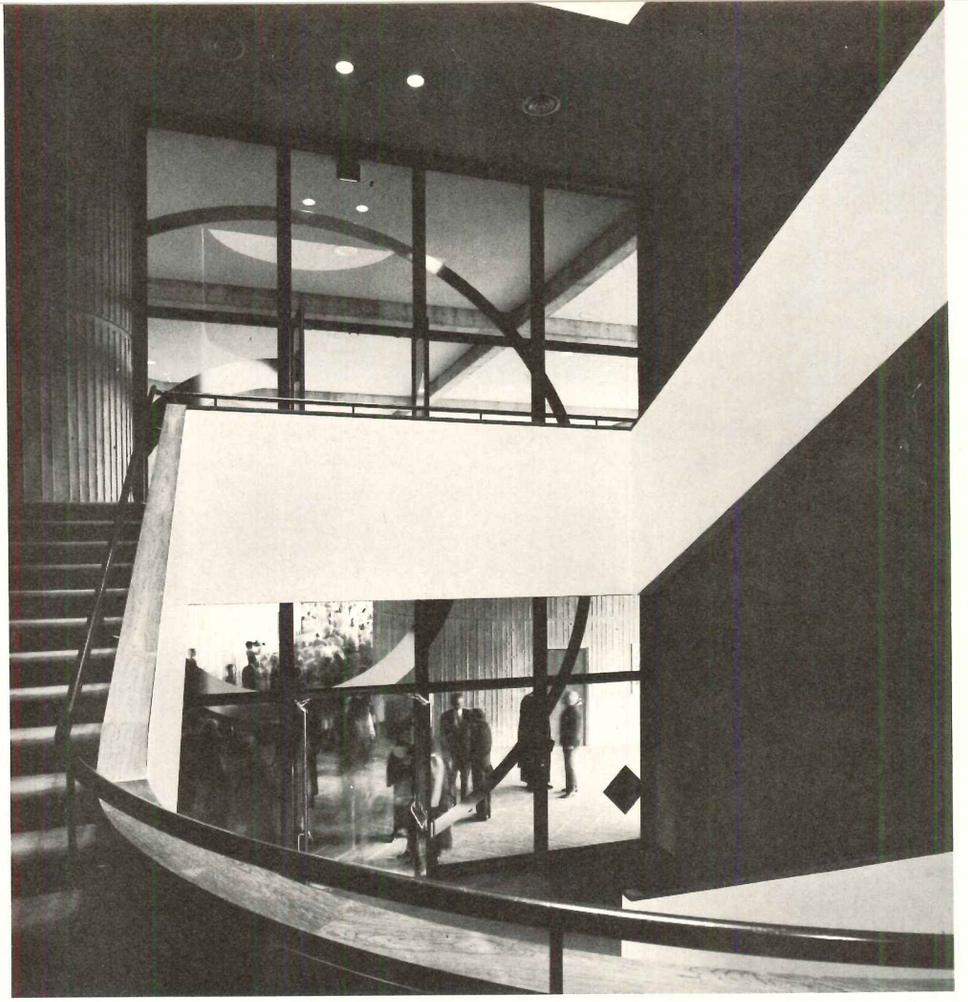
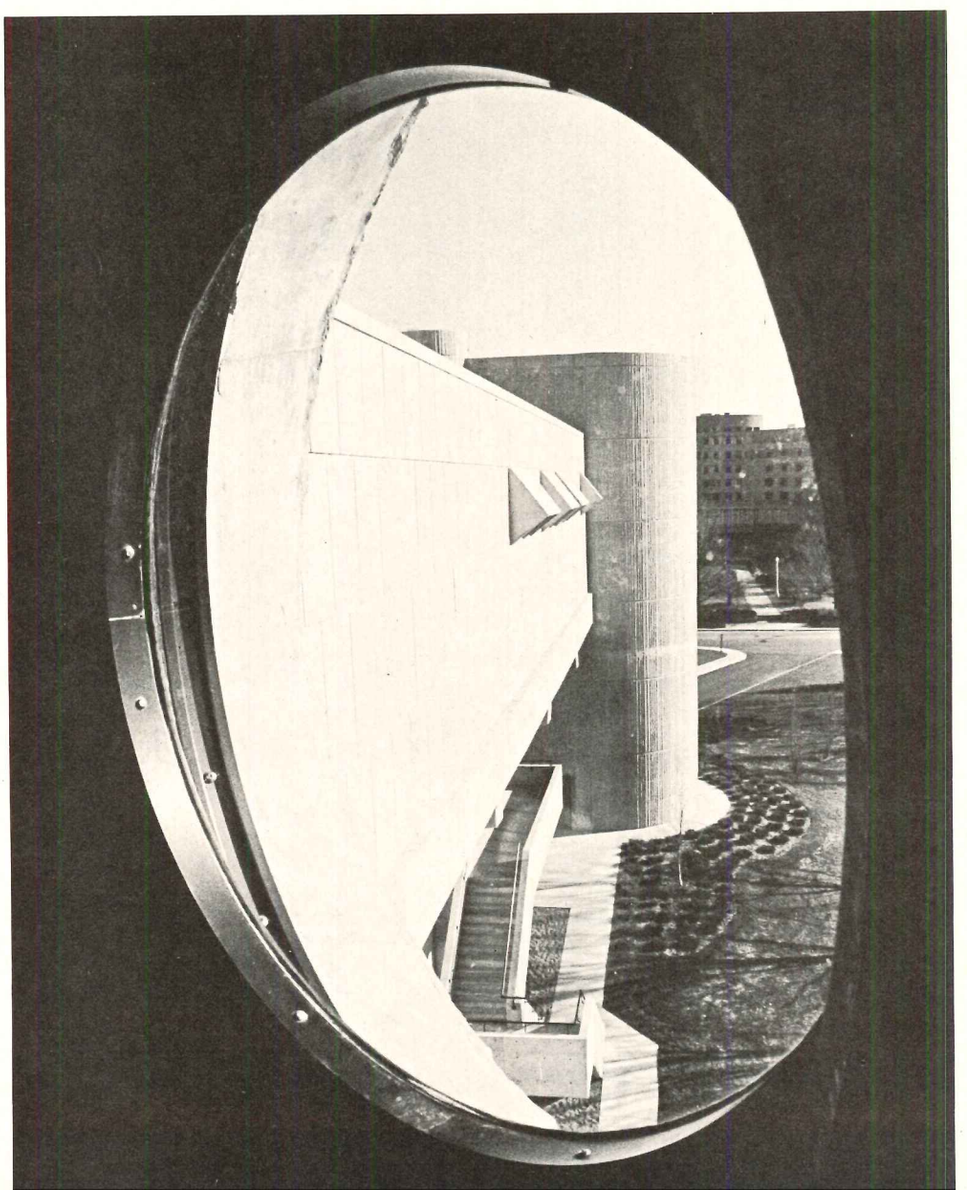


SECOND FLOOR



Circular forms appear in many guises in the Musical Arts Center. Applied silver graphics on the doors into the stairwells (left) echo the curve of the stair towers themselves, seen (below) through a round window in another stair tower.

INDIANA UNIVERSITY MUSICAL ARTS CENTER, Bloomington, Indiana. Architects: *Woollen Associates—Evans Woollen, principal; Lynn H. Molzan, project architect; Tom Weigel, Larry O'Connor and Peter Mayer;* engineers: *Fink, Roberts & Petrie* (structural); *J. M. Rotz Engineering Co., Inc.* (mechanical and electrical); acoustical consultants: *Bolt, Beranek and Newman;* lighting consultant: *William Lam;* landscape architect: *Frits Loonsten;* other technical consultants: *Ben Schlanger, Olaf Soot, Jean Rosenthal;* general contractor: *F. A. Wilhelm Construction Co., Inc.*



VOCATIONAL EDUCATION:

New directions, new responsibilities, new designs

Vocational education has long operated in the interstices of general education; typically in old buildings vacated by the school district and, until recently, on budgets that were plainly inadequate. Such trade schools were terminal in their approach, equipping their graduates for the world of work with only bare, entry-level skills. Their programs smacked of under-achievement, of blunted opportunities, of wrinkled parental egos. Vocational education has always been "for the other guy's kids."

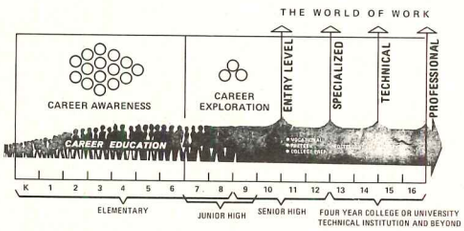
This trade school stigma has persisted in many places—against all good sense—and in the past has worked particularly to the detriment of schools that openly sought some reconciliation between vocational and academic programs. College admissions officers too often discriminated against graduates of comprehensive high schools. But, ironically, it is in just this integrated approach that the best potential for both vocational and academic education now seems to lie.

In recent years, officials of the U.S. Office of Education have peered unblinkingly at disturbing figures. By their own estimate, nearly 2.5 million young people leave the nation's public school systems each year without adequate preparation for careers—this in spite of heavy Federal funding of vocational-occupational education in the middle and late 1960's. (This estimate groups high school dropouts, college dropouts and those who graduate from high school but do not enter college).

In an effort to stem this tide, the Department of Health, Education and Welfare is developing a program it calls "Career Education." Too fluid at present for precise definition, this program takes as its goal the elimination of "artificial separations between things academic and things vocational." According to HEW's "Career Education" booklet: "Every child gets the same educational bill of fare up to a certain grade, usually the 6th. Besides learning how to read, write, and compute, the career education student studies history, languages, and the physical and social sciences. Simultaneously, he explores the world of work through a wide spectrum of occupational 'clusters.' For example, in the 'transportation occupations' cluster, he becomes aware of such diverse occupational areas as aerospace, pipeline, road, and water transportation. He is made aware of the hundreds of job categories in each and their relationship to each other as well as to himself and his fellow members of society. The same exposure is provided in the 'health occupations' cluster and its service possibilities in accident prevention, pharmacology, and medical and dental science.

"In the middle grades, 7 through 9, the student examines more closely those clusters in which he is most interested. By the end of the 10th grade he develops elementary job entry skills—as a typist, for example, or construction helper, social work aide, service station attendant, or environmental technician aide—skills he can pursue if he does not complete the 12th grade. If he does complete the 12th grade, the student is prepared to enter the world of work or to continue his education at a postsecondary institution—college, technical institute, or other—suitable to his needs, interests, and abilities." See diagram for Career Education model.

The nature of curricular reform is also set out: "The Bureau [of Adult Vocational and Technical Education] has identified and codified 15 occupational clusters in all. Aside from the transportation and health occupation



Courtesy of U.S. Department of Health, Education and Welfare

clusters already mentioned, they are: agri-business and natural resources, business and office, communication and media, consumer and homemaking education, construction, environment, fine arts and humanities, hospitality and recreation, manufacturing, marine science, marketing and distribution, personal services, and public service."

Career education is being developed experimentally in several states and in a few of the big city school systems, but educational programs do not test out quickly. It is too soon for meaningful results. The points to note, however, are:

- The Federal government has placed itself squarely behind a program of comprehensive education—a program that is not terminal in the sense that a student can leave at any of several levels depending upon how much time and energy he is willing or able to invest.
- The expansion of the curriculum and its grouping into new and larger occupational clusters will almost certainly have significant implications for architects and educational facilities planners.

These and other concepts are explored in seven new schools

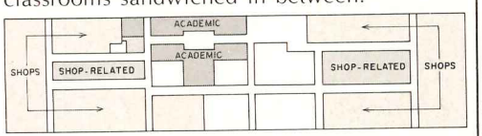
Many states and regions, accustomed to pressing ahead on their own initiative, have been developing new facilities and area vocational programs that are responsive to student needs and shifting economic circumstance. Seven such schools from various regions are included in this study.

The Minuteman Regional Vocational Technical School (pages 130-131) and the **Greater Lowell Regional Vocational Technical School** (pages 128-129) are the work of Drummey Rosane Anderson, a Wellesley, Massachusetts firm that has been deeply involved over a four and a half year span in planning more than half a dozen vocational facilities for the Commonwealth of Massachusetts. While their work has been sharply confined geographically, it parallels other developments elsewhere and presents, in kaleidoscopic form, a simplified but unusually

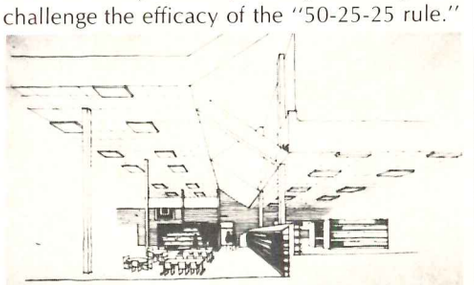
"The great danger that career-oriented schools must avoid is getting trapped in the same mold that has shaped general education—the mold of academic politics, of tenured professorships, of experiment and creativity too often frozen by convention."

clear summary of many of the reforms now underway in vocational education. The ideas hammered out in this sequence of schools are essentially developmental and built on each other, although routine administrative delays in several of the projects have blurred their precise chronology.

The first vocational school the firm undertook was commissioned over four years ago for the Massachusetts communities of **Bristol-Plymouth.** Recently opened, the building is somewhat orthodox in plan and its spatial allocations reflect the traditional "50-25-25 rule" that anticipates that 50 per cent of a student's time will be spent in shops, 25 per cent in shop-related classrooms, and the remaining 25 per cent in regular academic classrooms. These programmatic divisions are translated concentrically into the Bristol-Plymouth plan as peripheral shops, central academic classrooms and shop-related classrooms sandwiched in between.

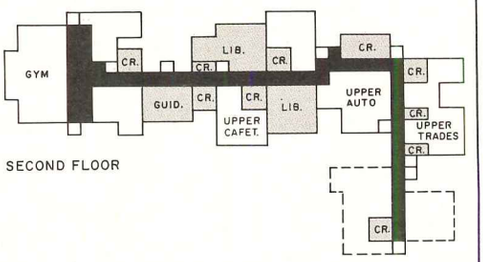


For residents of **Attleboro,** where school officials had determined to close the existing vocational school and incorporate its functions in the local high school, the architects were instructed to design a comprehensive school for 2800 students out of a high school originally designed for 1200 pupils. Working with educational consultants Englehardt & Englehardt, Drummey Rosane & Anderson were able to include an enlarged media center and a combination of open and closed classrooms (following similar developments in primary and secondary school planning) that began to challenge the efficacy of the "50-25-25 rule."



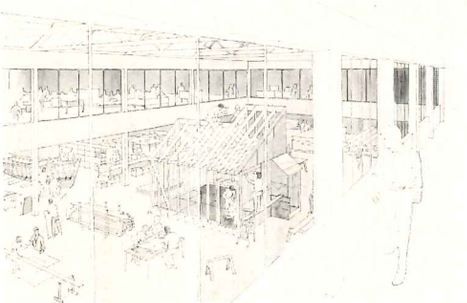
But what is most important about Attleboro, however, is the merging of vocational and general education in a single, comprehensive facility that begins to erase the time honored distinctions between the separate vocational and academic curricula.

For **Pathfinder,** a vocational facility in western Massachusetts, the architects drew up



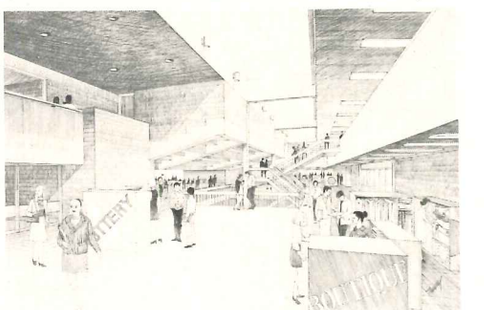
conceptual plans that better integrated shops and classrooms in a large ground floor area. Main horizontal circulation occurred on the second level and overviews of the shop areas were provided from this gallery. But when the regional organization was altered, and a new superintendent-director selected, this inventive plan was modified into a more conventional scheme now under construction. The original plan remains interesting, however, as it contains, in more than embryonic form, the first development of a spatial arrangement that recurs with increasing emphasis in each of the schools that follows.

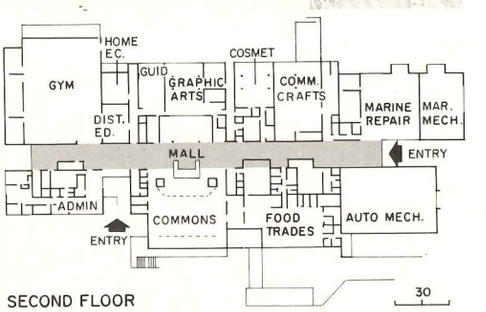
At the **Whittier Regional Vocational School** (Haverell region), the shop-related classroom arrangement continues as at Bristol-Plymouth except that the various building trades are no longer taught in isolated shops but are clustered into an integrated trades area.



In this two-story space, students of masonry, carpentry, electricity, plumbing, heating and ventilating can learn not only their own particular skills but also grasp the ligaments that bind these skills into the larger grouping of building trades. The overview principle, pioneered but abandoned at Pathfinder, will give all Whittier students regular glimpses into the trades area.

Various of these ideas are combined in the **Cape Cod Vocational School,** a project the firm now has out to bid. In this school, the clustering of classrooms and shops extends beyond the building trades to include automotive and marine mechanics and service. Because the Cape has a flourishing summer tourist trade, a cottage industry that produces hand crafts has sprung up to service this trade. The architects have therefore expanded the distributive education center, (marketing and sales) into a large public mall lined with kiosks, each representing a different school division and each selling the products or services created within the division. The mall opens





into a student commons and overlooks, at points along its length, an integrated and open trades hall in which students can construct an entire building shell.

The ideas developed in this sequence of facilities and programs have reached their fullest expression to date in the designs for Minuteman and Lowell.

Minuteman is designed for clustered team teaching. In its mammoth trades hall, an active, open area with plenty of opportunity for student interaction, emphasis is placed on learning skills common to a range of careers and then relating them back to the student's particular program. This shared system economizes on the duplication of staff and equipment common in various vocational programs. Only those functions that present a fire or health hazard to the rest of the school are isolated, and here, some minor duplication seems unavoidable.

At Lowell, the heart of the educational program is the Learning Activities Package (LAP). The LAP system presumes that all complex skills can be broken down into simpler, component skills and that these component skills are common to a range of complex skills. Thus, the student who wants to take apart an automobile engine and the student who wants

"At the post-secondary level, we must avoid the tendency to become too selective in our admissions—a tendency that has been natural in colleges and universities, but in career-oriented institutions is restrictive and self-defeating."

to design a piece of furniture must both understand fractions and a "fractions package" can be put together for use by each. And some blending of vocational and academic curricula happens quite naturally. Over 30,000 such packages have already been prepared at Lowell, and more will be ready before the new facility opens in mid-1974.

Neither school, when complete, will represent an ultimate form and their creators would make no such claim for them. Both are forceful embodiments of somewhat divergent educational theories adapted to different regional needs, and each may be taken as a vector, pointing by a different path, toward the same integrated educational future.

Of the remaining schools in the group, **Harlan Area Vocational School** (page 135) is the simplest in plan, the most modest in budget, and least sophisticated in program. It is located in an economically depressed area and therefore its task, to provide students with a range of career opportunities denied their parents, is especially urgent. The uncomplicated but dignified architectural solution developed by Bennett & Tune has a great many merits.

At the opposite end of the spectrum is **Sheridan College** (pages 138-140) outside Toronto. At this splendid, career-oriented facility, now only partially complete, 70 programs are offered in five divisions to 2800 full time students at the post-secondary level. These programs break down into nearly 1200 different courses. Architects Marani, Rounthwaite & Dick, along with Sheridan administrators, visited technical institutes in various European countries before beginning to design Sheridan's large, flexible teaching spaces. The forms that resulted are at once bareboned and enormously exciting. They are also highly functional and arranged to maximize the mix between students (and staff) in the various vocational curricula.

Also in Toronto, but serving students at the secondary level, is the **Greenwood Secondary School** (page 132-133), by architects Fairfield & DuBois. Here is a handsome facility, designed on a tight urban site, exclusively for young women. In addition to regular classrooms, it provides special learning facilities for the physically handicapped and for girls who may have learning difficulties.

At its new **Regional Complex in Yorktown Heights,** New York (page 136-137), the State Board of Cooperative Educational Services (BOCES) provides vocational education for a consortium of 20 school districts in upper Westchester and Putnam Counties. Students from the academic high schools in the region are bussed to Yorktown Heights for half-day sessions. Youngsters learn a wide range of skills in some 30 or more shop areas, and all students in the BOCES region, their college plans notwithstanding, spend a portion of their school time in learning vocational skills.

The DeVry Institute (page 134), now under construction in Chicago, is the latest in a series of vocational schools that Caudill Rowlett Scott has designed for the Bell & Howell Corporation. Like similar schools for the same client in Phoenix, Arizona and Columbus, Ohio, the Chicago school will be operated for profit and will offer intensive technical programs leading to Associate and Bachelors degrees. The school will concentrate exclusively on career training and will operate three shifts a day in an effort to meet a heavy regional demand.

The idea that a large corporation can enter the field of education so successfully has raised a few academic hackles. But most educators agree that private enterprise, using management techniques developed in industry, can achieve not only meaningful economies but also the flexibility to add, drop or reshape courses without undue concern for state educational codes, tenured professors or other familiar aspects of educational politics.

The schools in this study whether "vocational," "occupational" or "career-oriented," have many common features:

- Each takes as its primary task the development and implementation of educational programs that will equip students with useful career skills.
- Nearly all place a heavy reliance on electronic media for teaching.
- All have—or will have—active programs in adult education and retraining.
- All make a determined effort to place their students, after graduation, in positions that offer career opportunities and chances for personal satisfaction.

Architectural similarities are also present:

- Most, but not all, of these schools strive for and achieve a straightforward industrial esthetic. Several tend to read as steel component assemblies that can be hastily erected and easily altered.
- Most tend not to conceal either their structure or their mechanical innards behind furred-out walls or dropped ceilings.
- Most reach for an openness of plan (consistent with fire codes) and spatial arrangements that promote intermix between the vocational disciplines. Overviews, in the form of elevated circulation spaces, often help in this process.

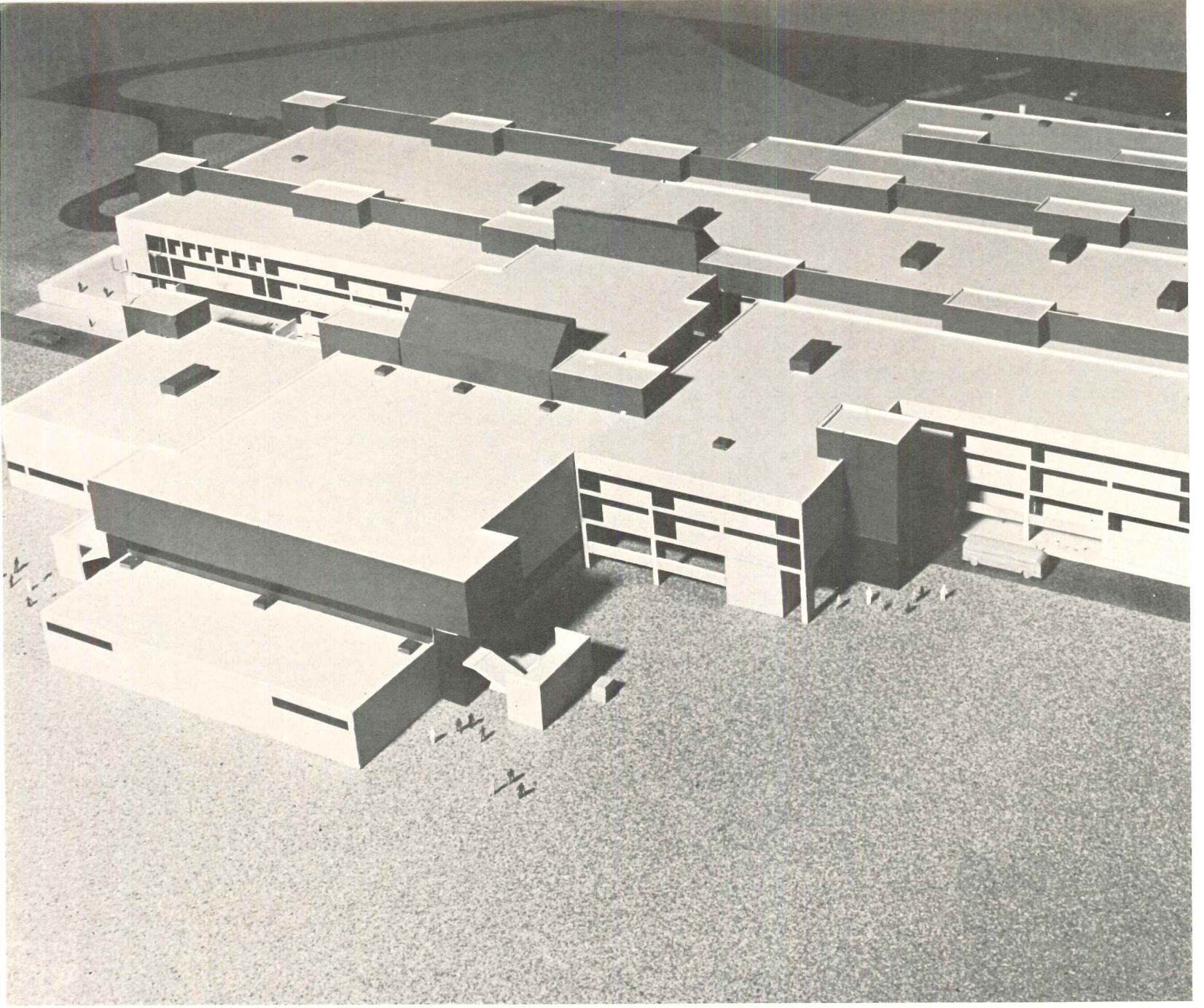
Trends are emerging as vocational education prepares for a future of greater responsibility:

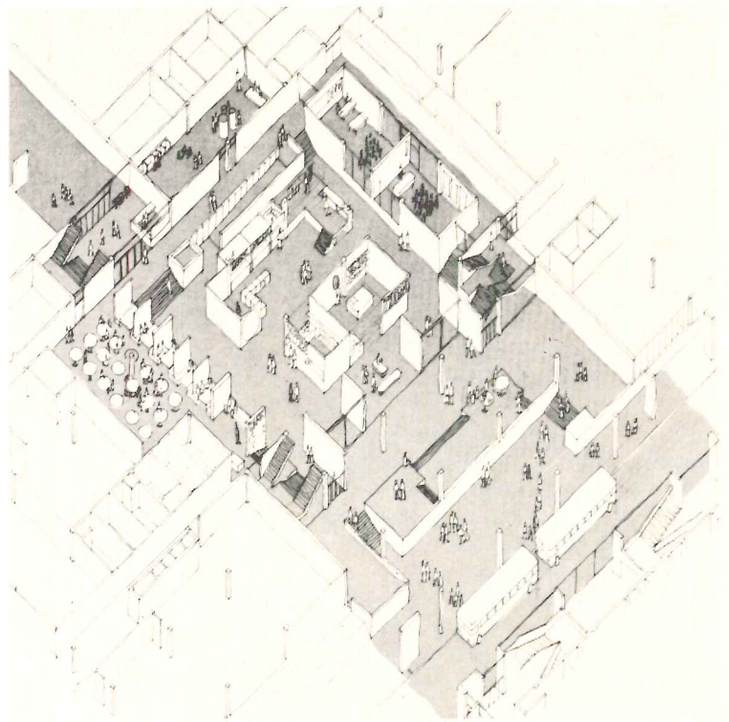
- Funding agencies will continue to seek alternatives to reduce the large capital outlays that well equipped vocational schools have always required. These alternatives will include more intensive utilization of new facilities, a mounting interest in the conversion of older factories and loft structures, an increasing use of temporary and/or mobile structures, and finally, the wider use of simulators that in some cases may replace actual equipment for purposes of instruction.
- Private enterprise will almost certainly get deeper into education for profit. Bell & Howell is by no means the only corporation in the business of education management. RCA and ITT have similar holdings and other corporations are expressing a mounting interest. Architects will therefore have new kinds of school clients.
- The vocational curriculum will place increasing emphasis on preparation for new kinds of careers. The enrollment in Trades and Industry (T&I) may be expected to level off while health sciences and various service industries are gaining in enrollments—a shift that has considerable significance for architects and facilities planners.

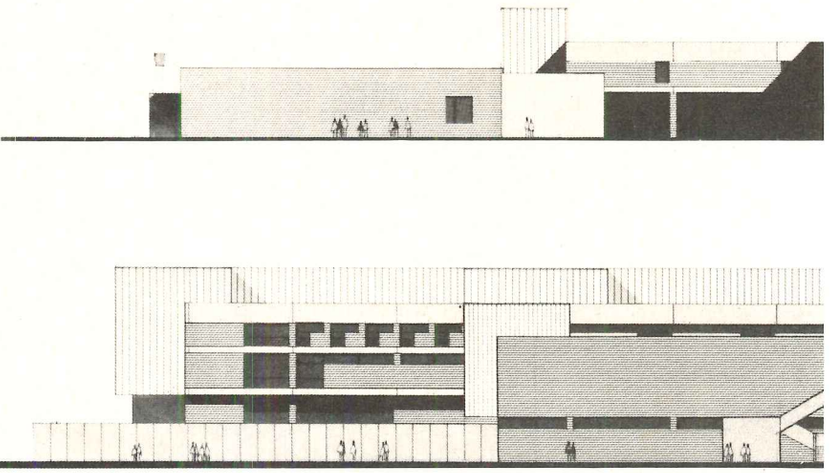
With success, danger ahead: creativity frozen by conventions

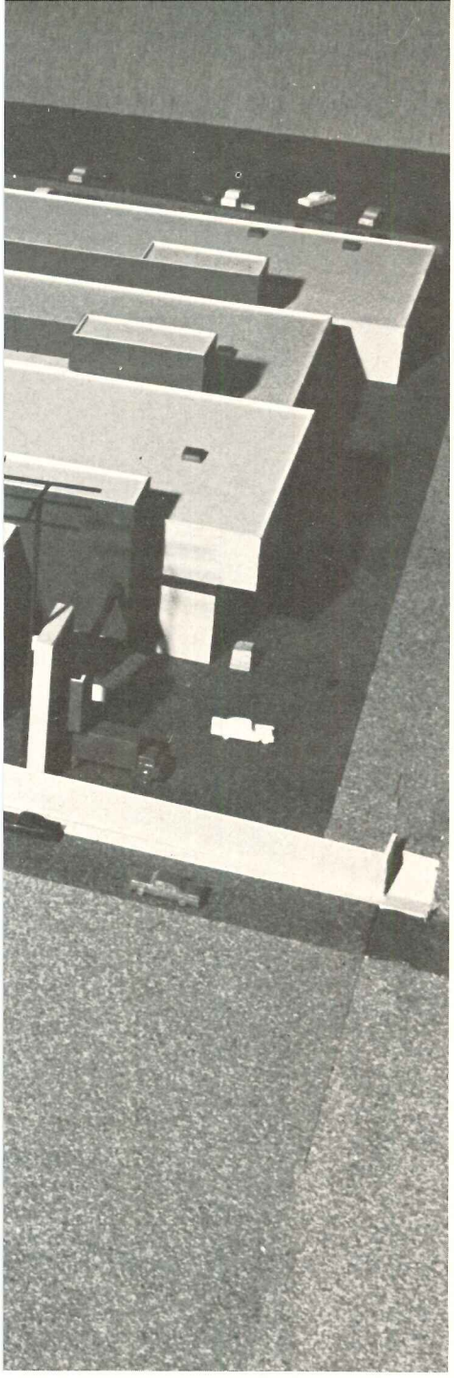
"The great danger that career-oriented schools must avoid," says educational planner Alan Woodruff, "is getting trapped in the same mold that has shaped general education—the mold of academic politics, of tenured professorships, of experiment and creativity too often frozen by convention." Sheridan College president John Porter adds that "at the post-secondary level, we must avoid the tendency to become too selective in our admissions policy—a tendency that has been natural in colleges and universities, but in career-oriented institutions is restrictive and self-defeating."

Both men argue in favor of a mandatory system of periodic review, not provided in the system now. These reviews—of staff programs and equipment—would guard against staleness and help to keep vocational programs in touch with emerging needs and advancing technology.—*Barclay F. Gordon*









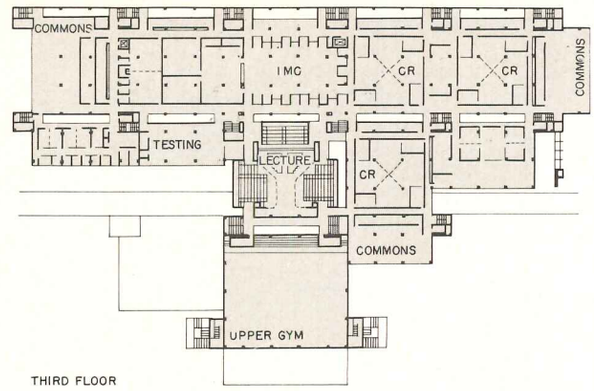
Samuel Robbins photos

GREATER LOWELL REGIONAL VOCATIONAL TECHNICAL SCHOOL TYNGSBORO, MASS.

Lowell will be an immense facility with a strong industrial esthetic loyal to the legacy of New England mill towns from which it springs. The plan will be divided by internal pedestrian streets that space out the major elements of the program and break down the school's massive, 475,000-square-foot bulk. The design includes open and closed classrooms (both paired and quadripartite), a shopping mall for distributive education, 35 separate trades areas, and a series of satellite media centers with a cumulative total of 600 individualized study carrells. These media centers give forceful expression to the administration's commitment to the LAP system (page 126). In addition, the plan contains three cafeterias, a central kitchen, six gymnasiums, a swimming pool, a theater with a 600-seat capacity, and a full complement of administrative and support spaces.

The building, which will serve 2000-3000 students, will be constructed of both cast-in-place and precast elements along with ribbed block for exterior walls. Total development cost will be approximately $20 million.

GREATER LOWELL REGIONAL VOCATIONAL TECHNICAL SCHOOL, Tyngsboro, Massachusetts. Architects: *Drummey Rosane Anderson Inc.—principal-in-charge: David W. Anderson; project architects: Terrence A. McCormick and Alan M. Strassler;* engineers: *Greenleaf Engineers Inc.* (mechanical); *Thomas Rona Associates Inc.* (structural); contractor: *White Construction Company.*



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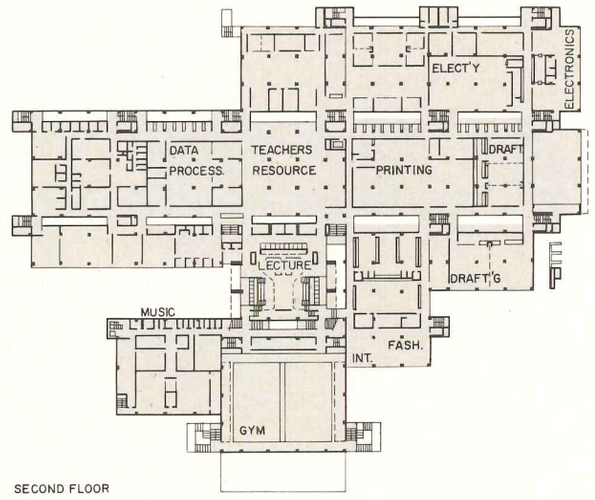

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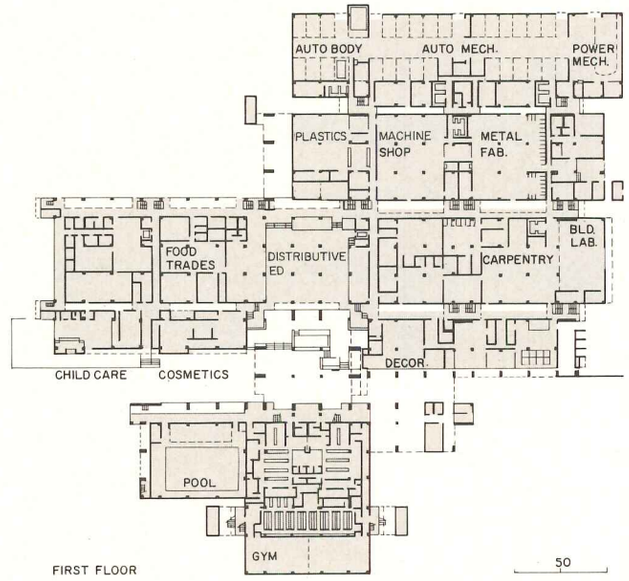

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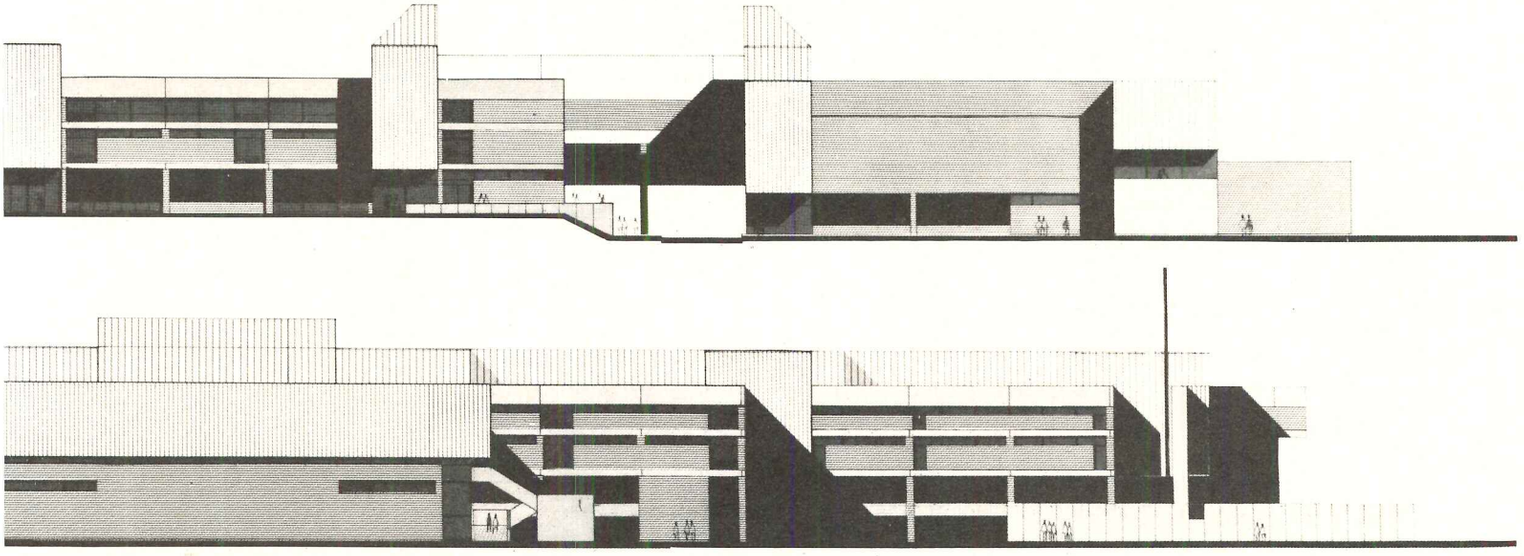
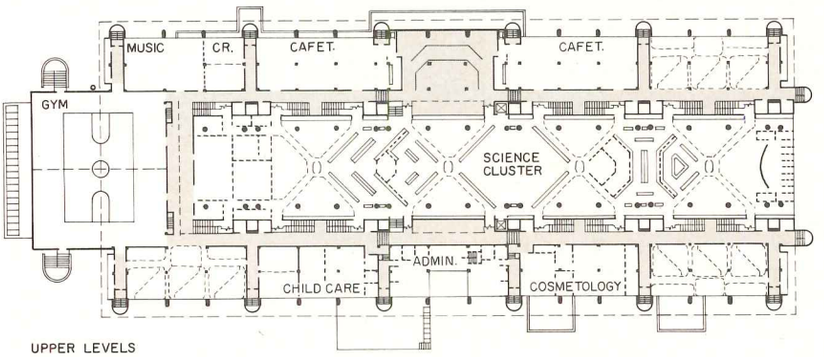
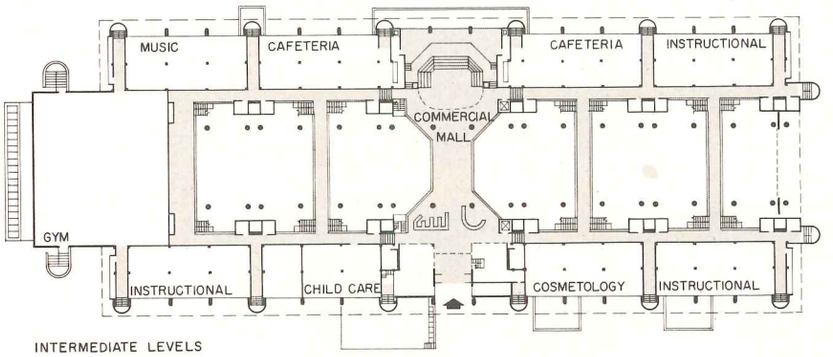
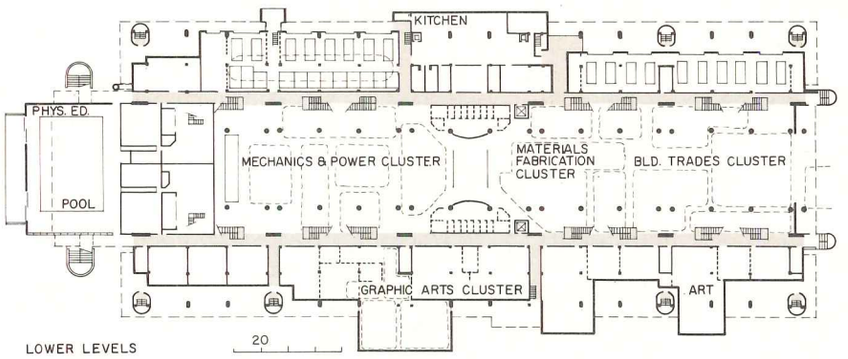




UPPER LEVELS



INTERMEDIATE LEVELS



LOWER LEVELS 20

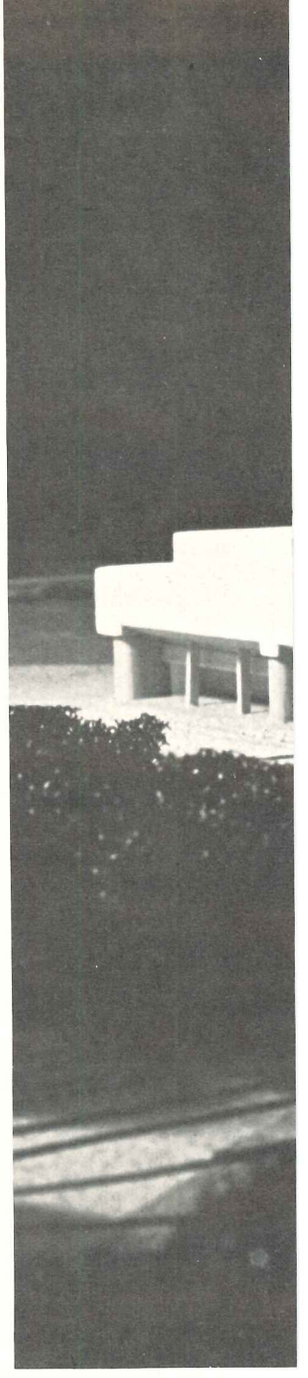
MINUTEMAN REGIONAL VOCATIONAL HIGH SCHOOL LEXINGTON, MASS.

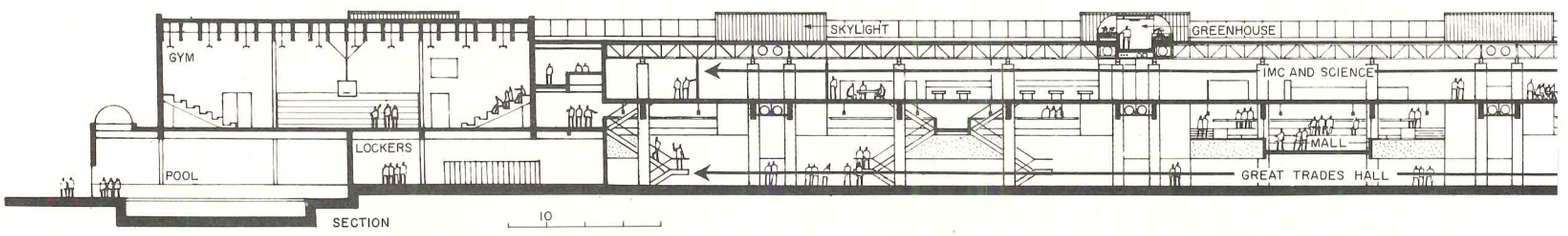
This exciting project is being designed for a belt of relatively affluent, technically-oriented communities along Route 128, outside Boston. Like the Lowell School (previous pages) by the same architects, the Minuteman facility embodies several rapidly evolving ideas that Drummey Rosane Anderson have helped to develop in a series of previous schools. Unlike Lowell, however, it will employ a single media center equipped with 300 individualized study carrells. The school is designed for cluster team teaching; students of various trades will learn skills common to each trade, then apply these skills in particularized programs. The distributive education space is a large mall, overlooking the trades hall, where articles made by the students can be publicly sold.

Minuteman makes excellent use of its open space, and exposes its educational program to the maximum consistent with fire codes. The building will be constructed using deep, precast beams supported by three-foot-diameter concrete columns. Exterior cladding will be weathering steel on a base of outsized bricks.

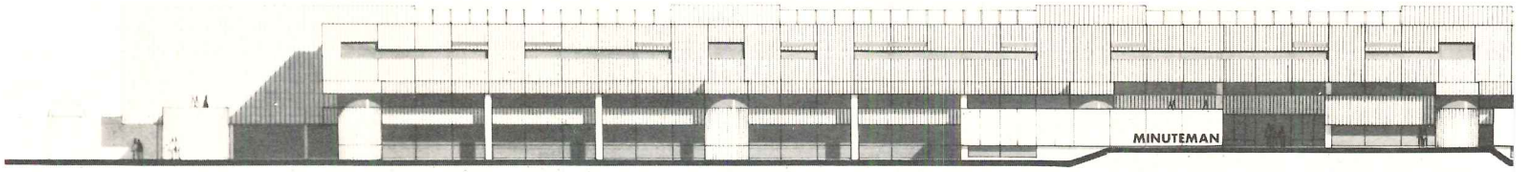
The total development cost of the 310,000-square-foot structure is expected to be $14,500,000.

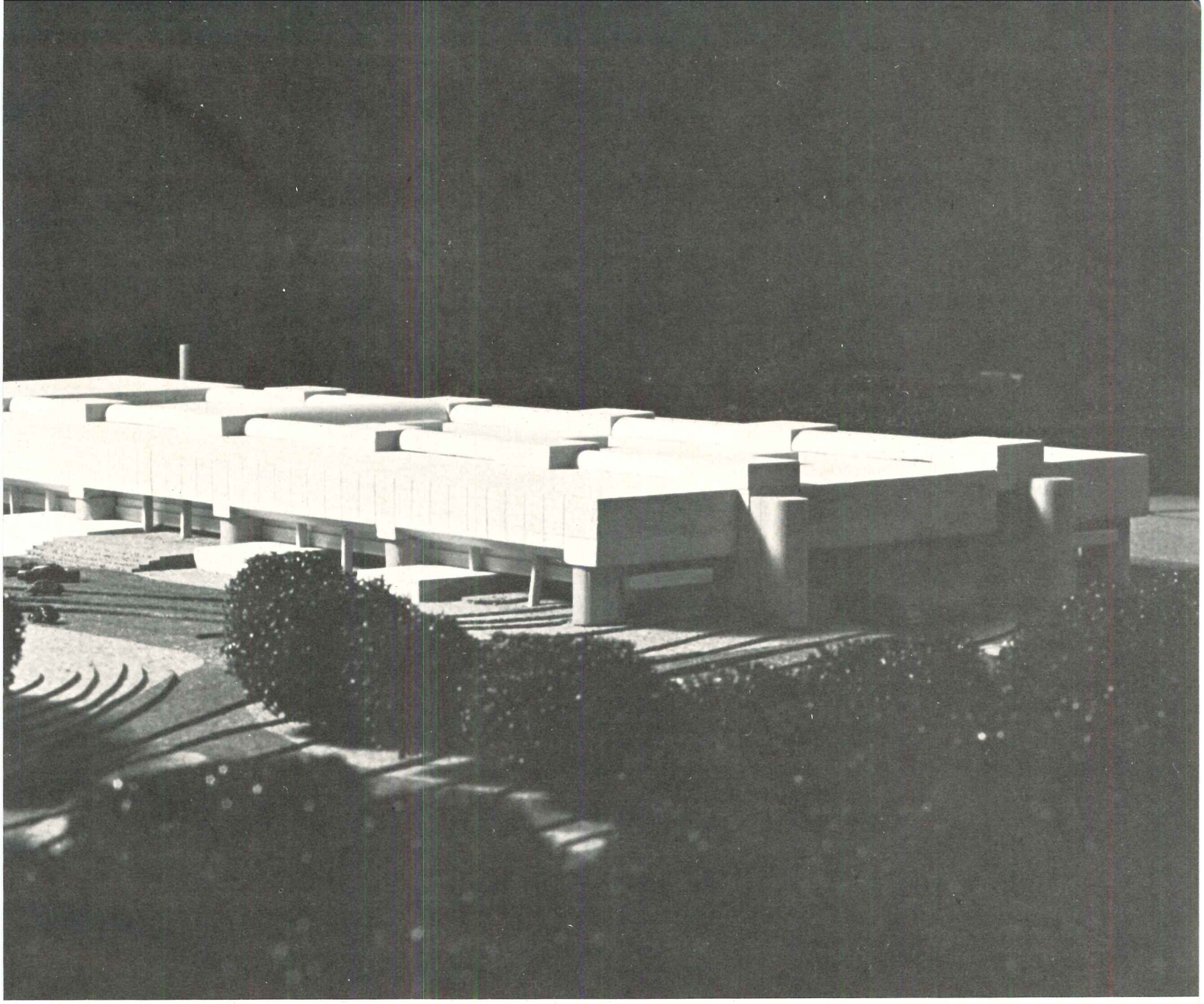
MINUTEMAN REGIONAL VOCATIONAL HIGH SCHOOL, Lexington, Massachusetts. Architects: *Drummey Rosane Anderson—David W. Anderson, partner-in-charge; Alan Strassler and Penelope Beye, project architects;* engineers: *LeMessurier, Inc.* (structural); *Greenleaf Engineers, Inc.* (mechanical); contractor: *White Construction Company.*

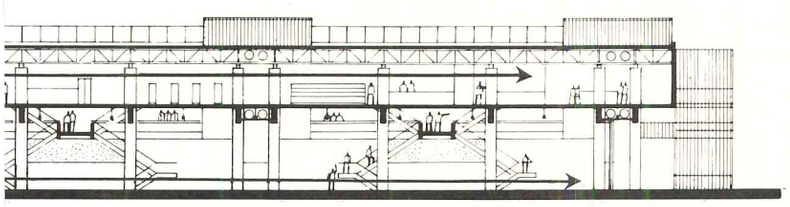


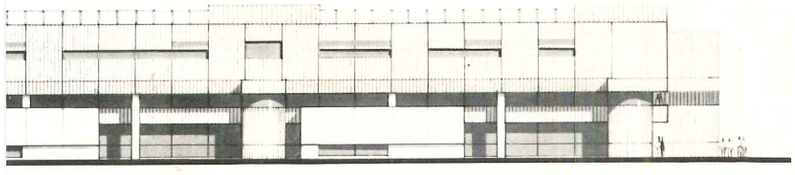


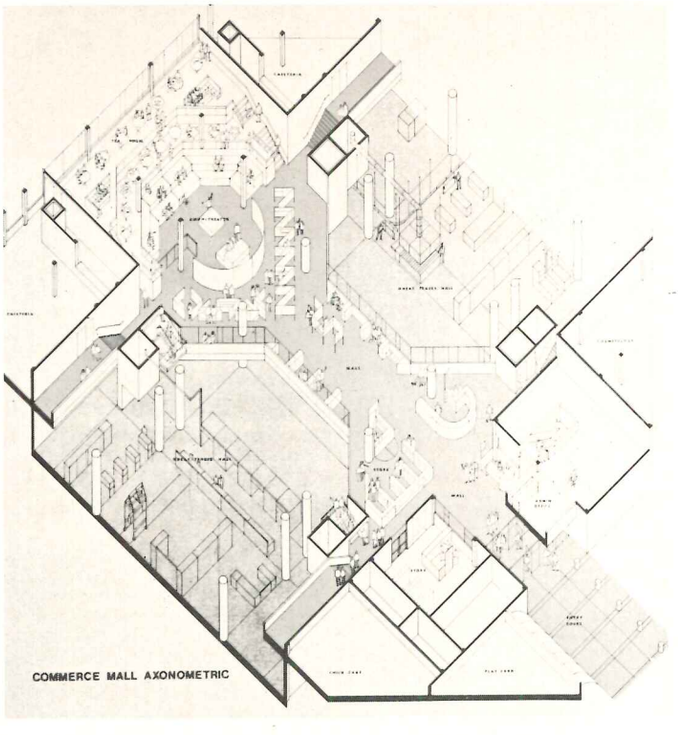
SECTION 10



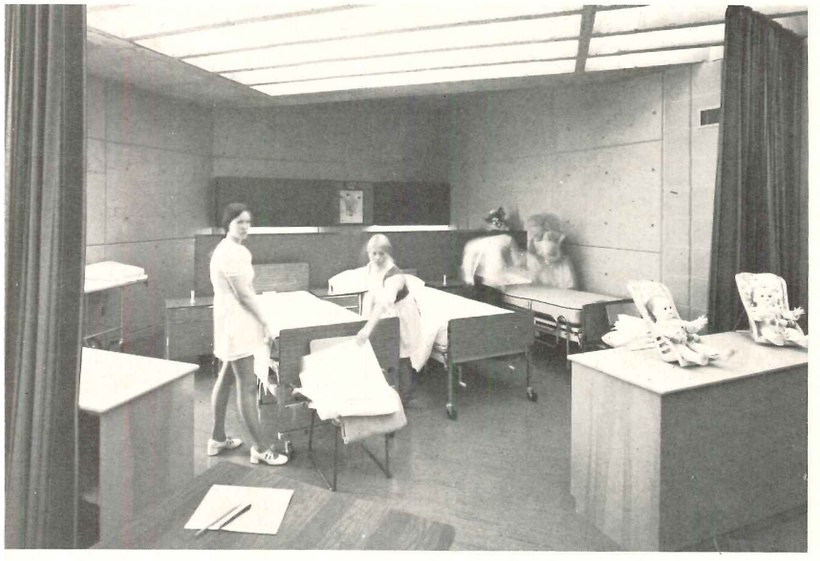


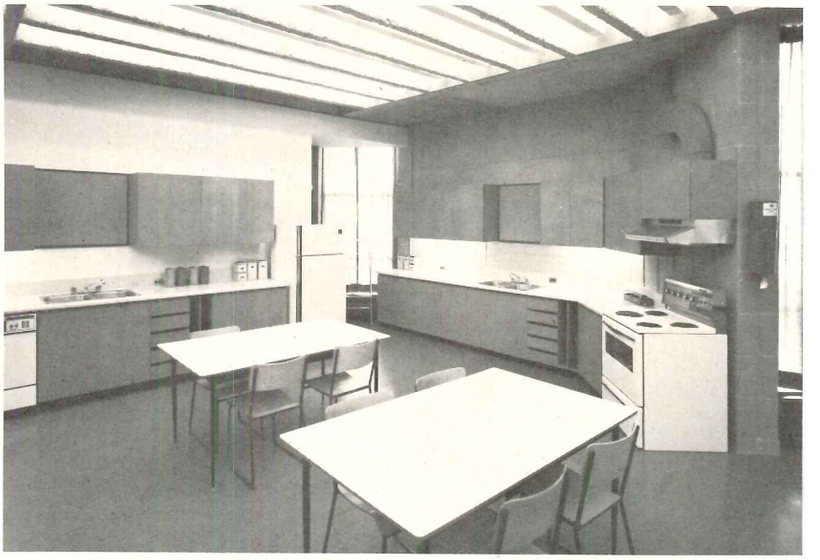


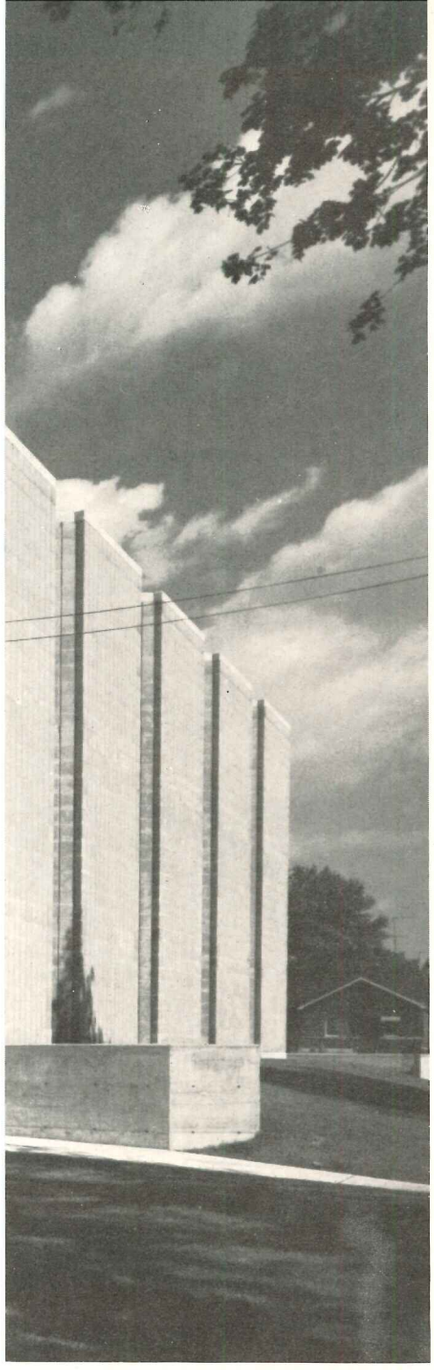




COMMERCE MALL AXONOMETRIC







Robert Perron photos

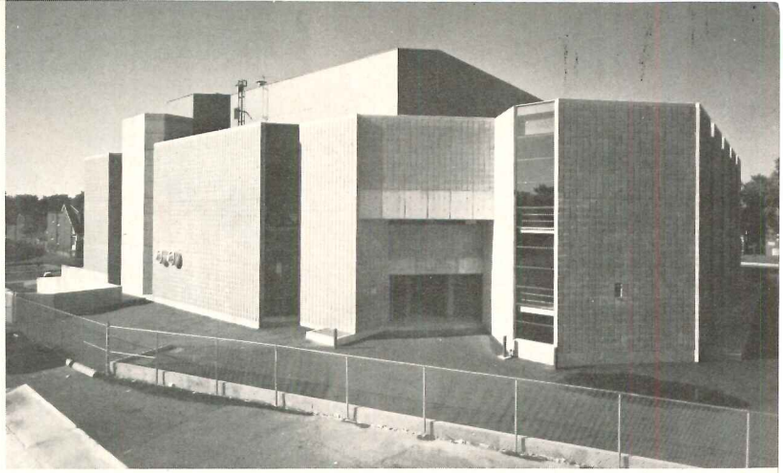
GREENWOOD SECONDARY SCHOOL TORONTO, ONTARIO

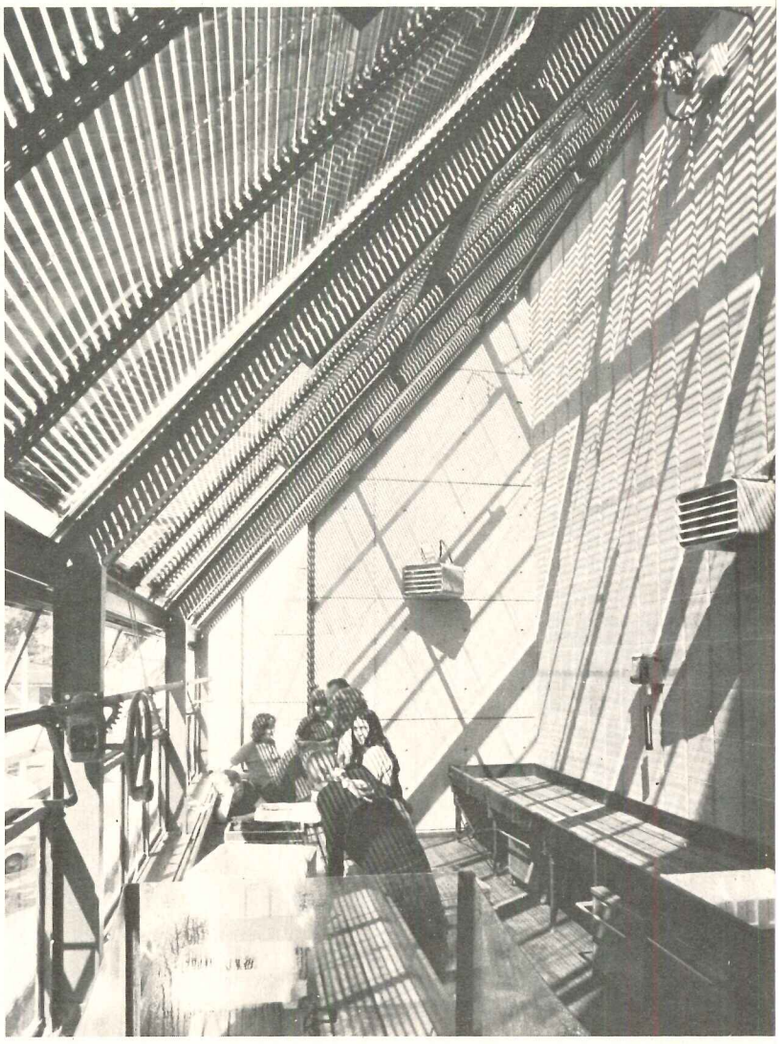
Located on an urban site in downtown Toronto, this school is designed for girls, many of whom may have either learning difficulties or physical handicaps. Entry is from the corner of the site and the visitor is immediately confronted by the library—a device that firmly establishes the building's educational character. Special classrooms for students with various disabilities are clustered on the second floor. A small greenhouse, also on the second floor, projects gracefully over the entrance. The third floor contains a gym as well as teaching spaces for hospital services, hairdressing, typing and art.

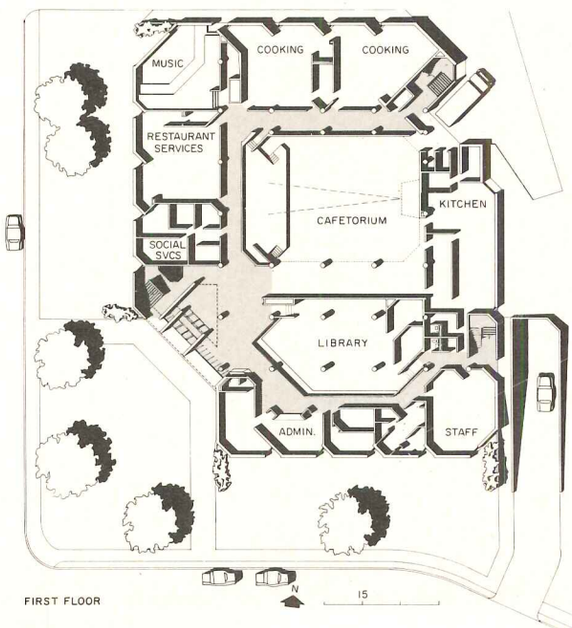
A 12 by 12-inch concrete block with chamfered edges was used for walls both inside and out. Ceilings are drywall or acoustic tile except where the waffle slab is left exposed — and bush-hammered. The bold use of color gives the school a cheerful character and the broad masonry surfaces and careful detailing give it an appealing architectural simplicity.

Construction cost for this 84,467-square-foot school was $24.50 per square foot.

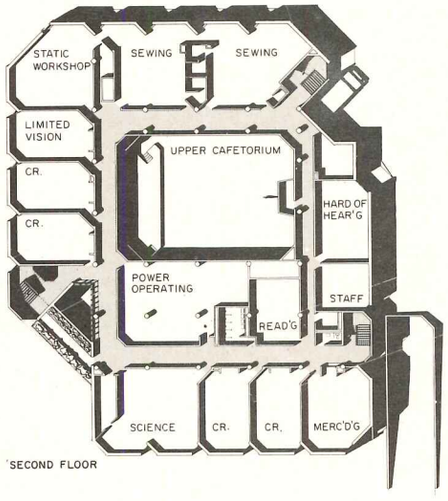
GREENWOOD SECONDARY SCHOOL, Toronto, Ontario. Architects: *Fairfield and DuBois—Andre LeRoux and Gordon Rolleston, project architects* and *G. D. Frittenburg, chief architect for the city of Toronto's Board of Education;* engineers: *Morrison, Hershfield, Burgess & Huggins, Ltd.* (structural); *Eduards Perkons & Associates, Ltd.* (mechanical); *D. E. McGregor & Associates, Ltd.* (electrical); contractor: *Paul Carruthers Construction.*



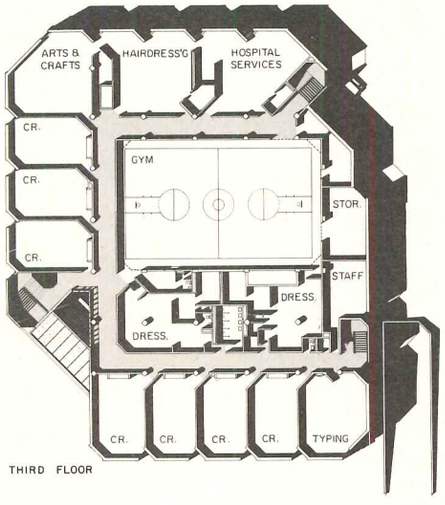




FIRST FLOOR



SECOND FLOOR



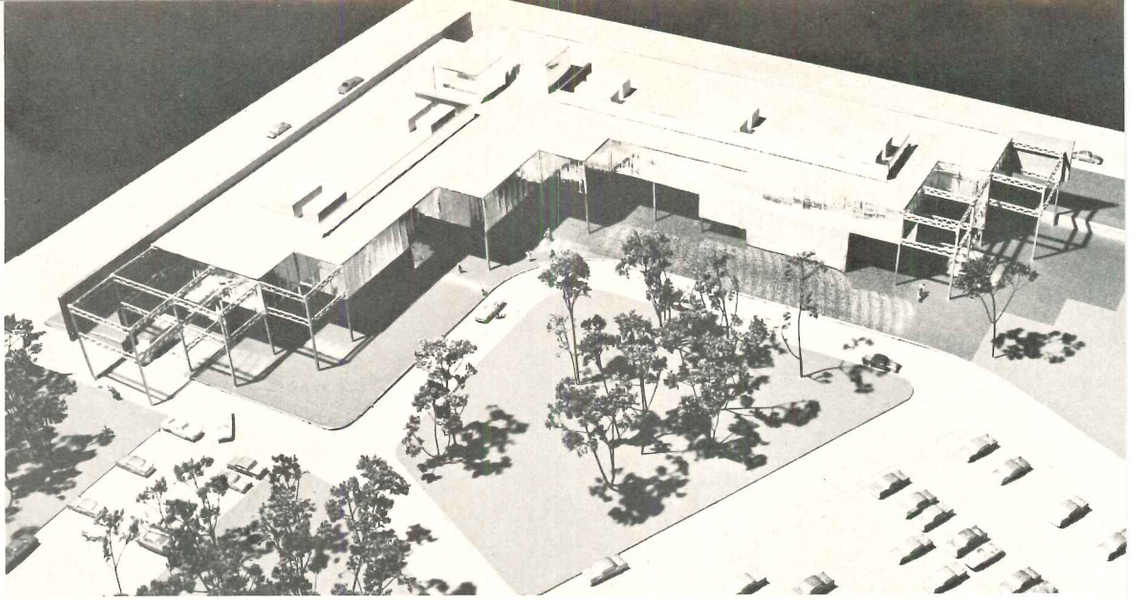
THIRD FLOOR

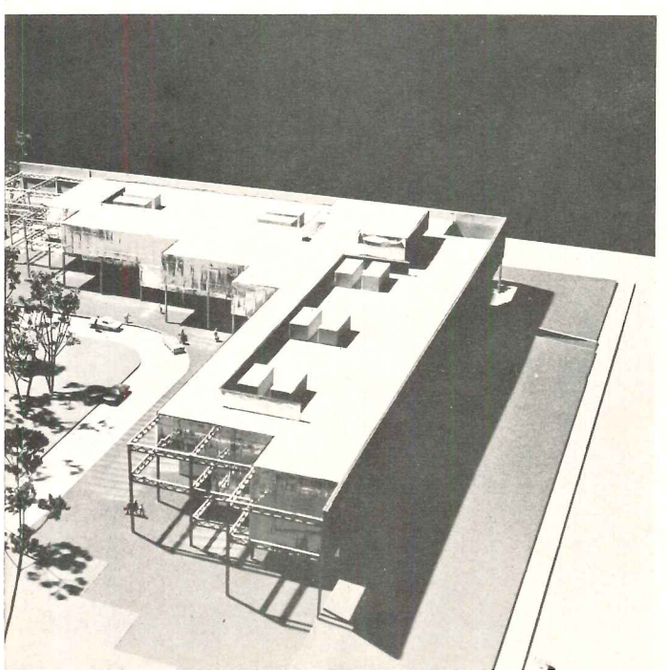
DeVRY INSTITUTE BELL & HOWELL SCHOOLS CHICAGO, ILLINOIS

The site is 17 acres zoned for industrial use on the outskirts of the city. On the southeast corner of this site, Caudill Rowlett Scott is designing a 100,000-square-foot technical school that will be owned and operated for profit by Bell & Howell Schools—a subsidiary of the large national corporation. The handsome three-story school, when complete, will accommodate 3500 students in three daily shifts. The plan takes an "L" shape, closed to the south and east, but opening inward toward stands of handsome trees and planting. Classrooms are thrust against the blind side and labs line the glazed wall. A three-story student commons occupies the central section and provides a space for mix and relaxation.

Solid exterior walls on the south and east elevation will be weathering steel. The glazed wall will be mirror glass and thus its character will change from reflective during the day to transparent at night. The structural skeleton of bar joists and 8-inch tube columns projects past the ends of the building in anticipation of its growth and to expose the industrial components of which it is being assembled as part of its design.

DeVRY INSTITUTE OF TECHNOLOGY, Chicago, Illinois. Client: *Bell & Howell Schools, Division of Bell & Howell Company.* Architects: *Caudill Rowlett Scott—partner-in-charge: G. Norman Hoover; design: Peter Gumpel; project manager: Joseph Scarano;* construction manager: *Kitchell Contractors Inc.*





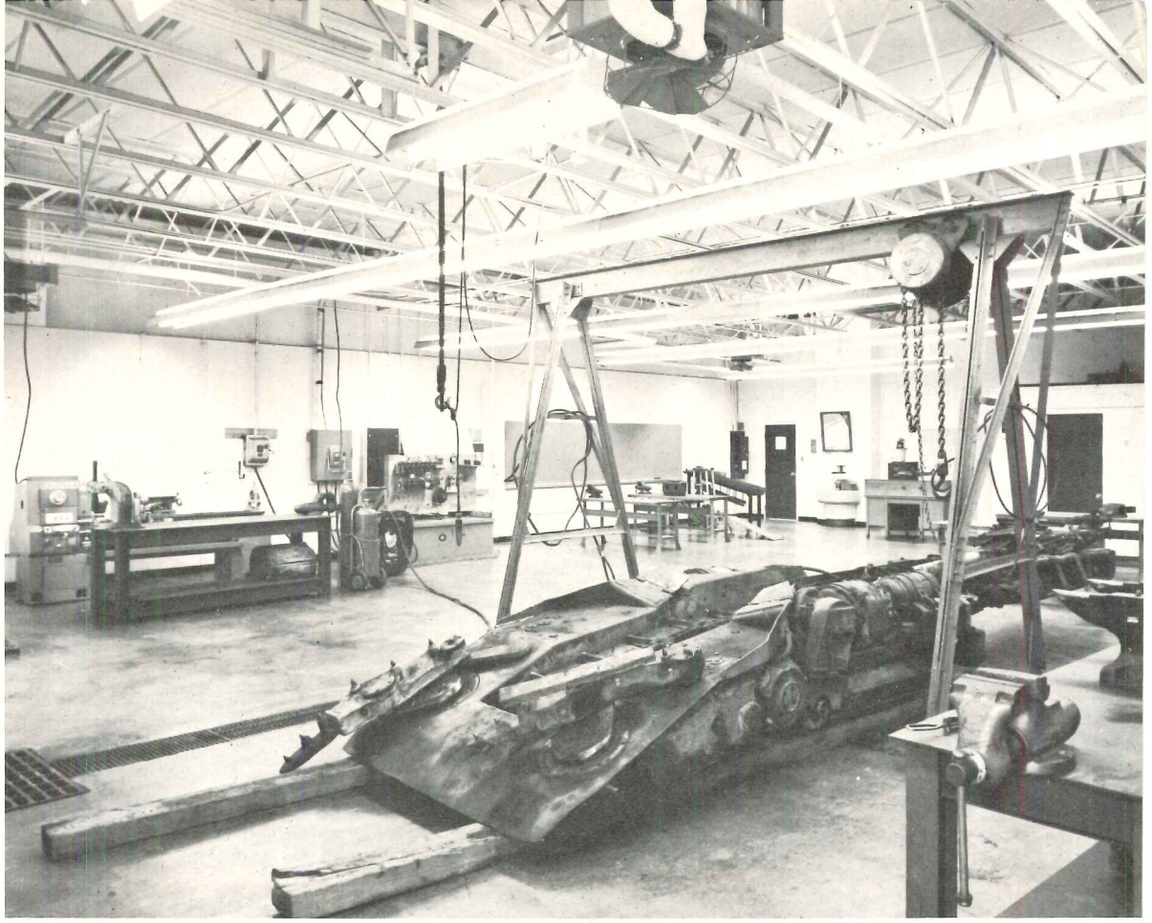
HARLAN AREA VOCATIONAL SCHOOL HARLAN, KENTUCKY

The problem here was to house five vocational programs (3 industrial, 2 laboratory), regional administrative offices and regional supply operations in a 40,000-square-foot plan. Further constraints included a very limited budget ($543,000) and a site, in coal country, remote from nearly everything except need.

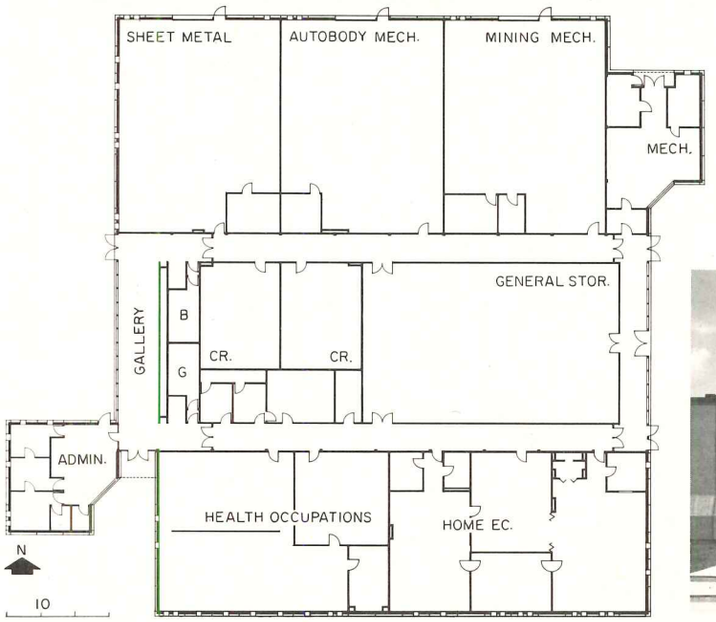
Because of the budget and because the need for flexibility was urgent, simple systems and finishes were indicated. Exterior walls are load-bearing, tilt-up panels, cast-on-the-site and broom finished. The panels are thickened near the base to provide a moment connection to the system of pier and grade beam foundations. The roof structure is a system of open web steel joists. Principal finish materials are gypsum drywall and acoustical tile.

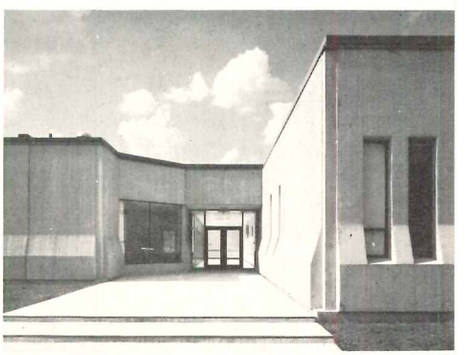
The finished building is utilitarian but has an appealing architectural character thoroughly appropriate to its important community function.

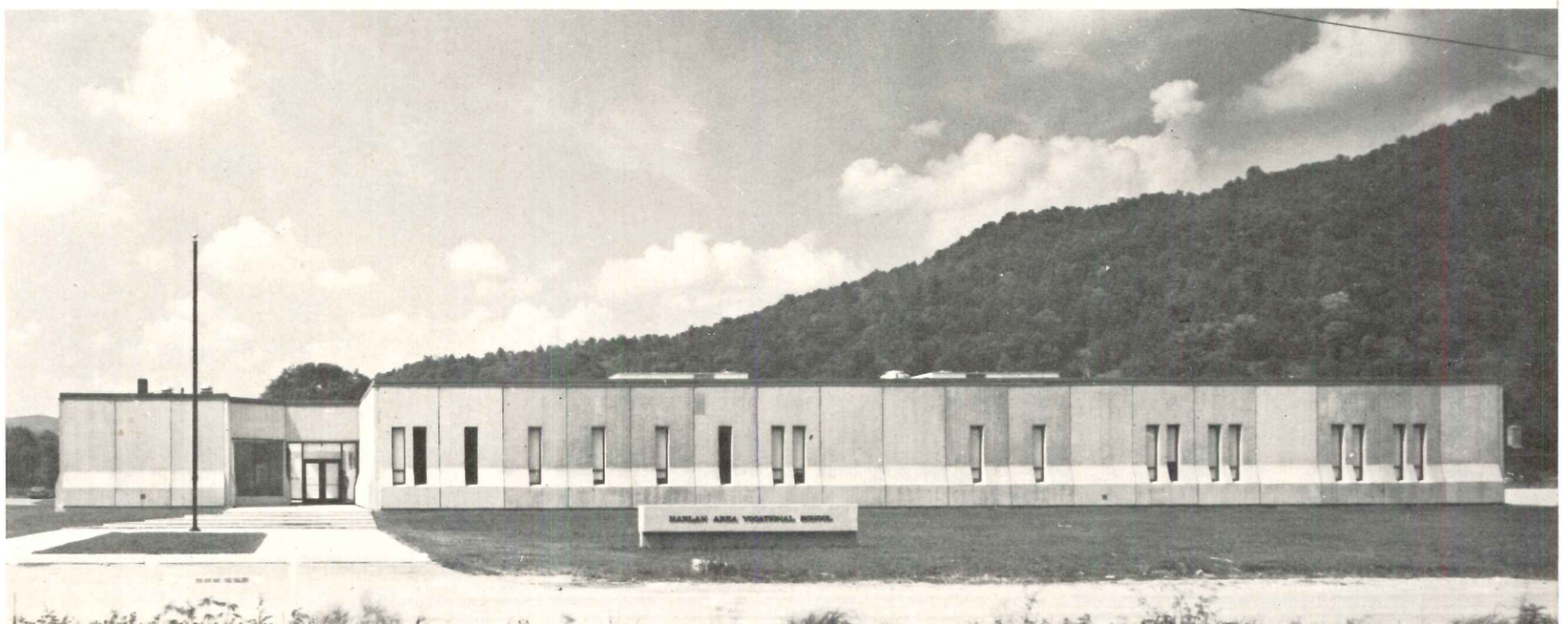
HARLAN AREA VOCATIONAL SCHOOL, Harlan, Kentucky. Owner: *Department of Finance, Commonwealth of Kentucky.* Architects: *Bennett & Tune, Architects;* engineers: *White, Walker & McReynolds* (structural); *Hugh Billehay & Associates* (mechanical/electrical); contractor: *G. Marcus Jones, Inc.*

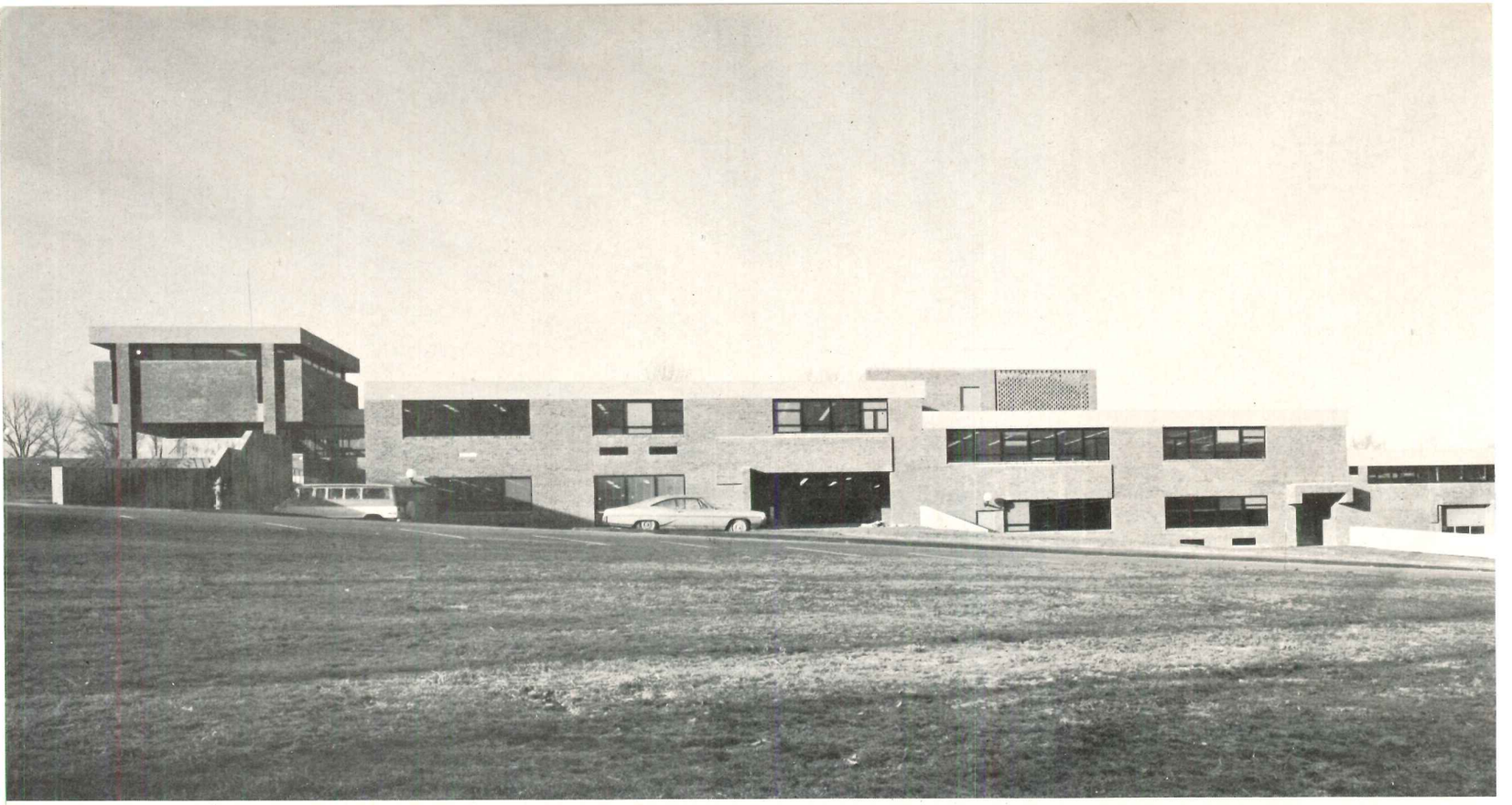


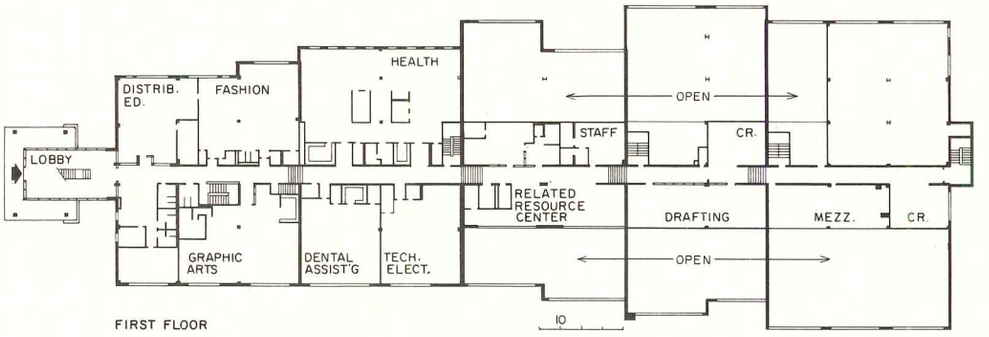
Charles Bayless photos



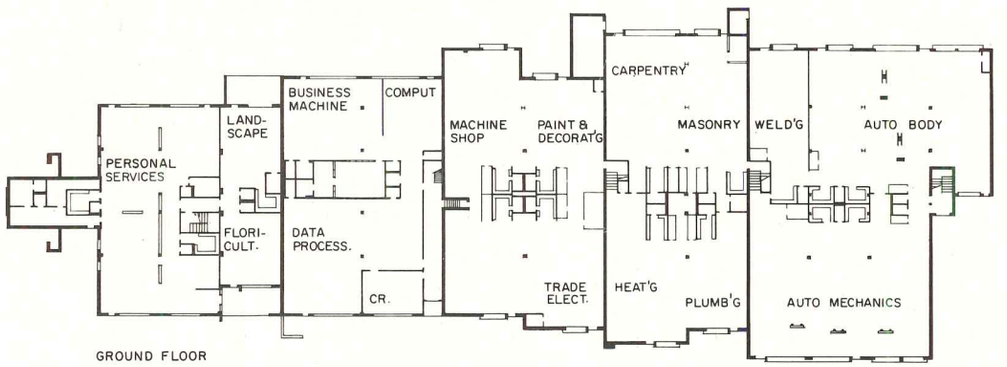




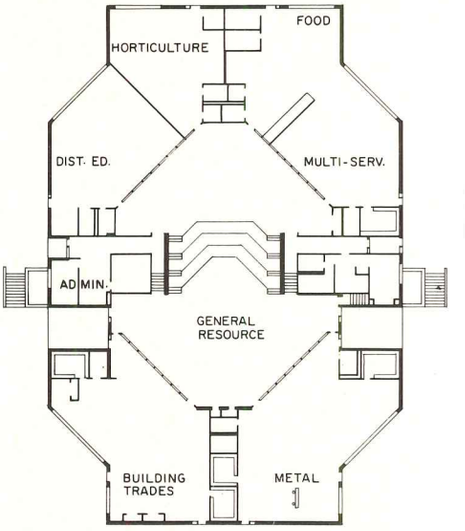




FIRST FLOOR



GROUND FLOOR



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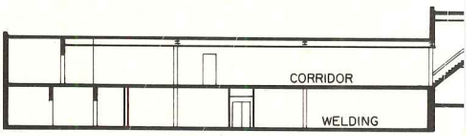
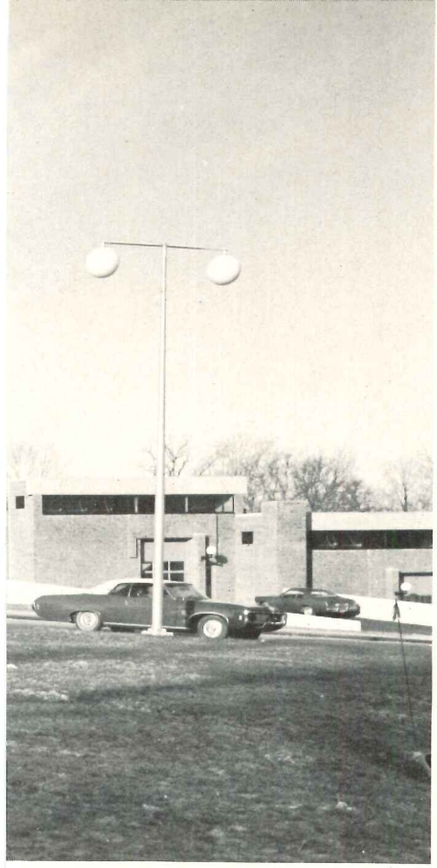
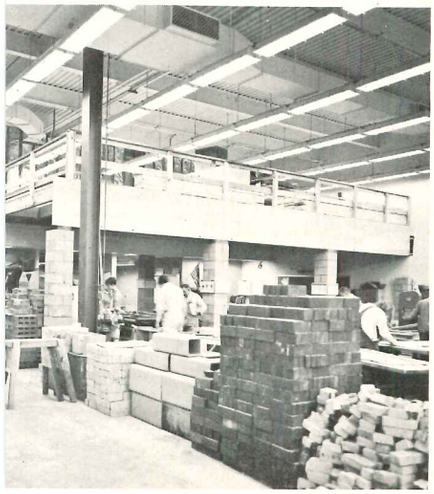






Joseph W. Molitor photos

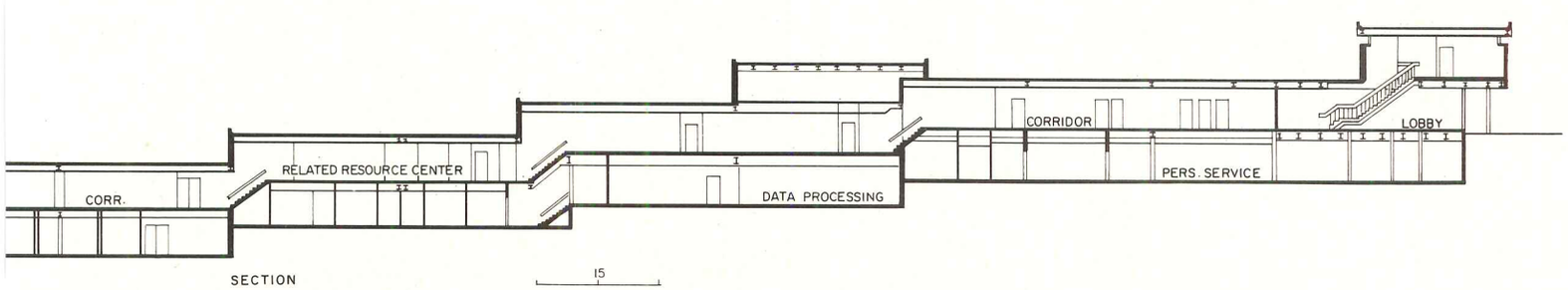
BOCES COMPLEX, YORKTOWN HEIGHTS, NEW YORK

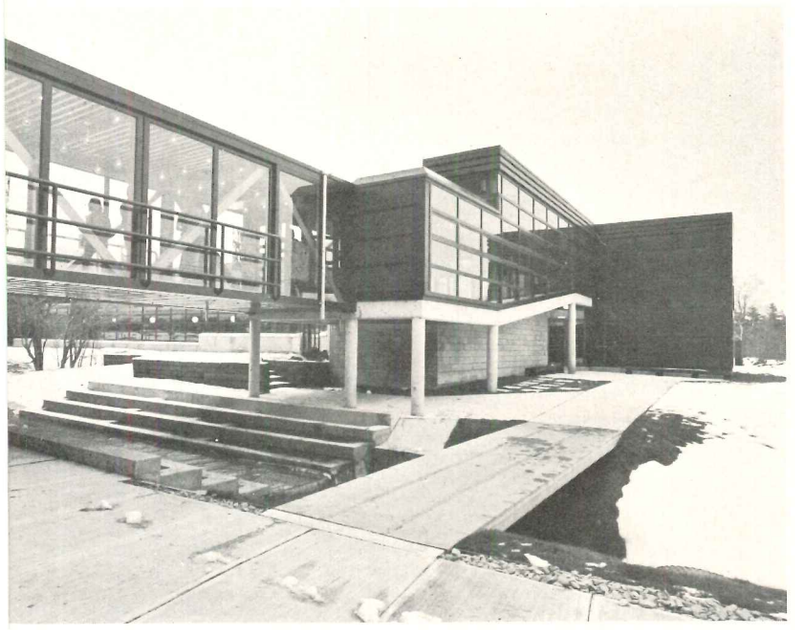
On a suburban site in Yorktown, N.Y., a two-county Board of Cooperative Educational Services (BOCES) operates a new, multi-building complex that includes a well-equipped vocational school. This brick, steel and block structure steps down a gentle incline (see section) and, from its upper level corridor, provides students and staff with overviews of many of the building's 30 or more individual instruction areas. A modest number of traditional classrooms are interspersed among the shops.

In a nearby building, the Exploratory Occupational Educational Center (photos right), youngsters make their first acquaintance with vocational skills. On the basis of interest and aptitude, individual students are later guided toward programs in the vocational school.

Soon to be completed, the four-building complex will serve 20 school districts in upper Westchester and Putnam Counties, providing specialized educational services for the children (and adults) of those communities.

BOCES REGIONAL COMPLEX, Yorktown Heights, New York. Owner: *The Dormitory Authority of the State of New York*. Architects: *LaPierre, Litchfield, Imbs;* engineers: *Finley and Madison* (structural); *Herbert Pomerantz and Associates* (mechanical); *Eberlin & Eberlin* (civil); contractor: *Polera Building Corporation*. User: *Putnam-Westchester Board of Cooperative Educational Services.*



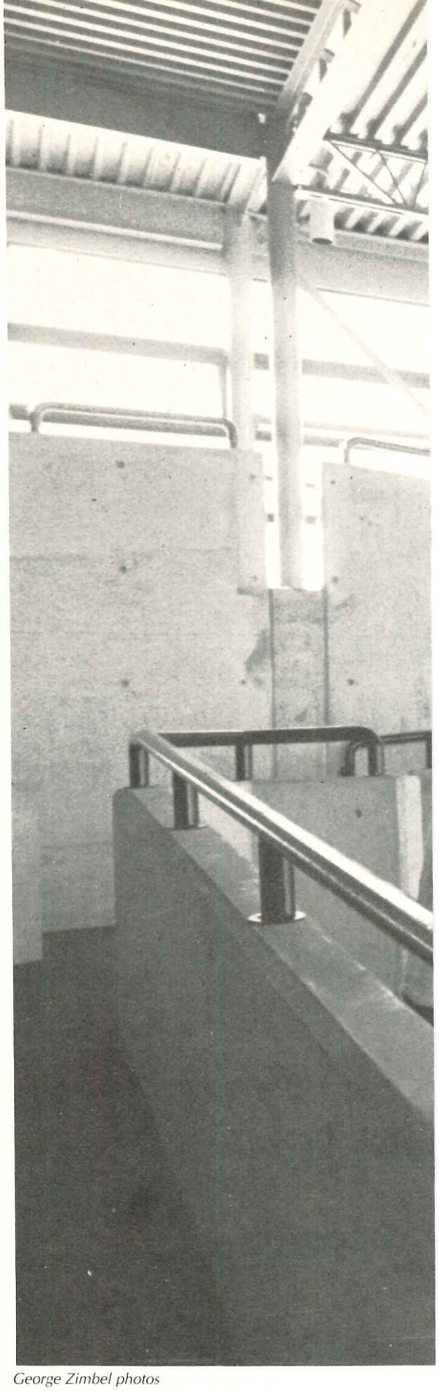


SHERIDAN COLLEGE OAKVILLE, ONTARIO

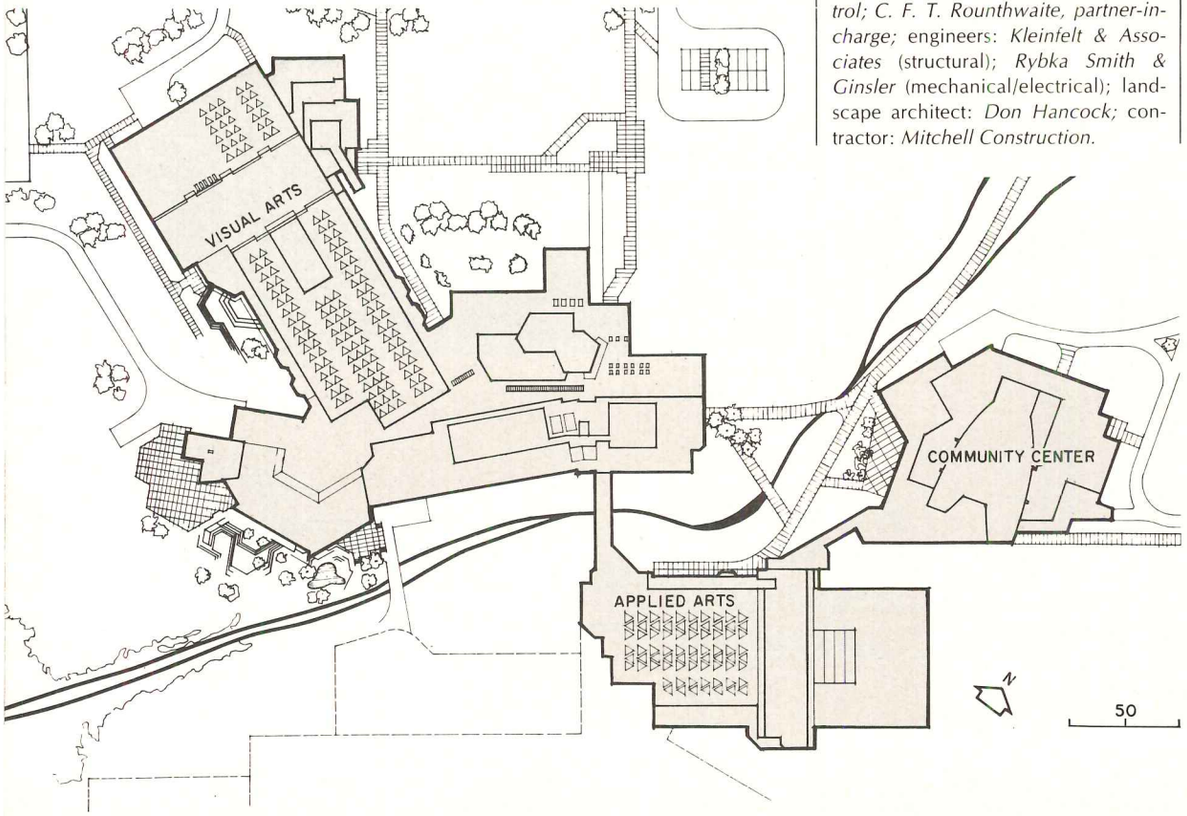
Sheridan College is a complex of one- and two-story steel structures growing in stages on a handsome site outside Toronto. The site was formerly farmland and is bisected by a shallow stream. The buildings, both existing and proposed, will be grouped around the stream and will grow outward in a finger pattern as later stages are built.

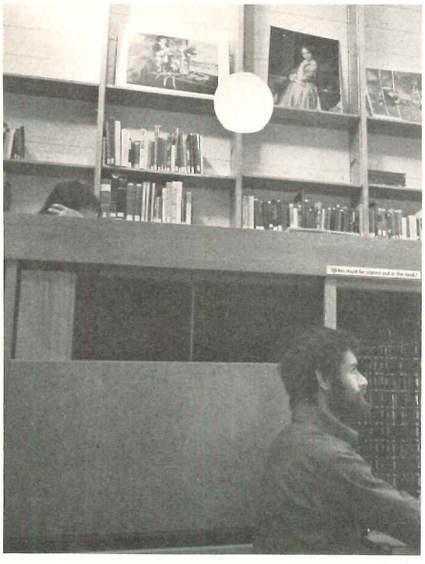
The college, of course, provides a variety of spaces, but the basic structure, which had to be assembled on a tight schedule, is a 30 by 30-foot bay with built up roofing over a steel roof deck. Triangular trusses support the roof deck and a pair of long Vierendeel girders carry the trusses (see photos). The bays are arranged on each side of an elevated spine from which overviews of skylighted studios are provided on each side. All services have been left exposed for maximum flexibility. Ductwork, structural hardware and conduit, therefore, become integral parts of the interior design. It is gratifying to see them assembled so convincingly into a coherent, evocative and colorful visual whole.

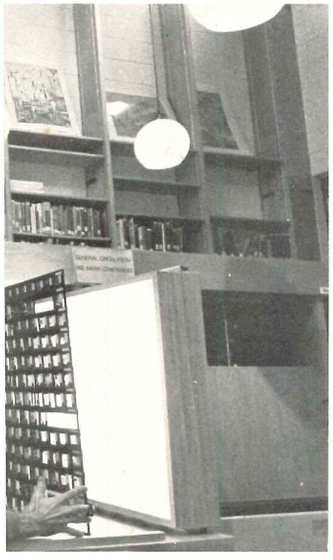
SHERIDAN COLLEGE, Oakville, Ontario. Architects: *Marani, Rounthwaite & Dick—Klaus Donker, designer; Keith Wagland, planner; David Freeman, project manager; A. Cosway, cost control; C. F. T. Rounthwaite, partner-in-charge;* engineers: *Kleinfelt & Associates* (structural); *Rybka Smith & Ginsler* (mechanical/electrical); landscape architect: *Don Hancock;* contractor: *Mitchell Construction.*



George Zimbel photos







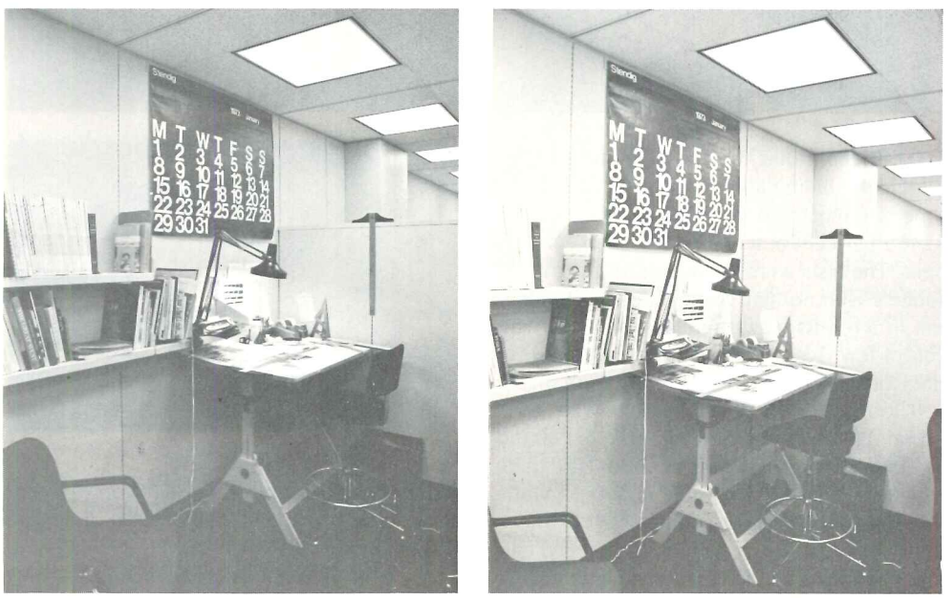
Sheridan students gather for coffee and talk (top photo) in a small cluster defined by low partitions and floated in the enlarged corridor. Demountable, bleacher seating is provided in the large-scale work spaces (center photo). These large studio spaces are lighted by a combination of fluorescent tubing and natural daylight admitted through a regular pattern of pyramidal skylights. Faculty desks (photo below) overlook the studios in both directions from the elevated gallery. These spaces, large and small, are filled with exciting color and activity.

Technical news reports and analysis

Conserving energy in lighting: proposals emerge from both the design professionals and industry

Buildings, altogether, take a large portion of the energy consumed by this country. And, because lighting load—compared to the total—is large in itself, and, in turn, affects the amount of air conditioning required, it has become the focus of much controversy in the current era of energy shortages. The need for conservation of energy with lighting systems is not only being argued for by architects, engineers, and lighting consultants, but it is acknowledged, as well, by the lighting industry itself.

As might be expected, suggestions of what to do about it run the gamut of reasonableness and practicability. With respect to the energy demand of lighting, some say footcandle levels, as commonly used, ought to be arbitrarily reduced. Others say that too much emphasis is laid on footcandle levels *per se;* that from an energy standpoint, lighting should be given a budget, and that the building designer should then utilize this budget to obtain the best type of lighting appropriate to the various building spaces. The Illuminating Engineering Society says that their recommended lighting levels provide for a range of values in buildings such as office buildings and schools, depending upon the degree of difficulty of the tasks involved. One of 12 recommendations made by IES last year for conserving lighting energy was that higher levels of light be provided for seeing tasks as compared with non-working areas—corridors, file space, etc. Obviously such an approach requires a lot more design talent and time than is commonly employed in office buildings today, where an entire floor is a uniform geometric pattern to suit a particular office planning module, ceiling-grid module, and/or a particular budget constraint. While it is obvious that the concept of completely flexible modular space is not consistent with efficient energy utilization—with a lighting fixture being provided in each module so that partitioned offices can be located at will—the "put the light where it is needed" approach may not be so easy. It may require the client to make up his mind sooner how floor areas are going to be used. The owner has to have the right talent available when changes are made in the future. The lighting design in the beginning is likely to take a higher level of expertise (both lighting design and architectural design) than is normally brought to bear on the problem to achieve results that are both functionally effective and esthetically satisfying. It is likely to be more expensive initially than the ubiquitous 2- by 4-ft recessed troffer in a lay-in ceiling.



Higher intensities of lighting for difficult tasks can be provided locally. With the desk lamp off, illumination is 100 fc; with it on, it is 200 fc. Brightness ratios in the viewing area are well within the comfort range. Of course the lamp has to be positioned to avoid reflected glare.

But even with the "blanket" approach to lighting, savings could be made in energy usage—if not demand—by local switching to turn off lights in unoccupied spaces, or switching off part of the lights when the building is being cleaned in the evening. Local switching has not been done much recently in office buildings because it increases initial cost. And the question is who wants to pay for it now? Dimming of banks of fluorescent lamps on a programed basis or in response to the availability of daylight is technically feasible using solid-state dimmers, but the energy savings vs. higher initial cost picture needs to be fully examined.

Another approach is to provide a level of general illumination, somewhat less than is required for critical seeing tasks, to give certain degree of brightness to room surfaces and some on the tasks, and to add the balance required with local luminaires. Carrels in schools and libraries are an example. And, more recently, a system has been developed for office buildings in which indirect general lighting and local lighting have been built directly into office-landscaping-type furniture wherever needed.

Greater utilization of daylight would require more care in designing for proper brightness relationships within rooms, in evaluating the impact on air conditioning, and in planning spatial arrangements (deep interior spaces cannot benefit except by skylighting).

I.E.S. lighting levels stem from value judgments based upon data from Blackwell

Lighting levels have increased over the years as the state of the art has advanced in efficiency of lamps, efficiency of luminaires, and in the control of glare and heat from lamps. For example, before fluorescent lamps were introduced, the radiant and convected heat from incandescent lamps put a virtual ceiling on footcandle levels. Energy costs have not been an appreciable deterrent because they have been, particularly in recent years, small in comparison to the other owning costs of buildings such as taxes and maintenance.

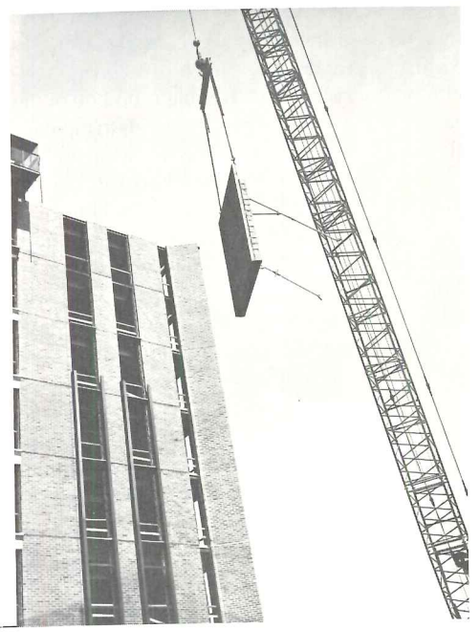
A new set of recommended illumination levels was announced by the Illuminating Engineering Society in 1958. It was based upon 56 "practical tasks"—many of them, industrial—submitted by IES application committees to

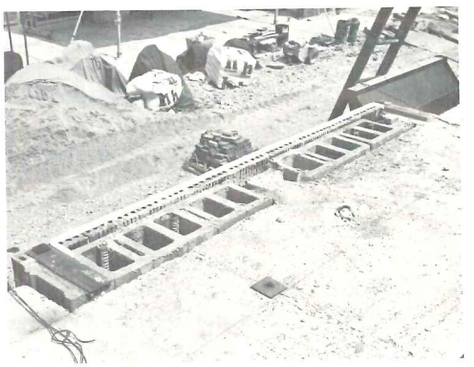
Load-bearing masonry panels are site fabricated in "mini-factories" to speed building completion

An estimated four month's saving in construction time has been attributed to the use of story-high, load-bearing masonry panels in the Tower 14 office building in Southfield, Michigan, designed by architects Nathan Levine & Associates. The building was out of the ground in May of last year and topped out the last of November. Cost of the project, excluding land, was $20 per square foot.

The precast panels of brick with block back-up were fabricated by union bricklayers at the site in two canvas-covered shelters that also serve as storage sheds for the panels, which are cured for seven days before they are lifted by crane to their positions where they are set by the crews. The masonry contractor, Vetovitz Brothers, Inc., was able to erect the four corners and the other exterior panels for each floor in 16 hours. The time cycle for each floor to be structurally framed was from seven to eight days. The window contractor could follow right behind panel erection because there was no splashing of mortar.

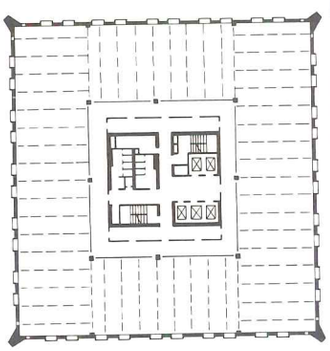
The prefab masonry wall panels were designed by consulting structural engineers William Lefkofsky & Associates to take only vertical load—their own weight plus half of the load of the prestressed double-tees that form the floor system. The brick and block wythes of the panels are bonded by a grout-filled collar joint and horizontal wire reinforcing. The panels are reinforced at corners to carry the lintel reaction (the lintels are needed to support legs of the double-tees when they occur within a window module). Panels also are reinforced to permit lifting without creating tensile stresses in the mortar joints. The lifting device is a coil loop attached to one of the vertical corner bars which runs full height of the panel, and is solidly grouted. The vertical bar is looped at the bottom in a bond beam; thus, during hoisting, the panel is lifted, effectively, from the bottom. The panels are full grouted through the 10th floor; from the 11th through 14th floors, only where reinforced.

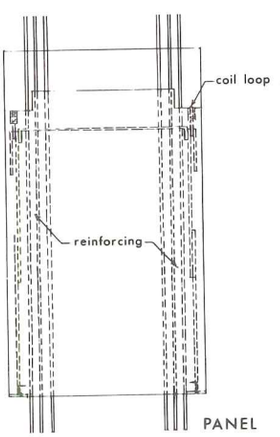


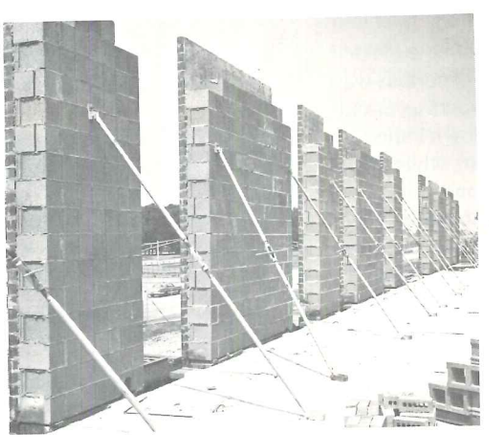


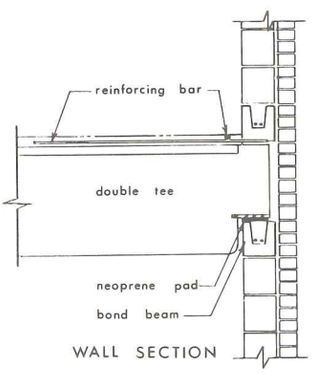
Panels are fabricated on masonry production lines within on-site enclosures. The masons use automatic mortar spreaders to lay up the concrete block back-up speedily. The panels are guided into place by workers using a piece of equipment that serves as a "stop" for the panels and also as a scaffold. The panels are grouted and reinforced to tie them together. A strip of foam plastic prevents seepage of grout on the outside face. The six bars (three on each side) that extend from one panel to the next are placed in the field.

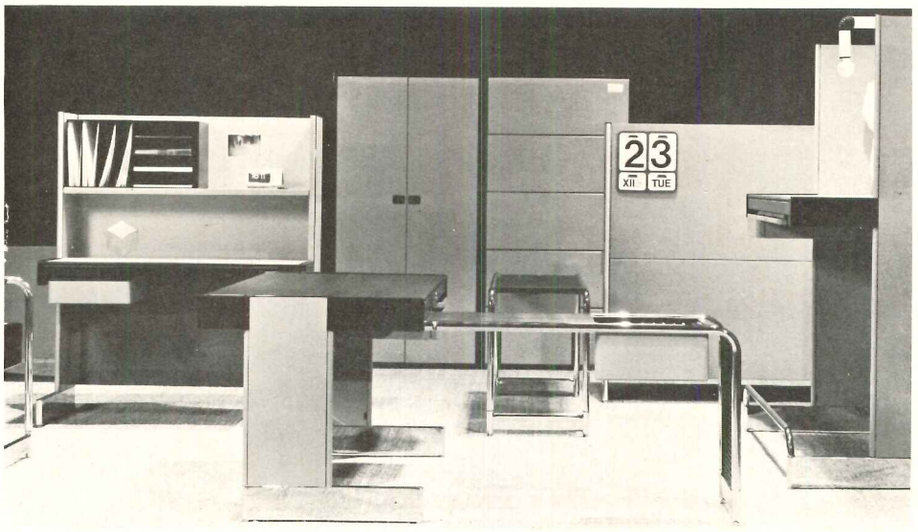
The floors are prestressed double-tees that span 36 ft from the masonry panels to a ring of steel beams near the core. The reinforced masonry core takes all of the wind load transmitted by walls to the floor system.





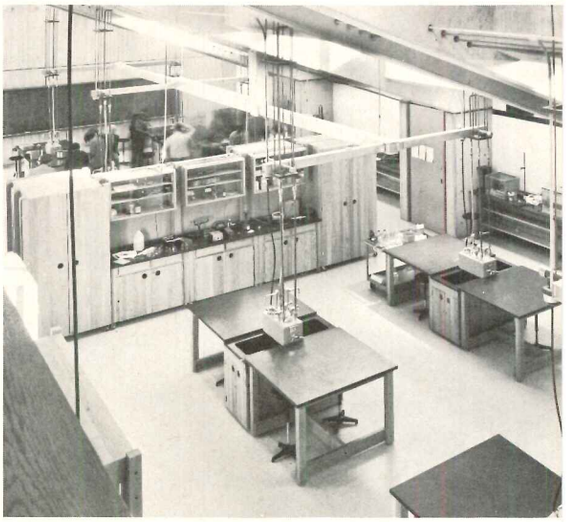






OFFICE SYSTEM / Two systems—all wood or all steel—can be combined, using the oak desk shell of the *F-System* with the steel components of the *S-System*. Secretarial, clerical and executive tables and desks in light or dark oak finishes or five plastic finishes are offered with storage units. ▪ Sunar Industries Ltd., Toronto, Ontario.

circle 300 on inquiry card



CLASSROOM SCIENCE FURNITURE / The *KD6* modular system combines solid oak construction with the ease of knock-down components for various arrangements. Charcoal-colored inorganic work tops are included. Adaptable components permit panels, doors, shelves and tables to be added, subtracted, lowered, raised. With a few extra parts, the system can be converted to dormitory or office furniture. ▪ John Adden Associates, Inc., Boston, Mass.

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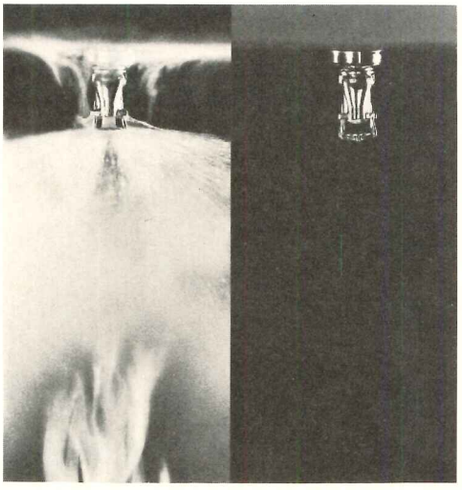

AUTOMATIC ON-OFF SPRINKLER / The *Aquamatic* is the only sprinkler head designed to shut itself off after extinguishing a fire, according to the manufacturer. Independently operating heads automatically reset themselves and can be integrated into existing sprinkler systems or designed into new construction. Tested and approved by Factory Mutual and UL. ▪ Grinnell Fire Protection Systems Co., Inc., Providence, R. I.

circle 303 on inquiry card

TABLE-ARM LOUNGE SEAT / Recommended for schools, the modular *Cubo* line of urethane lounge seating features a table-arm of oak butcherblock or rosewood veneer. A plastic laminate arm is also offered. Coverings include leather, vinyl or fabric. ▪ Harvey Probber, Inc., Fall River, Mass.

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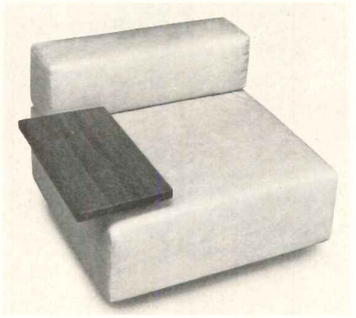

CUSTOM CASEWORK / This library installation illustrates the manufacturer's capability to produce complete media center furnishings to architectural specifications. All wood is light driftwood oak with dull polyurethane finish for maintenance. ▪ Harvey Probber, Inc., Fall River, Mass.

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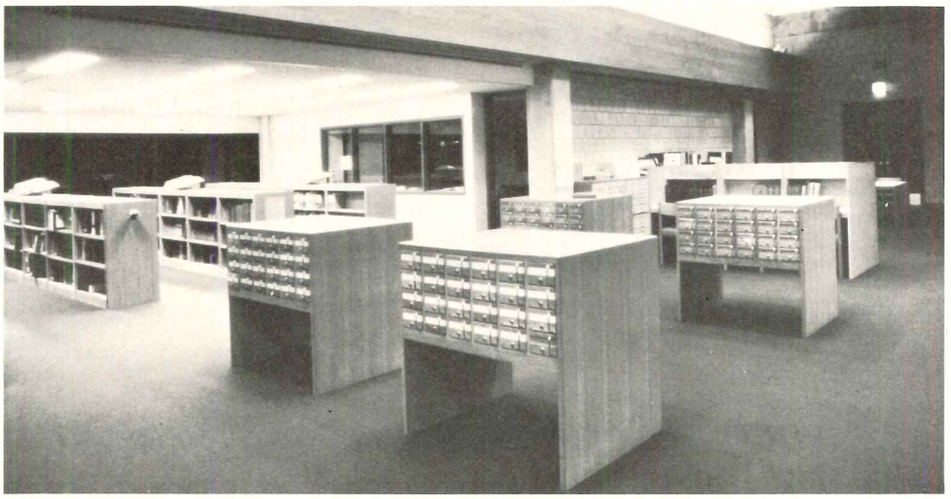
more products on page 153



Knoll International

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Andrew Ivar Morrison and Bruce R. Hannah design for Knoll

Their multiple seating system is a trim solution to the problems of all public space requirements, offering the economical use and easy maintenance of polished aluminum and a unique upholstery method.

Knoll International operates in 31 countries.

For more data, circle 68 on inquiry card

Bright idea

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For more data, circle 69 on inquiry card

continued from page 149

HID OUTDOOR LIGHT / An integrally-ballasted fixture for area lighting can be used singly or in clusters, with 400-watt mercury, *Metalarc* or *Lumalox* 2 lamps, or with 1000-watt mercury or *Metalarc* lamps. A sturdy channel trunnion mounts at the center of gravity to distribute the unit's weight evenly and make aiming easy. The fixture is prewired. The *BAL* is offered in standard grey finish or six optional finishes or custom-matched finishes. ▪ GTE Sylvania, Inc., New York City.

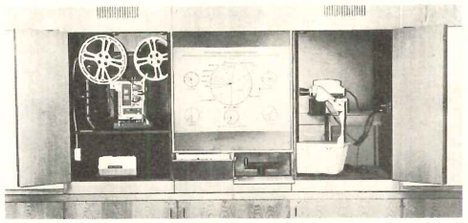
Circle 305 on inquiry card

INDUSTRIAL DUCT LINE / An expanded line of spiral duct and machine-made fittings is announced, in sizes up to 60 in. o.d. A wide range of ventilation and exhaust fittings are also available. Line is in 16 gauge galvanized steel ▪ United McGill Corp., Westerville, Ohio.

Circle 306 on inquiry card

COR-TEN SEAMLESS PIPE / Available in sizes ranging from 2⅜ in. to 12¾ in o.d. the pipe, like all *Cor-Ten,* requires no paint and is recommended for use as columns or other structural members. Product reduces weight while increasing strength. Weathers to a dark brown. It provides a 50,000 psi minimum yield point and four times the corrosion resistance of carbon steel. ▪ United States Steel Corp., Pittsburgh, Pa.

Circle 307 on inquiry card



AV CENTER / Designed to replace full-scale custom systems, it is prefabricated to be installed as furniture against a wall or in a shelf arrangement. Sound motion pictures, slides and overhead transparencies are shown in normally lighted rooms on a non-glare screen, with front access to all equipment. ▪ Jerome Menell Co., Inc., New York City.

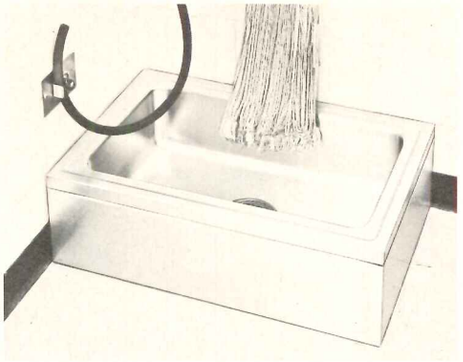
Circle 308 on inquiry card

ELECTRONIC SLIDE RULE / The *Model ESR-1* features a full 12-digit display, automatic cube root and hyperbolic functions in addition to all transcendental and trigonometric functions. The 16-digit version features direct conversion of radians to degrees, as well as degrees, minutes and seconds to decimal equivalents. ▪ Dietzgen Corp., Chicago, Ill.

Circle 309 on inquiry card

WOOD CURTAIN WALLS / A full line of custom-fabricated wood curtain walls are manufactured completely ready for erection with the company's pre-glazed insulating glass. Load-bearing walls can be custom produced to meet virtually any design specifications or size or configuration and can be painted or stained in any color. Any size or thickness of glass can be supplied. ▪ Burton Enterprises, Inc., Cobleskill, N.Y.

Circle 310 on inquiry card

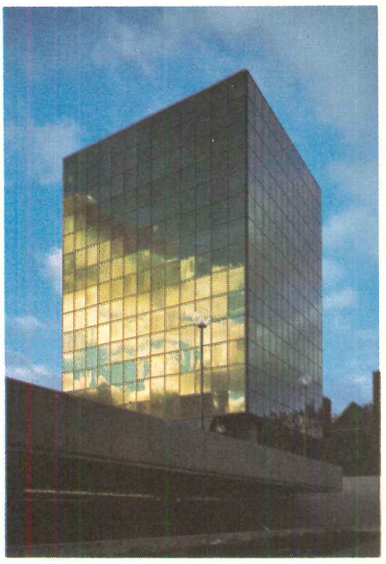


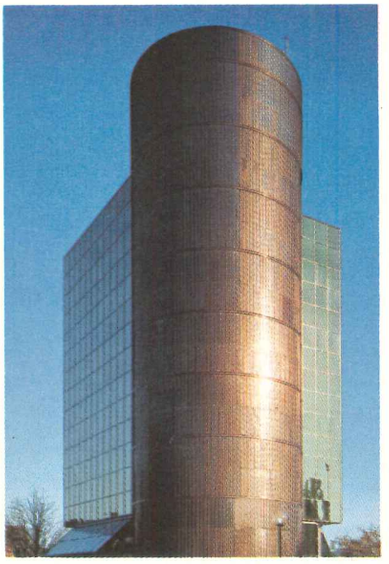
FLOOR SERVICE SINK / Made of stainless steel, unit comes in 25 in. by 23 in., or 33 in. by 21 in. models. ▪ Elkay Mfg. Co., Broadview, Ill.

Circle 311 on inquiry card

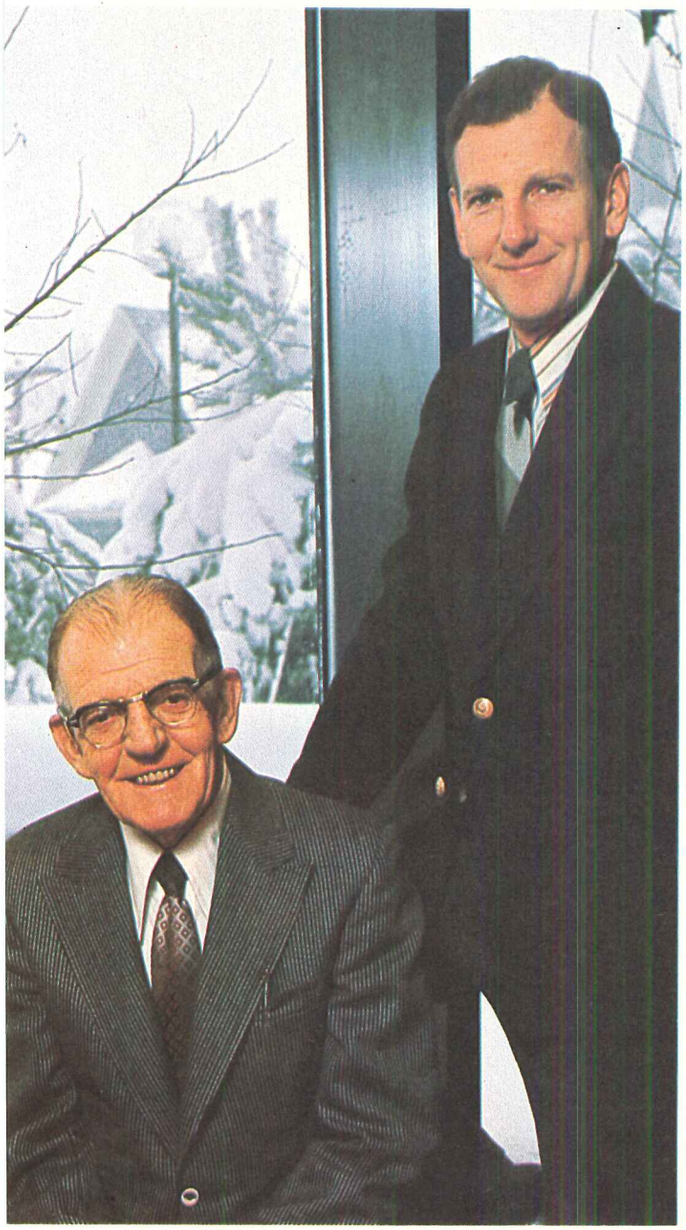
more products on page 166

"WE LIKE THE IDEA DOESN'T HAVE TO FROM NATURE PROTECT





THAT A BUILDING SEPARATE PEOPLE IN ORDER TO THEM FROM IT."



Don W. Seaton, Chairman of the Board;
Kenneth D. Seaton, President,
Detroit & Northern Savings & Loan, Hancock, Michigan

Detroit & Northern Savings & Loan brings an open-world philosophy to bear on its new headquarters building in Hancock, Michigan.

"The area around the building is known as 'Copper Country,' and we wanted the building to reflect Detroit & Northern's long and close involvement with that area's people and industry," says President Kenneth Seaton. "The exterior of the building features copper tones, set off by reflective glass with a golden Vari-Tran® coating."

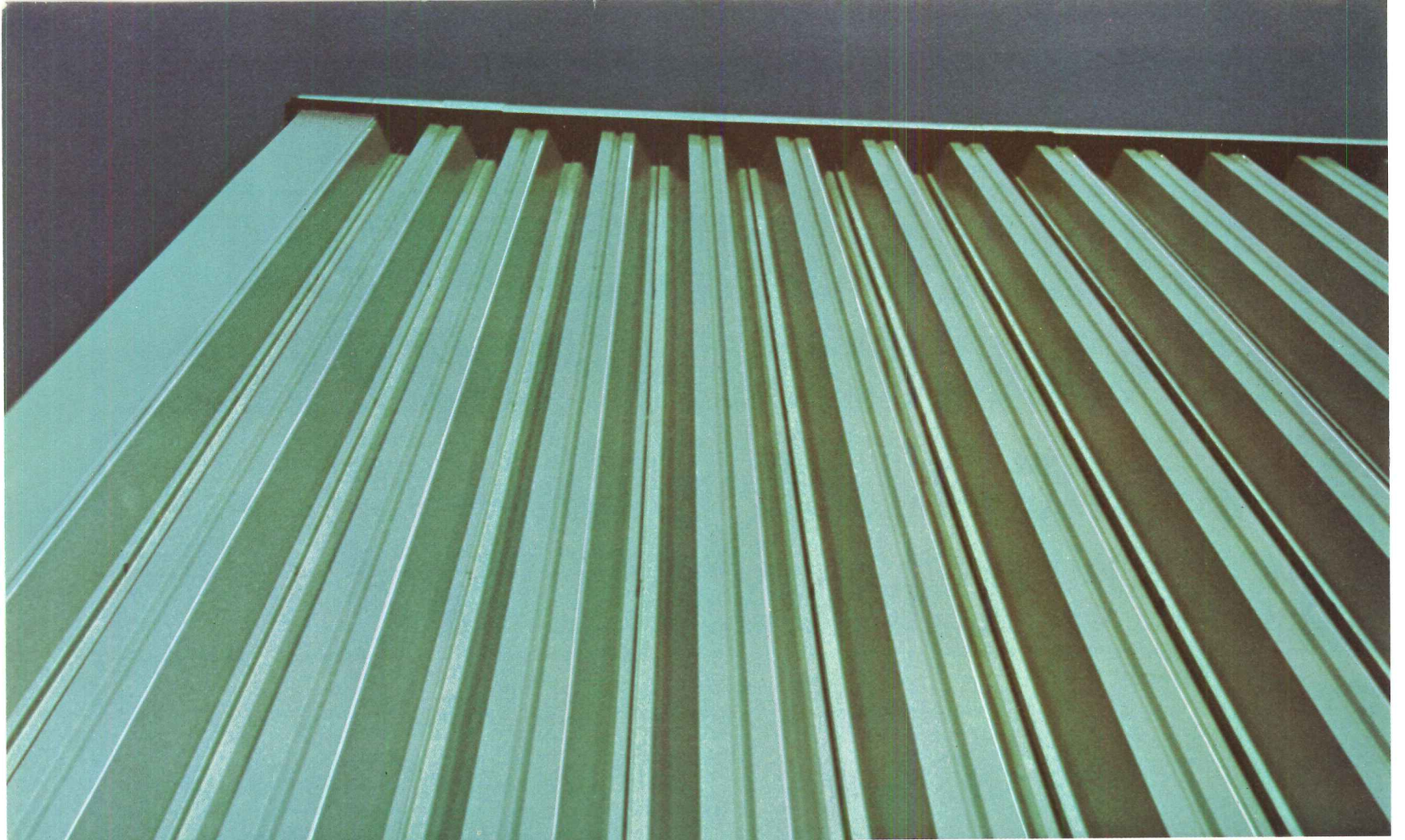
There's plenty of weather to protect people against in Hancock. Temperatures range from 92° all the way down to −30°. Those extremes of temperature demand something special in the way of insulation. That's why Detroit & Northern is using Thermopane® insulating units made with Vari-Tran coated glass from LOF. Thermopane insulates against the cold and wind of Northern Michigan's winter. Vari-Tran reduces air conditioning needs during the summer by cutting down on solar heat gain. They both cut building operating costs.

LOF Architectural Representatives are helping many architects bring their ideas into being. For the whole story, send for our brochure, "Reach for a Rainbow." Libbey-Owens-Ford Company, Dept. R-273, Toledo, Ohio 43695.

Owners: Detroit & Northern Savings and Loan Association, Hancock, Michigan. Architect: Maurice B. Allen, Jr., A.I.A., Tarapata-MacMahon-Paulsen Corporation, Bloomfield Hills, Michigan. General Contractor: Herman Gundlach, Inc., Houghton, Michigan. Glazing Contractor: Cupples Products Div., H. H. Robertson Company, St. Louis, Mo.

LOF

For more data, circle 71 on inquiry card



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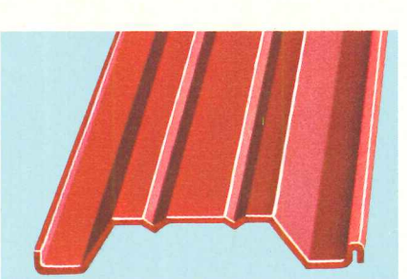
BBR—SPANMASTER PANELS—The NEW shape for towering buildings. Full 4 inches deep and 12 inches wide for long-span erection. Whether used as single skin or as face panels for insulated walls, Spanmaster basks in unmarred beauty when erected with concealed fasteners.

400 DR—CANYON-RIB—Another new shape for today's big buildings. A real beauty with deep 4-inch design (12 inches wide) for long-span benefits.



ABCF—MAJESTIC—The shape of buildings to come. A husky, 12-inch wide, 2-inch deep intermediate long-span Binkley original.

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AE / UPDATE

A classified advertising section devoted to helping architects and engineers keep up to date on building product manufacturers.

PORTABLE SOLID WASTE AND REFUSE COMPACTORS and systems from The Tony Team, Inc. includes four sizes and great versatility. Pollution Packer[tm] compactors bale, bag and box all types of wastes and refuse, wet or dry. Machine capacities range from .8 C. Y. to 4½ C. Y. of loose wastes at 10 to 1 compaction ratio . . . operate on low amperage, 110-V60 cycle service. For hospitals, hotels, schools, colleges, restaurants, office and apartment bldgs. Simple adaptation to chute-type disposal systems. Spec sheets and literature available from: The Tony Team, Inc., 7399 Bush Lake Road, Mpls., Minn. 55435.

For more data, circle 74 on inquiry card

MASTERPIECES OF TEXTURED POETRY . . . Modern architecture cries out for the warmth and color of tapestry. The renaissance of the weaving art is today exemplified in the centuries-old ateliers of Aubusson, France, World Capital of Tapestry. Here traditional tapestries are still woven, but the emphasis is now on designs by top contemporary artists—Calder, Delaunay, Le Corbusier, etc. Tapestries can be custom-woven from your own artwork or designed to your specifications. Brochure available. Art Vivant, Inc., 173 Highridge Rd., New Rochelle, N.Y. 10804.

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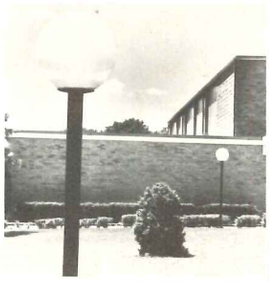

THE HOLOPHANE VISTA/PRISMASPHERE[tm] is an outdoor luminaire combining a graceful, prismatic, delicately textured spherical shape with efficient controlled light. Other benefits: choice of Postop® and all-bracket mounting arrangements, complete lamp hiding, choice of mercury and incandescent lamps, outstanding weatherability of acrylic, optional polycarbonate vandal-resistant version, easy installation. For complete information write Dept. AR-21, Holophane Company, Inc., Montvale, N.J. 07645.

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SPACE-SAVING REFRIGERATORS WITH MODULAR COMPATIBILITY, undercounter and eye-level models in a variety of standard dimensions that form an unbroken line of design. Polished stainless steel exterior (or your choice of finish) and interior. Designed for hospital labs, pharmacies or nurses' stations, explosion safe or total explosion proof construction optional. Freezers with same dimensions available. Removable front grille facilitates easy servicing. Defrost systems, featuring condensate evaporator and accumulator, eliminate need for floor drain. Write: Jewett Refrigerator Co., Inc., 2 Letchworth St., Buffalo, N.Y. 14213.

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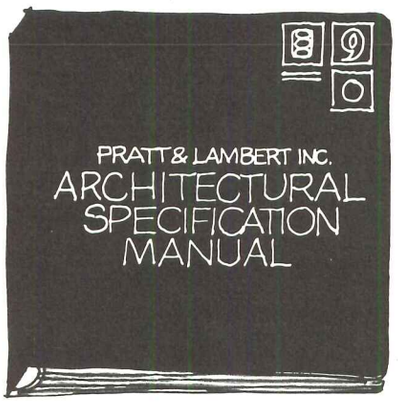

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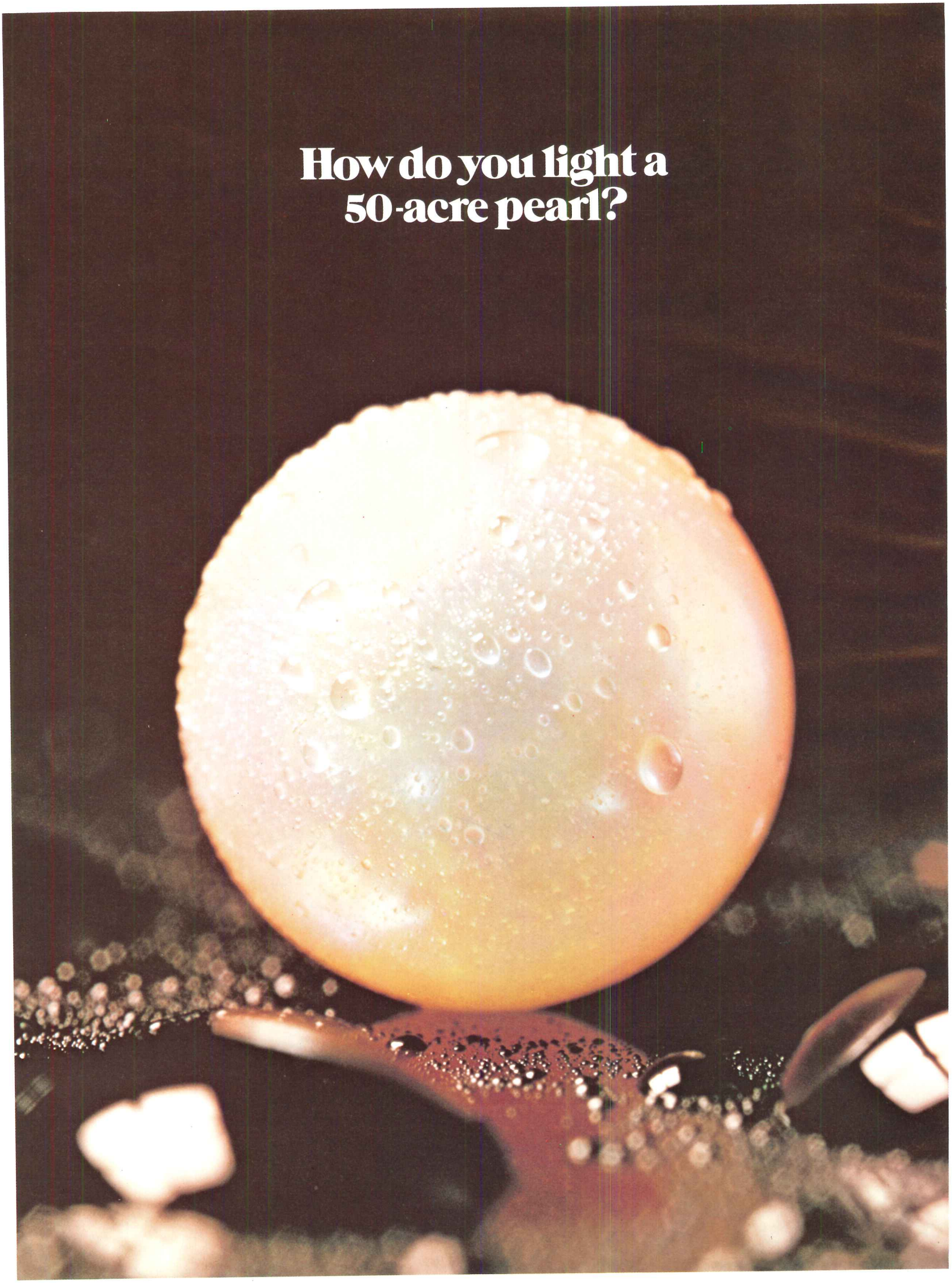
For more data, circle 80 on inquiry card

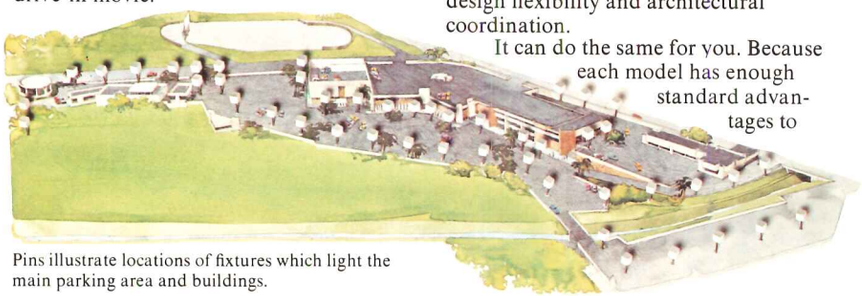
For more data, circle 73 on inquiry card

How do you light a 50-acre pearl?



Wide-Lite sized up the perfect solution for Hawaii's Pearl Ridge Mall.

You'll find Honolulu's new marketplace in the heart of a residential development, and across the street from a drive-in movie.



Pins illustrate locations of fixtures which light the main parking area and buildings.

So, highly directional lighting is a sure requirement for what will be one of the world's largest shopping centers when completed.

But how do you light a 50-acre pearl for dramatic effect, while maintaining an uncluttered appearance, in addition to keeping light from spilling into outlying areas?

Try the Spectra Series for size.

It takes only 88 Spectra I, II and III fixtures (more about our other Spectra models later) to light the buildings with a minimum of three footcandles and the parking area with a minimum of one footcandle.

Three different light sources including metal halide, high pressure sodium and quartz are inside selected fixtures. A special timer controls the sources so that each evening the pearl is bathed in a different color and intensity of light—thus giving it a surprisingly new appearance for returning shoppers.

To keep the pearl uncluttered, the main parking area is lighted from the perimeter. Every luminaire has a satin white baked enamel finish to complement the overall decor.

And, to keep light in its place, selected Spectra fixtures have louvers at angles of 20°, 45° or 60°, depending on location.

The Spectra Series can suit you.

Honolulu's new shopping center is one example of how Spectra allows for design flexibility and architectural coordination.

It can do the same for you. Because each model has enough standard advantages to make customizing a simple, low-cost procedure should you need it.

Here are some:

Spectra I is designed for shopping center parking lots, plazas and fairgrounds. It spreads uniform illumination over more than an acre; is available in models for four 1000 watt, four 400 watt or two 1000 watt high intensity discharge lamps; and may also be ordered with any combination of embossed glass and ribbed aluminum panels.

Spectra II projects smooth, uniform lighting in a 360° pattern and also comes in models specifically designed for street lighting applications. It's available for use with 100 to 1000 watt mercury vapor lamps; 400 and 1000 watt metal halide lamps; and 400 watt high pressure sodium lamps.

Spectra III has an exclusive adjustable reflector which allows light to be aimed vertically without moving the fixture. It's designed for building facades and general floodlighting; can be pole, wall or ground mounted singly or in multiples of 2, 3 or 4 on matching Spectra poles; is available for use with lamps ranging from 100 to 1000 watts; and comes in two styles.

Spectra IV is our wall washer. It installs directly to walls without auxiliary mounting brackets; is available for use with 250 and 175 watt mercury vapor lamps; and is the final touch of elegance to installations where design and continuity is important.

Spectra VII is our newest addition. It's ideal for shopping centers, airports, or anywhere rigid light control is important. All light is confined below the horizontal plane when it's mounted lens down (an optional mounting bracket allows other positions). It may also be mounted singly or in multiples, and is available for use with 400 and 1000 watt lamps.

All Spectra luminaires are available in golden bronze as well as four optional finishes: terra cotta, slate blue, avocado and dark bronze.

Shown clockwise from top right: Spectra I, Spectra II, Spectra III *low wattage*, Spectra III *high wattage*, Spectra IV and Spectra VII.

Need to size up an outdoor or indoor lighting situation? Call your Wide-Lite* representative in the Yellow Pages, under Lighting.

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Even though carpeting looks luxurious, it is the most economical commercial floor covering.
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Please send me your Vacuum Cost Comparison Brochure that tells how your Central Vacuum Systems work and save money.

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The Spencer Turbine Company

For more data, circle 85 on inquiry card

continued from page 153

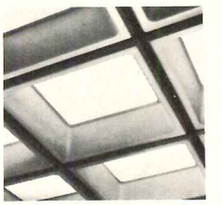
SPIRAL STAIRCASES / The *Model 20* economy staircase is designed for both interior and exterior use and includes a top platform, one-piece round handrail and base plate fully assembled. Four diameters include 42 in., 48 in., 54 in. and 60 in. Fully-welded and factory-assembled, the unit is custom ordered to fit unusual size variations and ceiling heights. Can be carpeted and installs in 20 minutes. ▪ Whitten Enterprises, Arlington, Vt.

Circle 312 on inquiry card

POT SINK FAUCET / The company has developed a pot sink faucet with full ¾-in. capacity water flow that enables the operator to fill large sinks or tanks at a rate of 25 gal. per minute, compared to the 14 gal. per minute limit of standard ½-in. faucets. Designed for heavy-duty use, all eight models are constructed of heavy wall bronze casting with polished chrome finish. Blue and red international color coded handles. ▪ Fisher Mfg. Co., Los Angeles.

Circle 313 on inquiry card

ACRYLIC COFFER CEILING / A one-piece low-brightness ceiling is available in modules from 2 ft by 2 ft to 5 ft by 5 ft, with opaque collars of grey-white acrylic, antique gold and metallic gold and aluminum. White matte acrylic diffusers are above the ceiling plane. Economical to install and maintain. ▪ United Lighting and Ceiling Corp., Oakland, Calif.

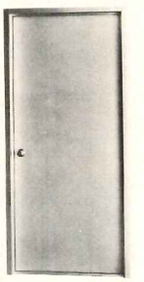


Circle 314 on inquiry card

CLASSROOM SEATING/A tablet arm chair, a chair with a bookrack and a tablet arm chair with the bookrack have been introduced, featuring a 100 degree seat-to-back angle and a 6 degree front-to-back seat pitch for maximum comfort. Polypropylene seats and backs in seven colors or fabric upholstery are available. Standard arm finish is putty, with teak and bronze offered as options. The arm's ½-in. diameter steel rod frame is finished in polished chrome. ▪ Steelcase, Grand Rapids, Mich.

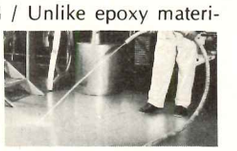
Circle 315 on inquiry card

FLUSH DOOR/Designed for both interior and exterior use, this 1¾-in. flush door features fluted aluminum on both sides, with clear anodized surface. Bronze hardcoat finishes are also available. Stiles and rails are assembled using a ⅜-in. tie rod with reinforced corner construction prior to the foaming process which bonds to all inner surfaces. Core is flame-resistant. Schlage knob set ▪ Amarlite/Anaconda, Atlanta, Ga.



Circle 316 on inquiry card

HEAVY-DUTY FLOORING / Unlike epoxy materials, this flooring will not checkerboard after hot water exposure and it resists thermal shock from hot water cleaning. Called *Orthite 94 HW,* it is especially suited to areas where sanitation must be maintained. Recommended for indoor-outdoor use. It is selfbonding to any clean, dry, sound surface, and cures to a smooth surface. It is slip-resistant. Available in several integral colors for even wear. ▪ Permaflex Products Co., Philadelphia, Pa.



Circle 317 on inquiry card

MOTORIZED MOVABLE STORAGE / The producer claims this is the first electrically-operated storage system to comply with UL safe performance standards, having been tested with a 45,000-lb payload. The *Full-space* filing and storage unit consists of wood shelving units on rail-riding carriages. All can be easily moved within 10 seconds after pressing a control button. The units glide from side to side, using normally wasted aisle space. ▪ Lundia, Myers Industries, Inc., Decatur, Ill.

Circle 318 on inquiry card

more products on page 174

In the carpet world, Anso® Nylon's five year guarantee is on top of the pile.

Two Shell Plaza is Houston's new pride.

So in the public areas and hallways, this building has "TXR-10" carpeting from Commercial Carpet Corporation.

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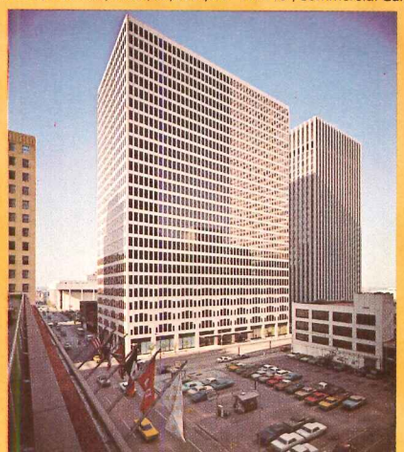
Two Shell Plaza, Houston, Texas/35,000 yds. "TXR-10"/Commercial Carpet Corp.



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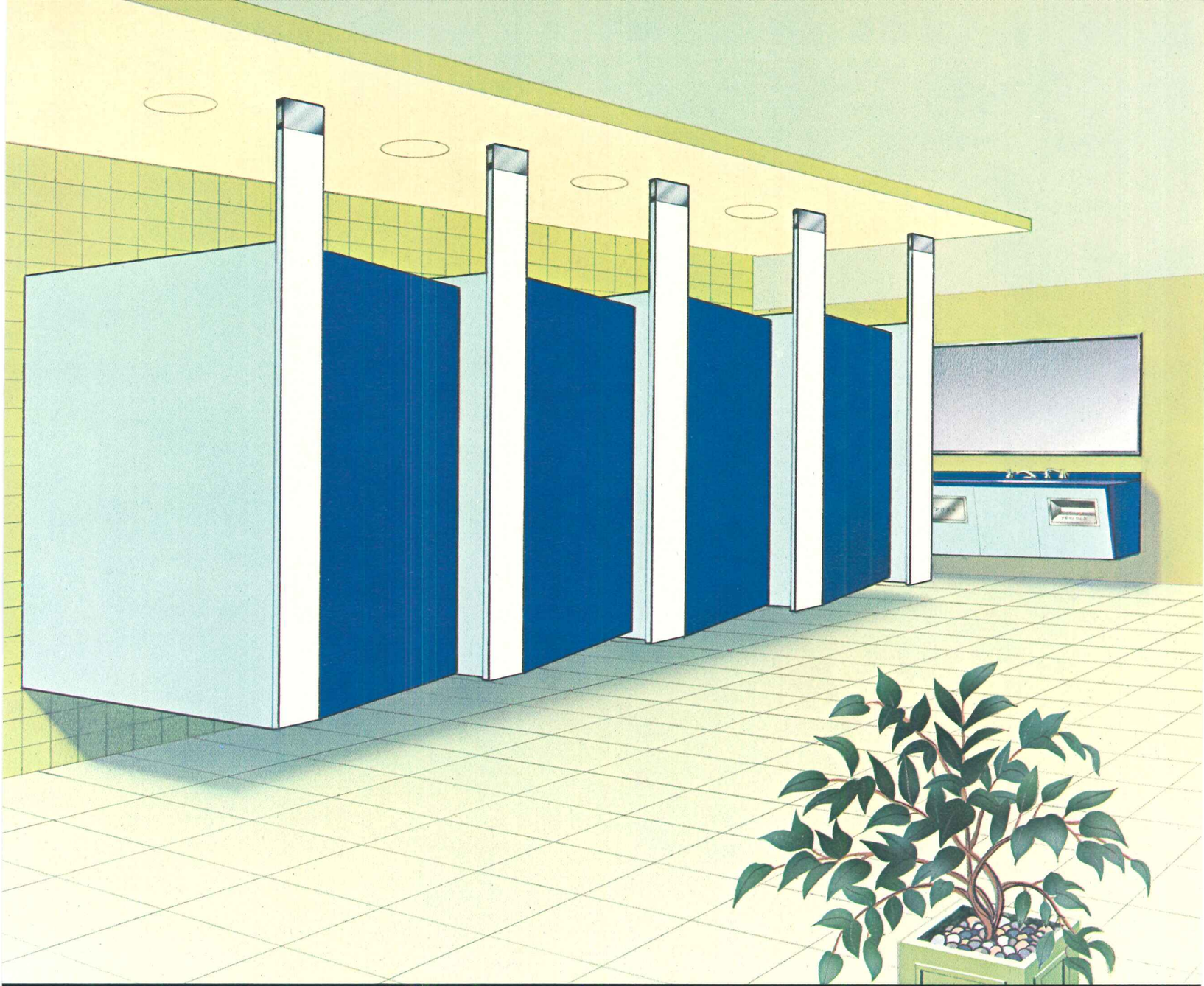

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And still another hidden feature . . . all holes for hardware are factory drilled and furnished with threaded steel inserts, to assure maximum holding power and precise alignment.

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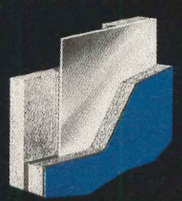
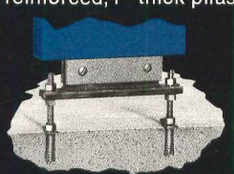


Steel reinforced, 1″ thick pilasters



Factory-installed leveling device

Threaded steel inserts for hardware

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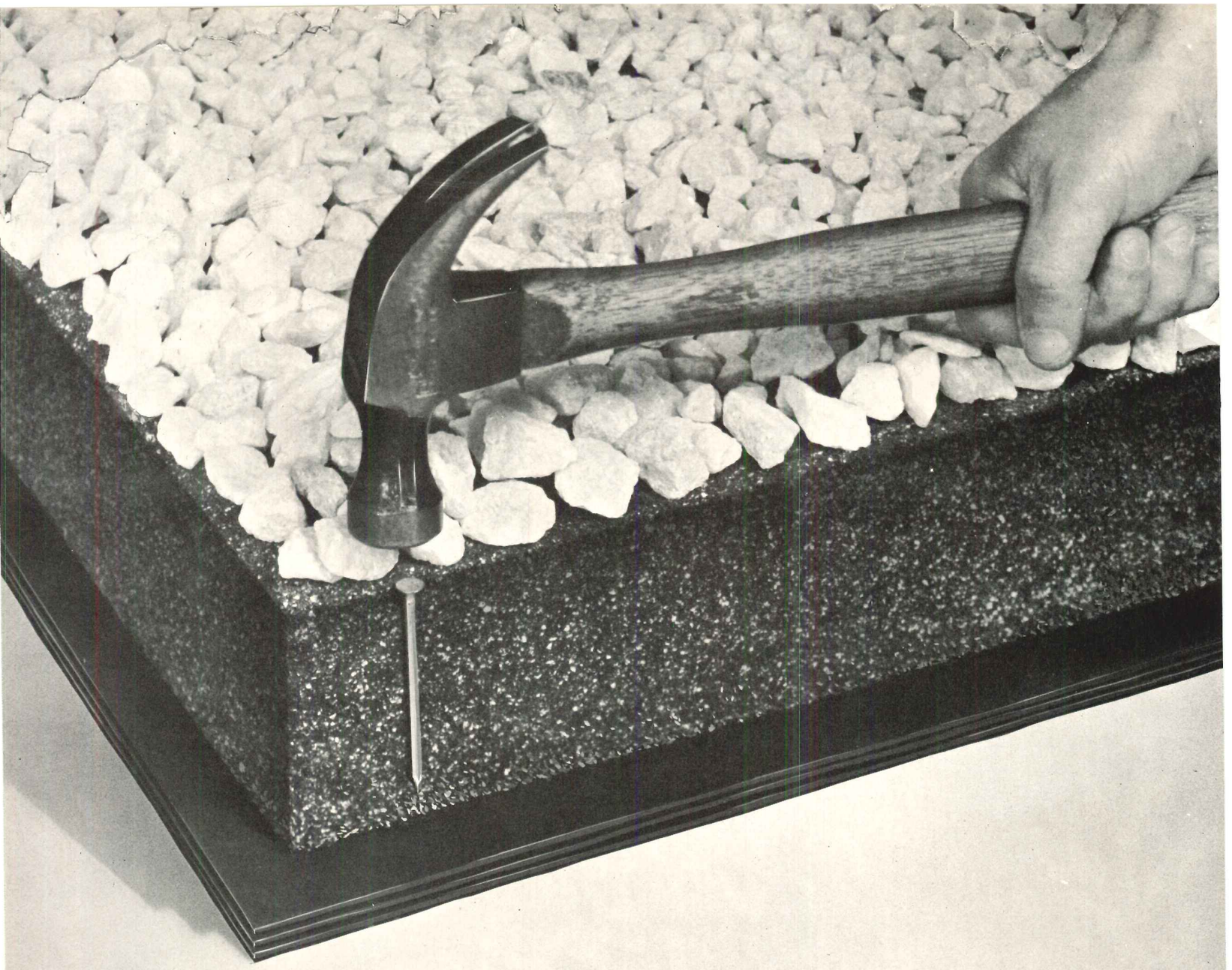


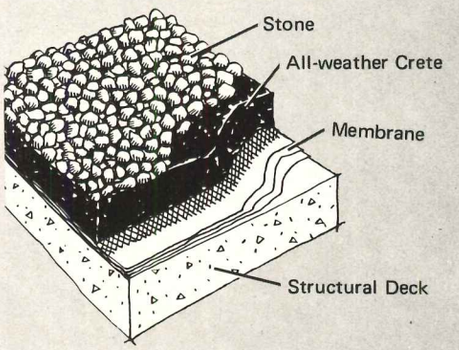
can you do this to your roof deck and still not puncture the membrane?

You can if it's protected with the All-weather Crete Insul-top system! This insulation applied over the waterproof membrane will protect it from normal accidental puncture (also from freezing and from extreme temperature cycling). It reduces expansion and shrinkage to a minimum. All-weather Crete can be sloped to drains and contoured around and over projections to provide positive water drainage.

In short, this system protects the membrane keeping it "alive" and waterproof for years! A different system? Certainly.

Consider this concept in your next project. Write for the 16 page technical booklet "Designing a Leak Proof Roof". Silbrico Corporation, 6300 River Road, Hodgkins, Illinois 60525, (312) 735-3322.

You may change your entire thinking about roof decks!



All-weather Crete® Insul-top System

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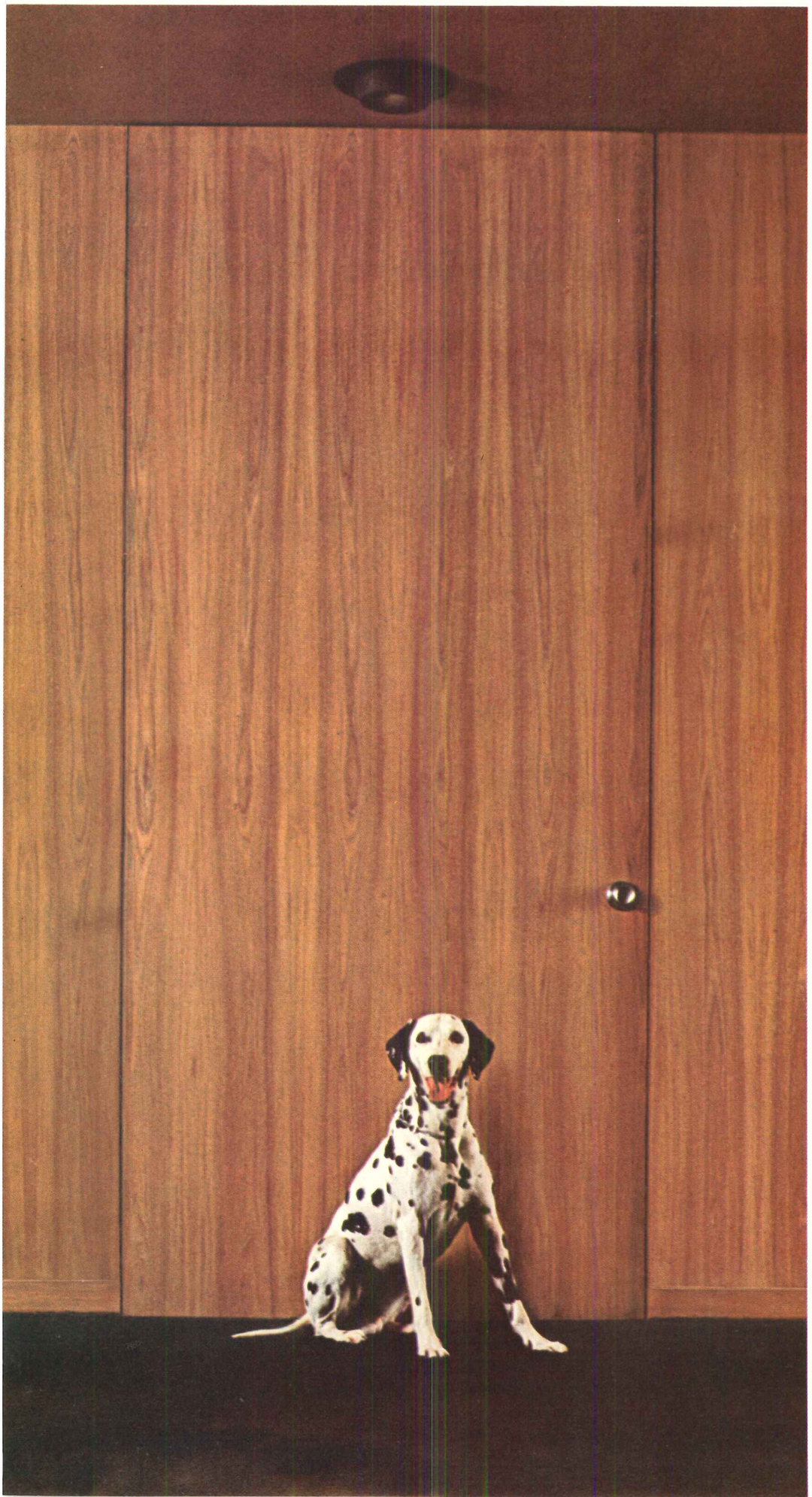
SILBRICO

The only acoustical fire door 9 feet tall and 30 minutes thick.



A 30-minute fire door is something you need. A 9-foot acoustical door is something you'd like. Only U.S. Plywood puts them both together, in our tall, tough, beautiful, acoustical fire door. 9 feet tall. 30 minutes thick. STC rated 28. UL tested and rated for fire resistance, heat transmission and structural integrity.

The Weldwood acoustical fire door is considerably less expensive than a comparable metal door. It also performs considerably better when tested for heat transmission. After 30 minutes in UL's test furnace, where it gets well over 1500°F, the Weldwood door's unexposed side was less than 175°F, cool enough not to harm a person forced against it during a fire. Its STC 28 rating provides good speech privacy and protection in hotels, motels and other commercial installations.

The core of this door is Novoply.® The face is your choice: striking hardwood veneers, Duraply® for job-site painting, Permaply® for solid color prefinishing, or colorful plastic laminates.

No matter what kinds of doors you're specifying, the one name to remember is Weldwood.® We have the biggest, and best, line of architectural doors in the business: interior, exterior, static- and radiation-shielding as well as acoustical and fire. For more information on any of them, call your local U.S. Plywood Branch Office.

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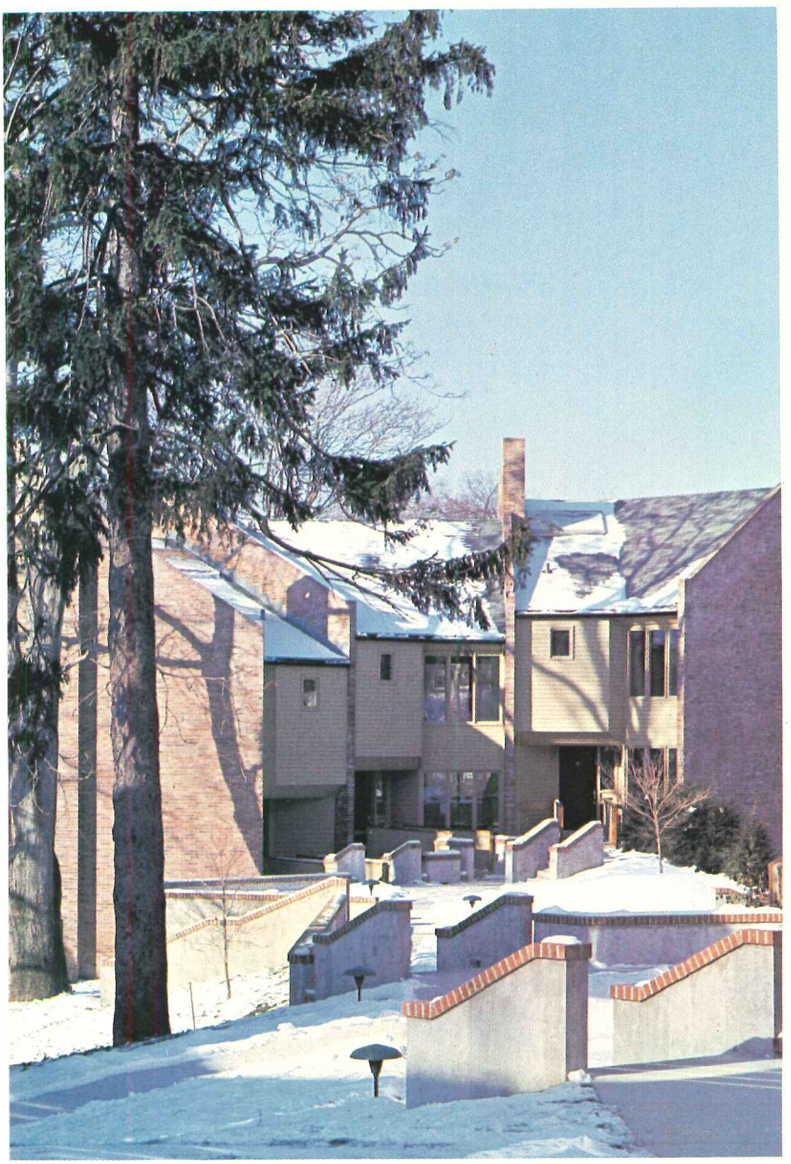
For more data, circle 92 on inquiry card

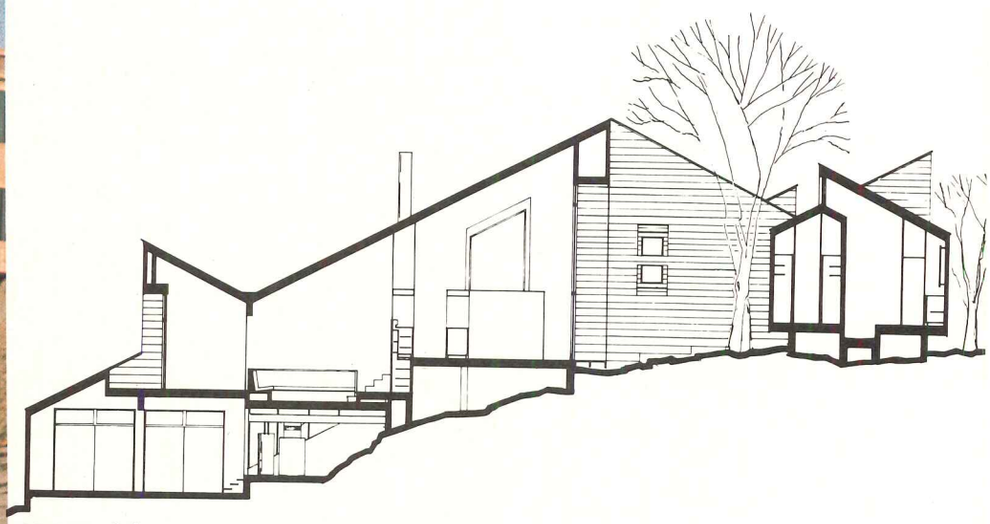


Top: Ocean House Apartments. Architects: Donald Sandy, Jr. and James A. Babcock. Photographer: Thomas A. Abels.

Above: House in Lincoln, Mass. Architects: Joseph Maybank and Arthur Cohen. Photographer: Nick Wheeler.

Left: Meadgate Condominiums. Architects: Allen Moore, Jr., John B. Rogers and James M. McConnell. Photographer: Carol Rankin.

Right: House in Huntington Bay, N.Y. Architect: Richard Henderson. Photographer: William Maris.



SECTION A-A

COMING IN MID-MAY...
ARCHITECTURAL RECORD'S IDEA ANNUAL OF THE HOUSING FIELD

RECORD HOUSES AND APARTMENTS OF 1973

According to F. W. Dodge, the years 1971-1975 will be housing's biggest five-year boom since the '50's. During that time more than 11 million housing units will be built.

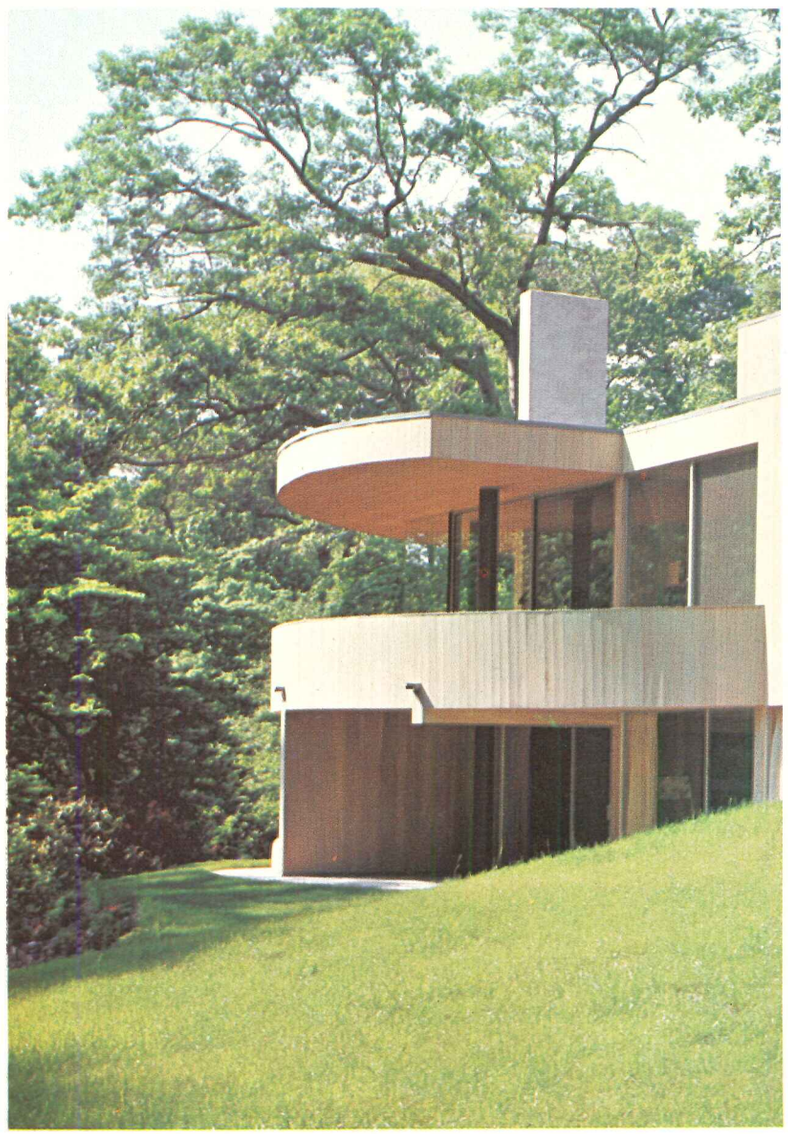
In mid-May Architectural Record's *Record Houses and Apartments of 1973* offers a timely opportunity for manufacturers of quality building products to exert year-in and year-out influence on those architects and builders who are at the forefront of the continuing housing boom. It will reach all major groups of specifiers and buyers in this market:

- over 42,000 architects and engineers who are verifiably responsible for 87 per cent of the dollar volume of all architect-planned residential building.
- 20,000 of the nation's foremost builders qualified by Sweet's on the basis of annual building activity to receive the Light Construction File.
- 4-5,000 leading interior design offices qualified by Sweet's to receive the Interior Design File.
- in addition, bonus bookstore distribution to an influential segment of the house building and buying public.

Record Houses and Apartments offers its advertisers a unique advantage:

The issue has the longest working life of any issue of any architectural magazine! Architects refer to it five, ten, even fifteen years after publication.

Don't miss it! Closing date: April 15.



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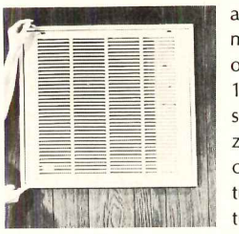
ARCHITECTURAL RECORD

1221 AVENUE OF THE AMERICAS NEW YORK 10020

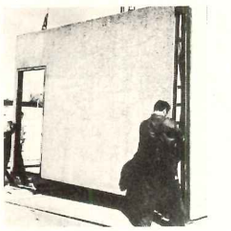
continued from page 166

ELECTRONIC AIR CLEANER / Recommended for apartment and light commercial use, *Model 908* is offered in three sizes up to 1600 cfm. Unit can be installed vertically or horizontally in sidewalls or ceilings in place of the return air grille in single-return central air-handling systems. Eliminates the work of manually washed air cleaners and the expense of inplace washed air cleaners. Uses a 120-volt AC power supply. ▪ Bryant Air Conditioning Co., Indianapolis, Ind.



Circle 319 on inquiry card

PLASTIC BEAD AGGREGATE / For use in concrete, this plastic bead aggregate offers high strength-to-weight ratio for lightweight concrete. The expanded beads prepackage air to build in a constant thermal resistance for lower heat flow and improved heating and cooling economy. ▪ BASF Wyandotte Corp., Parsippany, N.J.



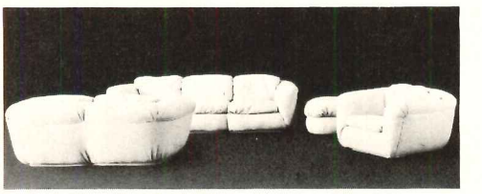
Circle 320 on inquiry card

WASHROOM DRYER / A new line of electric hand dryers for public washroom use is offered in stainless steel. The *Model F* is fully recessed, while the *Model S* is surface-mounted. Both units offer metal construction, vandal-resistant design and push-button operation. ▪ Electric-Aire Corp., South Holland, Ill.

Circle 321 on inquiry card

LATEX HOUSE PAINT / A one-coat, exterior paint contains a preservative pigment that permits the company to guarantee the paint for 8 years. Guarantee also covers mildew, fading and chalking; the paint is fume-resistant, non-yellowing and has a rust inhibitor with 8-year durability. Available in 20 colors or hundreds of custom mixed shades ▪ Evans Products Co., Roanoke, Va.

Circle 322 on inquiry card



THE PLUMP POTATO GROUP / Total spring construction, enhanced by a selection of imported wools and fine leathers, characterizes these pieces for reception areas, executive offices or home. The couch comes as a two- or three-seater. Round ottoman is available. ▪ The Fortress Collections, Los Angeles, Calif.

Circle 323 on inquiry card

more products on page 178

Republic lockers. Loud in one way, but not the other.

Bright. Bold. And, really, beautiful.

That's the way it is with Republic Steel lockers. Available in 19 decorator colors. No matter whether you want them in hallway style, gym style, in single, double, or multiple tier types.

But the great thing about these Republic steel lockers is that they are now much quieter.

The secret is in the new spring steel one-piece latching system we've developed that just doesn't "thump" when it's opened or "thump" as it's closed.

It's due to rubber silencers that just won't allow metal-to-metal contact or let the doors go "bang." (As anybody knows, doors that don't slam take less maintenance and last years longer than doors that do.)

So, if you want lockers loud in one way (to please the eye), but not loud in the other (to please the ear), order from Republic.

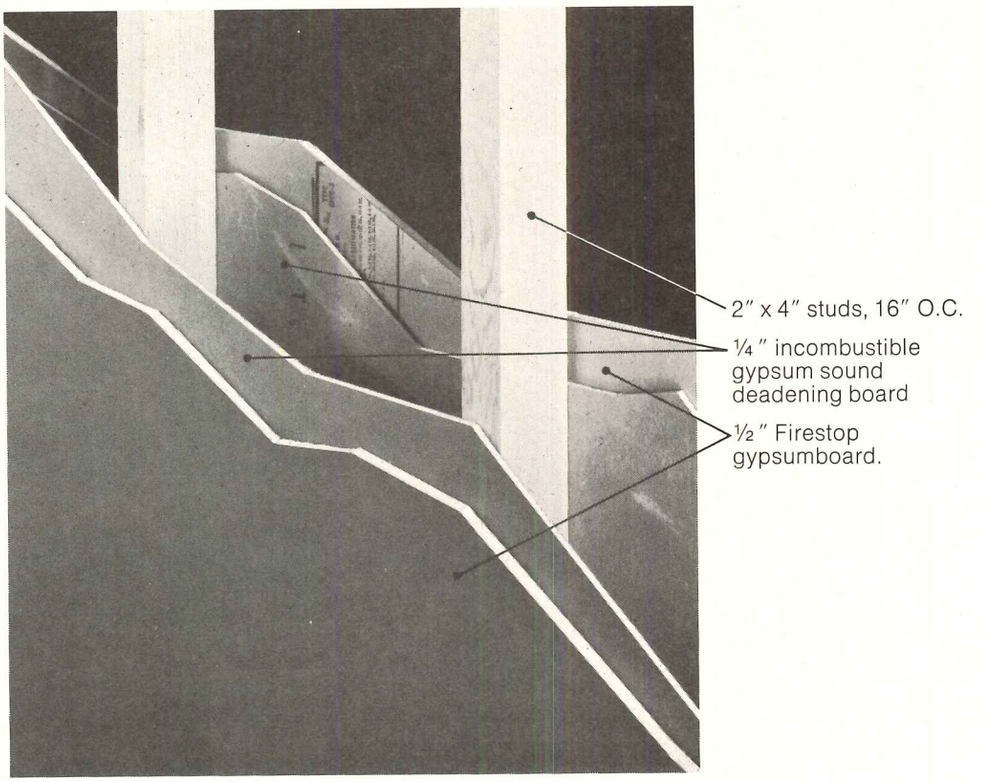
Send for brochure L-102 that describes our whole locker line. Contact our nearby district sales office or write Republic Steel Corporation, Manufacturing Division, Youngstown OH 44505.

Republicsteel
Manufacturing Division

For more data, circle 94 on inquiry card

It's Georgia-Pacific's gypsum sound control system. It gives you a one-hour fire rating (Test T-3006). An STC of 45. It reduces wall thickness by ¾". *And it costs $36 per thousand sq. ft. of wall area less than a ½" wood fiber sound control system.

Just apply ¼" incombustible gypsum sound deadening board over a wood framing system (2" x 4" studs, 16" O.C.). Then apply ½" G-P Firestop® gypsumboard or Firestop® Eternawall™ vinyl surfaced gypsumboard to the sound deadening board. And that's it! Call your G-P representative today.



This sound control system costs $36 less* than a wood fiber system.

Georgia-Pacific

Gypsum Division, Portland, Oregon 97204

For more data, circle 95 on inquiry card

Mercy Hospital, Columbus, Ohio. Daniel A. Carmichael, Architect

In the **Real** World of Healthcare

In hospital after hospital . . . year after year . . . Jamestown Products casework serves in a very tangible way. Welded corners . . . rabbeted frames . . . brass hinges with nylon bushings and closed tops for rigidity and sanitation are only a few of the realities of our enameled and stainless steel casework. There are many more. In the real world of healthcare, the casework you specify must serve 24 hours a day — indefinitely.

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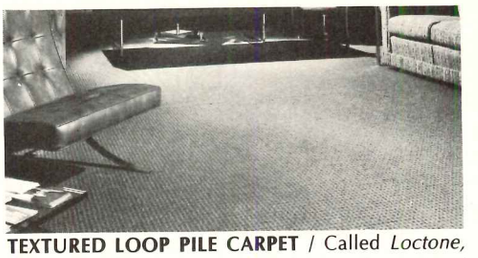
AVM CORPORATION

For more data, circle 96 on inquiry card

continued from page 174

OFFICE FURNITURE SYSTEM / *Interlubke* office systems go from floor to ceiling, taking the place of walls and doors. It becomes the partition walls with mobility when needed. Storage walls are built on modules that are either 2 ft or 3 ft wide and 15 in. or 24 in. deep. These units can be interconnected and can go around corners, installed back-to-back or singly. Walk-through doors lock and electrical outlets and telephone jacks can be installed. Finished with eight coats of white liquid polyester. A wide offering of interior components. ▪ ICF, Inc., New York City.

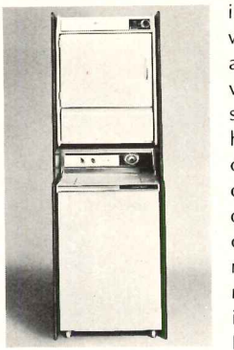
Circle 324 on inquiry card



TEXTURED LOOP PILE CARPET / Called *Loctone,* this heavy-duty carpet meets the requirements of FHA and government specifications. Using three-ply *Moresque* and two-ply *Acrilan* acrylic yarns, the effect of the pattern is similar to those in woven designs. Disguises traffic and soiling. Three or four colors in ten colorations. ▪ Downs Carpet Co., Willow Grove, Pa.

Circle 325 on inquiry card

PLUMBED-IN COMPACT LAUNDRY / For ease of installation, this automatic washer and electric dryer are each 21 in. wide. The washer is installed using standard plumbing fixture hook-ups. The matching-capacity dryer requires no outside exhausting and operates on 115 volts. It can be wall- or counter-mounted. A heavy-duty rack is available for stacking the pair. ▪ General Electric Co., Louisville, Ky.



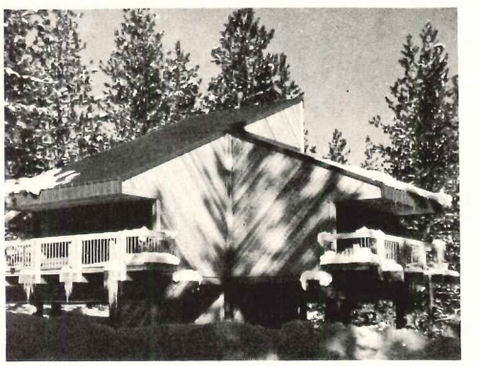
Circle 326 on inquiry card

MOVABLE PARTITION / The *KW-700* demountable and relocatable partition system features vinyl-clad gypsum wallboard panels with steel spring clips that snap securely to aluminum studs designed for the purpose. No special tools are required. A choice of colors and textures is offered. ▪ Kaiser Gypsum Co., Inc., Oakland, Calif.

Circle 327 on inquiry card

ACOUSTIC CEILING / The "Seacrest" pattern is offered in large modules 2 ft by 2 ft, or 2 ft by 4 ft. Part of the *Acoustone* series, the panels are composed of mineral-wool fibers and binder, molded and screeded into lightweight units that are non-combustible and sound-absorbing. Modules can be suspended in exposed grid suspension systems. ▪ United States Gypsum Co., Chicago.

Circle 328 on inquiry card



STANDING-SEAM SHED ROOF / Aluminum *Zip-Rib* panels for roofing and fascia treatments come in continuous lengths up to 46 ft and are coated with an ultrablue fluorocarbon finish. Using no through fasteners, the panels are zipped together with an electric crimping tool, locking the panels to special anchor clips attached to the roof underlayment. Aluminum is .032-in. gauge. ▪ Kaiser Aluminum, Oakland, Calif.

Circle 329 on inquiry card

more products on page 180

The Caradco Sculptured Door

Elegance.

You get deep-carved panels fashioned from one-piece, *wood-grained faces that can't split, check or shrink;* a factory prime coat that welcomes paint or toned *stain*... that lets you suit the final finish to your fancy, be it avantgarde, traditional or in between. Result: it looks like more than it costs. And that's the beauty of it: *it costs less* than conventional panel doors.

We did even more with the door pictured. We *prefinished* it with a smooth white factory coating, to bring out the full richness of the wood texture. It's easy to see why this *practical* eyeful has tremendous buyer appeal. For more facts on Caradco Sculptured Doors, please call us or write.

Caradco Window and Door Division

Scovill

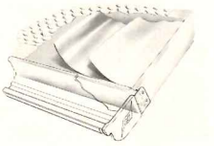
Main Plant, Dubuque, Iowa 52001 Eastern Assembly Plant, Hainesport, New Jersey Ohio Assembly Plant, Columbus, Ohio

For more data, circle 99 on inquiry card

PRODUCT REPORTS

continued from page 178

DRAFTING SURFACE / *Stratasteel* is the drafting surface used on all premium tables from the company. It is constructed with a smooth, nonglare, durable vinyl drawing surface over a layer of steel framing, a layer of tempered hardwood board, all of which is over a cellular honeycomb with a steel undersurface. Light green surface is easy on the eye. A full line of drafting tables is offered. ▪ Hamilton Mfg. Co., Two Rivers, Wis.



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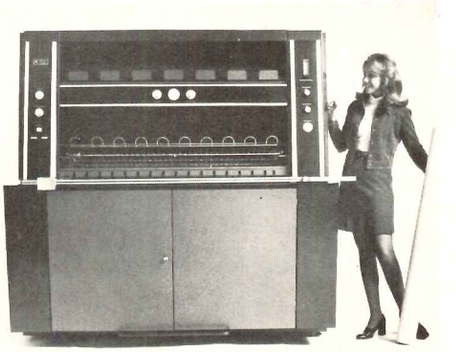
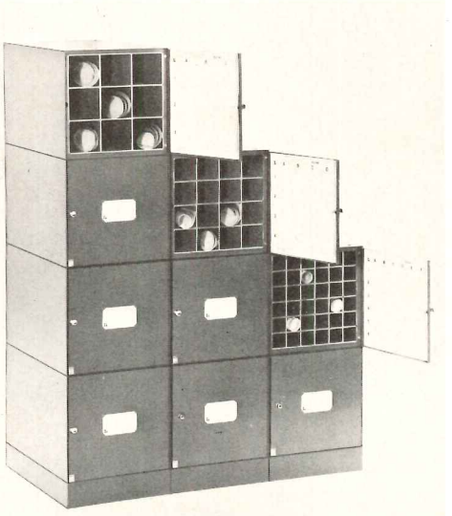


AUTOMATED DIAZOPRINTER / Capable of full-size reproductions of originals up to 48 in. wide and at speeds of up to 80 ft per minute, this printer features automatic dual-roll feed, roll selection cutting and is said to more than double the productivity of a comparable non-automatic printer. Unit automatically selects the roll which matches the size of the original so that the operator can feed originals in any sequence without pre-sorting them. Blue or black line prints. ▪ GAF Corp., New York City.

Circle 331 on inquiry card



TUBE ROLL FILES / A modular cabinet to be used singly or stacked has been recently introduced to accommodate drawings up to 60⅞ in. in width. The steel cabinets are divided into 9, 16 or 36 square compartments, made of heavy fiberboard with aluminum reinforcement. A spring-latched door with continuous hinge can be changed from left to right. ▪ Plan Hold Corp., Carson, Calif.

Circle 332 on inquiry card

For more data, circle 101 on inquiry card ▶

Hager Introduces

ECO

(Electronic Control of Openings)

EXIT

ENTRANC

STAIRWAY

ECO

The new simplistic system for security and traffic control

With today's growing concern for greater security, building designers find that openings must be increasingly involved with the closing.

A new system for controlling traffic and monitoring access areas brings the entire program within bounds for both effectiveness and budgetary considerations.

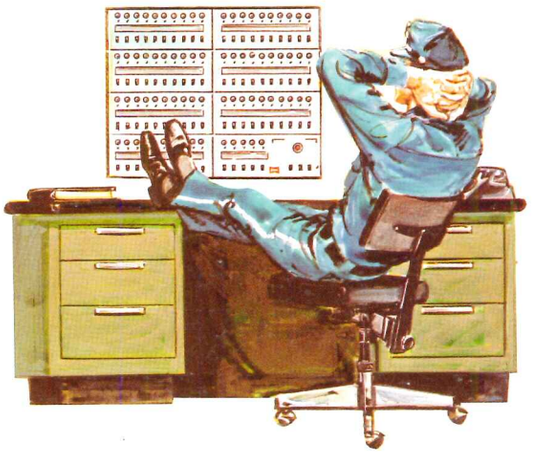
Hager introduces ECO, the electronic control of openings. Basically it is rather a simple package. Yet it can monitor an entire building, with silent signal or audible alarms to alert the central station that a door or area is being violated.

The ECO system is compact. A complete unit is little larger than an attache case. Yet it is highly sophisticated in operation; provides all and more of the essential functions of much more complex installations.

The comparatively low cost is further benefitted because the system is designed to become an inherent part of the building specifications. Wiring for ECO is part of the regular electrical installation. The control module merely plugs in at any designated location. Hager electric hinge components make it possible to completely monitor and control any number of individual openings remotely.

Five openings or 100 or more are monitored and/or controlled at a single station. The number of openings controlled can be increased merely by adding plug-in modules, so the system fits in a practical way to exact building needs without overages.

ECO can be set to signal when a door is violated; can be lock-integrated to show whether a door is secured; and can activate the door lock from the central station.



Hager

It all started with the Hager ELECTRIC HINGE

Three years ago Hager introduced the electric hinge, a unique hinge (now patented) incorporating electric contacts.

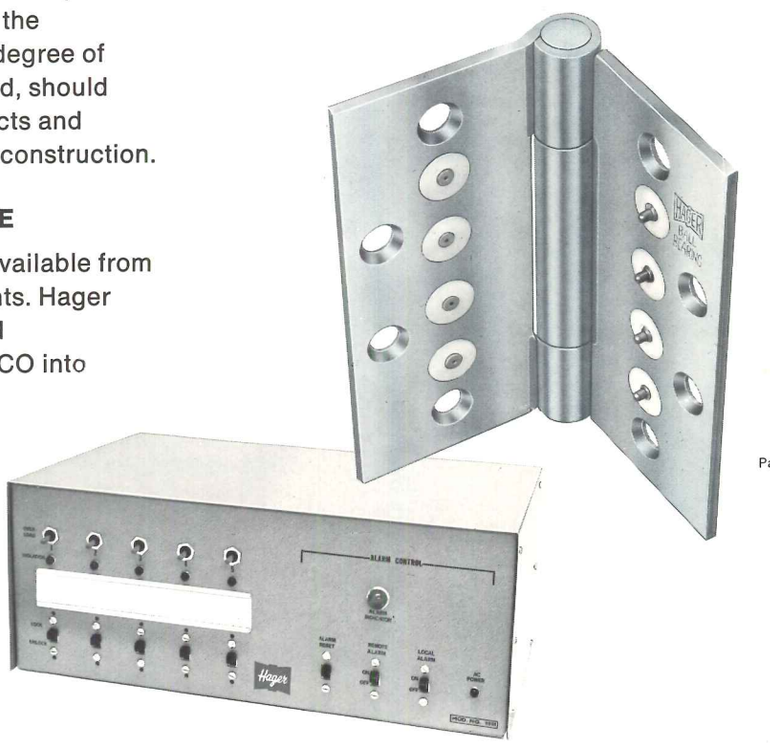
This hinge made remote openings control possible for the first time . . . using standard hardware products.

The potential for this new development was quickly recognized by architects and building owners. Hager engineers then set about to create a central control system that could make best use of this hinge signaling innovation. The result is here in ECO, electronic control of openings.

ECO is unlike the various methods you may have worked with in the past. The compact size, the ease of installation, and the adaptability of ECO to most any degree of security and traffic control wanted, should warrant consideration by architects and builders now contemplating new construction.

HAGER CONSULTANT SERVICE

Detailed information on ECO is available from architectural hardware consultants. Hager engineers provide schematic and specifications that incorporate ECO into the general wiring plans.



Patent No. 3,659,063

HAGER HINGE COMPANY
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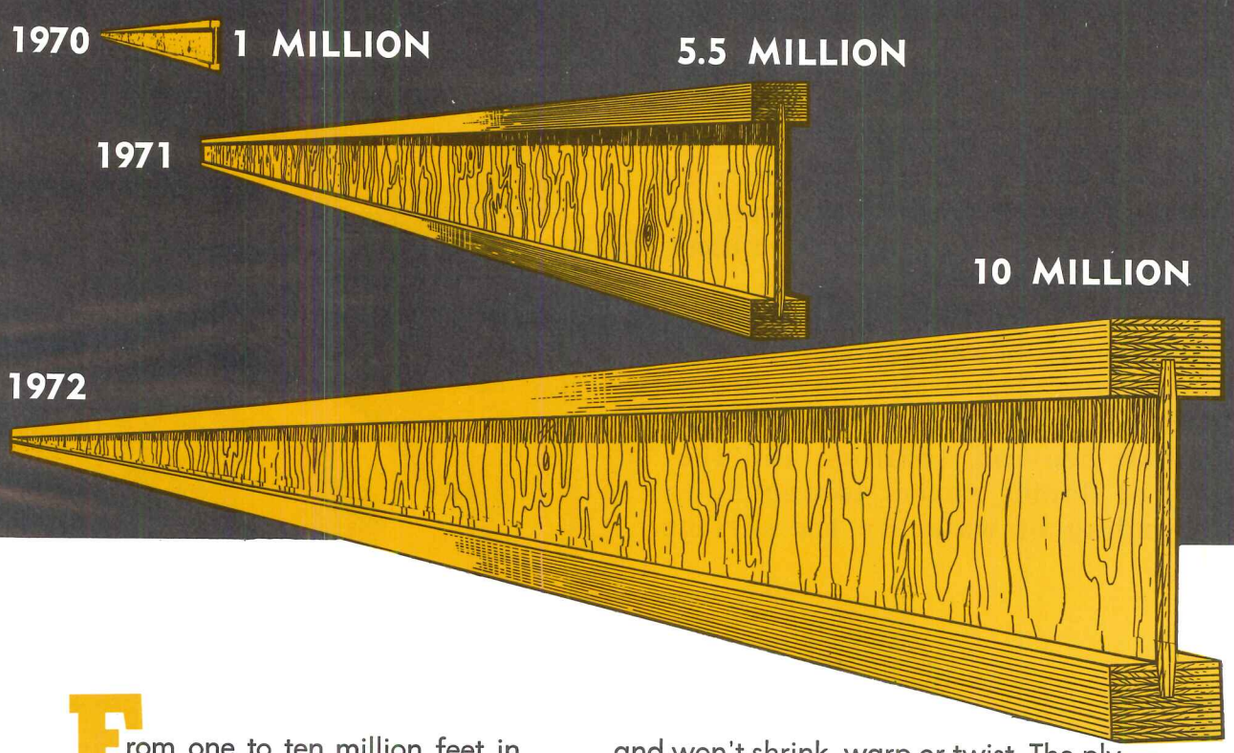
TJI Incredible



From one to ten million feet in sales in just two years; an incredible performance but TJI is that kind of product. A product which gives you low initial cost, lower labor costs, less construction time and a top quality floor or roof system.

As a floor joist, the Trus Joist I-series spans up to 24 feet at 2 feet O.C., in roofs to 40 feet and for multiple spans you can have any length to 60 feet. They're available in depths from 10 to 24 inches.

TJI's are light weight, easy to handle and won't shrink, warp or twist. The plywood web cuts easily to accomodate even large ductwork and erection time is two to four times faster than with solid sawn joists.

Another 15 million lineal feet or more of TJI's will be used in apartments, town houses, condominiums and commercial buildings this year. That's about equal to the total sales of the last three years.

Incredible?

As we said, TJI's that kind of product.

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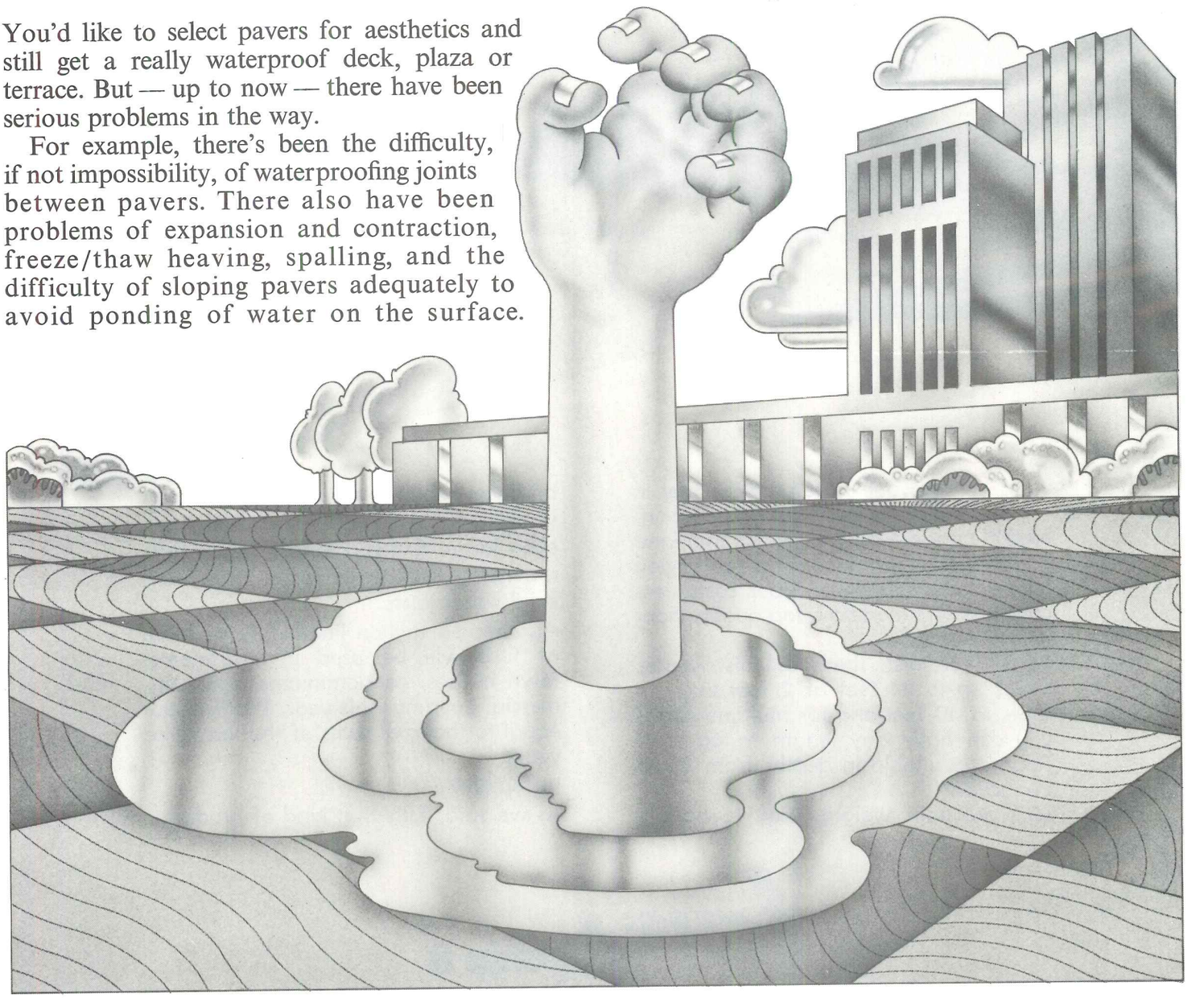
Creative engineering in structural wood.

For more data, circle 102 on inquiry card

How to keep a beautiful plaza from drowning.

You'd like to select pavers for aesthetics and still get a really waterproof deck, plaza or terrace. But — up to now — there have been serious problems in the way.

For example, there's been the difficulty, if not impossibility, of waterproofing joints between pavers. There also have been problems of expansion and contraction, freeze/thaw heaving, spalling, and the difficulty of sloping pavers adequately to avoid ponding of water on the surface.



One solution could be laying your pavers in a setting bed spread over the waterproofed surfaces. The trouble here is the necessity for surface drains, which don't exactly contribute to an aesthetically pleasing job. A second problem is the settling or wash-out of this setting bed, which causes the pavers to shift.

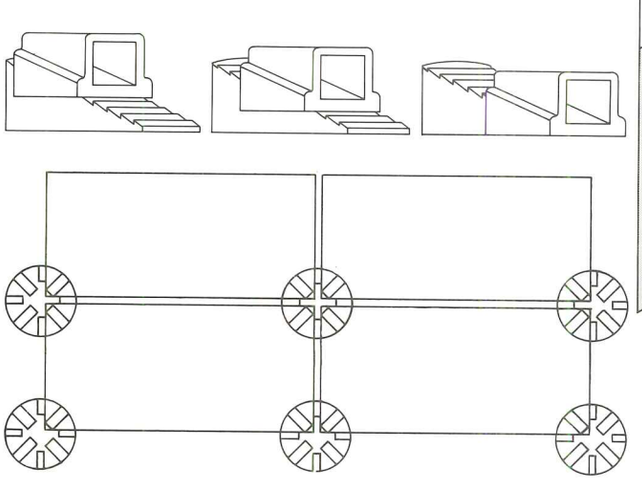
You can eliminate both the aesthetic and technical drawbacks by raising your traffic surface above a suitably waterproofed structural slab so water can run down through the joints between the pavers, and be carried off by drains in the structural slab. With this method, waterproofing your structural slab is simple — especially when you use our Tremproof® Liquid Polymer, which is cold-applied and adheres to both vertical and horizontal surfaces to form a flexible, seamless blanket.

But how do you raise the pavers above your waterproofed surface? Till now, the most common way was casting concrete pedestals. But this job is cumbersome, time-consuming and requires individual shimming of the paver corners.

Now we have developed an uncomplicated, economical device called the KingPin™. It's an adjustable pedestal that goes a long way toward simplifying the job of installing pavers.

How KingPins save time.

Once the waterproofing has been applied to the structural slab and covered with a protection board, you simply place KingPins on your protection board. Then you set the KingPin to the approximate height you need, making fingertip adjustments as you set the pavers to allow for deck or paver irregularities. Pavers line up instantly using the KingPin controlled-joint spacers. KingPins work equally well set on rigid insulation.



KingPins are tough.

When you use KingPins, your only load limit is the strength of your pavers. KingPins can take up to 10,000 pounds with zero deformation; And because they are high grade plastic polymer, they won't rot, crack, melt or absorb water in normal use.

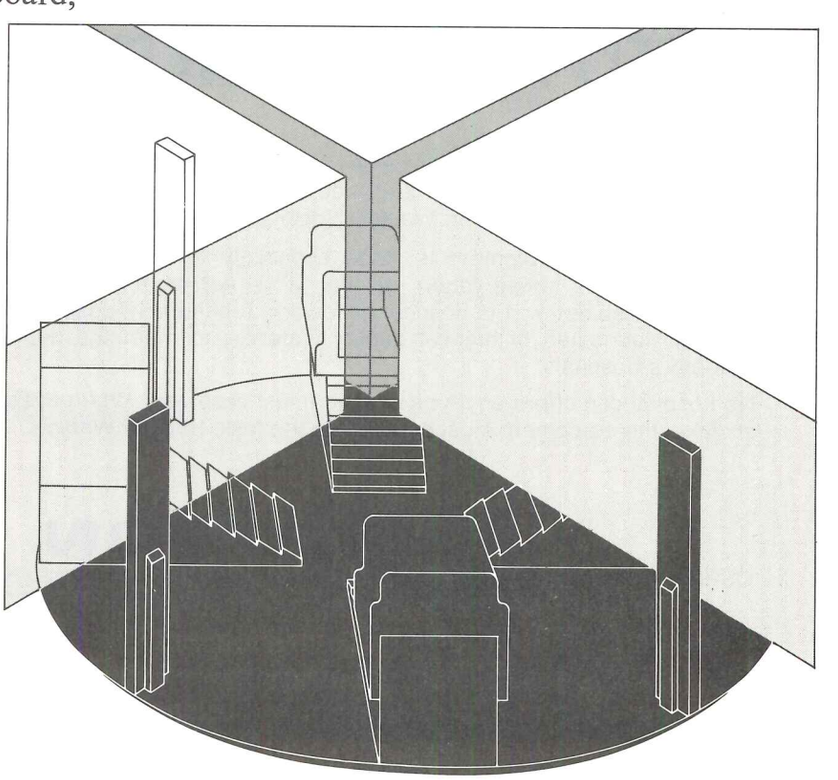
Why jobs look better.

When you use KingPins, design freedom is almost unlimited. You don't need surface drains. You don't need joint sealants. Joint size is controlled, for beauty. Each paver will be drained so there'll be no ponding. When maintenance is needed below the surface, just lift the pavers off the KingPins and out of the way. When the repair is done, your plaza looks as good as new, without patching.

One more thing. If you have any caulking, glazing or waterproofing problems, your Tremco man can help. For more than 45 years, our business has been providing top-quality leakproof systems and products such as our job-proven sealants, MONO®, DYmeric® and Lasto-Meric®; and our roof-edging system, Tremline™.

The Tremco Manufacturing Company, Cleveland, Ohio 44104. Toronto 17, Ontario.

TREMCO®
The water stoppers



OFFICE LITERATURE

For more information circle selected item numbers on Reader Service card, pages 215-216.

FASCIA & FLASHING SYSTEMS / A new brochure fully describes and illustrates features such as: free-floating systems to accommodate movement in any direction; built-in venting; simple, modular, self-locking installation; clean, architectural appearance. Design ideas, performance specifications and applications are included. ▪ The Tremco Mfg. Co., Cleveland, O.*

circle 400 on inquiry card

ELECTRICAL MODERNIZATION / Special design considerations and techniques for electrical modernization are explained in *Monograph 23* of the Electrical Design Laboratory published by NECA for architects and engineers. Includes application studies of five modernization projects and a section on hospital electrical modernization showing how to correct obsolete wiring, switch-gear and outlets. The effect of the OSHA Act is discussed. ▪ NECA, Washington, D. C.

circle 401 on inquiry card

INTEGRATED CEILINGS / A complete line of ceiling systems is illustrated in this catalog. Some systems use vaulted modules with mineral board and some have perforated metal coffers. Design information and fire ratings are included. ▪ National Ceiling Systems, Niles, Ill.

circle 402 on inquiry card

MASONRY FINISH / A product that fills, seals and finishes masonry to a tough semi-gloss finish in one application, *SF-50 Sprayfil* has been given a Class A rating for flame spread. The coating has USDA approval and resists chemical attack. Interior or exterior application is suggested. More information is available from the company. ▪ Elliott Paint & Varnish Co., Chicago, Ill.

circle 403 on inquiry card

INTRUSION/FIRE CONTROL / The *Alpha 3000* brings all intrusion and fire alarms—for a single building or complex—to one central command post. Basic protection/detection systems are covered: electronic security and fire alarms, closed circuit TV, card reader access control, patrol tour and audio intercom. The control center can also run a building's mechanical equipment. ▪ Honeywell Commercial Div., Minneapolis, Minn.

circle 404 on inquiry card

LIQUID-APPLIED WATERPROOFING / This bulletin describes the company's urethane rubber, liquid-applied waterproofing membrane, *UWM-28*. The new material essentially provides a seamless membrane between concrete slabs and is recommended for plazas, planters and parking decks. A specifications guide is included. ▪ Gates Engineering, Wilmington, Del.*

circle 405 on inquiry card

ROOFING AND WATERPROOFING / A brochure is available on the use of reinforcement fabrics for roofing and waterproofing. It describes the use of asphalt-or tar-saturated cotton fabric, glass fabric, jute and glass mats for reinforcement of hot or cold applied bituminous coatings in roofings and waterproofing systems. Applications on bridge decks, foundations, roofs, pipelines, tennis courts, pavements and tunnels are described. ▪ Koppers Co., Inc., Pittsburgh, Pa.*

circle 406 on inquiry card

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

more literature on page 204

RECORD IMPRESSIONS

A convenient service offering reprints, reports and back issues

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⑭ SEALING JOINTS: 1968 SPECIAL REPORT
8 pgs. 2-color .50 per copy
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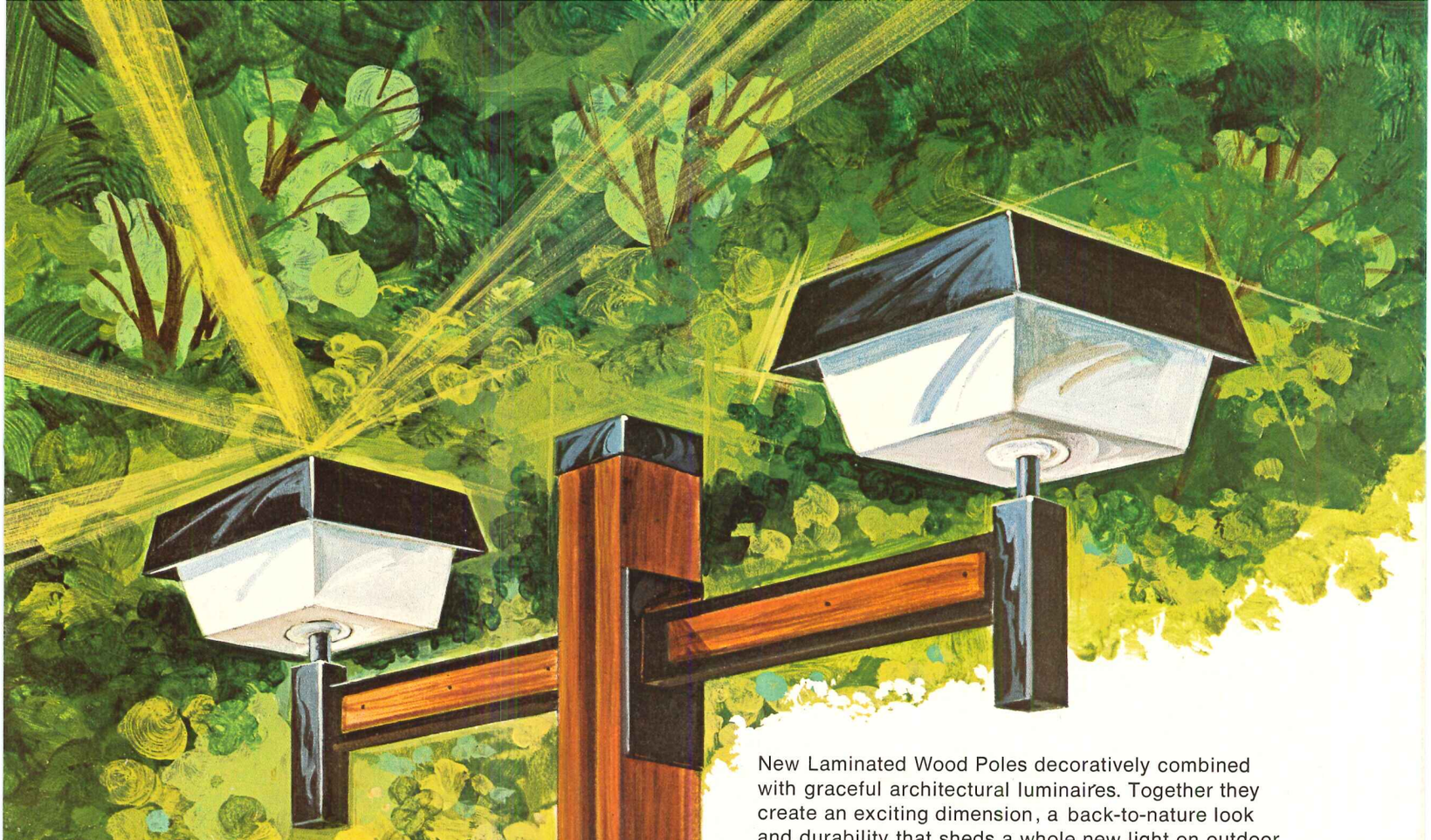

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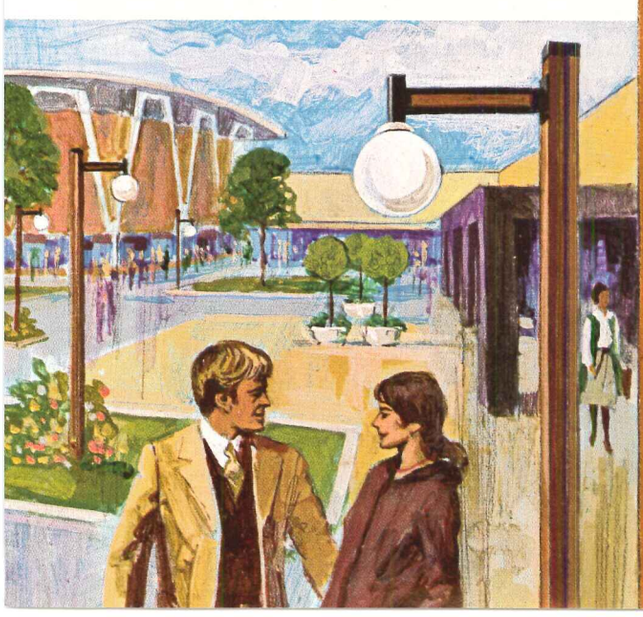

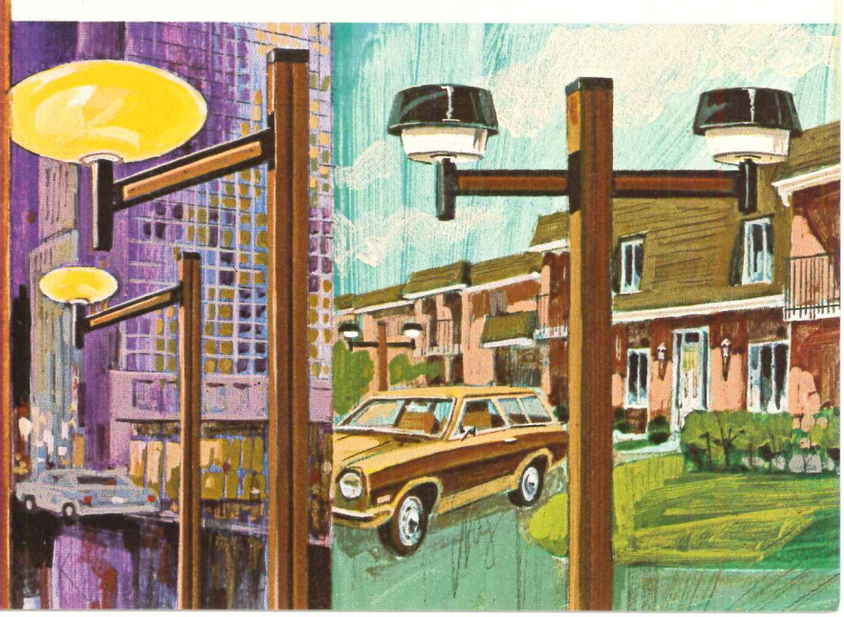

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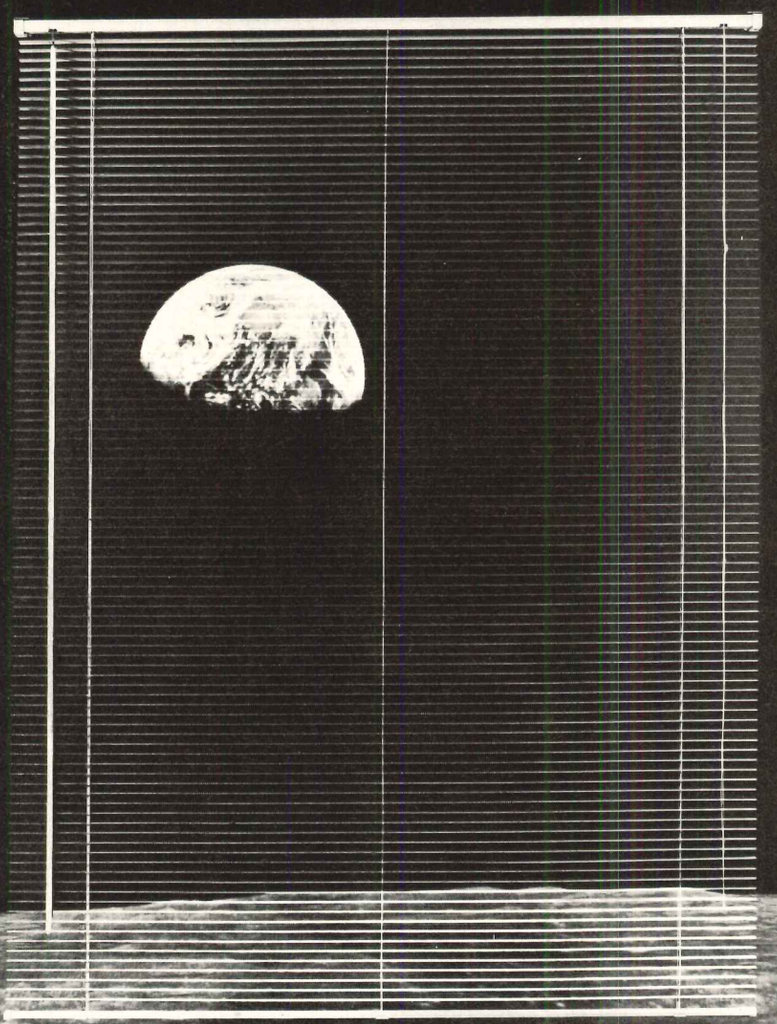

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The new, Venette Mark II offers all the aesthetic advantages of crisp, slim, unobtrusive 1-inch louvers . . . topped by an equally slim, unobtrusive 1″ x 1″ headrail which should *not* be confused with a simple "shrunken head." The Venette Mark II headrail assembly has been engineered for full scale ruggedness and reliability. Your first "hands-on" operation reveals a tilt action that's perfectly smooth, quiet, and responsive to your lightest touch.

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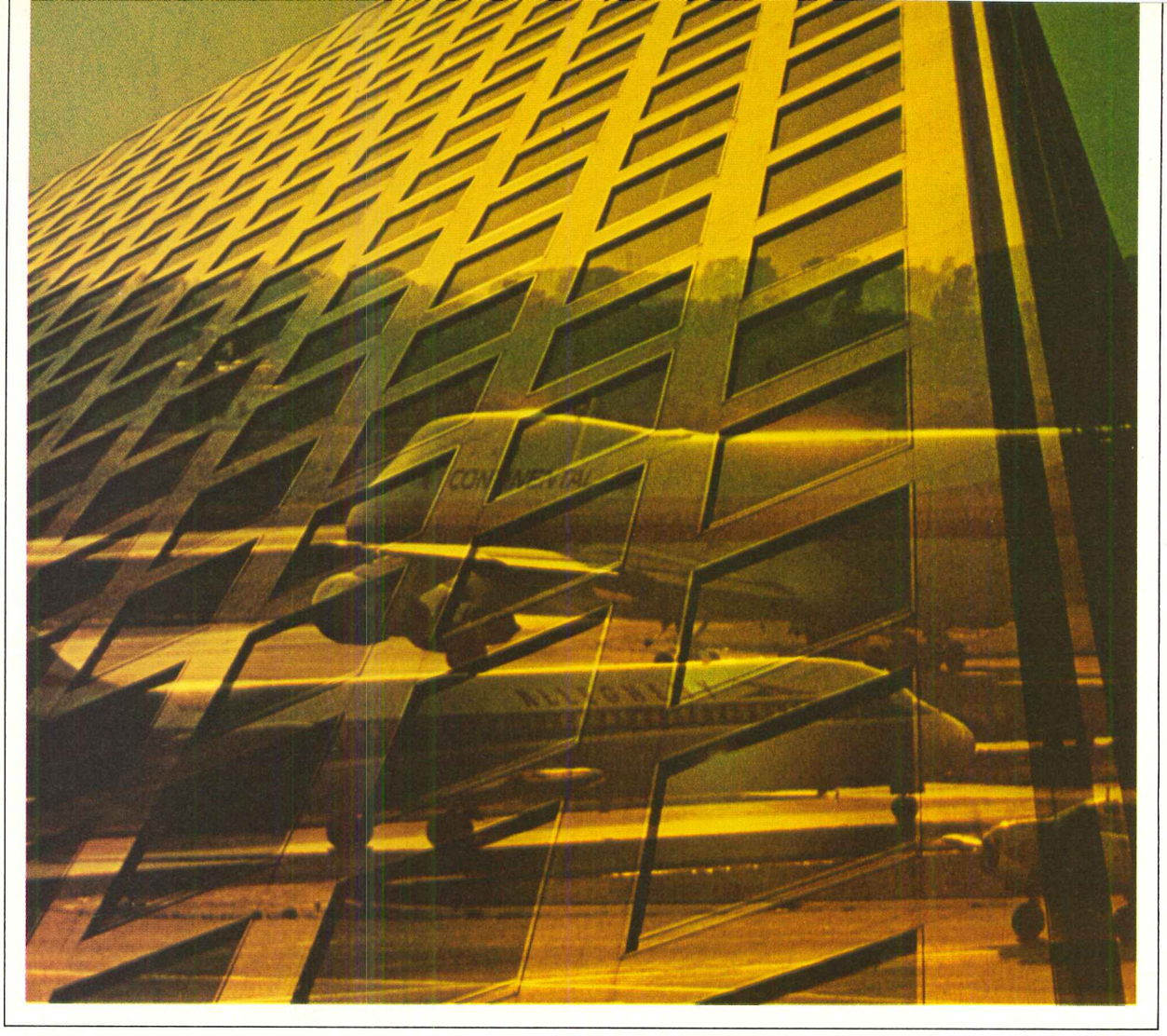

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OFFICE LITERATURE

continued from page 198D

STEEL ELECTRICAL RACEWAY DESIGN / A new edition of the "Steel Electrical Raceways Design Manual" is now available, including practical analysis and application of the provisions of the 1971 National Electrical Code relating to steel raceways. Includes discussions of factors that make for safe, dependable wiring systems in most institutional, industrial and residential buildings. ▪ American Iron and Steel Institute, New York City.

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INSULATION / *Zonolite* insulation is described in a new brochure that covers glass fiber and loose-fill vermiculite attic insulation, styrene foam and masonry wall insulations. Fire resistance data, installed costs, specifications, savings and U value charts are included. ▪ W. R. Grace & Co., Cambridge, Mass.*

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STRUCTURAL WOOD PRODUCTS / The 1973 edition of an engineered structural wood products catalog is available to architects and engineers. It offers specifications, while covering information on species, face grade, patterns and sizes of *Lock-Deck*, a laminated wood decking. ▪ Potlatch Forests, Inc., San Francisco, Calif.*

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ELEMENTARY SCHOOL FLEXIBILITY / A 6-page brochure explains how an economical concrete roof deck, masonry walls and steel beams were combined in an elementary school to allow educators to change classroom groupings without remodeling. Illustrations show plans and details for construction of the decks, walls, partitions and interior arrangements. ▪ The Flexicore Co., Inc., Dayton, O.*

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ALL-METAL FASCIAS / A comprehensive catalog illustrating gravel stop, fascia and mansard panels, is available to architects. Full-color installation photos, detail drawings and specification data are included on all the company's products, including soffit panels and thru-wall flashing. ▪ Cheney Flashing Co., Trenton, N.J.*

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FIRE EQUIPMENT / The Fire Equipment Manufacturers Association representing manufacturers of standpipes, hose rack assemblies, and related equipment as well as portable extinguishers and systems which use other than water for the extinguishing agent, offers a new publication which should be of assistance to any person whose responsibility it is to determine the necessary interior fire equipment which will be needed in a building. ▪ Fire Equipment Manufacturers Association, Evanston, Ill.

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INSULATING CONCRETE / A new 4-page data sheet discusses the properties of perlite insulating concrete for roof decks including insulating value, lightweight properties, nailability, ease of placement and fire resistive ratings. Contained are tables showing U values for different thickness slabs, thermal conductivity and compressive strength as well as comparisons with other concretes including expanded slag, shale or clay and sand and gravel. The data sheet includes mixing and placing information for perlite concrete roof decks as well as guide specifications. ▪ Perlite Institute, New York, N.Y.

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

more literature on page 211

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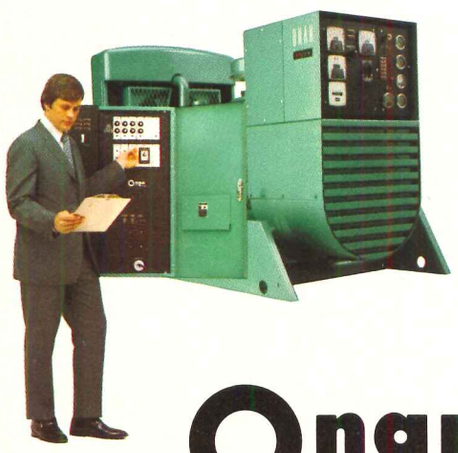

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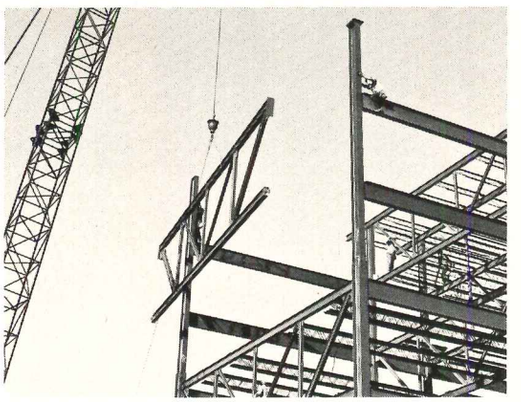
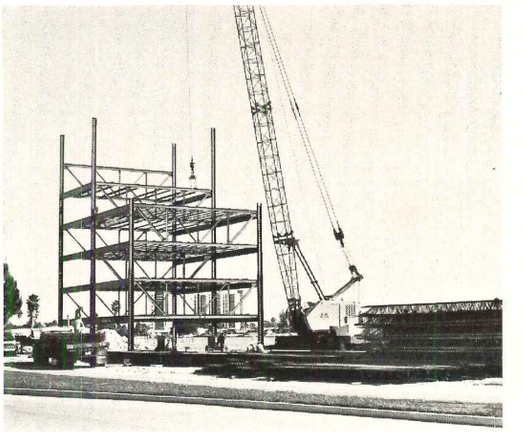
Treasure Island, Florida: another builder cuts costs in today's competitive market with Staggered Steel Truss.

Staggered Steel Truss is a new structural design concept for multi-story structures. It's been proven across the country to compete with and often beat other framing systems. And it can compete on a number of counts.

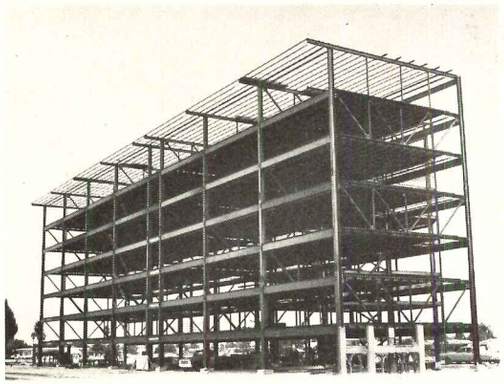
For instance, Green Feathers, Inc., owner and builder of St. James Apartments, Treasure Island, Florida, chose Staggered Truss for construction speed. They wanted faster occupancy for a quicker return on their investment. The main body of the building, which utilizes the Staggered Truss design is a rectangle, 207 ft. x 40 ft. and 7 stories high. It was erected in just 5 working days. (a 68 ft. x 46 ft. wing in the rear of the structure was erected with the conventional braced steel frame method.)



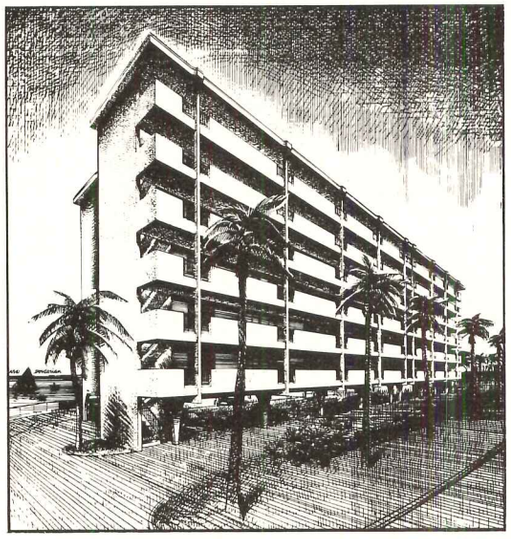


The Staggered Truss design also provided an ideal solution to off-street parking requirements by making possible a column-free 207 ft. x 40 ft. ground level parking area under the building. Additional benefits were realized in a relatively light weight steel frame and less costly foundations.

Essentially, the Staggered Steel Truss system is made up of one-story high trusses that span transversely between exterior steel columns and occur in a staggered pattern from floor to floor. Trusses at a given floor are placed midway between those of the floors below and above. Each floor rests on the top chord of the trusses below and is supported, alternately, from the bottom chord of the adjacent trusses.



Staggered Truss concept was developed for U. S. Steel by the Massachusetts Institute of Technology. The St. James Apartments is just the latest of many buildings around the country to use it effectively—and profitably.



We'll gladly send you a complete structural report (ADUSS 27-5588-01), which describes how Staggered Truss was used on this building. Also a free 26-page booklet on Staggered Truss, that shows a design for a typical 20-story apartment building in full detail. Write U. S. Steel, P. O. Box 86, Pittsburgh, Pa. 15230.

Construction Details

Description: A 7-story apartment building with penthouse atop. The main unit is a rectangle 207 ft. x 40 ft., to which a short wing 68 ft. x 46 ft. is appended. The latter is conventionally steel framed and cross-braced. 53 apartments, of which 8 are one-bedroom, 40 two-bedroom, and 5 three-bedroom. The entire main unit is set on pedestals, providing a 207 ft. x 40 ft. column-free parking space on the ground floor.
Design live loads: 40# psf in apartments/100# psf in corridors/20# psf on roof/Wind loading as per code.
Applicable Code: Southern Standard Building Code, Coastal Region.
Structural Steel: Total steel frame weight, 206 tons. Weight of other structural steel, 121 tons. Field connections are high-strength bolts.
Floor System: 16" joists on 2'6" centers. 9/16" formed metal deck with 2½" poured concrete.
Roof Construction: 28 gage galvanized steel formed decking; 3" lightweight concrete slab; built-up roofing with tar and gravel.
Foundations: augered caissons.
Interior Walls and Partitions: Partitions ½" drywall on 3⅝" metal studs. Party walls without truss: ⅝" Fireguard X Gypsum wallboard on each side of 8" lightweight concrete blocks. Party walls with truss: ⅝" Fireguard X Gypsum wallboard plus 1" soundboard on 3⅝" steel studs.
Exterior Wall: 8" concrete block, sprayed with stucco.
Elevators: 1 bank, 2 elevators.
Fire Resistance: 1 hour for floor/ceiling. 2 hours for columns, spandrels & trusses (dry-wall).
Steel Erection Time: For the main unit of the building, 5 working days. Total steel erection time: 12 working days.
Gross Area: 90,098
Floor-to-Floor Height: 9'8"
Floor-to-Ceiling Height: 8' (7' in bathrooms and corridors).

Owner: Green Feathers, Inc., Treasure Island, Florida
Architects: Edward W. Hanson, Architect, Inc., Clearwater, Florida
Structural Engineers: O. E. Olsen & Associates, St. Petersburg, Florida
General Contractor: Green Feathers, Inc., Treasure Island, Florida
Structural Fabricator: Musselman Steel Fabricators, Inc., Tampa, Florida
Structural Erector: West Coast Steel Erectors, Inc., Tampa, Florida

United States Steel USS TRADEMARK

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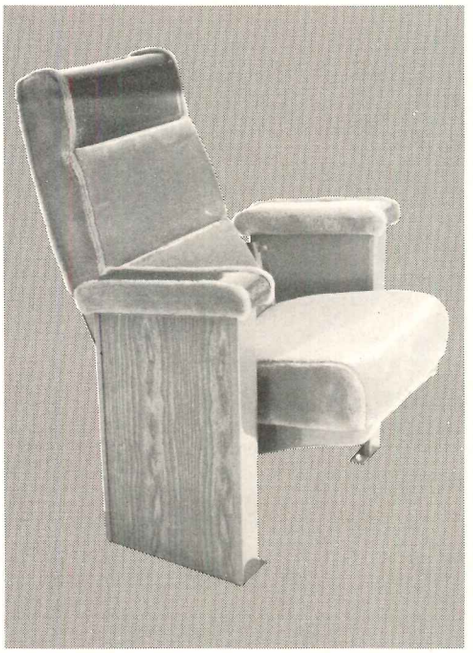

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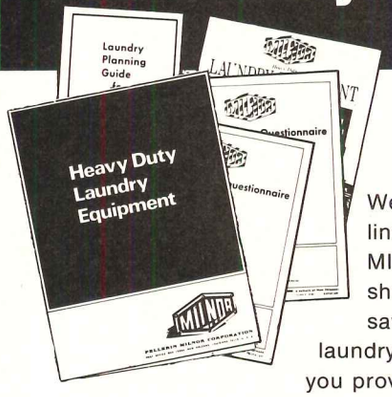

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Intermediate to Senior interior space planner/designer with minimum 5-6 years experience in architectural office. To work within interiors group of Wolff Zimmer Gunsul Frasca Architects, 1500 S.W. First Avenue, Portland, Oregon 97201 (write direct).

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OFFICE LITERATURE

continued from page 204

OUTDOOR LIGHTING / A complete new line of roadway and area luminaires, called *infinity I,* has been announced. A one-piece cast aluminum housing and an adjustable compound parabolic elliptical *Alzak* reflector, with glare-free illumination and sharp cut-off, are primary features of the new fixtures. Special advantages of the *infinity I* line also include easy relamping; a choice of pole styles and materials; and options in power core or internal ballast, wattages, type of mounting and many more. ▪ Emco, Inc., Rock Island, Ill.

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TELEVISION SYSTEMS / A newly revamped, 36-page, commercial products catalog contains illustrations, descriptions and specifications for over 250 products, such as *Ultra-Plex* strip amplifiers, power panels, splitters, drop taps, line amplifiers, tilt compensators, etc. Covered are commercial systems equipment for MATV, CCTV, ITV, ETC, CATV, NATV and Sub-channel. ▪ Winegard Co., Burlington, Iowa.

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SWIMMING POOL PRODUCTS / This 1973 catalog features deck and underwater equipment, including a new expanded section of *Para-Flyte* 3-meter and 1-meter diving towers that are now available in 4,608 varieties of optional superstructures, lengths, materials and accessories. Included in the new catalog are diving boards, water polo goals, ladders and rails, underwater windows, lights and speakers; filters, chemical feeders, heaters, skimmers, fittings, covers, test kits, paints, chemicals, vacuum cleaners, brushes and safety equipment—more than 500 products for use in, on and around residential and commercial swimming pools. ▪ KDI Paragon Inc., Pleasantville, N.Y.*

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MUSIC EDUCATION EQUIPMENT / This 1972-73 color catalog pictures products ranging from portable choral risers to soundproof, self-contained movable practice rooms. The catalog highlights *CONCEPT II* Rollaway Choral Risers. These units have built-in wheels, are quickly set up, and just as quickly folded compactly, rolled to the storage area and nested. ▪ Wenger Corp., Owatonna, Minn.*

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ELASTOMERIC FLASHING SYSTEM / A 4-page brochure on the company's *Contourflash* elastomeric flashing system describes physical properties of the flexible neoprene rubber flashing designed for difficult areas such as skylights, expansion joints and parapet walls. The bulletin pictures many applications and it contains details of typical installations. It also provides guide specifications for architects. ▪ Gates Engineering, Wilmington, Del.*

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EXHAUST ELIMINATION SYSTEMS / The *Monoxivent* system described in this new 8-page brochure is designed for automotive service operations. The company also offers engineering services for specific installation requirements. Complete specification data are provided. ▪ Kent-Moore Corp., Warren, Mich.*

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

ADVERTISING INDEX

Prefiled catalogs of the manufacturers listed below are available in the 1973 Sweet's Catalog File as follows.
A Architectural File (green)
I Industrial Construction File (blue)
L Light Construction File (yellow)
D Interior Design File (black)

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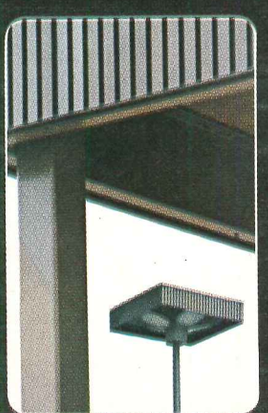

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