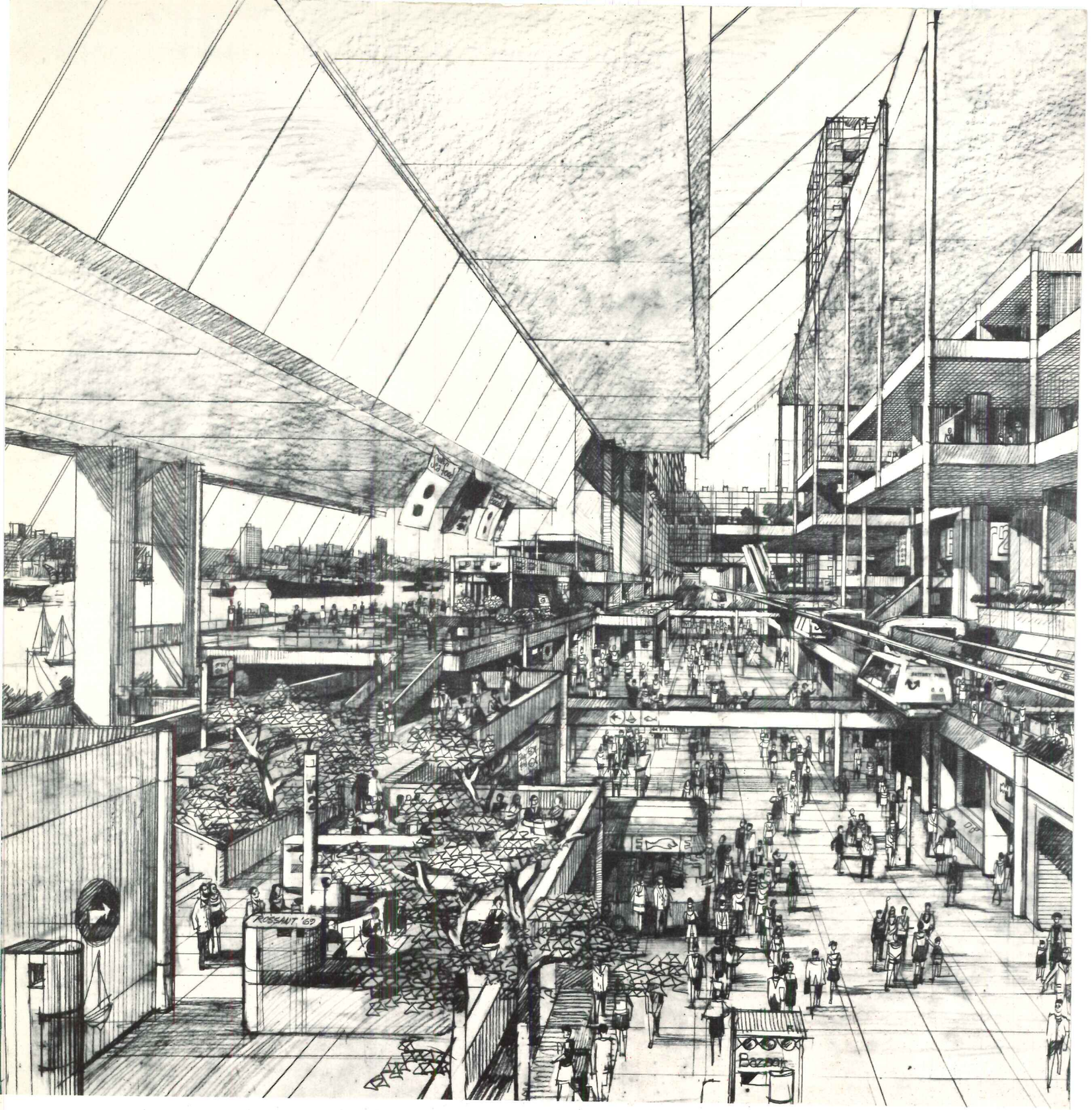


BATTERY PARK CITY: URBANITY AND HUMANITY FOR AN IN-TOWN NEW TOWN

THE DESIGN OF INTERIORS, AN EXPANDING FIELD FOR ARCHITECTS

IT'S NOT JUST THE CITIES: A NEW SERIES OF ARTICLES BY ALBERT MAYER

BUILDING TYPES STUDY: MUSEUMS FOR TODAY'S COMMUNITIES

STRUCTURE THAT SUITS ARCHITECTURE THAT SUITS ACOUSTICS

SEMI-ANNUAL INDEX / FULL CONTENTS ON PAGES 4 AND 5

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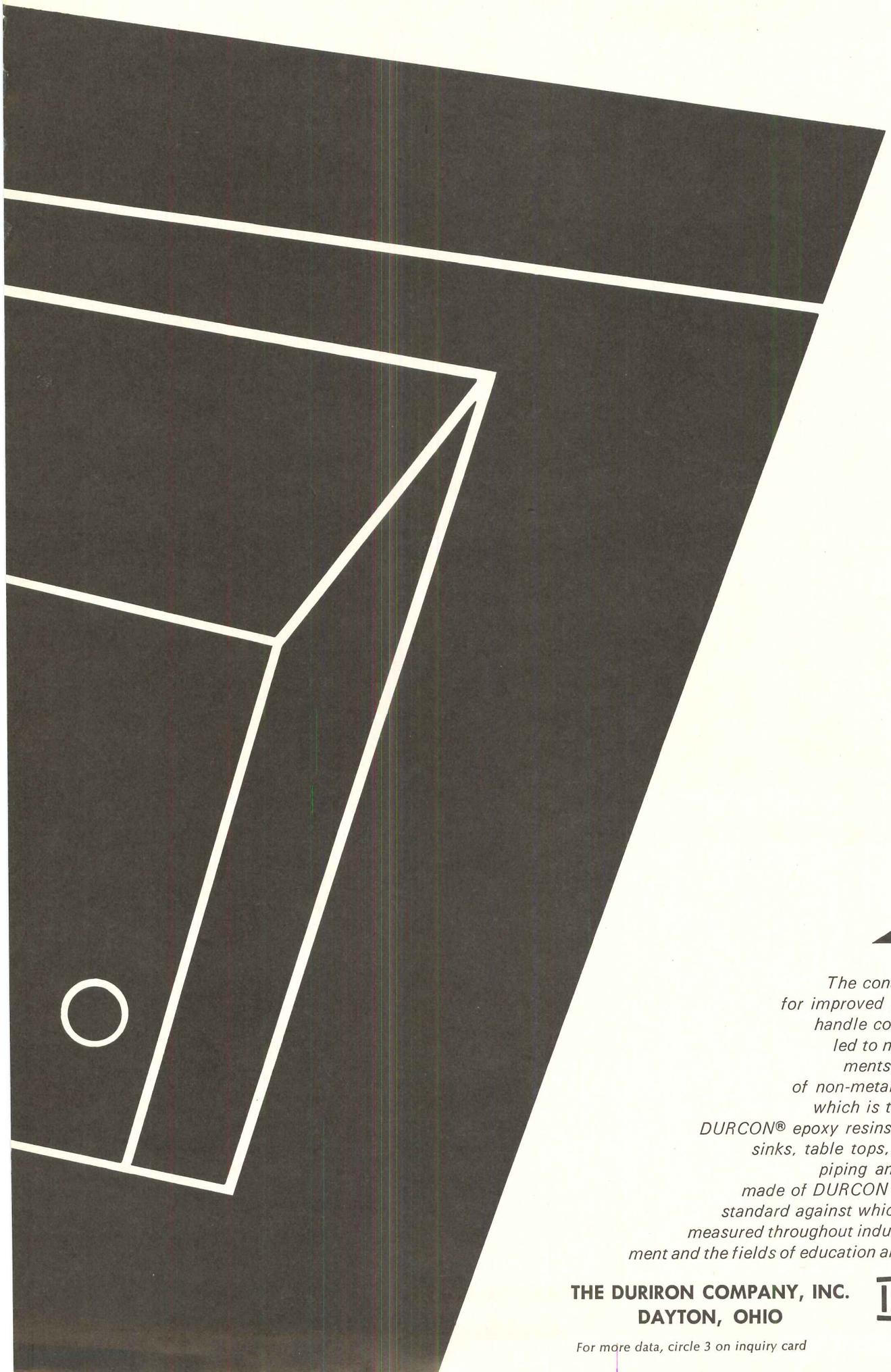

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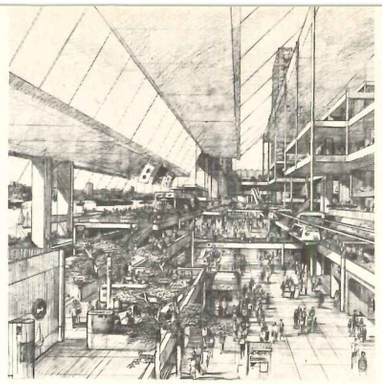

Cover: Battery Park City, interior perspective
Architects: Joint project of Harrison & Abramovitz,
Philip Johnson & John Burgee and Conklin & Rossant
Drawing by James Rossant


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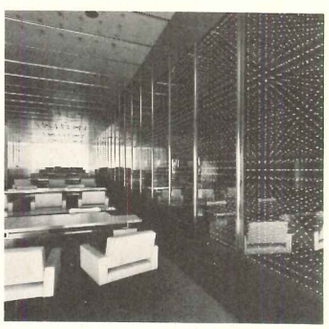

Michael Proulx

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### BUILDING TYPES STUDY: STORES

The scope of architecture for retail stores and shopping centers encompasses an extraordinary variety of special considerations, roughly divisible in two categories. One category has to do with the multiple points of contact through which merchandising and display disciplines are brought into harmony with building design. The other relates all of those disciplines with the even broader scope of considerations involved in urban and suburban redevelopment. The July Building Types Study will scan the interaction of these forces and show examples of how architects are dealing with them at all levels.

### UNIVERSITY OF EAST ANGLIA

The first completed buildings of Denys Lasdun's new University of East Anglia, to be featured next month, establish the dominant themes of an over-all development plan which newly affirms its designer's conception of architecture as urban landscape.

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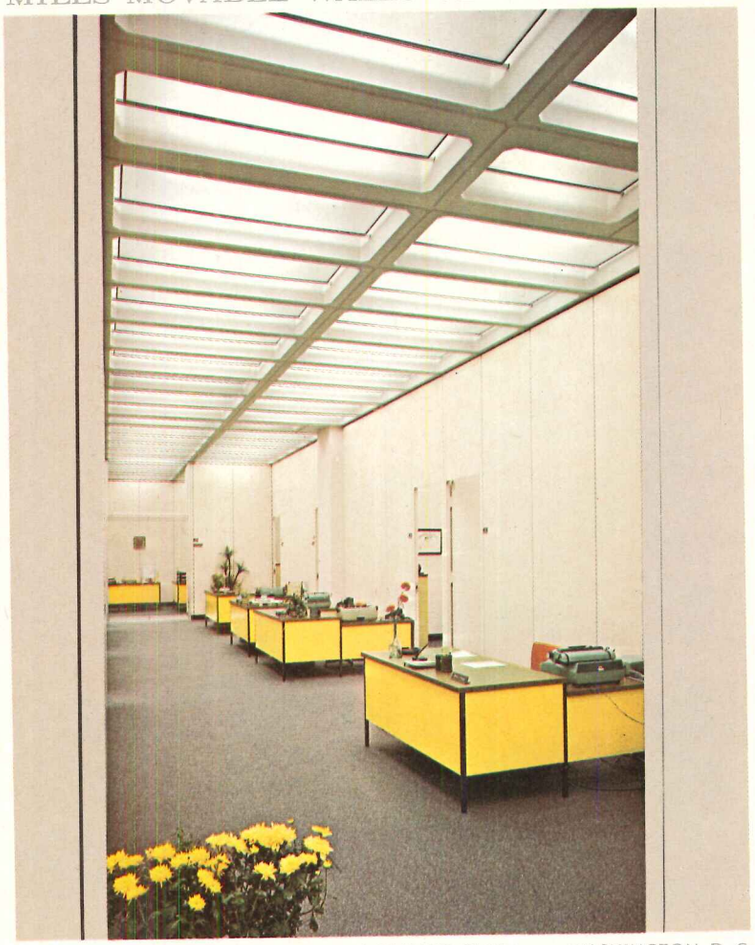

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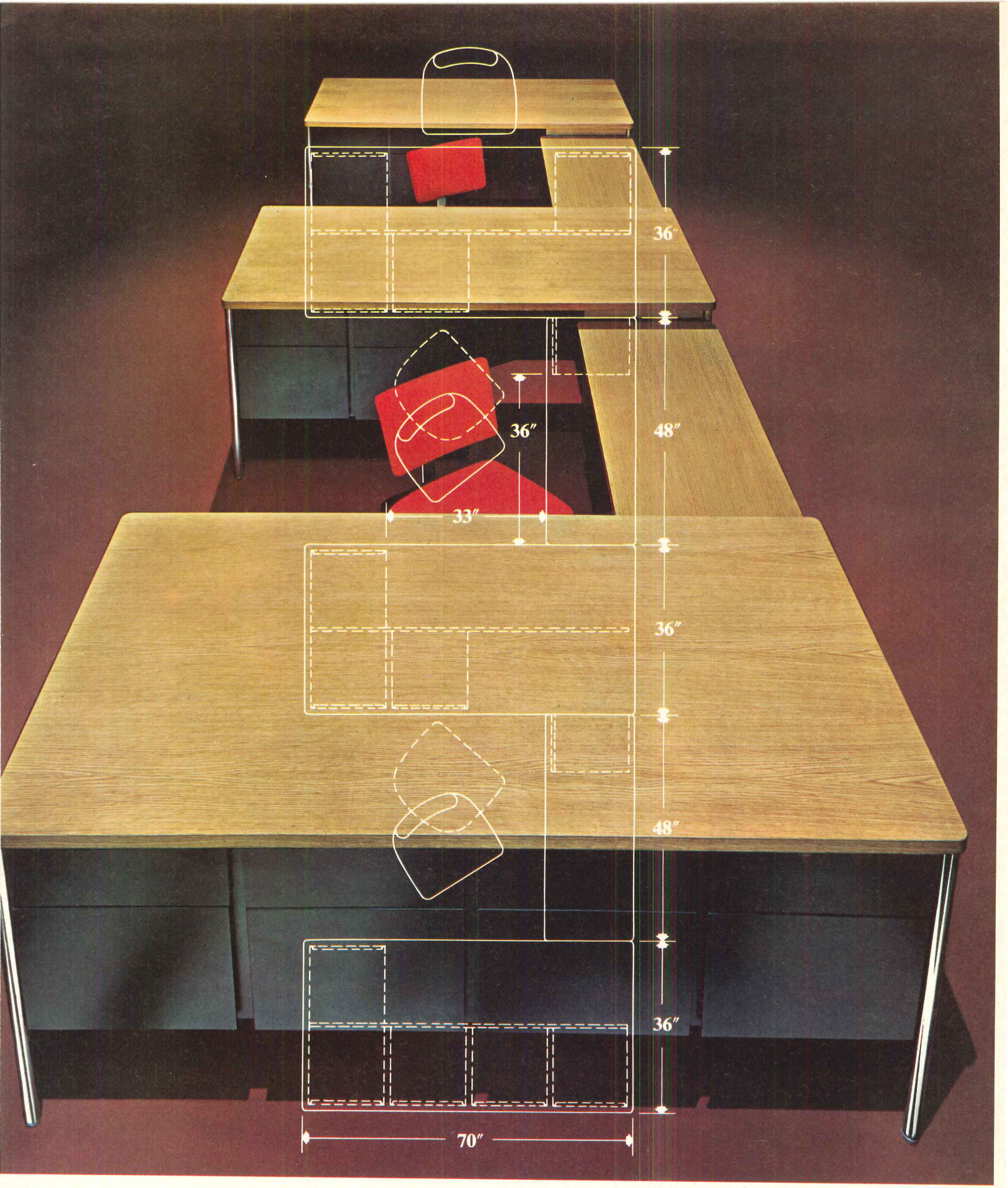


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# President Nixon's first major statement on architecture

. . . deserves three cheers from architects.

The statement came in the President's message to Congress on the District of Columbia, and therefore requires extrapolation to be considered national policy. (But see also Dr. Moynihan's speech, next page.)

Said President Nixon: "Carved out of swampland at our country's birth, the Nation's Capital City now sets a new test of national purpose. This was a city that men dared to plan—and build by plan—laying out avenues and monuments and housing in accordance with a common rational scheme. Now we are challenged once again to shape our environment: to renew our city by rational foresight and planning . . ."

The message goes on with specific proposals on matters of District self-government and transit, and then comments on Pennsylvania Avenue. "Pennsylvania Avenue should be one of the great Avenues of our Republic—as in the original vision of our Capital City—and will be so if the Pennsylvania Avenue Commission presses forward with its present plans. Already, in accordance with the Commission's plans, construction of the Presidential Building at 13th Street has been completed; construction is continuing on the new Capital Reflecting Pool, as well as buildings for the Federal Bureau of Investigation and the Labor Department. Planning is going forward for the Federal Triangle, a new Municipal Center at Judiciary Square, and an extension of the National Gallery. Our ultimate goal must be the Avenue of L'Enfant's Plan, a grand route connecting the Congress and the President's House, the vital center of the City, monumental in importance but designed for the Citizens of this Nation to enjoy at all hours for work or pleasure. I will encourage the development of this plan and submit legislation at the appropriate time . . ."

And that is good and important news. The Pennsylvania Avenue plan that the President will "encourage the development of" is, in its present form, the outgrowth of President Kennedy's "Guiding Principles for Federal Architecture." That policy—which has had such far-reaching and beneficial effects—was first presented in trial-balloon form at the First Conference on Esthetic Responsibility sponsored by the New York Chapter of the American Institute of Architects (RECORD, May 1962) in a speech by "an unheralded young speaker from Washington, Daniel P. Moynihan Jr."

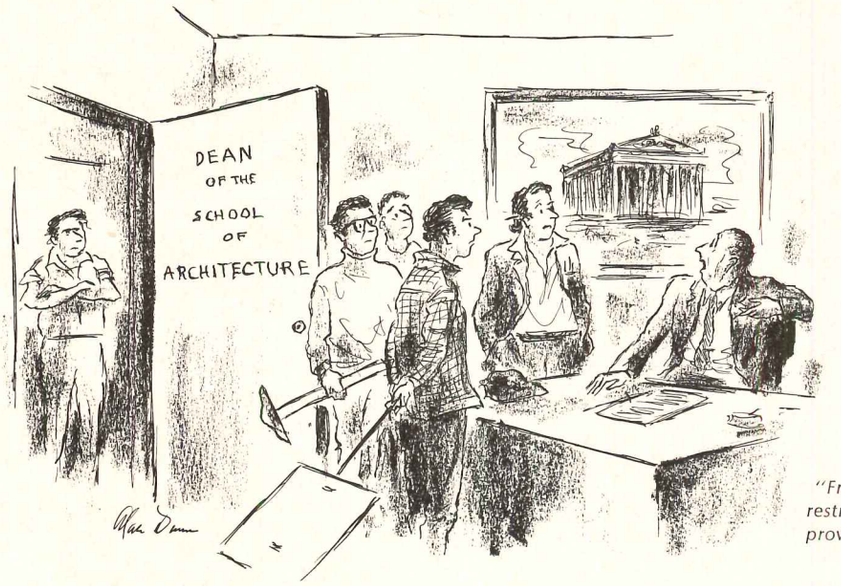
Two months later (RECORD, July 1962) a document with the unlikely title of "Report to the President by the Ad Hoc Committee on Federal Office Space" established for the first time a national policy on public architecture with the now-famous words: "Major emphasis should be placed on the choice of designs that embody the finest contemporary American architectural thought," and the suggestion that "as a rule" the advice of "distinguished architects" should be sought before important contracts are awarded. That report also proposed the redevelopment of Pennsylvania Avenue to make it "the great thoroughfare of the City of Washington," and suggesting a renewal of the idea first suggested by L'Enfant, Washington and Jefferson that the avenue from the Capitol to the White House should be "the 'grand axis' of the city as of the nation." That redevelopment was to take place within the framework of the McMillan Commission report of the early 1900's, which developed the plans for the Mall, the Lincoln Memorial, the Arlington Bridge, and the development of public buildings between the Capitol and the White House; within the framework of the Federal Triangle complex conceived by Secretary of the Treasury (under President Hoover) Andrew Mellon; and within the framework of the National Capital Planning Commission.

A nine-man council, chaired by Nathaniel A. Owings and including Dr. Moynihan, presented in 1964 the redevelopment plan for the Avenue that President Nixon has just reaffirmed as a national policy. There has been some implementation of the plan, as the President noted. There have been hard-won victories—such as the re-siting of the FBI Building. There have been setbacks—undistinguished commercial buildings built within the physical framework but outside the philosophical framework of the Plan. The site-acquisition for the critically important National Square has gone slowly. But the President's statement on the Plan gives it new importance and his intention to "submit legislation at the appropriate time" could give it both the muscle and the money that is needed.

There is, of course, only one Federal Triangle. But every city has its "grand axis" that needs design attention, and for which an implemented Pennsylvania Avenue Plan would stand as a new standard of design and environmental quality of the very highest order. As President Nixon said in the concluding sentences of his District of Columbia message: this "noble aim—this planning of a Capital City . . . encompasses a drive which must apply to areas of rebuilding beyond a single Avenue, and to areas of need beyond physical renovation. It infuses our knowledge of human want with a new urgency. It tests our vision of man, and of the future of his cities." And that is a statement on architecture.

*—Walter F. Wagner, Jr.*

—Drawn for the RECORD by Alan Dunn




*"Frankly, I see a great future in restructuring the universities, provided that you include escape hatches for deans—"*

## Another step towards a national policy on architecture

President Nixon's strong and encouraging statement on the Pennsylvania Avenue Plan (see editorial, previous page) is a strong policy statement on the importance of quality design. Another was delivered on May 8th by Dr. Moynihan, whose speeches as Assistant to the President and head of the President's National Council on Urban Affairs can be given great weight. What is perhaps most important is his concluding message:

"The Federal Government, by its own example and by incentives, should seek to add to the amenities of the urban environment.

"Although there is little that can be stated with confidence in this area, it is hardly to be disputed that most American cities are far uglier than they need be, and that part of this ugliness is allowed, if not indeed rewarded, by Federal programs.

"Social peace is a primary objective of social policy. To the extent that this derives from a shared sense of the value and significance of the public places and aesthetic value of the city, the Federal government has a direct interest in encouraging such qualities.

"Daniel J. Elazar has observed that while Americans have been willing to become urbanized, they have adamantly resisted becoming citified. Yet a measure of this reluctance is needed. There are not half-a-dozen cities in America whose disappearance would, apart from the inconvenience, cause any real regret. But to lose one of those half-dozen would plunge much of the nation and almost all the immediate inhabitants into genuine grief. Something of value in our lives would have been lost, and we would know it. *The difference between those cities that would be missed and those that would not be resides fundamentally in the combination of architectural beauty, social amenity, and cultural vigor that so sets them apart* [italics ours]. It has ever been such. To create such a city and to preserve it was the great idea of the Greek civilization, and it may yet become ours as we step back ever so cautiously from the worship of the nation state with its barbarous modernity and impotent might. We might well consider the claims for a different life asserted in the oath of the Athenian City-State:

> We will ever strive for the ideals and sacred things of the city, both alone and with many;
>
> We will unceasingly seek to quicken the sense of public duty;
>
> We will revere and obey the city's laws;
>
> We will transmit this city not only not less, but greater, better and more beautiful than it was transmitted to us."

And that is a statement on architecture!

## Some new bad news about land costs

"U.S. Land Prices—Directions and Dynamics," was prepared for the Douglas Commission by Mrs. Grace Milgram of the Columbia University Institute of Urban Environment. Among its major conclusions:

Land suitable for development is increasing in price from 10 to 15 per cent each year. As a result, the report finds, the cost of the site for FHA-insured single-family houses increased, during the decade ending in 1966, from 14.2 per cent to 18.2 per cent of the total cost of the house.

Solutions proposed in the report: 1) Manipulation of property taxes, income taxes, and capital gains taxes to siphon off rising values of land in the path of development; 2) Land-use controls to permit more intensive use of residential sites; and 3) creation of metropolitan area land reserves —with state or Federal help if necessary— from which sites could be sold or leased on terms suitable for the housing of low-income families."

That is, of course, pretty strong medicine. But just maybe it is what is needed to curb the greedier land speculators, and put an end to truly restrictive (rather than properly protective) zoning. Which brings us to another point. . . .

## Would busting large-acre zoning accomplish what is hoped?

The Douglas Report itself, previously reported on in some detail in RECORD, offers as one solution to the housing problem some fresh study of "large-acre zoning." There have been some efforts by unlikely alliances of local homebuilders and black action groups from the cities to break down large-acre zoning. Quite apart from the ethical problems (on all sides) involved, the question that seldom gets asked (and never gets answered) is, it seems to me: "Will reducing lot size really decrease the cost of the lot, and will that reduction (if any) be passed along to the home buyer?" It has been my observation that when areas are rezoned, the price of the new and smaller building lot quickly climbs very close to the price of the original larger lot. In short, downzoning of land on which $30,000 or $40,000 houses are being built will not, it seems to me, do much for the urban slum-dweller, but simply result in $30,000 to $40,000 houses on smaller lots.

## A slogan worth remembering

A group of students at Louisiana State University, Tulane, University of Southern Louisiana, and Southern University—banded together "to organize interdisciplinary, open-end teams of young professionals to work for a better society"—sends a flyer describing their aims and objectives which includes this worth-thinking-about slogan:

"If you're not part of the solution . . . you're part of the problem." —*W.W.*

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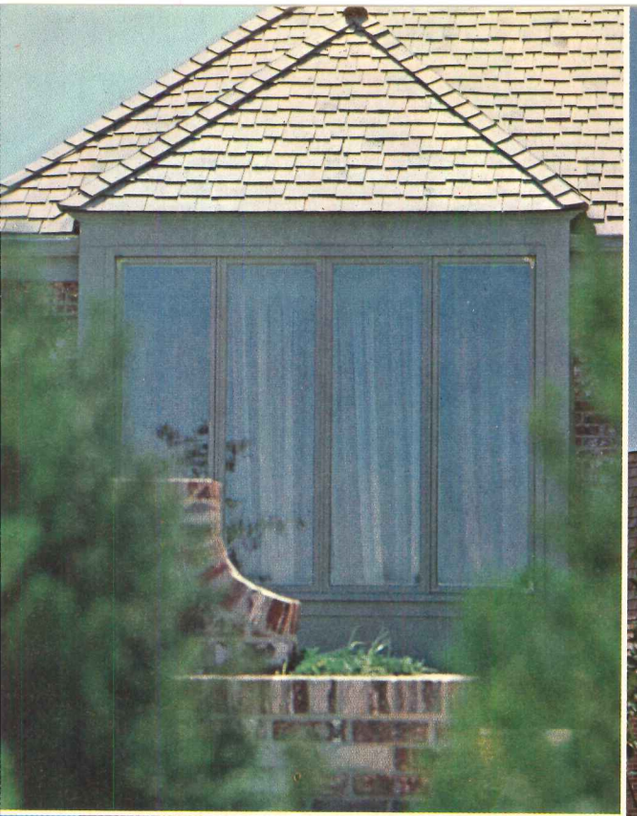

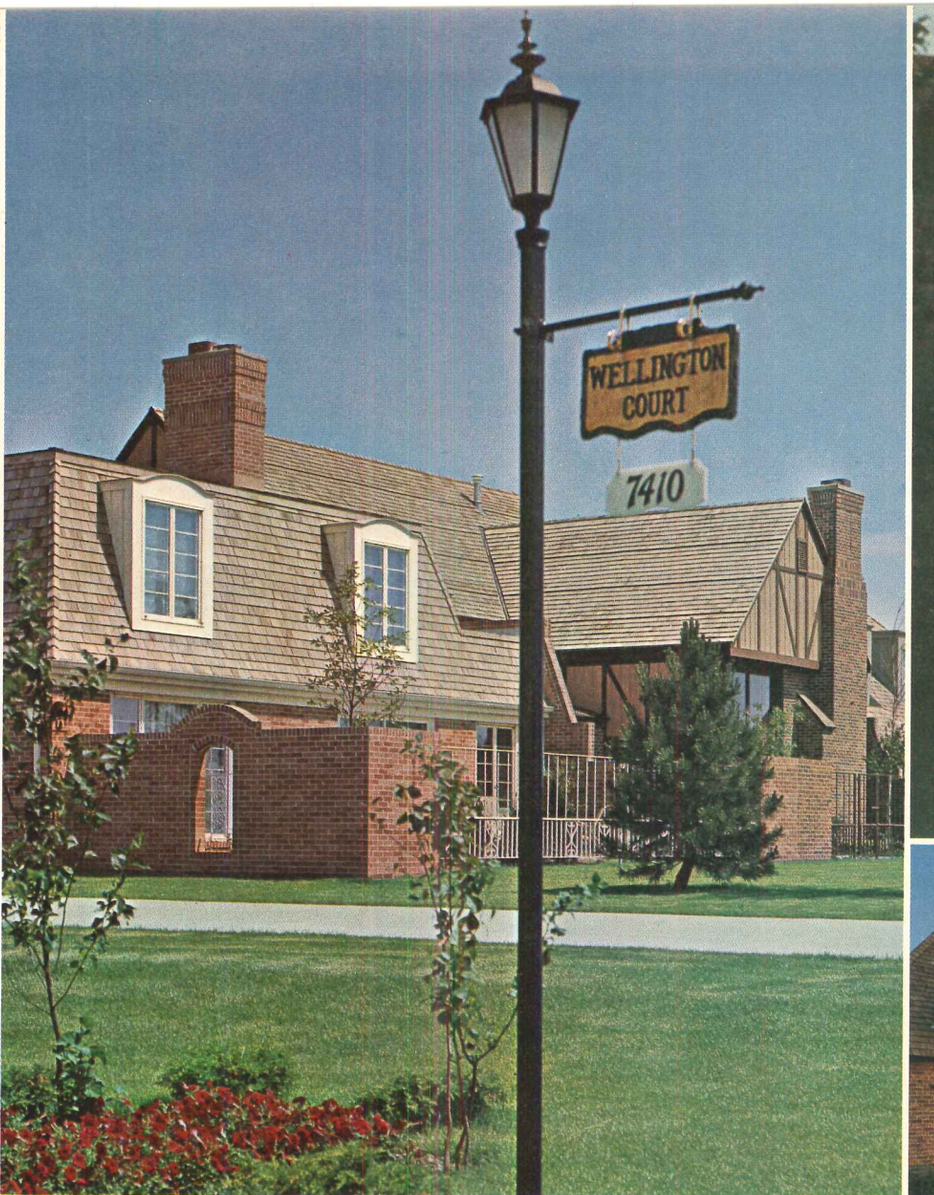
WELLINGTON
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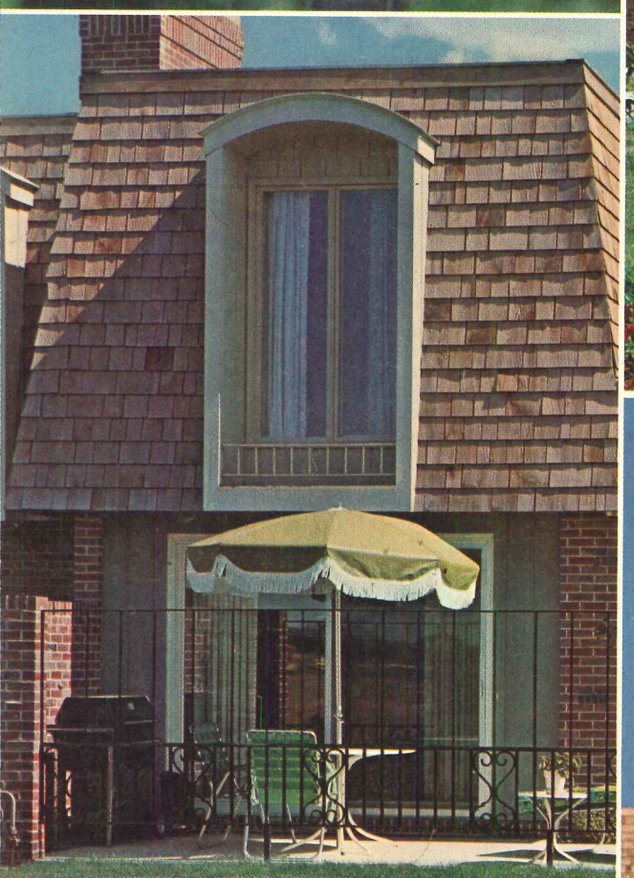
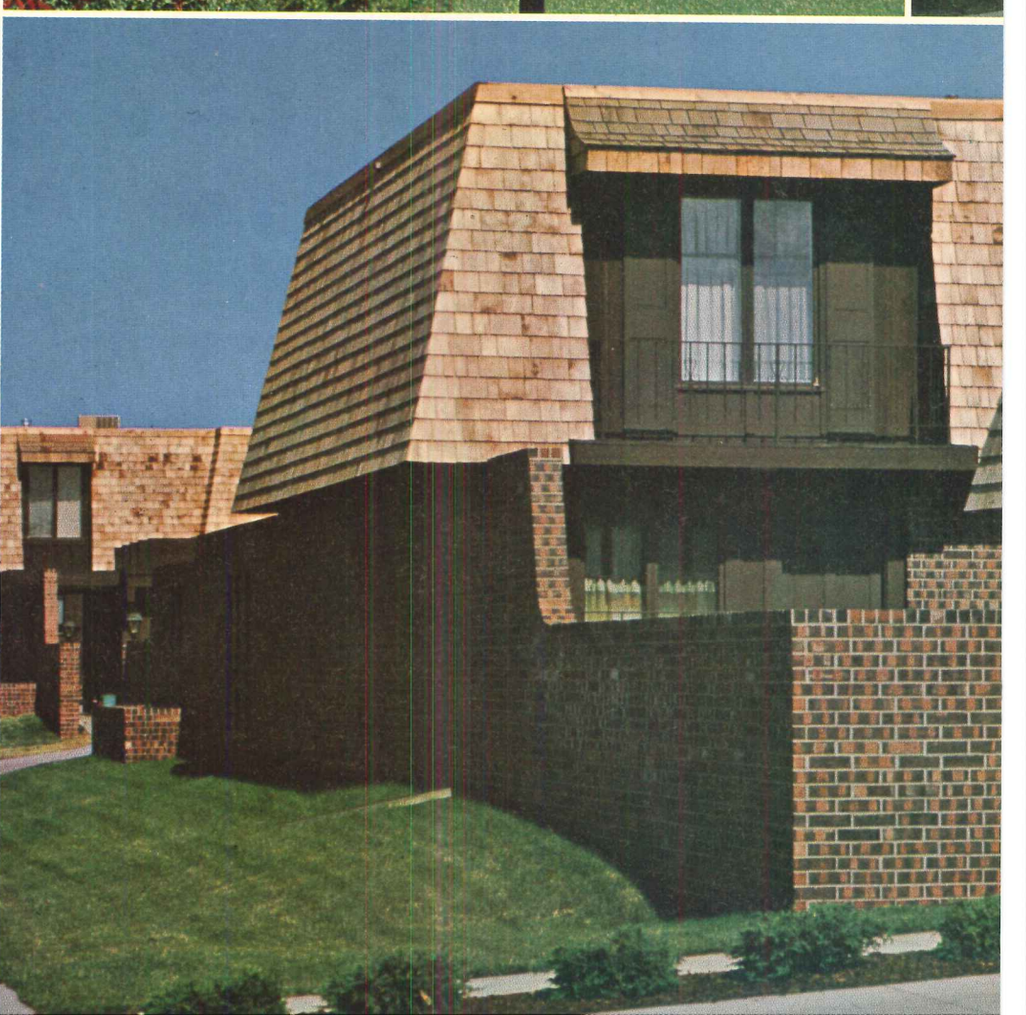
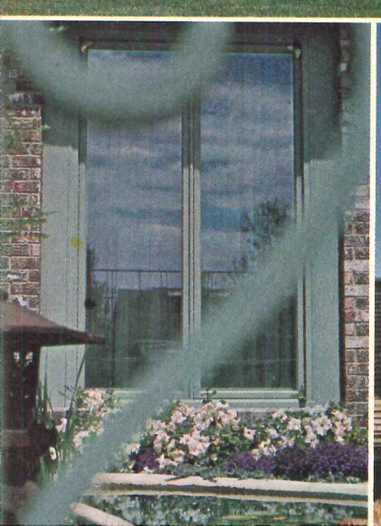
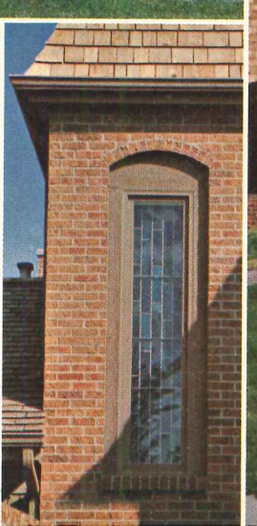
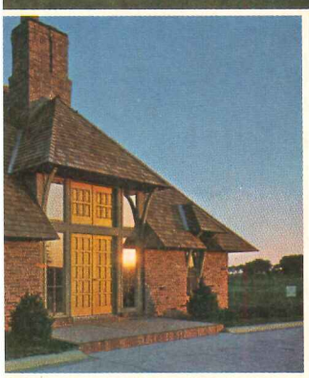


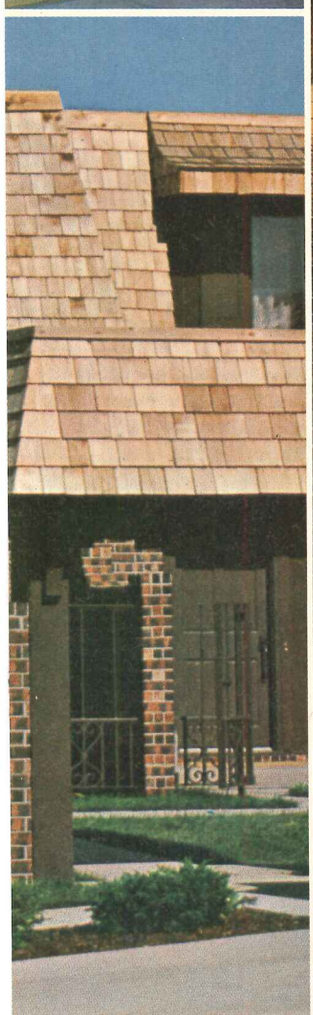






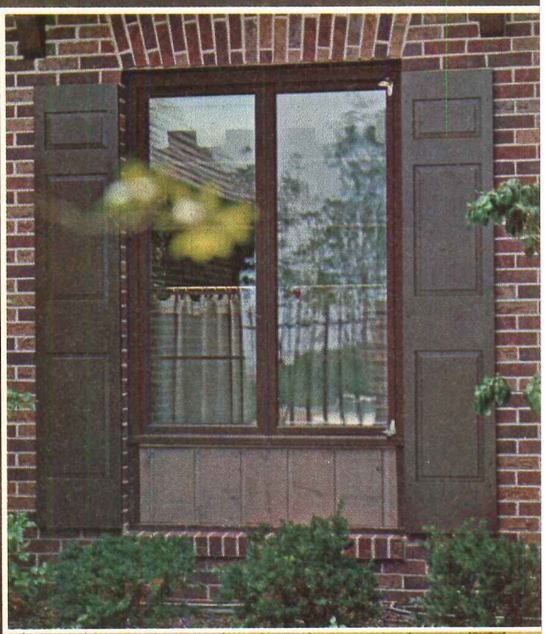
Wellington Greens, Lincoln, Nebraska. Builder-Architects: Strauss Brothers





# Do window design details make a difference?

# The difference between night and day.



These might have been look-alike townhouses. They're all part of the same development. Yet each unit has its own character, charm and sales appeal. Each has its own style of stock Andersen Windows.

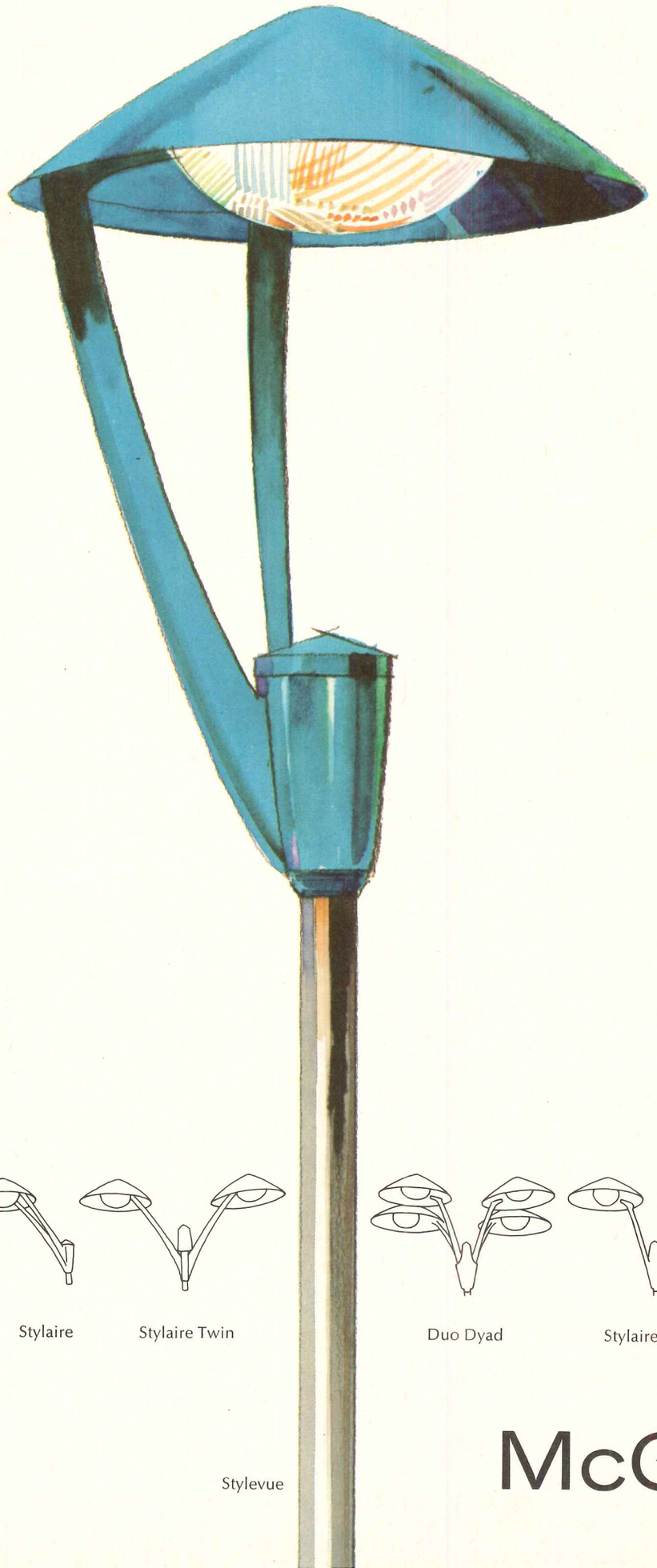
Why Andersen? They're America's most beautifully-designed wood windows. Slim. Trim. Elegant. Also they're built to last for the life of the building. Precisely detailed. Incredibly weathertight. And finally, Andersen offers thousands of weapons in the war against conformity—6 window and gliding door styles, hundreds of sizes, a variety of grilles, etc.—all factory assembled and available from local stock.

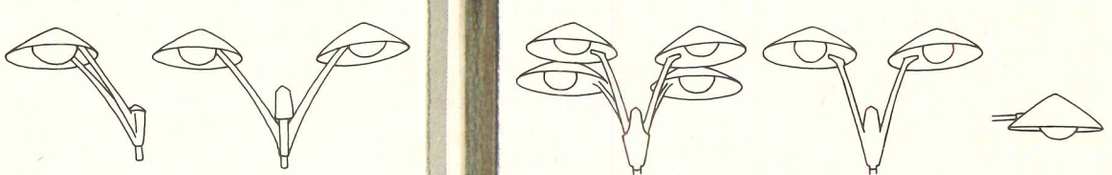
But if, as the saying goes, "One picture is worth 1000 words," we've already talked too much about the variety and sales appeal of Andersen Windows. For more *technical* information, just call your nearest Andersen Distributor. Or, consult Sweet's Architectural or Light Construction Catalog File.

## Andersen Windowalls™

*Window Beauty is Andersen*

ANDERSEN CORPORATION • BAYPORT, MINNESOTA 55003





Stylaire

Stylaire Twin

Duo Dyad

Stylaire Dyad

Styleshield

6904

Stylevue

McGraw

# With styled area lighting, the only thing better than the evening performance is the matinee

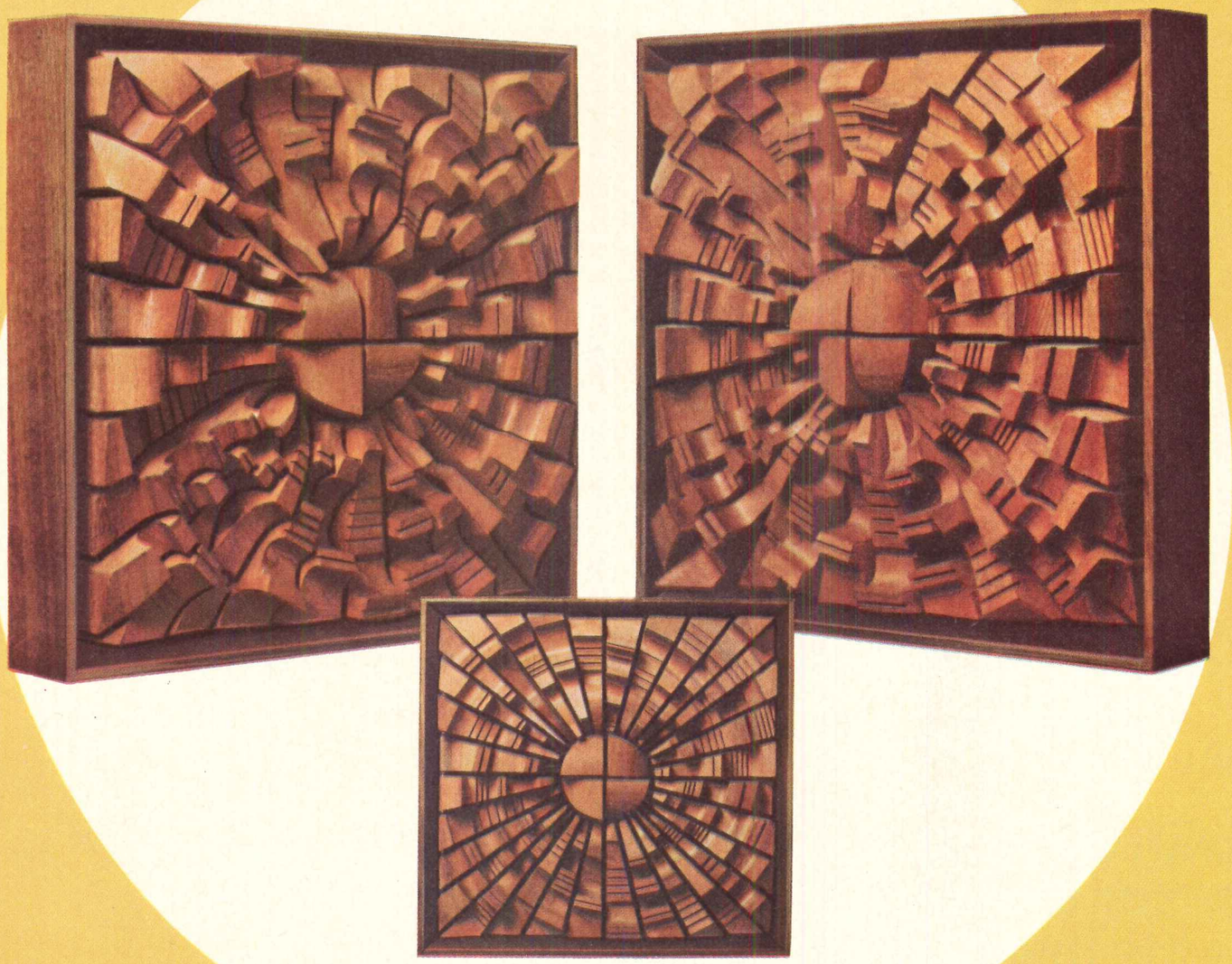
The only time you really see outdoor luminaires is in the daytime. They surround your building, so they also create one of the first impressions. Sometimes that first impression can be pretty dreadful. "Gas-station" lighting hardware can turn off all the effects you've worked for in your building design.

Styled area lighting sets the stage for your whole plan—night and day. For attractive high-level illumination, the Styled Mercury units illustrated can provide from 250 to 4000 watts of controlled lighting on each pole. Metal additive or ceramic discharge lamps can be used for a variety of IES lighting patterns. And all day long, their clean, modern design adds full-time architectural character to your roadways and parking areas.

We believe that outdoor lighting should contribute to good overall design, and we'd like to work with you to fully exploit lighting design possibilities in your next project. As a start, write for "Ideas in Lighting" specification and application guide which shows the complete line in several styles. We're also in Sweet's. Or contact your authorized McGraw-Edison distributor, or your local McGraw-Edison sales engineer. McGraw-Edison Power Systems Division (formerly Line Material Industries and Pennsylvania Transformer), Box 440, Canonsburg, Penna. 15317. In Canada, McGraw-Edison Power Systems Division, Scarborough, Ont.

-Edison

*For more data, circle 8 on inquiry card*



**Swirl** by Robert Pierron—a sculptured wood relief from the private collection of
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**FREEDOM TO CREATE IN WOOD**... The promise of wood in the hands of a sensitive designer adds beauty to structure ... form to function ... feeling to flexibility. For more than two generations our single-source custom service has enabled architects and designers to unleash their total creativity on the wonderful warmth of wood. We invite you to think of wood as the medium ... freely ... unconcerned with construction and installation. We can produce it.

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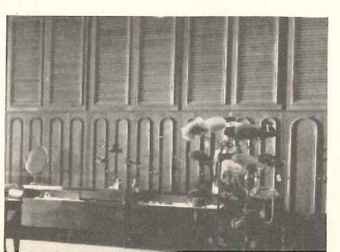

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# TCS

## Why coat stainless steel?

. . . because proper soldering of stainless steel requires an extra step of pretinning or use of corrosive fluxes. These fluxes must be removed after soldering to prevent attack on the stainless.

TCS solders perfectly using a non-corrosive rosin flux. Pretinning is unnecessary.

. . . because architectural metals are subject to corrosive attack in severe chemical, industrial or marine environments.

TCS enhances the proven ability of stainless steel to resist corrosive attack under these conditions.

. . . because the reflective surface of stainless steel may sometimes be undesirable in architectural applications.

TCS weathers naturally to a predictable, uniform and attractive dark gray. If color is desired, it can also be painted.

TCS, Terne-Coated Stainless Steel, is 304 nickel-chrome stainless steel covered on both sides with terne alloy (80% lead, 20% tin). It is a product of Follansbee Steel Corporation, Follansbee, West Virginia.

**FOLLANSBEE**

FOLLANSBEE STEEL CORPORATION • FOLLANSBEE, WEST VIRGINIA

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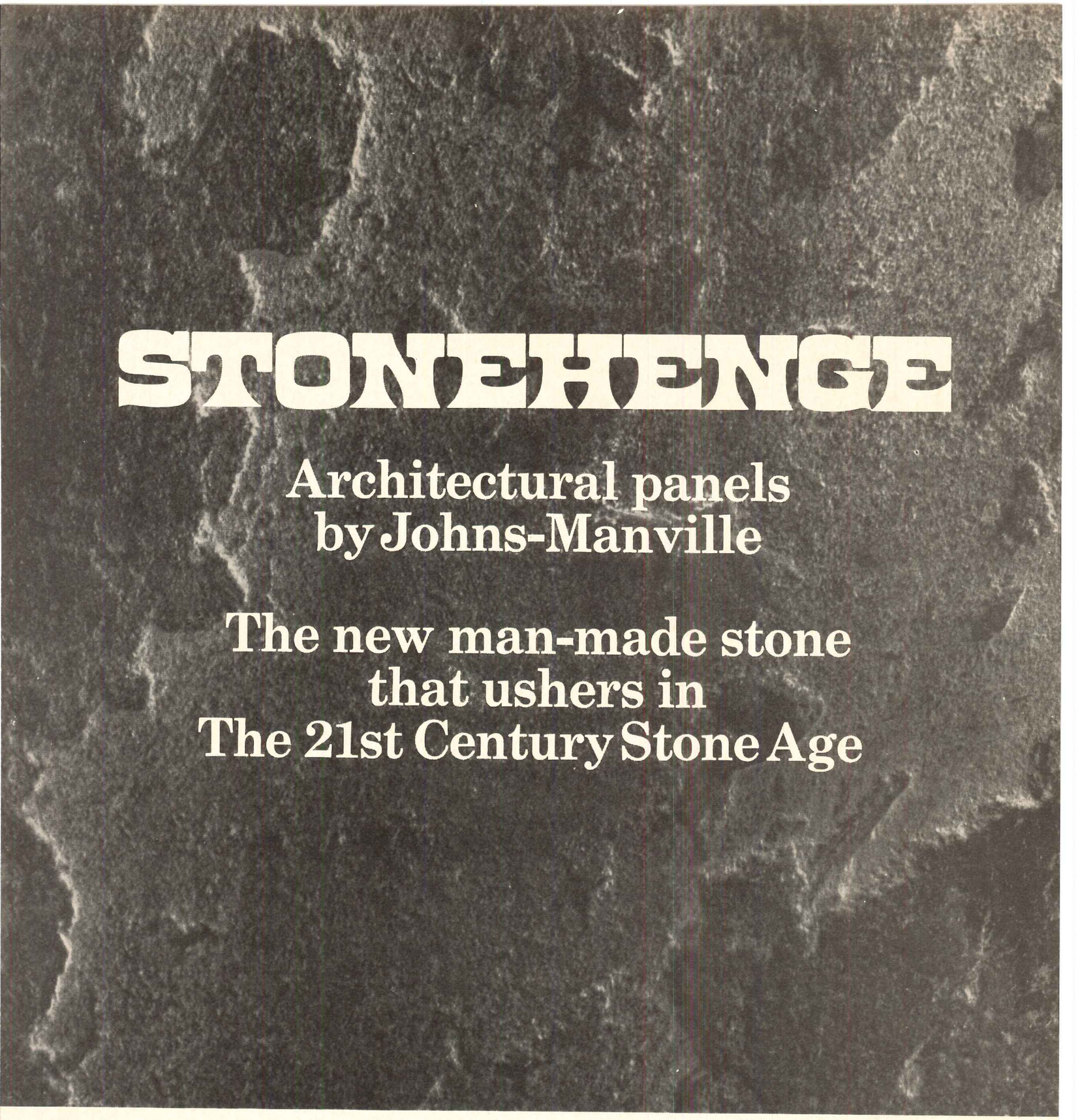


**Stonehenge™... lighter, tougher, more versatile, less expensive than natural stone.**

Now—an architectural panel with all of stone's virtues but none of its vices. J-M Stonehenge's deep-relief surface has the rugged beauty of nature's own. Use Stonehenge for facings, spandrels, lobbies, accent panels—anywhere—indoors or out—where you would use natural stone. And many places where natural stone's weight makes it impractical.

Erecting Stonehenge takes only a fraction of the time needed for natural stone. Stonehenge has superior screw holding ability. Its simple mounting systems mean less labor.

And, lacking natural stone's inherent flaws, Stonehenge provides uniform strength without extra thickness. Stonehenge can be used in panels up to 4′ x 8′ in thicknesses as little as ½″.

For the whole story, write Johns-Manville, Box 290-BI, New York, New York 10016. Cable: Johnmanvil.

JM
**Johns-Manville**

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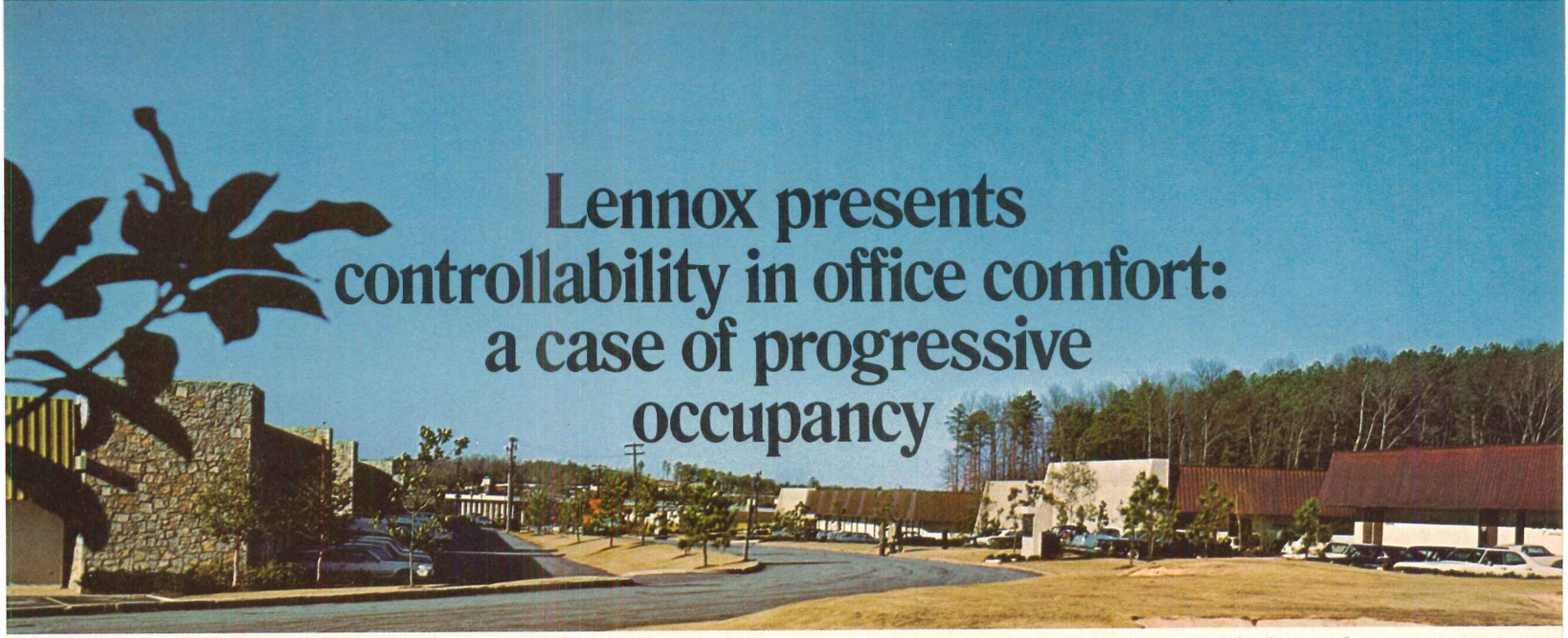
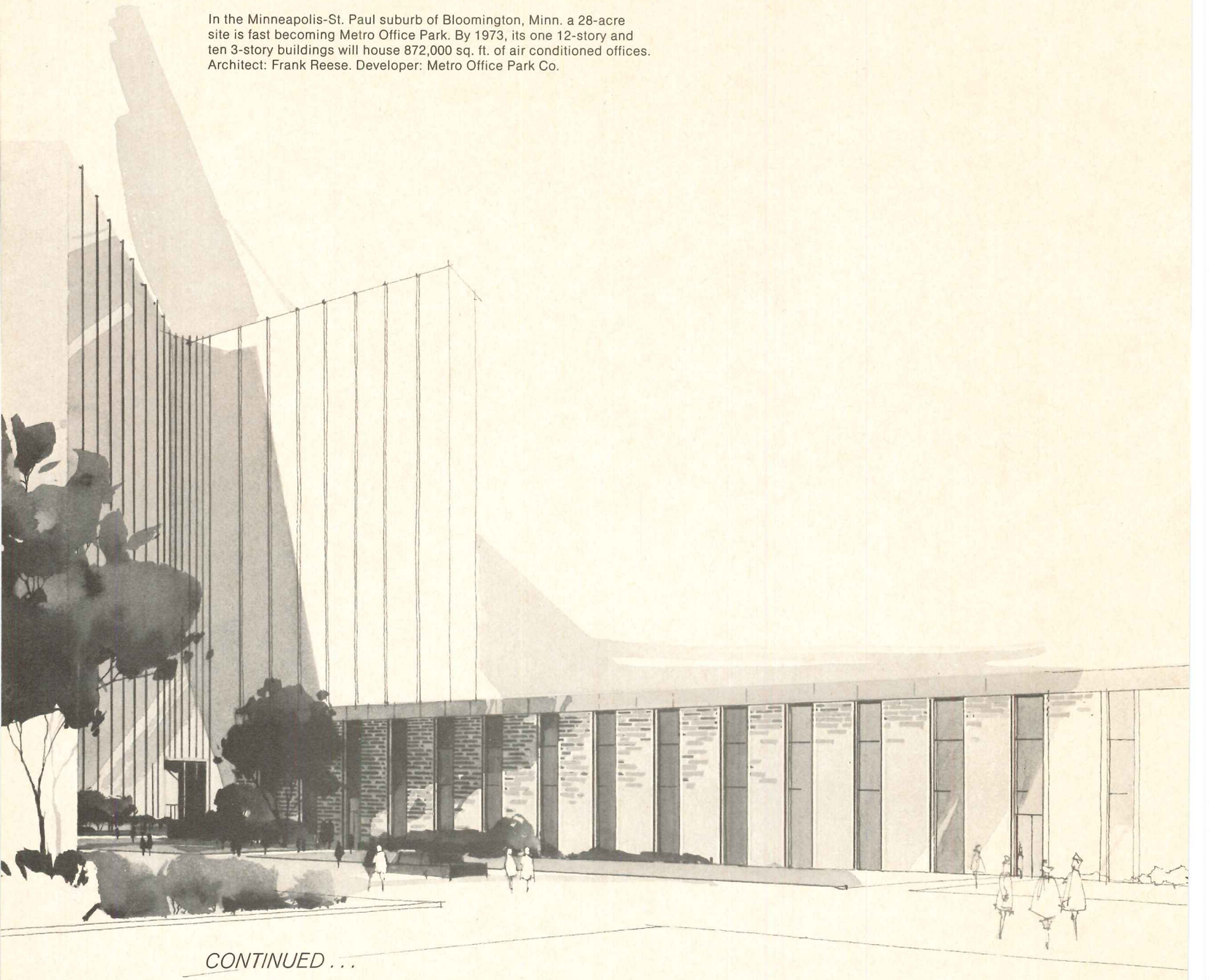
# Lennox presents controllability in office comfort: a case of progressive occupancy



Ever-rising office building costs dictate early and progressive occupancy, pacing the construction. This demands that physical facilities—including heating and air conditioning—be able to meet the same pace. The central, ducted "micro-climates" of Lennox modular systems provide the necessary flexibility for step-by-step occupancy through the individual controllability of office comfort.

*continued . . .*

Freeway Office Park, outside Atlanta, Georgia, is an exciting example of the suburban office complex. Ten buildings and 145,000 sq. ft. are heated, cooled and ventilated by hidden Lennox rooftop equipment. Architects: Heery & Heery. Engineers: Frank M. Brewer and Associates. Developer and general contractor: Newman & Associates.



In the Minneapolis-St. Paul suburb of Bloomington, Minn. a 28-acre site is fast becoming Metro Office Park. By 1973, its one 12-story and ten 3-story buildings will house 872,000 sq. ft. of air conditioned offices. Architect: Frank Reese. Developer: Metro Office Park Co.

*CONTINUED . . .*

# controllability in office comfort

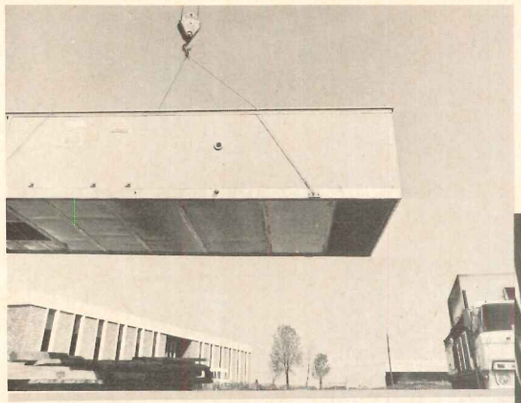
Many of today's newest office buildings are being designed into gracious parklike settings—in attractive, spacious complexes that combine easy suburban accessibility, tenant freedom and maximum efficiency.

Both comfort and design requirements are ideally met by Lennox modular systems—the practical way to building-by-building completion of an office park. Rooftop mounting is fast and eliminates equipment rooms. Individual zone control can be "shifted" as rental areas change. Power Saver™ gives many days of free cooling with outdoor air, also ventilates.

Lennox units eliminate the necessity for maintaining a costly overcapacity, such as encountered where a central station system is installed. And local service is available.

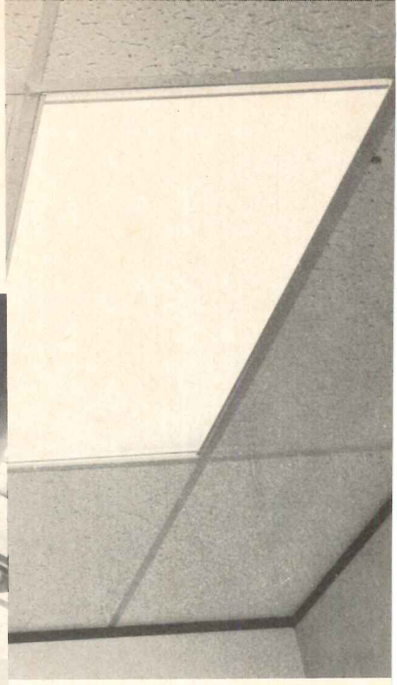
Lennox systems impose no design restrictions on you. The low-profile units can be concealed on the roof with little or no enclosure needed. They never steal valuable floor space. And their light weight allows use of non-loadbearing walls. You can design for future growth with ease, too: because these are unitary systems, building additions simply call for extra units.

There's economy, too, in the Lennox systems: roof mounting saves time and labor; the mounting frame is flashed in place with the roof, further reducing on-site labor; and these units are completely assembled, wired and tested at the factory. This means a single-source responsibility: Lennox.



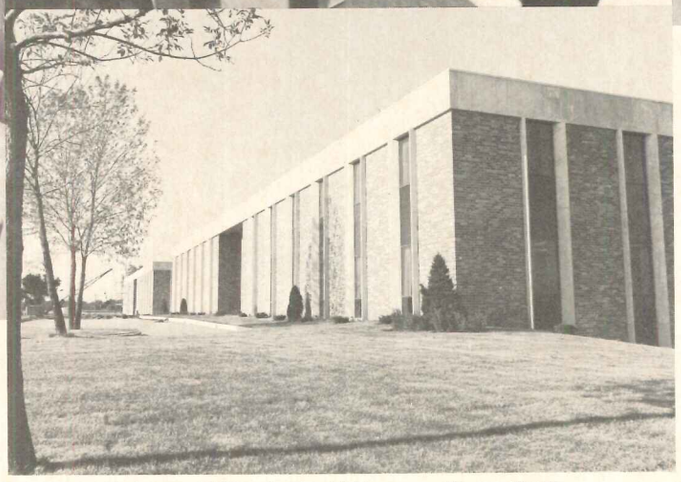
◀ Each 3-story building in Metro Office Park will be heated and cooled by four Lennox DMS (Direct Multizone System) units, rooftop mounted to save space, installation time and labor.

▼ Spacious interiors and gracious styling are offered in Metro Park buildings with modular comfort systems serving from the rooftops.

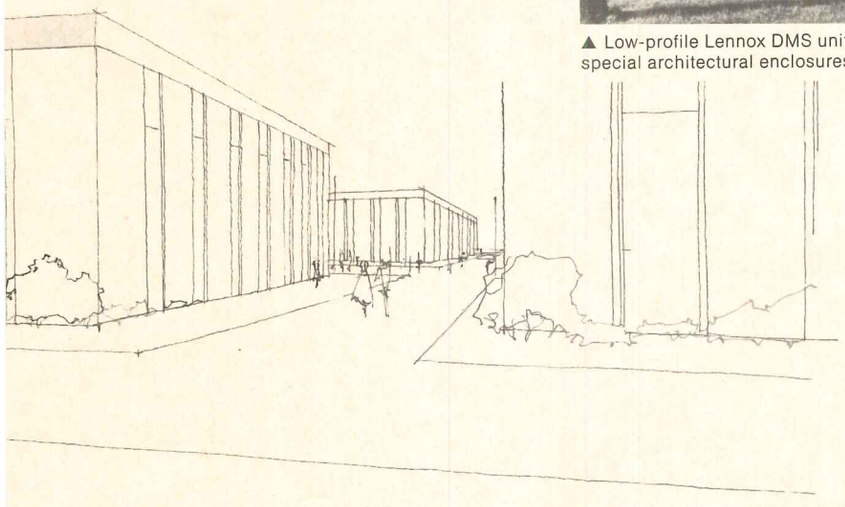


▲ A unique feature of Atlanta's Freeway Office Park ducted heating and air conditioning system: all return air goes through lighting fixtures, cooling them and extending life of lights by 15-20%.

▲ Progressive occupancy during construction of the Metro buildings is offered by the modular flexibility of the Lennox DMS units.



▲ Low-profile Lennox DMS units stay hidden on rooftops without special architectural enclosures.



Lennox "micro-climates" assure comfort all year long—whatever the types and ages of people, in any activity, regardless of occupancy. Some zones might need cooling; others might need heat. They get what they need with Lennox.

Lennox units are available for multizone or single zone control, each perfectly compatible with the other. Gas, electric or oil heat source.

Before you plan an office building—or any other type—learn why Lennox should be your choice to recommend. See Sweet's 29a/Le—or write Lennox Industries Inc., 494 South 12th Avenue, Marshalltown, Iowa 50158.

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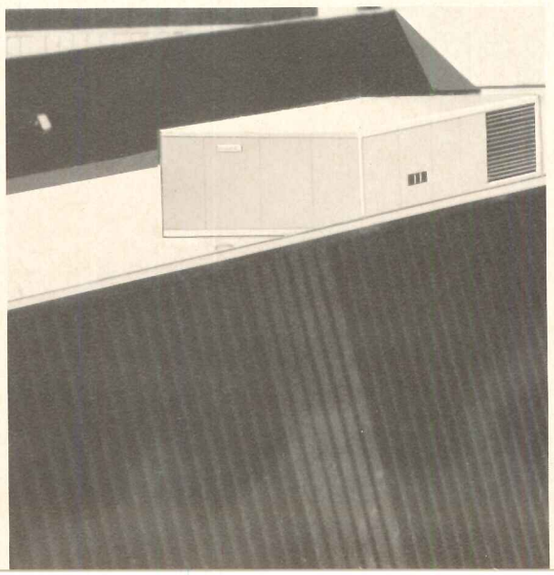

◀ In Freeway Office Park, buildings have handsome copper mansard roofs which provide all-weather protection for walkways. Their slight rise above normal roof line is sufficient to conceal the Lennox DMS units that deliver 350 tons of cooling and 6,000,000 Btuh heating for the total complex.

**LENNOX**

AIR CONDITIONING · HEATING

Oakland-Alameda County Coliseum, Oakland, California. Skidmore, Owings & Merrill, Architects/Engineers, San Francisco.

## Get your doors ready for action

with LCN Smoothee® surface-mounted door closers. "Smoothees" are famed for the flawless door control they provide . . . for their simple good looks . . . for the way you can count on them for year-in, year-out, trouble-free, attention-free service. Look them up in Sweet's—or write: LCN Closers, Princeton, Illinois 61356.

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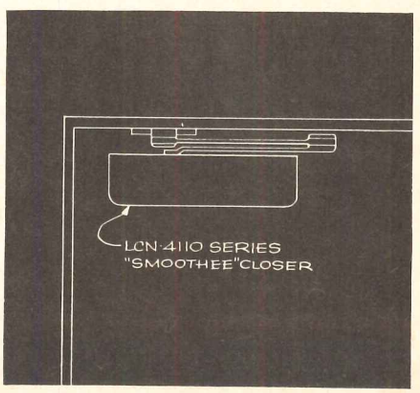
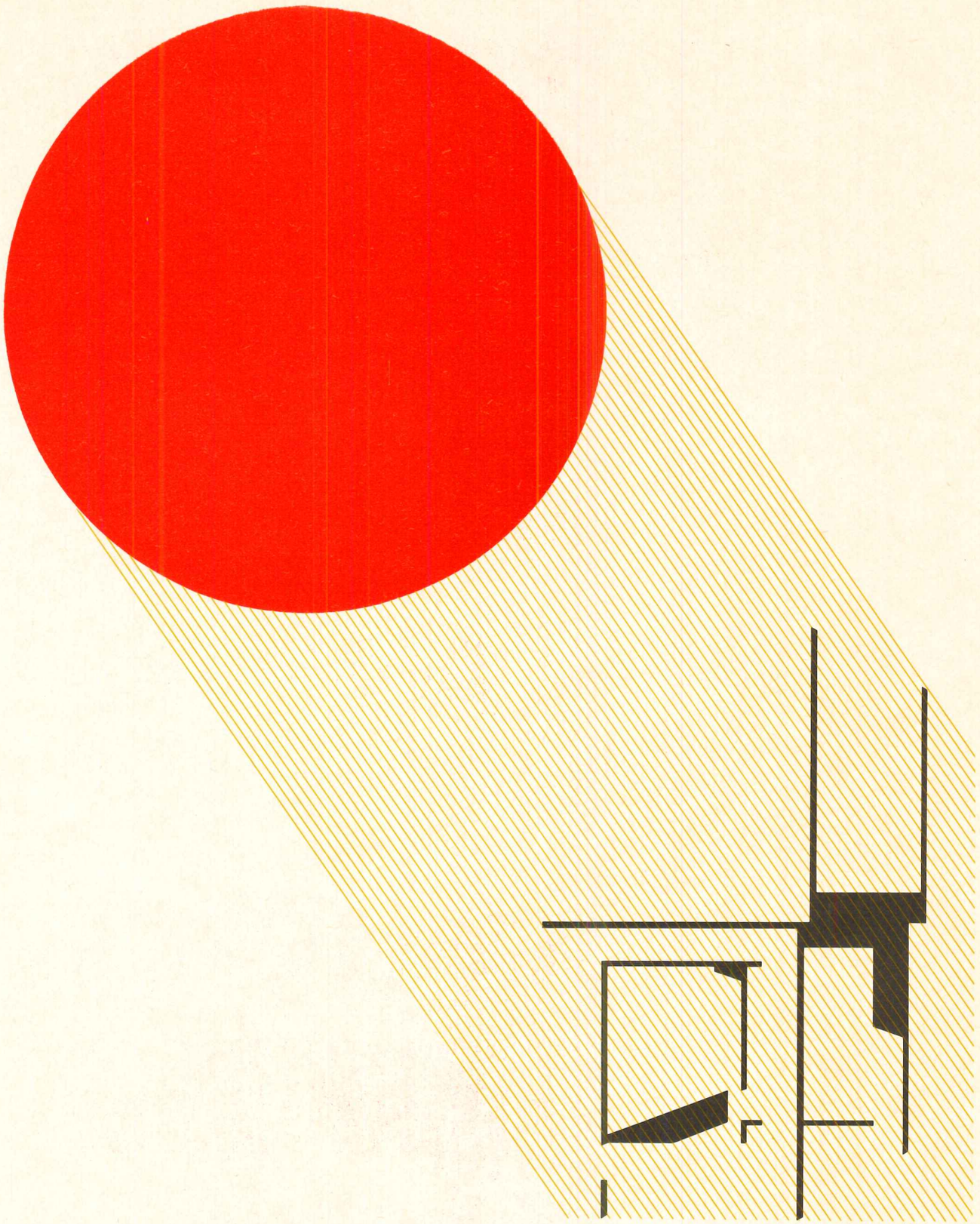


# Macy's Kentile vinyl floor: it's better than brick!

In Macy's busy San Francisco store, a floor has to stand up to a ton of traffic, be easy to maintain, and still face the morning looking fresh and beautiful. Big reasons why Macy's in this—and 3 other West Coast stores—selected Kentile Colonial Brick Solid Vinyl Tile. (See unretouched photo below.) It's a dead-ringer for natural brick, yet needs no bricklayers. Can't chip or powder. Enhances any interior—commercial or residential—with brick's rugged beauty and texture at far less cost. Superior too, in comfort, quiet, and ease of cleaning. Like all Kentile quality floors, Colonial Brick resists stains, scuff marks... and it's greaseproof. Comes in Georgetown Red (shown below) and 3 other colors. Samples? Call your Kentile® Representative. Whatever your flooring needs, he's got the objective answer.

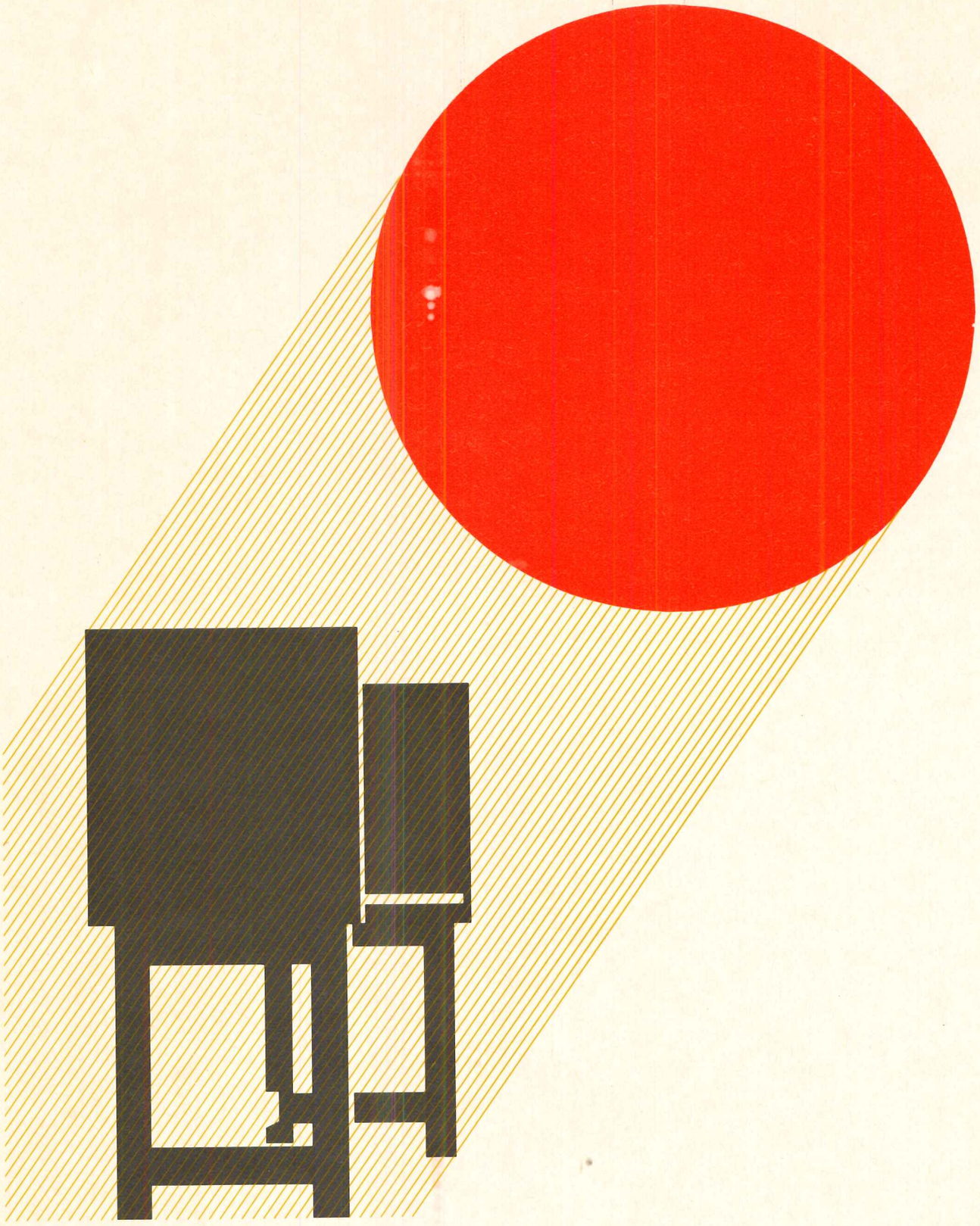
BROOKLYN, N. Y. 11215

**KENTILE FLOORS**



**Tektonic 100: the visual effects of environmental light and shadow on geometrical forms.** This distinctive group of oak design furniture from Library Bureau, Division of Remington Rand, is characterized by its severe simplicity of design. With this pure approach, form seems to change with the movement of its environmental light source. Every piece of the Tektonic 100 group has been designed and developed with classic proportions and balance. The study habits and needs of the student have also been given prime consideration. For example, light solid-color

SPERRY RAND



material is used to reduce surface contrast between desktop and printed material. And all writing surfaces have been lowered to 28 inches. Any number of color-coordinated materials can be used to provide the architect, interior designer or librarian with an infinite variety of individualized schemes. For instance, chair upholstery, insert panels for the carrels, wood tones, and optional accent colors can be matched to the draperies or carpeting. For more information on the Tektonic 100 group: carrels, tables, card catalogs, and technical equipment, contact Library Bureau.

LIBRARY BUREAU DIVISION OF REMINGTON RAND 801 PARK AVE. HERKIMER, N.Y. 13350

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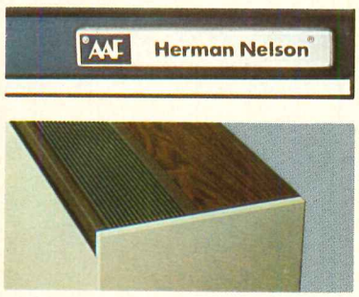
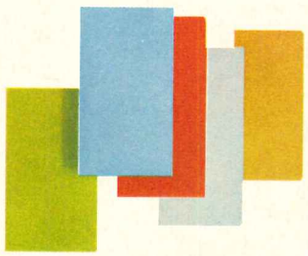
# the quiet design

**offering a new unity of color, styling and environment**



Start with the thin look of AAF/Herman Nelson's new classroom unit ventilator styling. The look of length. Uncluttered. No exposed fasteners. Clean lines that become a part of the wall. No large, shiny metal areas. Soft beige base color is complemented by a textured, vinyl-painted, long-wearing brown or gray topping.

Now you've got a year-round environmental control system that won't intrude into any room. You've got a system you don't have to design around. One that virtually becomes a part of the total classroom environment. If accent is desired, four new earth-tone colors are offered for application to front panels.

Write for new Bulletin 600 A36, "A Climate for Learning." Or see your AAF/Herman Nelson representative. American Air Filter Company, Inc., 389 Central Avenue, Louisville, Kentucky 40208.

AAF **Herman Nelson**
SCHOOL PRODUCTS DIVISION

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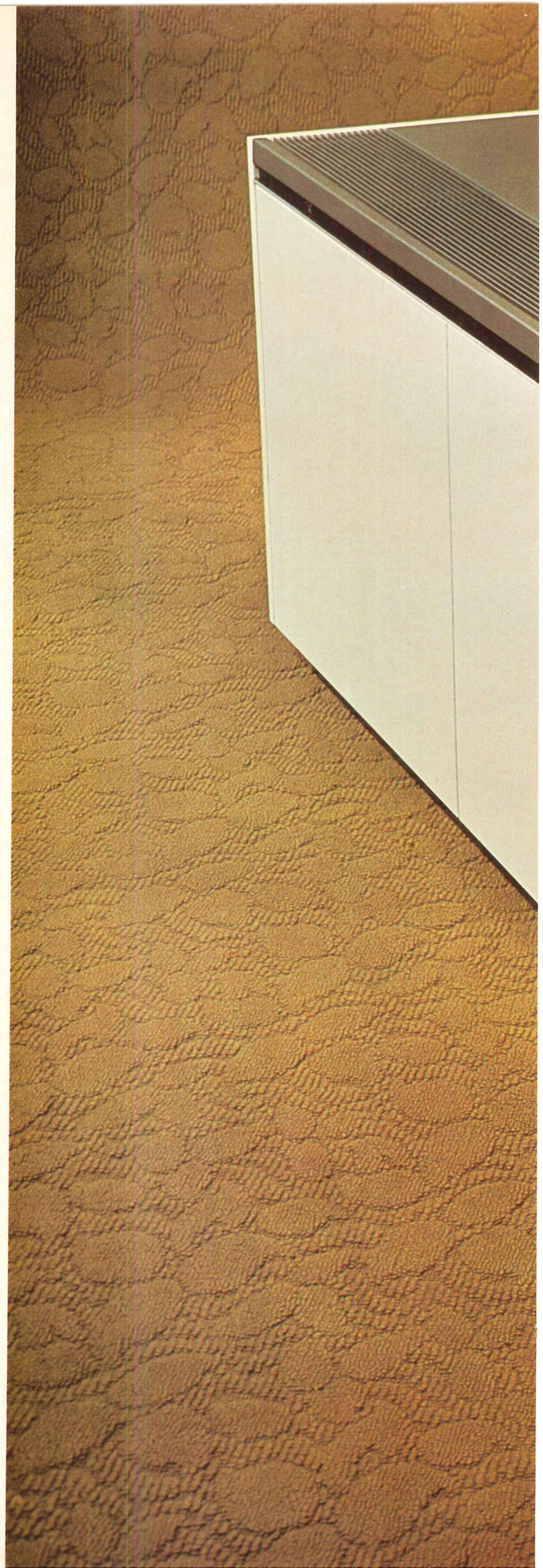
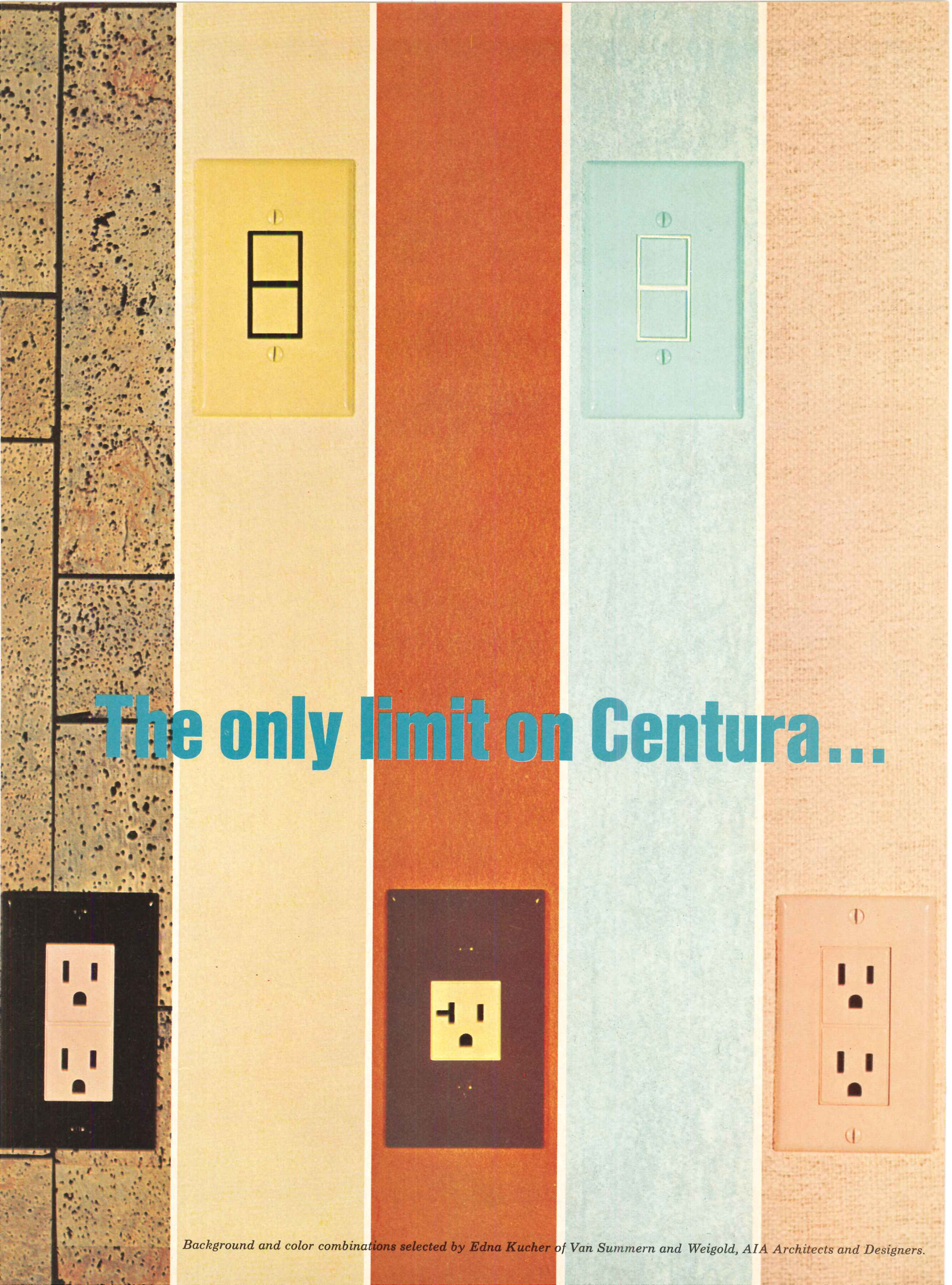
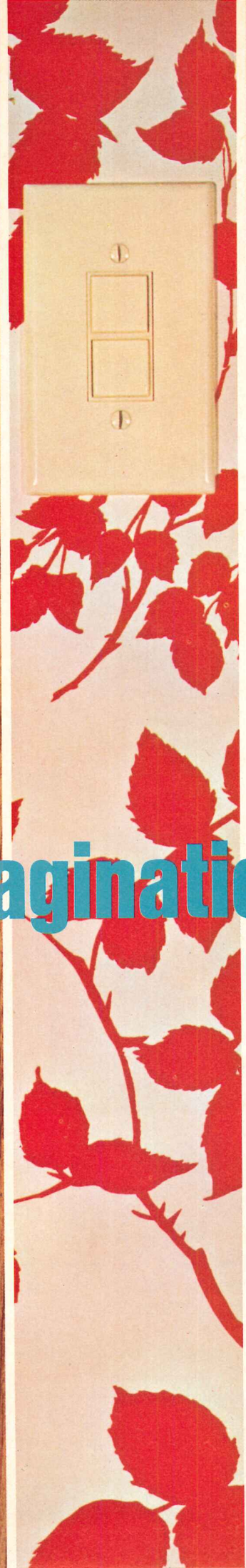




# The only limit on Centura...

*Background and color combinations selected by Edna Kucher of Van Summern and Weigold, AIA Architects and Designers.*



# is your imagination

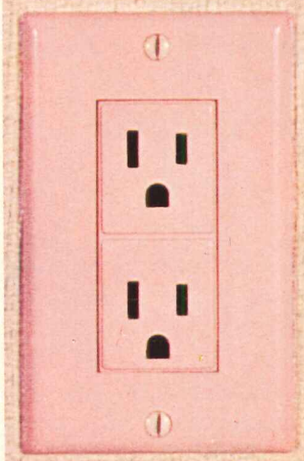
The choice of wall switches and receptacles is no longer a mundane decision. By combining elegant styling with bold, contemporary colors, Leviton now offers a new dimension in design never before available. It's called Centura.

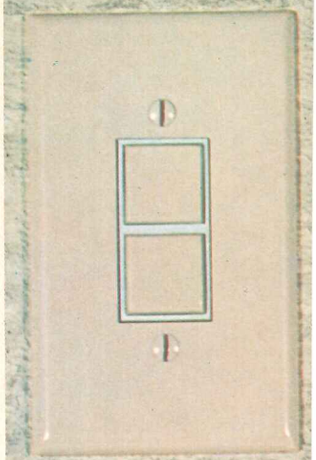
Centura is the world's most advanced design in wiring devices. The touch-button AC switches fit flush against the wall and provide effortless finger-tip lighting control. An illuminated model is also available.

Design freedom in Centura starts with nine colors plus brass, aluminum and stainless steel wall plates. Centura can be color coordinated with any decor. A virtually infinite variety of color combinations can be selected by using contrasting colors for the switch, switch frame, and wall plate. U-ground receptacles and wall plates can also be color contrasted for dramatic effects.

Centura, backed by Leviton's unprecedented 25-Year Guarantee of Performance and listed by UL and CSA, already has gained professional acceptance in such projects as the CBS and General Motors Buildings in New York, Boston City Hospital, Las Vegas International Hotel and Marco Island, Florida.

For more information on this exciting new design as well as Leviton's other advanced Spec Grade wiring devices, use the coupon below.





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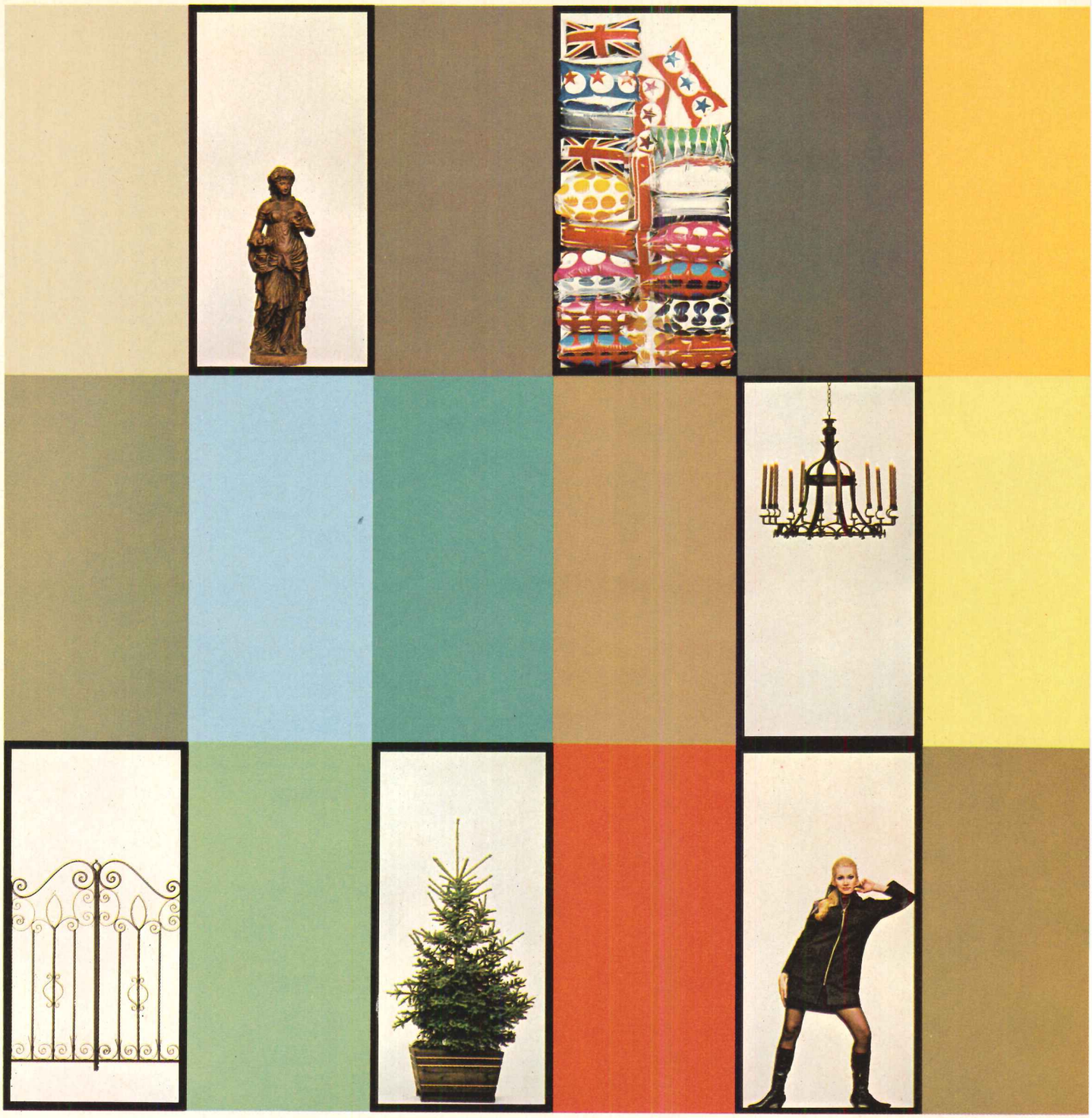

# Weyerhaeuser® Panel 15 now comes in

But don't let the bright, good looks fool you.

Underneath that 10-mil textured aluminum face there's rugged Structural I exterior-type Douglas fir plywood.

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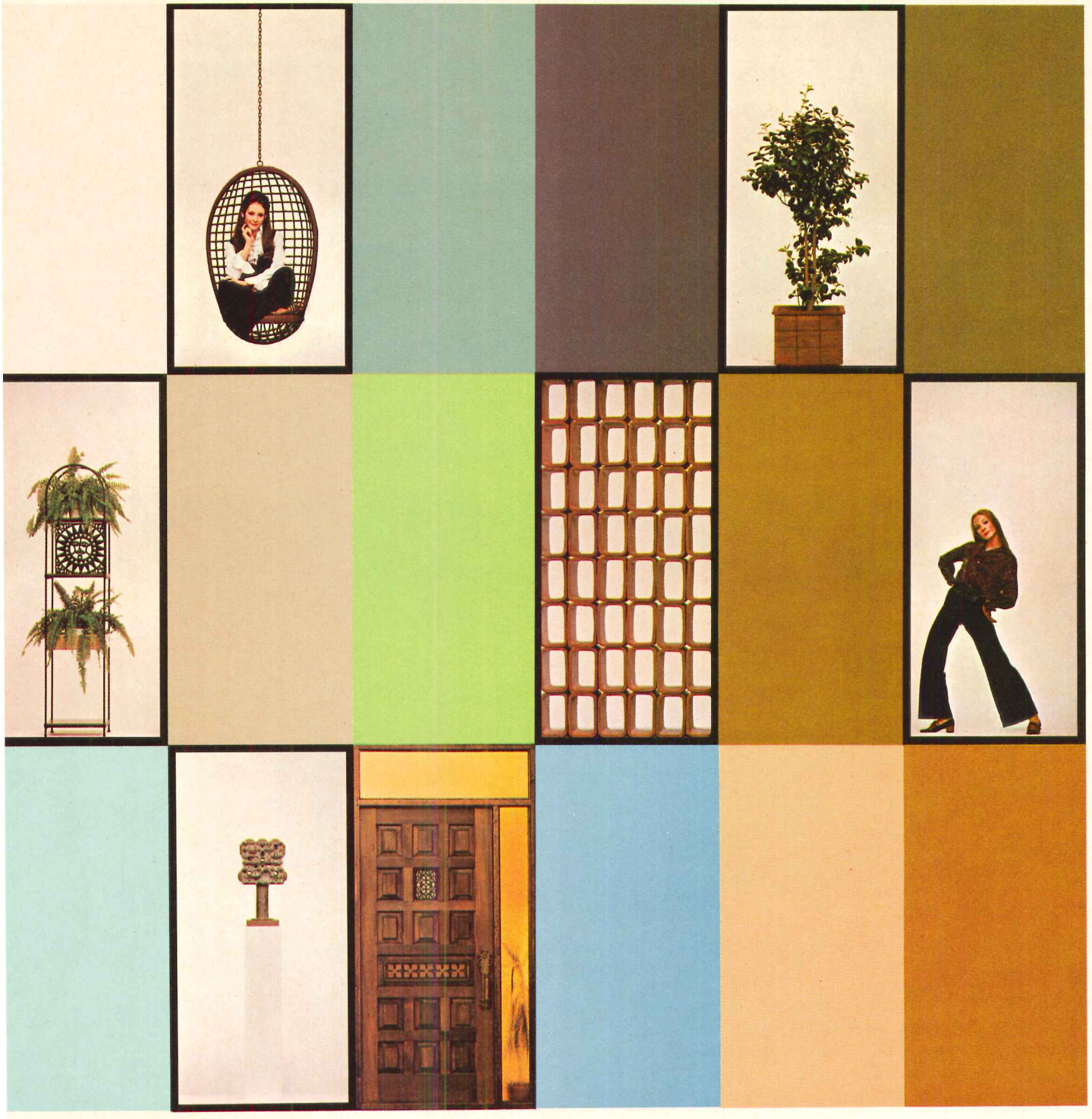
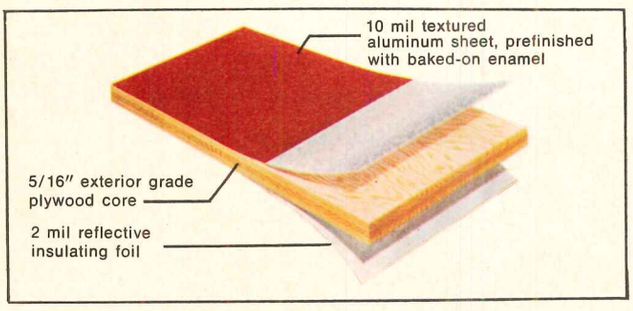


# 23 basic colors. Or dream up your own.

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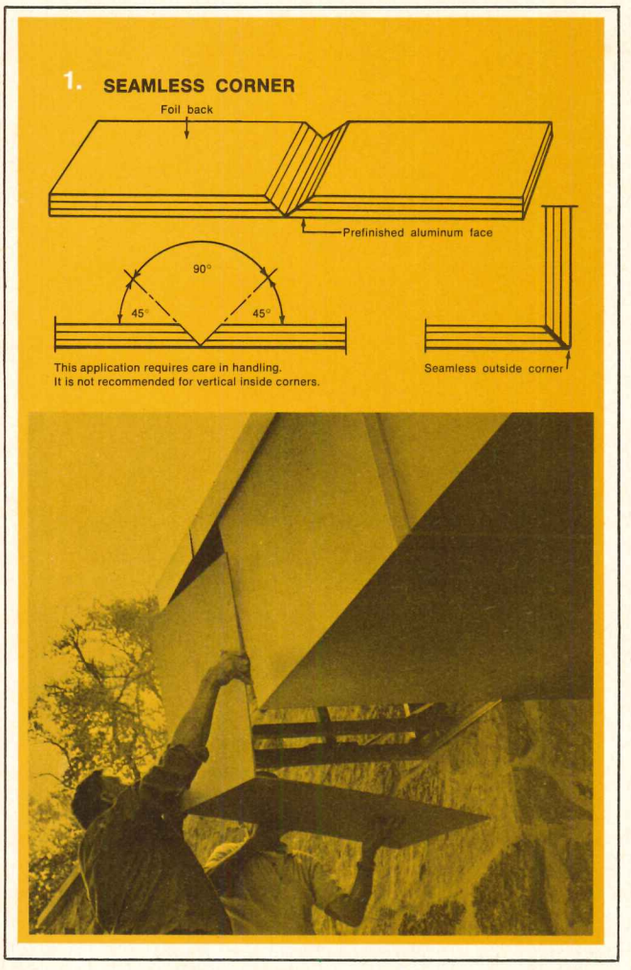


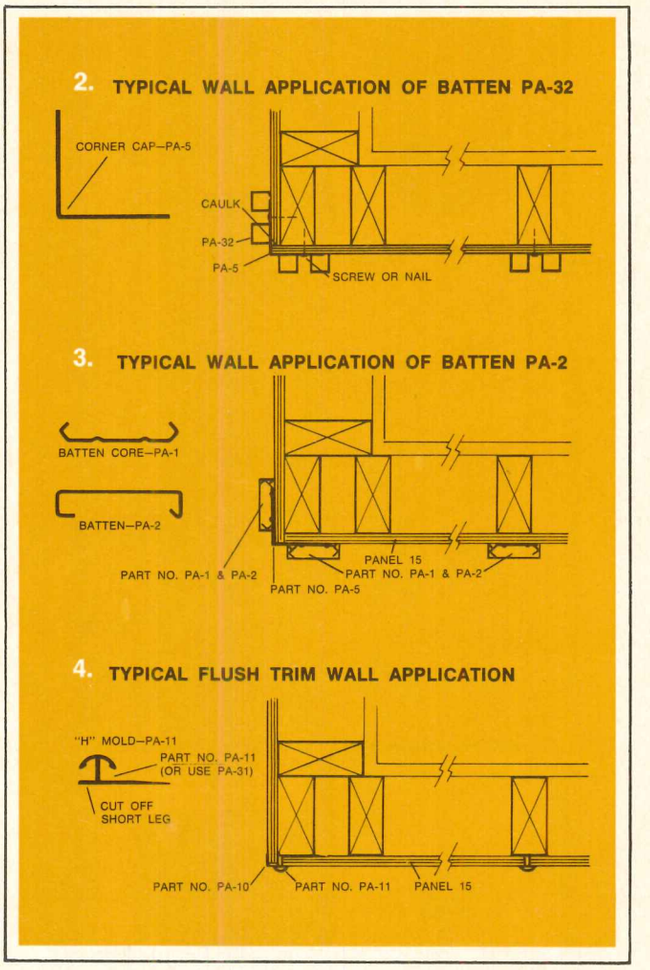


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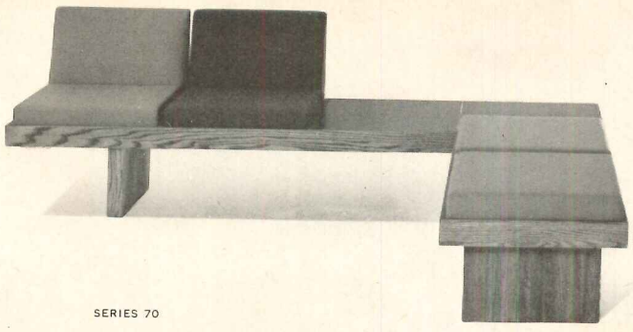

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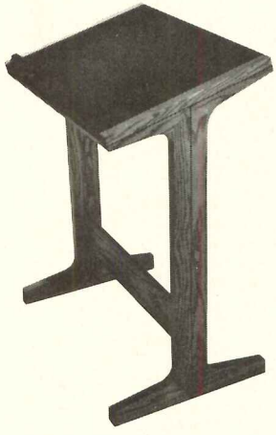

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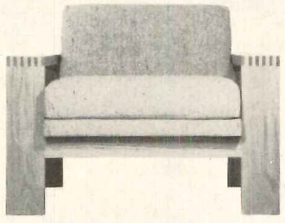

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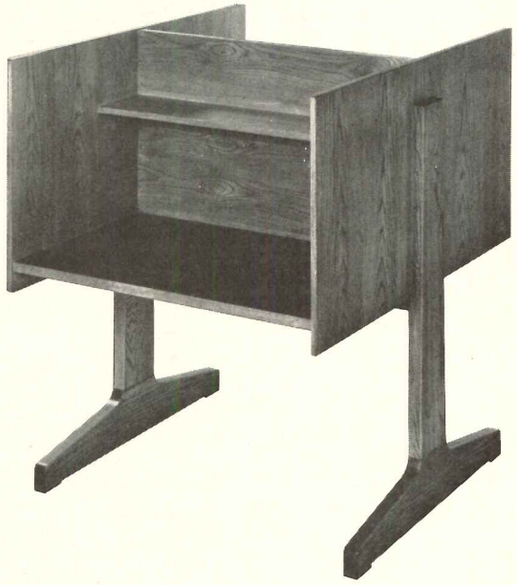

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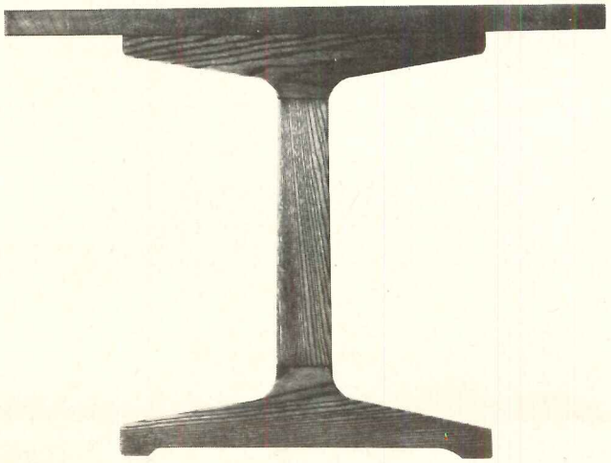

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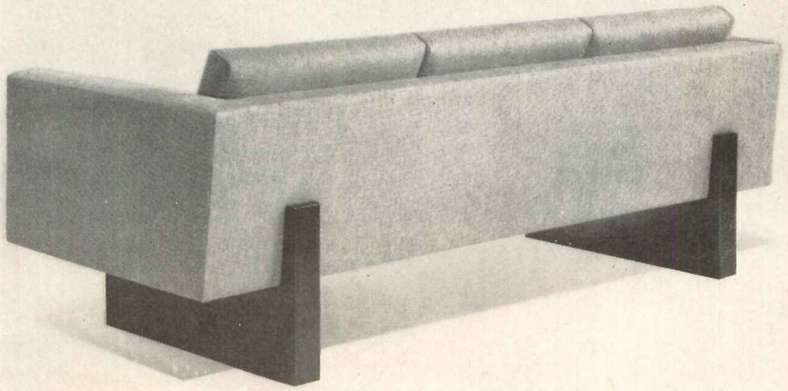

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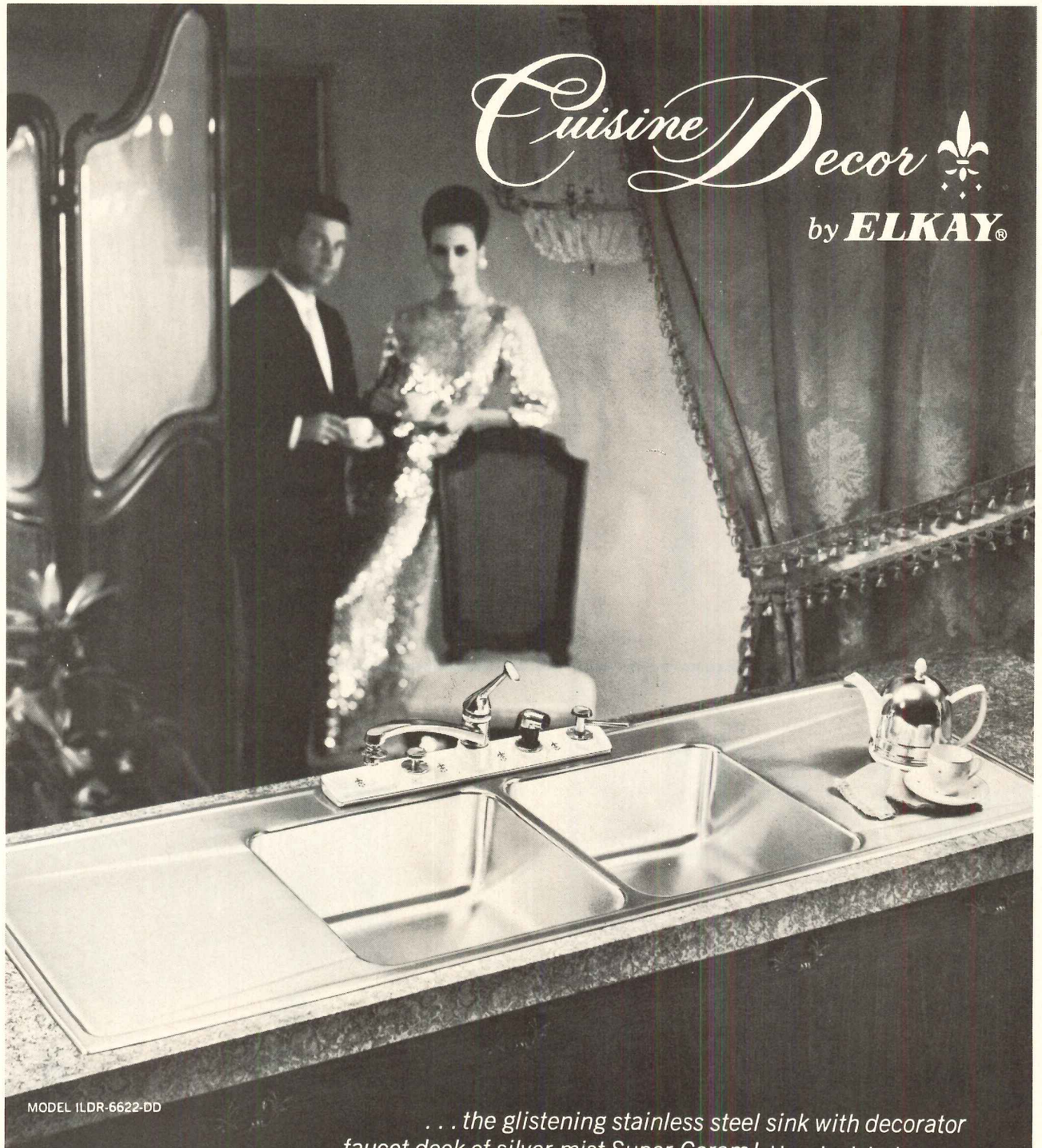


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*see our catalog in Sweet's* (S)

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# News in brief

**President Nixon made his first major statement on architecture (see page 9), and he seemed to be for it.** The same message to the Congress (on the District of Columbia) contained a specific (and warm) endorsement of the Pennsylvania Avenue Redevelopment Plan. And Daniel Patrick Moynihan, the Assistant to the President who is widely thought to be the author of the District message, made a major address on urban policy at Syracuse University whose final passage (see page 10) sounded like a re-statement of the aims of the original Pennsylvania Avenue proposal submitted to President Kennedy by a Cabinet committee headed by then-Secretary of Labor Arthur Goldberg (and also largely authored by Dr. Moynihan). Secretary of Housing and Urban Development George Romney launched "Operation Breakthrough," his major effort to solve the problem of low-cost housing through effective collaboration of labor, industry and consumer groups, and of local, state and Federal governments.

**For the second year in succession, the $25,000 R. S. Reynolds Memorial Award**—the world's richest architectural prize—will be presented to the architect of a building designed for Montreal's Expo '67, now the permanent "Man and His World" exposition. It is said to be the world's largest space-frame structure. This year's 13th annual winner is 39-year-old Boyd Augur of London, selected for his design of the Gyrotron structures housing Expo's major entertainment ride. The award is given for "a significant work of architecture in the creation of which aluminum has been an important contributing factor." Last year's winner was the Netherlands Pavilion at Expo '67; architects: Walter Eijkelenboom and Abraham Middelhoek, Rotterdam, and George F. Eber of Montreal, associate.

**Rice University has named Anderson Todd to succeed William W. Caudill as director** of the School of Architecture, effective July 1. Professor Caudill, who has been director of the School since 1961, will spend a year's leave of absence from Rice in research on the changing field of international architecture, and will then return to his William Ward Watkin Chair in Architecture to devote a large share of his time to strengthening the School's graduate program. He will be devoting some of his leave to completing a book on "Architecture by Team," a concept he helped develop at Caudill Rowlett Scott, the Houston-based architectural firm of which he is one of the founding principals. Professor Todd, who has taught at Rice for 20 years, is principal in the Houston architectural firm of Todd Tackett Lacy. He has a B.A., with Honors in Architecture, and an M.F.A. in Architecture from Princeton University.

**Gerald S. Runkle, a 22-year-old senior at the Ohio State University School of Architecture,** has won the OTHER annual Reynolds award, the eighth annual Reynolds Aluminum Prize for Students, for his design of a "Soundfountain." He thus divides a $5000 award with his school. His design, a free-form arrangement of water pipes, aluminum puddle-wheels, and musically-tuned arms, was intended to provide PLEASANT sounds of splashing water and musical chimes to mask UNPLEASANT sounds which are a problem for so many city locations. Honorable Mentions of $1000 each went to Hal M. Moseley Jr., Cranbrook Academy of Art, and Mark W. Vande, Massachusetts Institute of Technology. Honorable Mentions went to Roger S. Macon, Kent State University, and Jon C. Crowdus, University of Arizona.

**Lewis Mumford received a special Medal for Notable Creative Achievement from Brandeis University** when that institution presented its 1969 Creative Arts Awards and Citations last month. Mr. Mumford was cited as "critic of the arts, teacher, cultural leader, man of eloquence in both words and action, who has set down the guiding lines of thought and belief for the cities we build and the dwellings we inhabit; who, in the light of a vision that may yet redeem us, has warned of the perils we run and the errors we cause, whose work is a beacon light in the confusions of the twentieth century, encouraging us to persevere along the hazardous and wonderful path to a life sustained by the noblest conceptions of what humankind may create with honor and grace."

**Noel Michael McKinnell is the winner of the 1969 Arnold W. Brunner Award** of the National Institute of Arts and Letters, which carries a $1000 prize. Mr. McKinnell, a partner in the Boston architectural firm of Kallmann and McKinnell, was a winner, with his partner Gerhard Kallmann and Edward Knowles of New York, in the 1962 international competition for the design of the New Boston City Hall (February 1969, pages 133-144, and—as a 1969 A.I.A. Honor Awards winner—this issue, page 42). He has degrees from the University of Manchester (1958) and Columbia (1960).

# A.I.A. invites broad student participation at this month's Chicago convention

Architecture students will this year for the first time participate fully in all the sessions, social events and tours of a national convention of the American Institute of Architects, with all the privileges of A.I.A. membership except voting, when the A.I.A. holds its 1969 annual convention June 22-26 at the Palmer House in Chicago.

As this year's convention is, also for the first time, being held jointly with the Royal Architectural Institute of Canada, Canadian architecture students will also have representatives there.

The U.S. student participants are expected to include representatives not only of the Association of Student Chapters/A.I.A., but of at least three non-A.I.A.-affiliated student organizations. The three are: Students Associated for a Responsible Architecture (SARA), a group based at the Chicago Circle campus of the University of Illinois; The Architects' Resistance (TAR), an "underground" group; and the National Association of Student Planners and Architects (NASPA).

In previous years, the Association of Student Chapters/A.I.A. held a separate convention concurrent with the A.I.A., and the students registered for that convention were also invited to attend some sessions of the A.I.A. convention. Actual student participation in A.I.A. programs was limited to an address at one session of the convention by the president of the A.S.C./A.I.A. This year, student registration and participation, with all the privileges of the floor, including the opportunity of presenting resolutions, is open to all architecture students.

No advance estimates were obtainable on the number of students likely to be among the 6000 registrants expected at the convention. Some 200 students have usually attended the A.S.C./A.I.A. conventions, and, when all the schools are in session, there are nearly 800 architecture students in Chicago. But most architecture schools will have closed for the year nearly a month before the convention, and summer jobs and travel may hold down student attendance.

### FOCUS on architecture

At a convention whose official theme is "Focus Now," in a city which is like a "museum without walls" of modern architecture from Sullivan to the present, there seem likely to be frequent shifts of focus from events at the Palmer House to the architecture of Chicago. The tours arranged by the Chicago Chapter, A.I.A., as host chapter capitalize fully on Chicago's unique architectural resources. There are Frank Lloyd Wright tours, a Chicago School of Architecture tour, a "Chicago Highrise" tour, and mini-tours of various building type groups.

### Moynihan the keynoter

The program begins earlier than ever, with a brunch at the Merchandise Mart preceding a special "Architects' Day" program arranged in connection with the First National Exposition of Contract Interior Furnishings (NEOCON), which will be going on at the Mart during the convention.

Daniel Patrick Moynihan, Assistant to the President for Urban Affairs, will be the keynote speaker at the inugural session on June 23. Major speakers also include Dr. Hans Selye, professor and director of the Institute of Experimental Medicine at the University of Montreal, as Purves lecturer; Dr. Albert J. H. Dietz, professor of architecture at the Massachusetts Institute of Technology; and Marver H. Bernstein, dean of the School of International Affairs at Princeton University.

### A new "Tale of Two Cities"

In a new kind of program called a "Tale of Two Cities," a team of U.S. architects will report on their intensive study of Montreal and a team of Canadian architects will report on Chicago.

Thirteen workshops are also scheduled, and on the day after the convention, the Merchandise Mart has also planned workshops for architects.

### New standards proposed

Besides election of officers, convention business will include consideration of revised Standards of Professional Practice, with changes intended to recognize "the current and future state of architectural practice."

The annual Building Products Exhibit, which will include Canadian exhibits, will be held at the Palmer House.

## Sibyl Moholy-Nagy resigns after 18 years at Pratt

"With deep regret and in hopeless frustration," Sibyl Moholy-Nagy has resigned as professor of architecture at Pratt Institute, where she had taught in the School of Architecture for 18 years.

Mrs. Moholy-Nagy submitted her resignation in a long letter to "The Coordinate of the School of Architecture," the Vice President for Academic Affairs and the Faculty Council of Pratt Institute. The "Coordinate" succeeded Dean Olindo Grossi in administering the School.

The letter accused "the representatives of the Pratt Institute faculty" of "bad faith in dealing with the liberal and moderate MAJORITY of students, and of browbeating their supporting teachers into silence and inaction." It also accused the Coordinate and the "New School Committee" of "floundering in a morass of verbiage resolutions, and comforting hallucinations of chorus lines of committee, subcommittee, 'selected and elected' representatives in order to avoid the inevitable conclusion that the central issue is THE STUDENT WHO CAME IN GOOD FAITH TO PRATT INSTITUTE TO BE TAUGHT, AND HIS FRUSTRATION BY A NEGLIGENT AND LEADERLESS FACULTY."

The letter concluded: "I have during the last academic year tried to the best of my ability to gain a measure of influence in the hope to stem the destruction of Pratt Institute and the School of Architecture through vanity, power intoxication, and misinterpretation of 'the democratic process.' I have failed completely, and therefore have no choice but to resign. . . ."

At the same time, another long-time member of the Pratt faculty, architect William Breger, announced he will take a year's leave of absence and plans "to leave permanently unless there is an administration in the School of Architecture other than the three-man Coordinate or Triumvirate." Mr. Breger has taught at Pratt for 23 years.

Architect Seymour Howard resigned from the Pratt faculty last fall after 20 years, and is now teaching in Marseilles.

Dean Grossi is on special assignment for Pratt, developing various international programs.

## Tunnard dismissed as Yale city planning head

Christopher Tunnard has been dismissed as chairman of the Department of City Planning in Yale's School of Art and Architecture following the unauthorized mailing by a student-faculty group within the department of acceptance notices to 12 candidates for admission. Mr. Tunnard continues as professor of city planning.

Also dismissed from his administrative post was Louis S. DeLuca, assistant dean of the School of Art and Architecture. He continues as adjunct professor of city planning.

Harry Wexler, acting department chairman during Mr. Tunnard's absence for the first semester and part of the second, was notified that his teaching appointment probably would not be renewed.

The student-faculty group, known as the City Planning Forum, was established as a governing body within the department but is not recognized as such by the university. It approved the 12 candidates early last month and forwarded their files to the dean of the School, Howard S. Weaver. On May 23, the Forum itself sent out acceptance letters on Yale stationery to the 12 candidates.

Kingman Brewster, president of the university, has advised the eight candidates already enrolled of 18 who had been officially accepted "not to enroll at Yale next year for the degree in city planning." In a letter to the enrollees, Mr. Brewster said Yale would "honor our commitment of admission" but "we cannot now promise to offer a degree administered by an adequate department of city planning."

Telegrams were sent by Dean Weaver to the 12 recipients of the unauthorized letters informing them that the letters did not constitute official notice of acceptance.

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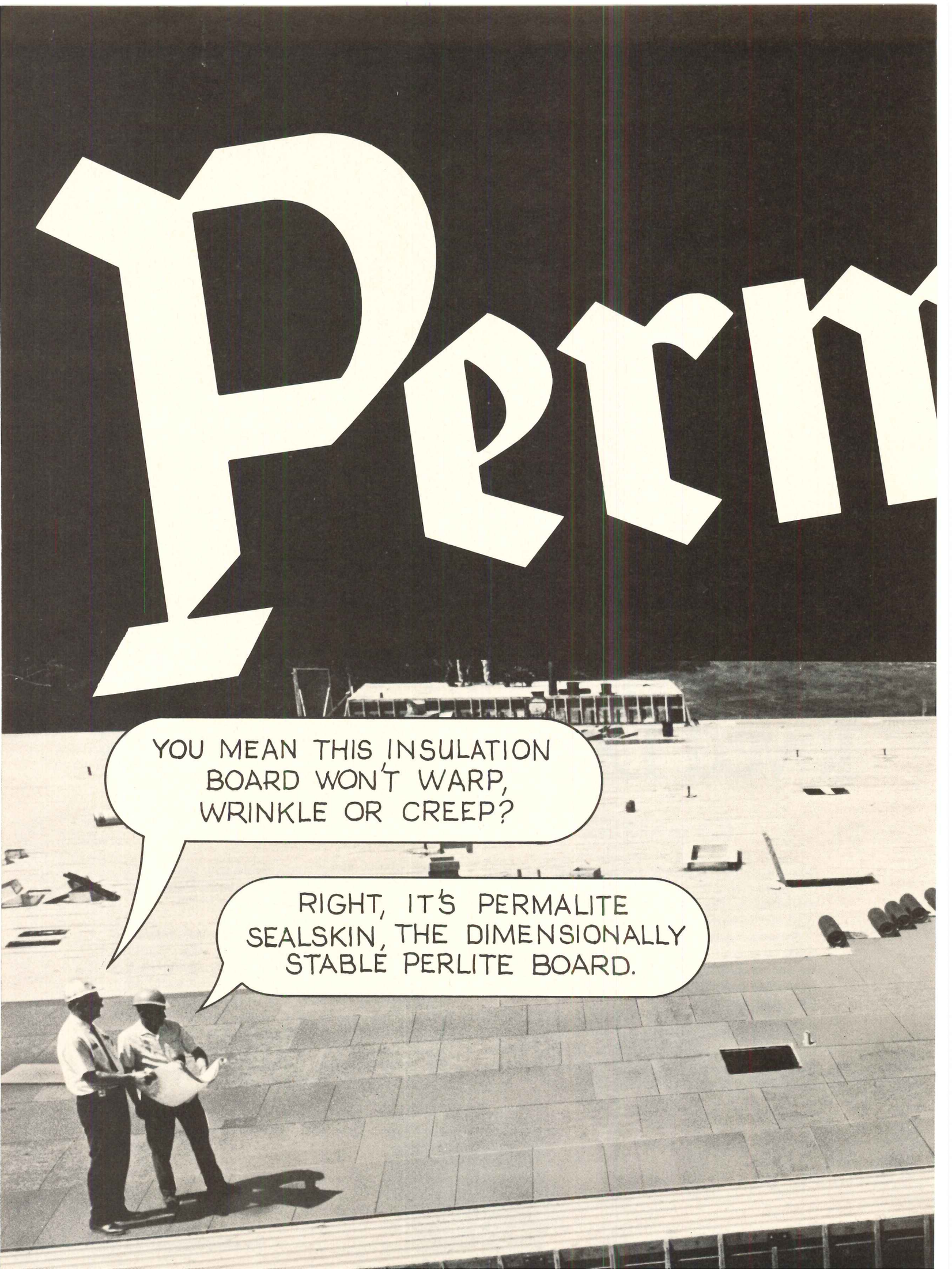
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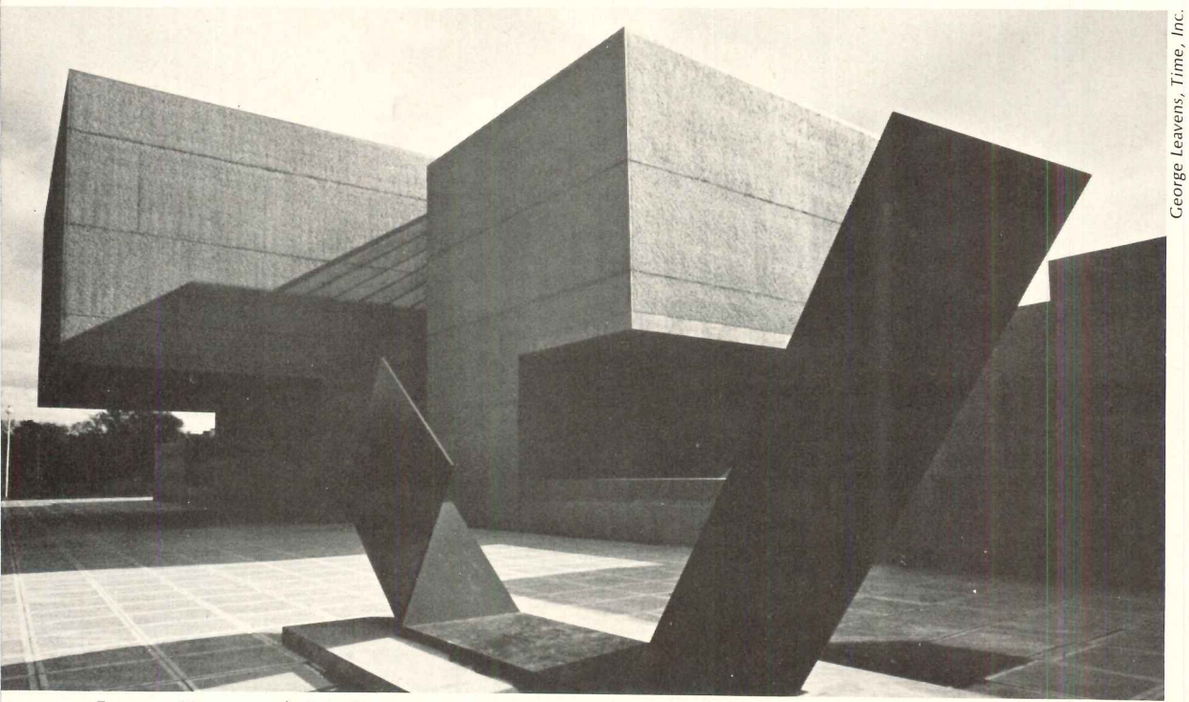
## SIXTEEN RECEIVE THE NATION'S HIGHEST ARCHITECTURAL AWARDS

The American Institute of Architects has named 16 entries, chosen from 465 submissions, as winners of 1969 A.I.A. Honor Awards for architectural excellence. (Last year there were 20 winners out of 377 entries.) The nine-man jury reported that this year's entries had a quality "higher than it has been for many a year."

The diversity of winning entries is attributed in part to a special effort to encourage urban design projects and historic preservation or restoration projects. As a result, there were 27 preservation or restoration submissions, as compared with one in 1968, and approximately 20 were classified as "urban design."

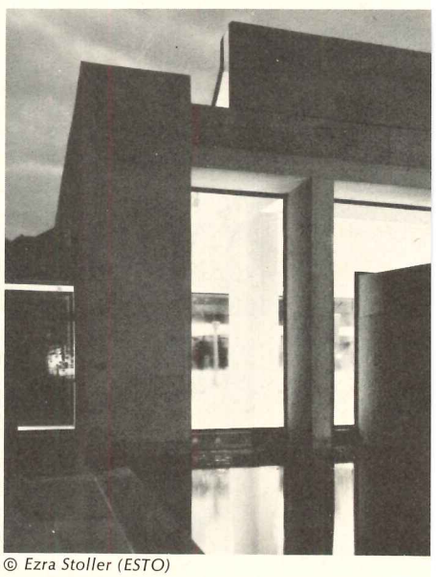
Eligible projects included any executed in the U.S. or abroad, completed between January 1, 1964 and December 31, 1968, by an American, licensed architect in private practice in the U.S.

The jury: Arch R. Winter, F.A.I.A., Mobile, Alabama, chairman; Ray D. Crites, A.I.A., Cedar Rapids, Iowa; Archibald C. Rogers, F.A.I.A., Baltimore; Hugh Stubbins, F.A.I.A., Cambridge, Massachusetts; William Turnbull, Jr., A.I.A., San Francisco; Jean Paul Carlhian, A.I.A., Boston, observer; Robert L. Durham, F.A.I.A., Seattle, observer; F. Blair Reeves, A.I.A., Gainesville, Florida, observer; and Max O. Urbahn, F.A.I.A., New York City, adviser.



George Leavens, Time, Inc.

**Everson Museum of Art,** Syracuse, New York. Architects: I. M. Pei & Partners—project associate, Kellogg Wong, with William Henderson and Reginald Hough—and Pederson, Hueber, Hares & Glavin. "The freestanding sculptural form is well scaled to the plaza upon which it stands and to the surrounding urban mass. . . . the whole thing comes off as a fine work of architecture. . . . Altogether, a firm but sympathetic habitation for quiet water and restless art." Structural engineers: R. R. Nicolet & Associates; mechanical and electrical engineers: Robson & Woese, Inc.; general contractor: William C. Pahl Construction Company, Inc.



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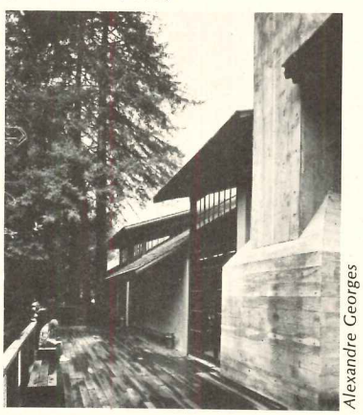
J. B. Rogers

**Girls Dormitory, Putney School,** Putney, Vermont. Architect: John B. Rogers. "The non-institutional character and the strong sense of structure (partly student-executed) overcome any lack of skillful finish or small inconveniences. Outside, one of the particularly delightful features is integration of building with landscape and an awareness of line: their fine, upstanding exterior effect, their harmony with the thin lines of trees, and the thin winter shadows cast by the trees in wintry country." Structural engineers: Souza and True.

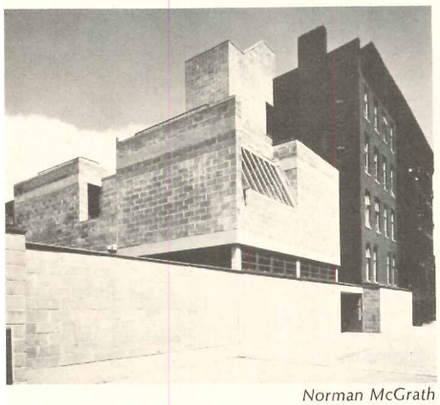


Alexandre Georges

**Mill Valley Library,** Mill Valley, California. Architect: Wurster, Bernardi and Emmons, Inc. ". . . Sited among the redwoods, the preservation of which was a condition of its design, the library is appealing and inviting from any point of view." Structural engineers: Gilbert/Forsberg/Diekmann/Schmidt; mechanical and electrical engineers: Gayner Engineers; landscape architect: Lawrence Halprin & Associates; general contractor: Ira W. Coburn, Inc.

Dave Gleason

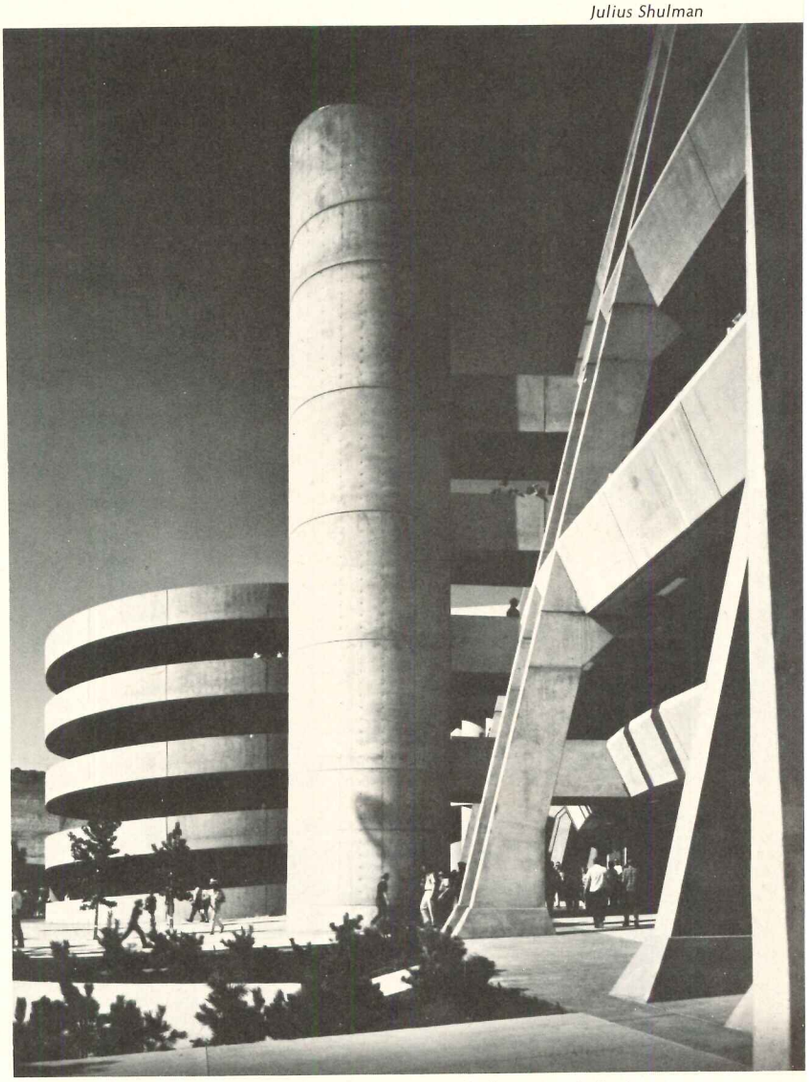
**D.C. Reeves Elementary School,** Ponchatoula, Louisiana. Architects and engineers: Desmond/Miremont/Burks—Andrew Gasaway, project architect. "An extremely limited budget . . . contributed to . . . the 'childlike' solution . . . the simplicity of traditional forms of the bayou country and the frank modesty of native materials. . . . The result is honest architectural understatement. . . ." Contractor: Ragusa Brothers, Inc.; owner: Tangipahoa Parish School Board.

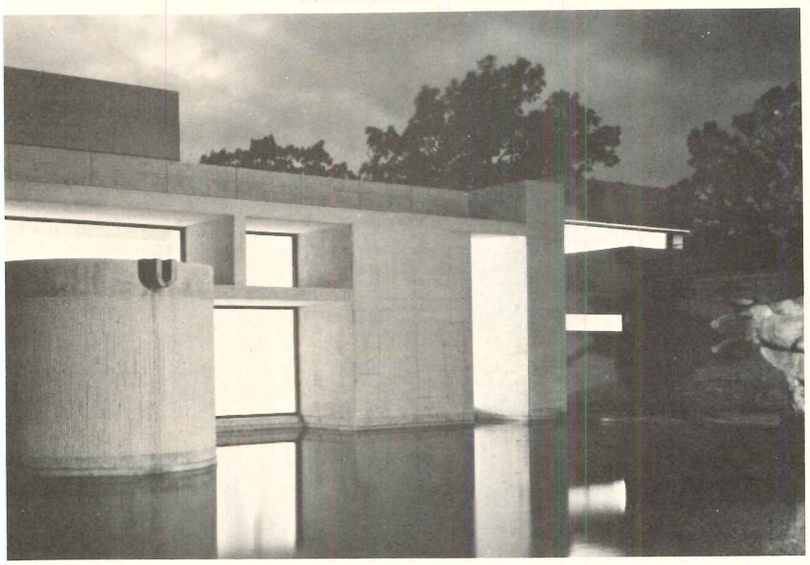


Norman McGrath

**Exodus House,** New York, New York. Architects: Smotrich & Platt. This rehabilitation center for ex-addicts is "a small project with a tight budget, involving not only the design of new facilities but the remodeling of the adjacent tenement . . . the director expresses enthusiasm for the therapeutic effect of the building upon the patients. . . Architecturally and thematically, Exodus House gives its neighborhood a point." Structural enginers: William Atlas; mechanical and electrical engineers: Wald & Zigas; general contractor; Graphic Construction Corporation.

Julius Shulman





**Des Moines Art Center Addition,** Des Moines, Iowa. Architects: I. M. Pei & Partners—G. A. Whitelaw and R. M. Mixon, architects-in-charge. ". . . The dramatic quality of the sculptural form is heightened by the reflecting pool between the old and new buildings and by the play of sunlight on the . . . concrete masses. . . . The building works well as a gallery. There is also a further functional quality: its graceful massiveness suggests protection of that which it contains." Structural engineers: Weiskopf & Pickworth; mechanical and electrical engineers: Robson & Woese; general contractor: The Weitz Company; owner: Edmundson Art Foundation.

**San Diego Stadium,** San Diego, California. Architects and engineers: Frank L. Hope and Associates—Frank L. Hope, Jr., architect-in-charge, Charles B. Hope, engineer-in-charge, R. Gary Allen, project designer, Ernest R. Lord, project architect. "This mammoth project has a plan of diagrammatic simplicity and a structural system that is monumental. . . . The siting, with the ground sloping up on all sides to the harmoniously complicated structure, is easy on the foot as well as on the eye. . . ." Civil engineer: The City of San Diego; landscape architect: Wimmer and Yamada; acoustical consultants: Bolt, Beranek & Newman, Inc.; wind consultants: General Dynamics; general contractor: Robertson/Larsen/Donovan.

Morley Baer

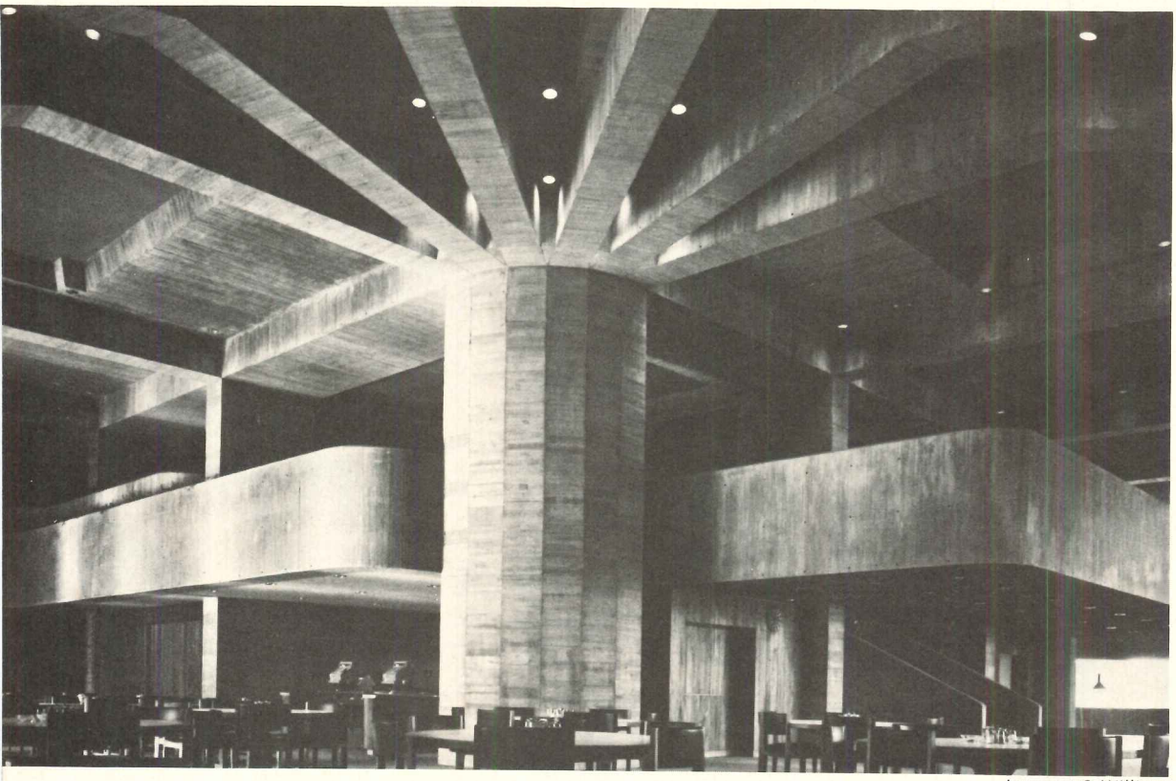
**DeAnza College,** Cupertino, California. Architects: Ernest J. Kump Associates and The Office of Masten & Hurd Architects Associated. " . . . The motif of the precast concrete structural system and the grouping of buildings by discipline around courts combine to create an unpretentious atmosphere conducive to pleasant college and community life. . . ." Structural engineers: Earl and Wright, Inc., mechanical engineers: T. M. & G. M. Simonson; electrical engineers: Smith and Garthorne; landscape architects: Royston, Hanamoto, Beck & Abey; contractor: Barnhart/Dillingham Construction Company; owner: Foothill Junior College District.

**Collegetown Phase I,** Sacramento, California. Architects: Neill Smith & Associates—Brendan O'Hare, project architect, Douglas Barker, senior designer—and Dreyfuss & Blackford, supervising architect. "A pleasant, direct response to low-income student housing . . . . a sense of community. . . ." Structural engineers: GFDS Engineers; mechanical and electrical engineers: Alexander Boome; landscape architect: Lawrence Halprin & Associates; contractor: Nielsen/Nickles; graphics designer: Marshall Roath; owner: Sacramento State Collegetown Corporation; developer: Campus Facilities Development.

*Morley Baer*

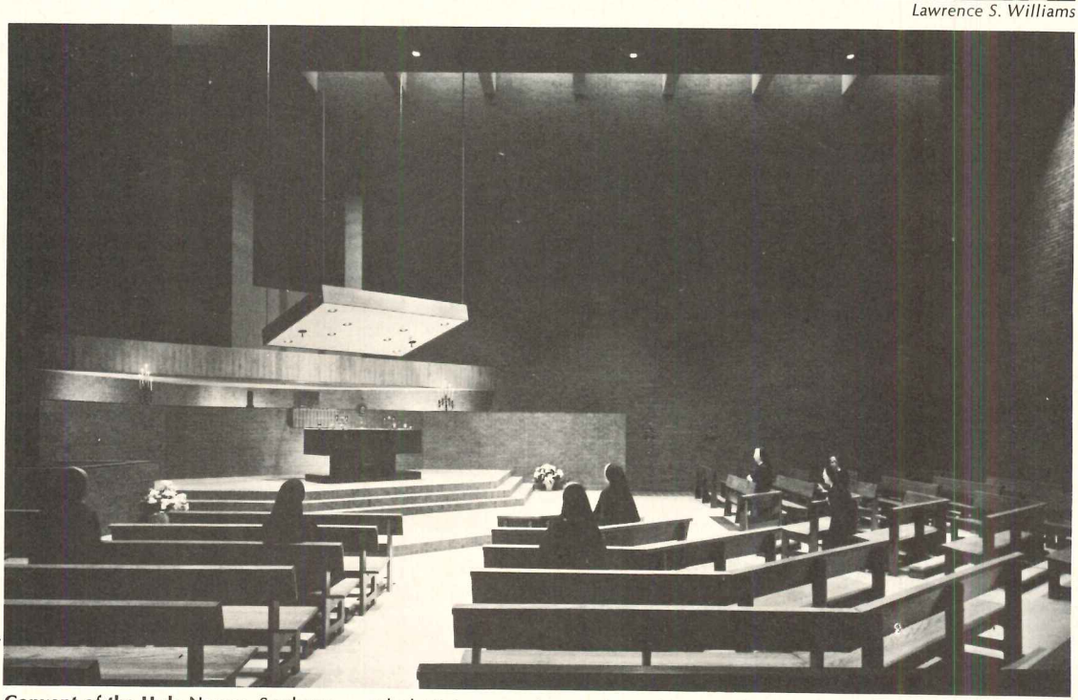
*© Ezra Stoller (ESTO)*

**The Boston City Hall,** Boston, Massachusetts. Architects: Kallmann, McKinnell & Knowles in association with Campbell, Aldrich & Nulty, architects, and LeMessurier Associates, Inc., structural engineers. ". . . . Boston's 'Great House' achieves its civic purpose not by size or by height but by its rich, expressive form. Interior spaces are sensitively scaled and appropriately expressive where their nature is symbolic. . . ." Mechanical engineers: Greenleaf Associates, Inc.; electrical engineers: Cleverdon, Varney & Pike; plumbing: Robert W. Sullivan, Inc.; general contractor: J. W. Bateson Company, Inc.



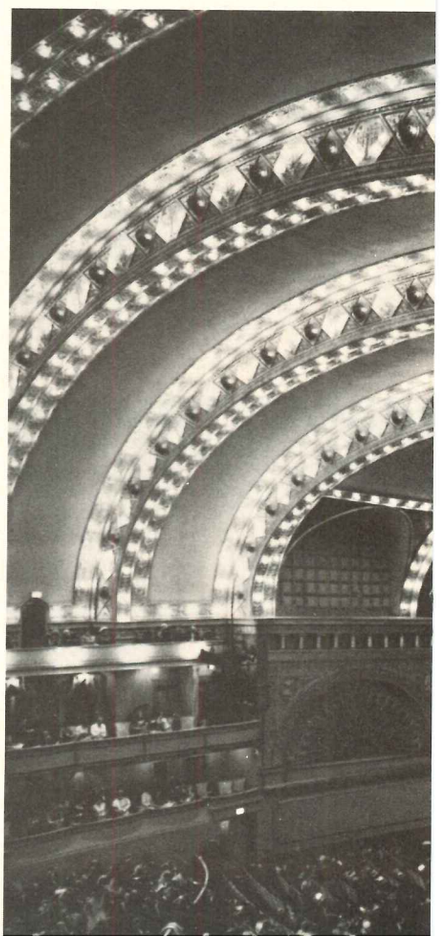
*Lawrence S. Williams*

**Monsanto Company Cafeteria,** St. Louis, Missouri. Architects: Vincent G. Kling and Associates. "This below-grade building is well detailed and shows a considered use of color and material. . . . The exposed concrete structure is bold and exciting in concept and execution, and is used adroitly to create both grand and intimate spaces. . . ." Structural engineers: F. Ray Martin; mechanical and electrical engineers: Ferris and Hamig, Inc.; general contractor: William H. and Nelson Cunliff Company.



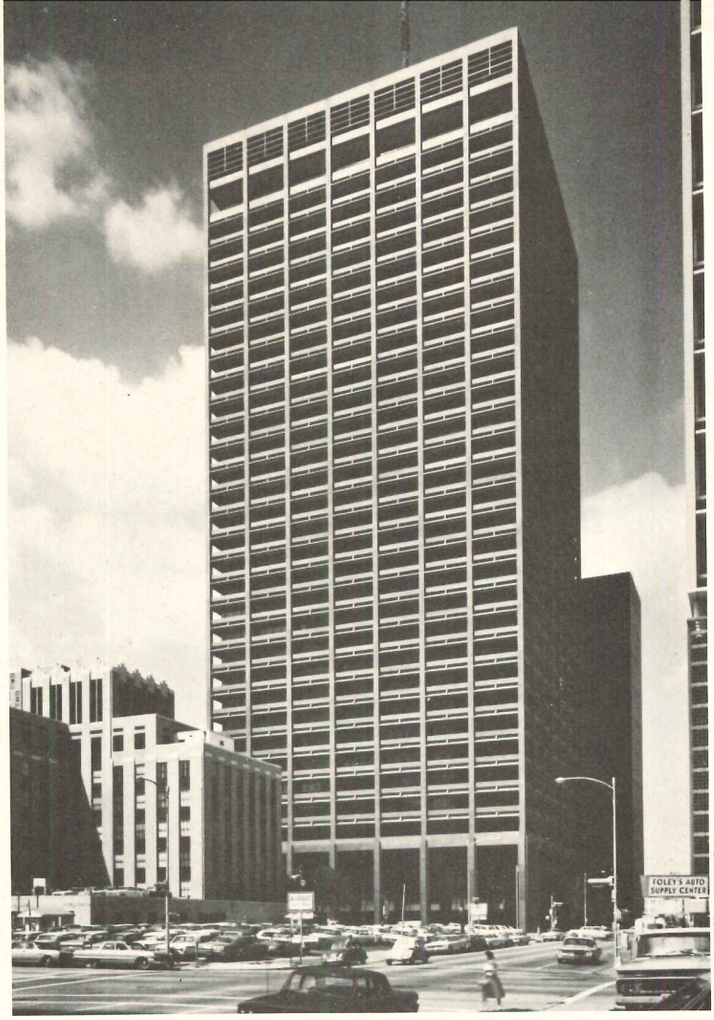
*Morley Baer*

**Convent of the Holy Names,** Spokane, Washington. Architects and engineers: Walker/McGough/Foltz/Lyerla & Peden. "Maintaining a happy balance between community and privacy, the triple functions of the convent—scholasticism, nursing, and worship—are divided in plan with the elements closing around a central courtyard. The dual structural system of reinforced concrete and bearing brick walls uses materials and color to clarify movement patterns and the main public spaces. The common rooms are very successful well-lit spaces. . . ." Mechanical and electrical engineers: Marque, Clerc & Riley; general contractor: Eric Plath, Inc.

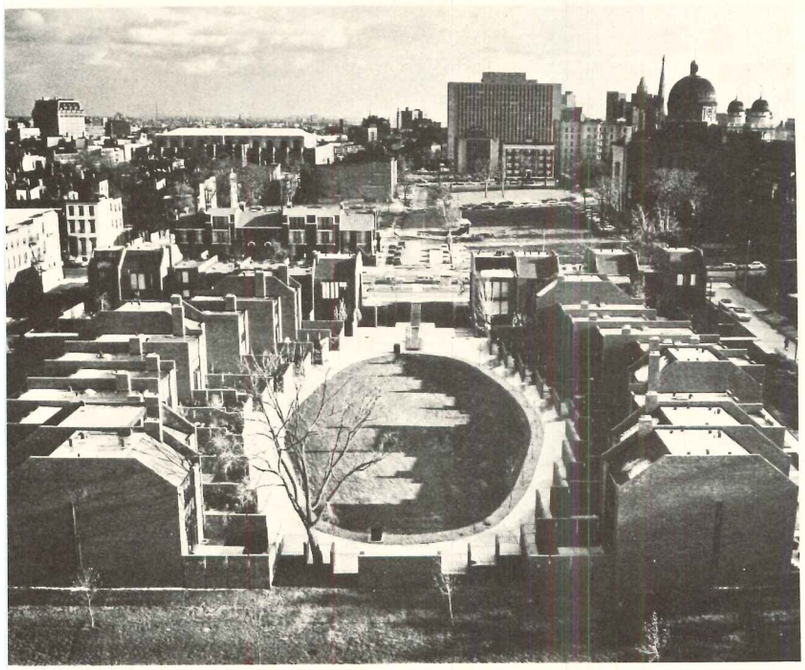


**Tenneco Building,** Houston, Texas. Architects and engineers: Skidmore, Owings & Merrill. "The wide street setback on four sides . . . has provided an opportunity for the architects to create pedestrian entranceways that are somewhere between being pleasant and being grand. The four identical sunshaded facades, with the glass walls set in four or five feet, make a clear declaration of the structure. They have scale and dark warmth and they are simple. . . . The plan is likewise simple: a core of vertical circulation and services surrounded by partitionable office space with completely flexible and adjustable utilities. . . ." General contractor: W. S. Bellows Construction Corporation; owner: Tennessee Gas Building Corporation.

*Robert C. Lautman*

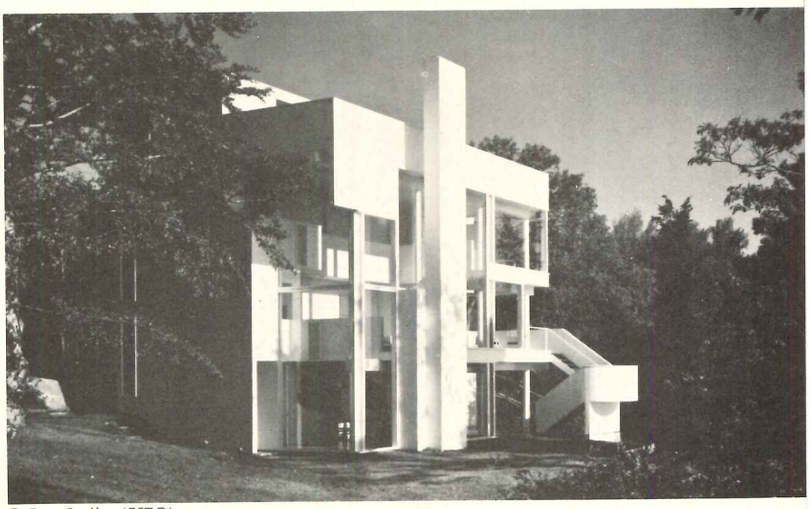



*© Ezra Stoller (ESTO)*



**Bolton Square,** Baltimore, Maryland. Architect: Hugh Newell Jacobsen. In this urban renewal project near the center of the city: "The parking bays indented on three sides and the strong, stylish vertical lines of their fenestration place these distinguished townhouses in the 1960's. But, the small, landscaped front yards and the rear courtyards giving onto a large inner open space that is like a meadow recall . . . the 1920's. . . ." Structural engineer: Carl Hansen; landscape architect: Hugh Newell Jacobsen; general contractor: Ames Ennis, Inc.; owner: Stanley I. Panitz.

*Richard Nickel*



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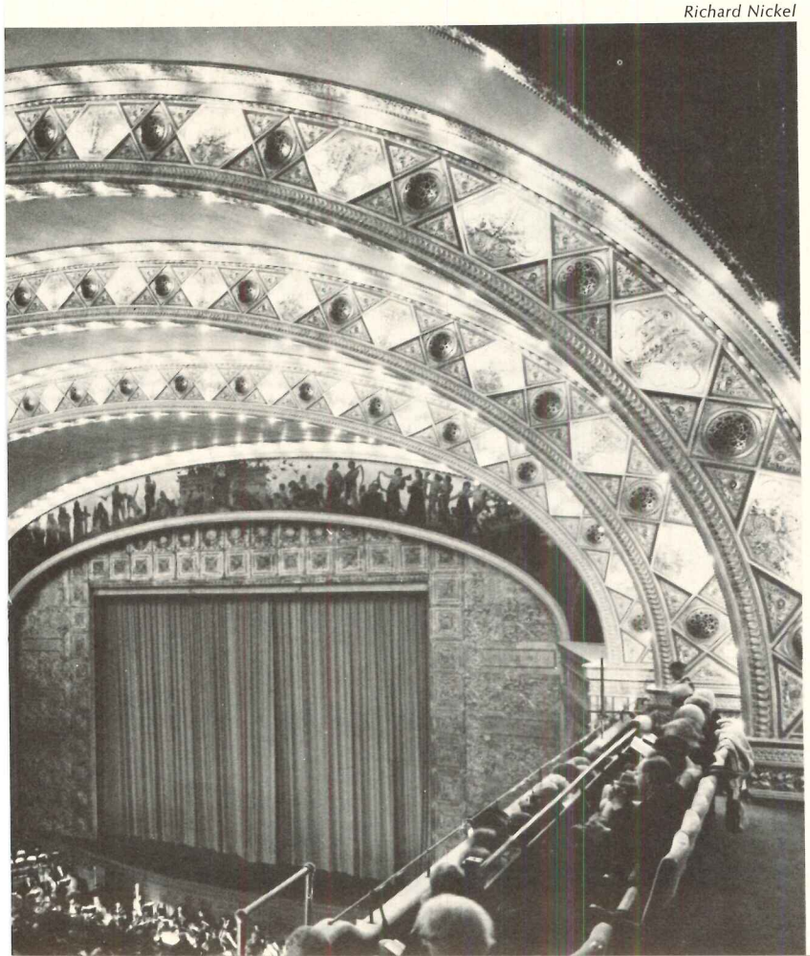
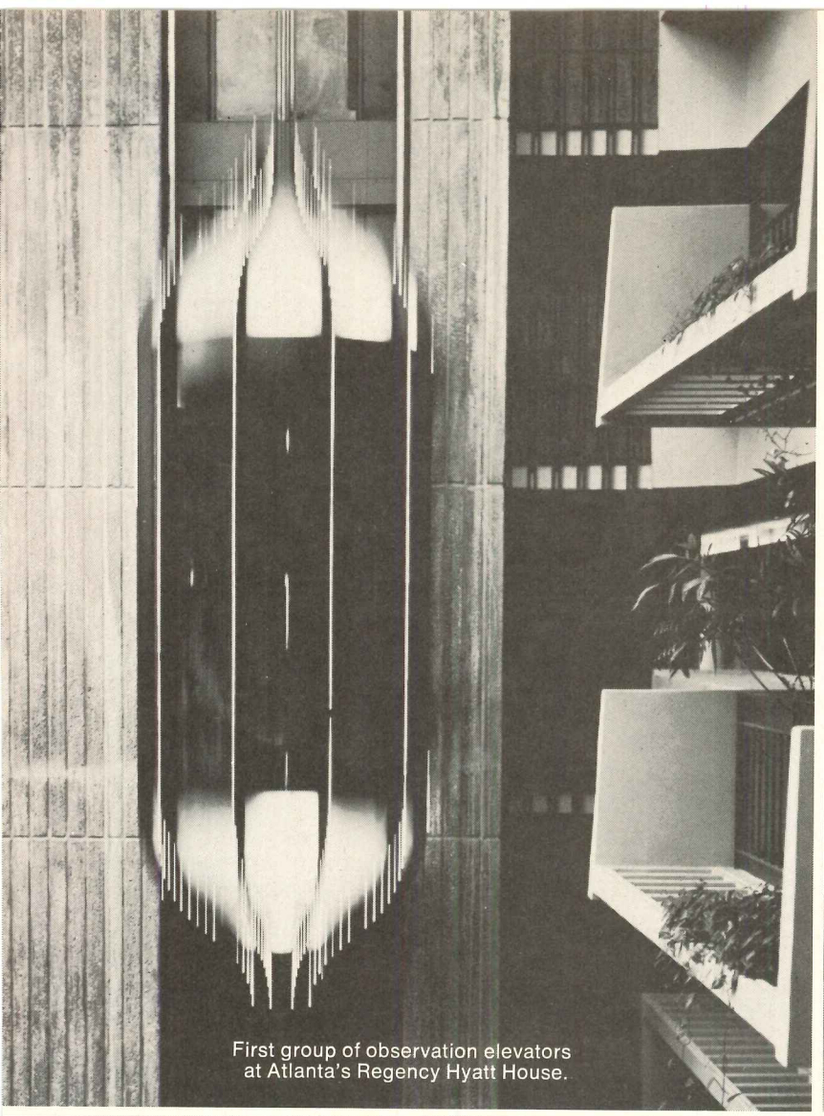


**Auditorium Theater Restoration,** Chicago. Architects: Harry Weese & Associates and Crombie Taylor, consulting architect. ". . . . To honor Louis Sullivan for the original design of this building would be superfluous; the restoration itself is the homage paid to him. . . . Credit is shared by the group of Chicago citizens, who fought for and gained financing for the restoration, and by the architects, engineers, and artisans who understood, with such fine perception, the aims and performance of Sullivan." Theater consultant: George Izenour; interior consultants: Dolores Miller & Associates; structural engineers: Severud Associates and The Engineers Collaborative Ltd.; general contractor: J. W. Snyder Construction Company; owner: Auditorium Theater Council.

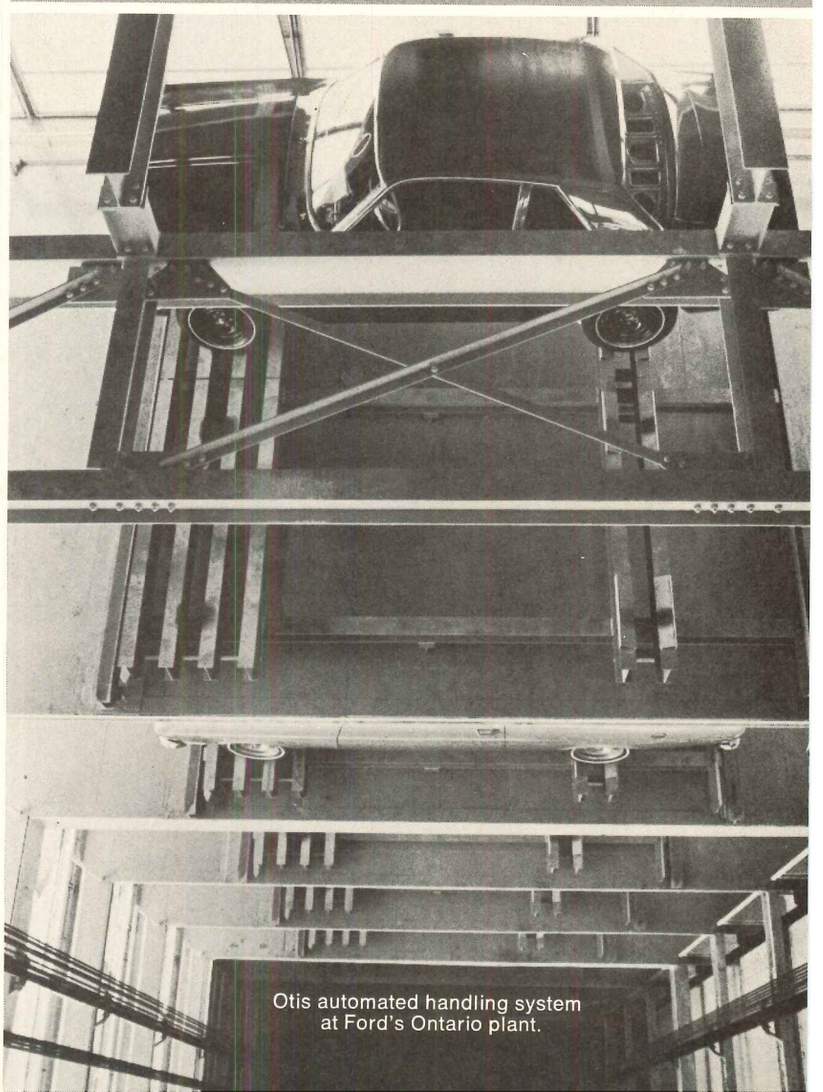
**Smith House,** Darien, Connecticut. Architect: Richard Meier. "This apparently simple piece of domestic geometry subtly plays off the rocks and uses its naturalistic setting as a foil for hard, unwavering line. The house itself is varied within an overall, unifying pattern. Its clean consistency extends from outside to inside and the uncurtained glass frames views from within and without." Structural engineer: William Atlas; general contractor: Ernest Rau; owner: Mr. and Mrs. Fred Smith.



First group of observation elevators at Atlanta's Regency Hyatt House.

Trav-O-Lator moving walks, a natural outgrowth of Otis escalator technology.

Otis Material Handling Operations makes a complete line of fork lift trucks.



Otis automated handling system at Ford's Ontario plant.

# If Otis means elevators to you, we've got only ourselves to blame.

Sure, we put our name on more elevators than any other company. And we're proud of it.

But we also have a fast-growing materials handling operation, which now includes Baker, Moto-Truc, and Baker-York. We're proud of that, too.

And we're specialists in automated handling systems. Otis can automate a complex warehousing operation, or car-parking system, as easily as we automated the elevator.

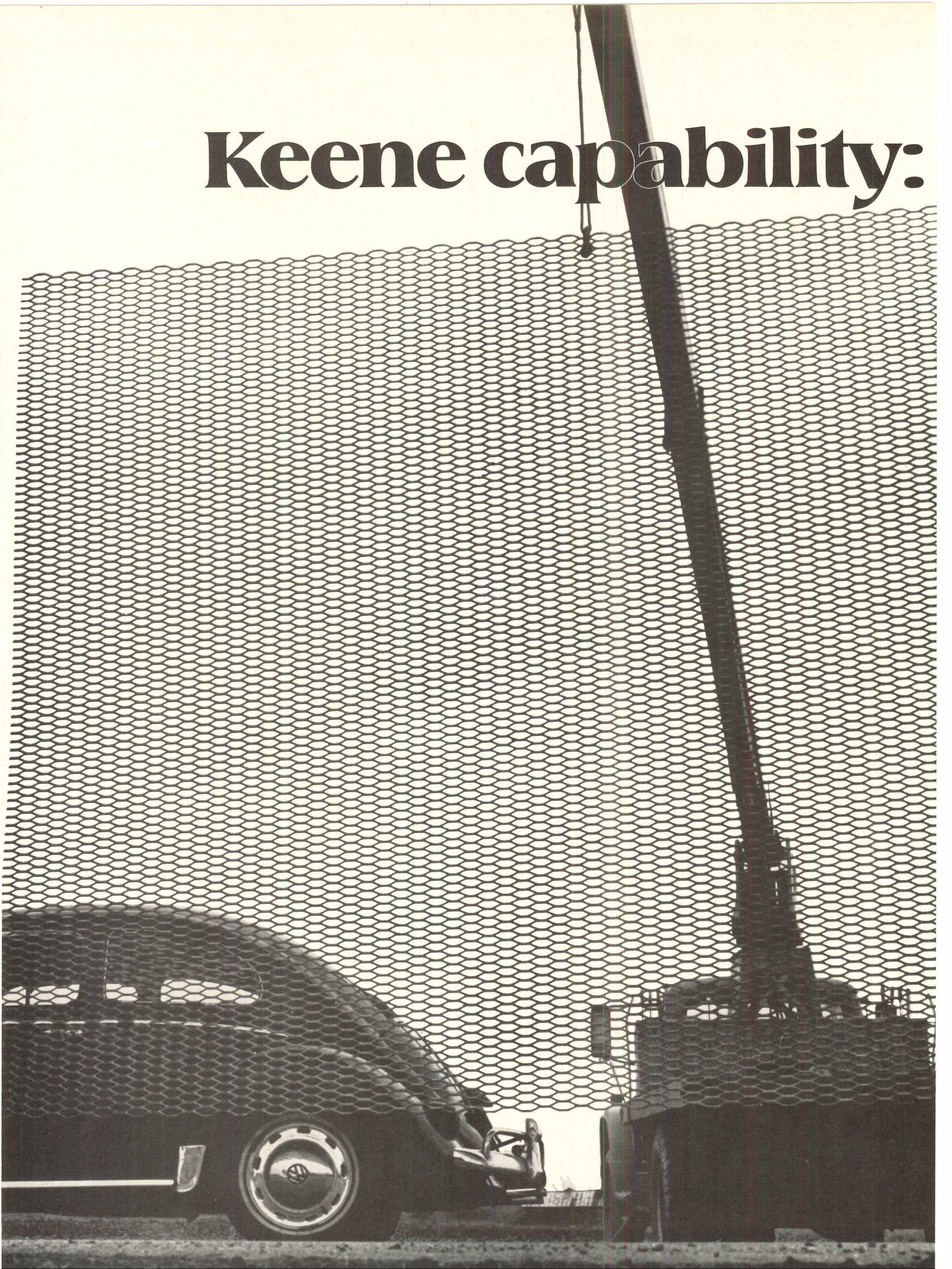
Our escalators have saved billions of steps. And our Trav-O-Lator® and Trav-L-Aire® moving walks are speeding traffic at terminals, shopping centers and other places.

Today, Otis moves people and materials in all directions. In all parts of the world.

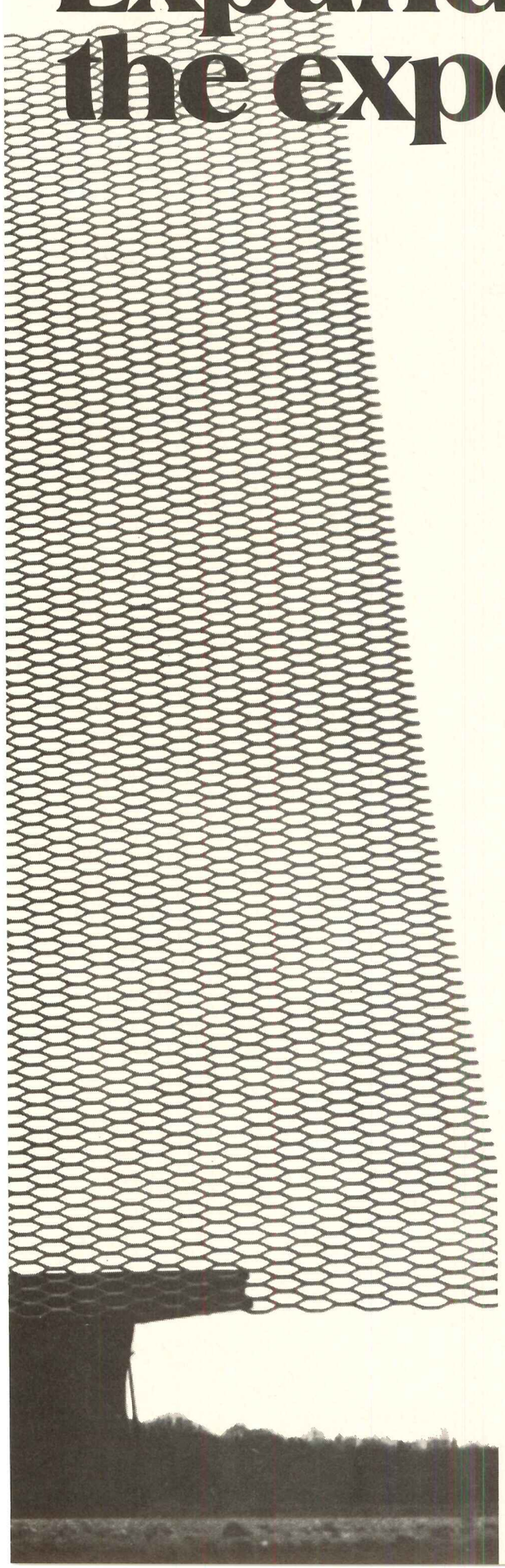
It's time that our image caught up.

Otis®

# Keene capability:



# Expanded beyond the expected.



Most architects know us for the decorative meshes we produce. Obtainable in a host of colors, metals, patterns and finishes the mesh is designed into facades, solar screens, air diffusers, indoor and outdoor space dividers.

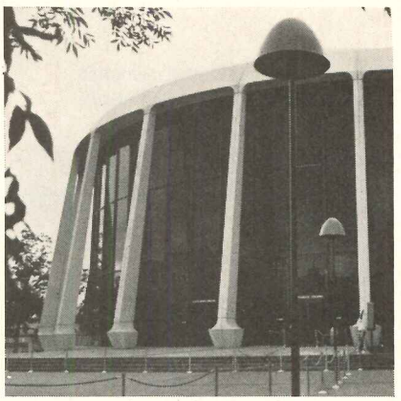
But few of these same architects would expect the capability of our Metal Construction Products Division to extend to this, the largest sheet of expanded metal ever fabricated. Measuring 12 feet by 16½ feet the sheet can be used for industrial flooring and heavy-duty shelving. Equally unexpected is our ability to produce expanded mesh so small it is understandably called micro-mesh and finds its way into space applications.

Our capability, expanded beyond the expected, is evident, too, in our structural Speed-Steel®. Lightweight and easy to handle, this nailable steel framing is available in an array of shapes that give architects unexpected design freedom. Speed-Steel's many applications include sports arenas, shopping malls, nursing homes, and theatres, typified by the Confluence Theatre, San Antonio, Texas.

In keeping with this practice, our Lighting Division goes beyond the function of the average producer by collaborating with designers. Where one of the hundreds of fixtures we produce is not quite suitable we produce what is desired. The National Center for Atmospheric Research by I.M.Pei Associates is a good example.

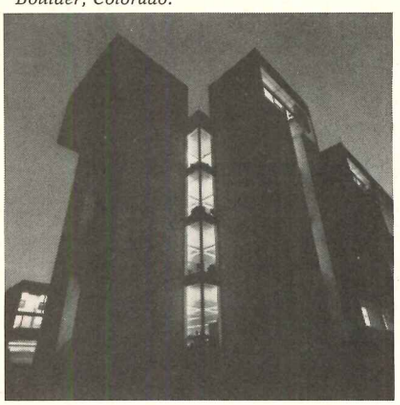
What more can you expect from us? Consider this. Our Interior Systems Division assumes responsibilities beyond that of individual product function. You provide us with performance requirements. We then assume total, single source responsibility for the interior providing a complete turn-key operation. You eliminate time spent specifying, searching, obtaining component bids. And because everything fits together with everything else, interiors can be varied to accommodate changes later.

Providing what is most needed where it is least expected is a Keene characteristic. For more information on our architectural mesh and other Keene Building Products, write Keene Corporation, Metal Construction Products Division, Parkersburg, West Virginia 26101.



*Confluence Theatre, San Antonio, Texas.*

*National Center For Atmospheric Research, Boulder, Colorado.*



KEENE
CORPORATION

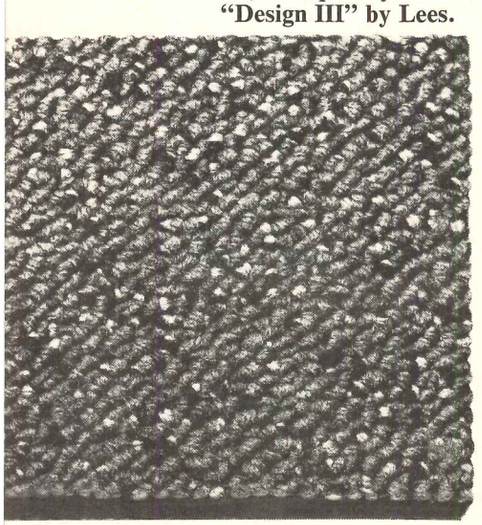
## We've just begun to grow.

*For more data, circle 173 on inquiry card*

**Antron® puts up with the daily grind**

**McCarran International Airport knew that even 3,400,000 people a year wouldn't faze Antron.***

**So they installed 9,000 square yds. of "Design III" by Lees.**



**When a carpet has to look good despite both wear and dirt, it should be made of "Antron" nylon by Du Pont.**

When McCarran International Airport in Las Vegas became the world's first carpeted airport, they wanted more than just prestige and luxury. They needed carpeting that would improve the acoustics, morale and safety, muffle the jet turbine whine and solve the complex and hazardous maintenance problems they had faced with hard-surface flooring.

The solution simply had to start with "Antron"—the dirt-defying nylon from Du Pont. Lees "Design III" was the choice, loomed of continuous filament "Antron". Lees describes "Antron" as "the fiber combining the longevity and toughness of nylon with the resistance to soil appearance, low static generation, and some of the other aesthetic characteristics formerly only associated with natural fibers."

"Design III" is the carpet that proved itself more than equal to millions and millions of visitors at the New York World's Fair "without apparent wear." Its performance convinced McCarran officials and Bonded Service, Inc., the lease maintenance contractor, that it could do the job for the 17,000,000 travelers they expect in the next five years.

So far the decision to put "Antron" to work has paid off in reduced injury claims, improved acoustics and easier, more hazard-free maintenance.

Why don't you look into "Antron" for your next job? For the complete "Antron" story and information on other Du Pont fibers, write: Contract Carpet Specialist, Du Pont Carpet Fibers, Rm. 16D6, 308 E. Lancaster Ave., Wynnewood, Penna. 19096.

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

**Visit Du Pont at Room 1097.**

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REG. U.S. PAT. OFF.

Better things for better living
...through chemistry

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KOHLER'S BOLD CARIBBEAN BATH TUB
IN NEW ORLEANS BLUE

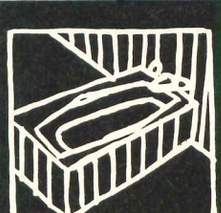
ANOTHER OF OUR
HAPPY BLUES

SIX
LUXURIOUS
FEET

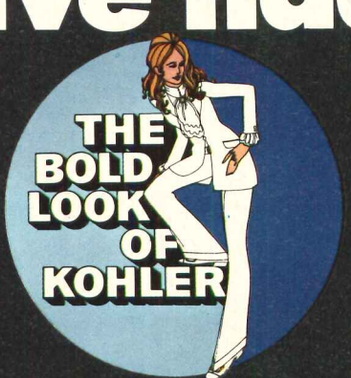
SAFETY
GRIP RAILS

SIDES CAN
BE TILED,
PANELLED
EVEN
CARPETED

SAFEGUARD
BOTTOM
FIRM FOOTING
BUILT IN

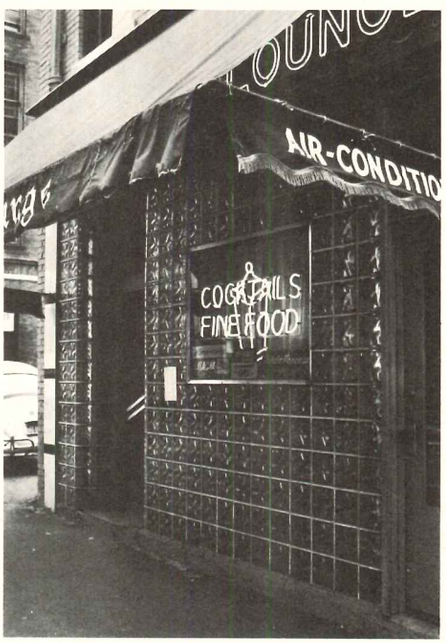


# Kohler says ho-hum baths have had it.




Kohler Co., Kohler, Wisconsin

# IF YOU THINK GLASS BLOCK STILL LOOKS LIKE THIS




# YOU'D BETTER

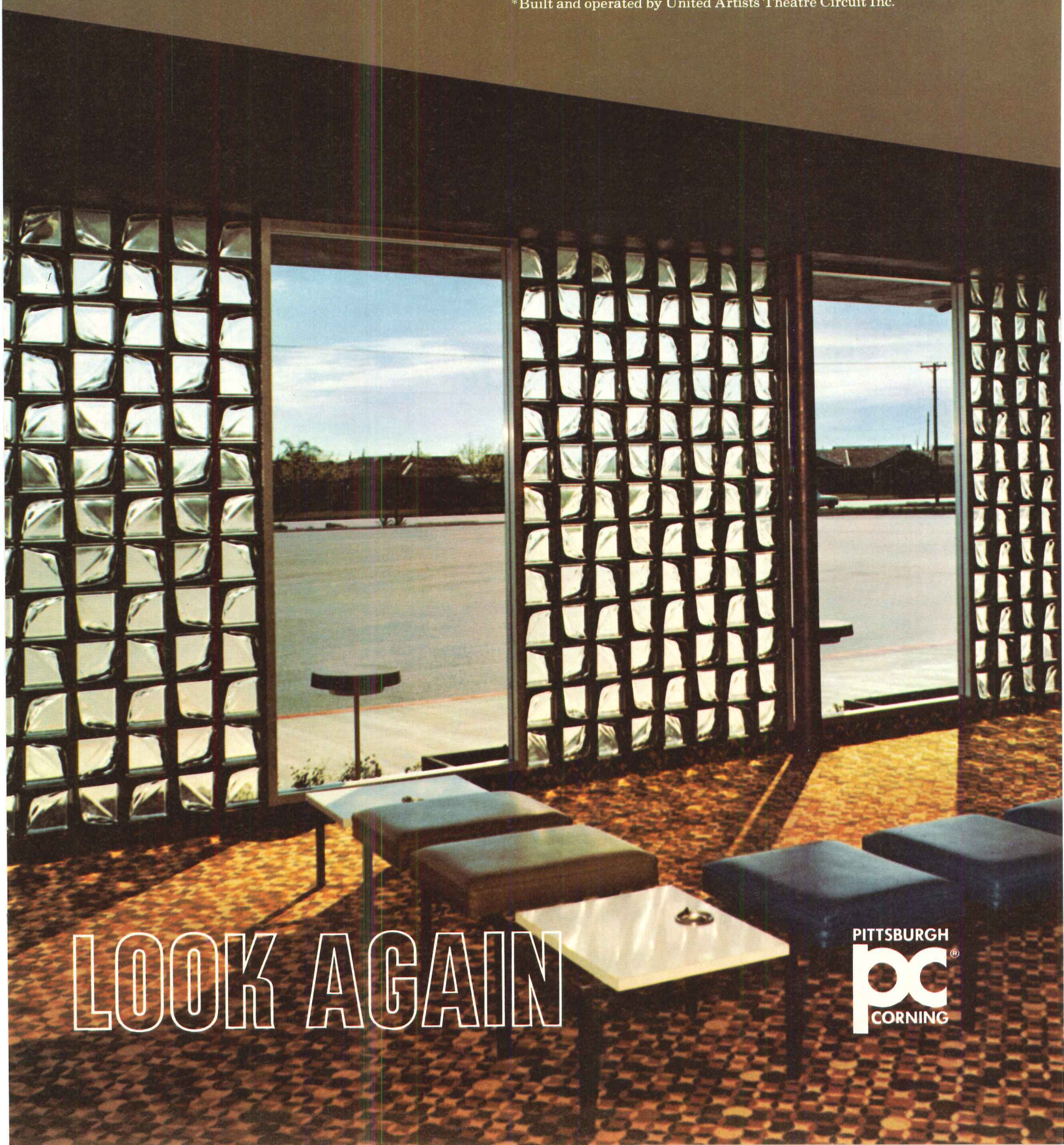
*For more data, circle 19 on inquiry card*

An exciting new show is in for a long run at the deux ciné theatre* in Corpus Christi, Texas—glass block by Pittsburgh Corning.

The architects, Kipp and Winston, took advantage of both the design and functional elements of this beautiful Chiaro pattern. Panels of modern sculptured Chiaro were alternated with panels of plate glass to create a striking illusion of openness. Chiaro allows the light to enter, while keeping the noise and dust out. Heating and air-conditioning costs are also substantially reduced.

Find out how you can get your show on the road with Chiaro, Intaglio and many other interesting glass block patterns. Write for our free catalog: Pittsburgh Corning Corp., Dept. AR-69G, One Gateway Center, Pittsburgh, Pa. 15222.

*Built and operated by United Artists Theatre Circuit Inc.



# THE PROBLEM SOLVER...

## ...IN THE HOTEL WHERE UNIQUE NEW CARPET SQUARES ARE WELCOME GUESTS!

Corridor before . . . And after.

# HEUGATILE LOOSE-LAID CARPET SQUARES... TOTALLY NEW CONCEPT IN CONTRACT CARPETING!

Revolutionary new Heugatile carpet squares are loose-laid . . . remain securely in place without adhesive, tack-strip, or underpad. Thus, long-wearing Heugatile carpet squares can be rotated—as required—to equalize wear, retard the development of wear patterns, and keep the entire carpet young-looking longer. Heugatile . . . the world's only totally-interchangeable, "rotatable" carpet squares!

## At Stratfield Motor Inn in Bridgeport, Connecticut . . .

Heugatile loose-laid carpet squares replaced terrazzo and ordinary carpet. Hard-surface terrazzo is cold, noisy, dangerously slippery, and costly to maintain (requires frequent sweeping and mopping). Ordinary carpets develop threadbare traffic paths. But Heugatile solves these problems. And more . . .

- Long-wearing Heugatile carpet squares can easily be rotated to extend their life.
- Most stains are easily sponged off with warm water and mild detergent.
- If a square is permanently damaged, just replace it in seconds. No cutting, matching, or patching as with ordinary carpets!
- Heugatile drives maintenance costs down! A test installation of 108 sq. yds. of Heugatile in a busy hallway reduced maintenance time from 12 hours per week (hard-surface flooring) to 2 hours per week (Heugatile carpet squares)—a saving of $29.75 per week *in the test area alone!*
- Heugafelt—one of 4 Heugatile carpet-square products—is highly resistant to cigarette burns!

See why we call Heugatile "The Problem Solver"? Even the name is tough. Heugatile. ("You-Ga-Tile").

*Heugatile carpet squares are unconditionally guaranteed to remain in place. Will not shift under foot, wheel, vacuum or cleaning equipment when installed according to installation manual.*

See Heugatile "specs" in Sweet's 1969 Architectural & Interior Design Files.

**When visiting the Summer International Home Furnishings Show and NEOCON, see all 4 Heugatile carpet-square products at: Chippendale Co., 325 North Wells Street, Chicago, Illinois 60654.**

HEUGATILE® *The problem solver*

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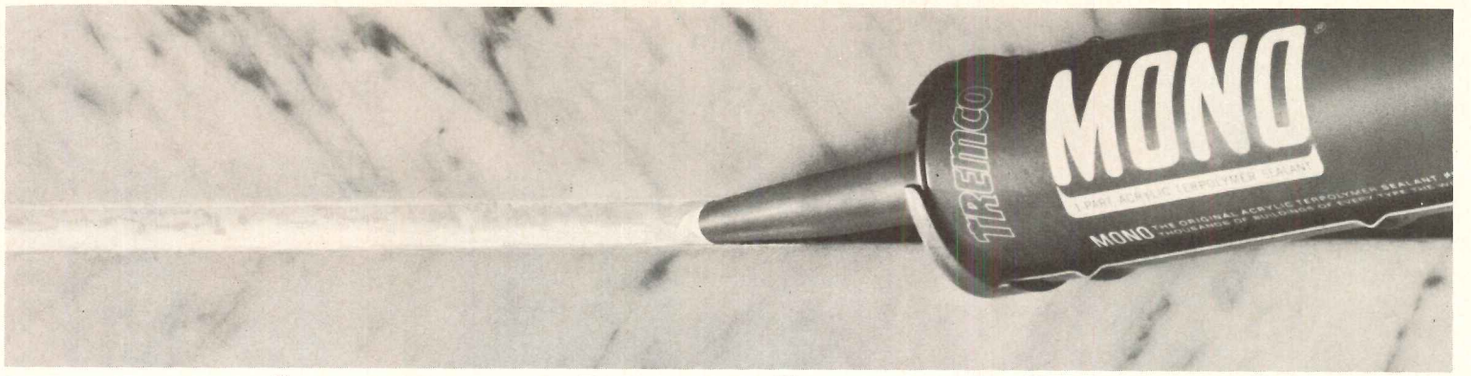



# Tremco has one thing that sticks to the job better than MONO.

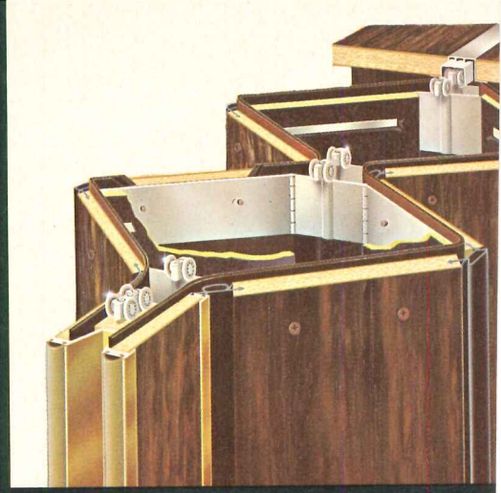
## The man who sells it.

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

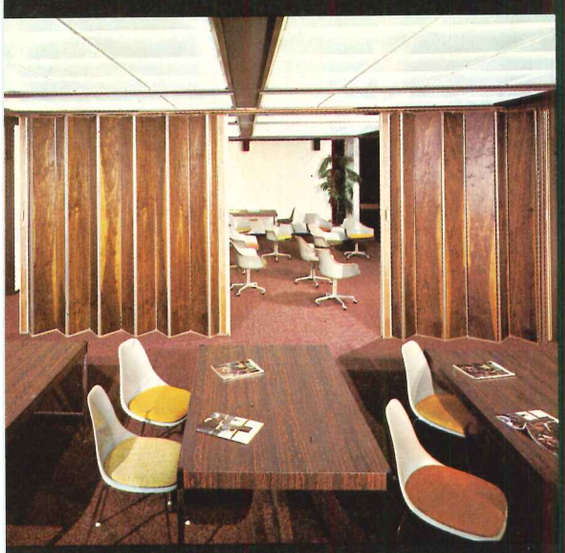
**TREMCO**
**The water stoppers**

*For more data, circle 21 on inquiry card*

# From Panelfold...STC 40
## an exciting new concept in wood



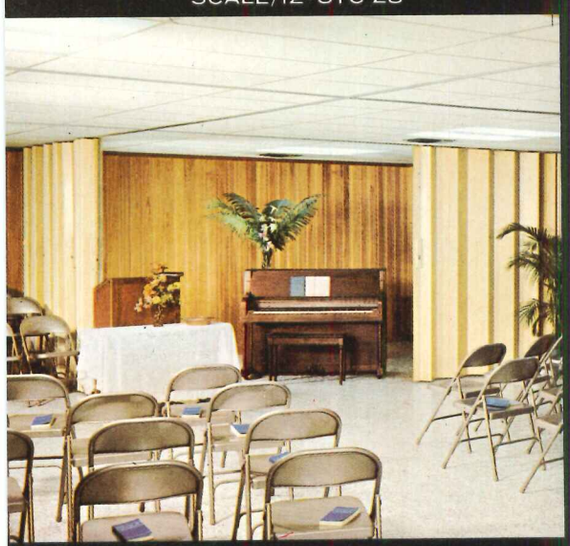
TWIN PANEL SONICWAL



SCALE/12•STC 28

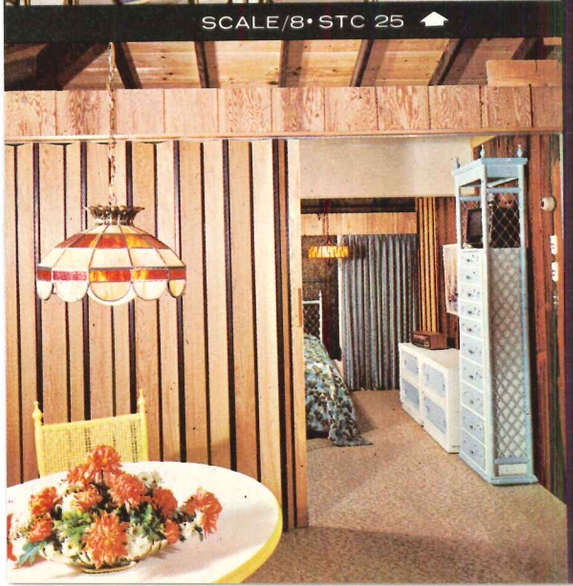
SONICWAL/88•STC 40

SONICWAL/66•STC 36



SCALE/8•STC 25

Panelfold manufactures a full range of wood folding doors and partitions in both Single Panel and Twin Panel configurations. Four, Six, Eight and Twelve inch panel widths are offered. For each design or construction condition there is an appropriate Panelfold product to fill your acoustical requirements (STC 25 through 40), resolve area flexibility dilemmas or satisfy the aesthetic need dictated by room size. The Panelfold national sales team is ready to help you with the details.



SCALE/6

SCALE/4

*ARCHITECTS:*
*Pancoast/Ferendino/Grafton (1)*
*Connell Associates, Inc. (2) (3)*
*James Merrifield (4)*
*Arthur Perrin (5)*
*Alfred Browning Parker (6)*

**Panelfold**

1090 E. 17th Street, Hialeah, Florida 33010
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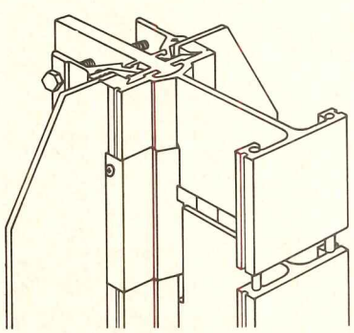
# About the high cost of beauty and other myths.



Pittco's new Seventy-Five Curtain Wall system has upset a lot of old rules for buildings. Like the one that says beauty should cost a lot. Nonsense.

The Seventy-Five Curtain Wall lets you erect your building without compromising your design or budget. It's available in your choice of five anodized aluminum colors, each integrated with Pittco® entrance systems and storefront metals. And Seventy-Five Curtain Wall accommodates any standard thickness of glass or spandrel.

We've also squelched those ugly tales about curtain wall leakage with our rainscreen system, a proved method of pressure equalization. Keeps tenants dry and civil.

We've even made it clumsyproof with a controlled-pressure glazing system for secure installation without breakage. Interior glazing saves expensive days of glazing and erection. And we've subjected Seventy-Five Curtain Wall to a merciless series of performance tests. (It's satisfied all the standards of NAAMM Tests A, B, C-1 and C-2.)

Pittco's new Seventy-Five series has erased all the old slander about curtain walls. Take advantage. Write for complete details: Pittco Architectural Metals, Box 930, Kokomo, Indiana 46901.

PPG INDUSTRIES

*For more data, circle 23 on inquiry card*

# Some structures dictate the use of round columns.

You look at the design. You know the columns should be round.

Then you look at the budget and wonder if the client can afford aesthetics.

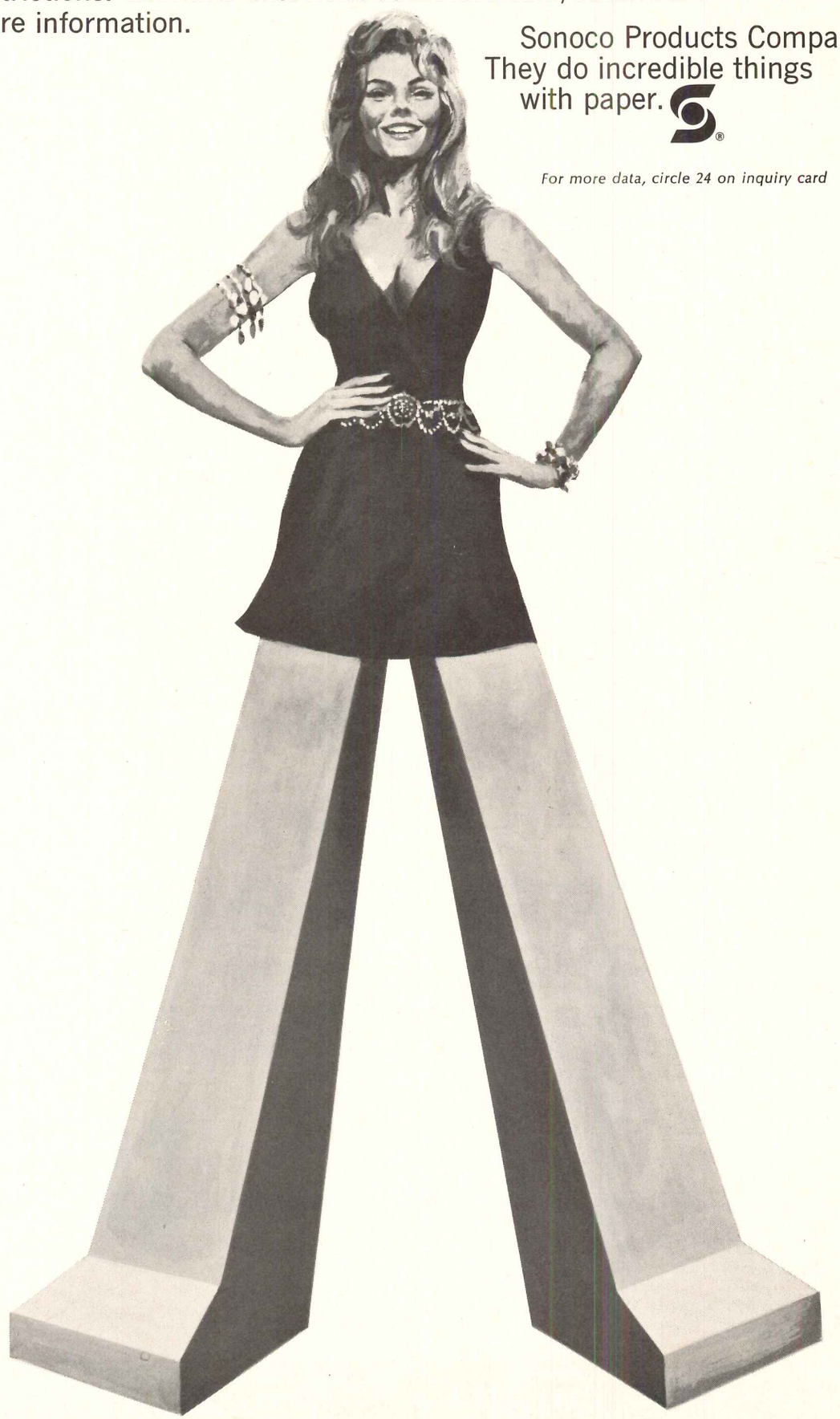
He can. If you form the round columns with Sonotube® Fibre Forms.

Fibre forms are easier to place, brace, pour and strip. So they cost less than other column forming methods.

And Sonotube forms come in larger diameters than any other fibre forms.

Sonotube forms give you more freedom to create. With fewer budget restrictions. Look into this. Write us at Hartsville, South Carolina 29550, for more information.

Sonoco Products Company.
They do incredible things
with paper.



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# Mohawk's Whipcord II. Now with ANSO, the carpet fiber that makes dirt seem to disappear.

A commercial carpet.

It gets scuffed, kicked, and wiped on. It lives in a world of dirt and dust and grime. Yet, it's expected to look great.

Impossible? Not to the people at Mohawk. They use ANSO™ nylon, the carpet fiber that makes dirt seem to disappear.

ANSO does strange things with light. Turns it around to reflect the beauty, color, and texture of a carpet. But not the common dirt a carpet has to put up with.

ANSO is specially engineered to resist ugly soiling and extreme wear, which makes it ideal for commercial carpeting. Whipcord II is fortified with metallic copper wire and it is permanently static-protected. ANSO costs more than ordinary nylon. But it's worth it, because ANSO looks new. Longer.

ANSO. Mohawk welcomes it.

For details, write: Mohawk Carpets, Commercial Carpet Department, 295 Fifth Avenue, New York, New York 10016.

ANSO™

The Nylon Fiber That Makes Dirt Seem To Disappear.

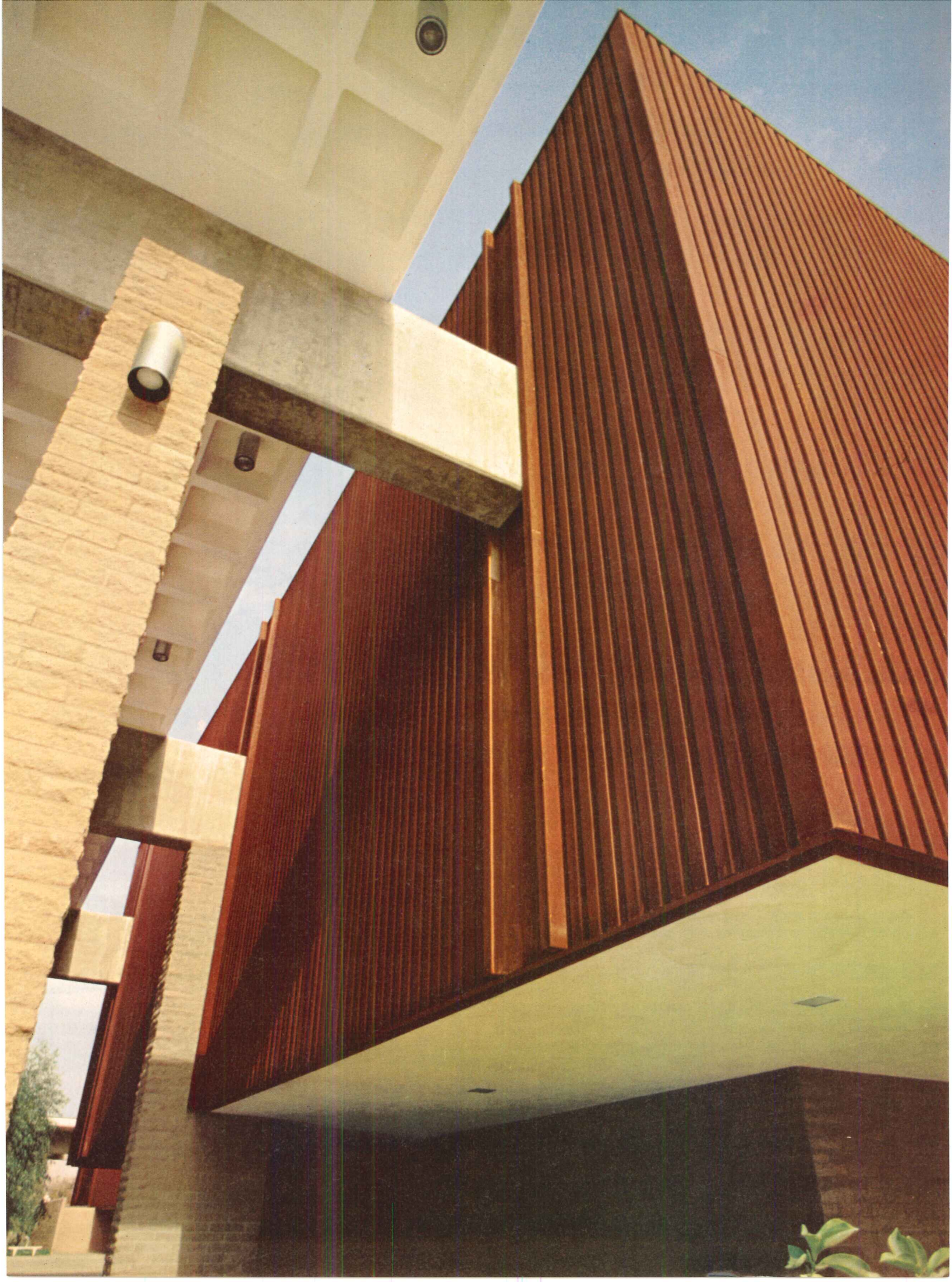
Allied Chemical

*For more data, circle 25 on inquiry card*

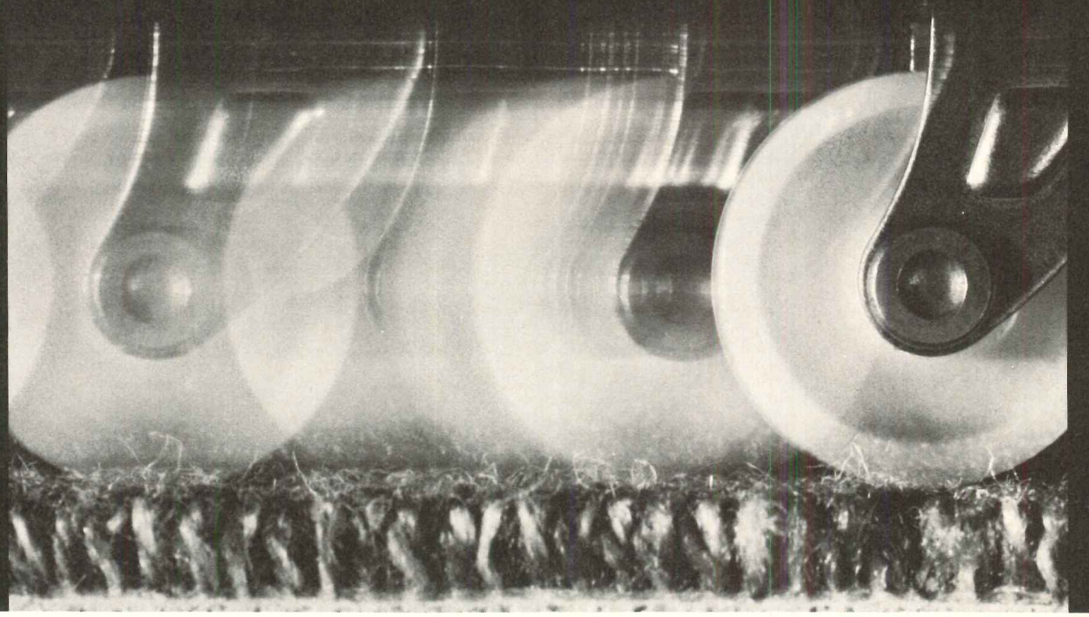
USS **Cor-Ten Steel...naturally**

FRESNO CONVENTION CENTER, FRESNO, CALIFORNIA
ARCHITECT: ROBERT STEVENS & ASSOCIATES, FRESNO, CALIFORNIA AND ADRIAN WILSON & ASSOCIATES, LOS ANGELES, CALIFORNIA

For information on bare USS COR-TEN Steel, the original weathering steel, contact a USS Construction Marketing Representative through the nearest USS sales office, check your Sweet's Architectural File, or write to United States Steel, Box 86, Pittsburgh, Pennsylvania 15230. USS and COR-TEN are registered trademarks.



# NON-STOP CARPET.



## Double Jute-backed carpets glued directly to floors keep wheels, casters rolling easily.

No cushions or pads to bog down wheels and casters. Double Jute-backed carpet glues directly to the floor. Any floor, new or old. Wood. Concrete. Even glues down securely over previously installed resilient flooring.

Once down, it stays down. Resists shifting and delamination. But comes up so cleanly that it can be reinstalled elsewhere.

Safer, too. Unlike practically all foam and vinyl backings, Jute backing helps carpets meet the flame-spread resistance requirements of the Hill-Burton Act.

Best of all, Jute-backed carpet glued directly to the floor costs substantially less. Less than cushion-backed carpet with equal pile. Less than equivalent carpet with separate underlayment.

Specify it for areas with wheel and caster activity. Offices. Hospitals. Nursing homes. Libraries. Computer areas. Even supermarkets.

**JUTE•ON•JUTE**

Jute Carpet Backing Council, Inc., 25 Broadway, N.Y. 10004

WRITE FOR SAMPLE GLUE-DOWN SPECIFICATIONS plus other pertinent material including successful case history at Ford Motor Co., Dearborn, Mich.

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

*For more data, circle 26 on inquiry card*

Series 4000

*An office should be a place of beauty and comfort, as well as efficiency. The executive sees more of it than he does of his own home. Don't condemn anyone to days of drabness if you can help it—and you can. Only a man's signature says more about him than his office.*

alma

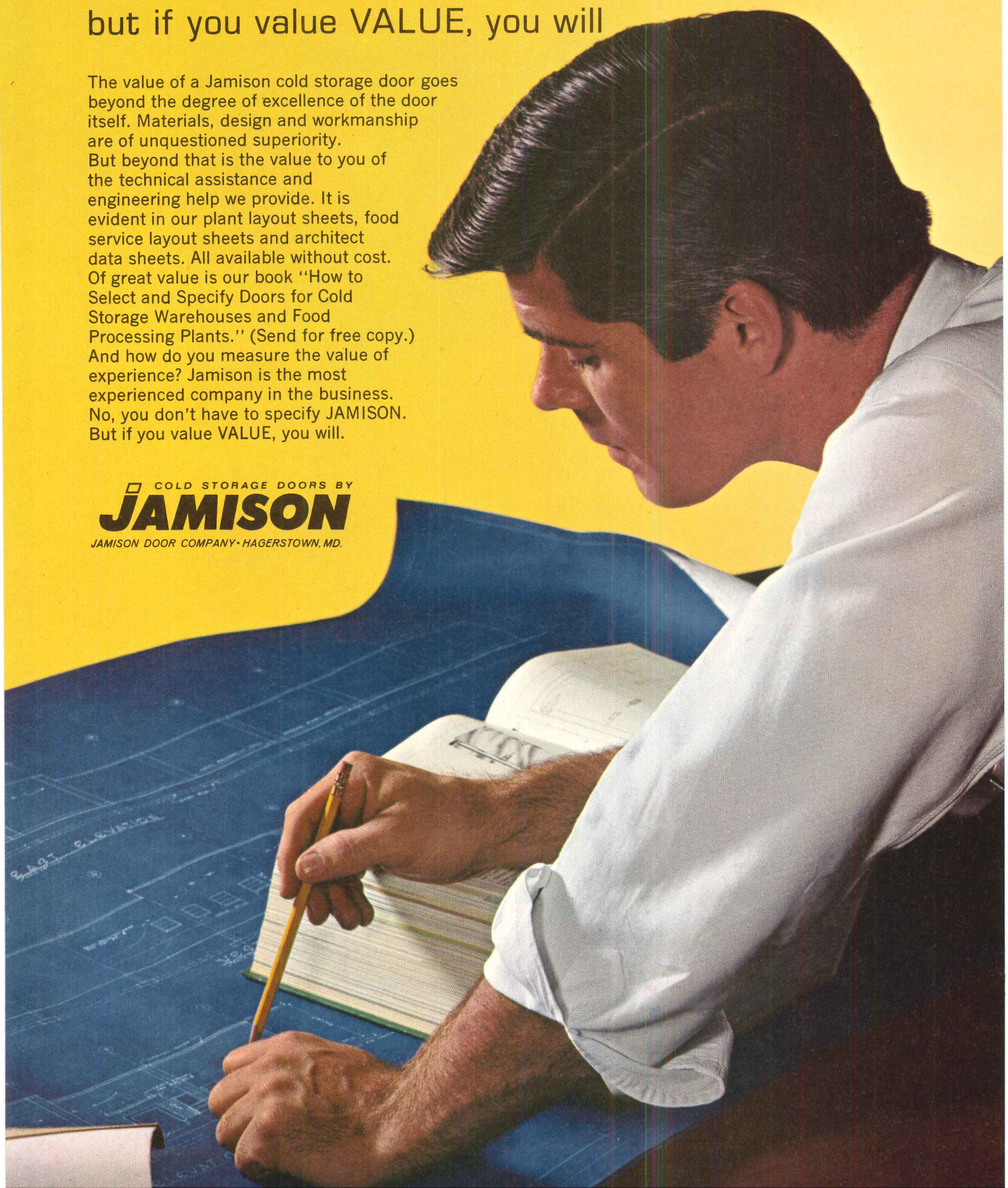
See the Alma Series 4000 in our showrooms in High Point and Chicago (Space 1140, Merchandise Mart). For a full-color brochure illustrating this and several other Alma Series, write Alma Desk Company, Dept. AR-93, Box 271, High Point, N.C. 27261.

# You don't have to specify JAMISON

## but if you value VALUE, you will

The value of a Jamison cold storage door goes beyond the degree of excellence of the door itself. Materials, design and workmanship are of unquestioned superiority.
But beyond that is the value to you of the technical assistance and engineering help we provide. It is evident in our plant layout sheets, food service layout sheets and architect data sheets. All available without cost.
Of great value is our book "How to Select and Specify Doors for Cold Storage Warehouses and Food Processing Plants." (Send for free copy.)
And how do you measure the value of experience? Jamison is the most experienced company in the business.
No, you don't have to specify JAMISON. But if you value VALUE, you will.

COLD STORAGE DOORS BY
**JAMISON**
JAMISON DOOR COMPANY • HAGERSTOWN, MD.



# Is resistance still a virtue?

## Porter says yes, with Vectra fiber.

New Porter "Double Play"—the first tweed tufted contract outdoor-indoor carpet of Vectra® fiber—resists stains, fading and wear, but can't resist being beautiful.

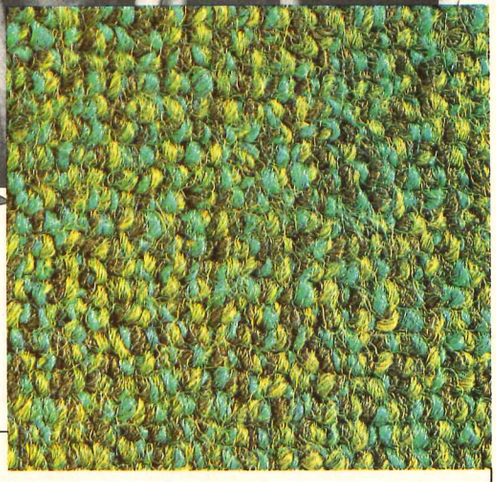
You know good old rugged, rough-and-tumble indoor-outdoor carpet. Now, Porter has made it a thing of beauty. The name is Double Play, and it's the very first tweed tufted contract carpet made with spun yarns of 100% Vectra olefin fiber... to rival the look and feel of Nature's own luxurious fiber.

But the real beauty of Double Play is the fact that it stays beautiful. Thanks to Vectra fiber's remarkable resistance to stains, fading and abrasion. Resistance that can be measured in fewer commercial cleanings... lower maintenance costs. So Double Play is an indoor-outdoor carpet in the truest sense. But once you see how lush and natural it looks indoors... you may not have the heart to put it outside.

SPECIFICATIONS

Pile of 100% solution dyed Vectra olefin fiber
⅛ gauge (216 pitch)
Pile wt.—28 oz. per yd.
Stitches per inch—7.5
Tufts per sq. inch—60
Yarns—3 ply
Primary Backing—100% polypropylene

*Secondaries:*
(all bonded with latex)
Jute
High density rubber
Durogan



Porter Carpets/P.O. Box 91009/East Point, Georgia 30344
Please send me samples and information on Porter "Double Play" carpet.

NAME_____

COMPANY_____

ADDRESS_____

CITY_____

STATE_____ ZIP_____

ENJAY

Vectra® olefin fiber is manufactured by Enjay Fibers and Laminates Company, Odenton, Maryland, a division of Enjay Chemical Company. Odenton: (301) WO 9-9000. New York: 350 Fifth Avenue, (212) LO 3-0720. Charlotte: One Charlottetown Center, (704) 333-0761. Enjay makes fiber, not carpets.

**Vectra . . . the fiber that believes resistance is still a virtue.**

*For more data, circle 28 on inquiry card*

# HOPE'S

## HEAVY INTERMEDIATE STEEL WINDOWS

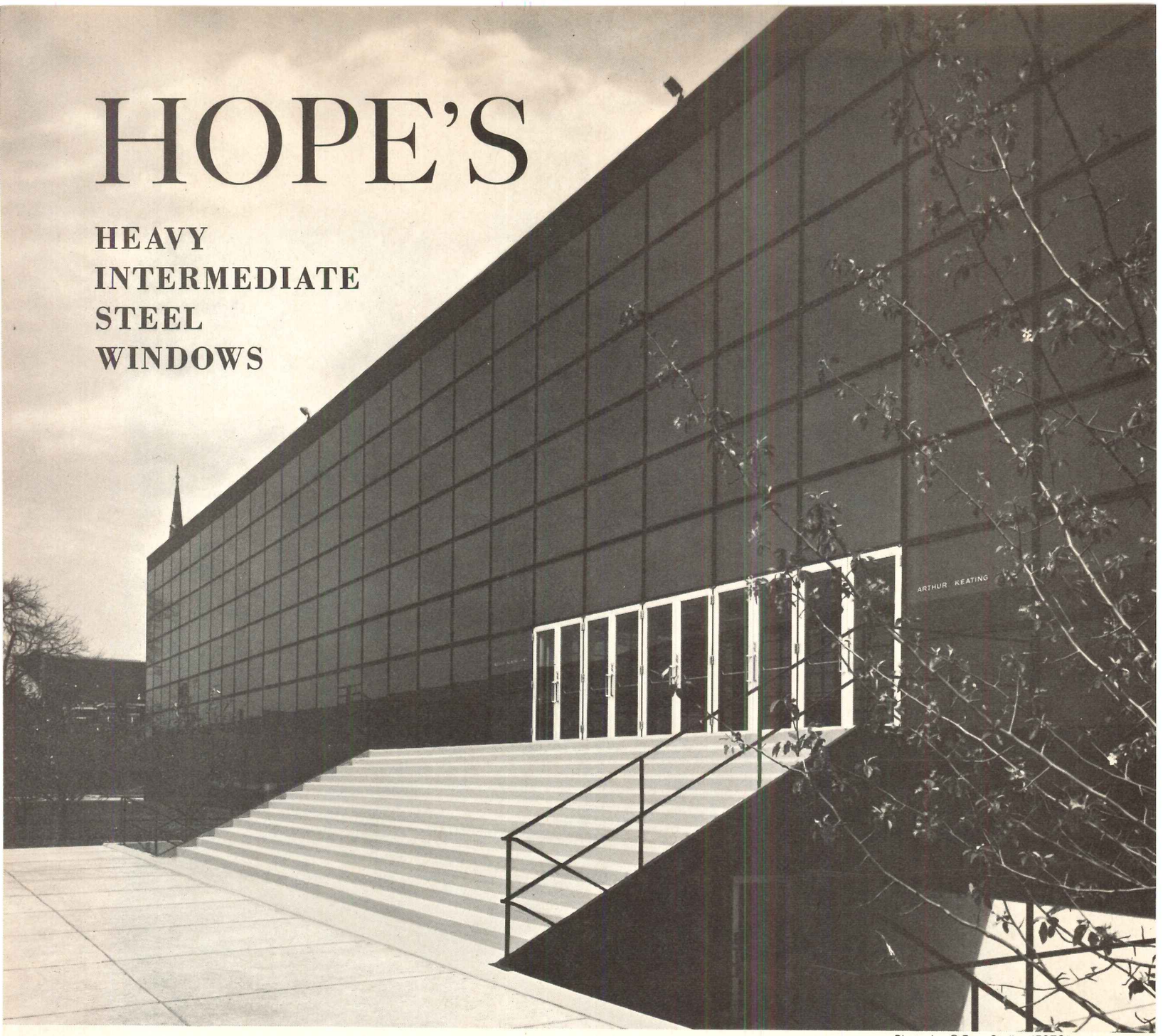



*Photo by ©Ezra Stoller (ESTO)*

**GYMNASIUM (Arthur Keating Hall), ILLINOIS INSTITUTE OF TECHNOLOGY—CHICAGO, ILLINOIS**

*Architects: Skidmore Owings & Merrill* — *General Contractor: A. J. Maggio Co.*

Custom Heavy Intermediate Steel Windows were selected by the architects and furnished by Hope's for the exceptionally large window walls in this handsome structure. Installation of all components including entrances (furnished by Hope's) was included in Hope's contract thus eliminating divided responsibility and insuring proper coordination and installation — Hope's would welcome the opportunity to discuss the windows for your next building — no obligation.

MEMBER STEEL WINDOW INSTITUTE

Our catalogs are filed in Sweet's Architectural file and our sales offices and representatives are located in principal cities.

# HOPE'S WINDOWS, INC. *Jamestown, N. Y.*

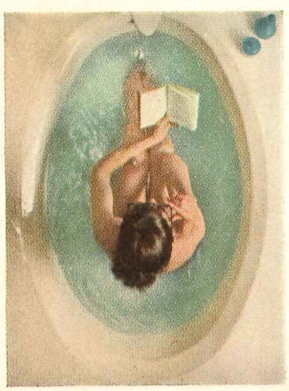
HOPE'S WINDOWS ARE MADE IN AMERICA BY AMERICAN WORKMEN

American-Standard creates

# The UltraBath

The most exciting thing that ever happened to bathing. The UltraBath*. With all the luxuries, all the personal conveniences women have always dreamed of. And more. Because the UltraBath is more than a bath. It's the most lavishly elegant bathing and showering center ever! All three separate components (Shower Tower, Control Console, Bathing Pool) are unified to give your homes, and your customers, the best of the future now. There's even a new color... subtly sensational "Bone." The high-fashion American-Standard color that women can live with now and forever. For full details, see your American-Standard representative or write us.

AMERICAN STANDARD
PLUMBING & HEATING DIVISION
40 W. 40th St., N. Y., N. Y. 10018



**Ultra-spacious Bathing Pool*.** New wide oval shape is 42" wide for maximum elbow room. Other luxury features include a "contour" back, comfortable beveled rim, Stan-Sure* slip-resistant surface in a new sunburst pattern, and a whirlpool attachment for the most luxurious bathing ever.

**Ultra-luxurious Shower Tower* column.** This richly styled exlusive unit is completely pre-piped and factory assembled. Installs with a few simple plumbing connections. Features Stereo* Shower Heads for extra luxurious showering with separate shoulder height controls. Hide-away* rinsing spray comes built-in with its own revolving storage compartment.

**Ultra-convenient Control Console* panel.** Features 3 different automatic controls, all pre-wired. "Auto Pool Fill" turns water off at any pre-determined depth. "Pool Temp" mixes hot and cold water to any desired temperature. "Whirlpool Timer" turns whirlpool off at pre-set times. Console also contains concealed storage cabinet for whirlpool attachment.

**Matching Ultra* Lavatory.** Complements the UltraBath in both its graceful oval design and deluxe beveled edge as well as with its subtle "Bone" color. Unique Ultra Font* faucet directs the water up and out in a graceful arc for easy, non-splash shampooing.

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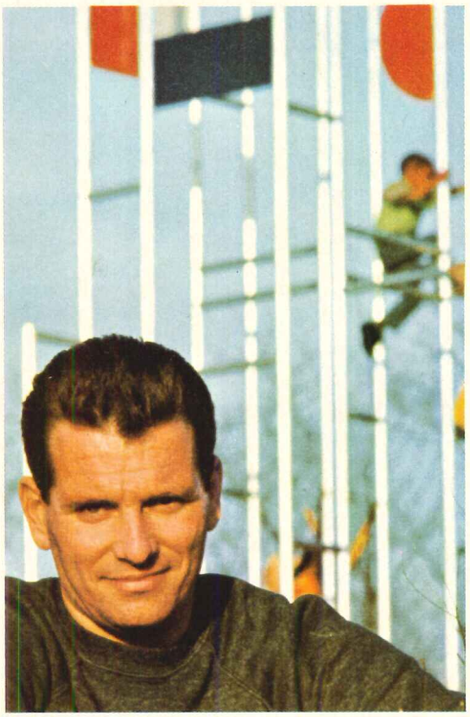
# Ventures In Design

NO. 1 IN A SERIES BY ALUMINUM COMPANY OF AMERICA

# The Aluminum Forest By David Day



"We have created a false difference between technology and art. Good design *is* good art." Those two sentences are part of the design philosophy of promising young designer David Day, first recipient of a commission by Alcoa in our "Ventures In Design" program.

The program is intended to "create a fresh and effective method of recognizing young designers who have shown ability and promise." It will emphasize the importance of good design in marketing, and create practical design innovations that utilize aluminum in significant, functional and esthetic ways.

Selection.

A panel of influential design educators assisted Alcoa in choosing "Ventures In Design" selectees. They include: Arthur J. Pulos of Syracuse University, James M. Alexander of the University of Cincinnati, Jack Crist of San Jose State College and John Andrews of the Philadelphia College of Art.

The designer.

David Day was no stranger to Alcoa. He won one of our student design awards in 1962 when he was a student at the University of Cincinnati. Since then he has held several positions in the design field, including stints with Southern Illinois University and R. Buckminster Fuller. For the past five years, he has been an associate in the office of highly regarded designer William J. Schickel, Loveland, Ohio. During this association, several of his designs have been reviewed in *Industrial Design* magazine.

The design.

Day's design, the Aluminum Forest, is basically playground sculpture. But it's a lot more than that. It is an esthetic and architectural experience, alone or in conjunction with other structures.

It is in complete harmony with current trends in art. Trends toward physically experiencing what the art means by touching it, moving around it, going in and out of it. Trends toward the use of modern technology in design, fabrication and installation.

It is a joyful concept, communicating the spirit of the forest with trunks, branches and colorful leaves. And it can be made to include the play of light, the movement of a fountain or the wind. Sound. It begs for the active participation of people of all ages. In short, it is good design. A blend of art and technology.

Other uses.

The aluminum forest might also be employed to fill space between buildings, as sculpture, as a setting for the exhibit of art, as a temporary substitute for foliage in housing developments, as a frame for advertising. The list is endless.

Aluminum, the designer's metal.

This work is simple and restrained. It combines the disciplines of the designer, the artist, the artisan, the engineer and the basic materials producer.

Aluminum contributed to the design both esthetically and functionally.

As David Day said, "I just couldn't have made it with another material. The light weight of aluminum makes my 18-ft structure easy to handle and erect. Aluminum's weather resistance is head and shoulders above that of any other metal, without any extra finishes. And it won't stain adjacent areas. Most important, I was able to order just the right alloy, in the right pipe size, off the shelf. That's one of the great things about aluminum. The leaves, for instance, could have been specified in an infinite variety of shapes and finishes. I used red, white and blue enameled sheet for the prototype, but I could have used anodized earth colors or bright metallics."

The industrial designer has an invaluable tool in Alcoa® Aluminum. No other material can be formed, fabricated and finished by so many methods. No other metal matches its high strength-to-weight ratio. And no other metal is so forgiving of hard abuse.

Alcoa is the designer's ally.

Alcoa believes that good design is a major part of good marketing. And we have supported this belief over the years with student and professional design awards. It's also the reason we maintain our own design division, to communicate with both consultant and corporate design personnel about special Alcoa Aluminum alloys, fabricating techniques and finishes. This assistance is just one of Alcoa's many services available to you, your staff designers or independent designers you have retained. Just call your local Alcoa sales office listed in the telephone directory, or write Robert P. Eganhouse, Manager of Design, Aluminum Company of America, 1501 Alcoa Building, Pittsburgh, Pa. 15219.

**Change for the better with Alcoa Aluminum**

ALCOA

Overlooked: The use of communications has doubled in the last decade—and will double again in the coming decade.

Overlooked: An avalanche of innovations is being developed to send data, pictures, charts, diagrams—you name it—over our network.

Overlooked: Within a few years every company with more than a hundred employees will need a computer or access to one.

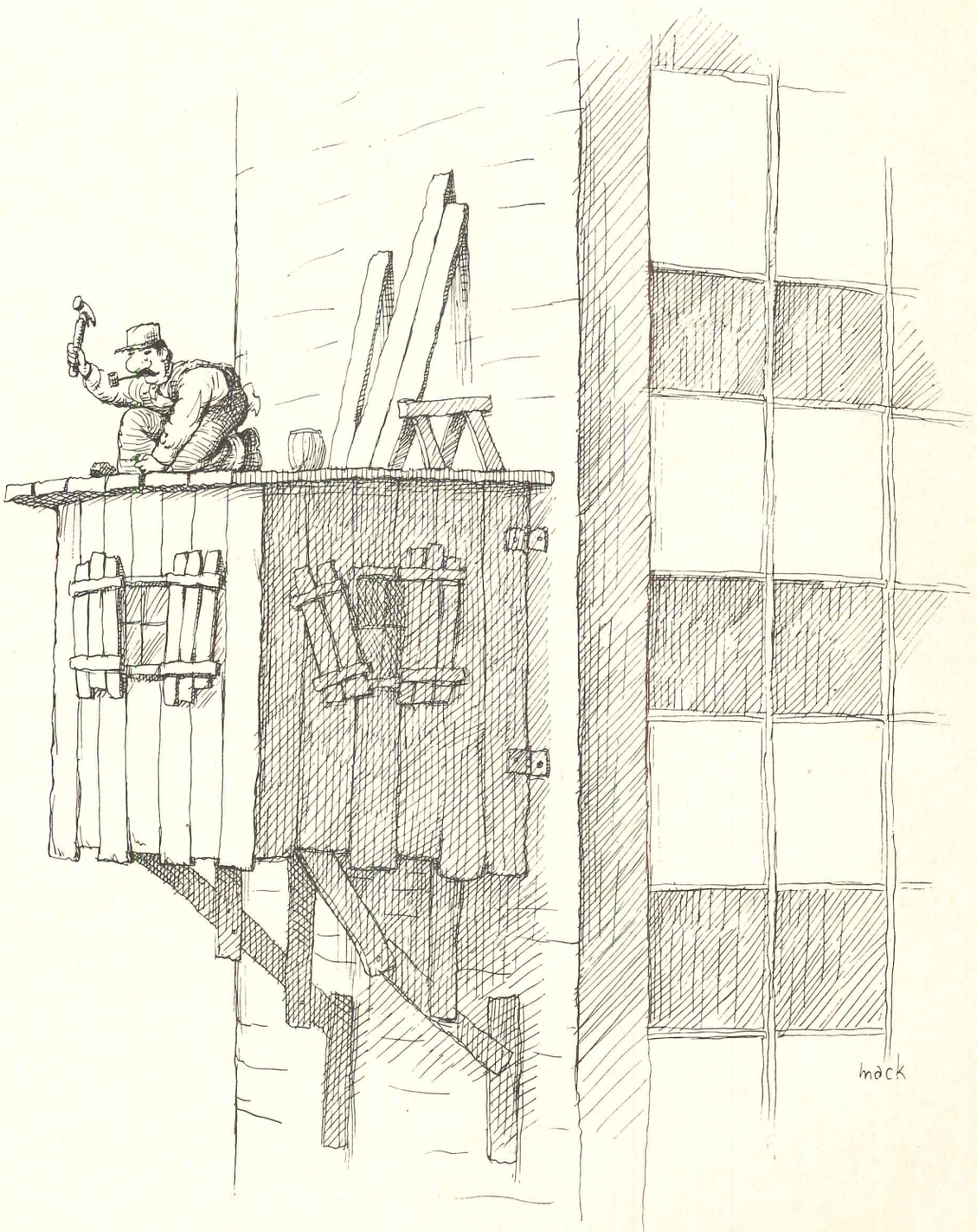
When you overlook facts like these, it won't take long for the communications explosion to disfigure your award-winning, sleek, modern building.

To help you plan for the communications explosion, call 212-393-4537 (collect) for our complete list of Building Industry Consultants.

They'll help you steer clear of Overlooks.

YOUR ANYWHERE ANY THING ANY TIME AT&T NETWORK

# Introducing the Overlook.

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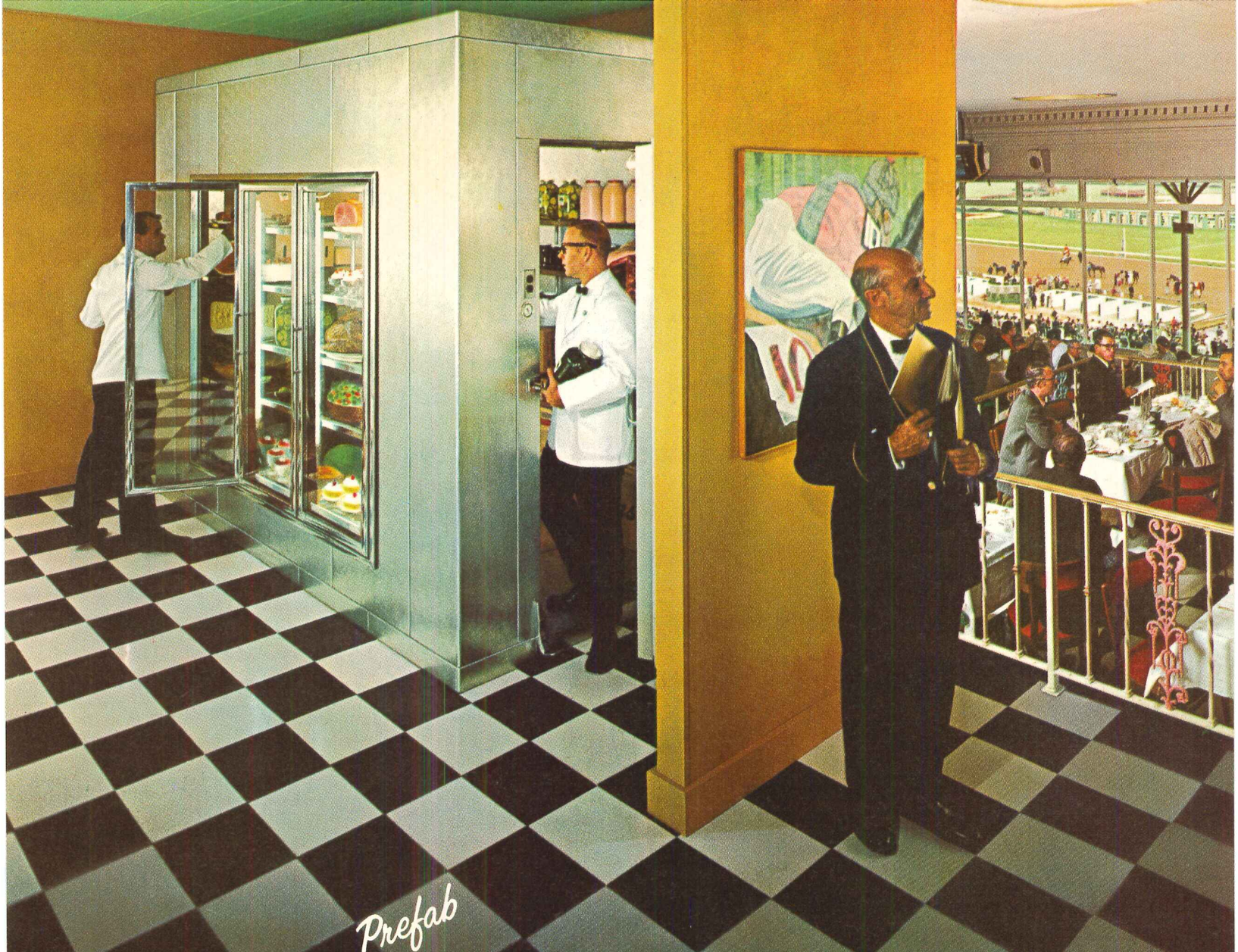

*Prefab*

**Put a Bally Walk-In Cooler/Freezer in the kitchen. In the race to keep up with excited spectators, it's a sure bet to speed service. Sectional panels assemble in any shape or size to provide cooling or low temperature storage space. Bally prefab Walk-Ins can easily be expanded or relocated. Learn about other features from our 32-page booklet and urethane wall sample.**

There's an evolution in the kitchen

Bally

Bally Case & Cooler, Inc
Dept. AR-6, Bally, Pa. 19503

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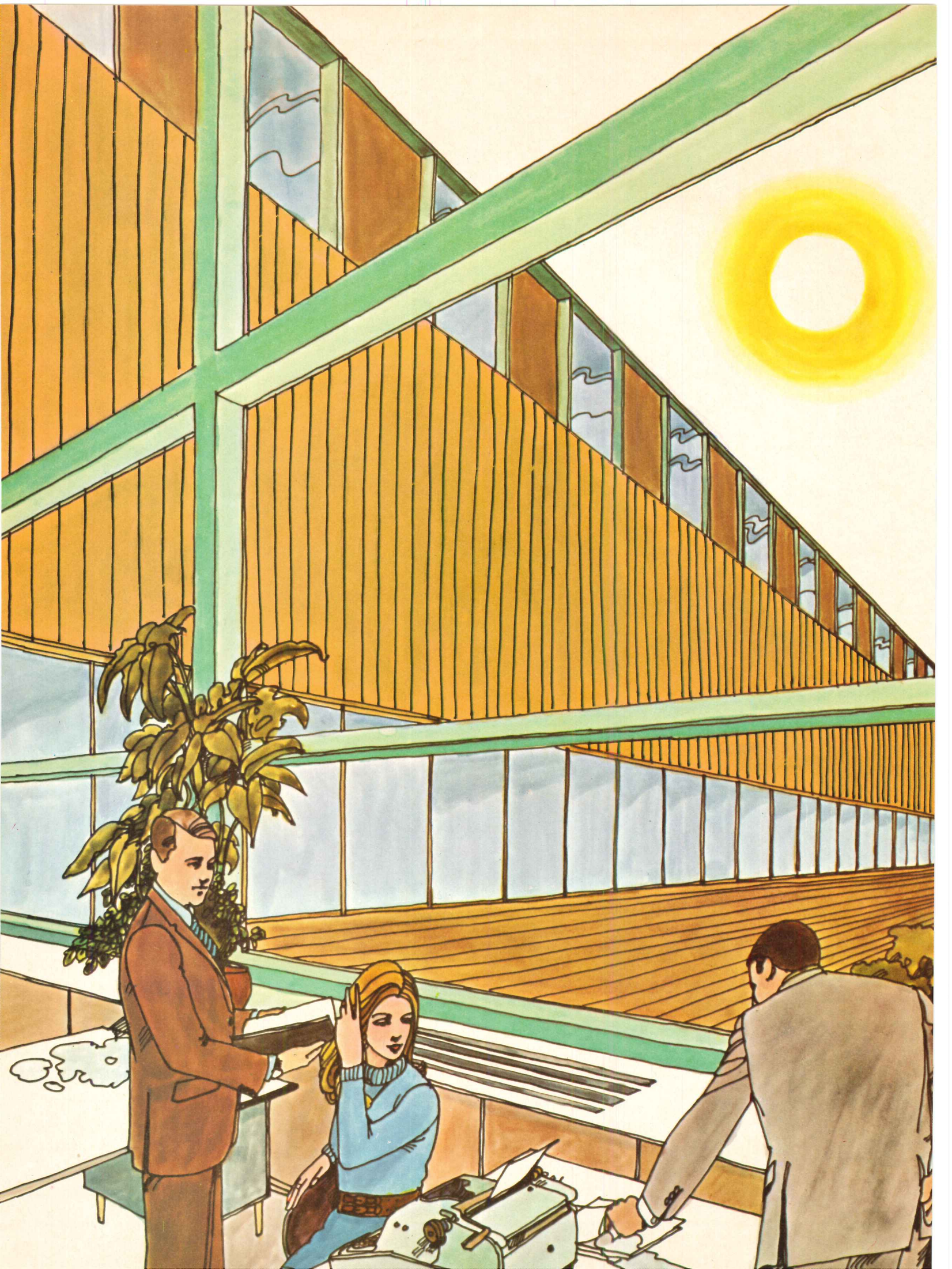


# DURANAR™ fluoropolymer color coatings by PPG assure the longest beautiful life under the sun

Metal buildings are now taking on brilliant architectural colors with a combination of beauty and permanence unsurpassed by any finish. This new super finish is DURANAR fluoropolymer color coatings, factory applied to aluminum and steel.

Panels and extruded trim finished with DURANAR coatings should remain bright and colorful 20 or more years after installation—even when subject to strongest ultraviolet exposure. These tough coatings also offer excellent resistance to chemical attack by industrial acids, alkalis and salts.

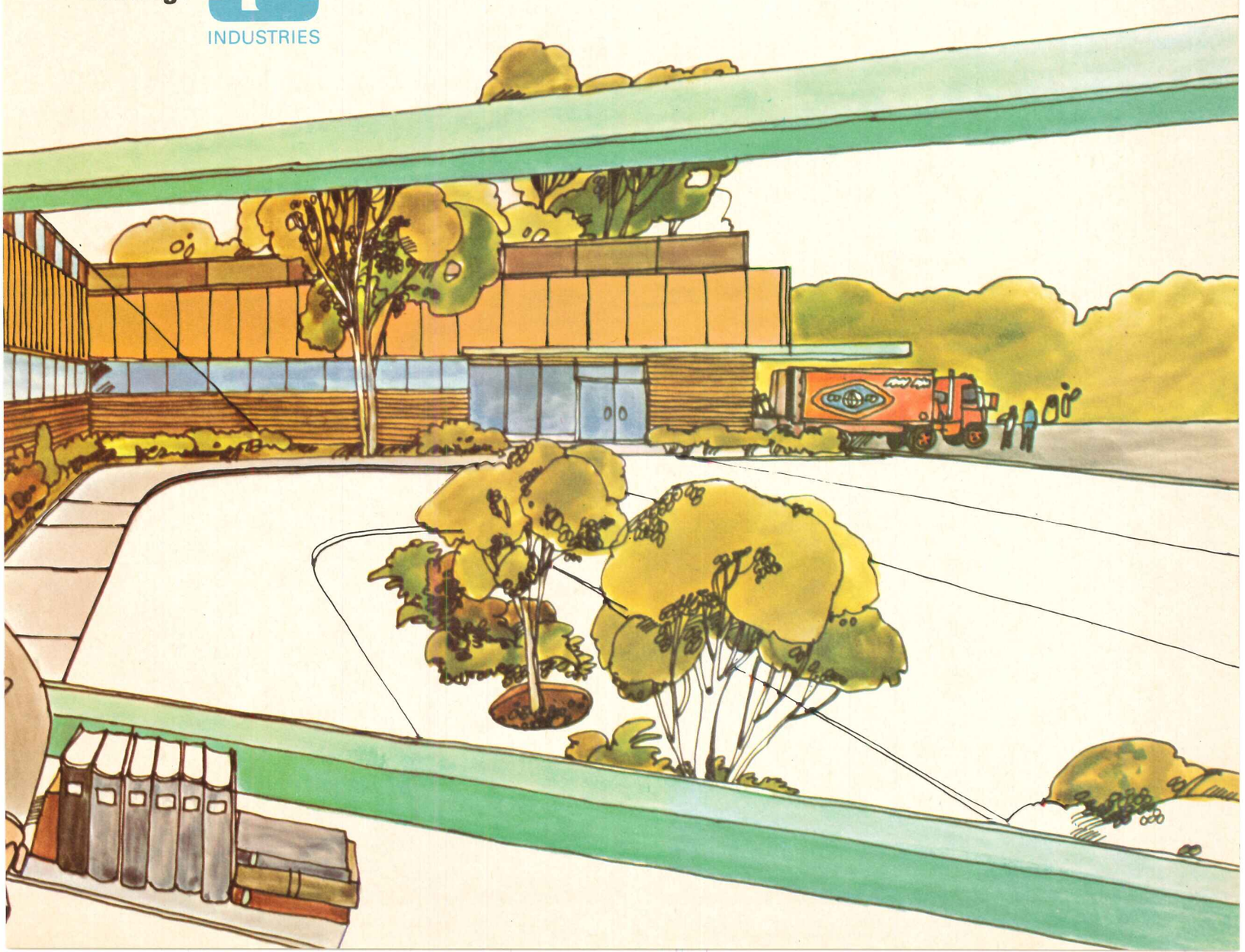
The extra-long color life is achieved by a new pigmentation system developed by PPG which equals the long life of the Kynar 500* fluoropolymer base. DURANAR color coatings utilize a 2-coat factory-applied system to deliver unmatched film flexibility on both steel and aluminum sheets and extrusions. This tough and flexible coating effectively guards against damage in forming and fabrication, shipping and storage, erection and service.

Get full information on this superior new finish for metals from your supplier, Sweet's Architectural File or by contacting Dept. 16W, PPG INDUSTRIES, Inc. One Gateway Center, Pittsburgh, Pa. 15222. Telephone 412/434-3191.

*TM Pennsalt Chemical Corporation

*For more data, circle 34 on inquiry card*

Color Coatings PPG INDUSTRIES



# CHF

# contemporary TABLES

MANGO I. Inspired design, eloquently expressed. Available in mirror chrome, mirror chrome with black edges, black with mirror chrome edges, bronze plate, and flat black.

*One of many new designs from CHF*

CHF COMPANY

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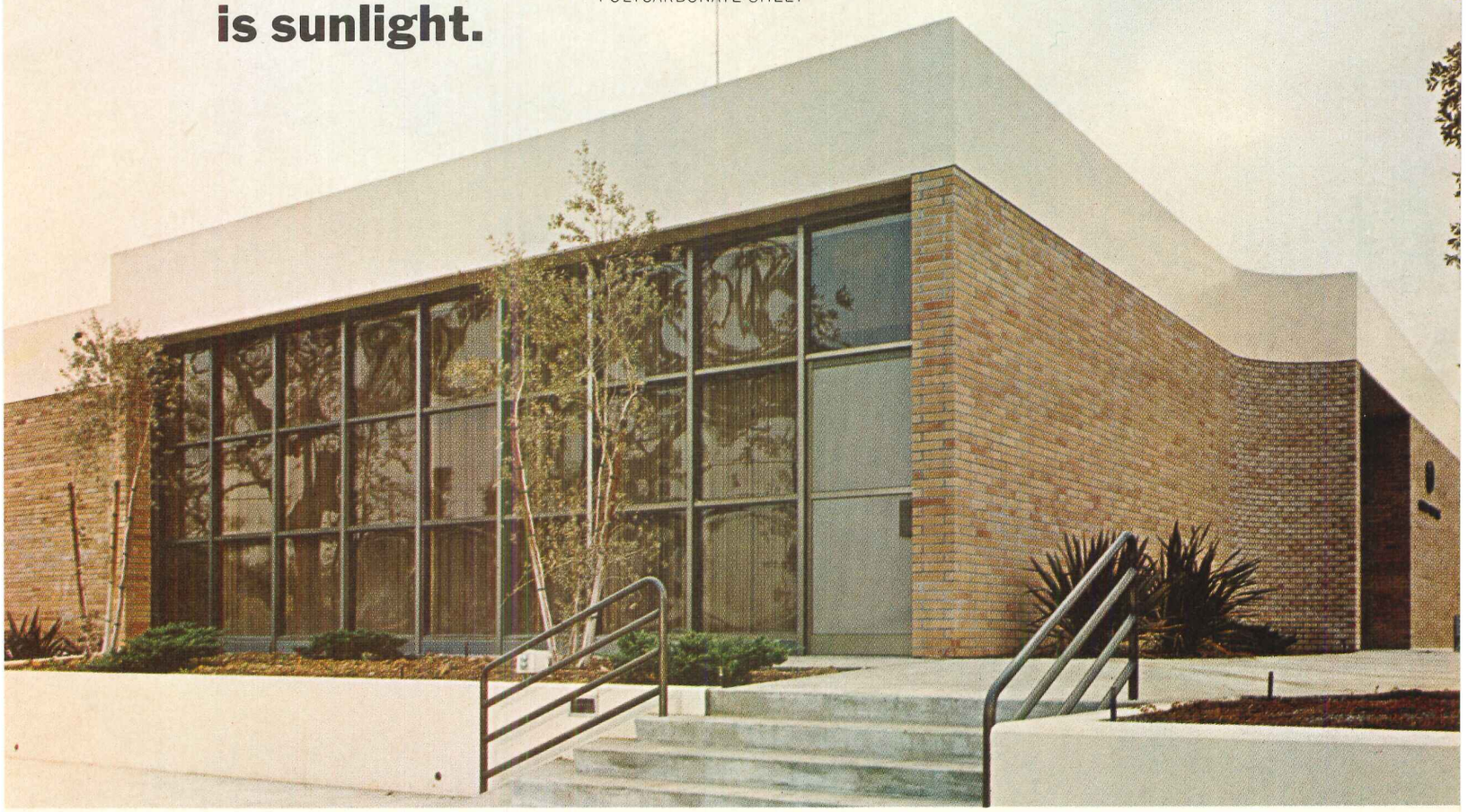
# The only thing that can get through these LEXAN® windows is sunlight.

POLYCARBONATE SHEET



Companies that live in glass houses learn to take the breaks as they come. Not so with General Telephone Company of California. They are protecting complex communications equipment with unbreakable, solar tinted LEXAN SHEET for glazing.

LEXAN just won't break. Thirty times tougher than cast acrylic, it shrugs off rocks, bricks, baseballs. It doesn't crack, chip or shatter even if a bullet penetrates it. Easily cut to any shape, LEXAN SHEET is installed with non-hardening sealing compounds.

All clear? If not, we'll be happy to send you complete data. Just return the coupon...or phone, of course.

LEXAN®

Clear as glass...tough as metal

*For more data, circle 36 on inquiry card*

Section 54F-13
Plastics Department
General Electric Company
One Plastics Avenue
Pittsfield, Massachusetts 01201

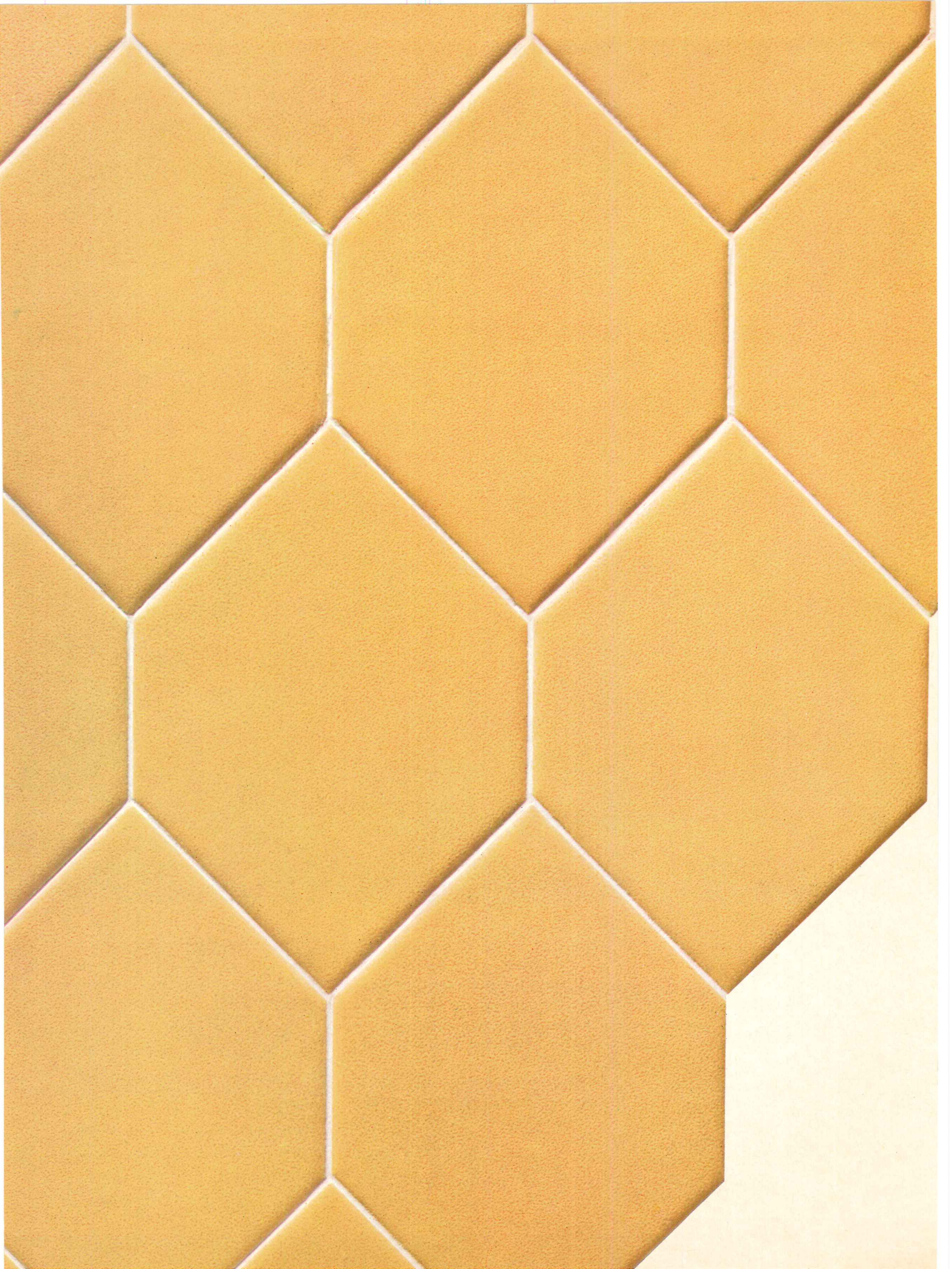
Please send me more facts about unbreakable LEXAN SHEET for glazing.

Name_____

Firm_____

Street_____

City_____ State_____ Zip____



# Meet the tile that doesn't know where to stop.

## Mosaic ceramic tiles climb walls, hit the ceiling, pave the way, and solve more design problems than anyone except you.

The consolidation of the Mosaic and Stylon lines gives you the opportunity to make your selections from the broadest line in the industry. We offer a wide choice of colors, sizes, shapes and finishes. Mosaic is the "just-right" ceramic tile for any application – commercial, residential, industrial or institutional. And . . . floors and walls are color coordinated to permit the harmonious effect you want.

To insure delivery of tile when the job calls for it, Mosaic has 10 plants from coast to coast, 33 regional warehouses and over 150 distributors in every major metropolitan marketing area.

Plus over 30 sales representatives available to supply you with samples and product information. And the most complete design service anyone provides.

Here we give Harvest Gold tile full run of a room and spread it clear across the page. For more on what Mosaic tiles can do for you and your work, write: The Mosaic Tile Company, Box 999, Florence, Alabama 35630. We'll send you our complete Architect's Guide. Or if you'd like, a Mosaic representative will deliver it.

MOSAIC® MOSAIC TILE COMPANY
A DIVISION OF STYLON CORPORATION

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# Cabin Crafts Prescribes LesCare™ Carpet

(For The New Look in Health Care)

Medicenter needed a carpet that would meet unusually hard usage demands. It had to be tough. Powerfully stain resistant. With built-in good looks that stay that way longer with easy, inexpensive maintenance. Cabin Crafts prescribed LesCare carpet, a proven top performer in numerous contract situations.

LesCare carpet's densely tufted construction of solution dyed Acrilan® acrylic makes it highly stain resistant. Joseph Brooks, Medicenter's Assistant Vice President, Contract Service Division, comments: "We specified LesCare carpet for its exceptional wearability, ease of maintenance, beauty and moderate price."

LesCare carpet, available in 18 glowing colors, is just one of Cabin Crafts famous family of stain resistant carpets of solution dyed Acrilan. All are perfect for use in medical institutions as well as other contract installations.

Find out more about the impressive low maintenance costs of carpet as compared to tile; the important bacteriostatic advantages of carpet; safety factors inherent in carpet; acoustical benefits. Write us today for details.

Mail to: Advertising Manager, S. Cam Petty
WestPoint Pepperell, Carpet and Rug Division
Post Office Box 1208, Dalton, Georgia 30720

Name

Address

City State Zip

☐ Please send information regarding Cabin Crafts multi-purpose carpeting.

☐ Please have a Cabin Crafts contract representative call.

SEE US AT
FIRST NATIONAL
EXPOSITION OF CONTRACT
INTERIOR FURNISHINGS
JUNE 22-27, 1969

neocon
CHICAGO

AT THE MERCHANDISE MART
SPACE 1846

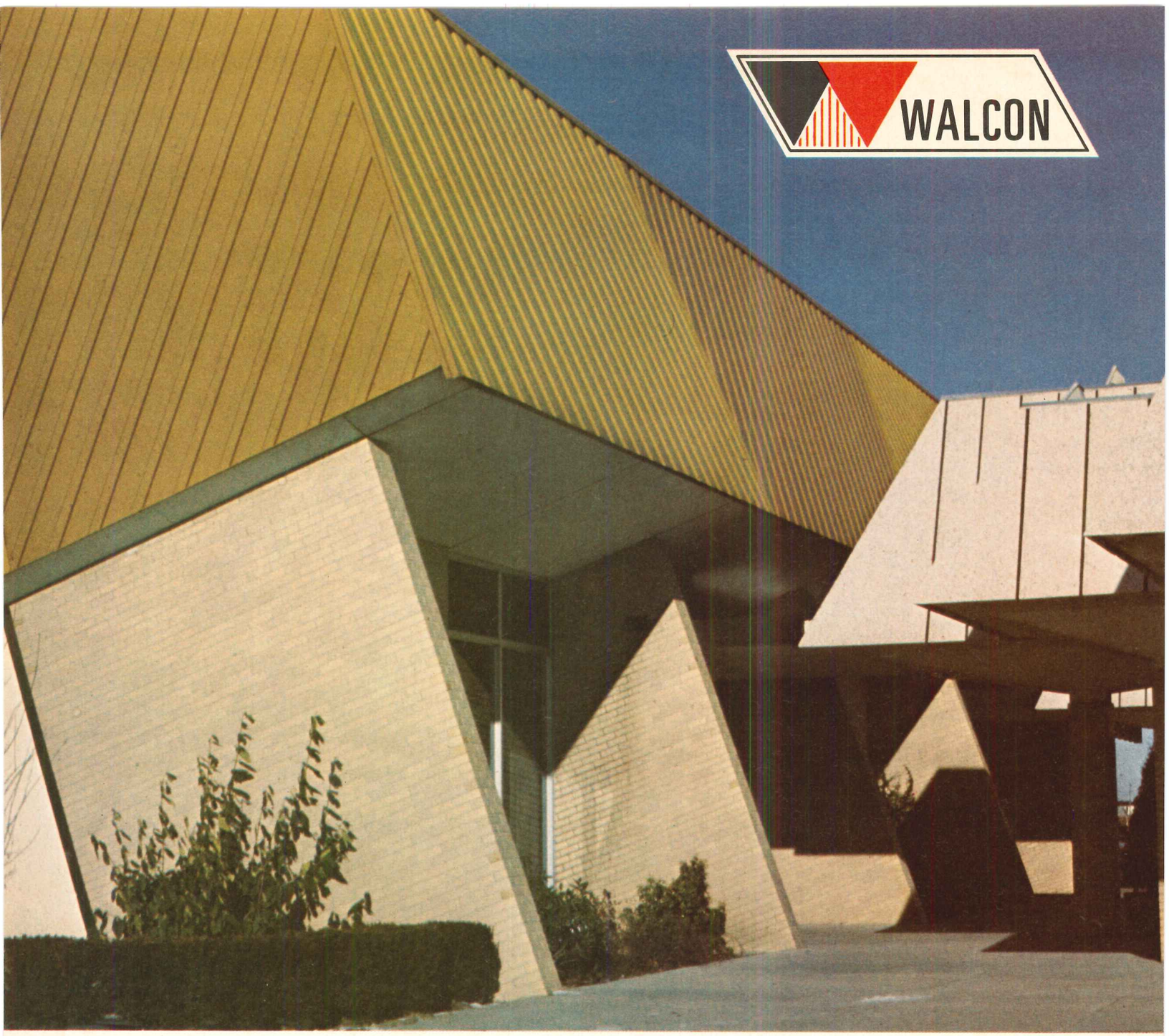
CABIN CRAFTS®

West Point Pepperell
Carpet and Rug Division
Dalton, Georgia 30720

Pictured: Patient's room and (insert) lounge in the new Medicenter in Phoenix, Arizona, featuring Cabin Crafts LesCare carpet. Medicenters of America, Inc. is a national complex of extended care facilities that provide convalescing patients with a comfortable, practical transition from hospital to home.

*For more data, circle 38 on inquiry card*

Monsanto
APPROVED FOR OUTDOOR USE




*AMERICANA THEATER;* Southfield, Michigan.
*OWNER:* Nicholas-George Theaters; Allen Park, Michigan.
*ARCHITECT:* Nordstrom & Samson; Dearborn, Michigan.
*GENERAL CONTRACTOR:* Muzzin & Vincenti; Allen Park, Michigan.

# THERE IS "DESIGN FLEXIBILITY" IN EVERY WALCON WALL SYSTEM.

Creative imagination plus *design flexibility* were combined to produce the unique facade of this ultra-modern theater building.

Walcon's Rol-Line "R" panels with baked enamel finishes in harmonizing colors were installed on various planes to create the designer's concept.

Walcon Metal Wall Systems are available in various combinations of gages in aluminum and steel in virtually any color. Factory or field assembled systems in five standard profiles with a broad selection of surface treatments make Walcon the wall system that is engineered to accommodate Design Flexibility.

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*Metal Wall Systems • Steel Roof Deck • Louvers*

*For more data, circle 39 on inquiry card*

# Interiors for business: an architectural response

Interior design and space planning for business—for which some practice considerations and recent examples appear in the special feature beginning page 129 of this issue—have been among the major services of many architectural firms for many years. The ways in which some of these firms have organized and developed practice in this field illustrate some of the considerations dealt with in the interiors feature. The directions of growth, for example, are obviously determined by the combined forces of business conditions in general and the organizational goals of particular architectural firms. The following brief outlines of how two firms operate in this field underscore the effects of these forces.

The 1961 formation of ISD Incorporated, the interior space design subsidiary of The Perkins & Will Partnership, was a response to both business and practice forces, of course, but its corporate form and subsequent development illustrate the practice methods of this firm in particular. Principals of the partnership maintain that design dynamics thrive under conditions of autonomy and self-direction. It has been a policy of the firm to set up various operating entities of which ISD is one and Perkins & Will Engineers Inc. is another.

ISD was founded with a nucleus group of eight architects and designers in the Chicago office of the partnership. It has since expanded to a second office in New York and a total staff of more than 80. Kenneth Johnson, president of ISD, attributes the over-all growth to flexibility of the firm in providing not only interior design services for business firms, but other supporting services in programing and special research projects. The over-all areas of service of ISD include: planning, programing, interior design, color schedules, graphics and tenant development. One of the assets of the firm is an inventory of rental spaces in metropolitan areas, including the structural modules of each.

Louis Beal, executive vice president for ISD, manages the New York office and is responsible for design and new business. One of the procedures supporting the latter function is a firm-wide new business and marketing committee through which, he says, "cross fertilization has been very helpful." This has had by no means an inbreeding effect since less than 25 per cent of ISD commissions are in buildings designed by The Perkins & Will Partnership.

One of the useful devices ISD has applied to their business space programing service has improved the efficiency of preliminary interviews. Detailed questionnaires are set up for various types of buildings or tenants (banks, Blue Cross, Time Inc., for example). These questionnaires are handled on a person-to-person basis by graduate architects on the staff of ISD in interviews with executives and department heads of the client firms. They serve the double purpose of assuring complete coverage of all pertinent information and enabling the space design firm to begin on-the-spot orientation of clients in some of the implications of their answers.

Following analysis of the questionnaire, full-scale orientation meetings of ISD principals and client executives set up the programing schedule. At this point, sometimes the client can be advised that his preliminary estimates of required space are either too large or too small; or, as in at least one case, the client may be advised that for reasons of departmental relationships, his operation would perform better on eight floors, instead of fewer floors of equivalent total area as had originally been planned. The result, in that case, was a re-selection of tenant space by the client.

One of the recent special projects of the firm was a behavioral research study of the office environment seeking to evaluate four specific sub-environments: spatial, equipment, functional, and non-work spaces such as lobbies and reception areas. The research was conducted for ISD by Dr. Lawrence Wheeler, head of the behavioral research department of the architectural firm, Ewing Miller Associates.

### West coast architectural firm sets up interior design affiliate

An example of the response of an architectural firm to changing demands of the economy was the creation of a separate affiliate out of an interior space planning department of a West Coast architect.

Business Space Design began in 1958 as a department of Naramore Bain Brady & Johanson. At that time most of its work consisted of planning space for tenants in University Properties' office buildings, especially the Washington Building, which was then under construction.

By 1963 the volume of work slowed down temporarily, and the partners of the architectural firm considered the advisability of establishing BSD as a separate affiliate. This seemed to have several advantages, professionally and economically.

1. Architects who might want this planning and design service would probably be reluctant to consult with another architectural firm, but might consult with BSD directly if it were a separate entity. As a matter of fact, some visiting architects from South Africa expressed interest in such an arrangement.

2. The services of a space planning firm would be useful to owners of older office buildings who might not think of consulting a full-service architectural firm regarding remodeling of tenant space.

3. The affiliate company could profitably handle smaller jobs that would be unprofitable for the larger parent company.

Therefore, in 1963 Business Space Design was established as an affiliate, with quarters in a downtown office building five blocks away from the parent firm. It is a separate entity but not a separate company; all staff members are employes of the parent firm. Robert Messer, director of BSD, is a senior associate of NBB&J, a position one step below partner on the organization chart.

Business Space Design does architectural planning of office space as well as interior design. Of the ten staff members, three are licensed architects, two are graduate architects, and two are graduate interior designers.

Business Space Design's work with the parent architect involves only space planning in office buildings. They have no responsibility for the design of the building itself, but are consulted early about the schematics relating to rental modules, bay depths and all areas of the building that affect the rental market. Their comments on the layout of rental space are significant to the basic building design.

ARCHITECTURAL BUSINESS THIS MONTH

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Cost commentary and indexes..... 92

# THE GREAT

## The best air handling system in the world can't purify polluted air. Purafil® can!

Never before has the atmosphere been so laden, so contaminated with pollutants. No matter how fine your air-handling system performs, polluted air ultimately gets inside buildings and plants.

Sometimes you can see the polluted air as smog. Worse, sometimes you can't see it, just smell it. Nearly every situation presents a different problem: the odors and the contaminants are different; and the air moving methods differ as well.

## ventilation

Ventilation used to be the most efficient way to control odors in a building and it would still be if it were not for outside air pollution. Good ventilation air can dilute odors but it cannot remove gaseous pollutants from the air.

In order for the system to operate with any effectiveness at all, it must constantly maintain a continuous flow of good clean air, and this is getting harder and harder to find.

The result, ventilation only serves to move polluted outside air inside. Today this does not answer the problem in most areas. Today's air problem requires a better solution.

The better solution is an air purification system capable of cleaning contaminated air while reducing equipment and operating costs. By recirculating the inside air, an air purification system reduces the amount of outside air needed to maintain a comfortable level. Most important, it offers economical, clean air, free of uncomfortable odors and irritants.

## conditioned outside air

Conditioning air means bringing in outside air and heating or cooling it. But does not mean removing gaseous and odorous pollutants from the air.

The addition of an air purification system can significantly reduce the outside air requirements for the a/c system. With the addition of an air purification system, you use a higher percentage of recirculated air, so smaller heating and cooling units can be utilized to condition the same amount of air. Experience has shown that a reduction of up to 20% in equipment costs can be realized.

You spend less money on equipment, reduce operating cost by utilizing air recirculation, and achieve odor and contaminant-free air in the bargain.

## common methods of air filtration

There are several different air purification methods used to remove odors and gaseous pollutants in conjunction with air handling systems.

## activated charcoal

Charcoal is expensive. True, it can reduce capital equipment cost by allowing maximum air recirculation. But any

# AIR BATTLE

savings incurred are soon offset by the high cost of maintenance. It is short-lived, and it has poor effectiveness at normal odor levels. Upon saturation it desorbs, dumping the contaminants back into the air. It requires expensive removal, regeneration and reinstallation.

In order to regenerate charcoal after it becomes saturated, it is necessary to have a spare supply on hand, or shut down the system while the material is being returned to the factory for regeneration. Besides, charcoal cannot remove certain pollutants from the air.

## scrubbers and washers

This method of air purification is very expensive and is only practical where extremely high corrosive concentrations are prevalent, much higher than normal odor loads.

## electrostatic precipitators

Electrostatic precipitators are designed to remove only particulate pollutants from the air, and they will not remove gaseous or corrosive pollutant odors after one or two days operation. They are expensive and must be cleaned often.

## masking agents

Masking agents are not a method of air purification, but they are employed frequently.

They merely compound the problem by perfuming an offensive atmosphere instead of eliminating the source of the trouble.

## purafil environmental control systems

Oxidation is the best way to eliminate odors and air pollutants. Purafil is the best air purification system utilizing this method. The system is composed of cells filled with pellets of activated alumina impregnated with potassium permanganate. As air passes through the bed of pellets, each odor-carrying molecule is adsorbed, absorbed, oxidized and destroyed. *Therefore, air can be recirculated repeatedly: outside air requirements can be reduced up to 85%.* Operational costs of heating, cooling, cleaning and/or dehumidification are greatly reduced. Purafil has double the service life of charcoal and unlike charcoal, does not desorb upon saturation. *Purafil also offers protection from corrosion for electrical and electronic equipment throughout an installation. In short, it's the most efficient, economical air filtration method on the market.*

It fills the void in air handling technology by solving the often unrecognized problem of gaseous contamination and extends the efficiency of today's equipment.

Let Purafil Environmental Control Systems help you win "The Great Air Battle".

For more information, including a free copy of our booklet, "Purafil; The Product and Its Applications," write Purafil Environmental Control Systems, Borg-Warner Corporation, Washington, West Virginia 26181.

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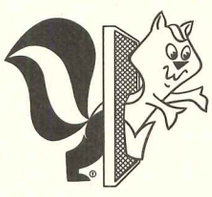

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BORG WARNER®

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# The old neighborhood will never be the same.

This could be the beginning of the end. For airplane hangars as we know them—boxes, big and ugly and wasteful of space.

They're on their way out, because of a man who looks like a college professor. He wears tweedy suits and smokes a pipe and—what do you know, he is a college professor. Charles R. Hutton is his name, Professor of Construction Technology at Purdue.

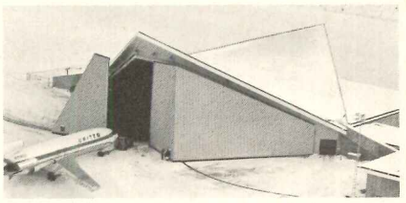
Way back in 1963, he had an idea. Why not build a hyperbolic paraboloid out of steel? As an architectural design, the H.P. was nothing particularly new. But building one of steel—that was unheard of.

The projected advantages of such a structure were obvious and many. A steel hyperbolic paraboloid could be erected quickly, its cost would be low, and its weight far less than for an H.P. built with conventional materials. It would be a dream for schools, theatres, shopping centers. Maybe even airplane hangars.

To prove that the theory could work, Professor Hutton knew he'd need time and support and money. So he took his idea to Inland Steel. And there, he got all three.

Today, six years later, the world's first hyperbolic paraboloid jet airplane hangar has been completed at Wold-Chamberlain Field in Minneapolis. It provides overnight maintenance facilities for United Air Lines Boeing 727's and DC-8's. And what a superb structure it is! Measuring 165 feet long on one side, 125 feet long on the other side and 185 feet wide. Soaring majestically 65 feet into the air. And made almost entirely of Inland-produced steel, like INX-50 high strength steel.

The engineers chose INX-50 because it was the perfect way to reduce the hangar's weight, without a corresponding reduction in all-important yield strength.



It's precisely because of the availability of high-strength steels like INX, that such imaginative structures as the H.P. have become possible. Inland's other high-strength steels are doing their part, too, to modernize the face of America. COR-TEN, TRI-STEEL®, HI-STEEL®, HI-MAN® steels—all are being used more and more to solve construction problems and make new architecture a new reality.

Got any neighborhoods *you* want changed? Send for our free design manual on steel H.P.'s. And start changing.

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**Inland High Strength Steels**

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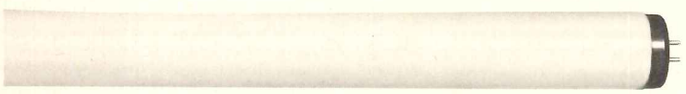
# Titanium.

## It puts an end to premature grayness in fluorescent lamps.



**Westinghouse introduces the lamp with Titanium.**

Other lamps begin to lose their brightness from the moment they come to life. Little by little they turn gray.

By the end of their life, their brightness is reduced by as much as 3% of what you get from Westinghouse lamps with Titanium. Not enough to plunge an office into darkness. Just enough to keep you from getting your money's worth.

Look at it this way. If you had 30 graying fluorescents in the ceiling, they'd only be doing the work of 29.

That's why Westinghouse brought Titanium to light. It's exclusive. Only Westinghouse fluorescent lamps are made with it. And you get all the light you're paying for.

Ask for the light that stays brighter longer. Ask your Westinghouse agent-distributor for the only line of fluorescent lamps made with Titanium.

They won't cost you a cent more to buy and operate than the ones that turn gray before their time.

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

*For more data, circle 42 on inquiry card*

COMMENTARY

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

# Building cost indexes—their compilation, use, and misuse

Cost index numbers have been used, multiplied and misused for more than two centuries, and it is a prudent architect who understands what indexes are and what he can and cannot do with them.

Building cost indexes are devices for measuring overall cost changes by evaluating the effect of changes in a series of key variables so that a comparison of two index numbers for different periods or places will measure changes in costs relative to both time and location. In short, building cost indexes can answer the question: "How much have costs gone up?" How accurate that answer will be is determined by the resources of the compiler and the judgment of the user.

### Components of the index limit scope of its use

Each building cost index author (we have been able to count 22—see table 1) develops his index in one of two ways:

1. For each index period a standard base building is repriced and the percentage increase is applied to the previous index to arrive at the new index.
2. A weighted "mix" of certain labor and materials items (occasionally overhead and general conditions items are included) presumably representative of a typical building is priced, and the increased price of the "mix" is reflected in the index series. The labor and material items can be as few as four or as many as twenty, depending on the requirements of the author.

Since the choice of labor and materials items varies from author to author, the reported cost increases will also vary. Table 1 indicates the wide range of variance among authors where an average annual increase has been computed from reported figures. One of the principal reasons for the much larger annual cost increases reported recently was the effect on indexes of the sharp increase in lumber prices during the last half of 1968.

One reasonable criticism of the compilation of indexes is that an increase factor developed by indexes is applied to a known historical cost to determine the current cost, and that the building is not repriced. (There are one or two exceptions in the attached list where the building is repriced.) However, if the index author reflects changing prices in his formula that are the important ones, the reflected cost changes should be sufficiently accurate to use when a repricing is too time consuming or expensive.

Building cost indexes, when they are computed from local price situations, are a valuable guide to relative construction costs, and valuable for extending the trend of historical costs to produce current costs. However, any accurate determination of new costs of buildings is difficult because of the many variables affecting such costs. Many cost items change at different rates with time and place and market conditions. If any generalized correlation is to be drawn, it must be based on a general or national view of total cost increases and wage rate increases. But many other cost items can affect the local, overall increase significantly.

In practice an ideal building cost index must involve productivity, efficiency, changes in profit percentages, effect of taxes, etc. However, to quote the Department of Labor: "A perfect index is an illusory phantom." Not only is each building in itself unique, but there are so many influences on its cost that they are virtually impossible to measure. A theoretically ideal building cost index could be established by the industry, but it would require an almost unlimited expenditure for the necessary price measurements.

### Judgment factors are critical in an erratic world

The architect should use indexes, or increases derived therefrom, with caution. If bidders working with identical plans and specifications can commit themselves to contract amounts with a ten per cent or more spread from high to low, and index authors can report increases with a thirty per cent or more spread from high to low (inputs and weightings vary from author to author), then the architect *must* apply cost increases derived from indexes with extreme discretion. If the architect applies too small an increase to his preliminary estimates, the building may be in danger of overrunning its budget. Conversely, if too large an increase is assumed, the project may never proceed beyond this stage.

Recent cost increases have been both larger and more erratic than experienced before 1967, and they are expected to continue this trend.

**Table I: Average Annual Cost Increase**

| Cost Index Author | Index Type | Geographical Coverage | 1947 Index | 1967 Index | Increase 20-year | Average Annual |
|---|---|---|---|---|---|---|
| Aberthaw Construction Co., Boston, Mass. | Industrial | New England | 304 | 628 | 106% | 5.3% |
| American Appraisal Co., Milwaukee, Wis. | Industrial | 30 cities | 430 | 909 | 110% | 5.5% |
| Associated General Contractors of America, Washington, D.C. | All buildings | 12 cities | 296 | 657 | 121% | 6.05% |
| Austin Company, Cleveland, Ohio | Industrial | Central & Eastern | 301 | 494 | 64% | 3.2% |
| Boeckh Division, The American Appraisal Co., Milwaukee, Wis. | Commercial and industrial | 20 cities | 323 | 677 | 110% | 5.5% |
| H. F. Campbell Construction Co., Inc., Detroit, Mich. | Industrial | 17 cities | commences 1961 | | | |
| Chemical Engineering, McGraw-Hill, Inc., New York, N.Y. | Chemical plants | not specified | 64.8 | 109.5 | 69% | 3.5% |
| U.S. Dept. of Commerce, Washington, D.C. | All buildings | composite | 67 | 127 | 89% | 4.5% |
| Fruin-Conlon Contracting Co., St. Louis, Mo. | Industrial | St. Louis | 347 | 685 | 97% | 4.9% |
| George A. Fuller Co., New York, N.Y. | Commercial and industrial | Eastern cities | 354 | 695 | 96% | 4.8% |
| "Handy-Whitman," Whitman, Requardt & Assoc., Inc., Baltimore, Md. | Public utilities | entire country | 347 | 750 | 116%E | 5.8% |
| Marshall and Stevens, Inc., Los Angeles, Calif. | All buildings | 237 cities | 338 | 672 | 99% | 5.0% |
| W. L. Nelson, Tulsa, Okla. | Refineries | not specified | 117 | 286.6 | 145% | 7.7% |
| Port of New York Authority, New York, N.Y. | Hangar costs | New York | 136 | 341 | 150% | 7.5% |
| Railroad Construction Cost Indexes, I.C.C., Washington, D.C. | Stations and office buildings | not specified | 333 | 590 | 77%E | 3.8% |
| Bureau of Reclamation, Denver, Colorado | General buildings | Western states | 82 | 170 | 108% | 5.4% |
| Smith, Hinchman, & Grylls, Inc., Detroit, Mich. | All buildings | not specified | 371 | 703 | 89% | 4.5% |
| Turner Construction Co., New York, N.Y. | Industrial and commercial | Eastern cities | 382 | 695 | 82% | 4.1% |
| Dow Building Cost Calculator, New York, N.Y. | All buildings | 187 major U.S. cities | 181 | 297.5 | 63% | 3.5% |
| Factory Mutual System, Norwood, Mass. | Industrial and residential | Entire country | 180 | 355 | 97% | 4.9% |
| Engineering News Record, McGraw-Hill, Inc., New York, N.Y. | Construction | 22 cities | 413 | 1070 | 159% | 8.0% |
| Engineering News Record, McGraw-Hill, Inc., New York, N.Y. | All buildings | 22 cities | 313 | 671 | 112% | 5.6% |

E = Estimate

# INDEXES AND INDICATORS

*Dodge Building Cost Services*
*McGraw-Hill Information Systems Company*

## BUILDING COST INDEXES

The information presented here indicates trends of building construction costs in 21 leading cities and their suburban areas (within a 25-mile radius). Information is included on past and present costs, and future costs can be projected by analysis of cost trends.

The indexes are computed on a basis of 40 per cent labor rate and 60 per cent materials price. Wage rates for nine skilled trades, together with common labor, are used. Prices of four common building materials are included for each listed city.

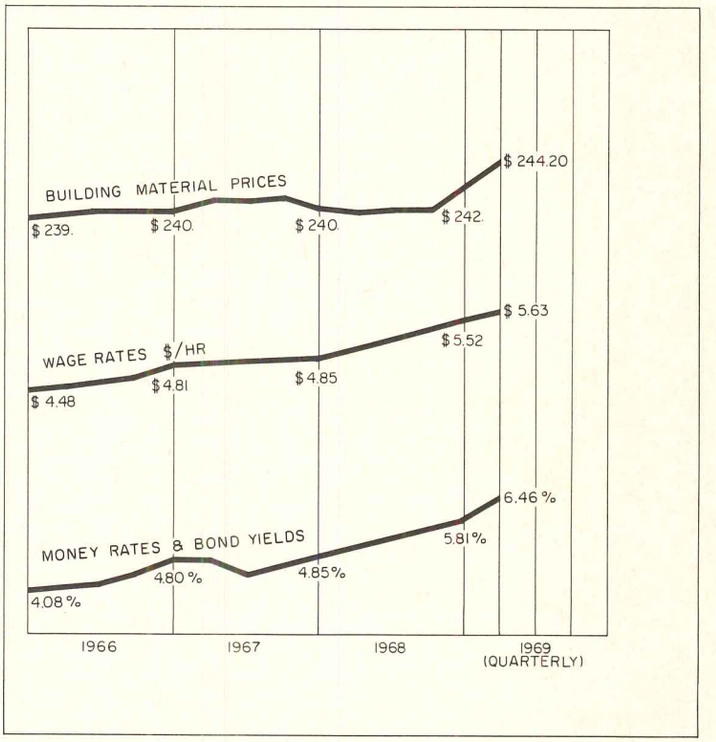
**JUNE 1969**

| Metropolitan area | Cost differential | Current Index residential | Current Index non-res. | % change year ago res. & non-res. |
|---|---|---|---|---|
| U.S. Average | 8.6 | 301.4 | 321.0 | +4.58 |
| Atlanta | 7.4 | 349.0 | 370.2 | +5.51 |
| Baltimore | 7.9 | 299.2 | 318.3 | +2.96 |
| Birmingham | 7.4 | 273.1 | 293.6 | +3.76 |
| Boston | 8.4 | 267.5 | 283.1 | +3.41 |
| Chicago | 8.9 | 329.6 | 346.7 | +3.51 |
| Cincinnati | 9.1 | 296.7 | 315.3 | +6.47 |
| Cleveland | 9.8 | 321.1 | 341.2 | +5.76 |
| Dallas | 7.7 | 281.9 | 291.2 | +5.60 |
| Denver | 8.2 | 302.9 | 322.0 | +4.12 |
| Detroit | 9.4 | 316.4 | 331.9 | +5.81 |
| Kansas City | 8.3 | 270.1 | 285.9 | +5.14 |
| Los Angeles | 8.4 | 303.8 | 332.4 | +3.90 |
| Miami | 8.5 | 299.9 | 314.8 | +5.75 |
| Minneapolis | 8.7 | 296.8 | 315.5 | +3.69 |
| New Orleans | 8.0 | 274.4 | 290.7 | +5.68 |
| New York | 10.0 | 310.5 | 334.0 | +3.03 |
| Philadelphia | 8.6 | 294.8 | 309.5 | +4.05 |
| Pittsburgh | 9.2 | 283.9 | 301.8 | +5.04 |
| St. Louis | 9.1 | 294.7 | 312.2 | +4.55 |
| San Francisco | 8.7 | 389.9 | 426.5 | +4.90 |
| Seattle | 8.5 | 273.1 | 305.2 | +3.59 |

Differences in costs between two cities may be compared by dividing the cost differential figure of one city by that of a second; if the cost differential of one city (10.0) divided by that of a second (8.0) equals 125%, then costs in the first city are 25% higher than costs in the second. Also, costs in the second city are 80% of those in the first (8.0÷10.00=80%) or they are 20% lower in the second city.

## ECONOMIC INDICATORS

Indicators are intended to show only general direction of changes.
BUILDING MATERIALS—The U.S. average price of a "package" of common materials.
WAGE RATES—The U.S. average wages of nine skilled trades and common labor. Fringe benefits are included.
MONEY RATES AND BOND YIELDS—An arithmetic average of the latest prime rate, short term prime commercial paper rates, and state and local government AAA bond rates.




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

1941 average for each city = 100.00

| Metropolitan area | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 (Quarterly) 1st | 2nd | 3rd | 4th | 1969 (Quarterly) 1st | 2nd | 3rd | 4th |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| U.S. Average | 264.6 | 266.8 | 273.4 | 279.3 | 284.9 | 286.6 | 297.5 | 301.5 | 302.6 | 309.3 | 310.0 | 314.9 | | | |
| Atlanta | 294.7 | 298.2 | 305.7 | 313.7 | 321.5 | 329.8 | 335.7 | 345.6 | 346.7 | 352.3 | 353.1 | 364.2 | | | |
| Baltimore | 269.9 | 271.8 | 275.5 | 280.6 | 285.7 | 290.9 | 295.8 | 302.9 | 304.1 | 307.9 | 308.7 | 311.4 | | | |
| Birmingham | 249.9 | 250.0 | 256.3 | 260.9 | 265.6 | 270.7 | 274.7 | 278.5 | 279.5 | 283.6 | 284.3 | 288.4 | | | |
| Boston | 237.5 | 239.8 | 244.1 | 252.1 | 257.8 | 262.0 | 265.7 | 269.3 | 270.3 | 276.3 | 277.1 | 278.2 | | | |
| Chicago | 289.9 | 292.0 | 301.0 | 306.6 | 311.7 | 320.4 | 328.4 | 329.4 | 330.0 | 338.7 | 339.5 | 340.4 | | | |
| Cincinnati | 257.6 | 258.8 | 263.9 | 269.5 | 274.0 | 278.3 | 288.2 | 291.4 | 292.5 | 301.8 | 302.6 | 309.8 | | | |
| Cleveland | 265.7 | 268.5 | 275.8 | 283.0 | 292.3 | 300.7 | 303.7 | 316.5 | 318.3 | 330.7 | 331.5 | 334.9 | | | |
| Dallas | 244.7 | 246.9 | 253.0 | 256.4 | 260.8 | 266.9 | 270.4 | 272.3 | 273.4 | 281.0 | 281.7 | 287.2 | | | |
| Denver | 270.9 | 274.9 | 282.5 | 287.3 | 294.0 | 297.5 | 305.1 | 304.9 | 306.0 | 311.7 | 312.5 | 317.0 | | | |
| Detroit | 264.7 | 265.9 | 272.2 | 277.7 | 284.7 | 296.9 | 301.2 | 309.2 | 310.4 | 315.5 | 316.4 | 326.8 | | | |
| Kansas City | 237.1 | 240.1 | 247.8 | 250.5 | 256.4 | 261.0 | 264.3 | 267.5 | 268.5 | 277.2 | 278.0 | 281.0 | | | |
| Los Angeles | 274.3 | 276.3 | 282.5 | 288.2 | 297.1 | 302.7 | 310.1 | 312.0 | 313.1 | 319.3 | 320.1 | 323.7 | | | |
| Miami | 259.1 | 260.3 | 269.3 | 274.4 | 277.5 | 284.0 | 286.1 | 293.1 | 294.3 | 304.5 | 305.3 | 309.6 | | | |
| Minneapolis | 267.9 | 269.0 | 275.3 | 282.4 | 285.0 | 289.4 | 300.2 | 300.0 | 301.0 | 309.0 | 309.4 | 310.6 | | | |
| New Orleans | 244.7 | 245.1 | 248.3 | 249.9 | 256.3 | 259.8 | 267.6 | 270.6 | 271.6 | 273.9 | 274.2 | 285.5 | | | |
| New York | 270.8 | 276.0 | 282.3 | 289.4 | 297.1 | 304.0 | 313.6 | 315.9 | 317.0 | 320.6 | 321.4 | 324.9 | | | |
| Philadelphia | 265.4 | 265.2 | 271.2 | 275.2 | 280.8 | 286.6 | 293.7 | 293.3 | 294.2 | 300.9 | 301.7 | 304.6 | | | |
| Pittsburgh | 250.9 | 251.8 | 258.2 | 263.8 | 267.0 | 271.7 | 275.0 | 293.0 | 284.2 | 291.3 | 293.8 | 297.0 | | | |
| St. Louis | 256.9 | 255.4 | 263.4 | 272.1 | 280.9 | 288.3 | 293.2 | 293.7 | 294.7 | 303.6 | 304.4 | 306.8 | | | |
| San Francisco | 337.4 | 343.3 | 352.4 | 365.4 | 368.6 | 386.0 | 390.8 | 396.4 | 398.0 | 401.9 | 402.9 | 415.6 | | | |
| Seattle | 247.0 | 252.5 | 260.6 | 266.6 | 268.9 | 275.0 | 283.5 | 286.2 | 287.2 | 291.6 | 292.2 | 296.1 | | | |

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



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CURRENT TRENDS IN CONSTRUCTION

*Robert M. Young*
*Senior Economist*
*McGraw-Hill Information Systems Company*

# Industry plans another increase in capacity

American manufacturing firms are starting an eighth straight year of planned increase in spending on new plants and equipment. Prior to this time, the typical investment cycle was made up of three or four—five, at the most—years of rising investments followed by one- or two-year retrenchments in which spending dropped from 10 to 50 per cent. By following this sequence, increased capacity and gains in actual production, which usually grow at greatly differing rates, were brought into line.

The latest period hasn't been much different from earlier ones as far as the relationship between output and capacity is concerned. Annual gains in industrial production have ranged from nine per cent in 1966 down to one per cent in 1967. The rate at which plant capacity has been utilized has varied from over 90 per cent in 1966 to 81 per cent in late 1967. The utilization rate is now about 85 per cent, or eight points below usual goals.

Despite these fluctuations in growth, new capacity has been added at a steady five to six per cent rate in each of the past five years. What's apparently changed is industry's *attitude* toward investment. The severity of business cycles before World War II, as exemplified by the boom of the 1920's followed by the great depression in the Thirties, tended to focus attention on short-run considerations, or even on after-the-fact responses to business conditions. If business was good last year, expand; if it was bad, hold off new investment.

Since the war, greater confidence has been developed in the underlying strength of the American economy. Although shortcomings in fiscal and monetary management persist—the current high rate of inflation underscores this point—the tools of economic policy have nonetheless gradually reduced the likelihood of sharp year-to-year changes in business activity, while practically eliminating the familiar cycle of boom and recession. As a result, *long-term* planning has achieved increasing prominence in American business.

The results of this shift in attitudes toward investment planning are showing up quite dramatically at the present time.

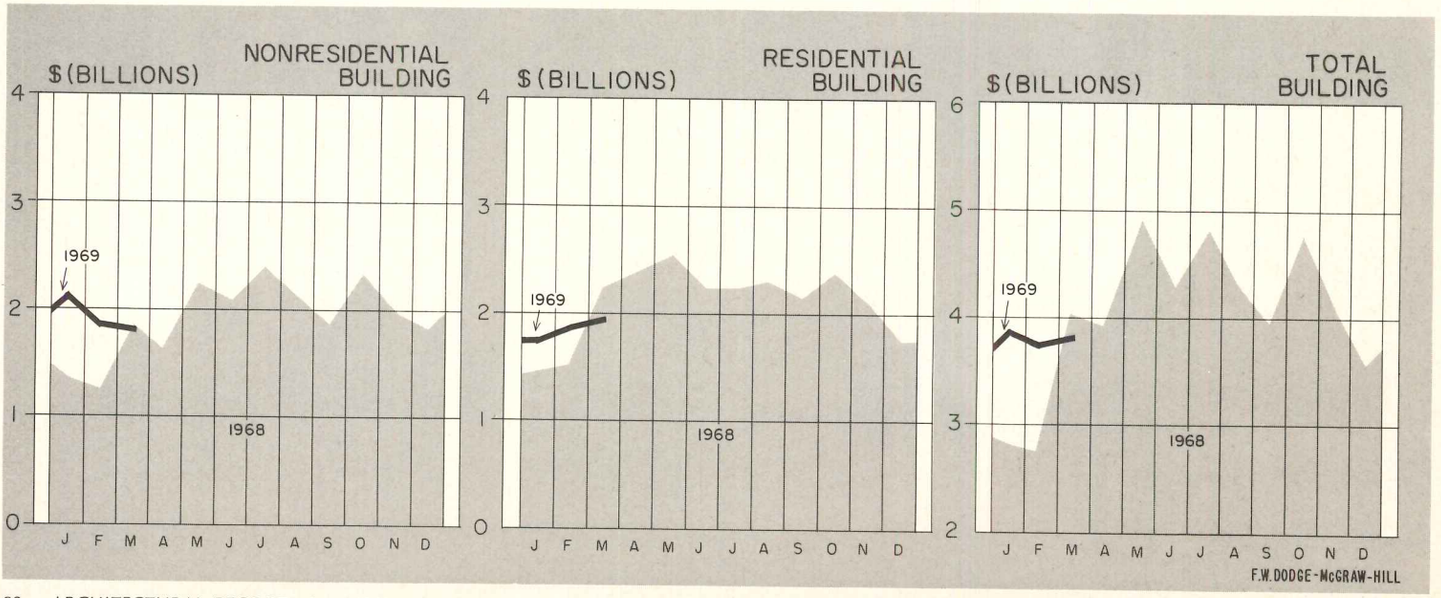
The current business outlook is cloudy at best. Fiscal and monetary policies are aimed at sharply reducing the rate of economic growth in an attempt to contain inflation, and there is little doubt that they will be at least partially successful before the year end. Industry is faced with the prospect of a sharp cut-back in defense spending, which had contributed substantially to recent gains in output. Operating capacity is well below the "desired" rate, and has been declining slightly over the past year.

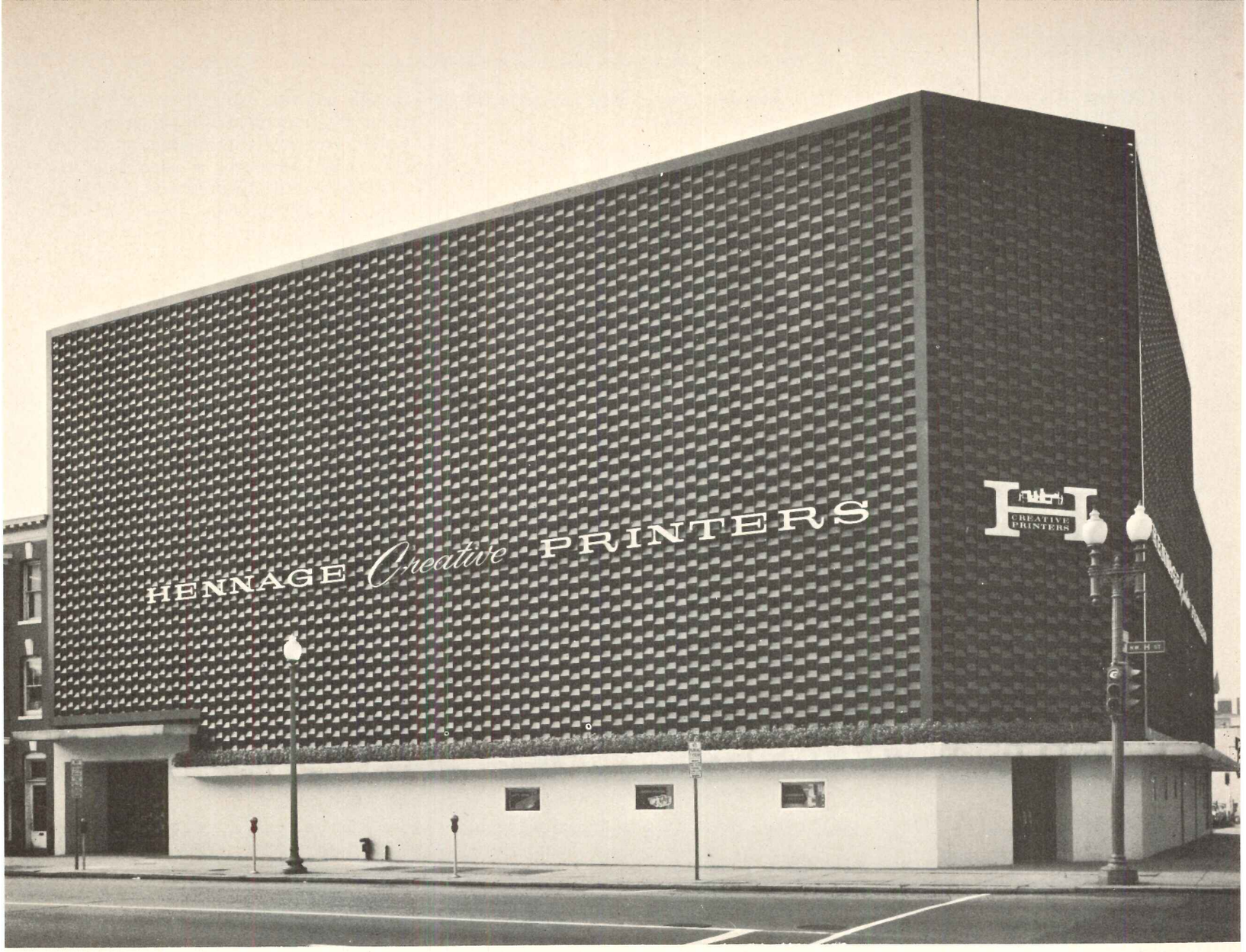
In the face of this discouraging outlook, the latest McGraw-Hill survey of investment plans reveals that manufacturers are planning to increase their outlays for new plant and equipment 13 per cent in 1969—well above the gains of the past two years and just short of the boom level increases of the mid-sixties. Even more important, however, is the fact that they expect investment in each of the three following years to exceed that of the current year. This is the first time in the history of the survey that long-term investment plans have topped the short-range goal.

One reason for the bullish plans for 1969 is an expected seven per cent increase in sales. But since capacity will be increasing by the same amount, this will still leave the operating rate of all industry well below the desired level. The real clue lies in the outlook for the future. The survey reveals an expected 24 per cent jump in output during the following three years, while the rising level of investment will increase capacity by only 18 per cent. Employment, meanwhile, will be rising only half as much as output. Clearly, then, manufacturers are planning now for the future capacity and growth in productivity to a much greater extent than they have in former years.

Emphasis on *long-term* planning should result in a much smoother year-to-year pattern in capital spending, and hence in industrial construction.

## Building activity: monthly contract tabulations






ARCHITECT: S. THOMAS STATHES, A.I.A., KENSINGTON, MD.

# "MONUMENTAL"—LARGE SCALE BORDEN DECOR PANEL

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The facade illustrated is the result of close cooperation between Mr. Joseph Hennage, head of the printing firm, and Borden's architectural department. This new design uses structural tees at 12" o.c. and large 7" reversing tabs which give approximately 80% closure to the screen. The resultant strong shading effect nearly eliminates vision of the building behind the screen.

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# LETTERS

**Coverage of a young architect's work**

On behalf of my associates and myself, I would like to thank you and your staff for the superb coverage you gave our office in your April issue. The article has brought nothing but the most favorable comments from my colleagues here in the greater Boston area.

It is always reassuring to see the active interest that you and your staff take in young, less well established architectural firms such as our own. We are deeply grateful for the honor you have given us by such nation-wide exposure.

*Earl R. Flansburgh, A.I.A.*
*Cambridge, Massachusetts*

**A.I.A. Brochure**

I have just read your critique of the A.I.A. Brochure (April Perspectives). Your flattering remarks will go a long way to give the new P.R. Committee a sense of accomplishment. Being its first Chairman and being the guy responsible for the booklet, obviously I am very pleased.

As far as the credits go, the reason we chose the listing in the back is that I felt it was the only method that could be used to properly give credit while at the same time not intend to single out a few individuals at the expense of their fellow professionals. The brochure as you know represents the Institute and the photographs represent the work of individuals.

*Philip J. Meathe, F.A.I.A.*
*Smith, Hinchman & Grylls Associates, Inc.*
*Detroit*

**Bronx Community College**

Thank you very much for publishing photographs of Bronx Community College in your April Buildings in the News. The credit, in addition to listing Benjamin Moscowitz as partner-in-charge, should have listed me as chief designer.

*Gautam B. Shah*
*de Young & Moscowitz &*
*Harry M. Prince & Associates*
*New York City*

**Springboard to response**

I have studied with interest your February article in Perspectives concerning the design (?) of ugliness. No doubt conditions in Ohio are different from conditions in Louisiana, and therefore Mr. William B. Morris, I am sure, was relating conditions as he found them in his own locality. There is considerable doubt in my mind as to which state represents the most prevalent situation throughout our Nation.

Perhaps one of the first conditions contributing to the ugliness in communities in Louisiana is the fact that a large proportion of the buildings (many of them quite substantial) are not designed by architects. Louisiana's registration laws permit the design of buildings by engineers, a policy which may be common in other states as well. Architects do not possess all of the design ability present in the human race and there are many engineers who are skilled designers. However, others regard the design of buildings merely as a secondary function which may be fulfilled by copying similar buildings. This situation is compounded by those architects and engineers who are believed to merely lend their name to a project by affixing their stamp to plans prepared by the owner or a draftsman.

Another type of building not designed by architects, which is finding increasing acceptance with the public, is the prefabricated metal building. Many prospective clients decide that they do not wish to build when they are given an honest appraisal of building costs by their architect, with the architect's appraisal, of course, based upon their stated requirements. These prospective clients will then frequently accept a good sales pitch by a metal building salesman selling a standard building meeting few of the requirements with which the architect was burdened. While there are circumstances under which metal buildings furnish practical solutions, it is difficult to make a standard metal building into an


**Now you see it.**

aesthetic masterpiece.

In our own experience, gathered during many years in Louisiana, we have not found very many clients capable of thinking beyond the facade of a building (if the building is on a corner, they may think in terms of two facades). As a result, many clients will not only request that the architect use the most economical treatment possible on the remainder of the building but will also dictate that he use items which actually destroy all possibility of aesthetic quality for the total concept. A drive around the city of Baton Rouge reveals ugly mechanical equipment protruding from the roofs of many of our low-rise buildings, and conversations with the architects who designed these buildings inform us that the client insisted upon this equipment installed in this fashion because it was least expensive. We also find large blank concrete block walls where no effort was made to achieve aesthetic appeal because the client frowned upon the expenditure of the few extra dollars required to achieve a minimum of aesthetic quality in these walls. Not all clients are responsible for the ugliness of buildings characterized by this trait yet, at least in Louisiana, I believe that responsibility for ugliness rests far more frequently with the client than with the architect, in architect-designed buildings.

Serious discussions with architects during the last two years reveal that many architects in Louisiana feel that the profession is facing some type of profound change, the exact character of which is not entirely apparent as yet. The increasing cost of construction is driving many owners, including some public agencies, to turn to the "complete package" type of construction wherein the owner contracts with a firm to design and build his building within a certain stipulated sum. This creates somewhat of a problem for public agencies, which are required by law to accept bids on all of their building construction. However, the component systems have provided somewhat of an alternative by permitting the bulk of a building to be bid under component systems. This is, of course, particularly effective in buildings where one design may be repeated, as in schools. It also limits the amount of architectural service required. An increasing number of owners are willing to sacrifice the benefit of individual design for their buildings in order to achieve the economy available by this approach.

At a luncheon with architects and engineers during the past few days, the thought was expressed by several of the architects that we are approaching a return to the fundamental concept of the architect as the "master builder." This approach is frowned upon by many architects and by some professional organizations, yet it does supply the answer to some of the problems facing the profession today (i.e., the unwillingness of an owner to add an architect's fee to the total cost of a building which he already feels is too expensive and the unwillingness of an owner to spend any added money to achieve aesthetic quality). We all recognize, of course, that this approach would create other problems which might be even more serious and difficult to resolve (i.e., limitation of bids, the introduction of monopolistic practices, the stifling of an independent creative approach), yet many architects recognize that changes will be made within the very near future and that those changes will occur with or without the consent of their profession. Perhaps magazines can assist in exploring the problems and presenting constructive views of laymen as well as of professionals.

I must confess that I have used the information in your column as a springboard to discuss other problems of major concern to architects. However, one of the primary responsibilities of journalism is to stimulate thought and provoke responses, therefore this correspondence should not be considered too irrelevant.

*Lionel H. Abshire*
*Lionel H. Abshire & Associates Architects*
*Baton Rouge*

*more letters on page 102*


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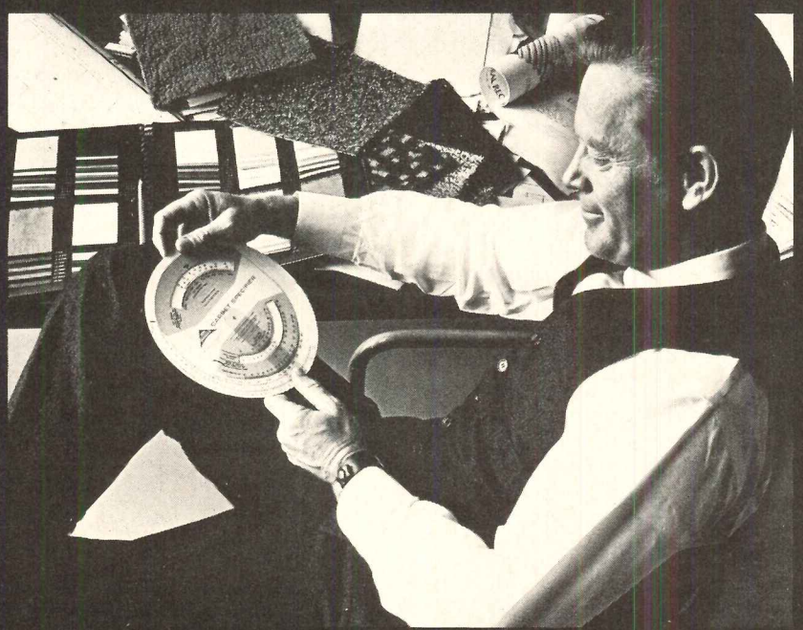

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*The Olive Orchard,* Vincent van Gogh, National Gallery of Art, Washington, D. C., Chester Dale Collection

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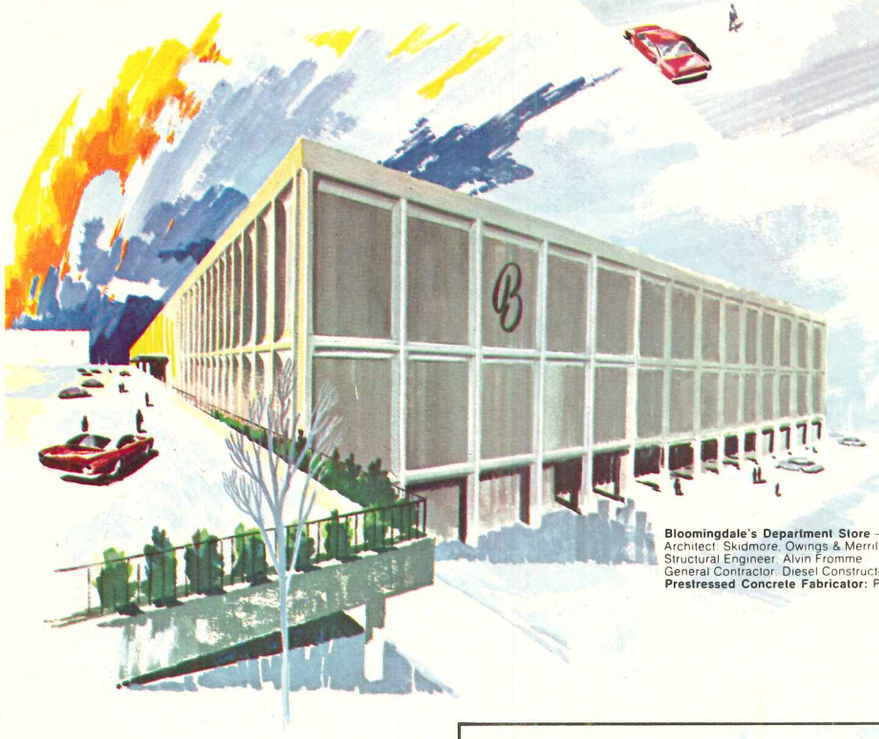

**Bloomingdale's Department Store** – Short Hills, New Jersey
Architect: Skidmore, Owings & Merrill
Structural Engineer: Alvin Fromme
General Contractor: Diesel Construction Co.
**Prestressed Concrete Fabricator:** Prefabricated Concrete, Inc., Farmingdale, N.J.

**Headquarters Fire Station** – City of Tacoma, Washington
Architect: Robert Billsbrough Price, AIA
Engineer: Anderson, Birkeland, Anderson and Mast
Contractor: McKasson Bros. Construction, Inc.
Prestressed Erection: Pacific Crane and Construction Co.
**Prestressed Concrete Fabricator:** Concrete Technology Corporation, Tacoma, Washington

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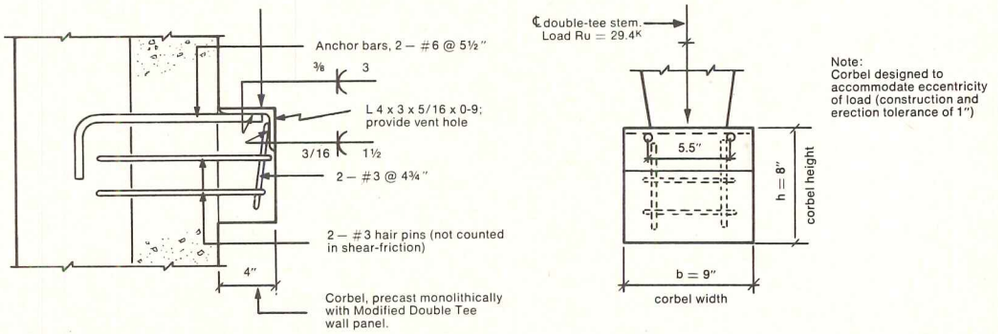


Note:
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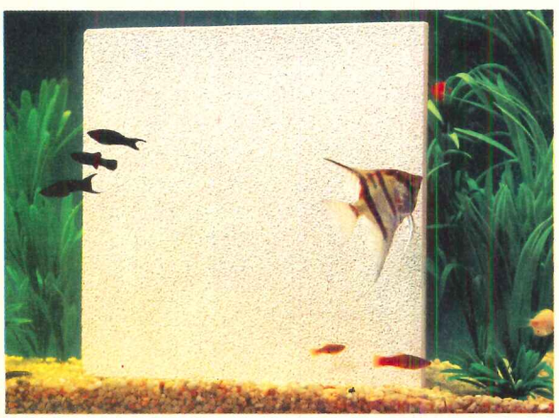

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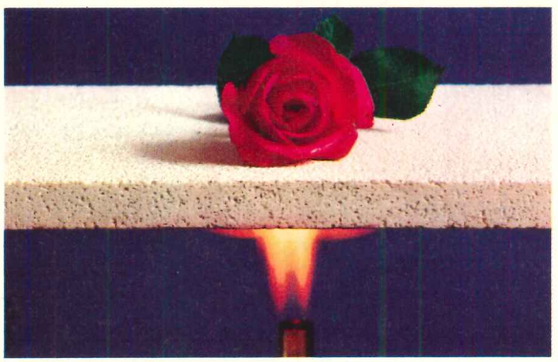

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*continued from page 95*

**Kind words department**

We are delighted with the Sea & Ski article in the February RECORD. I also noticed with interest the feature on Franzen's five new projects. Since the demise of Arts & Architecture, the RECORD is the only magazine that consistently runs work of this kind.

*Robert B. Marquis*
*Marquis & Stoller*
*San Francisco*

The February article on our work is wonderful. I don't know whether to blush or be proud. I'll do both.

Incidentally, the story and pictures on the Boston City Hall were outstanding.

Since there is also an article by Llewelyn-Davis, the issue is positively authoritative.

*Ulrich Franzen*
*New York City*

**End Plates in 1964**

I noted in the February 1969 issue, page 168, a statement concerning "end plate design": "A relatively new type of moment connection, called end plate, cuts costs of the steel framing. . . ." The implication is that this end plate design is something new. In 1964 my firm designed a seven-story office building in Fairfax County, Virginia having approximately 273,000 sq ft of space. The entire structural system of connections between beams and girders and for moment connections at columns used the technique of end plate design. I should like to refer you to the American Institute of Steel Construction's Engineering Journal of January 1964, wherein an article by Onderdonk, Lathrop & Coel entitled "End Plate Connections in Plastically Designed Structures" describes our building.

*A. George Mallis, P.E.*
*Mallis, Patterson & Burgener*
*Springfield, Massachusetts*

*We did not intend giving the impression that end plate design was something quite new; but we are interested to hear that you used this approach as early as 1964.*

*We thought by mentioning that end plate design is not a "standard" detail, but that it had won over designers, fabricators and erectors, would make it clear that the technique has been in use.—RF*

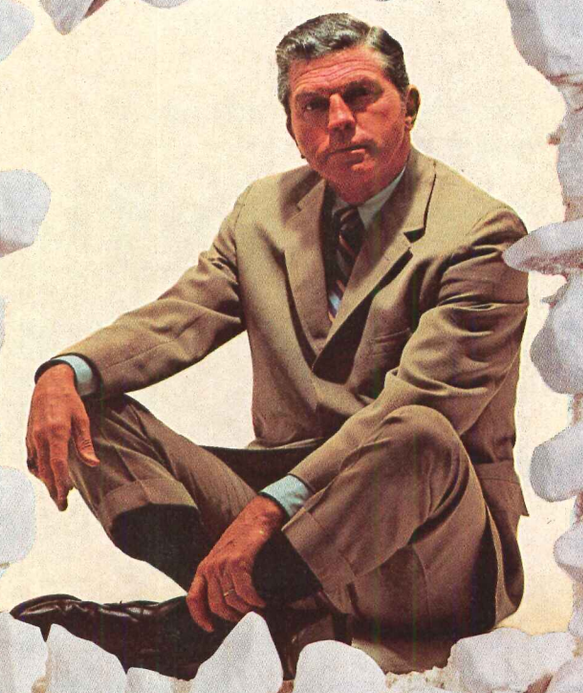
**Poet's corner**

Herewith our thanks to you for publishing the lines by "as-yet little-known poet" Stephen Cohn (February, page 10). He manages in a few lines to convey to the unrealizing architectural profession that it indeed "seems a shame to sing the web/And give no credit to the spider."

We are sure he is a very fine banker, but wish to say we think he is also a very fine poet and we hope others will be discerning enough to publish him!

*Julio R. Guerra, Associate*
*William C. Baxter Architect*
*Weslaco, Texas*

# EXPOSED AGGREGATE?



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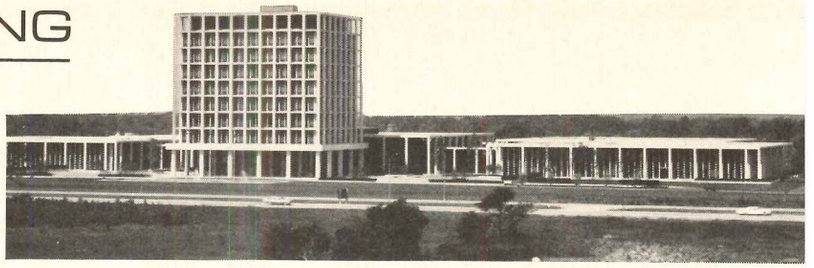
# CONCEALED AIR HANDLING



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### . . . designed to be neither seen nor heard and built to be forgotten.

7,000 troffer lights equipped with Multi-Vent slot type air diffusers provide the heating, cooling and lighting environmental control in Allstate Insurance Companies' modern home office in Northbrook, Illinois.

**Price was not the sole reason for selecting Multi-Vent. Installed cost and lasting performance were important.** Cost per unit on the receiving dock was not the competitive difference which resulted in the selection. A number of other features were:

**Minimal job-site handling.**
Multi-Vent "SES" slot type air diffusers come to the job site completely assembled as a ready-to-install unit. There is no on-the-job snap-together, crimping or screwing of crossovers to ends. Minutes are saved per unit. This, times 7,000 units and the savings become quite handsome.

**Time-saving system balancing.**
Air volume adjustment is easily accomplished with built-in volume control valves which are completely accessible from roomside. Directional control, from horizontal to vertical, is also accomplished from roomside.

**Long-life construction.**
There is nothing fragile about Multi-Vent slot type air diffusers. They are made of heavy gauge steel and every joint is welded, not crimped or screwed. They are rattle-free and don't breathe where they are not supposed to.

We'd be glad to send you complete information about Multi-Vent slot type air diffusers for every kind and size of troffer light.

Just write . . .

Multi-Vent Products Division
Dynamics Corporation of America
1400 North Kostner Avenue
Chicago, Illinois 60651

DCA

*For more data, circle 54 on inquiry card*

Part of every troffer light is a Multi-Vent slot type air diffuser. Functional to the Nth degree, yet completely unseen from roomside.

Designs by Ving Smith, A. I. D.

# Have a wild idea in canvas!

Design with canvas and your imagination takes wing, while the cost stays happily down to earth. That's because standard hardware or welded pipe framing supplies all the structural support needed. The fabric is a sturdy weave of 100% cotton (8 to 15 ounces per yd. of 31″ width) treated for mildew and water resistance to weather any outdoor job. No wonder there's so much happening in canvas. Canvas solves so many problems. Ask your local canvas products manufacturer.

CANVAS AWNING INSTITUTE
(in cooperation with National Cotton Council and Cotton Producers Institute)
P. O. Box 12287-e, Memphis, Tennessee 38112

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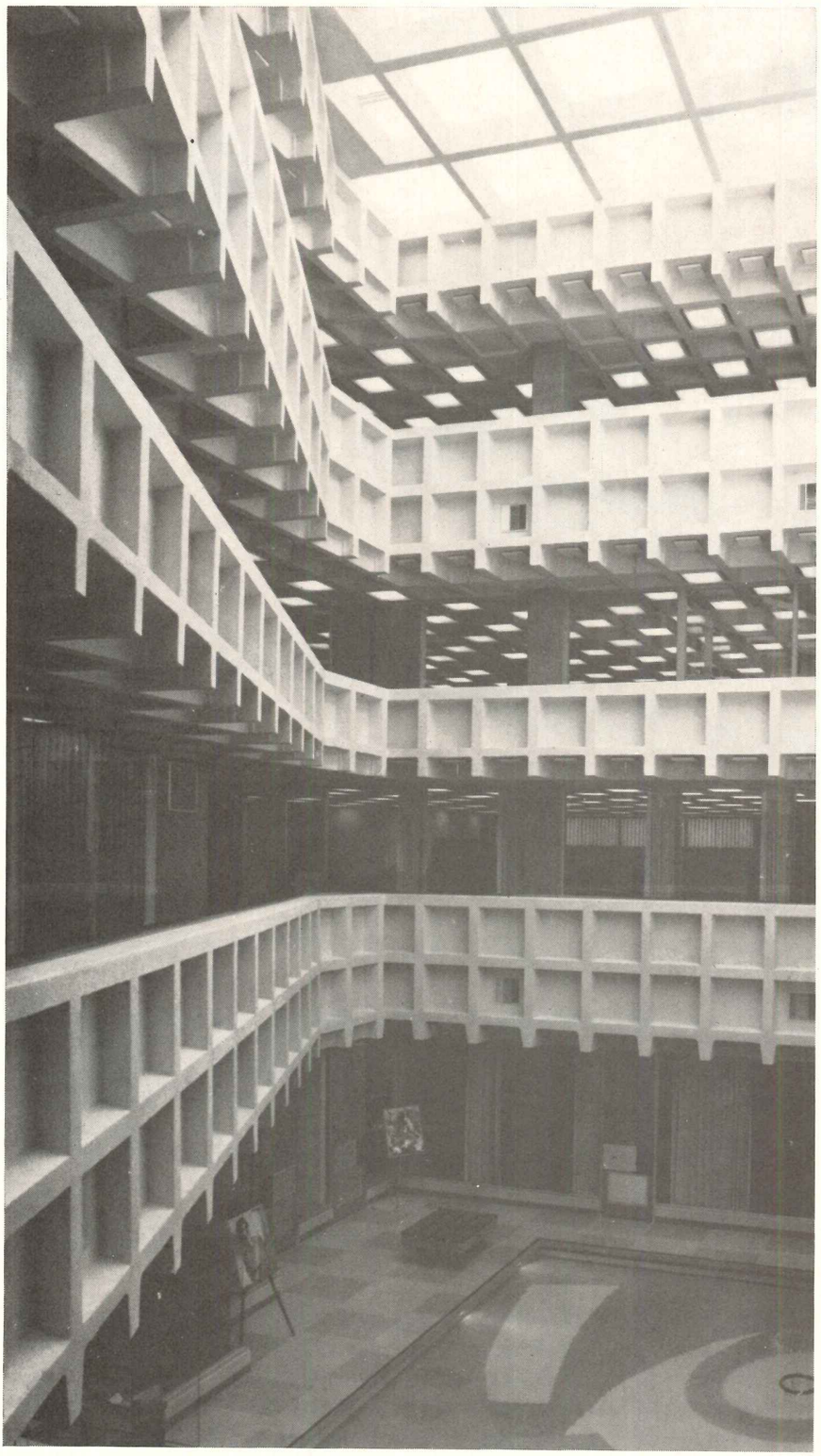
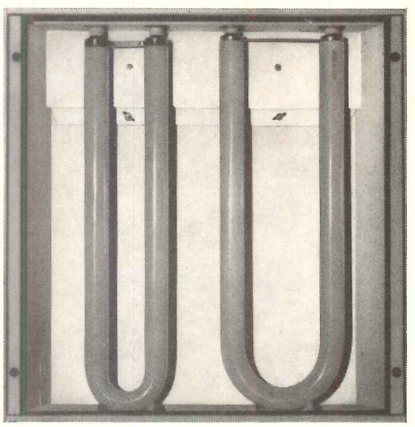
# 25% more light thanks to U.





Keene's new family of 24" or 30" square fixtures give you 25% more light than similar units using straight fluorescents. You get high light output with complete interior design freedom. Reason: the new 40-watt U-shaped fluorescent just coming into use.

Being square and non-directional the new fixtures are ideal for modular construction and for large areas where the commonly used 1 x 4, or 2 x 4 linear fixtures would be disruptive to design or construction.

### Use any U-tube

What makes our fixture truly one-of-a-kind, however, is that it uses any major manufacturer's 40-watt U-shaped lamps... the ones with the 6" leg spacing or the 3½" leg spacing...as demonstrated above.

### Sliding sockets

This flexibility's possible because our unique fixtures have adjustable sliding sockets* that secure the lamp, provide the power. What's more each fixture needs only one standard 40-watt ballast versus the two expensive ones required on units that use straight fluorescents. A feature that saves on cost and lets the fixture run cooler.

You save on installation and maintenance as well. Recessed models feature a hinged assembly that puts all electrical components on one side. There are 3 types available: surface, air and non-air, recessed. Want us to shed more light on our new fixture family?

Write: Keene Corporation, Lighting Division, 4990 Acoma Street, Denver, Colorado.

*Patent Pending

**KEENE**
CORPORATION
**LIGHTING DIVISION**

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

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# The number is Corbin 4726

Your number for security. Corbin exit devices operate at a finger's touch. Dependable, safe and whisper-quiet. This is only one of many designs. It displays the style, quality and security built into the complete Corbin line of door closers, locksets and exit devices.

Your Corbin distributor can furnish you with complete data on this design, or write P. & F. Corbin, Division of Emhart Corporation, New Britain, Connecticut 06050. In Canada—Corbin Lock Division.

CORBIN®

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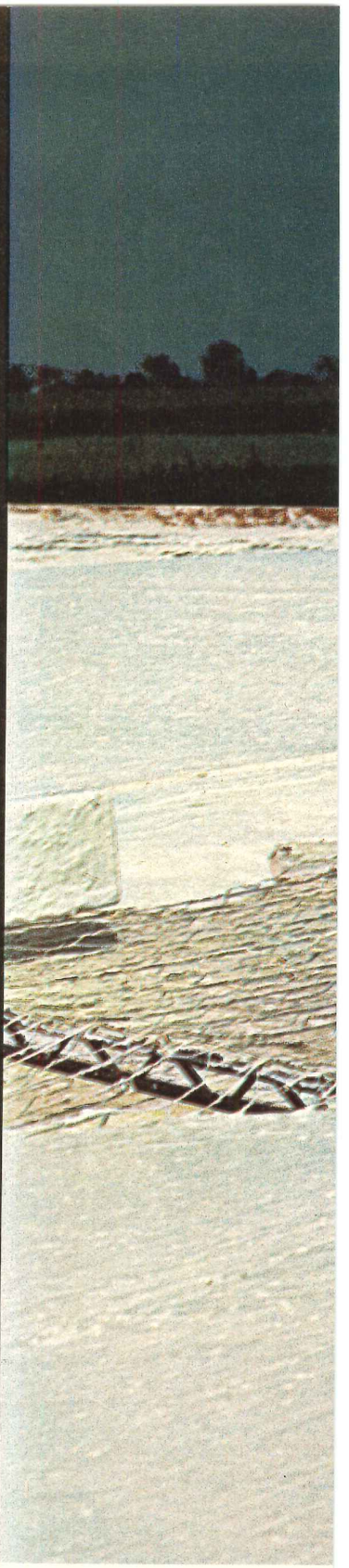
# New, two-hour fire rating for deck reinforced with Keydeck Truss-T subpurlins

Keydeck mesh reinforcement is the other component of the Keystone roof deck reinforcement system. It has proved to be a superior reinforcement under great stress, maintaining the integrity of decks subjected to hurricanes, tornadoes and earthquakes.



The webs are open. The cast in place material flows through. This single design improvement—from solid subpurlin to the open webs of the Keydeck Truss-T—provides many advantages.

One advantage is the new two-hour fire rating for a deck utilizing Keydeck wire mesh reinforcement and Keydeck Truss-T subpurlins.

Other advantages are: Lighter subpurlins; reduced thermal conductivity; electrical conduits can be hidden in poured slabs over exposed form-boards; composite resistance to shear, uplift, cracking and deflection because embedment is complete.

The Keydeck Truss-T subpurlin is another example of Keystone's Inner Strength products for roofs, walls and floors.

For help with reinforcement problems, call your Keystone Representative. Or write, Keystone Building Products Department, Peoria, Illinois 61607.

# inner strength

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Peoria, Illinois 61607

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# OFFICE NOTES

## NEW FIRMS, FIRM CHANGES

**Golemon & Rolfe, Architects,** has named ten new partners and associates. Members advanced to partner are **J. William Frye, Jr.,** coordinator of medical facilities projects; **Melvin L. Hildebrandt,** director of project development; **Stayton Nunn, Jr.,** coordinator of educational projects; and **Ralph A. Zander,** who is coordinator of commercial and airport projects. **J. D. F. Boggs, Jr.** and **Thurmon E. Jacks** are new senior associates. New associates are **Michael C. Farley, L. David Godbey, R. Lynn Hanson** and **Keith J. Simmons.**

**Frank Grad & Sons, Architects—Engineers—Planners** of Newark, New Jersey, have announced the appointment of **Stanley C. Brogren** and **Howard N. Horii, A.I.A.,** as senior associates. Seven associates have also been appointed: **Vincent F. Balogh, Herbert E. Boeckel, Jr., George L. Cedeno, Thomas Remick, Michael J. Savoia, A.I.A., Eugene A. Schreiber** and **Ronald H. Schmidt, A.I.A.**

**Leif Valand** and **Nelson S. Benzing, Jr.** announce their association for the practice of architecture under the firm name of **Valand, Benzing & Associates.** The firm is located in Suite 305, 410 Oberlin Road, Raleigh, North Carolina.

**Wakely Kushner Associates, Inc. Architects,** St. Clair Shores, Michigan, announce that **H. Warren Groth, A.I.A., John P. Jensen, A.I.A.** and **William J. Manes** have been appointed associates of the firm.

## NEW ADDRESSES

**Samuel J. De Santo, A.I.A.,** 61 East 86th St., New York City.

**Eckbo Dean Austin & Williams,** 7440 North Figueroa St., Los Angeles, California.

**Ellerbe Architects,** 1660 L Street Building, Washington, D.C.

**Gruzen & Partners,** 1700 Broadway, New York City.

**Gueron, Lepp & Associates, Architects,** 132 Madison Avenue, New York City.

**Holden Yang Raemsch & Corser, Architects,** 251 Park Avenue South, New York City.

**Feldman, Misthopoulos Associates,** 220 Park Avenue South, New York City.

**Hoberman & Wasserman, Architects/Planners,** 19 West 44th Street, New York City.

**Charles M. McAuliffe, A.I.A.,** 2733 Nottingham Way, Trenton, New Jersey.

**Office of Franciscan Art and Architecture,** 2 Park Avenue, New York City.

**Eleanor Raymond, F.A.I.A.,** 100 Memorial Drive, Apt. 5-10-C, Cambridge, Massachusetts.

**Myron A. Vigod, A.I.A.,** 16 West Palisade Avenue, Englewood, New Jersey.

# Strength and beauty of the forest

# ...engineered Southern Pine

*Architect: Hugh J. Leitch, AIA, Project Architect in association with Forrest M. Kelley, Jr., AIA, Architect to the Florida Board of Regents*

The students at West Florida University study in unique surroundings which reflect the versatility, economy and strength of Southern Pine for engineered timber structures. □ In this ultra-modern food, health and study complex, laminated arches of Southern Pine and wood roof decking impart a massive air of permanence combined with a congenial environment. □ For an illustrated case history on this building, write: Southern Pine Association, P. O. Box 52468, New Orleans, La. 70150.

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# 'Our new offices highlight functionally related work areas. And we carry out our concept with furniture by Royalmetal.'

**—Omer B. Cioli,**
**Norton Lilly & Co. Inc., New York.**

Color defines the working space for functional groups at Norton Lilly. Chairs from Royalmetal's new 6000 series, keyed to the colors of the steamship lines which Norton Lilly represents, identify each area. Blue motif in the photo at left denotes the American and Australian Steamship Line area.

Desks from Royalmetal's new 6000 series adapt to the needs of managers, freight agents, and secretaries. And coordinated furniture unifies the grouping into a spacious, uncrowded office arrangement. Matching credenzas and conference tables add to efficiency. Royalmetal office furniture is available in styles to match your needs, from reception room to executive suite. See them at your Royalmetal dealer. Or write for our illustrated office furniture catalog. Royalmetal Corporation, One Park Avenue, New York, N.Y. 10016.

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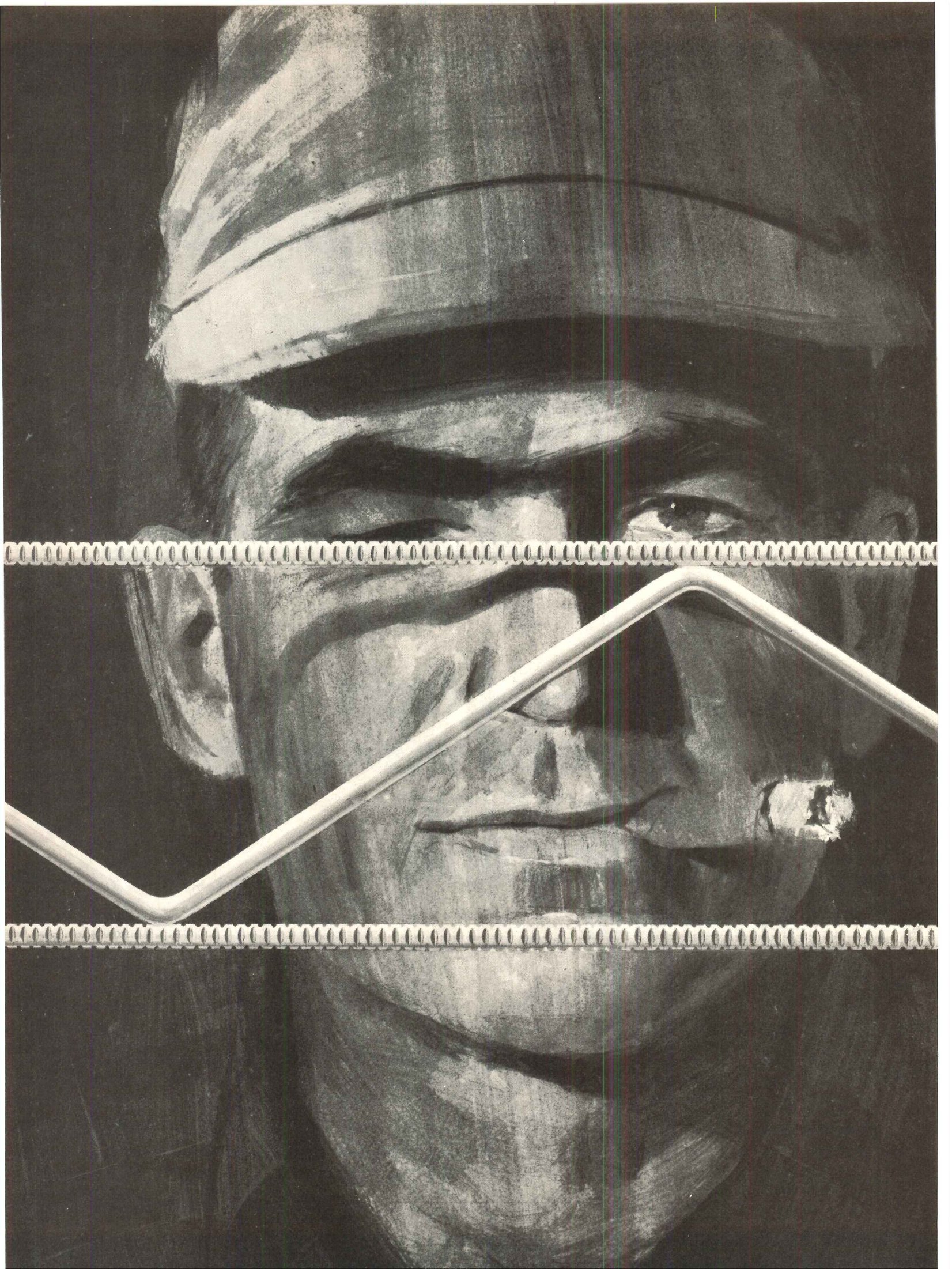

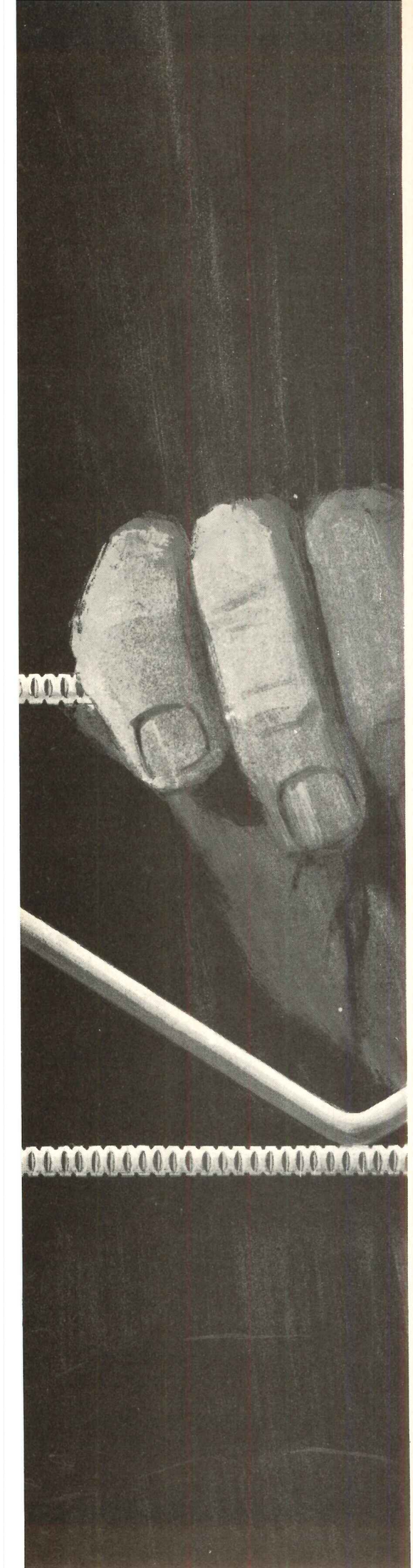

# Who made all the fuss about a truss?

# We did, sir, it's one of ten good reasons to use Dur-O-waL® Truss masonry wall reinforcement.

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**5.** Dur-O-waL research is the most extensive in the business. We back up every claim for our product with independent research.

**6.** When you need Dur-O-waL Truss you can get it. Over eight thousand dealers stock and sell our product.

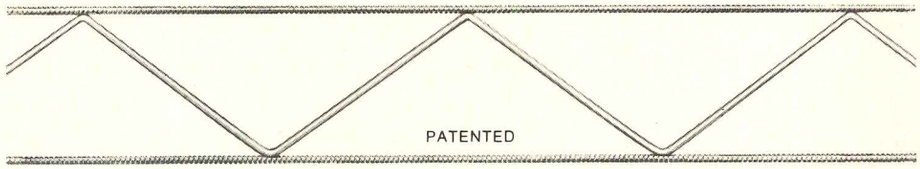
**7.** Dur-O-waL Truss is nationally distributed.

**8.** Dur-O-waL has trained factory representatives who can help you with reinforcing problems.

**9.** A constant supply of technical literature based on current research is available to you.

**10.** Dur-O-waL offers additional products exclusively for masonry construction, all backed by the same reputation for quality.

Questions on masonry wall reinforcing applications? Just write to Dur-O-waL, P.O. Box 368, Cedar Rapids, Iowa 52406.

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**Citizens and Southern Bank, North Avenue, Atlanta, Georgia.**

**General Contractor:**
Beers Construction Company
**Architect:**
Aeck Associates, Inc.
**Electrical Engineer:**
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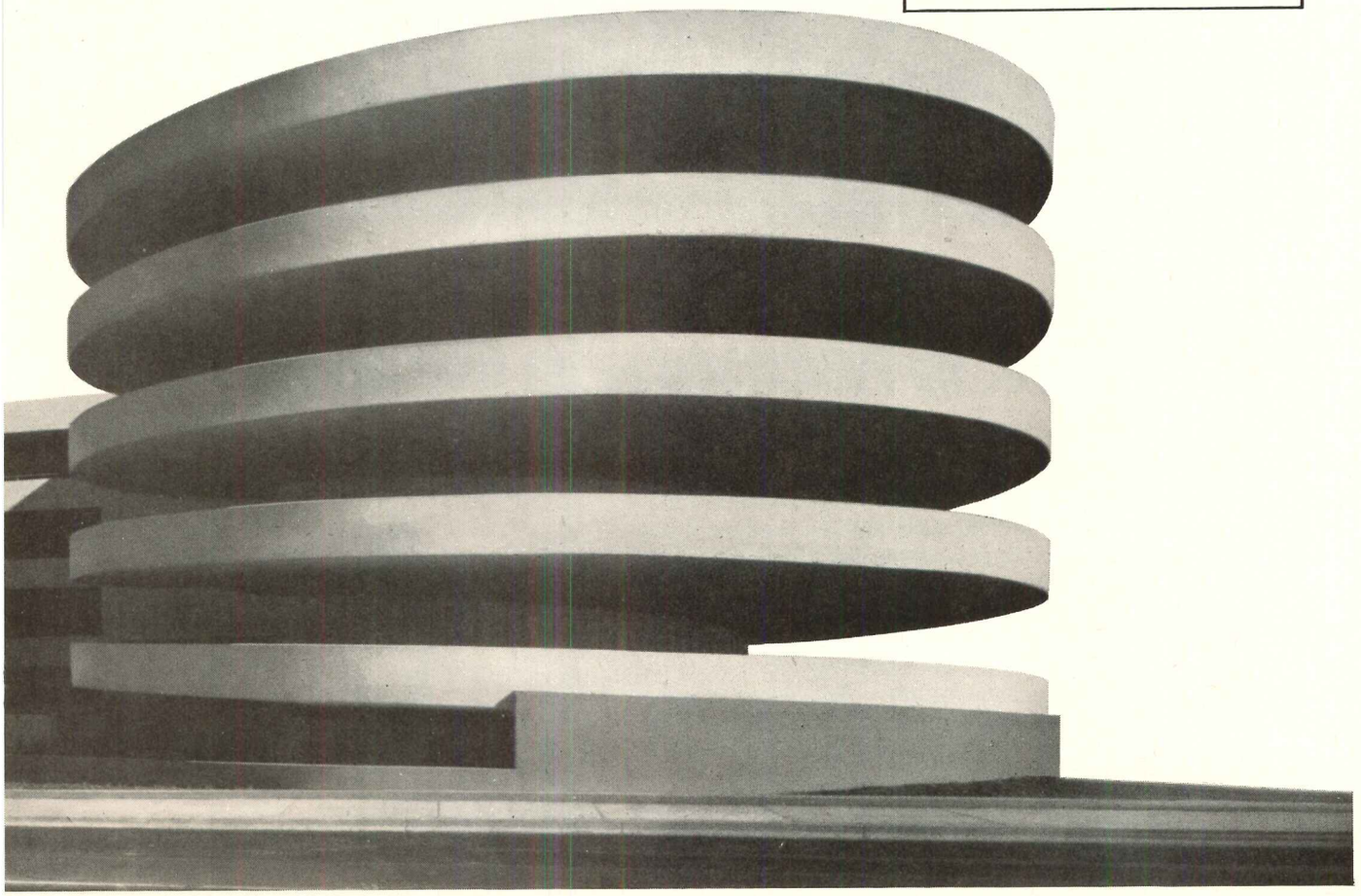

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# Landmark is harmony in lighting

Each Landmark luminaire has been styled to harmonize with the esthetic considerations of many types of architecture. Further, Landmark engineering is in tune with the requirements of the lighting engineer. The lighting designer is offered a full range of light sources and illumination flexibility within a controlled number of configurations. The electrical contractor is provided with fixtures that are factory-tested, pre-wired, and easy to install and direct. The owner finds Landmark units practically maintenance-free and uniquely weatherproofed. Relamping is simple with no tools necessary. Write for photometric data, specifications, and name of Landmark representative. Our condensed catalog is in Sweet's.

**FEATURED PERFORMER** is the new Landmark "Traditional" area light. Cast aluminum housing, acrylic diffusers. "Breathing seal" keeps inner optical assembly free of dirt and moisture.

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Southaven, Mississippi 38671

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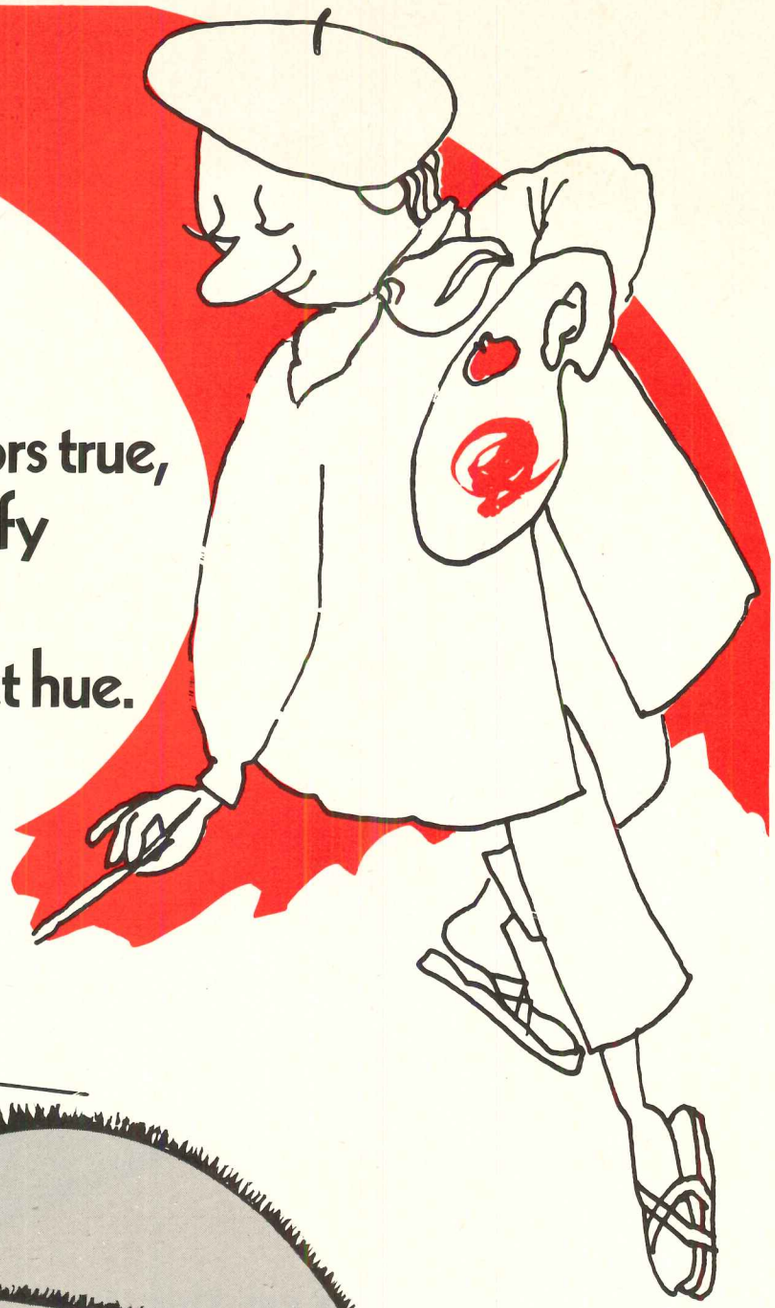

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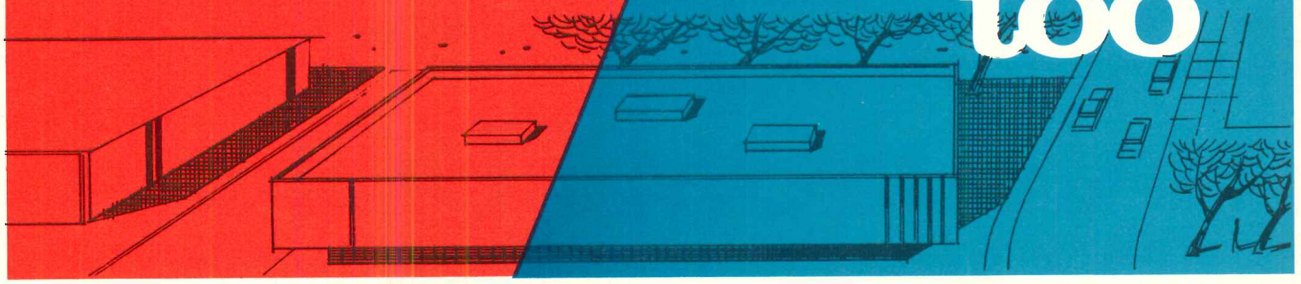
# hottest item on the roof coolest, too



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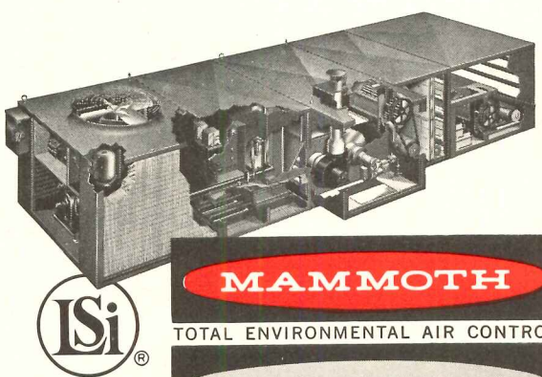

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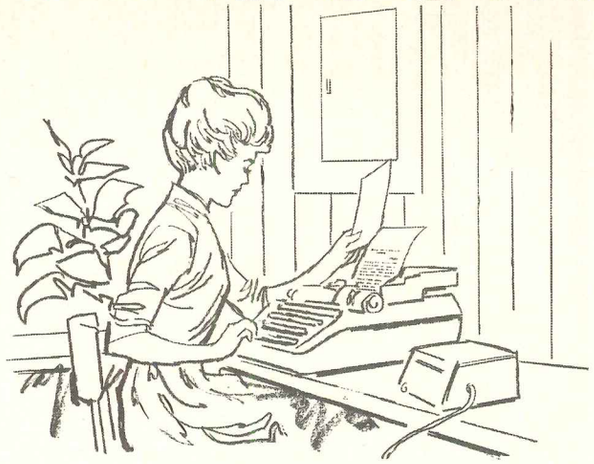

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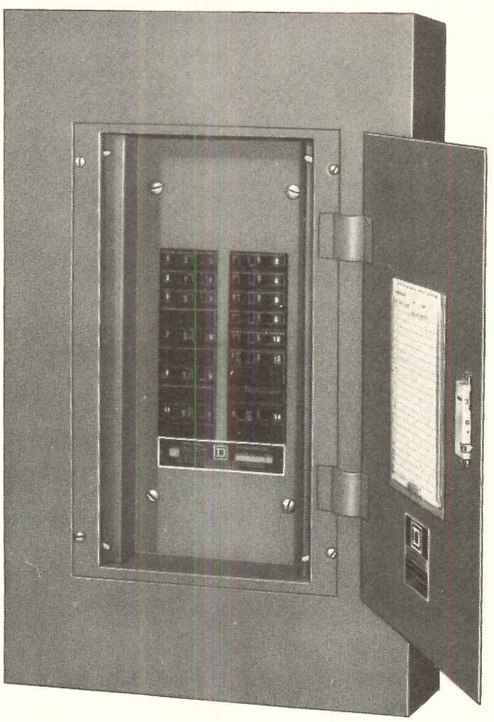

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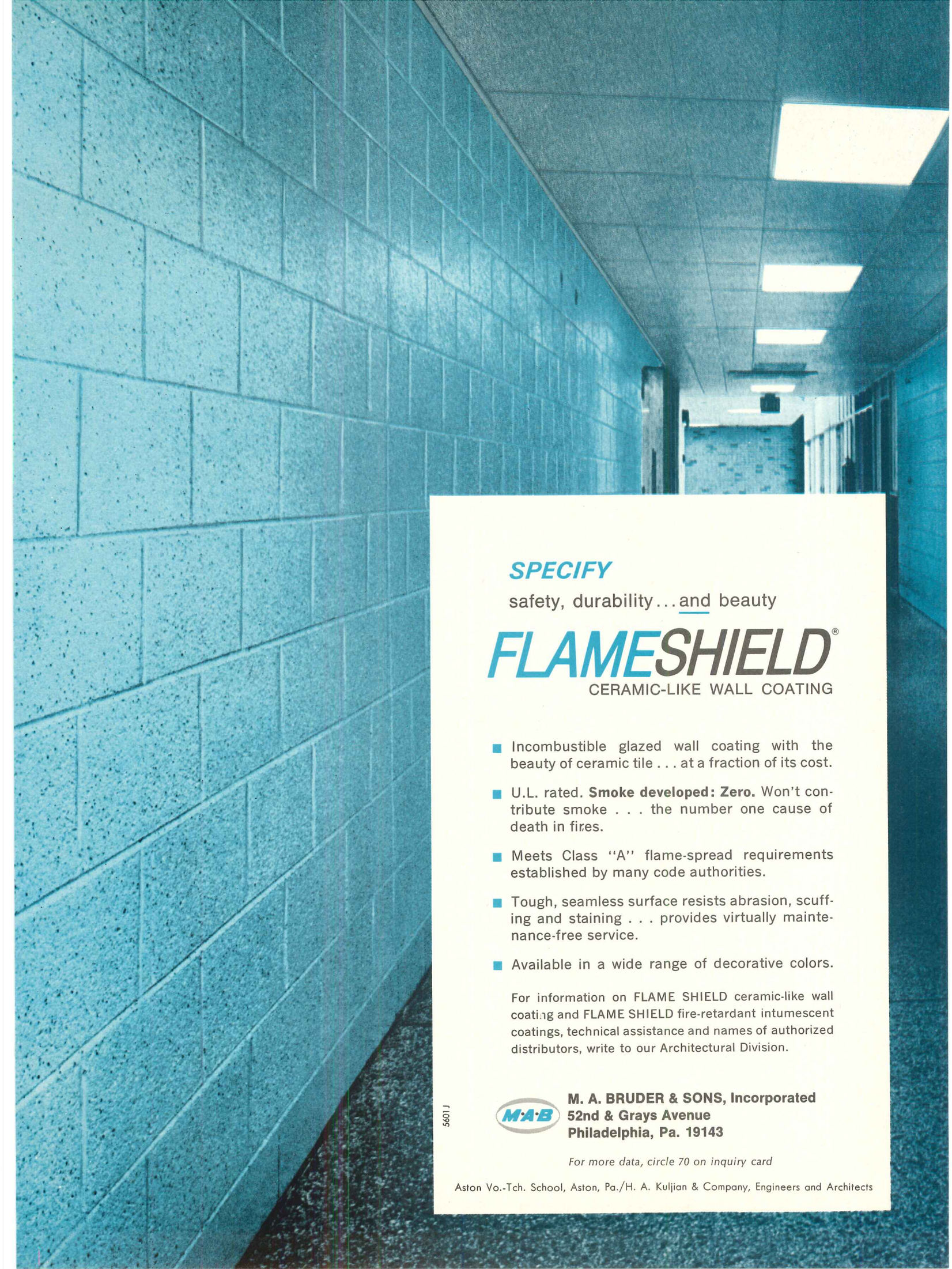

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18 01
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**TEMPLE B'NAI JESHURUN,** Short Hills, N.J.
Associate Architects: **PIETRO BELLUSCHI-GRUZEN & PARTNERS,** Newark, N.J.
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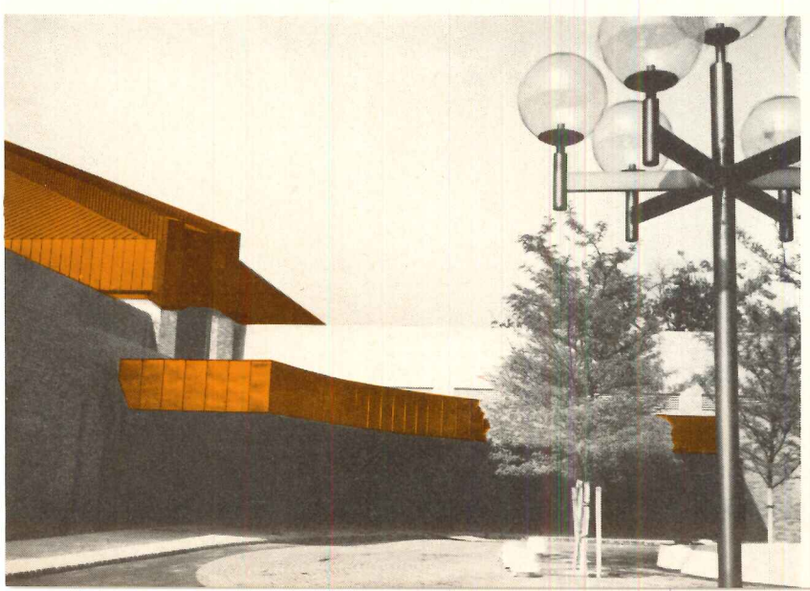
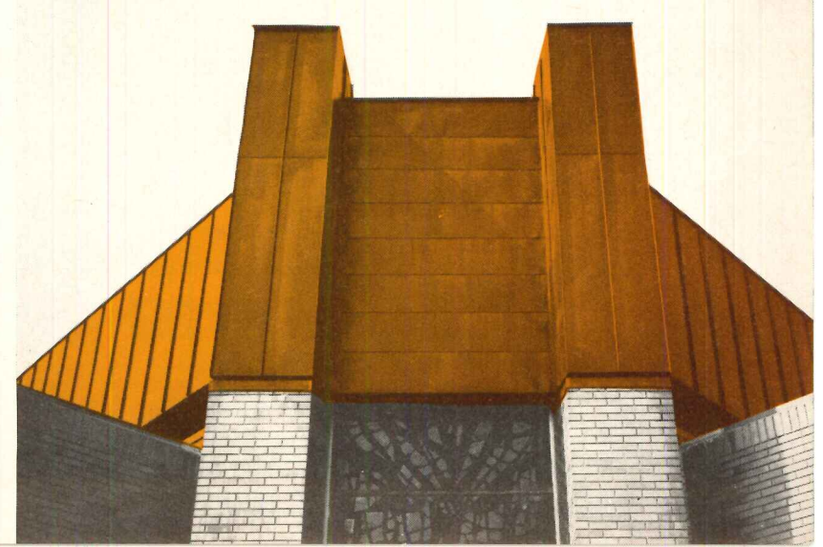
Sheet Metal Contractor: **SCHTILLER AND PLEVY CORP.,** Newark, N.J.





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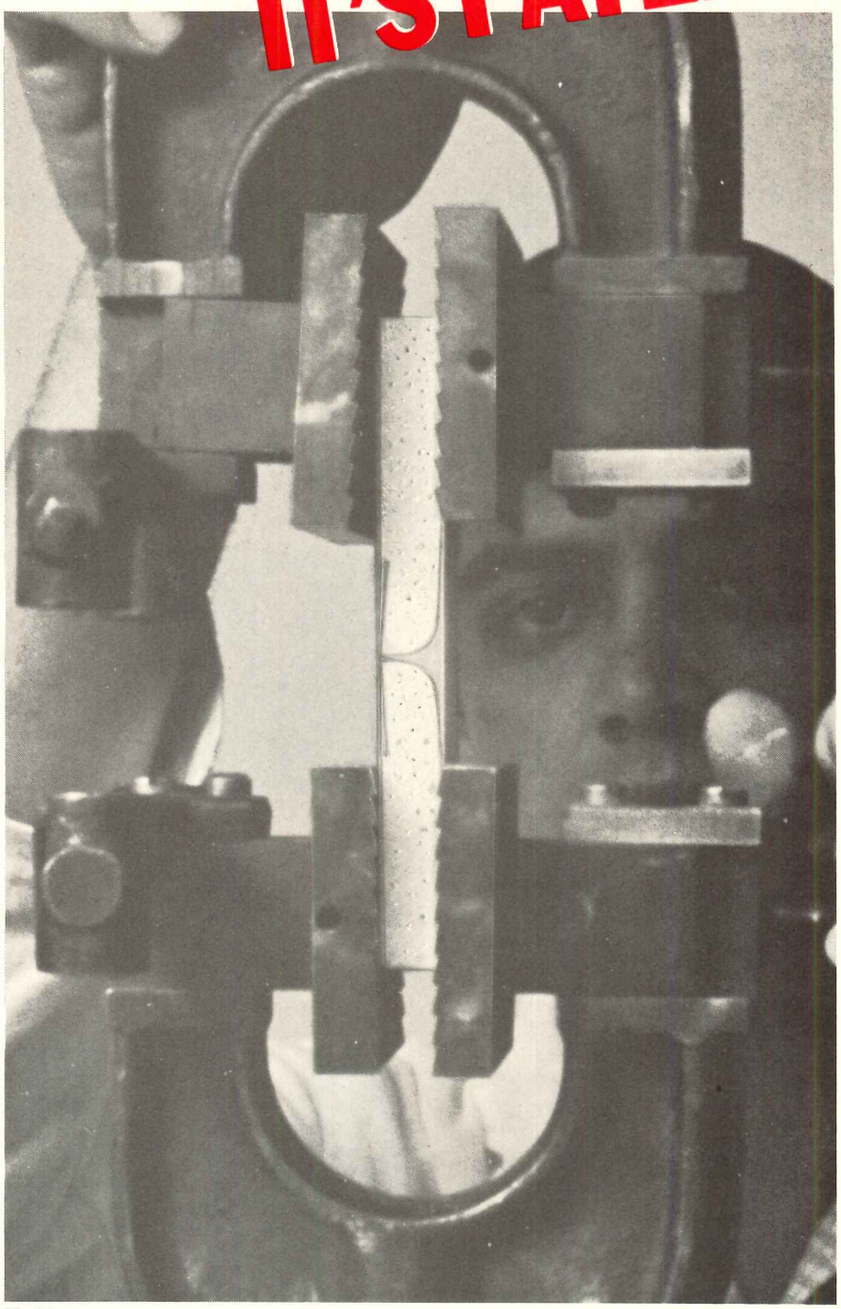

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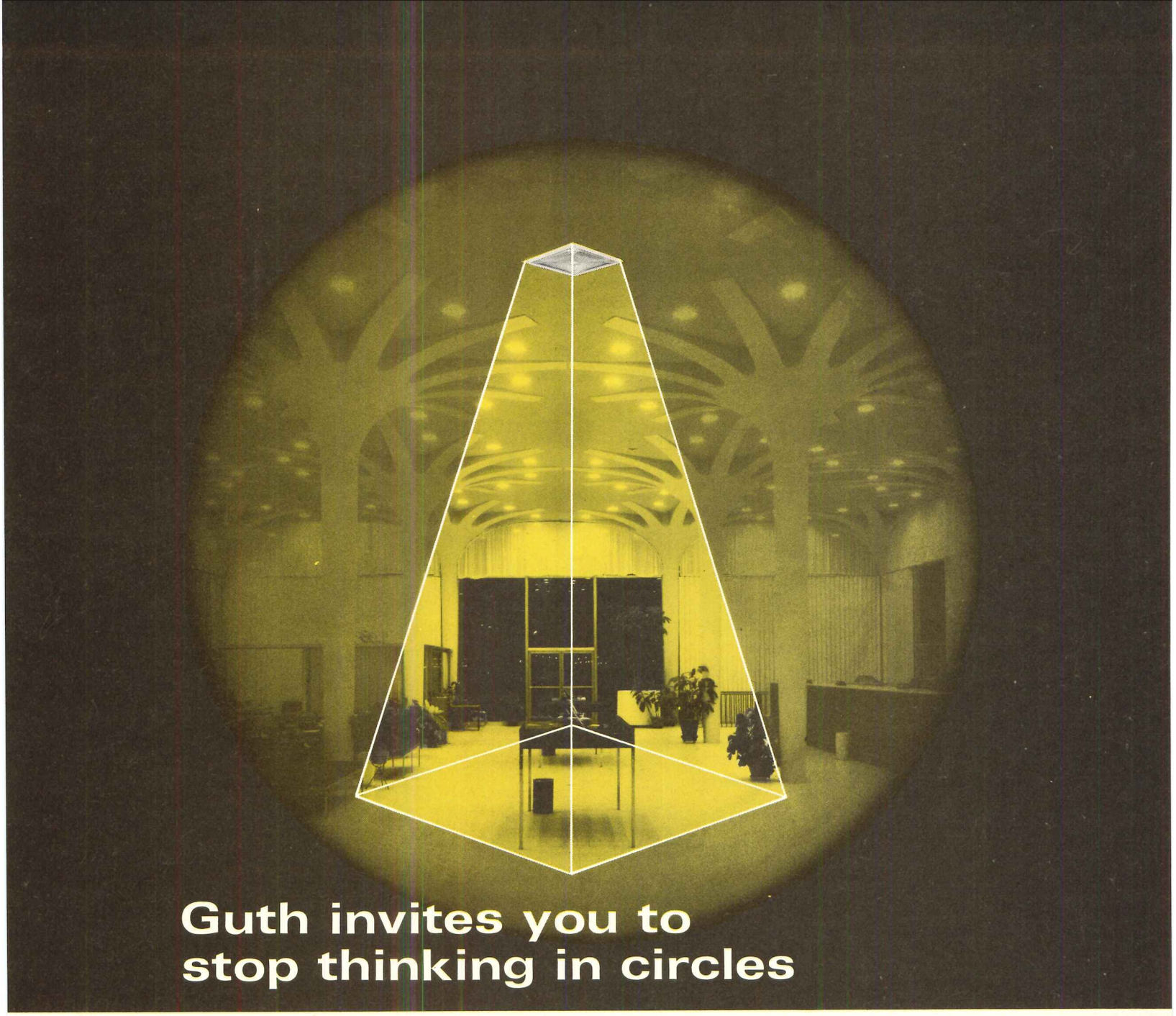

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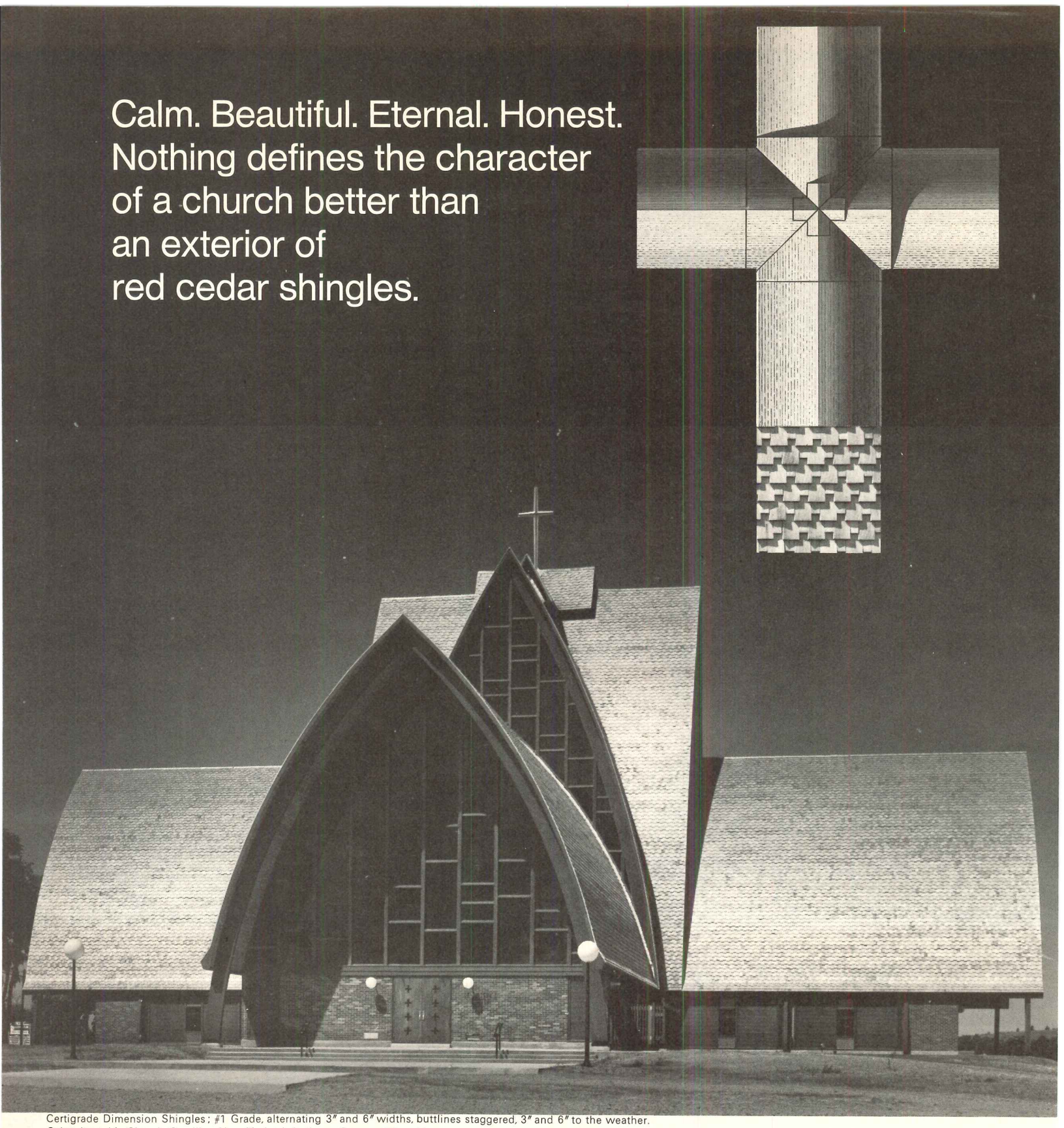

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Saint Joseph's Church, Camillus, New York; J. Anthony Cappuccilli, architect.

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# THE DESIGN OF INTERIORS

This is a time of change in the design of interiors. Across the country, architectural firms of all kinds and sizes are finding new kinds of involvement in interior design. More and more architects are doing the design of interiors for all kinds of buildings—of all building types, whether new structures designed by them, or remodelings or renovations. More and more architects are exploring the perils, the profits, and the complex problems of expanding their practice in (or into) interior design, deciding whether or not to establish separate departments, deciding how to staff for the new work, struggling with new problems in specification, fee arrangements, and client relations.

The reason for the change is a growing need—a growing demand by clients for "total architecture" designed professionally in every respect. This need, sensed with a growing awareness by architects, has also been sensed elsewhere. It has been sensed by the truly professional interior designers—who are striving individually and through their associations (the American Institute of Interior Designers and the National Society of Interior Designers) to establish themselves on the same kind of professional level that architects have long maintained—through consideration of the need for licensing, professional fee arrangements, and the like. This need has been sensed by a new breed—the space planners who are offering their services in the complex (and important) field of interior programing.

The need has been reflected in the joint decision to hold the Merchandise Mart's First National Exposition of Contract Interior Furnishings (NEOCON) this month, concurrently with the joint annual conventions in Chicago of the American Institute of Architects and the Royal Architectural Institute of Canada. It is important to note that a special "Architect's Workshop" is being offered as a special post-convention feature of NEOCON, with the cooperation of A.I.A. and the R.A.I.C.

And this growing need will be reflected, to a growing extent, in the pages of ARCHITECTURAL RECORD.

This special report is a beginning. It examines, starting on the next page, the present state of interior design practice: the opportunities and the perils and the profits and the complex problems. It includes the results of a broad survey of architects made by the editors to examine patterns of practice, of organization, and of relationships with interior designers and clients, a survey that indicates a deep and growing involvement by architects in this field of expanded practice. This report also includes examples of some of today's finest interior design—by architects and interior designers in many building types.

In later issues, we will continue to present on a regular and continuing basis more articles on interior design practice and examples of distinguished current work.

And in January, we will introduce a new program—RECORD INTERIORS—to recognize outstanding interiors designed by architects. This will be a continuing program: citations will be given for the best work of the year, and the designs will be published in each January issue. Details on submitting work for consideration in this new program are on page 317 of the June issue. It is our hope that the quality of the work submitted and our editorial evaluation of it will earn for this new program the same kind of respect among architects and other professionals now enjoyed by RECORD HOUSES.

Our intent, in this expanded editorial coverage of the design of interiors, is the same as it has always been: to be helpful to our readers in their continuing efforts to establish an ever higher level of performance in the practice of architecture.

*—Walter F. Wagner, Jr.*

*Interior of the Bank of Houston by Wilson, Morris, Crain & Anderson Architects. The banking room is an all-glass, column-free space designed by the architects, which contains the officers' area, public space and teller space. Alexandre Georges photo.*

# THE DESIGN OF INTERIORS

## A PROFILE OF EMERGING TRENDS IN PRACTICE

In the decade now drawing to a close, there has been a resurgence of professionalism in interior design. This has been substantially a return to the "mother art" of architecture and has run parallel to the expanding scope of other architectural services.

This is not to suggest that professional levels of skills required for interior design are inherent in the training or talent of every architect. Further, many successful and gifted practitioners, who have never registered, or practiced, or even trained as architects, qualify as interior designers of the very highest caliber.

The point here is an important one: The practice of interior design today calls upon an array of talent and detailed competence that is unique to its own success and must be learned by anyone through basic design education honed by exacting practice in the field. It has a generic bent of effective sensitivity to form and function in human environment that is essentially architectural. Therefore, it recruits heavily among those who have pursued that bent through architectural schools with adequate design emphasis. Further, it has a special immediacy for many practicing architects in that it completes and integrates the overall design of many types of buildings.

### How did we get here? Where are we now?

The field of interior design is complicated by a number of demanding and limiting factors—artistic and economic—some of which are carried over from the business and professional doldrums of the thirties. During the Depression, interiors commissions were scarce and mostly residential. Many of them were handled by a coterie of variously talented amateurs, among whom were furniture sales departments, housewives with rich friends, dealers and contractors of various sorts, and—let's face it—unemployed architects. Formation in 1931 of the American Institute of Decorators aptly named the conditions that prevailed, but at the same time it raised the first concerted voice of recognition of the fact that qualifying standards were essential even—or perhaps especially—for so mixed a group.

The war years generated new demands and provided opportunities for what is now called the contract furnishing industry. Post-war potential greatly multiplied demand on all fronts of interior design and furnishing. Sharp and preferential trade practices developed, however, which were harmful to almost everyone involved.

Although the reviving business economy supported an increasing number of commercial space planners for both offices and retail stores, the custom of providing layouts and specifications for minimal or no fees and relying for income on the mark-up of furnishings carried over from Depression practices. The custom was further entrenched by certain furniture outlets, who maintained planning service departments as part of their sales operation.

But the demand for truly professional services in both programing and design of business and institutional spaces gained more and more support from prospering and sophisticated clients. Some architectural offices were already providing such services. Others prepared to do so.

Strong evidence of the drive toward professional status for interior design was the formation in 1957 of the National Society of Interior Designers followed, in 1961, by a change in name of A. I. D. to the American Institute of Interior Designers. The substitution of the term *designers* for *decorators* was a clear statement of intent. Both organizations set up membership-qualifying standards of education (four-year college degree with a design component) and training (three or four years of work in a "recognized establishment"). Thus the term *decorator* was relegated to those who could not qualify, and the term *designer* was used to designate a category of practice advancing toward professional standing.

While these moves have worked no sudden magic in the marts of trade, they have had at least two marked effects on how architects and other acknowledged professionals can set up to do business as interior designers. First, they have gained the mixed blessing of increasing surveillance by the Federal Trade Commission over pricing practices of the furniture industry. Possible consequences of a ruling by FTC early this year that only one price prevail for furniture sold to either retailers or professional designers were viewed with alarm by A.I.D. when it appeared that certain manufacturers would thereupon require professionals to purchase from designated distributors, many of whom themselves maintain competitive "design" services. An A.I.D. resolution sought the support of N.S.I.D., A.I.A. and the Industrial Designers Society of America to keep the FTC informed of such ramifications, and some of these problems are now being resolved.

A second and perhaps more profound effect of emerging professionalism in interior design has been to free architects—already secure in their professional status—from any compulsion to set up separate departments or corporations in order to obtain "resale numbers" for the discount purchase of furnishings. This has not been an insurmountable problem for many years, and those relatively few architectural firms which now separately incorporate their design services (as shown in the RECORD survey reported on following pages) do so for other business reasons. The point is that full options of organization now exist.

*Model apartment in Horizon House, Palisades, New Jersey. This interior, the public spaces and the building itself have been designed by Skidmore, Owings & Merrill. © Ezra Stoller (ESTO) photo.*

*The main lobby of the new addition to Stamford Hospital in Stamford, Connecticut by interior space designers ISD Incorporated features long curved walls. The outside wall is hung with white vertical louvers, and the inside wall is paneled in teak-stained red oak, used throughout the building interiors. A rust and beige tweed carpet is used with dark brown leather Scandinavian chairs and sofas covered in green nylon fabric. They are grouped around low Travertine marble topped tables. Exposed metal is brushed chrome. Bill Rothschild photo.*

**Interior design work affects architects' office organization**

The best organization for interior design services in a fully integrated architectural office could be none at all; or a cell of enthusiasts; or a tasteful young girl in a sunny corner; or a separate corporation; or a tender of samples in a closet; or an outside consultant; or . . . As is so often the case in practice, it all depends.

The serious fact is that unless the architect approaches interior design with the same respect for its special character that he might bring to, say, urban planning or any other of the "expanded services" proliferating these days, he is in for a rude awakening—if not disaster.

Organization for interior design can be —indeed must be—as flexible and varied as the building types involved. Further, it will be affected by the point in the overall building design development at which the interior design is introduced. The annual volume of work will, of course, determine some of the limits of organization, as will the consistency or fluctuation of the work load.

Architects in practice are already familiar with the basic modes of organization for doing business as professionals in their states. Proprietorships and partnerships are the predominating if not the only form of organization permitted by the laws of many states for architectural and other professional practices. Some interesting points of law beyond the scope of this discussion are still to be resolved in the courts, as more and more firms seek to reconcile the readily incorporated retailing practices of former decorators with the legal and ethical responsibilities (as well as the prerogatives) of bona fide professionals.

The following general characteristics of the practice of interior design are some that architectural firms should take into account in their approaches to in-house organization.

1. It is vastly detailed in every aspect. There are no areas of massive and readily specified emplacement of major components or systems that can absorb unexpected expenditures of design time on detail in other areas. Therefore, the accounting system for personnel time must be more rigorous than many architects are accustomed to.

2. The number of product categories and variations of color, finish and quality is virtually infinite and changes daily. Some arrangement must be made for sophisticated product information storage and retrieval with a place and designated responsible personnel for sample and catalog storage and up-dating. For any volume of business much above the break-even point, this can be a full-time librarian operation.

3. Specifications for such diverse items as a ribbon or a chair can be unbelievably complex in special language and technical detail in any custom furnishing document. Expertise is required.

4. Dealings with a vastly increased number of manufacturers and suppliers are usually more direct than they are in conventional construction. The architect may have to be prepared not only for a new role in shopping but an expanded supervisory if not directly active role in purchasing and quality control as well.

5. Clients for interiors tend to have strong opinions in the designer's own professional area, but to vacillate in their decisions as to particulars of execution. Further, their capacities for visualization of a design goal from verbal description, swatches, chips or catalog tear sheets are often, if unadmittedly, limited. Organization can do little to correct these idiosyncrasies, but should prepare for added emphasis on presentation techniques and extra care and completeness in its letters of agreement as to scope of services, schedules, fees, extras, penalties, prepurchase deposits, deliveries, taxes, and every possible bone of future contention.

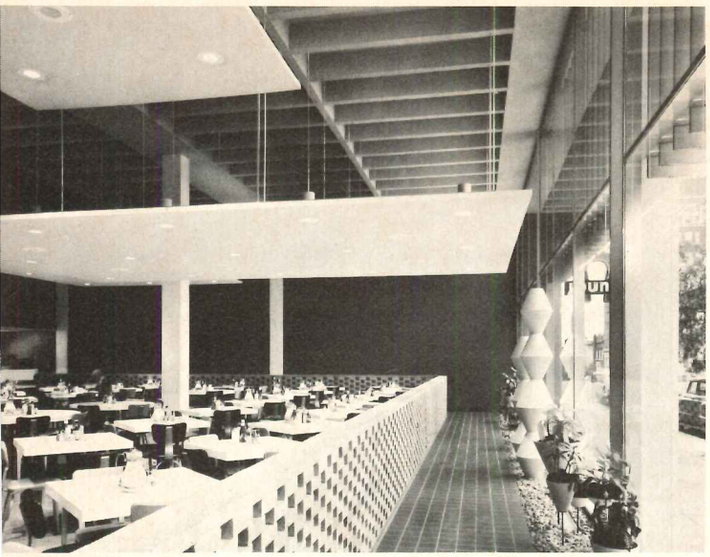
**The influence of building type on practice organization**

Most architects could sit down and postulate the differences in design approach to the interiors of houses, churches, schools, stores and office buildings. Why, then, do so many interior design ventures by architects founder on the shoals of those differences? Because the obvious differences of shape and form and function with which architects are accustomed to deal obscure the basic—although perhaps simpler—differences that affect the business of handling and charging for the job.

Differences in size and scale, for example, introduce the well known (but seemingly contradictory and often overlooked) stipulation that smaller jobs call for larger multipliers in the fee structure and proportionately more executive time in disciplines of the schedule and budget.

The following observations have been made by various practitioners regarding the organizational implications of two building types—residential and business. They underscore differences at these two ends of the scale, but are by no means a complete guide. The special requirements for other building types also call for specific measures in organization for practice.

**Residential interiors** (i. e., for houses and apartments, but not necessarily including hotels or dormitories) call for seemingly endless discussions of small matters. The organization should provide for more or less gentle reminders that the designer is a professional and his time is a direct charge to the job. The letter of agreement provides an opportunity to be specific on these



*Main seating area of The Piccadilly Cafeteria, Tulsa, Oklahoma by Murray Jones Murray. The architectural commission included the design of the building itself as well as all the interiors. Julius Shulman photo.*

*Clyde's Bar in Georgetown, Washington, D.C. by Hugh Jacobsen, architect. Recently completed, the bar and restaurant seats 250 people. All woods are clear white oak. The unusual barstools are tractor seats from the John Deere Museum. The brass-plated supports were designed by the architect. Robert C. Lautman photo*

points and should be detailed and explicit about the scope of services.

Preliminary interviews are a special hazard in residential work. It is a sad fact that prospective clients have been known to go from office to office picking the brains of responsive architects and designers who are too quick to reach for sketch pads and catalogs before the agreement is signed. The prospect leaves to think it over and finally goes home to a do-it-yourself design project.

Another burdensome feature of residential work that needs organizational attention is the fact that the architect's purchasing function is likely to be more direct, is often piecemeal, and encounters informal business practices on the part of the client in matters of delivery and documentation. The architect's own records have to be extremely well kept to cope with these conditions. And it can hardly be called a dilution of his professional standing if he writes in a percentage handling charge item by item—so long as the client is aware of this procedure.

**Office interiors,** specifically those large and varied spaces designed to accommodate all phases of business enterprise, present two very large problems for the organization of design practice. First is the fact that the design must follow a voluminous and vastly detailed program which business clients are increasingly calling upon experts to prepare. The development of these programs involves familiarity with commercial business practices and a penetrating study of the particulars of the client operation. It is characteristic of this kind of program that it must be unrelated to physical arrangements (the province of design), but must at the same time take into account the flow of commerce and communication within the client organization.

A whole new profession of specialists in this field has grown up. It has sprung largely from the experience of design firms who have watched the problem of programing grow as their own practices became more and more involved in business space design. Programing capability, therefore, is frequently set up as a service within the design firm. It is a separate and demanding service, however, and must be organized accordingly.

The second paramount problem in organization for business space design is one of degree. That is, the spaces involved are frequently extremely large, the clients are sophisticated and demanding in business-like practices. And the varieties as well as the quantities of furnishings and interior construction have nurtured a whole new industry called contract furnishings. Parallel to this, of course, the scope of work for business firms has provided opportunities for furniture design by architects.

At least one of the complications architects encounter in organizing for business interior design practice has developed out of the rapid growth of business itself. The manufacturers and suppliers of contract furnishings were not slow to respond to a demand for some sort of planning and layout service. They set up to provide that service with departments of varied capabilities—some of which have demonstrated a high order of competence. Most of these firms now work cooperatively with architects when the occasion demands. But on some other occasions, they must be recognized and dealt with as competitive with professional design practices.

The client group for business interiors divides into categories that will affect especially the promotional aspects of organization. Building owners are a major category which embraces two kinds of work. One is for those owners who are fairly large business firms and occupy their own buildings. This work has a substantial programing component. The other kind of work is for those building owners who want to prepare space for tenants. This may limit the scope of work or at best introduce a block between the designer and the program—which should really fit the needs of the tenant rather than the owner-client.

Tenants themselves form another large category of client. Some design firms have organized to aid in the search for suitable premises. In general, the tenant group tends to underestimate area requirements. A consulting competence to advise realistically in these matters may be an asset in a well developed professional design firm.

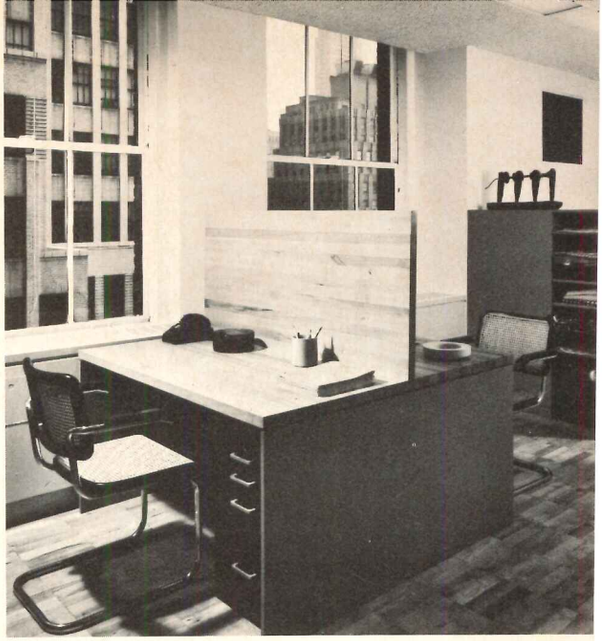
Real estate developers are another kind of client that may need special handling. In boom building years in New York, for example, some of these firms offered "free" interior design as a sales point for prospective tenants. They were not always sensitive to the ethical ground rules of professional design practice, but they have improved in this regard and are not only valued clients but are also a good source of contact with tenant prospects.

Some very large business corporations have developed their own interior design departments, which handle their far-flung premises with trained competence if not professional flair. While they are not often prospects for outside professional design, they are sometimes aware of the limiting effects of the one-client practice of their own captive departments. They are then prospects for outside consulting services.

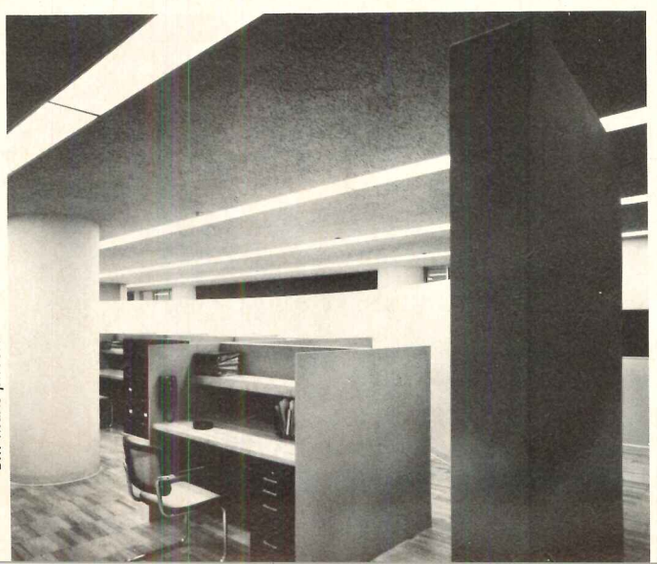
### Fee structures for interiors need further study

Architects' provision of interior design services and the special programing requirements of some aspects of this work are listed under the heading "Additional Serv-

*(text continued on page 142)*



## *OFFICES AND SHOWROOMS FOR HERLINGER BRISTOL, LTD., NEW YORK CITY*



*Bill Maris photos*

Gwathmey & Henderson Architects is a new and young firm that is rapidly gaining a reputation for the quality of its general practice as well as the excellence of its interior design.

The client, Herlinger Bristol, Ltd., consists of two recently-merged companies that design, weave and sell fabrics. They needed a reception area (left), a central production space for 12 people (bottom left), and salesmen's space (top), as well as two executive offices, a fabric testing laboratory, a weaving room and two showrooms. These requirements had to be accommodated within 5,000 square feet of loft space in a typical prewar lower-Broadway building.

An ordered and open plan was created within the existing column grid and exterior walls. The total area was planned to make the central space and the interior circulation elements visible from the reception rooms, as can be seen in the photograph at left, in which a portion of the showroom is revealed through the glass wall. The architects have succeeded in their attempt to achieve a sense of transparency and visual penetration through the various spaces to the exterior window wall. It is their belief that visitors as well as employes react positively to an environment in which the various activities are within view.

Walls are of painted plaster, ceilings are acoustic tile and floors are maple. Window shades are a natural beige.

All cabinet work and special fixtures were designed by the architects, and the movable furniture, which includes classic chairs by Marcel Breuer and Mies van der Rohe, was selected by them. George Langer was the mechanical engineer and the contractor was Garson-Bergman.

*AIR FRANCE TICKET OFFICES*
*FIFTH AVENUE, NEW YORK CITY*

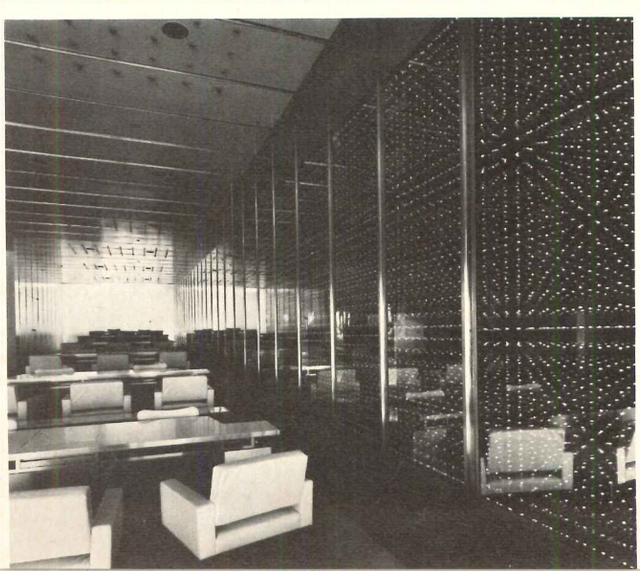
*Michel Proulx photos*

The design of this spectacular ticket office is the work of two interior design firms—Pierre Gautier-Delaye in Paris and Labalme Associates, Inc. in New York. Pierre Gautier-Delaye has created 53 ticket offices for AIR FRANCE in all parts of the world as well as the interiors of the Boeing 707 and the coming Boeing 747 for Air France. George Labalme heads a highly diversified design organization. Its range of services includes retail store, restaurant and office design, product development and graphics as well as corporate identity programs.

The interior of the ticket office suggests the passenger cabin of a great plane as it moves at supersonic speed through a star-filled night sky. More than one passerby has compared it to the interiors of the film "2001: A Space Odyssey." The "stars" appear in a wall of dark mirrored panels with tiny electronically-programed lights.

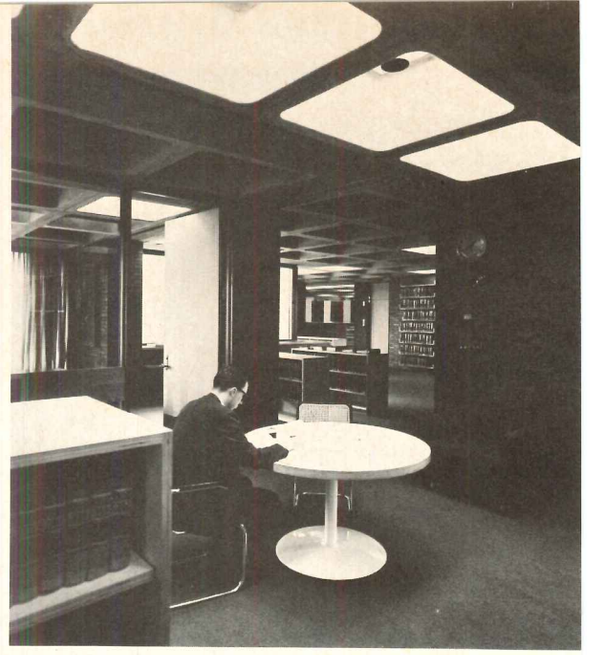
The white marble of the street facade is used in the entrance foyer on the floors, walls and ceiling (as shown in the photographs at left and above). The information desk (above and in the corner of the photograph at right) is of white laminated plastic on an edge-lit marble base. The planisphere behind it is incised in marble and gold-leafed. Six broad-stepped platforms with illuminated risers carry desks and credenzas of stainless steel and white laminated plastic. Each riser doubles as a return-air opening. The area under the platforms is an air plenum for the heating, ventilating and air-conditioning system. Twenty-four different colors of custom-loomed wool carpet cover the platforms.

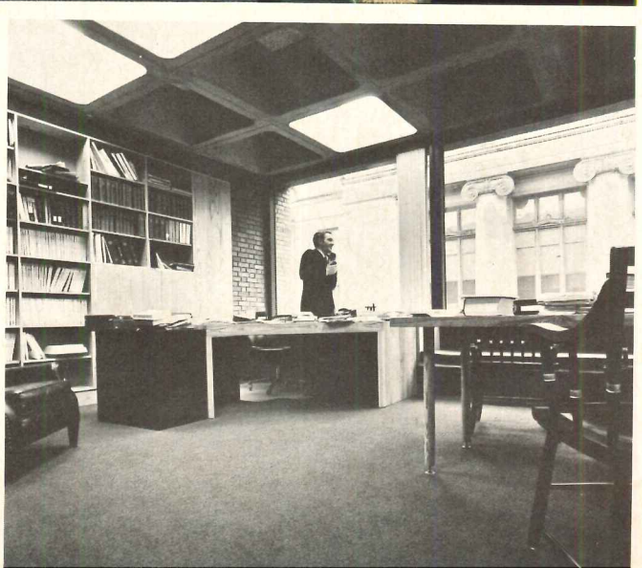
The ceiling is also of white laminated plastic with 45 bulb canopies of light above each platform. The module set by the stainless steel channel between each mirror carries up across the ceiling and down the north wall; every third channel in the ceiling is an air-conditioning strip diffuser. The electrical and mechanical engineer was I. A. Freedman, P. E.



*THREE INTERIORS BY BENJAMIN THOMPSON ASSOCIATES:*

*1. FACULTY OFFICES AND LIBRARY*
*HARVARD LAW SCHOOL, CAMBRIDGE, MASS.*





The three-and-one-half-year-old architectural firm of Benjamin Thompson Associates has designed some of the best college and school buildings in New England. The firm has done the interiors of every building that it has so far constructed. New clients, looking at the firm's past work, see for themselves that interiors are the essence of architecture and are easily persuaded to allow the firm to do the complete job.

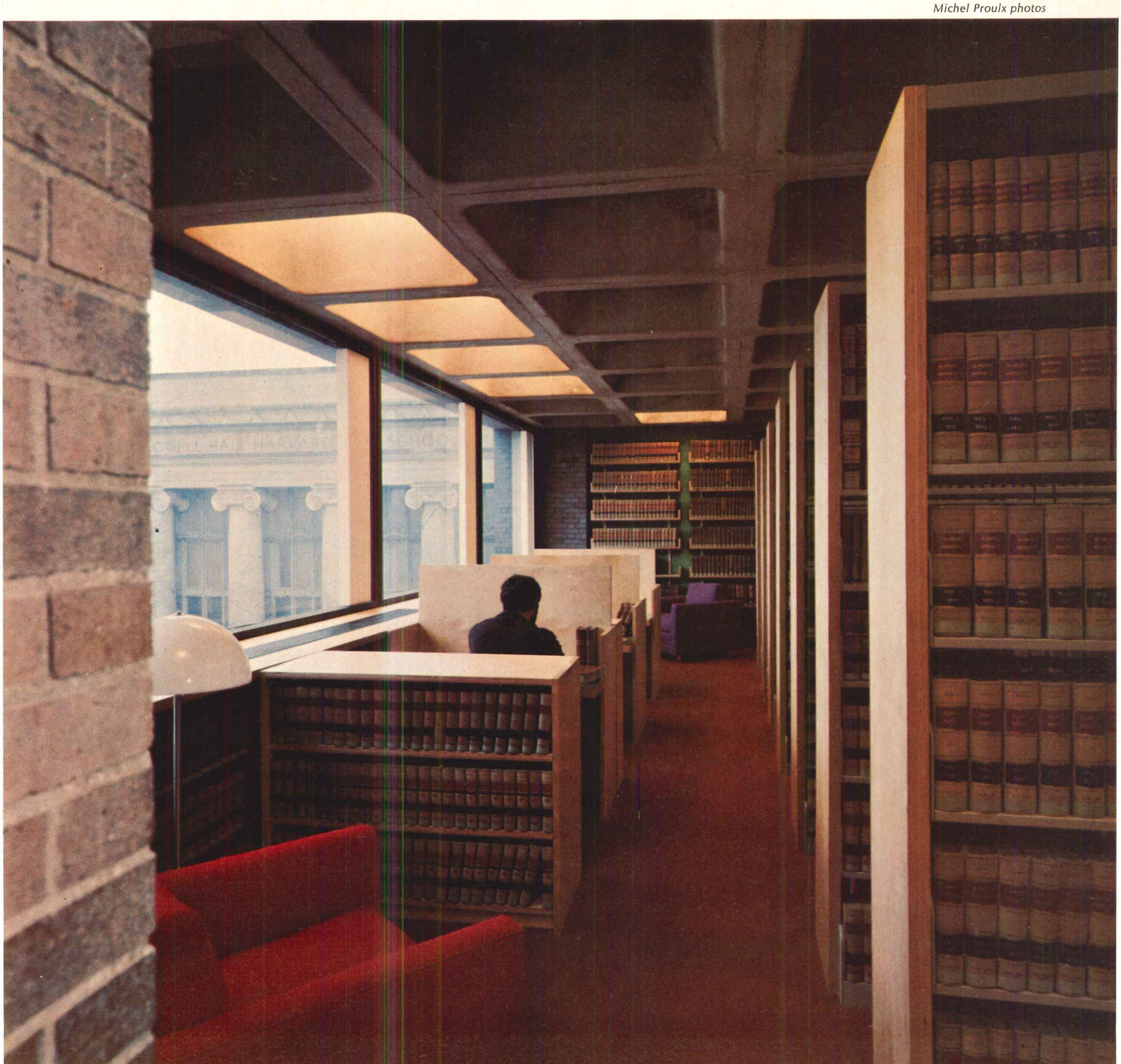
Thompson is founder and part owner of Design Research, which manufactures a small line of furniture, most of which was originally custom designed for one Thompson job or another and which is gradually being added to as new pieces are developed to meet new needs. DR also sells domestic and imported furniture, and other kinds of decorative and useful objects. DR items are used in Thompson's interiors wherever they are competitively advantageous.

"We live in rooms," says Thompson, and interior spaces are the focus of his architecture. The three campus buildings whose interiors are featured in this issue are basically similar in their planning and structural concepts. They differ rather subtly in the color and type of finish materials used, but they differ significantly in their ambience. The expressiveness of each group of rooms is highly appropriate to their users.

Thompson's associates, Thomas Green and Joseph Maybank, and his architect in charge of interior design, Joan Sprague, work closely with the future occupants of the spaces they are designing and provide them with a large range of options. At the left are two Harvard law professors' offices, one lawyer favoring an inflated plastic chair among other lively items, the other more comfortable with the traditional Harvard chair.

Thompson's interiors make the most of the "givens," as in the law professors' private library (shown above and right). Here the handsome bindings of law books become the basic decorative accent.

*Michel Proulx photos*

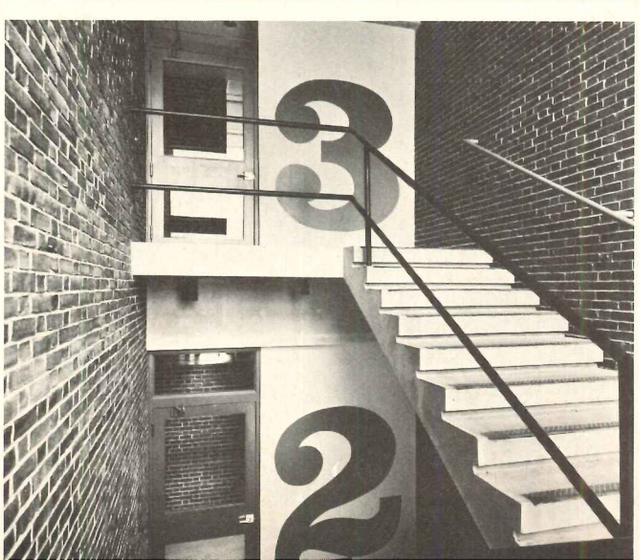


## 2. *BRONFMAN SCIENCE CENTER*
## *WILLIAMS COLLEGE, WILLIAMSTOWN, MASS.*

This recently completed $4-million science center has been totally designed by Thompson's firm. It includes two-, four- and six-man science, math and psychology laboratories, classrooms, computer spaces, a 285-seat auditorium and a two-level library (shown above and right) for mathematics on the lower level and psychology on the mezzanine.

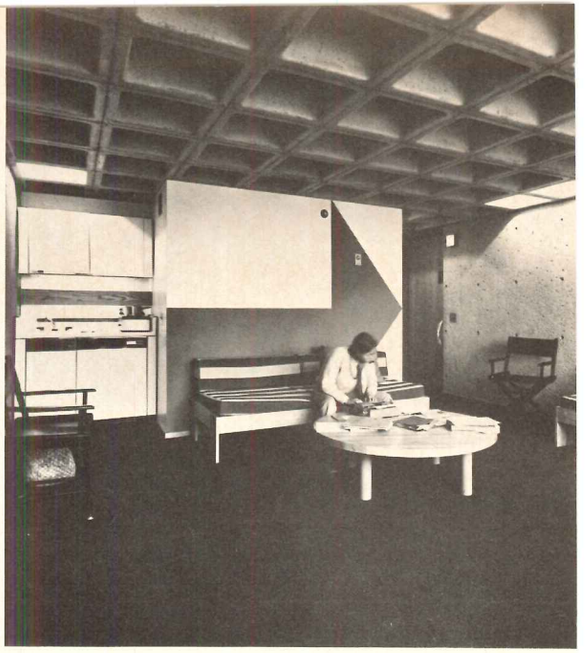
Successful design themes that continually recur in Thompson's work are much in evidence here, but although these themes are familiar, their quality of expressiveness is uniquely appropriate to a science building. Common to most of Thompson's interiors are brick walls, slatted wood or exposed waffle-slab ceilings, apricot rugs, butcher-block tables, deep wooden hand rails, super-graphics in stair halls, and brilliant color accents as provided in the library by the multicolored movable chairs, a widely-used contract item. Just as the Harvard Law School interiors have become in use a fitting environment for lawyers, so the Williams science building interiors seem appropriate to the undergraduates and their teachers.

The two-man student laboratory (shown at left) adjoins a similar two-man faculty laboratory. This arrangement facilitates teacher-student collaboration on research projects. At the rear of the photograph can be seen an exposed heat-resistant glass pipe in a brightly painted niche. All similar laboratory drainage pipes are exposed in this way—not only because a stoppage can be easily spotted and repaired—but because the glass pipes, like the rest of the laboratory equipment, are among the "givens" which, like the law books, have a beauty of their own. Thompson's interior architecture is essentially subordinate to the people and objects it holds.



*Michel Proulx photos*

## 3. *DORMITORIES FOR KIRKLAND COLLEGE, CLINTON, N.Y.*



The firm of Benjamin Thompson Associates has completely designed the campus for this new coordinate college of 600 girls which is associated with Hamilton College for men. One group of dormitories is now complete and the interiors, considered with those of the Harvard Law School and the Williams Bronfman Center, reveal the beautiful range of expressiveness of the design vocabulary of Thompson's firm.

Kirkland College, in addition to bringing girls to Hamilton College and providing facilities for a greatly augmented educational program emphasizing the humanities and social studies, will become the art and music center of the coordinate campus as well as a conference center.

Kirkland's public interiors are therefore appropriately bold and colorful, as in the lounge (right). Here brightly painted chairs with rush seats are combined with cushioned sofas covered in large simple patterns. The budget for the interior furnishing of Kirkland is within the strict limits established by the New York State Dormitory Authority.

The girls' own rooms (left and below) out-Thompson Thompson in their gaiety. These 18-year-old decorators suspend canopies and other objects from their ceilings, and choose or create their own mini-graphics and super-graphics, with inspiration which must be derived at least in part from the examples set by Thompson in corridors, stair halls and lounge-study areas (above).

Thompson, lecturing at the recent dedication ceremonies, complimented the girls as artists and expressed the hope that a bit of their esthetic would spread to the men's college across the road.

*Michel Proulx photos*

*The first so-called "Office Landscape" constructed in the United States for Dupont in the Farmer's Bank Building in Wilmington, Delaware. The Quickborner Team, a management consultant firm, contributed to the development of this concept.*

*Exterior remodelling and interior design for a Women's Fashion Store for the Joseph Magnin Company, Walnut Creek, California. Design architects and store planners were Chatham & Schulster. Robert Brandeis photo.*

*(text continued from page 132)*

ices" in A.I.A. Document B-131, the standard form of agreement between owner and architect drawn up on a basis of percentage of construction cost. Stipulation is made that these "additional services" shall be paid for separately by the owner, but no figures are suggested in the document as a basis for that payment. The assumption is that for these services, as for basic building design, the various chapters will accommodate fee scales to regional conditions.

The multiplicity of detail associated with interior design practice is such that the accustomed percentages and multipliers for building design work are frequently inadequate for interior design. The survey reported on the following pages underscores this assumption.

Architects can work successfully in interior design at a fee nominally stipulated as 10 per cent of construction costs, but the interior construction cost figure to which it is applied must contain a considerable factor for the kind of administration expense that is conventionally contained in the base cost as part of the building contractor's bid. In interior work, it is normally an additional expense directly to the architect because he is more consistently involved in administration of the contract.

Similar increases in normal multipliers applied to direct personnel and technical costs should be considered. The amount of executive time is disproportionate in interiors commissions. And at the other end of the scale, the clerical and technical time devoted to the details of the work greatly exceeds that required for other architectural services. This means that either the methods of recording time must be more stringent or the multipliers must be raised to cover the different norm.

Architects experienced in successful interior design have observed that if the figures for all categories of time, materials, and overhead are accurate and include a provision for profit, the interior design is bound to make money—provided, of course, it proceeds at a reasonably predictable or at least controllable pace.

### Survey of architects draws profiles of interior design practice

A recent survey of architect-readers of the RECORD, selected to provide a representative cross section of U.S. practice,* shows that about 64 per cent of the architects surveyed practice interior design as part of their professional service. Of those who do design interiors, 63 per cent find the business profitable. Three quarters of the firms practicing interior design intend to expand that service; some, obviously, in an optimistic attempt to move the operation into the profit column.

The tabulation opposite shows a summary of replies to some of the survey questions worked out as percentages of those firms now practicing interior design. The following is a summary of findings not reportable as percentages or not readily apparent in the table.

- About a third of the firms now doing interior design have been in that field for less than five years.
- Slightly more than half of these relative newcomers say the practice is profitable.
- Among those who did not mark the practice as profitable, the predominant reason given is that the service is provided as part of the over-all architectural service and is not separately identified as a profit source.
- Others found that work on small projects of interior design entails more detail and internal cost than was anticipated in fee structures.
- Only 22 per cent of architectural firms who practice interior design have set up a separate department to do so, and of those only one in seven have it separately incorporated.
- In a representative 100 architectural firms of all sizes who practice interior design, the staffing for interior design was reported as follows:

| | Full time | Part time |
|---|---|---|
| Registered architects | 29 | 104 |
| Architectural graduates | 26 | 52 |
| Others | 30 | 90 |

- The range of size of interior design staff is from one to 50, and it is notable that in the smaller firms the proportion of architects and graduates is higher.
- In those offices which design interiors for more than 50 per cent of the buildings they design, the likelihood of profitability is markedly higher than among those who do interiors for a smaller proportion.
- Of 47 firms who design interiors for 25 per cent or less of their own buildings, 38 per cent reported the operation not profitable—often because no profit was sought.
- Among those reporting no profit, about half included interiors as part of the over-all design, characterizing their interior work as an "extra service" done to retain total design control.

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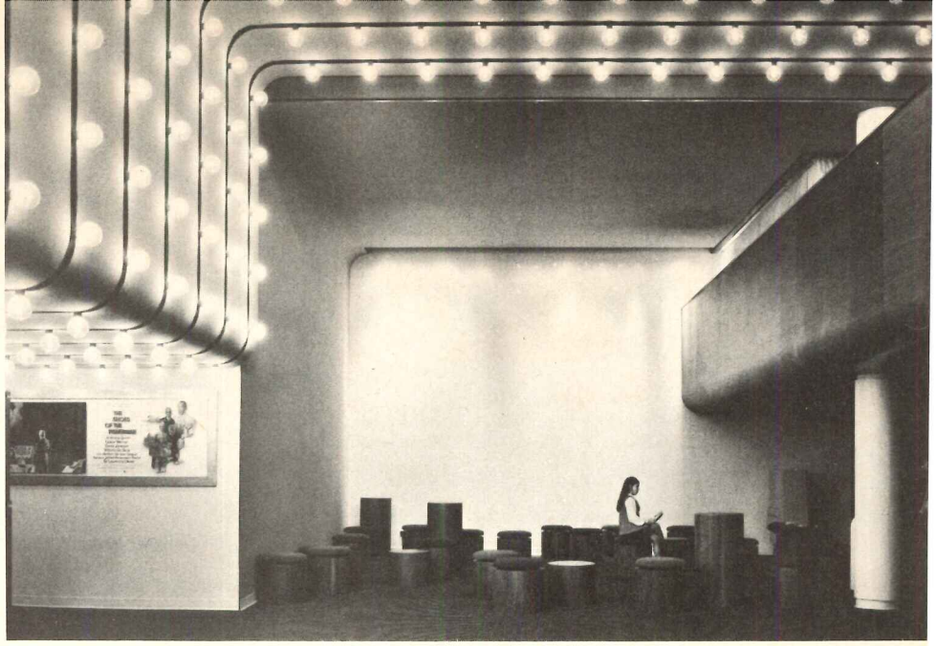
* A questionnaire was mailed to a statistically random sampling of 500 architects taken from the alphabetical roster of RECORD subscribers. Thirty-two per cent of these questionnaires were returned. The percentages reported here are based on those returns.

The same questionnaire was mailed to the entire roster of 192 presidents of A.I.A. chapters as a measure of the above statistical profile against a group reasonably assumed to represent a wide variety of office size but with more than statistical consistency in factors of conventional success. Forty-seven per cent of these questionnaires were returned and agreement with the statistical sample was very close.

*A typical office interior for Tower East, Shaker Heights, Ohio. Architects for the building and its principal interiors were The Architects Collaborative. Principal-in-charge was Walter Gropius. Assisting him for the interiors was Jack Chun.*



*Lobby of the L'Enfant Theater and Communications Center, part of the L'Enfant Plaza complex in Washington, D.C. The architectural firm of Jan Hird Pokorny planned and designed the theater and all its interior spaces. The lobby's primary light source is hundreds of clear five-inch incandescent globes that run in strips across the ceiling like a sparkling theater marquee.*

▪ Other reasons given for lack of profit were: insufficient size and volume of projects to cover research or to keep files current; too time consuming; inadequate fee structures.

**Fee structures vary**
**but some generalizations are possible**

▪ Of architects charging 8 to 10 per cent of materials and construction costs, 40 per cent did not realize a profit.

▪ Of those charging 12 to 15 percent, only 14 per cent reported no profit.

▪ Those few (four per cent) who charged 20 to 30 per cent of construction costs made money.

▪ On another fee basis, the most frequently charged multiple of direct personnel expenses was 2.5, a figure commonly used in general architectural practice.

▪ But 45 per cent of firms who operate at 2.5 times direct personnel expense realize no profit for their interior design efforts.

▪ Occasionally architects opted to negotiate fees on the basis of a multiple of 2.5 to 3.0 times an estimate of expense plus overhead, but again the method is reported to be unprofitable in nearly 50 per cent of the cases.

▪ In a separate mailing of the same questionnaire to a list of presidents of A.I.A. chapters, the profile of practice was virtually identical to that drawn by the larger, statistically random sampling of architect-readers of the RECORD.

**Comments on trends and problems are thoughtful and varied**

A sampling of comment on trends or problems volunteered by some architects in the space provided on the questionnaire is as follows:

Interiors done in the office of the designing architects for the building help to control the "total project."

Problem—convincing clients that all interiors should be coordinated with the building design.

Problems of conflict of interest—I feel that no retailer of merchandise should give interior decorating service, and vice-versa; all furniture should be billed directly to owner, following designer's approval; designer should not purchase material in his own name ever; and he should not be forced into this position by the manufacturers.

Here (in a major Southern city) the designers are owned by suppliers; with state work there is more flexibility in bidding practices (but with) political interference.

Need for better "systems" approach to aid architectural designer (i.e. "how to do-specify-order etc."). Organized source information would help especially to unravel the "mystery" of cost.

Biggest problem is overcoming client tendency toward "decorating" rather than designing. Client tends to think of interiors as something divorced from the building.

I see a trend toward interiors being included in architectural work.

Retail establishments are cornering interior design activities due to their free design services!

I see a trend in closer relation and more integration between architects and interior designers.

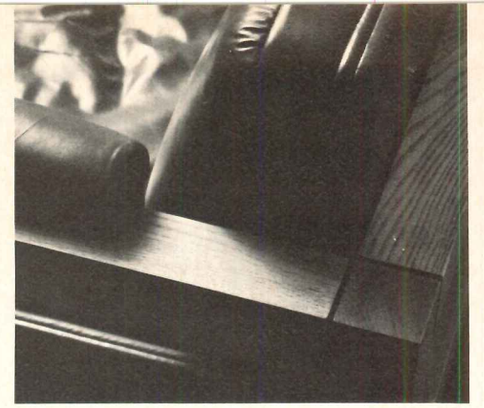
**ARCHITECTURAL RECORD SURVEY OF INTERIOR DESIGN PRACTICE**

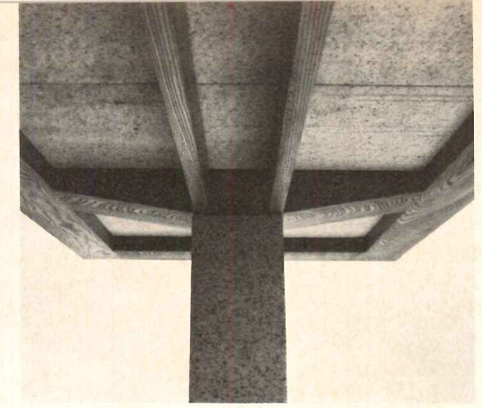
The following is a summary of answers to those questions in the survey (described in the text) which could be worked out as percentages of those architects in the statistically random sample who do include interior design as part of their professional services.

1. *Is your interior design practice profitable?*
   Yes 63 No 28 Varies 6
2. *Do you hope to expand your interior design practice?*
   Yes 73 No 20
3. *Do your interior designs include design and/or selection of movable furnishings?*
   Yes, design 75 selection 87
4. *Percent of firms reporting a separate department for interior design:* 22
   Department separately incorporated: 3
5. *For what per cent of buildings you design do you complete interior designs?*
   5 to 25% of buildings: 45 30 to 60% of buildings: 27 70 to 100% of buildings: 15
6. *Please check the types of interiors you have designed.*

| | | | |
|---|---|---|---|
| offices 90 | theatres 20 | stores 39 | museums 4 |
| dormitories 20 | schools 43 | libraries 24 | banks 54 |
| apartments 42 | hospitals 23 | restaurants 37 | houses 59 |

7. *Who are your major clients for interior design?*
   other architects 3 real estate developers 23 commercial tenants 43 building owners 85
8. *Who purchases the furnishings you specify?*
   Architect does, 37 client does, 81
9. *Do you work with interior designers retained by the client?*
   Often 9 Sometimes 72 No 19
10. *If so, do you approve or otherwise control material specifications on behalf of the client?*
    Yes (at least sometimes) 55 No 17





*Architect Warren Platner has created a new collection of furniture for CI Designs. The new line possesses the unity of character, consistency of scale and forthright use of materials which characterize distinguished architecture. The materials consist of ash, granites, leather and other coverings. The joinery is a logical use of these materials. Tables may be had with stone, wood or leather tops. Cabinets have stone, wood or leather doors and tops. Seating pieces include a dining-conference chair, lounge chair, sofas of various lengths and large and small ottomans and benches.*

Problem: Interior designers who claim they serve for nothing and make a fee on materials.

Problems: Lack of definition, professional ethics and standards; manufacturer-dealer relationships and policies; need for interior furnishings contractors.

Biggest problem is keeping up with all the newest items.

First the problem is to obtain a qualified interior designer with a background in architecture—then you have to expand so that you can keep him busy.

Frankly we haven't been able to cut the line between "architectural services" and just where "interiors" begin. Just for the record: where do floor finishes, wall coverings, colors and lay-in ceiling patterns actually fall—notwithstanding actual "furnishings" themselves?

Quality standards need to be established in some easily digested form.

The problem as I see it, is that too many interior designers attempt to narrow down their scope of design choices by establishing arbitrary and artificial "rules" regarding interior design. This allows them to practice with a minimum of talent and imagination; frequently with none at all. The other problem is that too many architects regard interior design as "window dressing," rather than as an integral part of the total building concept.

Inability to purchase certain lines of furnishings when manufacturers protect franchised distributors creates a problem. Also the general requirements of keeping showroom space to maintain maximum discounts from manufacturers.

We are architects. Our selection of materials and furnishings reflects our architectural design concept of the building and is somewhat more architectural than that of interior design firms.

Unless a client employs a reputable space planner or his architect, the end product usually ends up a complete disaster. Also, when the client moves his load of has-been furnishings into a new space, the game is lost.

Architects initiate interior design in planning buildings. To offer comprehensive services to clients and to control total design, it is mandatory that we be expert in interior design as well as other services.

Interior design should be done by interior designers, not architects—we're not trained for it.

Interior contractors are taking professional designers' plans and competing on a "package deal" direct to the client. It is still cheaper for the client to send interior work out for competitive bids.

Competition of office supply companies doing interior design (for free) is a problem. There is definitely a trend toward architectural firms having their own interiors department. But I think that this can only be practical in large companies with many jobs because of the very broad field of interior design.

There is need for licensing of interior designers.

Finding good bidders for contract work is a problem. We also feel all alone in attempting to set up really good specifications—particularly for carpeting.

We will very likely depend more frequently on consultants.

Fees create a problem. Interior design should be contracted for on a separate basis. Architectural firms performing this service should be compensated for on a multi-rate basis or some other equitable arrangement.

The day of the interior decorator selling merchandise for his fee is fast ending. Interior design can stand on its own two feet today as a design service paid for by the client on a direct fee basis.

Franchises in limited areas are poor for open bidding work. And manufacturers' control of carpet installation is harmful.

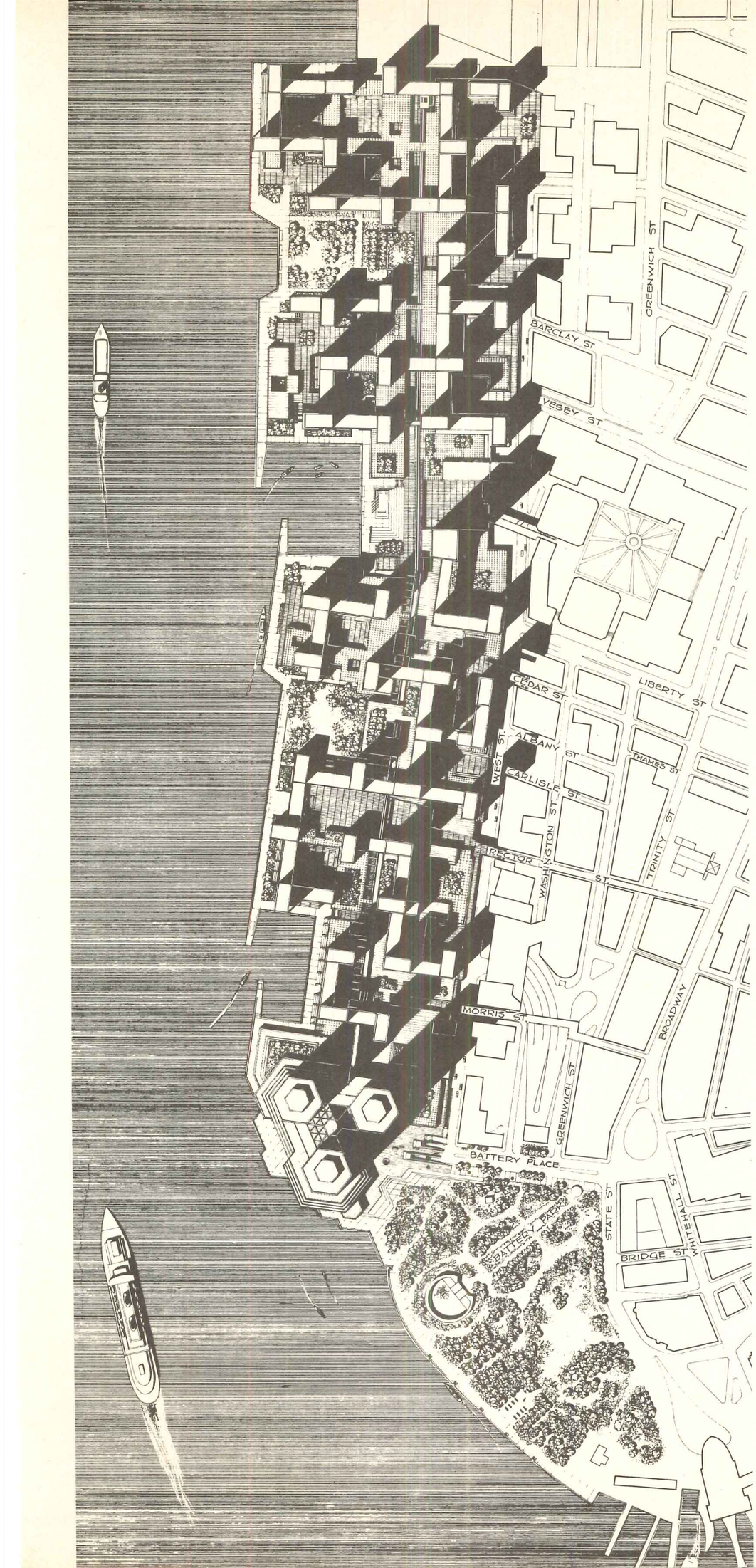
Most architects—including ourselves—are terribly inexperienced about this. We must become involved—the A.I.A. does not seem to recognize it as far as providing contract documents, etc.

Interiors take much more time than we are equipped to handle. Many clients of buildings now want interior design along with building design—particularly for banks and small office buildings.

Trend is toward a softer look in furniture, but not to the "cute" or merely "decorated." Problem No. 1: convincing the public that experienced architects are well qualified for interior design. Problem No. 2: convincing more architects that they must become proficient at, and practice, interior design to maintain the integrity of the buildings they design.

Interior design should be included in project design and both worked through together.

There must be a closer relationship in the basic architectural development of spaces, functions, etc. Interior designers should develop designs for specific furnishings (i.e. custom designs for furniture, textiles, lighting and graphics).

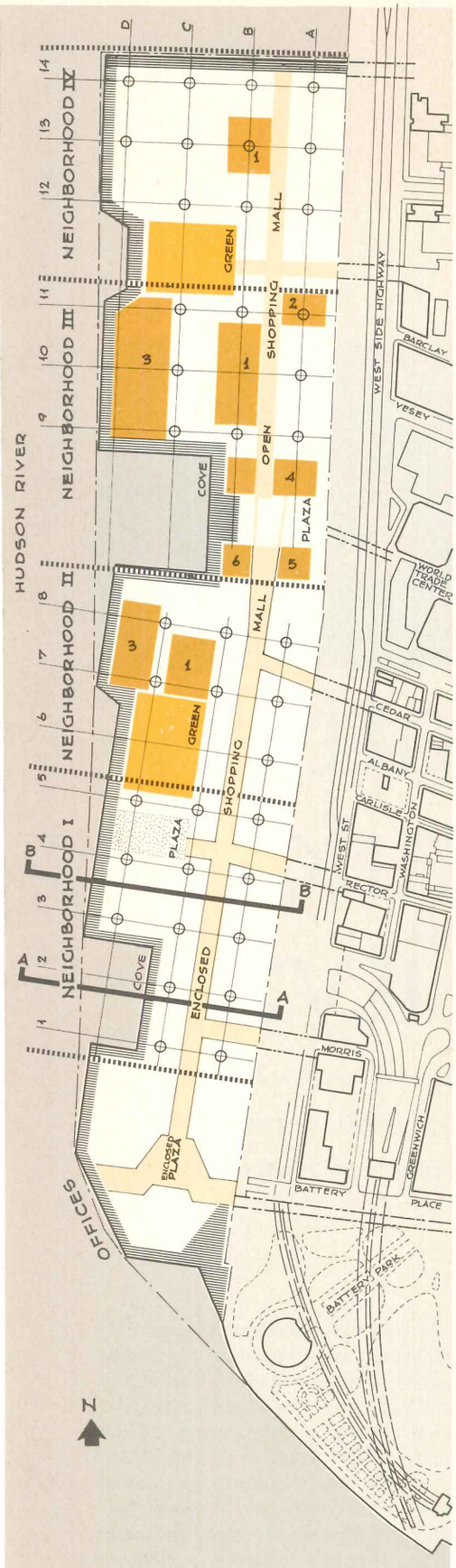


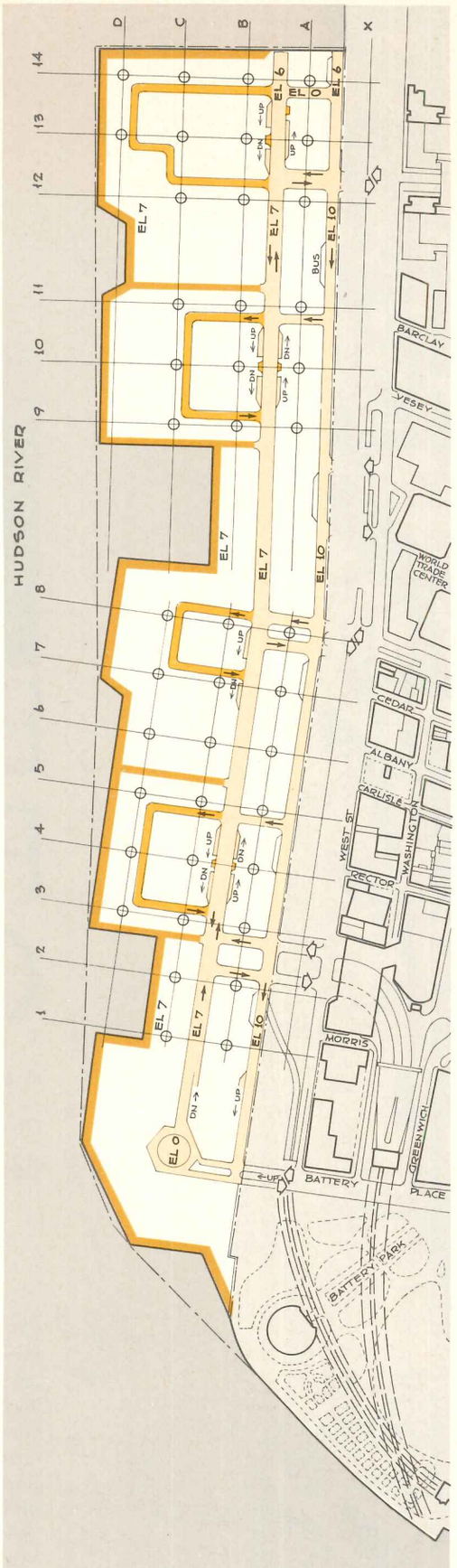

*Thomas Airviews*

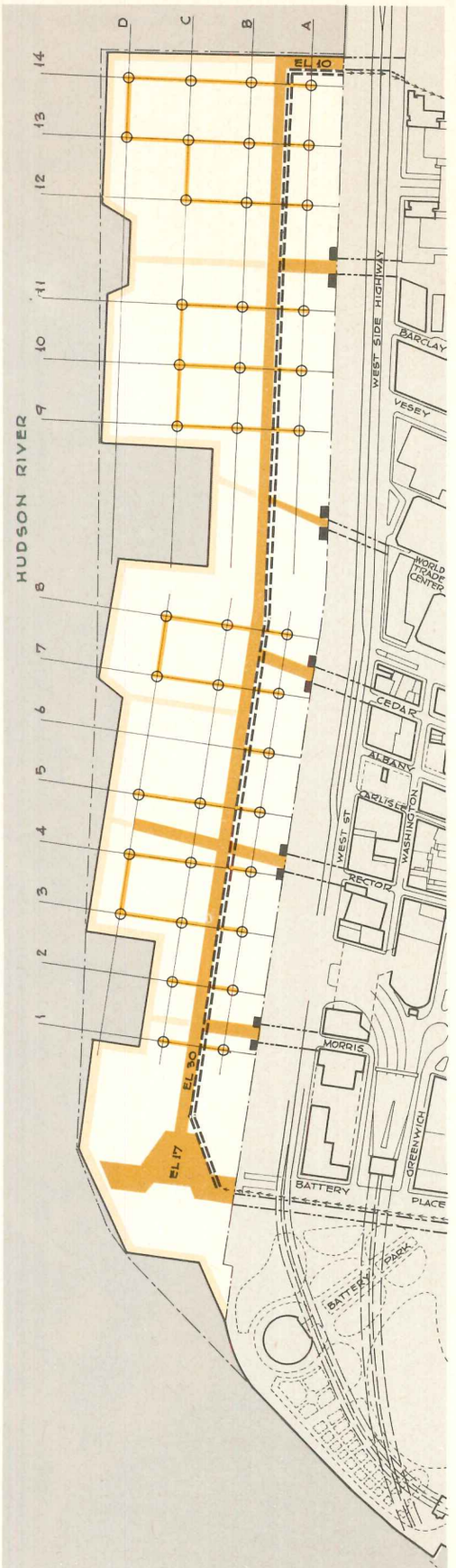
# Battery Park City:

## A proposal for new housing, new jobs, and new land . . . perhaps a new kind of urban life

Battery Park City is a sweeping proposal for the revitalization of a portion of our largest city, launched by both Nelson Rockefeller and John Lindsay as the largest urban development project in the history of the country. It will be located in what is now a portion of the Hudson River (see aerial photo, above) on filled land between Battery Park and Chambers Street in lower Manhattan. The two agencies principally involved in its creation have been New York City's Office of Lower Manhattan Development, and the Battery Park City Authority, created by the State Legislature in 1968 as a public, non-profit corporation for the purposes of directing and financing the development of the site. Under these two groups, the present design and master plan were created by the architectural firms of Harrison & Abramovitz, Philip Johnson &




## CIVIC FACILITIES

1 SCHOOLS
2 HEALTH CENTERS
3 INDOOR AND OUTDOOR RECREATION
4 CULTURAL FACILITIES
5 POLICE (below)
6 FIRE (below)

MALL
PLAZA
GREEN
ESPLANADE

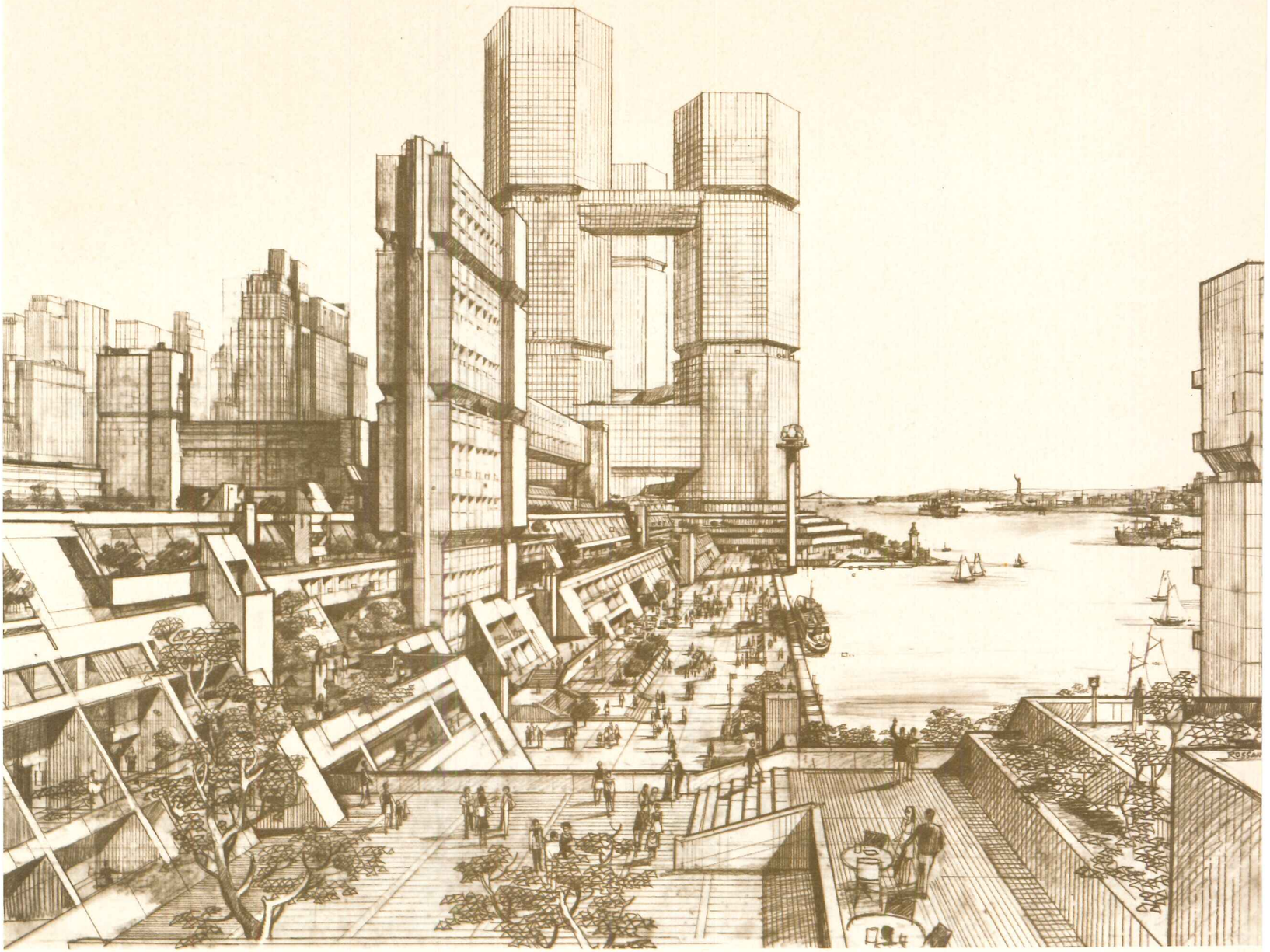
## VEHICULAR CIRCULATION

ARTERIAL STREETS
COLLECTOR STREETS
EMERGENCY WAYS
VEHICULAR SITE ACCESS

## PEDESTRIAN CIRCULATION

| | |
|---|---|
| PRIMARY | EL 30 |
| SECONDARY | EL 30 |
| ESPLANADE | EL 7 |

PUBLIC TRANSIT SYSTEM (PTS)
PTS EXTENSION
VERTICAL ACCESS
PEDESTRIAN ACCESS



At left are three of the 12 maps which help define the intent and limits of the project. Above is a perspective looking south from one of the coves, and focusing on the three hexagonal office towers. The Statue of Liberty and Verazzano Narrows Bridge are in the distance.

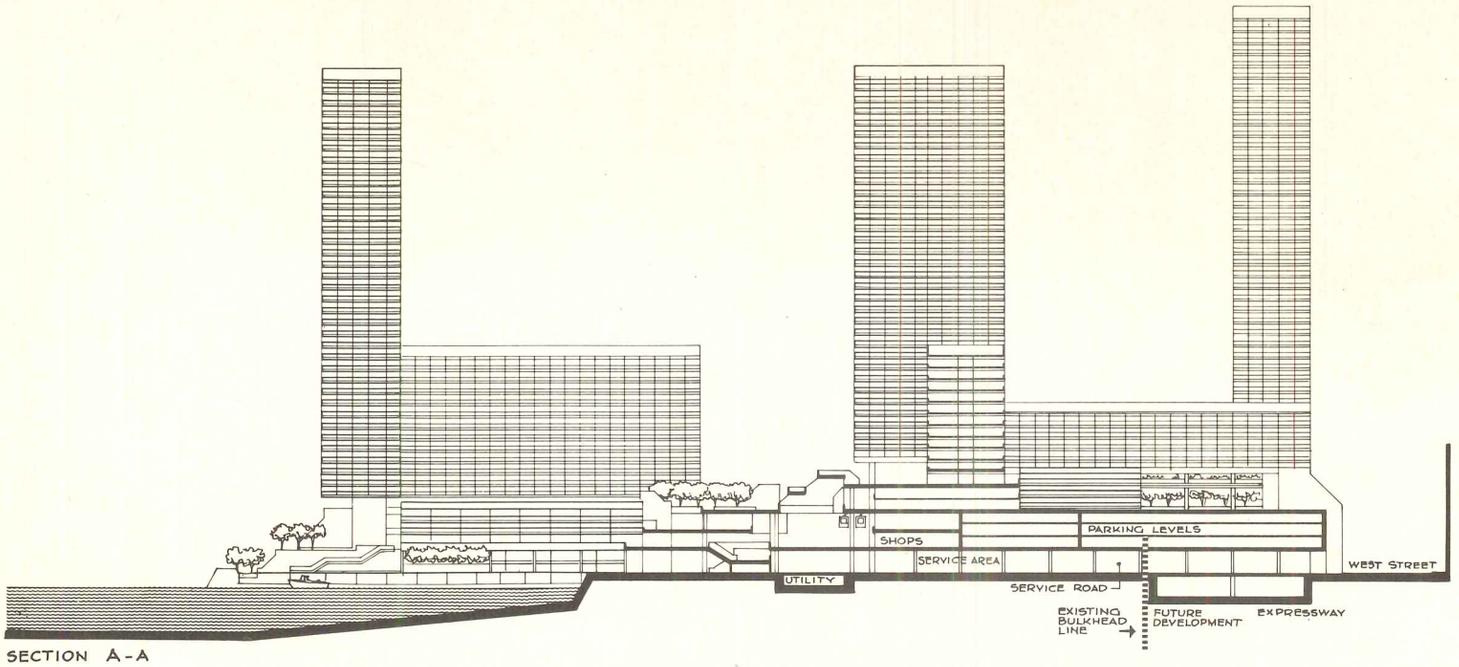
John Burgee, and Conklin & Rossant.

As now conceived, and as presented to the public in the press brochures, Battery Park City's statistics are impressive:

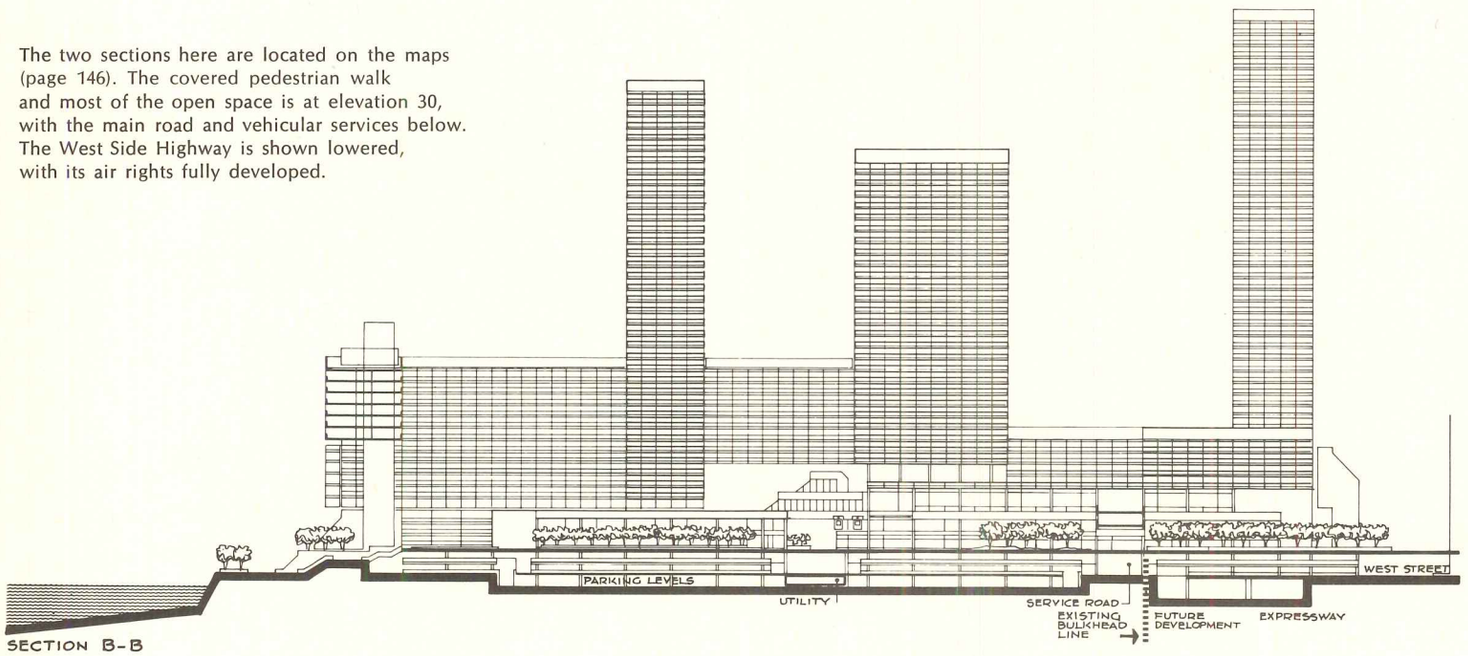
- 91 acres of new land created. The total area of the project will be 118 acres, after the West Side Highway is lowered and its air rights developed as the final stage.
- Five million square feet of new office space.
- 19,000 new apartment units for 55,000 residents. Two-thirds of these are to be conventionally financed by private development and will almost certainly be high-rent apartments. One third will be subsidized by either the state or Federal government for middle- and low-income occupancy.
- 35,000 jobs created—30,000 in the new office and retail spaces and 5,000 in maintenance and services. This exceeds the total work force in a city the size of Schenectady or Troy.
- Total cost: more than $1 billion. As estimated: $300 million for office and commercial buildings, $500 million for housing, $100 million for sinking the West Side Highway, and $150 million for landfill, planning, administration, and civic facilities.
- Cost to New York City: $100 million for putting the highway underground.
- Revenue produced for New York City: between $25 million and $35 million annually, upon completion of the project. Lesser amounts while construction proceeds.
- Projected final completion: early 1980's, with some portions complete and producing revenue by 1974.

Sweeping schemes for renewal of our cities have been proposed off and on over the past 100 years and even before, as men have been moved to recognize overcrowding and physical decay as part of our "urban crisis." They have generally produced larger or smaller amounts of discussion, but little actual change. It is fair to ask then: Is Battery Park City different? What is the general concept implied by the plans, renderings and sections, and does this scheme have a better chance than others of succeeding in the forms we see here?

The renderings, model, descriptive maps, and sections now complete have two purposes, of course. One is to describe in a *general* way the configurations of the buildings and the city which could be built on the site, under restraints imposed by laws, codes and the designers themselves. "Designers" is here used in its widest sense, for the economists and politicians have had as much hand in shaping the present con-




SECTION A-A




SECTION B-B

The two sections here are located on the maps (page 146). The covered pedestrian walk and most of the open space is at elevation 30, with the main road and vehicular services below. The West Side Highway is shown lowered, with its air rights fully developed.

cepts of Battery Park City as have the architects and planners. The drawings are not meant, then, to be detailed or immutable. The second purpose of at least part of the graphics is to interest and excite the viewer —to broaden one's concepts of the possible, for our cities cannot be changed without ideas that have this ability.

**The scheme at this stage: a public shoreline and circulation spine**

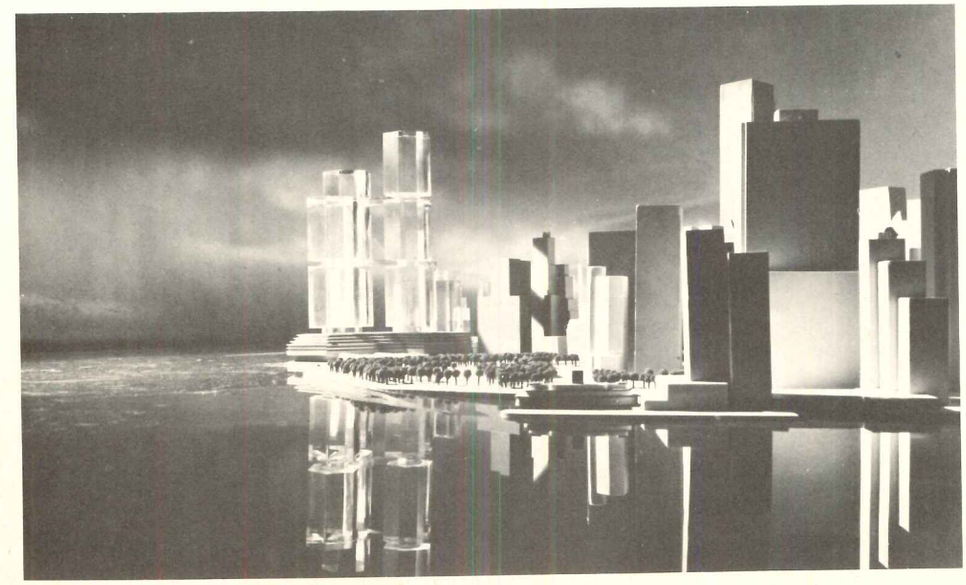
The land has been divided into two principal parts. The southernmost portion (ten acres) is reserved for the 5,000,000 square feet of office space, represented in the renderings by the three octagonal towers, connected at their base with a series of terraces and a plaza, and at their higher elevations by bridges. The remainder of the site is to be a high-density residential area, including shops, plazas, greens, coves, and an esplanade along the river's edge.

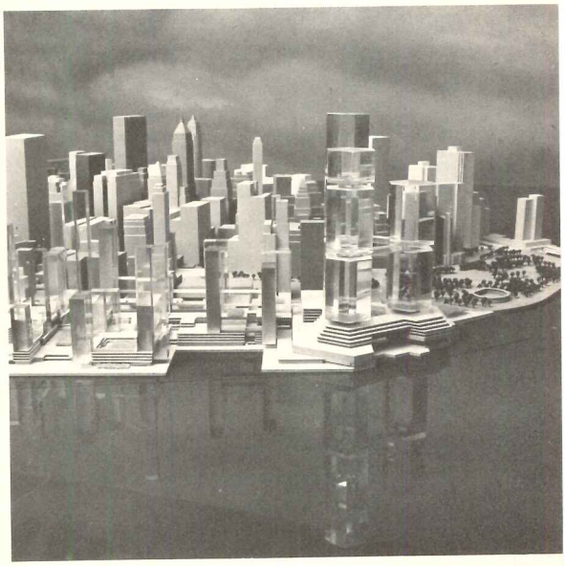
The core of Battery Park City will be a shopping and circulation "spine" (maps, page 146) running from the site of the office towers at the southern tip of the new land, past the World Trade Center to the northern limits of the site. On the vehicular circulation map this spine is shown at elevation 7 (seven feet above water level) as a wide roadway, with secondary circulation loops connected to it—one for each neighborhood—and with access to parking garages both above and below the roadway.

Pedestrian circulation also takes place principally along this central spine, but at elevation 30, above the roadway. The main pedestrian and shopping street is to begin as an enclosed plaza within the office towers and continue as a completely enclosed mall up to the new plaza in front of the World Trade Center. It would then become an open shopping mall to the northern end of the project. Running in close proximity to the mall would be the public transportation facilities. In the rendering (above, right) these are envisioned as an overhead suspended monorail system, with cars holding twelve people. The circles placed at the intersection of the grid lines (1 to 14 and A to D on maps) indicate the location of the elevators serving the apartment towers above elevation 30. This vertical transportation is connected by walkways to the main circulation corridors and finally to the city as a whole by seven major bridges across the West Side Highway.

A second feature of the project is its shoreline, which is an attempt to develop one part of New York's waterfront for public

This interior perspective of the covered pedestrian mall shows mixed shopping and restaurant spaces, and one concept for the rapid transit system. Below are two model photographs, showing the apartment towers located within the grid system, and the large office towers.





use. It would be irregularly shaped, as shown on the maps, with at least two major coves and with its entire length devoted to a public esplanade which would be closed to vehicular traffic at all times, with the exception of emergency vehicles.

As a conception of what is possible in city life, Battery Park City's vision is outstanding. Its physical forms are sufficiently diverse to be interesting, and facilities of differing functions are in proximity to each other. This mix of forms and functions is not as strong (nor as chaotic) as the fabric of our existing cities, but it is certainly in better relation to existing patterns than most core-city "projects" we have seen for too many years. More dramatic vistas from the interior of Manhattan could have been created in Battery Park City by allowing the existing east-west streets to run through to the water's edge, as has indeed been done in the Lower Manhattan Plan of 1966. And the proposed fixing of vertical transportation and apartments within a grid system (which makes it easy for the pedestrian or driver to find his way) could make the spaces between buildings repetitive and dull. But the plan acknowledges the need for a rational circulation system first of all, and its buildings and spaces are subjected to this discipline. It indicates a workable yet nearly total separation of vehicular and pedestrian traffic. The principal space of the circulation spine—its enclosed mall—is given entirely to the pedestrian, as is the waterfront and most of the spaces open to the sky. Properly conceived, this disciplined scheme can be as visually exciting as the graphics which now represent it.

**Will it be built in conformance to the present scheme?**

The financing procedures are these: the Battery Park City Authority must first obtain a Master Lease from New York City for the 91 acres of new land—this lease to extend for 100 years. Battery Park City will then issue bonds to finance the remaining fill required and the preparation of the site. It can then sublease the land designated for office buildings and for apartments to private developers, applying the revenue from these to develop the streets, utilities, and public amenities. The developers of the office buildings and conventionally financed apartments will pay full rent and a yearly tax equivalency payment to Battery Park City, which will in turn pay the city the annual revenues agreed upon in the Master Lease. Developers of the low- and middle-income housing will pay less annual rent to the city than will the high-income apartments, and low-income construction costs will be partially subsidized.

If not rigidly controlled, a nonprofit "public interest" corporation created to finance a specific enterprise can become heavy-handed; dedicated to its own self-perpetuation and responsible to no element of the electorate. In this instance, the principal vehicle for control by the city of Battery Park City is the Master Lease, which New York's Board of Estimate must approve, as described above, before development can proceed. Included as a part of this lease is the Master Development Plan for Battery Park City. This includes: 1) the graphic material of maps, plans, and charts which detail the proposed scheme (including 12 site maps that explain existing conditions, establish traffic patterns, propose the sanitary system, etc.; 2) the written explanations and descriptions that accompany the graphics; 3) a summary of the proposed density controls for the site; 4) a written section of planning and design criteria, which outline in a general way the design intent of the documents within the Master Plan; and 5) a section that provides general guidelines for the preparation of plans for specific development, including their design review by a still-to-be-determined system.

The design criteria stipulate, in part, that the project shall be developed in layers, with divisions of land use being defined both vertically and horizontally. It protects five views, specifying that buildings may not be constructed so as to obstruct them, and establishes the design objective of a "pyramidal" skyline, with the highest towers being placed near the World Trade Center.

The written documents which accompany the drawings stipulate that there will be two coves as shown and that an uninterrupted public esplanade will exist for the entire length of the waterfront. It specifies that 30 per cent of the total site shall be developed for public use, (plazas, parks, the esplanade, etc.) and that an additional 27.5 acres within the residential developments be reserved as open public space. It specifies that the major pedestrian circulation street shall occur at elevation 30 and the vehicular circulation shall be at elevation 10. An enclosed mall is a stipulated part of the documents. The "grid system" as a basis for locating the apartment towers and the vertical transportation is specified in the Lease as only one approach which might be taken.

The concepts we see implied in a general way by the drawings and plans, then—public access to the shore, the coves, large plazas and public spaces, separation of vehicular and pedestrian traffic, an enclosed mall, the multi-level, mixed-usage, layered development of the site—are in fact specified in the Lease and must be included in any development of the site based on that lease. This, plus the detailed and workable financing plans, give Battery Park City a chance of succeeding in a form similar to what we see on these pages.

Of course, a development of this nature, spanning ten years, must be flexible too, and depend to a large degree on the competence and good faith of the men who direct it from day to day. A format for design review has yet to be established, and it is important. As specific projects are proposed for Battery Park City by the private developers and their architects, they must be tested against the overall plan for their functional and esthetic conformance to it, and rejected if they do not comply. In principle, the Office of Lower Manhattan Development and Battery Park City Authority have agreed that the city (rather than the Authority or some architectural "board of arbitration") should exercise the final design judgment on a particular design's suitability and appropriateness to the Master Plan, and that the form of the office towers as shown in the Master Plan (three linked hexagonal towers of 50 to 60 stories each, the central plaza between, the parking, etc.) should be followed strictly, if at all possible.

Other controversial issues may effect the sociological and financial scope of the proposal, though not necessarily its design. One is the proposed mix of high-, middle-, and low-income housing. Only 7.5 per cent of the dwelling units are now proposed as low-income housing, and many people consider that insufficient. The reasons for this low percentage are, of course, financial. The financial load of the project is being carried by the office buildings and, to a lesser degree, the conventionally-financed apartments. The middle- and low-income units would be subsidized by either the state or Federal government initially, and eventually by the city too, for they would pay much less tax. Some planners have said that the only way more low-income housing could be built within the project is to increase the amount of office space, either in height or the area of land covered. Others say not even this is possible without creating havoc in the finely tuned financing, and possibly scuttling the whole project.

Another issue: apartment construction in New York City is at its lowest ebb in years; why will developers be prone to build apartments in Battery Park City when they will not build them anywhere else in Manhattan? There are at least two advantages: A prospective developer will not have to assemble several parcels of land to create one sufficiently large tract, as is usual in the city, and there will be no problem of disrupting or relocating existing tenants. These advantages eliminate two logistical headaches for developers, but do not substantially effect the long-term financial risk. The city may have to offer certain special concessions or guarantees to developers and their bankers if they are to be enticed into fulfilling the role which the present plans of Battery Park City assume they will fulfill.

Yet all of these problems are surmountable. Indeed, the existence at this stage of specific and identifiable problems, as well as the substantial amount of drawing and planning already complete, help make Battery Park City believable, and a project that could change the face of Manhattan.

*—Robert Jensen*

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BATTERY PARK CITY, New York City. Controlling agencies: *Office of Lower Manhattan Development, Richard H. Buford, director; Arthur Wrubel, planner. Battery Park City Authority, Charles Urstadt, chairman; Edward R. Levy, assistant commissioner.* Architects: *Harrison & Abramovitz; Philip Johnson & John Burgee; Conklin & Rossant.*

# IT'S NOT JUST THE CITIES

by Albert Mayer

## Part One:

## The national continuum of urgency and opportunity

*"Each thing in the universe is hitched to everything else. You can't pick anything up without finding that everything else in the world is attached to it."* — John Muir

*"No man is an island entire of itself. Every man is a piece of the continent, a part of the main: if a clod be washed away by the sea, Europe is the less."* — John Donne

The environmental crisis in this country is not only a matter of the city: it is an interrelated continuum of malaise and deterioration all the way from rural areas and small towns through metropolitan areas and possible megalopolis. *Within* the city and the metropolitan area, it encompasses not only slums but, in a kind of "vertical" continuum, the substantial areas just beginning to become "gray" and the quality of living in even the "best" of our neighborhoods.

Coping adequately with the extent and the emerging visible severity of deterioration, of crisis, of near-crisis and of pre-crisis in this national continuum demands a massive scale and immediacy of funding and operation, both public and private, far beyond any present appropriations or indications of intent. These *are* within the country's growing capacity, if we will muster the determination to make them available, increasingly, beginning NOW. On the other hand, failure to act until each node of deterioration has reached the state of hyper-crisis now poisoning the city slums *will* mean a *later* magnitude quite beyond any conceivable resources.

Heroic pressures need to be brought in order to raise government funds commensurate with the need of the continuum. But in view of the scale of total need, and particularly in the present climate of intention and non-intention in the Administration and in the Congress, funds and action by public interest groups and other private sources must also be heavily stepped up.

To fully and imaginatively fructify a new realization of the continuum, and energize the massive funds required, we need the deployment of deep personal-organizational commitment, of which there are already examples on many planes, but we need it on a vastly multiplied scale.

The purpose of this presentation is to carry conviction as to the character of our environmental condition, and as to what kinds of analysis, action, commitment are required. This article offers three types of material: facts and developments known and frequently reported on in their individual impact, but inadequately or not at all in terms of interacting and cumulative impact (or possible solution); elements and relationships just emerging, or just being recognized; formulation of kinds and scales and urgencies of new concern, fresh policy, action and participation. Realization of their burning immediacy may unfreeze minds and impulses of many who can act.

Albert Mayer is an architect who has been for nearly 40 years strongly involved in planning and housing for public as well as private clients, both as practitioner and as consultant. Commissions have included (among many others) master planning for Aluminum Company of Canada's new city of Kitimat, B.C., Chandigarhh, Greater Bombay, and (currently) the new city of Maumelle, Arkansas. He has lectured and written widely, and his 1964-65 series of articles for ARCHITECTURAL RECORD, "Architecture for Total Community" (in consultation with Clarence Stein), was developed into the book, "The Urgent Future" (McGraw-Hill, 1967). He has degrees from Columbia University and the Massachusetts Institute of Technology. From 1935 to 1961 he was a member of the New York architectural firm of Mayer, Whittlesey and Glass; he is now in private practice in New York. He is a Fellow of the American Institute of Architects and of the Society of Applied Anthropology, and a member of the American Institute of Planners and of the American Society of Civil Engineers.

## 1 Evidences of the continuum, on the negative side.

To solve the burning problems of the city we must do the job *now,* and on a scale that too few are ready to face. The unprecedented scale of the Housing and Urban Development Act of 1968, on which there has been so much self-congratulation, is still only a long overdue substantial *beginning,* for a segment of the total job of total environment which we owe ourselves.

**"The fire in the cities is only the most spectacular symptom in a total national continuum of malaise or disease in our environment...."**

But if we get ourselves hysterically concentrated, as we seem to be doing, on *just* the cities, in a sort of paroxysm of guilt for neglect, then we will *not* solve the problems of the cities. I do not ask for less, but for more, much more—aid, money, imagination, devotion—for dealing with the city's ills.

The anguish and alarm which have belatedly taken hold in our country are restricting themselves largely to the subjects of city, slum, race, in what could be a fatal inadequacy of view and action.

The fact we must recognize is that the fire in the cities is only the most spectacular symptom in a total national continuum of malaise or disease in our environment. We must learn to understand that there is a *continuum* consisting of many, many sharp points or nodes, and ranging from malaise to exacerbated crisis, in many and multiple intermeshed aspects of our national life and environment: in city and in rural areas, in fringe and in suburbs, in mega-metropolis and in county seat.

I use the word continuum in a number of senses. First, in the sense of a national *geographic-functional* continuum. Until recently the flood of city problems and of dangers had been continuously replenished and increased by the migration to the cities of hundreds of thousands of ill-equipped newcomers from the countryside. In the 1968 election, the statement of this problem became a political cliché. But it has become a cliché before any really massive action has been effectuated, may even have dulled the impulse to real full-scale action.

**"The non-city areas in the country themselves cry out for help. They are themselves gravely sick...."**

The non-city areas in the country themselves cry out for help. They are themselves gravely sick, even if not so vociferous: with diminishing numbers of jobs, meager education, rural slums, health deficiencies, cultural deprivation. These are practically the phenomena that we associate with the deprived areas of the cities, though the specific forms and relative intensities differ. And let's not forget that riots are not confined to the cities. There have been riots among the poor in Appalachia, and riots against strip-mining.

The cities and the non-city areas alike are bulging with crisis and pre-crisis. Each is, potentially, bursting with promise. A joint fate, a joint opportunity. A plunge into the 20th-21st century with its new techniques, insights, potentials; instead of hugging the obsolete-obsolescing configurations of the late 19th and first half of the 20th and allowing or encouraging vast trend-expansion at great cost. The mega-cities and mega-regions are no longer necessary, produced as they were to meet now outworn technical facts and factors. In fact it is now *possible,* by and large, to live and work equally well at any point on the continuum. In a sense every node is a possible alternative to any other. Transportation and the interstate road system, communications and tele-communications, cultural diffusion, underline this. And we have the following growing evidence of people's preferences from a Gallup Report (May 5, 1968):

Question: If you could live anywhere in the United States you wanted to, would you prefer a city, suburban area, small town or farm?"

| Answers: | *1966* | *1968* |
|---|---|---|
| City | 22% | 18% |
| Suburban | 28 | 25 |
| Small Town | 31 | 29 |
| Farm | 18 | 27 |
| No Opinion | 1 | 1 |

These are positive factors in the concept of continuum; and we are now in a position to effectuate these choices.

There is a continuum in the *ecologic* sense also. Most obviously: Stream pollution is an artery negatively connecting the elements in the continuum. Less obviously but more pervasively: air pollution. And now we learn that the oceans are being ruined for the future by mounting chemical pollution—notably from synthetic organic fertilizers —that is disrupting the natural marine plant-fish life cycle and fish as a food resource [1]. . . . Indeed a continuum for good or ill.

There is a further negative characteristic common to both the rural and the urban points of the continuum in what might be called the "vertical-social" sense. Even in non-spectacular non-slum areas, non-spectacular but inexorable erosion is taking place. In the Flatbushes, the Grand Concourses of the cities, in Newark's North Ward, the not-long-ago bastions of staid solidity: and in many, many small towns: the young, active people are moving away to where the action is, or is supposed to be. A somewhat delayed time-bomb, for the old people have a habit of eventually dying. So even these respectable places are decaying and are starting to empty out. In some further developed cases, urban and rural, whole areas and settlements are being deserted.

This aspect leads into another strident dimension of the social-economic continuum which has just recently in the last few years forced itself onto center stage. The lower middle class has needs similar to those of the recognized poor, *and* a dangerous psychological and actual feeling of neglect. From Newark: "When pools are being built in the Central Ward [a major Negro slum], don't they think the white kids have got frustrations?" (Quote from Tony Imperiale, leader of the adjacent white middle-class area.) And Bertram Gold generalizes: "Lower-mid-

dle-class Americans of various ethnic backgrounds appear to be troubled, confused and angered by the rapidity of social change around them." David Riesman notes the necessity of America being "so productive that it can satisfy the claims of the disinherited without aggravating the malaise of the most recent still-undernourished heirs."

In short, an almost unnoticed point on the continuum is suddenly found to be a suppurating infection. *They* have decided to vote against helping the poor, unless they get similar help. Says Nathan Perlmutter: "What is to the point is that low-income and low-middle-income whites, ethnic Americans included, like the black poor, are also possessed by a sense of powerlessness, are also alienated, are also resentful, and they are telling it like it is to Messrs. Harris and Gallup. Between the backlashing lines of their answers to pollsters, they are really saying: "Why doesn't someone look after me?"

In short, we are not going to be allowed the formerly logical sequence of first helping the worst-off, then when that is done, those not quite so badly off. In the meantime, the lid will blow off. . . . You see, it's a continuum.

Nor is it only the extreme geographic points that are suffering: that is, the large cities, and the rural areas with their small urban foci. The poisoned fringes around the cities; then the suburbs; and then the spottily settled areas beyond the suburbs—areas or way stations between the extremes of the geographic continuum: These are themselves in deep trouble, which of late they are becoming less and less successful in ignoring in their erstwhile utopian islands. On the tangible side there are such literally poisonous phenomena as air pollution and stream pollution; the ruthless slashing through by great new roads; deteriorating school systems. These are striking daily evidences of the inexorable close-knit character of the continuum, even at its gilded nodes. These are phenomena that have their origins outside as well as inside, that cannot be solved in isolation, financially or physically. And, less tangibly: The younger generation, hippies and those less demonstrative, are abandoning the desiccated suburban areas and actually seeking the spectacular human experience of the city slums. The daily headlined drug and drinking scandals of the suburban teenagers are another symptom of ill-health and alienation. "Maplewood Starts Drive on Marijuana" (The New York Times, Feb. 23, 1968) is one headline of many. And now, one witnesses the rising crime statistics and even welfare loads. Golden Westchester County's welfare load is rising faster than New York's.

Indeed, again on the more tangible side, the socially and morally timid suburbanite is now being driven into a further migration. An example: Seventeen clergymen of the Inter-Faith Clergy Fellowship in Freeport, Long Island (35 miles from New York) grappling with what they call "the problem of white fright and flight," have issued a pastoral letter "A Time for Courage," an appeal to their congregations to meet and solve racial tensions, increasing crime, deterioration of neighborhoods, student unrest (The New York Times, March 16, 1969). What the secure-insecure suburbanite decides to do in this case will be highly significant. Thus the suburbs, of which we will say a good deal more plus and minus.

But dismal or threatening phenomena, alienation, permeate still other way stations on the continuum. Consider a few examples. . . . Iowa State University at Ames ("Moo College"). The Des Moines Register of January 27, 1968 quoted the University's student Iowa State Daily as reporting that a shipment of LSD had recently arrived on campus. The associate editor who had written the article and was quoted, had talked to ten students known to him to be drug users. . . . From Evansville, Indiana, not in any wicked metropolitan orbit, no suburb, and no big city (1960 population 141,543) comes a report in the New York Post: "Arrest Girl in Drug Case on Dad's Tip." The girl was 18. Thirty friends were also involved.

In short, we have this continuum from quite rural areas to, at the other end, metropolis and possible megalopolis. There is direct specific bread-and-butter evidence that each affects the other negatively, and that each *could* help the other. While we can quite possibly determine which parts are the *most* gangrened, this is an exercise in futility. We must tackle them all, each on a massive scale, because they inextricably affect each other, and exacerbate each other. And, if we wait with any *one* because it may seem momentarily less virulent, the cost of waiting, and thus of further deterioration, means hopelessly greater expenditures later. Certainly the disastrous price of waiting, or turning the other way, is being amply proved daily in the purgatory of the cities. And waiting, in our land-speculative economic system, means defeat in necessary plans and development.

Perhaps as dramatic a single indication or index of the geographic-functional phenomenon of continuum and starting recognition of it, is this revealing small instance: The Republican legislature of Vermont passed a bill early in 1968 providing for a *State Housing Authority,* as an umbrella under which small towns can qualify for Federal assistance, in recognition of the intensity of the problem and of the fact that "the housing needs of low- and middle-income families will not be provided by private enterprise acting alone." VERMONT! Imagine. Vermont, the citadel of simplicity, of resolute and sturdy aloofness and self-sufficiency! *And,* a rock-ribbed Republican legislature.

**"Nor is it only the extreme geographic points that are suffering... the large cities and the rural areas....The poisoned fringes around the cities; then the suburbs; and then the spottily settled areas beyond the suburbs...: These are themselves in deep trouble."**

**" We have the resources, the productivity....The question is, do we have the national will to redistribute their benefits drastically?"**

## 2 Unprecedented scale of financial commitment required. NOW.

There are, then, solid anatomical, functional, ecological reasons for insistence on the conception of continuum, of the urgent "everywhere-ness" of the

need and opportunity, the massiveness and the totality of our undertaking, because it's all one palpitating body. But even more: we must face the much larger costs of such a *total* program, to be accomplished within the very limited number of years we are going to be allowed, because it requires a many-fold increase in funds for these social and human and environmental purposes. Those who really believe in what we are talking about must plainly face and advocate much higher *effective* taxation on those of upper income, much higher proportions of future increase in Gross National Product: in short, sharp redistribution of disposable wealth to meet the budget requirements of what is so desperately urgent. *Here is the overriding issue if we are really in earnest.* This is why I am at pains to assemble "under one roof" the devastating miscellaneous-total-typical, ranging from the long-recognized but inadequately felt, to factors whose recognition is relatively new. If we think only in terms of a somewhat larger slice of present budgets for one's own immediate sector of interest, or even of somewhat larger total national budgets, we are simply shadow-boxing, avoiding the life-and-death issue in favor of twiddling with ingenious suggestions and techniques. And above all, let us not be beguiled by or take false comfort or pride in the fact that we have in the past few years been spending higher sums than before, on education, housing, training, social progress, environment. *That* is only a measure of our decades of neglect, *not* an indication of anything like adequacy.

It is not the intention to work out here the tremendous total sums that are required for housing, schools, community elements, recreation: the composite of living elements. But just one now-urgent element is noted, because up to a very few years ago it didn't even seem on the horizon, and for that very reason is now of even higher urgency It has become crisis before it has been deeply branded on our attention. To achieve clean air in metropolitan areas alone, will require, according to Senator Henry M. Jackson of Washington, $15-billion over five years. This sum is one of the lowest-cost imperative expenditures required for livable environment (*literally* livable, i.e., enabling us to keep on living). All the more, its scale is an index of the kinds of sums we must set about making available.

We *have* the resources, the productivity, the production. We will increasingly have them. The question is, do we have the national will to redistribute their benefits drastically?

This issue, this insistence, is not just a quirk of mine. John W. Gardner, ex-Secretary of Health, Education and Welfare, has said, re "the problems of the cities, poverty and discrimination," that "it does not seem to me that either Congress or the public is fully aware of the alarming character of our domestic crisis. We are in deep trouble as a people. And history is not going to deal kindly with a rich nation that will not tax itself to cure its own miseries." Former Under-Secretary of Commerce Samuels: "If America means business . . . it must invest in public needs by giving up at least half of its annual increase in private affluence over the next five years." Barbara Ward, the British economist addressing the American Institute of Architects in the summer of 1968, made this even more explicit. She put the growth of the American economy at the rate of $50 billion a year. "Shouldn't half of that wealth be devoted not to the increase in private affluence but to reversing the trend of public squalor?"

Here are the scale and tempo we need. Without this, the rest is conversation. Without this, we are ineffectual technicians or imagineers, content with or settling for or misled by minor or what are called "pilot" undertakings.

**"We are not going to be allowed the formerly logical sequence of first helping the worst-off, then those not quite so badly off. In the meantime, the lid will blow off."**

A few footnotes now, on these strong statements. First, we are discovering—many have discovered—that the situation is totally different from what we have for years been beguiling ourselves into visualizing as adequate, starting small and building up volume over the years. We've been stagnant, or gone too slowly, for too long. Thus the massiveness being urged is further accentuated, has got to be injected, *from the start. We have got to make large-scale dramatic moves at once* if we are going to turn things around, turn alienation into confidence and belief, turn disruptive anger into joint performance.[2] And we can move fast because we've accumulated a lot of experience; also, we can research as we go along. *In such work, doing the full-scale job is the best research.*

And perhaps our people are indeed further ahead in alarm and readiness to respond, or more inspired by a new vision, than the timid legislator thinks. A Gallup poll taken early in 1969 revealed that 73 per cent of those specifically questioned, declared themselves *willing to pay additional taxes* to improve our natural surroundings. What can be more dramatically indicative than a readiness to pay higher taxes, in the present atmosphere of tax revolt?

So, an immediate massive push, coupled with a time limit by which we have got to agree to have done the jobs, and THE JOB. For the first time in any such legislation, the 1968 housing act set a limit for the achievement of good housing for all—a 10- to 20-year period. We must apply such goals and limits to all our undertakings to transform the environment. Only so can we arrive at budgets, intellectually justify such budgets and shame the niggardliness and callousness of Congress, which not only drastically cuts down amounts in the initial legislation but then forces us to refight the whole issue by their violent further cuts when it comes to finally appropriating funds. Such time limits, coupled with massive starts, may possibly produce an atmosphere of hope and confidence, or at least suspension of disbelief.

**"What is still all but ignored... are the vast residential areas... until now bastions of desirability ... that are just at the beginnings of slippery downhill inevitability..."**

The importance of scale and pace just cannot be over-stated. And above all, indispensably,

drastic shortening of the period between original broaching, discussion, debate, legislation, funding, action, multiplication. The magnitudes of new action to make up for the decades of inaction or of minuscule action, the need for dramatic immediate attack, have been emphasized. There are additional compelling reasons.

The bedrock fact: 100 million more people in 30 years in this country. That is, 3 million each year to provide for, beginning last year. (I am, of course, aware and hopeful that this massive projection may not be realized. Demographers are terribly fallible. But even if the actuality turns out to be a serious number of millions less, we will certainly be facing some very large magnitude. The issues and the action requirements will be pretty much the same.)

Measures on any scale less than unprecedented and "total," even though greater than before and greater than the recent incipient increases, will or could, paradoxically, prove wasteful and even evanescent, or indeed harmful. Consider two specific cases.

Very considerable efforts have been made and are under way, to train and to employ the hard-core, who are to a considerable extent Negroes. But there must be a purposeful *increase* of *new* jobs. In face of mechanization and automation and increased productivity, the only indefinitely expansible increase in employment is found in the *total* new programs of building the environment. The *total* volume of employment must be sharply and permanently increased. Otherwise there will be sharply negative reactions in two ways. In the first place, the white workers feel themselves menaced and insecure at sharing roughly the same number or an only mildly increasing number of jobs, with the added labor competition created by the new trainees. This is highly evident in the dichotomy between the fine pronouncements of top labor leaders in the building trades, and the unwillingness of the locals to open up their apprenticeship rolls and remove other restrictions. It is evident on the political side in the unexpected support for Richard Nixon among the rank and file of organized labor. In the 1968 vote, 90 out of every 100 union *officials* were for Hubert Humphrey, but only an unprecedentedly low 56 per cent of *members* did actually vote Democratic.

For example: Again referring to Tony Imperiale in Newark, he is quoted as quoting one of his constituents: "The whites are the majority. You know how many of them (the white kids) come to me night after night because they can't get a job? They've been told 'We have to hire Negroes first.' " [3] From Boston, this report: "Boston has a labor shortage. The Model City Board wrote into its plan provisions for training 2000 construction workers, but this was stricken by the City Council. Mr. Gopen says union influence was responsible. . . . Union officials say there will not be enough work for 2000 new workers." [4] In other words, labor insecurity.

And on the Negro or hard-core side, better jobs will only be temporary, because unless there is a *permanent and continuing buildup* of employment, they will be the victims of non-seniority, of the last-hired, first-fired sequence. Thus, enhanced bitterness and disillusion. In Sweden, the unions accepted the economics of mechanization and prefabrication, and have even introduced such measures of their own, because they had had the prior assurance of greater and sustained volume of housing and environment-building—which has been fulfilled over a number of years now.[5] This, of course, we so desperately need in the most substantive sense also—i.e., because we need them for better living, better education, better communities: happier, more stimulating environment for *all* of us.

**"The big sums . . . need to be energized into tangible neighborhood-scale enterprises, each of which requires the involvement and deep continuous commitment of people."**

The major bulk of such future-oriented employment will be in construction, in related extractive and manufacturing industry, and in the professions. But possibly even more striking because we hear and think of them less, are figures used in a Senate speech by Robert F. Kennedy. He predicted that by the 1970's there would be a shortage of 344,000 registered nurses, 200,000 mental health workers, 100,000 social workers, 500,000 elementary and secondary school teachers.

Consider another kind of instance where even apparently spectacular achievement may well be wiped out because the total action hasn't been sweeping enough. To anyone who has paid even very partial attention to urban efforts, the name of Hyde Park-Kenwood in Chicago carries magic with it. Originally a middle-class area on the South Side, it went steadily downhill, became dilapidated, unsafe, people moved away: the usual syndrome. Through a tremendous, tenacious, sustained, gallant joint effort by people of conviction who wanted to stay there, with the help of the city and its urban redevelopment mechanisms, of the University of Chicago and of the Zeckendorf organization, which was then imaginatively and effectively functioning on large scale, this large area was turned around. It became and is a confident civic-minded community-capable integrated area, a sought-after area.

**"What we must do is to galvanize the phlegmatic and unadventurous building industry into the kind of sustained emergency performance that we have miraculously managed in the times and mood of the two world wars, in favor of this new kind of domestic war effort or crusade."**

So far, so good. Indeed, so very good. But let us pursue the prospects over time, as one must in the life of a city or a neighborhood. In May of 1968, a study was made, entitled *Racial Integration in Housing*.[6] Among the areas studied is Hyde Park-Kenwood. Comments from this study:

*"Conclusions and Outlook for the Future* . . . White demand for housing is presently very strong, and the vacancy rate is less than 1 per cent. . . . Whether white demand will be sufficient if South Shore becomes all Negro and Hyde Park-Kenwood is an integrated island in an entirely Negro South Side is an open question. . . . Two men who are among the most knowledgeable about Hyde Park-Kenwood, Julian H. Levi, executive director of SECC and Bruce Sagan, publisher of the Hyde Park Herald, believe that the present strong white demand is no cause for relaxation and that the future is uncertain. . . ." Finally, the report makes clear that the

reversal of physical and social decline of a sizable area requires enormous outlays of public *and* private funds together with a substantial grass roots effort . . . *and* that the future of such an area is in large measure dependent upon solutions to the problems associated with race and poverty *in our cities as a whole.*[7] That is, unless a whole city, and indeed metropolitan area, are integrated, the pressures on the one or two specific areas that are integrated—even large ones—will become intolerable, the balance gives way; they become new additions to the ghetto area, or, now so frequently, abandoned areas.

While at this moment in time, many in the minorities are questioning the desirability of integration, I am of the belief that it is essential and will come, as I argue elsewhere. . . . In any event, the scale argument is entirely valid.

Another example where only major scale and tempo can be effective: air pollution. This is not only an irritation. Eminent ecologists now inform us that in many urban areas we are at or close to the tipping point of oxygen deprivation in the atmosphere—i.e. to the point where oxygen deficiency is irreversible in terms of healthy human and plant life. Fast massive action over very large areas, or. . . .

**"A Gallup poll taken early in 1969 revealed 73 per cent of those specifically questioned declared themselves willing to pay additional taxes to improve our natural surroundings."**

## 3 Some positive examples in the continuum.

We have considered examples in the negative direction, of need for great and sustained scale, the self-defeating potentials or actualities of the too little and too timid. Consider these positive cases.

*Pittsburgh: clean air.* Pittsburgh, the national butt, years ago in a great surge of spirit, grandly determined to rid itself of smog, and did, at very great expense. Relevantly too, in the light of the present Federal political climate, it was achieved largely by citizen and local corporate effort and money. In assessing the significance of the Pittsburgh experience and triumph, there are several elements which should not be overlooked. Initially and for some years, there was stiff opposition from powerful coal interests and railroads, and from householders who were led to believe their fuel bills would increase. And, viscous indifference. The effort was started in the city of Pittsburgh. But it was soon found that it had to be regional to be successful (the continuum). The cost was massive, has been over $360-million. Benefits are massive too, first in terms of improved health and amenity. Then, financially, savings of over $30 million already in one of the earlier years of improvement, in cleaning bills and household laundry bills.

*TVA: exhausted rural area and river valley development.* Consider another splendid example of the potency of the grand design, of the superior long-term economy of the generous-massive input of funds and energy. While the current meager Appalachia effort is accomplishing some good, it is nothing like enough to turn the tide functionally, socially, economically, and thus to infuse convinced and sustained enthusiasm. TVA, on the other hand, the great jewel of the New Deal, had a statesman-like conception of large scale as well as depth and concentration, and budgets that could achieve the impacts to carry it forward. By now it is a self-sustaining operation with cumulative dramatic results. Its chairman, Aubrey Wagner, said in a 1968 speech:

**"TVA: Exhausted rural area and river valley development. . . . A splendid example of the superior long-term economy of the generous-massive input of funds and energy."**

"The developed Tennessee River is hard at work . . . Power production sets new records yearly. In 1967 alone, private industry announced projected new plants costing a total of more than three-quarters of a billion. . . . *Non-farm employment increased by 417,000 jobs in the five years ending in 1966.* . . . In the 1960's, the Tennessee Valley Region reached the first decade in modern history *in which total employment, including that on farms, has grown faster than the national trend.*" As contrast, recall the desperately depressed condition of the area when TVA was conceived and started. This then not only has tremendous impact on its own area, but provides a significant road guide to national destiny. Currently, TVA is an almost forgotten symbol or an event taken for granted. While it has become a powerful beacon abroad in developing countries, and has become central in the planning-development of some countries such as Iran, there haven't been nearly enough action repercussions from it in this country: neither continuing inspiration nor emulation. How wasteful, to ignore our own discovery and inventiveness. How necessary such major rural counter-magnets are for a big chunk of the new 100 million population.

*Great Britain: the New Urban Configurations.* In Great Britain the creation of New Towns as alternates to the great city have pushed forward on great scale (28 now occupied or under way), and by new mechanisms of combined private-government development corporations, and with control of land prices. This rate of achievement is the equivalent in U.S.A. of over 100 new towns and cities. And unlike our handful now under way, every one contains substantial amounts of public housing.

While large sums were invested, they have all later shown financial return; not the private enterprise killing, but sound public-benefit-return rates in addition to the enormous human, health, social benefits. Of course, many will not "pay," in terms of purely money return.

These examples are a few scintillating points on the continuum. All have dash and validity, show what positives we can accomplish. TVA is a powerful regional and national beacon. In Pittsburgh the excitement, the victory, the pride of the air-cleansing experience was a main element in sparking the city's later and continuing notable civic renaissance. The British effort has the elan of imaginative and impressive scale, gives leaven to the whole *national* tempo. More Pittsburghs, more TVA's, more New Towns accomplishments, and other moral-civic-regional crusading equivalents. Few positive instances have been

noted in this section. First there are not too many that combine major initiative, major accomplishment, major and lasting elan, sustained participation and vitality. Also, others are noted where they naturally occur in their operative connection. One is Hyde Park-Kenwood already noted. One of the most permanently exciting is the National Rural Electrification Co-operative Association (NRECA) whose work is referred to at a number of places later. This, too, has been on the generous scale of funding that is indispensable for self-propelling self-renewing success.

The thesis and the imperative of continuum is that we've got to spend masses of money, time, effort dedication—much larger than ever—much of it spent in new ways and new localities.

**"The British New Towns effort (28 to date, equivalent to 100 here) gives leaven to the whole national tempo."**

## 4 Massive words vs. eye-dropper funds.

The two previous sections have considered the massive scale of financial commitment that is essential across the board; and some rewarding, specific examples of what real, generous scale can accomplish, has accomplished. By way of contrast, let us examine what is happening as new elements and needs in the continuum are gaining intellectual and verbal recognition, but not the necessary visceral-moral conviction and power.

The 701 planning assistance program, which makes Federal funds available for planning purposes to various state and local bodies was broadened by Congress, in the Housing and Urban Development Act of 1968, to cover four additional kinds of entities: among them, rural districts, non-metropolitan areas, multi-state regional commissions. But, as an American Institute of Planners commentator drily notes: "Since Congress has appropriated only $43.8 million for 701 in fiscal year 1969, the addition of the four new client groups will put a considerable strain on existing 701 appropriations." An understatement, if you know the situation.

**"Pittsburgh: The excitement, the victory, the pride of the air-cleansing experience—at vast cost—was a main element in sparking the city's later and continuing notable civic renaissance."**

Another instance of the combination of fine words and eye-dropper funds may be found in the verbal recognition of regional concepts and needs. The Public Works and Development Act of 1965 established five regional commissions (in addition to Appalachia, which had been set up previously). These are: The Ozarks Commission, New England, Upper Great Lakes, Four Corners (four states in the Southwest), Atlantic Coastal Plain. Each of these is composed of several states or parts of states, with total population of well over 20,000,000. A quite ambitious scale, and several more such regional commissions are likely to be set up. But, the fact is that funds made available are absurdly meager in any comparison with the great areas and populations.

Such instances may still be somewhat esoteric. In the well-known case of Model Cities, in which the last and the present Administrations have placed so much hope and confidence, the funds are notoriously inadequate to the purposes and the verbiage. Further accentuating this, recently: the headline: "PRESIDENT ADDS TO MAYORS' POWER. Reorganizes Model Cities to Let Local Leaders Expand Size of Areas Covered." But, still the same meager funds.

And, as examples of big headlines which only trade dollars (all from The New York Times, April-May 1969):

*Nixon Diverts $200 Million to Fix Up Riot-Torn Areas. Funds for Other Programs to Be Used.* The key word is "diverts."

And *NIXON PROPOSES $1-BILLION DRIVE TO FIGHT HUNGER. No Budget Rise Needed. A Reprogramming of Funds Is Sought. . . .*

## 5 By contrast, the continuum in multiple dimensions.

We opened up this concept of a linked, indissoluble continuum in the national situation, not just as patriotic rhetoric, but as an iron fact not yet fully realized or viscerally part of deep worry and of policy-action.

The first dimension of the continuum which we discerned was its national-geographic extent, the "horizontal" national-functional-social journey all the way from the "excessively rural" to the excessively urban-metropolitan, and (shudders) megalopolitan. We noted numerous way-stations: we will later identify more, and at closer range. We also noted in a preliminary way the "horizontal" mutually exacerbating ecological continuum, a clear case of communicating infection actual and imminent.

The next aspect of the continuum we then began to identify is necessity for mass or volume, and *pace*. It will be clear, crusadingly clear, that identification of all the nodes or way-stations shows there are many more than most of us were recognizing or allowing ourselves to be driven forward by. But this doesn't in itself mean much—if we are willing to proceed in action by a little help there, out of a total arrived at in the old days and ways—the eye-dropper approach. That is, recognition of the "horizontal continuum" as points on an abscissa *X* is significant only if there is the component of massive resources brought to bear in minimum completion time and dramatic speed to each point on the continuum, i.e., what is thought of as *Y*. It is the product of *XY's* that has meaning.

There is, of course, the possibility that these totals will seem so huge as to be discouraging and tend to inhibit or minimize action. But here is the pragmatic value of the concept of continuum and points on it. It brings out more sharply the points of one's own narrower concern, allegiance, effort: of our own thing. And it brings out enhanced aware-

**"... We can research as we go along. In such work, doing the full-scale job is the best research."**

ness and immediacy of the *elsewheres* which are no longer remote and indifferent, because they affect our own thing as well; affect us in a plus or minus direction. Thus, conceivably, even Congressional attitudes may change from indifference, parochialism, cliché, to significant debate and action.

In short, the thesis is that nodes and concentration are not lost in the vast and long-line continuum. The specific single-pointed even becomes heightened because it contributes to total wholeness, and cannot itself be fully consummated without total wholeness.

## 6 The continuum in the city itself. One aspect.

Even in the highly dramatic city dilemma, we tend to deal only with single exacerbations. Consider one example here which, as is so often the case in this introductory piece, serves as an indicator of much else as well.

In the long line of legislation on housing and urban development from 1937 to 1968, there has been expanding recognition of the great variety of needs—specifically housing for the poor, planning, urban renewal—though until the 1968 act, the emphasis was always on slum clearance, i.e., the aspect of visual and sententious eye-sore or pride-sore and not to the crying substantive need for great additional quantities of good new housing. The 1968 act goes a substantial way toward redressing that. And there has been help for new middle-class housing, through FHA as well as some state laws. But what is still all but ignored, unrecognized at the Federal level, or anywhere else in the plight of cities, are the vast residential areas where the sands are running out from under, areas until now bastions of stability and desirability, and that are just at the beginnings of slippery down-hill inevitability, the Flatbushes, the Grand Concourses, many others. These don't yet even require big rehabilitations. They specifically require the new high-quality adventurous community schools and pervasive livening up of the area. They require infusion of some quite attainable glamorous activities and reputation for glamorous activities: a little off-off-off-Broadway theater or circuit; happenings; simple itinerant kids' theaters like the delightful Paper Bag Players, and Theater in the Street; some special shops. These are relatively inexpensive, but imaginative, requiring animators with verve, of whom there are many available in cities, actual and potential.[8]

**"While we can quite possibly determine which parts are the most gangrened, this is an exercise in futility. We must tackle them all, each on a massive scale, because they inextricably affect each other, and exacerbate each other."**

We have only a very few years to reverse the dullness and to vitalize such middle-class areas, breathe the breath of life into them, at relatively minor cost. In a very few years, the cost of revalidating them will be astronomic, as the young people continue to move away and the old people die off, and the cancer of vacancies takes vicious hold, with the invitation to vandalism and destruction. Incidentally, this process of deterioration generally precedes, by a substantial time gap, the influx of poor and minorities. In fact, once this process gains real headway in these very extensive areas, we may not be able to save the cities at all.

## 7 The continuum elsewhere, including rural.

Available figures indicate there will be a continuation of the upward trend of population concentration in the large metropolitan regions (Megalopolis) in absolute numbers and in percentage of national population. However, some figures recently available indicate a cessation of the long uninterrupted trend of in-migration from the countryside and even possible slight beginnings of countermovement. Also the previously cited public poll shows a surprising (and growing) majority preference for living in locations other than city and suburb, again a reversal of older trend.

And there are special new organized magnetic pulls and pushes:

Very potent though not so widely publicized is the National Rural Electrification Cooperative Association which has, of course, revolutionized rural and small town life and amenity in the last 30 years by making cheap light and power and telephone service available. For some years now it has been instrumental in attracting industry and employment into such areas. This alert and powerful group are also at work in promotion of housing. They do a most essential job on their own and in catalyzing and energizing available government programs such as the next two.

The Department of Agriculture has several related action agencies: Farmers Home Administration, Community Development Service, resource conservation and development projects in its Soil Conservation Service.

The Department of Housing and Urban Development has a number of programs which appear to be moving ahead at a serious rate: urban planning assistance program, multi-county planning assistance in non-metropolitan areas, public facilities loan program, water and sewer facilities program, etc.; and, of course, their urban and urban housing plans and funds.

So we have what should be thought of as not only a rehabilitation program, but really as a new resource and refreshed pioneering, a new and sophisticated and rounded environment competing with the major developed areas; a tapestry to work on, of open area, of small communities-regions, and of middle-sized city-regions. And we have 20th-21st century techniques and planning agencies and aids, some of them just noted. Thus we already have a tremendous start on a number of nodes in our continuum, which the original eighteenth century settlement movement never had, and which the giant

city-regions have been too busy to use in a holistic way.

BUT. There are several very major hang-ups.

The literature of all the agencies mentioned emphasizes in self-congratulation that land prices move up fast when their programs are applied. This carries along the whole syndrome of land speculation, resulting impossibility of optimum execution of plans, rapidly climbing costs of shelter, etc.

People and agencies are so happy at the early prospect of more dynamic development, whether in hamlets, in sizable communities or in cities, that no one thinks of setting creative development limits, every one is just delighted at the prospect of a boom.

**"Some figures recently available indicate a cessation of the long uninterrupted trend of in-migration from the countryside and even possible slight beginnings of countermovement."**

We forget that even our most gargantuan chaotic metropolises also started small and with low land values. Are we simply going to repeat all this? Or, are we going to work at and work out new systems, new institutions, new visceral aims, new and better incentives, to make the very most of the new possibilities?

One misses reference in these sources to accommodating race and minority. Surely we have got to work through this, if these areas are to genuinely and creatively develop their portion of the next 100 million in this country.

Here again, let us just leave these questions for now as indicative of a range, as caveat or challenge to new kinds of thinking and aims to be considered and struggled over, further on.

## 8 Human commitment in the continuum. Some of its multiple forms.

So far, there has been emphasis on the high priority of the whole continuum, and recognition that to achieve it, we must have vastly expanded funds of quite unprecedented magnitude. But even these two major elements are not enough, not by a long shot. In the struggle for environment, eternal vigilance, creativity and imagination are required for its enhancement, or even for just making it tolerable.

John K. Galbraith gave an interview on his 60th birthday last October. "In the cities, North and South, visitors should be on their guard against sociological explanations of slum problems," Professor Galbraith told The New York Times. "My own view is that somewhere around 75 per cent of the urban crisis could be solved by money. There may be a few things wrong with New York that $5-billion wouldn't solve, but not many."

I applaud Mr. Galbraith for his refreshing and clarifying emphasis on just plain lots of money. But, difficult as it is to get that kind of money—which we must do because it is indispensable—that is by no means all, or even 75 per cent, as he puts it. It requires also vastly greater, more pervasive, more many-sided, more all-out human commitment on the part of many more people than we have yet mustered. And on many planes. Consider a few.

For one thing, it is at least doubtful that the legislated sums will in fact be spent. After the initial tough struggle to win them, usually pared down, there have each year been furious and successful movements in appropriations bills to pare down those amounts drastically further. We must be alert to this, renew our commitment and pressure, tenaciously do the job all over again. And once *that* is over: The sums do not spend themselves. For example, in the Eisenhower administration, 810,000 low rental public housing dwelling units were authorized over a period of six years, but less than 20 per cent of these were actually constructed and occupied. Partly, the official machinery bogged down; partly there was local, largely racist, opposition to the sites selected, or to finding and proving "equivalent slum demolition." Now, when the 1968 act provides for a 10-year program of 600,000 units a year for subsidized housing, a total of 2,600,000, there is at least very serious question of whether the building industry as now normally organized can or wants to turn out such numbers. What we must do is to galvanize the continuing phlegmatic and unadventurous building industry into the kind of sustained emergency performance that we have miraculously managed in the times and mood of the two world wars, in favor of this new kind of domestic war effort or crusade.

Another stage or element of personal or personal-institutional commitment: The big sums that we need, and sometimes get, must not just remain in monolithic form. They need to be energized into tangible neighborhood-scale enterprises, each of which requires the involvement and deep continuous commitment of *people*. Not only does this transform the funds into vibrant individual undertakings with the life-quality of self-identification, but as a by-product it often locates additional sources of funds and of people-commitment.

Illustrations: The Hyde Park-Kenwood accomplishment in Chicago (it was said locally that Hyde Park-Kenwood was not an urban renewal enterprise but a way of life!). In New York, two neighborhood women in a poor area, Mrs. Iemma and Mrs. Jenkins, by the most dogged commitment, brought their UPACA (Upper Park Avenue Neighborhood Association) into being and activity, enlisted the commitment of the New York Federation of Reformed Synagogues and the close personal commitment of a number of its members. Jointly these groups were able to find funds and financial cooperation to obtain mortgages for some 400 rehabilitations and some 200 new units (now under way), together with a galaxy of recreational, educational and training operations constituting a vigorous totality that is still on the upward move. This was the state of affairs in early 1969, the operation having started from *scratch* only three years before. Metro-North in East Harlem has produced a similar cumulative effort, also still in forward motion. This

was sparked and carried forward largely by local churches and people; with some outside commitment of similar singlemindedness. One could cite many more fruitful constructive commitments, and examples of internal-external groups closely interworking. But, just not enough; nowhere near enough.

**"We have got to make large-scale dramatic moves at once if we are going to turn things around, turn alienation into confidence and belief, turn disruptive anger into joint performance."**

Another quite different kind of vigorous human commitment is in the arts: injection of art, art instruction, art participation. This is catharsis through art: awakening of people through creative art experience, through creative participation, the release from frustrations and transformation of the person into greater awareness, understanding, forcefully meeting his own self and environment. Consider Budd Schulberg's determination and dedication in evoking literary expression in dozens of Watts young people and its infectious stimulating effect on others elsewhere. On the other coast, Piri Thomas, the writer, product of East Harlem and still living there, founded the East Harlem Creative Writing Workshop. "You and I know," he said to an interviewer, "that really serious writing is done usually when you are alone. So why do we bring them together like this? Because they need to know they are all doing it—to get them writing."

Such personal commitment in and through the arts drenches through the gamut, including drama on the street as well as in schools, storefronts, clubhouses; and the visual arts. Some of it uncovers, cultivates, develops creative activity. Much has direct effect in a deeply intimate way on quite new audiences. A great deal of the effect is in the individual-social byproducts effects.

Re this last: Jim Woods, resident of Watts and creator-operator of Studio Watts, describes one activity: "Chalk-in." In this, young people create colored chalk designs each on their own small area of pavement. The winners are selected by people's votes. Last year Mr. Woods induced the Los Angeles County Registrar to bring the new voting machines which will be used in future county and state elections to Watts and the Chalk-in. With the machines came county employees to show voters how to use the new system. He says, "Most people in Watts have never voted. They just don't have the idea that their vote counts. Having the public vote and choose winners, who in turn receive $500 in scholarships, introduces in the consciousness of people in the ghetto the value of voting to make a change. We are using art to get them to be at ease with voting procedures."

**"The thesis and the imperative of continuum are that we've got to spend masses of money, time, effort, dedication... and that much of this must be spent in new ways and new localities."**

Provocative, challenging and fruitful as is this element of personal commitment, individual and joint, in the development of individuals and of community, and widespread as examples of it are, it has not yet begun to be deployed by more than a fraction of people. It is a great resource that can be helpful and transforming on many planes, of which I have indicated a small range of examples. And it is most rewarding spiritually, as those who involve themselves in it know.[9]

## 9 Government crassness and private initiatives. Pursuing human commitment on larger scales.

Returning to the all-important problem of funding, even the most optimistic must agree that in the presently foreseeable atmosphere in the Administration and in Congress, the huge sums that are required will not be forthcoming from government. The formulas in the last election campaign, and current formulas-clichés, that are to accomplish whatever meager purposes are visualized, provide for their accomplishment by private enterprise, business. It is felt that business as business can and must be induced to bring its magic into low-cost housing and environmental operations, on a profit basis. A favorite proposal is to assure this by means of tax incentives, thought to be more palatable or less obvious to the country than more visible forms of subsidy. The late Senator Kennedy had proposed this also, and mentioned the order of magnitude of 12-15 per cent as an attractive rate of profit. The reality is even more shocking. Title 1X of the 1968 Housing Act provides for a National Corporation for Housing Partnership. The Wall St. Journal estimates that investors would receive an actual return ranging from 24.4 per cent in the second year to 16.8 per cent in the tenth year!

In my mind it is almost obscene to tackle these major socal situations on this kind of profit basis. The motivation is inevitably and deeply inappropriate; and a great step backward. Are we to go further and establish tax incentives for business to handle schools, libraries, hospitals, public health, park systems?

Thus we are probably at a double impasse: The scale of thinking and funding to be proposed is likely to be far smaller than is required by consideration of total continuum of need and its urgency: crisis and near-crisis or pre-crisis. And the decision to handle the bulk of the job as a private profit business is unacceptable for two reasons. Already discussed is the moral-social inappropriateness. There is also the great time lag until enough know-how and organization have been created to make significant amounts of housing available.

It is to be noted that it is contemplated to involve not only the private technical and research resources which are and should be involved in any case, but also the entrepreneurial and landlord functions. Repeat: the country badly wants the technical-productive resourcefulness of a manufacturing and building industry with constantly improving quality of output and lowering costs, with normal competitive profit character; but they must *not* become involved in the social, operating-maintenance and landlord complex. Also in justice to private business, it needs to be noted that many businesses in the spirit of public well-being have set up non-business funds as it were, are doing important environmental-philanthropic jobs. One instance among many is Smith Kline & French, who in Philadelphia have sub-

sidized costs of neighborhood rehabilitation, set up information centers, etc. Quite another type of involvement is the Life Insurance Association, now on its second billion of slum loans.

But this negative thinking and proposed policy *could* have a striking positive effect. The inadequacy might well stir and quickly expand and increase the multiplicity and scale of non-governmental initiative and funds of which a few examples have been cited—i.e., *private* in the best sense, private in the sense of personal commitment, public interest and non-profit groups, many based on churches, foundations, labor unions. Not only is there a historic far-flung "private" record in this field, but in late years it has multiplied its operations in scale and variety, particularly in housing—commands the skills and allegiance of some of the ablest private people and could readily expand to do magnificently more. In particular and urgently, we must span the gap until we can succeed in awakening government. This sector already has more than the beginnings of a real footing, now. It is *this* sector of non-government enterprise that should be encouraged, concentrated on. We need, of course, to include the burgeoning (genuine) cooperative movement, which has a successful start here, has been doing so massively well in housing in Sweden; and so extremely well here in the case of the National Rural Electrification Cooperative Association. The respectful and fruitful dealing by government and Congress steadily or increasingly with N.R.E.C.A. in the last thirty years is very far ahead of the record with any other public interest groups and coops. The present desperations could indeed be calling forth and escalating innovative institutions.

The Center for Community Change, headed by Jack Conway, is a major undertaking which breaks new ground. It covers both "horizontal" continuum in urban, metropolitan and in non-urban areas; and in "vertical" variety of effort: In human, economic, and physical-environmental construction spheres. Its three constituent elements are the Citizens Crusade against Poverty, the Citizens' Advocate Center, the Social Development Corporation. Ford Foundation made an initial contribution to it of $3.5 million.[10] It has strong financial support from labor. It has already been doing magnificent work, including pioneer social work in poverty, housing, education. In Watts, it ranges from housing and hospitals through large-scale farming and chicken raising. It includes a poor people's cooperative, manufacturing enterprises in the poor village of Crawfordsville, Georgia; cooperatives in the grape center of Delano, California. Even this considerable scale is nothing.

But note for example that 88 foundations in this country have assets of $16 billion. Note the very substantial funds of churches and labor unions who have made a considerable beginning commitment, especially in housing; who could fairly quickly expand at least twenty-fold. D. B. Robertson, associate professor of religion at Syracuse University, estimates that in the single year 1966 contributions for religious purposes totaled $6.5 billion (untaxed). These are magnitudes to conjure with. They must massively move. There are also vast sources of *personal* private wealth: a kind of wealth which constitutes potential commitment not yet tapped at all.

Urban America and the Urban Coalitions have begun to tap such sources, and corporate and bank contributions, but in a quite minor or token way. Such contributors are readily capable of far greater sums if their intensity of interest can be enhanced to produce massive individual effort on the level of high priority moral claim, rather than just trailing along: an effort, say, comparable to Andrew Carnegie's library pioneering and sustenance. Still others could call a moratorium or at least semi-moratorium on their acquisition of prestigious million-dollar paintings and devote such sums to "locality" museums and cultural resources in sub-city and in rural small-town areas, on what might be a sort of 20-for-1 basis. Experiments and experience are proving these out. Again, private land ownership and speculative purchase always get in the way or prevent worthwhile enhanced environmental action-and-accomplishment, whether in over-developed or developing areas. Until this state of affairs is basically mastered institutionally, immediate acquisitions and reservation of large chunks of strategically located land areas—not only for parks and such, but as the very basis for imaginative and effective development—constitute an urgent and fruitful and personally gratifying field for awakened and multiplied forward-oriented private action.

**"... A new moral atmosphere and challenge and pattern ... creation of a new kind of prestige, a 'richesse oblige'...."**

In other words, a new moral atmosphere and challenge and pattern. In other words, creation of a new kind of prestige, a *richesse oblige* on far larger scale and into new channels. This should, of course, not just fashionably take the place of other interests, humanely important and traditional channels such as hospitals and educational institutions. Another source would need to be the voluntary or involuntary sacrificer of conspicuous waste such as the lady whose wealth is estimated at $250 million, talking about trading in her present plane, a four-engine turbo-prop Viscount, for a pure jet airliner. She uses the Viscount, which could have held as many as 65 passengers had it been outfitted as a normal airliner, to commute to her homes in Palm Beach and Washington, and to her elegant mountain retreat in the Adirondacks. The cost of private airliners varies, largely depending on the decor of the interior, but manufacturers say that the minimum is about $4.2 million.

Thus, a determined drive for both public legislation-appropriation, public interest groups, enhanced private sources of philanthropic affluence and meretricious super-affluence, could master the continuum if an atmosphere of urgency, morality, alarm is brought into operative being—and the grim situation more than warrants it. Self-revolution: or, accelerating decay? . . . William James urged it upon us in his essay "The Moral Equivalent of War."

**"Those who really believe in what we are talking about must plainly face and advocate much higher effective taxation on those of upper income... sharp redisposition of disposable wealth.... Here is the over-riding issue if we are really in earnest."**

Prospectus. In future articles I hope to more fully analyze our present situation (Megalopolis: Multiplying the Intolerable!), contrasting our current way of planning individual developments in a matrix of unlimited growth with the creative alternative of a concept of maximum regional carrying capacity — and alternate magnets. Also to identify and describe more fully the significant nodes (potential magnets) of the prospective national continuum, outline the elements of a total plan or policy taking account of them, and consider some of the problems that overhang or permeate planning-development in this country (because by and large only the individual, passionately-sought objective and *its* advantages are being considered). Finally, selected significant nodes will be developed in new planning concepts as illustrations of their potential as elements of environmental design.

*"America is a land of wonders . . . and every change seems an improvement. . . . No natural boundary seems to be set for the efforts of man, and in his eyes what is not yet done is only what he has not yet attempted to do."*

—Alexis deTocqueville

**Footnotes**

[1] Dr. Paul R. Ehrlich, Stanford University biologist, as reported by Gladwin Hill in The New York Times, 3/16/69.

[2] Most of us were surprised and shocked when riots broke out in New Haven in the fall of 1967. New Haven! Synonymous with alertness, sensitivity, with large-scale effort and funds! But even here, and just a few days *before* the riots, Major Lee was quoted as saying in an interview: "A visiting nurse not only takes care of a school kid but looks around the kid's house. That's what we're doing now, but the *trouble* is it's *still microscopic*" (my underlining).

[3] The New York Times Magazine, 9/29/68, *"Tony Imperiale Stands for Law and Order."*

[4] The New York Times, 4/3/69.

[5] A minor but significant example here, especially because it bears on the continuum: jobs in the rural area. Neil Gallagher in the Journal of the American Institute of Architects, January 1969, quotes "editorial in Forest Products Review re: Symposium on Communities of Tomorrow: "... If the forest industry could be assured of a continuing resource base of public timber over the years, it would make the necessary long-term investments to create even more jobs and strengthen rural economies. Then people would not have to leave rural areas to seek doubtful urban employment."

[6] By Milgram and Beilenson, for Department of Housing and Urban Development.

[7] Underlining by me.

[8] The sponsors of the Laclede Town Urban Renewal in St. Louis have creatively applied just such imaginative-simple elements delightfully. This is a development of new town houses, but the experience is applicable, and the application overdue.

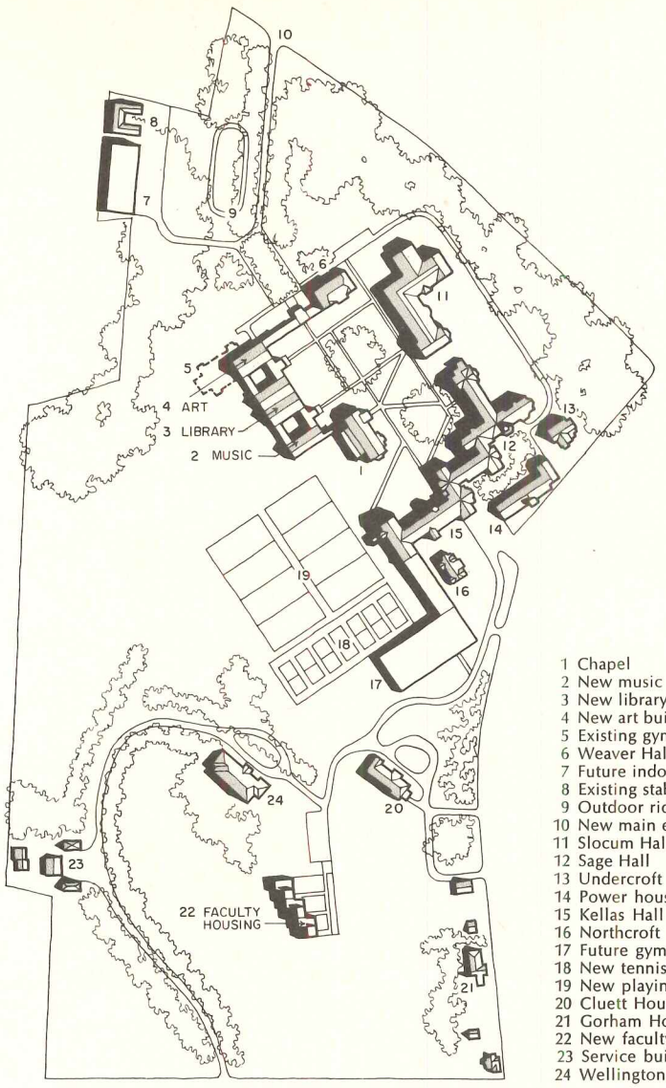
[9] The examples here noted of art as catalyst and as local catharsis, are in themselves highly vital. Quite separate from this, and on a quite different plane, may be the ultimate (or imminent?) reverse-impact of the aroused slum condition on the content and character of art-architectural output in a total national sense. I hope I grasp this well enough, or will, to do a significant piece of work on it. A recent trip to Mexico has searingly opened this line of speculation.

[10] Ford has given a far larger total sum to other social-racial-economic efforts, urban and rural: its own sensitive continuum.

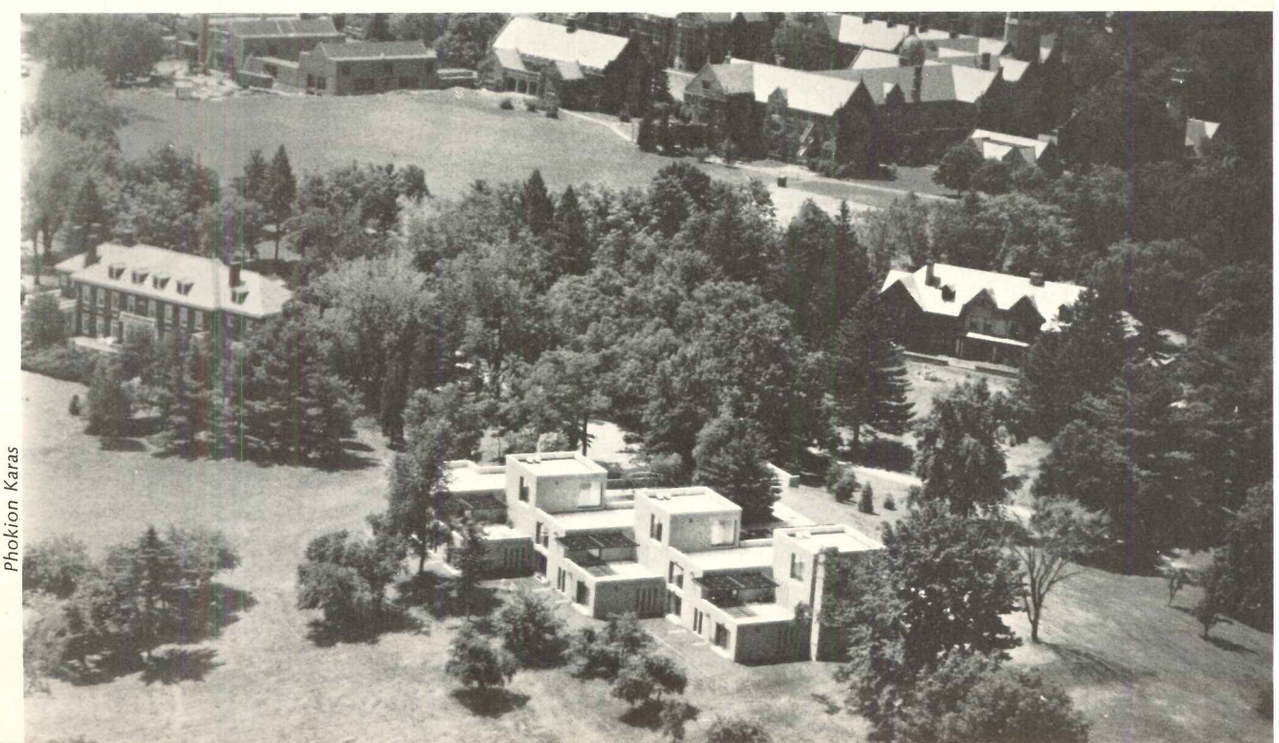
# BARNES COMPLETES THE FIRST STAGE OF EMMA WILLARD EXPANSION

with spirited facilities for faculty housing, library and music, which implement his long-range master plan for the girls' school campus in Troy, New York. The original buildings, designed in a variety of traditions, were scattered over a pleasantly wooded site. The plan (left) that Edward Larrabee Barnes developed will fill in the gaps between the older buildings with several stages of new construction to create a connected spiral of the academic campus. At its completion, the spiral complex will have the chapel as its hub (with a new main entrance cut through the main level to focus on it) and curve around to open widely on the playing fields. The art building, which will complete the library-music structure and form the first link of the spiral, is now under construction.

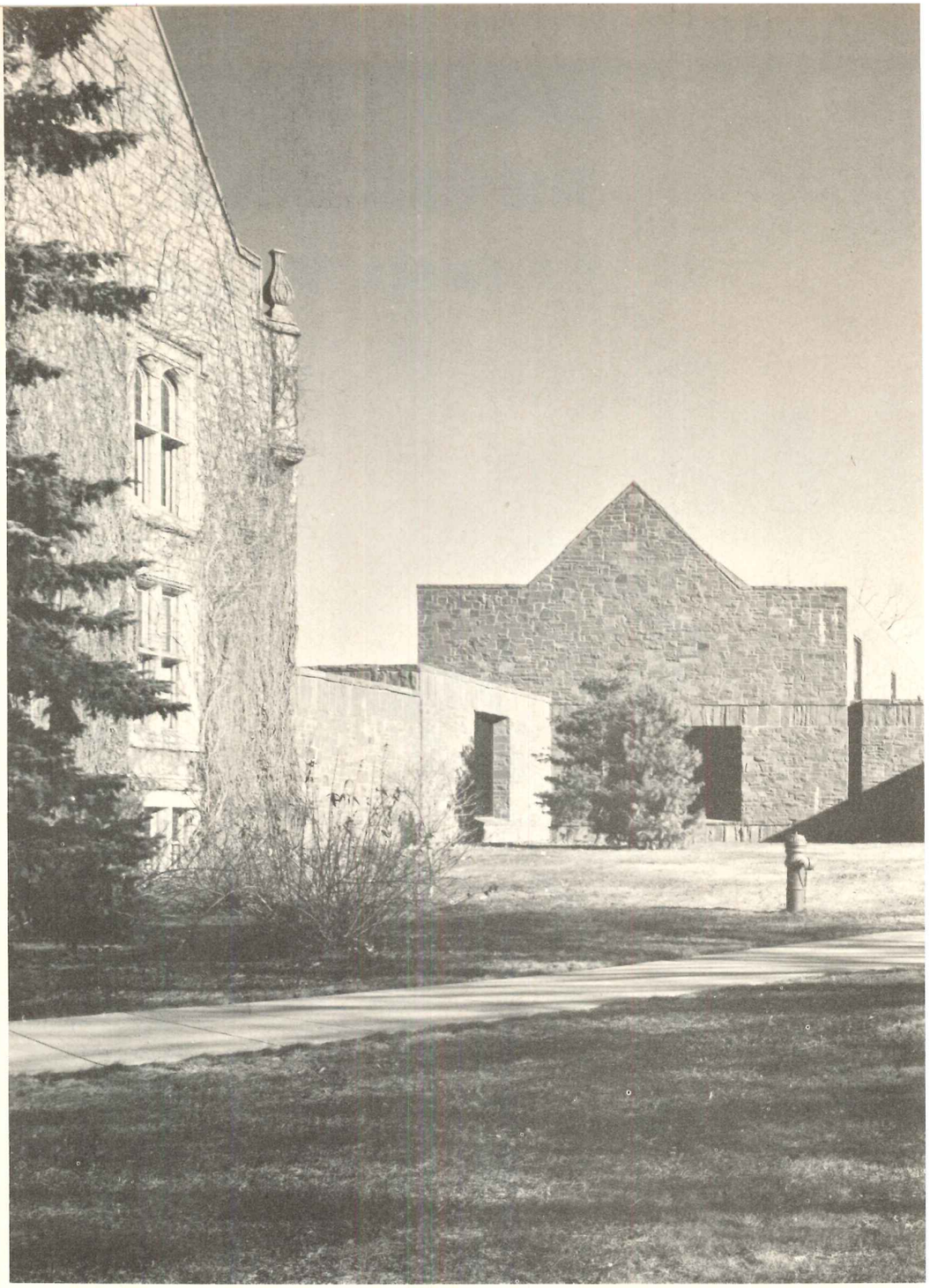
The new buildings are thoroughly contemporary, and use, as Barnes puts it, "prime forms"—true squares, half circles and the like, to achieve a quiet compatibility with the older units. The new materials are also very sympathetic with the others: a rough bluestone for the art-music-library wing, and a soft-beige, exposed-aggregate concrete block for the faculty housing. The air view of the campus (below) was made from the same angle of view as the master plan sketch at left, with the terrain-hugging faculty housing units in the center foreground, and the library-music facility in the upper left. Although the completed scheme makes a formal unity of the academic units, the beautiful grounds are undisturbed.




1 Chapel
2 New music building
3 New library
4 New art building
5 Existing gymnasium
6 Weaver Hall
7 Future indoor riding ring
8 Existing stable
9 Outdoor riding ring
10 New main entrance
11 Slocum Hall
12 Sage Hall
13 Undercroft
14 Power house & laundry
15 Kellas Hall
16 Northcroft
17 Future gymnasium
18 New tennis courts
19 New playing fields
20 Cluett House
21 Gorham House
22 New faculty housing
23 Service buildings
24 Wellington Lay Hall



Phokion Karas



## LIBRARY AND MUSIC

facilities are handsomely provided for the Emma Willard campus by these two buildings, which are linked by a landscaped courtyard and connecting, enclosed corridors. Since these photographs were taken, an art building and second courtyard, which echo the music unit, have started construction (see master plan on the preceding page). When the art section is completed, this first link in creating a spiral organization of the academic campus will, in itself, be a strong, formally balanced structure.

As can be readily seen in the photographs, the basic forms, bluestone exterior and black slate roofs combine to give a distinctive individuality that has a very happy and compatible relationship with the existing buildings.

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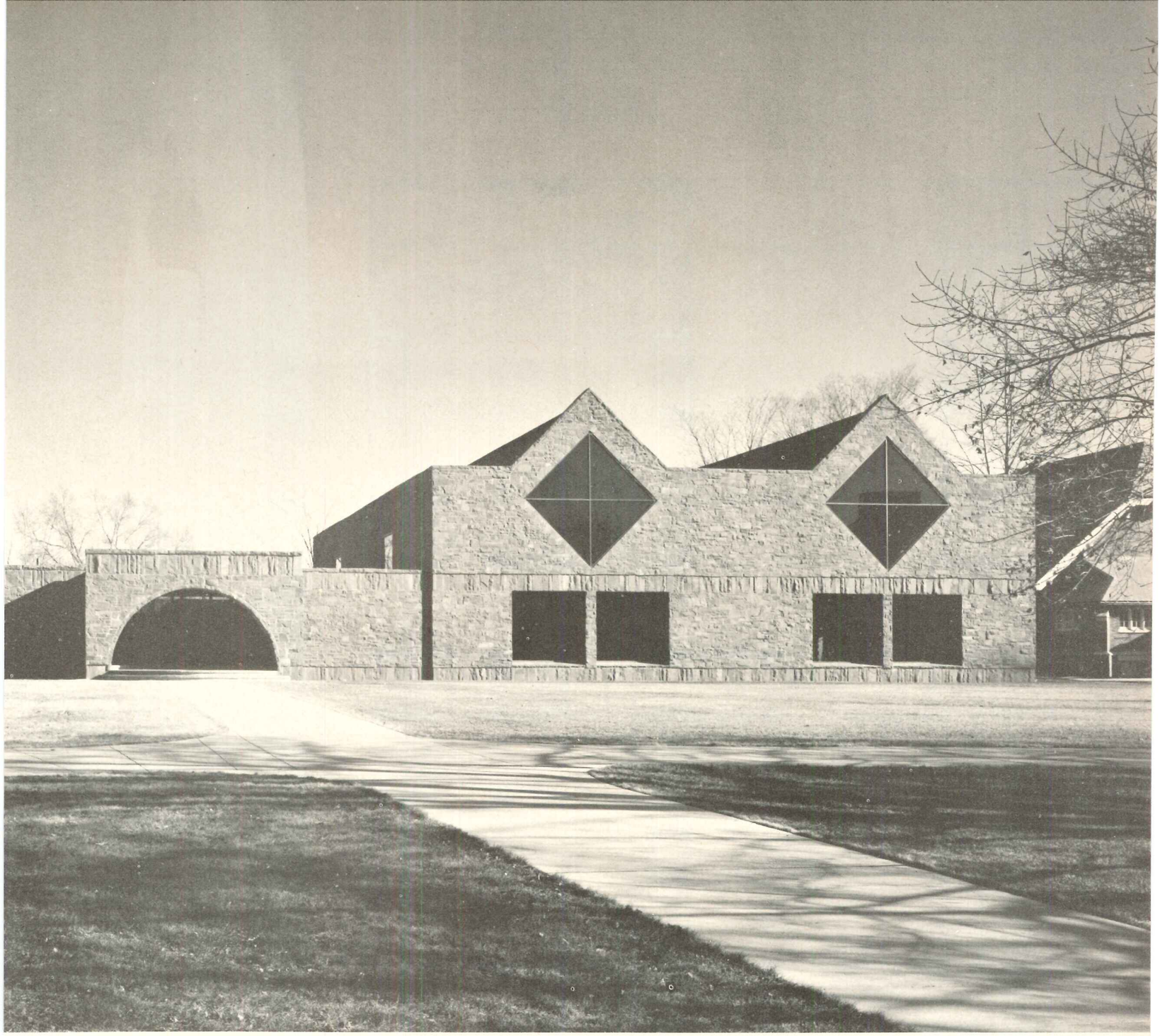
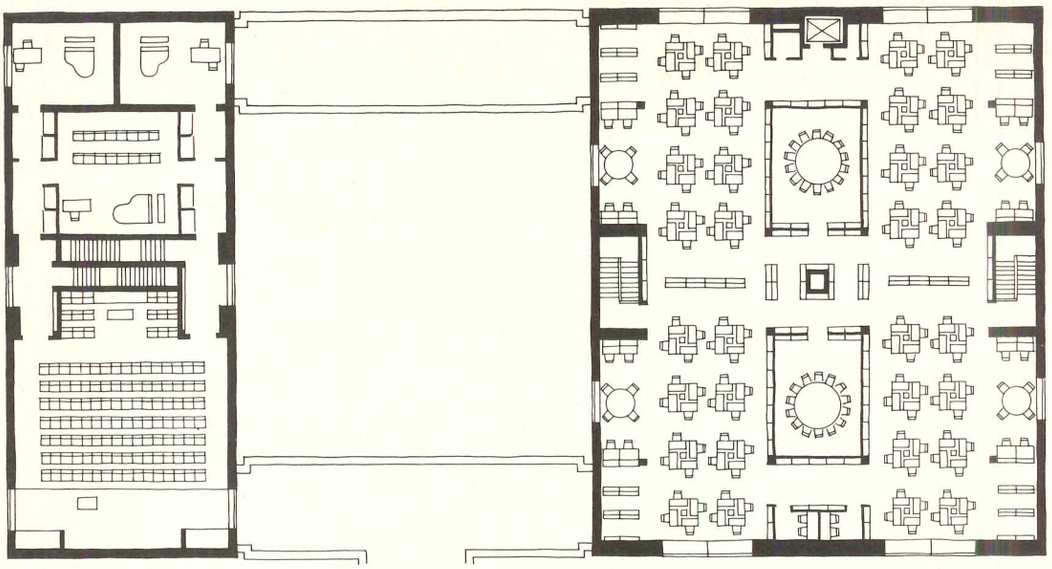
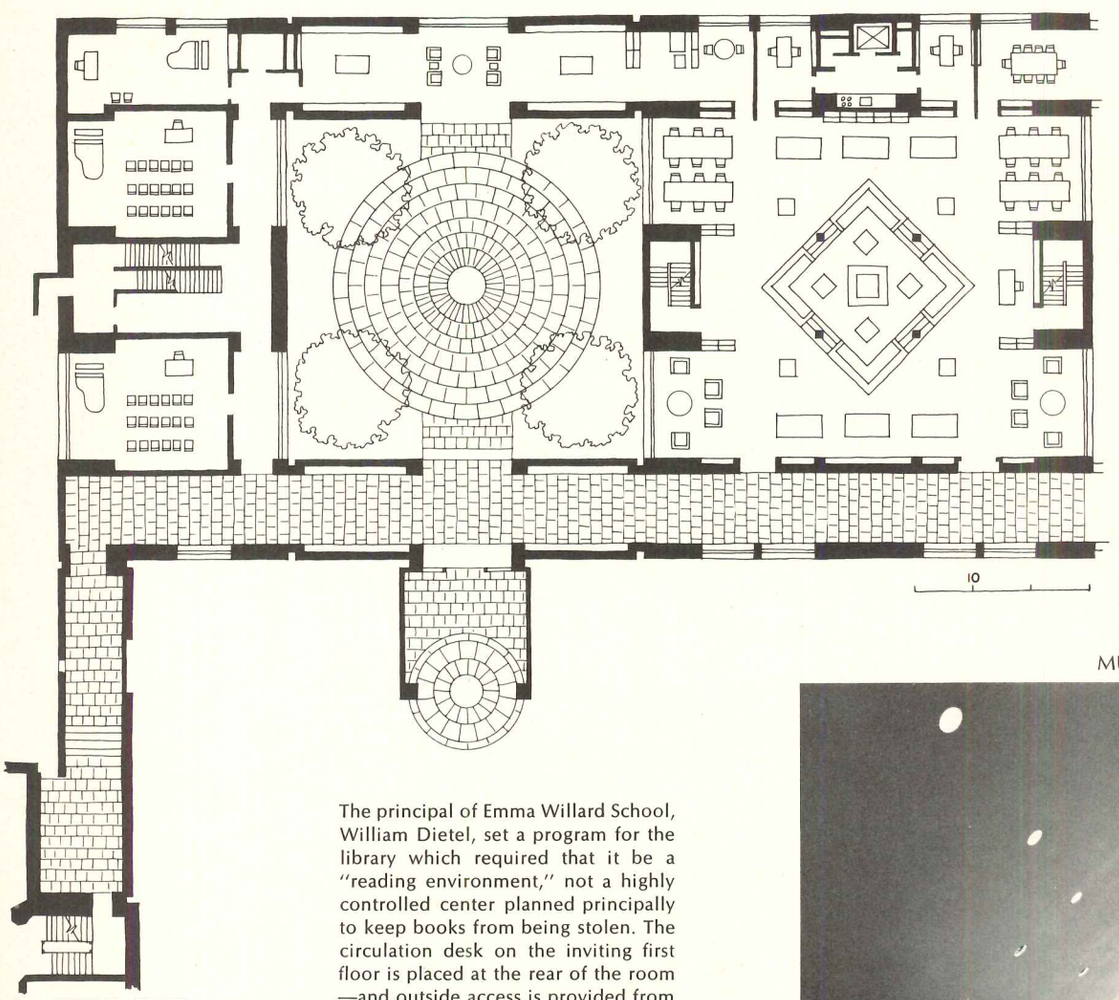
SNELL MUSIC BUILDING AND WILLIAM MOORE DIETEL LIBRARY, Emma Willard School, Troy, New York. Architect: *Edward Larrabee Barnes—Noel Yauch, associate;* engineers: *Severud Associates (structural); Jaros, Baum & Bolles (mechanical);* landscape architect: *Peter Rolland;* interior designers: *ISD Inc., Mary Barnes and Noel Yauch;* contractor: *George B. H. Macomber Co.*

*Joseph Molitor photos*



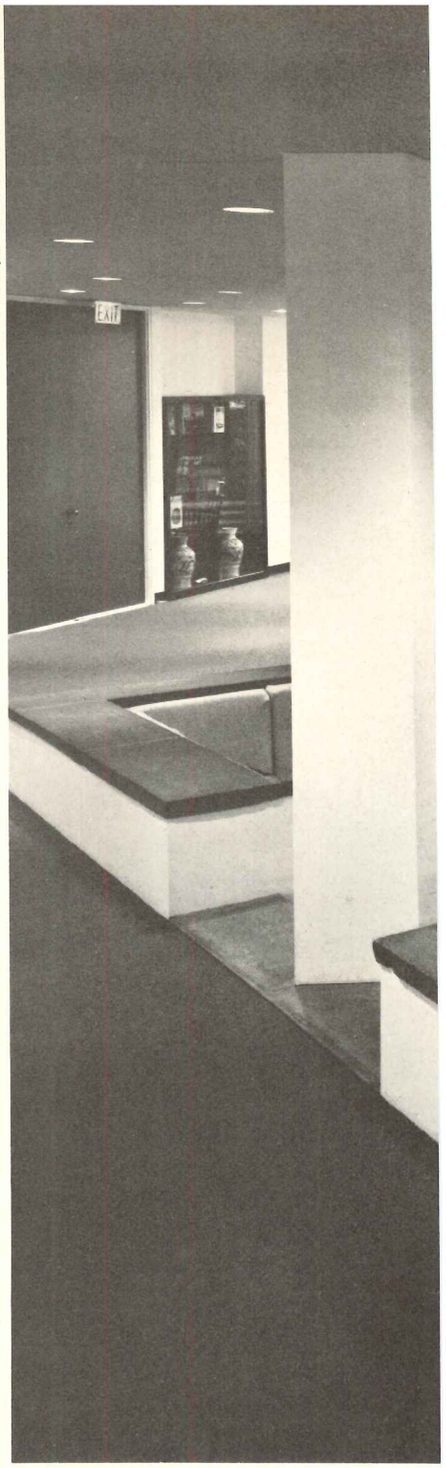


SECOND FLOOR

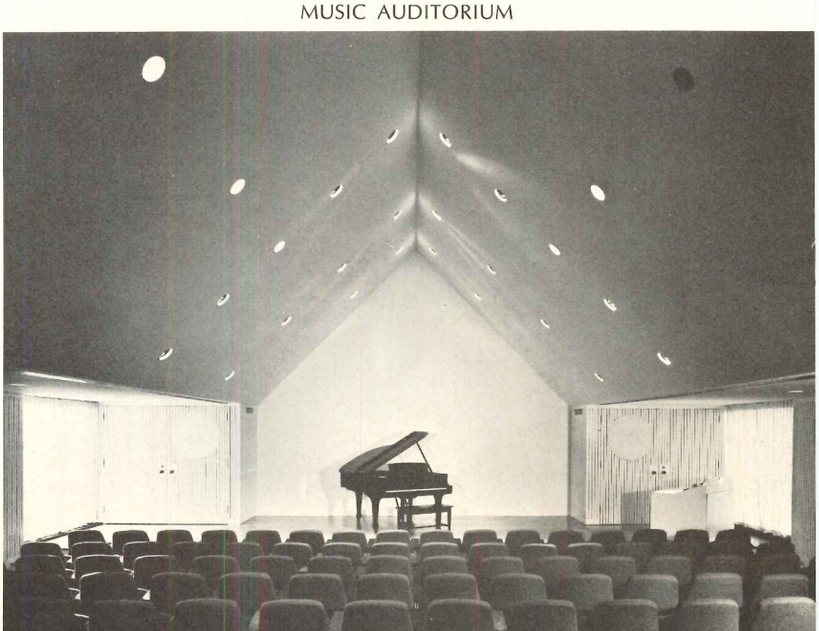



GROUND FLOOR

Joseph Molitor photos



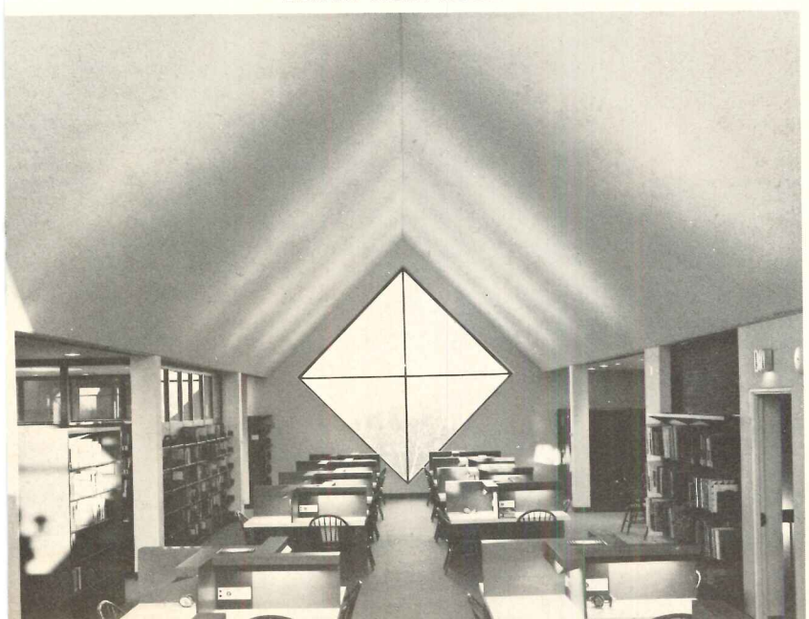

MUSIC AUDITORIUM



The principal of Emma Willard School, William Dietel, set a program for the library which required that it be a "reading environment," not a highly controlled center planned principally to keep books from being stolen. The circulation desk on the inviting first floor is placed at the rear of the room —and outside access is provided from all directions. The room centers on a conversation pit (and quiet talk is permitted and tea served), and has windows open to the courts. Upstairs, there is a true reader-stack mix and electronically-equipped carrels with up-down lights. In addition to spaces shown, the music unit has basement practice rooms.

LIBRARY

LIBRARY STUDY ROOM



MUSIC STUDIO

## APARTMENTS FOR FACULTY HOUSING

**HOUSING** are at a slight remove from the academic "spiral" and are designed to reflect the English park-like setting of rolling lawns. All the apartments are amply sized and extremely pleasant; each has a garden or a large roof terrace with trellises. The result is a sort of pueblo-type village of apartments which can be easily expanded in either direction. The entrance side of the building (below) is two-story and low in scale; access is thus provided at the middle level for all apartments.

A special concrete block, of a handsome beige color, is used for the exteriors, and provides an economical "match" to the stone of the rest of the campus. For all its random appearance at first glance, the structure is a very disciplined one, with repetitive banks of apartments—each grouped around plumbing cores. Each apartment has good privacy and sound insulation.

The complex, in all, forms an extremely fine solution to the difficult problem of combining the necessary close-grouping and economy with well-designed facilities for living.

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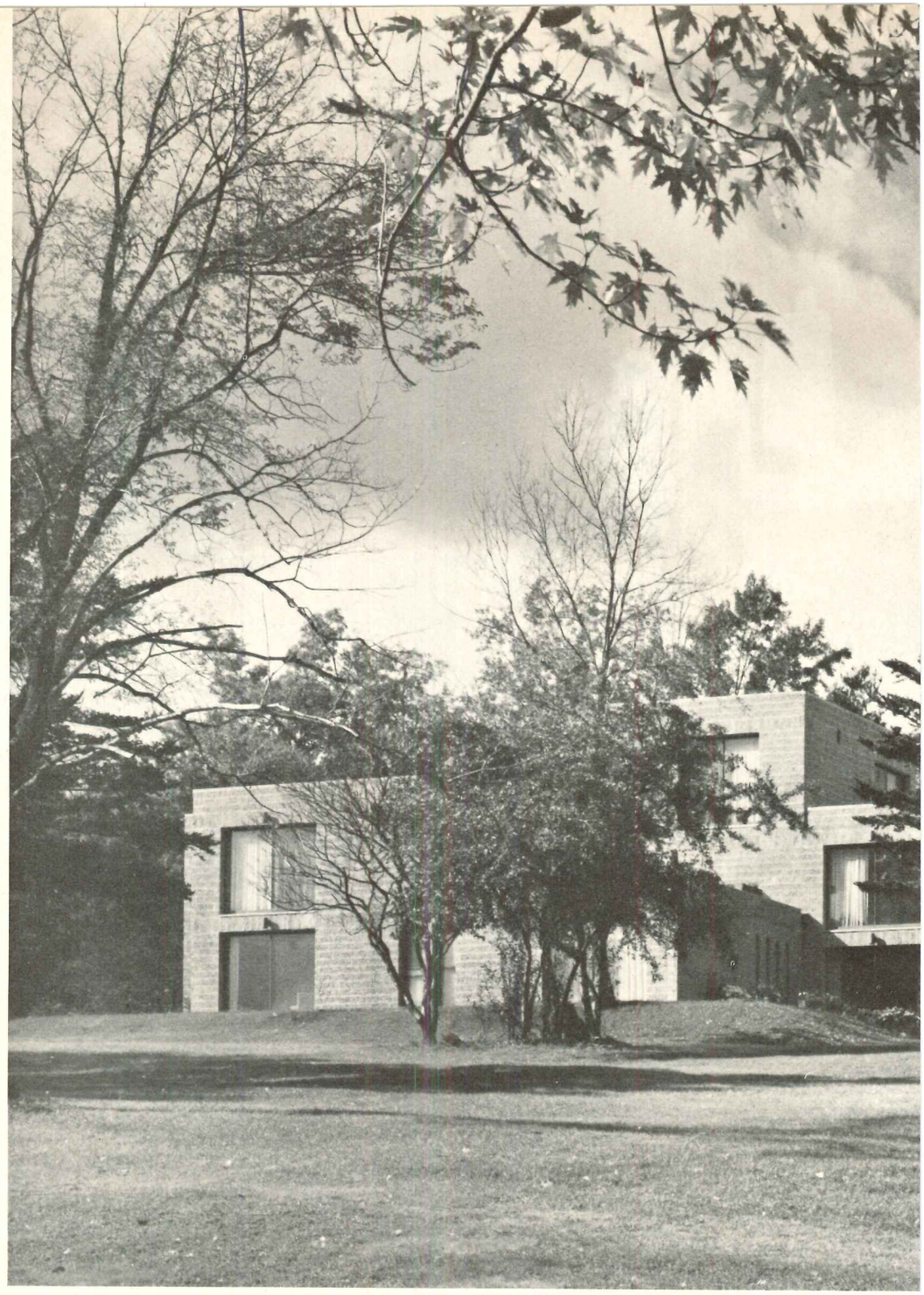
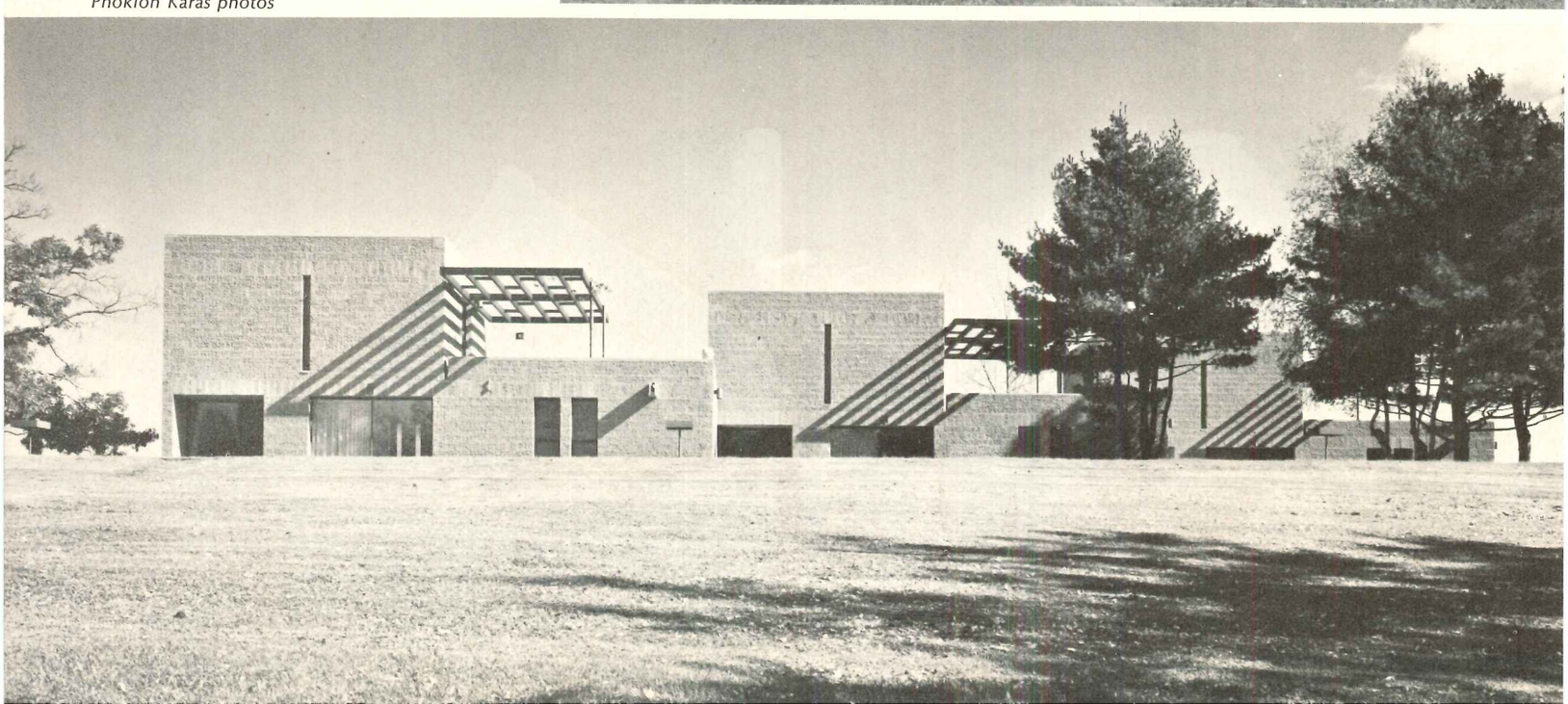
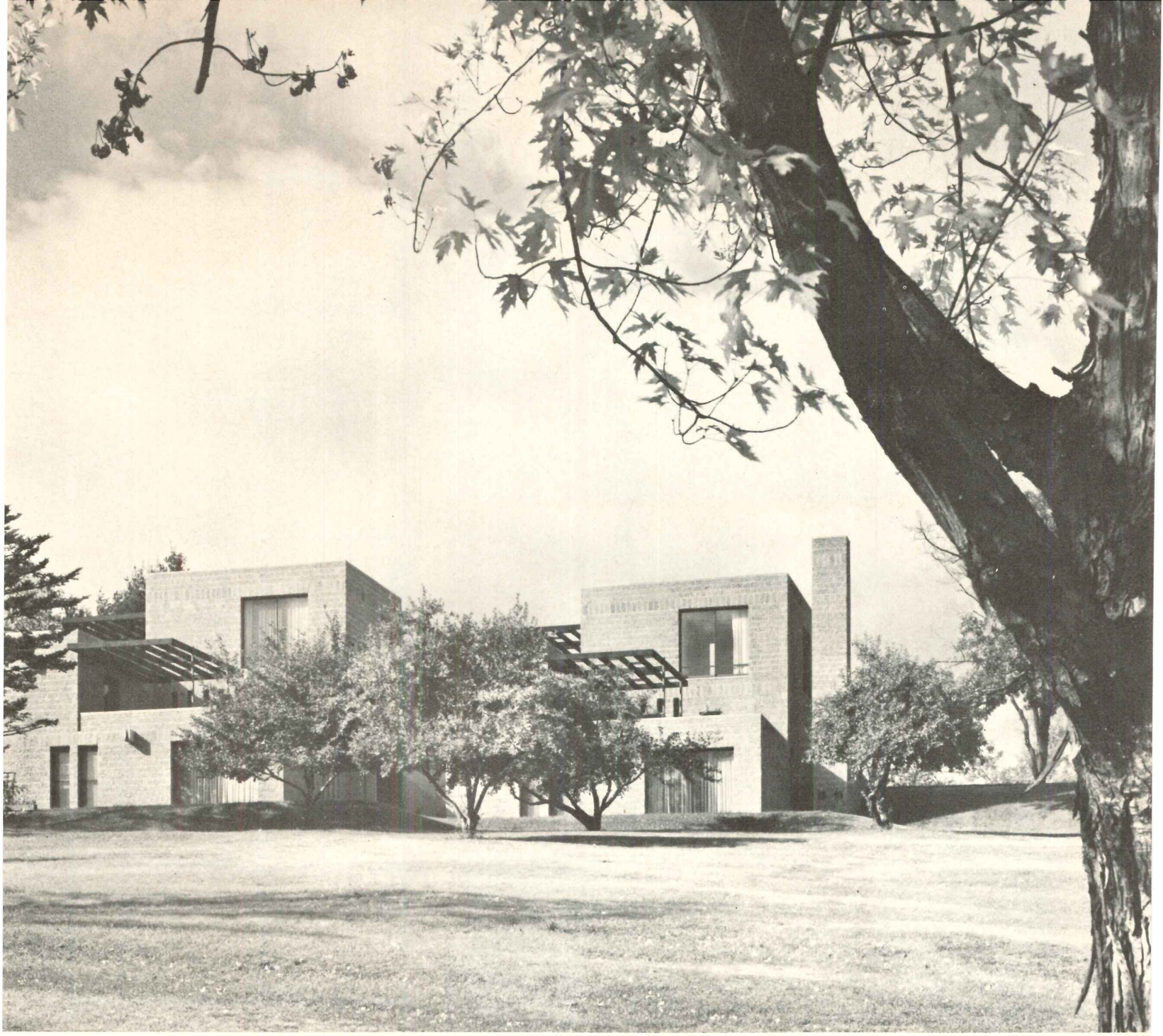
CLEMENTINE MILLER TANGEMAN APARTMENTS, Emma Willard School, Troy, New York. Architect: *Edward Larrabee Barnes—Noel Yauch, associate;* engineers: *Severud Associates (structural); Jaros Baum & Bolles (mechanical);* landscape architect: *Peter Rolland;* contractor: *Duncan E. Cahill.*

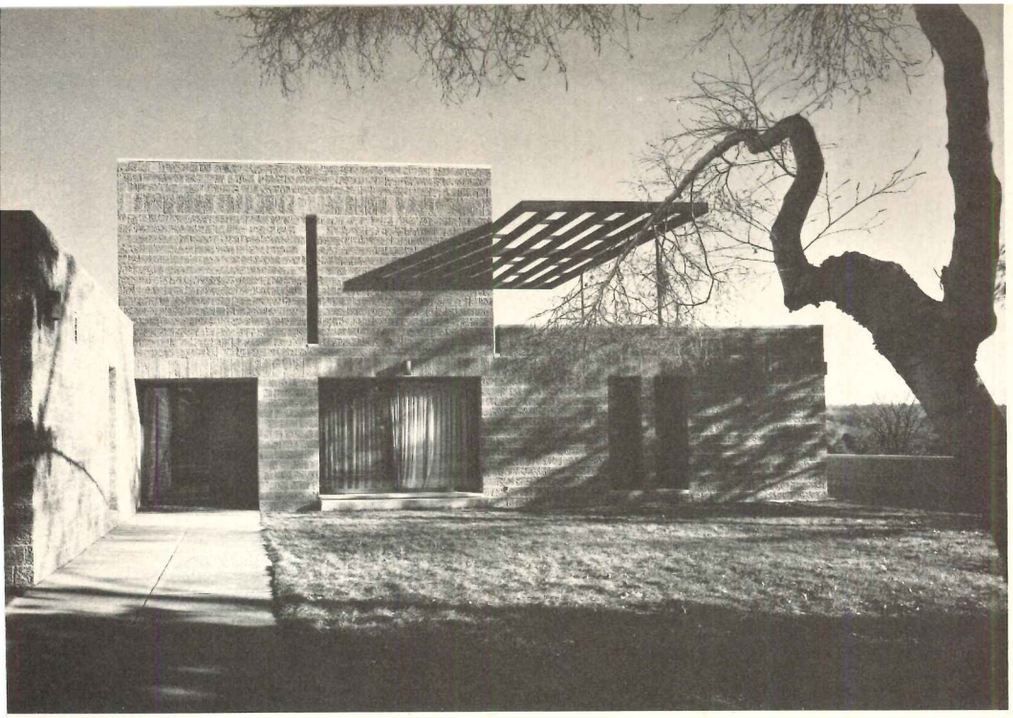


*Phokion Karas photos*

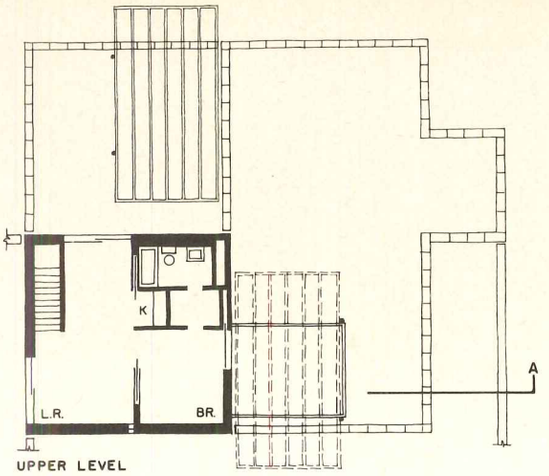




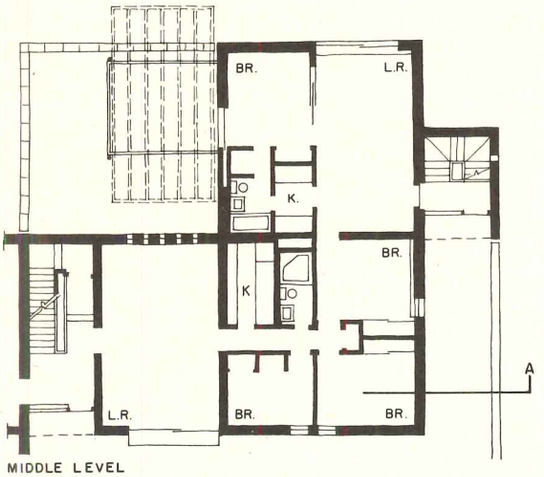
Joseph Molitor photo



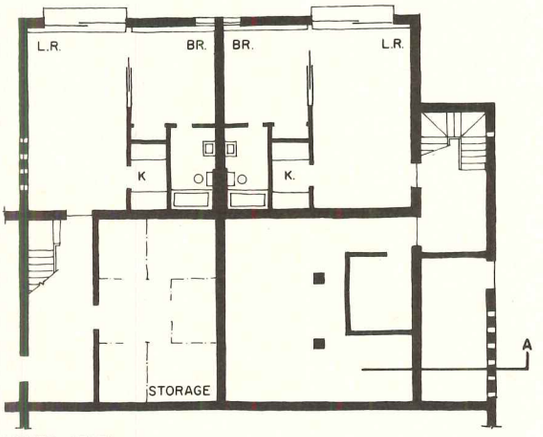
*Joseph Molitor photos*




UPPER LEVEL



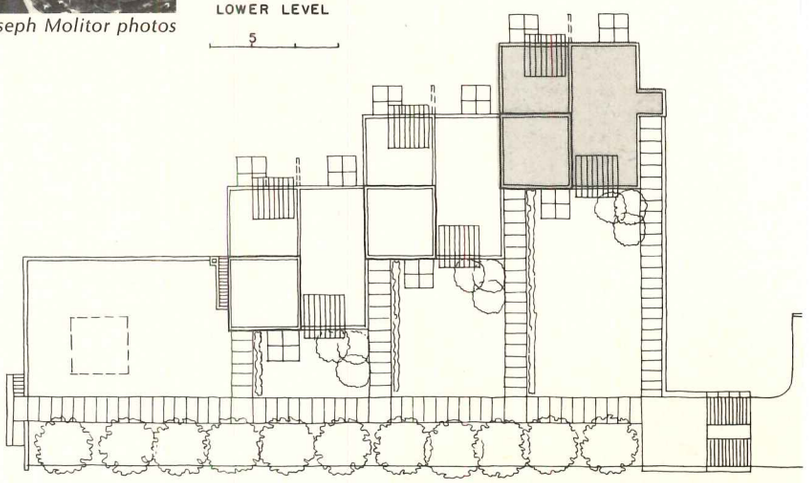

MIDDLE LEVEL



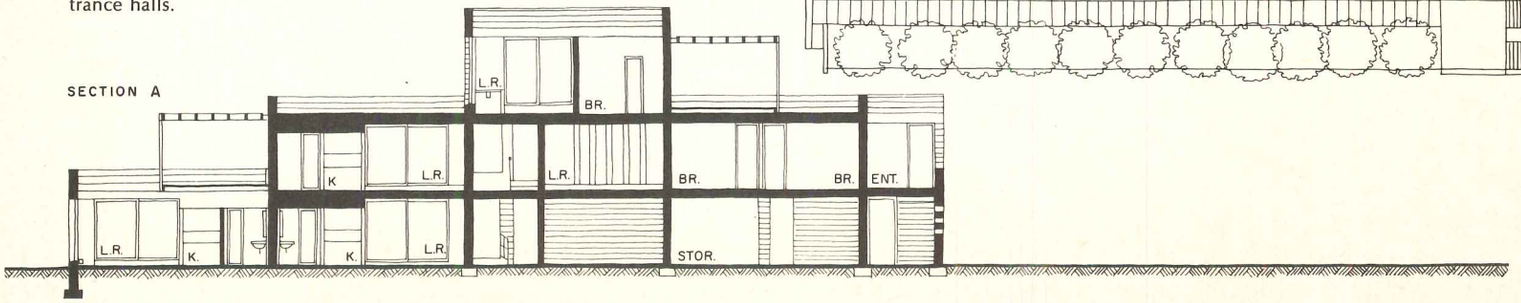

LOWER LEVEL

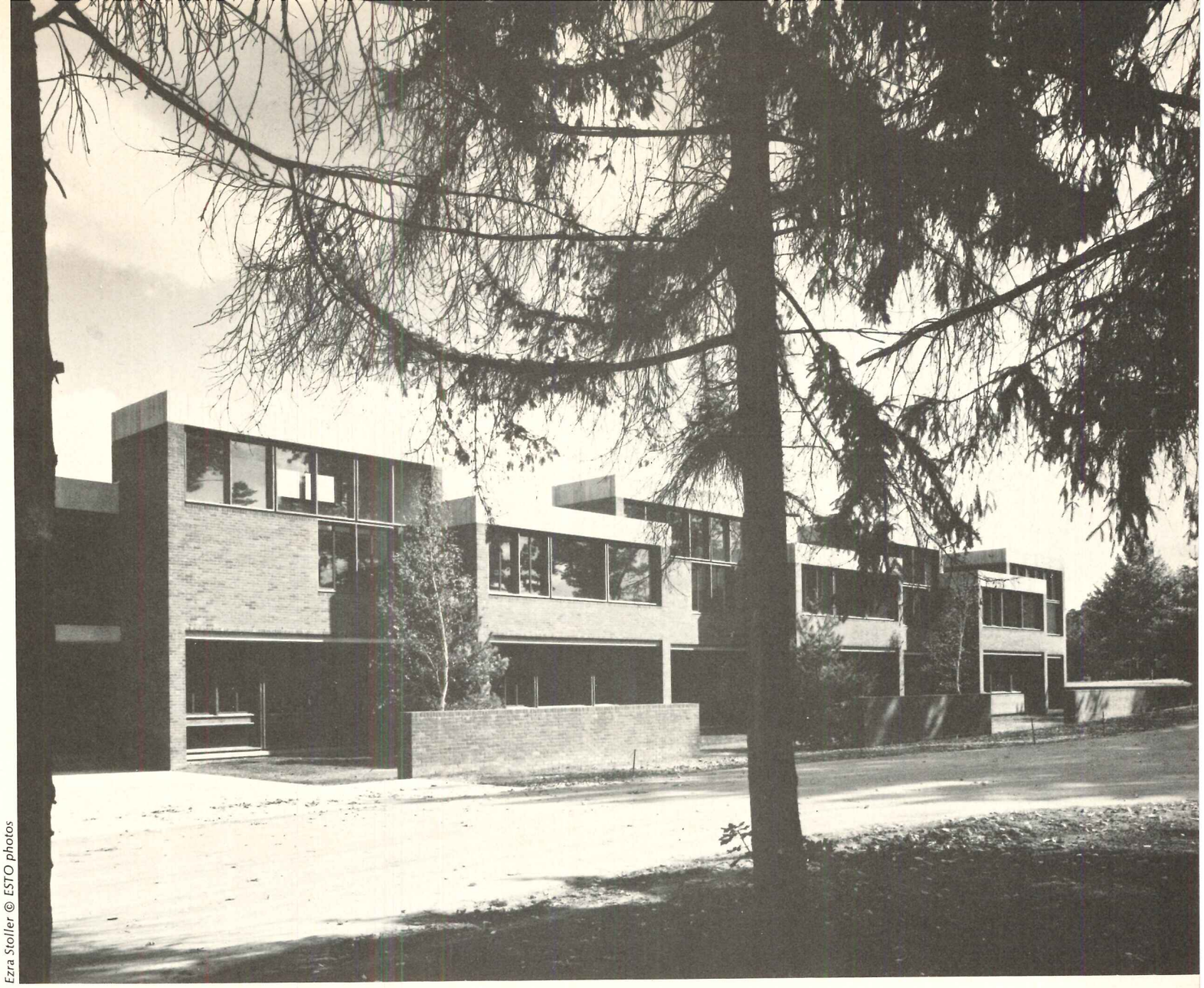
5

At its present stage, the faculty housing structure at Emma Willard School consists of three identical, but staggered, units. The five apartments in each unit drop off at each floor to provide the roof terraces. Most of the units have one or two bedrooms—however, a flexible scheme is provided at the second floor (see plan above right) which permits one of the two apartments on this level to have three bedrooms if desired. All interior walls are gypsum board, painted off-white. Floors in the apartments are oak, with slate in the entrance halls.



SECTION A





Ezra Stoller © ESTO photos

# The Allendale School: an expression of individual spaces

The Allendale School of Rochester, New York, has a new 16-classroom addition to its campus, providing facilities for 400 students from grades one through twelve. The new building gives a much needed focus to the campus and has specifically fulfilled, in its internal arrangements, the particular needs of Allendale's curriculum. Architect Louis Bakanowski of Cambridge Seven Associates spent nearly a week talking to the students, teachers, and administrators of the school before beginning design. The consensus at Allendale, he discovered, was that the identifiable classroom was its basic educational unit, rather than multi-classroom or "school-as-a-whole" conceptions. His completed building, then, in its plan and in its elevations, reflects this thinking. Individual classrooms are expressed in elevation as well as in plan by setting one stacked pair of spaces forward of the neighboring pair, and repeating this system along the two-story facade. Alternate second-floor spaces are then given a clerestory for additional light, further emphasizing the separation of one classroom from another. The architectural expression of repeated but largely autonomous spaces reflects the teaching procedure.

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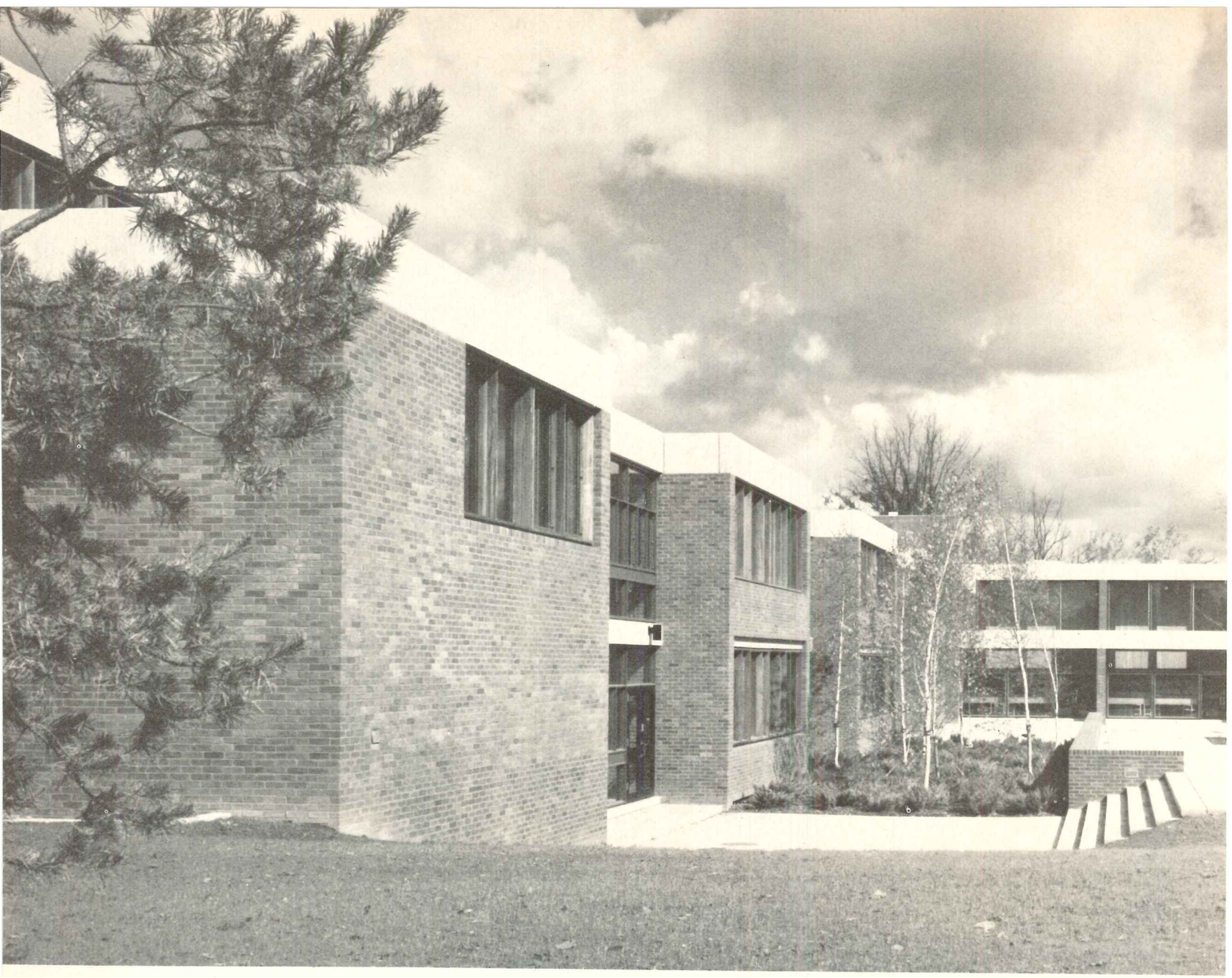
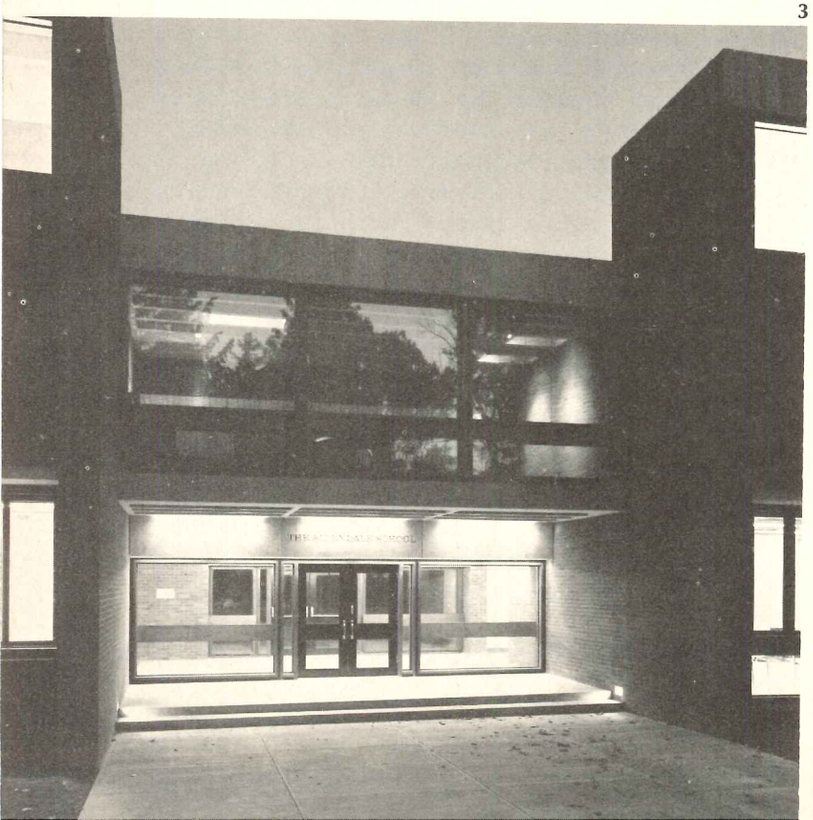
THE ALLENDALE SCHOOL, Rochester, New York. Architect: *Louis J. Bakanowsky of Cambridge Seven Associates—design team: Louis J. Bakanowsky, William K. Goodwin, Tyrus Porter, Ernest Barbee;* structural engineers: *David C. Weidemann & Associates;* mechanical engineers: *Greenleaf Associates;* landscape architect: *James E. Gui;* contractor: *John B. Pike & Sons Inc.*

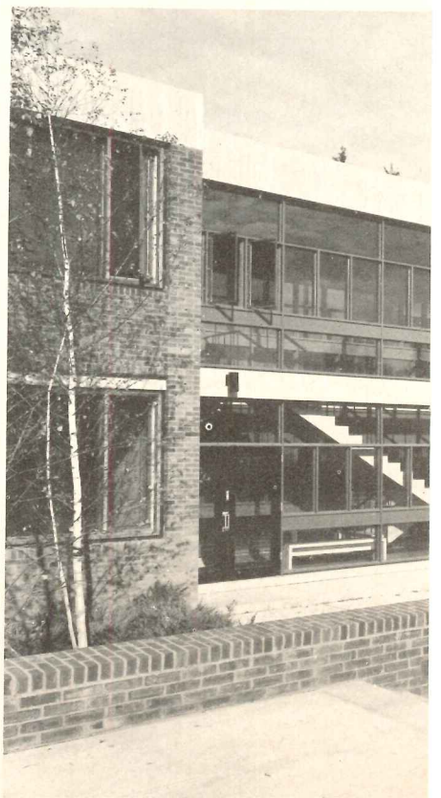


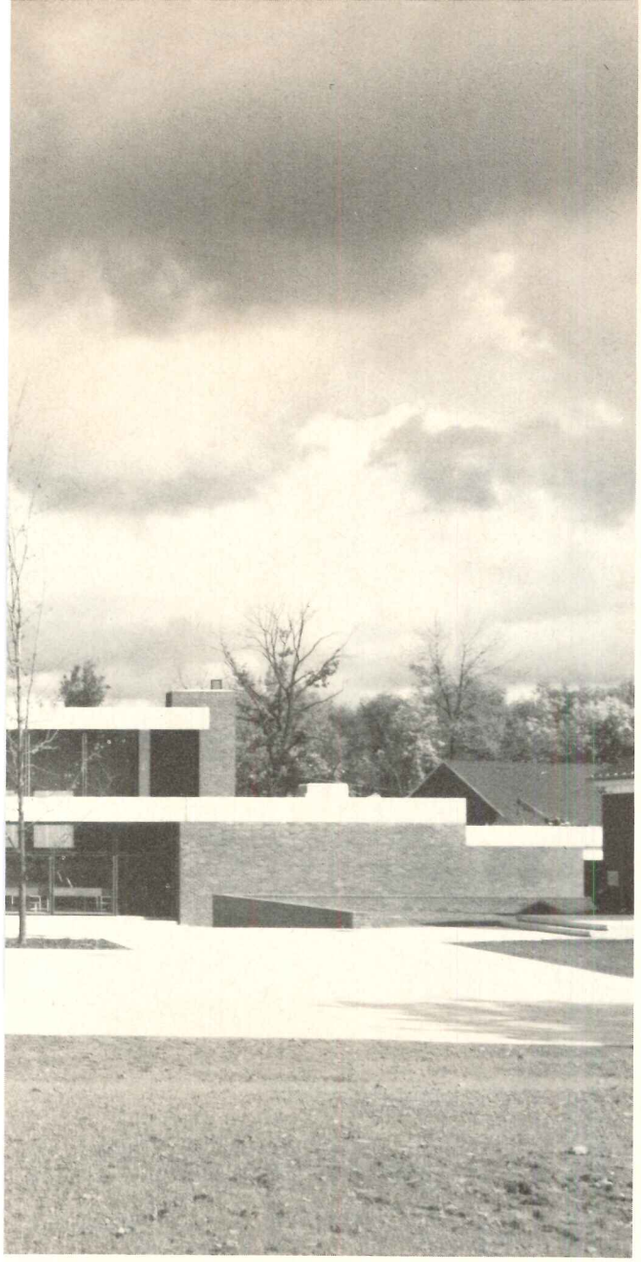


3

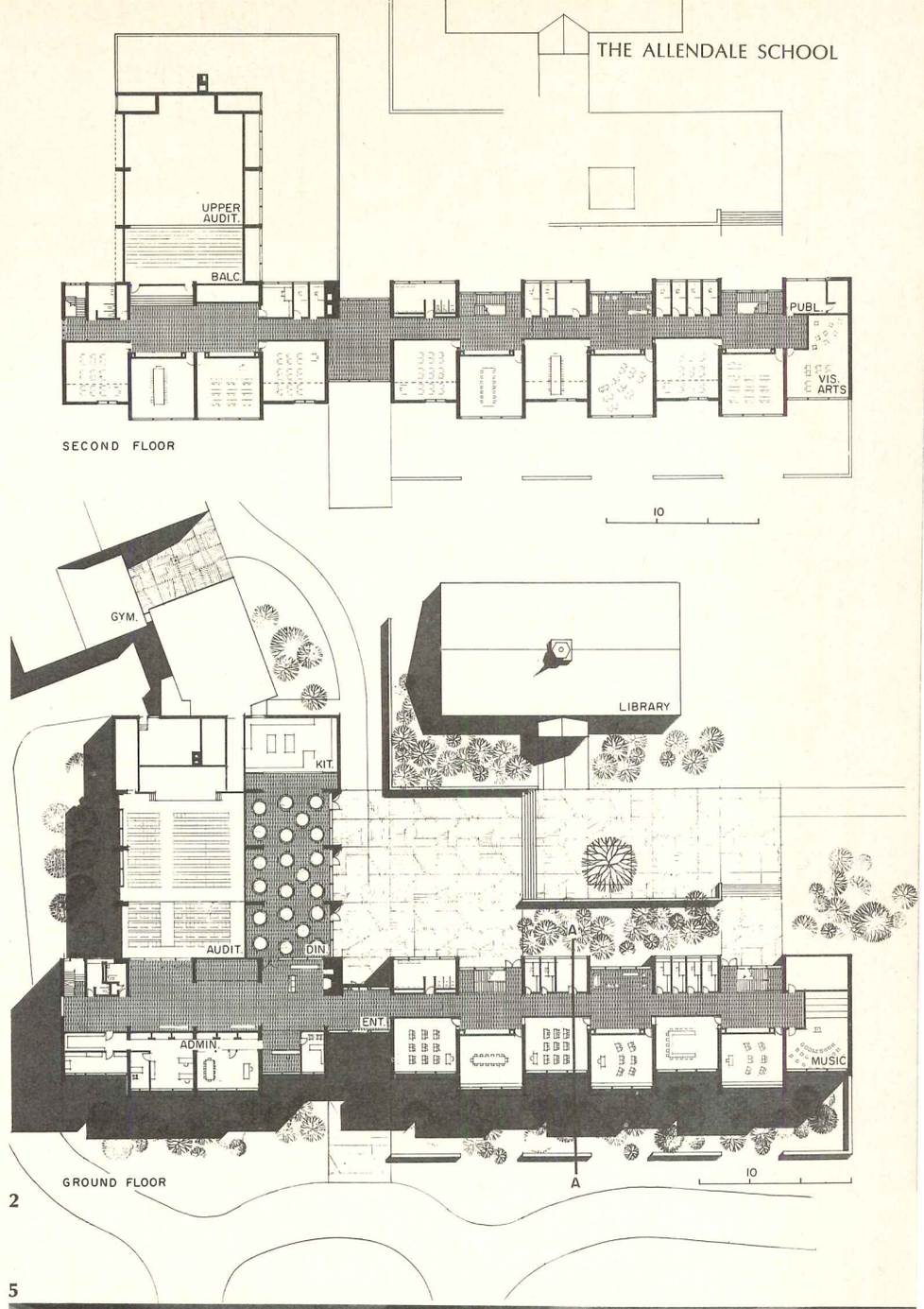
By manipulating the circulation space, the architect has attempted to extend the range of educational experience beyond the classroom, into the public life of the school. Small conversational and gathering places occur along the corridors (2) and at the stair locations, with larger and more formal spaces looking out on the court (1 and 4). Access to the new classrooms from the rest of the campus is directly through this court, keeping it animated and alive. The dining area (5) faces the active spaces, while the classrooms have been placed on the quiet side of the complex. The court thus becomes a gathering place for the campus as a whole, focusing activity with its sense of enclosure. The main public entrance (3) leads directly to it through the first-floor corridor.

Exterior materials at Allendale are a warm grey-brown brick, with buff-colored concrete forming the horizonal bandings. The abundance of well-maintained trees and planting areas is a distinct benefit to the Allendale School, as these photos indicate.





1


THE ALLENDALE SCHOOL
UPPER AUDIT.
BALC.
PUBL.
VIS. ARTS
SECOND FLOOR
10
GYM.
LIBRARY
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DIN.
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A
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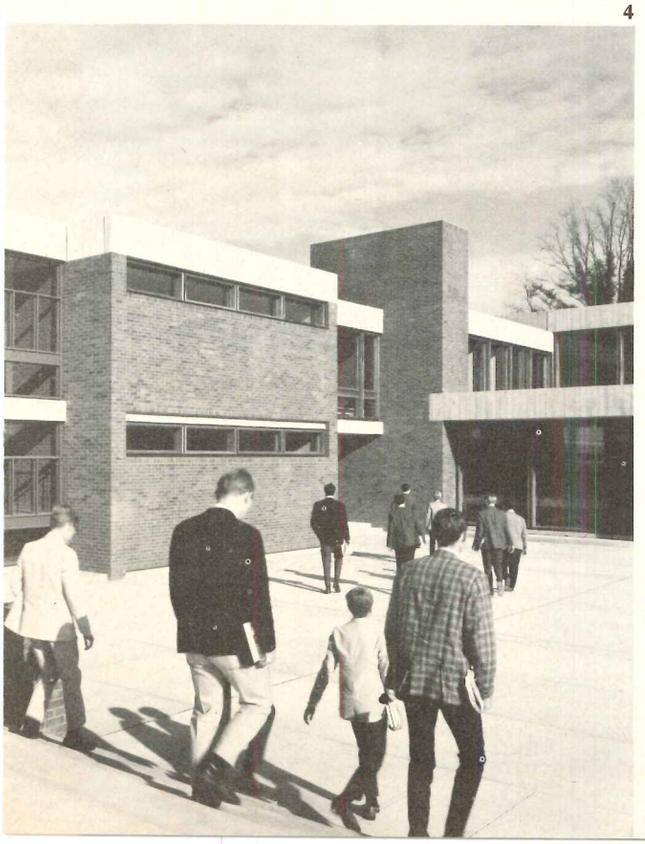
2

4



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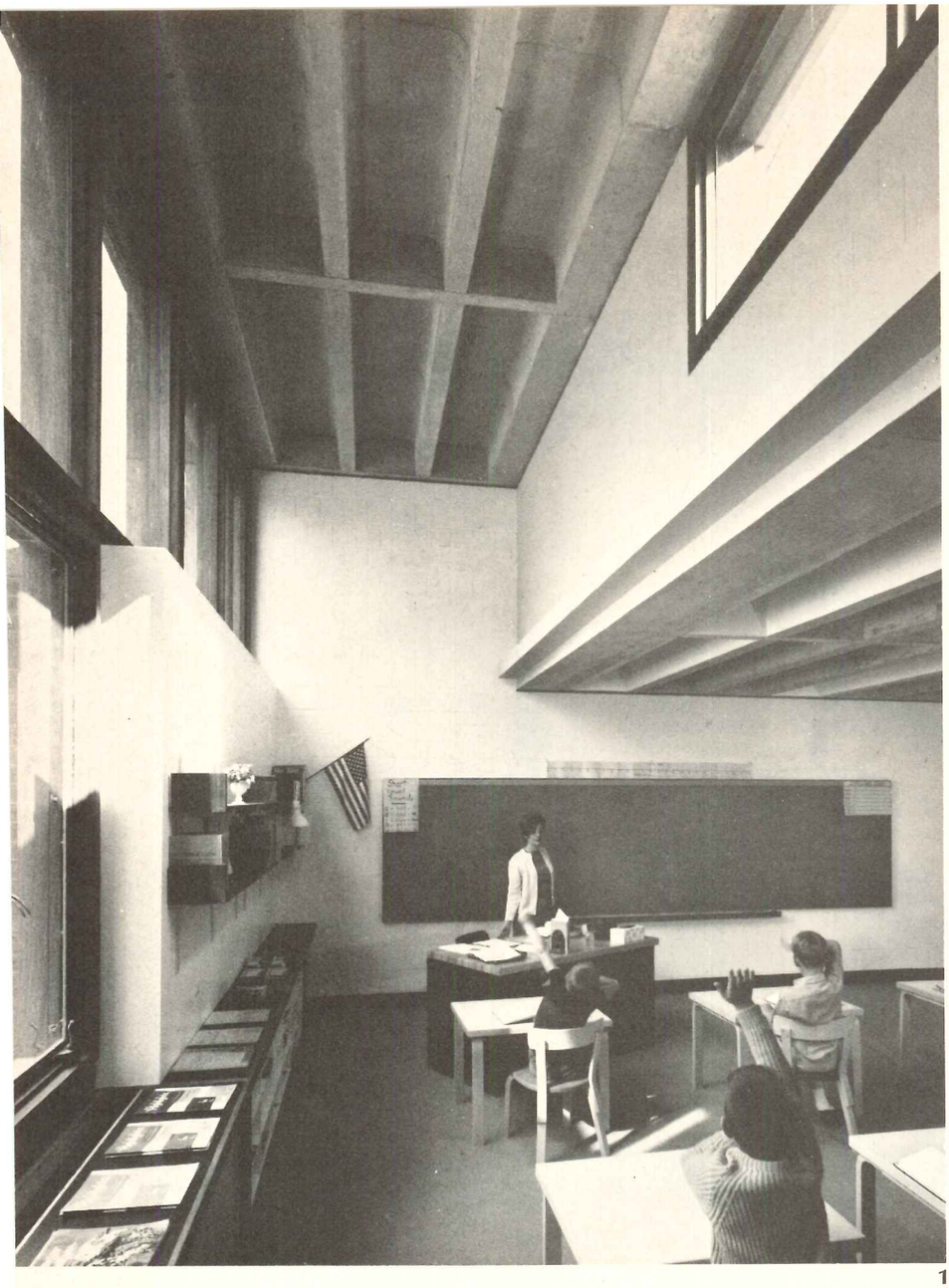

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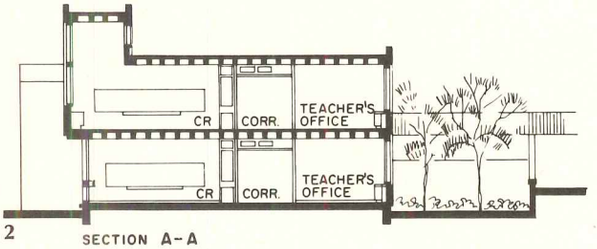
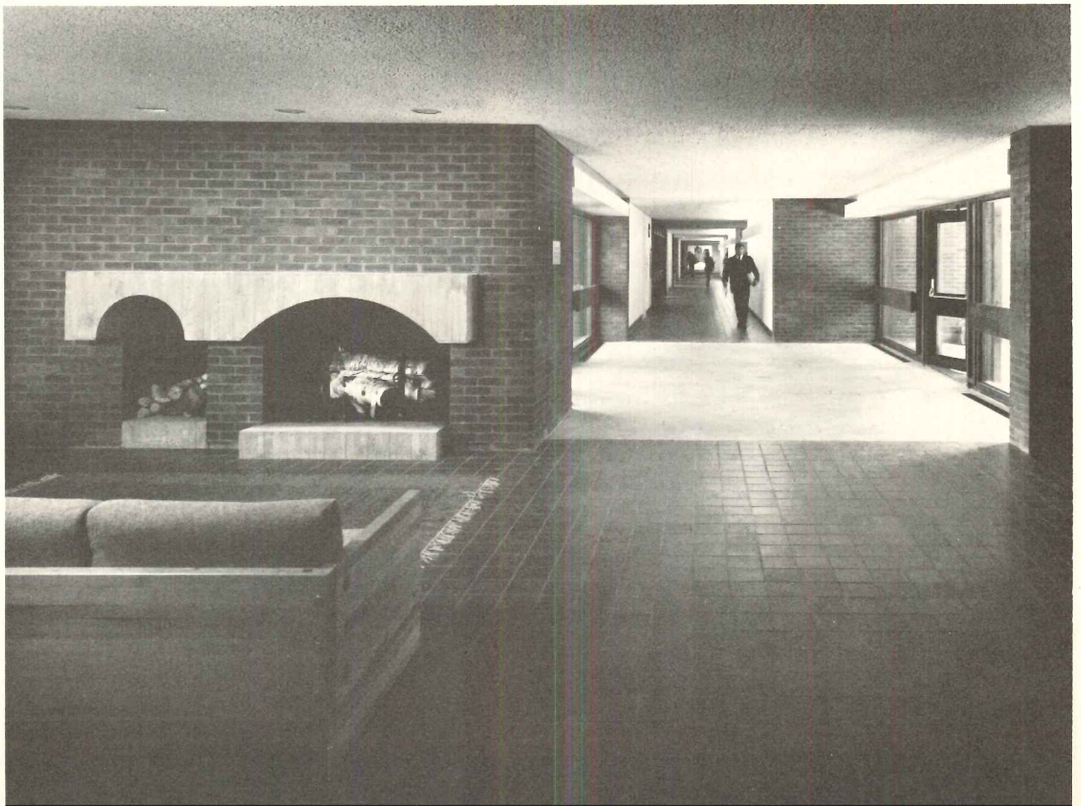



2 SECTION A-A

The interior of a second-floor classroom **(1)** and the section **(2)** show how the alternating and irregular silhouette of the main facade was achieved. The positions of paired rooms are staggered along the facade, the second floor overhangs the first at points, and a raised clerestory has been placed in alternate classrooms at the second floor. A pan-formed poured-in-place concrete floor and ceiling system has been left exposed throughout the school, with the exception of the corridors, which have dropped ceilings concealing the mechanical ducts. The corridors **(3)** utilize spots of bright, primary color and large graphics to enliven the spaces. Window sash throughout is a heavily-oiled African mahogany, with large mullions and jambs. The lounge **(4)** is directly adjacent to the campus and public entrances, and provides a foyer to the dining hall.

4



Raymond Lifchez

# MUSEUMS

Spurred by unprecedented public interest—as manifested not only in record-breaking attendance (now an estimated 300 million visits annually) but in financial support as well—museums are growing at an unprecedented rate. New institutions have come into being, ranging from great cultural landmarks whose influence is nationwide in scope, to modest local and regional collections whose more limited mission is the enrichment of their immediate communities. Existing museums have expanded their premises, extended their services, enlarged their collections, and revamped their installations.

At the same time, the surge of growth has prompted museums old and new, large and small, general and specialized, to redefine their publics, reexamine their policies—and renew their efforts to relate the latter to the former. Despite carping from some quarters about the risk of sacrificing scholarship to showmanship, most have contrived in the process to maintain their essential function as places in which, as Webster has it, "are preserved and exhibited objects of permanent interest in one or more of the arts and sciences." But many are also reviving and revitalizing the much earlier role in which the very term "museum" is rooted: a place of study. And in emphasizing this new/old dimension of learning as well as looking, they are drawing by and large on the best traditions of the new/old school of pedagogy, which holds that learning can and should be pleasurable—a challenge perhaps, but never a chore—and, by the same token, that apprehension is for many a condition of appreciation. As Rexford Stead, deputy director of the Los Angeles County Museum of Art, pointed out at a recent conference on "The New American Museum and Its Community," today's museum "is no longer a kind of sacred temple of beauty, appealing only to a mere fraction of the population. It must be a lively place, a dynamic place . . . a college without entrance requirements."

Much of the new emphasis on communication is reflected in the introduction of special programs and presentation techniques aimed at making museum offerings more meaningful to a large, eager, but largely inexpert audience. But the trend is inevitably making itself felt too in the planning and design of new museums and, interestingly, in their siting, with particular attention to interaction with the community and its resources.

Nowhere perhaps is the proposition that the relation between a museum and its setting can be one of mutual enrichment better demonstrated than in Mexico City's Chapultepec Park where, as Raymond Lifchez' discussion on the following pages suggests, the recent construction of four museums has made the city's major recreational resource a major cultural and educational resource as well. Preeminent among the four is the National Museum of Anthropology, whose reputation as one of the most brilliantly successful museum designs of recent years is attributable not only to the distinction of its architecture and collections but to the sure-handed but lighthearted way it informs its public, and to the masterful touch with which its enclosed spaces are merged with outdoor plazas, courtyards, and gardens, and finally with the park itself. The other three Mexican "museums in a park," however, also assert a similar theme, as do the recent United States examples presented here—all enlivening and enhancing settings which in their turn add to the attractions of the museums themselves as places for pleasurable learning. —*Margaret Farmer*

# A BRILLIANT MUSEUM REFLECTS MEXICO'S CULTURAL AMBITIONS

*by Raymond Lifchez*

Four museums recently built in Chapultepec, Mexico City's principal park, reflect concern on the part of the government-client for the betterment of the peoples' educational facilities and of Mexico's cultural institutions.

The first modern museum in Mexico was the National Museum of Anthropology in Mexico City. Architect Pedro Ramirez Vasquez, to whom the commission was given in 1960, says that the problems presented by this work were complex. Two equally difficult requirements had to be fulfilled: the building had to function as a museum, a dignified housing of a cultural legacy, and was to be contemporary yet not alien to that legacy. To achieve these aims it was necessary to search for and re-evaluate the nearly forgotten tradition of Mexican architecture in its pre-Hispanic past, evoking this tradition even though the formal solutions might be different.

In examining these unchanging values, Ramirez Vasquez found it evident that Traditional and Modern architecture in Mexico have certain underlying concepts in common, in spite of differences in technique and specific formal solutions, which he embodied in this building. For example: the influence of the geographic environment, integration into the landscape, generous use of space, preservation of materials, a plastic continuity perpetuated through the handiwork of artisans, and modes of construction that are characterized by an ambition for permanence and boldness of design.

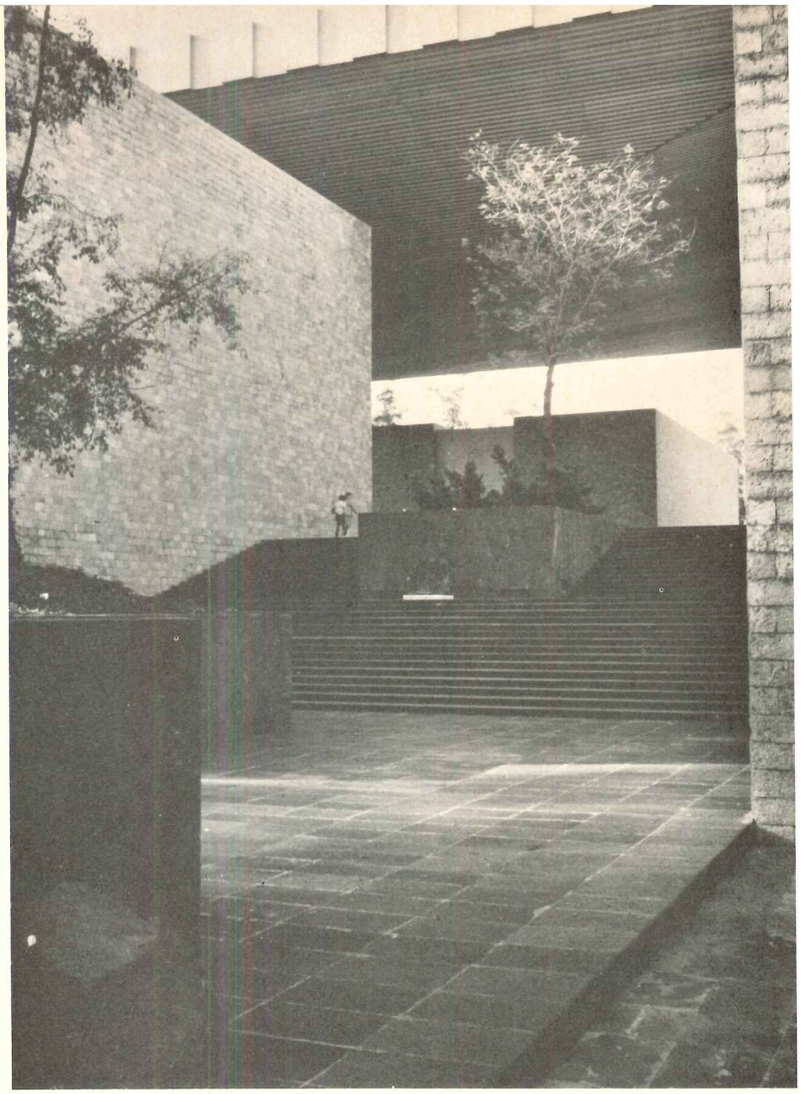
The broad, open spaces typical of pre-Hispanic architectural ensembles in Mexico are a reflection of the profound respect landscape has inspired in man and of his communion with the natural world. Pre-Hispanic architects in Mesoamerica never created a structure that conflicted with its surroundings. The Mexican's love of his landscape, expressed in a striving for harmony between architecture and environment, began as part of an exalted conception of man that elevated the individual to a dignified place in his society. Spaces and masses were planned with a careful eye to dignifying the great multitudes that would congregate in these ritual centers. Architecture, open spaces, and landscape were all fused into a single and indivisible whole.

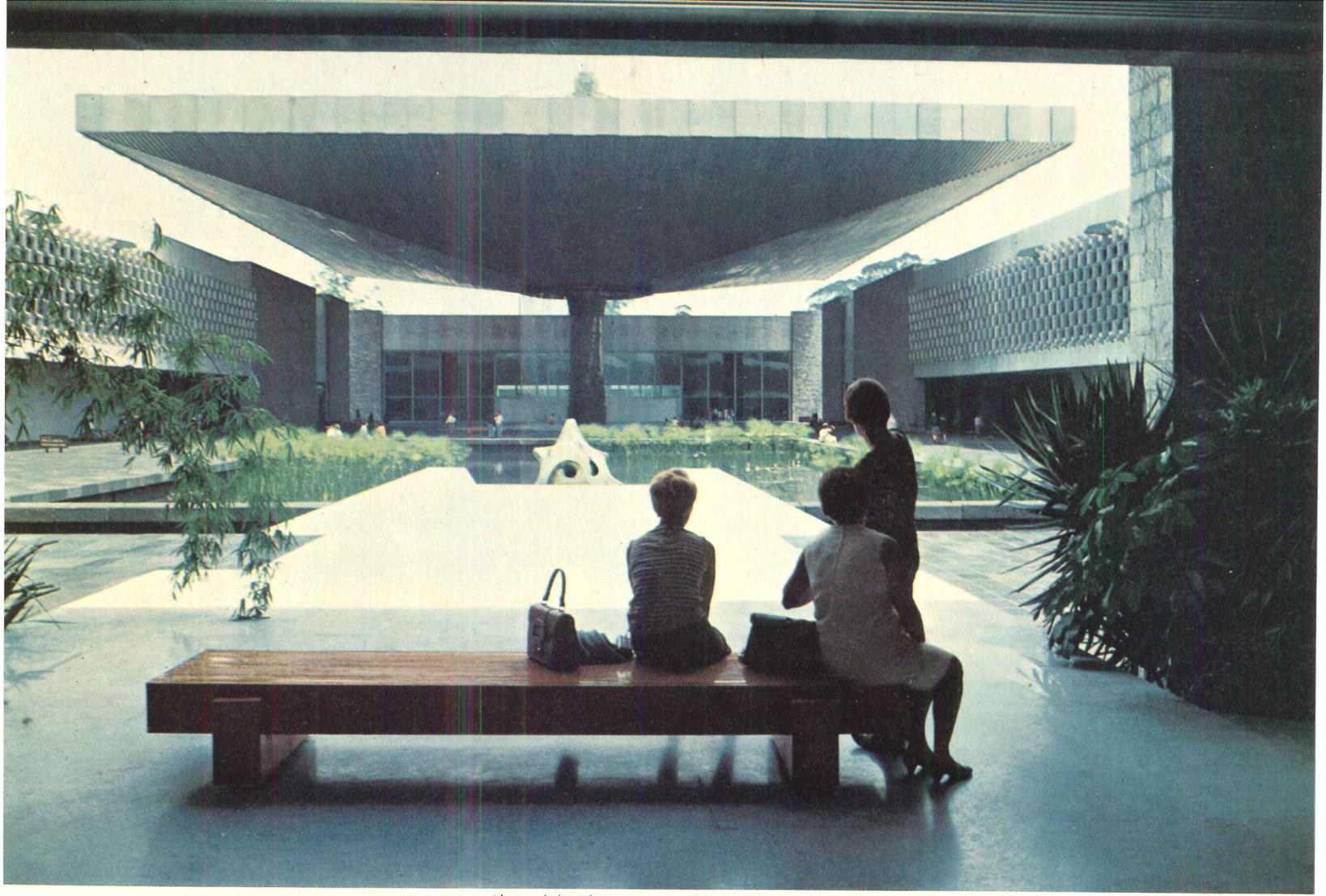
Volumetrically, the museum is comprised of various open and closed spaces that include its site in the Park. These spaces are assembled in a masterly fashion, in which each part achieves heightened significance in relation to the other parts. Inside, one's attitude toward the enclosed spaces is partly formed by the simultaneous experience of the definite presence of the outdoors—vegetation, sky, and the elements; conversely, open space is developed as the logical extension of the enclosures. Because the grand proportions of open spaces have been so well incorporated into the organization of relatively small architectural forms, one has the experience of an architecture of human scale but monumental proportion.

The Museum of Anthropology is not only buildings and spaces, it is also very much people and exhibits. The plaza at the museum's entrance attracts not just museum visitors, but is also a place for vendors, picnics, siestas and flirtations: It is Chapultepec Park's Piazza di Spagna.

From the plaza one enters the museum lobby, a large space that serves on occasion for ceremonies and receptions. It is also the place where one is introduced to the museum's vast collection from Mexican Mesoamerica in an Orientation Room utilizing mixed media.

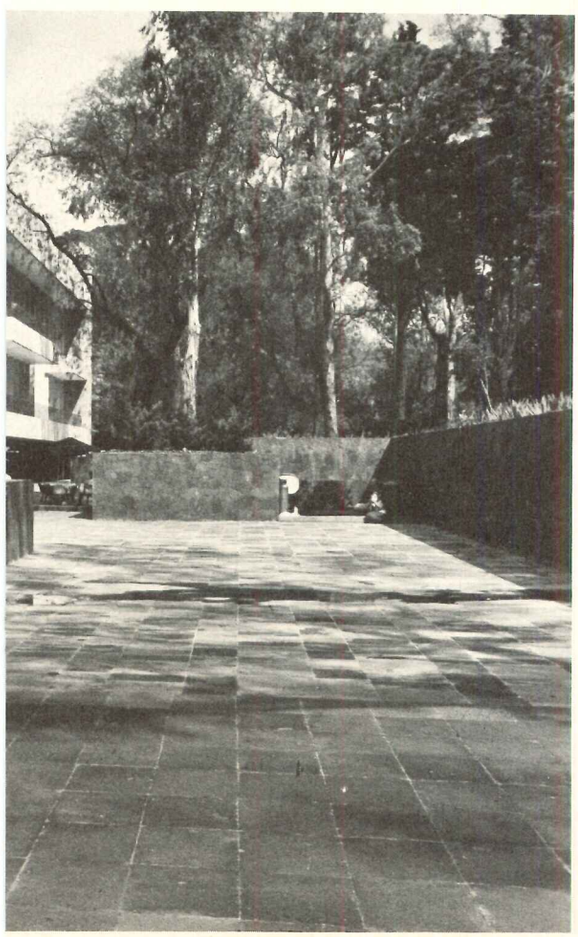
The large central courtyard of the museum is reached from the lobby. The aim, says Ramirez Vasquez, was to encourage a casual and fluid circulation by the public, to give it free access to the galleries either in the consecutive manner of a tour or by individual visit according to personal preference. This aim led to the conception of a central nucleus of distribution created in the form of a courtyard or esplanade. The solution, known as the quadrangle layout, was borrowed from classical Mayan architecture. It consists of a kind of patio bounded by enclosed buildings, thus maintaining a sense of the ex-

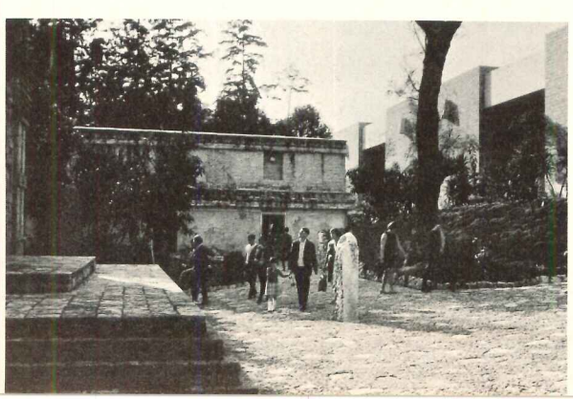




Raymond Lifchez photos

*Above left:* The opening of interior spaces to the outside, a characteristically Mayan architectural solution, is enriched here by linking the courtyard level with that of the school facilities and restaurant by means of a broad stairway. Following pre-Hispanic tradition, the trees of the park were left undisturbed, and thus were made an organic part of the building. *Above:* The view from the Aztec Room shows the gigantic umbrella roof extending over half the courtyard, thus offering protected access to the adjoining exhibition rooms during the rainy season. *Left and below:* Gardens bordering the outer walls of the museum's pavilions are utilized as patios for large exhibits. But more importantly, they are transition zones between the man-made world of artifacts and the living world of the park and the city beyond. *Right:* The entrance plaza of the museum is only one of a succession of spaces—open and closed—in which the life of the park is exposed, a natural setting not only for museum visitors but also for vendors, picnics, siestas and flirtations.





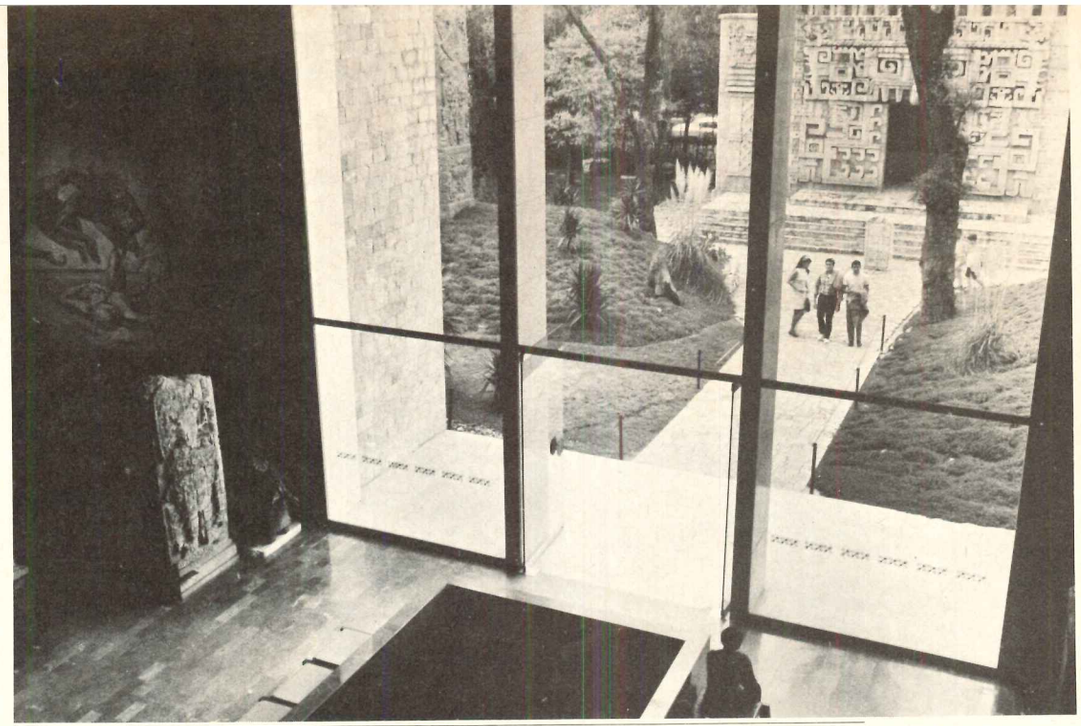
terior merging with the interior.

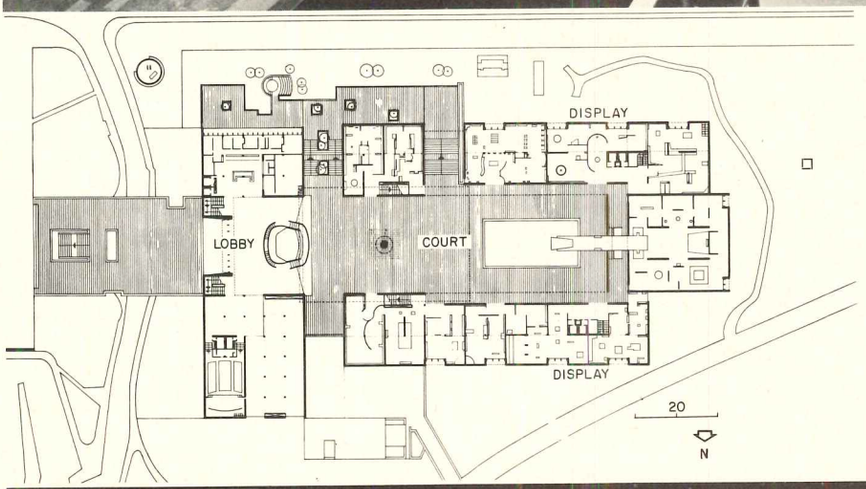
A portion of the central courtyard is covered by a large umbrella, to enhance the feeling of spaciousness, and to permit free circulation during the rainy season. The umbrella and support form a magnificent fountain that spills onto the pavement beneath.

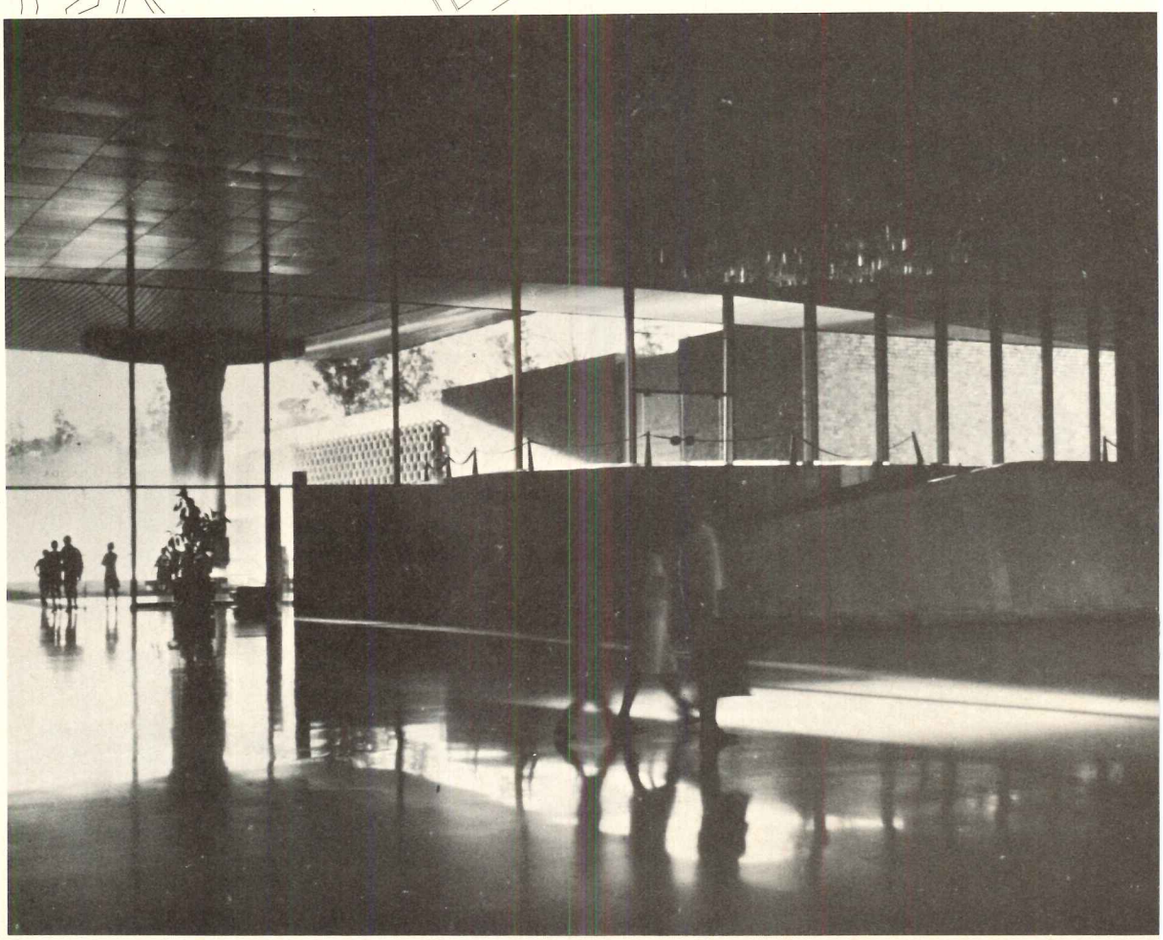
At the other end of the courtyard there is a pool planted with varieties of swamp plants found in the Mexican Valley. The pool is meant to be symbolic of the lake origins of the Aztecs, whose culture is most directly related to the indigenous Indian population. The principal pavilion of the museum, entered at the pool, houses the Aztec collection.

Small gardens border the pavilions. The gardens form a transition zone between the enclosed spaces of the museum and the surrounding park, and are reached directly from the courtyard when they are utilized as public spaces—the restaurant's patio—or from individual pavilions when they are utilized as a setting for large installations of sculpture and architecture. The relationship of in- and outdoors does more than provide alternative solutions for installations; it provides a place of "retreat" in a visitor's itinerary that is essential in such a vast collection.

The National Museum of Anthropology provides all the necessary adjuncts of a modern scientific and educational institution. There are about 20,000 square feet of workshops, laboratories, storerooms and research offices; a temporary exhibition hall of 60,000 square feet; an auditorium seating 350 persons; a library with a quarter of a million volumes; the National School of Anthropology, with accommodations for 500 students; provisions for school children, studios, an outdoor theater, play areas and dining facilities. These give a dynamic dimension to the museum's educational function, but within the composition of forms they are hardly in evidence. Ramirez Vasquez has given hierarchical order to these numerous functions, with stress on the prime function of the museum as a treasury of the nation's heritage.

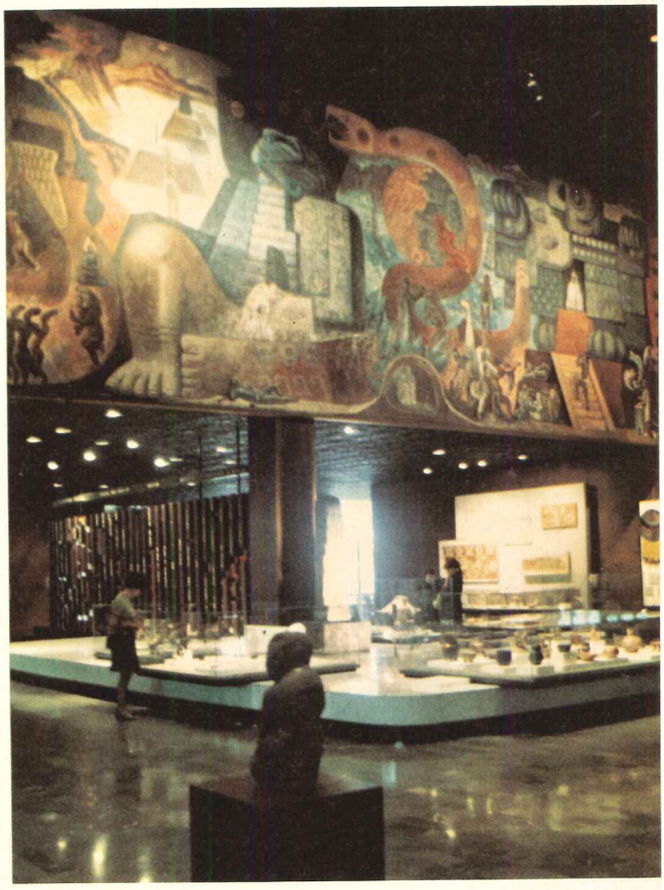


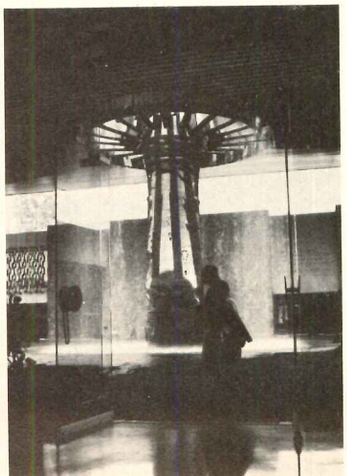


NATIONAL MUSEUM OF ANTHROPOLOGY, Mexico City, Mexico. Architect: *Pedro Ramirez Vasquez.*

*Above left:* Each major gallery opens onto a closed garden in which large objects are displayed. The plan shows the simple arrangement of pavilions around the great court. *Far left:* The entrance lobby before entering the central courtyard. *Above:* One half of the Aztec Room as seen from an exterior gallery, one story above. *Left:* Each pavilion is divided into three parts. In the low section, ethnographical material explains the culture; in the double-storied section—which also gives way to the garden—artifacts of the culture are given a "monumental" setting. Upstairs, artifacts of the culture's indigenous society are displayed. *Right:* A large exhibit room is highlighted by a mural of Mexico's school of social realism. *Below:* A curtain of water falls from the vast umbrella roof, veiling the sculpted central support column—in fact a monumental fountain depicting in bronze relief major events of Mexican history.





## FOUR MUSEUMS IN A PARK

Of the four museums built in Chapultepec Park since 1960, one—the National Museum of Anthropology shown on the previous pages—has particular architectural significance. Each, however, is unique in its intention to put *places* and *services* at the disposition of the people. Three were built during the presidency of Adolfo Lopez Mateos (1958-64), a period that was particularly devoted to the idea of a cultural reawakening in the nation. Curiously, of the four new museums, only the Museum of Anthropology was made to house an extant collection. The other three, the Museum of Modern Art and the Museum of History (both also by Pedro Ramirez Vasquez) and the Museum of Natural History (by Leonides Guadderrama) were constructed with the belief that given the right place, collections and participation of people would materialize: and they did.

Chapultepec Park is a venerable acreage now situated in the middle of sprawling Mexico City. To residents of the city, this park with its ancient trees, freshwater lakes and hilly terrain presents a kind of Garden of Eden in the middle of the Valley of Mexico, which was until the modern era one vast swamp. With urbanization the land has been filled and canals dug, but the valley remains a great plain without large numbers of trees, except in Chapultepec.

Because of its uniqueness, the park has remained untouched, apparently regarded by centuries of builders as a resource too valuable to change. It was not until the 1880's that the first popular installations were built there. The development of the park, from that time on, took the familiar pattern followed in the 19th century in other cities around the world. Zoological and botanical gardens were laid out, restaurants were opened, a few ponds were created. The people were now invited in, and from that time on the park became immensely popular.

Since 1940, the population of Mexico City has grown from 1,760,000 to 7,500,000 inhabitants. During this time the city has experienced the brunt of poor economic planning at the national level, which has centralized all industrial and educational facilities in only a few cities. In Mexico City, the situation is reflected by a population of which almost one-third are "squatters," whose existence in the city taxes all public services. The squatters represent many problems, but essential here is the fact that the majority of squatters are Indians. They come from the land, without education, and are largely disaffected from the society of the city—which regards them as intruders—and from any meaningful understanding of Mexico as a nation in the 20th century. The hope of familiarizing poorly educated citizens with the story of the Republic and the enormous sacrifice made by all Mexicans in obtaining democracy was the explicit purpose of building the Museum of History.

A similar hope was the motive force behind building the National Museum of Anthropology, as Mateos' dedication makes clear: "The Mexican Nation erects this monument in honor of the great cultures that flourished during the pre-Columbian era in regions that now form part of the Republic of Mexico. In the presence of the vestiges of those cultures, contemporary Mexico pays tribute to indigenous Mexico, in whose expression it discerns the characteristics of its national identity."

### The Museum of History

Ramirez Vasquez' History Museum was the first of the four built in Chapultepec Park. It was the first museum of its kind in Mexico. The government wanted to study the reactions of the people to such a facility. Dedicated to the "struggle of the people for their liberty," the museum was made in order to give the "ignorant people and the children" a true image of the nation's history.

The museum is situated a few hundred yards below and along the road to historic Chapultepec Castle, which today houses significant artifacts from the political and social history of Mexico. The History Museum, which is actually a kind of gallery, contains no authentic relics, but the stories it relates through various means are further amplified by a visit to the Castle.

The museum was designed as a spiraling ramp, an enclosed path down the hillside, that makes two complete revolutions around its "core." The itinerary begins in an entrance hall at the top of the site. Inside the gallery, the ramp down forms a continuous exhibition space and leads, at its termination, into a single, three storied space, which is the core around which the ramp is wound. At this place, the exit from the museum leads one into the park again.

Museologically the theme of the "struggle of the people for their liberty" is well executed. The various historic periods are separated in such a way that the trip down the gently sloping ramp leads one in and out of small separate galleries, each one a complete story in a sequence of chronological events. Ramping down gives a certain persuasion to the itinerary and facilitates the movement of large numbers of people. Clustering the exhibits in sequence along the ramp assures that one will be exposed to each. The entire visit probably takes a fairly literate person not more than an hour. At the same time a group can nest inside each small gallery for lectures and, moving from gallery to gallery, spend the day in the museum.

The historical survey ends with the giving of the reformed constitution in 1917. The popular sentiment of Mexicans for the ideals embodied in their constitution led Ramirez Vasquez to terminate the museum in a "church-like" space—the simple, rounded volume of the sky-lit core—in which only this one document is displayed. The solution was highly subjective, he admits, but entirely appropriate in terms of the program.

### The Museum of Modern Art

The Museum of Modern Art, like the History Museum, has a glass facade that allows for visual correspondence between inside and outside. It is built close to a main road and pathways, and in this way, much of what goes on inside can be seen from without. The museum has two buildings: a large, free-form gallery for paintings and a smaller pavilion for sculpture and artifacts. The arrangement of the site allows for a sculpture garden between the two buildings. The garden, boldly filled with hundreds of sculptures, is screened off from the rest of the park in such a way that one easily sees within.

Realizing that modern art would not immediately attract popular attention, Ramirez Vasquez purposely located the museum at the main entrance into Chapultepec Park. In this way, the building would at least be noticed by a majority of the people.

As a device for breeding broad public interest in modern art, the building has had only limited success. It has, however, been highly successful as a "generator" of Mexico's first collection of modern art. The rest will take time.

### The Museum of Natural History

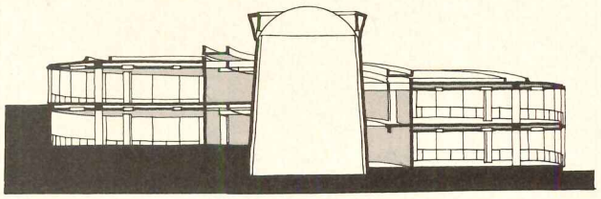
Twenty years ago 300 additional acres were incorporated into Chapultepec Park. Contiguous to the original parcel, but unlike it in landforms and vegetation, the new acreage underwent forestation before the first facilities were located there in 1964. The New Chapultepec Park, with its amusements, was expected to attract large numbers of children, and for this reason, the Museum of Natural History was built there. Like the History Museum, it was to be an adjunct to the city's educational facilities, and it functions as such.

This museum is comprised of a number of concrete shells about 150 feet in diameter. One of the shells serves as an entrance pavilion and is glazed. The others are light-sealed; there are no windows and the entrances have light-lock arrangements that leave the interiors wholly dependent on artifical illumination. The museum's architect, Leonides Guadderrama, has achieved notable success with the installations in the exhibit areas and has utilized very well the interior spaces of the small shells. With the use of colored lights—for displays, charts, diagrams, etc.—he has carved out of total darkness a kind of constellation of exhibits under each shell that is extremely attractive. There is a certain aura of mystery and theatricality entirely appropriate for the subjects and the audience.

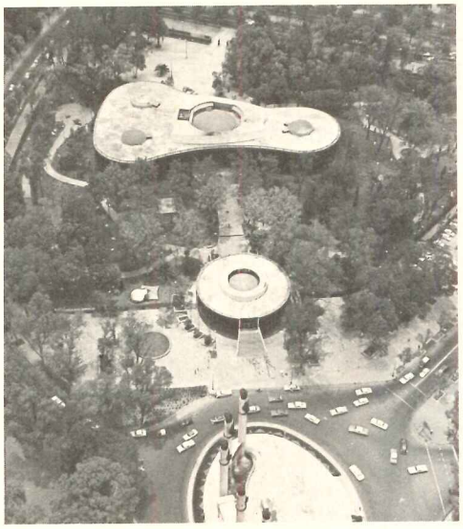
*—Raymond Lifchez*

*Aerial photos: Francisco Uribe*

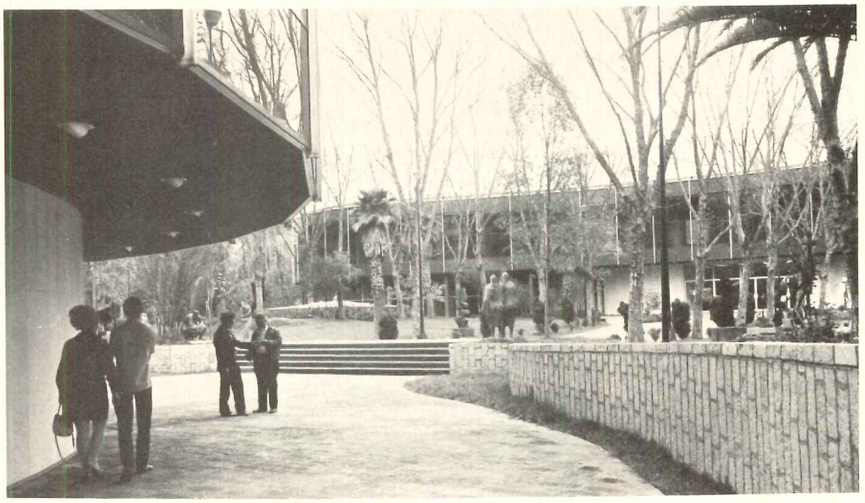
**THE MUSEUM OF HISTORY** lies slightly below the crown of the hill topped by Chapultepec Castle. As the section shows, a ramped gallery leads from the entrance at the top of the hill into the core space at the center. Glass-walled exhibition links between galleries (below) reaffirm the close relationship of museum to park.

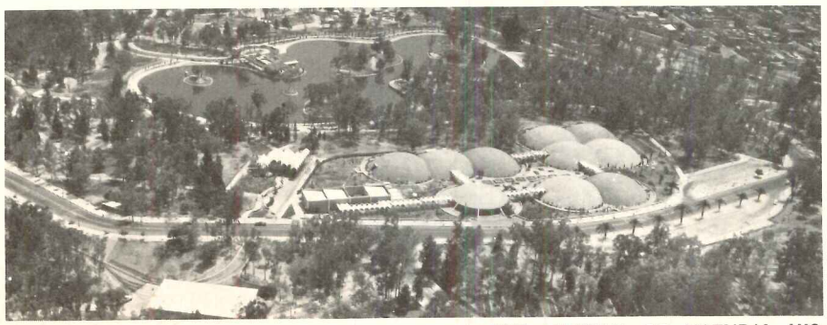


*Raymond Lifchez photos*

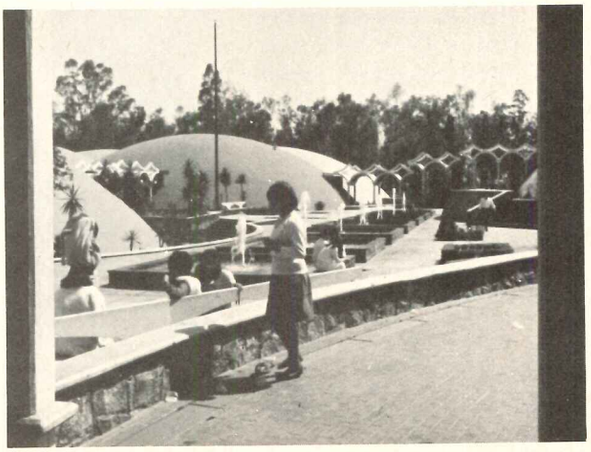


**THE MUSEUM OF MODERN ART** consists of two separate pavilions. The round entrance pavilion is unpretentiously located at the sidewalk, making a certain welcoming gesture toward passersby and inviting transition to the free-form pavilion behind. A garden between the two serves as a sculpture gallery.





**THE MUSEUM OF NATURAL HISTORY** in New Chapultepec Park is comprised of a series of clusters of concrete shells which form the various galleries. Clusters are linked by canopied walkways, and, as in the case of the Museum of Modern Art, by gardens which double as outdoor "corridors" between major exhibits.



## SENSITIVELY MODEST MUSEUMS ENRICH HISTORIC SITES

Commissioned jointly by the Ohio Historical Society and the Ohio Department of Public Works under a statewide program of improvement of historic sites, the three small museums shown here and on the following spread (plus two others commissioned at the same time but not yet completed) serve as focal points and orientation centers for the extensive outdoor "museums" of which they are a part.

All deal with various facets of early Indian cultures in southern Ohio, all are similar in size, and all meet essentially the same basic program requirements within essentially the same budget—a set of factors which with less imagination on the part of the architect (and client) might readily have led to all being stamped from the same mold. Yet, as architect E. A. Glendening says, "We felt very strongly that [the museums] had to be individual entities rather than duplicate structures as so many public facilities are in so many areas. Each had a different story to tell and this could only be accomplished with buildings designed to meet the detailed needs."

The buildings are indeed "individual entities," reflecting the particularities of their specific locations and the resulting particularities of their subject matter. At the same time, though, while no look-alikes, the museums do bear certain family resemblances, notably in their sympathetic relationship to the historic landmarks they explicate, as well as to the parking areas, picnic grounds, hiking trails, and other features incorporated to enhance public enjoyment of those landmarks. And there is consistency too in the straightforward plans (each is basically a one-room museum with minimal support facilities) enlivened by manipulation of structural forms and lighting, and in the thoughtful handling of unassuming—and inexpensive—materials.

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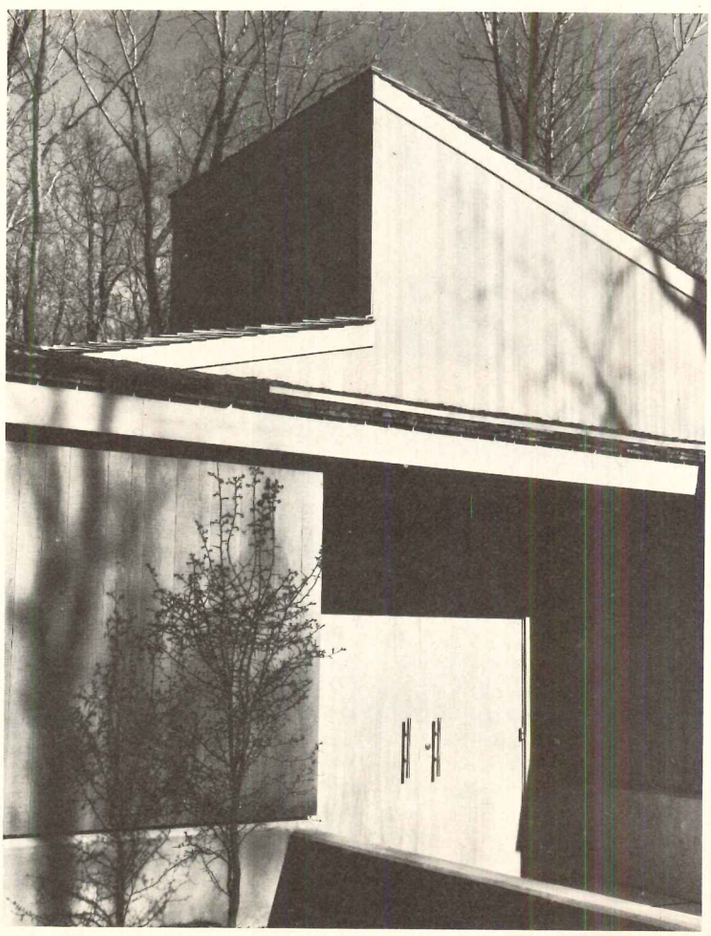
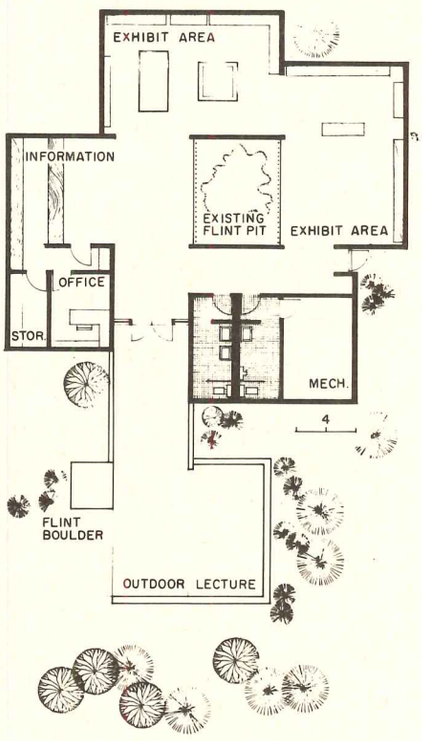
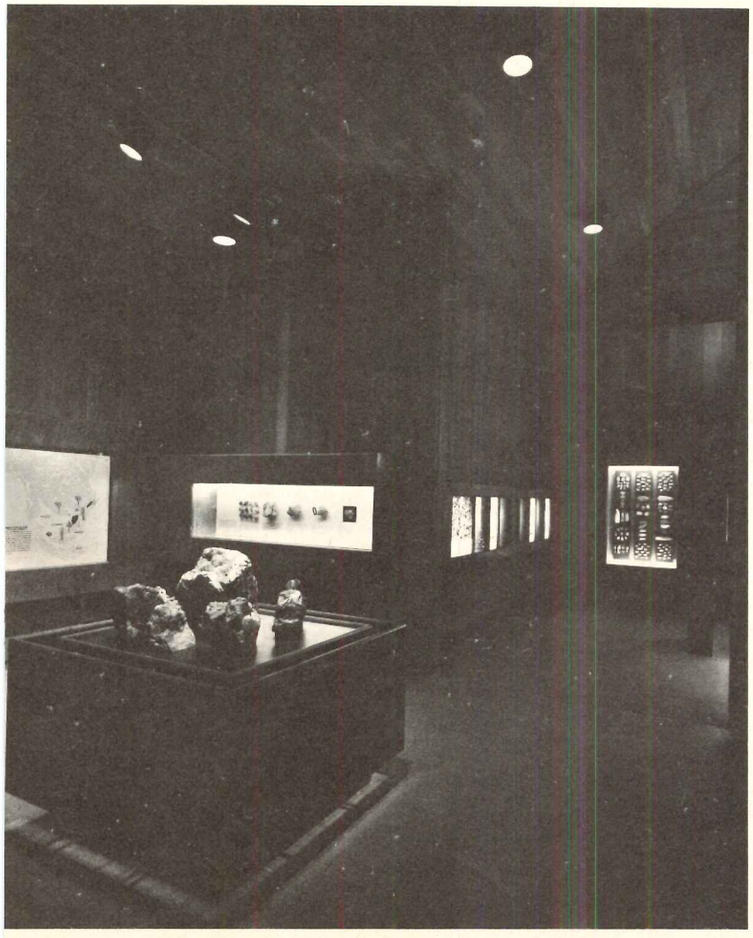
FLINT RIDGE MUSEUM, Licking County, Ohio; FORT HILL MUSEUM, Highland County; FORT ANCIENT MUSEUM, Warren County. Architect: *E. A. Glendening, A.I.A.*

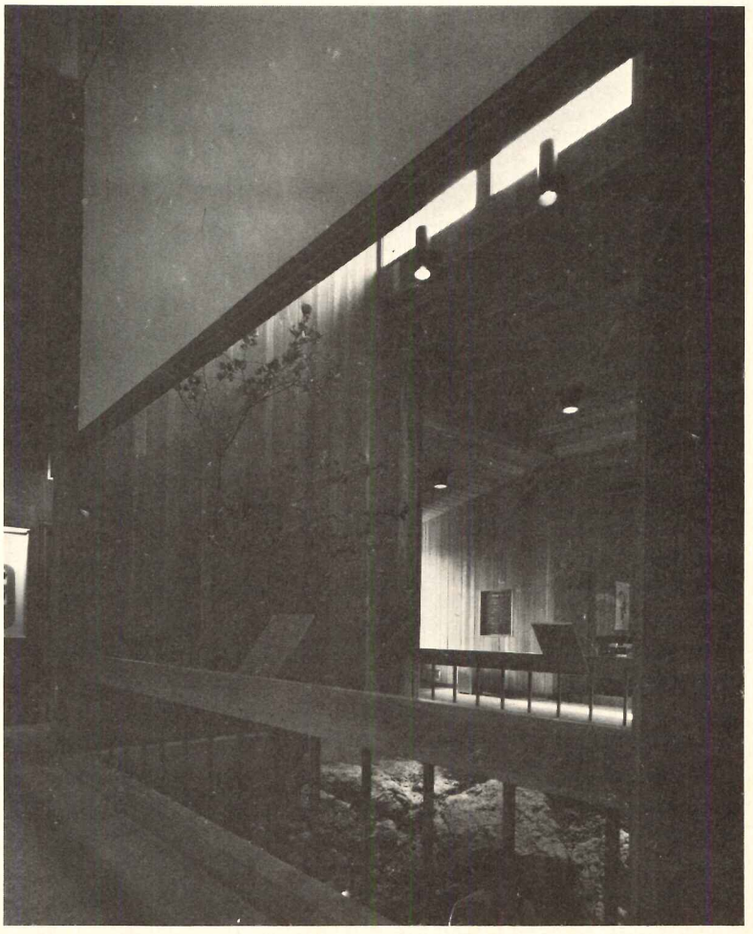


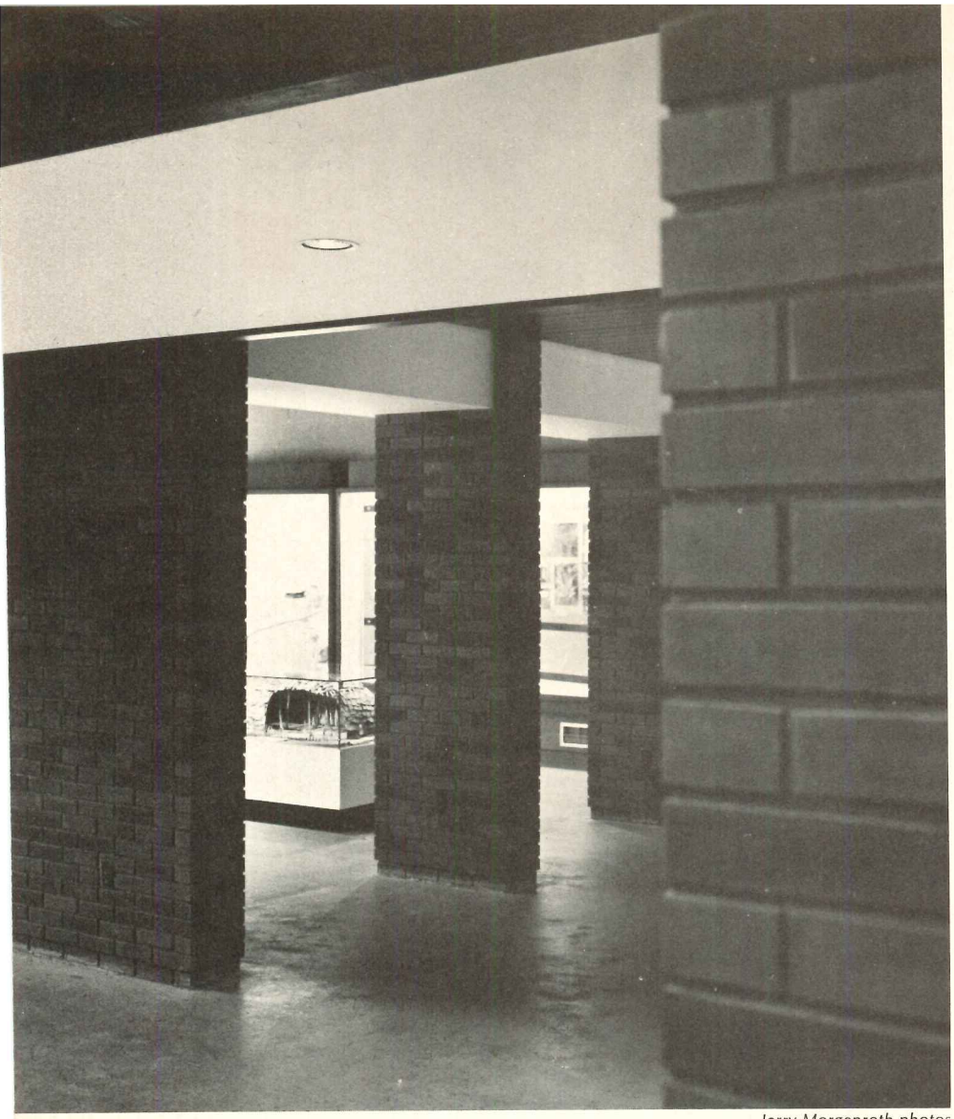


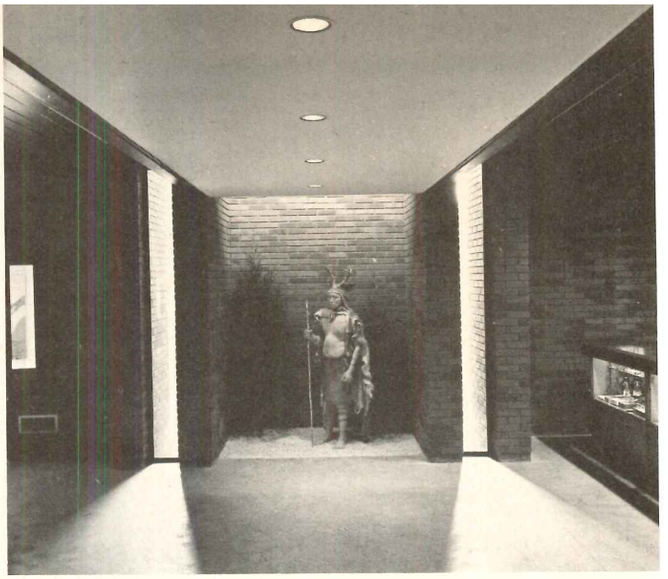
**THE FLINT RIDGE MUSEUM,** which deals with the use of flint and its importance in the development of Indian cultures in the immediate area and throughout the Midwest, is located over one of the many existing flint pits which dot the site, in order to provide an authentic illustration of the way flint was mined by long-ago Indian tribes. From a stepped, paved court used for outdoor lectures, the visitor enters a tight low-ceilinged area which expands with the upward slope of the roof into a progressively more generous space culminating in the dramatic focus of a clerestory directly above the flint pit. (As shown at right, a reflective baffle deflects light from the clerestory into the pit—and out of the eyes of viewers.) In contrast with the strong natural light thus beamed on the principal exhibit, the subsidiary displays of flint tools and weapons and unusual crystals and deposits ranged around the perimeter of the swastika-like plan are picked out by downlights which also provide low-key general illumination, and by display lighting in the wall cases. Because the setting is heavily wooded, the architect felt wood to be "the only possible choice" of materials: the building, accordingly, is of frame construction with cedar siding inside and out.

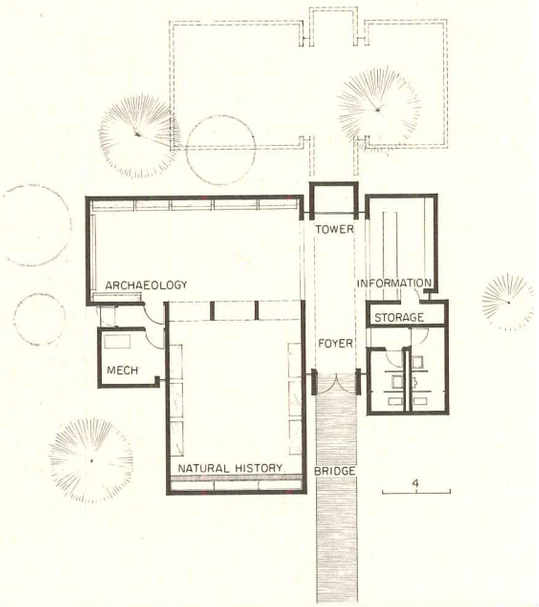
*Jerry Morgenroth photos*





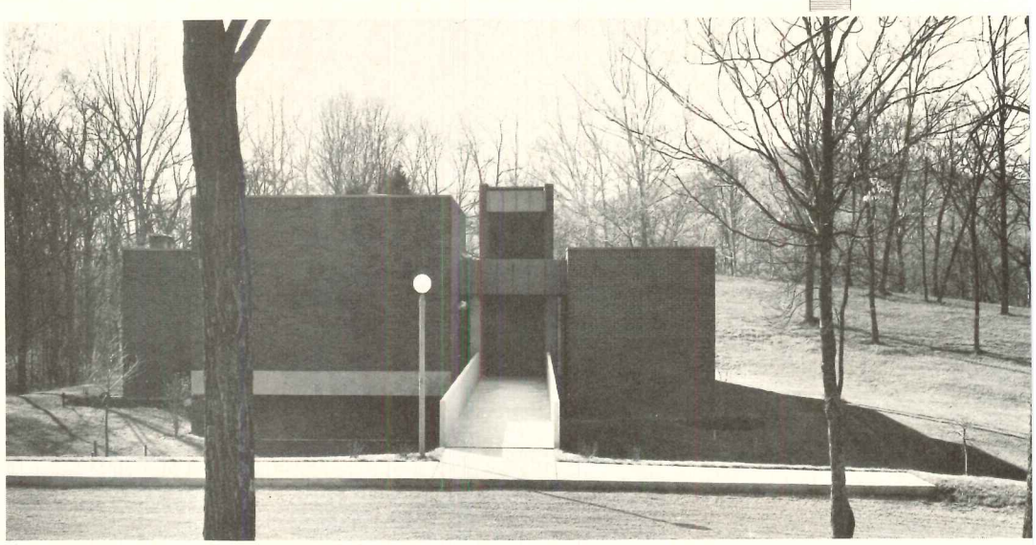


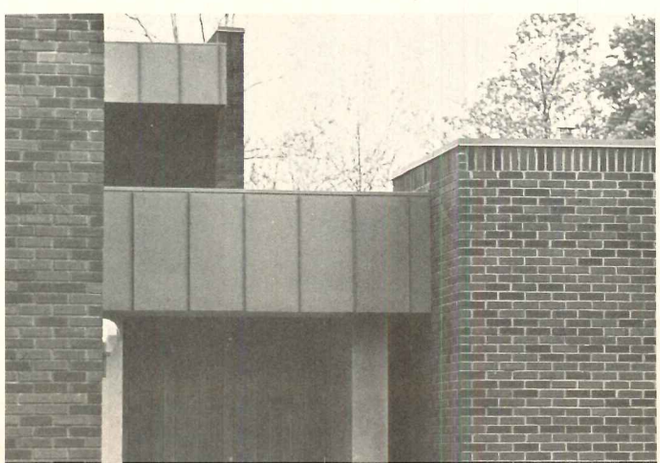


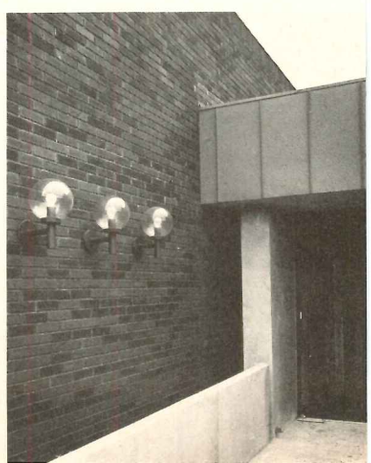


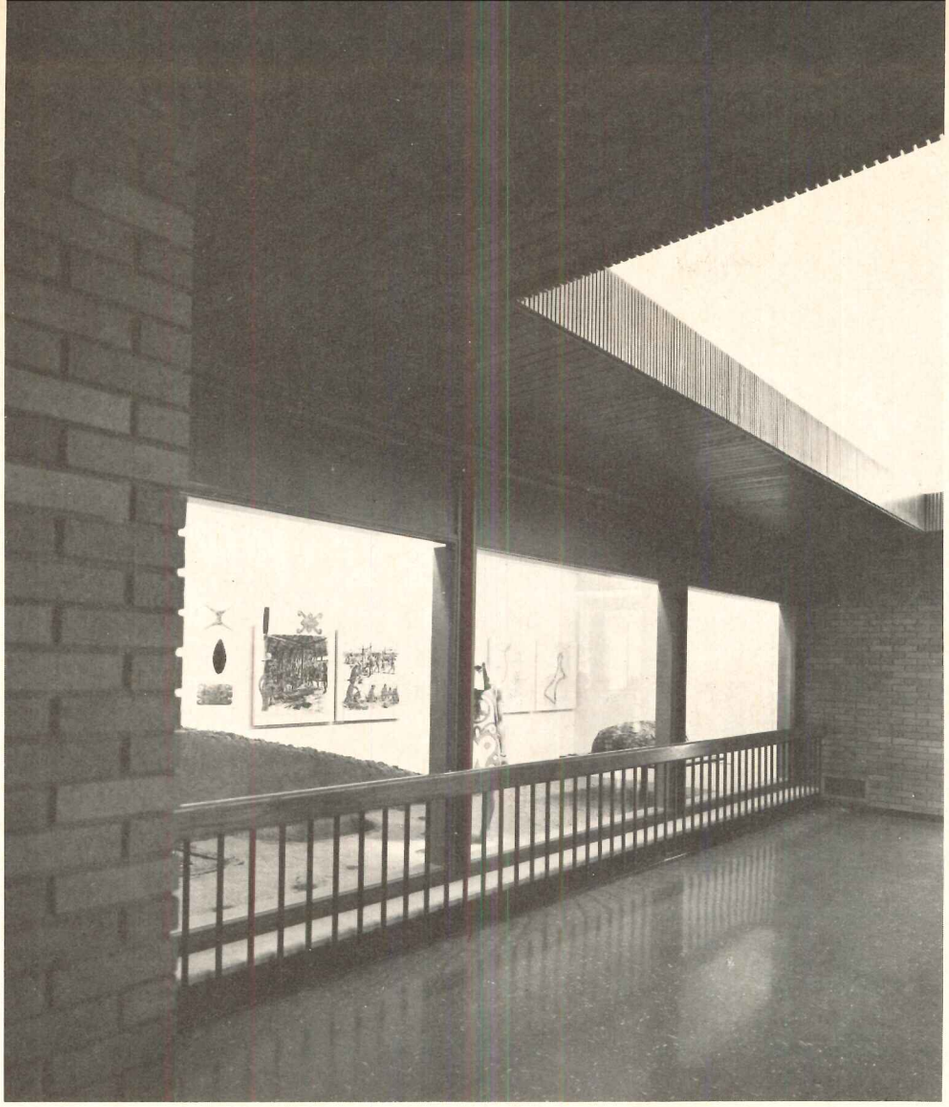

*Jerry Morgenroth photos*

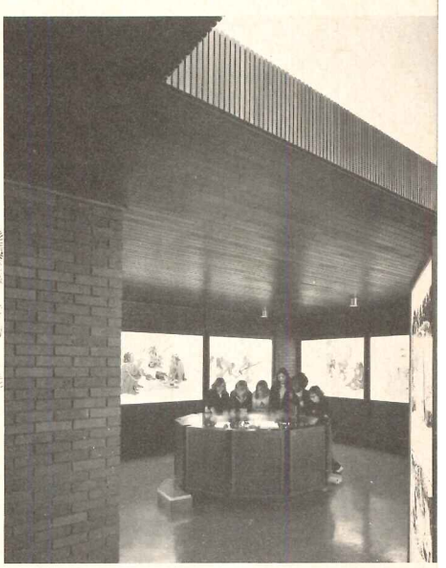
**THE FORT HILL MUSEUM,** as the name suggests, is located at a site featuring a 1200-foot, steep-sided, flat-topped hill which commands a broad view in all directions, and so afforded indigenous Indian cultures an easily defended natural fortress. Because the site is significant geologically as well as archaeologically, the museum's exhibit spaces are laid out in an L-shape, with separate areas devoted to the natural history of the region and to the culture of its early inhabitants. The two areas, however, are not discrete but flow into one another, demarked only by a line of brick pillars and a jump in ceiling height in the natural history section. This shift in height also adds interest to the basically simple masonry masses of the building exterior, as does the prominent treatment of a clerestory tower whose terne fascia is echoed at the entrance. On the interior, the tower becomes an alcove for special displays, highlighted from above and further emphasized by strip windows at the sides. In the passage leading from entry bridge to exhibit areas and terminating at the tower, maximum spatial and visual impact is achieved simply with a lowered, light-finished ceiling in contrast to adjacent dark wood ceilings and exposed brick walls.



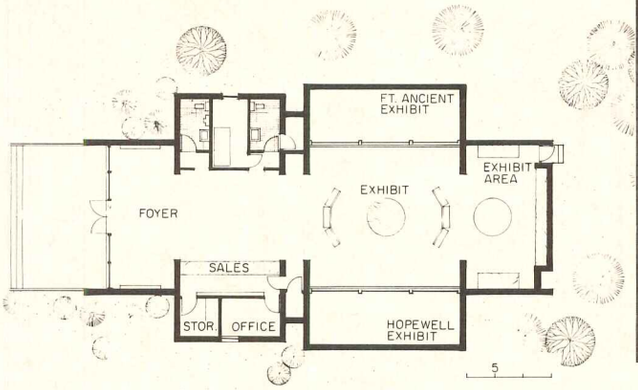








**THE FORT ANCIENT MUSEUM** relates to a site distinguished by two extensive groupings of defensive and burial mounds, one tracing the culture of the very early Hopewell Indians, the other, that of the later and more advanced Fort Ancients. This duality of subject matter is reflected in the museum's plan by placing large display areas for the panoramic depiction of the respective cultures on either side of the principal exhibit space. Set off from the main room as much by their light-washed white walls as by their sunken floors and rails, these open, oversize "display cases" are supplemented by an intimate secondary exhibit area and by freestanding displays in the central space. As in the other two museums, striking effects are rendered with deceptively modest techniques of handling form, materials—and light. Here the key elements are raised domes finished in white acoustical plaster, which become in effect giant luminaires, defining as well as indirectly lighting the museum's two primary functional areas. The same in shape but different in size (the larger marking the display space; the smaller, the lobby), these squared-off, terne-faced domes also enhance the clean, low-slung lines of the exterior. The structure is loadbearing masonry, with the same golden brick repeated inside and out.



# HISTORICAL MUSEUM ADDS PUBLIC AMENITY TO URBAN SETTING

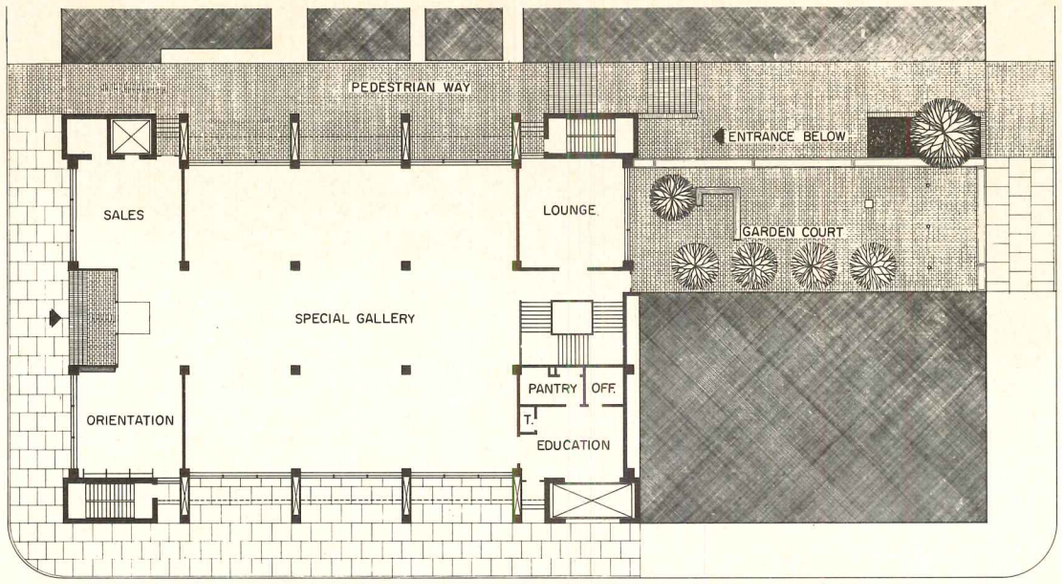
In planning a new central headquarters building to house its collections, the Oregon Historical Society wished not only to improve its service to the students, historians, and writers who have been its most faithful clientele but to provide facilities enabling it to reach out to a broader public.

The site is a full half-block (minus a 50 by 75-foot corner now occupied by a tavern) which lies between the so-called Park Blocks, Portland's institutional center, and the edge of the downtown area. The Society felt that the building should orient to both, openly relating to the public at ground level, and creating an exterior "special place" which would be identifiable to the public and tie into the fabric of the city. This set the parameters within which the architects met a program calling for museum, library, and office space, and "as much storage as could be accommodated."

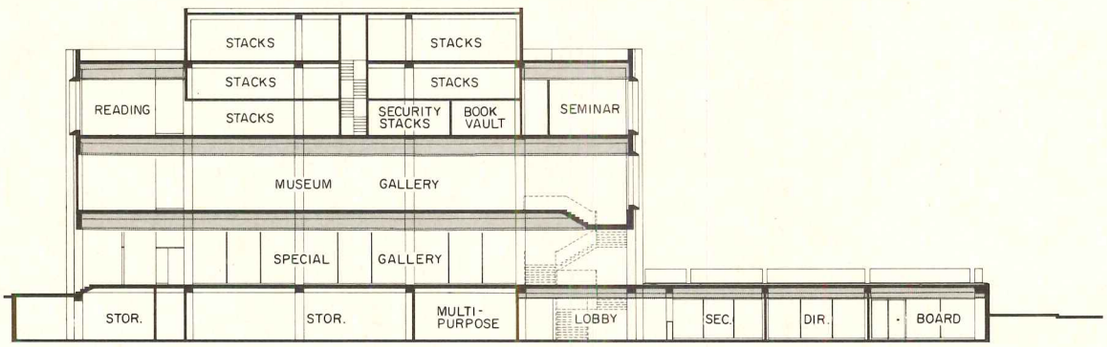
The result is a three-story building, plus a full basement largely given over to storage. At street level, a special gallery, invitingly open on three sides, features changing displays designed to lure passersby. Above it is a second gallery which houses the Society's permanent exhibits and is fully enclosed to assure complete light control. The library occupies the building's third floor, with reading and seminar rooms, and staff offices ranged around the central core of open stacks.

The desired outdoor "special place" (or places, as it proved) were created with an assist from the sloping site and zoning requiring a sideyard—a combination that suggested placing administrative offices at basement level, opening to a landscaped court and public pedestrian way which links the Park Blocks with downtown. The administrative wing is roofed by a spacious garden court accessible from the main-floor gallery and lounge.

HEADQUARTERS BUILDING, OREGON HISTORICAL SOCIETY, Portland, Oregon. Architects: *Wolff-Zimmer-Gunsul-Frasca;* consultant: *Pietro Belluschi;* structural engineer: *Stanley V. Carlson;* mechanical engineer: *Thomas E. Taylor;* electrical engineers: *Grant Kelley & Associates.*

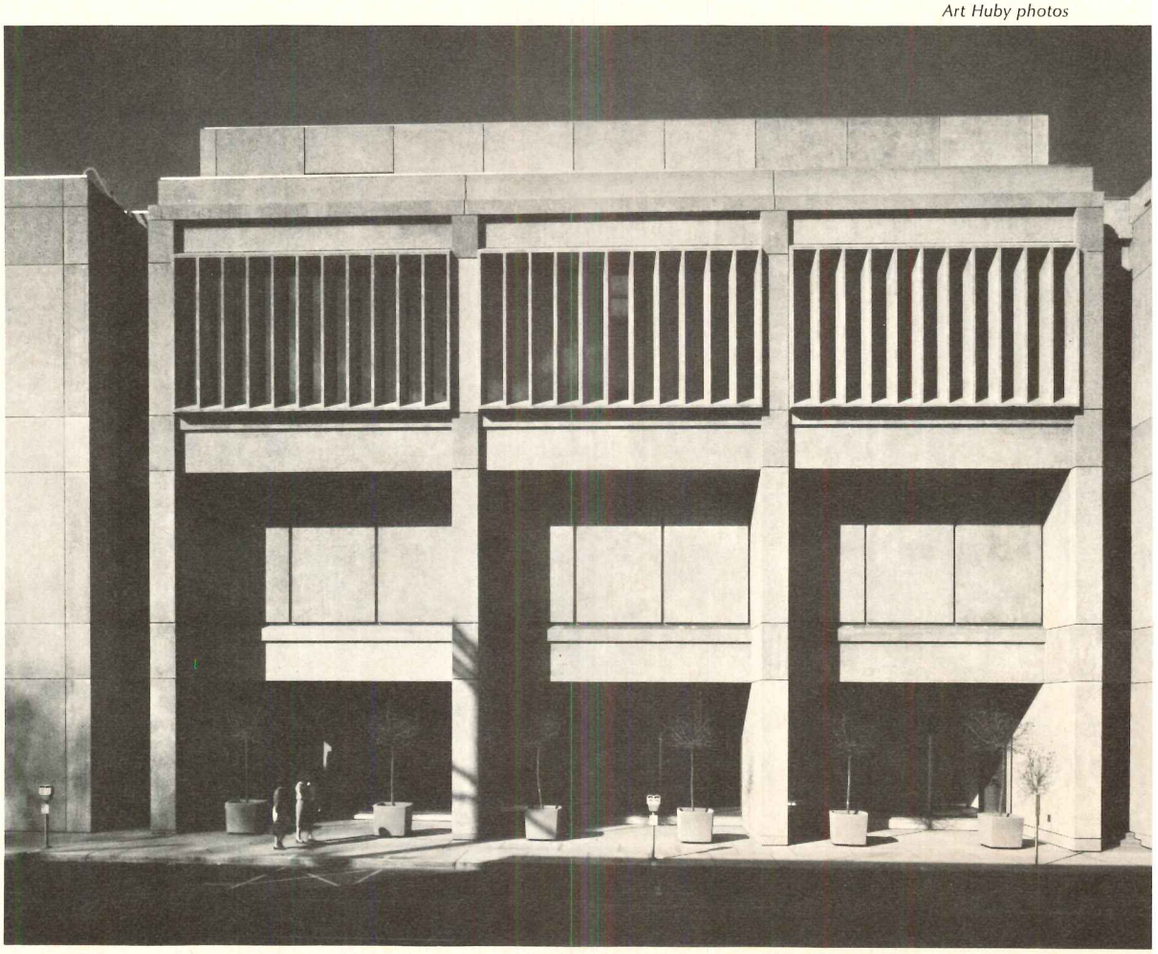



FIRST FLOOR PLAN




LONGITUDINAL SECTION

*Art Huby photos*



Building fenestration—or lack of it—(side elevation at left) reflects interior functions: open and enclosed galleries, and sunshielded library reading rooms and offices. To keep floor areas open and flexible, vertical penetration is confined to corner towers and main stair. Pedestrian way (above) gives through-block passage and provides access to basement-level executive offices topped by garden court. Spacious, uncluttered street-floor gallery for changing special exhibits (right and below) is glazed on three sides to lend a sense of openness and welcome, its paved floor and luminous ceiling providing a neutral background for displays. A portion of the library's comfortably furnished main reading room is shown below right.

## PARK SITE LENDS SERENDIPITY TO NEW ART MUSEUM

Perhaps the richest esthetic treasure this new art center will ever display is its site—a heavily wooded terrain adjacent to one of the several ponds of a magnificent community park system. And the architects, recognizing this priceless natural endowment, have taken care to assure that it will in fact be displayed, disposing the gallery spaces so that exhibitions are punctuated with planned views of park, pond, and sculpture courts.

Designed for community use in teaching and performing, as well as exhibiting works of art, the building is a series of pavilions conceived in terms of a continuous circulation pattern.

Entering the lobby via a hooded entry pavilion and bridge, the visitor may make his way down a flight of stairs to one of the center's three galleries (Gallery A), and from there, through exhibition corridors and glazed links which open on the exterior courts, to other pavilions in the sequence. Or, he may elect to go directly to the largest of the three (Gallery C), crossing an exhibition bridge which overlooks the pond and spans a man-made lagoon complete with "island" and fountains.

The prime gallery areas themselves were formed through the use of skylight hoods—which are also repeated elsewhere in the building, giving it an almost random profile reminiscent of the region's old mills—and exposed wood plank and beam construction. A studio-platform at one end of the major gallery makes it possible to use the space as a hall for lectures, films and other presentations.

In addition to the usual office, service, and storage areas, the center's facilities include a library and tea-room, each with a fireplace, and a studio wing with its own parking lot and landscaped entrance court.

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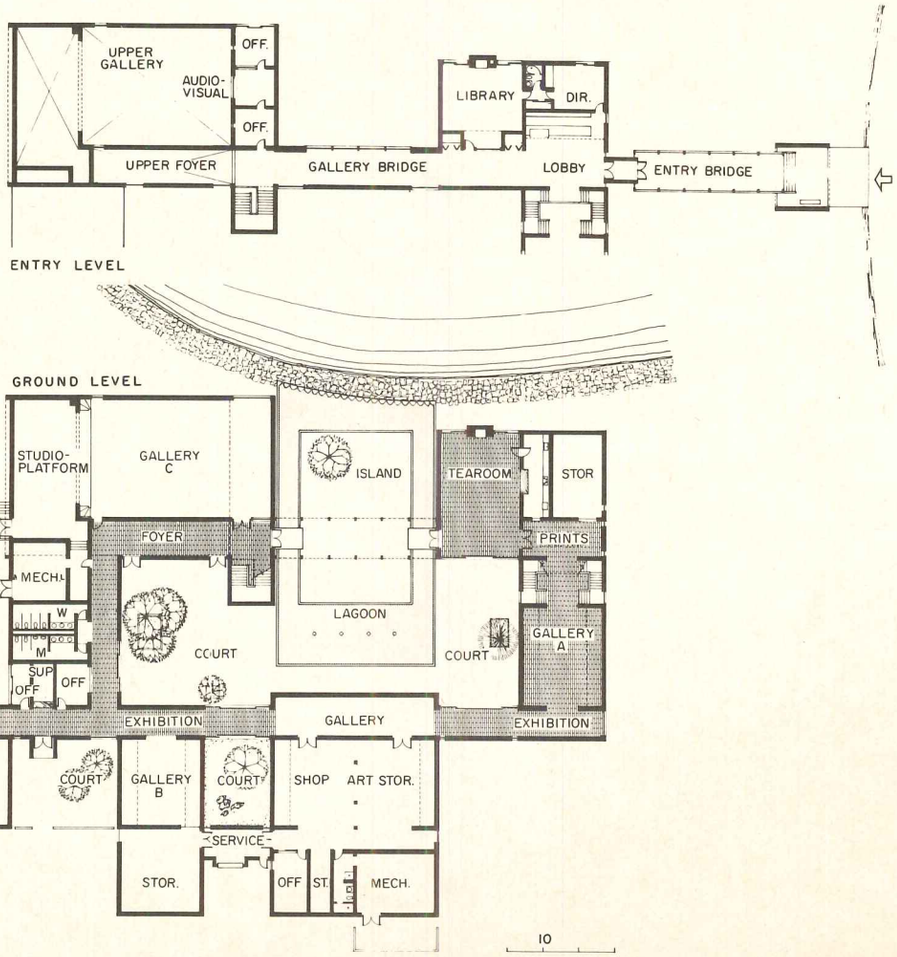
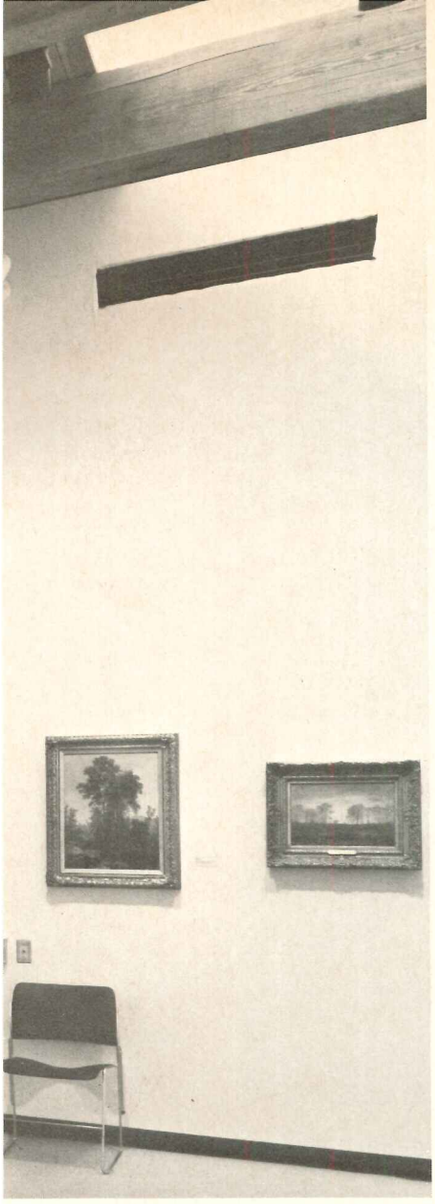
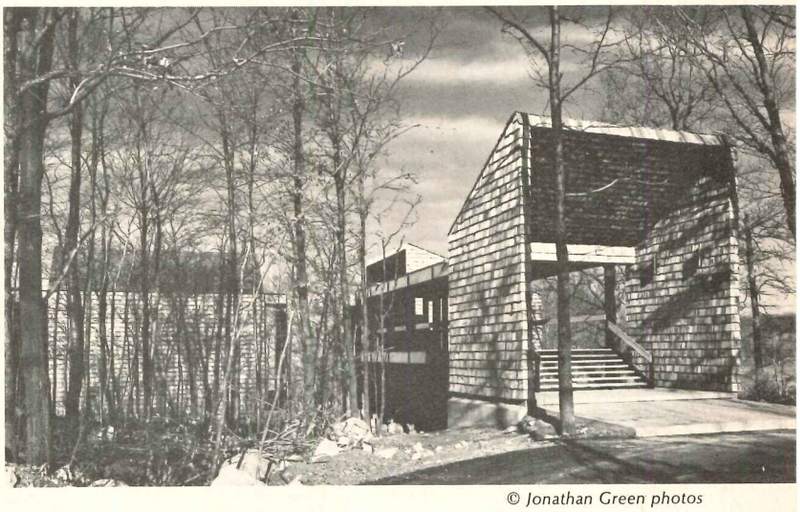
BROCKTON ART CENTER—FULLER MEMORIAL, Brockton, Massachusetts. Architects: *J. Timothy Anderson & Associates, Inc.—George Notter, principal in charge;* structural engineers: *David C. Weidemann & Associates;* mechanical and electrical engineers: *Francis Associates, Inc.;* landscape architects: *Frank and Ruth White;* general contractor: *Eaton & Associates, Inc.*



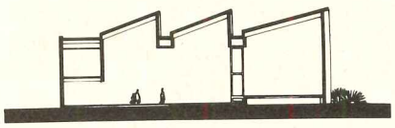


The largest of the center's three galleries (above), which includes a curtained studio-platform, doubles as a lecture hall. Beige cloth-covered walls and carpeted floor contrast with rugged, almost industrial, quality of structural forms and materials. Photo (left) from inside Gallery B illustrates the relation between galleries and exhibition corridors: Since the main wall of the exhibition area is best viewed from within the gallery, visitors are drawn back from gallery to corridor, to continue the circulation sequence.

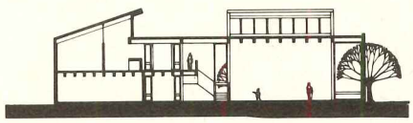
Entry pavilion and bridge are seen at right. The pond elevation below and, beneath it, a photo of the opposite elevation, show the intricate massing of the skylighted pavilions and their connecting links.



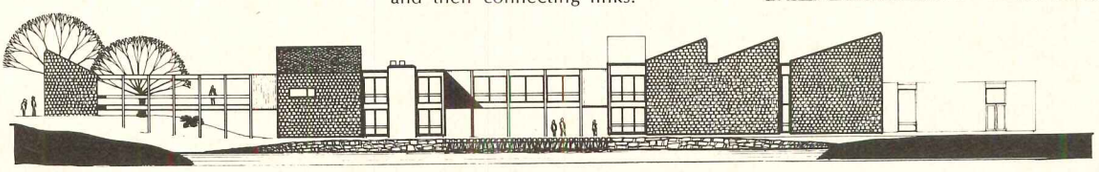
© *Jonathan Green photos*



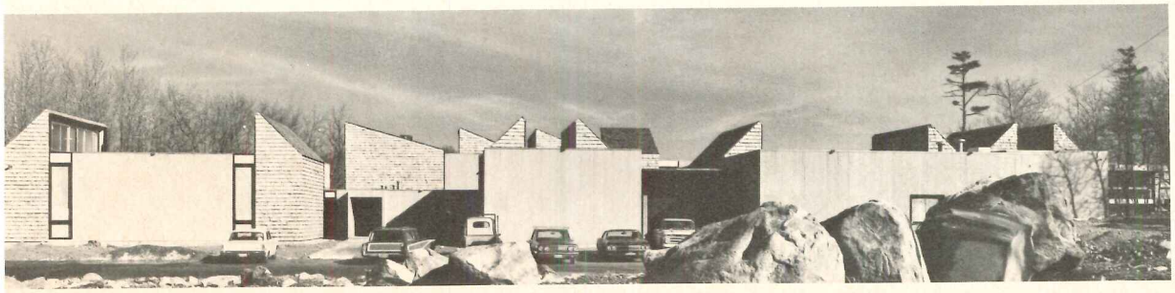
GALLERY C



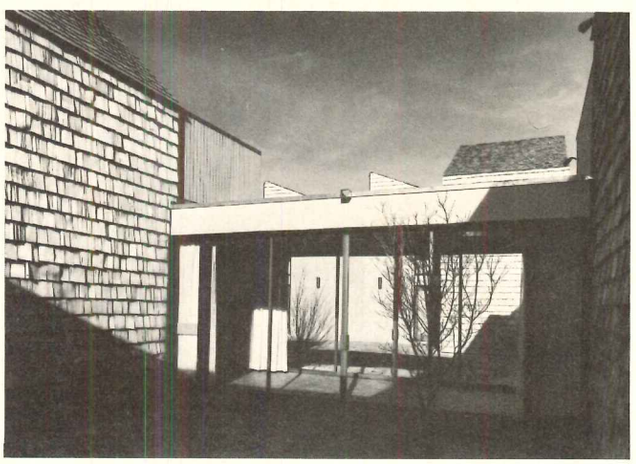
OFFICE LOBBY GALLERY A

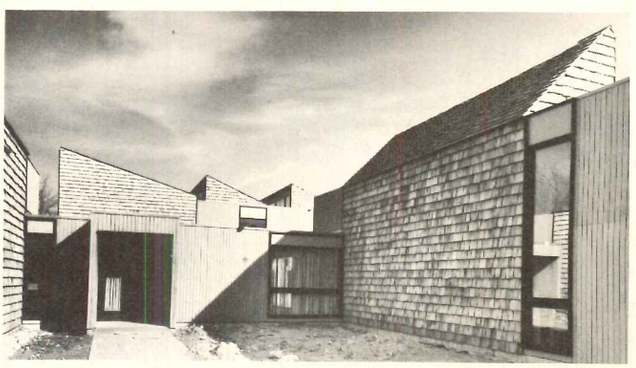


ENTRY PAVILION OFFICES EXHIBITION BRIDGE GALLERY C



Varied and pervasive courts not only afford a change of vista as one moves through exhibit areas, but add usable space by providing a natural setting for outdoor exhibitions and community gatherings. Materials—glass, cedar shakes and vertical cedar siding, and bluestone paving—strike a unifying theme. The view from the exhibition bridge (below) between the lobby and the main gallery juxtaposes man-made art against a natural display of woods and water.





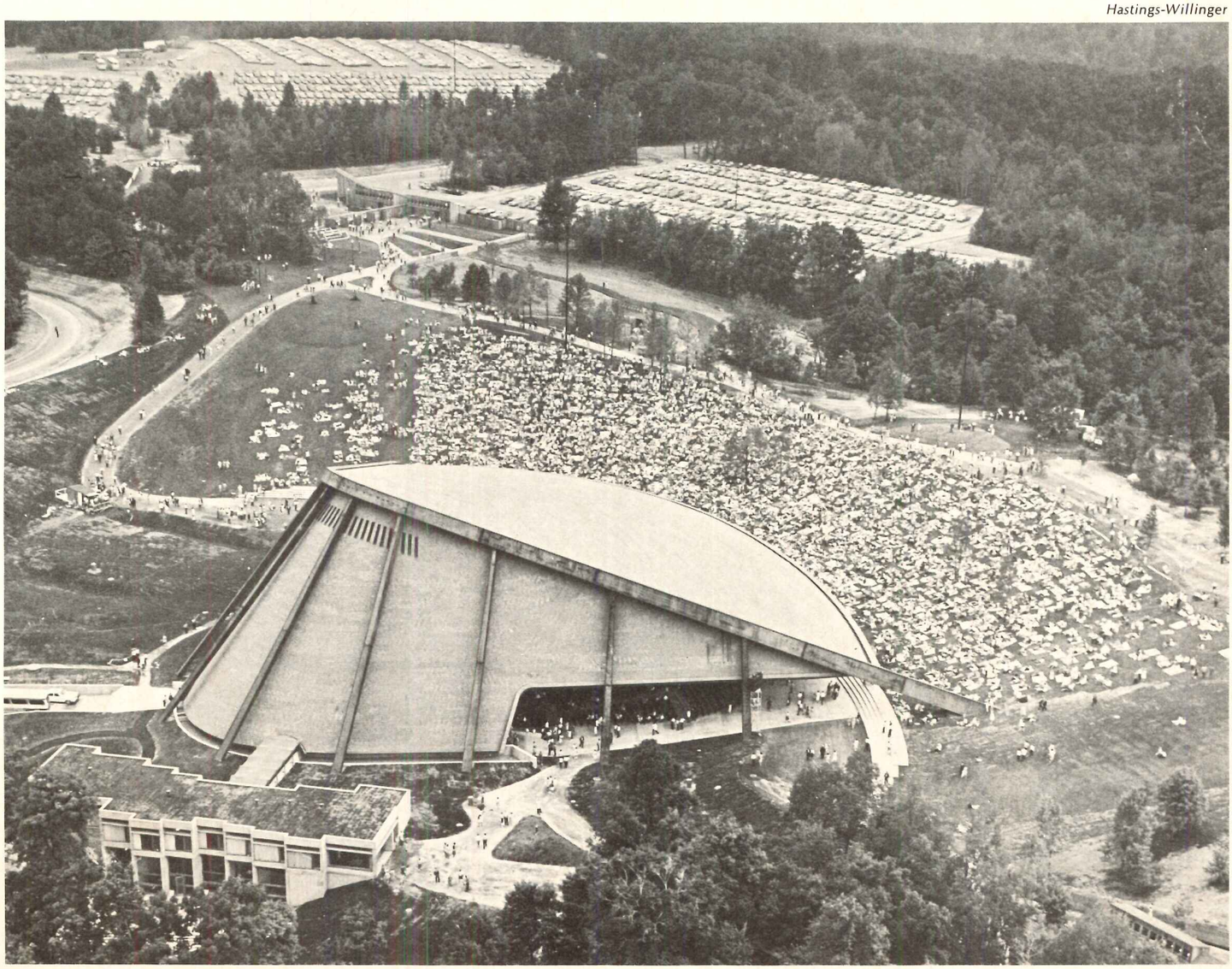
# Structure suits architecture that suits acoustics

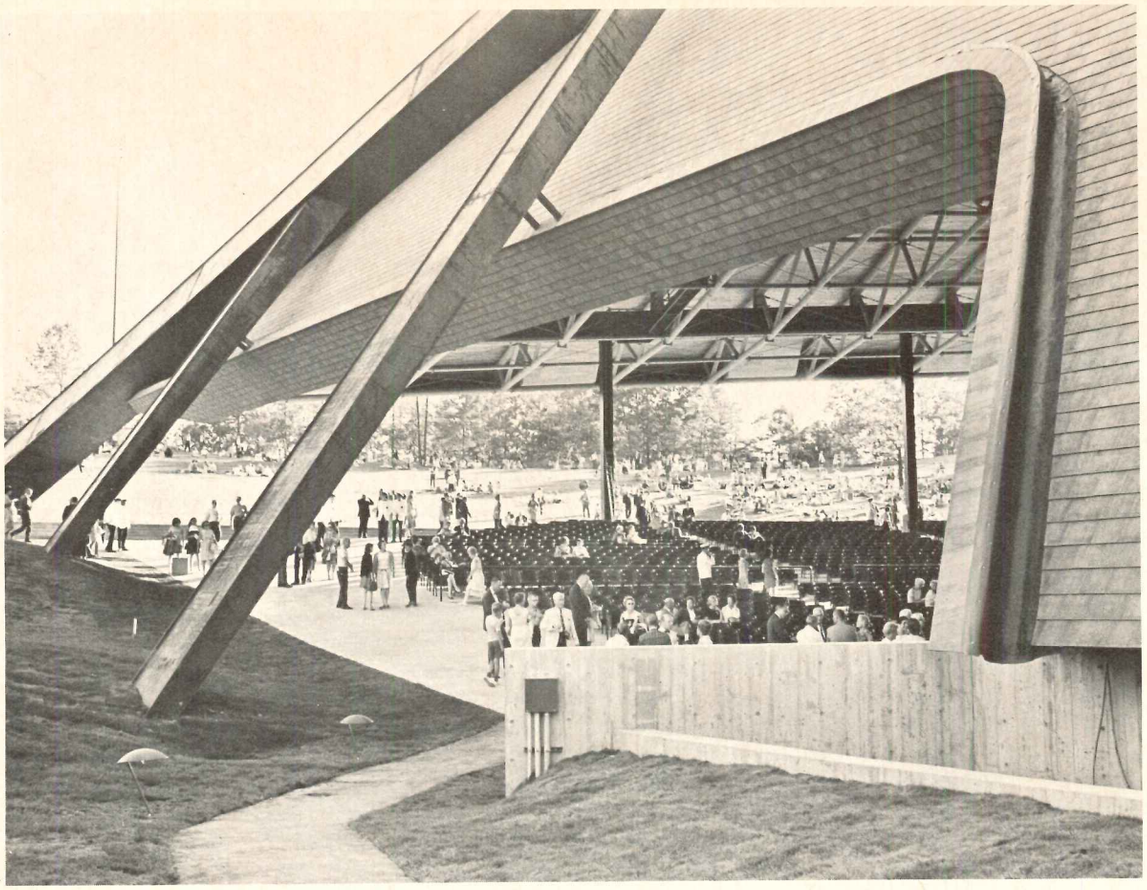
The soaring shape of the pavilion for Blossom Music Center, summer home of the Cleveland Symphony, grew almost entirely out of functional requirements for acoustics and sight lines; and its exterior texture and color were chosen to fit the natural, rustic environment. The structure was a logical response to the architecturally-conceived shape and consequent load-carrying requirements. The shell of the pavilion has a shape somewhat like a truncated cone. It follows the fan-shaped plan of the seating and tilts from a high point 94 ft above the stage floor to the perimeter opening, which varies from 25 ft at the center to 15 ft at the sides. The heights were determined by acoustical and sight-line requirements.

The roof is supported by single-plane pipe trusses, which in turn are supported at one end by a huge tipped steel arch-girder and at the other end by a column-supported girder located 25 ft from the perimeter. The tipped arch-girder bears on two large underground footings and is supported by 10 sloping, tapered columns located outside the pavilion's walls. The arch and these exterior columns are made of "weathering" steel, which, together with the russet-colored shingles of the shell, serves to complement the wooded landscape. The arch-girder was intended to be an architecturally-emphasized element as well as a major structural element, providing visual transition between wall and roof.

Many structural schemes were considered in the early design stages by the architect, Schafer, Flynn and vanDijk, and the structural engineer, R. M. Gensert Associates. These included: 1) a space frame spanning the entire area; 2) double-cable suspension systems with elevated supports over the stage; 3) a series of radially-oriented single-plane trusses supported over the stage; 4) a series of radially-oriented space trusses.

*Hastings-Willinger*

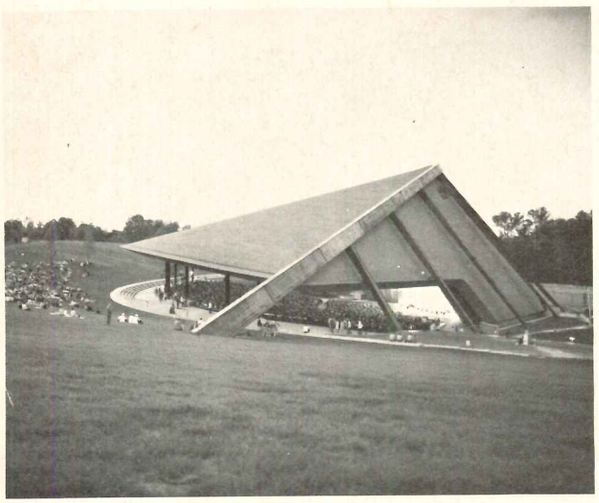


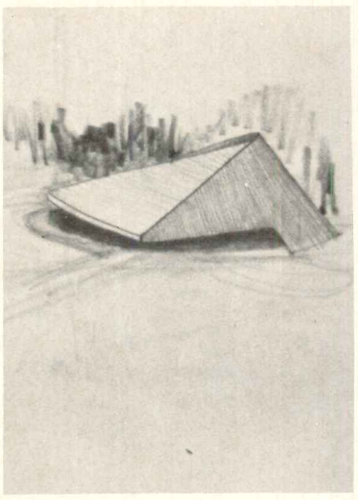


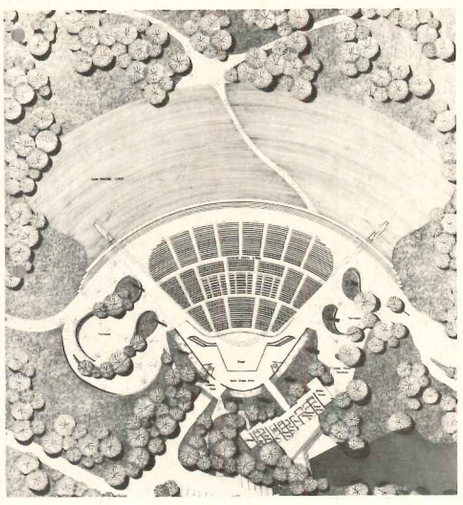
Blossom Music Center, summer home of the Cleveland Symphony Orchestra, is designed to accommodate 15,000 people—4,500 in the pavilion and 10,500 on the sloping lawn around it. The orchestra pit seats 100 musicians, and the stage will take 200 performers. Behind the pavilion is a separate building for the Green Room, choral rehearsal room, and private rooms for conductor, soloist and others.

Final design is remarkably like the architect's original concept (below, center). Shape was derived from seating-plan, acoustical-volume, and sight-line requirements. The hundreds of tubular members of the roof trusses act as "micro-diffusers" of sound waves Clusters of speakers are concealed in the fascia at the edge of the roof to reinforce sound to the lawn area.

*Frank Reed*







*Jim Cross*

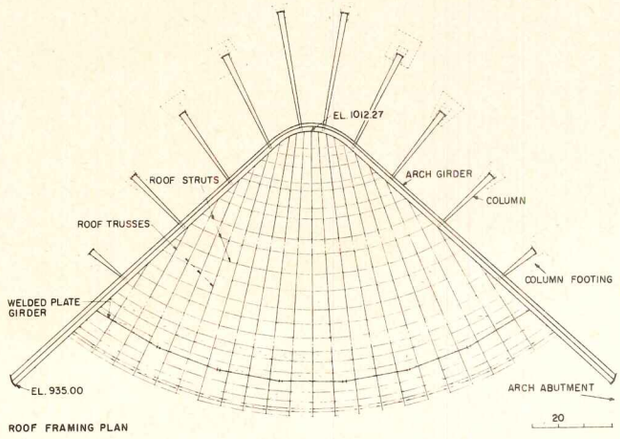
Cable structures were ruled out because the structural engineer feared that temperature change might create a noise problem. The space frame offered the most elegant structure, but it required rather heavy articulation of members at its supports, creating a visual barrier. Thus the decision was made to work with space trusses as the initial approach, incorporating transverse framing for stability and for unification of the structural ceiling.

**The structural concept and how it evolved**

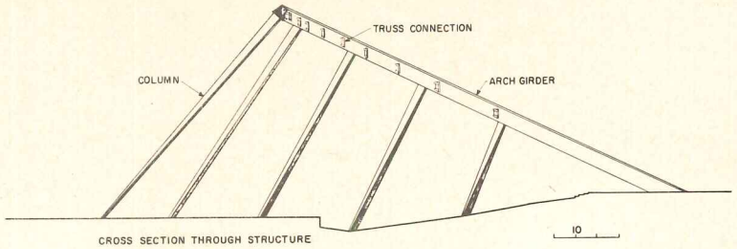
The fan shape of the pavilion and the height of the building above the stage set the pattern of radially-placed trusses. Each truss was to be framed with two top chords and one bottom chord to resemble a space frame in behavior and appearance. To resist wind forces against the high wall of the building, an inclined peripheral arch was placed where the walls and roof meet. Wind forces from the opposite direction would be resisted by the inclined columns supporting the arch. Wind forces acting on either side of the building centerline would be resisted by the arch in lateral resistance, and transmitted by secondary bracing to the rear wall and to the columns at the open portion of the pavilion, where resisting moments would be set up between the roof and columns. Vertical loads and reactions from space trusses to arch would be transmitted by the arch as a beam to the inclined columns.

The supporting peripheral arch presented problems in itself. First, it was inclined and nearly parabolic. This meant that its top and bottom flanges were constantly warped with respect to the web section. Further, the intersection of arch and supporting inclined columns was different at all points except for the symmetry on either side of the building. At first the arch was interpreted as a single-layered skeletal system, but its lack of torsional resistance required it to be extended into a box-like skeletal system. The intersections of the three-dimensional skeletal arch and the space trusses were studied for two-, three- and four-joint connections. After building many models, the engineers concluded that it would be nearly impossible to detail, fabricate and erect non-symmetrical three-dimensional systems coming together in a three-dimensional manner. Thus, the engineers decided to use a closed steel-plate box section.

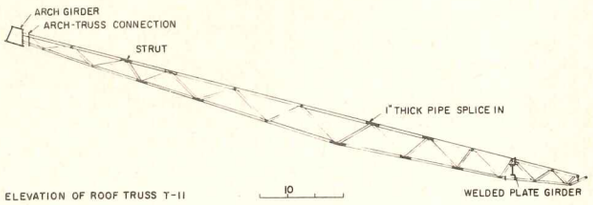
Concurrently, studies were being made




ROOF FRAMING PLAN

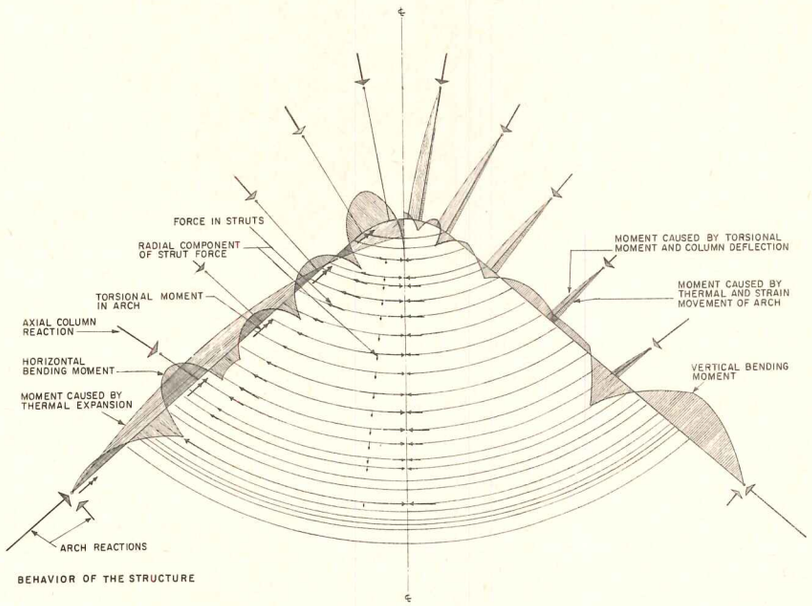



CROSS SECTION THROUGH STRUCTURE

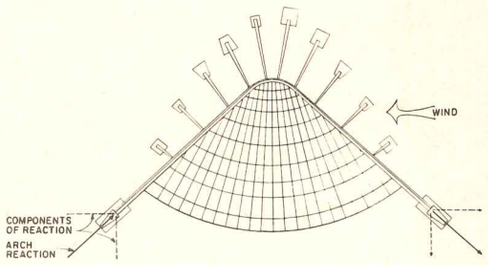


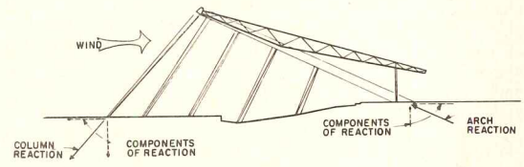

ELEVATION OF ROOF TRUSS T-11

Structure has an elegant simplicity that belies the complex interaction of forces. The roof is supported by single-plane pipe trusses, which in turn are supported by a huge arch-girder spanning 400 ft and a smaller plate girder at the other end. Holding up the arch are 10 tapered, inclined columns.

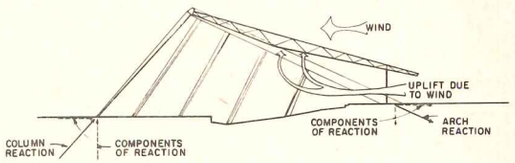



BEHAVIOR OF THE STRUCTURE

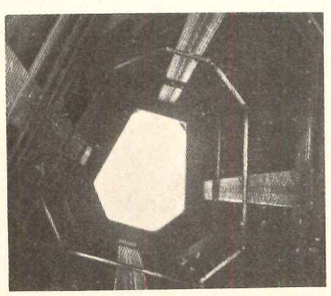


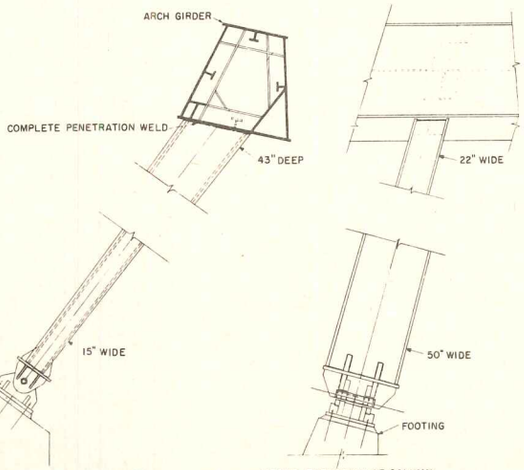




The arch and tapered columns not only transmit dead load of the roof to the ground, but work together to resolve wind forces. When the wind blows from the side, the "arch" provides a tensile component at one footing and a compressive component at the other. When wind blows from the back, the arch works in compression and the columns in tension; the opposite conditions pertain when the wind blows from the front, creating an uplift. Struts between the trusses transmit wind force from one side of the arch to the other. The various forces and reactions are shown above.



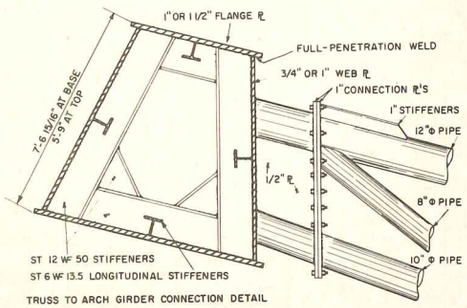

Columns are tapered in two opposite directions to take moment caused by torsion that occurs in the arch girder, and bending caused by static and temperature strain in the arch. Arch has stiffeners to prevent buckling. Further, webs and flanges are joined by full penetration welds, reducing the amounts of stiffening required.



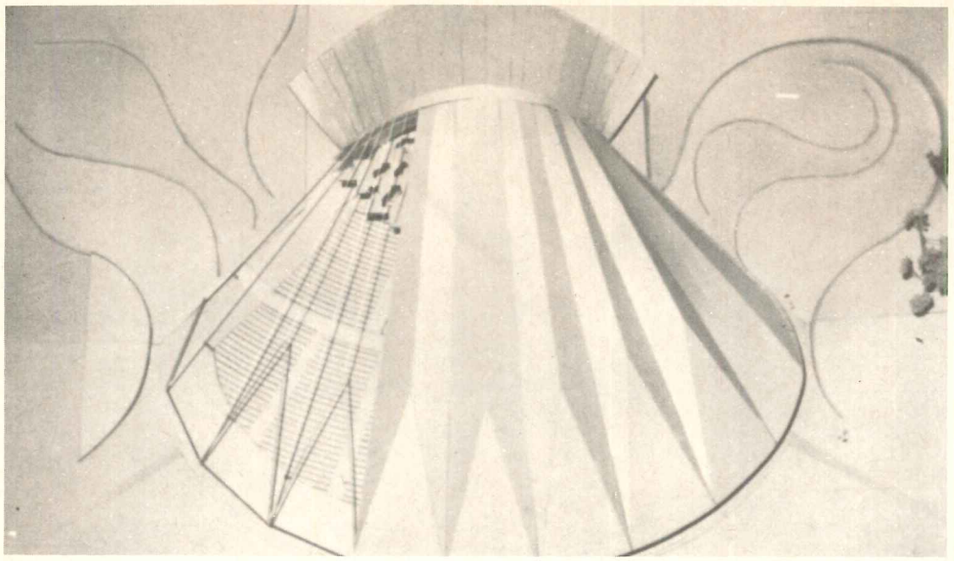


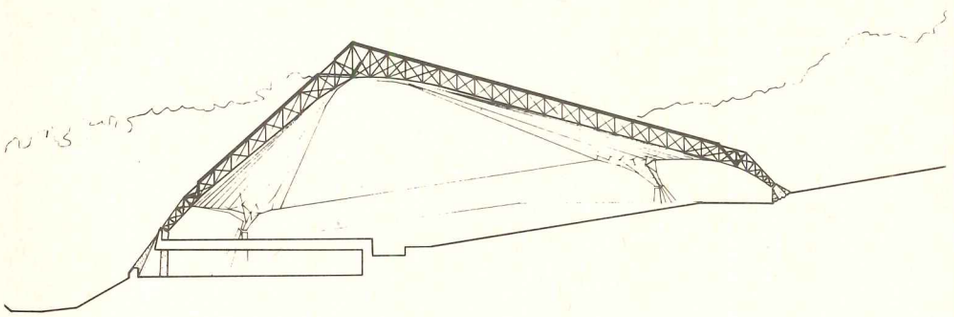

SIDE ELEVATION OF COLUMN

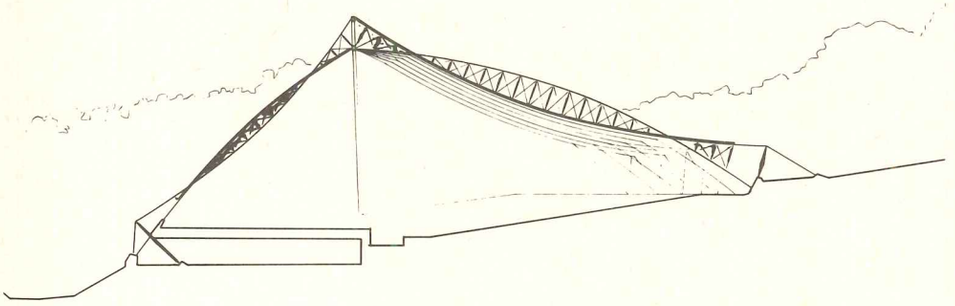
FRONT ELEVATION OF COLUMN

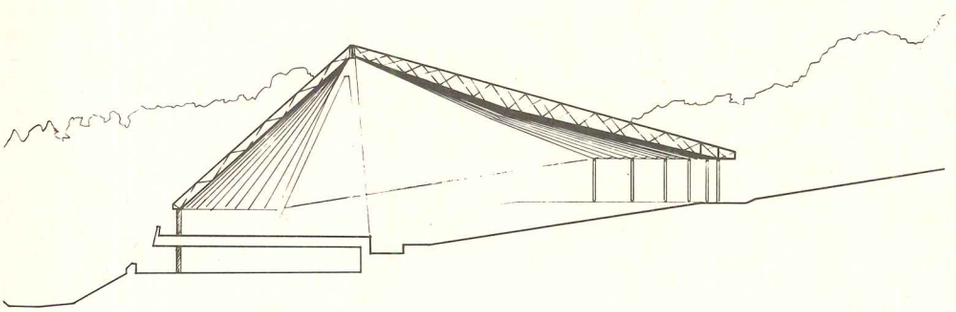



TRUSS TO ARCH GIRDER CONNECTION DETAIL









Early in the design development the architect explored the texture of the roof, including one model in which radial undulations were used for visual control of the surface. But since these were inconsistent with the acoustics and structurally inefficient, this approach was abandoned. Some early structural approaches are shown above. The space frame (top) provided an elegant structure, but required heavy articulation of members at the supports. The double-cable structure (middle) was thought to be possibly "noisy" when temperature change occurs. Space trusses (bottom) were seriously considered. This sketch shows a vertical arch rather than a tipped arched-girder.

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BLOSSOM MUSIC CENTER, Peninsula, Ohio. Architects: *Schafer, Flynn and vanDijk—Ronald A. Straka, associate-in-charge of design;* consulting architect: *Pietro Belluschi;* structural engineer: *R. M. Gensert Associates—Miklos Peller, associate-in-charge of design;* mechanical and electrical engineer: *Byers, Urban, Klug & Pittenger;* general contractor: *Turner Construction Company;* steel fabricators: *The Kilroy Structural Steel Company, Tucker Steel Corporation;* acoustical consultants: *Heinrich Keilholz, Christopher Jaffee;* soils consultant: *David V. Lewin;* site consultant: *William A. Gould and Associates.*

for the columnar supports of the arch. At first they were made skeletal, like the arch. But the system appeared to be over-structured—i.e., the space truss supports were just as busy as the space trusses, even though they did less work. Next, the supports were tried as star-shaped struts with two pairs of cables for three-dimensional stability. But this solution had a redundancy because of the inherent lateral stability of the arch. So, cables were abandoned and stability was obtained by tapering the star-shaped struts so that they could resist wind moment.

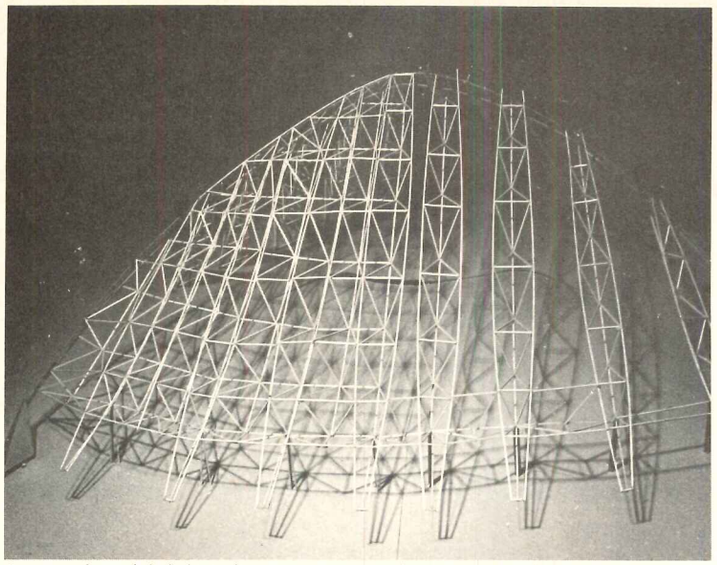
The space-truss scheme had to be abandoned, however, because of the short construction time available (seven months), and the non-standard fabrication requirements. After many studies, it was determined that single-plane pipe trusses with variable depths should replace the space trusses, and tapered box columns should replace the star columns.

The great peripheral arch-girder (400-ft span by 200-ft rise) required engineering design considerations of combined longitudinal stresses for bending under vertical and lateral loads, in addition to tranverse stresses from eccentric connections of roof and wall trusses. Another major consideration was that of thermal stress. Lastly there was the problem of local buckling from load concentrations.

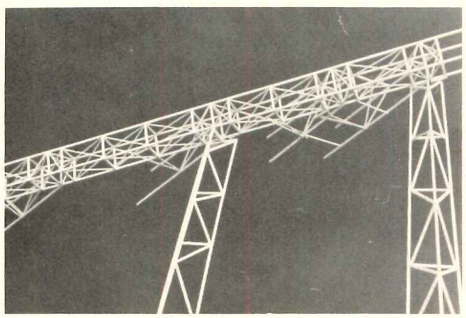
The inclined box columns (as long as 125 ft) supporting the arch were tapered in two opposing directions to provide end stability. Because these columns were inclined, they had to be designed to take secondary stresses resulting from an eccentricity of axial load.

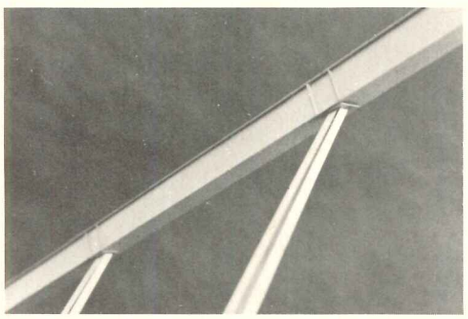
The architect's concern for "correct" structure and the structural engineer's concern for esthetics are demonstrated by design decisions made concerning termination of the arch at the ground. A concrete abutment implied primary structural forces within the arch, whereas the arch was strictly secondary in behavior with respect to wind, and even less for vertical loads, because of its steep angle of inclination and intermittent supports. First, a triangular steel support was attempted. The relationship of roof slope, roof support and roof corner required a break in the thrust line of the arch between the two upper points of the triangle. This was contrary to arch action, so the end support was abandoned for a series of inclined V-shaped supports. This approach lacked sophistication, so it was finally decided to allow the base of the arch to disappear into the earth, thus minimizing the action of an arch required for secondary loads, and exemplifying the use of corrosion-resistant steel.

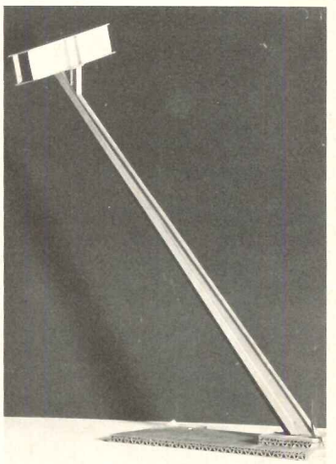
Deck of the structure is 4-in. tongue-and-groove wood plank, which, with lateral nailing of adjacent planes, provides a rigid diaphragm capable of transmitting horizontal and oblique loads. The 4-in. wood deck also acts as a thermal shock absorber, protecting the structural system against sudden changes in geometry.



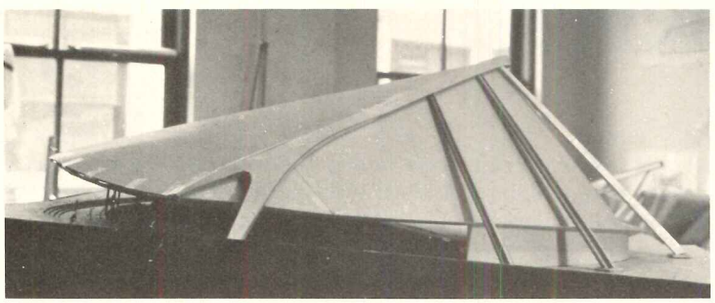
Structural model (left) indicates geometry of space-truss scheme. Because of the complexity of fabrication, approach was changed to single-plane pipe trusses. Various column configurations (right) were evaluated. The triangulated columns seemed over-elaborated for the job; cable-guyed star columns contradicted the inherent lateral stability of the arch. The single-plane arch was changed to a box to give it torsional resistance.

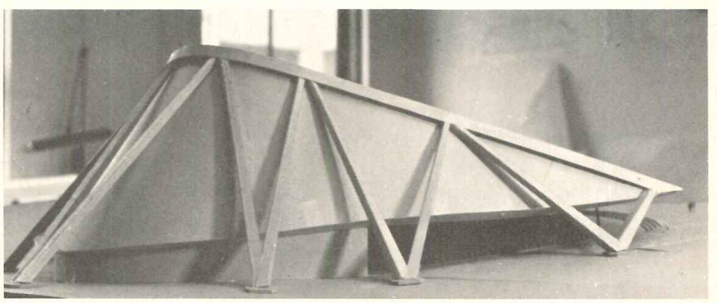


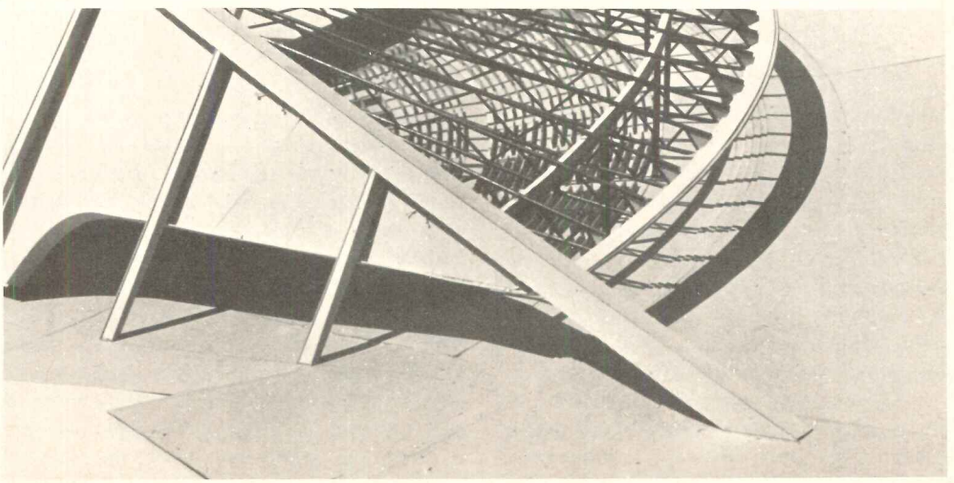




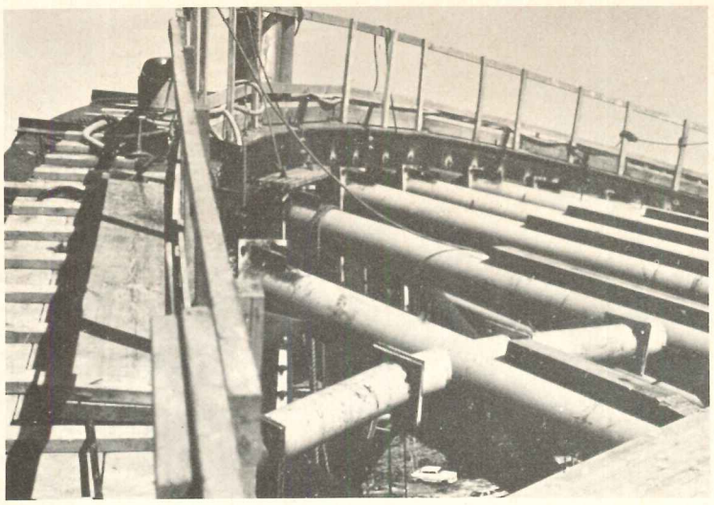
Intersections of three-dimensional skeletal systems were studied, but the engineer concluded that they would be nearly impossible to detail, fabricate and erect. For this reason, a closed steel box was selected for the peripheral arch. The intersection of inclined star supports and built-up arch was then studied. Merely setting the arch on these supports created a visual and structural tendency for them to twist away from each other. A short stub was introduced, but this posed architectural problems. Finally the doubly-tapered column was developed as the best solution.

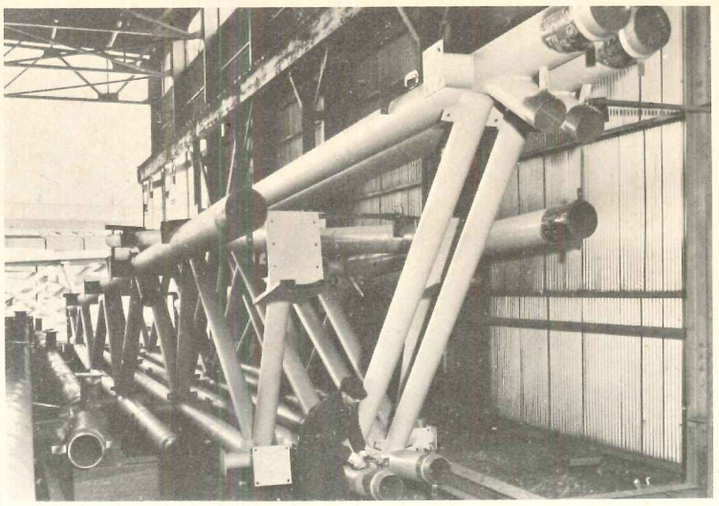


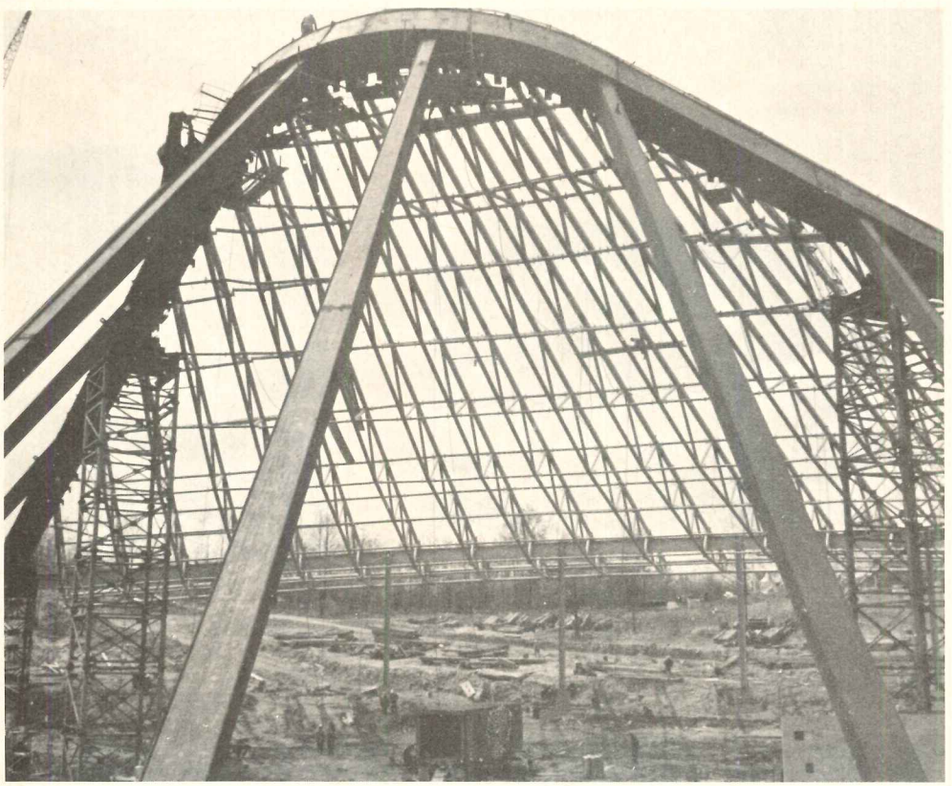




Termination of the arch-girder posed problems for the engineer in terms of logical expression of its function. An exposed concrete abutment implied primarily arch action, but this was only a secondary function of the structural member. A triangular support at the end interrupted the thrust line, and so was contrary to arch action. Then inclined, V-shaped supports were considered, but the structure lost its sophisticated appearance. Finally, inasmuch as the arch-girder was to be fabricated of "weathering" steel, it was decided to continue the arch down into the ground, eliminating massive above-ground support.







Field construction and shop photos give an idea of the scale and functioning of the roof truss system. The longest trusses span 175 ft and cantilever another 28 ft to provide a curved promenade. Pipe struts between trusses transfer wind forces from one side of the arch-girder to the other. Diagonal tie bars between trusses give them lateral stability. Pipe web members were contour cut by automatic machine to fit pipe chord members for neat welded connections. Pipe chords were fabricated with short sections of thicker pipe (1-in. wall) at panel points to take the large compressive loads of the struts. Further, design investigation showed that secondary stresses would be present around heavily-stressed web members, especially where the chord wall was thin.

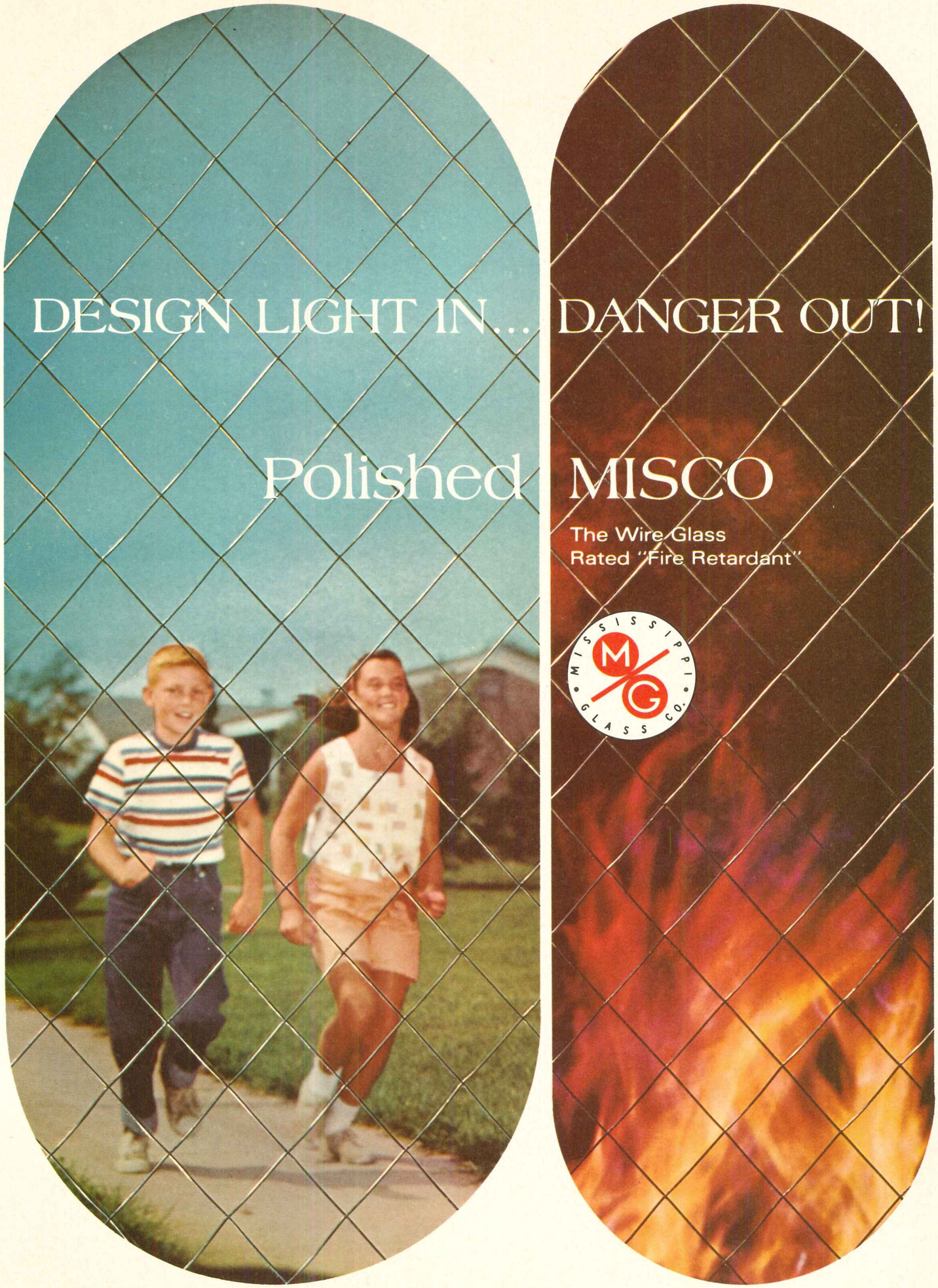
**Steel fabrication required attention to strength and appearance**

One reason for using pipe for the trusses, it is said, was that a "closed" shape was desired for acoustical reasons. But this posed difficulties both for engineering analysis and for fabrication. The engineers had to design against collapse of the pipe chord members that could result from compressive forces transmitted by truss web members and wind struts. Because there is little literature on the subject, tests were made on actual joints, from which allowable design stresses were determined and minimum pipe shell thicknesses established. Since the required shell at some joints was more than that required for axial forces between joints, sections of chords at panel points having a thicker shell were butt welded to the remainder of the chord.

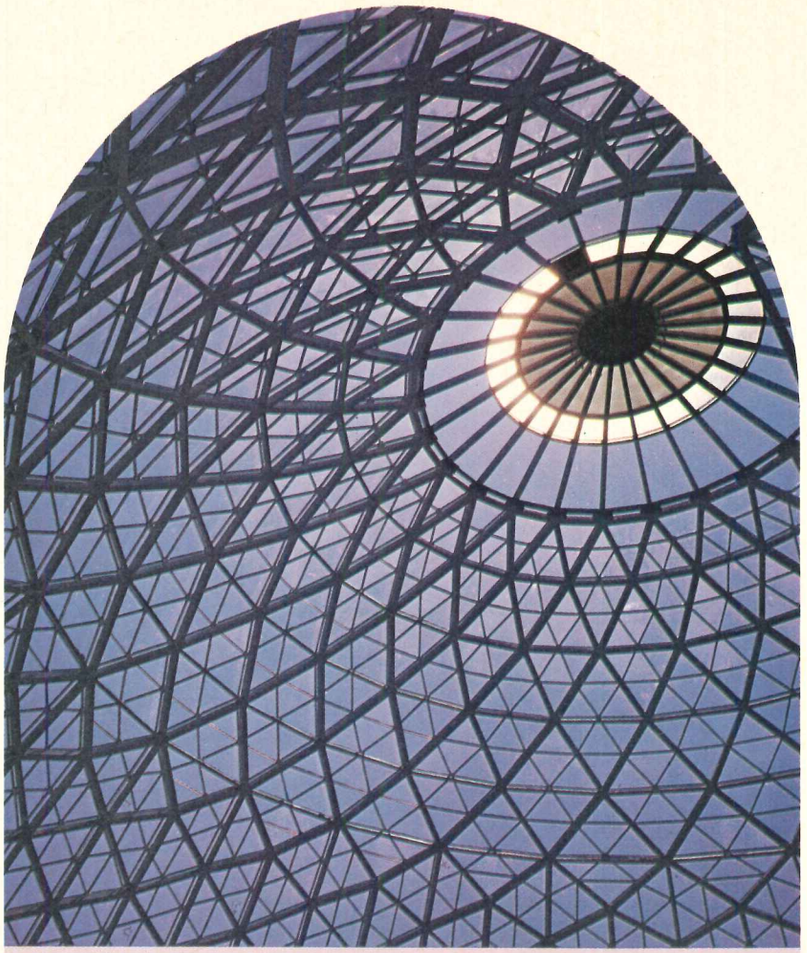
After several types of connections for the steel pipe truss members were investigated, it was decided to use a contour-cut welded connection. This would require the least amount of fabrication, as well as provide the most pleasing connection. Because of the complicated shape of the contours, the web chord connections were welded manually. Fillet welds were used to avoid joint preparation and to speed fabrication. Where fillet welds were found to be ineffective, or difficult because of the small incident angle of the web member, small gusset plates were added.

All connections had to be unobtrusive. No connections were to be seen on the outside faces of the arch girder or on the columns. To stabilize the cross-section of the arch girder and to provide strength against buckling, internal stiffeners were used. Also, the connections of the stiffeners to the plates of the arch girder had to provide moment as well as shear resistance. Inasmuch as speed of detailing and fabrication were of paramount concern, fillet welding was selected as requiring the least amount of detailing, giving the neatest and strongest type of connection, and allowing use of the least material. Thickness of the arch girder plates was kept as thin as possible because of the higher cost of "weathering" steel. Engineering studies indicated that an extra set of longitudinal stiffeners might have to be used on the web plates and on the bottom flange plates to prevent buckling. But it was found this could be avoided if the welds at the corners of the arch were complete-penetration. This was the fastest and least expensive operation, saving an appreciable amount of stiffener material and fabrication time, while providing a neat seam on the exposed surfaces.

The steel columns are stressed by axial load and bi-axial moment gradient, partly caused by the torsional moment in the arch girder, and partly by static and temperature strain movement in the arch. The full column section had to be developed at the joints, calling for complete-penetration welds at the splice points. Further, complete-penetration welds were required between column flanges and webs.




For more data, circle 75 on inquiry card



# POLISHED MISCO

## for clear vision with fire protection

Wherever fire control is part of built-in safety . . . in windows, doorways, walls, skylights . . . wire glass finds growing use in regular specifications. Yet, not all wire glass is listed by Underwriters' Laboratories, Inc. as fire retardant*. Mississippi Glass is one of only two sources for wire glass so listed.

When you design with fire control in mind, specify with confidence in the proved protection of Polished MISCO Wire Glass. It permits full vision and maximum light transmittance. The diamond-shaped netting is inconspicuous, yet protectively visible to alert floor traffic and avert danger from human impact.

*To qualify for this "Fire Retardant" listing, Mississippi Wire Glass had to withstand the furnace test given by Underwriters' Laboratories, Inc., Wire glass windows in a removable wall are placed in a gas-fired furnace. Temperature is raised to 1600° F. in 45 minutes and held at this point for 15 minutes. The wall is then removed and the glass is subjected to a 1⅛" stream from a fire hose at 35 to 40 lbs. of pressure. The glass must remain in the sash, substantially unchanged except for any cracking due to thermal shock. Actual test scenes are shown in our 30 minute film "Rolled Glass by Mississippi."

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## FULL-VIEW DOORS

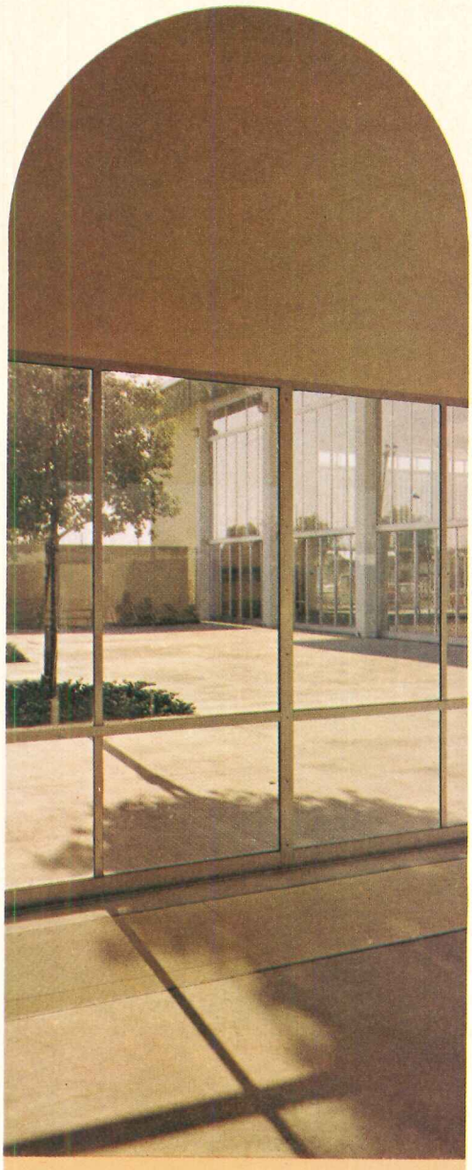
### with fire retardant glass

Polished MISCO gives clear vision, so important to safety at busy doorways. It can take abuse and still stand by, ready to fulfill its complete fire retardant function. The way it holds against intense heat seals the doorway against drafts that speed through any openings and spread the smoke and flame. The wire webbing is unobtrusive yet it subtly blends with entrance areas so the glazing adds an interesting design feature as well as a safety function.

## ATTRACTIVE WALL SECTIONS

### with full-vision range

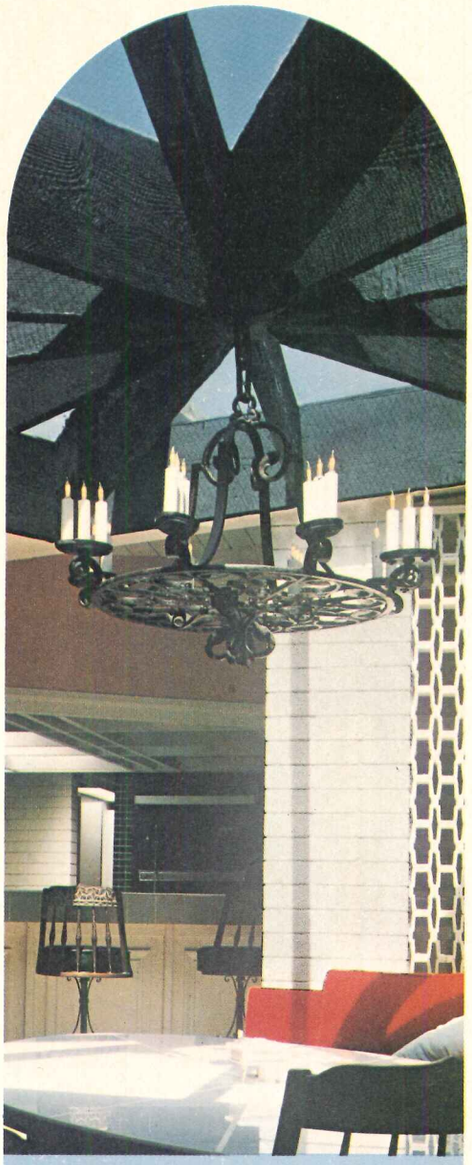
Give the "open" feel to interiors through walls that make full use of natural light. The smooth surface of Polished MISCO makes attractive wall sections that are easy to keep that way. The diamond-shaped mesh is inconspicuous . . . just visible enough to ward off floor traffic accidents from unawareness of glazed openings. Its basic fire retardant ability checks smoke and flame. The sturdy steel webbing holds glazing fast in its frame under prolonged heat exposure.



## PROTECTIVE WINDOWS

### that give clear view

Transmit natural daylight through windows that are glazed sentinels against fire, breakage, vandalism, and forced entry. Polished MISCO provides window areas with fire retardant protection, while maintaining clear vision and the sense of spaciousness that comes from greater light transmittance. Mississippi Wire Glass has been looked to by architects and engineers as the approved fire retardant glazing through more than 60 years.



## SKYLIGHT GLAZING

### dramatic and functional

No need for protective screening above and below. MISCO's strong steel diamond-shaped webbing is already fused in where it not only protects against impact from above or below but also prevents shattering that releases ordinary glass for dangerous fall out. Listed "Fire Retardant" by Underwriters' Laboratories, Inc., Polished MISCO holds fast against fire spread under intense heat. Bring more light in from above safely, with fire retardant Polished MISCO.

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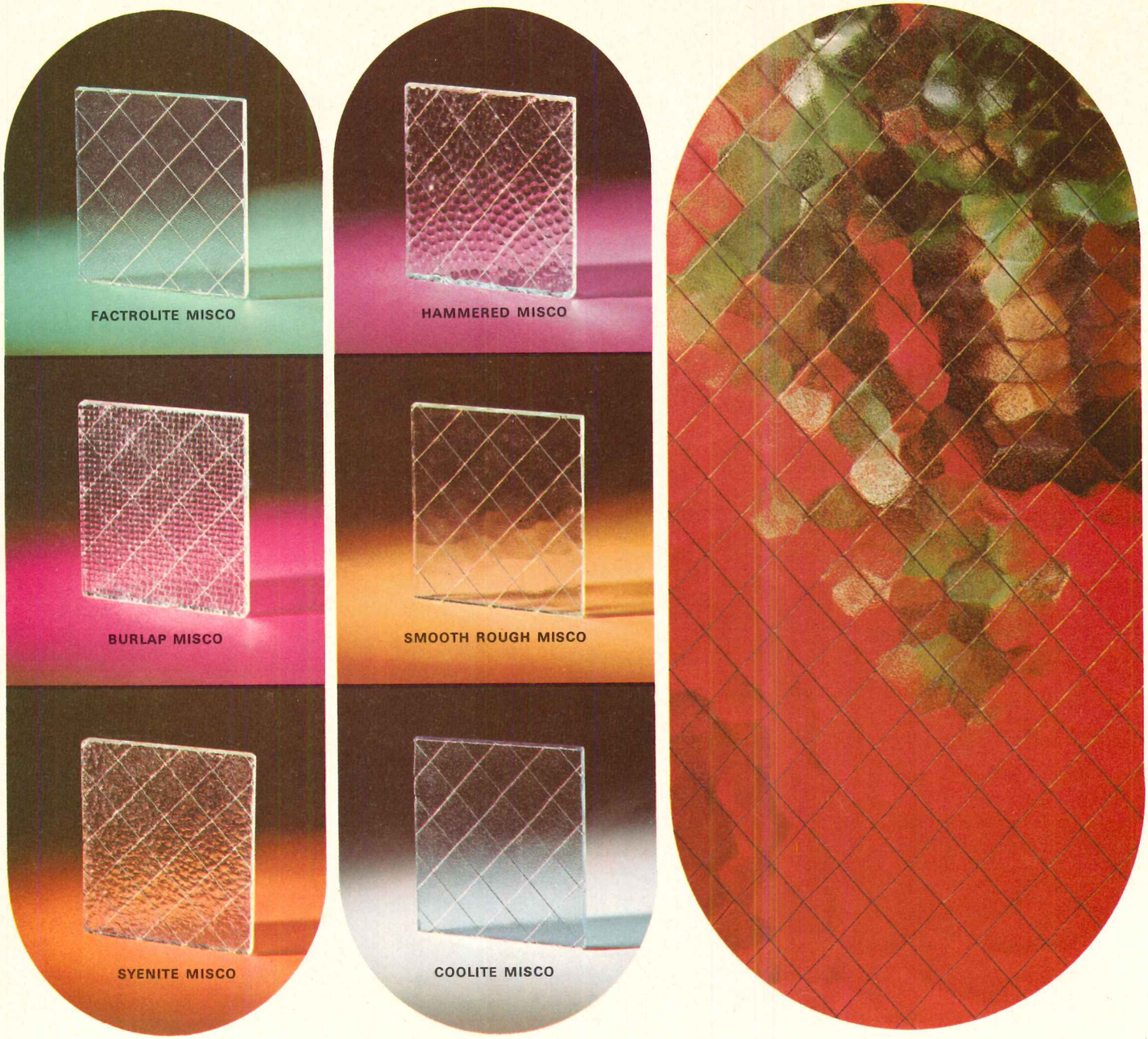
# Patterned MISCO

Protection plus diffusion for controlled light direction and obscurity for varying degrees of privacy and heat absorption where required.




All ¼" MISCO Patterned Wire Glass is listed by Underwriters' Laboratories, Inc.

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Because of its long history in the manufacture of wire glass that has always met Underwriters' requirements, Mississippi Glass is a natural source for technical information on various requirements in glazing applications. Architects and engineers are urged to consult with our specialists for possibilities in dramatic use of glass and particularly on safety requirements. Mississippi Glass is available from most leading distributors of quality glass in the principal cities of the United States and in Canada from Canadian Pittsburgh Industries, Ltd., Hobbs Glass Division.

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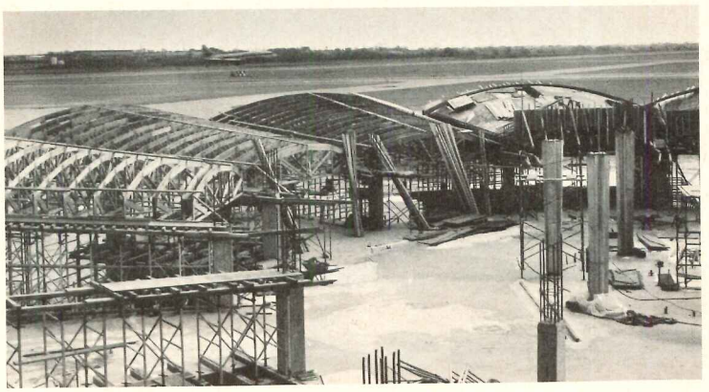
# Prefabricated wood trusses serve as formwork for conoidal concrete roof

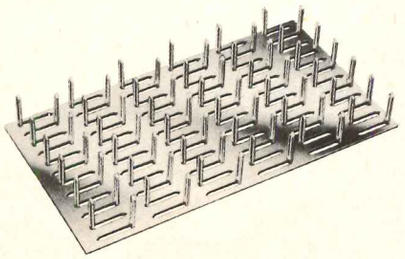


Like practically every airport terminal in the country, Milwaukee's General Mitchell Field is expanding to accommodate the overburdening crush of passenger travel. Now under construction is a new boarding pavilion for the terminal's south concourse. The master plan envisions one more pavilion like this for the north concourse and three larger diamond-shaped pavilions.

The parachute-shaped concrete roof structure of the south concourse pavilion is being formed through use of 364 *Gang-Nail* bowstring trusses, spaced 3 ft on center and having 2- by 10-in. top chords and 2- by 6-in. bottom chords. They are made to carry a load of 105 psf. Each truss in a given bay is different in pitch and length (from 5 to 55 ft) so that a conoidal shape is formed when they are decked over by plywood. The building has 12 similar bays of 27° 10′ and one odd bay of 34°. Radius is 97 ft. Thickness of the concrete roof structure varies from 6 to 10 in. Concrete was pumped from truck mixer up through a hose interlaced through a special boom.

The formwork was bid in both wood and steel. While one steel bid was comparable to that for the bowstring trusses, there would have been too long a delay in delivery. The wood bowstring trusses were fabricated at a plant 25 miles south of Milwaukee; thus there was a savings in time and manpower for the in-plant fabrication.

The *Gang-Nail* connector plates consist of galvanized sheet steel in thicknesses of 14-, 18- and 20-gauge punched to form a series of nail-like projections. A 40-ton platen press embeds the connectors on both sides of a joint without distortion. The trusses are manufactured by licensed fabricators in 38 states.



Marvin Rand

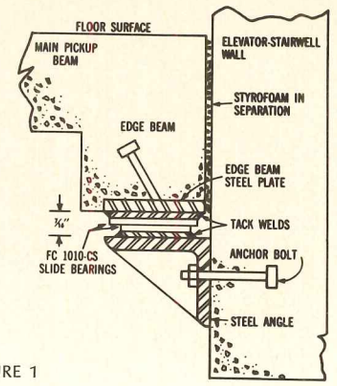



FIGURE 1

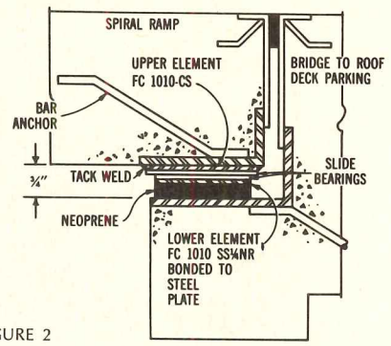
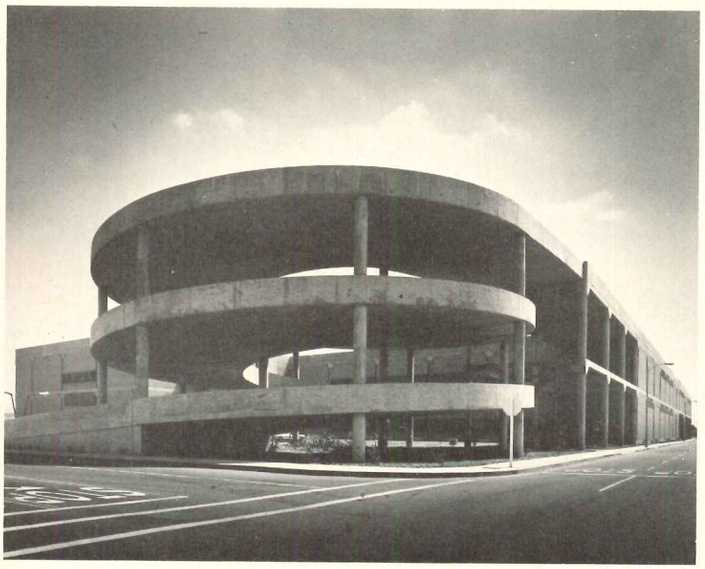
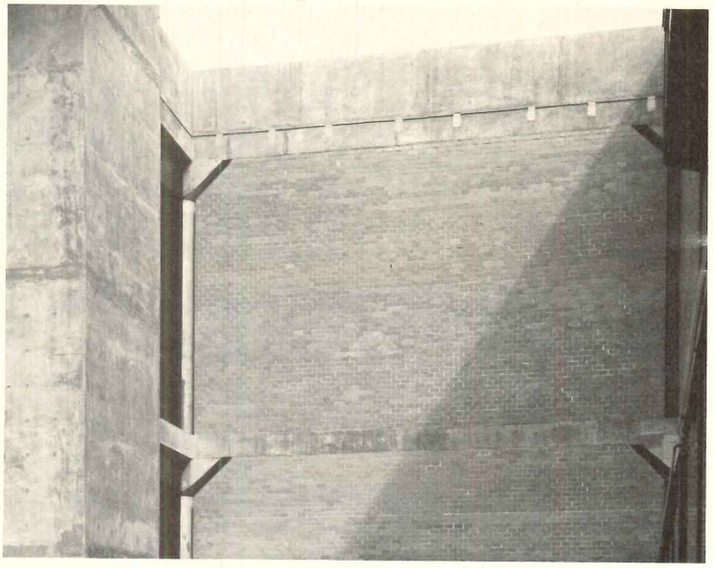



FIGURE 2





# Slide bearings let structure move with temperature and lateral loads

Structural rigidity can be one of the most detrimental factors in causing damage to buildings affected by thermal expansion and contraction or seismic force. To prevent this damage, architects design functional systems in buildings to allow the structure to "give" with movement.

Though there are many systems that can be utilized to accommodate this movement, Daniel, Mann, Johnson & Mendenhall, Los Angeles architectural firm, utilized slide bearings of fluorocarbon in the design of the Worldway Postal Center at Los Angeles International Airport.

The fluorocarbon slide bearings are opposing pads of reinforced *Teflon* composition, which are installed as slip-plane members at points in a structure where stress is likely to occur.

The architects designed Worldway in three separated building elements: the main structure, a spiral ramp leading to rooftop parking, and a stairwell-elevator shaft adjacent to the main building.

To assure freedom of movement, fluorocarbon slide bearings, produced by The Fluorocarbon Company of Anaheim, California, were installed at the two junctures where the three building elements are joined.

One set of fluorocarbon slide bearings was installed between the main building and stairwell-elevator shaft. Concrete edge beams emerge from the main building and terminate within inches of the stairwell-elevator shaft wall (see Figure 1). The bottoms of edge beams are fitted with 3/32-in.-thick fluorocarbon slide bearings, factory-bonded to steel plates for simple field installation. The wall of the stairwell-elevator structure has a steel angle bolted to it, on which another fluorocarbon steel-backed slide bearing is tack welded to comprise the lower element. The main structure furnishes partial support for the secondary structure without being integrally tied to it, and both are at liberty to move independently of one another.

A second installation of fluorocarbon slide bearings was utilized in the separation between the main building and the rigid-frame spiral ramp leading to the parking area on the roof (see Figure 2). The same slip plane principle applies to this application as between the main building and elevator-stairwell structure. In this second application, however, a neoprene pad is used in conjunction with the fluorocarbon to allow for rotation and deflection of the spiral ramp.

*For more information circle selected item numbers on Readers Service Inquiry Card, pages 321-322*

**MODERN GROUPING** / The *Lotus* chair, designed in Sweden, is a low-slung tapering tub shell of molded rigid polystyrene in a glossy white finish. The interior is filled with flexible polyurethane and a "squashy" shirred slipcover-cushion in a bold cotton. Chairs are shown with matching pedestal table. ▪ Dux Incorporated, Newport News, Va.

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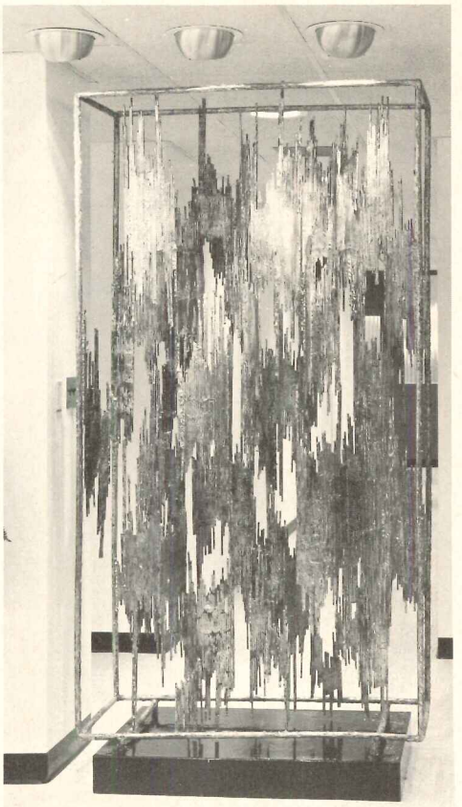

**SCULPTURED SCREEN** / The artist who created this screen for an office in the Empire State Building also creates table and wall, as well as standing, sculpture for architects, engineers and interior designers. ▪ Silas Seandel Studio Inc., New York City.

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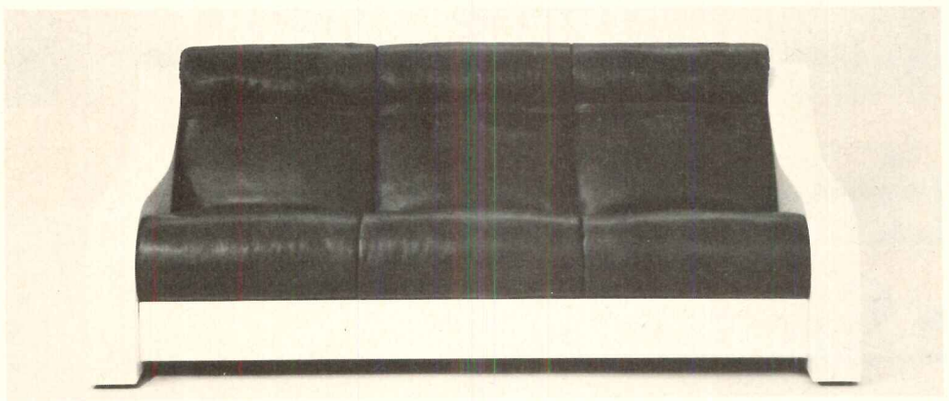

**COMFORTABLE SOFA** / Three-seat sofa with full neck and head support has a wood frame with a glossy white alcohol- and stain-resistant polyester finish. The upholstery is covered in Dacron and foam in natural, black or orange-red leather. ▪ Stendig, Inc., New York City.

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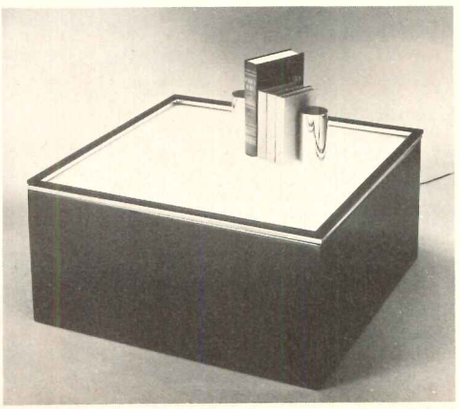

**GLOWING TABLE** / Furniture designed for the "affluent market" includes a patent vinyl-wrapped cube with illuminated solar bronze glass top framed in stainless steel. ▪ Helikon Furniture Company, New York.

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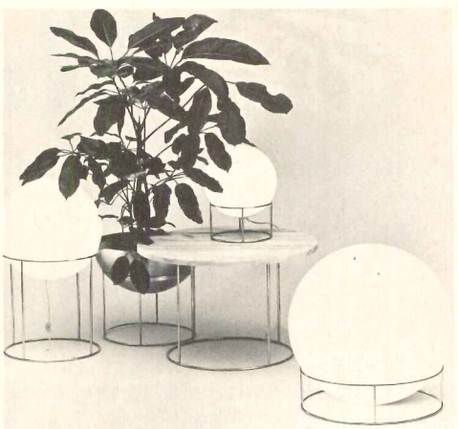

**ACCENT LIGHTING** / The *moon* lamp has a ring base in four heights to cradle 10-, 14-, 20- or 24-in.-diameter opalite glass globes. ▪ Burke Division, Dallas.

*Circle 304 on inquiry card*

*more products on page 206*

# Next time, specify The Sure Cure

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Or specify PLIOLITE resins just to stay within your cost estimate. PLIOLITE based membranes cost about 40% less than other types that meet the same specs. And they can be sprayed on, to hold labor costs down.

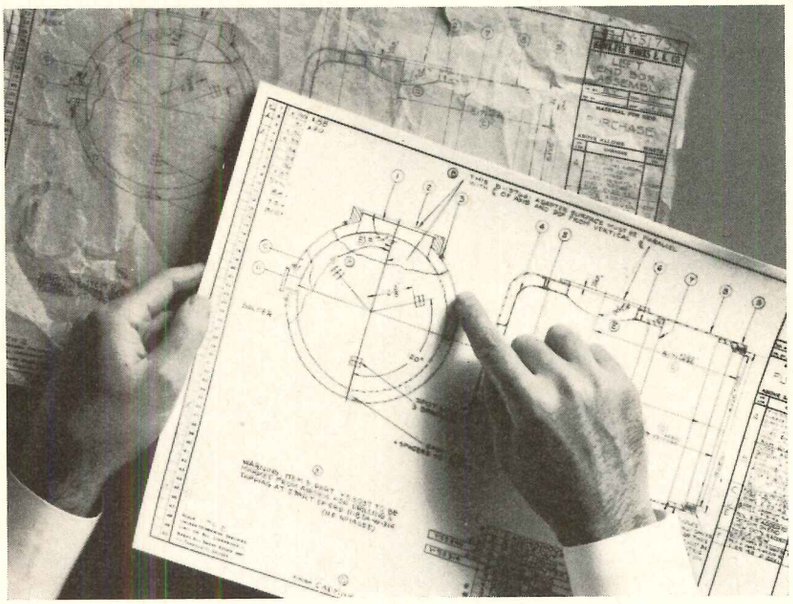
Specify the cure that prevents masonry problems. And write for information about curing membranes.

Goodyear Chemicals Data Center, Dept. **F-84**, Box 9115, Akron, Ohio 44305.

**GOODYEAR CHEMICALS**

*For more data, circle 76 on inquiry card*

# Save the ruins.



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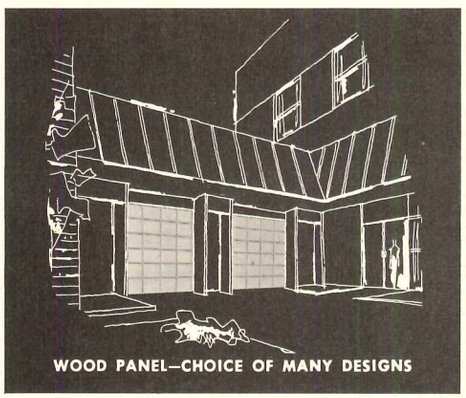
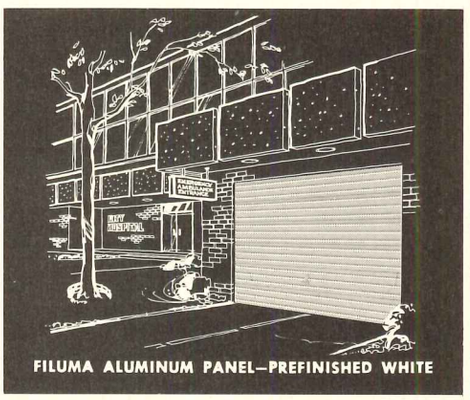
*For more data, circle 77 on inquiry card*

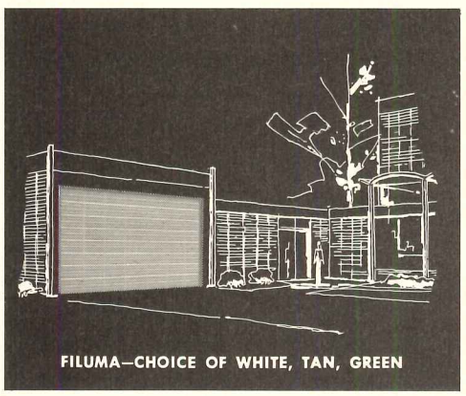
*continued from page 203*

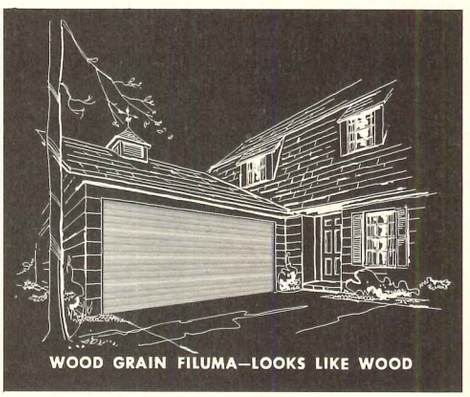
**BIOMECHANICAL SEATING** / An industrial seating line, consisting of 20 different models, has been designed for proper physical support. An upholstered, waterfall-shaped seat provides balance for the body and relieves pressure in the legs while adjustable backrest helps prevent vertebra strain. A chair with a one-piece fiber glass-reinforced polyester resin shell has fade-away arm rests that permit use close to work surfaces. ▪ Ajusto Equipment Company, Bowling Green, Ohio.

*Circle 305 on inquiry card*


## Let your imagination go with Frantz doors

Frantz garage doors won't limit your imagination. No matter which direction you go with architectural designs, there's a door from the long Frantz line to go with you. From traditional to contemporary . . . with quite a few stops in between. There's the dynamic sweep of the horizontal rib pattern in Frantz Filuma® fiberglass garage doors . . . in white, tan and green. And the dramatic new Wood Grain residential door that's really tough, easy-care fiberglass but passes for wood anywhere. And Filuma aluminum panels pre-finished in white (mix them with fiberglass, if you wish). And wood panel doors with many different panel arrangements. And flush doors. And carved panel doors. And rigid doors. With Frantz, you needn't worry about performance and durability. Non-stop quality is as much a part of every door as the Frantz name on the handle. On your next design, let your imagination go. Frantz doors will go with you.

U. S. Patent Nos. 194094, 3104699, 3169612

**FRANTZ MANUFACTURING COMPANY**
Dept. 85 • Sterling, Illinois 61081

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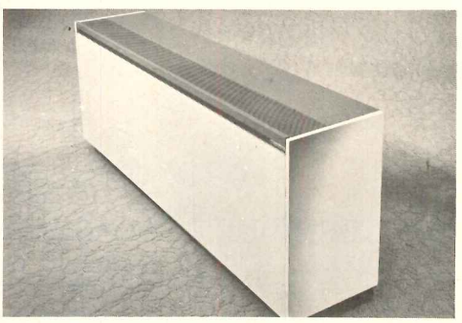
**FLOORING** / *Tytron* flooring is reported to have: exceptional durability, excellent appearance, low maintenance, light weight and superior stain resistance. It is recommended for heavy traffic areas where minimum maintenance time and cost are desirable such as hospitals and, as shown, in elevators. ▪ Monsanto Company, St. Louis.

*Circle 306 on inquiry card*



**CLASSROOM VENTILATORS** / Restyling of an entire line of floor-mounted classroom unit ventilators and accessories has eliminated all exposed fasteners, shiny metal trim strips, most seams or joints and return air grills on front panels. ▪ American Air Filter Company, Inc., Louisville, Ky.

*Circle 307 on inquiry card*

*more products on page 215*

# Before you specify partitions-consider the man who keeps changing his mind!

It's bound to happen with almost every new building, no matter how well planned it is.

Six months from now, or a year, or a couple of years, somebody will change his mind. He'll want the conference room moved from one end of the hall to the other.

Or he'll want a bigger office for someone who was just made vice president. Or more room in the steno pool.

Or something.

That's why our Quick Change movable partitions make so much sense. They allow for changes just about as easily as the mind changes.

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Naturally, we're not the only ones who make movable partitions. But we think we make the best.

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Finally, Quick Change can change quickly! And that's important!

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Please send me your literature on Masonite Quick Change movable partition systems.

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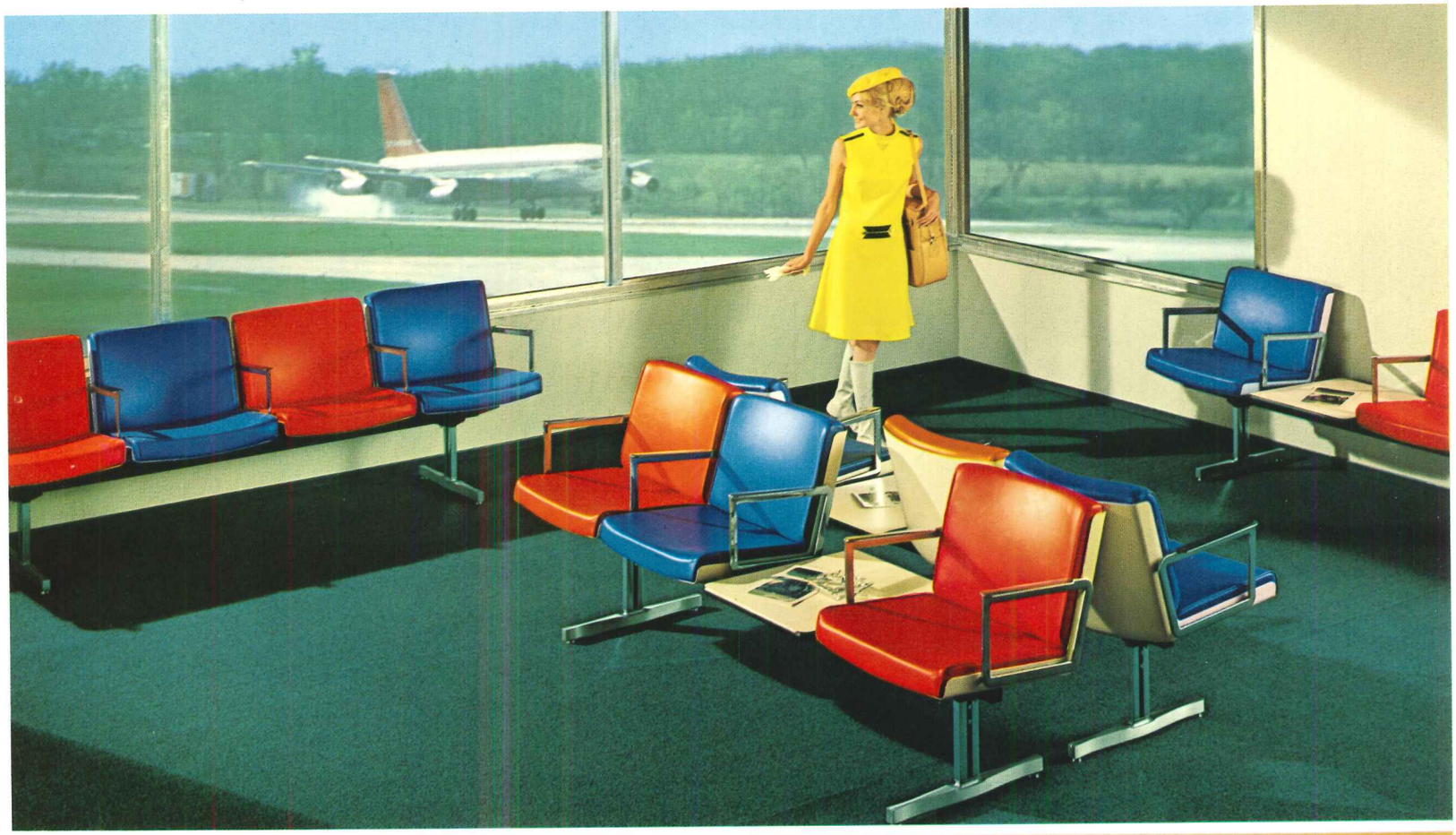
upholstered armrest shells, mounted on "D" series base



upholstered shells—Floor mounted base

upholstered armrest shells, mounted on "A" series base

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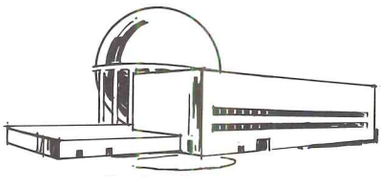
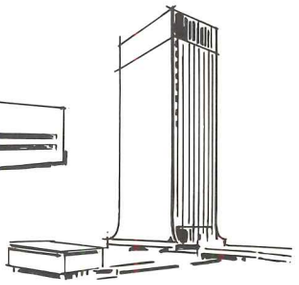


Nuclear Reactors



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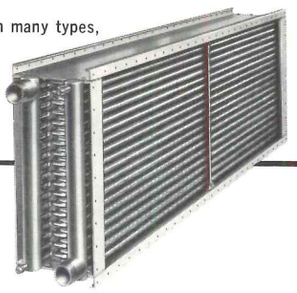

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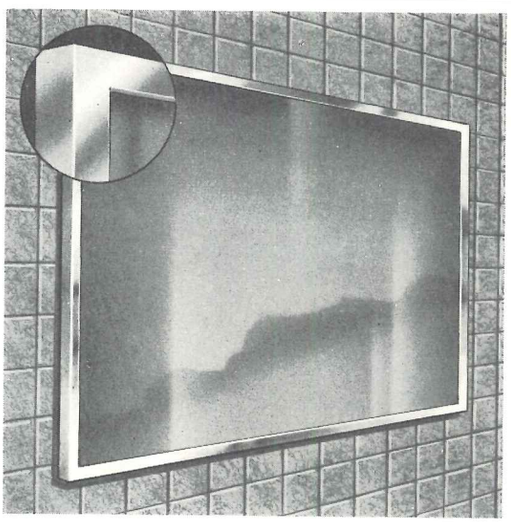

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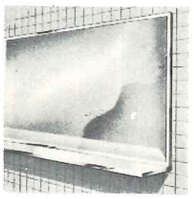
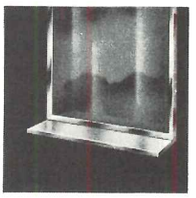
EPCO®

Mitered joints at the corners are eliminated to make this frame the ultimate in good appearance and sturdiness. It has a narrow 5/8" face and 7/8" deep. Finishes are grain line or high polish. There are no exposed screws or fasteners — locks in position when mounted and is tamper-proof. Available with either of two shelves shown.



**#131 STAINLESS STEEL SHELF**
Welded one-piece construction available as separate unit or as integral part of #135 mirror.

**#132 STAINLESS STEEL SELF SUPPORTING SHELF UNIT**
One-piece formed unit for heavy duty application. Mounts below #135 mirror frame.



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When you specify a Bilco Smoke Hatch, your clients get the value of traditional Bilco quality plus the assurance of a respected independent organization that it will operate to the very highest performance standards. It will, for example, remain securely closed when subjected to wind uplift of 30 p.s.f. It will operate against a 10 p.s.f. snow load and automatically lock in the open position. A long series of opening and relatching tests guarantee its rugged design and durability.

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Armstrong
Ceiling Systems that work

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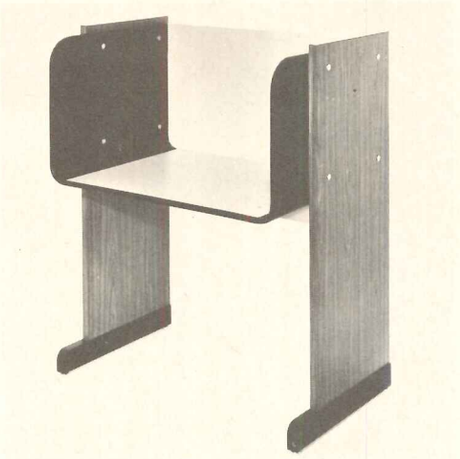
continued from page 206



**LIBRARY CARREL** / The softly-curved plywood shell of the *LBC-300* carrel "was developed from a study of the accelerated pace of today's student." The light color desk top and back conform to the finding that "a light, solid color should be used to reflect light rather than to absorb it." The dark interior side panels impart a more private atmosphere. The carrel, which is available as an individual unit or in groupings, is easily wired for audio-visual components. ▪ Sperry Rand Corporation, New York City.

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**CASTELLI CHAIR** / Designed in Italy by Anonima Castelli especially for institutional, commercial and business use, this solid, lightweight stacking chair may be used individually or in rows. Its structure consists of light-alloy aluminum die-cast elements in combination with welded steel tubing covered with sound-deadening vinyl. The feet are noiseless and self-leveling and the seat and backrest are beech, walnut or rosewood plywood with anatomically-shaped curvatures for posture-perfect comfort. Add-on features include armrests, bookrack, ganging devices and a tip-up tablet arm (armchair is stackable). ▪ Krueger Company, Green Bay, Wis.

*Circle 309 on inquiry card*

**CONTRACT DRAPERIES** / *Saran* fibers used in a contract drapery line are reported to have many good characteristics: They will not support combustion, are durable, have good abrasion resistance, and are highly resistant to bacteria and insects. Because of their resilience, fibers can be flexed without damage and will not lose strength after extensive exposure to sunlight. Draperies hang wrinkle-free and can be cleaned with conventional dry-cleaning solutions. ▪ Enjay Fibers and Laminates Company, New York City.

*Circle 310 on inquiry card*

**TILE** / Hard surface flooring of *Vintal* vinyl polymer tile is translucent, with an inner patterning that penetrates through the tile. The construction is reported chemically similar to marble, yet the tile is said to wear like vinyl asbestos. ▪ The Flintkote Company, New York City.

*Circle 311 on inquiry card*

more products on page 224


CAPE KENNEDY

...where ZERO weather stripping has an important place in the race for space.

At Cape Kennedy the watchword is "dependability."
Which explains why they use ZERO products.

ZERO products are favored
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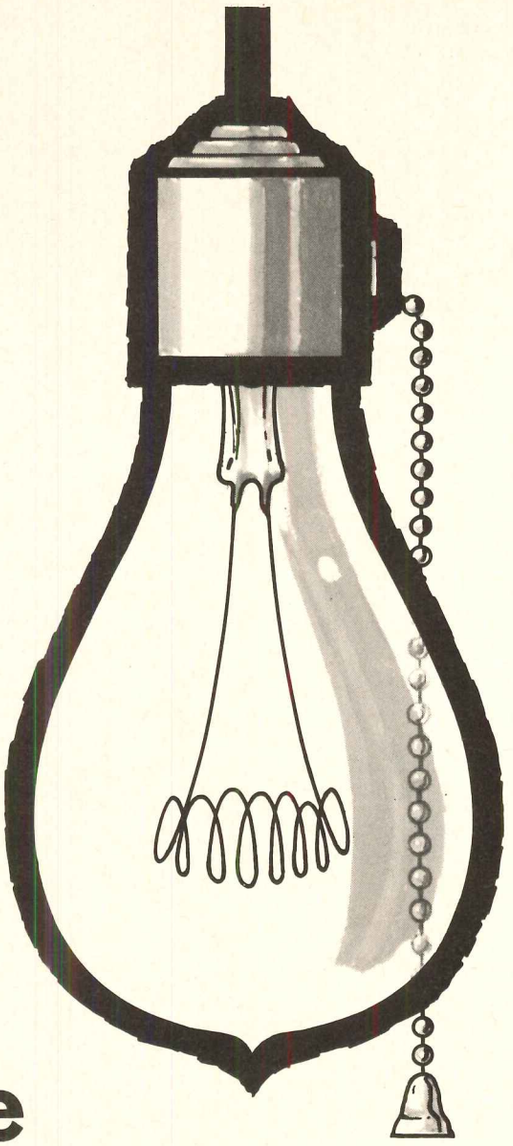

# install a gas turbine generator – best kind to meet the next power blackout.

If you're the owner of a high-rise apartment or office building, a hospital, airport, manufacturing plant with critical processes, or computer or communications center – you are well aware of the disaster that could be caused by the failure of electrical power.

What's the best answer? What's the most economical and *reliable* source of emergency electrical power you can get?

Many operators, including American Telephone and Telegraph Company, believe the answer is Solar gas turbine generator sets. AT&T and the Bell System have installed hundreds of these reliable sets at their hardsite, disaster-proof communications centers and telephone exchanges from coast to coast.

Today Solar's family of gas turbine generator sets includes its new 225 kw and 800 kw generator sets. The 225 kw and the 800 kw sets are the first of their kind *within the installed price range of reciprocating engine equipment.* Solar 225 kw and 800 kw generator sets are so small and lightweight they can be installed quickly anywhere from rooftop to basement. No special structural foundations or cooling water are needed as in the case of comparable reciprocating equipment.

In critical emergency power applications *where failures are unacceptable*, you can count on Solar gas turbine generator sets to start up every time, provide *reliable* emergency power in seconds.

If you want the kind of reliable electrical power more and more civic ordinances are making mandatory...with savings on installed costs that result in minimum cost per kilowatt...get the facts today on Solar's new gas turbine 225 kw and 800 kw emergency generator sets. Write: Solar, Dept. R-254, San Diego, California 92112.

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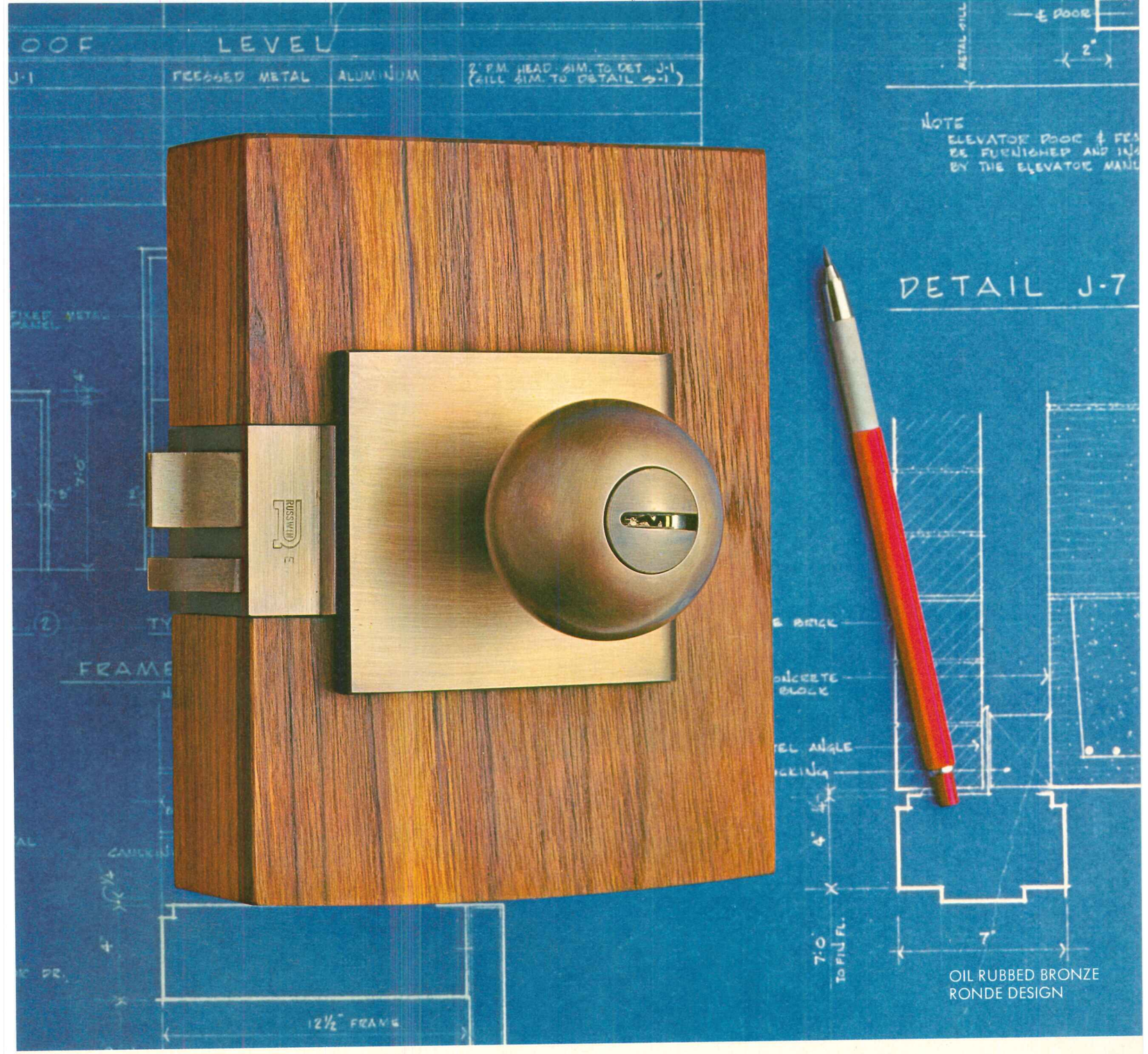


# For the sake of distinction, plan ahead with Russwin Uniloc* Locksets

Security measures in all your buildings call for the unique protection of Russwin UNILOC Locksets. They do the job dramatically . . . with a fresh styling that gives door decor an excitingly new and different look. No assembly required for installation . . . cuts time, trouble and costs.

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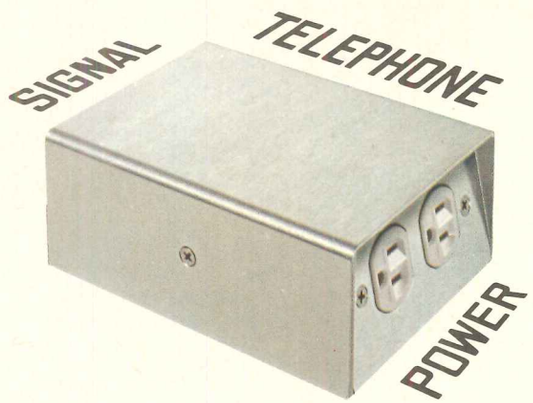
# CEL-WAY® The in-floor electrical distribution system for every need!



Cel-Way in-floor electrification adapts itself to the whole spectrum of architectural ideas and construction techniques: high rise, low rise, concrete frame, steel frame, interior landscaping.

Here is *system* in the pure sense of the word. All electrical services—telephone, power, signal—are neatly sandwiched into a single slender floor slab. This floor fitting and in-floor electric cell system accommodates itself to any building module. It meets all electrical requirements for the present, and anticipates changed or expanded needs for the future. It's the perfect antidote for building obsolescence.

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Here is *versatility* which opens the way to innovations never before possible, like supplying partitions with all three electrical services through a single entrance.

For the complete Cel-Way story, including construction and installation details, specifications and other data, check Sweet's 1e/Gr, or write for Cel-Way product manual. Granco Steel Products Company, 6506 North Broadway, St. Louis, Mo. 63147. A subsidiary of Granite City Steel Co.

***IMAGINATION IN STEEL***

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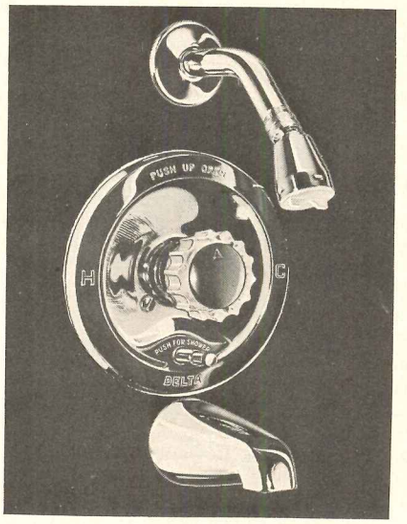
GRANCO®

Steel

# Delta Faucet introduces

# DeltaTemp

The safety valve.




Delta-Temp, soon to be known as the standard in "safety" tub and shower valves.

If you're tired of mis-matched valves in bathrooms, you're ready for Delta-Temp. It's the only Delta valve around that is accepted by Mrs. America, and she's waiting to know how she can have one—today!
Get one for yourself! They work!

*Here are the features to back us up:*

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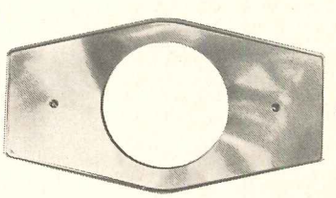

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# mix and match porcelain-on-steel AllianceWall® chalkboard colors for beauty and versatility

AllianceWall porcelain-on-steel chalkboards are the ultimate in functional design. The popular feltwhite 118 boards double as a movie screen and can be used for projection of any type visual aid. AllianceWall porcelain-on-steel chalkboards can also be used with magnetic symbols, letters, characters and diagrams for more effective instruction. Also, the feltwhite 118 boards can be written on with watercolor markers to add emphasis to written presentations.

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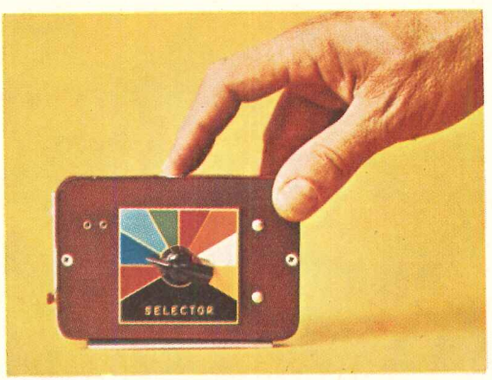


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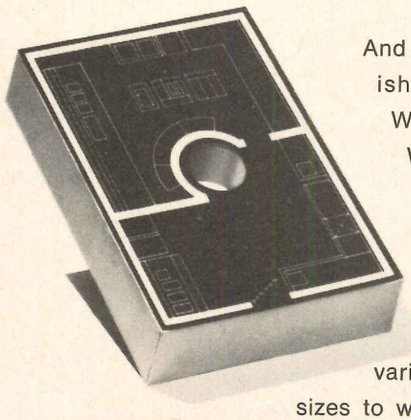
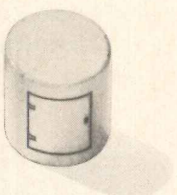
General Offices: Dallas, Texas 75202
Manufacturers of The "OVERHEAD DOOR" and electric operators for residential and commercial buildings

*For more data, circle 91 on inquiry card*

# go ahead, build your kitchen without a walk-in cooler/freezer!



And when you're ready for the finished touches, talk to Elliott-Williams . . . the cold specialists. We'll custom design just the right walk-in to fit your needs. Our high quality pre-fabricated urethane panel sections afford us with an infinite variety of shapes and sizes to work with, assuring you that whatever space you have available will be put to the utmost use. And what about the contrasting finish of your attractive kitchen and nondescript walk-in? Simply specify the walk-in to fit the decor. Elliott-Williams panels are available in your choice of enameled colors, wood vinyl laminates, fiberglass, stainless steel, or anodized aluminum finishes. It's all a matter of filling in where you left off . . . for some a tough problem. For Elliott-Williams . . . child's play.

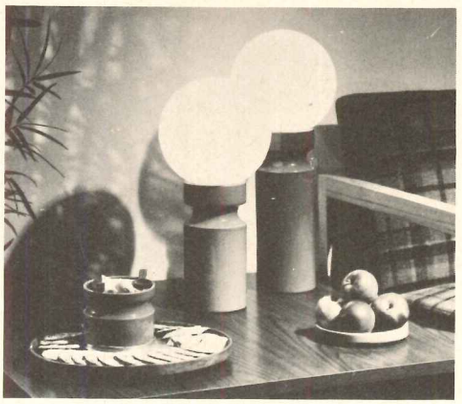


ELLIOTT-WILLIAMS
WALK-IN FREEZERS, COOLERS, COMBINATIONS
2900 N. RICHARDT, INDIANAPOLIS, INDIANA 46219

*For more data, circle 92 on inquiry card*

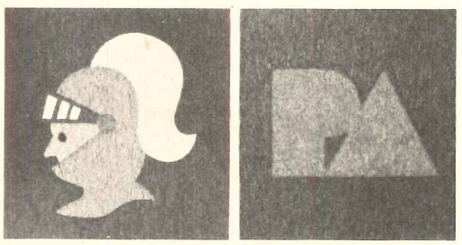



*continued from page 215*



**LAMPS** / A collection of contemporary lamps for suites and offices includes globe and column or jar-shaped lamps. There are large lamps for general room lighting and medium height units for reading, desk work and bedside lighting. ▪ Haeger, Dundee, Ill.

*Circle 312 on inquiry card*



**CARPET SQUARES** / Recent development makes possible incorporating designs and trademarks into loose-laid carpet squares. The design squares can be manufactured in two or more colors and can mix different textures. The squares—like all the company's carpet squares—are installed without adhesive, tack-strip or underpad and can be rotated to equalize wear. ▪ Van Heugten U.S.A. Inc., Kenilworth, N.J.

*Circle 313 on inquiry card*

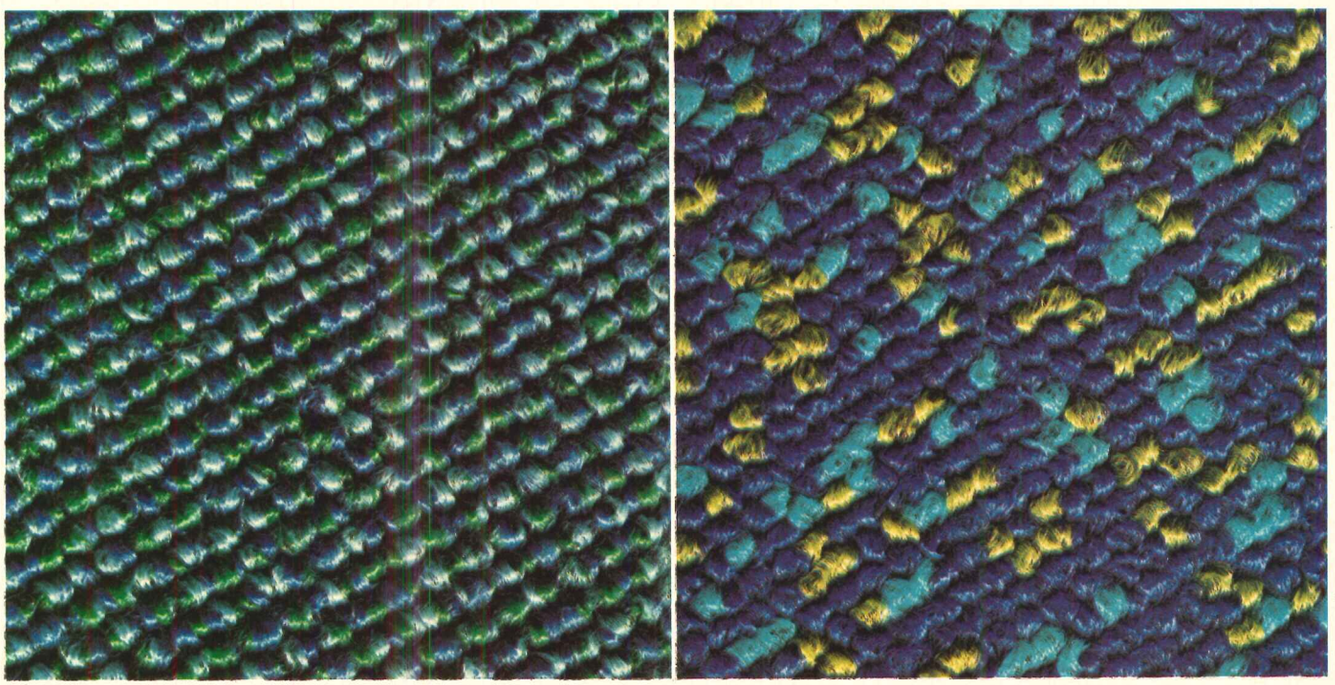
**ROSEWOOD SOFA** / This rosewood-paneled sofa, with loose pillows and cushions covered in nubby textured fabric, is from the *Elite Series* of contract seating pieces designed for such applications as executive offices and luxury hotels. ▪ Directional Contract Furniture Corp., New York City.

*Circle 314 on inquiry card*

*more products on page 244*

# Institutional carpet doesn't have to look old fashioned. Ours doesn't.

**(And it's anti-static, too.)**



Ours is Constellation. Super-tough, application-proved, anti-static Densylon® with a new look. Up to now, you had little choice. Old-fashioned tweeds. Residential patterns that looked good but couldn't stand the wear. Or expensive, one-of-a-kind orders that took all kinds of time and money. Now there's Constellation. Beautiful enough to use anywhere. Tough enough to take the heaviest traffic. With 16 color combinations in stock. Or any custom combination you want. In the same price range as ordinary institutional carpet. All because we're CCC—world's largest manufacturer of commercial and institutional carpet systems. Find us in the Yellow Pages or mail this coupon.

Commercial Carpet Corporation
10 West 33rd Street, New York, N.Y. 10001
Attention: Mr. Walter Brooks Dept. AR-6

☐ Please have your representative call on me.

☐ Please send portfolio and Constellation swatches.

Name_____

Title_____ Phone_____

Organization_____

Address_____

City_____ State_____ Zip_____

See us
at NEOCON
Space 11-124
and at AIA
Booth 116-118

neocon
CHICAGO

CCC

Programs, and products to make them work.

*For more data, circle 93 on inquiry card*

*For more data, circle 33 on inquiry card*

KROGER

# Light is to be dramatic by. Light is to come right in by.

That's our kind of light. Coordinated to enhance the fine stroke of the architect. Friendly to welcome all but trouble.

We make a newly expanded line of outdoor light fixtures. They start ideas. They make ideas come true. For accents and broad strokes. Contemporary or traditional. Large area or small. They're all coordinated. All pleasing to the eye, by day or by night.

You see a sample here. Post tops. Wall mounts. Up downs. Pencil beams.

Check the reader service card, and we'll send you our new Idea Book that covers the whole spectrum.

Or let's begin with where you want to light. Call us or your nearby Crouse-Hinds agent or distributor. He's ready to do the analyzing, costing and comparing with an assist from our home office computer.

We'd like to hear from you.

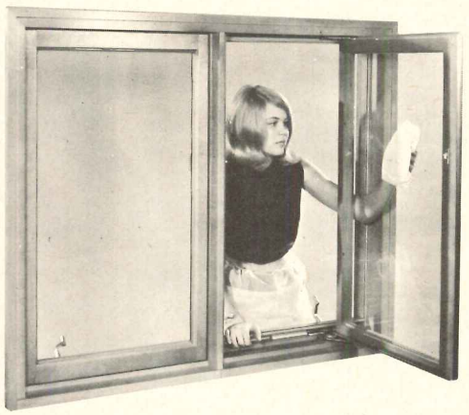
Outdoor Lighting Dept., Crouse-Hinds Company, Syracuse, N. Y. 13201.

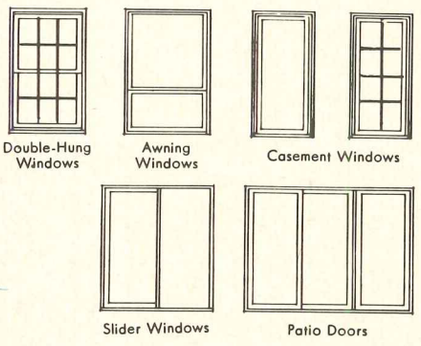
CROUSE-HINDS®

**CROUSE-HINDS**

# The power of attraction...

Designed and Fabricated by: Mid-America Homes, Inc., Crown Point, Indiana
Contractor: Miller Brothers, Griffith, Indiana






## CARADCO Wood Patio Doors and C200' Casements

CARADCO Patio Doors and C 200 Casements are powerfully attractive to both single dwelling and multiple unit clients. C 200 Casements, for example, are double weatherstripped. Hinges are concealed. Insulating glass with vinyl glazing and removable vinyl grilles are featured options.
CARADCO Patio Doors offer ⅞" insulating glass, complete weatherstripping and easy operation. For eye appeal and for satisfaction . . . specify CARADCO: the best in windows and doors.

CARADCO DIVISION SCOVILL
Dubuque, Iowa 52001

EASTERN ASSEMBLY PLANT,
Pemberton, New Jersey

*Caradco Windows and Patio Door products are further detailed in Sweets* $\frac{19c}{Ca}$ *and Canadian file* $\frac{8wmw}{Car}$

*For more data, circle 94 on inquiry card*

# General Electric offers new coolers, new colors...and a clever new twist.

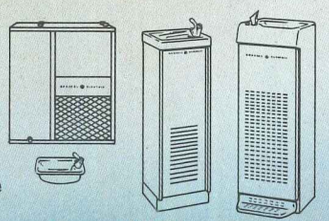
**The New Coolers**—a stylish wall-mounted Space-Saver and a smartly designed PS floor model. Both with the latest in engineering excellence and designer appeal.

**The New Colors**—deep gray pebble charcoal textured vinyl and a soft gray regal silver enamel. Both available on the popular GE semi-recessed cooler, bringing its total color selections to five. The Space-Saver wall unit also comes in five finishes.

**The New Twist**—a unique removable/cleanable precooler core for improved water cooler sanitation. Only GE has it. Permits easy access to the drain . . . without removing side panels or basin top.

For more details on General Electric's full line offering, including capacities and color choices, see Sweet's Catalog. Or write GE, Dept. 761-44, 14th and Arnold Streets, Chicago Heights, Ill. 60411.

*For more data, circle 95 on inquiry card*



new remote

compact PT-3

rugged RS

GENERAL ELECTRIC

# FORMICA® toilet compartments defy scribblers...won't rust.

## This lasting beauty actually discourages vandalism.

FORMICA® toilet compartments offer built-in confidence. Interiors feature interesting designs that discourage scribblers . . . vandalism in general. They won't rust . . . another age-old problem solved. Plus they can be cleaned easily in minutes . . . the famous low maintenance feature of laminates. You provide your clients with long-range economy when you specify FORMICA® brand toilet compartments. Contact your Formica representative or write Dept. AR-69 today for the names of authorized manufacturers near you or your job site.

Want to discuss surfacing? We make a strong case for seeing your Formica man.

FORMICA BRAND products

There are other brands of laminate but only one

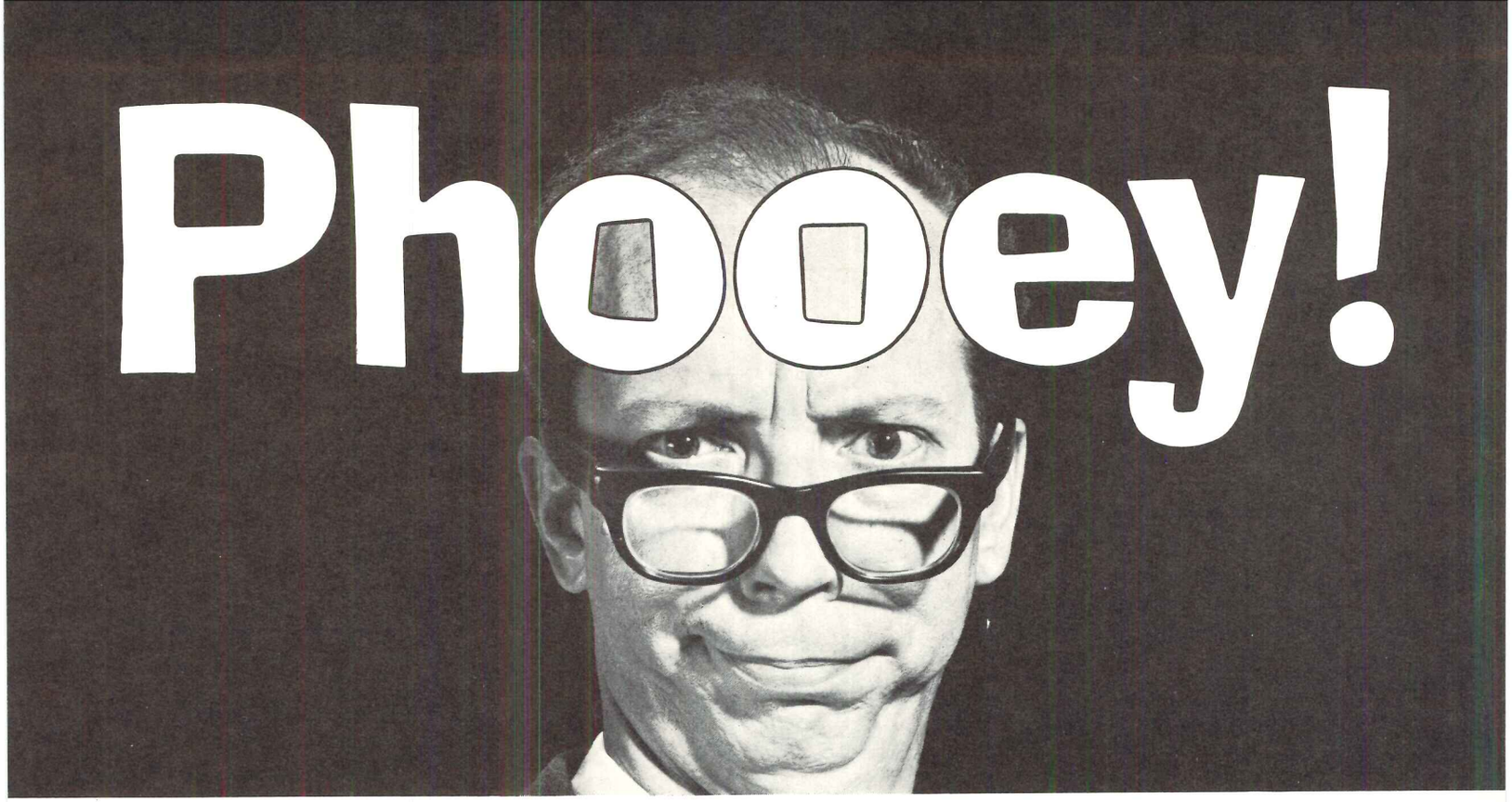
FORMICA® BRAND laminate

## Leadership by design

© 1969 • Formica Corporation • Cincinnati, Ohio 45232, subsidiary of CYANAMID

*For more data, circle 96 on inquiry card*

# Phooey!



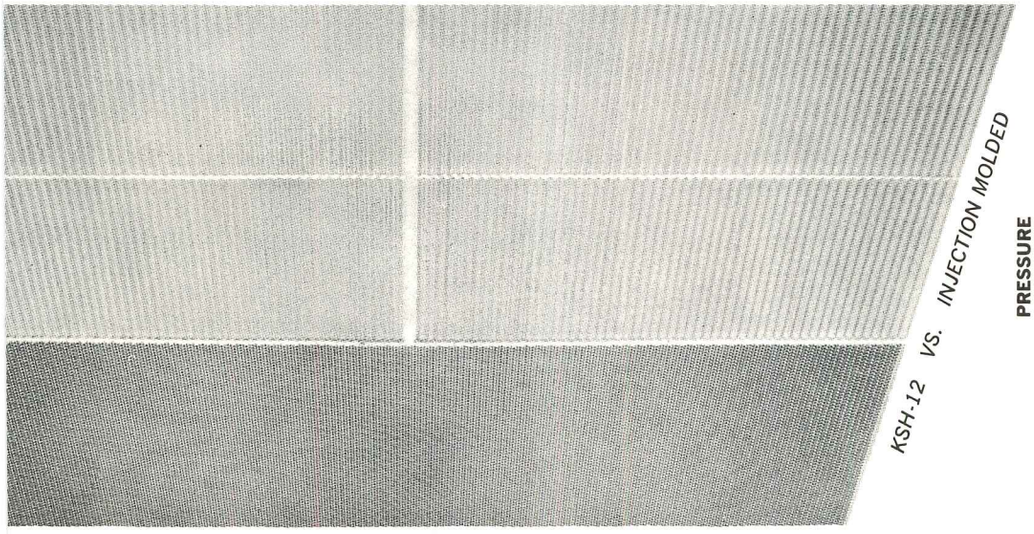
That means nonsense.

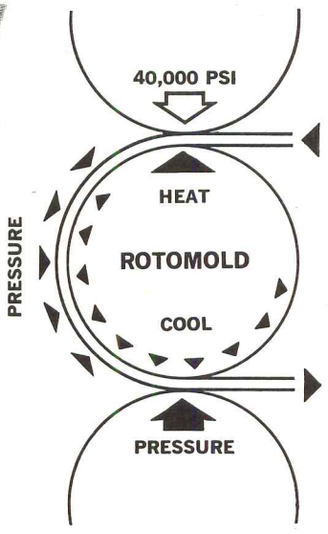
And that's our answer to the statement that "... injection molding is the only way to produce good prismatic lighting panels."

Fact is ... THERE'S NOW A BETTER WAY. It's the continuous new "ROTOMOLD" process developed by and exclusive to K-S-H. Performance-wise, panels produced by the "ROTOMOLD" process are as good as the best injection molded.

See, examine, compare them yourself. You'll say "Phooey" to injection molding. And you'll specify performance, not nonsense.

Write for complete information.




"ROTOMOLD" is an efficient, continuous molding process with rotating mold and precision control of temperature, pressure and material. It assures perfect prism reproduction, sharp and stress free. Uniform quality panel after panel. And at much lower cost!

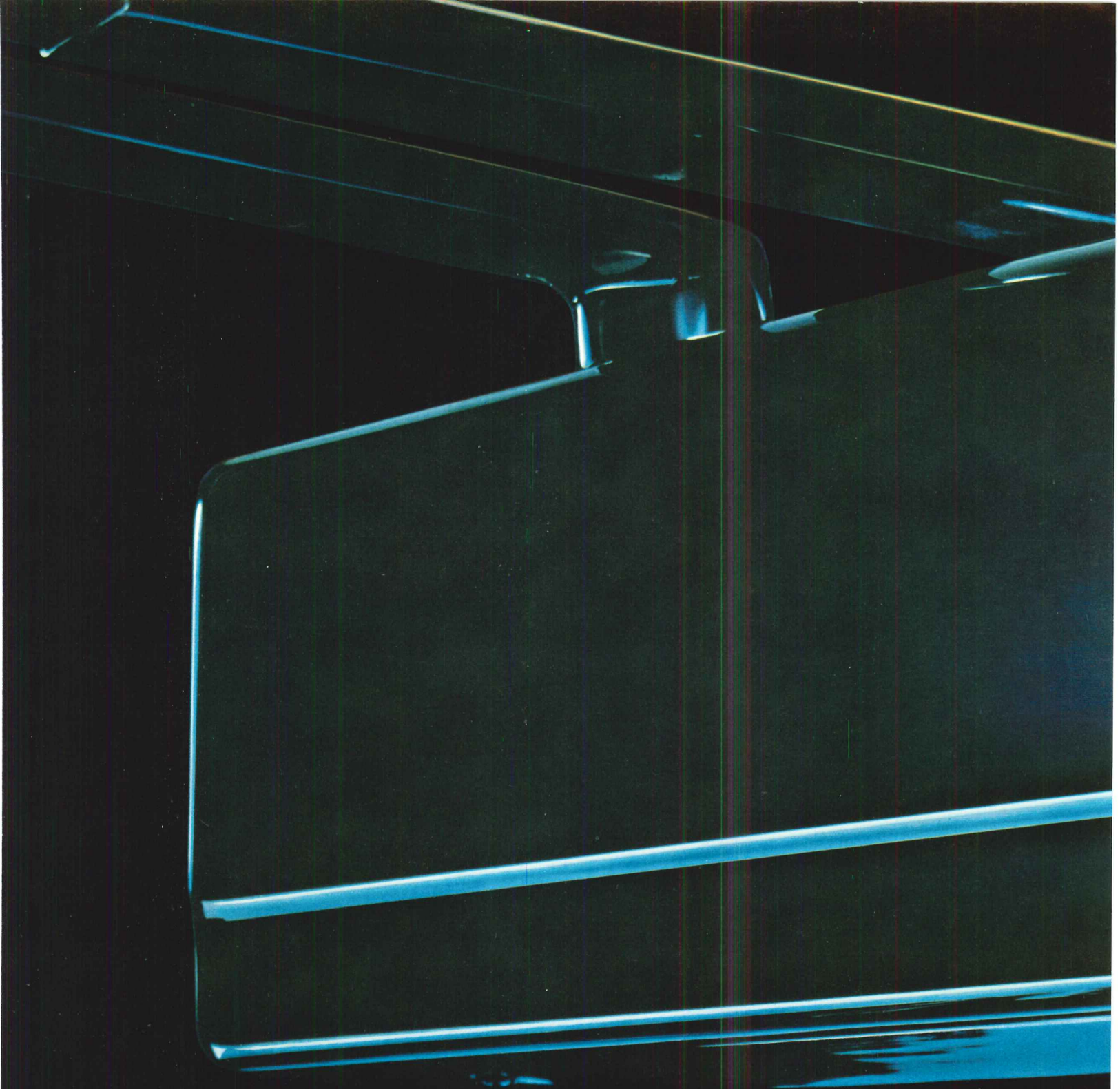
KLITE®

**K-S-H, INC. • 10091 MANCHESTER • ST. LOUIS, MO. 63122**

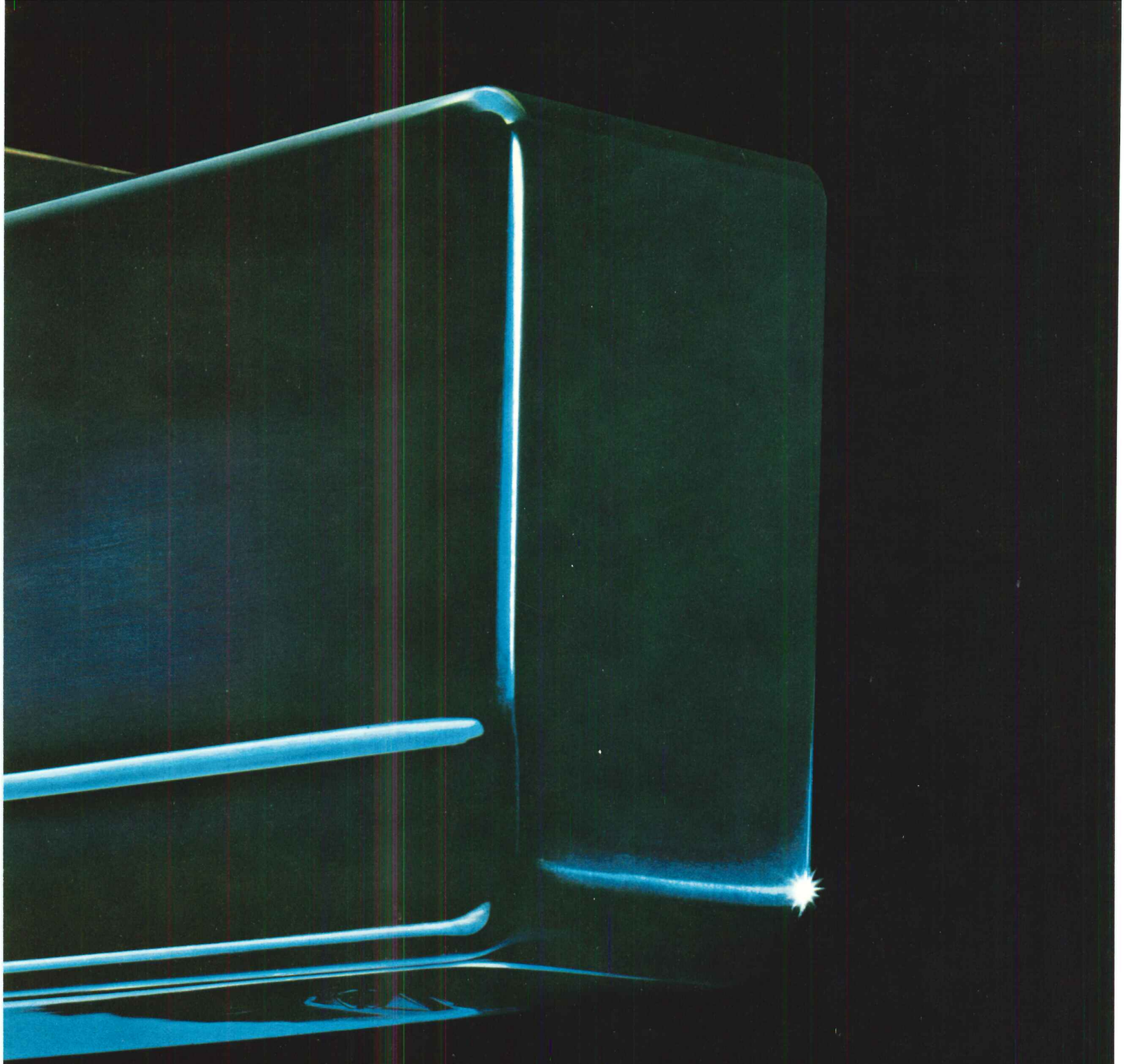
Plant locations: Santa Ana, California • St. Louis, Missouri • Xenia, Ohio • Fredericksburg, Virginia • Toronto, Canada • Geel, Belgium • Mexico City, Mexico

*For more data, circle 97 on inquiry card*

*For more data, circle 98 on inquiry card*



# top of any line



# the Powerglide® 150 door closer

No point in superlatives. Let's just say that now all the features you want in a door closer are on tap in one smooth, good looking package. The ultimate refinement of the tested Powerglide line, the top of any line.

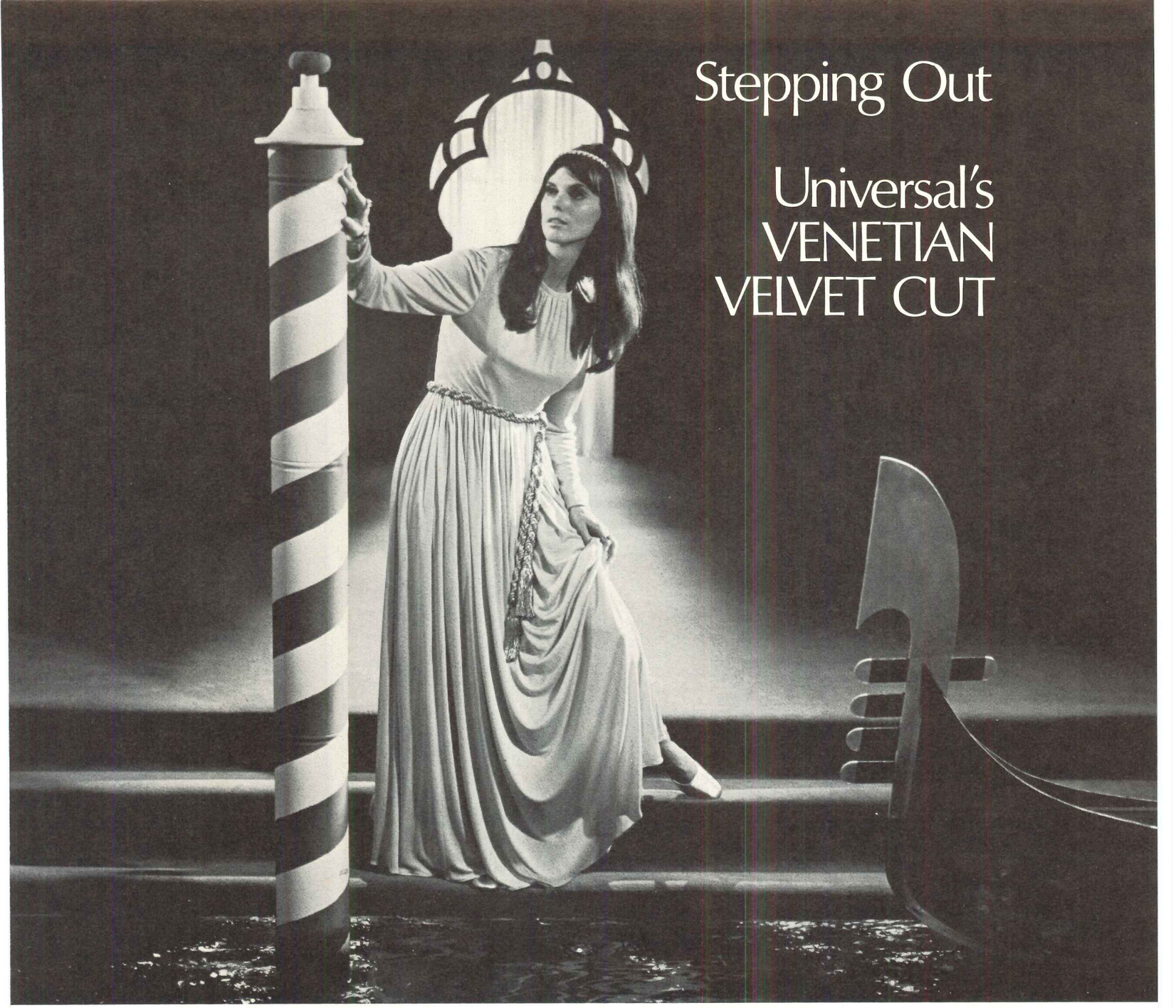
For one thing, the 150 series closer will handle any door. It can be inverted, even on a corner bracket, and comes complete with a special backcheck selector valve for standard or parallel arm applications.

The new closer is designed to control effectively a full range of door sizes. Its adjustable spring can be tuned to give a minimum of 50% extra closing power to compensate for any conceivable installation, location, or air flow pattern. For hospitals and other special installations, your customer can "dial" delays in its closing cycle. Finally, the trim, heavy-gauge cover that conceals the massive machinery of the 150 series closer blends in and belongs. The nonferrous bronze or aluminum cover is available in all standard plated and sprayed finishes.

For full details on this product of more than 80 years of door closer experience, write: Sargent & Company, 100 Sargent Drive, New Haven, Connecticut 06509 • Peterborough, Ontario • Member Producers' Council

**SARGENT®**

A complete line of advanced architectural hardware, including the Sargent Maximum Security System.




## The Ultimate Luxury in Contract Carpet

Finalemente! Universal's VELVET-CUT COLLECTION captures **la dolce vita** of the finest woven velvet carpeting—while advancing all the benefits of modern, precision-tufting! Made on one of the industry's first 1/10 gauge **cut-pile** machines, the VELVET-CUT COLLECTION is rich with the joyous color of old Venice and available in two devastatingly beautiful types. Both are of high-density construction.

### ST. MARK'S

- Pile Yarn: 100% solution dyed Vectra® olefin fiber
- Stain, static, and abrasion resistant
- Gauge: 1/10″
- Stiches per inch: 10
- Pile weight: 35 oz sq yd
- Pile height: ¼″
- Density: 100 tufts per sq in
- Ultra Violet light factor added

COLORS:

Golden Grain, Jamaica Blue, Charcoal, Avocado Mist, Brazil Nut, Dark Moss, Cumquat, Regimental Red

### FLORIAN

- Pile yarn: 100% polyester
- Gauge: 1/10″
- Stitches per inch: 10
- Pile weight: 28 oz sq yd
- Pile height: 5/16″
- Density: 100 tufts per sq inch

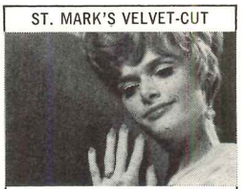
COLORS:

Sand Gold, Golden Wheat, Tassel Gold, Firethorne, Sash Red, Tropic Blue, Spring Meadow, Beret Green, Bronze Olive, Navy, Turquoise, Avocado

St. Mark's and Florian primary backing: DuPont Typar®—secondary backing: 40 oz HI-D foam rubber or 9 oz jute

Gown and Accessories: Davison's, Atlanta

ST. MARK'S VELVET-CUT



Deep — Dense — Delightful

### OTHER UNIVERSAL STARS

made on Universal's 5/64″ tufting machines

BONANZA: 100% continuous filament nylon

LUCKY STRIKE: printed variation of Bonanza

DICKSIE: 100% Herculon® polypropylene

HIGH CHAPARRAL II: 100% continuous filament nylon

VANGUARD: solution-dyed Vectra® olefin

MAIL THIS COUPON FOR UNIVERSAL SAMPLES

VELVET-CUT COLLECTION: ☐ Florian ☐ St. Mark's

UNIVERSAL STARS: ☐ Bonanza ☐ Vanguard ☐ Dicksie ☐ Lucky Strike ☐ High Chaparral II

Name_____

Firm Name_____

City_____ State_____ Zip_____

universal carpets inc.

ELLIJAY, GEORGIA 30540, PHONE: 404/635-2332

For more data, circle 98 on inquiry card

For more data, circle 99 on inquiry card

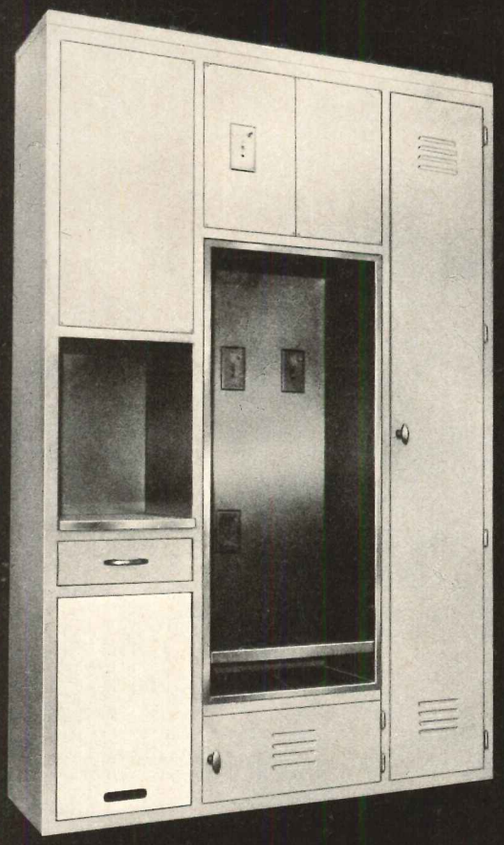
# * Of course it's a Haws drinking fountain

. . . a beautiful drinking fountain shouldn't be too obvious. Agreed? Carefully-sculpted to enhance your ideas . . . clad in the native splendor of cast stone (five colors, two finishes). The Haws Model 30 outdoor drinking fountain stands exquisitely in harmony with its setting . . . any setting. A fountain? It could almost pass for a work of sculpture. Yet this sly harmonizer is incomparably rugged—a fountain for all seasons, kid-proof, weather-proof, freeze-proof! Write **Haws Drinking Faucet Co., 1441 Fourth St., Berkeley, Calif. 94710.**

*The drinking fountain that looks better than a drinking fountain—Haws Model 30 in vivid stone.*

HAWS® **DRINKING FOUNTAINS**

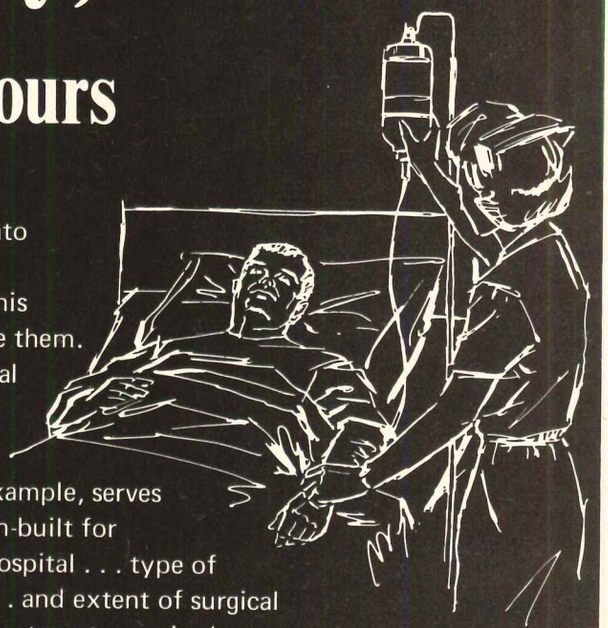
*For more data, circle 100 on inquiry card*



Custom-built AVM Intensive Care Unit, equipped for electronic monitoring keeps patients under constant surveillance.

# Humanity, Our Client

## ...yours and ours



Human problems come into sharpest focus in hospitals. The concerned architect knows this and does what he can to relieve them. For one thing, he provides hospital casework that causes no problems of its own.

Intensive Care casework, for example, serves perfectly when it has been custom-built for the type and size of the hospital . . . type of patients to be served . . . and extent of surgical and post-operative treatments required.

AVM JAMESTOWN INTENSIVE CARE UNITS MAY BE ORDERED TO YOUR EXACT SPECIFICATIONS.

**JAMESTOWN PRODUCTS DIVISION**

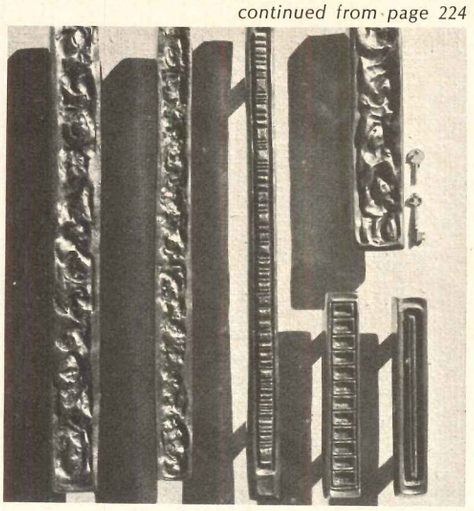
AVM CORPORATION

(Formerly Jamestown Metal Products, Inc.)

JAMESTOWN, NEW YORK 14701

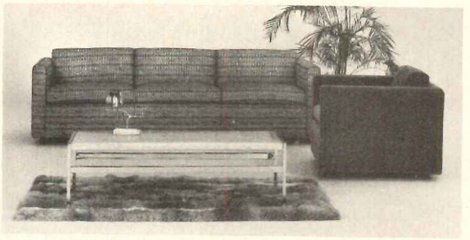



*continued from page 224*



**HANDCRAFTED DOOR PULLS** / A group of original designs by sculptor Joy Verner is cast in bronze-brass or aluminum and finished with a hand-rubbed patina or a *Granite-Gray* duranodic finish. ▪ Forms & Surfaces, Santa Barbara, Calif.

*Circle 315 on inquiry card*



**EXECUTIVE GROUPING** / This grouping of sofa, chair and coffee table can create a relaxing nook in an executive's office. The sofa, 90 inches long, and the chairs are available in a variety of coverings. The table is "sturdy enough to sit on" and is available with either walnut or mirror-chrome legs. ▪ Myrtle Desk Company, High Point, N.C.

*Circle 316 on inquiry card*

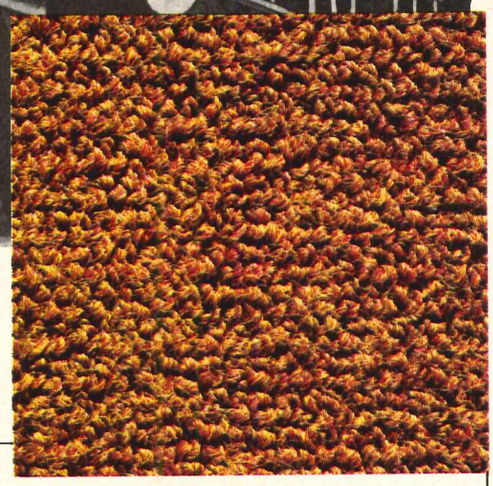
**STUDENT CENTER CARPET** / The University of Montana, Missoula, chose *Hightstown* knitted acrylic carpet for the student dining room (and several other areas) in the new University Center Building. The selection was based on the company's *Traffic Engineering* concept, by which carpet grade and style are chosen for specific areas based on anticipated traffic conditions. ▪ Kentile Floors, Brooklyn, N.Y.

*Circle 317 on inquiry card*

*more products on page 252*

*For more data, circle 101 on inquiry card*

# Is resistance still a virtue?



## Tread-Well says yes, with Vectra fiber.

New Tread-Well "Armor" tufted indoor-outdoor carpet made with Vectra® fiber resists stains, fading and wear, but can't resist being beautiful.

It's no secret that for maximum durability, indoor-outdoor carpet is hard to beat. Now from Tread-Well comes a whole new dimension in indoor-outdoor carpet. Beauty. The name is Armor... a fine gauge tufted carpet made with spun yarns of 100% Vectra olefin fiber. Armor... the closest thing yet to the luxury of Nature's own fiber... yet so stain, fade and abrasion resistant you can measure the difference in fewer commercial cleanings, lower maintenance costs.
Armor... an indoor-outdoor carpet in the truest sense. But once you see how lush and natural it looks indoors, you may not have the heart to put it outside.

SPECIFICATIONS
Pile of 100% solution dyed Vectra olefin fiber
1/10 Gauge
Pile wt.—28 oz. per yd.
Pile ht.—1/8"
Stitches per inch—8
Primary Backing
100% polypropylene

*Secondary Backings (wt. per sq. yd.)*
9 oz. jute
38 oz. high density rubber

Tread-Well Carpets, Inc. / P.O. Box 825 / Dalton, Georgia 30720
Please send me samples and information on Tread-Well "Armor" carpet.

NAME_____
COMPANY_____
ADDRESS_____
CITY_____
STATE_____ ZIP_____

ENJAY

Vectra® olefin fiber is manufactured by Enjay Fibers and Laminates Company, Odenton, Maryland, a division of Enjay Chemical Company. Odenton: (301) WO 9-9000. New York: 350 Fifth Avenue, (212) LO 3-0720. Charlotte: One Charlottetown Center, (704) 333-0761. Enjay makes fiber, not carpet.

**Vectra... the fiber that believes resistance is still a virtue.**

*For more data, circle 102 on inquiry card*

# This new fluorescent is bent on saving space.

**General Electric's Mod-U-Line* fluorescent is more compact and flexible. If you don't need it today, you'll need it tomorrow.**

Every inch counts when you're trying to squeeze fluorescents into today's compact lighting fixtures. That's why General Electric made the Mod-U-Line fluorescent. And made it with a tighter corner. It works beautifully in two-lamp fixtures. And you'll even slip three of them into a 2-by-2 foot lighting fixture. Without a puff or a groan. And the Mod-U-Line is strong. We took the extra precaution of making it of heavier glass and bracing the ends with a steel bar. So there's less chance of breakage in handling. With thoughtful advantages like these, you might think that Mod-U-Line costs more than other curved fluorescents. It doesn't—just $2.95 list for the cool white color, $3.05 for warm white. Right now Mod-U-Line fluorescents are proving themselves. Not by our talking about them—but by people using them. For further information about this more flexible fluorescent—with the faster delivery—see your GE Large Lamp Agent. Or write to: General Electric Co., Dept. C-909, Nela Park, Cleveland, Ohio 44112. We won't throw you a wrong curve.

GENERAL ELECTRIC

*TRADEMARK OF THE GENERAL ELECTRIC CO. MADE IN WEST GERMANY

*For more data, circle 103 on inquiry card*

# YOUR PEOPLE WILL MAKE JUST AS MUCH NOISE BUT THEY'LL HEAR LESS OF IT.

Sound absorbent furniture is here.

Our new TAG furniture is surfaced with Artitex, a nylon finish that swallows up noise. Artitex looks and feels like velvet, wears like iron and comes in 13 glorious colors.

TAG also restores visual privacy to open offices. With Artitex-coated screens that keep out eyes as well as noise.

And TAG is flexible. For instance, you can switch drawers and panels from one desk to another without tools or muscles. Much easier than moving a whole desk.

The TAG (Task Administrative Group) Collection was designed for the noisiest office. That's why it's best in every office. Like all Art Metal furniture, TAG looks beautiful and works beautifully. Write for name of dealer.

**ART METAL**
JAMESTOWN NY

Visit us at our AIA exhibit.

©1969 ART METAL, JAMESTOWN, N. Y.

For more data, circle 104 on inquiry card

## Summertime Swimming All Year Long

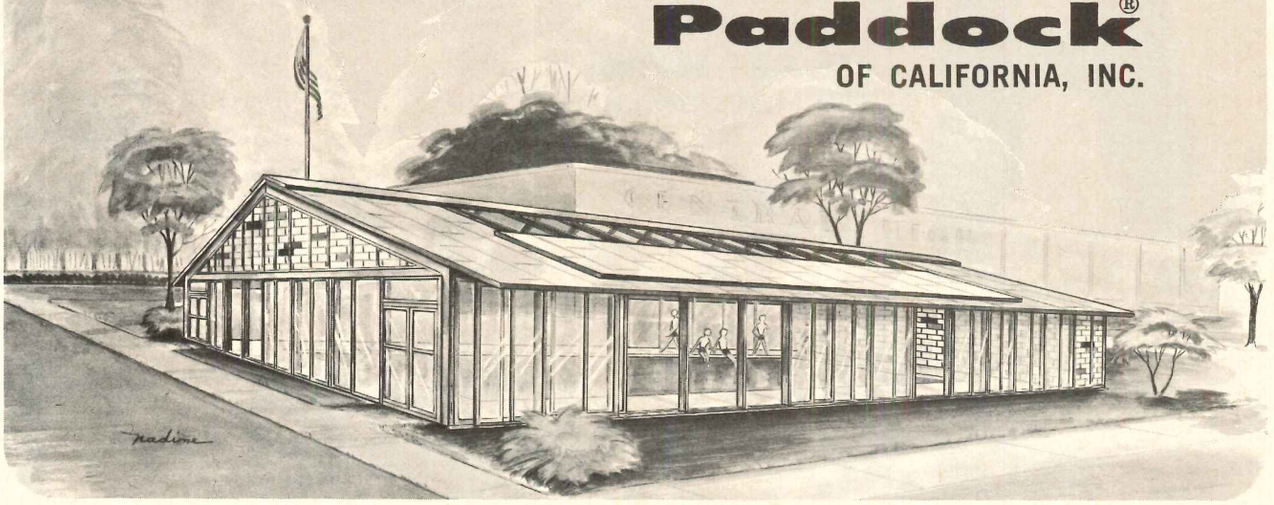
# The Paddock Skywall Natatorium

A choice of indoor or outdoor swimming is yours with a Paddock Natatorium, the enclosure designed specifically for swimming pools.

Architecturally conceived to be delightfully gay, yet to offer the permanence of a masonry structure and a freedom from maintenance never before achieved. When it's warm, almost half of the roof and two-thirds of the side walls open — still, wintertime is swimtime in comfort even at below zero temperatures. Your investment per hour of swimming is far less when the pool is enclosed.

Free detailed brochure, write Paddock Structures, Inc., P.O. Box 5308, Albany, N. Y. 12205.

**Paddock®**
**OF CALIFORNIA, INC.**



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# CHURCH USES MATCHING MOUNT AIRY GRANITE OVER SPAN OF 61 YEARS!

Here's proof-positive of the long lasting and matching beauty of Mount Airy Granite. Original church, seen at far right, built in 1907. Next is the Educational Building erected in 1952. The new Sanctuary was dedicated in 1968.

These handsome buildings exemplify the universal appeal of good design, plus the dignity of Matching Mount Airy Granite which transcends time and is always compatible to its surroundings. For complete details, write us today.

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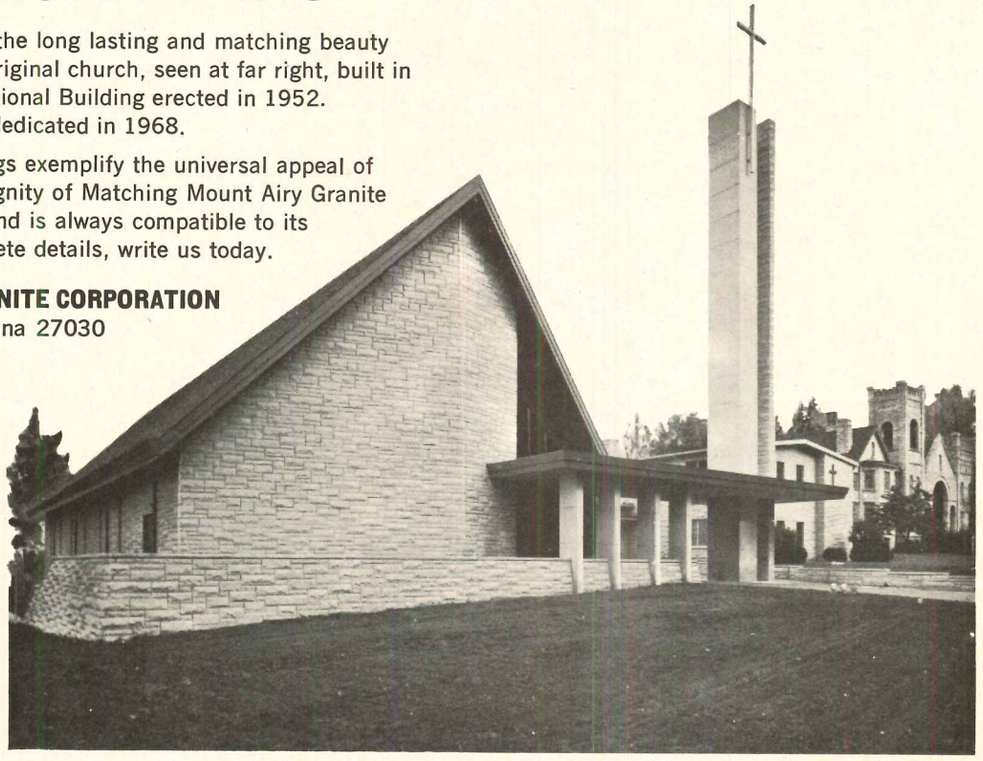

First Baptist Church, Mount Airy, N. C. Architects: Wilber, Kendick, Workman and Warren, Charlotte, N. C. Contractor: Hugh G. Strickland, Inc., Winston-Salem, N. C.

*For more data, circle 105 on inquiry card*

# After 4000 successful deliveries, we can help bring your new-born building to life with a standardized automation system.

The birth of every new building is an awesome event. For architect and owner alike. It's reassuring if the people involved in bringing your building to life have had lots of experience.

Honeywell's been through it over 4,000 times. Our one-man control systems have been pre-tested and proved in all kinds of buildings. We've got the standardized equipment down to a science, so we can concentrate on optional features that tailor the system to this particular building. That means your client doesn't have to pay the price of a custom-built, one-of-a-kind system . . . in dollars or in start-up jitters.

We'll deliver the system on time and have it working on time. And we'll back it up with operating and maintenance information we've gained over 18 years of automation experience.

Want building automation help? Send for your planning guides: Honeywell, Commercial Division, G2118, Minneapolis, Minnesota 55408.

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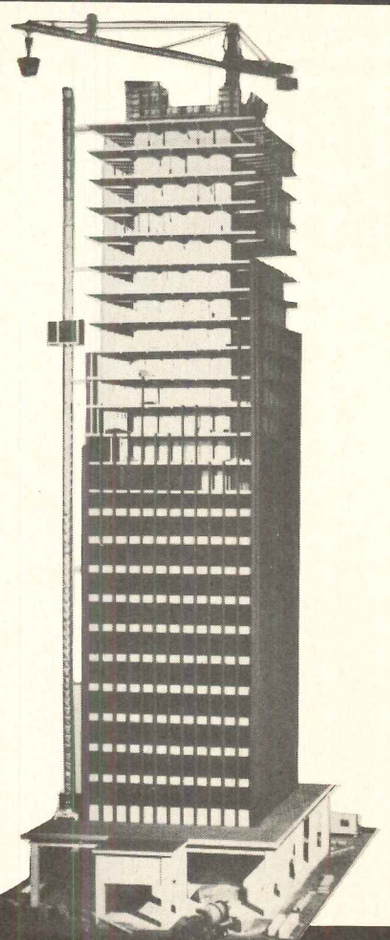
# *On the rise*

At the first joint convention and show of the American Institute of Architects and the Royal Architectural Institute of Canada the buoyancy of the construction industry on both sides of the border will be clearly evident.

Canadians are pleased to participate in this important event and eleven leading Canadian companies will be exhibiting. In addition, an 8-foot, 25 storey model will be the feature of the Canadian federal Department of Industry, Trade and Commerce stand. This will illustrate the various objectives of the BEAM* Program, designed to increase efficiency and productivity in the manufacture and assembly of **Building Equipment, Accessories and Materials.* Be sure to visit the Canadian display in the upper exhibit hall, Palmer House, Chicago, June 22-29. See how Canadian suppliers are meeting architectural demands for beautiful materials, sophisticated design.



**Department of Industry, Trade and Commerce**
**Government of Canada, Ottawa**

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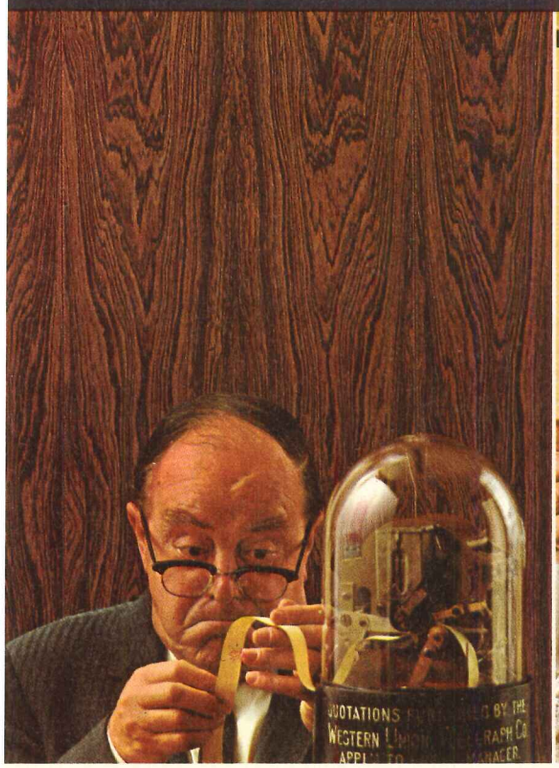
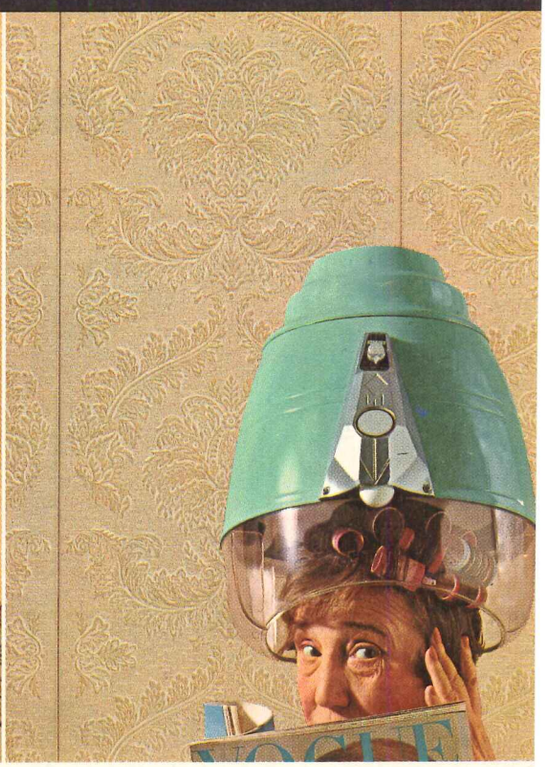
# How Marlite paneling gets involved in everybody else's business.

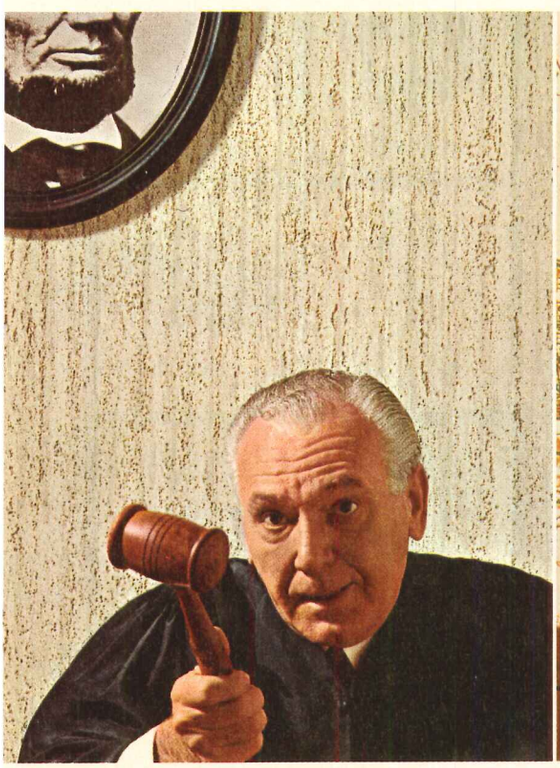



**New Rosewood** does wonders for a corporate image by capturing all the rich grain and color of hand-rubbed natural wood. Only difference: Marlite stays like new, Annual Report after Annual Report.

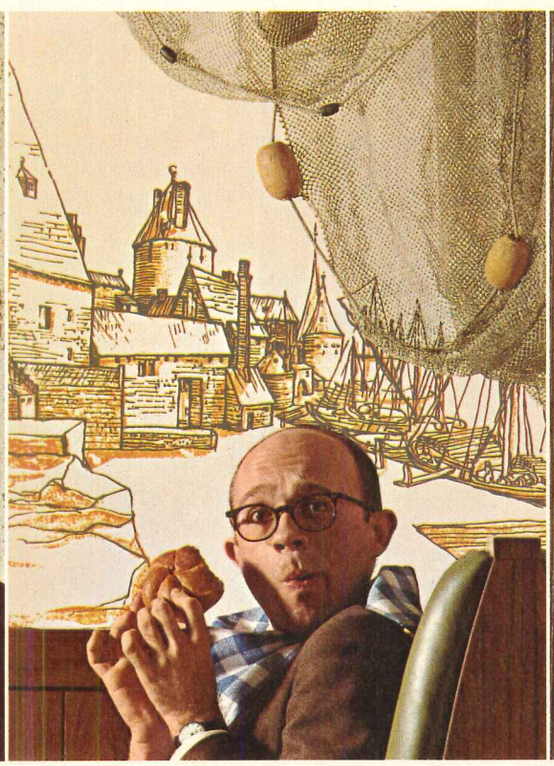
**New American Tile** is the answer where clean walls are the question. All the beauty of ceramic tile, but none of the problems of grouting. And like all Marlite paneling, this wall wipes clean with a damp cloth.



**New Antique White Tapestry** has texture you can see and feel—down to the most delicate thread. But Marlite texture can't peel off. It's deep-embossed in the panel for a lifetime of wash-and-wear beauty.



**New Lombardy Travertine** has been accused of looking like costly Italian limestone. That's the idea exactly. So if your customer wants magnificent walls without paying a heavy penalty, make a case for this Marlite paneling.



**New Marlite Mural,** entitled "Flemish Harbor," is crafted in deep brown and gold on a white background. Use this panel when you want pictorial effects in a hurry. (Marlite goes up fast without interrupting business.)

**New Textured Oak** gives you everything the real wood has except acorns. Authentic texture. Distinctive grain. Plus a rugged plastic finish that resists heat, moisture, stains and dents. A great background for any business.

See Marlite's new line of prefinished hardboard paneling (including new Fire-Test Panels) in Sweet's File or write Marlite Division of Masonite Corporation, Dept. 605, Dover, Ohio. 44622.

MASONITE CORPORATION **Marlite®** plastic-finished paneling

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6804

continued from page 244

**VINYL WALLCOVERING** / Exceptional depth of embossing and a comprehensive range of colors and color effects characterize *Hercules*, a new pattern in the *Genon* contract line. To achieve the coarse fiber, open-weave simulation without excessive weight, *Hercules* is made of an expanded vinyl. The *Genon* line is reportedly engineered to endure the heaviest institutional and commercial traffic and yet to satisfy the most diversified decor requirements. ▪ The General Tire & Rubber Company, New York City.

*Circle 318 on inquiry card*

**REFRESHMENT CENTER** / The *ODP3RH* water cooler provides, per hour, three gallons of 50 deg cold water and 45 six-ounce cups of 180 deg F hot water for instant hot drinks. In addition, there is a 1.2 cu ft refrigerated compartment. ▪ Ebco Manufacturing Company, Columbus, Ohio.

*Circle 319 on inquiry card*

**STACKING CHAIR** / A stacking chair with tablet arm is reported ideal for mass seating arrangements where note-taking is desired. The stacker has a suspended sling seat and curved back of polypropylene plastic that flexes under weight. ▪ Steelcase, Grand Rapids, Mich.

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more products on page 268


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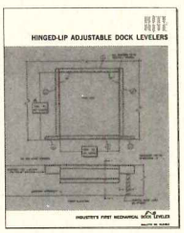
**RITE-HITE'S NEW DOCK DESIGN CATALOG**

This just-published 8-page brochure provides valuable assistance in the layout of efficient shipping facilities. Includes detailed information on dock height, driveway approach, building protection, drainage, door openings, truck-trailer lengths. Also contains complete specifications and operating data on RITE-HITE Dock Levelers.

**Complete and return the coupon for your FREE copy of this valuable time-saving brochure.**

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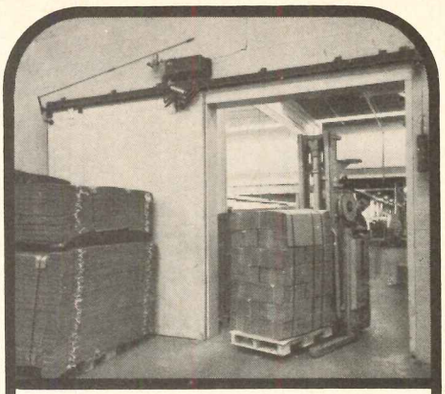

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***Specify Automatic Door Operators by Air-Lec***

The pneumatic door operator above is on a dynamic fire door at Honeywell — one of over 10,000 modern U.S. plants that realize Air-Lec door automation pays its own way through improved material flow and heating or air conditioning savings.

Don't let the compact, eye-pleasing designs fool you . . . Air-Lec door operators have offered the SAFEST, fastest operation, longest trouble-free life, and highest quality door operator value since 1921. Easily installs on new or existing doors — including fire doors — for complete, fast door automation. Allows safe manual operation.

Basic pneumatic and electrical models for most sliding, swinging, folding, bi-parting or overhead doors.

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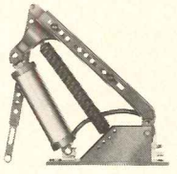
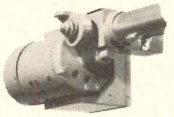

SWING TYPE

OVER-CENTER


OVERHEAD

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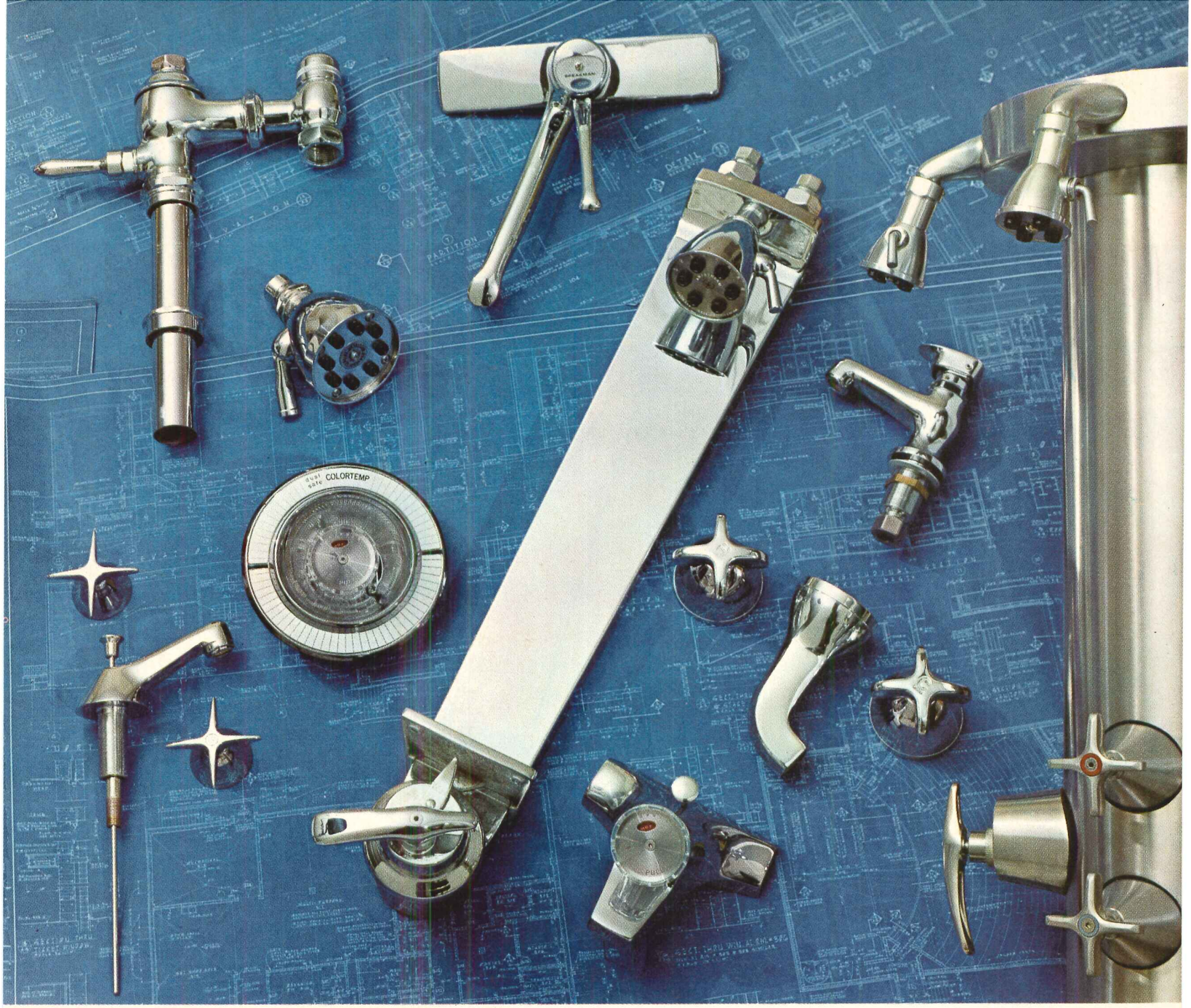


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For value, after all, is not just cost, but performance in relation to cost. And dollar for dollar, Speakman brass consistently outperforms other lines of admittedly good brass. This is what we mean by *value-rated*. It's a planned superiority built into every item in Speakman's wide spectrum of home, plant and institutional products.

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The achievement comes primarily from Speakman's patented cartridge that provides trouble-free performance far beyond that of ordinary single control valves. Maintenance costs are extremely low. The cartridge houses the *only* working and wearable parts found in COLORTEMP valves. Interchangeable in all models, the cartridge can be replaced in minutes. Specify top brass—beautifully by SPEAKMAN.

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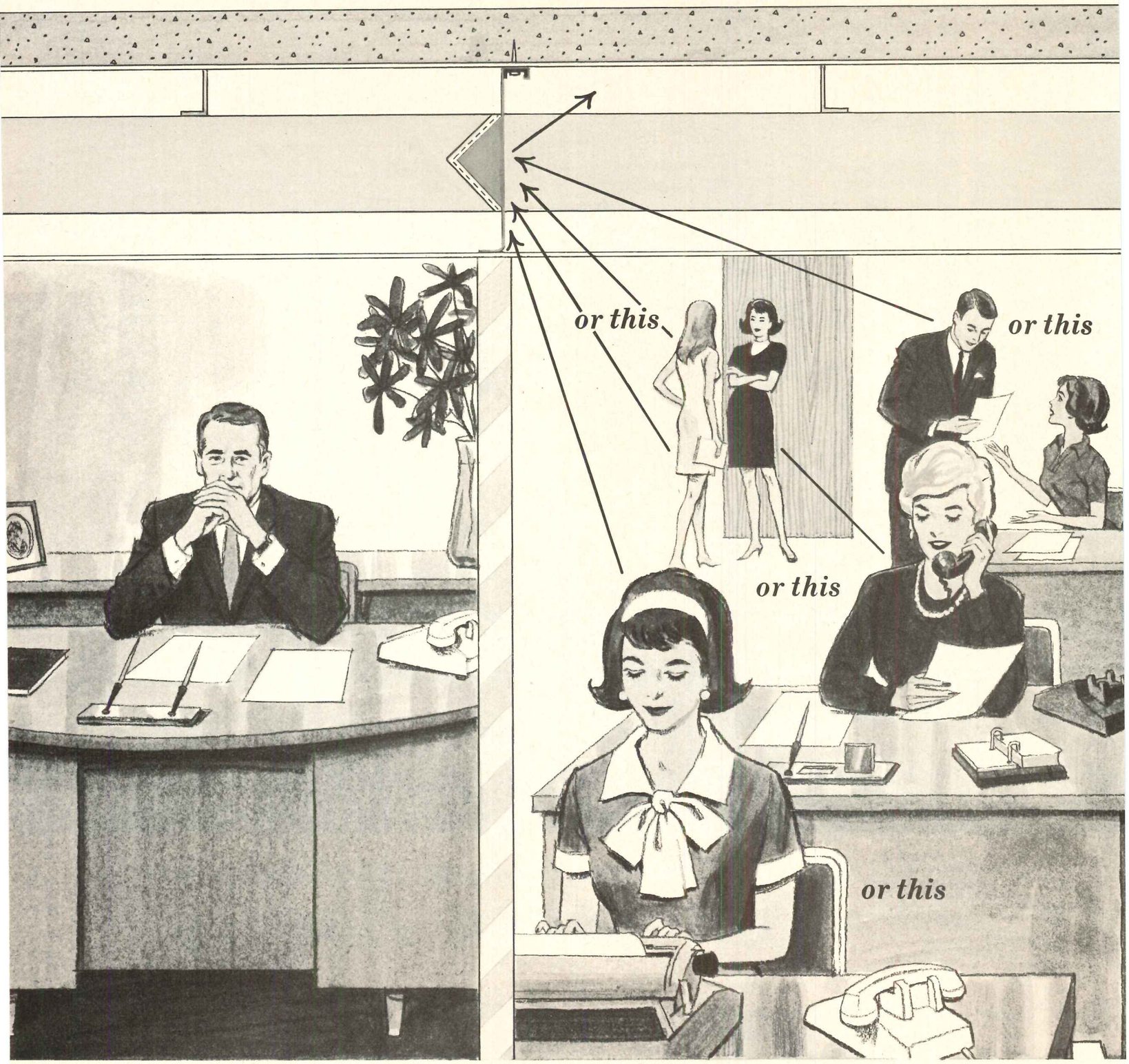


## Soundproof plenums with ACOUSTILEAD®

Most of today's office walls are all right, as far as they go. But they don't go far enough. Because they reach only from the floor to a hung ceiling, they allow sound waves to pass through the plenum areas above partitions and to travel from one office to the next.

But hang an Acoustilead plenum sound barrier from the slab above to the top of a wall or partition and you block noise effectively. Acoustilead also ensures the STC values of sound-rated partitions.

Where dry walls are extended to the floor slab above, sound leakage around ducts, pipes and wiring makes them ineffective. These leaks can be stopped by crimping Acoustilead around the obstacles to create a sound-tight seal.

Acoustilead is sheet lead 1/64" thin. It has excellent noise-reduction qualities and can be installed easily and inexpensively. Weighing only one pound per square foot, it can be cut with scissors or knife and fits tightly around ducts and vents. Acoustilead comes in handy 4' x 25' rolls.

For information on Acoustilead, write to the Sound Attenuation Dept. of Asarco.

Federated Metals Division
AMERICAN SMELTING AND REFINING COMPANY
120 BROADWAY, NEW YORK, N.Y. 10005

ASARCO

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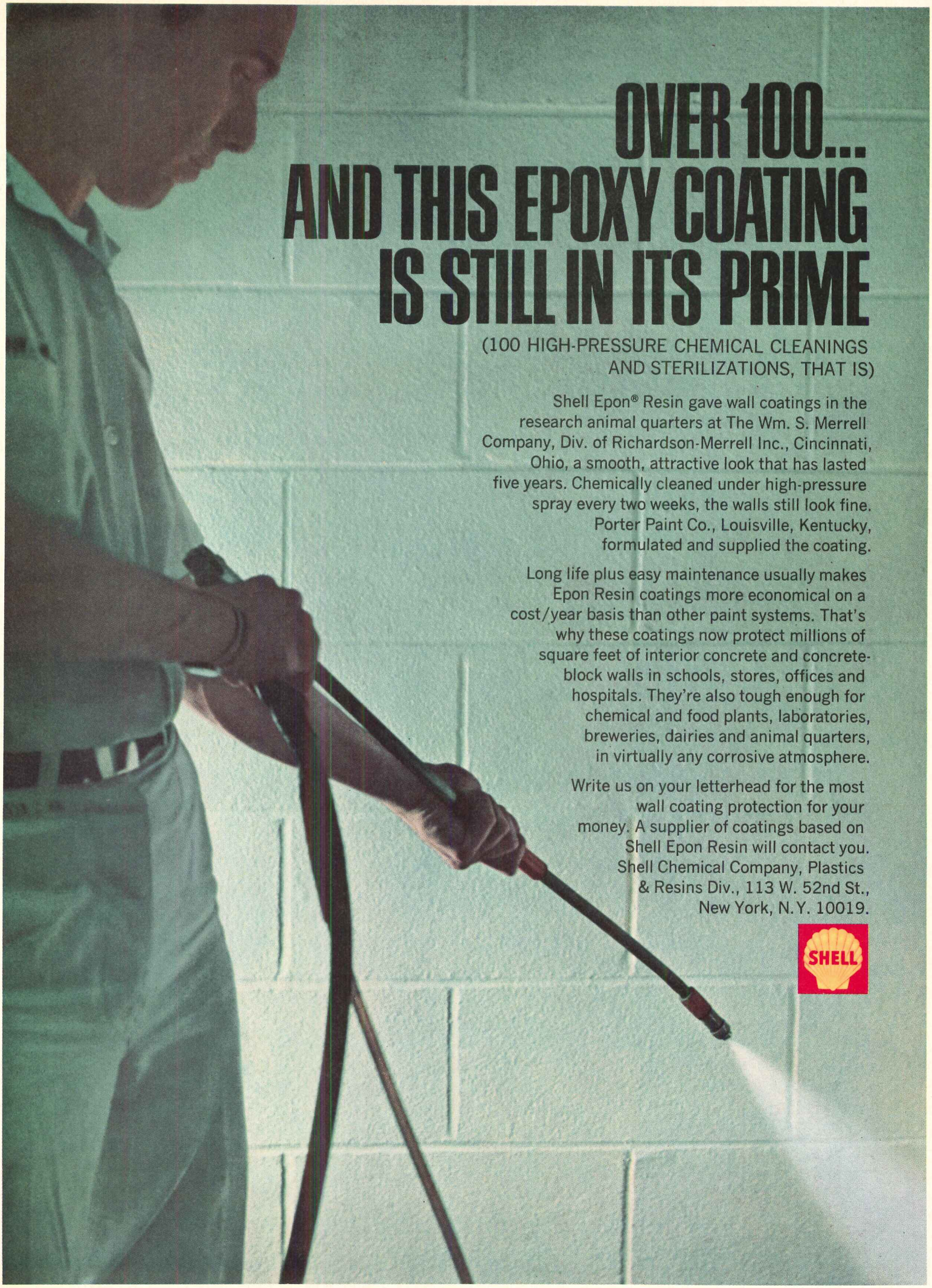


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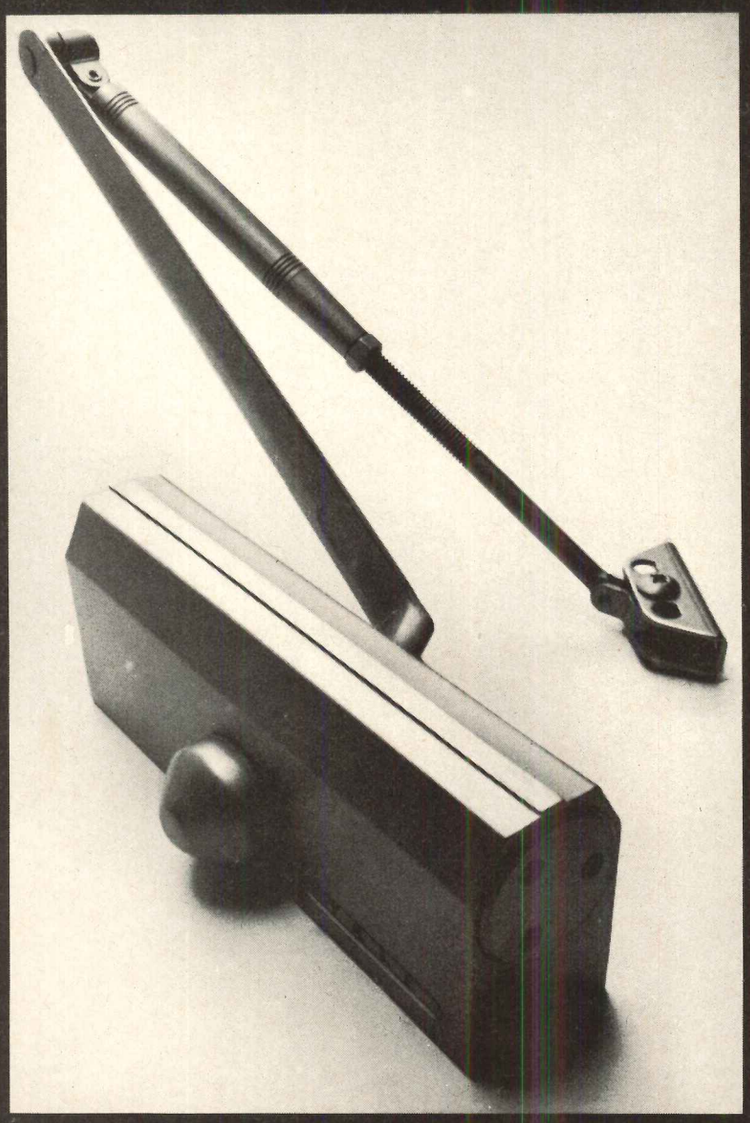
# SLAM? NO.

**A door closer you can recommend without getting the door slammed on you.**

When you recommend Yale® #50C series you're talking about a door closer that's slim enough to fit today's modern designs, and designed with no visible mounting screws to detract from its modern look.

And when you say "#50C door closer" you're also saying "no slam." The full rack and pinion mechanism and continuous checking action make certain of that. So mention our name. It opens doors. And closes them, too. For more information, contact your Yale Representative.



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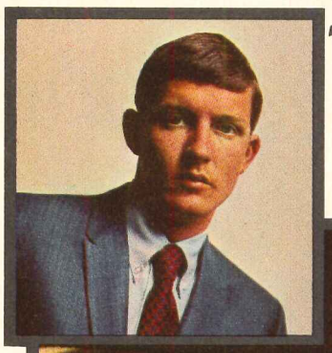

# The Commander.

He commands carpeting from Seamloc.

His name: Larry Burns of Custom Contract Interiors, Inc., Dallas, Texas. His assignment: choosing a special carpet for the interior of Trini's in Dallas. His choice: carpeting of A.C.E.® (Allied Chemical Engineered) nylon from Seamloc Loma-Loom. His pattern: Nylstone, a small stone effect, in crimson red and persimmon with high durability and low maintenance; it blends in perfectly with the Mexican motif. Allied Chemical backs carpeting carrying its A.C.E. label with a solid 3-year guarantee. Become a Commander. Write Allied Chemical Corporation, Fibers Division, One Times Square, New York, N.Y. 10036.

Allied Chemical

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*by Cramer*

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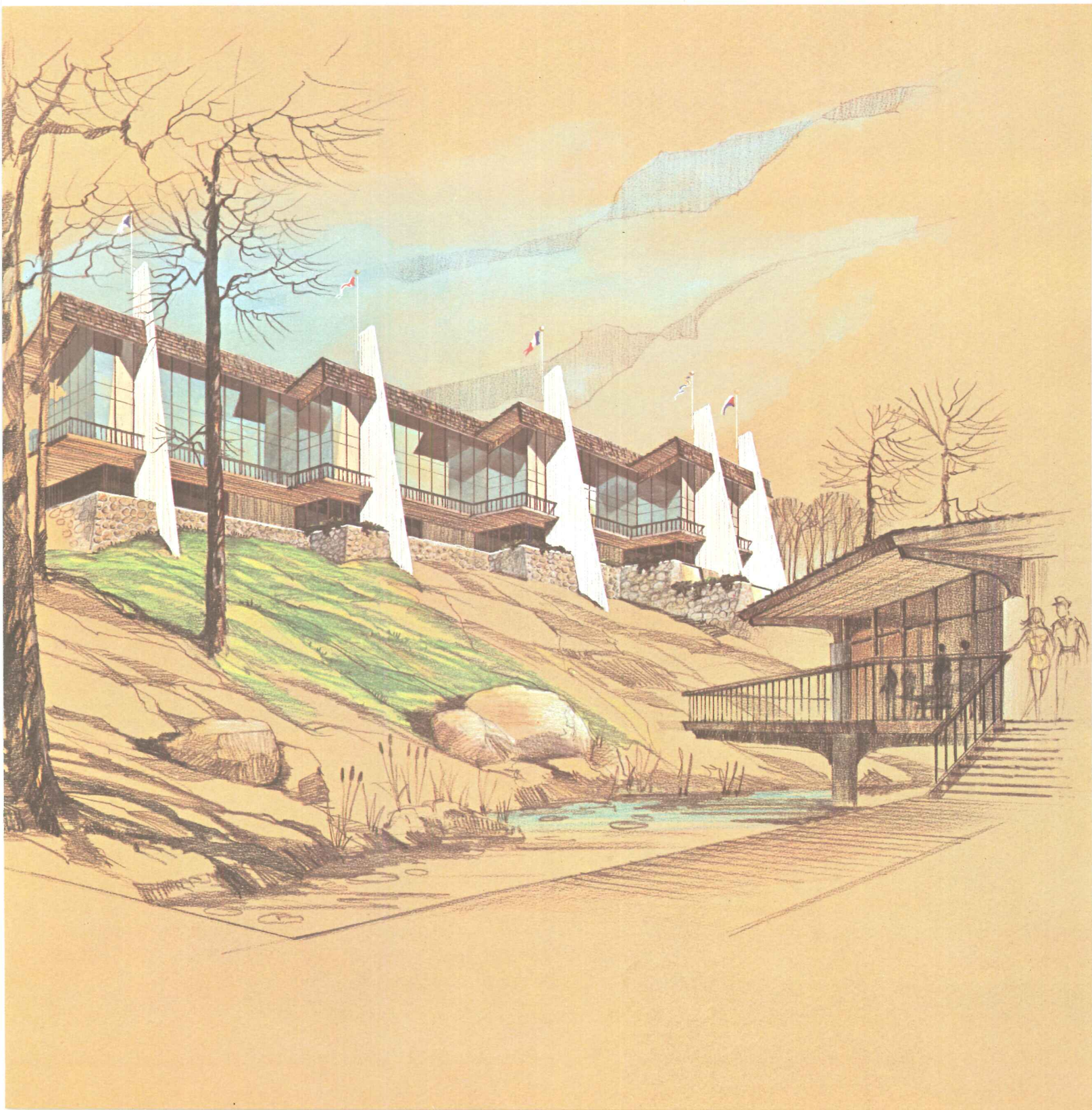
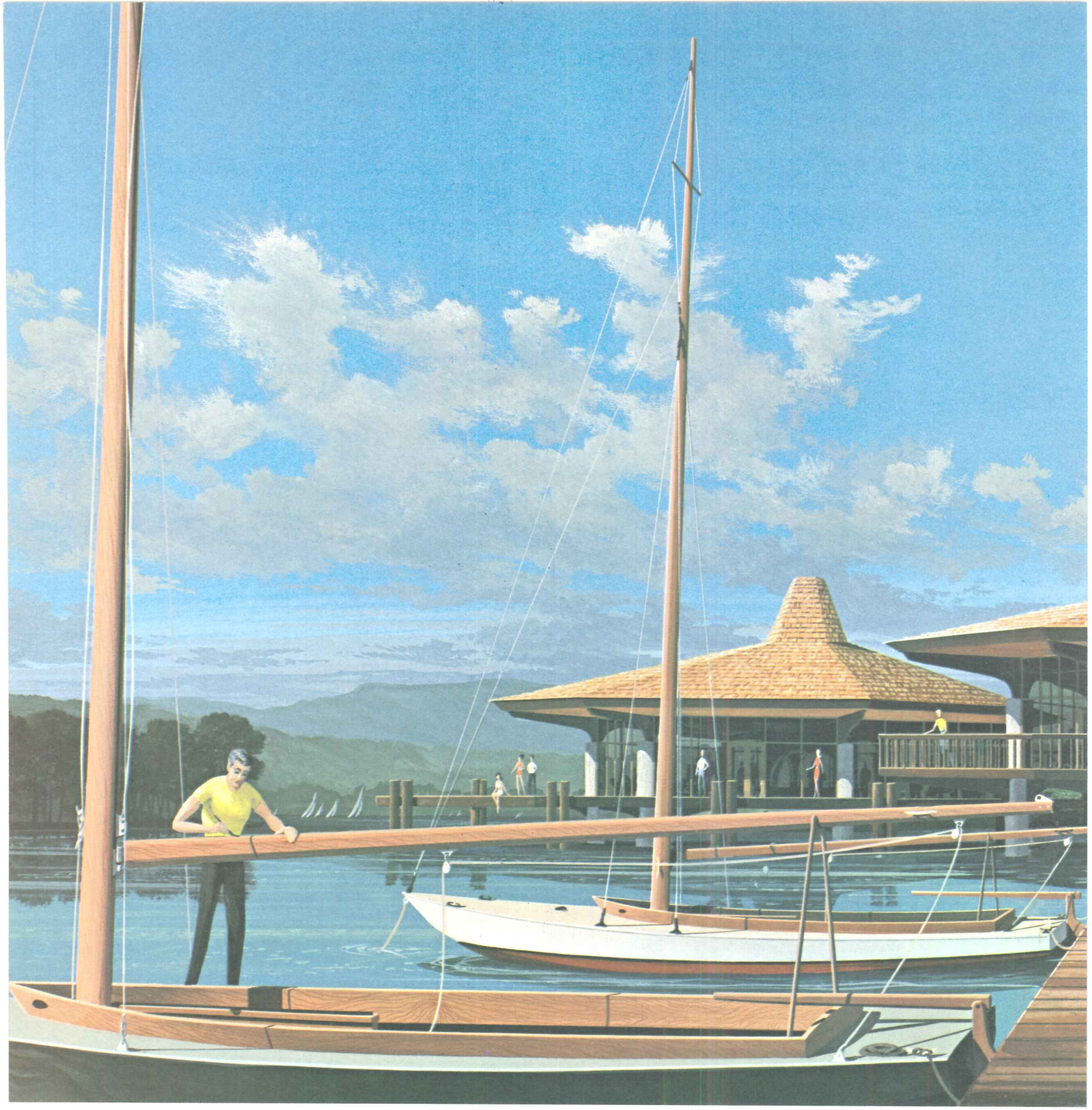
Harold R. Roe, A.I.A., of
Howard Associates, specifies

# "OUTER SPACE" GLASS
## FOR RECREATION COMPLEX

Proposed location: a water resort area in Michigan.

Problem: (1) design buildings that give vacationers a complete feeling of freedom, (2) protect them from reflected glare from the water, (3) provide economical heating and air conditioning.



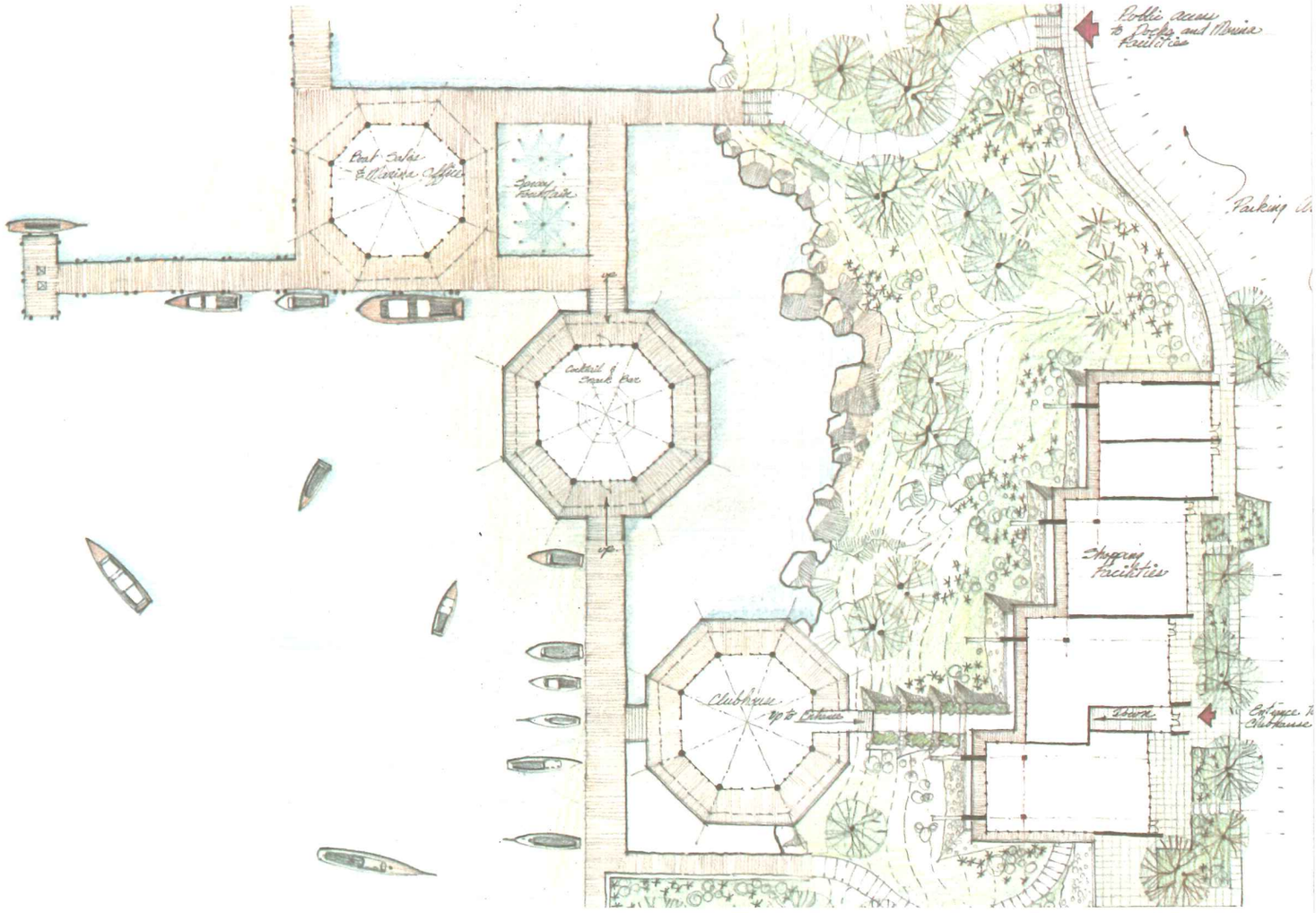


On a hill overlooking the lake is a public shopping facility. For glazing this building, the architect would specify Thermopane® insulating glass with Vari-Tran(™) chromium alloy on the inside surface of the outboard light. Vari-Tran is the metallic coating applied to the glass in a vacuum equivalent to that found by astronauts 125 miles straight up. It controls transmission of light and heat to almost any extent you want to reduce glare and make air conditioning more efficient.

*Renderings by Howard Associates, Architectural Illustrators, Sylvania, Ohio.*

Mr. Roe has designed three octagon-shaped structures—a boat sales and marina office, a cocktail lounge and snack bar, a club house. Each affords 360° view of the scenery and activity surrounding it. For glazing, the architect proposes Thermopane fabricated with Parallel-O-Bronze. This hi-performance unit controls reflected glare from the water, reduces solar heat gain to keep interiors more comfortable, and helps air-conditioning equipment function more economically.

L-O-F makes a particular kind of glass for every purpose in building design. Refer to Sweet's Architectural File. Or call your L-O-F Glass Distributor or Dealer listed under "Glass" in the Yellow Pages. Libbey-Owens-Ford Company, 811 Madison Avenue, Toledo, Ohio 43624.



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Parallel-O-Grey®, 13/64", ¼"
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HEAVY-DUTY PLATE GLASS
Parallel-O-Plate®, 5/16" to ⅜"
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Parallel-O-Bronze®, ⅜", ½"

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with Vari-Tran™ Cr Coating

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Regular,tinted or with
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ROUGH PLATE, Regular or Tinted
(Rough 2 Surfaces)
(Polished 1 Surface, Rough 1 Surface)

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*Fordham University, The Leon Lowenstein Center at Lincoln Center, New York City.* Here are 1,800 window-wall units and end-wall panels, all the same uniform shade. They were cast with a local New England gravel aggregate and ATLAS White Cement. The elements have exposed aggregate finish. The white precast in this new classroom building will be uniform for years to come because ATLAS White Cement has uniform physical properties as well as uniform color. Precast Contractor: Eastern Schockbeton Corp., Fort Lee, New Jersey. Architect: The Perkins and Will Partnership, White Plains, New York. General Contractor: Corbetta Construction Co., New York, New York. For our new "White Concrete in Architecture" brochure, write Universal Atlas Cement Division of U.S. Steel, Room 6163, Chatham Center, Pittsburgh, Pa. 15230. ATLAS is a registered trademark.

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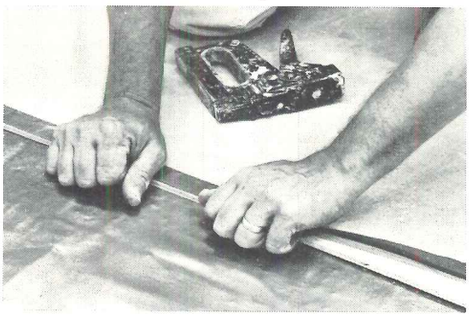
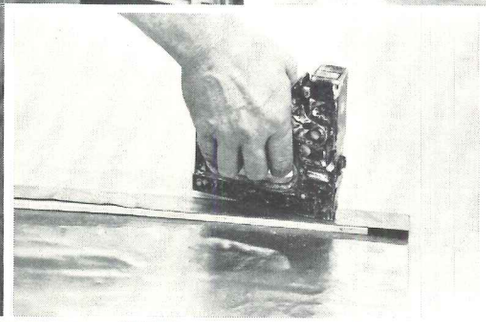
WHITE CEMENT

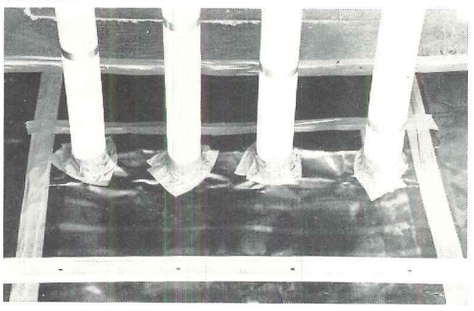
# soundproof a library?

## YOU CAN, WITH A HAMMER, STAPLE GUN, TAPE AND 1/64″ SHEET LEAD









That's the beauty of sheet lead. You can fold it, bend it (even around ducts and piping), form a tight, soundproof seal — easily and economically.

Lead provided the answer for the special problems offered by the Newark College of Engineering's new library. In addition to the essential quiet needed for the main reading room, the Newark College library has a number of special adjoining study rooms that needed sound protection from the outside world for proper student concentration. Architects Epple & Seaman of Newark specified sheet lead plenum barriers above the hung ceiling for the entire area. The sheet lead is only 1/64″ thick and weighs one pound per square foot; but it stops noise more effectively than other thicker, more difficult to manage materials.

Solve your noise problems with lead: metallic sheet, leaded plastics, bulk damping compounds and other lead products. For additional information on the use of lead for sound insulation write for your copy of "Acoustical Plenum Barriers and How To Install Them," Lead Industries Association, Inc., Dept. L-6, 292 Madison Avenue, New York, N. Y. 10017.

**Lead Industries Association, Inc.**

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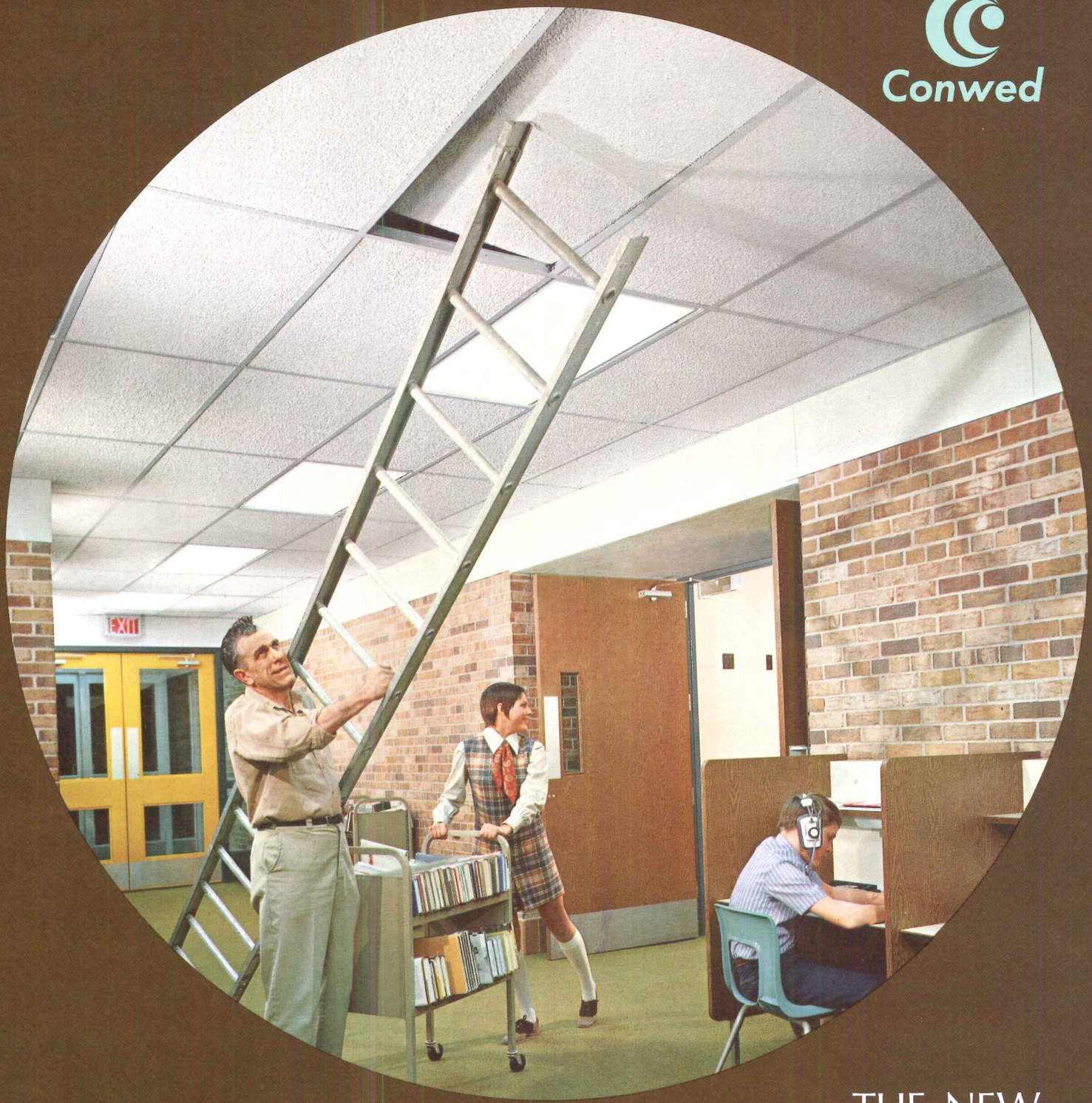
Conwed

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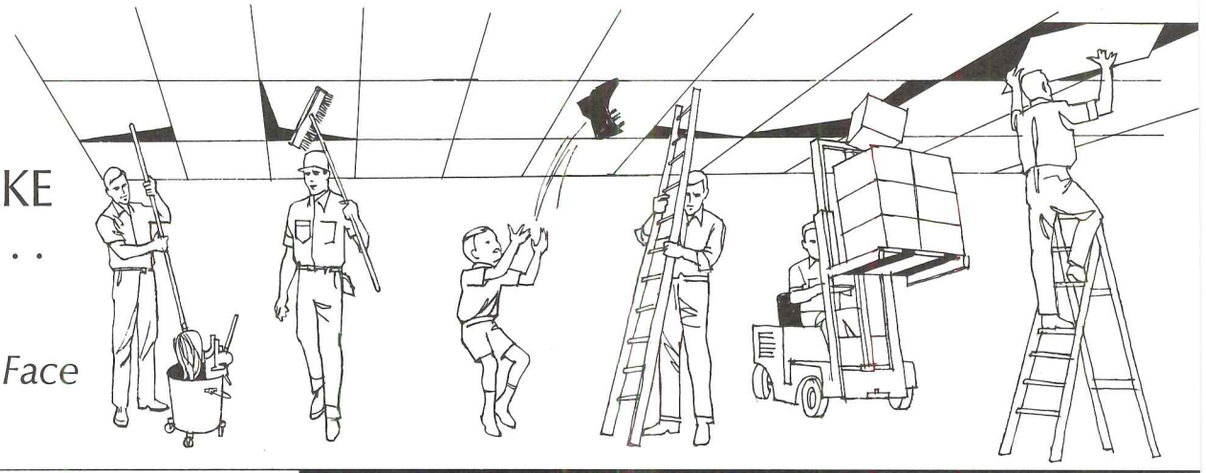
## *Specify Conwed® Rock Face Ceiling Panels*



Now, a lay-in ceiling panel designed for areas where ceilings receive abuse. Conwed Rock Face Panels can take normal blows and scuffs including rough handling during installation and maintenance. The secret is a specially compounded, ultra-hard, mineral surface with superb impact resistance. As an added plus the surface has a beautiful, natural texture.

Rock Face panels, another Conwed first, are truly "products for enduring beauty."

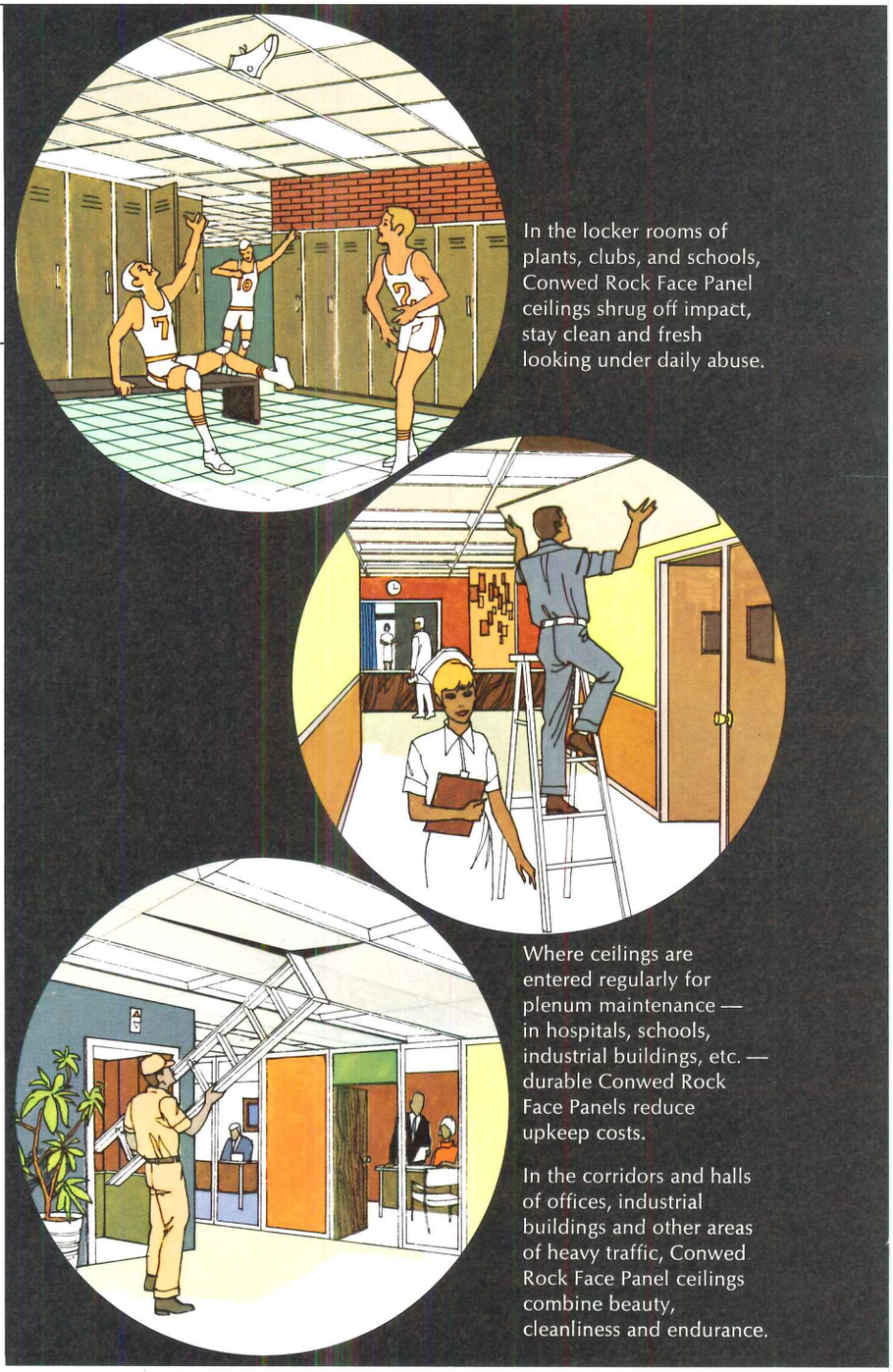
*Bold, beautiful texture • Absorbs noise • Installs fast in panel sections • Rugged, durable surface • Provides lift-out access.*

Conwed "Rough" Rock Face, a deep, naturally textured, white surface pattern; 5/8" thick panels 24" x 24" or 24" x 48".

**For more information about this exclusive ceiling development by Conwed Corporation, including specifications, installation and application data, write:**

*Conwed Corporation, Dept. C3*
*332 Minnesota Street*
*St. Paul, Minnesota 55101*

Conwed
CORPORATION
*Products for Enduring Beauty*



In the locker rooms of plants, clubs, and schools, Conwed Rock Face Panel ceilings shrug off impact, stay clean and fresh looking under daily abuse.

Where ceilings are entered regularly for plenum maintenance — in hospitals, schools, industrial buildings, etc. — durable Conwed Rock Face Panels reduce upkeep costs.

In the corridors and halls of offices, industrial buildings and other areas of heavy traffic, Conwed Rock Face Panel ceilings combine beauty, cleanliness and endurance.

FRONT PAGE PHOTO:
School corridor scene photographed in Upper Midwest.
Emphasizing the rugged beauty of Rock Face by Conwed.

# Make us prove Lyon quality takes more pushing around!

Don't try this with anything but Lyon! Anything less than Lyon double-wall construction might buckle! But seeing is believing. So come in and pound on our two-layer steel top. Notice that it's the main structural member and that the lower layer is ribbed for extra strength. Thump any flat surface! Listen! Sound deadeners are *everywhere*. Try our exclusive "lock-in-top." It controls *all* drawers. See how you can combine components to suit your needs. And speaking of "pushing around," the 100% acrylic finish will last with the furniture. See what we mean by *quiet strength—with flair*. See your Lyon dealer.

LYON OFFICE FURNITURE ®

Showrooms: New York, Los Angeles, Boston, Aurora, Ill.

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LYON METAL PRODUCTS, Inc.
651 Monroe Ave., Aurora, Ill. 60507

☐ I'd like the name of my nearest dealer

☐ Send my free copy of your full color brochure

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# fight dull pools!

Deck equipment is the first thing a client sees when they look at a completed pool. It dramatizes the beauty and lines of a well-designed commercial or residential pool. That's why it makes sense to specify graceful, sturdy Paragon Para-Flyte deck equipment for your next pool project. Para-Flyte adds zest and that "finishing touch" to any pool setting.

Paragon is one of the world's leading manufacturers of quality deck equipment. We make over 500 professionally-engineered products used in, on and around pools. Over the years we have developed a *unique manufacturing flexibility* that permits you to realize your personal architectural concepts at prices remarkably close to standard catalog items.

Write for our catalog. Or check our insert in Sweets. You will see the wide latitude possible with Paragon special or standard deck equipment and accessories.

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12 PAULDING ST., PLEASANTVILLE, N.Y. 10570
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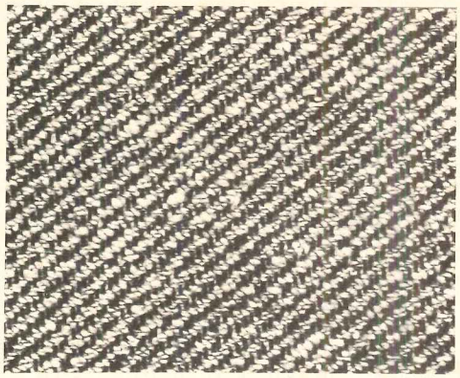
*continued from page 252*



**UPHOLSTERY** / *Coyote,* from a comprehensive collection, is an all-nylon diagonal weave with a slub look. In two-tone or contrasting colors, the pattern is available in 16 colorways. It is said to be specifically keyed for large contract installations where durable, visually attractive budget upholstery is required. ▪ Isabel Scott Fabrics, New York City.

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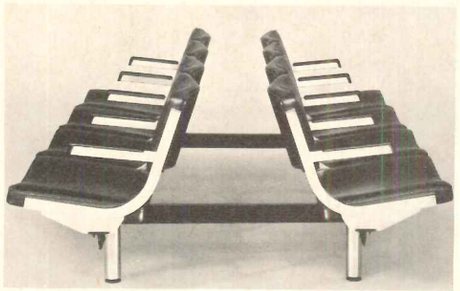

**SEQUENTIAL SEATING** / A back-to-back ganging arrangement increases the versatility of a sequential seating system. Unusually shaped seat and back cushions are said to achieve high seating density without sacrificing comfort. Units are available with bench, armless or armchair seating. ▪ Harter Corporation, Sturgis, Mich.

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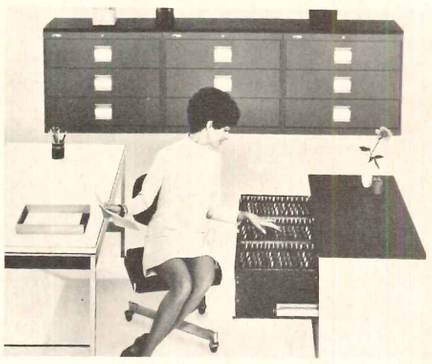

**LATERAL FILING** / An expanded line of equipment offers a variety of sizes. Special features include split drawers for card trays and freestanding sliding-door storage cabinets. ▪ Oxford Filing Supply Co., Inc., Garden City, N.Y.

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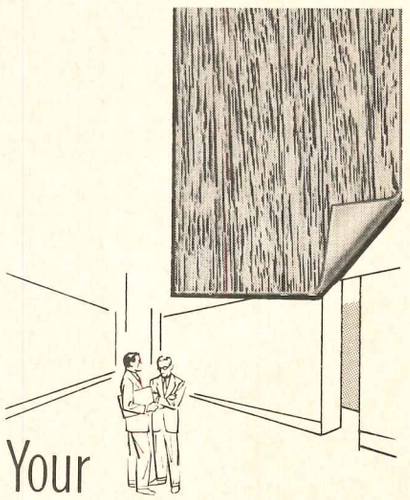

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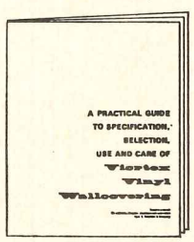


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Butler County
Community Junior College
El Dorado, Kansas

Architects: Schaefer-Schirmer & Eflin

Roof: Designer Early American by Ludowici-Celadon Co.

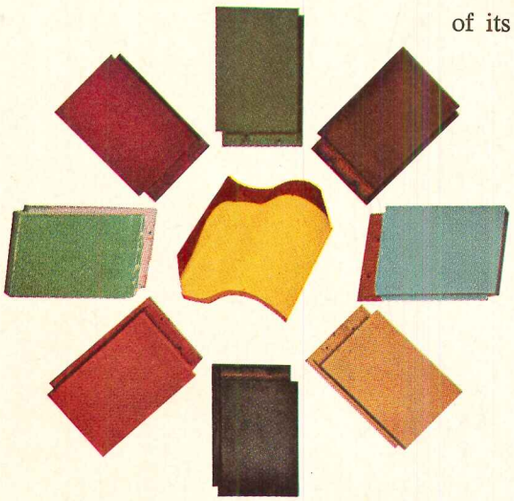
*Award-winning Architects Choose*

# Ludowici Clay Roofing Tile...

The roofs of these graceful college buildings are the focal point of attention—provide distinctive styling that set the pattern for the overall structural design.

Award winning architects prefer Ludowici Roofing Tile because of its versatile beauty—its practical durability and non-fading colors.

Varied patterns, colors and surfaces offer an unlimited choice of roof styling in hard-burned clay—all architecturally sound and with award-winning quality of design.



WIDE SELECTION OF OTHER PATTERNS, TEXTURES & COLORS

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UNIFORM SYSTEM Division No. 7

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# When it comes to setting thermostats, the girls in Martin Dorm each do their own thing.

Midwestern College, Dennison, Iowa, is a brand-new coeducational school that began in October of '65.

Now, when you start off new like Midwestern did, you can have the latest of everything.

Take Martin Dorm, for instance. Wall-to-wall carpeting, panelled walls in each room.

And to really spoil the gals, each room has its own GE Zoneline heating/cooling unit. So the coeds can set any temperature that pleases them. How's that for individuality?

But don't get the idea this is a rich kids' school. Not so. Midwestern is run on a taxpayers' budget. It's a gem of architectural efficiency.

That posh Zoneline comfort, for example, actually cost Midwestern a good bit less to install compared to traditional heating and air-conditioning systems.

True, any good zonal heating/cooling system could have done the job for Midwestern. So why was GE Zoneline the choice?

For one thing, GE service is nearby—a comforting thought to the building maintenance staff. Although with Zoneline you can keep a spare unit on hand for instant replacement. What could be easier?

The architects naturally considered GE exclusives in choosing Zoneline.

The GE rotary compressor, for instance, is much quieter than the reciprocating type generally used. Quiet enough to save a midnight complaint because of noisy air conditioning. For quietness, too, GE has a special low-speed blower.

Also nice to know, the unique GE Spinefin coils use continuous tubing to eliminate many of the brazed joints found in most air conditioners. Every brazed joint is a potential refrigerant leak. Who needs headaches like this?

Zoneline controls are prominently located on top of the chassis, and so simple, a coed's little sister can operate them.

For added reliability, GE keeps the electrical connections of each unit on the room side of the weather barrier. Why give weather a chance at them?

There are many more GE features the architects liked. The attractive grille, the washable air filter, the unique interior baffle, the positive seal air vent and so on.

Maybe the same features are what you're looking for in your next dormitory or office building. Find out. Check out a Zoneline application near you. Your GE Central Air Conditioning Distributor will tell you where.

*Zoneline Cooling and Heating Systems.*

GENERAL ELECTRIC

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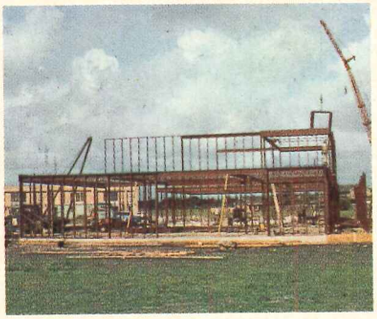
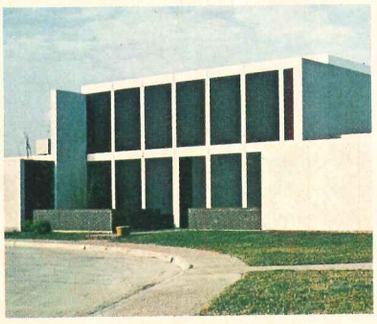
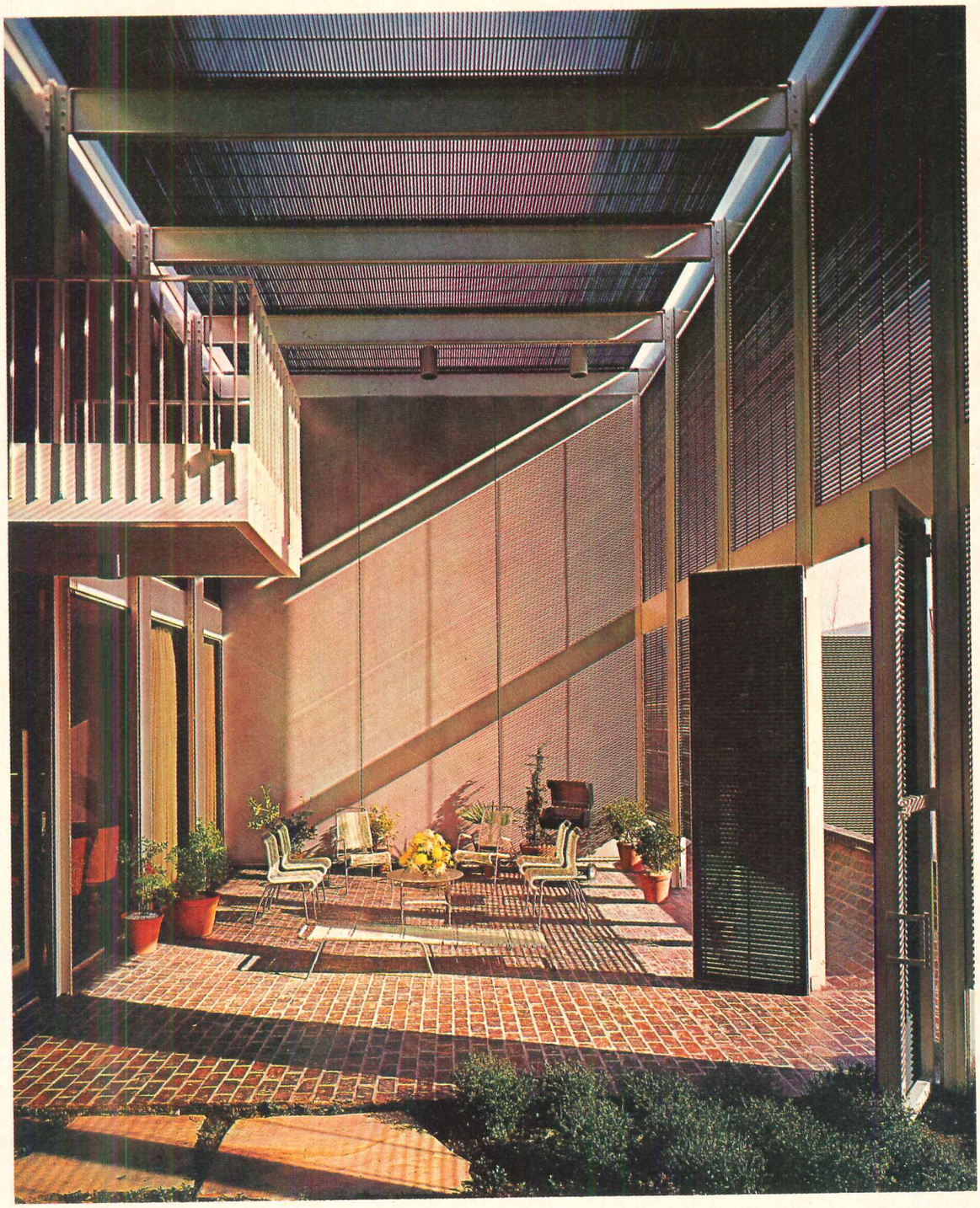
# Speed-Steel™. Now it can happen for homes.



*Terrace in the townhouse. Award winner designed by Talbott Wilson, AIA of Wilson, Morris Crain and Anderson, under the auspices of the American Iron and Steel Institute for "Style in Steel Townhouses," Houston, Texas.*





Here at this townhouse in Texas, Keene Speed-Steel™ structural framing system proves that wood no longer has the monopoly on beauty, economy and convenience of erection in residential architecture.

Competitive in cost with wood, the steel system can be put up faster, has the added advantage of being vermin and fireproof. It's pre-cut and sized by the local Keene distributor, assembled on the site with standard tools. And because Keene Speed-Steel framing studs can be nailed easily, conventional material can be used for both interior walls and exterior skin.

What's more, since the steel is lighter and stronger than wood, homes can be designed with eye-pleasing yet functional exterior walkways, balconies, cantilevered roofs.

Find out more about this remarkable steel for home and commercial building. Write: Keene Corporation, Metal Construction Products Division, Penn Metal Operation, Parkersburg, West Virginia.

**KEENE**
CORPORATION

METAL CONSTRUCTION PRODUCTS DIVISION

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

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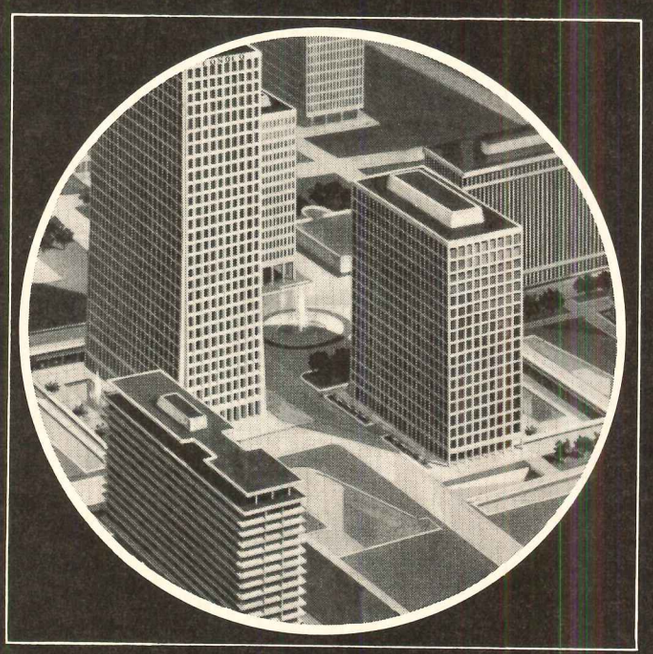
# Houston's Greenway Plaza; the $150 million city within a city.



# Zonolite Mono-Kote is making every fireproofing dollar count.

*Architects: Lloyd, Morgan & Jones, Houston, Tex.

Here at Houston's gigantic new Greenway Plaza, all the buildings have their frames, concrete or steel, sprayed with Zonolite Mono-Kote.® Why? Architects Lloyd, Morgan & Jones insisted on it.

Zonolite Mono-Kote® is the cheapest, lightest, fastest-to-apply fireproofing you can get.

Why spend millions of dollars more for traditional fireproofing methods that could double the building weight just to get the same fire rating you get from Zonolite Mono-Kote? You save on materials, materials handling and time.

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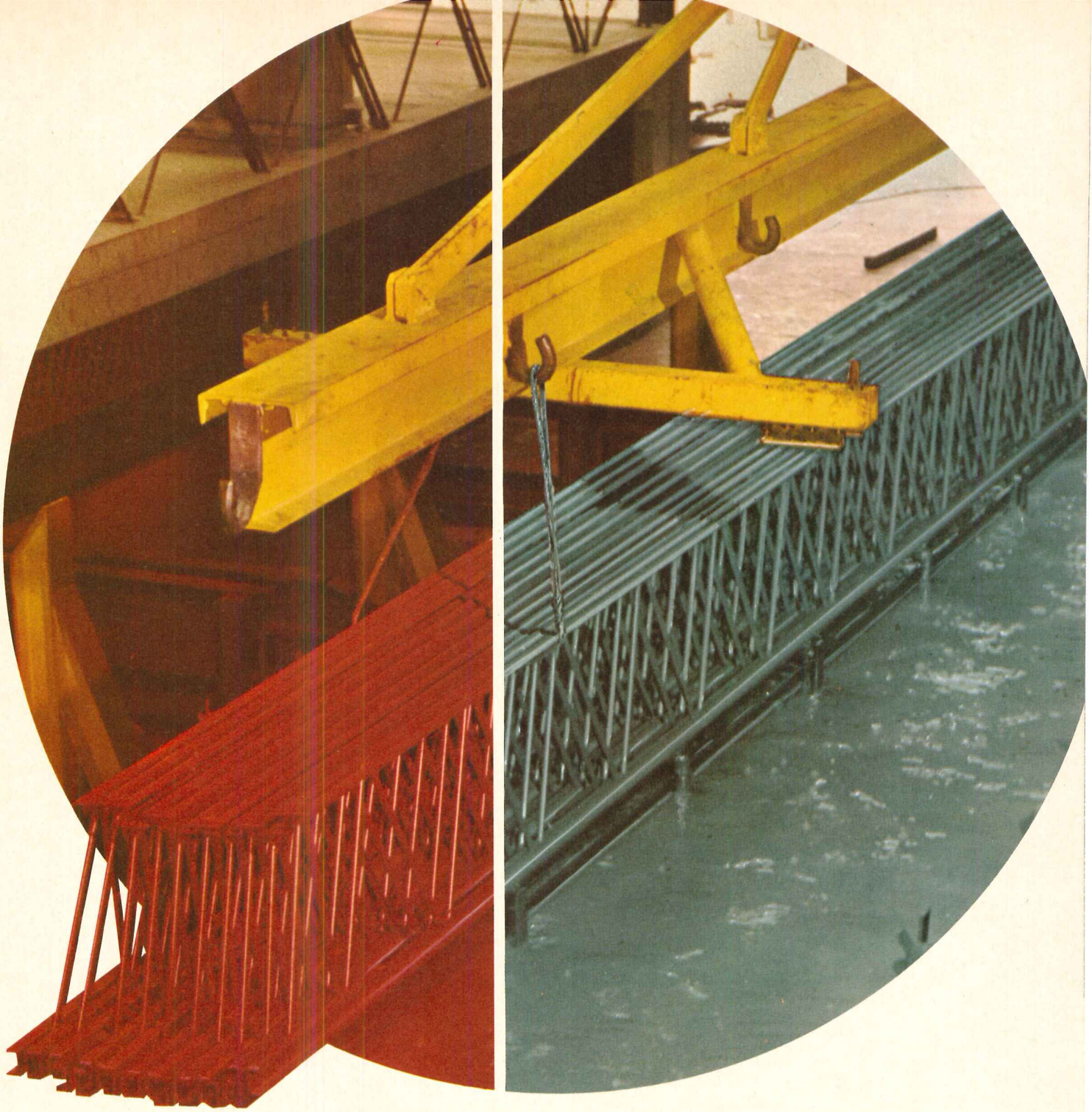
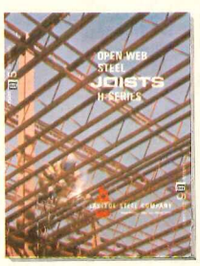


# Now...Laclede Joists Electropainted Red or Grey

Electropainting is the new process which uses the principle of electroplating to put a tough, uniform, protective coating on Laclede joists.

The positively charged joists are immersed in a bath of negatively charged paint. When current is applied, the paint deposits on the joist surfaces to uniform thickness precisely controlled by regulating voltage. After electropainting, the joists are conveyed through a drying oven and a tight, dense, hard finish results.

With this new process, coverage is complete, even to sharp edges, corners, and hard-to-reach nooks; there are no tears, drips or runs; weatherability and abrasion resistance are excellent; painting is consistent from batch to batch; coated joists have a highly attractive finished appearance. Electropaint is now available in either red or grey. Take your choice!




*Send for your free copy of a new H-Series Joist Catalogue.*

**LACLEDE STEEL COMPANY**

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*Programmed for Progress in Steelmaking*

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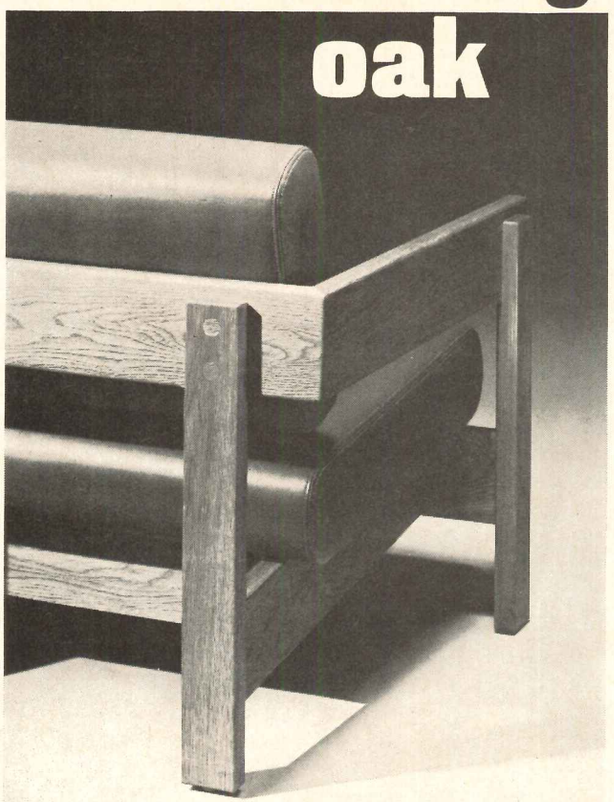
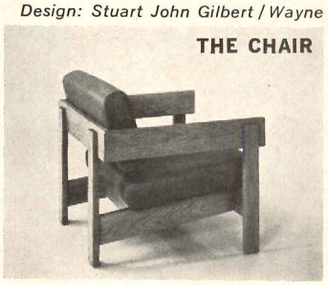
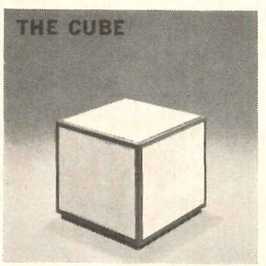
# bold, brawny oak



*Design: Stuart John Gilbert / Wayne W. Good*

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## Don't let your client down after the building is up . . .

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Now you can have upgrade janitor's closets or maintenance rooms. MOLDED-STONE® from Fiat makes this mop service basin modern, attractive and fully functional, with greater utility and cleanliness. Features self-draining mop shelf, molded integral; cast brass drain; stainless steel dome strainer and lint basket; crash-proof, extra-thick shoulders that need no protective cap. Super-strong MOLDED-STONE® cuts weight to 20% of masonry, provides a smooth, easy-to-clean surface.

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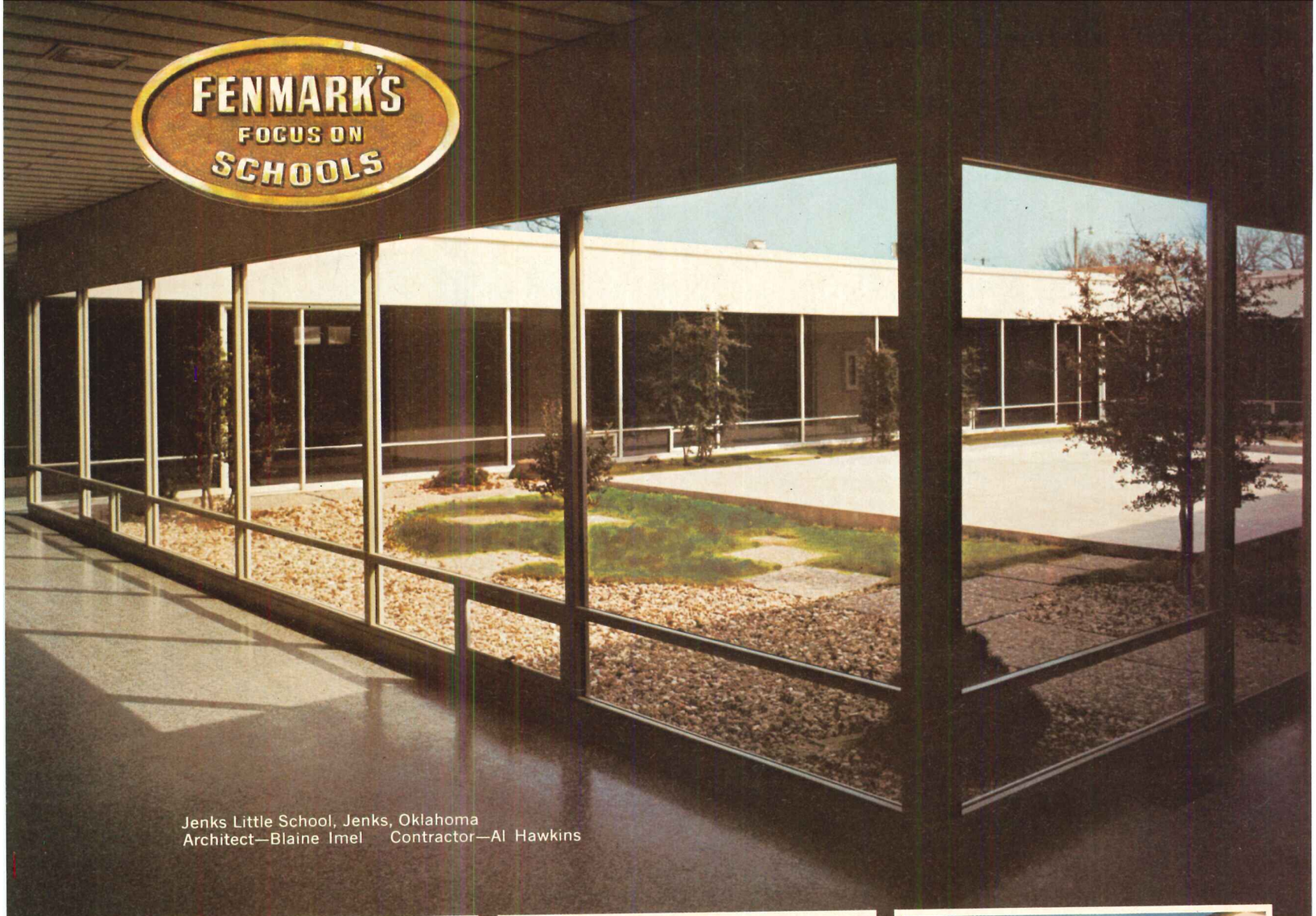
# FENMARK'S FOCUS ON SCHOOLS



Jenks Little School, Jenks, Oklahoma
Architect—Blaine Imel  Contractor—Al Hawkins

North Elementary School, Waukegan, Illinois
Architect—Swanson & Ladehoff

St. Christines—Industry, Pa.
Architect—Kenneth Roos

Fort Crook School, Omaha, Nebraska
Architect—Martin, Money and Assoc.
Contractor—Butler Construction Co.

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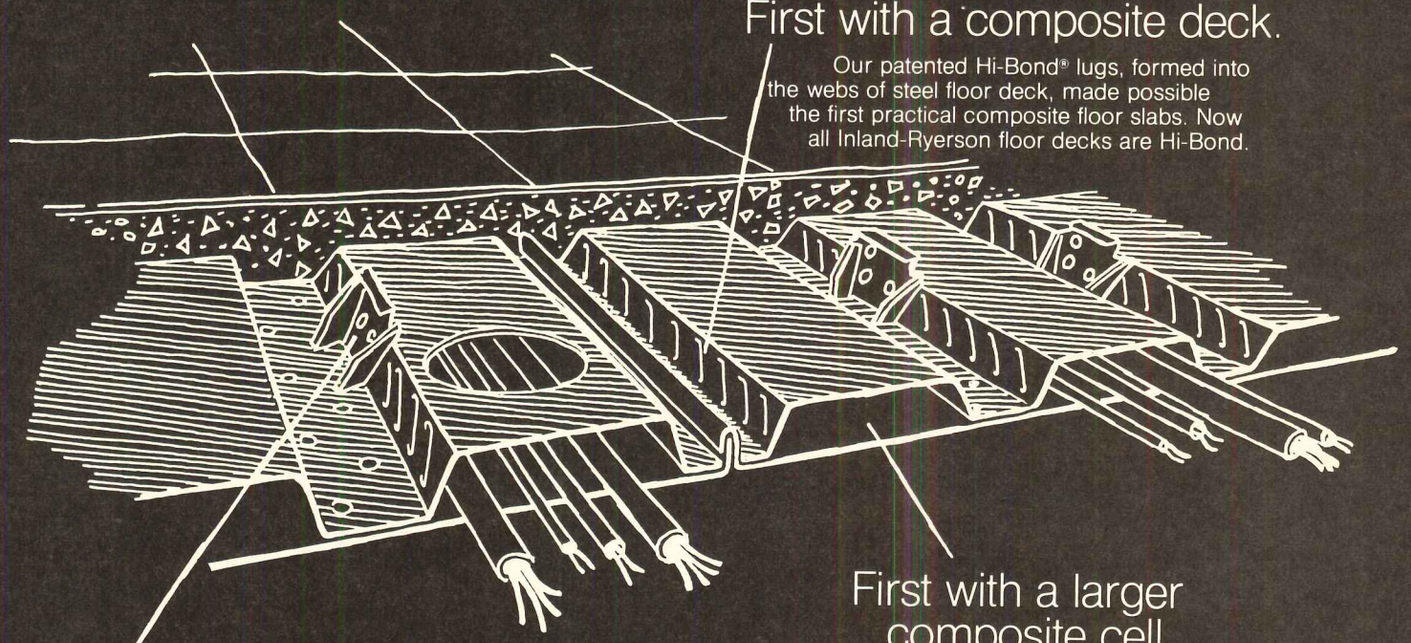
# Composite design? Think of Inland-Ryerson first.



## First with a composite deck.

Our patented Hi-Bond® lugs, formed into the webs of steel floor deck, made possible the first practical composite floor slabs. Now all Inland-Ryerson floor decks are Hi-Bond.

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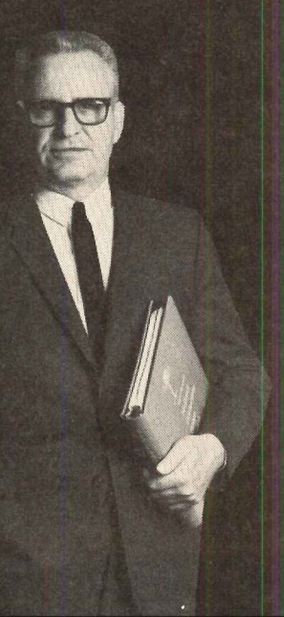
1⅝" NF Celluflor®, by Inland-Ryerson, offers the first 8" cell that is compatible with 1½" composite floor deck requirements. This means 66% greater capacity than conventional 1½" floor cells.

## First with a tapered shear connector.

Shaped to take advantage of floor deck geometry, new Inland-Ryerson shear connectors are more efficient than any other design. And they can be welded with conventional field-welding equipment through all deck finishes, even through double thickness cellular sections.

## First with information and assistance.

Our sales engineers have the experience and design data to help you select the most effective and economical components for composite beam design. Phone your nearest Inland-Ryerson office today, or write for new Catalog 272 which describes Inland-Ryerson composite design concepts. Inland-Ryerson Construction Products Co., Dept. F,4033 W. Burnham Street, Milwaukee, Wisconsin 53201.



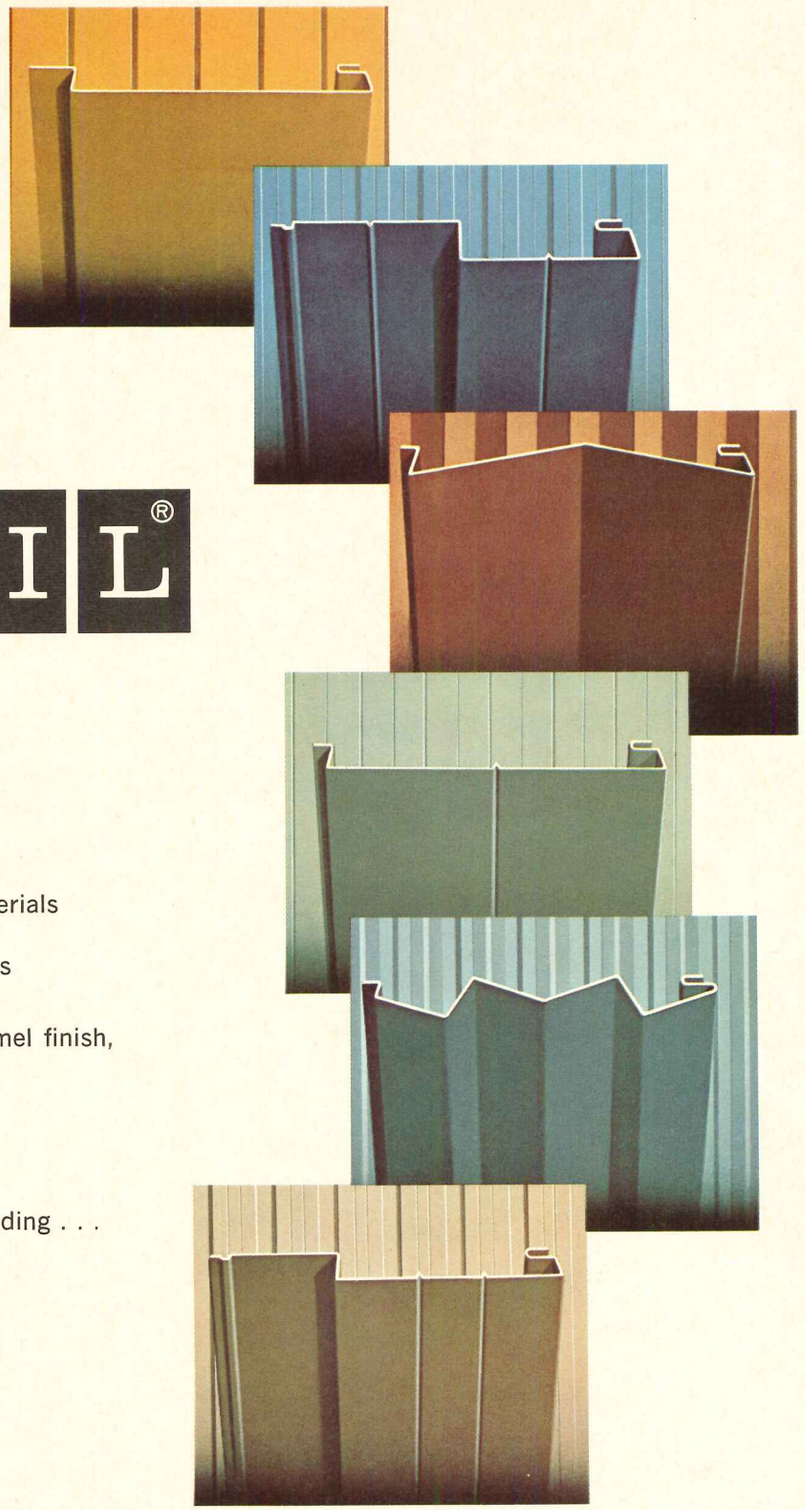
INLAND RYERSON

A member of the INLAND steel family

# Robertson has 30,112 recipes, planned to please a designer's palate!

# DURASIL®

## is one of the magic ingredients.



Did you know that Robertson's wide range of face and liner profiles, colors, finishes and materials offers a selection of more than 30,000 different design combinations for architectural walls?

Durasil, Robertson's silicone-polyester baked enamel finish, plays a colorful role in this presentation of design opportunities. But color is only part of the picture. Permanence is the strong point with Durasil. Factory-applied to Robertson panel shapes, Durasil's 50% silicone formula is proof against fading . . . will not chip, check, crack, blister or peel, even after years of exposure to the elements.

If you would like more information on this low-cost approach to colorful, long-lasting architectural walls, write today for your free copy of the Durasil brochure.

## H. H. Robertson Company

**H. H. Robertson Company**
**Two Gateway Center • Suite 1102**
**Pittsburgh, Pennsylvania 15222**

Please send me a copy of the Durasil brochure.

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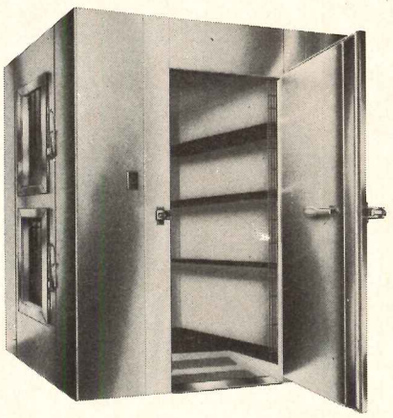
I want a walk-in with one full-length stainless steel door and a steel plate, Ramp-In floor and adjustable wire shelving and an Automatic Defrost-Vaporizer and two half-length glass service doors and an Alarm System and I want it yesterday.

**You want Nor-Lake. With a full range of components and options, the only thing we won't change is the quality.**



**NOR-LAKE INC.**
Second and Elm, Hudson, Wisconsin 54016
Phone: 715-386-2323 Dept. 3160

*Pride is contageous at Nor-Lake*

Over 270 models—all designed to NSF configurations.
Sweets File 23a/No.

And I want more information about Nor-Lake Walk-Ins.

Name:_____

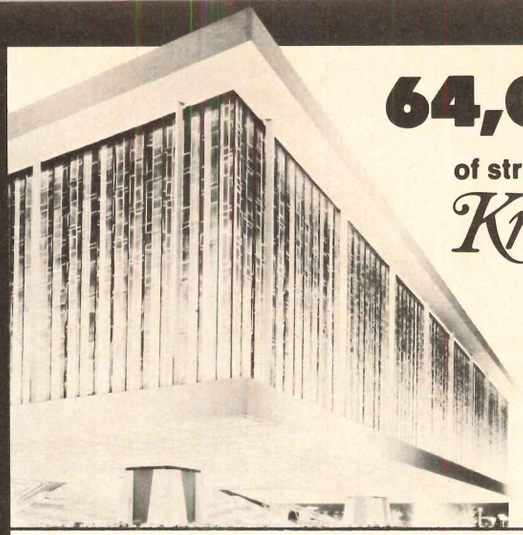
Address:_____

City:_____ State:_____ Zip:_____

I need Refrigeration Equipment for_____

_____

*For more data, circle 132 on inquiry card*



**64,000 □'**
**of structural**
*Krinklglas*®

*Specifically manufactured for*
**the U. S. (Federal) Pavilion at the New York World's Fair.**

A masterful installation, which after 5 years remains brilliant, strong, and as good as new!

We also originated (1959) copolymer marble and natural cleft slate, available in sheet, slab and core (plug) envelopments, in any color for exterior or interior use. This was only the beginning...

***TODAY, NOTHING IS IMPOSSIBLE... ANY IDEAS???***

**DIMENSIONAL PLASTICS CORP.**
**1065 E. 26th St., Hialeah, Florida 33013, Tel. (305) 691-5961**

**please refer to Sweet's/Plastics 1969** 5a/Di
**Sweet's/Interior Design File—Vol. 8 Materials B1 Plastics a**

*For more data, circle 178 on inquiry card*

**How to provide efficient internal communications:**

**USE "*Instant Indoor Airmail*"**

**A modern Pneumatic Tube System** can often pay for itself in less than a year. Not only does it slash the cost of messengers—it also speeds communications, increases efficiency, eliminates verbal misunderstandings.
**Ideal for hospitals,** office buildings, libraries, banks, factories, warehouses, etc. We take start-to-finish responsibility . . . backed by a half-century of experience in the pneumatic tube business.
**Get cost-saving facts.** *Write today for illustrated literature.*

**Standard Conveyor COMPANY**

312-F Second St., North St. Paul, Minn. 55109 • Tel. 612: 777-1355

*For more data, circle 179 on inquiry card*

# Bright idea

**Specify a complete wash center with one word: Bradpack!** The economy of a complete, preassembled wash center, including the accessories of your choice. Everything design-coordinated Plus foot control. Plus beauty and ease of installation. You get them all when you write "Bradpack." You can specify from 3 models: full length unit or lav section only, both with foot control; or lav and upper section only, with wrist blades for wheel chair patients. All are stainless steel, completely preassembled and ready for installation. For hospitals, motels, dormitories—all public and private washrooms—write "Bradpack." Got the word? See your Bradley representative. And write for literature. Bradley Washfountain Co., 9109 Fountain Boulevard, Menomonee Falls, Wisconsin 53051.

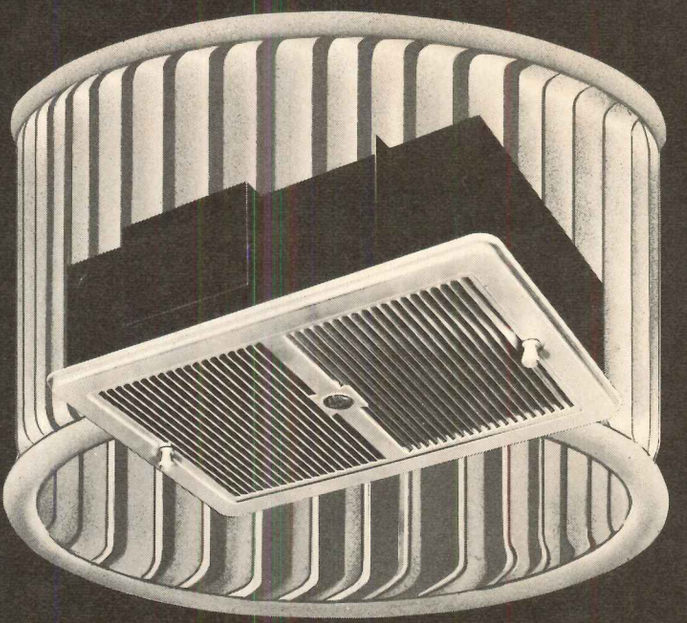
# from Bradley!

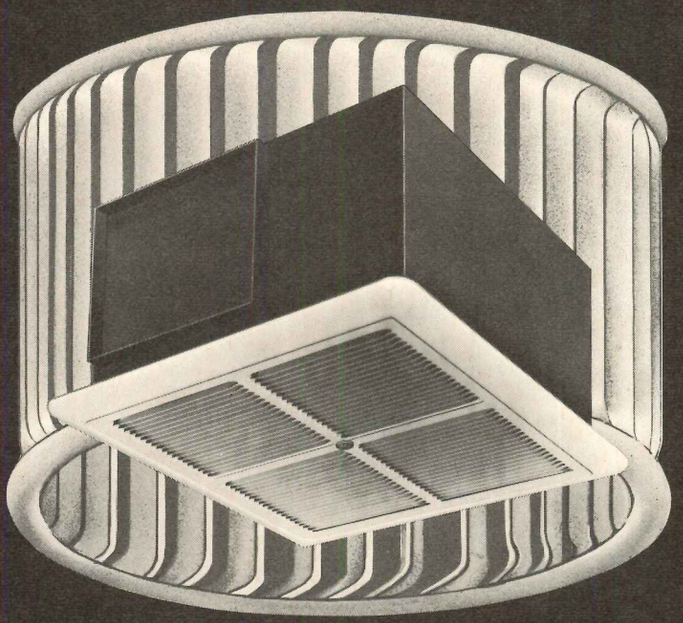
BRADLEY

*For more data, circle 135 on inquiry card*

# *Quiet!*

## *With Trade-Wind QT Ventilators*





The quietness of the remarkable Trade-Wind QT Ventilators is achieved through the use of a single over-sized wheel turning at a low speed. The minimal motor vibration is dampened out at the source through the use of special motor mount assemblies. The heavy gauge housing is virtually free of vibration.

For maximum QUIET, specify QT:
V-QT-90: 90 CFM at 0.1″ static pressure
Chrome grille.

V-QT-200: 190 CFM at 0.1″ static pressure
V-QT-300: 285 CFM at 0.1″ static pressure
V-QT-400: 425 CFM at 0.1″ static pressure
Neutral beige enamel grille.

*Write for details.* *Trade-Wind by* **THERMADOR**

*5119 District Blvd., Los Angeles, Calif. 90022, Dept. AR*

*Division of Norris Industries*

Los Robles Hospital, Designed by C. H. Jones, A.I.A.

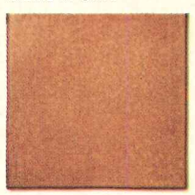
## Franciscan Terra Floor—
## A contemporary ceramic tile for contemporary designs

***The new family of Franciscan ceramic tile products which has emerged from the modern movement in the design studios of INTERPACE is typified by the "Flashed Walnut" color of Franciscan Terra Floor. This glazed ceramic tile in a nominal 12" x 12" modular size is distinguished by rich earthy textures and colors.***

***Striking, unconventional floor beauty is only one of the advantages offered by Franciscan Terra Floor. Other characteristics which add value to any building are its rugged durability and minimum maintenance. It can be used in a wide variety of exterior and interior applications in all types of climate. Most important—Franciscan Terra Floor is competitive in price with many less desirable materials.***

***Join the modern movement in tile by specifying Franciscan Terra Floor on your next project.***

Mums in Olive



Pebble in Brown

Floral in Antique White

Franciscan® Terra Floor INTERPACE®

**2901 Los Feliz Boulevard, Los Angeles, California**
**1275 Harrison Street, San Francisco, California**
**945 Elliott Avenue West, Seattle, Washington**
**260 Cherry Hill Road, Parsippany, New Jersey**

Obtain complete information from Sweet's Catalog

*For more data, circle 136 on inquiry card*

*For more data, circle 137 on inquiry card*

Approximately half actual size

# Pilkington Deep Flemish for a bold design on light

See the Pilkington range for bold, brilliant Deep Flemish; and for individual exclusive designs in patterned glass— glass that divides space and shares light, versatile, with a real place in modern design. For samples, and further information please write to Dept. P, c/o Architectural Record, 330 West 42nd Street, New York, N.Y. 10036

PILKINGTON GLASS

*For more data, circle 138 on inquiry card*

# A translucent floor tile!

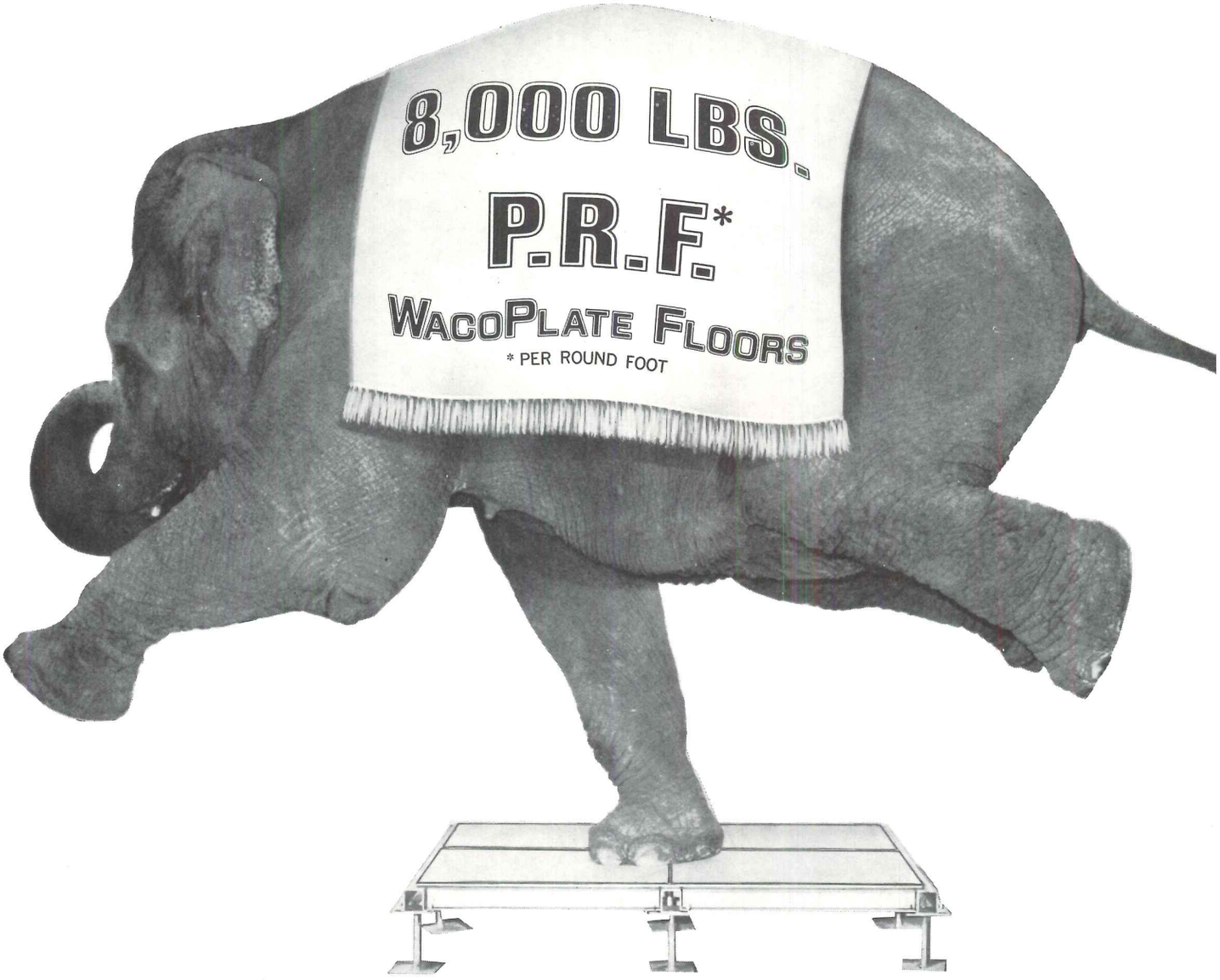
# Why?

For those who want to create floors with a soft inner glow. Light doesn't bounce off the surface of a VINTAL floor, but penetrates, returning spread out and diffused. Imagine what this can do to a room. ☐ There isn't another floor like totally new VINTAL. Here is a tile with the translucency of fine china, the deep down beauty of real marble, the luxurious look of homogeneous vinyl and the versatility of vinyl asbestos tile . . . all at a low cost that will surprise you. ☐ VINTAL by Flintkote®, the new quality standard in floor fashion — subtle elegance is now practical and economical.

## VINTAL® VINYL POLYMER TILE

FLOORING PRODUCTS DIVISION
480 Central Avenue, East Rutherford, N. J. 07073

FLINTKOTE®




# OK, load our raised floor with 8,000 pounds on one foot!

## (but don't try it with any other floor)

WacoPlate Raised Floors provide two advantages you won't find in any other floor. Anywhere.

One is more strength than any other floor. You avoid problems like deflection and dimpling, or costly reinforcement to meet later — possibly unforeseen — requirements.

Why do other floors lack the strength of WacoPlate? Can't be because a weaker floor avoids problems. Or saves you money. WacoPlate prices are competitive.

The second exclusive advantage of WacoFloors is that they provide complete accessibility without sacrificing stability. The explanation is our Snap-Lok Rigid Grid System. The stringers in this grid system give the floor rigidity, strength and stability, yet they are easily removed and replaced. No loose fasteners are required.

**WacoFloors are installed with panels of steel or wood core. For complete details, dial direct or write.**

Stringers are easily removed from the exclusive Snap-Lok Rigid Grid System.

**WACOFLOORS**

**WASHINGTON ALUMINUM CO., INC.**

Knecht Ave. at Penna. R.R. • Baltimore, Maryland 21229

301 / 242-1000

*There is no equal to a WacoFloor*

*For more data, circle 140 on inquiry card*

*For more data, circle 139 on inquiry card*

*For more data, circle 141 on inquiry card*

*The hinge so superior*
*it deserves a pin to match!*

# TRI-CON

The world's slimmest concealed ball-bearing hinge now adds the green Teflon*-coated pin . . . the pin that never needs oil so there's never oil seepage to mar hinge appearance. Teflon combines with the Delrin bushing for inner-barrel mechanism that gives the smoothest friction-free movement ever achieved. Yet Tri-Con sells for the price of ordinary premium hinges.

Hager®

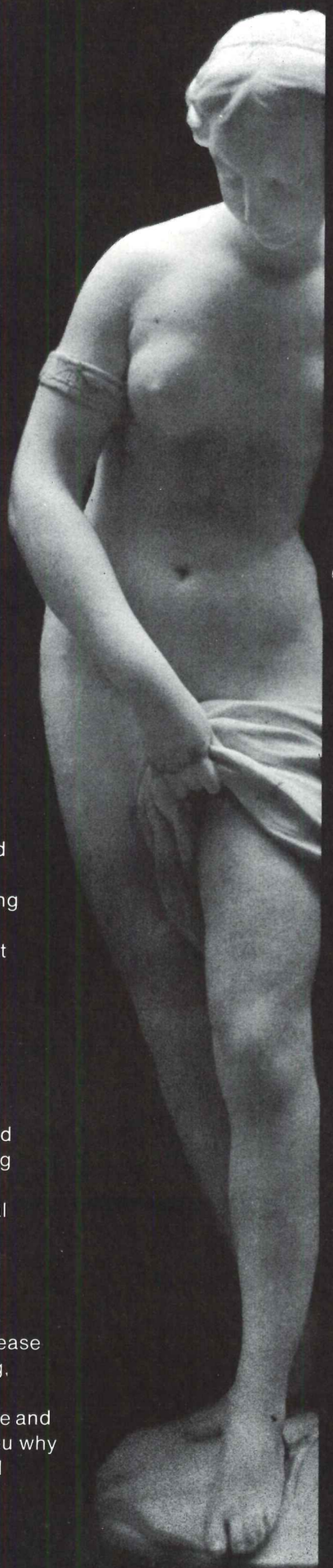
*Everything Hinges on Hager*

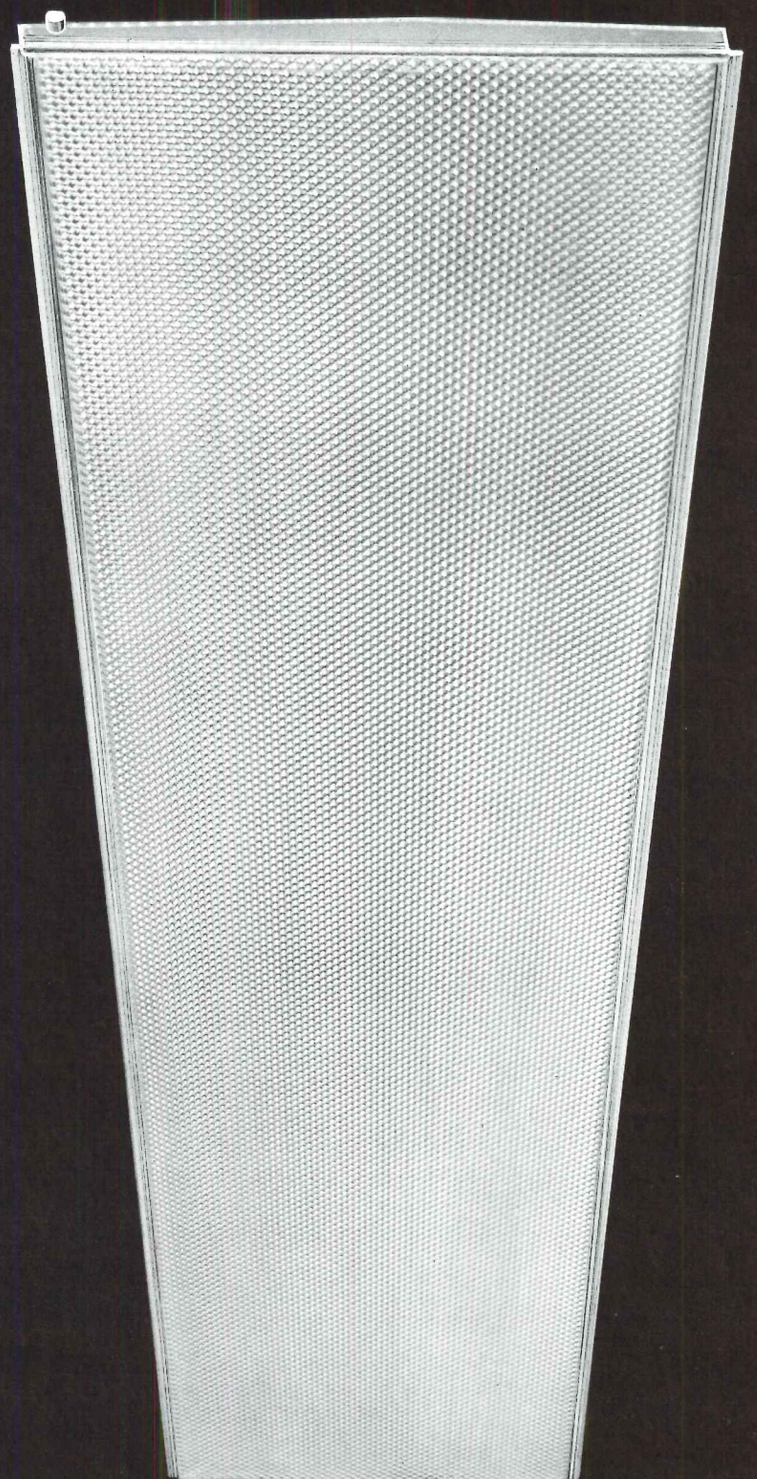
**HAGER HINGE COMPANY**
139 Victor St. • St. Louis, Mo. 63104
*In Canada:* HAGER HINGE CANADA, LTD.

*DuPont's Registered Trademark

Printed in U.S.A.

# a thing of beauty is a joy...





PL-F Acrylic Standard Frameless will go on looking and performing like the cool, calculated beauty that it is, indefinitely. Because it is **plaskolite.**

Many years from now PL-F Acrylic will have lost none of its efficiency and retained all of its glare reducing power and uniform distribution. Structural integrity and beauty will not have changed in any way.

**plaskolite** frameless lenses are made to please and perform for a long, long time. In terms of esthetics, performance and dollars, let us show you why PL-F Acrylic Standard Frameless should be specified now.

## PL-F Acrylic
Standard Frameless

Send for specification/design data today.

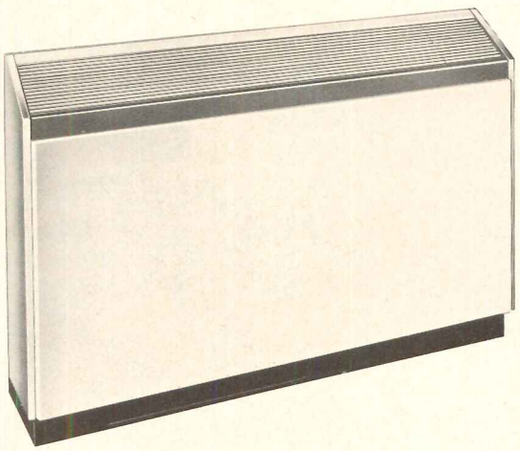
plaskolite, Inc.

1770 Joyce Avenue, Columbus, Ohio 43219.

*For more data, circle 142 on inquiry card*

# Meet the new Nesbitt Modular Roommate

## See how it provides individual comfort for buildings with modular spaces.

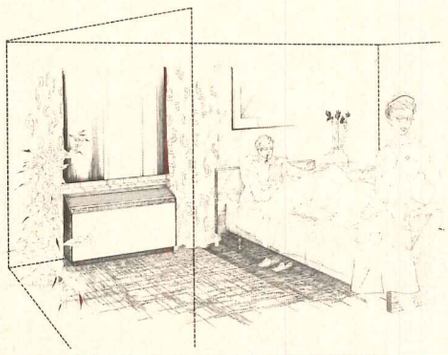


The Modular Roommate is a handsome, peacefully quiet, year-round air-conditioning unit designed to match the requirements of spaces ranging from 100 to 700 square feet—modular spaces such as found in hospitals, nursing homes, motels, dormitories and offices. It provides individual comfort to the occupants of these spaces even during those seasons when the occupant of one space may demand heating while his neighbor desires cooling. It provides lower operating costs for the owner because each unit in the system can be shut down when the space is unoccupied.

The Nesbitt Modular Roommate system lowers first cost, too, because of the high percentage of factory-installed components which take advantage of mechanization and testing facilities and minimize on-site field labor. In addition, of course, the modular system eliminates chillers, cooling towers, fan rooms and ducting, etc.

Quiet by design through special insulation, a compressor discharge muffler and an exclusive low-noise compressor result in a new level of noise control.

The Modular Roommate is offered in five capacities from 7,300 to 17,800 btu/h—with either electric, hot water or steam as choices for heating. Unit cabinets are available with slope top or flat top—floor or wall mounted, with either high or low air intake. A wide selection of controls allows you to design your system to meet any special requirements. And if you want to delay full year-round air conditioning, you can do so easily without major expense.



## See how it fits modular patient rooms.

## For example, at Parkview Hospital. Turn page...

For more data, circle 144 on inquiry card

For more data, circle 143 on inquiry card

# See how this total Nesbitt comfort system fits into the new Parkview Hospital.

This five-story, 57,900 square foot, building is the Parkview Hospital in Philadelphia, Pa. It cost $1,581,000 to construct. Air conditioning, heating and ventilating cost only $3.47 per square foot. Amazingly economical when you consider some of the problems involved.

Here's how Nesbitt helped the Architect and Engineer solve the comfort conditioning problems so economically. First, Nesbitt had the product mix (modular self-contained units, Rooftop Multizone units, cabinet heaters, unit heaters and finned tube radiation) to ideally meet the various requirements of spaces in the building. Also, the selection of equipment with a high degree of factory-assembled components eliminated much on-site labor.

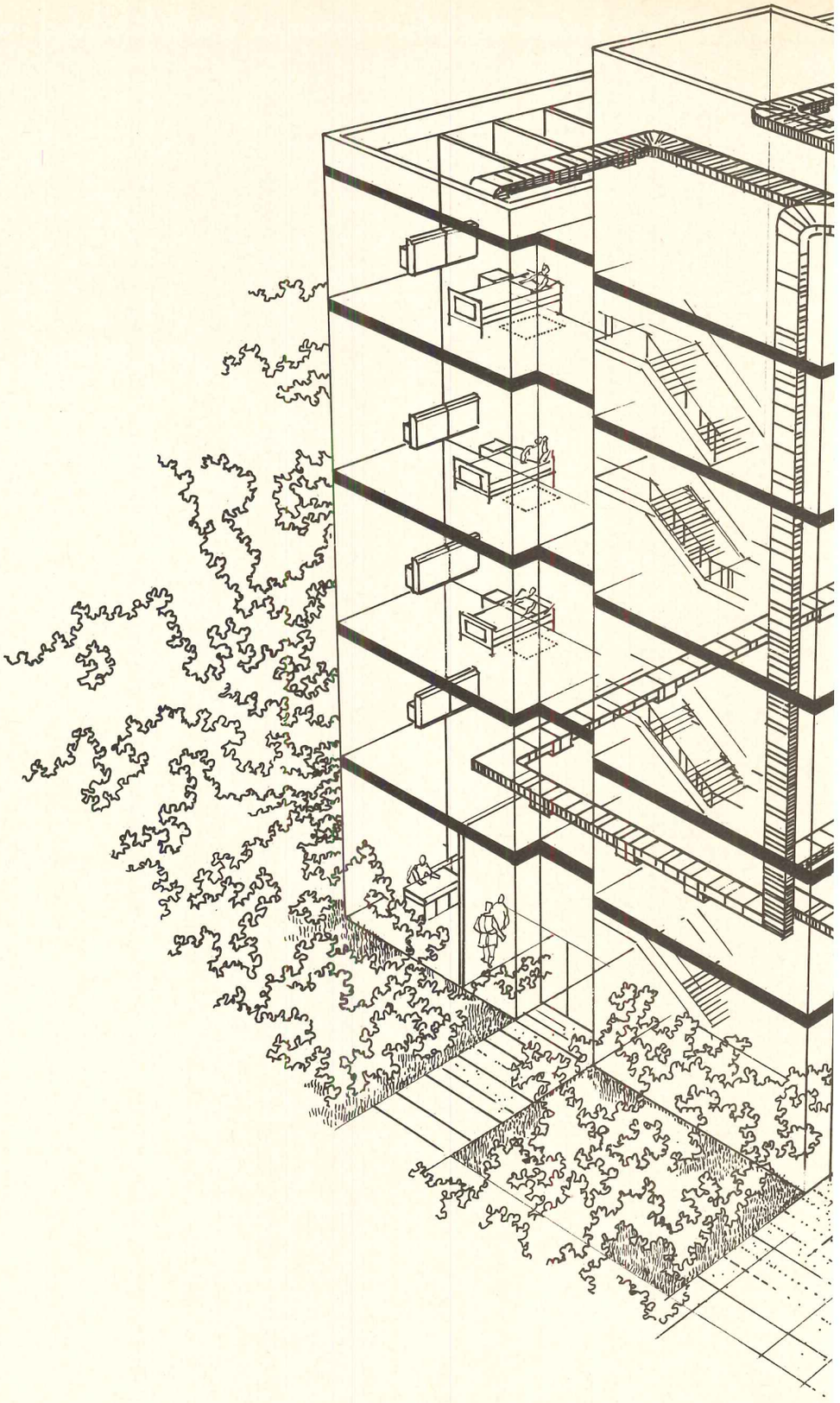
Patients' rooms were located around the perimeter of the building. A modular system was needed that would automatically compensate for the varying exposures as well as the individual needs of the patients. This required a system with the ability to provide simultaneous heating and cooling automatically on demand from each space. A Modular Roommate in each room with its own thermostat provided the ideal answer.

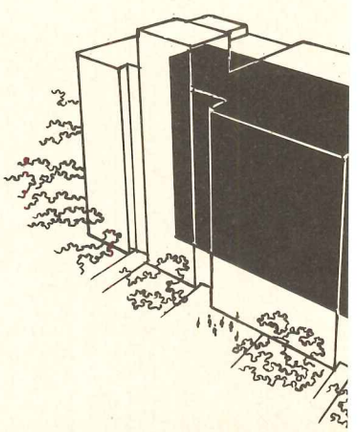
The service core contained a lobby on the first floor, and on each of the upper floors—nurses' stations, utility rooms, treatment rooms and food service facilities.

Twin Nesbitt Rooftop Multizone units were installed to service the five-floor core area. Duct shafts were constructed to run from each roof-mounted unit to each of the five floors. Each of the five floors were treated as separate control zones supplied with conditioned air to meet individual comfort requirements.

The net result was to provide a total system with a high degree of factory-assembled components, which in turn reduced field labor costs and optimized the overall air-conditioning costs. In addition, the system is unique in its ability to meet the individual comfort requirements of the various spaces.

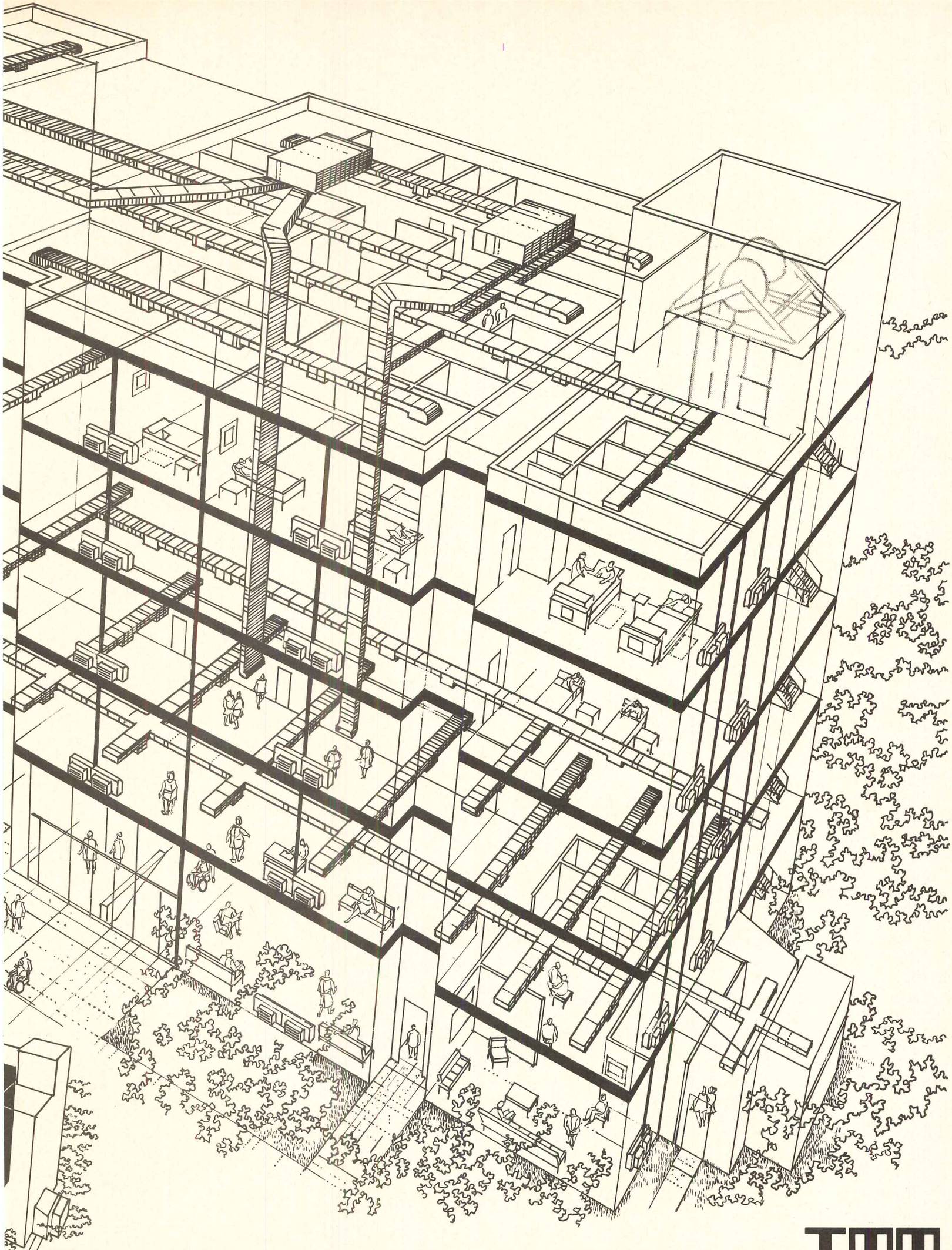
For full details of how the Nesbitt product mix can help you solve some of your problems, write Nesbitt Operation, ITT Environmental Products Division, International Telephone and Telegraph Corporation, Philadelphia, Pa. 19136.





*Parkview Hospital, A Subsidiary of American Medicorp*
*Architect: Henry D. Dagit & Sons*
*Consulting Engineers: Paul H. Yeomans, Inc.*
*General Contractor: Frank A. D'Lauro Co.*
*Mechanical Contractor: Wolfson & Schnoll, Inc.*

*For more data, circle 144 on inquiry card*



NESBITT ITT

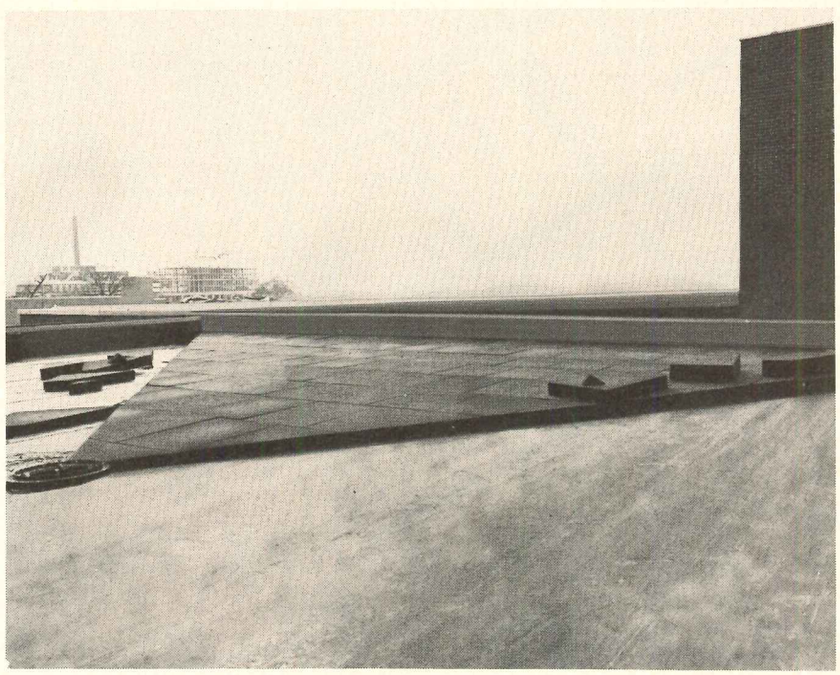
# Simple way to get positive roof drainage: The Tapered FOAMGLAS® System.

Tapered FOAMGLAS roof insulation automatically slopes a flat deck for positive drainage. The system is simple: the roofer places factory-tapered blocks in sequence and roofs over immediately. No delay or waiting for roof fills to dry. Single-contractor responsibility.

FOAMGLAS is 100% closed-cell glass, so it's completely waterproof and can't absorb vapor from inside the building. Dimensional stability and high compressive strength make it an excellent base for built-up roofing. And it's the only roof insulation guaranteed for 20 years.

Write for more information and a free sample. Pittsburgh Corning Corporation, Dept. AR-69, One Gateway Center, Pittsburgh, Pa. 15222. In Western Europe, contact Pittsburgh Corning de Belgique, S.A., Brussels, Belgium.

The Insulation People PITTSBURGH PC® CORNING



*For more data, circle 145 on inquiry card*


## OFFICE LITERATURE

*For more information circle selected item numbers on Reader Service Inquiry Card, pages 321-322*

**CORRIDOR PANEL** / A low-cost corridor panel, particularly suitable for office, school and hospital corridors where ceiling plenums are used for services and storage, is explained in a helpful booklet. Engineered to span as far as eight feet, *Soundspan* is wall hung, with no other suspension required. The panel can be removed readily when access into the plenum is required. ▪ Soundlock Corporation, Atlanta.*

*Circle 400 on inquiry card*

**TILE WITH SHAPES** / A four-page color brochure announces three new shapes for *Terrapiso,* onyx and marble precast terrazzo tile. Shown are 11 color combinations ▪ Regal Products, Inc., Anaheim, Calif.

*Circle 401 on inquiry card*

**FURNITURE** / Two catalogs present handsome designs for libraries, institutions and offices. The *Kill Collection* is "designed in the Bauhaus tradition" by Danish architects Kastholm and Fabricius in steel, leather, Fiberglas and hand-woven woolens. ▪ Harvey Probber, Fall River, Mass.

*Circle 402 on inquiry card*

**CLEAN ROOMS** / Literature explains the cost and efficiency break-throughs that have led to the use of clean rooms not only in biological, chemical and medical research but also in the manufacture of electronics, pharmaceuticals, aerospace components, data processing accessories: "by anyone involved with miniaturization and micro-miniaturization." ▪ Tate Architectural Products, Inc., Jessup, Md.*

*Circle 403 on inquiry card*

**PORTABLE PARTITION** / *Acousti-Seal 300* —covered in a four-page brochure—is a portable wall system that is said to have a wide range of sound retardance for educational, office, hotel, motel, restaurant and club facilities. ▪ New Castle Products, Inc., New Castle, Ind.*

*Circle 404 on inquiry card*

**LIGHTING CONTROL SYSTEM** / A solid state, fully automatic lighting control system for theater, television and architectural dynamic lighting offers hundreds of presets and controls unlimited dimmers. With the system, described in a six-page folder, a single master button can instantly record all the values of a complete lighting set-up. Different set-ups can be recalled at will in any desired order, and any scene can be merged directly into any other. ▪ Century Lighting, Inc., Clifton, N.J.

*Circle 405 on inquiry card*

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

*more literature on page 309*

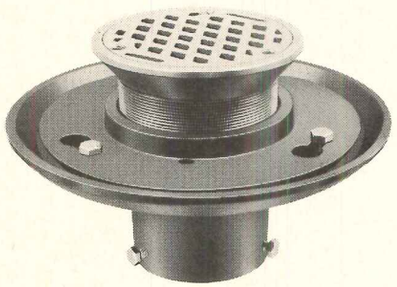
*Introducing...*

# Sim-pli-ci-ty®

## FROM THE LEADING PRODUCERS OF CAST IRON SOIL PIPE

THE SIM-PLI-CI-TY LINE OF DRAINS AND CARRIERS—A NEW AND COMPLETELY MODERN ENGINEERED SELECTION — WAS DESIGNED FROM THE BLUEPRINT TO THE FINISHED PRODUCT TO PROVIDE A SIMPLE, FUNCTIONAL SOLUTION TO THE PROBLEMS OF THE MECHANICAL CONTRACTOR. AFTER FIVE YEARS OF THOROUGH TESTING IN THOUSANDS OF INSTALLATIONS THROUGHOUT THE UNITED STATES, WE ARE PROUD TO PRESENT TO THE ENGINEER, MECHANICAL CONTRACTOR AND OUR DISTRIBUTORS—THE SIM-PLI-CI-TY LINE OF DRAINS AND CARRIERS.

## DRAINS



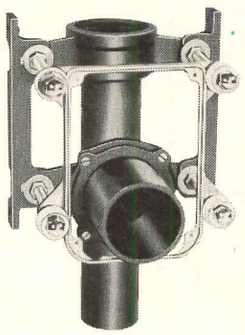
The Simplicity Drain (Illustrated) Features:

1. Alignment screws to maintain perfect alignment.
2. Removable, invertible clamping collar for low rough-in and easy access for caulking.
3. Designed to save labor cost on installation.
4. Integrally cast weep holes to provide secondary drainage.
5. Non-corrosive clamping bolts.

### *Check our complete Line . . .*

- ☑ FLOOR
- ☑ ROOF
- ☑ SHOWER
- ☑ AREA
- ☑ SANITARY FLOOR SINK
- ☑ CLEAN OUTS
- ☑ GREASE INTERCEPTORS
- ☑ HYDRANTS

## CARRIERS



The Simplicity Carrier (Illustrated) Features:

1. Tiling frame and cover included with every closet carrier.
2. Mechanical coupling.
3. Flexibility.
4. Designed for dual-tite gaskets or lead and oakum installation.
5. Full sanitary sweep at no sacrifice in "close dimension."

### *Check our complete Line . . .*

- ☑ WATER CLOSET
- ☑ LAVATORY
- ☑ URINAL

WRITE OR CALL ONE OF OUR DIVISIONS FOR LITERATURE ABOUT THE COMPLETE SIMPLICITY LINES OF DRAINS AND CARRIERS.

MANUFACTURED AND DISTRIBUTED BY:

**▫ ALABAMA PIPE CO. ▫ ANNISTON FOUNDRY**

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a division of The Mead Corporation

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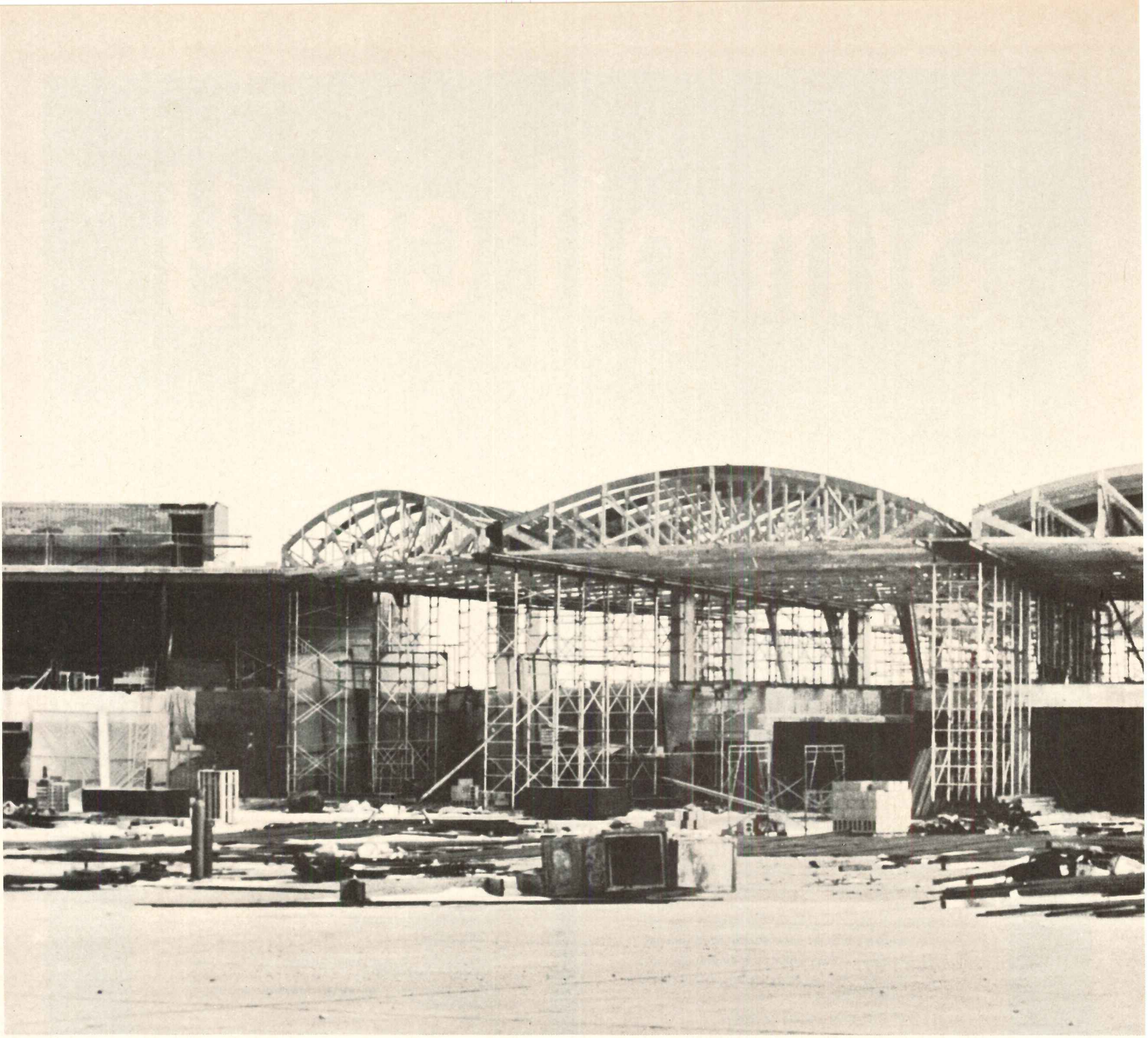
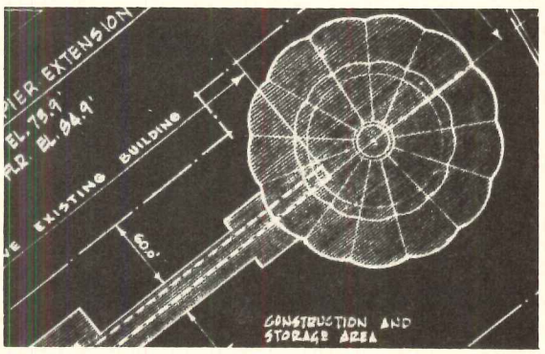
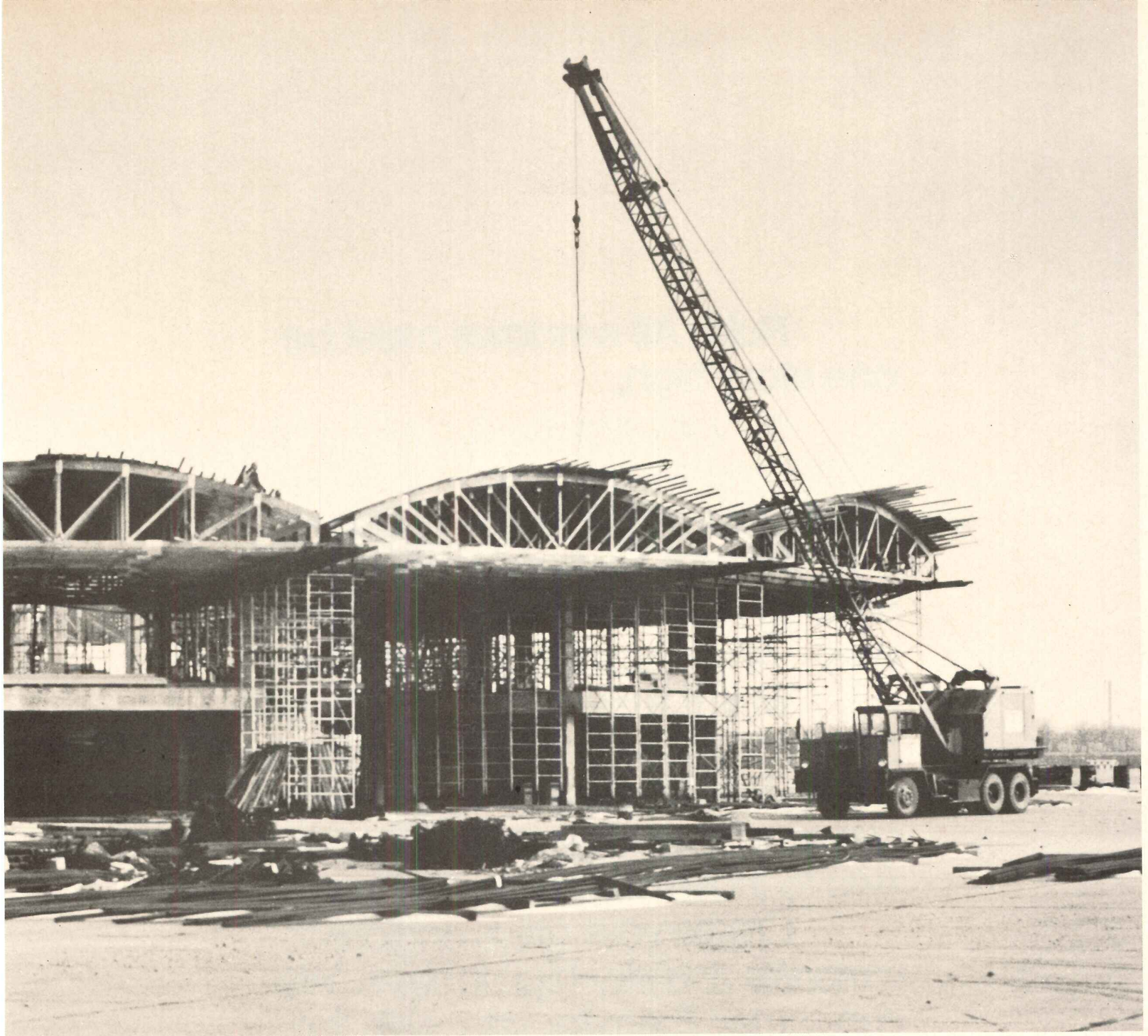


# Without Gang-Nail® trusses this job would still be on paper...




©Automated Building Components, Inc. 1969



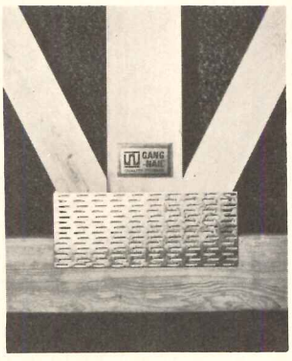
*Designed by Collings Engineers, Inc. of Milwaukee, Wisconsin for the Architectural Div. of the Milwaukee County Dept. of Public Works. General Contractors, Korndoerfer Construction Company. Gang-Nail Trusses by Custom Components Company of Racine, Wisconsin.*

■ Roof construction on the airport terminal at General Mitchell Field, Milwaukee, began many months sooner because of the ready availability of Gang-Nail Trusses.

Many bids were solicited from companies engaged in conventional shoring methods. Steel was not only expensive but could not be supplied for months, thus postponing all construction for the winter. Only Gang-Nail was able to design and fabricate trusses rapidly with the complex curvatures required for the concrete hyperbolic shell. Pre-engineered Gang-Nail Trusses proved to be the most economical method of constructing the forms.

The 364 bowstring trusses, only 12 with similar dimensions, were designed by Gang-Nail engineers and verified by computer. They carry a live load of 105 psf on 3 ft. centers and utilize exclusive 14 gauge connector plates developed by Gang-Nail Engineering.

Gang-Nail Trusses are also used in roof and floor systems throughout the world in thousands of installations for buildings of all kinds. For further information contact:



*Look for this sign of Quality and Performance*

GANG-NAIL

**AUTOMATED BUILDING COMPONENTS, INC.**

7525 NW 37th Avenue • Drawer J • Miami • Florida 33147

*Los Angeles • Toronto • London • Auckland • Melbourne • Zurich • Johannesburg*

*See us in Sweets.*

*For more data, circle 148 on inquiry card*

**Rule: All windows must be one story high.**

It's very simple: Just pick out a standard window design, and multiply it by several hundred.

Presto! You've designed a building that avoids all verbal controversy. And any visual excitement.

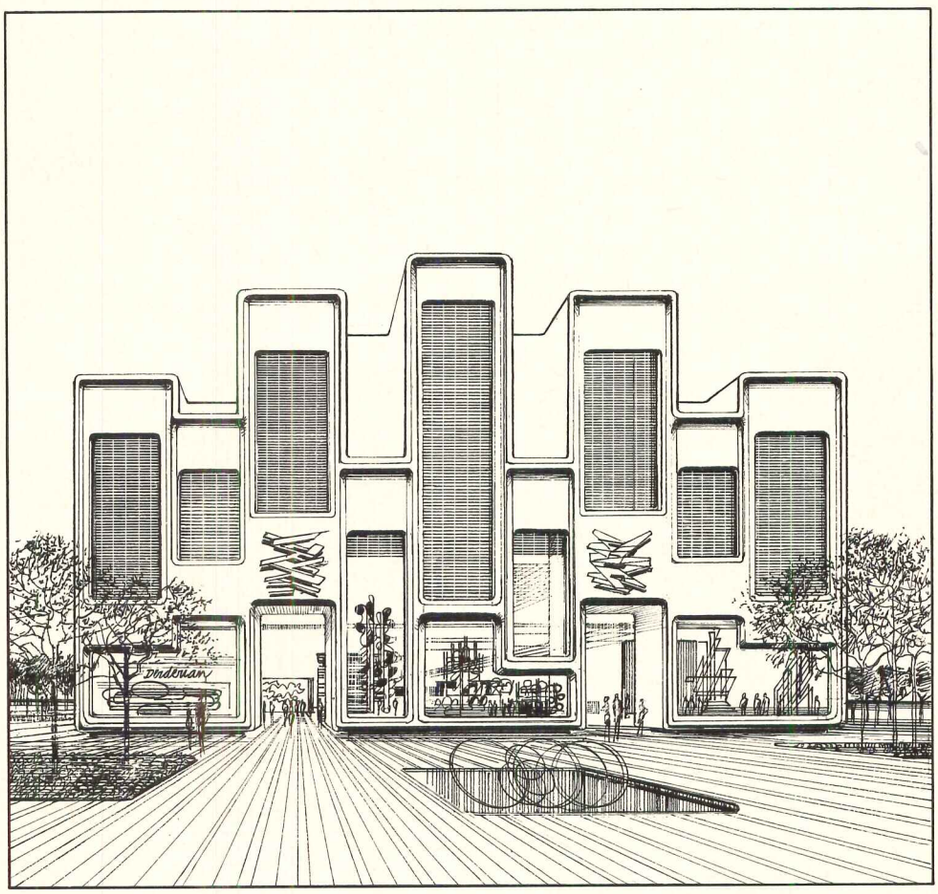
Well, if that's what you consider architecture, go back to your cookie cutter. We want to talk to men who can send their imaginations soaring. And to those dreamers, we say...

Create your glass-enclosed minarets and sky-high lobbies. We can screen them for you, with the most efficient, light-and-privacy-controlling window covering ever known. And the most beautiful blinds ever seen.

Cascade those blinds, several

storys at a time if you like. We'll raise them for you when they get too heavy. With motors, if necessary.

Go on. Have your dreams. We'll help make them come true.




**Levolor Blinds. For architects who break the rules.**

ARCHITECT ARA DERDERIAN USED MOTORIZED CONVENTIONAL LEVOLOR BLINDS IN HIS VISUALLY EXCITING COMMUNITY ARTS CENTER. JUST IMAGINE WHAT YOU CAN DO, NOW THAT YOU KNOW YOU DON'T HAVE TO WORRY ABOUT THE WINDOWS. □ TELL US ABOUT IT, BEFORE SOMEONE WITH LESS VISION TELLS YOU IT CAN'T BE DONE. □ LEVOLOR LORENTZEN, INC., 720 MONROE STREET, HOBOKEN, NEW JERSEY 07030

*For more data, circle 149 on inquiry card*

# In the past two years one building company, Multiplex Inc., has put down ½ million square feet of concrete form.

## And left it down.

Because the form they used was Tensilform,® Wheeling's permanent steel form for concrete floors.

And what's more, their electricians, plumbers and other tradesmen were able to walk on it before the concrete was poured.

The Nob Hill Apartments in Syracuse, New York is only one of the projects where Multiplex has used Tensilform. Here's what their VP of purchasing and construction coordinator, Mike Stepanovic says about it:

"We first used Tensilform in 1966, and we'll keep on using it because it saves us money. It's easy to handle, quick to install, and it provides a good working platform for other trades."

"And, best of all, it saves us time. It doesn't have to be stripped."

Multiplex has completed 10,484 similar apartment suites, in Ohio, Indiana and New York. They plan to build 5,000 to 6,000 more a year. Mike has the tricky job of keeping the quality high and costs low. Specifications take care of the quality by including things like individually controlled heating and air-conditioning, carpeted hallways, built-in kitchens, high speed elevators.

Wheeling Tensilform helps take care of the costs.

Mike also said something else; "Delivery was good. Tensilform was always here when we needed it."

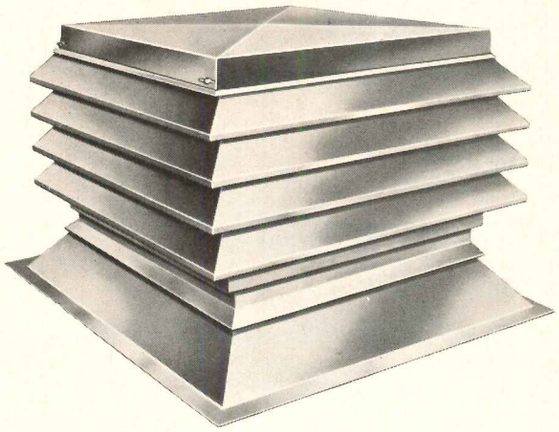
Maybe that's what helped him to decide to stick with a good thing. For the Nob Hill Project he's using Wheeling Roof Deck, too.

**Wheeling Tensilform**

Wheeling Corrugating Co., Div. Wheeling-Pittsburgh Steel Corp., Wheeling, W. Va.

*For more data, circle 150 on inquiry card*

# SELF-FLASHING!

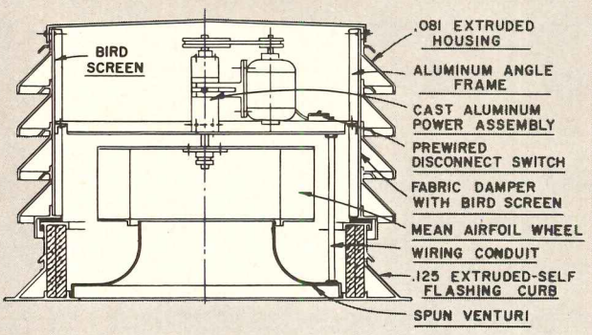


# LONG-LASTING!

## Cook Model ETC Extruded Tier ALUMINUM CENTRIFUGAL ROOF VENTILATORS

The new Cook Model ETC roof ventilator is completely assembled, ready for installation, including bird screen, built-in fabric dampers, pre-wired disconnect and self-flashing curb. The integral extruded aluminum roof curb contains 2" of thermal and acoustical insulation. Direct drive units from 7" to 21" wheel sizes. Belt drive units from 15" to 48" wheel sizes.

- All aluminum.
- Bird screen standard in both exhaust outlet and motor compartment.
- Built-in fabric dampers, standard.
- Pre-wired disconnect switch, standard.
- Self-flashing aluminum extruded roof curb, standard.
- All aluminum mean airfoil wheel.
- Cast aluminum power assembly, standard.
- Motor out of air stream.
- Removeable top for easy access to all parts.
- Shipped as a complete unit.




*Write for Bulletin ETC or call one of the 80 COOK sales offices*

**LOREN COOK COMPANY**
640 North Rocky River Drive,
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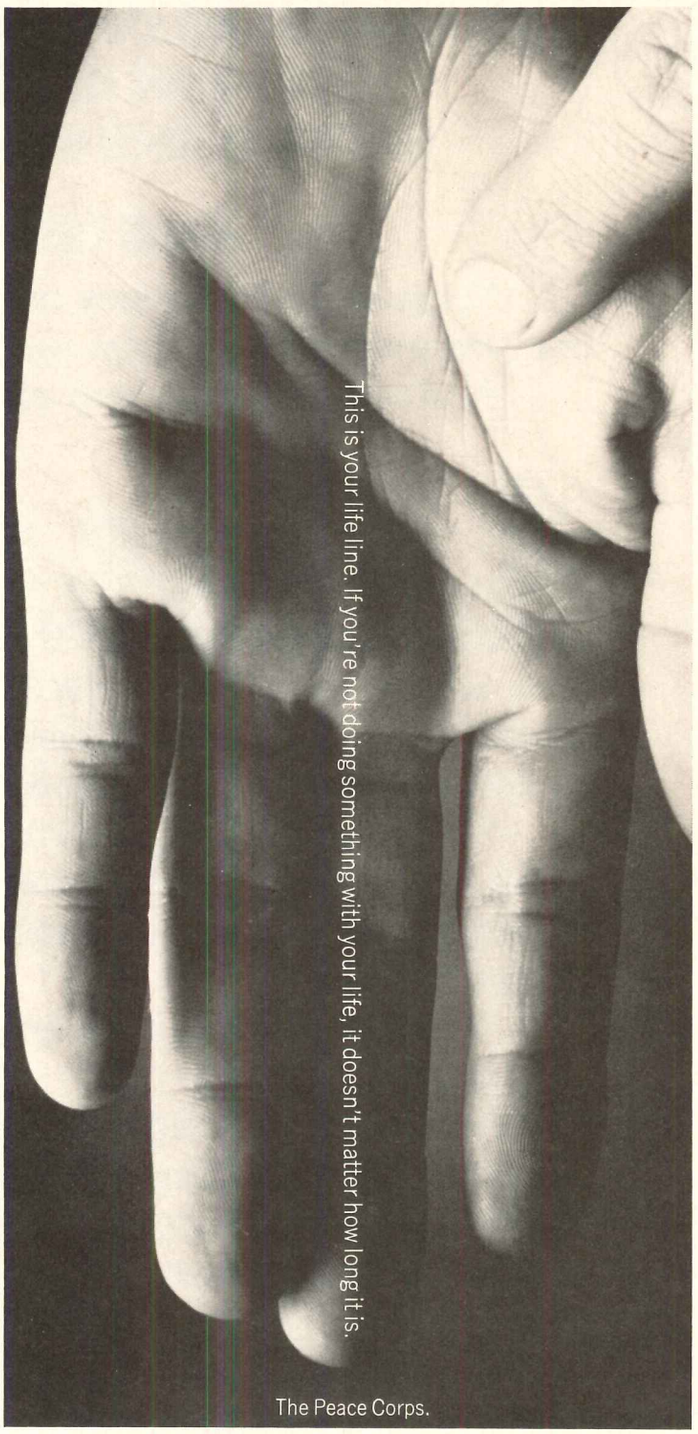

# DO YOU DREAD A BID OPENING?

There's nothing pleasant about a low bid which is several thousand dollars over the estimate. That's one reason why architects have had to become the first line of defense against soaring building costs.

A TRUS JOIST roof or floor system can do so much to keep your project "in the money." No cure-all, but the light weight cuts the cost of footings, foundations and bearing walls . . . makes the construction of any building far speedier and less costly.

The wide, wood chords provide a perfect nailing surface for low-cost roof decking and ceiling materials. The open webs allow fast installation of duct work, plumbing and wiring. Long spans, up to 100 feet, can eliminate many bearing walls. And if it's an unusual profile you're after, TJ can provide it more economically than any other system.

For example, a subcontractor after building two TJ apartment projects in Albany, N.Y., credited 17 cents a square foot to the builder of a third project for using TRUS JOIST instead of 2 x 12 floor joists (details available on request).

TRUS JOIST guarantees that the original joist quotation will be the final price unless there are intervening changes in plans or specifications during the period specified.

More information? Free design manual or cost estimate? Just call. Wouldn't it be pleasant if the bids came in under the estimate?

TRUS JOIST could make the difference.

trus® tj joist

9777 Chinden Blvd. Boise, Idaho 83702

Plants at: Boise, Ida. □ Portland, Ore. □ San Francisco □ Dubuque, Ia. □ Phoenix □ Calgary, Alt. □ Soon in Ohio

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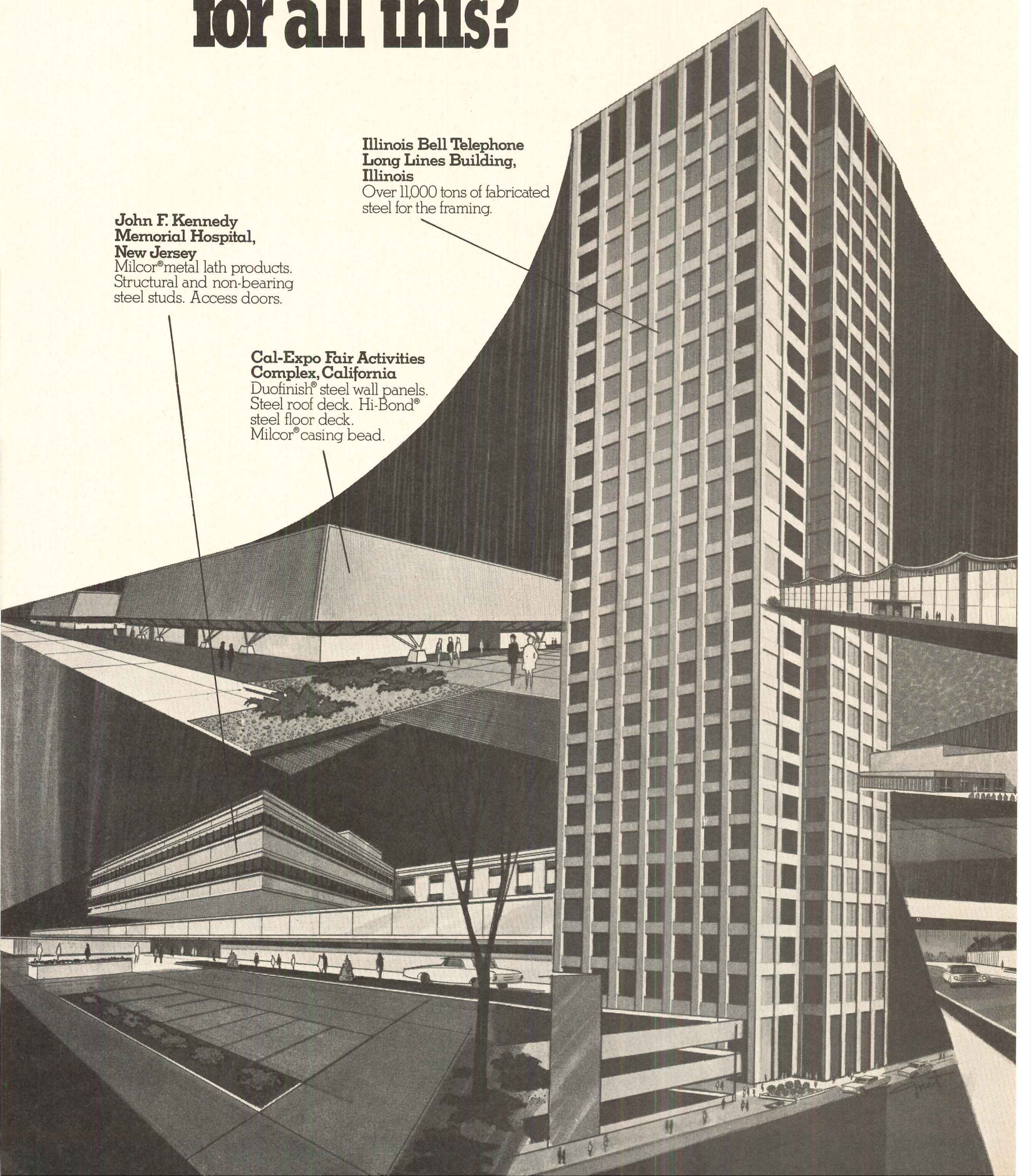
# Who's responsible for all this?

**Illinois Bell Telephone Long Lines Building, Illinois**
Over 11,000 tons of fabricated steel for the framing.

**John F. Kennedy Memorial Hospital, New Jersey**
Milcor® metal lath products. Structural and non-bearing steel studs. Access doors.

**Cal-Expo Fair Activities Complex, California**
Duofinish® steel wall panels. Steel roof deck. Hi-Bond® steel floor deck. Milcor® casing bead.



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In this one organization, national in scope but local in ability to serve your needs, you can now find construction systems and skills for almost every project.
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A member of the INLAND steel family

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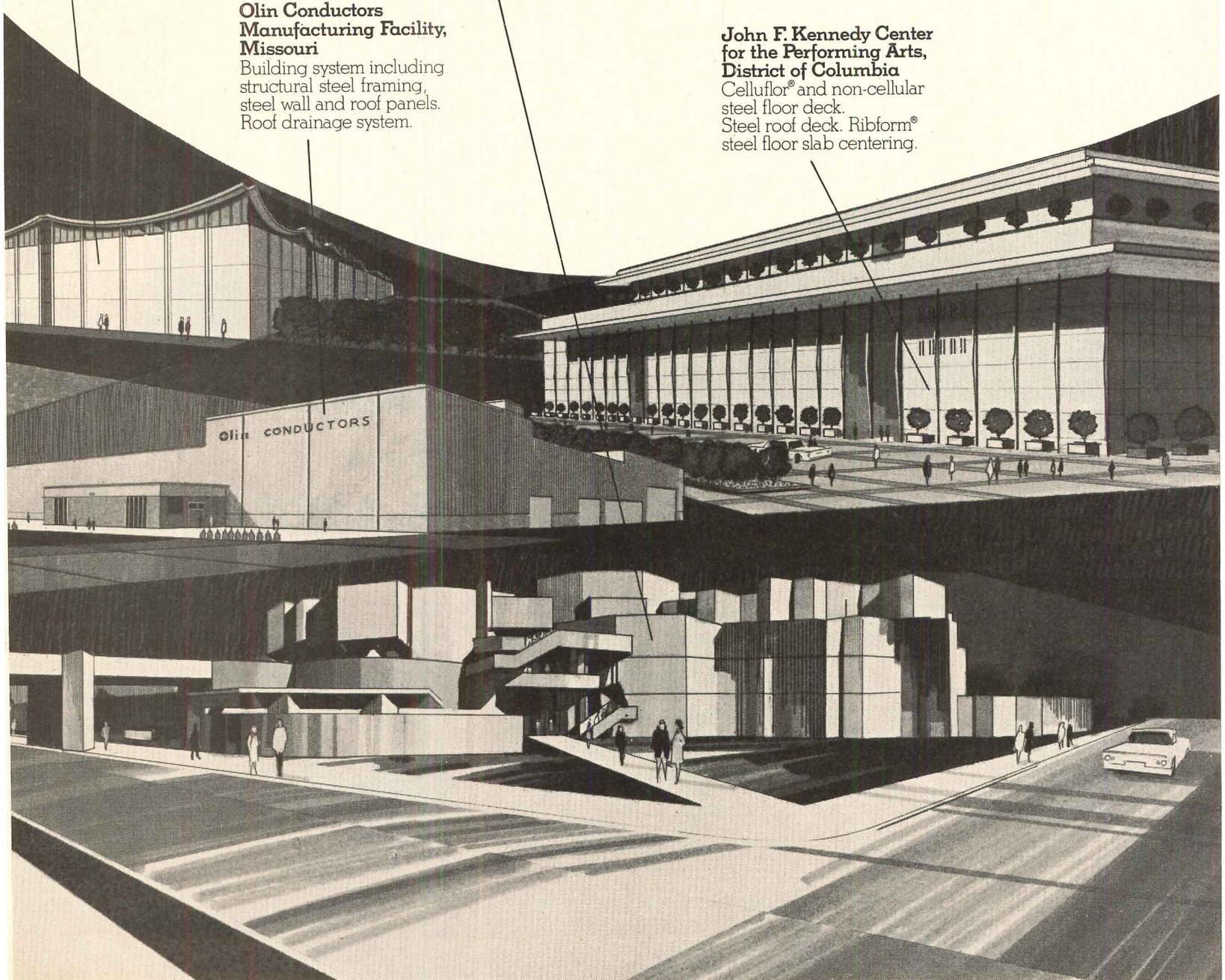
**American Hospital Supply Corporation Warehousing Facility, Illinois**
Post tensioning assemblies for prestressed concrete.
Concrete reinforcing steel.

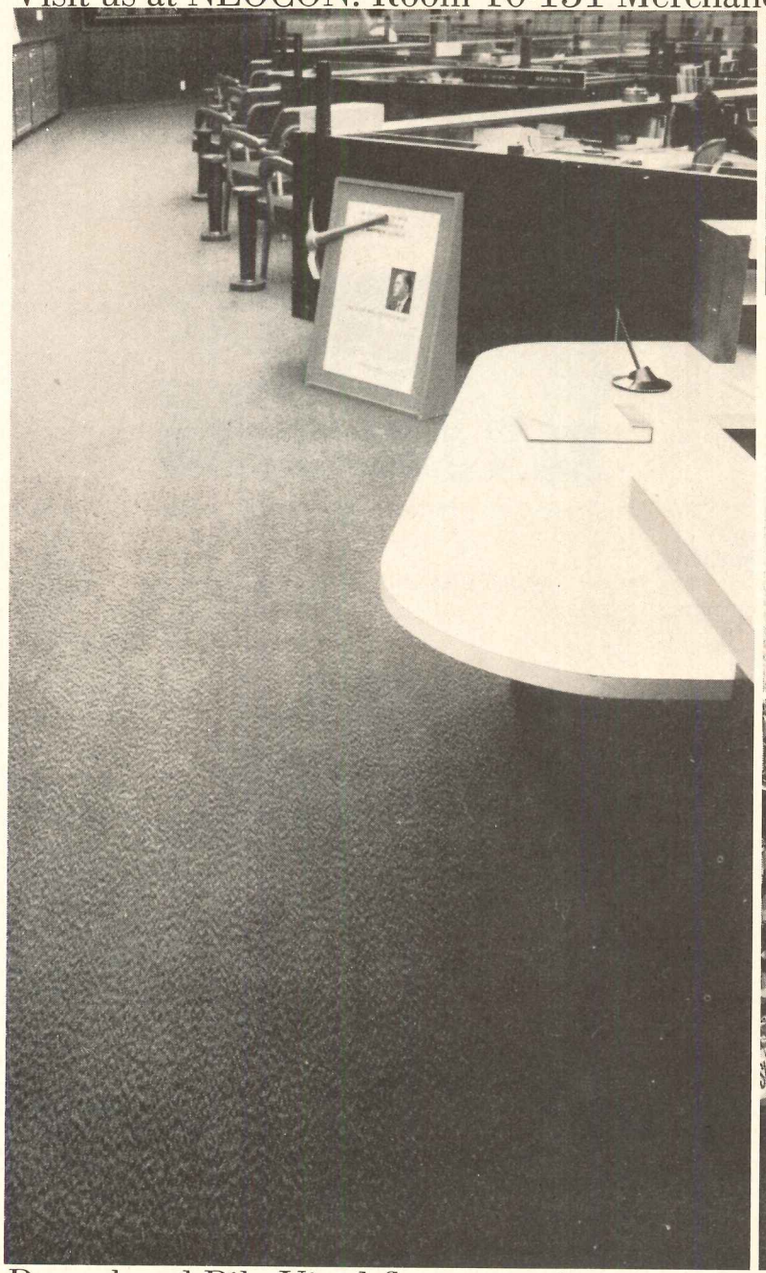
**University of Illinois Science and Engineering Building, Illinois**
Over 1,500 tons of concrete reinforcing steel.

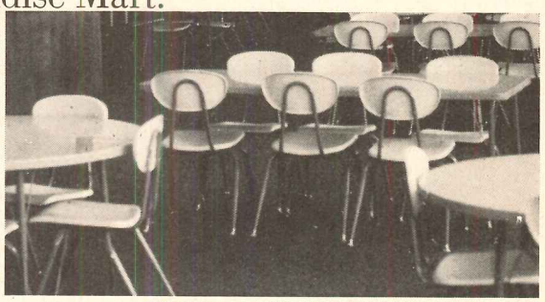
**Olin Conductors Manufacturing Facility, Missouri**
Building system including structural steel framing, steel wall and roof panels.
Roof drainage system.

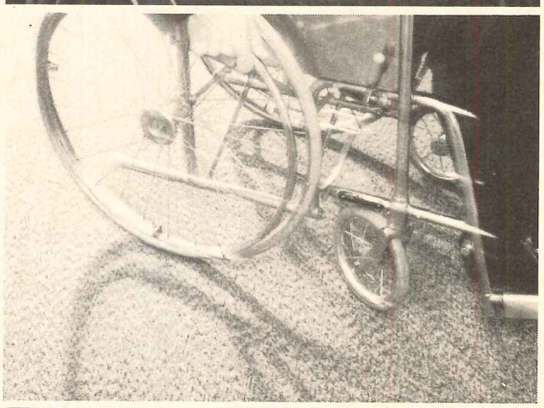
**John F. Kennedy Center for the Performing Arts, District of Columbia**
Celluflor® and non-cellular steel floor deck.
Steel roof deck. Ribform® steel floor slab centering.

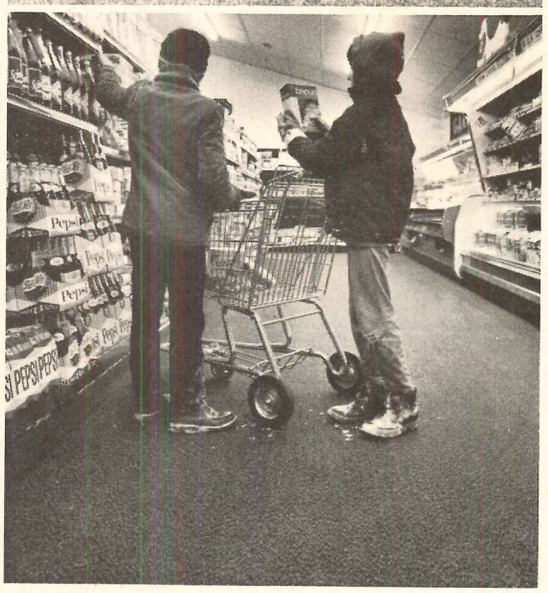


Visit us at NEOCON. Room 10-151 Merchandise Mart.









# Powerbond Pile Vinyl floor covering.
# Office proof, school proof, hospital proof, store proof, etc. proof.

If it weren't for Powerbond™ Pile Vinyl's outstanding durability, low maintenance, excellent sound deadening properties, sure footedness, beauty and general superiority for use in any high traffic area, we could stop right here about what has helped push Powerbond Pile Vinyl into such wide acceptance.

But. There is more.

Behind its beauty (24 matchless colors and 3 textures) there's extraordinary ruggedness, abrasion resistance and resilience. And it's made of Allied Chemical's specially engineered commercial nylon. No scuffs, traffic patterns to show. And spike heels can't spike it. No buckling. No rippling. The pile is so dense, spills, dust and dirt stay on the surface. It can take just about anything anyone can dish out.

And in back of that is our famous 5-year wear guarantee.

You see, it's the only floor covering that combines the luxury of a super-dense pile with all the inherent practicality of vinyl. (We fuse the two together using several layers of vinyl. Because there's nothing better than vinyl for ultimate stability.)

There are a few "almost-likes" but nothing exactly like Powerbond Pile Vinyl. Which is what you'd expect from something that has set the standard for floor covering.

Please send me more information and swatches.

Name_____

Firm_____

Street_____

City_____

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**Collins & Aikman**
210 Madison Avenue, New York 10016

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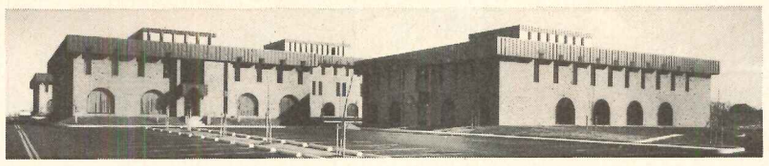
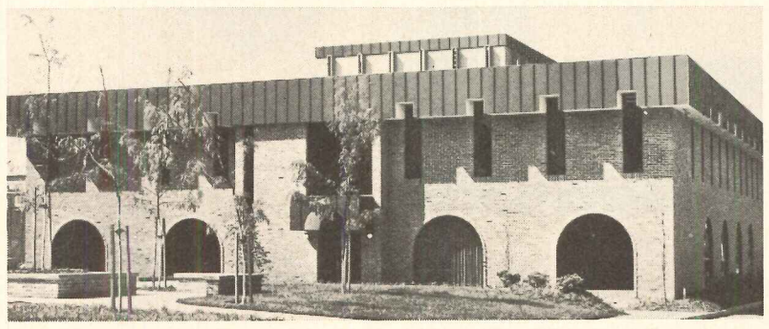
Whitpain Offices, Inc.
Blue Bell, Pennsylvania
Architect: Jack Levin
Philadelphia, Pennsylvania
Builder – Owner: T.H. Cosgrove, Inc.
Warminster, Pennsylvania





# NEW FASHION IN FASCIA WITH TiGUARD™

The beauty of copper plus the strength of stainless steel – that's why the fascia of this new computer center campus in Blue Bell, Pa., is TiGUARD copper-clad stainless steel. A composite of copper metallurgically bonded to both sides of a Type 409 stainless steel core, TiGUARD will not delaminate under serverest forming conditions. It cuts, forms, and solders as easy as copper. It weathers like copper too. Within two weeks the TiGUARD fascia of the Whitpain campus acquired its dark brown patina that blends with the earth-tones of the brick. Unlike copper, TiGUARD has low thermal expansion . . . fewer expansion joints are needed . . . buckling is no problem.

Designed for roofing, flashing, curtain walls, rain drainage, and all general sheet metal work, this exciting new architectural metal gives architects greater design flexibility and freedom from fluctuations in cost and availability of copper. All this, and at cost savings of up to 15% compared to solid copper.

TiGUARD architectural metals are available nationally through a network of quality sheet metal and roofing distributors.
For further information call your local distributor or write Manager, TiGUARD Building Materials, Attleboro, Mass. 02703.

**TEXAS INSTRUMENTS**
INCORPORATED

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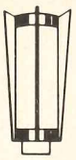
## SPIRES

In unit - molded fiberglass for extra strength and durability. High gloss finish. Graceful designs . . . built to inspire, impress, endure.

From Wiedemann, the originator of the fiberglass baptistry . . . and leading Baptistry Specialist . . . comes quality that is unsurpassed in the church building and remodeling field.

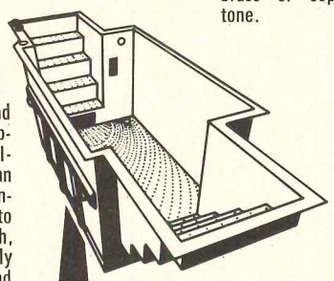


## LIGHTING

Aluminum church lighting in five styles, to compliment any style of architecture. Available in natural aluminum or anodized in gold, brass or copper tone.

## BAPTISTRIES

Over 150 shapes and sizes of fiberglass baptistries available. FIBERSTRESSING is an exclusive process of interlaminate bridging to give superior strength, lasting beauty. Fully automatic heaters and many optional features available.



**Write for free information kit**
**See Sweet's**
**Architectural File**
(S)

## *Wiedemann Industries, Inc.*

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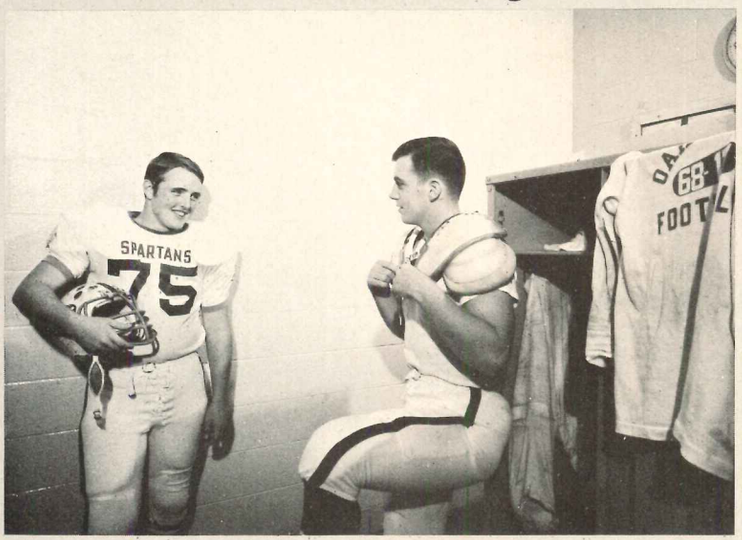
# *New GLASS epoxy eliminated tiling costs...*




Oak Lawn High School
Oak Lawn, Illinois

# *reduced wall maintenance at Oak Lawn High School.*

New GLASS-GARD epoxy contains real glass . . . goes on 6 mils thick in one coat. Creates a veneer of glass . . . resembles tile . . . costs far less! Resists abrasion, chemicals, stains. Advertised in Sweet's. Write for tests, colors, specification kit.

ARMSTRONG PAINT & VARNISH WORKS, INC.
1330 S. Kilbourn Ave., Chicago 60623 / Phone 312 762-7000
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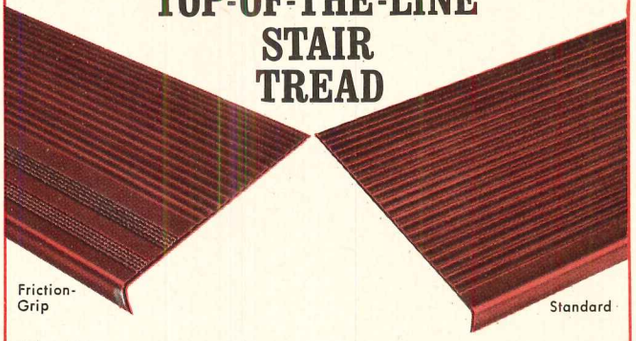
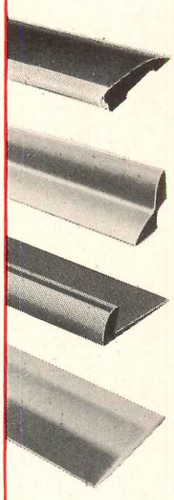
# NOW–TRI-ACTION... MERCER'S TOP-OF-THE-LINE STAIR TREAD




The Mercer Stair Tread line! First *Standard* with full-depth corrugations. *Friction-Grip* with exclusive pyramidal gripper design. And now *Tri-Action*—the heavy-duty stair tread that makes Mercer the leader! With *three* 1" Friction-Grip strips as an integral part of the tread for maximum traction. With a longer, sturdier nose. With a smooth-finish back area for beauty. With a square or round nose—in 6 attractive colors. It's the ideal stair tread for heavy-traffic applications—and attractive enough for commercial and residential installations!

*Tri-Action Sizes: 13" depth, lengths up to 12'. 1/4" wear area tapers to 1/8"; 15/8" nose. Risers and stringers available. For complete specifications on the entire Mercer Stair Tread line, write for catalog sheet.*

## OTHER MERCER FLOOR AND STAIR SPECIALTIES



**THRESHOLD/ DOORSTOP**
Vinyl cushion gasket acts as weather seal. 36" sections x 2½" wide. ½" to zero. 5 colors.

**UTILITY MOLDING**
¾" x ¾". 4' sections. 4 colors.

**CAP STRIP**
3/16". 6' sections 5 colors.

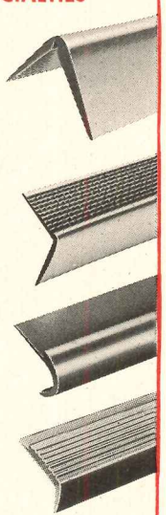
**THRESHOLD (SADDLE)**
½" center, .225" edges. Full and half-saddle. 30", 36", 42", 48" sections. 6 colors.

**CORNER GUARD**
Flexible vinyl. 5/16" thick tapering to 1/16" 54" sections. 5 colors.

**TOP-SET STAIR NOSING**
Friction-Grip style. 39" and 9' sections. Square and round nose. 6 colors.

**INTERIOR STAIR NOSING**
Bull-cap for .125" and .080" material. 12' sections. 7 colors.

**COMMERCIAL STEP NOSING**
Square-type. .125" butting gauge. 12' sections. 8 colors.



See your local distributor, or write:

MP **mercer**
PLASTICS COMPANY, INC.
*Main Office & Warehouse:* **1 Jabez St., Newark, N. J. 07105**
*Factory & Warehouse:* **Eustis, Florida 32726**

*For more data, circle 146 on inquiry card*

# How to keep World War II out of a quiet love scene

Take one large motion picture theater and convert it into two, one up and one down. Exhibit different films in each and improve the overall profitability of the building. Loew's Theaters did just that with the famous old Loew's State at Broadway and 45th Street in New York City. ☐ Keeping the sound within each theater is essential; the thunder of bombers in one doesn't add to a love scene in the other. Loew's did the soundproofing by making the floor of the upper theater plenty thick and then covering it with a lead shield. ☐ The density and limpness of lead makes an effective barrier against noise. It is being used, in a variety of forms, in offices, schools, theaters, hotels, building foundations, boats, planes, and industrial applications. Today's architects and designers are using lead to stop noise from invading our privacy, lowering human efficiency and injuring our health. ☐ You can make life more liveable by designing for quiet . . . with lead. ☐ **St. Joe supplies quality lead —American industry puts it to work.**

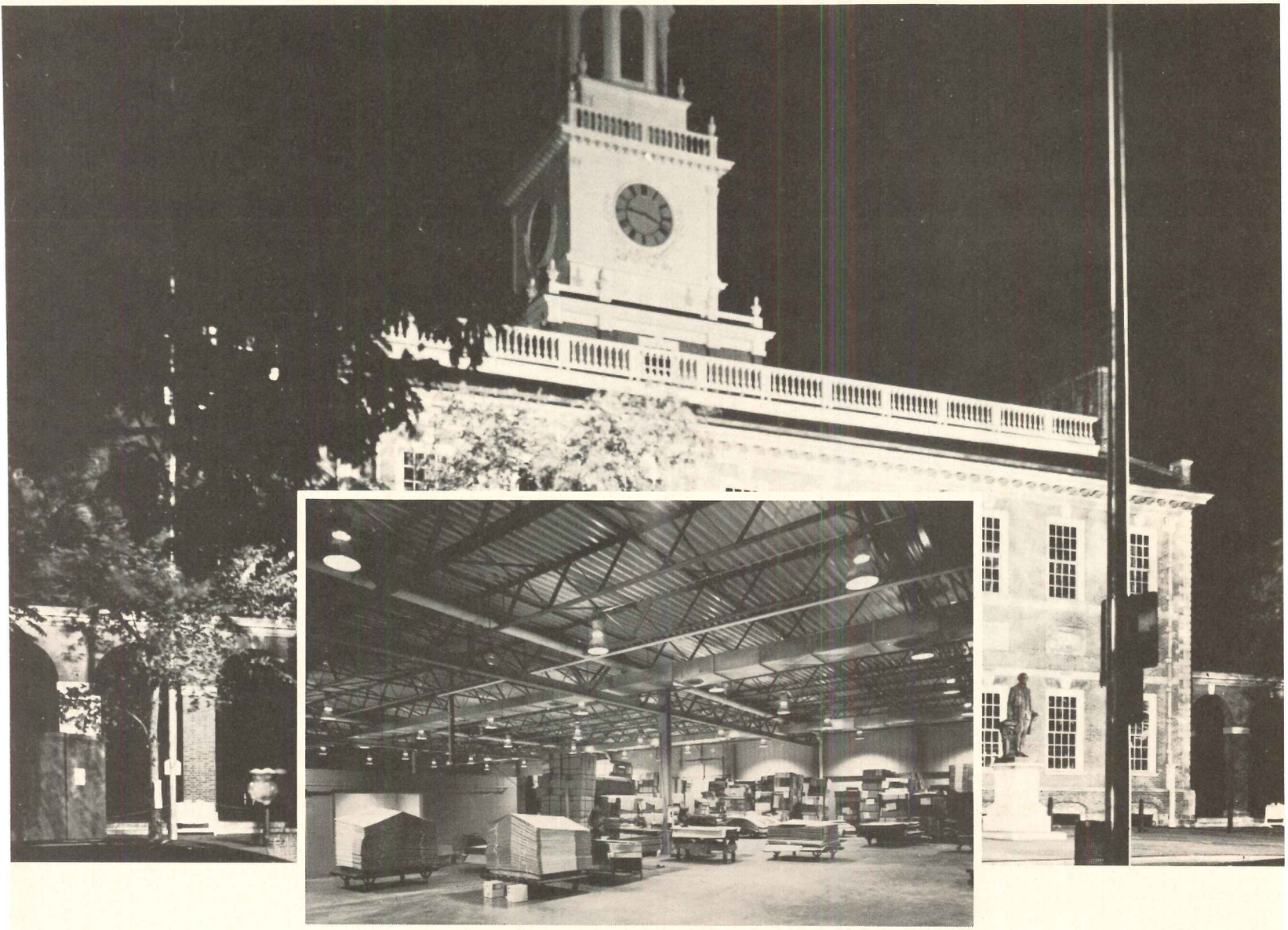
ST. JOE

Producers and Marketers of Lead, Zinc, Zinc Oxide, Iron Ore Pellets, Iron Oxide, Agricultural Limestone, Cadmium, Copper Concentrates, Silver and Sulphuric Acid.

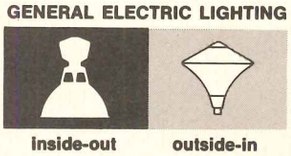
ST. JOSEPH LEAD CO., 250 Park Avenue, New York, New York 10017

PB-359

# General Electric luminaires freed the beauty of Independence Hall...



# ...and can free your plant lighting problems too.




Whether you are lighting a page of history or making industrial history possible, the experienced people at General Electric can design the system to help. Both inside and out, GE has the most complete line of luminaires from which to choose.

Floodlights, for instance, that enhance the beauty of the oldest—or newest—building. Industrial luminaires that filter the air they operate in, using every modern light source — Mercury, Multi-Vapor*, or Lucalox® lamps. Twin units. Singles. Enclosed. Open. High mounting or low. For 100-watt to 1000-watt lamps.

See your General Electric Sales Engineer or franchised distributor for full details, or write Section 460-45, General Electric Company, Lighting Systems Department, Hendersonville, North Carolina 28739.

GENERAL ELECTRIC

*Trademark of General Electric Company

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*continued from page 292*

**OFFICE STORAGE** / A brochure illustrates the contemporary design of office storage and filing furniture. The cabinets and side files are available in standard and designer colors. ▪ Mosler, Hamilton, Ohio.*

*Circle 406 on inquiry card*

**SUEDE-LIKE SURFACE** / A color brochure on the *Epoxyn Suede-Tron Electrostatic Process* explains how colored fibers are applied to achieve a "luxurious, textured surface." ▪ Co-Polymer Chemicals, Inc., Livonia, Mich.*

*Circle 407 on inquiry card*

**CERAMIC TILE** / A 1969 catalog presents a comprehensive line of glazed tile (including *Terra Vitra),* ceramic mosaics and quarry tile. The 32-page color catalog contains installation photos and color charts, as well as a chart of suggested harmonizing accessories. ▪ American Olean, Lansdale, Pa.*

*Circle 408 on inquiry card*

**PARTITIONS** / A 12-page booklet entitled "Quick Change Movable Systems" contains information and photos on the flush-post, feature-post and 275 partition types. In addition there is a section on panels, doors, facing materials, colors and finishes. ▪ Masonite Corporation, Chicago.*

*Circle 409 on inquiry card*

**HARDWARE** / Metal doors, door frames, hardware and other builders' supplies are listed in an illustrated 97-page catalog. ▪ Tri-State Builders Hardware, Inc., Wheeling, W.Va.

*Circle 410 on inquiry card*

**SEATING** / An eight-page booklet presents the *Sunberg Chair* made of cast nylon. The simple, sculptured shell design comes in warm, bright colors with metal legs or pedestal, bar or swivel base. The booklet shows models with tablet arms, plain arms or without arms. Particularly interesting are *swingaway* seating and chair-table combinations. ▪ American Seating Company, Grand Rapids, Michigan.*

*Circle 411 on inquiry card*

**SCHOOL DIVIDERS** / A color brochure features the *Schoolmates* convertible space divider system that is designed to meet changing space needs. The panels, with baked enamel or chalkboard finish, are available in four widths and two heights—different-size panels may be used together. Hour-by-hour, *Schoolmates* can be changed to build visual screens, divider walls, study carrels, teachers' enclosures and storage or work areas. ▪ The E. F. Hauserman Company, Cleveland.*

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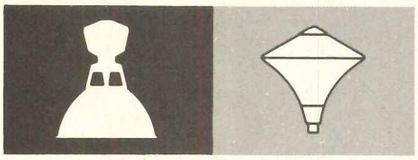
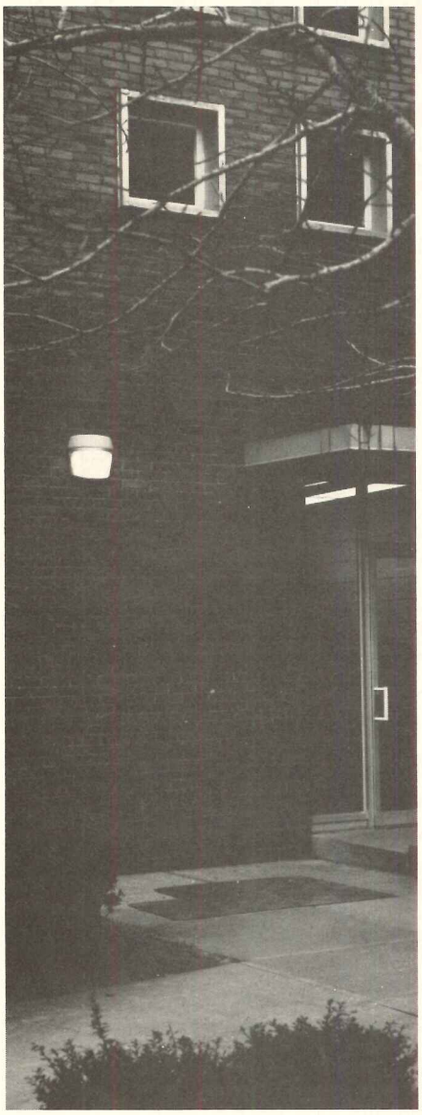
**Additional product information in Sweet's Architectural File*


**GENERAL ELECTRIC LIGHTING**



inside-out outside-in



(TM)
**Wallighter-100**

Here's the precise light control you need for lighting walkways, entrances, loading docks, and parking areas.
At approximately 10 feet mounting height it blends snugly against the wall surface—attractive by day and functional by night. Units for 50- or 100-watt long-life mercury lamps.

460-36

Write for 40-page GEA-7723, "Area Lighting Guide." Hendersonville, N. C. 28739.

GENERAL ELECTRIC

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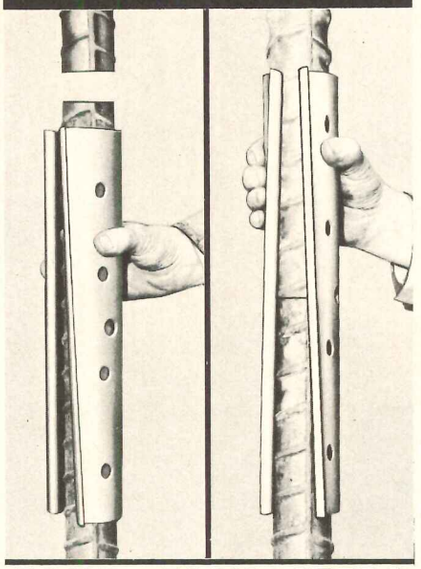
**G-LOC® SPLICES**



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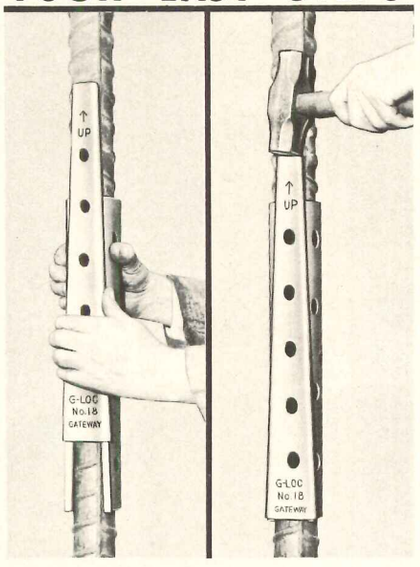


The G-Loc Splice makes a positive concentric full bearing compression splice in concrete columns . . . welding and lapped splices are unnecessary.

The four steps above show the simplicity of installing the G-Loc Splice. It takes less than a minute to join two reinforcing bars, after the bar ends are brought into contact.

Column vertical bars, up to 30 feet in length, have been successfully erected (free standing).

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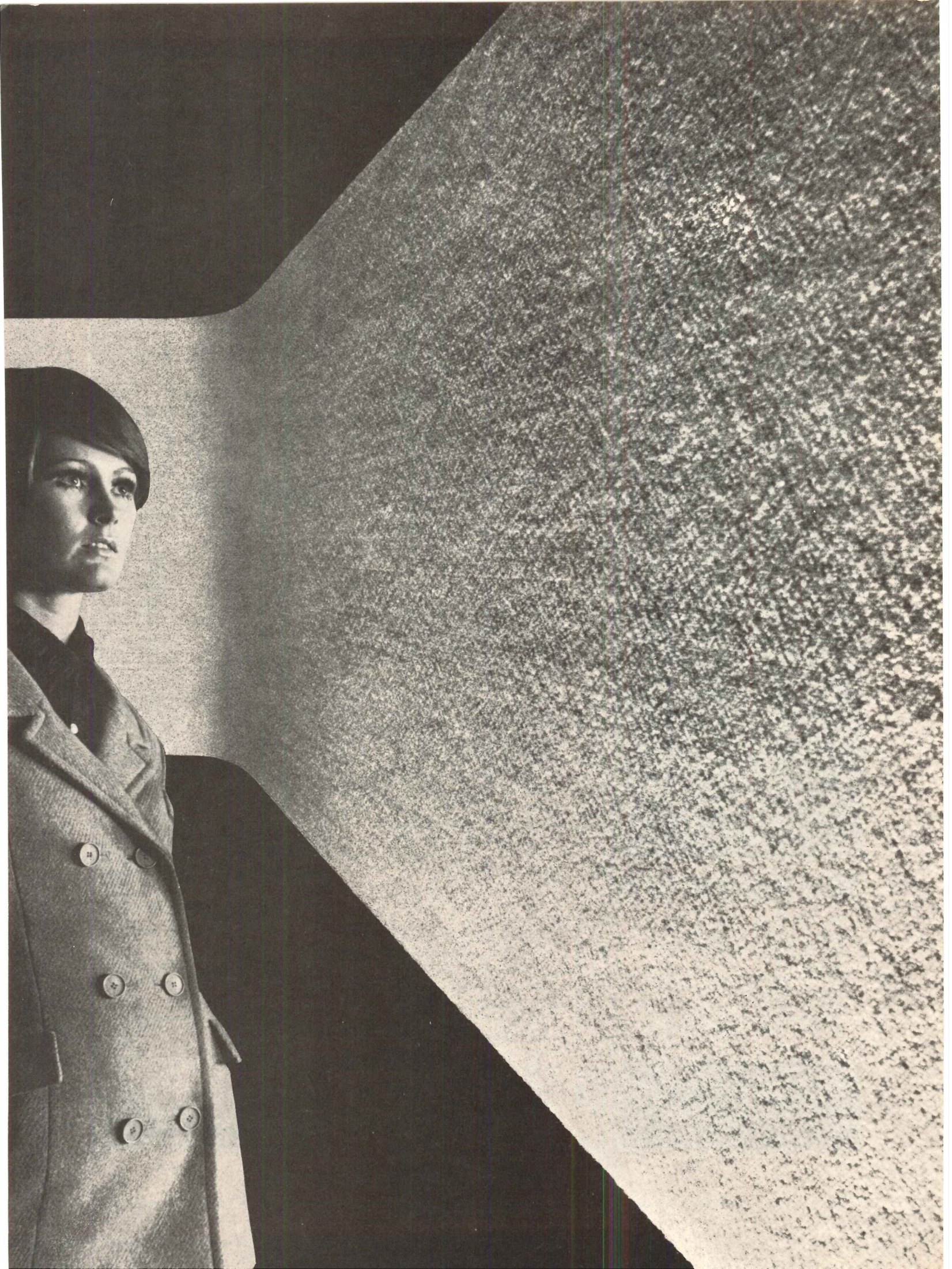

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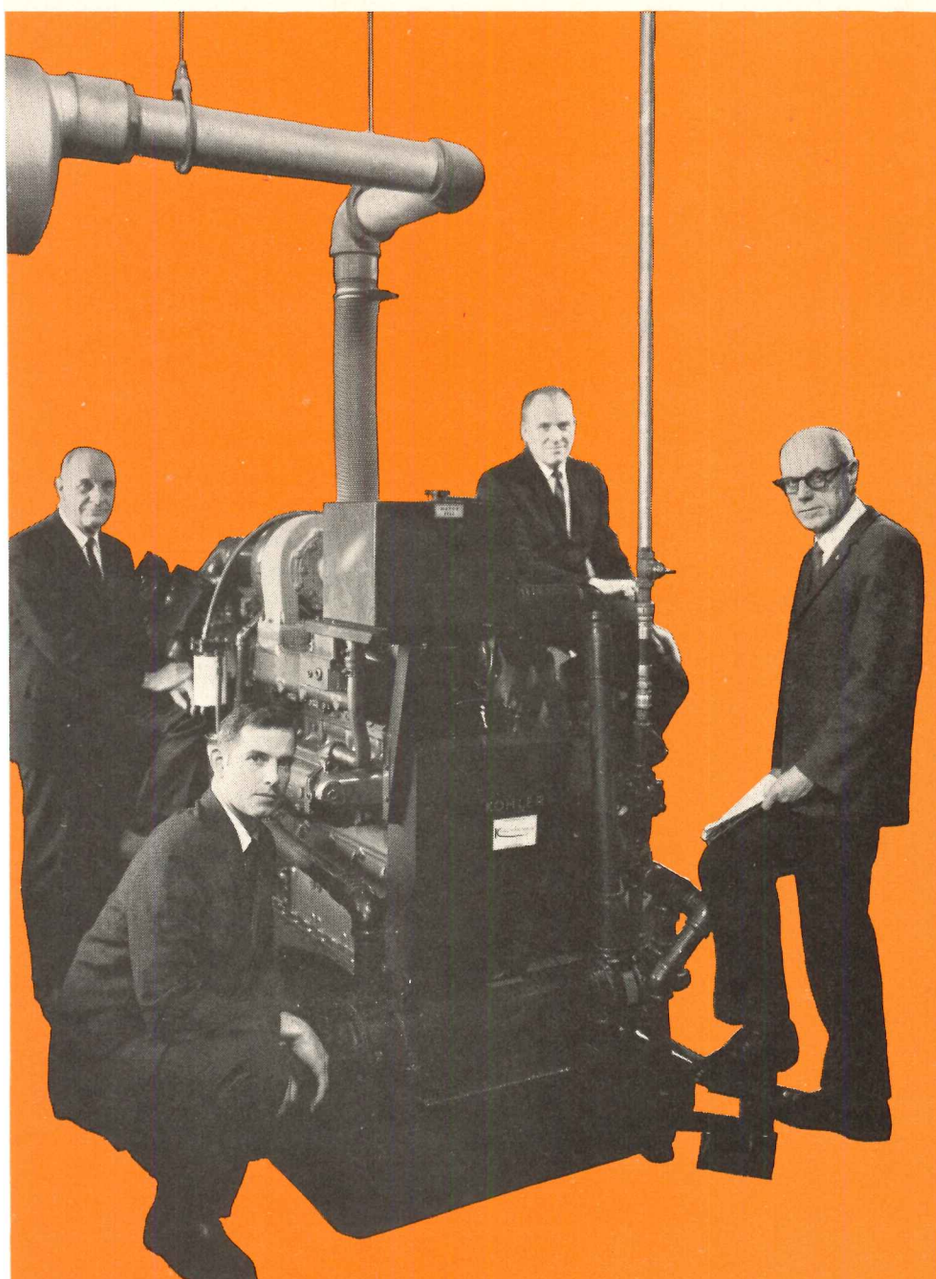

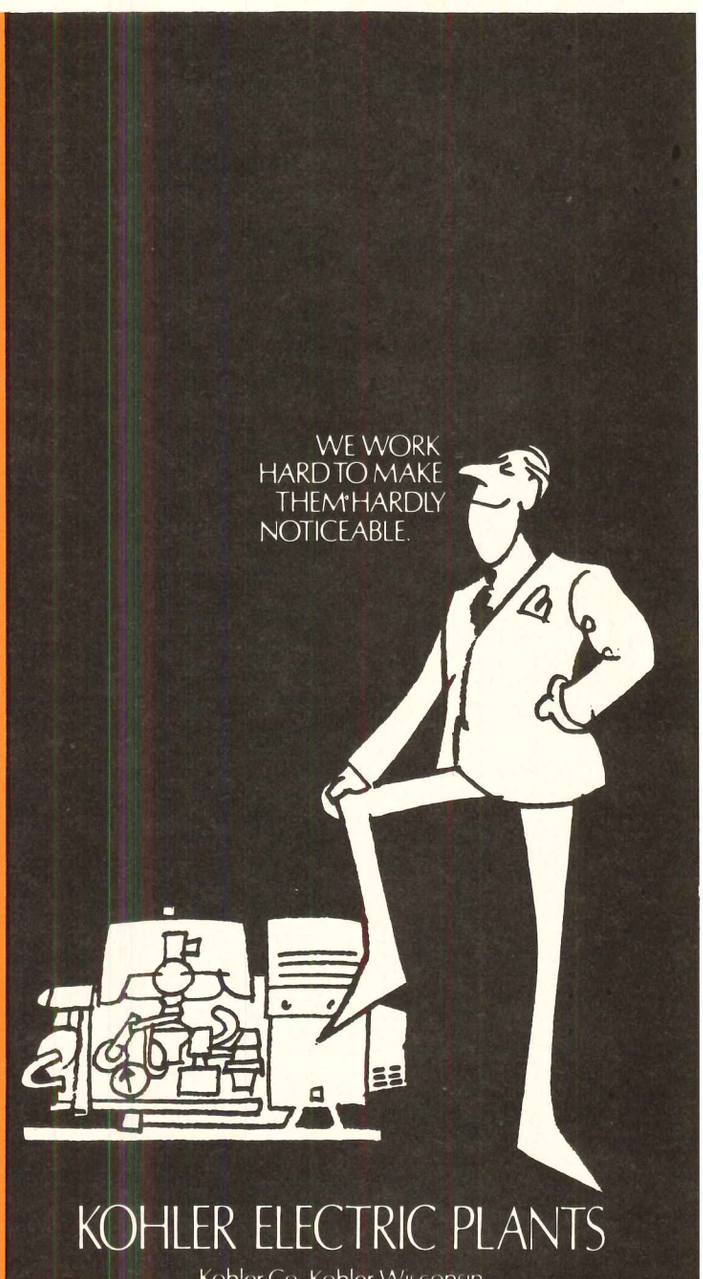


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# ARCHITECTURAL RECORD

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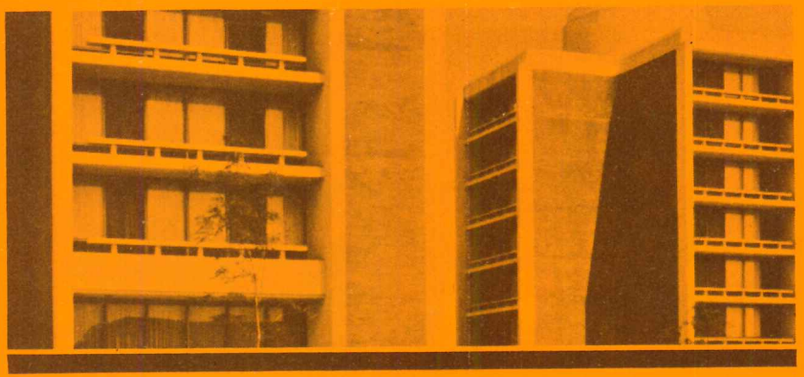

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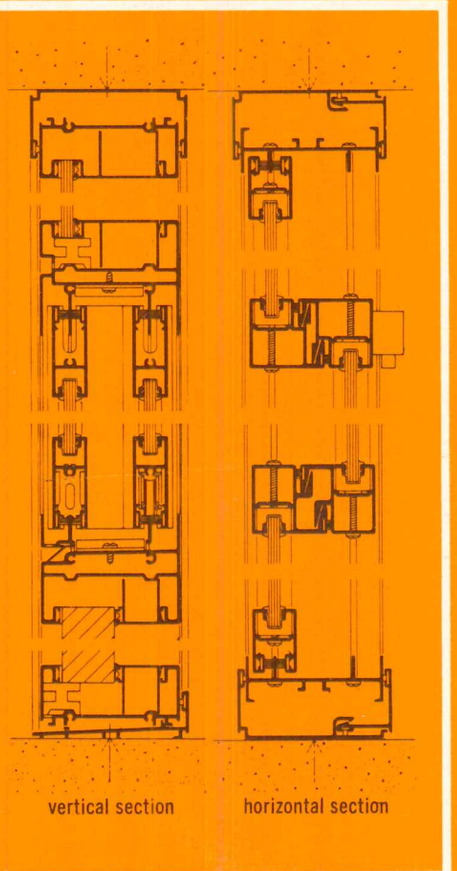


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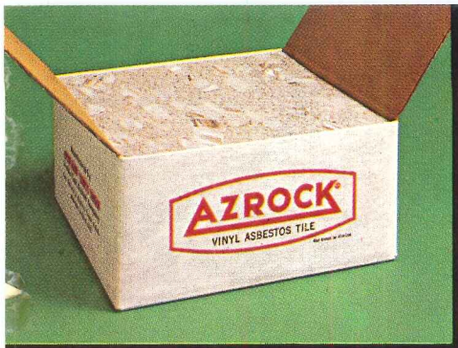

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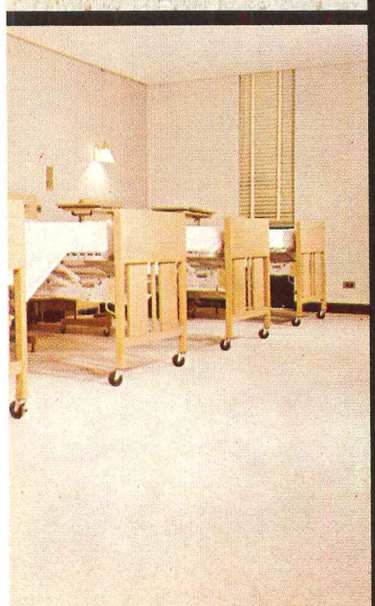

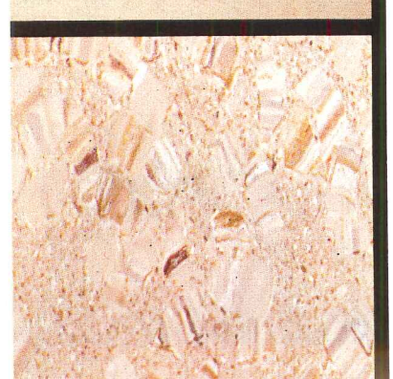

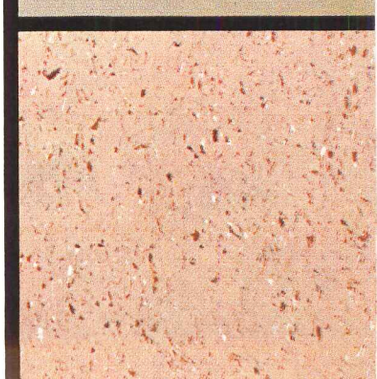

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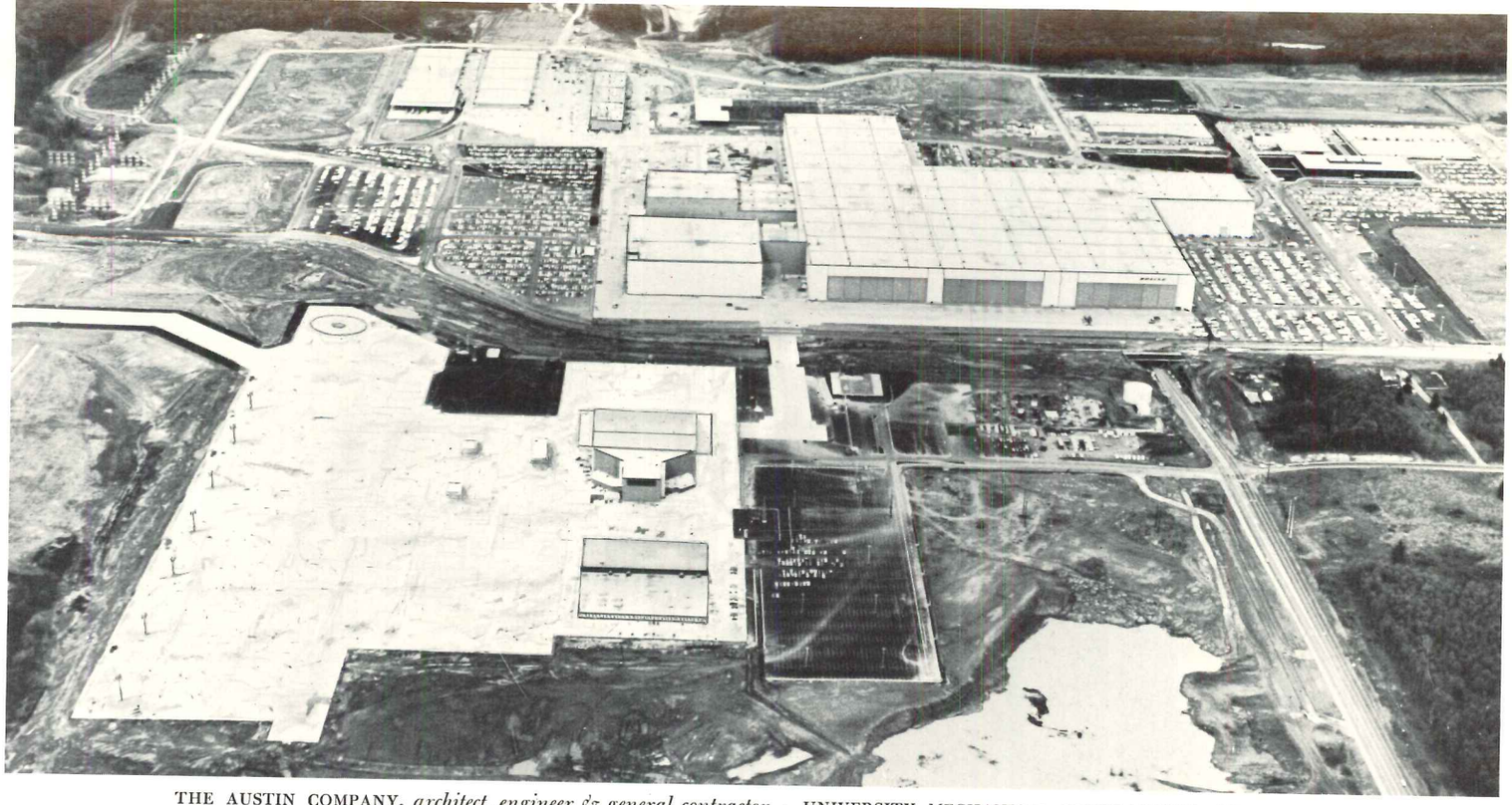

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