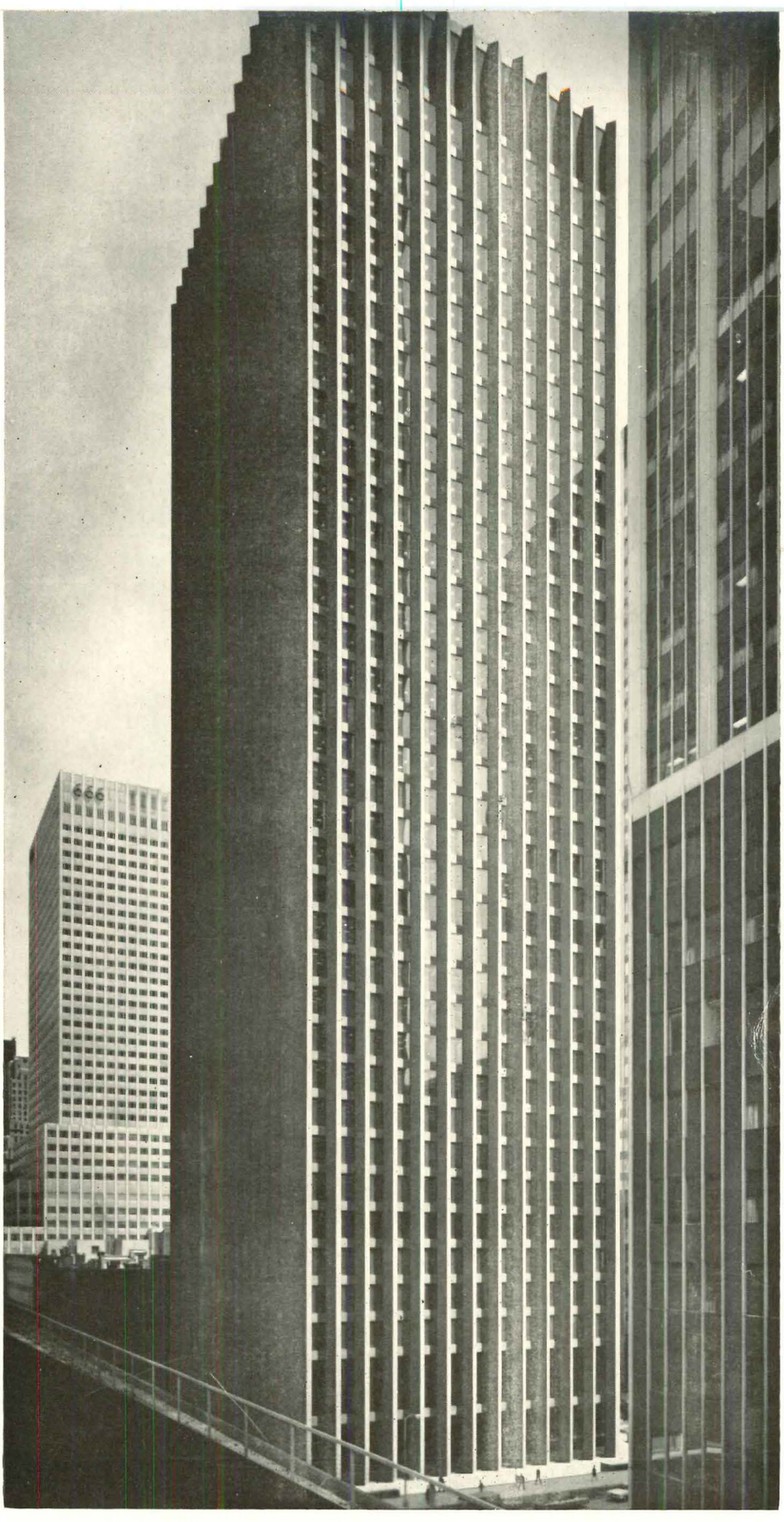

ARCHITECTURAL RECORD

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BUILDING TYPES STUDY: RECREATION BUILDINGS AND FACILITIES

CBS OFFICE BUILDING BY EERO SAARINEN

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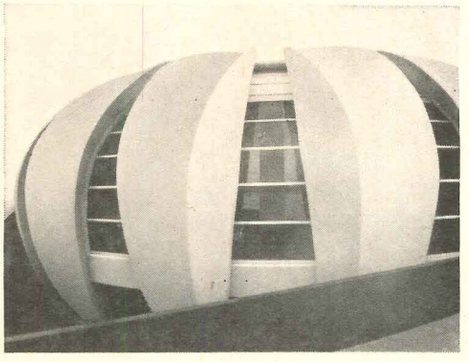
Wyoming National Bank, Casper, Wyo.
Architect: Charles Deaton, Denver, Colo



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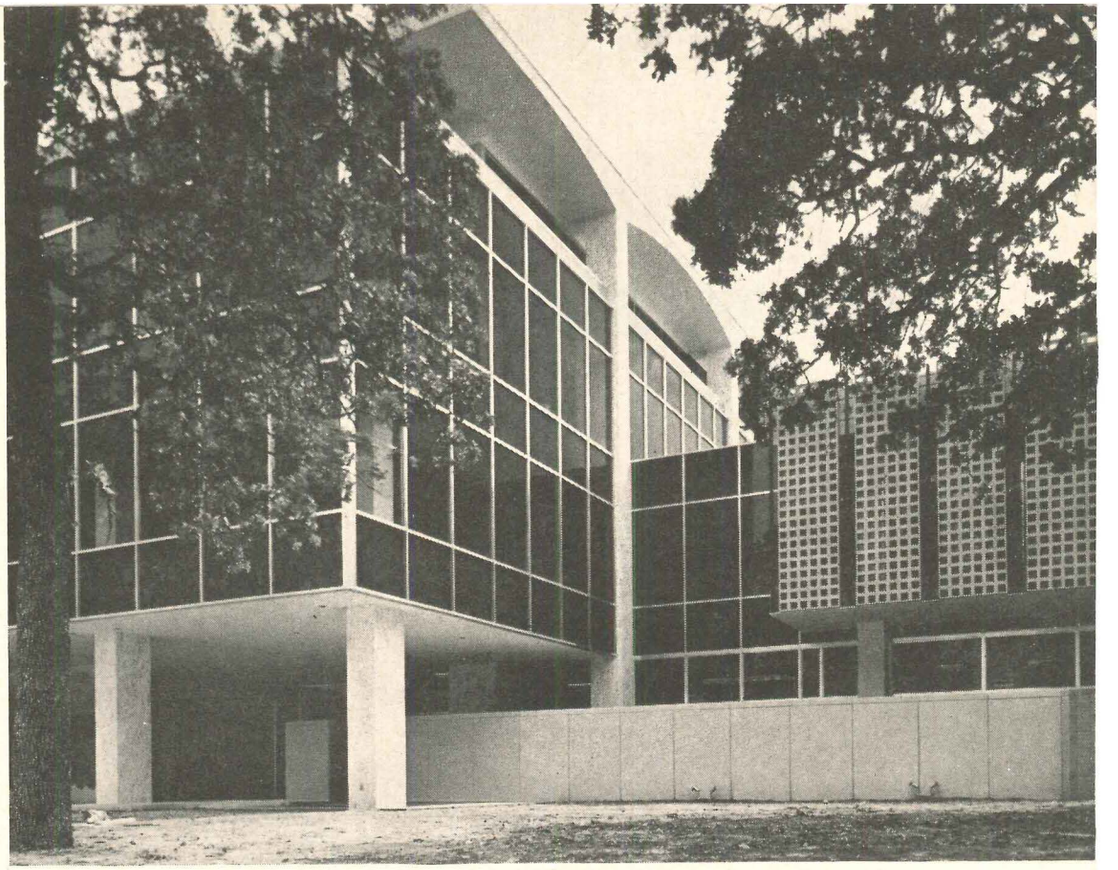
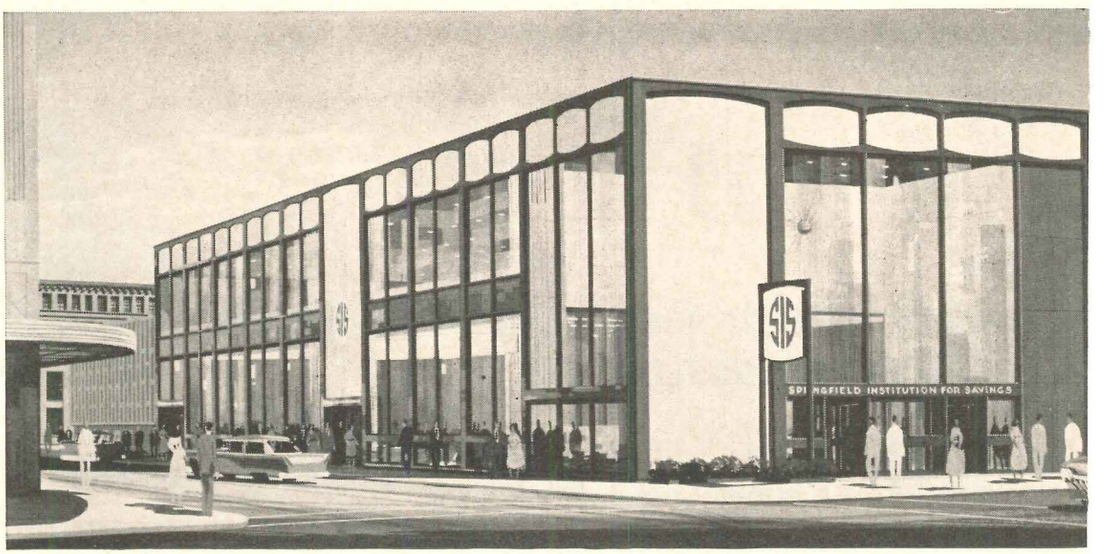


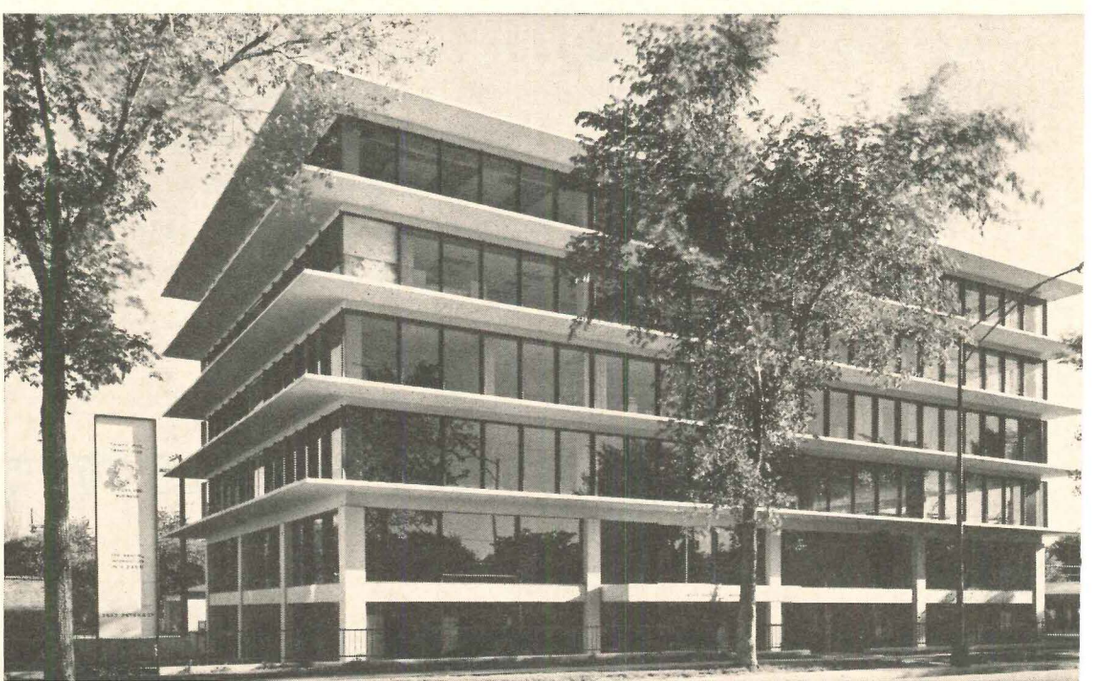
DALLAS, TEXAS

Oak Plaza Building
Architect: Thomas E. Stanley
General Contractor:
Thomas J. Hayman Co., Inc.
Dover Oildraulic Elevator installed
by Hunter Hayes Elevator Co.



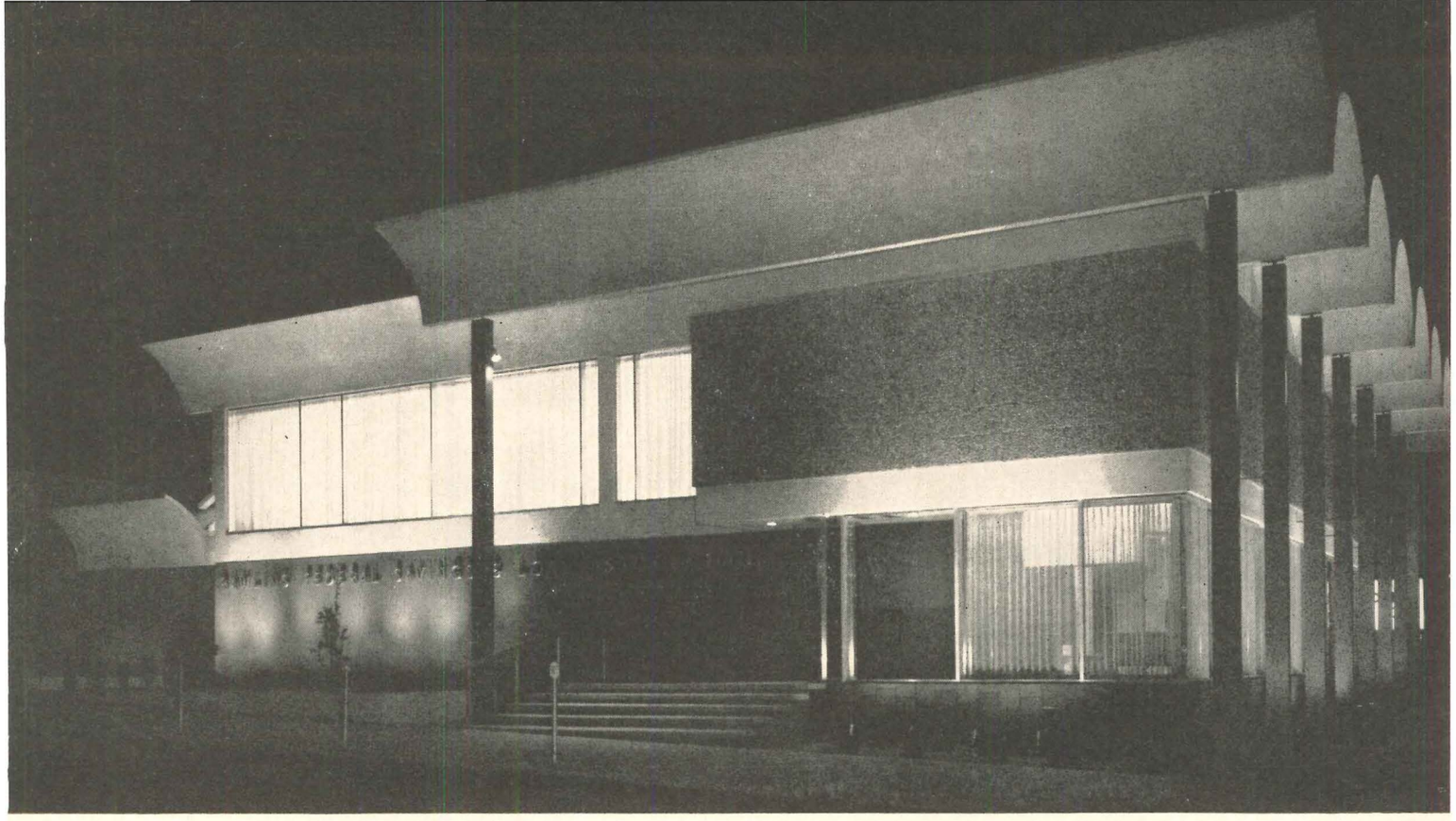
SPRINGFIELD, MASS.

Springfield Institution for Savings
Architects: Alderman and MacNeish
Architectural and Interior Design:
Raymond Lowey / William Snaith
General Contractor: E. J. Pinney Co.
Dover Oildraulic Elevator installed
by Bay State Elevator Co.



CHICAGO, ILLINOIS

3525 W. Peterson Office Building
Architect: Schurecht, Inc.
Dover Oildraulic Elevator installed
by Gallaher & Speck



RAWLINS, WYOMING . . . Rawlins Federal Savings and Loan Association. Architect: Richard L. Crowther and Associates. General Contractor: L. M. Olson, Inc. Dover Oildraulic Elevator installed by Dover Elevator Co.

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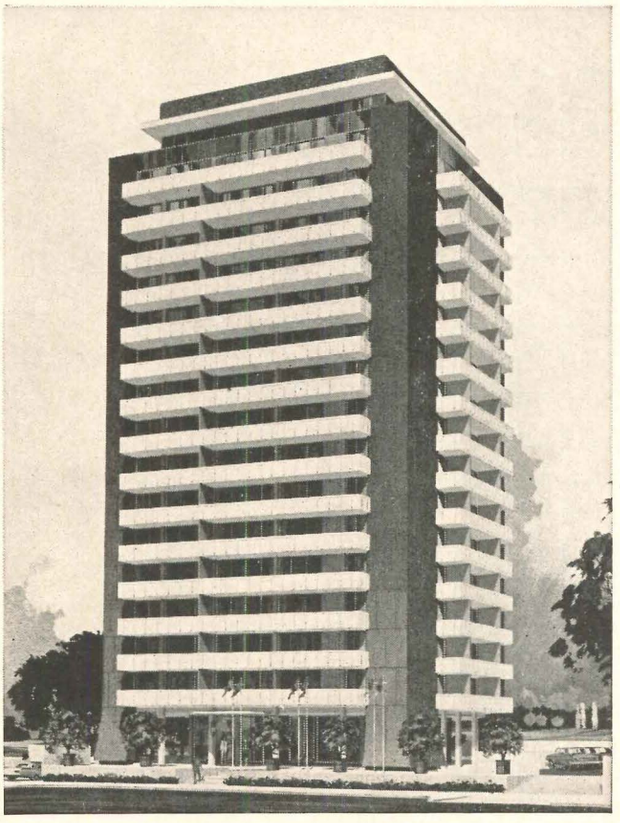

DENVER, COLORADO . . . Embassy House. Architect: De Genette and McMichael. General Contractor: Irwin Horwitz. Dover Electric Elevators installed by Dover Elevator Co.

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Cover:

The CBS Building, New York City. Architect: Eero Saarinen and Associates. Joseph W. Molitor, Photographer

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Architects and Buildings

Authors and Articles

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RECORD

CONTENTS

July 1965

Building Types Study 348: Recreation

Coming in the Record

ARCHITECTURE FOR LIVING ON THE CAMPUS

In these days of overcrowded campuses faced with yet vaster expansion problems in the future, some think the mood of student confusion and student protest may be born in part of the need to feel some identity in the midst of a vast academic complex. Approaches to housing students are taking account of this factor, and a new variety of types is developing. Architectural results, as the examples in next month's Building Types Study on Dormitories show, are in many cases of a very high order.

THE CASE FOR URBAN RENEWAL

Among the many voices being raised these days on the subject of urban renewal, that of the Federal official responsible for administering all the housing and urban renewal programs of the Housing and Home Finance Agency surely deserves to be heard. In a paper to be published next month, Dr. Robert Weaver evaluates the urban renewal program so far and discusses its problems and its potential.

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Who Takes the Blame When the Roof Leaks?

Why, the architect, of course! If the world is slow to concede kudos to architects, or even to mention their names in news reports, it seems to relish the chance to say, "Hah, and the roof leaks."

One day recently I was talking about this propensity on the part of the public, and I spouted a bit to a luncheon guest. Anybody in the field knows, of course, that 99 times out of 100 the fault is not that of the architect; it belongs to the sloppy workman who neglected to press home the caulking compound. And because he left a gap the water pours in, runs down the inside of the window, and the architect is the butt of raucous laughter. Sometimes, if the building gets much in the news, the leaks get four-column heads in the newspapers. On the way back to the office I determined to write this bit of defense.

As it happened that was the afternoon that somebody showed me a clipping about the notorious Houston baseball stadium. Compared to all the hullaballoo about the glare and the steelwork patterns which prevented outfielders from seeing fly balls, this little story didn't amount to much. But it was titled: "On top of everything, the Astrodome leaks."

Hah, and the roof leaks. This is somehow the age old, ultimate insult to the building designer. One wonders why should there be so much satisfaction in this old charge.

I suppose it is natural to want to knock figures off of pedestals. Is the architect a figure on a pedestal? And does the public down below feel a little scorn in the frozen look of the statue? Is this the image of the architect?

I have listened to hours and hours of talk about public relations for architects. Two points always dominate: (1) there should be more criticism in all the publications; (2) all stories about buildings should include the name of the architect.

Criticism should deal with artistic aspects of architecture, not with leaking roofs. And architects should cuff each other about, in artistic matters. And please be sure to spell the names correctly. There is a tacit assumption that publicity is always desirable, in spite of the pleas for criticism.

It doesn't take much perspicacity to note that when the newspapers really let go about architecture, they blast forth on some functional or construction or cost matter, some imperfection, possibly trifling, which they can charge, perhaps wrongfully, to the architect.

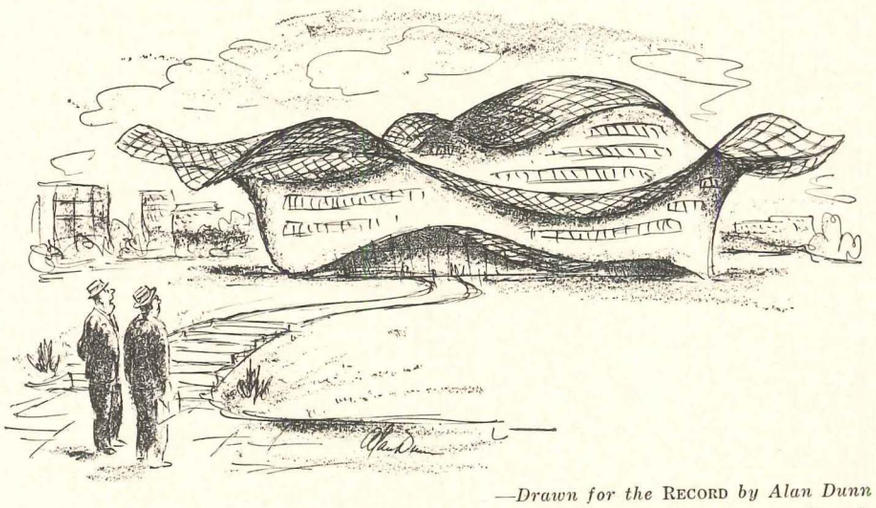
The Houston stadium is ample evidence that "criticism" is available to the architectural profession, available in huge quantities. Fair or unfair. And fortunately most of the stories I read about the stadium and its trials did not mention the name of the architects. But the image of the architect suffers just the same.

Well, I started out to defend the architect. Occasionally, of course, the roof does leak because of a design slip, or perhaps an experimental design. I can think of only a few cases at the moment. The glass wall presented some problems, not always sufficiently anticipated. But the 99-out-of-100 generalization is that it is a workman's slipshod performance that makes leaks in roofs or windows.

There was one famous case when New York papers gave columns and columns to a university building, and the story sputtered on about the leaky windows. It happened that at the opening dinner I sat opposite the builder. I asked him why the windows leaked, and he said, oh, caulking compound left out of one spot.

In any case, it is always charged to the architect. And it is just possible that "the architect" as an image is asking for it. Maybe there's more to public relations then debating about art and getting the names spelled correctly.

—Emerson Goble



—Drawn for the RECORD *by Alan Dunn*

"It was a long and glorious tradition—Richardson, Sullivan, Wright, Breuer, Saarinen, Mies, Johnson, Rudolph, and now—IBM."

Mobile Homes Keep Rolling Along

Well, that is, saleswise. They don't actually do much rolling along, physically. On the Massachusetts Turnpike recently I did see a huge house trailer, with a sign on the back that it was an extra-width load. A story in the Wall Street Journal says that they now come to 10 feet wide, and that 12 feet is to be expected. They can be as much as 60 feet long.

According to the Journal story, sales of mobile homes now amount to one-sixth of new one-family, nonfarm dwellings in the U.S.

The appeal seems to be a matter of cost, with some supposed savings in assembly-line manufacture. The mobility doesn't amount to much; beyond the original delivery to the site there is seldom any further moving.

Apparently newlyweds and retirees find them a quick and easy answer to a housing problem. The package dealers again.

It's Big and in Full Color

At the opening of the new exhibit at the Museum of Modern Art, the gag that spread around was that the show was like Cleopatra—big and in full color. The Museum had made a selection of significant architecture in the U. S. in the past 65 years, some 71 in all, all shown in full color transparencies, some as large as four feet square. Nobody told how much had been spent on the transparencies, but nobody doubted that the sum was large.

One recognizes that such a show is not for professionals, and that some effort toward "impact" is to be expected. But one can be disappointed in what such a show does to some famous architecture. Some of the things were beautiful, tremendous. But some were definitely bad.

Some famous buildings—like the Robie House—were submerged in dramatic color concoctions that would make a famous architect shiver in his grave.

Color is frequently important to architecture, but architecture is too important to be smeared with color merely for dramatic purposes.

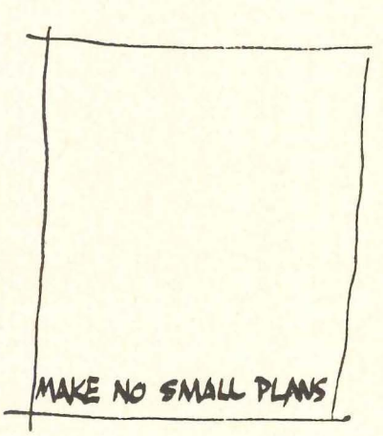
The Italian Hand in Fee Schedules

An American builder who works abroad relates an experience with an Italian architect about fees. There was this consideration and that consideration, and the Italian architect was to do just certain items. So of course the fee was to be just such and such. While protesting the fee, the architect finally came up with the fully Italian argument; "Well," he said, "I should have to pay an income tax on the proper fee, even if I did not receive it."

In re Goble's Editorial

By Mike Stousland

From Pop to Op
In one small hop
the junk from trunk
floats to the top
trusty-rusty things are found . . .
and mechanized
to go around.
Now circa May in '65 a movement new
has come alive
an empty canvas . . . with but one
line
of age old truth in letters fine
from Pop to Op—now comes the
scoop
the latest—greatest
Call it Poop.



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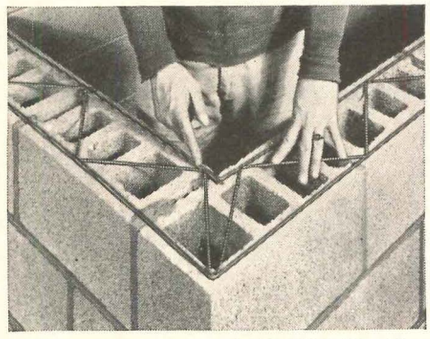

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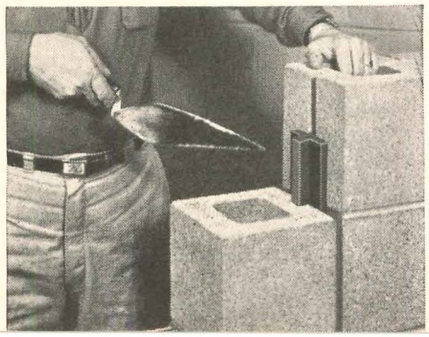

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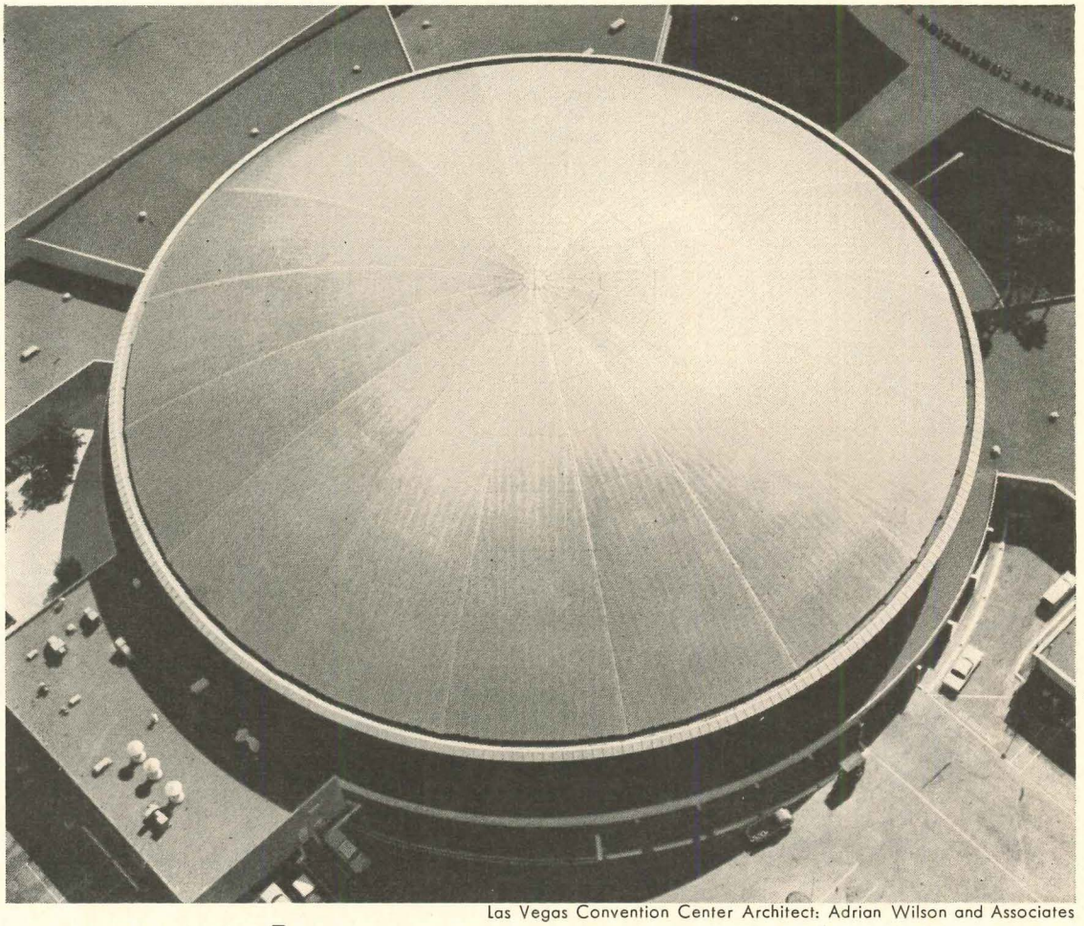

Las Vegas Convention Center Architect: Adrian Wilson and Associates

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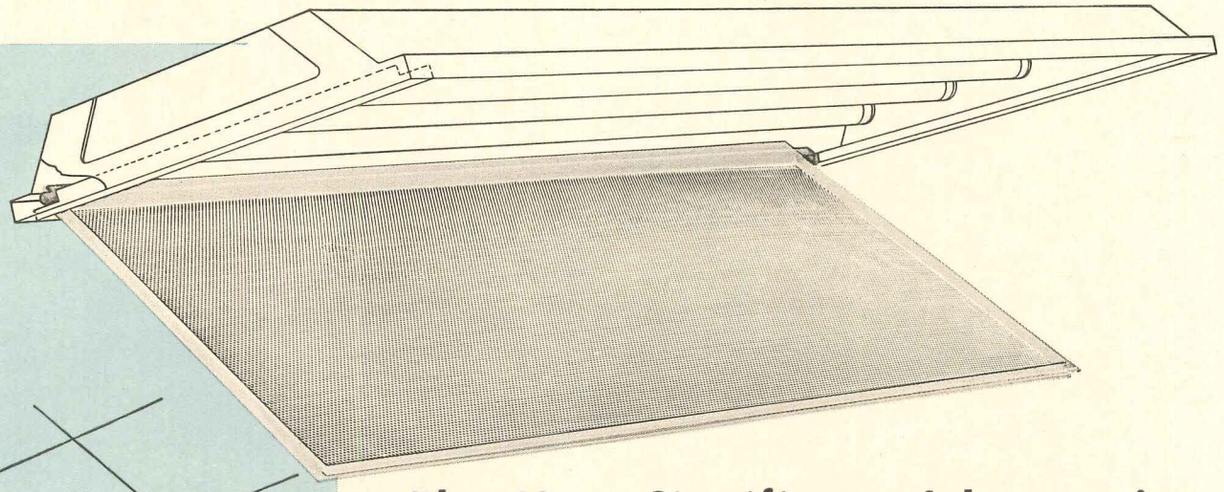

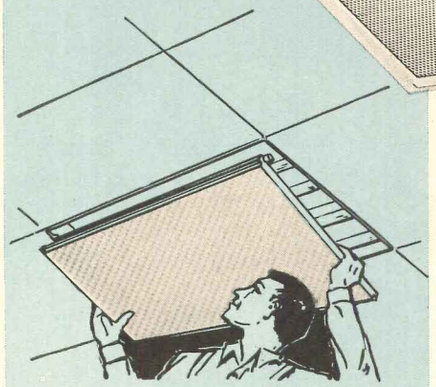

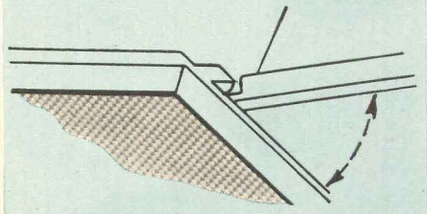

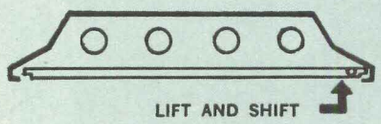

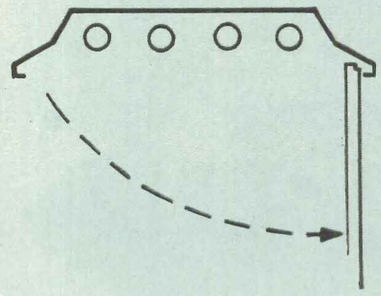

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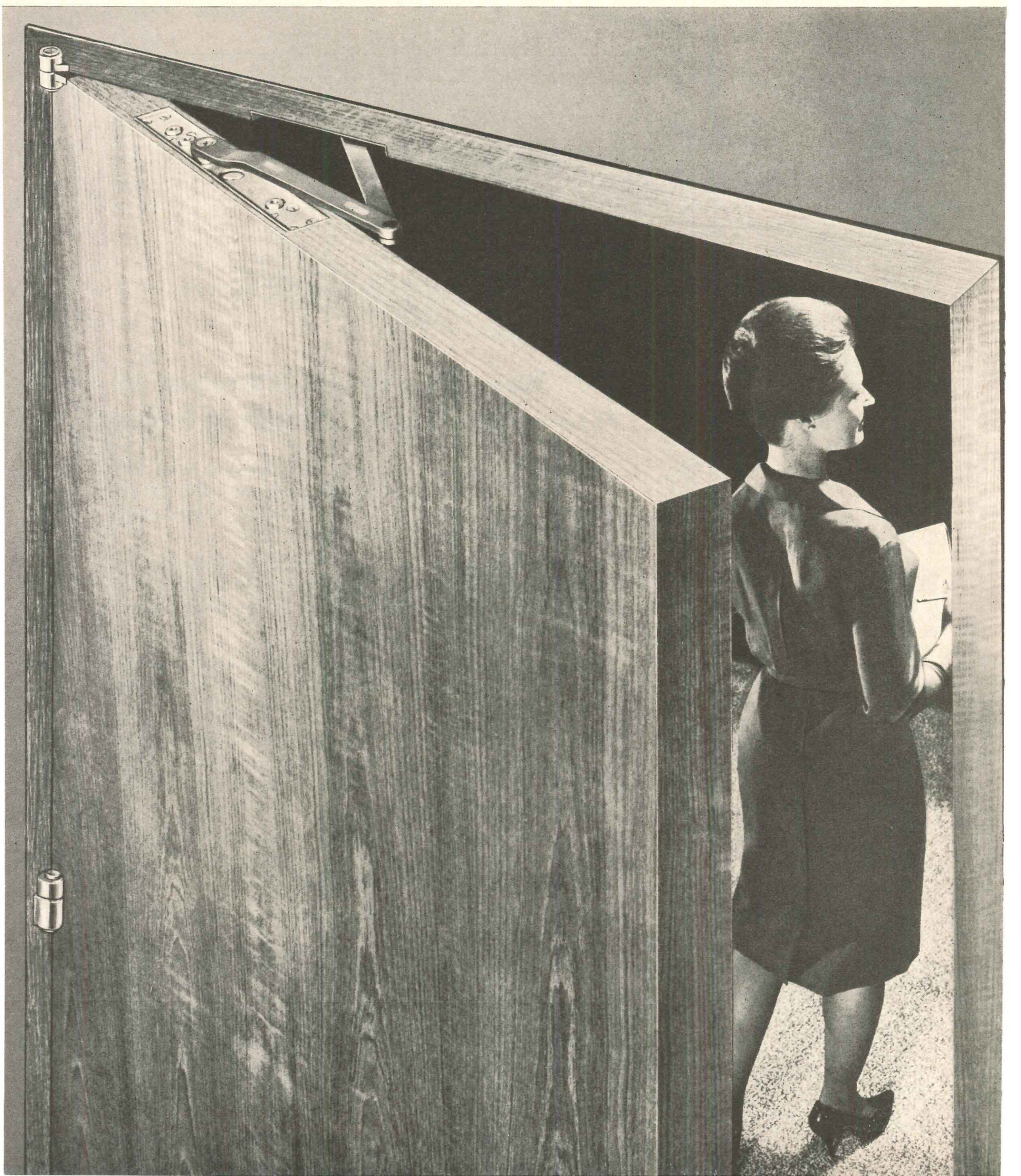

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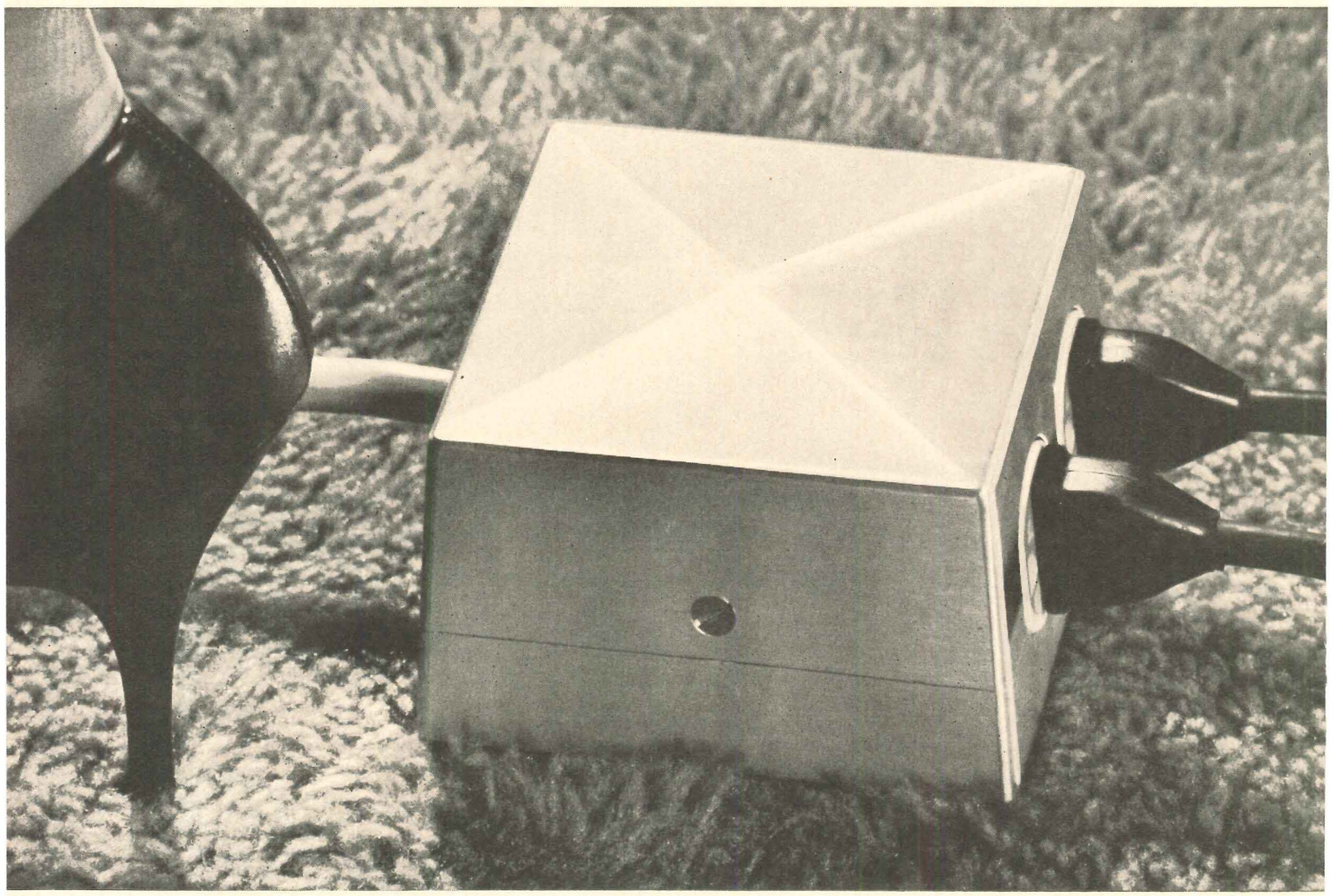
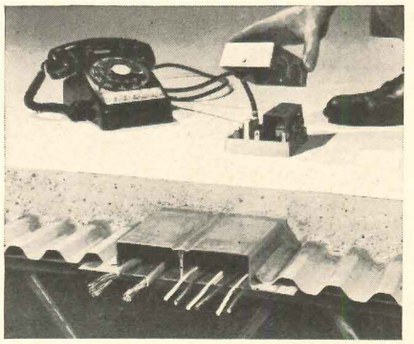


Telephone and power outlets in one fixture!



NEW ECONOMY FOR THIN FLOOR SLABS!
Cel-Way System provides full in-floor electrification . . . and saves concrete in steel joist floor construction.

Why one fixture is better than two. Granco's new Cel-Way In-Floor Electrification System puts electrical and telephone outlets in one compact floor fitting. Result: you've just eliminated 50% of the floor fixtures. Imagine a finished floor like the one above, with these new, single, low-profile, satin-finish fittings. All the double-fixture, dust-traps are gone. Floors are *now* attractive, uncluttered, easy to wax and clean.

But that's just the beginning. With Cel-Way, your installation costs are substantially reduced too. Compact, dual-service insert easily accommodates 100-pair cable; is roomy enough to house two amphenol jacks. The die-cast, contoured fitting and insert also make it easy to pull thick cables through cells to fitting. Marker screws pinpoint insert location for future use.

These are just a few of the reasons why you'll find Cel-Way practical for your next in-floor electrification system. Write today for more information on the exclusive features and benefits of this promising new floor system. Granco Steel Products Company, 6506 N. Broadway, St. Louis, Missouri 63147.

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FOR THE NEEDS OF TODAY'S ARCHITECTURE

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to last and last and last. And it does.)

Once Styrofoam® RM brand roof insulation is installed,
it's in for good. Same as Styrofoam FR for masonry walls
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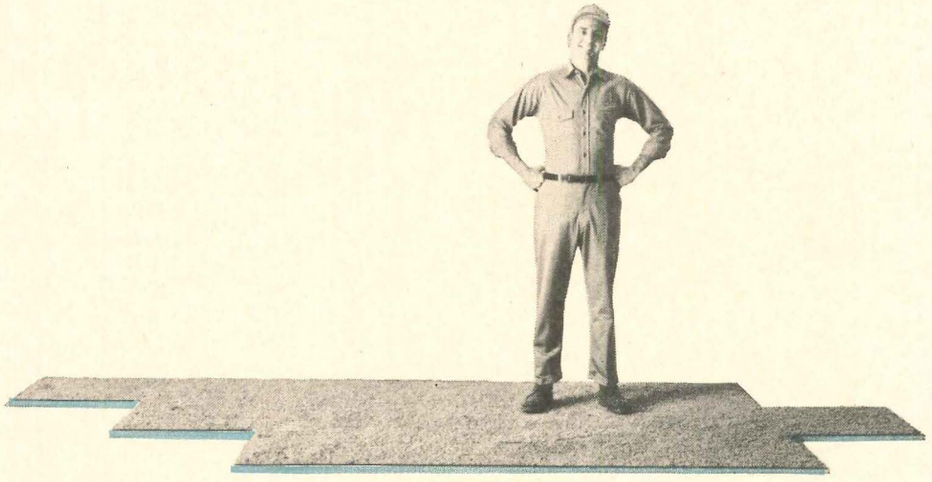
Wherever you specify Styrofoam, you're using an insulation
that won't absorb water from inside or outside.
One that doesn't need a vapor barrier. And is
extremely light in weight. No matter what its age,
Styrofoam doesn't rot, or collect mold, or deteriorate.
There's even more to remember about Styrofoam in Sweet's
Architectural File 10a/Do and 8a/Dow. Or we'll send
the information to you. Just write. The Dow Chemical Company,
Plastics Sales Department 1310N7, Midland, Michigan.
*Styrofoam is Dow's registered trademark for expanded polystyrene
produced by an exclusive manufacturing process. Accept no substitutes...
look for this trademark on all Styrofoam brand insulation board.*



OK. Now forget it.

(It gets along by itself just great.)

DOW

For more data, circle 8 on Inquiry Card

Designer Paul McCobb added an exciting new style to our functional equipment.

Paul McCobb, one of America's leading contemporary designers, says there is every reason to believe that heating and cooling equipment can be beautiful as well as functional. He proved it.

Mr. McCobb architecturally styled and coordinated the design of each of the Nesbitt products shown here . . . Sill-Line radiation, Syncretizer unit ventilator (free standing or with storage cabinets), as well as the Roommate

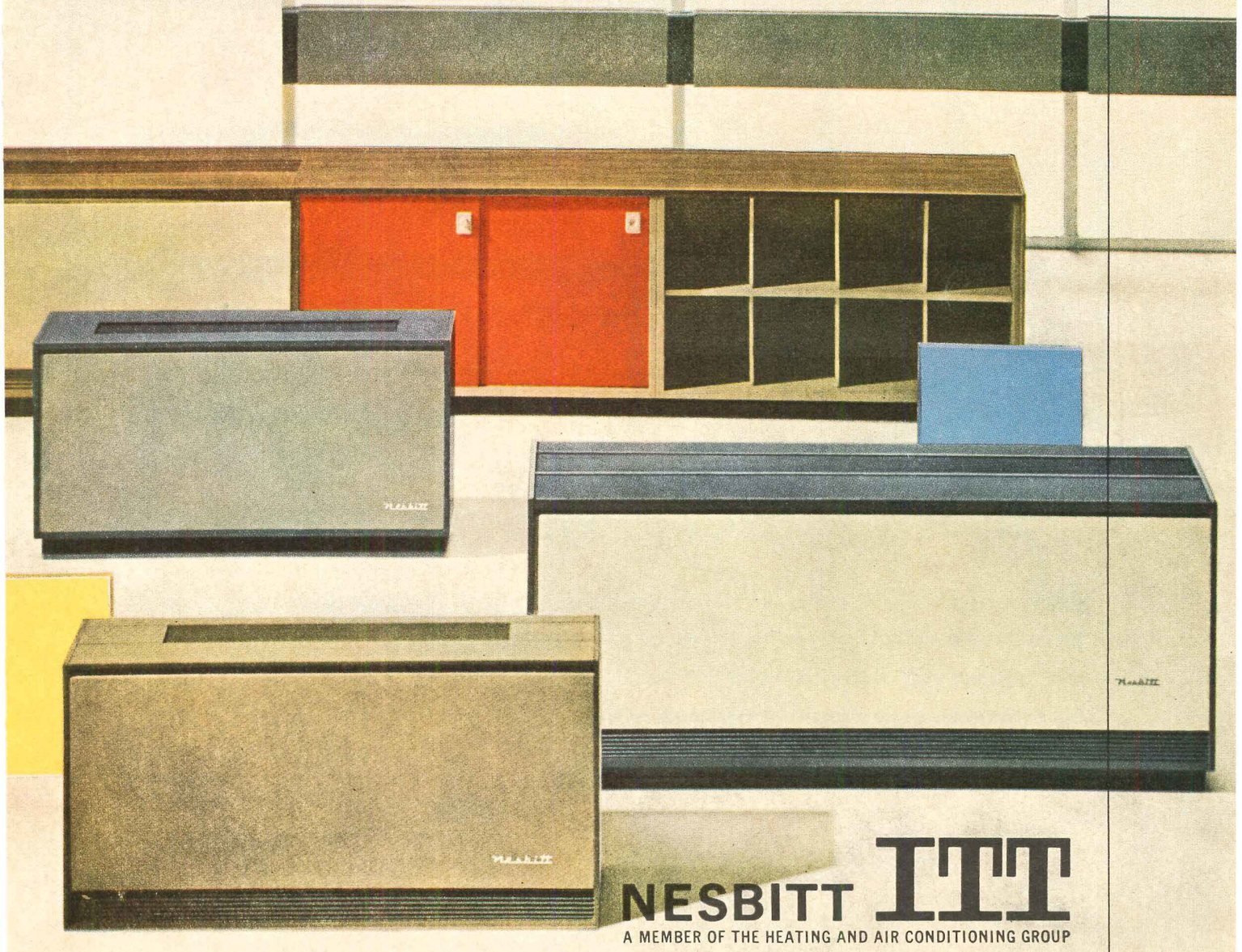
pkg and Roommate III cabinet air conditioners. The result: a contemporary look, a distinctive style that works right along with your designs.

It's important. After all, Nesbitt products *are* a distinct part of the room. Now with new colors, textures and patterns an integral part of the total design, the units blend with the room, with the building, with each other.

This gives architects complete freedom. You can organize and complement various arrangements of Nesbitt classroom ensembles, select the units that unify all your design elements.

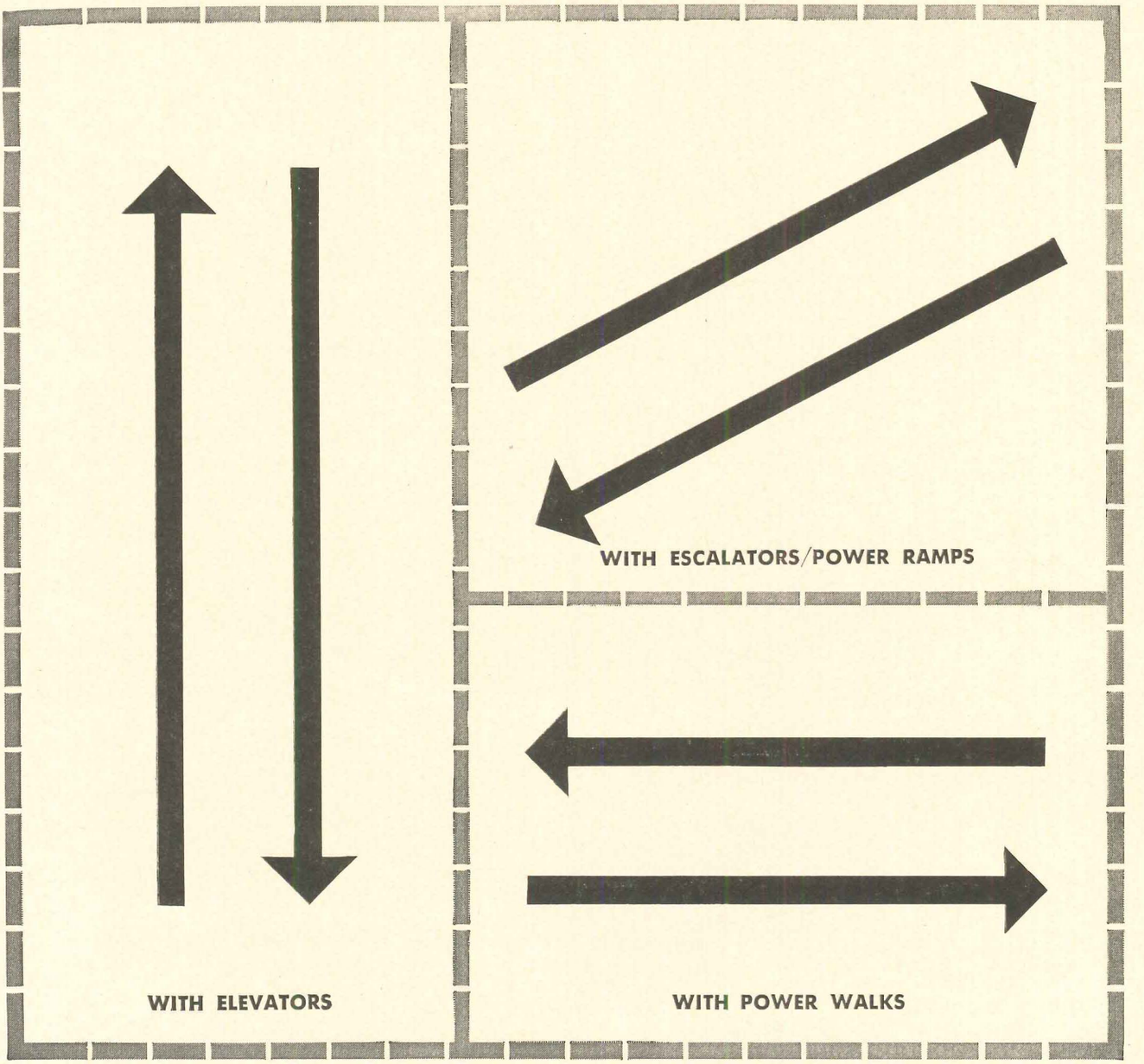
More Nesbitt unit systems are installed in schools and institutions than all other systems combined. That's reason enough to write for the facts on the exciting new style in Nesbitt heating and cooling equipment.

ITT NESBITT, a division of International Telephone and Telegraph Corporation, Philadelphia, Pennsylvania 19136.



NESBITT ITT

A MEMBER OF THE HEATING AND AIR CONDITIONING GROUP



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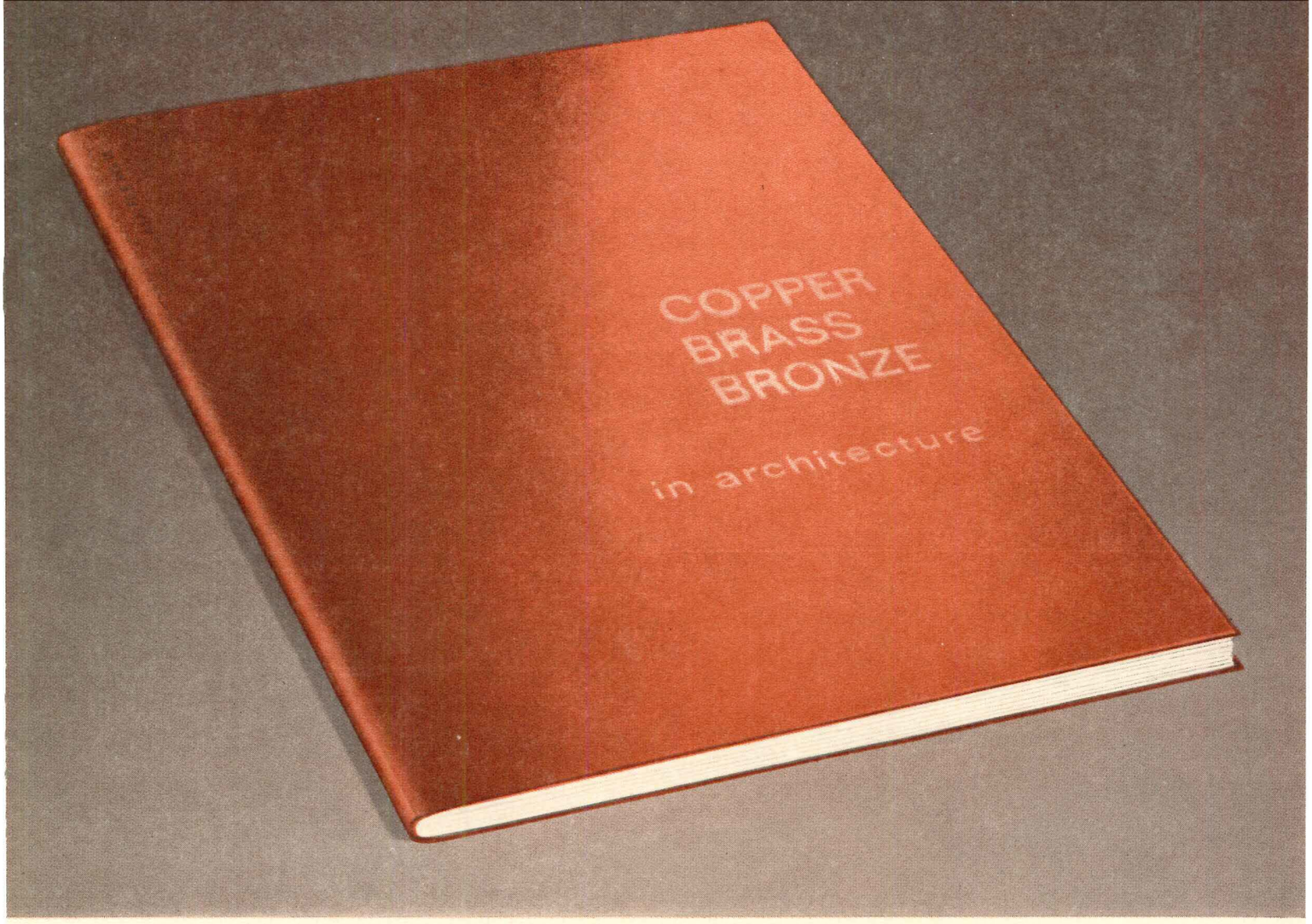

Just published! New facts about design economies, improved coatings, maintenance and finishes. Yours on request.

If you ever *didn't* specify copper, brass or bronze because of cost . . . then you're in for some pleasant reading. Our new booklet is full of fresh facts, figures, ideas and illustrations on the *practicalities* of using these beautiful metals. You'll find case histories on how architects took advantage of the strength and rigidity of bronze—in a standard roll-formed reversible window that was more economical than its extruded aluminum alternate; in a brake formed bronze curtain wall that carried an in-place premium of just 7%; and in a renovated bank entrance where the in-place premium was less than 11%. You'll learn how and why maintenance should be a decisive factor and how some leading architects are combining copper, brass and bronze with other materials to create distinctive contemporary designs. You'll find detail drawings, color photographs and information about Incralac, the advanced protective lacquer just developed by copper industry research. You'll get some down-to-earth advice from the head of the nation's largest metal maintenance contractor. And you'll also get the most accurate selection guide to colors and finishes ever printed. There's more, too. But why not send the coupon and we'll mail the complete booklet to you?

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AR

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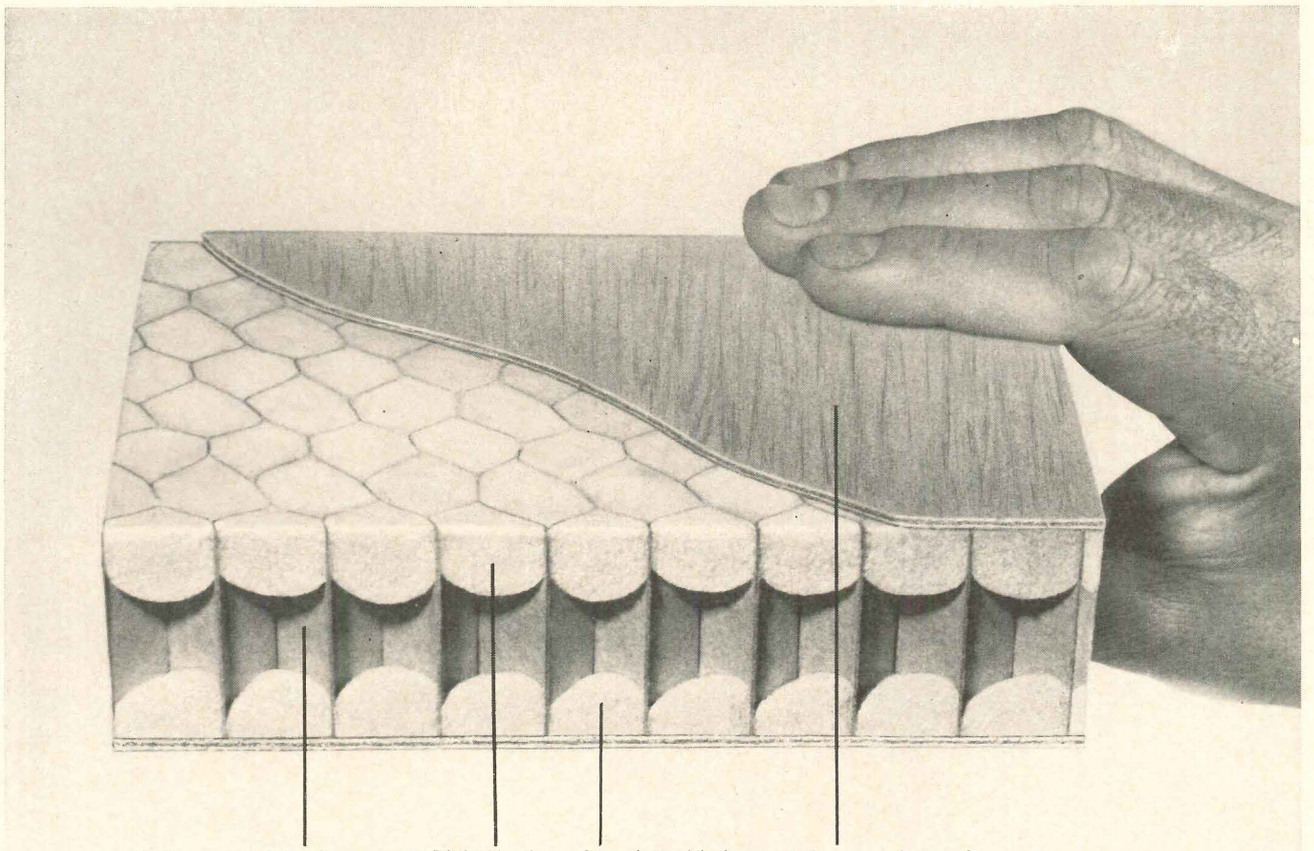


1. Honeycomb kraft core, pound for pound, produces the strongest and most economical sandwich structure known.

2. Rigid Urethane foam is molded into the top and bottom sections of each Honeycomb cell. With trapped air between the Urethane layers, it need not be necessary to fill the cells completely with foam to obtain the required amount of insulation.

3. Outer surfaces of the composite URECOMB core provide a continuing bonding surface for the application of wood, metal, asbestos, plastics or whatever facing material suits the designer's taste.

A new sandwich created for your taste

Union-Camp's new URECOMB core gives you the insulation of rigid Urethane foam plus the strength of Honeycomb—in one lightweight sandwich panel core.

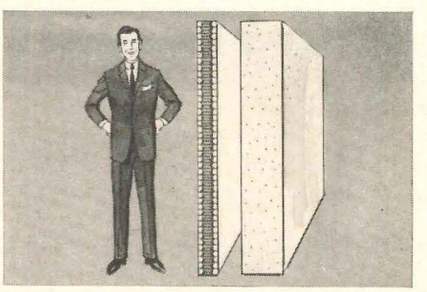
What a combination! Rigid Urethane foam —an outstanding insulator. And Union Honeycomb—incredibly strong and lightweight. Together, they make URECOMB—the most efficient structural sandwich core ever developed.

Amazing strength-weight ratio. The URECOMB core in a typical wall panel (2" thick) has a compression strength of more than 50 lbs. per square inch... yet it may weigh less than ½ a pound per square foot!

Built-in insulation. URECOMB core has good heat resistance and an outstanding coefficient of thermal conductivity. The two pound density of the Urethane in URECOMB has a "K" factor of 0.12... about twice as effective as the next best insulation. This may allow reductions in insulative panel thicknesses of up to 50%.

Flammability. The Urethane used in URECOMB is self-extinguishing. This characteristic of the Urethane foam is desirable in many applications. When sandwich constructions are involved, non-fire retarding foams have been found suitable, since the facings obstruct surface flame spread and prevent air from entering and feeding the flame in the core.

URECOMB insulated panels are easy to handle. Easy to install. Lightweight to ship. They are extremely rigid—ideal for floors, walls, partitions, roofs of varied structures.



Insulation is the same... but compare thicknesses and weights! URECOMB's unique combination of strength/weight and insulation can reduce panel thicknesses by as much as 50%... and still do the required job. For information write:

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Washroom Installation

Classroom Installation

Corridor Installation

in a class by themselves throughout modern schools

BRADLEY WASHFOUNTAINS

Remember when Bradley Washfountains were specified only for school shop rooms? Today's creative architects outmoded such thinking long ago, and now utilize colorful, functional Washfountains *throughout* modern schools: in corridors, washrooms, classrooms, cafeterias, science and art rooms, as well as shop rooms.

Bradley Washfountains are *the* wash fixtures for schools because they serve as many as eight students at one time, cutting installation costs 50% or more . . . save as much as 25% on floor and wall space, as well as 80% of the water lavatories require . . . and serve more students in less time with less supervision than any other wash fixture. They're more sanitary, too (hands touch only a fresh, clean spray of tempered water).

They're available in famous circular and semi-circular types, 36″ or 54″ sizes; two-person Duos; and counter-types. This gives you a wide variety of colors, compositions, and shapes to exercise your creativity. Doesn't it make good sense to *standardize* on Bradley Washfountains throughout modern schools?

See your Bradley representative or write direct for colorful literature. Bradley Washfountain Co., 9107 Fountain Drive, Menomonee Falls, Wis. 53055.

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Architects we have worked with find our laundry planning assistance invaluable. Wouldn't you? (A list of these firms is available upon request.) Check our catalog in Sweet's Architectural File, section 26g. Our offices and representatives are listed conveniently in the Yellow Pages—call American today!

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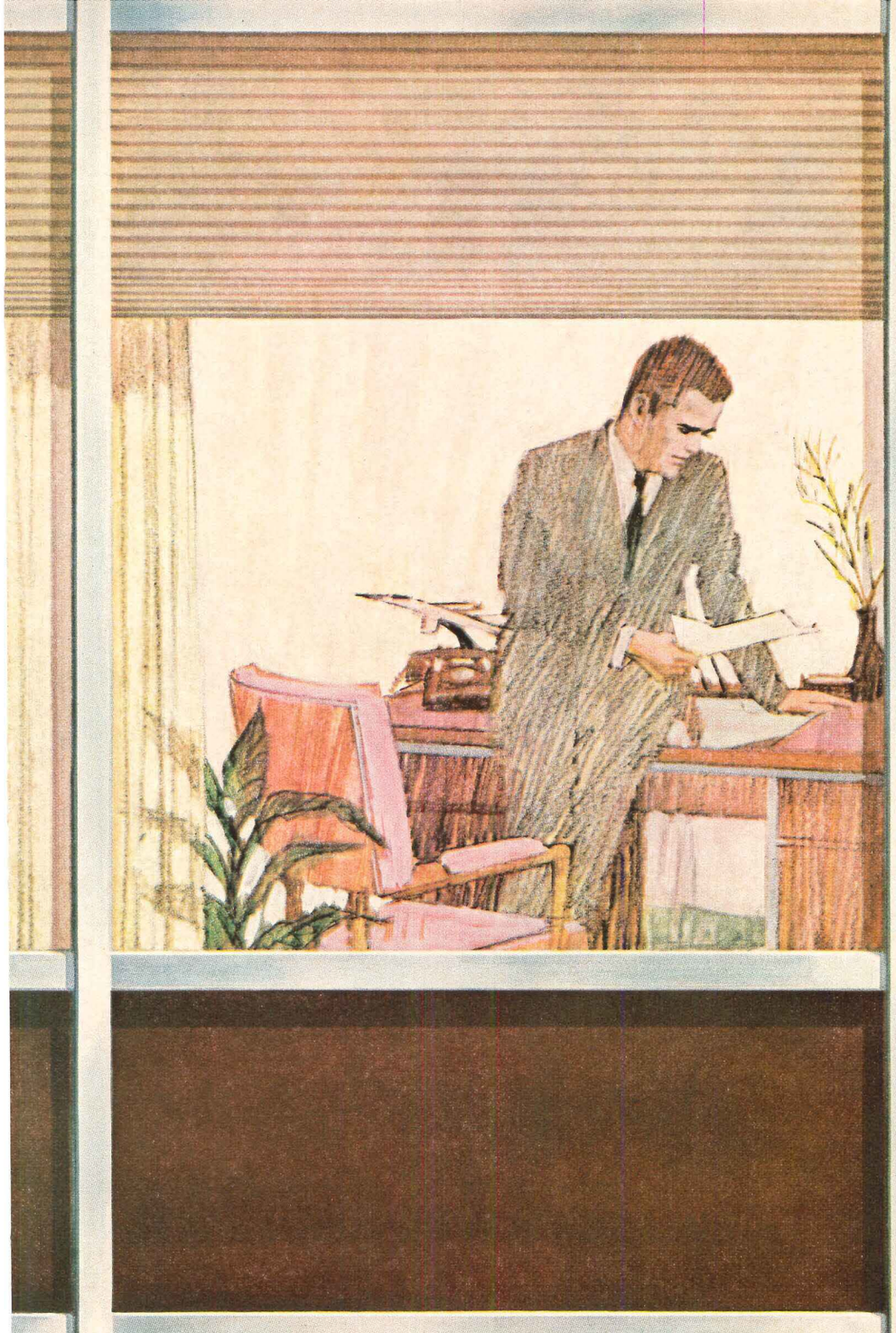


new economy and design freedom in Curtain Walls...with Reynolds Aluminum Multi-Framing System

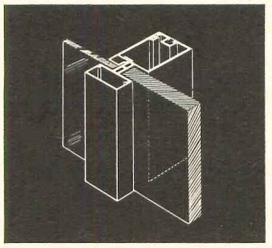
This system combines the beauty and durability of aluminum, with new economy and design flexibility. Multi-purpose extrusions reduce the number needed. All are solid shapes, permitting easy inspection.

Components are stocked by distributor-fabricators who also install, at minimum field cost, according to the architect's design.

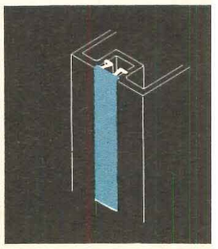
Mullion depth, in this system, can vary from four to eight inches. One continuous mullion can enclose a variety of glass, panels and window thickness.

Details are available in a portfolio which also shows the system's application to Store Fronts, Re-Facing and Partitions. 57 sheets of drawings.

For your set—and for name of distributor—write to Dept. PA-7, Reynolds Metals Company, Richmond, Va. 23218.



Single continuous mullion can enclose panels and windows of different thickness.

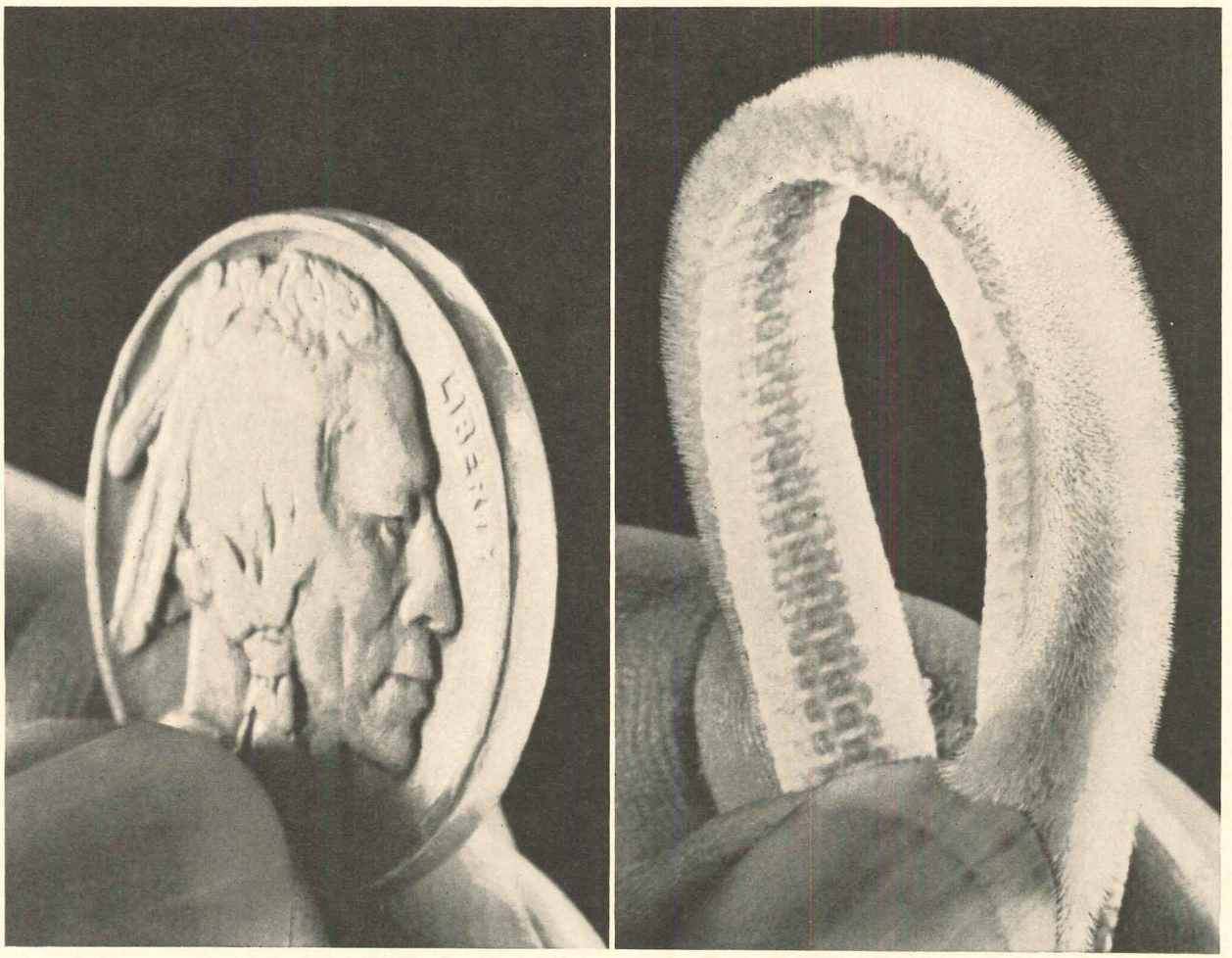


Snap-in Inserts can add shadows or color accents to the mullion face.

REYNOLDS
where new ideas take shape in
ALUMINUM

Watch "THE CELEBRITY GAME"—
Thursdays, CBS-TV

In weatherstripping a nickel still buys a lot



For about a nickel more per door or window, you can give your customers Poly-Pile.* And look what this means to them (and you) . . . *No sticking in hot weather.* Poly-Pile has a low coefficient of friction. No plasticizers to migrate. *No deformation in cold weather.* Poly-Pile doesn't take a set when cold. Stays soft and flexible. *No deterioration from use.* Tests show it outwears conventional weatherstrips 5 to 1. *No gaps, no cracks, no rattles, no leakage.* Poly-Pile has a thick pile that conforms to every surface, follows every irregularity, presents millions of polypropylene fibers as a thick barrier to infiltration of cold, dirt, water. Substantial heat savings are assured, about 9.5%. *No water absorption, no mildewing, no rotting.* Poly-Pile is silicone treated so moisture can't affect it. These are the things your customers expect when you tell them doors and windows have been weatherstripped. Why not avoid complaints? Invest a nickel more and give them the added values of Poly-Pile, by Schlegel.

*Poly-Pile is a trademark of The Schlegel Manufacturing Company

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AAMA

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For more data, circle 18 on Inquiry Card →

Meet CLYMATRON II, son of Clymatron. Better than its pa. Puts out more footcandles of cooler light. Better looking, too. Has extruded aluminum trim, regressed splay, frameless or framed enclosures. Besides lighting, Clymatron II handles air...lots more of it in fact, with a new adjustable baffle controlling its direction from vertical to horizontal...transfers heat...even provides total heating. In fact, it does so many things, it takes a brochure to explain the whole story. Better write for it!

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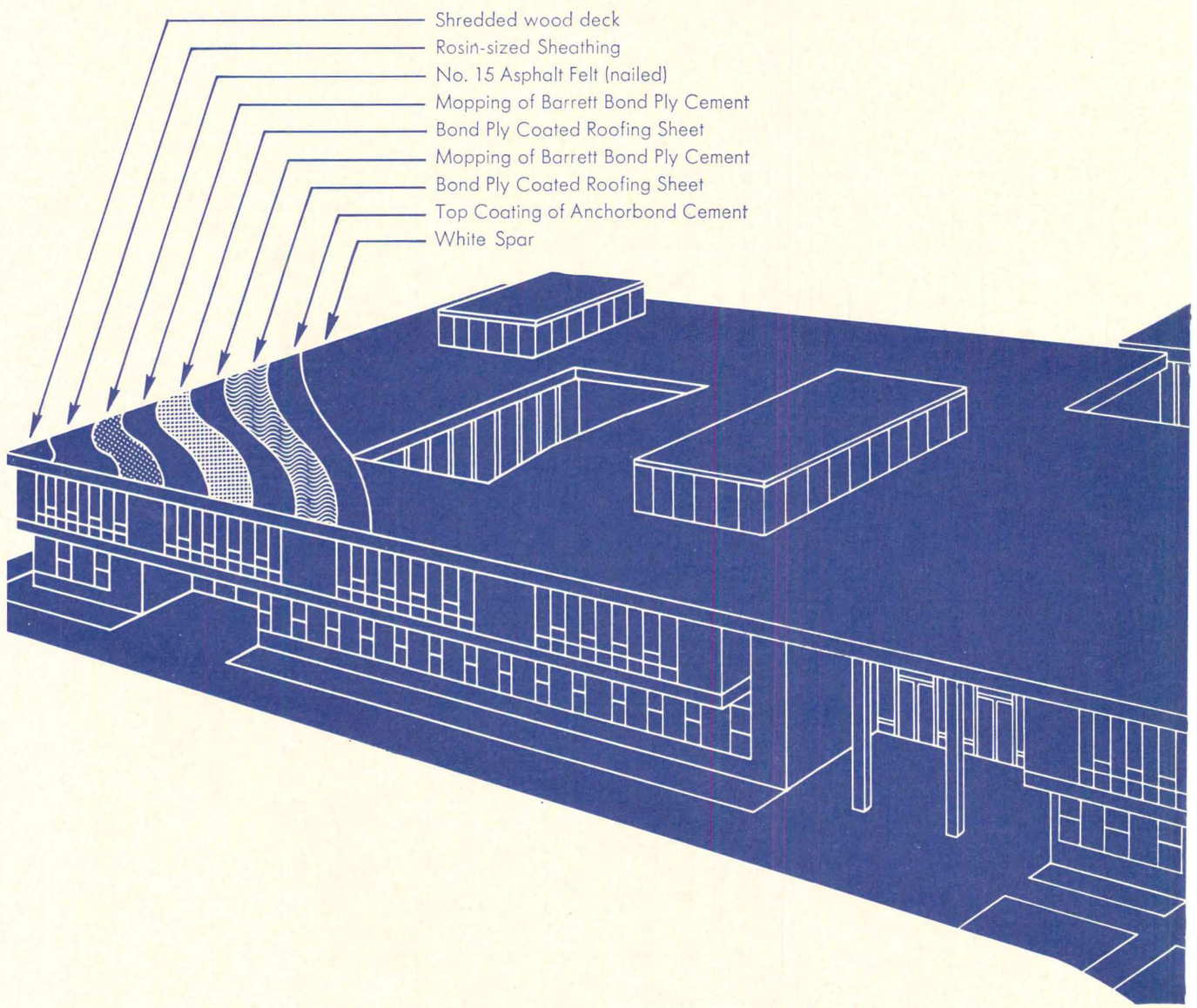
A DIVISION OF EMERSON ELECTRIC CO.

Half of this roof was built in a factory.

It meant less time and trouble to put it down, and extra quality to boot.



Northern Highlands Regional High School, Allendale, N. J.

Architects: The Perkins & Will Partnership, White Plains, N. Y.
Builder: A. A. La Fountain Inc., Hackensack, N. J.
Roofer: Advanced Roofing & Sheet Metal Co., Wallington, N.J.

Here's a new roof system that gives you the same 20-year bonded protection that conventional systems offer, but makes life a lot easier. It's a Barrett Bond Ply Roof. Perkins & Will used it on the spanking new Allendale, N. J. Northern Highlands Regional High School.

A Barrett Bond Ply System consists of Barrett Bond Ply Coated Roofing Sheet—coated on each side with a heavy, uniform layer of asphalt—and put down with Barrett Bond Ply Cement. This means extra quality because a big chunk of the labor originally done on the job is done in our factory under conditions of strict quality control.

Results: two less sheets and two less moppings for the roofer. More of the roofing dollar in known quality materials, less in labor. And more accurate job bids.

Next time, specify a 20-year Barrett Bond Ply Roofing System by name. All the details are available by writing to Barrett Division, Allied Chemical Corporation, Dept. ARC-7, 40 Rector St., N. Y., N. Y. 10006.

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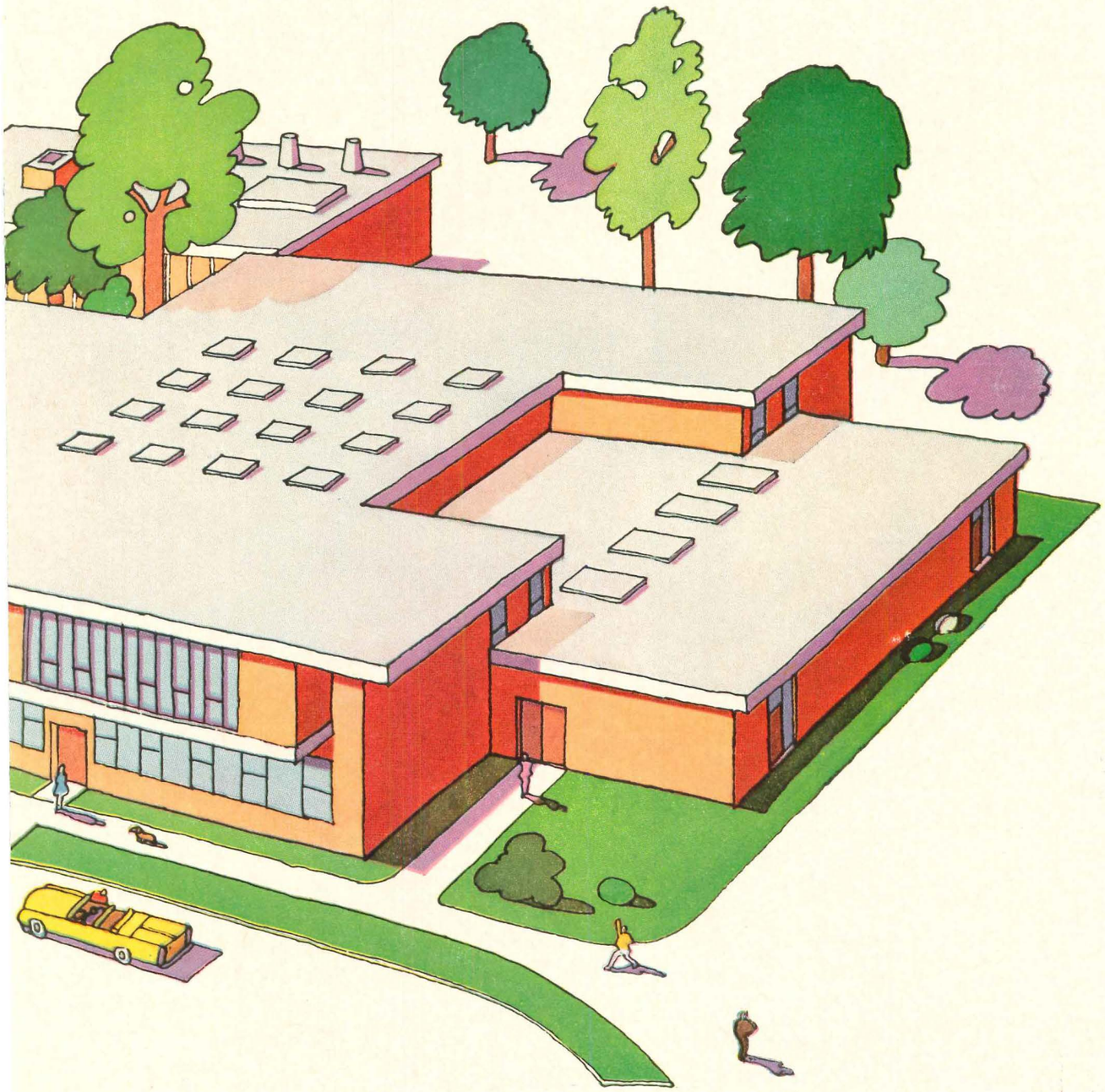

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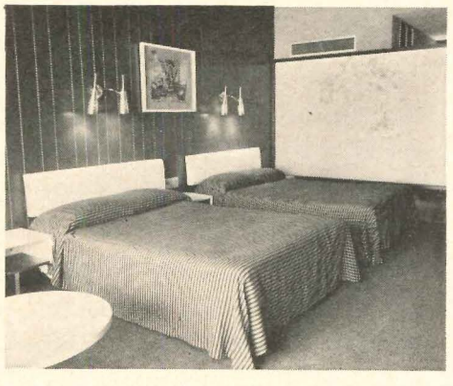
This Howard Johnson's Motor Lodge also treats guests to individual control comfort with an Arkla Gas system.

Comfort is a matter of personal preference at this modern lodge in Texarkana. Arriving guests find their room a cool 75°. Within three minutes, this can be changed to the exact temperature desired. Thermostat controls quickly adjust the amount of circulating chilled or heated water entering the fan coil unit.

What's behind it all? Dependable Arkla direct Gas-fired Chiller-Heaters and steam-fired Chillers. And throughout the lodge complex, a wide variety of flexible Arkla Gas equipment has been added to meet expansion demands. Initial costs have been moderate. And operating costs have been held low by the great economy of Gas Energy.



Year-round air conditioning by Arkla and Gas can benefit you. Call your local Gas Company sales engineer. Or write: Arkla Air Conditioning Company, 810 East Franklin, Evansville, Indiana. AMERICAN GAS ASSOCIATION, INC.

For heating & cooling... Gas is good business

VISIT THE SPECTACULAR FESTIVAL OF GAS PAVILION, N.Y. WORLD'S FAIR 1964-1965

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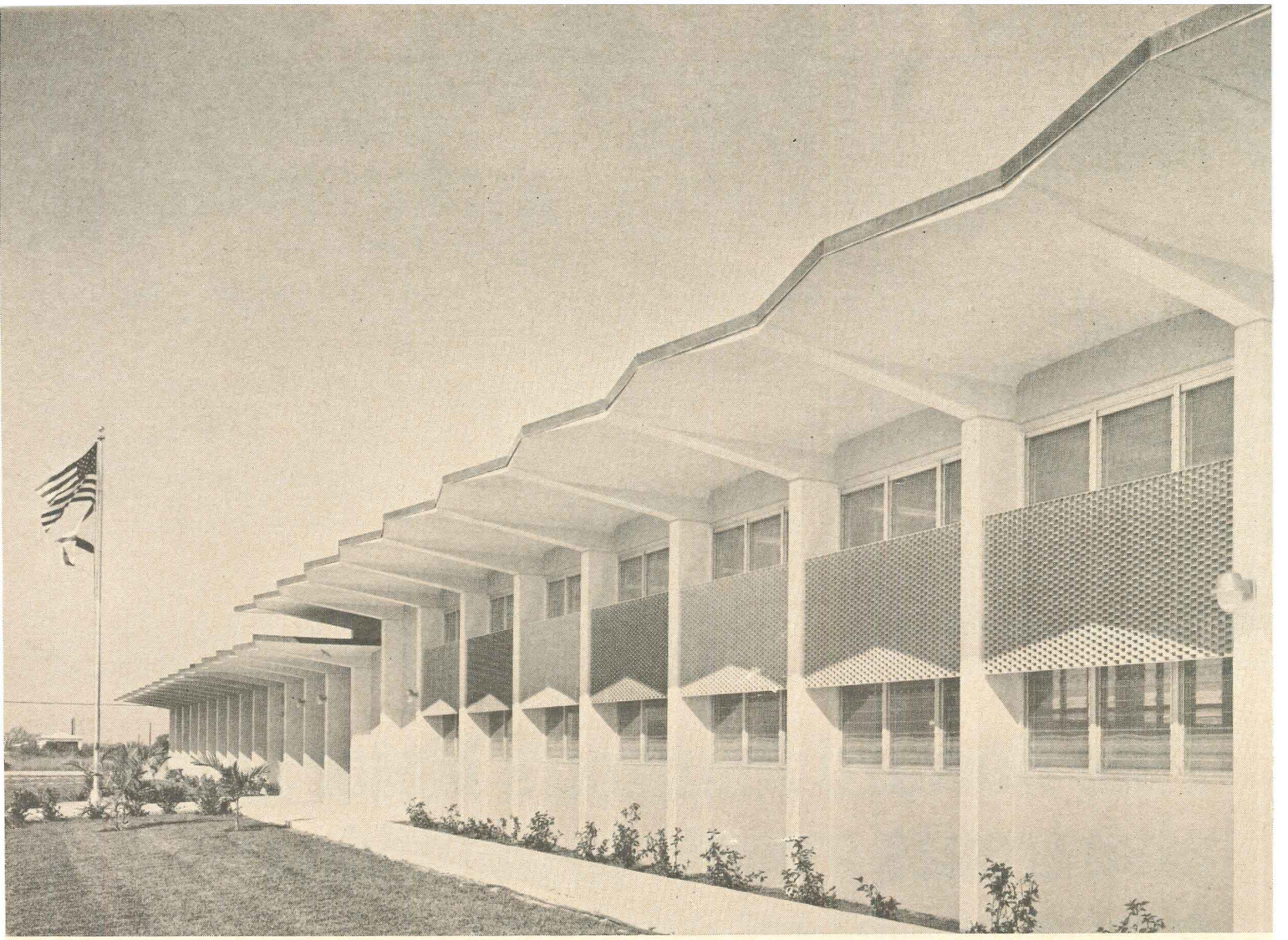

Architect: James E. Ferguson & Assoc., Coral Gables, Fla.

BORDEN DECOR PANELS: DECA-GRID

The aluminum sun screens on the school building above are Deca-Grid style Borden Decor Panel. The lightweight panels were furnished with tilted spacers to provide the proper degree of shading.

The tilting of the Deca-Grid spacers is known as the slant-tab variation, in which the slant-tabs (spacers) may be mounted at angles of 30°, 45°, 60° or 90°. The slant-tabs may be specified in various lengths as well, depending on the chosen angle of mounting. With the Deca-Grid style, specifications for spacings and spacer bar positions may be varied almost indefinitely.

All the Borden Decor Panel styles, including Deca-Grid, Deca-Gril, Deca-Ring and Decor-Plank, are highly versatile in design specification and in application such as facades, dividers, grilles, fencing, refacing of existing buildings, etc. Fabricated in standard or custom designs in sturdy, lightweight aluminum, Borden Decor Panels provide a handsome, flexible, maintenance-free building component.

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ARCHITECTS PLEDGE MAJOR EFFORT IN SUPPORT OF ENVIRONMENTAL GOALS OF "GREAT SOCIETY"

A.I.A. Convention and Pan American Congress, First Ever in U.S., Draw 4100 to Washington

The entente between architecture and the "Great Society" seemed to emerge as the unofficial theme of the 97th convention of the American Institute of Architects, held jointly with the XI Pan American Congress of Architects in the Sheraton-Park Hotel in Washington, D.C., June 14-18. With a total registration of 4,100, including 1,563 corporate members, the A.I.A. convention was the largest ever. The Federation of Pan American Associations of Architects, holding its first Congress in the United States in its 40-year history, had 264 delegates, a disappointing number when compared to original estimates. Current financial crises in Latin America seemed to be the explanation.

The A.I.A. cited President Johnson at the White House for "his forthright recognition of beauty as an intrinsic part of an environment that enriches man's spirit," and the President in accepting the citation told the architects that "no society can fulfill its greatness until its ideals and aspirations are expressed eloquently and effectively in its architecture."

The convention also cited Stewart Lee Udall, Secretary of the Interior, "in recognition of his effective efforts toward the realization of new concepts of conservation and restoration of the total physical environment for a nation with a burgeoning population." In his own speech, Secretary Udall called upon architects to "assert themselves and forge a new partnership with our public men and the enlightened leaders of industry."

Robert C. Weaver, Administrator of the Housing and Home Finance Agency, urged architects: ". . . Don't wait to be asked. Your role is pivotal . . . now there must be specific proposals for action . . . looking toward the achievement of specific environmental goals."

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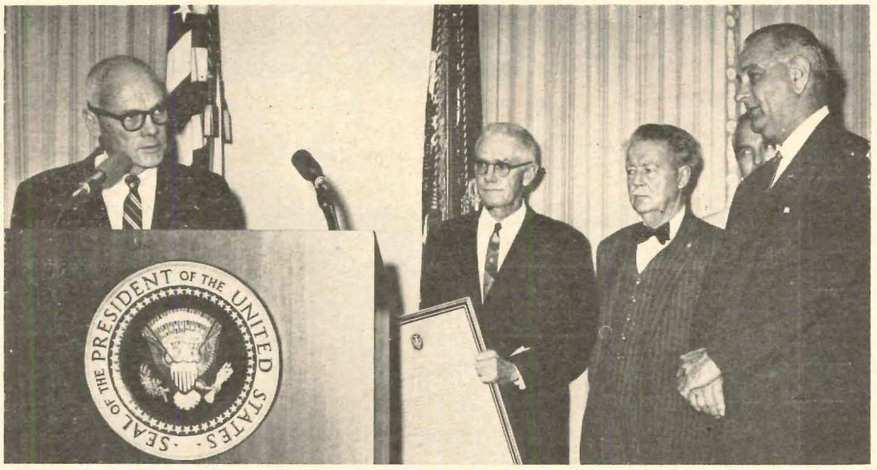
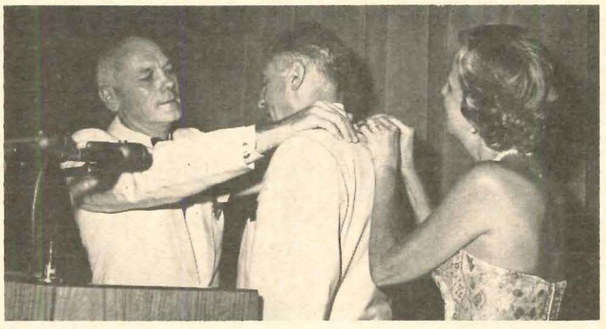
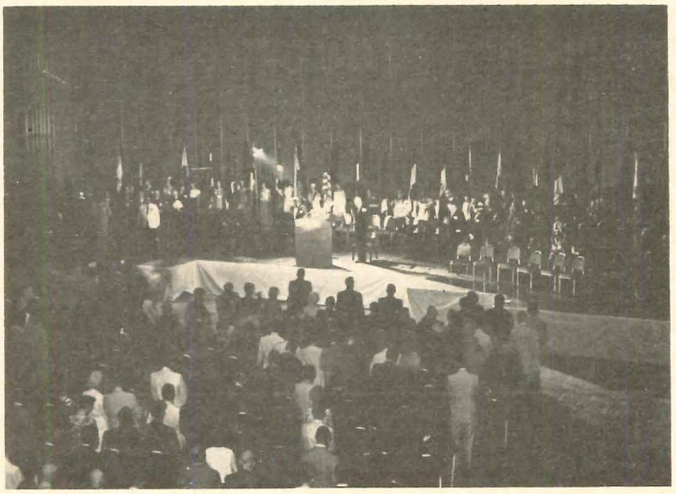


In White House Cabinet Room ceremony, A.I.A. President Arthur Gould Odell Jr. reads A.I.A. Citation honoring President Lyndon Baines Johnson for "his leadership in inspiring the people of this nation to act on their obligations and opportunities for conserving their God-given environment and improving their man-made surroundings . . . his forthright recognition of beauty as an intrinsic part of an environment that enriches man's spirit. . . ."



New A.I.A. President Morris Ketchum Jr. is invested with President's Medal by his predecessor, with assist from Mrs. Odell. Right: Charles M. Nes Jr. of Baltimore, who was elected to the post of first vice president and president-elect.

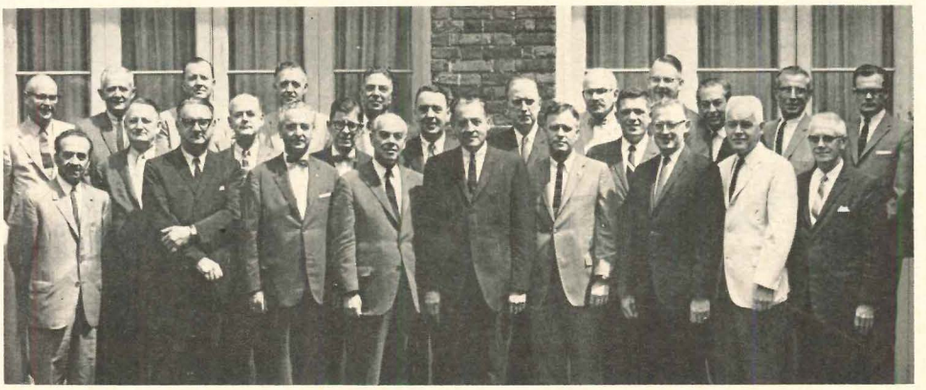


Joint opening ceremonies of A.I.A. convention and XI Pan American Congress of Architects were gala and moving, with music by a crimson-uniformed Marine band and a procession of flags of the 21 Pan American countries borne by girls in the traditional costumes of their countries. (The American wore simple white.)

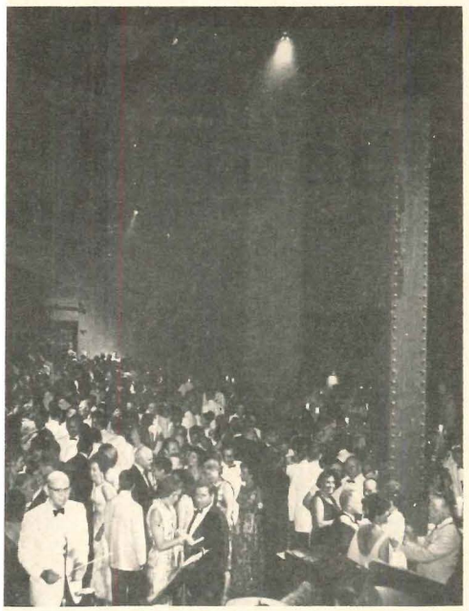
1965 A.I.A. Convention

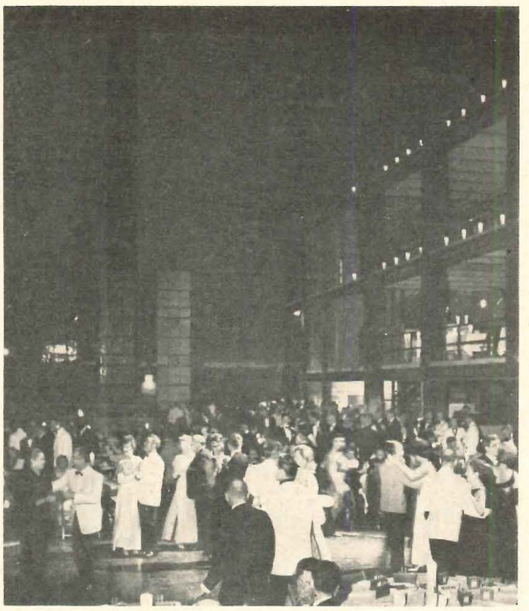
continued from page 35

PROGRAM HIGHLIGHTS were address by Lewis Mumford (*left*) to first annual Purves Memorial Luncheon and the closing address by HHFA Administrator Robert Weaver (*center*), a ringing challenge to architects to implement new public environmental policies. *Right*: Samuel Inman Cooper of Atlanta, P.F.A.A. president.



NEW A.I.A. BOARD (at post-convention meeting). Front row (*from left*): Regional Directors Charles J. Marr, *Ohio*, and Donald Faragher, *New York;* Treasurer Daniel Schwartzman, New York; Regional Director David Yerkes, *Middle Atlantic;* Vice President Rex W. Allen, Regional Director Angus McCallum, *Central States;* and First Vice President and President-elect Charles M. Nes Jr., Baltimore; President Morris Ketchum Jr., New York; Vice President George Kassabaum, St. Louis; Regional Director Dan C. Cowling Jr., *Gulf States;* Vice President Robert Durham, Seattle; Secretary Oswald Thorson, Waterloo, Iowa; Executive Director William Scheick. Back row: Regional Directors C. Day Woodford, *California*, Robert B. Martin, *Northwest*, Llewellyn Pitts, *Texas*, Victor C. Gilbertson, *North Central*, Willis Mills, *New England*, Ambrose M. Richardson, *Illinois*, Willard S. Hahn, *Pennsylvania*, Bernard B. Rothschild, *South Atlantic*, Walter Scholer Jr., *East Central*, James Hunter, *Western Mountain*, Robert Levison, *Florida*, and Philip Meathe, *Michigan*.





POWER HOUSE BALL was convention's enchanted evening. Hundreds of candles and subtle colored spots lit the vast spaces of an abandoned power house renovated by host chapter for the occasion. Three bands played, and some 2,400 dancers gave the old building a gala last chapter for its story. It will be torn down soon.

Ketchum Succeeds Odell

Morris Ketchum Jr. of New York City, as first vice president and president-elect, succeeded Arthur Gould Odell Jr. of Charlotte, North Carolina as president of the Institute at the Annual Dinner and Ball on June 18. At the same time, 37 new Fellows (two *in absentia*), were installed (May 1965, page 23), and the following men (three *in absentia*) were installed as Honorary Fellows: Fernando Belaúnde Terry, Perú; Ricardo Bermúdez, Panamá; Dr. F. Bruce Brown, Canada; Eduardo Kneese deMello, Brazil; Julián Ferris H., Venezuela; Ernesto Fuenmayor, Venezuela; Héctor Alfredo Guerra, Uruguay; Oswaldo Jimeno Aguilar, Perú; Gabriel Largacha Manrique, Colombia; Rodrigo Mejía Andrión, Panamá; Rino Levi, Brazil; Luis Miró Quesada, Perú; Daniel Ramos Correas, Argentina; Tomás Reyes Vicuna, Chile; and Gabriel Serrano Camargo, Colombia.

In the only contested election, Charles M. Nes, Jr., of Baltimore was elected first vice president and president-elect, defeating Robert F. Hastings of Detroit. Other new officers are: vice presidents—Robert L. Durham of Seattle and George Kassabaum of St. Louis; and Daniel Schwartzman, New York City, treasurer. Rex W. Allen, San Francisco, was reelected a vice president, and Oswald Thorson, Waterloo, Iowa, continues as secretary.

Five new regional directors were elected: Dan C. Cowling Jr., Little Rock, Arkansas—Gulf States; Robert B. Martin, Portland, Oregon—Northwest; Philip J. Meathe, Detroit—Michigan; Bernard B. Rothschild, Atlanta—South Atlantic; and David N. Yerkes, Washington, D.C. —Middle Atlantic.

At the Awards Luncheon held on June 14, medals and honorary memberships were presented as previously announced (April 1965, page 23). No Gold Medal was presented.

Agreement Everywhere

In the two business sessions, the delegates seemed to agree on everything, and there were no major issues. One series of resolutions applauded President Johnson for holding the White House Conference on Natural Beauty and supported the President's programs in the fields of conservation of waterways, billboard

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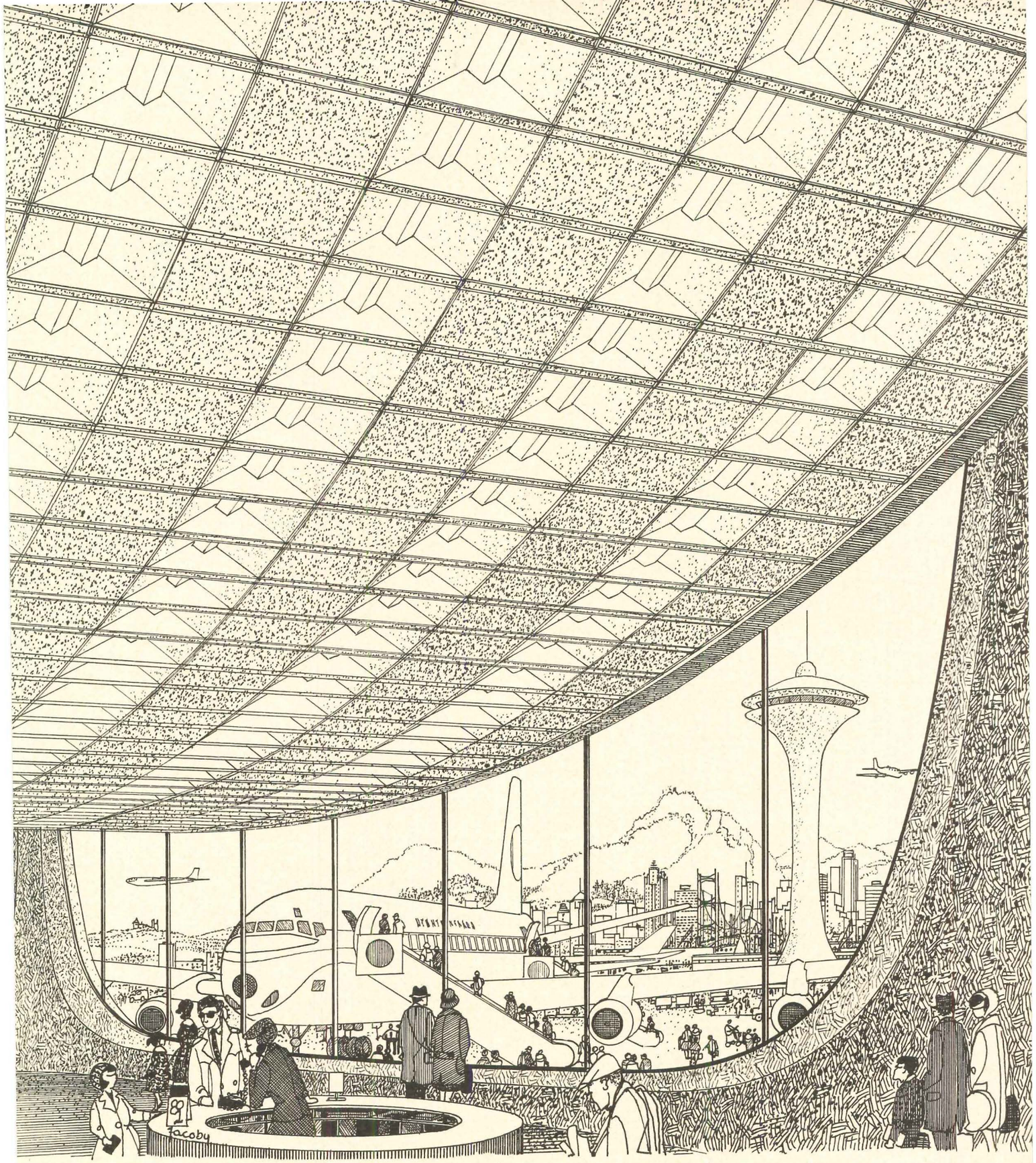


There is virtually no limit to the design effects possible with Armstrong Luminaire Ceiling Systems. In this airport departure building, rows of Luminaire modules suspended alternately with rows of flat sections shape an inwardly curved ceiling—creating an ethereal quality in harmony with the concrete support columns.

For free technical data on Armstrong Luminaire Ceiling Systems, a construction drawing of this particular design, and details on the many other design variations possible with Luminaire, write Armstrong, 4207 Rock St., Lancaster, Pennsylvania.

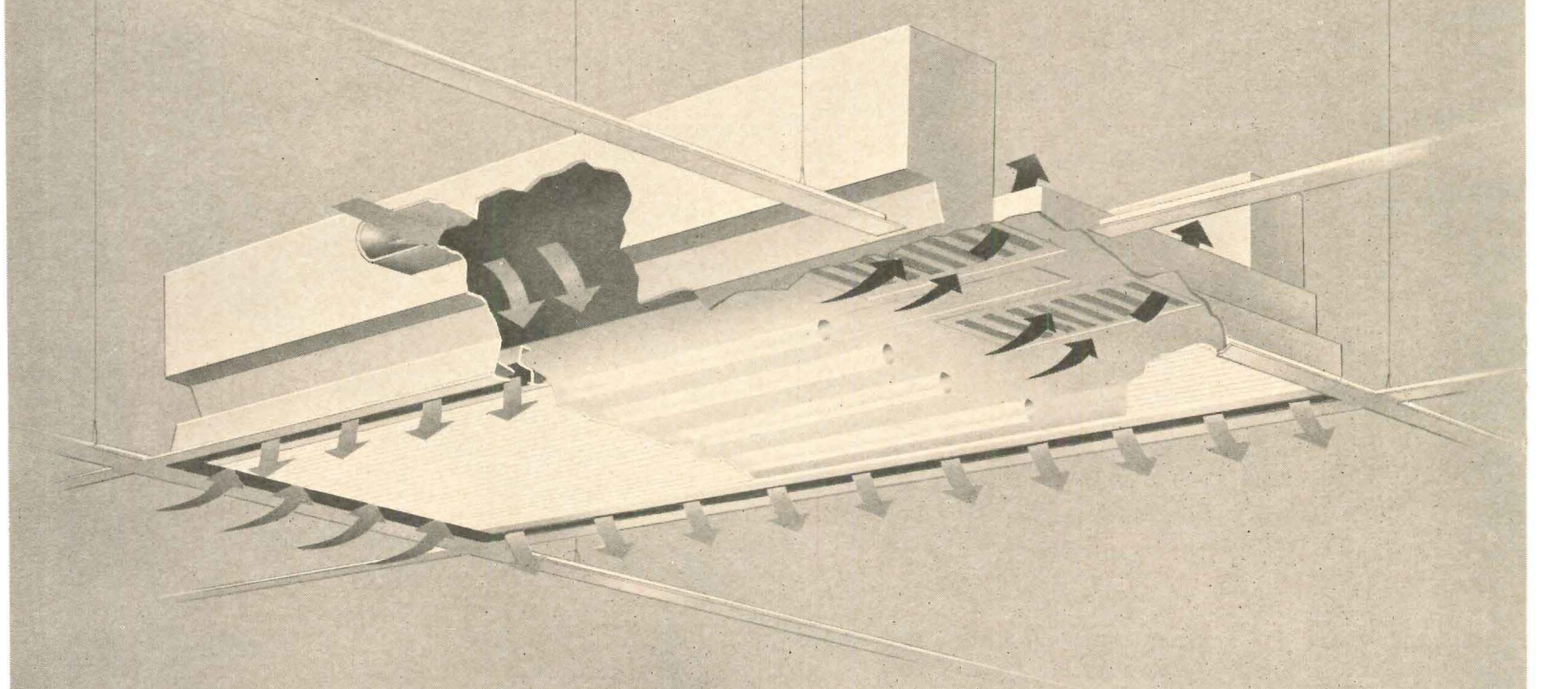
Ceiling Systems by

Armstrong

For more data, circle #1 on Inquiry Card.

Introducing Clymatron® II

by Day-Brite / Barber-Colman



An important new addition for the

Clymatron II incorporates new features of maximum benefit to the architect, engineer, contractor, and owner. It's the first combination air/light diffuser with *factory-installed* internally insulated air fittings (for 1.9 times greater heat transfer efficiency than uninsulated fixtures). It also features new *internally adjustable* air pattern control • *built-in* dirt trap (for cleaner ceilings) • *continuous* air supply slot • an integral housing for electronic "Dynamic Sensing" temperature control • and regressed splay that accommodates both framed and frameless lens • two side or one side air delivery.

It is compatible with all popular types of ceilings. "Building-block" design simplifies installation. Electrical workers install and connect *only* the light fixtures; sheet metal workers assemble, install, and connect *only* the air handling equipment.

Three standard housing sizes are available – 1 x 4, 2 x 4, and 2 x 2. Building projects which call for custom designs (such as increased air delivery or special esthetic considerations) receive special attention from Barber-Colman's and Day-Brite's engineering department.

Clymatron II is a product of DAY-BRITE®

Air Handling Components by Barber-Colman Company

A Division of Emerson Electric Co., St. Louis, Mo.

MANUFACTURERS OF QUALITY BUILDING PRODUCTS — THE PRODUCERS' COUNCIL INCORPORATED

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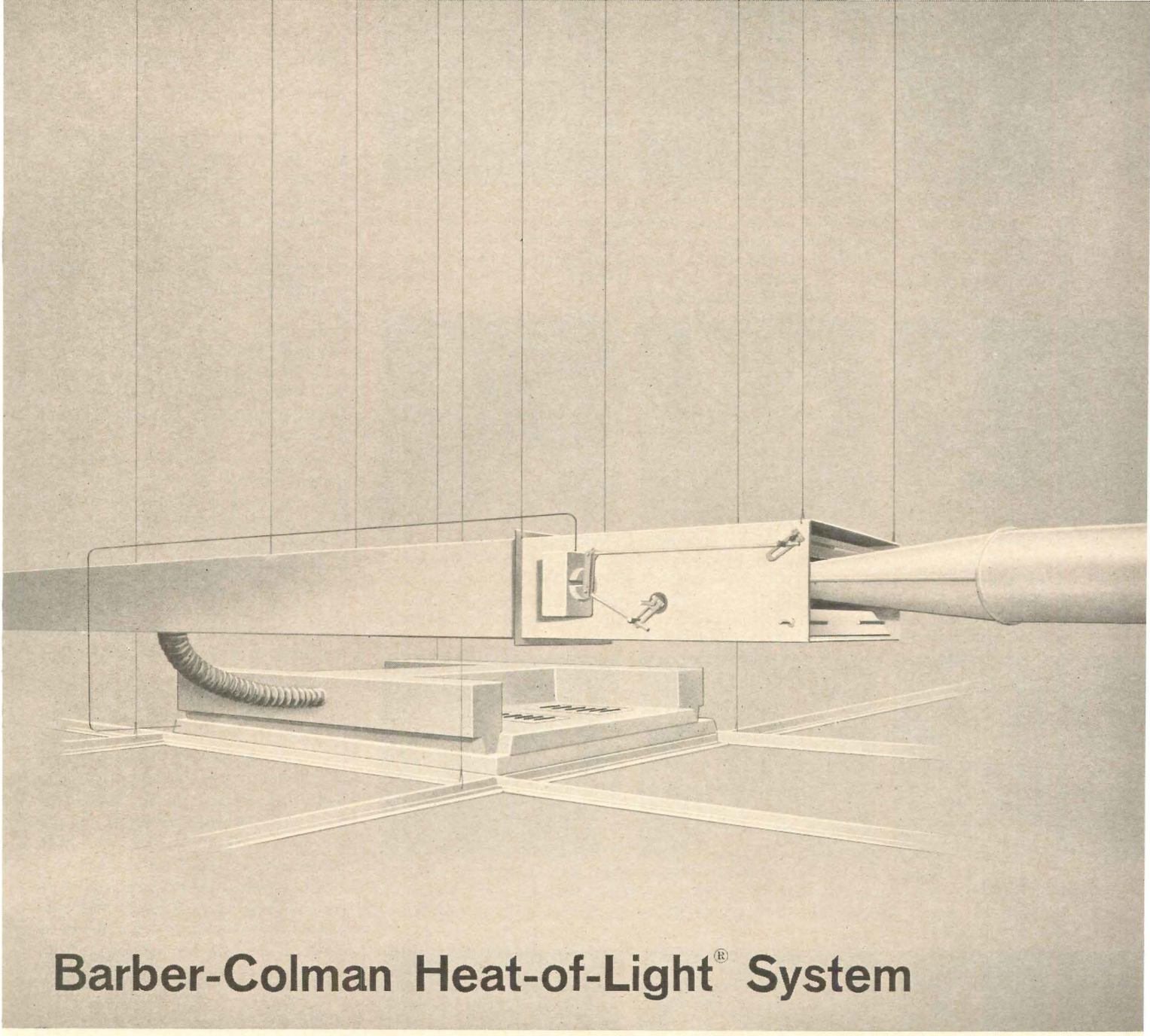
For more data, circle 38 on Inquiry Card



Barber-Colman Heat-of-Light® System

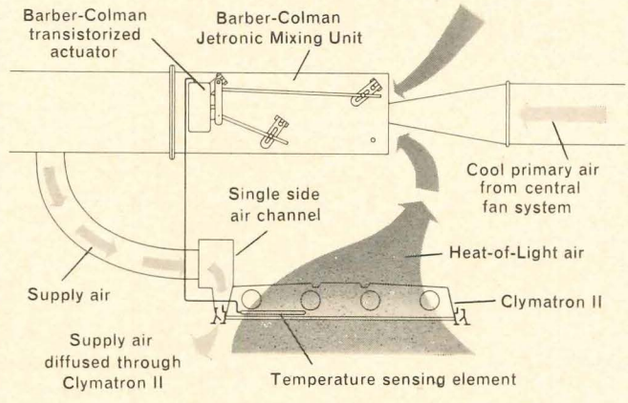
Energy can neither be created nor destroyed; it *can* be conserved and put to more efficient use. For example, when you buy light, you get light plus heat, whether you like it or not. Until recently, this light-generated heat represented wasted energy.

The Heat-of-Light energy conservation system changes this!

Barber-Colman engineers challenged traditional thinking. They asked, "Why should the building owner use an air conditioning system that throws away the energy (heat) he has already paid for in another form (light)?" The answers to this and other questions led to the modern Barber-Colman Heat-of-Light System.

One of the numerous ways that this energy conservation system works is shown at the right. How Heat-of-Light can best be applied to *your* next building project can be determined through one of our computerized Feasibility Studies. Simply contact your nearest Barber-Colman field office for details. No obligation.

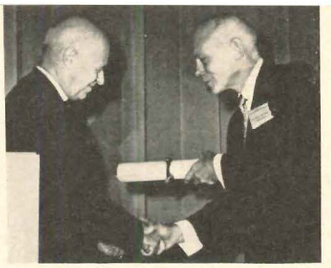
BARBER-COLMAN COMPANY
Rockford, Illinois 61101
In Canada: BARBER-COLMAN OF CANADA, LTD.
Toronto, Ontario



Heat-of-Light conserves energy . . . and cuts your air conditioning costs

In the Heat-of-Light System, heat generated by lighting fixtures is drawn into the ceiling cavity (through the lamp compartment of the Clymatron II). Automatically controlled Barber-Colman Jetronic® mixing units mix some of this warm air with cool primary air from the central air conditioner. This tempered supply air is then distributed to the conditioned space.

Since there is more heat available than required for local comfort conditioning needs, the remaining Heat-of-Light is available for use at the building perimeter, if required, to offset heat losses.


AWARDS LUNCHEON. With Morris Ketchum Jr., first vice president and president-elect, taking over as "voice" when the laryngitis that plagued him all week demanded, President Odell presented traditional honors to (1) President Ronald Allwork for The Architectural League of New York—Citation of an Organization; (2) Joseph Watterson, retiring editor of the A.I.A. Journal—Edward C. Kemper Award; (3) Leonardo Zeeveart, Mexican engineer—Allied Professions Medal . . .



. . . and (4) William Wilson Wurster and Theodore C. Bernardi, for Wurster, Bernardi and Emmons, San Francisco—Architectural Firm Award; (5) Robert Damora—Architectural Photography Medal; (6) Roberto Burle Marx, landscape architect, Brazil—Fine Arts Medal; (7) Eliot Noyes, architect and industrial designer—Industrial Arts Medal; (8) Jose Luis Sert—one of four First Honor Awards in 1965 program; (9) John Ely Burchard—Honorary Membership . . .



. . . and (10) August Heckscher—Honorary Membership; (11) Joseph N. Lacy, of Eero Saarinen and Associates—another of the First Honor Awards; (12) Frederick Gutheim—Honorary Membership. Honorary Memberships also went to Bruno Bearzi and Melton Ferris





PRESIDENTS ALL. President Arthur Gould Odell Jr., of Charlotte, N.C., with his successor, Morris Ketchum Jr. of New York, and an imposing array of past presidents as they waited to march in the joint opening ceremonies of the convention and the Congress. *Left to right*: Glenn Stanton of Portland, Ore.; Clair W. Ditchy of Detroit; George Bain Cummings of Binghamton, N.Y.; Leon Chatelain Jr. of Washington, D.C.; John Noble Richards of Toledo; Philip Will Jr. of Chicago; and J. Roy Carroll Jr. of Philadelphia.

1965 A.I.A. Convention

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control to preserve natural landscape, and mass transit facilities.

Two resolutions from the New York Chapter, one calling for the establishment of a Standing Committee on Natural Environment, and another calling for the A.I.A. to prepare a statement explaining the extent of an architect's services on a nationwide basis, were referred to the Board of Directors with the sponsor's consent. Delegates approved a resolution which called for a program to advise educators on the broadening of curricula to achieve better understanding of architecture and environmental design. The convention also gave unqualified endorsement to the "War on Community Ugliness."

Other highlights of the convention included the first annual Purves Memorial Lecture, delivered by Lewis Mumford, and the "Powerhouse Ball," organized by the host chapter and held in a soon-to-be demolished powerhouse.

The theme of the convention, "Cities of the New World," was implemented by two "program" sessions, the first moderated by Dean José Louis Sert of the Harvard Graduate School of Design, and the second by Carl Feiss of Washington, D. C., and by two "technical" sessions, both moderated by Daniel Schwartzman.

The Federation of Pan American Associations of Architects was concurrently holding its own business sessions as well as sessions of its working commissions. The new president of the F.P.A.A. is Gabriel Serrano Camargo of Colombia. The next Congress of the F.P.A.A. will be held in Colombia within the next three to five years.

A.I.A. Past President Henry L. Wright of Los Angeles was the titular delegate from the A.I.A. to the Congress and was therefore a member of the Supreme Council of the F.P.A.A. He was elected by the Council to the Executive Committee.

LBJ on Architecture

Although President Lyndon B. Johnson did not appear personally at the convention, he sent a message to the opening session in which he urged architects to build cities with "energy and vision." He added: "May your success be so great that when the judgment of the future is made, ours will be remembered as the Age of Beauty."

In accepting the A.I.A. Citation

presented to him at the White House on June 15, the President said in part: "Your profession is one which I personally greatly admire. . . .

"Here in this country, moving as we are into an age of much greater organization, it is more important than ever that attention be given to the quality and character of our architecture. . . .

"So it is my hope and intention that the efforts of the Federal Government of the United States be devoted to encouraging and contributing to these high standards. . . .

"We do not want and we do not accept the idea of a standard governmental architecture. This must never be. But we do look to the individual creativity of the members of your profession to provide the leadership that will express the aspirations of our society and exalt the full dimensions of the human spirit. . . ."

Weaver: Are Architects Ready?

Addressing the closing session of the convention, Robert C. Weaver challenged architects to take a positive role in determining the qualitative aspects of the urban environment. "Are you ready to move with us to build a finer nation?" asked Mr. Weaver. "Are you ready for a full-scale commitment drastically to raise the quality of living for all American families?" "Architects should be deeply involved in every aspect of this crusade. Not only can you all lead the fight in your professional capacities, but in your own personal lives . . . as citizens or teachers or parents, you can show the way. . . .

Mumford on the Good City

Lewis Mumford, delivering the first annual Purves Memorial Lecture, warned architects that "in our cities . . . the machine has become dominant, and has replaced human choice, variety, autonomy, and cultural complexity with its own kind of uniformity and automatism." The idea that mechanical progress is the equivalent of human improvement is sheer nonsense, Mr. Mumford asserted. He ended by saying that we can achieve good cities if we "reverse the present order of our thinking, and restore those components of nature and culture that we have neglected in our one-sided preoccupation with financial profits, national aggrandizement, and mechanical power."

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PRESIDENT'S RECEPTION. Pan American Union was setting for this traditional event, and a spectacular setting it was. Receiving line (*above*) was in the great hall, but the beautiful gardens will be equally remembered.

CITIES OF THE NEW WORLD. Following the President's Reception, buses took guests to the Museum of History and Technology for the opening of the special exhibition relating to the theme of the convention. *Right*: key convention tools.

A.I.A. SERVICE CENTER near Product Exhibit, with Faye Nealis and Elliott Carroll of A.I.A. staff, George Nemeny of New York. *Right*: Solis Seiferth, New Orleans, as he registered.


(1) VP Rex W. Allen, San Francisco, retiring Treasurer Robert F. Hastings, Detroit, Secretary Oswald Thorson, Waterloo, Iowa, and VP Hugh Stubbins, Cambridge. (2) New Yorkers Max Urbahn, chapter president, and Mr. and Mrs. Morris Ketchum Jr., new A.I.A. president and "first lady," with F. A. Macomber of Rochester.


(1) Mr. and Mrs. Raymond Kastendieck of Gary, Ind., with RECORD Executive Editor Walter F. Wagner Jr. and Publisher Eugene R. Weyeneth. (2) New York's Sidney Katz, Kansas State's "Regents Distinguished Professor of Environmental Technology," Henry Wright, and Mrs. Katz.



(1) General Collins (USA ret.), Mrs. Chlothiel Woodard Smith, Washington, D.C., and retiring F.P.A.A. President Samuel Inman Cooper, Atlanta. (2) Toledo's John Noble Richards, Washington's Leon Chatelain Jr. (3) Information Director Richard Stitt, Executive Director William Scheick and President Odell.



(1) Pittsburgh's Dahlen Ritchey and Charles Odell. (2) Brazilian visitors R. A. Montenegro, Rino Levi and E. G. Pinto. (3) Anderson Todd of Rice and Dean Elliot Whitaker of Ohio State.



(1) J. W. McHugh, Santa Fe, and Edwin W. Carroll, El Paso. (2) Mrs. Edmund R. Purves, widow of the A.I.A. executive director honored in the Purves Memorial Lecture inaugurated at this convention, and President and Mrs. Odell. (3) RECORD Editor Emerson Goble with C. E. Stousland, architecture chairman at Miami of Ohio.


(1) New Yorkers Mrs. Margot Henkel (Chapter executive secretary), Ronald Allwork, Mrs. Allwork, Mrs. William D. Wilson and (2) Percival Goodman, Dr. Edwin Burdell (visiting from Madrid, where he now lives) and Dean Kenneth Smith, Columbia School of Architecture.



(1) Robert Kaplan of New York and Henry Wright of Los Angeles. (2) San Francisco's John Lyon Reid and interviewer. (3) VP Rex W. Allen with the A.I.A.'s new treasurer, Daniel Schwartzman of New York.


(1) G. D. Smith of Buffalo, John Stetson of Palm Beach and I. Lloyd Roark Jr., Kansas City. (2) Emerson Goble of the RECORD with Mr. and Mrs. Julius Shulman of Los Angeles and T. H. Coston of Oklahoma City.



(1) Detroiters Linn Smith and Walter Sanders, architecture head at Michigan and new A.C.S.A. president. (2) John Tereence Kelly, Cleveland (*center*), with RECORD editors Robert E. Fischer and William B. Foxhall. (3) Robert J. Cowling, A.I.A. staff, and Harold Spitznagel of Sioux Falls, S.D.



(1) VP Rex W. Allen, San Francisco, and Secretary Oswald Thorson, Waterloo, Iowa. (2) Pittsburgh's Robert Schmertz with daughter Mildred of the RECORD and Mr. and Mrs. Preston Bolton, Houston. (3) The new president with retiring Vice President Hugh Stubbins.


(1) Charles M. Bradley, Rockford, Ill., Marion Smith, Chicago Chapter's executive director, Eugene Hausmann, Belleville, Ill., Southern Illinois Chapter president, and Robert D. Field, Collinsville, Ill., Illinois A.I.A. president. (2) Host Chapter President Nicholas Satterlee and Mrs. Satterlee "at home."


(1) Mr. and Mrs. Ronald Gourley of Cambridge with Walter F. Wagner Jr. and Emerson Goble of the RECORD. (2) New Yorkers Gordon Lorimer, John C. B. Moore and Jan Hird Pokorny.

A.I.A. ANNOUNCES HONOR AWARDS FOR 1965

Four first honor awards and seven awards of merit were presented in the American Institute of Architects' 17th annual Honor Awards Program, established in 1949 "to encourage the appreciation of excellence in architecture and to afford recognition of exceptional merit." The awards were presented at the convention of the A.I.A. and the XI

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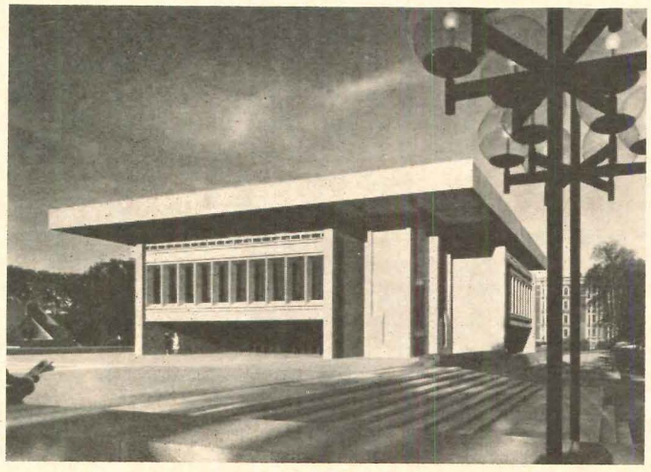
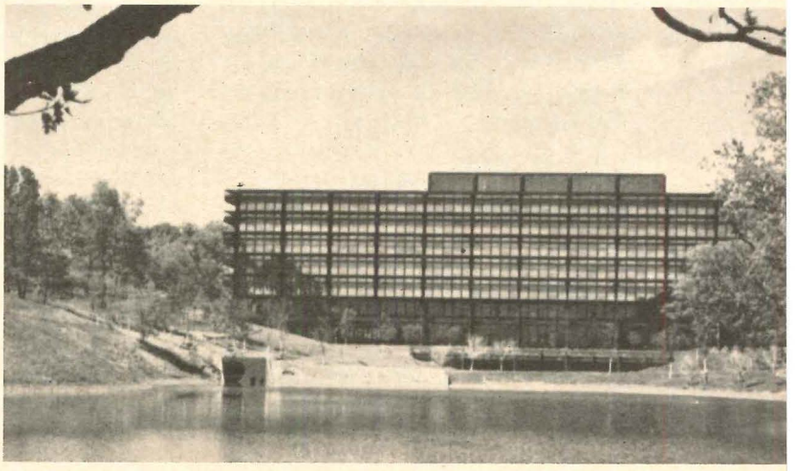
Honor Awards



Robert Damora

"Key structure in an important new campus complex, the building exemplifies a powerful manipulation of mass and plane to enclose space. Its relation to its environment is superb, its materials simple and logical, its detailing excellent."

School of Journalism, The S. I. Newhouse Communications Center, Syracuse University, Syracuse, New York. Architects: I. M. Pei & Associates, King & King, associated architects, Kellog Wong and Werner Wandelmaier (I. M. Pei), Russell King and Wendell Hoone (King & King), project designers; general contractor: J. D. Taylor Construction Company.



Ezra Stoller

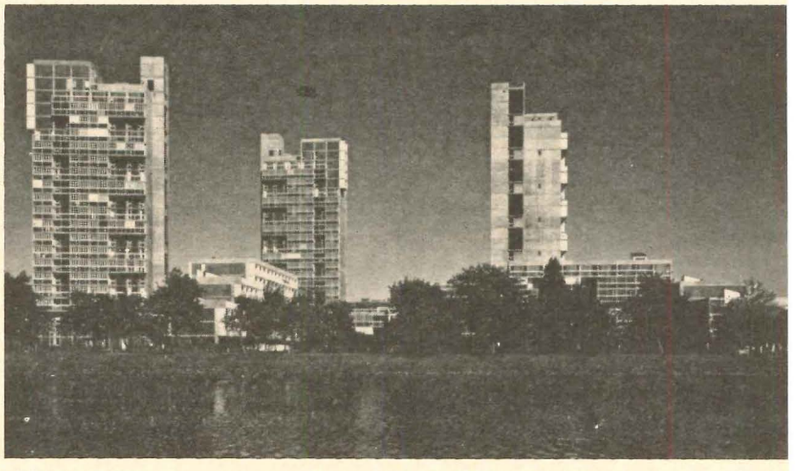
"A frank and clear and yet delicate structure. Steel that has formed a self-protecting oxide is used inside and out to give the building a marked unity. Dramatic in its siting as well as in its form, the building spans a ravine and a stream flowing into a reflecting pond. It is in scale with the people who use it."

Deere & Company Administrative Center, Moline, Illinois. Architect: Eero Saarinen & Associates; engineer: Amman & Whitney; landscape architect: Sasaki, Dawson, Demay Associates, Inc.; general contractor: Huber, Hunt & Nichols, Inc.

Roger Sturtevant

"A delightful small chapel of indigenous materials used in a forthright way and consistently detailed. Although modest and informal, the chapel is dignified, reverent in mood. Its strength echoes that of the trees surrounding it and its wood tracery the softness of their leaves."

The Eleanor Donnelly Erdman Memorial Chapel, Robert Louis Stevenson School, Pebble Beach, California. Architect: Reid & Tarics, Architects & Engineers, Robert F. Olwell, project designer; engineer: Dr. Alexander G. Tarics; general contractor: Volmer Peterson.



Phokion Karas, William H. Tobey

"Not merely a solution but a breakthrough in the grouping of high and low buildings. The site plan, the spaces between buildings, and consistency of scale and the thoughtful facades are some of the elements adding up to a fresh, light quality and unity of expression."

Francis Greenwood Peabody Terrace, Harvard University, Cambridge, Massachusetts. Architect: Sert, Jackson and Gourley; structural engineer: Nichols, Norton & Zaldastani; mechanical and electrical engineer: Sidney Greenleaf Associates, Inc.; landscape architect: Sasaki, Walker and Associates, Inc.; general contractor: Vappi & Company, Inc.

1965 CONSTRUCTION OUTLOOK AT MIDYEAR

By George A. Christie, Chief Economist, F. W. Dodge Company, A Division of McGraw-Hill, Inc.

A midyear evaluation of the nation's construction markets shows things coming along about as expected, only in some cases a little more so. Almost all the many categories of building activity have been moving in the direction (up, in most cases) indicated late last year; at this point, however, a few of the values originally predicted for 1965 could stand a bit of realignment.

Nonresidential Building

Six months ago, it looked as though this year's total of nonresidential building contracts would amount to something just short of $16 billion. And that would have brought the 1965 value up another three per cent —after the healthy eight per cent gain made in the year before. The anticipated strength in nonresidential building materialized in early 1965 all right, and in fact the demand for these building types gathered enough *additional* strength to push their combined contract value over the $16 billion mark for the year. And just about all of this added drive can be found in the "big three": commercial, industrial, and educational buildings.

The several remaining building types included under the broad nonresidential heading (hospitals, public buildings, religious, social and recreational buildings, etc.), will collectively just about equal their 1964 contract total of $4.4 billion. Thus, at mid-1965 the anticipated trend of total nonresidential building contract value is just a bit firmer than it was back in late 1964. Altogether, the building activity represented in this category looks to be heading for a grand total of $16.38 billion for the full year—a gain of 5½ per cent.

Residential Building

The answer to one important question arrived early in 1965: a housing recovery was in fact under way. While the Dodge Index of residential contract value slipped in 1964 from its all-time peak rate of 150 (1957-59 = 100) in the first quarter all the way to 133 by the final quarter, the opening months of 1965 brought steady improvement. The current year's first quarter averaged 138 (a five-point improvement from the previous quarter), and the second reached well into the 140's.

The housing recovery which began in the opening months of 1965 will be gathering momentum during the second half. During the period when the market was adjusting to the excess *supply* of housing, *demand*—as indicated by strong home sales and stable rental vacancy rates—was holding firm. With most regional markets expanding at mid-year, and with the probability of firmer Western housing markets in the near future, 1965's second half should be a good one, raising the year's total number of non-farm private starts to 1,510,000.

Due largely to this year's weak opening quarter (when the market was in the process of reversing itself) the total number of units built in 1965 will just about equal 1964's output. Contract *value* of the current year's units will nevertheless show a gain of about four per cent to $21.4 billion, reflecting the combined result of upgrading, rising costs, and a slight change in the mix of apartments, single family homes and nonhousekeeping units.

Nonbuilding Construction

The large gains in contract value reported in recent months for several key categories of nonbuilding construction (roads, utilities, dams) round out the general picture of improvement in *all* three major construction markets at midyear.

In the latter half of the year, however, it is likely that some changes will be taking place. The unusually strong pace of first-half highway contracts is bound to ease off; sewer and water construction, on the other hand, is slated for some improvement; and the impact of a few big dam and harbor projects will be dissipated. Utilities, however, are apt to extend their early gains into the remaining part of the year. On balance, the second half will bring a somewhat slower rate of nonbuilding construction, bringing the year's gain to nearly five per cent.

Construction markets at mid-1965 look in good shape—even a bit better than they looked at the start of the year. In the second half, the return to a full-scale rate of homebuilding, backed up by continued strength in most areas of nonresidential construction, will bring the 1965 contract total to $49.6 billion. This year's Dodge Index now appears headed for a five per cent increase to 144.

(A fuller midyear building markets analysis is available by request.)

REVISED OUTLOOK FOR 1965
F. W. DODGE CONSTRUCTION CONTRACTS

Type of Construction	Value of Contracts (Millions of Dollars) 1964	1965 est.	Per Cent Change 1965/1964
NONRESIDENTIAL BUILDINGS			
Commercial	$ 4,564	$ 5,150	+13 %
Manufacturing	2,964	3,100	+ 5
Educational	3,549	3,750	+ 6
Hospital & Institutional	1,620	1,675	+ 3
Public Buildings	789	700	−11
Religious Buildings	813	825	+ 1
Social & Recreational	598	650	+ 9
Miscellaneous	598	525	−12
Total	$15,495	$16,375	+ 5½%
RESIDENTIAL BUILDINGS			
One & Two Family	$14,052	$14,475	+ 3 %
Apartments	5,125	5,300	+ 3
Nonhousekeeping	1,384	1,650	+19
Total	$20,561	$21,425	+ 4 %
NONBUILDING CONSTRUCTION	$11,244	$11,775	+ 4¾%
TOTAL CONSTRUCTION	$47,299	$49,575	+ 4¾%
DODGE INDEX	137	144	

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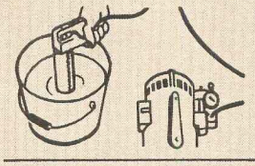
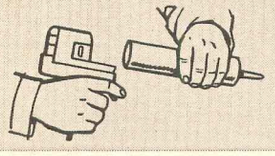
Ready to use cartridges


Gallon pails


5 Gallon drums

AIR OPERATED CAULKING GUNS


Fast vacuum loading for bulk dispensing


Easy Loading for cartridge dispensing

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Building Construction Costs

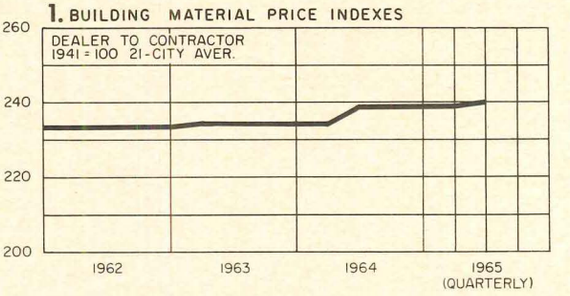
By William H. Edgerton
Manager-Editor, Dow Building Cost Calculator,
an F. W. Dodge service

The information presented here permits quick approximations of building construction costs in 21 leading cities and their suburban areas (within a 25-mile radius). The tables and charts can be used independently, or in combination as a system of complementary cost indicators. Information is included on past and present costs, and future cost can be projected by analysis of cost trends.

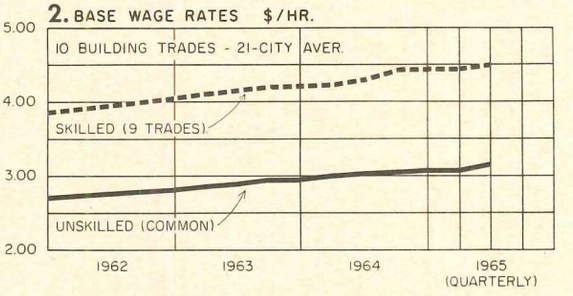
A. CURRENT BUILDING COST INDEXES—JUNE 1965
1941 Averages for each city = 100.0

Metropolitan Area	Cost Differential	Current Dow Index Residential	Current Dow Index Nonresidential	Per Cent Change Year Ago Res. & Nonres.
U.S. AVERAGE— 21 Cities	8.5	267.9	285.4	+1.80
Atlanta	7.2	303.6	322.0	+3.11
Baltimore	7.9	268.9	286.0	+1.15
Birmingham	7.5	249.0	267.8	+2.20
Boston	8.5	242.0	256.1	+2.59
Chicago	8.9	296.5	311.9	+1.22
Cincinnati	8.8	257.8	274.0	+1.50
Cleveland	9.2	270.7	287.7	+1.91
Dallas	7.7	252.2	260.5	+1.10
Denver	8.3	274.4	291.7	+1.16
Detroit	8.9	269.2	282.6	+1.75
Kansas City	8.3	241.4	255.5	+0.84
Los Angeles	8.3	270.9	296.4	+1.68
Miami	8.4	265.8	279.0	+1.40
Minneapolis	8.8	270.0	287.0	+2.16
New Orleans	7.8	242.2	256.6	+1.08
New York	10.0	279.9	301.1	+3.27
Philadelphia	8.7	266.4	279.7	+1.06
Pittsburgh	9.1	252.2	268.1	+0.23
St. Louis	9.1	264.2	280.0	+3.91
San Francisco	8.5	343.1	375.3	+3.24
Seattle	8.4	244.7	273.5	+1.29

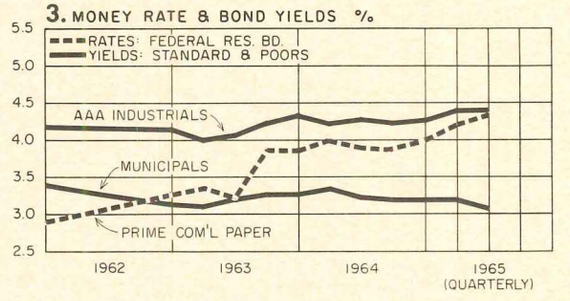
1. BUILDING MATERIAL PRICE INDEXES



2. BASE WAGE RATES $/HR.



3. MONEY RATE & BOND YIELDS %



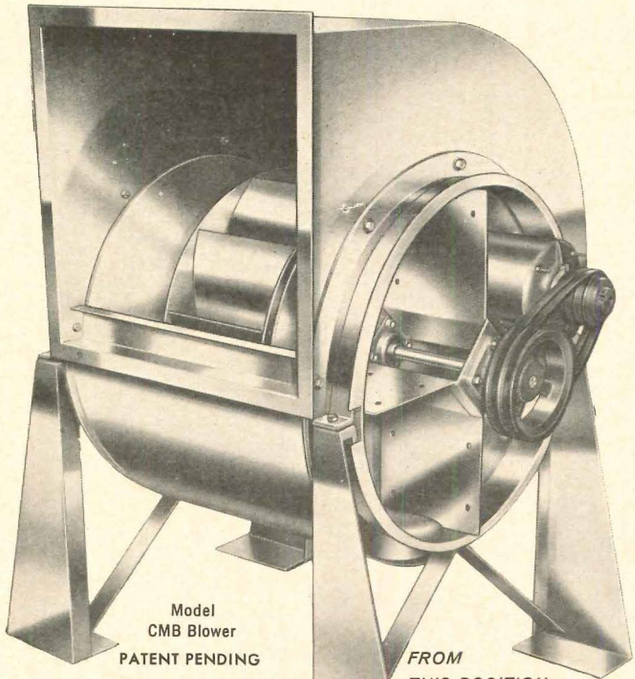
B. HISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL BUILDING TYPES, 21 CITIES — 1941 average for each city = 100

Metropolitan Area	1952	1958	1959	1960	1961	1962	1963	1964 (Quarterly) 1st	2nd	3rd	4th	1965 (Quarterly) 1st	2nd	3rd	4th
U.S. AVERAGE 21 Cities	213.5	248.9	255.0	259.2	264.6	266.8	273.4	274.7	276.8	278.6	279.3	279.5	281.0		
Atlanta	223.5	277.7	283.3	289.0	294.7	298.2	305.7	310.0	312.3	313.4	313.7	313.9	317.9		
Baltimore	213.3	251.9	264.5	272.6	269.9	271.8	275.5	277.2	279.3	280.5	280.6	280.5	281.0		
Birmingham	208.1	233.2	233.2	240.2	249.9	250.0	256.3	258.0	259.9	260.1	260.9	261.2	264.1		
Boston	199.0	230.5	230.5	232.8	237.5	239.8	244.1	246.1	247.9	251.3	252.1	251.7	252.6		
Chicago	231.2	273.2	278.6	284.2	289.9	292.0	301.0	302.2	304.5	305.1	306.6	306.5	307.3		
Cincinnati	207.7	250.0	250.0	255.0	257.6	258.8	263.9	265.1	267.1	268.9	269.5	269.4	270.2		
Cleveland	220.7	257.9	260.5	263.1	265.7	268.5	275.8	276.3	278.4	282.0	283.0	282.3	283.4		
Dallas	221.9	230.5	237.5	239.9	244.7	246.9	253.0	253.7	255.6	255.6	256.4	256.9	257.9		
Denver	211.8	252.8	257.9	257.9	270.9	274.9	282.5	282.6	284.7	287.3	287.3	287.3	288.2		
Detroit	197.8	239.8	249.4	259.5	264.7	265.9	272.2	272.7	274.7	277.7	277.7	277.7	279.3		
Kansas City	213.3	235.0	239.6	237.1	237.1	240.1	247.8	246.2	248.0	249.6	250.5	251.2	252.0		
Los Angeles	210.3	253.4	263.5	263.6	274.3	276.3	282.5	284.0	286.1	286.1	288.2	288.9	289.7		
Miami	199.4	239.3	249.0	256.5	259.1	260.3	269.3	270.1	272.1	273.1	274.4	274.4	275.4		
Minneapolis	213.5	249.9	254.9	260.0	267.9	269.0	275.3	275.0	277.1	281.6	282.4	283.4	283.6		
New Orleans	207.1	235.1	237.5	242.3	244.7	245.1	248.3	247.1	248.9	249.3	249.9	250.5	253.1		
New York	207.4	247.6	260.2	265.4	270.8	276.0	282.3	284.8	286.9	289.7	289.4	290.2	294.0		
Philadelphia	228.3	257.6	262.8	262.8	265.4	265.2	271.2	271.1	273.1	274.5	275.2	275.5	276.4		
Pittsburgh	204.0	236.4	241.1	243.5	250.9	251.8	258.2	260.8	262.7	262.9	263.8	264.0	264.9		
St. Louis	213.1	239.7	246.9	251.9	256.9	255.4	263.4	266.8	268.8	271.4	272.1	272.9	276.1		
San Francisco	266.4	308.6	321.1	327.5	337.4	343.3	352.4	358.2	360.9	364.1	365.4	366.6	366.9		
Seattle	191.8	225.8	232.7	237.4	247.0	252.5	260.6	260.1	262.0	265.7	266.6	265.1	266.3		

HOW TO USE TABLES AND CHARTS: Building costs may be directly compared to costs in the 1941 base year in tables A and B: an index of 256.3 for a given city for a certain period means that costs in that city for that period are 2.563 times 1941 costs, an increase of 156.3% over 1941 costs.

TABLE A. 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 first city are 25% higher than costs in second. Also, costs in second city are 80% of those in first (8.0 ÷ 10.0 = 80%) or 20% lower in the second city

TABLE B. 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 index for a city for one period (200.0) divided by index for a second period (150.0) equals 133%, the costs in the one period are 33% higher than those of the other. Also, second period costs are 75% of those of the other date (150.0 ÷ 200.0 = 75%) or 25% lower in the second period. CHART 1. Building materials indexes reflect prices paid by builders for quantity purchases delivered at construction sites. CHART 2. The $1.20 per hour gap between skilled and unskilled labor has remained fairly constant. CHART 3. Barometric business indicators that reflect variations in the state of the money market



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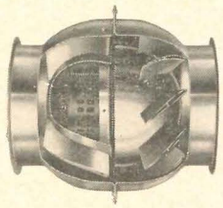
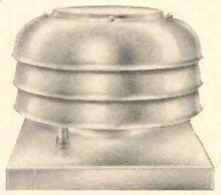


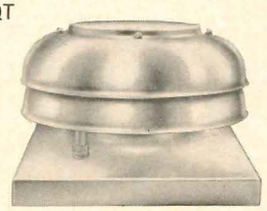
Centri-Vane® Straight Thru Centrifugal Blower

TCB



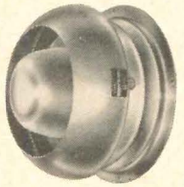
Spun-Tier® Centrifugal Roof Ventilator (Belt Drive)

QT



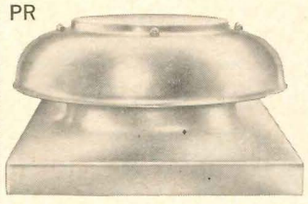
Spun-Tier® Axial Roof Ventilator

TW



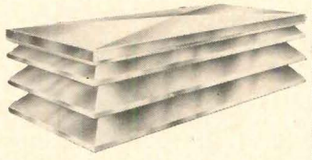
Centrifugal Wall Ventilator

PR



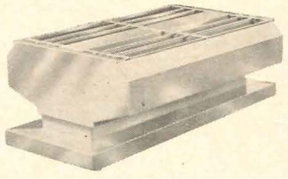
Spun-Tier® Relief Ventilator

TRE



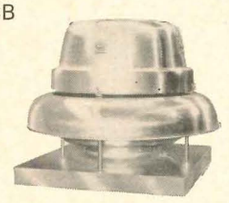
Extruded Tier Relief or Intake Ventilator

GR



Gravity Roof Ventilator

UCB



Uni-Dome Centrifugal Ventilator, Conventional Style

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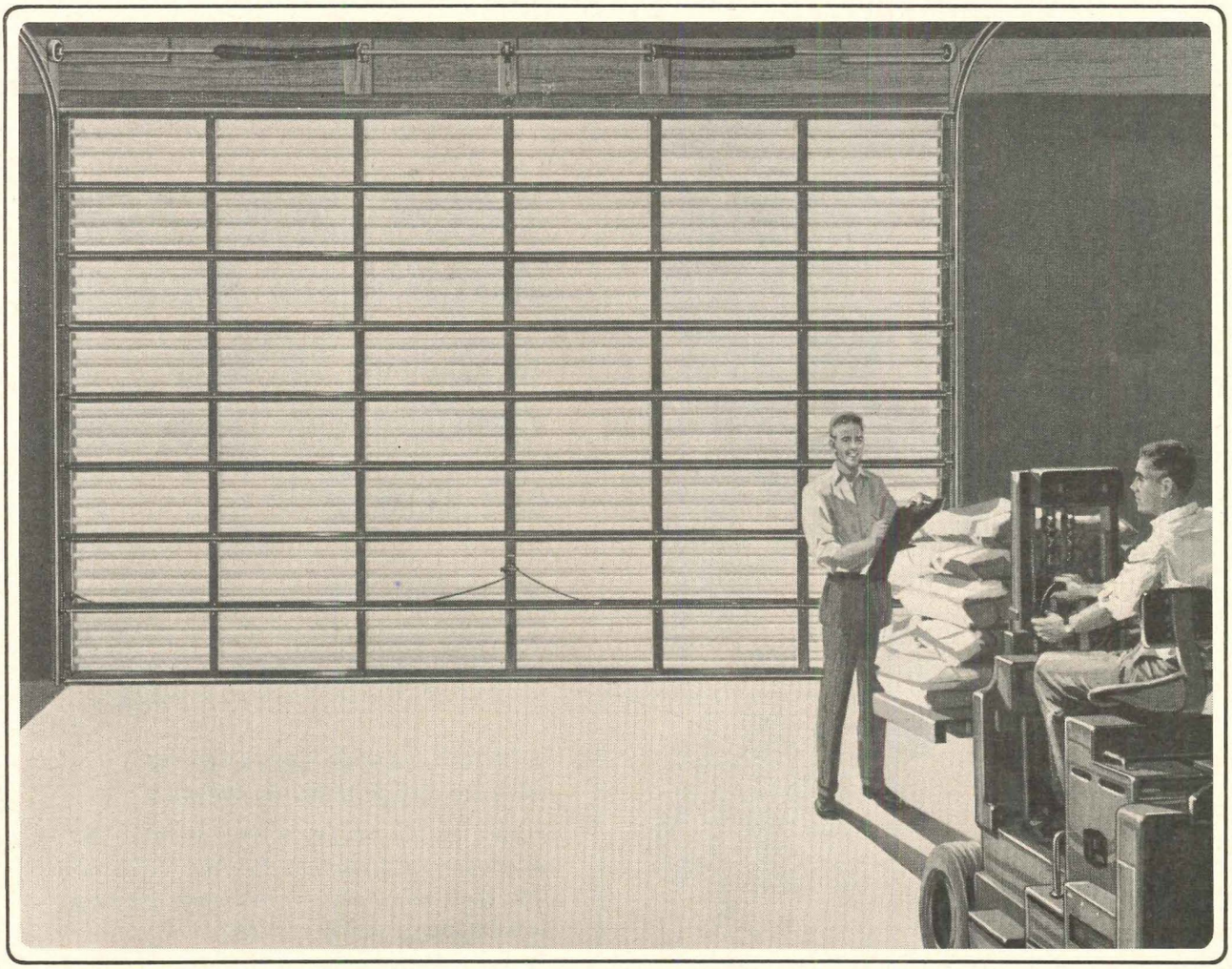

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Specify Frantz Filuma Garage Doors and give your clients a many-faceted bonus. First, there's the inherent esthetic beauty of their translucent fiberglass panels set in aluminum frames to give a dash of color outside while they let cheerful natural light *inside*. And because of better lighting inside, productivity and morale go up. Second, is Filuma's no-maintenance factor. Fiberglass panels are *pressure sealed** into the aluminum frame . . . never pull loose . . . are shatterproof and weatherproof. Your client just hoses them off to keep them bright as new. Special zinc-plated hardware won't rust. Rollers have hardened ball bearings and raceways for longer life, smoother operation. And Filuma is available in tan, coral, green or white in sizes up to 24 feet wide by 20 feet high. A special "one-man" movable centerpost lets you design opening widths to infinity. Specify the beautifully functional door . . . FILUMA by Frantz.

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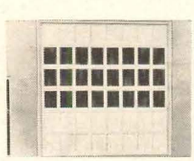
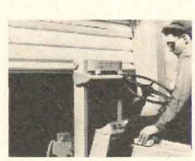


Frantz also makes wood doors in all sizes.



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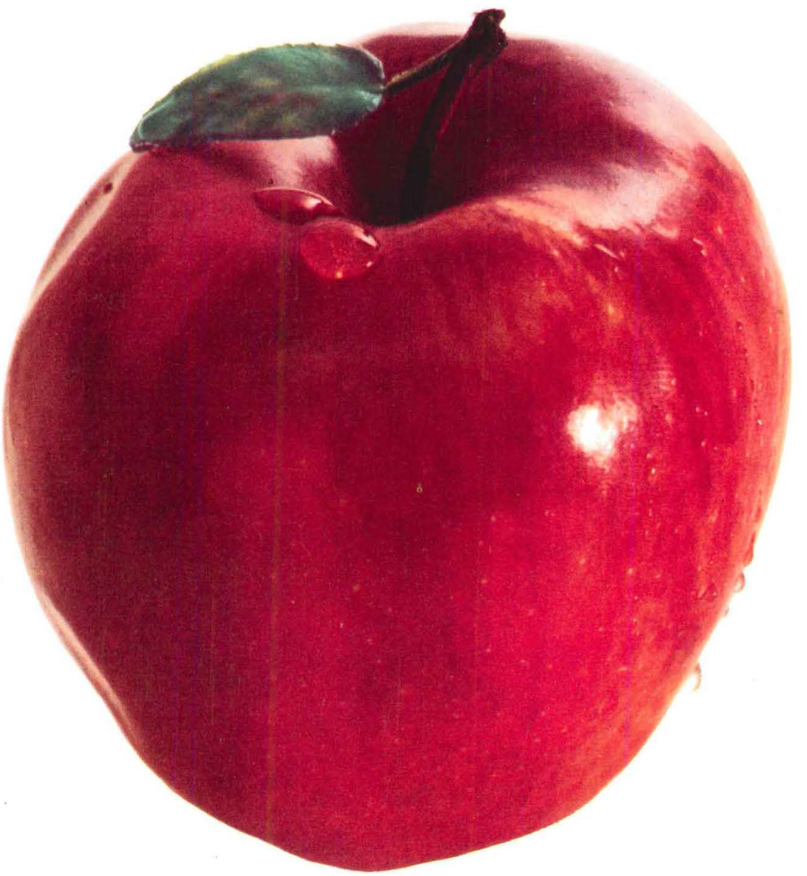
for the
teacher...



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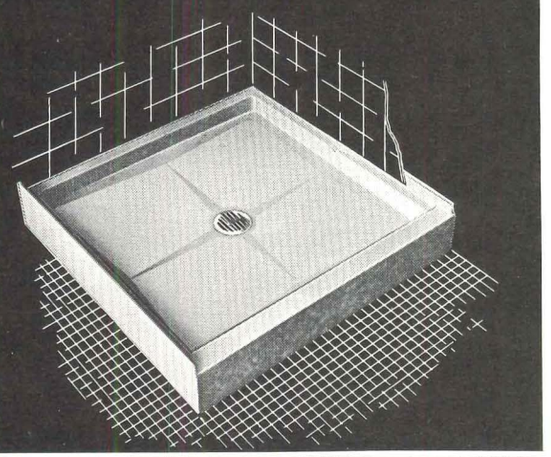

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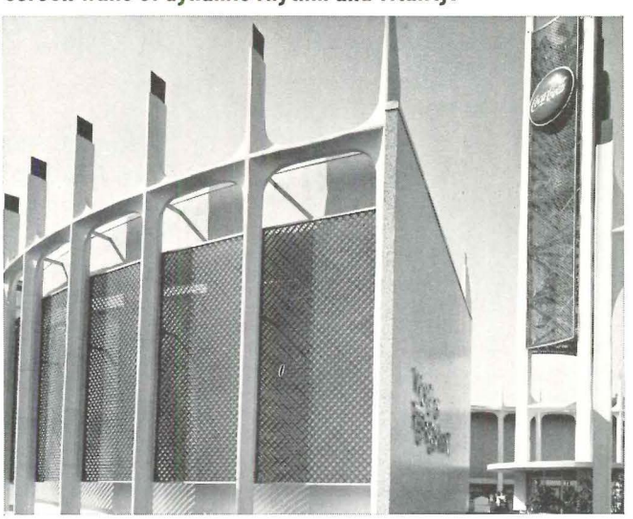

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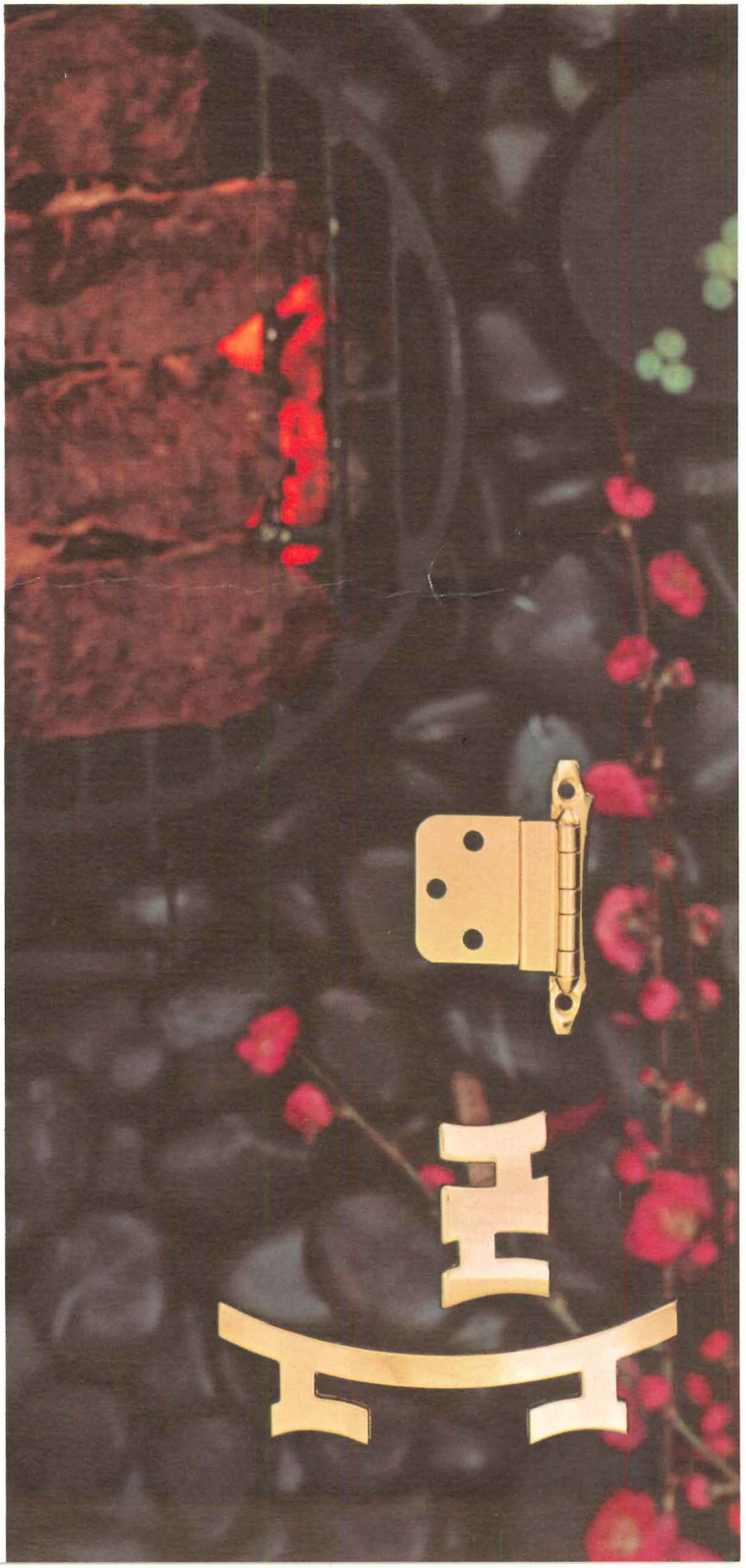

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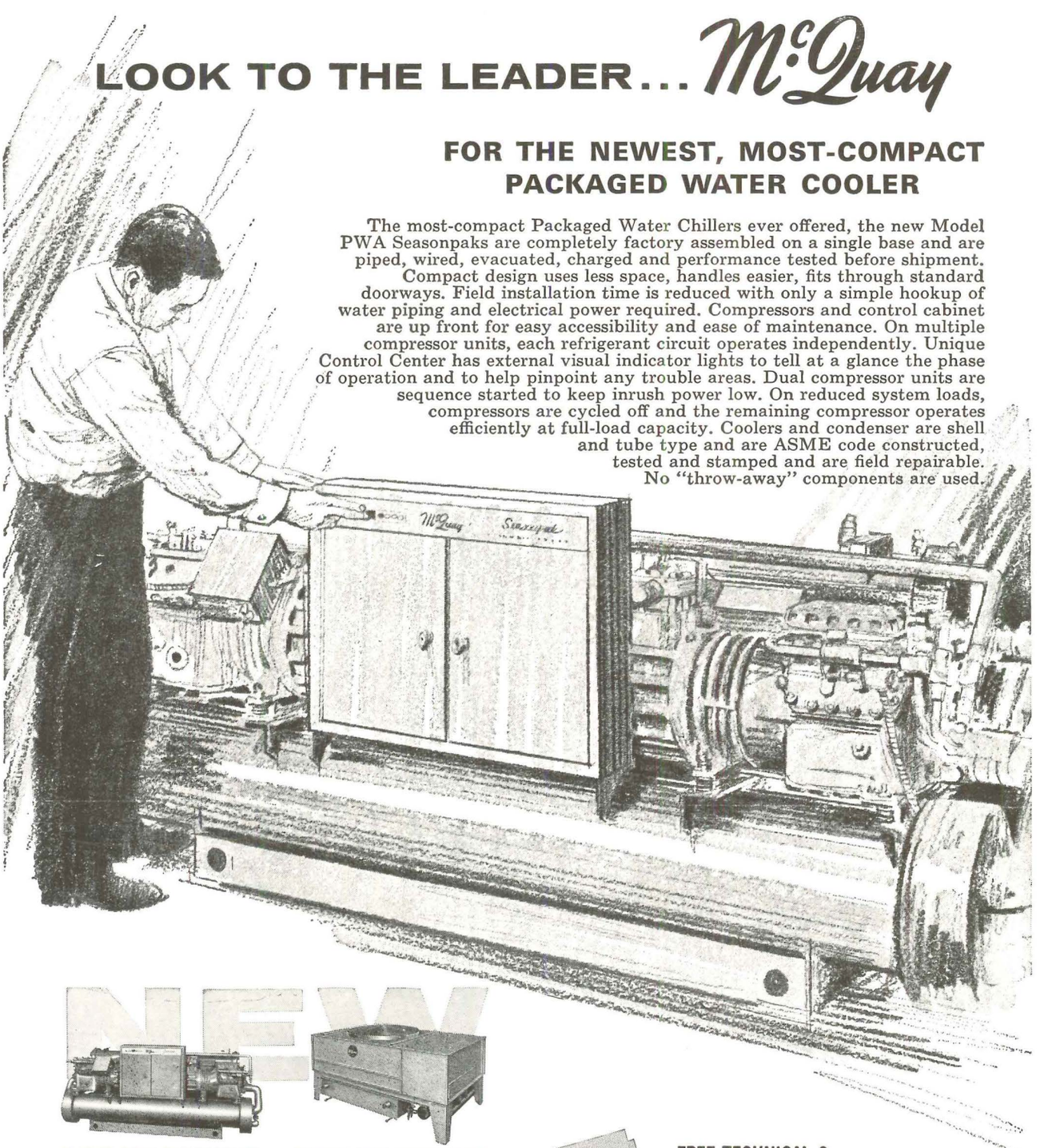

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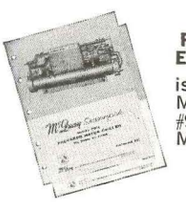

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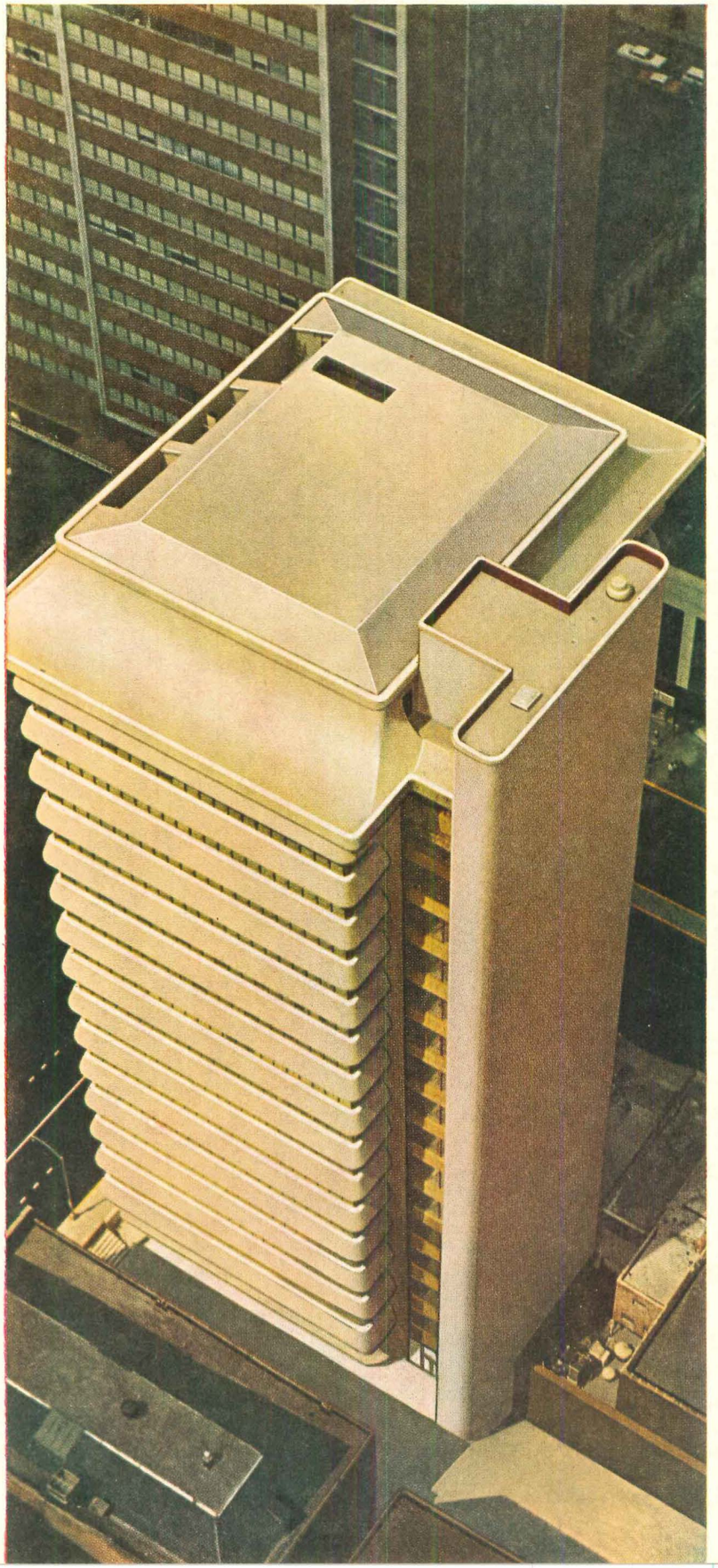

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A monthly roundup of reports on new books of special interest to architects and engineers

This Month's Books

Jewish Art

THE ARCHITECTURE OF THE EUROPEAN SYNAGOGUE. *By Rachel Wischnitzer. The Jewish Publication Society of America, 222 N. 15th St., Philadelphia 2, Pa. 312 pp., illus. $6.00.*

This is a book that anyone interested in Jewish art, or for that matter, in the architectural history of the West, would want to own. It is a well written, lightweight encyclopedia of information on the idea as well as the actual building of synagogues; it is a concise reference work of real value.

Mrs. Wischnitzer, historian at Yeshiva University, has made another contribution to a field of scholarship with which she is well acquainted. Her published studies in Jewish art include such intriguing titles as "The Egyptian Revival in Synagogue Architecture" (1951), The Messianic Theme in the Paintings of the Dura Synagogue (1948), and "Mutual Influences between Eastern and Western Europe in Synagogue Architecture from the Twelfth to the Eighteenth Century" (1947/48). THE ARCHITECTURE OF THE EUROPEAN SYNAGOGUE is a sum of information gathered in these years of research and publishing. It is copiously illustrated with photographs and reproductions of prints, paintings and drawings, some of extraordinary interest. The buildings are discussed in terms of style and chronology but, more important, are also discussed as part of the architecture of their contemporary non-Jewish milieu. In Europe, at least until the nineteenth century, the synagogue was circumstantially the cultural focus of the Jewish community, whose freedoms were continuously modified because of their "alien" origin and whose urban allotment was the ghetto. Yet, as Philip Johnson points out in the foreword to Mrs. Wischnitzer's *Synagogue Architecture in America* (1955), "the Jews have historically built in the styles and disciplines of the time" but, one is led to wonder, if not perhaps with the prime motivation to safeguard the very existence of the synagogue through a kind of mimicry. Moreover, one discovers that restrictions of size, height, window space, appearance, and even place of entrance for the worshipers were continuously imposed by civic authority on synagogue architecture for the better part of its history. Is it for this reason that there has not really been an equivalent "synagogue style" in any of the great epochs of Christian architecture? Distinguished Renaissance, Baroque and Revival buildings have been called synagogues, but there was seldom anything within those elements of style which truly called attention to their unique use. Mrs. Wischnitzer does not tell us whether or not there is a change in Jewish liturgy to parallel these attitudes toward the plastic arts, such as occurred in Christianity. One discovers, however, beneath the trappings of ornament a particular merit of the architecture; this is the evolution of a plan and section tailored to the function of the Cult—great squarish rooms, galleried on three sides, bipolar around a central bema and a laterally placed ark. These spaces must have been the proper setting for the vigorous yet personal attitude toward religious worship that Orthodox Judaism once was. In seeing the selection of post World War II European synagogues, one can not but think of the drawings of Louis I. Kahn for his Philadelphia project, which far better captures the spirit of what seems possible—a synagogue as satisfying in its way as are the impressions of the great seventeenth century Portuguese Synagogue of Amsterdam Mrs. Wischnitzer includes in her book.

Raymond Lifchez

New Towns

LAND FOR NEW TOWNS. *By Robin H. Best. Town and Country Planning Association, 28 King Street, Covent Garden, London, WC2. 60 pp. Paperbound, 7s 6d.*

If, in Britain, a new phase is now beginning in the building and extension of new towns, former ideas are not without consideration. This study analyzes one aspect of the problem: the land use, densities and agricultural displacement in the new towns.

The author has collected measurable facts on existing and proposed land use in already established new towns, and from the body of statistics proposed general conclusions about their land-use characteristics. Mr. Best believes that "there are no low-density new towns . . . space standards are too low to provide good living conditions that this generation, let alone the next, will want and afford."

continued on page 244

"Travertine-style solid vinyl flooring at this price?

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Here's another new style in sculptured vinyl from Goodyear. Richly textured travertine with the look and feel of real marble—priced well below anything of comparable design and material. Another way to fit highest style and top quality into a tight cost situation. We invite you to compare the quality and style with any other resilient flooring—then check out the low price!

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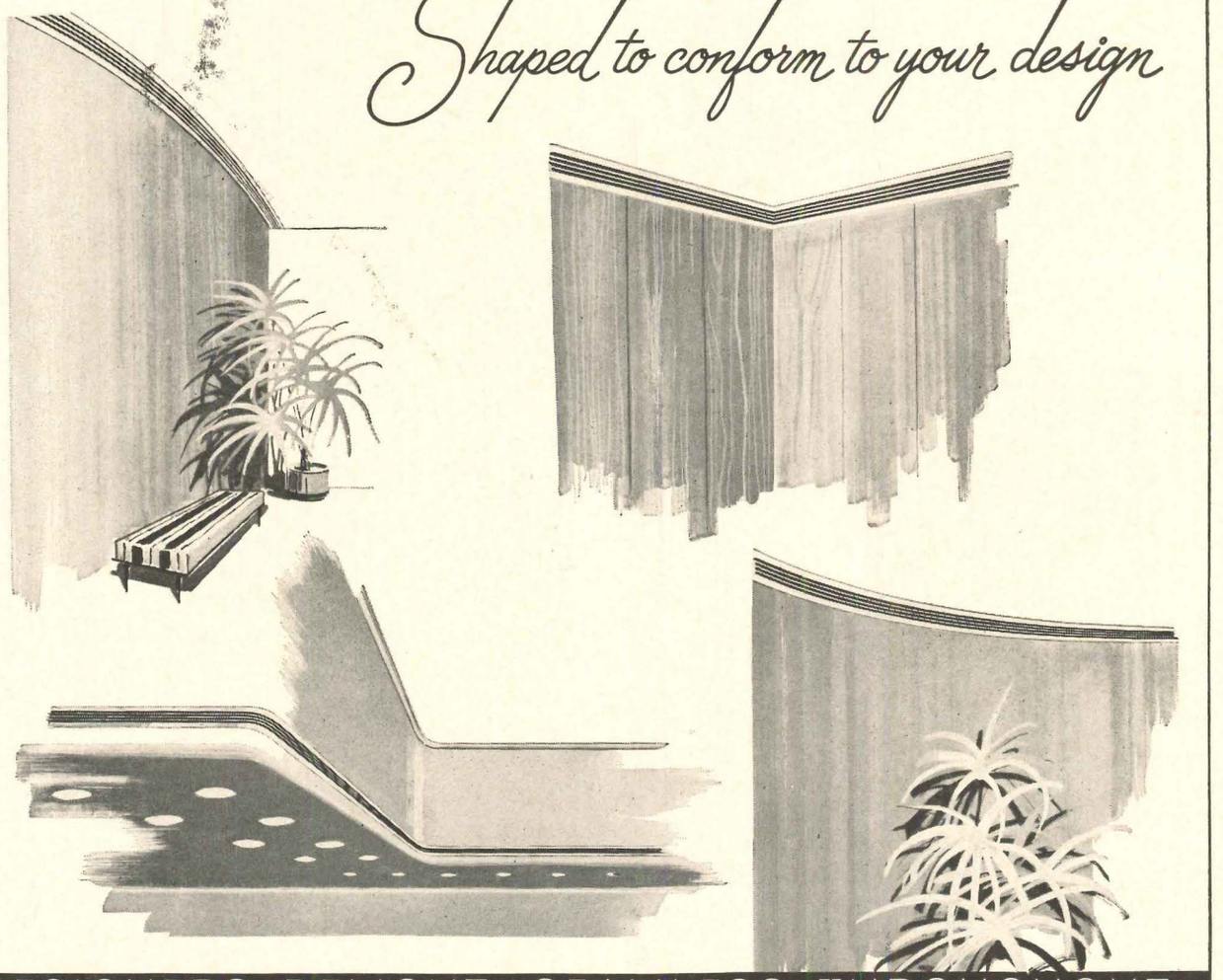

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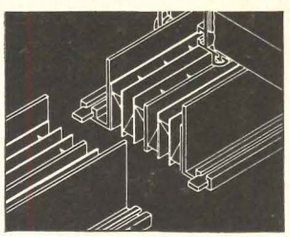

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1217 Delaware Avenue Apartments, Buffalo, N.Y.
Architect-Engineer: Backus, Crane & Love.

Something new in apartments

This building may *look* fairly conventional, but it isn't.

The architects' problem was to provide 80 units, with parking underneath, on a lot only 132 feet wide, and with a height limit to boot.

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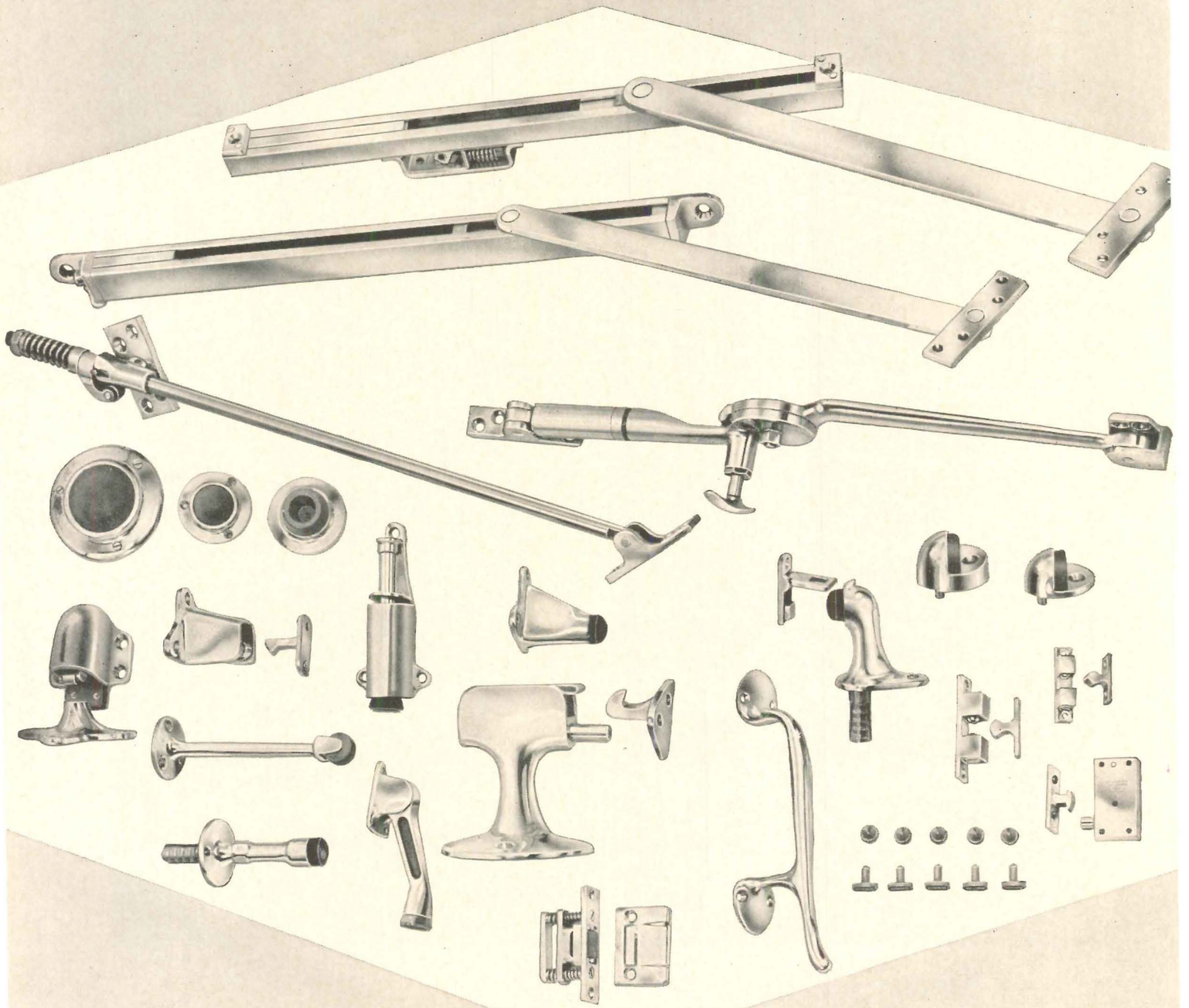

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On the Calendar

July

2–3 General Assembly, Union Internationale des Architectes—Paris

3–9 Tenth International Seminar on Finnish Architecture and Design—Jyväskylä, Finland

5–7 72nd Annual Meeting, The American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.—Portland Hilton Hotel, Portland, Ore.

5–9 World Congress, Union Internationale des Architectes—Paris

14–15 Conference to explore the effects of the new Catholic liturgy on the planning of churches, sponsored by the University of Detroit School of Architecture and the Liturgical and Building Commissions of the Catholic Archdiocese of Detroit—Sacred Heart Seminary, Detroit

20–24 First of an annual series of International Seminars on Ekistics and the Future of Human Settlements, organized by the Graduate School of Ekistics—Athens

26–28 University of Michigan's 18th Annual Conference: Aging and Mental Health—University of Michigan, Ann Arbor, Mich.

Office Notes

New Firms, Firm Changes

Jos. E. Murray and Associates has opened engineering offices at 1606 International Building, 601 California St., San Francisco 94108.

William F. Patterson, A.I.A., and **Leonard S. Golden,** A.I.A., have been appointed associates in the firm of **Siegmund Spiegel,** A.I.A., East Meadow, N.Y.

Perry, Shaw, Hepburn and Dean and **Clifford Douglas Stewart and Associates** have combined their firms under the name **Perry, Dean, Hepburn and Stewart, Architects,** 955 Park Square Building, Boston. Admitted to the firm are **Richard G. Sawler,** limited partner and **John Ruffing,** associate.

Robert G. Price has been made an associate in the New Orleans firm of **Charles Colbert,** architect, planner.

New Addresses

Davis, Brody & Associates, 12 E. 53rd St., New York City 10022.

F. T. Gardiner, P. Eng., 534 Broughton St., Victoria, B.C. Canada.

Queen Emma Gardens, Honolulu, Hawaii. Architect and Engineer: Minoru Yamasaki and Associates, Birmingham, Michigan. Contractor: E. E. Black, Ltd., Honolulu.

NEW YAMASAKI APARTMENT: 3 DIFFERENT DAP® SEALANTS USED.

Overlooking Nuuanu Valley, the Koolau Mountains and famed Diamond Head, the Queen Emma Gardens development is just minutes from the heart of Honolulu. Architect Minoru Yamasaki designed this series of luxury apartments which commands a spectacular view of land, sea and sky. Tenant privacy in the 580 units is effectively provided by the architect; no apartment looks directly into another except across the distance of a full city block.

Important sealing jobs in this outstanding project were assigned to DAP sealants. DAP Flexiseal® polysulfide polymer compound was used for exterior caulking. Balanced Modulus makes Flexiseal a most dependable sealant for the toughest jobs.

Sliding doorways, which open into lanais, were sealed with DAP Butyl-Flex® butyl-rubber caulk . . . an easily-applied 1-part sealant with 5 times the service life of conventional caulks. DAP '1012'® Compound was used for glazing windows. Specially developed to match the color of aluminum sash, '1012' needs no paint.

When specifying caulking, glazing and sealing products, you can depend on DAP quality, and on the DAP Technical Service Program for assistance in selecting the right DAP product to do the job right. Write us for full details.

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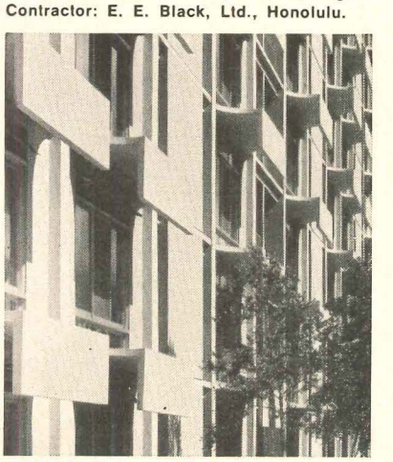

Close up of window exterior detail. DAP '1012' Glazing Compound keeps joints between glass and frame snug despite Oahu's tropical showers and brisk tradewinds.

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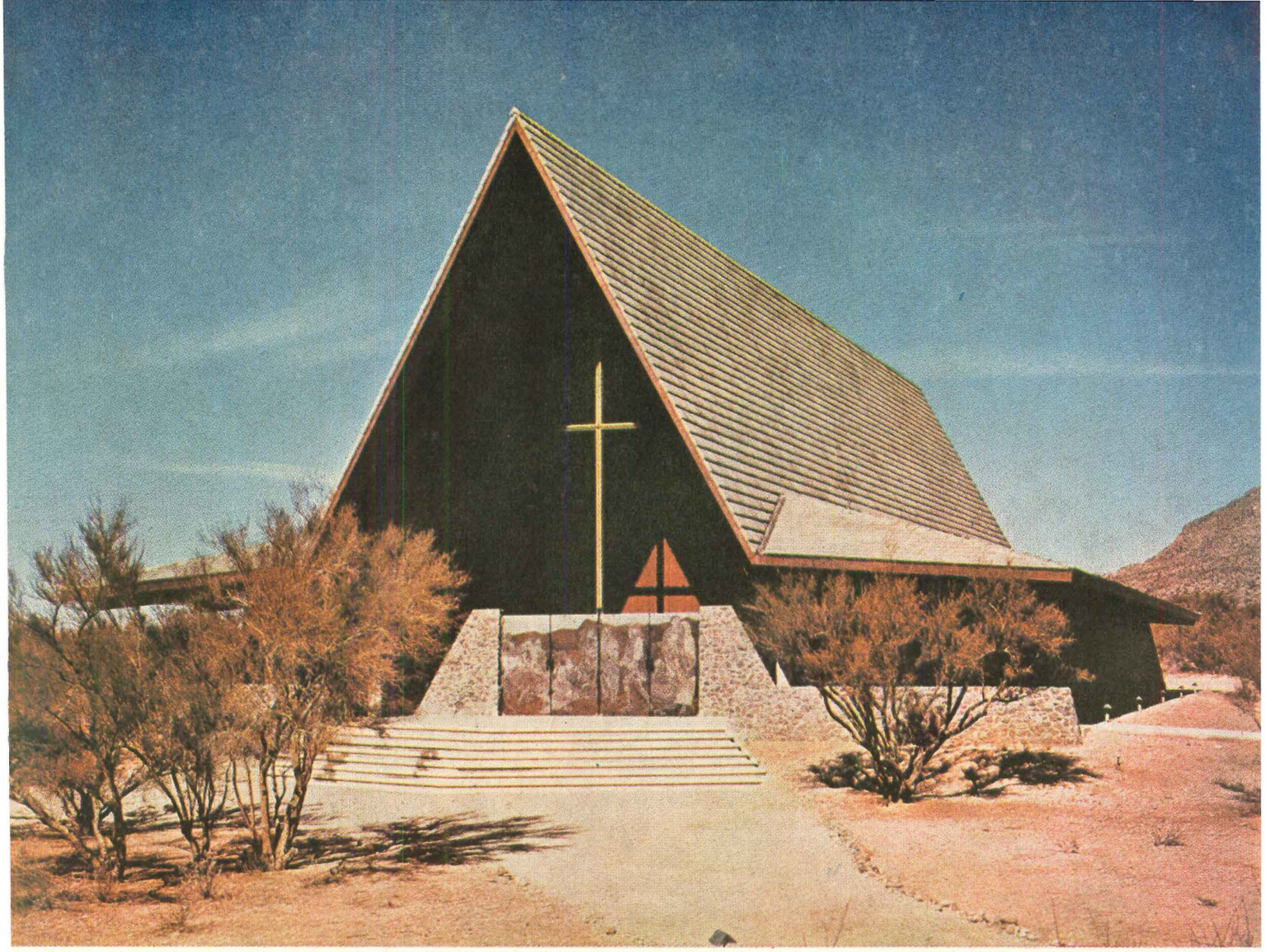


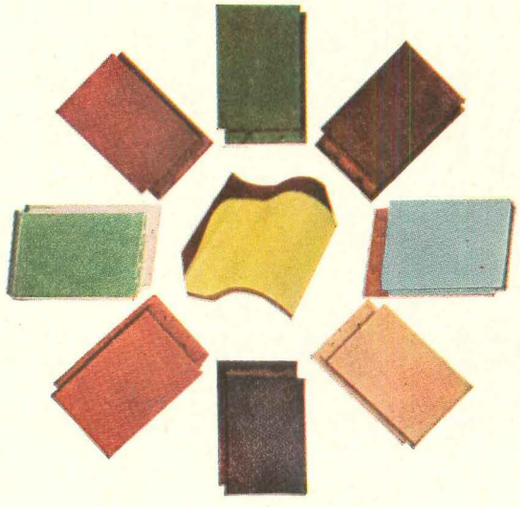
Beauty and Permanence for a House of Worship

ST. ANDREWS PRESBYTERIAN CHURCH
Tucson, Arizona

ARCHITECTS:
Cain, Nelson and Wares, P.C., Architects

TILE by LUDOWICI:
Designer Pattern Smooth Gray

WIDE SELECTION OF OTHER PATTERNS, TEXTURES & COLORS



Modern Designer Smooth Gray, selected by the architects, is one of a variety of patterns and colors permitting creative flexibility—especially important where the roof plays a significant role in the overall design.

For full information on Ludowici-Celadon roofing tile, write for our colorful brochure sent free on request.

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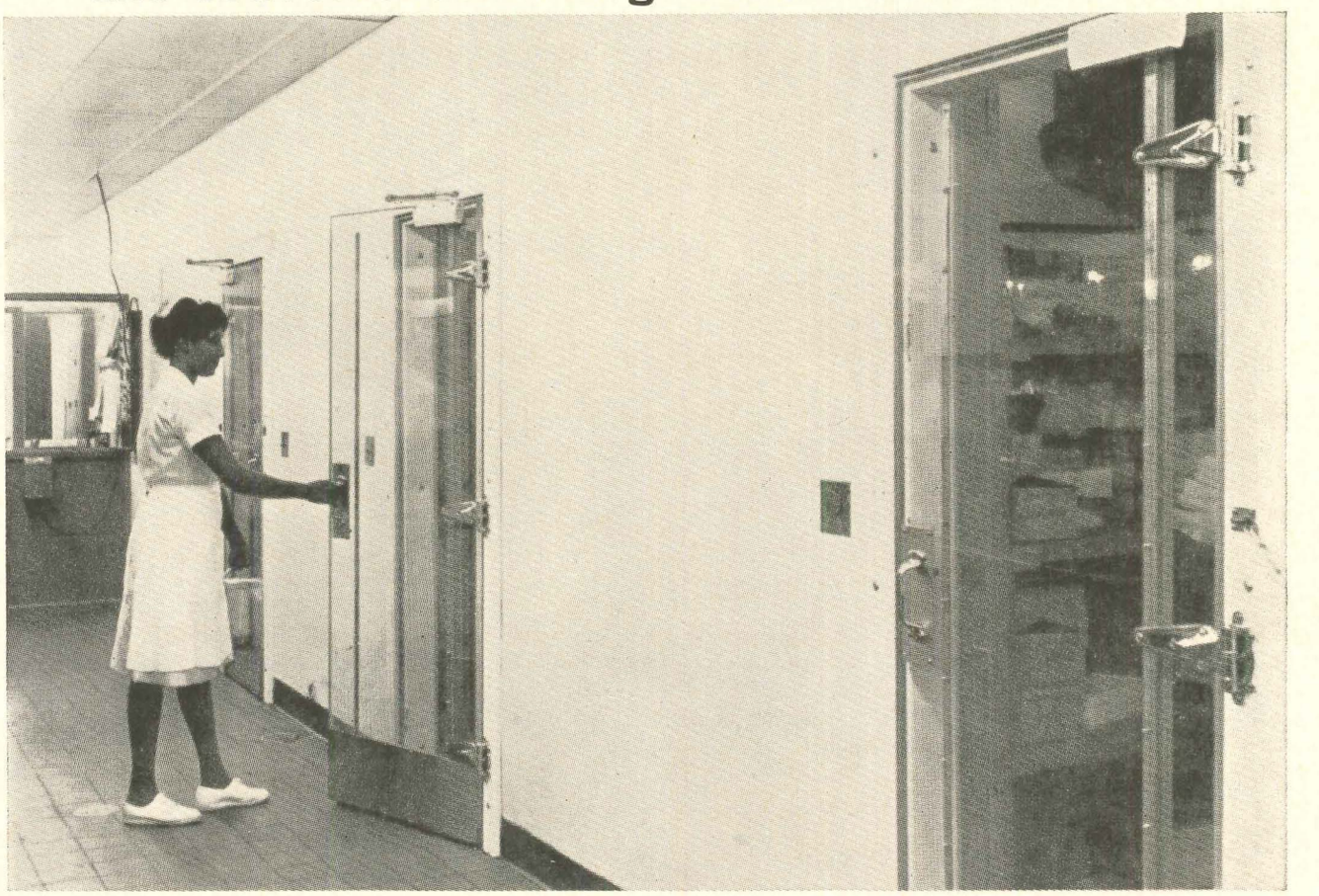
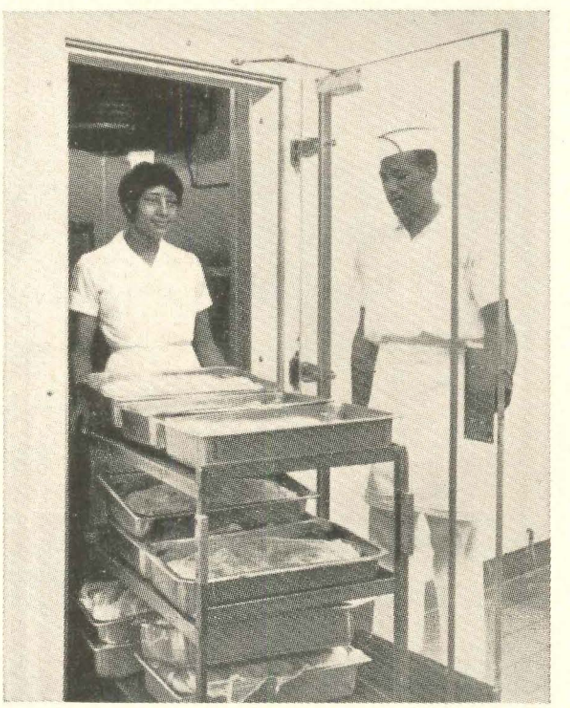
Jamison See-Thru Acrylic Plastic Doors add efficiency and convenience in large motor hotel kitchens



TRANSPARENT Jamison See-Thru acrylic cold storage doors installed in large kitchens of Marriott Motor Hotel provide easy access to cooler rooms.



See-Thru acrylic cold storage doors are sturdy, rigid doors which provide attractive, sanitary appearance.

The need for rapid access, supervision of personnel and maintenance of sanitation in the busy kitchens of the new Marriott Motor Hotel in Philadelphia made desirable the use of five Jamison See-Thru acrylic plastic cold storage doors. Jamison See-Thru doors can be opened as easily as insulated doors and give the additional advantages of improved employee supervision, convenience in identifying stored materials, elimination of accidental lock-in. The See-Thru door is just one of many Jamison doors developed to help cut costs and save time in the food service industry. For additional information write to Jamison Cold Storage Door Company, Hagerstown, Maryland.

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Architects: Hayes, Howell & Associates, A.I.A., Southern Pines, North Carolina

This home speaks a gracious welcome . . . with sweeping elegance of design and the natural warmth of wood.

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The patio plan provides each room within a pleasant view of a private courtyard. The resilient wood floor assures walking comfort.

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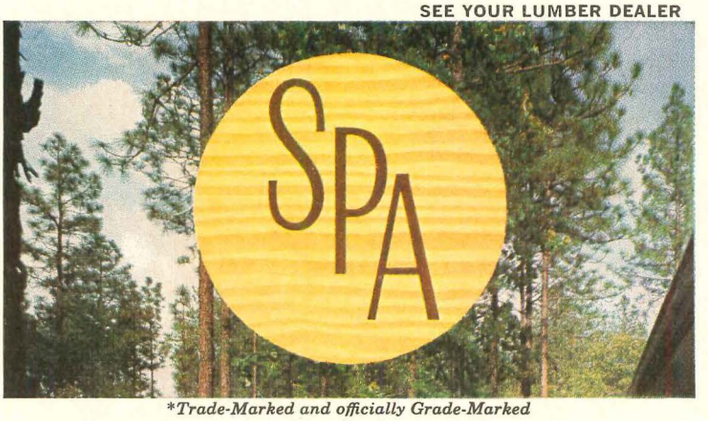

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continued from page 43

Pan American Congress of Architects in Washington, D.C.

The awards jury consisted of Willis N. Mills, Stamford, Connecticut, chairman; Philip Johnson, New York; Donald Lutes, Springfield, Oregon; Nathaniel Owings, San Francisco; and Peter Tarapata, Bloomfield Hills, Michigan.

Report of Honor Awards Jury

The 1965 Honor Awards Jury considered 388 entries; less than in 1964, but perhaps higher in over-all quality. In spite of broad support by practitioners in several states, notably California and Texas, there were no entries from 19 states. The Jury would support steps by the Institute to broaden the submissions geographically.

After several reviews of each submission, the Jury agreed that 50 projects were of superior quality. These were studied again several times by the entire Jury, which voted for about one quarter of these; a total of eleven awards.

The submissions were of high quality and the building types and solutions of infinite variety. It would appear that much superior work of modest scale is being done by the membership of the Institute. The Jury was pleased to see the results of talent, discrimination and serious professional effort in projects of low cost and moderate size.

The same cannot be said, however, for large-scale buildings and the spaces around them. In many cases the buildings were enhanced by great spaces, but few by truly human spaces. High quality structures often lacked successful site treatment and placement of site elements. Many projects involving the fabric of the city failed to satisfactorily relate the new to the old.

It was refreshing to see so many good individual houses. Their quality seems to contradict our reputation of abandoning this category in our practice.

Lack of sympathy between artist and architect was apparent in many instances. Often the painting or sculpture failed to provide the intended focal point for a space. The resulting effect on the Jury was loss of enthusiasm for the architecture.

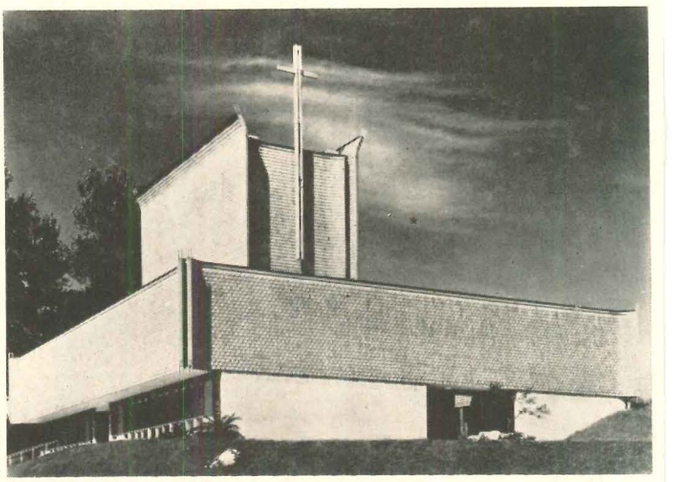
Singleness of purpose, logical expression and careful detailing, as usual, rated high with this Jury, which commends the premiated entries in these respects.

Awards of Merit

Robert Damora

"Ingenuous and imaginative with a sensitive feeling for the scale of a small house. The use of the structural grid permits great flexibility in this prefabricated house of concrete components, a neat and orderly concept offering a great variety of choices."

Prefabricated Tract House for New Seabury Community, Cape Cod, Massachusetts. Architect: Robert Damora; engineer: Sepp Firnkas; landscape architect: Suzanne Sissen; owner and general contractor: Emil Hanslin Associates, Inc.



Hugh Stratford and Charles Pearson

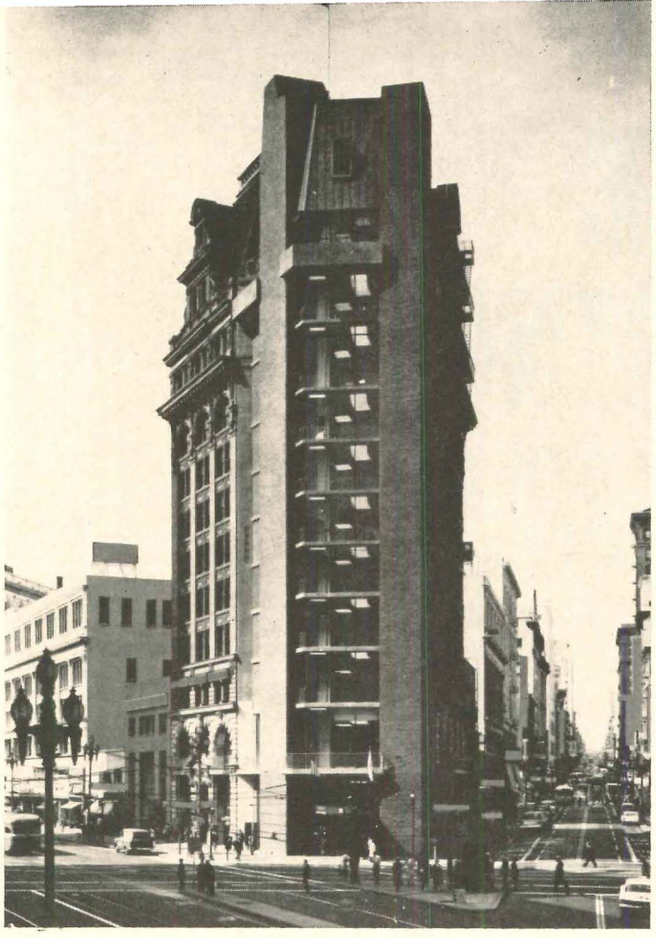
"A sensitive use of materials and forms natural to the setting and appropriate to a Japanese-Christian congregation. The church has a modest, serene quality. Its strong, simple massing is eased by shingle textures, subtly curved walls."

The Japanese Presbyterian Church of Seattle, Seattle, Washington. Architect: Kirk, Wallace, McKinley, A.I.A. & Associates; structural engineer: Worthington, Skilling, Helle & Jackson; mechanical engineer: James B. Notkin & Associates; electrical engineer: Thomas E. Sparling & Associates; landscape architect: Robert Chittock; general contractor: Rudy Simone Construction Company.

Joshua Freiwald

"An example of outstanding multiple housing on a small site. Modest in character and detailed with great care, the project is a compatible addition to its neighborhood. Design interest is achieved by juxtaposing voids—balconies in iron—and surface smooth windows."

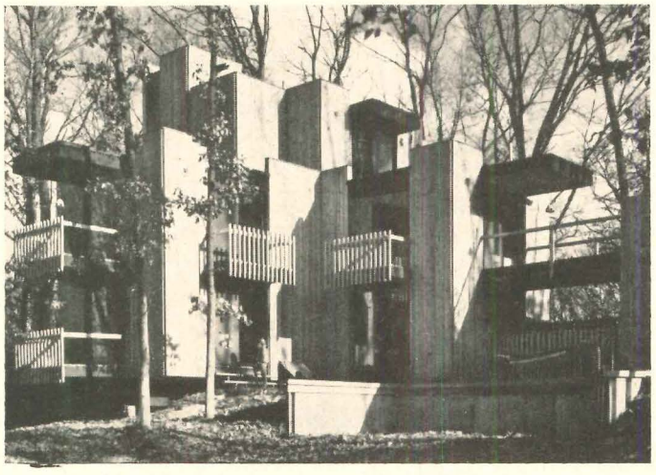
Terrace East and Terrace West Apartments, Berkeley, California. Architect: Roger Lee Associates, Ward Higgins partner in charge; engineer: Jack Kositsky, C. E.; landscape architect: Tak Sakanashi; owner: 1750 Walnut Company; general contractor: C. M. Peletz Company.



Morley Baer

"An addition to a fine old building conceived in empathy. The result is a solution rarely achieved under such circumstances. The old building is enhanced by the new, and the new is graced by the old."

Headquarters Building for Citizens Federal Savings and Loan Association, San Francisco, California. Architect: Clark & Beuttler, Charles W. Moore and Alan E. Morgan, associates; structural engineer: H. J. Brunnier; mechanical and electrical engineers: Keller and Gannon; landscape architect: Lawrence Halprin; interior consultant: Dudley Kelly; general contractor: Joseph L. Barnes Construction Company.



Julius Shulman

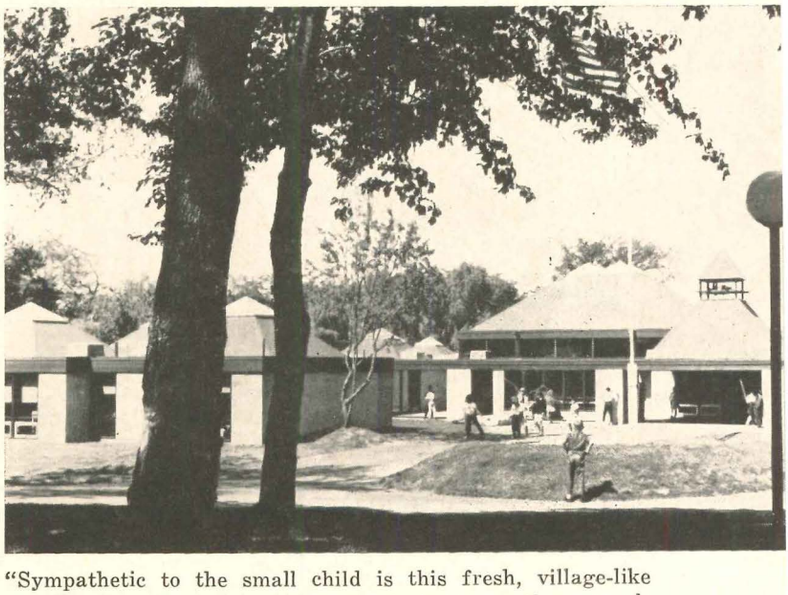
"A variety of living spaces through a playful composition of vertical elements. The house represents a most imaginative use of simple materials both inside and out, and through consistency of materials, its form acquires a sculptural quality. It fits its environment with sensitivity."

Ray D. Crites Residence, Cedar Rapids, Iowa. Architects: Crites & McConnell; engineer: Richard G. Whiteaker; general contractor: Berger Construction Company.

Mears Photography

"Apartments each with a private view and grouped around an intimate court made exciting by an astounding manipulation of levels. The use of water and preservation of trees produces an oasis in an urban setting."

The Oaks, Austin, Texas. Architect: R. Gommel Roessner, A.I.A.; engineer: George E. Maxwell; landscape architect: C. Coatsworth Pinkney; owner: John B. Holmes; general contractor: Robert C. Gray.



William Gerold and Charles Hauser

"Sympathetic to the small child is this fresh, village-like organization of an elementary school. A noteworthy example of appropriate scale and a fine expression of a direct use of simple, inexpensive materials. A community of spaces well fitted to site."

The Gordon School, East Providence, Rhode Island. Architect and landscape architect: William D. Warner; general contractor: F. N. Gustafson & Sons, Inc.

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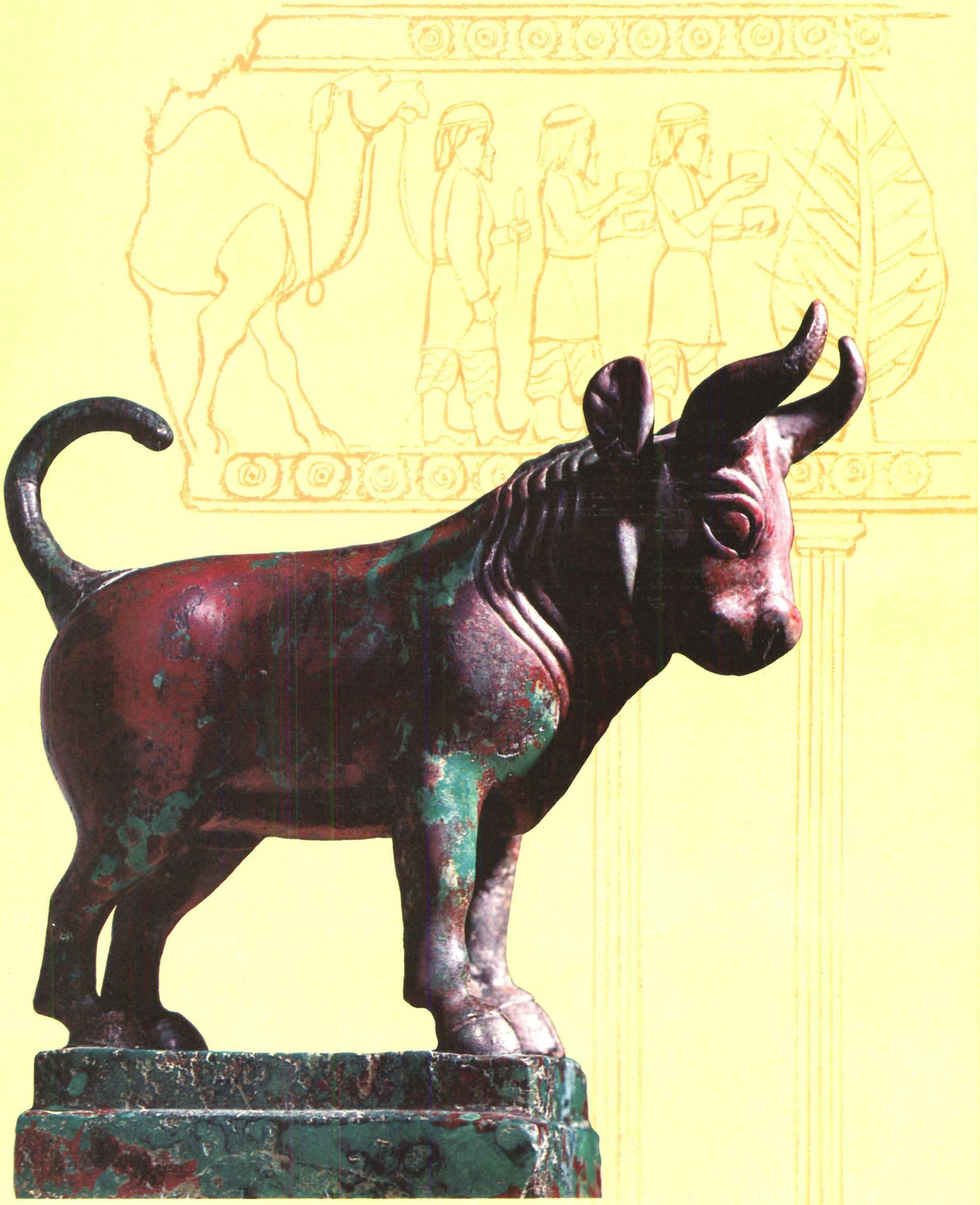
Near Eastern Bronze Bull, VI century B. C. (Metropolitan Museum of Art, Rogers Fund, 1947.)



COMPUTER CENTER WILL BE BUILT AT DARTMOUTH

A prominent design feature of the planned Kiewit Computation Center at Dartmouth College is a roof entirely supported by eight columns so that there will be a clear, unbroken span within the building, allowing the interior partitions to be moved. Architects are the New York office of Skidmore, Owings & Merrill. Construction on the $625,000 structure is expected to begin this spring.

Walls will be of precast concrete, with exposed granite aggregate on the surface. A continuous band of windows will run around the building above the walls.

HOUSING GROUP ELECTS OFFICERS

Frederick G. Frost, Jr., F.A.I.A., has been elected president of the Citizens' Housing and Planning Council of New York, Inc. Mr. Frost, who heads an architectural firm of the same name, has worked in the large-scale housing field and has headed a number of community, professional and public service organizations.

Among current commissions, Mr. Frost's firm is writing the architectural chapters of the new building code for New York City, an $800,000 project under the direction of Polytechnic Institute of Brooklyn.

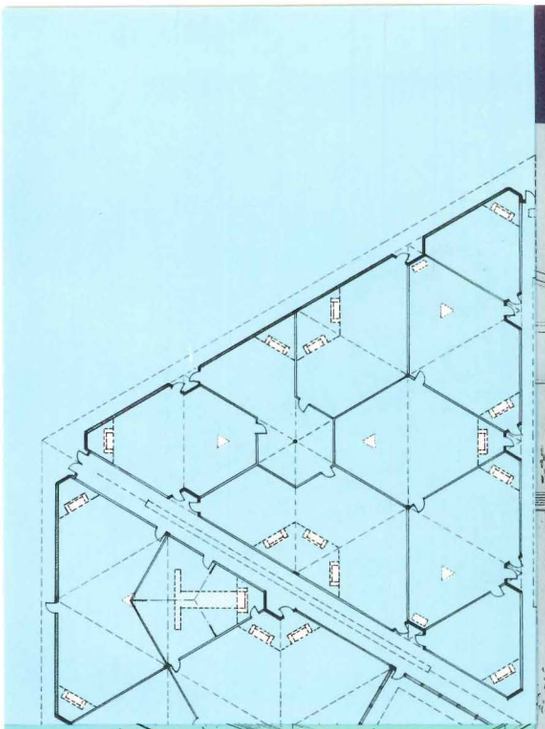
Other new officers include: vice president—Richard Ravitch, Vice president of the HRH Construction Corporation; treasurer—Richard J. Scheuer, of the real estate firm of City and Suburban Homes, Inc.; and secretary—William F. Blitzer, vice president of Lightolier, Inc.

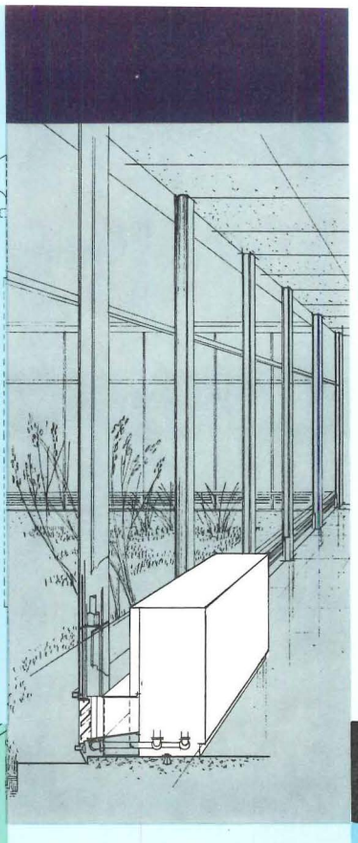
MONO-LOCK:
LOOKS AS GOOD AS IT LOCKS

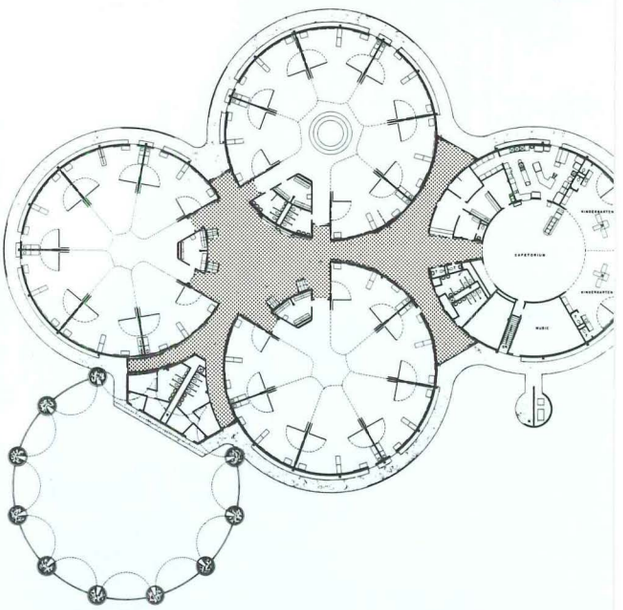
Nobody cares what the inside of our lock looks like. It's safe. Rugged. Dependable. Built on a heavy one-piece frame. The outside, that's the part we built for beauty. With form following function. (We call that integrity of design.) That's what you care about, isn't it?

The Mono-Lock shown in Castle design

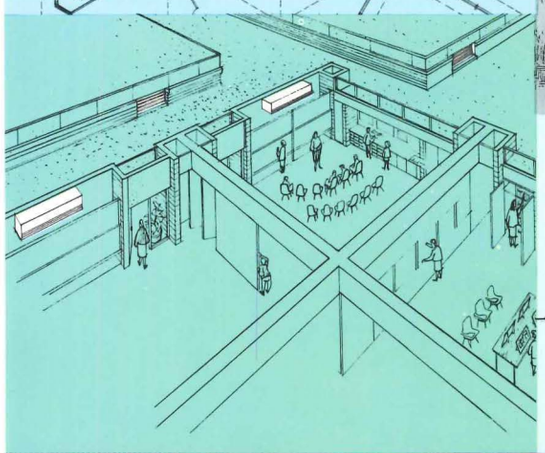
YALE®
THE FINEST NAME IN LOCKS AND HARDWARE
YALE & TOWNE

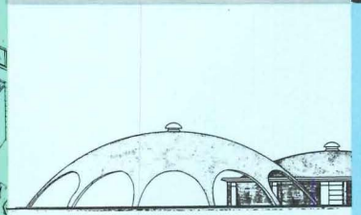


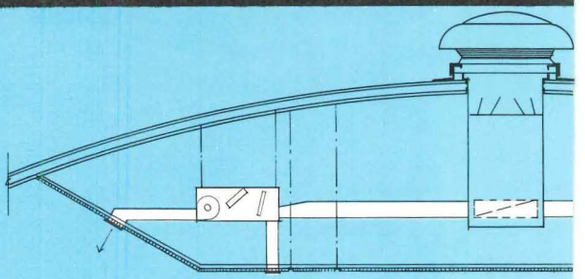


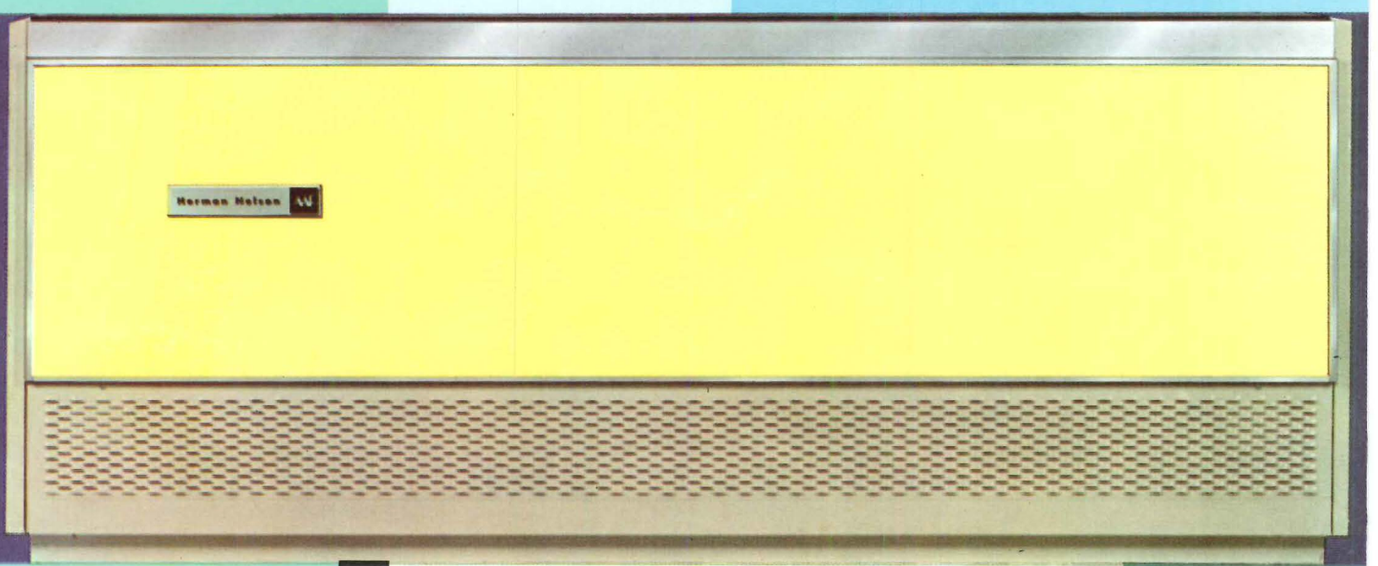


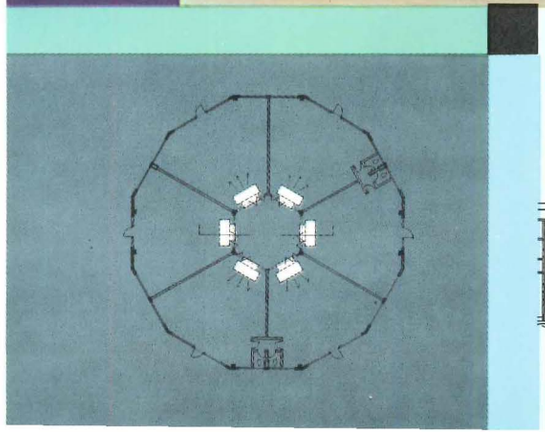
SCHOOL PLANS shown here are from a new AAF/Herman Ne
brochure showing how unit ventilators fit into the most advanced sc
designs by some of America's leading architects. Write for your c

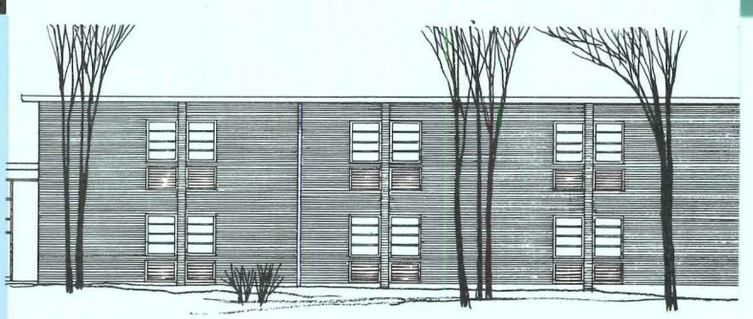


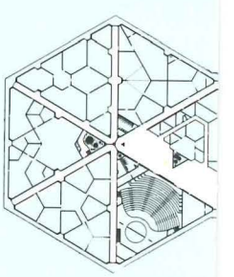












If Herman Nelson classroom unit ventilators cost a little more

...why do so many budget-wise architects select them as the base bid?

Simply put: they're designing a far greater value into their schools.

A 5% saving on unit ventilators for an average school represents a savings of about .0032% of the total school cost. And that .0032% can begin to look smaller and smaller in a few years should the lower-cost units need replacement, as they did recently in one Long Island school.

We don't say that Herman Nelson heating, air conditioning, ventilating unit ventilators are ten times better-built than others. Not even twice so perhaps. But they *are* worth any slight difference you *might* have to pay. Here are some reasons why:

ONE-PIECE UNITIZED FRAME (something you'll probably never even see) helps make sure Herman Nelson unit ventilators last as long as your building.

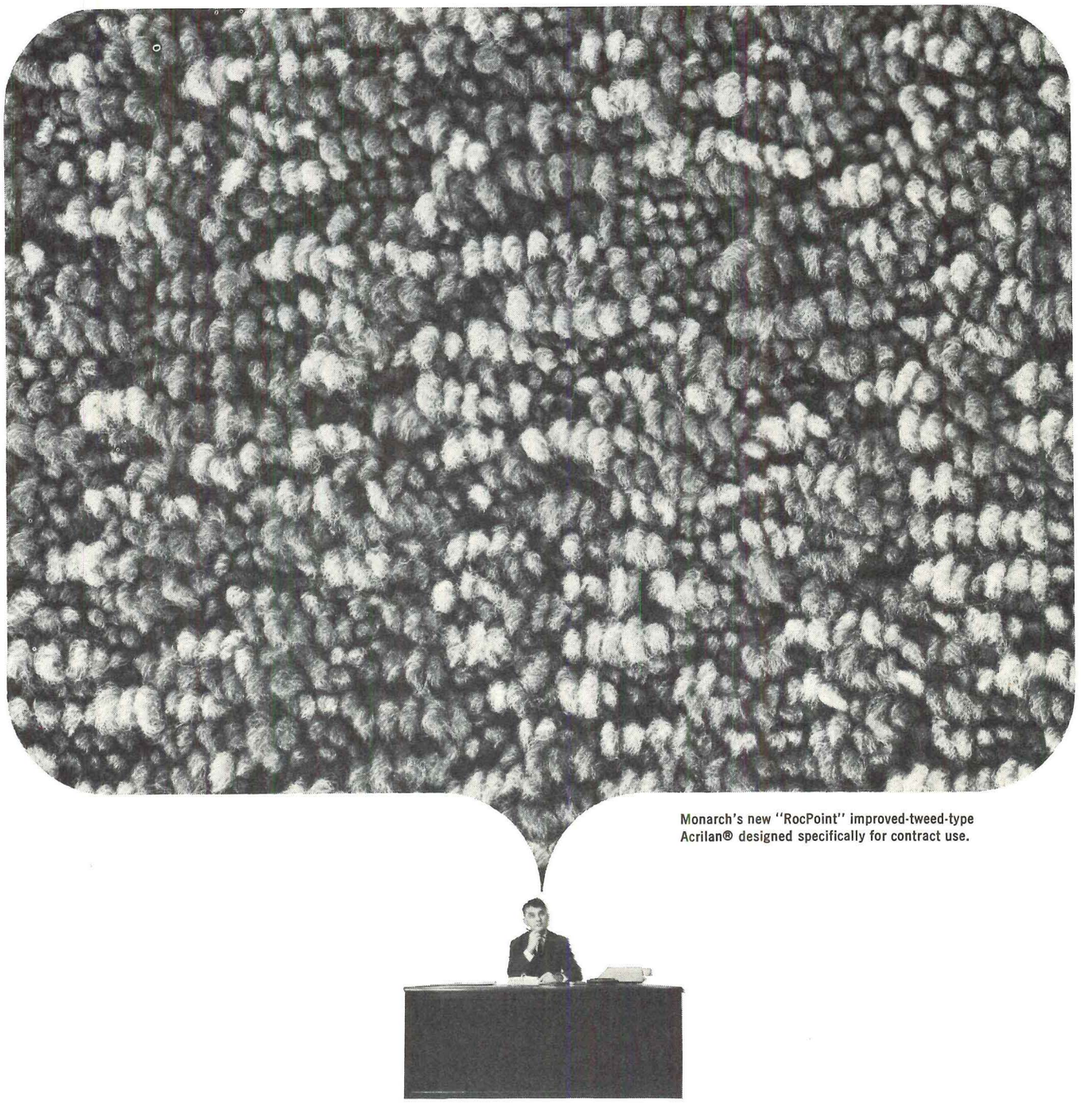
DRAFT/STOP DESIGN captures chilling down-drafts from the windows without adding additional (and unneeded) heat to the room.

5-YEAR WARRANTY (Type G units)—Covers *both* parts and labor should our units not perform as we promised. It backs up your decision to specify Herman Nelson with *action*, not talk.

If we build them a little better than the others, it's for a good reason. We want them to last the life of the school building. We think you do too. Write for the new booklet *"Architects Are Ingenious People—and the Ways They're Using Unit Ventilators Today Prove It."* American Air Filter Company, Inc., 215 Central Avenue, Louisville, Ky., 40208. In Canada: American Air Filter of Canada, Ltd., Montreal 9, Quebec.

FAR-SIGHTED PLANNERS CHOOSE HERMAN NELSON.

AAF **Herman Nelson**
SCHOOL PRODUCTS DEPARTMENT



Monarch's new "RocPoint" improved-tweed-type Acrilan® designed specifically for contract use.

Thinking seriously about carpeting? Think about Monarch.

Five reasons why:

1. You get deep, springy pile made from modern, man-made fibers . . . the strongest, longest-wearing fibers on the market. **2.** You have maximum selection from luxurious styles, exciting colors and textures . . . including Colorset multicolored patterned carpet and Veltron "flocked" carpet. **3.** You get instant availability from large factory stock of roll and cut-order carpet in commercial qualities. **4.** You are dealing with a mill experienced in specific contract problems, with more than 3,000 grueling torture tests to prove Monarch carpet's superior durability and cleanability in extreme wear situations. **5.** Hotels, motels, restaurants, clubs, buildings — even supermarkets — have installed Monarch carpet and found it entirely satisfactory.

Need any more reasons to specify Monarch?

Write Contract Division:

Monarch carpet mills CHAMBLEE, GEORGIA

ARCHITECT: PAUL HAZELTON, TRAVERSE CITY, MICHIGAN

It's June in January

under domes of PLEXIGLAS

Now guests at the Park Place Motor Inn, Traverse City, Michigan, enjoy year-round swimming in an outdoor atmosphere, thanks to a dome of PLEXIGLAS® acrylic plastic. This added attraction encourages more business in the off-season and increases year-round occupancy.

The light weight and impact resistance of PLEXIGLAS make possible light, simple dome structures, resulting in low construction costs. Large spans provide a clear view to the outside and an attractive exterior appearance.

The weather resistance and color stability of PLEXIGLAS have been proved over more than 20 years of outdoor use. PLEXIGLAS is available in colorless transparent sheets and a wide range of transparent tints that control glare and solar heat transmittance.

Write for our brochure, "Natural Light Through Domes and Arches of Plexiglas."

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PHILADELPHIA, PA. 19105

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A KAWNEER ENTRANCE

Beauty that never fades....

Style Leader 125 Entrance Package—shown in Permanodic Medium Bronze No. 28.

and precision performance that never stops!

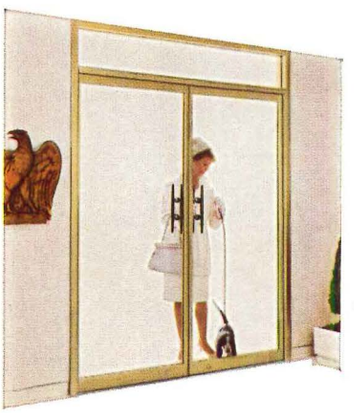
Now with **PERMANODIC*** *color*

Whatever you're planning—skyscraper, storefront, apartment, hospital, school or salon—Kawneer has an entrance package designed to meet your requirements for performance and appearance.

Independent laboratory tests and on-the-job installations prove Kawneer aluminum entrances last longer and are engineered to deliver superior performance—even after years of vigorous traffic and extreme weather conditions.

Now, there is an additional advantage to specifying Kawneer—Permanodic colors! These anodic hard color finishes add new warmth. And their beauty is *lasting*. Permanodic finishes are created from alloys, not dyes, and therefore are non-fading, resist corrosion and abrasion. These new entrance packages also offer exciting, new hardware options including Permanodic bars and new grips in teal, earth or black.

For superior performance, permanent beauty, and the savings these features afford, specify a Kawneer entrance package. Write for specification file, number P. E. 64, or Sweets File 16 E/KA.



Full Vision 128 Entrance Package—
shown Permanodic Light Bronze No. 26.

Narrow Stile 190 Entrance Package—
shown in Alumilite No. 204 A1R1.

Wide Stile 500 Entrance Package—
shown in Permanodic Black No. 29.

Extra Duty 350 Entrance Package—
shown in Permanodic Medium Bronze No. 28.

All entrances illustrated with concealed overhead closer. 190, 350 and 500 available with 5 closer options. 125 and 128 with concealed closer only.

Kawneer

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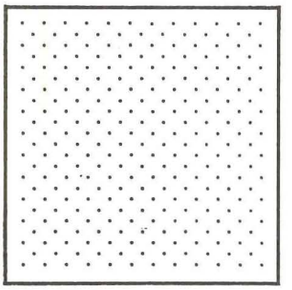
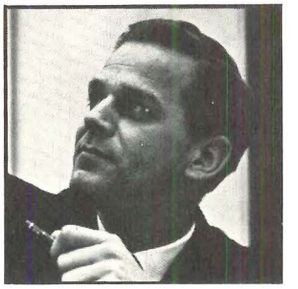
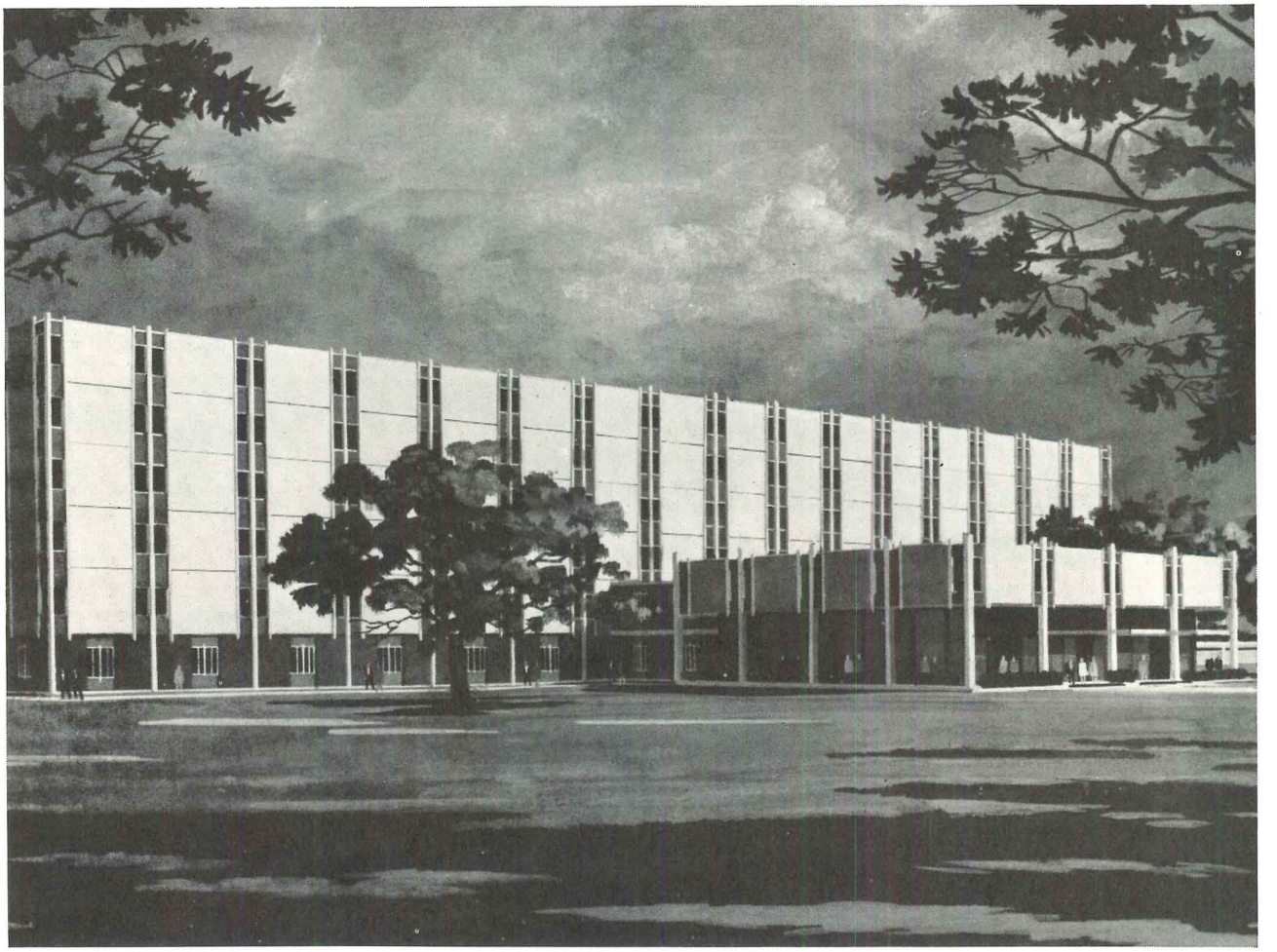




Cleveland architect A. A. Papesh specifies Inland Radiant Ceiling Panels with 3M Brand Velvet Coating



American Greeting Card Building combines superior heating, cooling, acoustics with near-perfect light diffusion

"Has excellent hiding qualities. Even the seams between panels flatten out in appearance," says architect Alexander A. Papesh about 3M Velvet Coating on Inland Radiant Ceiling Panels.

By finishing Inland Radiant Ceilings with 3M Velvet Coating, new beauty has been added to the system of controlling temperature nature's way: through transfer of radiant energy.

Uniform and glare-free, 3M Velvet Coating is an *optical* rather than a chemical formula. It has virtually perfect light diffusing properties — giving a soft, suede appearance with rich, uniform color over a wide range of viewing angles.

And while conventional flat finishes burnish when cleaned, 3M Velvet Coating stays glare-free—even after 250 scrubbings. Dirt and light abrasion marks remove easily with no change in appearance.

3M Velvet Coating and Inland Radiant Ceilings—a simple, economical system of temperature and acoustical control—plus glare-free, velvet-soft beauty to complement the interior decor.

For detailed information on Inland Radiant Ceilings, write: Inland Steel Products Company, P.O. Box 393, Milwaukee 1, Wisconsin.

INLAND STEEL PRODUCTS COMPANY in cooperation with 3M COMPANY

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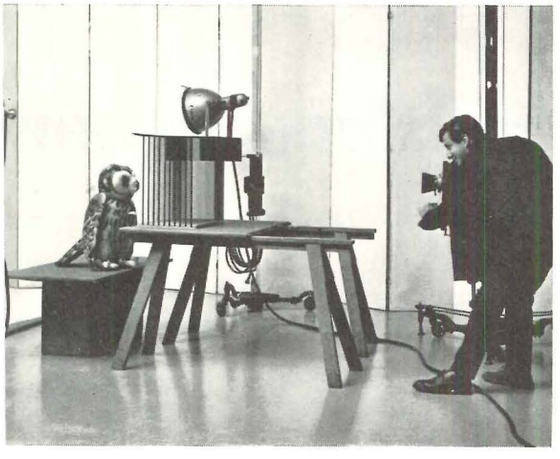
You're looking at a wise old owl through 10 pieces of PPG Float Glass



It's as though nothing is between the owl and the camera lens. This clarity is the reason why PPG Float—the new glass from Pittsburgh Plate Glass Company—is attracting the interest of automakers, mirror manufacturers and architects.

It's called PPG Float Glass because of the way it's made. Liquid glass is floated on a lake of molten metal, resulting in a new approach to perfection in glass.

PPG Float is available now. Specify it wherever the last word in clarity is called for. Contact your PPG Architectural Representative or write: Pittsburgh Plate Glass Company, One Gateway Center, Pittsburgh, Pa. 15222.

Left: This is how the photograph at top was taken through 10 pieces of PPG Float Glass. The model is a stuffed owl from F. A. O. Schwarz.

Pittsburgh Plate Glass Company, Pittsburgh, Pa.

PPG makes the glass that makes the difference

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LAMINATED PLASTIC

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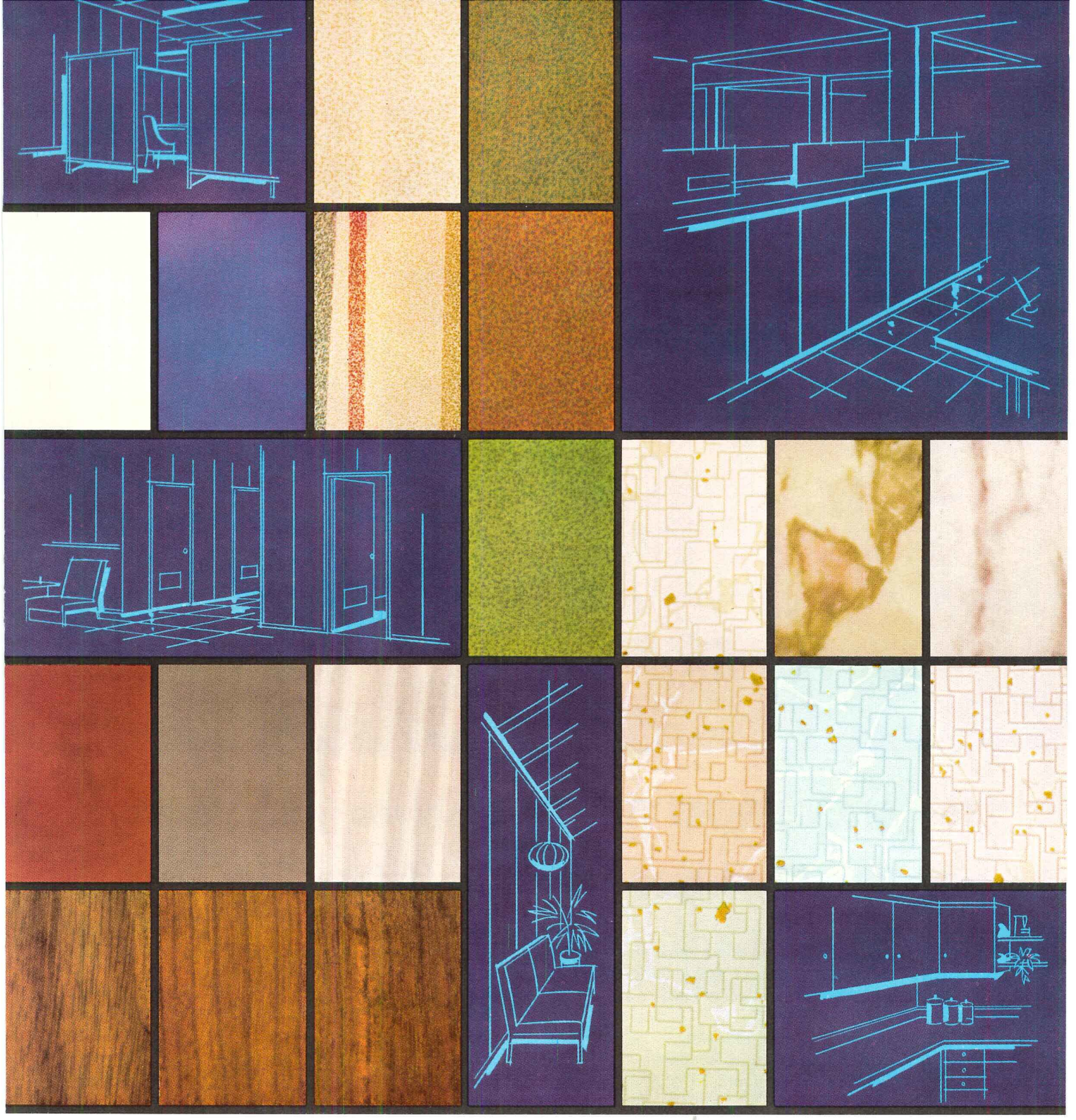

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Specify with confidence, for counters, tables, fixtures, vanities, cabinets, furniture, walls, doors, partitions . . . or any other residential, institutional and commercial application where beauty, durability and low maintenance are key considerations.

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Deep Blue
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Ruban Mist II
Surfwood
Fruitwood Cherry

Avocado Mist
Terra Cotta Mist
Dark Olive Mist

Antique Camelot
Beige Camelot
Fern Camelot

Beige Itala Marble
Azure Camelot

White Itala Marble
White Camelot

The MAN FROM BARCOL solves your problems with overhead-type doors . . . before they happen

Inferior quality overhead-type doors can cause trouble and expense for your client . . . problems for you . . . in one, or more, of these critical areas:

- Sealing efficiency
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Barcol Overdoors assure superior performance and dependability in all five! And the *man from Barcol* has the facts and figures to prove it.

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For instance, the man from Barcol provides complete specification guides, based on performance standards, for virtually all types of door installations. He will analyze client requirements and justify initial cost of door equipment, during the preliminary planning stage.

Barcol Overdoors and Electric Operators are the sound specifications for faster materials handling, more accurate temperature control and efficient, long-term door performance. Call the man from Barcol NOW! He's listed in the Yellow Pages.

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BARCOL OVERDOOR COMPANY

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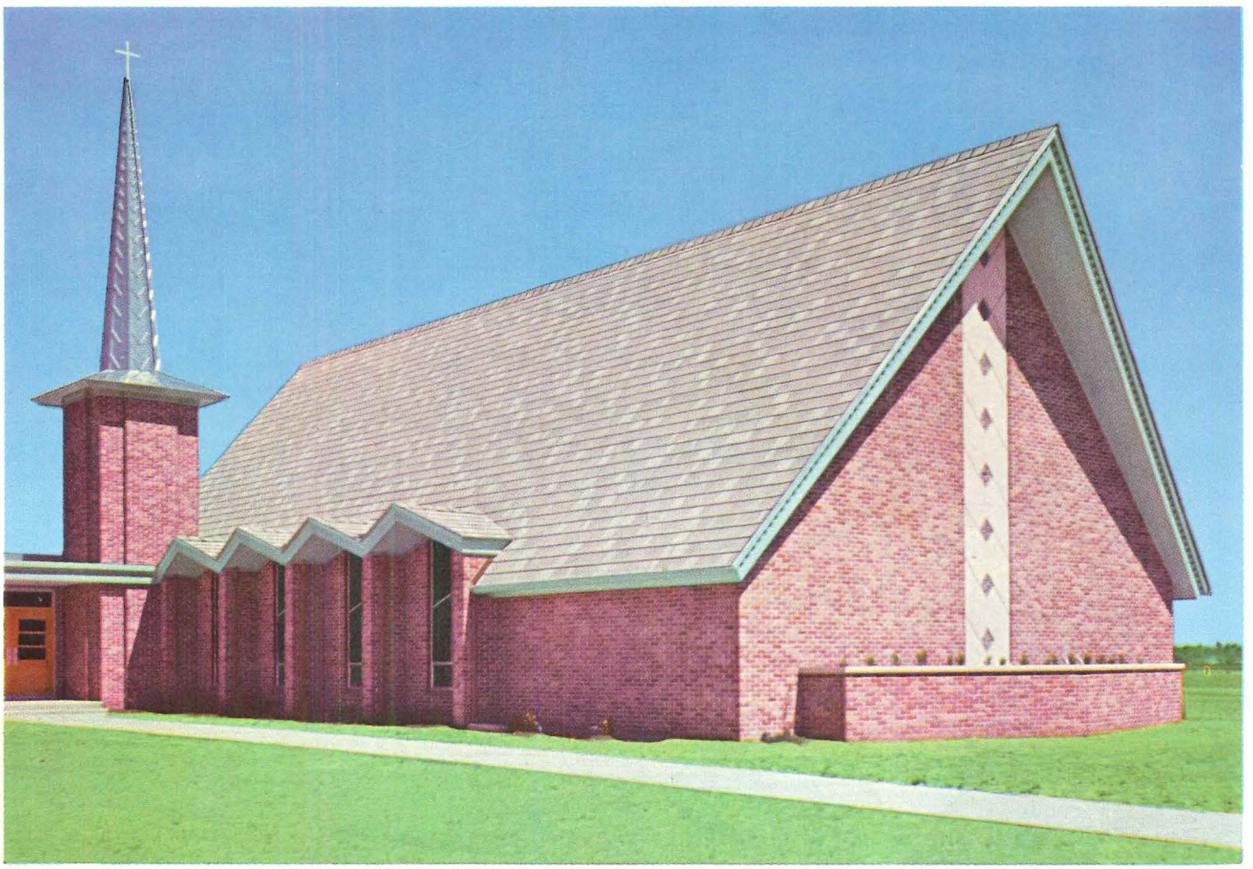
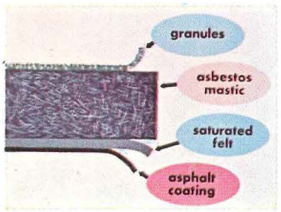
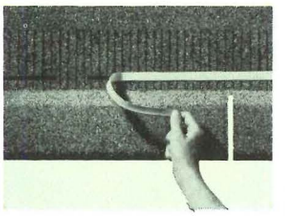
Is a Fire-Chex® roof as good as it looks?





You be the judge. First, note the unique Fire-Chex composition—a result of unmatched roofing experience that has produced superior felts, saturants and coatings—and the famous Fire-Chex Mastic that contains more asbestos than any asbestos-cement shingle of equal weight.

To protect against winds, Fire-Chex Shingles offer exclusive Sta-Seal® Tabs that bond one shingle course to the next on light pressure contact. And on Fire-Chex '325 Shingles the efficiency of this seal has been proved in test winds of hurricane force.



Also, Fire-Chex Shingles were the first to earn the Underwriters' Laboratories' Class "A" Fire-Safety Rating. The photo at the left shows an unharmed wood deck after a Class "A" fire brand test on a Fire-Chex roof at 2000°F. You just can't buy better protection against fire.

Exceptional durability—proved in 15 years of field use and millions of squares applied—enables Philip Carey to offer a 25-Year Bond on Fire-Chex Shingles. This is why Fire-Chex is a logical specification for any structure deserving quality components throughout.


Carey SHINGLE GUARANTY BOND

Know all Men by these presents,

SPECIMEN

A Fire-Chex roof *is* as good as it looks. And its good looks are just as much engineered as its quality. The extra thickness and the plain or 2-tone color blending of Fire-Chex Shingles will produce a roof of distinctive beauty on any structure. And, incidentally, Fire-Chex offers the widest choice of colors available in Class "A" shingles. For more information, write Dept. AR-765, The Philip Carey Mfg. Company, Cincinnati, Ohio 45215.

PHILIP Carey®

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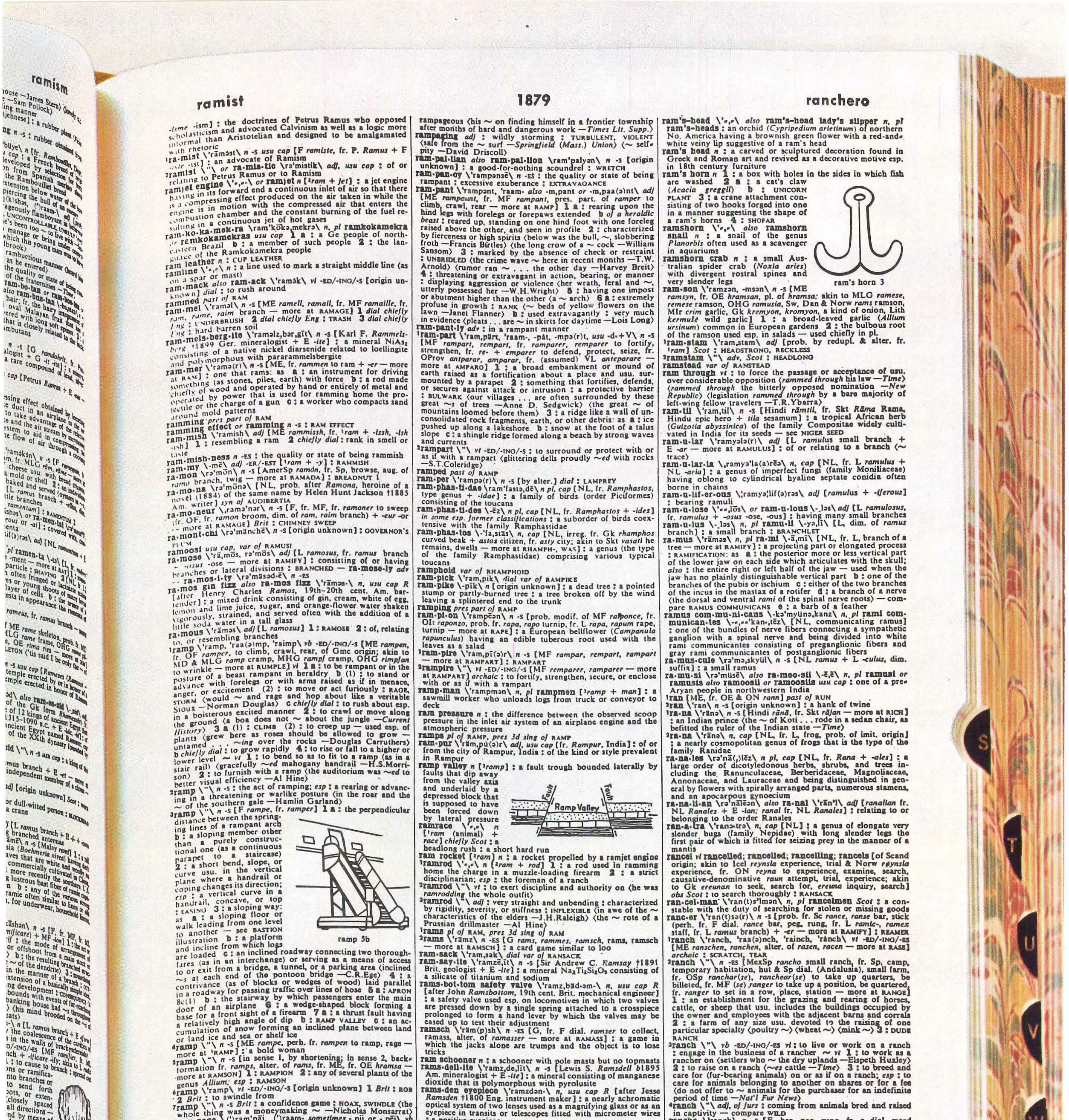

-isme -ism] : the doctrines of Petrus Ramus who opposed scholasticism and advocated Calvinism as well as a logic more informal than Aristotelian and designed to be amalgamated with rhetoric

¹ra·mist \'rāməst\ n -s usu cap [F ramiste, fr. P. Ramus + F -iste -ist] : an advocate of Ramism

²ramist \"\ or ra·mis·tic \rə'mistik\ adj, usu cap : of or relating to Petrus Ramus or to Ramism

ramjet engine \'‧,‧-\ or ramjet n [²ram + jet] : a jet engine having in its forward end a continuous inlet of air so that there is a compressing effect produced on the air taken in while the engine is in motion with the compressed air that enters the combustion chamber and the constant burning of the fuel resulting in a continuous jet of hot gases

ram·ko·ka·mek·ra \ram'kōkə,mekrə\ n, pl ramkokamekra or ramkokamekras usu cap 1 a : a Ge people of northeastern Brazil b : a member of such people 2 : the language of the Ramkokamekra people

ram leather n : CUP LEATHER

ramline \'‧,‧\ n : a line used to mark a straight middle line (as on a spar or mast)

ram·mack also ram·ack \'ramək\ vi -ED/-ING/-S [origin unknown] dial : to rush around

rammed past of RAM

ram·mel \'raməl\ n -s [ME ramell, ramall, fr. MF ramaille, fr. ram, rame, raim branch — more at RAMAGE] 1 dial chiefly Eng : UNDERBRUSH 2 dial chiefly Eng : TRASH 3 dial chiefly Eng : hard barren soil

ram·mels·berg·ite \'raməlz,bər,gīt\ n -s [Karl F. Rammelsberg †1899 Ger. mineralogist + E -ite] : a mineral $NiAs_2$ consisting of a native nickel diarsenide related to loellingite and polymorphous with pararammelsbergite

ram·mer \'ramə(r)\ n -s [ME, fr. rammen to ram + -er — more at RAM] : one that rams: as a : an instrument for driving something (as stones, piles, earth) with force b : a rod made chiefly of wood and operated by hand or entirely of metal and operated by power that is used for ramming home the projectile or the charge of a gun c : a worker who compacts sand around mold patterns

ramming pres part of RAM

ramming effect or ramming n -s : RAM EFFECT

ram·mish \'ramish\ adj [ME rammissh, fr. ¹ram + -issh, -ish] 1 : resembling a ram 2 chiefly dial : rank in smell or taste

ram·mish·ness n -ES : the quality or state of being rammish

ram·my \-mē\ adj -ER/-EST [¹ram + -y] : RAMMISH

ra·mon \rə'mōn\ n -s [AmerSp ramón, fr. Sp, browse, aug. of ramo branch, twig — more at RAMADA] : BREADNUT 1

ra·mo·na \rə'mōnə\ [NL, prob. after Ramona, heroine of a novel (1884) of the same name by Helen Hunt Jackson †1885 Am. writer] syn of AUDIBERTIA

ra·mo·neur \,ramə'nər\ n -s [F, fr. MF, fr. ramoner to sweep (fr. OF, fr. ramon broom, dim. of ram, raim branch) + -eur -or — more at RAMAGE] Brit : CHIMNEY SWEEP

ra·mont·chi \rə'mänchē\ n -s [origin unknown] : GOVERNOR'S PLUM

ramoosi usu cap, var of RAMUSI

ra·mose \'rā,mōs, rə'mōs\ adj [L ramosus, fr. ramus branch + -osus -ose — more at RAMIFY] : consisting of or having branches or lateral divisions : BRANCHED — ra·mose·ly adv — ra·mos·i·ty \rə'mäsəd·ē\ n -ES

ra·mos gin fizz also ra·mos fizz \'rāməs-\ n, usu cap R [after Henry Charles Ramos, 19th–20th cent. Am. bartender] : a mixed drink consisting of gin, cream, white of egg, lemon and lime juice, sugar, and orange-flower water shaken vigorously, strained, and served often with the addition of a little soda water in a tall glass

ra·mous \'rāməs\ adj [L ramosus] 1 : RAMOSE 2 : of, relating to, or resembling branches

¹ramp \'ramp, 'raa(ə)mp, 'raimp\ vb -ED/-ING/-S [ME rampen, fr. OF ramper, to climb, crawl, rear, of Gmc origin; akin to MD & MLG ramp cramp, MHG rampf cramp, OHG rimpfan to wrinkle — more at RUMPLE] vi 1 a : to be rampant or in the posture of a beast rampant in heraldry b (1) : to stand or advance with forelegs or with arms raised as if in menace, anger, or excitement (2) : to move or act furiously : RAGE, STORM ⟨would ~ and rage and hop about like a veritable Sioux —Norman Douglas⟩ c chiefly dial : to rush about esp. in a boisterous excited manner 2 : to crawl or move along the ground ⟨a boa does not ~ about the jungle —Current History⟩ 3 a (1) : CLIMB (2) : to creep up — used esp. of plants ⟨grew here as roses should be allowed to grow — untamed . . . ~ing over the rocks —Douglas Carruthers⟩ b chiefly dial : to grow rapidly 4 : to rise or fall to a higher or lower level ~ vt 1 : to bend so as to fit to a ramp (as in a stair rail) ⟨gracefully ~ed mahogany handrail —H.S.Morrison⟩ 2 : to furnish with a ramp ⟨the auditorium was ~ed to better visual efficiency —Al Hine⟩

²ramp \"\ n -s : the act of ramping; esp : a rearing or advancing in a threatening or warlike posture ⟨in the roar and the ~ of the southern gale —Hamlin Garland⟩

³ramp \"\ n -s [F rampe, fr. ramper] 1 a : the perpendicular distance between the springing lines of a rampant arch b : a sloping member other than a purely constructional one (as a continuous parapet to a staircase) 2 : a short bend, slope, or curve usu. in the vertical plane where a handrail or coping changes its direction; esp : a vertical curve in a handrail, concave, or top : EASING 3 : a sloping way: as a : a sloping floor or walk leading from one level to another — see BASTION illustration b : a platform and incline from which logs are loaded c : an inclined roadway connecting two thoroughfares (as in an interchange) or serving as a means of access to or exit from a bridge, a tunnel, or a parking area ⟨inclined ~s at each end of the pontoon bridge —C.R.Ege⟩ 4 : a contrivance (as of blocks or wedges of wood) laid parallel in a roadway for passing traffic over lines of hose 5 a : APRON 8c(1) b : the stairway by which passengers enter the main door of an airplane 6 : a wedge-shaped block forming a base for a front sight of a firearm 7 a : a thrust fault having a relatively high angle of dip b : RAMP VALLEY c : an accumulation of snow forming an inclined plane between land or land ice and sea or shelf ice

ramp 5b

⁴ramp \"\ n -s [ME rampe, perh. fr. rampen to ramp, rage — more at ¹RAMP] : a bold woman

⁵ramp \"\ n -s [in sense 1, by shortening; in sense 2, back-formation fr. ramps, alter. of rams, fr. ME, fr. OE hramsa — more at RAMSON] 1 : RAMPION 2 : any of several plants of the genus Allium; esp : RAMSON

⁶ramp \'ramp\ vt -ED/-ING/-S [origin unknown] 1 Brit : ROB 2 Brit : to swindle from

⁷ramp \"\ n -s Brit : a confidence game : HOAX, SWINDLE ⟨the whole thing was a moneymaking ~ —Nicholas Monsarrat⟩

¹ram·page \(')ram¦pāj, (')raam- sometimes -,pij or -,pēj\ vb -ED/-ING/-S [fr. Sc, prob. irreg. fr. ¹ramp] vi : to go on a rampage : act, rush, or storm wildly or excitedly ⟨go rampaging over the western prairies —Elinor Wylie⟩ ~ vt : to rush or storm in or about ⟨the peculiarly stirring timbres of thin brass . . . which can ~ a man's soul —Whitney Balliett⟩

²ram·page \'‧,pāj sometimes -,pij or -,pēj\ n -s : violent, riotous, or reckless action or behavior : a state of being turbulently active, wildly agitated, or destructive ⟨the river going on a ~ —H.M.Clark⟩ ⟨~ of wanton killings —Vicki Baum⟩

ram·pa·geous also ram·pa·gious \(')ram¦pājəs, (')raam-\ adj : displaying violence or recklessness : often destructive : being out of control : UNRULY ⟨seamen who are wild and . . . —Kenneth Roberts⟩ ⟨vegetation is startlingly . . . almost overwhelmingly ~ —Hamilton Basso⟩

ram·pa·geous·ly adv : in a rampageous manner ⟨the lobsters . . . were ~ lively when they reached me —New Yorker⟩

ram·pa·geous·ness n -ES : the quality or state of being rampageous ⟨his ~ on finding himself in a frontier township after months of hard and dangerous work —Times Lit. Supp.⟩

rampaging adj : wildly storming : TURBULENT, VIOLENT ⟨safe from the ~ surf —Springfield (Mass.) Union⟩ ⟨~ self-pity —David Driscoll⟩

ram·pal·lian also ram·pal·lion \ram'palyən\ n -s [origin unknown] : a good-for-nothing scoundrel : WRETCH

ram·pan·cy \'rampənsē\ n -ES : the quality or state of being rampant : excessive exuberance : EXTRAVAGANCE

ram·pant \'rampənt, 'raam- also -m,pant or -m,paa(ə)nt\ adj [ME rampaunt, fr. MF rampant, pres. part. of ramper to climb, crawl, rear — more at RAMP] 1 a : rearing upon the hind legs with forelegs or forepaws extended b of a heraldic beast : reared up, standing on one hind foot with one foreleg raised above the other, and seen in profile 2 : characterized by fierceness or high spirits ⟨below was the bull, ~, slobbering froth —Francis Birtles⟩ ⟨the long crow of a ~ cock —William Sansom⟩ 3 : marked by the absence of check or restraint : UNBRIDLED ⟨the crime wave ~ here in recent months —T.W. Arnold⟩ ⟨rumor ran ~ . . . the other day —Harvey Breit⟩ 4 : threatening or extravagant in action, bearing, or manner : displaying aggression or violence ⟨her wrath, feral and ~, utterly possessed her —W.H.Wright⟩ 5 : having one impost or abutment higher than the other ⟨a ~ arch⟩ 6 a : extremely profuse in growth : RANK ⟨~ beds of yellow flowers on the lawn —Janet Flanner⟩ b : used extravagantly : very much in evidence ⟨pleats . . . are ~ in skirts for daytime —Lois Long⟩

ram·pant·ly adv : in a rampant manner

¹ram·part \'ram,pärt, 'raam-, -pät, -mpə(r)t, usu -d·+V\ n -s [MF rampart, rempart, fr. ramparer, remparer to fortify, strengthen, fr. re- + emparer to defend, protect, seize, fr. OProv antparar, amparar, fr. (assumed) VL anteparare — more at AMPARO] 1 : a broad embankment or mound of earth raised as a fortification about a place and usu. surmounted by a parapet 2 : something that fortifies, defends, or secures against attack or intrusion : a protective barrier : BULWARK ⟨our villages . . . are often surrounded by these great ~s of trees —Anne D. Sedgwick⟩ ⟨the great ~ of mountains loomed before them⟩ 3 : a ridge like a wall of unconsolidated rock fragments, earth, or other debris: as a : ice pushed up along a lakeshore b : snow at the foot of a talus slope c : a shingle ridge formed along a beach by strong waves and currents

²rampart \"\ vt -ED/-ING/-S : to surround or protect with or as if with a rampart ⟨glittering dells proudly ~ed with rocks —S.T.Coleridge⟩

ramped past of RAMP

ram·per \'rampə(r)\ n -s [by alter.] dial : LAMPREY

ram·phas·ti·dae \ram'fastə,dē\ n pl, cap [NL, fr. Ramphastos, type genus + -idae] : a family of birds (order Piciformes) consisting of the toucans

ram·phas·ti·des \-ēz\ n pl, cap [NL, fr. Ramphastos + -ides] in some esp. former classifications : a suborder of birds coextensive with the family Ramphastidae

ram·phas·tos \-'fa,stäs\ n, cap [NL, irreg. fr. Gk rhamphos curved beak + astos citizen, fr. asty city; akin to Skt vasati he remains, dwells — more at RHAMPH-, WAS] : a genus (the type of the family Ramphastidae) comprising various typical toucans

ramphoid var of RHAMPHOID

ram·pick \'ram,pik\ dial var of RAMPIKE

ram·pike \-pīk\ n [origin unknown] : a dead tree : a pointed stump or partly-burned tree : a tree broken off by the wind leaving a splintered end to the trunk

ramping pres part of RAMP

ram·pi·on \'rampēən\ n -s [prob. modif. of MF raiponce, fr. OIt raponzo, prob. fr. rapa, rapo turnip, fr. L rapa, rapum rape, turnip — more at RAPE] : a European bellflower (Campanula rapunculus) having an edible tuberous root used with the leaves as a salad

¹ram·pire \'ram,pī(ə)r\ n -s [MF rampar, rempart, rampart — more at RAMPART] : RAMPART

²rampire \"\ vt -ED/-ING/-S [MF remparer, ramparer — more at RAMPART] archaic : to fortify, strengthen, secure, or enclose with or as if with a rampart

ramp·man \'rampmən\ n, pl rampmen [³ramp + man] : a sawmill worker who unloads logs from truck or conveyor to deck

ram pressure n : the difference between the observed scoop pressure in the inlet air system of an airplane engine and the atmospheric pressure

ramps pl of RAMP, pres 3d sing of RAMP

ram·pur \'räm,pu̇(ə)r\ adj, usu cap [fr. Rampur, India] : of or from the city of Rampur, India : of the kind or style prevalent in Rampur

ramp valley n [³ramp] : a fault trough bounded laterally by faults that dip away from the valley axis and underlaid by a depressed block that is supposed to have been forced down by lateral pressure

ramrace \'‧,‧\ n [¹ram (animal) + race] chiefly Scot : a headlong rush : a short hard run

ram rocket [²ram] n : a rocket propelled by a ramjet engine

¹ramrod \'‧,‧\ n [²ram + rod] 1 : a rod used in ramming home the charge in a muzzle-loading firearm 2 : a strict disciplinarian; esp : the foreman of a ranch

²ramrod \"\ vt : to exert discipline and authority on ⟨he was ramrodding the whole outfit⟩

³ramrod \"\ adj : very straight and unbending : characterized by rigidity, severity, or stiffness : INFLEXIBLE ⟨in awe of the ~ characteristics of the elders —J.H.Raleigh⟩ ⟨the ~ rote of a Prussian drillmaster —Al Hine⟩

¹rams pl of RAM, pres 3d sing of RAM

²rams \'rämz\ n -ES [G rams, rammes, ramsch, rams, ramsch — more at RAMSCH] : a card game similar to loo

ram·sack \'ram,sak\ dial var of RANSACK

ram·say·ite \'ramzē,īt\ n -s [Sir Andrew C. Ramsay †1891 Brit. geologist + E -ite] : a mineral $Na_2Ti_2Si_2O_9$ consisting of a silicate of titanium and sodium

rams·bot·tom safety valve \'ramz,bäd·əm-\ n, usu cap R [after John Ramsbottom, 19th cent. Brit. mechanical engineer] : a safety valve used esp. on locomotives in which two valves are pressed down by a single spring attached to a crosspiece prolonged to form a hand lever by which the valves may be eased up to test their adjustment

ramsch \'räm(p)sh\ n -ES [G, fr. F dial. ramser to collect, ramass, alter. of ramasser — more at RAMASS] : a game in which the jacks alone are trumps and the object is to lose tricks

ram schooner n : a schooner with pole masts but no topmasts

rams·dell·ite \'ramz,de,līt\ n -s [Lewis S. Ramsdell b1895 Am. mineralogist + E -ite] : a mineral consisting of manganese dioxide that is polymorphous with pyrolusite

rams·den eyepiece \'ramzdən-\ n, usu cap R [after Jesse Ramsden †1800 Eng. instrument maker] : a nearly achromatic optical system of two lenses used as a magnifying glass or as an eyepiece in transits or telescopes fitted with micrometer wires : a positive eyepiece

¹ram·shackle \'ram,shakəl, 'raam-\ adj [short for earlier ramshackled, alter. of ransackled, fr. past part. of obs. ransackle to ransack, freq. of ransack] 1 : appearing as if ready to collapse : DILAPIDATED, RICKETY ⟨once imposing though now ~ roof —Ellen Glasgow⟩ ⟨mounted on a ~ horse —W.F. Starkie⟩ ⟨a dirty ~ pier —George Santayana⟩ 2 : having little moral sense : DISSIPATED, UNRULY ⟨worrying about the ~ morality of . . . adolescents —John McCarten⟩ ⟨I may be getting ~ —H.G.Wells⟩ 3 : carelessly or loosely constructed ⟨the plot is innocent and ~ —Wolcott Gibbs⟩ ⟨the book is a ~ affair —J.A.Michener⟩

²ramshackle \"\ n : a ramshackle thing ⟨here in the faded ~ —Carl Sandburg⟩

ram·shack·le·ness n -ES : the quality or state of being ramshackle

ram·shack·ly \-k(ə)lē\ adj [ramshackle + -y] : RAMSHACKLE ⟨~ booths displaying souvenirs —Joseph Mitchell⟩

ram's-head \'‧,‧\ also ram's-head lady's slipper n, pl ram's-heads : an orchid (Cypripedium arietinum) of northern No. America having a brownish green flower with a red-and-white veiny lip suggestive of a ram's head

ram's head n : a carved or sculptured decoration found in Greek and Roman art and revived as a decorative motive esp. in 18th century furniture

ram's horn n 1 : a box with holes in the sides in which fish are washed 2 a : a cat's claw (Acacia greggii) b : UNICORN PLANT 3 : a crane attachment consisting of two hooks forged into one in a manner suggesting the shape of a ram's horns 4 : SHOFAR

ram's horn 3

ramshorn \'‧,‧\ also ramshorn snail n : a snail of the genus Planorbis often used as a scavenger in aquariums

ramshorn crab n : a small Australian spider crab (Naxia aries) with divergent rostral spines and very slender legs

ram·son \'ramzən, -msən\ n -s [ME ramsyn, fr. OE hramsan, pl. of hramsa; akin to MLG ramese, remese ramson, OHG ramusia, Sw, Dan & Norw rams ramson, MIr crim garlic, Gk kremyon, kromyon, a kind of onion, Lith kermušė wild garlic] 1 : a broad-leaved garlic (Allium ursinum) common in European gardens 2 : the bulbous root of the ramson used esp. in salads — used chiefly in pl.

¹ram·stam \'ram,stam\ adj [prob. by redupl. & alter. fr. ¹ram] Scot : HEADSTRONG, RECKLESS

²ramstam \"\ adv, Scot : HEADLONG

ramstead var of RANSTEAD

ram through vt : to force the passage or acceptance of usu. over considerable opposition ⟨rammed through his law —Time⟩ ⟨rammed through the bitterly opposed nomination —New Republic⟩ ⟨legislation rammed through by a bare majority of left-wing fellow travelers —T.R.Ybarra⟩

ram·til \'ram,til\ n -s [Hindi rāmtil, fr. Skt Rāma Rama, Hindu epic hero + tila sesamum] : a tropical African herb (Guizotia abyssinica) of the family Compositae widely cultivated in India for its seeds — see NIGER SEED

ram·u·lar \'ramyələ(r)\ adj [L ramulus small branch + E -ar — more at RAMULUS] : of or relating to a branch ⟨~ trace⟩

ram·u·lar·ia \,ramyə'la(a)rēə\ n, cap [NL, fr. L ramulus + NL -aria] : a genus of imperfect fungi (family Moniliaceae) having oblong to cylindrical hyaline septate conidia often borne in chains

ram·u·lif·er·ous \¦ramyə¦lif(ə)rəs\ adj [ramulus + -iferous] : bearing ramuli

ram·u·lose \'‧‧,lōs\ or ram·u·lous \-,ləs\ adj [L ramulosus, fr. ramulus + -osus -ose, -ous] : having many small branches

ram·u·lus \-,ləs\ n, pl ramu·li \-yə,lī\ [L, dim. of ramus branch] : a small branch : BRANCHLET

ra·mus \'rāməs\ n, pl ra·mi \-ā,mī\ [NL, fr. L, branch of a tree — more at RAMIFY] : a projecting part or elongated process : RAMIFICATION: as a : the posterior more or less vertical part of the lower jaw on each side which articulates with the skull; also : the entire right or left half of the jaw — used when the jaw has no plainly distinguishable vertical part b : one of the branches of the pubis or ischium c : either of the two branches of the incus in the mastax of a rotifer d : a branch of a nerve ⟨the dorsal and ventral rami of the spinal nerve roots⟩ — compare RAMUS COMMUNICANS e : a barb of a feather

ramus com·mu·ni·cans \-kə'myünə,kanz\ n, pl rami com·mu·ni·can·tes \-‧,‧‧'kan‧,tēz\ [NL, communicating ramus] : one of the bundles of nerve fibers connecting a sympathetic ganglion with a spinal nerve and being divided into white rami communicantes consisting of preganglionic fibers and gray rami communicantes of postganglionic fibers

ra·mus·cule \rə'mə,skyül\ n -s [NL ramus + L -culus, dim. suffix] : a small ramus

ra·mu·si \rə'müsē\ also ra·moo·sii \-ē,ē\ n, pl ramusi or ramusis also ramoosii or ramoosiis usu cap : one of a pre-Aryan people in northwestern India

¹ran [ME, fr. OE & ON rann] past of RUN

²ran \'ran\ n -s [origin unknown] : a hank of twine

¹ra·na \'ränə\ n -s [Hindi rānā, fr. Skt rājan — more at RICH] : an Indian prince ⟨the ~ of Koti . . . rode in a sedan chair, as befitted the ruler of the Indian state —Time⟩

²ra·na \'rānə\ n, cap [NL, fr. L, frog, prob. of imit. origin] : a nearly cosmopolitan genus of frogs that is the type of the family Ranidae

ra·na·les \rə'nā(,)lēz\ n pl, cap [NL, fr. Rana + -ales] : a large order of dicotyledonous herbs, shrubs, and trees including the Ranunculaceae, Berberidaceae, Magnoliaceae, Annonaceae, and Lauraceae and being distinguished in general by flowers with spirally arranged parts, numerous stamens, and an apocarpous gynoecium

ra·na·li·an \rə'nālēən\ also ra·nal \'rān°l\ adj [ranalian fr. NL Ranales + E -ian; ranal fr. NL Ranales] : relating to or belonging to the order Ranales

ran·a·tra \'ranə·trə\ n, cap [NL] : a genus of elongate very slender bugs (family Nepidae) with long slender legs the first pair of which is fitted for seizing prey in the manner of a mantis

rancel vi rancelled; rancelled; rancelling; rancels [of Scand origin; akin to Icel reynsla experience, trial & Norw røynsla experience, fr. ON reyna to experience, examine, search, causative-denominative raun attempt, trial, experience; akin to Gk ereunan to seek, search for, ereuna inquiry, search] obs Scot : to search thoroughly : RANSACK

ran·cel·man \'ran(t)s°lmən\ n, pl rancelmen Scot : a constable with the duty of searching for stolen or missing goods

ranc·er \'ran(t)sə(r)\ n -s [prob. fr. Sc rance, ranse bar, stick (perh. fr. F dial. rance bar, peg, rung, fr. L ramic-, ramex staff, fr. L ramus branch) + -er — more at RAMIFY] : REAMER

¹ranch \'ranch, 'raa(ə)nch, 'rainch, 'rånch\ vt -ED/-ING/-ES [ME ranschen, ranchen, alter. of rasen, racen — more at RASE] archaic : SCRATCH, TEAR

²ranch \"\ n -ES [MexSp rancho small ranch, fr. Sp, camp, temporary habitation, hut & Sp dial. (Andalusia), small farm, fr. OSp ranchar(se), ranchear(se) to take up quarters, be billeted, fr. MF (se) ranger to take up a position, be quartered, fr. ranger to set in a row, place, station — more at RANGE] 1 : an establishment for the grazing and rearing of horses, cattle, or sheep that usu. includes the buildings occupied by the owner and employees with the adjacent barns and corrals 2 : a farm of any size usu. devoted to the raising of one particular specialty ⟨poultry ~⟩ ⟨wheat ~⟩ ⟨mink ~⟩ 3 : DUDE RANCH

³ranch \"\ vb -ED/-ING/-ES vi : to live or work on a ranch : engage in the business of a rancher ~ vt 1 : to work as a rancher on ⟨settlers who ~ the dry uplands —Elspeth Huxley⟩ 2 : to raise on a ranch ⟨~es cattle —Time⟩ 3 : to breed and care for (fur-bearing animals) on or as if on a ranch; esp : to care for animals belonging to another on shares or for a fee ⟨do not offer to ~ animals for the purchaser for an indefinite period of time —Nat'l Fur News⟩

⁴ranch \"\ adj, of furs : coming from animals bred and raised in captivity — compare WILD

ranche \'ranch\ n -s [F, bar, peg, rung, fr. a dial. word (Normandy or Picardy) derived fr. L ramic-, ramex staff — more at RANCER] : a stroke in pin pool that leaves only the center pin standing and thereby wins the game

ranch·er \'ranchə(r), 'raan-, 'rain-, 'rån-\ n -s [MexSp ranchero, fr. rancho small ranch + -ero -er — more at RANCH] 1 : one who owns, operates, or is employed on a ranch — called also ranchero, ranchman 2 : one who ranches a particular kind of animal ⟨a mink ~⟩ ⟨wise ~s . . . naturally look for . . . qualities in selecting their fox and mink feed —Amer. Fur Breeder⟩

ran·che·ria \,ranchə'rēə\ n -s [MexSp rancheria, fr. ranchero + Sp -ia (fr. L -ia)] 1 : a dwelling place of a ranchero 2 : a small settlement often consisting of huts occupied esp. by Amerindians or Mexicans ⟨it was among these ~s . . . that the missions found their most fertile field for labor —F.M. & Marie Keesing⟩

ran·che·ro \ran'che(,)rō, raan- n -s [MexSp] : RANCHER

[1]**ram • set** \ 'ram,set \ *n*: a powder-actuated hand tool that uses energy of a fired blank cartridge to set threaded studs and drive pins into concrete and steel: a fast method of fastening wood, steel to concrete or steel (particularly in building construction)
[2]**ram • set** \ " \ *n*: studs and drive pins that are set into concrete or steel by a powder-actuated tool. Used to fasten wood, steel to concrete or steel
[3]**ram • set** \ " \ *vt*- -ing -s: To fasten wood, steel to concrete or steel by using a powder-actuated tool


ramset [2]

Please help us keep our name out of the dictionary.

We've got the same headache the makers of the first "aspirin" had.

"Ramset" also is the first of its kind. (The first powder-actuated fastening system.)

It's also the best known.

And, like "aspirin," it's also being used as a generic term to describe competitors' products.

People are asking for what's-his-name's "Ramset" tool. And whozis's "Ramset" fasteners. Why, we even get blamed when somebody else's product fails!

If this keeps up, our trademark also will become a common noun in the dictionary. Just like "aspirin."

And "cellophane" and "kerosene" and "linoleum." (These also were trademarks once.)

No skin off your nose?

Don't be too sure. In the confusion you could get shortchanged. Because no one else's fastening system quite measures up to Ramset. No one else's is as complete. Or as economical. Or —even more important—as safe.

Now. How can you help us keep our name out of the dictionary?

Just make sure you get the real, genuine, honest-to-goodness article when you specify "Ramset."

Like Ramset Tru-Set® fasteners.

And Ramset Jobmaster® and Flite-Chek® tools.

(The Ramset fastening system also includes Pow-R-Set® piston-operated tools, Shure-Set® hammer-in tools and fasteners, and Dynabolt® masonry anchors.)

And if you must use other people's equipment, please *please* don't call it "Ramset."

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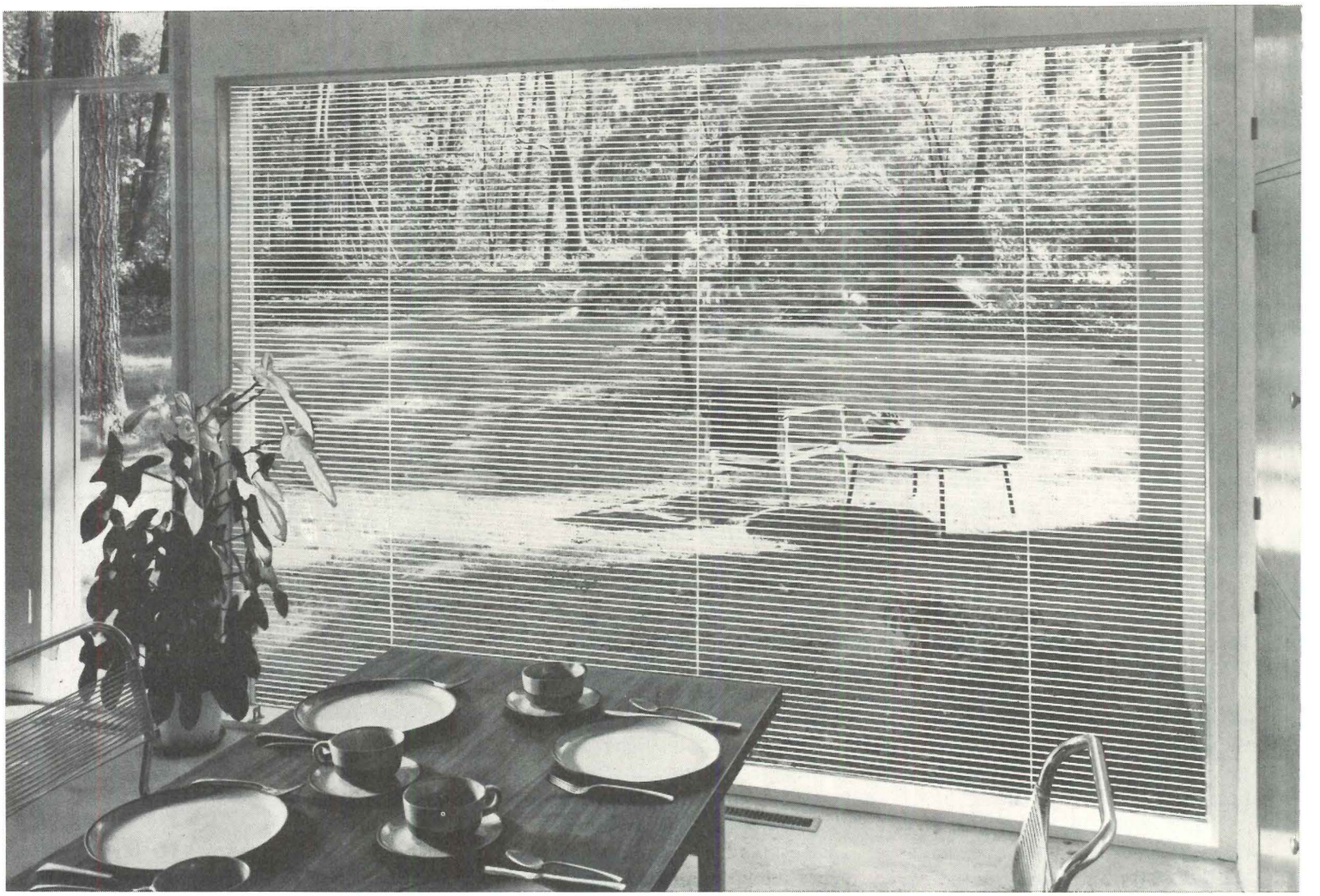
The Soft Blind is here!

The effect is soft and graceful.

New slender slats just an inch wide. New extra-slim cord and almost-invisible tape.

Look for the low metal head with the crossed Ls on the installation brackets, special new hardware, and slender matching bottom rail—symbols of design by Levolor.



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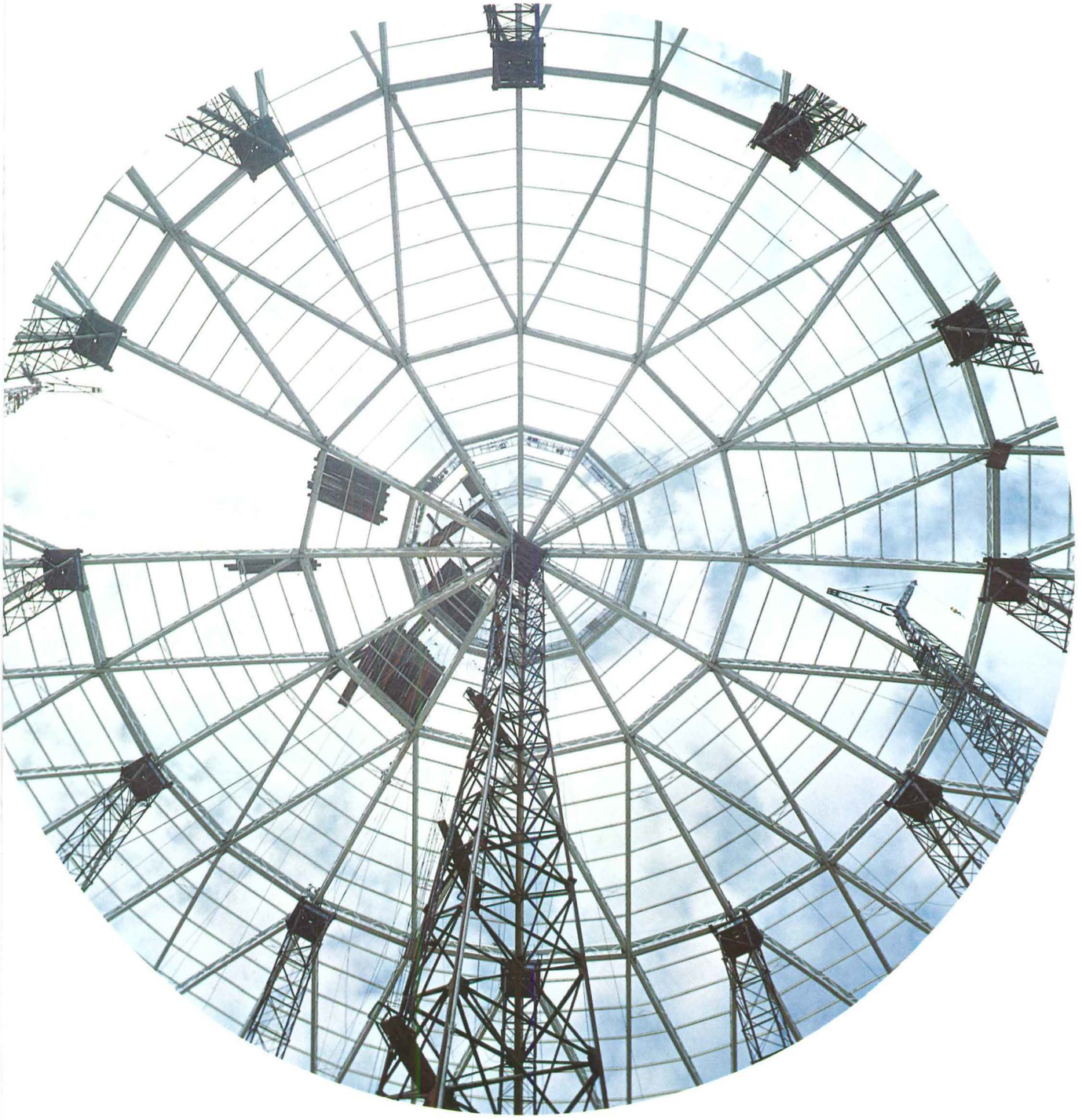
Steel is tops



(TURN PAGE FOR THE WHOLE DOME STORY)

Houston dome steelwork completed 30 days early

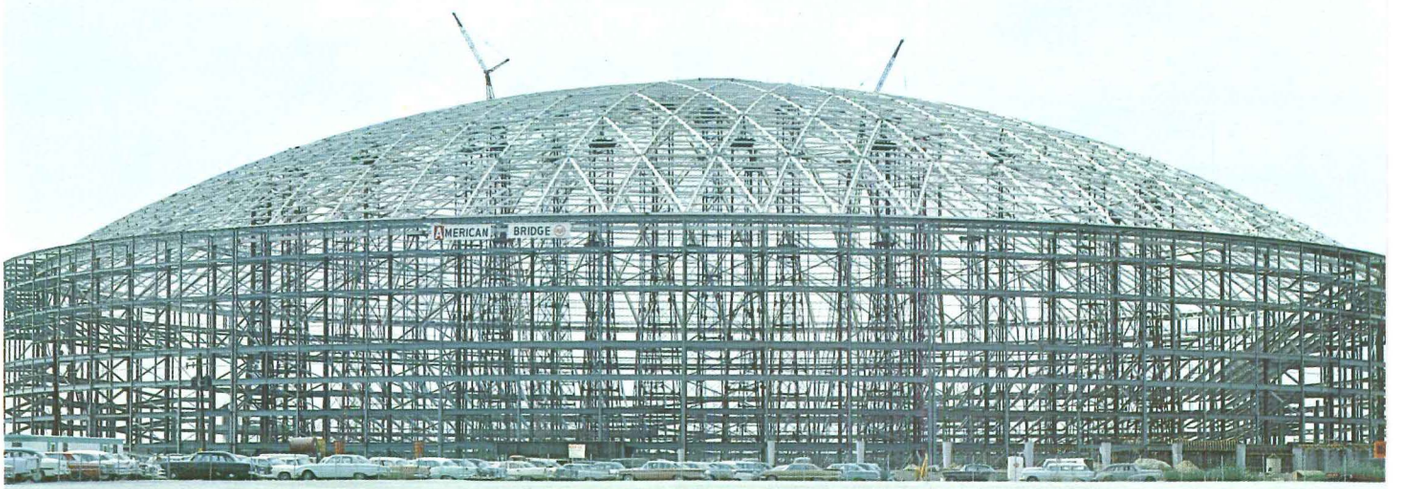
This spring the Houston Astros moved into the world's first indoor baseball park, a nine-acre steel-framed building topped by a 642-ft.-diameter dome that soars 202 ft. above the playing field. Because the Harris County Stadium is the first of its kind, architects-engineers Lloyd & Morgan and Wilson, Morris, Crain & Anderson faced a series of knotty problems, including a complex air-conditioning system, extraordinary acoustical difficulties, and tricky skylighting to admit sunlight for turf.

The first major decision was the type of structure to use for the dome. A number of systems were studied, including steel and aluminum geodesic suspension-type cantilever trusses, aluminum and timber space frames, and even an inflated flexible covering. The final selection—most economical of all—was a steel Lamella trussed structure designed by Roof Structures, Inc., of St. Louis.

Once under construction, the Lamella design proved even better than anticipated. The 2,890-ton dome—plus 6,110 additional tons of steelwork—was fabricated and erected in less than four months, 30 working days ahead of schedule.

Today, most large domes are built with steel because steel has the most favorable strength-weight-cost combination of any structural material. Steel can be erected in any season, and generally is less likely to be damaged in handling than other materials

Lamella is a registered trademark of Roof Structures, Inc.



Steel design most economical for Houston's record-span dome. This Lamella design in steel was the least expensive of several systems considered and actual costs came in under the budget estimate. All members are standard structural steel sections.

Owner: Harris County; Architects: Lloyd & Morgan and Wilson Morris, Crain & Anderson; Consultants: Praeger-Kavanagh-Waterbury; General Contractors: Lott-Drake, Inc.; Dome Designers Roof Structures, Inc.

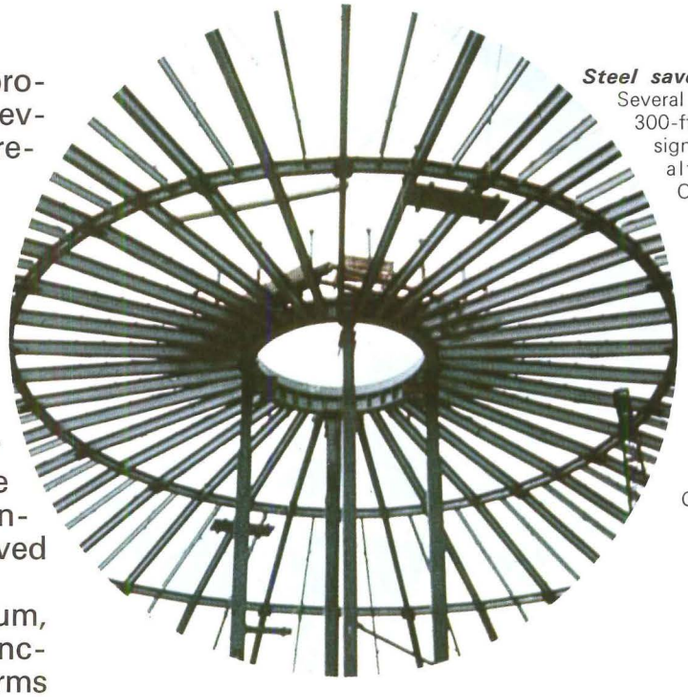
This mark tells you a product is made of steel.

The USS Family of Steels provides a range of strength levels to fit the designer's requirements.

Another striking example of steel's economy is Syracuse University's field house dome. With 700 tons of USS structural steel in the dome and canopy, it has a rise of 32 ft. and a diameter of 300 ft. In a competitive bid with a design using another material, steel saved $193,500.

At the Memphis Coliseum, an intricate and highly functional network of steel forms a gracious Lamella dome 105 feet high and 325 feet in diameter. Two other designs were originally considered—thin shell concrete and a conventional steel dome. Both were more expensive and would have taken longer to construct.

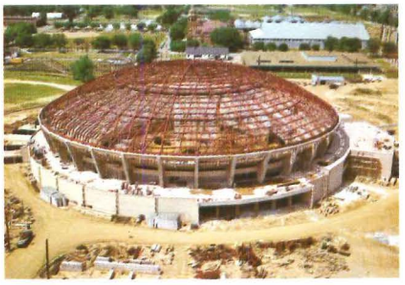
For information about the widest available range of structural steel shapes, or for design assistance, contact a USS Construction Representative at our nearest District Office or write United States Steel, Room 8216, 525 William Penn Place, Pittsburgh, Pa. 15230.

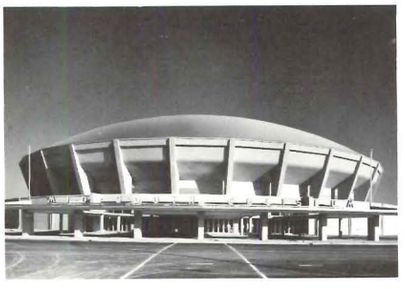


Steel saves $193,500 in Syracuse. Several bids were submitted for this 300-ft. low-profile dome. Steel design was $193,500 lower than the alternate concrete design. Owner: Syracuse University; Architect: King and King;

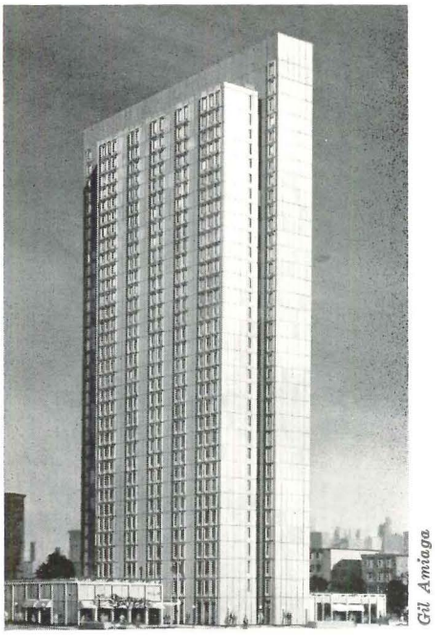
Engineer: Eckerlin and Klepper; General Contractor: R. A. Culotti Construction Co.

Steel lowest bid in Memphis. Lamella design in steel was selected over designs using other materials for two reasons: speed of construction, and low cost. Owner: City of Memphis, County of Shelby; Architects: Furbringer & Ehrman and Robert Lee Hall & Associates; General Contractor: Granite Construction Company; Structural Engineers: S. S. Kenworthy & Associates, Inc.; Dome Design: Roof Structures, Inc., and Steel and Roof Structures, Inc.; Fabrication and Erection: Pidgeon-Thomas Iron Co.





USS TRADEMARK **United States Steel: where the big idea is innovation**



Gil Amiaga

MEDICAL STAFF RESIDENCE HAS MAXIMUM SOUNDPROOFING

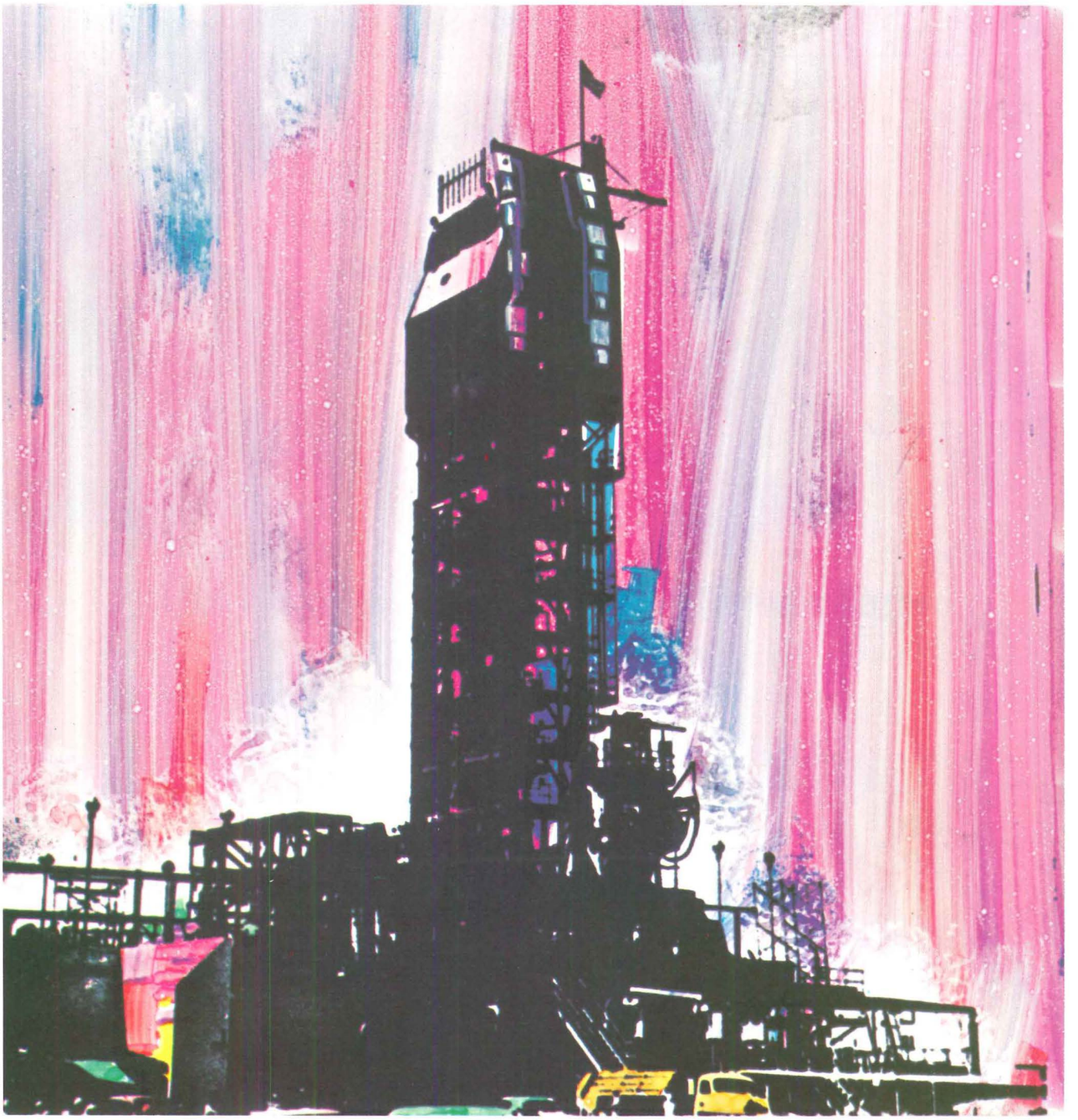
The $12 million Laurence G. Payson House staff residence for New York Hospital-Cornell Medical Center in New York City has been specially designed with maximum acoustical treatment and soundproofing to enable the doctors and nurses who work at night to have maximum opportunity to sleep with minimum distraction during the day. The 35-story structure was designed by the firm of Frederick G. Frost Jr. & Associates.

Structural engineers are Severud-Perrone - Fischer - Strum - Conlin - Bandel, and the mechanical and electrical engineers are Meyer, Strong & Jones. Landscape architects are Zion and Breen. The general contractor is the Turner Construction Company.

The structure will be faced with precast concrete panels with exposed aggregate and will contain 401 apartment units. There will be 82 efficiencies, 135 one-bedroom, 122 two-bedroom, 60 three-bedroom and two four-bedroom units.

The first floor of the structure will be leased to commercial tenants and a restaurant and bank will be housed in the basement and sub-basement. The second floor will have two meeting rooms with a capacity of 150 persons, apartments, and will be surrounded by roof terraces.

Can you guess what those eight little boxes are on top of Titan II Gemini Launch Complex 19?



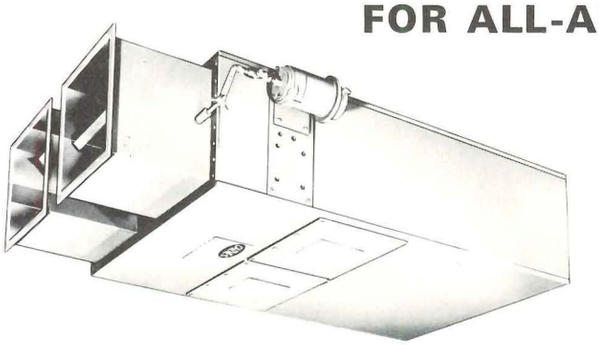
Titan II Gemini Launch Complex 19, Cape Kennedy, Florida

Carnes has the answer on the next page

ANSWER

Those eight little boxes are Carnes Constant Volume Mechanitrol® Acoustic Terminal Control Units — conditioning the white room atop the ten-level erector at Gemini Complex 19, Cape Kennedy. One of the most scientifically vital "rooms" ever built, this white room is 50 feet high, 25 feet square at its base, and it tapers to 23 feet at the higher level. Used by scientists and technicians, it enclosed and protected the two-man Gemini craft (Titan II) while it was being readied for its recent flight into space. Eight more Carnes ATC units are located on the side opposite to the one shown. Carnes Mechanitrol® kept inside room temperatures at a comfortable 75 degrees, with 50% humidity. Pressure maintained was higher than atmospheric pressure — so that when an elevator door was opened, inside air blew outward, preventing dust from entering the room.

CARNES TWO NEW HIGH CAPACITY ATC UNITS DELIVER 1000 TO 4000 CFM FOR ALL-AIR SYSTEMS



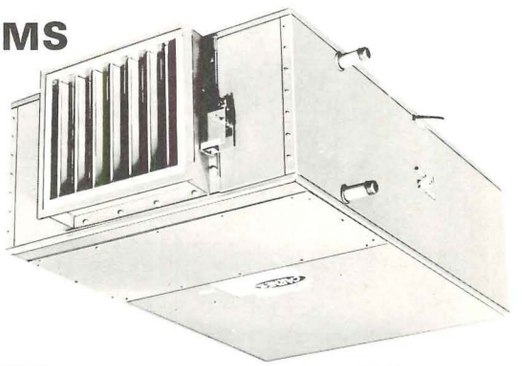
HIGH CAPACITY ATC ACOUSTICAL TERMINAL CONTROL

REHEAT UNIT

FOR SINGLE-DUCT HIGH VELOCITY SYSTEMS

Here is a factory built, calibrated and sound-rated unit for steam or hot water that allows use of a single-duct system for year-round air conditioning, providing individual zone control at reasonable cost. Offers maximum simplicity and occupies minimum space. Reduces high velocities and pressures for discharge at low velocity values. Continuous air motion in conditioned space provides maximum ventilation and odor dilution. Easy field balancing is assured by provision of a calibration chart, on which is plotted the relation between the pressure difference and CFM for each unit.

Choice of bottom or end discharge; one-row or two-row heating coil for steam or hot water. There is an easy-access door to coil for cleaning. Galvanized steel housing is acoustically baffled and lined with coated fibrous glass to prevent air erosion. External field water and steam connections, with external valve adjustment for easy initial balancing or simple rebalancing in event of building layout revision. Three sizes: 1000 to 4000 CFM. Write for Catalog E55B.



HIGH CAPACITY ATC ACOUSTICAL TERMINAL CONTROL

MECHANITROL®

FOR DUAL-DUCT HIGH VELOCITY SYSTEMS

These units' mechanical-type constant volume controllers maintain 1000 to 4000 CFM within ±5%, and feature a single pneumatic motor which is externally mounted (by control contractor) and is thermostatically controlled. Eliminate mechanical devices made of deterioration-prone materials. All moving parts are of stainless steel, brass or nylon for lifelong, trouble-free operation. Acoustic baffling is provided throughout the units plus 1" thick acoustic lining. Pressure balanced non-stick valves are resilient and leak-free; hot and cold valves are easily reversible. Integral blenders provide for temperature mixing of hot and cold air inlet streams. Provided in two sizes. Ceiling mounted, with square or circular inlets. There's more to the facts-story of Carnes Mechanitrol® Units' built-in efficiency and economy. Write today for Catalog E20D.

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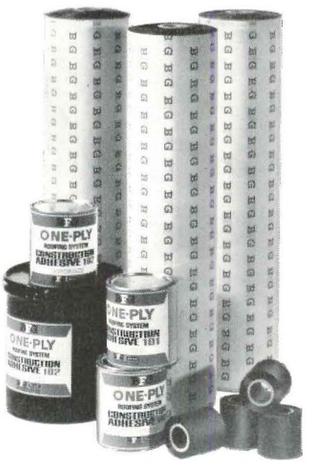
CARNES CORPORATION

VERONA, WISCONSIN

CANADA: VAPOR CARNES, LTD., MONTREAL 26, QUEBEC

UNRETOUCHED PHOTO OF SUMMITVILLE TILE INSTALLATION

This will roof nine squares



. . . so will this

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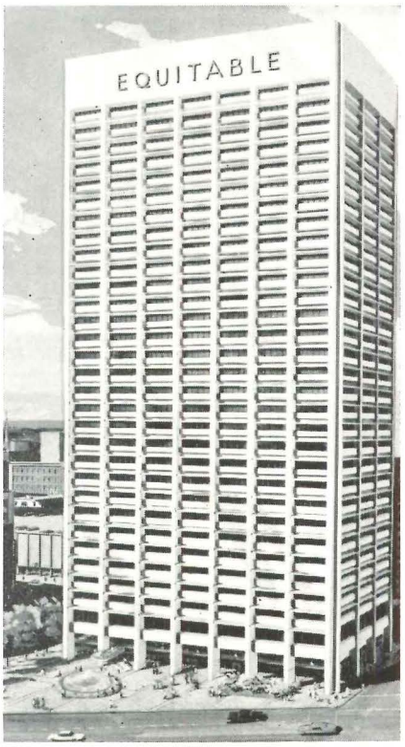
BFG ONE-PLY ROOFING SYSTEM

B.F.Goodrich

*Du Pont's Registered Trademark

For more data, circle 64 on Inquiry Card

For more data, circle 65 on Inquiry Card ➔

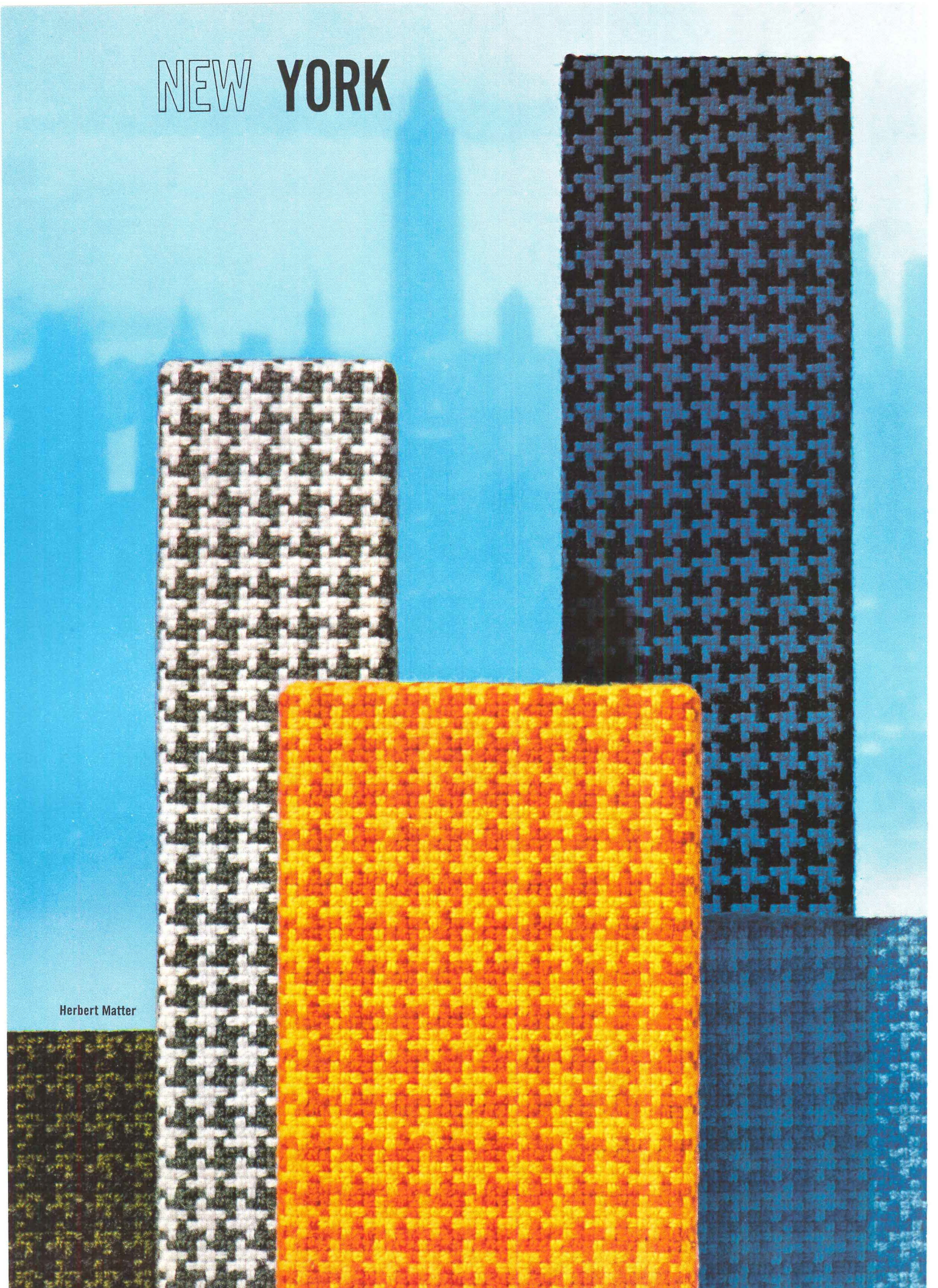


EQUITABLE PLANS HEADQUARTERS IN ATLANTA

The New York office of Skidmore, Owings and Merrill, associated with the firm of Finch, Alexander, Barnes, Rothschild & Paschal, are the architects for a proposed 32-story office building in Atlanta for the Equitable Life Assurance Society of the United States.

The building will be located on an 8,000 square-foot open landscaped plaza (below) in the heart of downtown Atlanta. The plaza area will have a pool and fountains in addition to planting.

The structure will rise 420 feet with 30 office floors, a penthouse, a high-ceilinged, arcaded ground floor for shops and lobby, and several basements. The gross area will total 670,000 square feet.


NEW YORK
Herbert Matter

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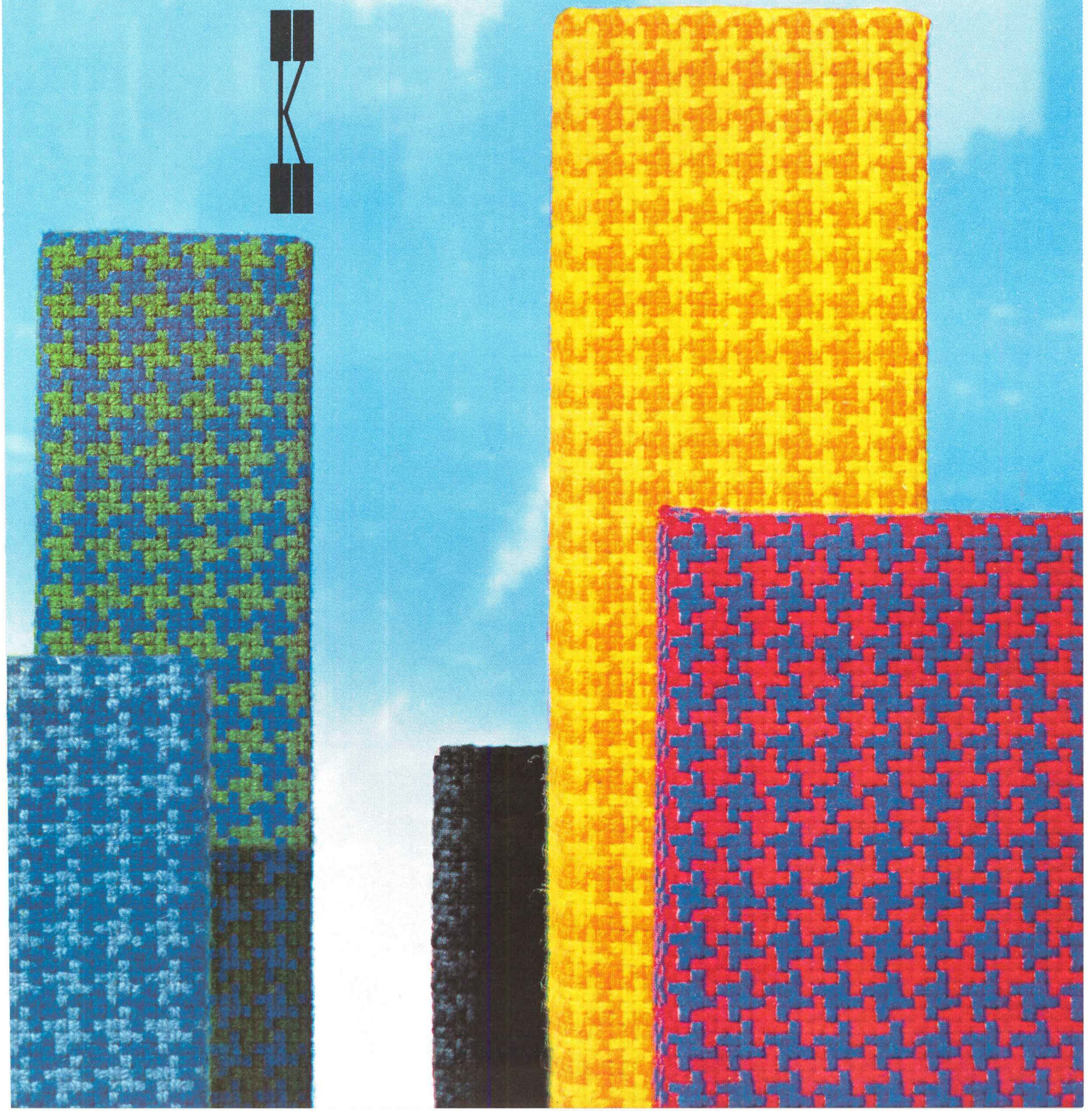


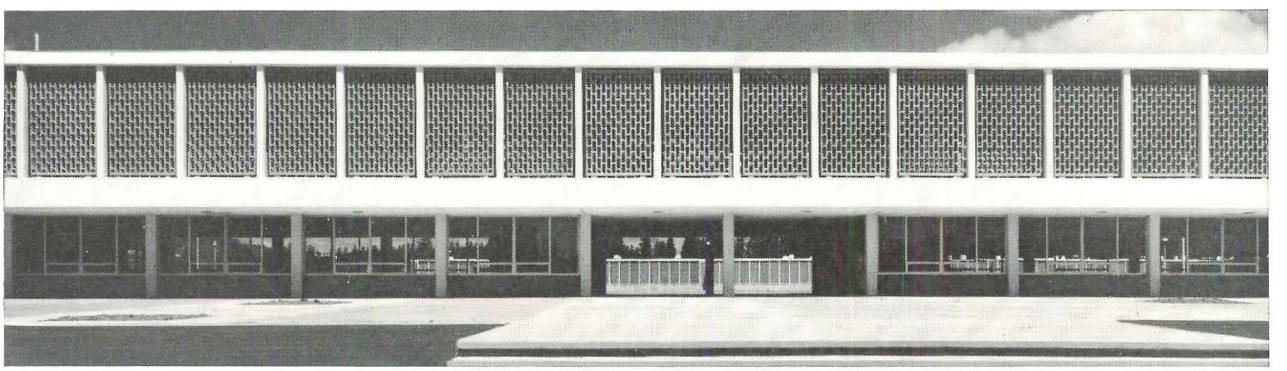
Built to Rehabilitate

...an all-concrete Corrections Center

The spectacular all-concrete Corrections Center at Shelton, Washington looks more like a college campus than a prison. Even the traditional iron bars have been replaced by decorative concrete screen walls. This is in character with the job the new $13-million Center was designed to do—educate and rehabilitate the young adults who are its inmates.

Unique among the 14 structures on the 400-acre site is the Multi-Purpose Building, which boasts its own "wings of an angel"—155 small and three large hyperbolic paraboloid roofs. Measuring 390 by 420 feet, the building houses a huge gymnasium which doubles as an auditorium, a dining room that can accommodate all 720 inmates at once, and a completely-equipped vocational-training center.

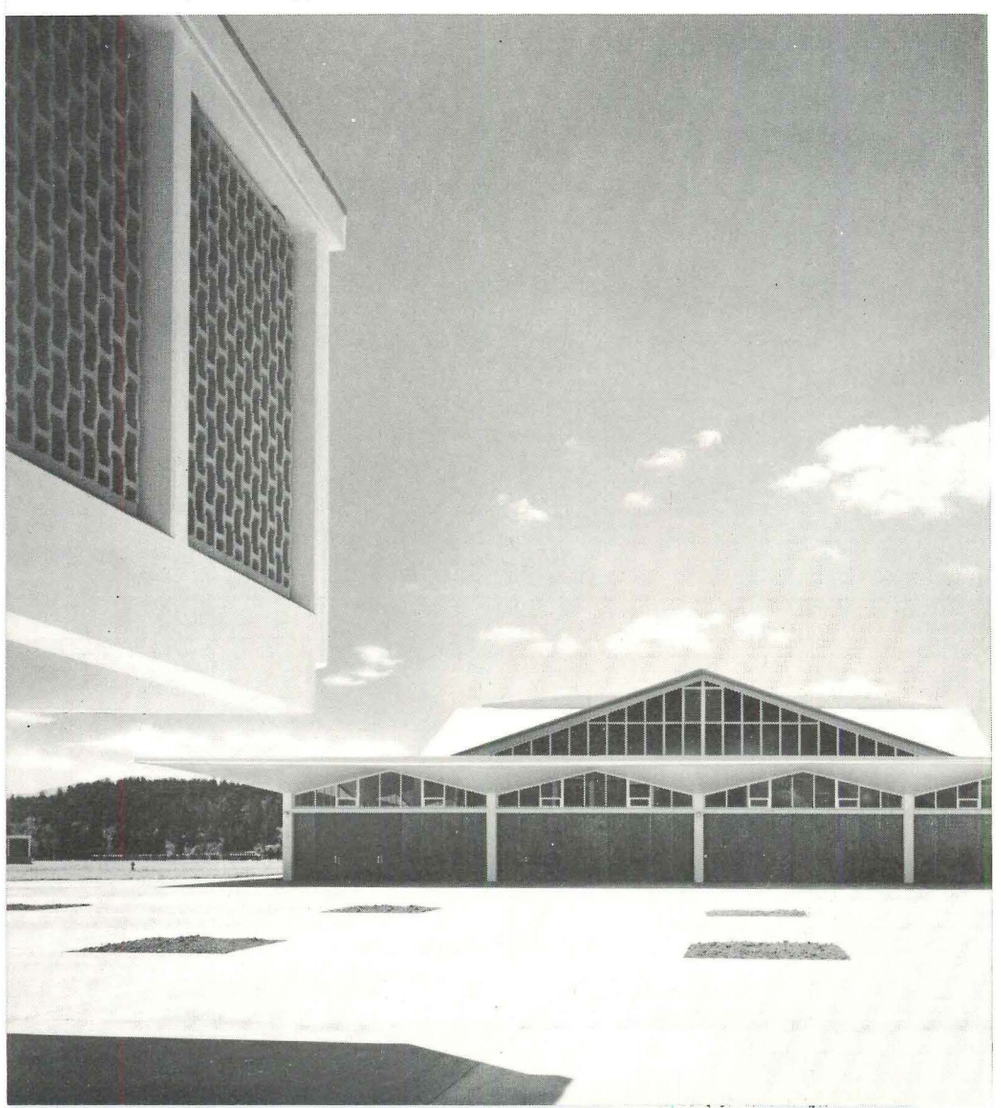
Economical, fire-safe reinforced concrete was the basic structural material for the entire complex, processed and tested for rigid quality control at the construction site. Lone Star Portland Cement was used for all cast-in-place concrete; "Incor," America's first high early strength portland cement, was used for all precast concrete units.

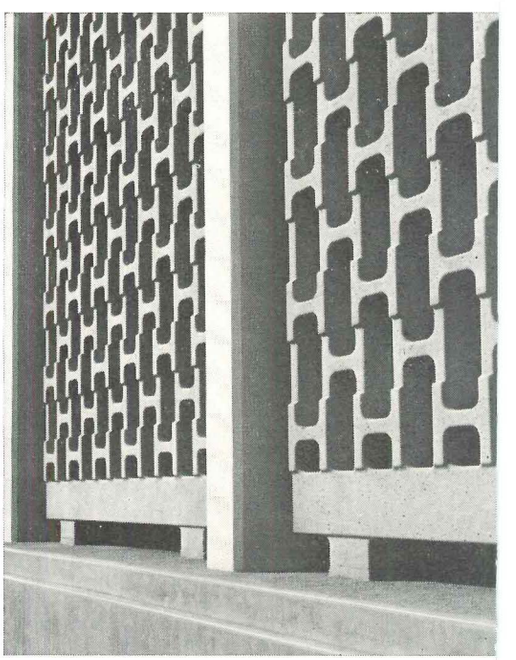


Owner: DEPARTMENT OF INSTITUTIONS, STATE OF WASHINGTON; Architects: BASSETTI & MORSE, Seattle, WALKER AND MCGOUGH, Spokane, CURTIS AND DAVIS, New Orleans; General Contractors (Joint Venture): MUTUAL CONSTRUCTION CO. and HENRIK VALLE CO., Seattle; Ready-Mixed Concrete: MOUNT VERNON SAND & GRAVEL CO., Mt. Vernon, Wash.

The Multi-Purpose Building's 158 hyperbolic paraboloid roof sections were precast with "Incor" cement. Efficient turnover of demountable forms proved highly economical in this multiple use of h/p roof structures.

"Iron bars do not a prison make" in the Center's attractive Educational Building (above and below). An open design allows light to filter through the window wall of precast reinforced concrete panels.





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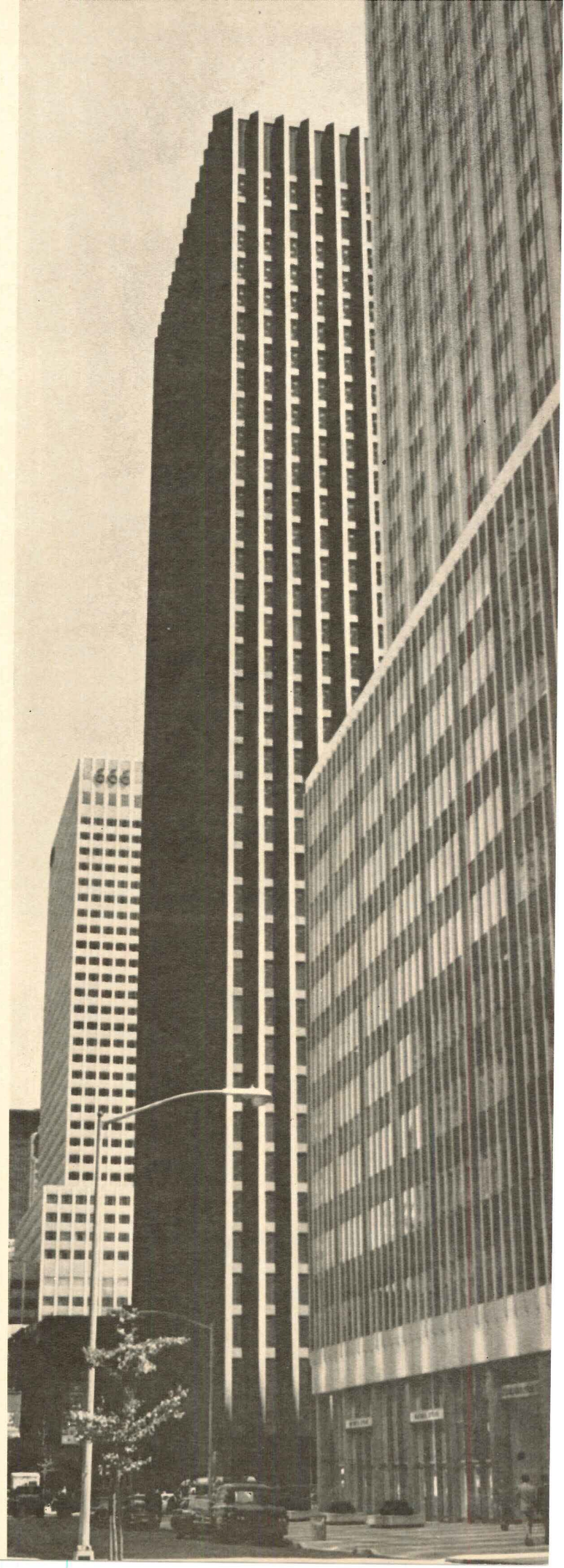
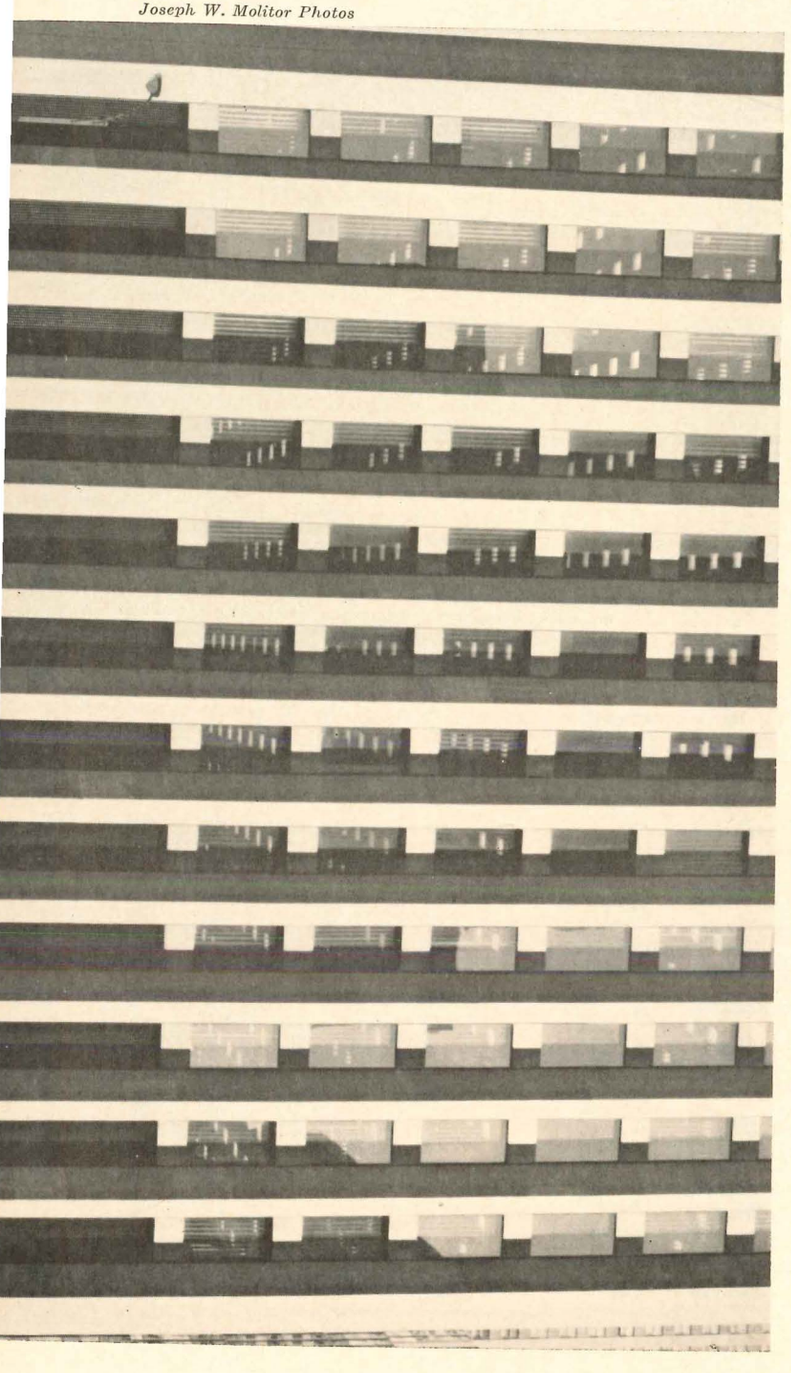
ARCHITECTURAL RECORD JULY 1965

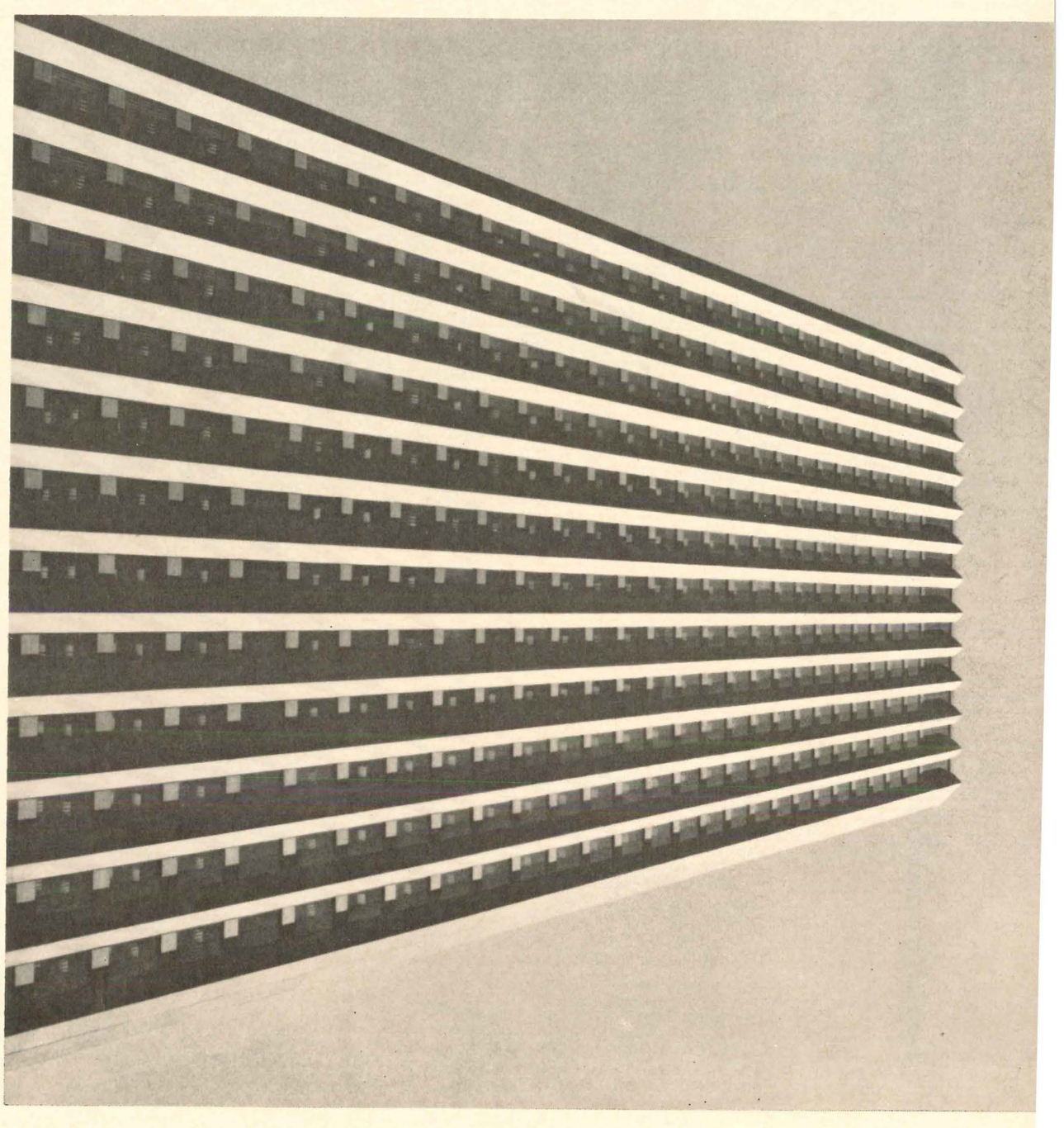
SAARINEN'S SKYSCRAPER

The new headquarters building for the Columbia Broadcasting System is the first reinforced concrete office tower to be built in New York City. Its owners have formally named it CBS/51W52. Such a title, cast in the hieroglyphics of our computer age, suits this masterfully contemporary structure which is the first and last skyscraper designed by the late Eero Saarinen.

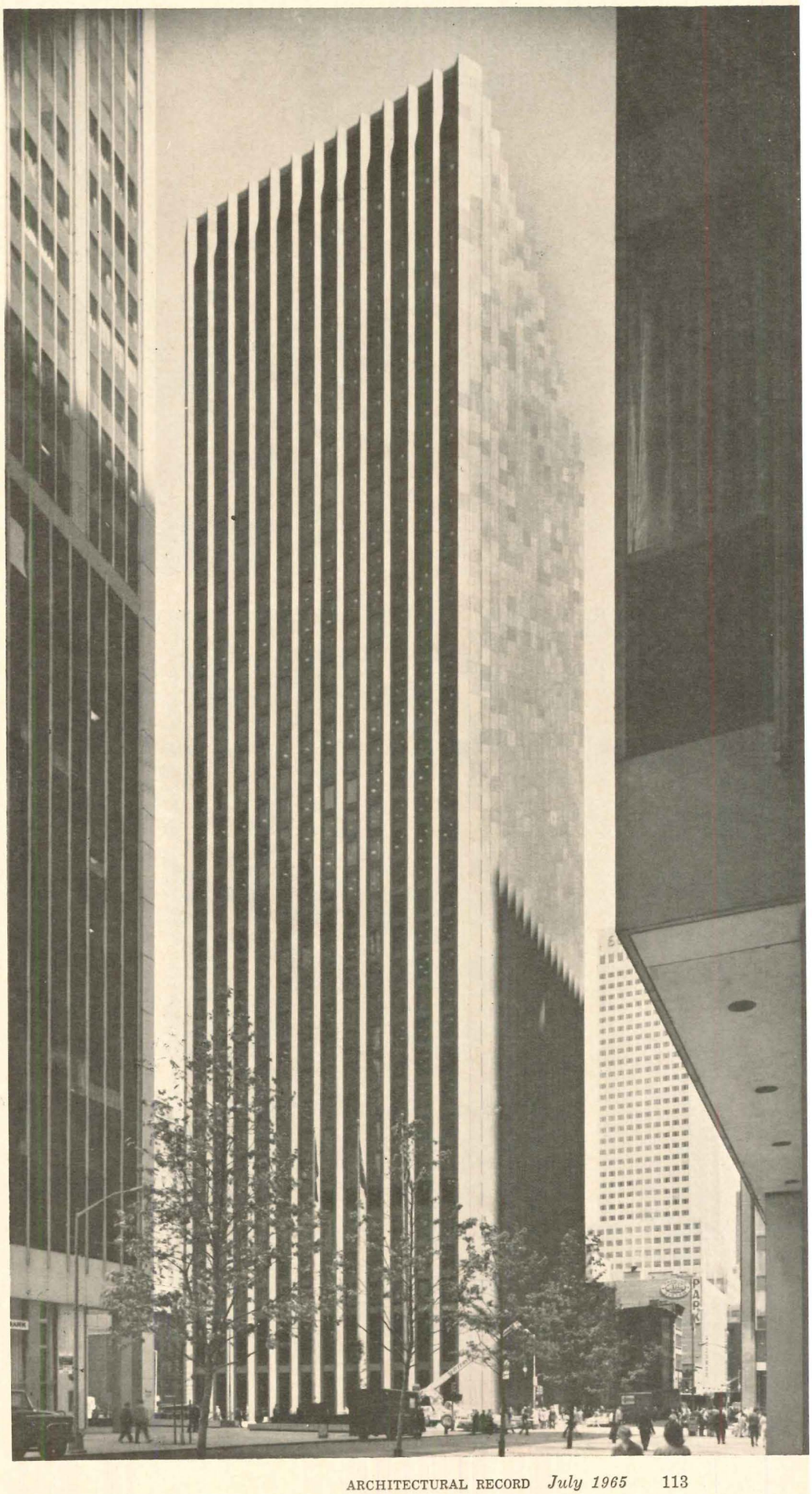


Joseph W. Molitor Photos





Each granite veneered concrete column has two exposed faces which extend at 45 degree angles from the building line and meet at a 90 degree angle. Columns and spandrels contain ducts for mechanical services.
Closely spaced on 10 ft centers, the columns of CBS are directly expressed from plaza to sky, rather than concealed behind curtain walls as in neighboring office buildings.



"I wanted a building that would stand firmly on the ground and would grow straight up."
EERO SAARINEN, *1961.*

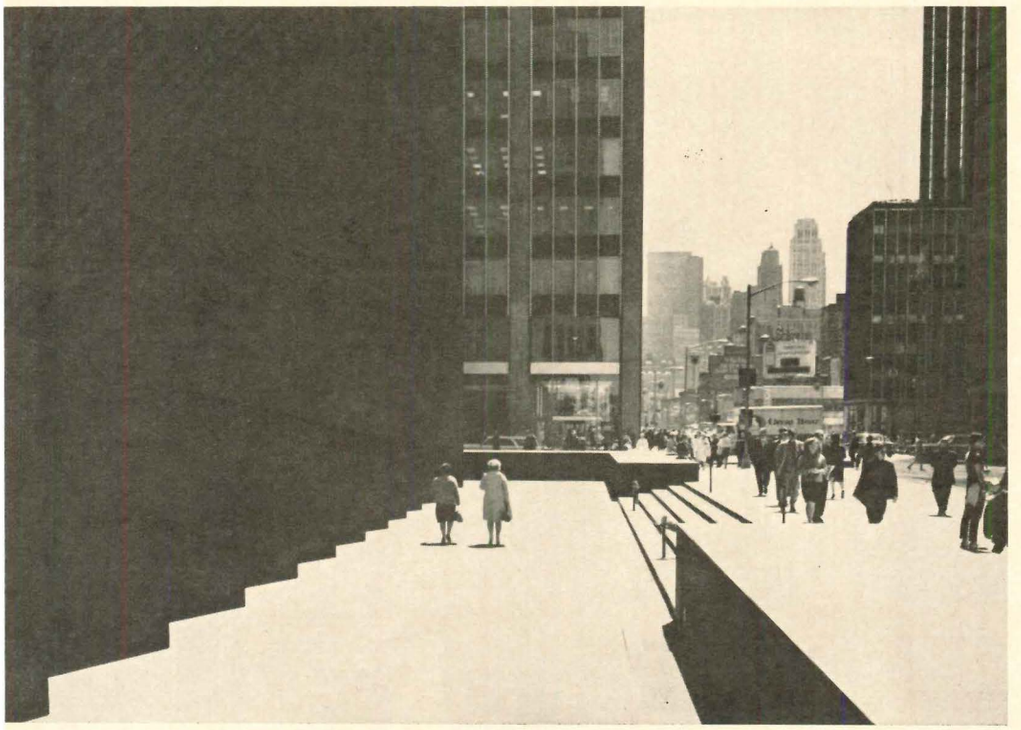
Saarinen also wanted to build his first skyscraper in concrete. According to his engineer Paul Weidlinger: "too many people were saying 'it cannot be done' and we were itching to show them."

The basic design has five foot wide columns on ten foot centers alternating five foot windows with five foot columns. The wider bay spacing characteristic of steel frame and curtain wall construction in buildings of great height would have been impractical in a similarly tall concrete structure. The closely spaced columns act as a *bearing wall* rather than a *bearing frame*. Structural engineer William J. LeMessurier has defined these two concepts as follows:

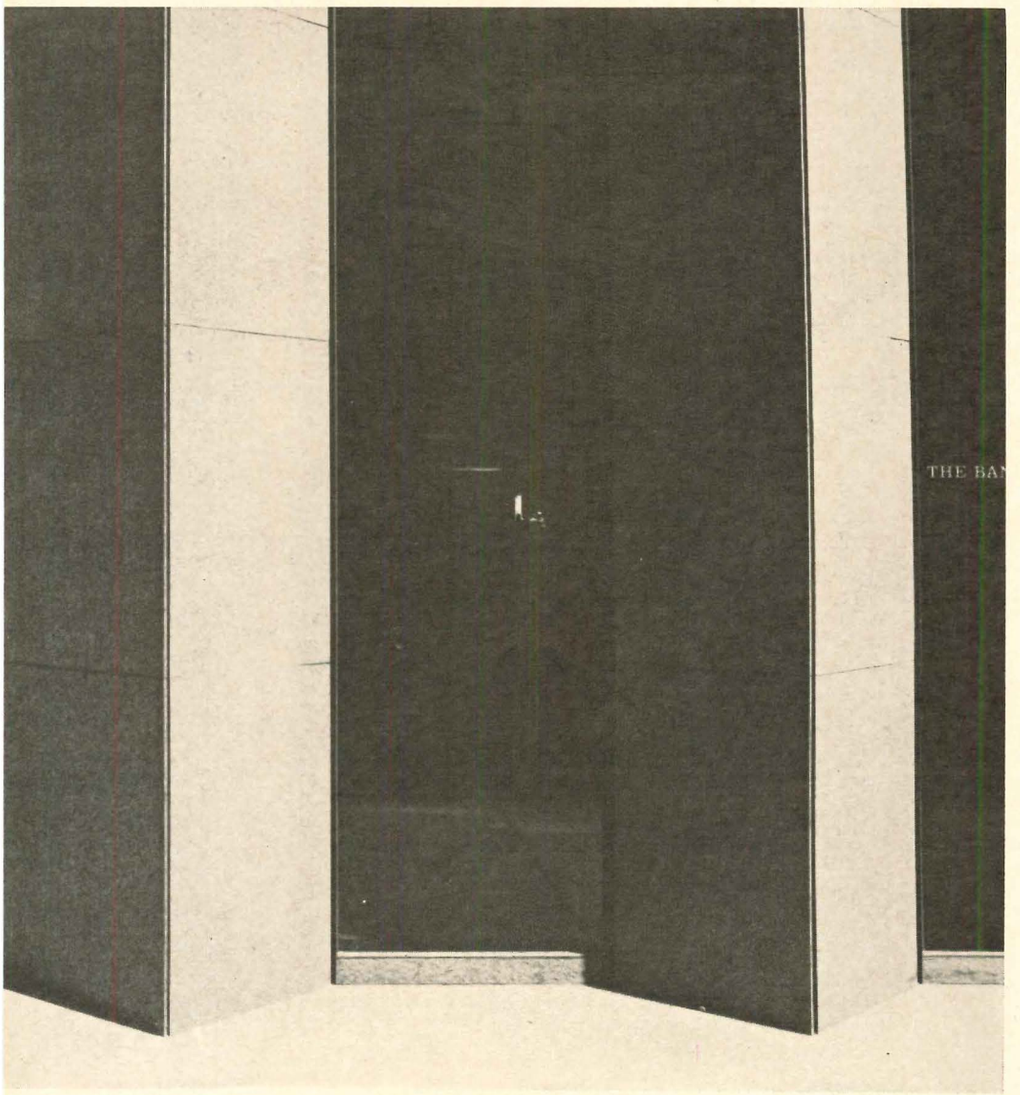
"A *bearing frame* is a vertical plane containing columns and girders which supports loads applied in its own plane and in which the columns have a spacing established by functional requirements. A *bearing wall* is a vertical structure which supports loads applied in its own plane, and in which the elements have a spacing established by structural requirements.

"Multi-story buildings may be considered as an assembly of hor-

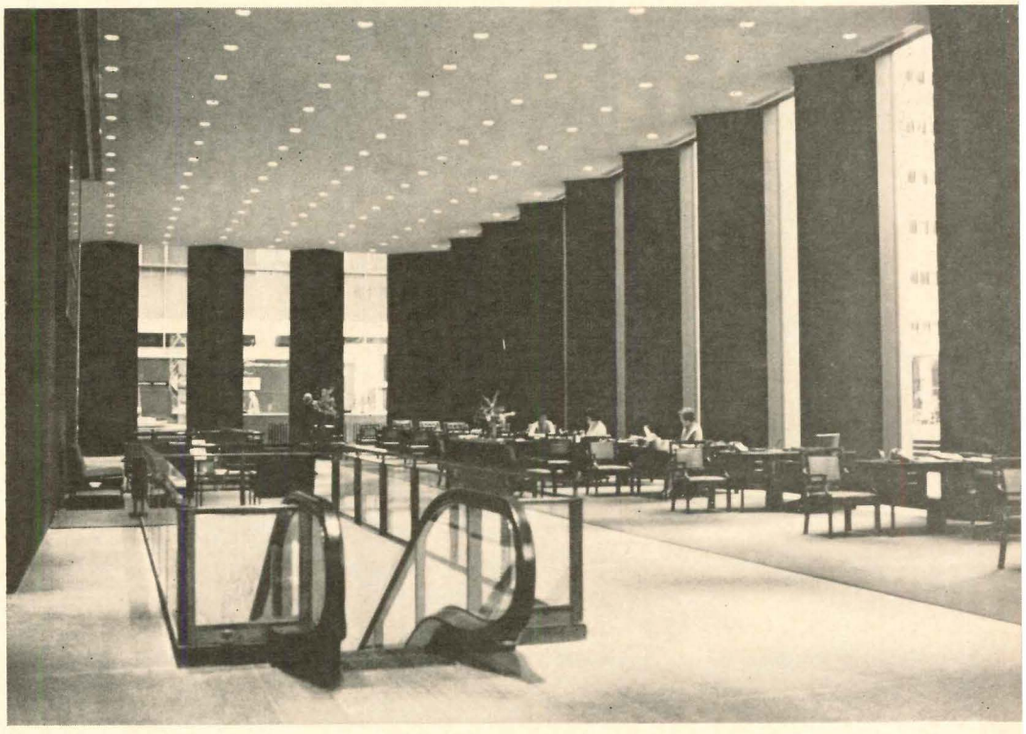
text continued on page 118



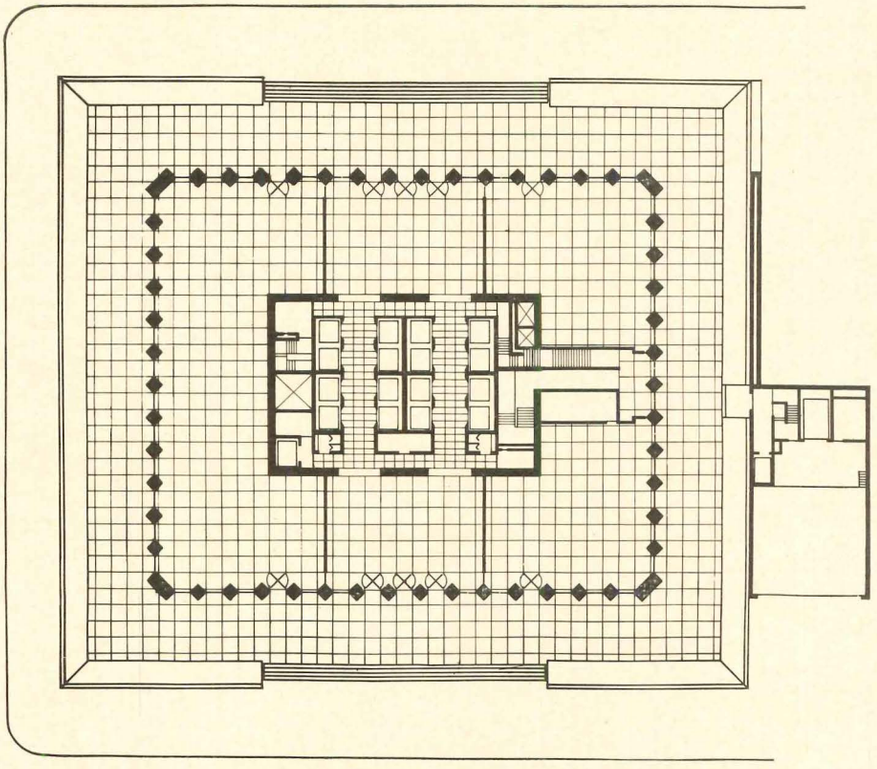
The plaza, five steps below the sidewalk level, is surfaced in the same granite as the tower. It can be entered only from West 52*nd* and West 53*rd* streets which are on the axis of the elevator corridors. Viewed from certain angles the row of columns suggests a continuous accordion pleated granite faced wall.



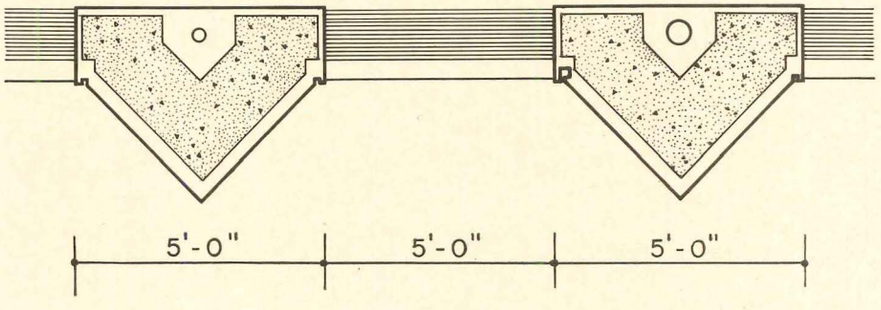
Saarinen's office building is not the first in which the columns are closely spaced to form what is essentially a bearing wall rather than the traditional skyscraper bearing frame. It is the first, however, in which the column spacing is the same at the base of the building as it is on the office floors. Paul Rudolph's Blue Cross-Blue Shield Headquarters Office Building in Boston collects its column loads in pairs on more widely spaced columns at the plaza level; SOM's Brunswick Building in Chicago picks up the loads from the tightly spaced columns of its bearing walls on four great spandrel girders which transfer the loads to 10 perimeter columns.

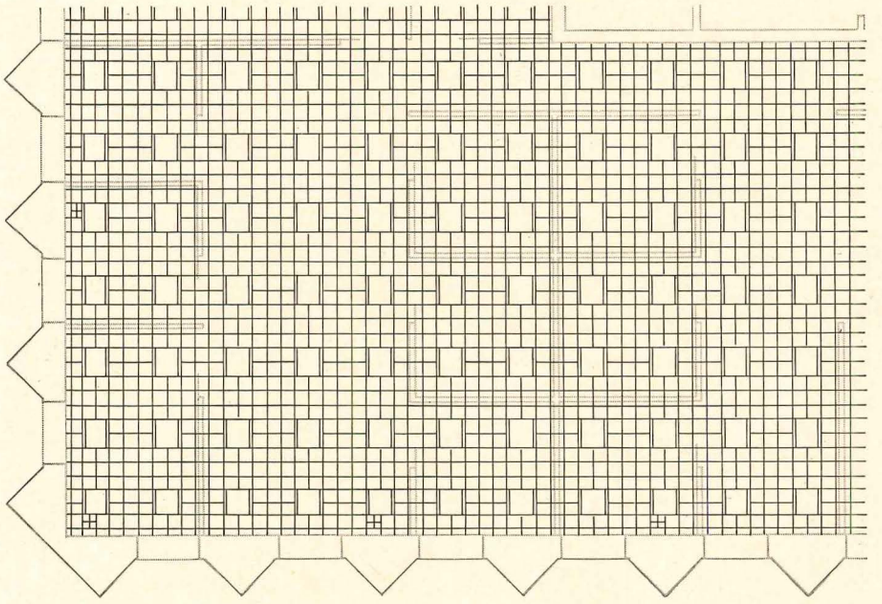


The Bank of New York occupies approximately one third of the plaza floor. The building lobby occupies the central third and a restaurant will be located in the remaining space.

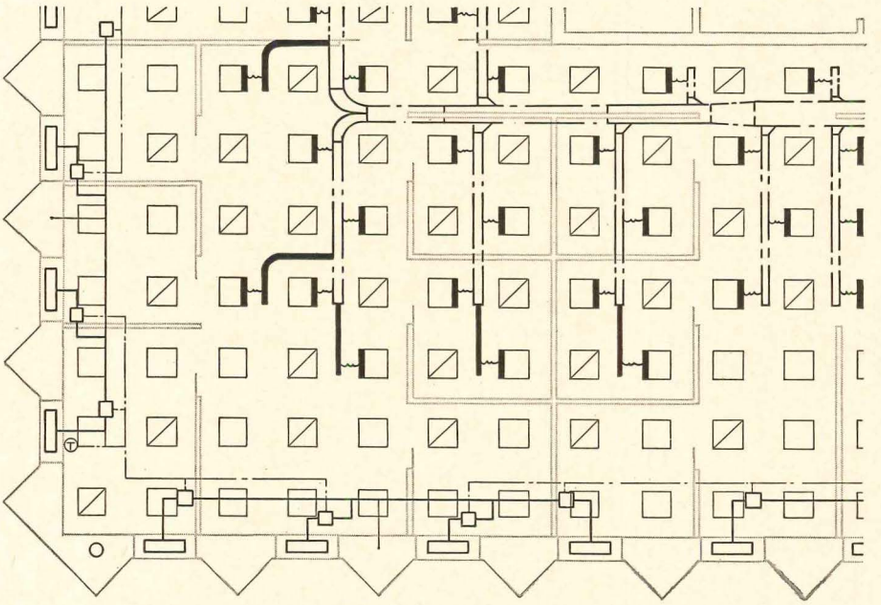


Since the column spacing was to remain constant from cornice to plaza, the architects had to provide enough width at the plaza level for people to pass through the columns and into the building. The entrance to a revolving door can be 5 ft at the minimum and because 5 ft is a good basic office module (a 2 ft -6 in. by 5 ft desk with chair fits a 5 ft by 5 ft space) this was the module selected. It was found that each concrete column including its facing and channel for mechanical equipment could be accommodated nicely in 5 ft of width. The more commonly used office building module ranges from 4 ft-3 in. to 4 ft -9 in.

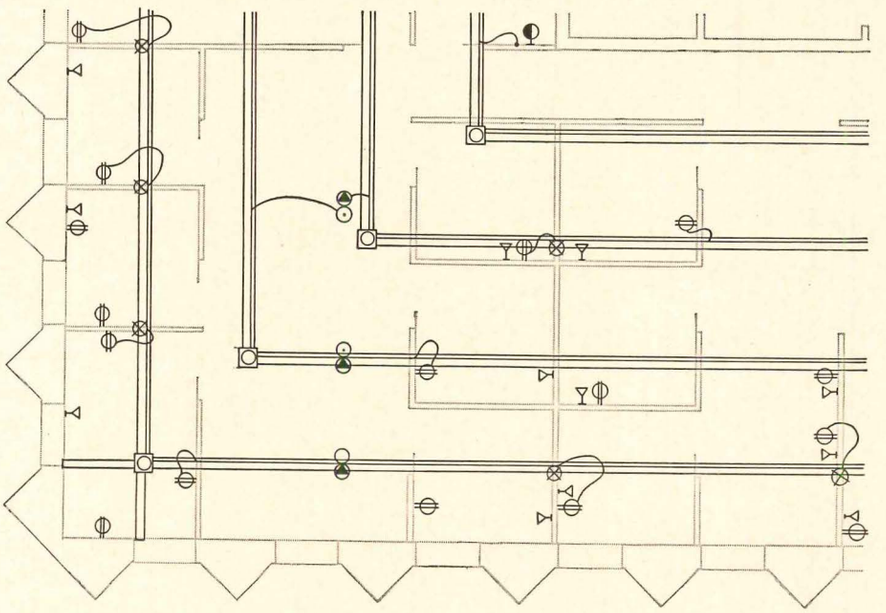




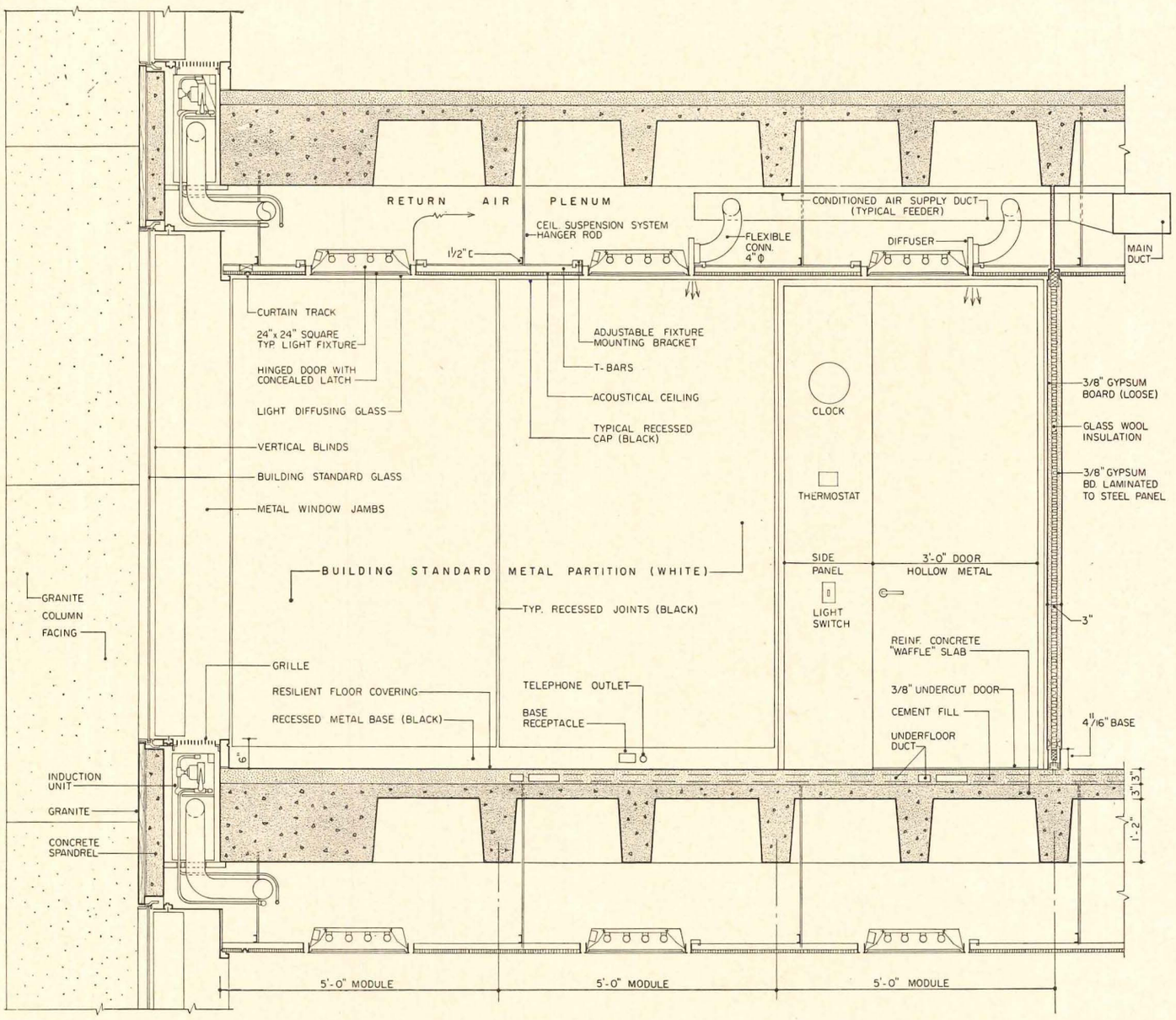
The 35 ft span between the core and the perimeter wall is relatively shallow so that interior offices and clerical spaces are not too far from the window wall. The minimum private office is 10 ft by 10 ft.



Heating, ventilating and air-conditioning diagram. Supply air is handled at one edge of the 2 ft by 2 ft lighting fixture. Return air is drawn through 2 ft by 2 ft return register. Air supplied to perimeter offices is from induction units at each window.



Underfloor duct elements. Metal partitions have bases which have been designed to facilitate entrance of electric facilities where required.



The section through a typical office shows the coordination of mechanical and electrical services within the 5 ft module.

Carson, Lundin and Shaw were interior architects for the CBS tower and their responsibility included the planning of the layout of the office floors from the interior window trim to the building core on the third to the thirty-sixth floor. They designed the standard and special metal partitions used throughout and coordinated the mechanical and electrical systems. They worked with acoustical engineer Paul Veneklasen to achieve a visual unity in carrying out his acoustic recommendations for the widely differing sound control requirements from office to office.

continued from page 113

izontal floor and roof planes combined with vertical bearing frames and/or bearing walls. *If we think of the exterior plane as a bearing wall, then what are the structural requirements which establish column spacings? If window openings are variable the determining factor will be structural efficiency. . . .*

"Perhaps the most valuable result of reconsidering the structural function of exterior walls will be the restoration of their role as bracing elements for wind and earthquake in tall buildings. Construction in the form of large framed bays with rigid connections is the most inefficient way to resist lateral loads. And since high efficiency of structural form for purposes of strength is always accompanied by maximum rigidity, the use of rigid bearing walls will improve the structural performance of buildings . . ."

The CBS building is one of the first of the new skyscrapers to employ the bearing wall concept and the only one to be completed in concrete. Weidlinger asserts that the structure is distinguished by the manner in which this concept is realized in a bold simple design. "Once the structural system had evolved," he said, "the computations were simple."

In the following statement Weidlinger analyzes the design:

"The structure is essentially supported on reinforced concrete bearing walls of the interior core and on a series of exterior columns which are spaced ten feet on center. Between these two supporting elements, the floor slab consists of a reinforced concrete joist system with predetermined areas of one-way and two-way action in the neighborhood of the corners. This analysis was executed by means of a high speed electronic computer which permitted the precise and economical distribution of the reinforcing steel and also permitted a determination of the areas in which one-way or two-way action of the plate was the most favorable.

"Because of the relative slenderness of the tower, the design of the wind bracing system required special attention. A substantial percentage of wind shear is resisted by the bearing walls in the core, but an important part of the wind is transferred to the foundation through the closely spaced exterior columns, which act in the manner of shear walls. This use of the columns induces torsion in the floor slab itself and special stirrup reinforcing for this purpose was provided.

"While the over-all cross section of the columns remains constant, the effective cross section is gradually reduced towards the upper floors of the building and the space gained in this manner is used to accommodate the down feed duct system which increases in size from the top down, leading therefore to an interesting integration of structural and mechanical components of the structure. The building is located over a subway tunnel, which cuts diagonally across the site, and the major portion of the core and some parts of the exterior columns are supported on heavy and extremely rigid steel girders bridging over the subway tunnels.

"The floor system is of lightweight concrete (that is it weighs about 27 per cent less than standard concrete). The vertical elements of the structure, namely, the core bearing walls and the exterior columns, are standard concrete. Since the temperature of the interior core is normally different from that of the exterior columns (due to heating or cooling of the building), insulation is provided for exterior columns, which is placed between the granite facing and the concrete itself. In addition to that, the covering of the interior face of the column is perforated to permit circulation of the ambient interior air, which, in turn, will tend to equalize the temperature difference between the core wall and exterior column."

ARCHITECT:
Eero Saarinen and Associates

GENERAL CONTRACTOR:
George A. Fuller Company

INTERIOR DESIGN:
Knoll Planning Unit

INTERIOR ARCHITECT:
Carson, Lundin & Shaw

MECHANICAL ENGINEERS:
Cosentini Associates

STRUCTURAL ENGINEER:
Paul Weidlinger

ociety Hill, May 1965

Joseph W. Molitor Photos

Philadelphia Report:

A LONG WAIT FOR THE RENAISSANCE

By Mildred F. Schmertz

Famous for the imagination, energy and sophistication of its planners, Philadelphia nonetheless renews itself slowly. This halting rebirth in the city which might be considered America's first great proving ground for modern urban planning theory has advantages to offset the frustrations and costs of postponement. Mistakes are made slowly, and there is time to assess them if not to admit them publicly. New and hopefully better planning tools are subsequently devised, introduced and implemented at the Federal level, and eagerly tested. The moral and philosophic basis for urban design judgements is continually being examined and questioned. Philadelphia isn't New York City, where sheer financial growth brings massive physical and social change at a rapid pace; a process in which New York's planning commission plays too small a part and in which responsible citizens' organizations are too often ignored. Philadelphia, on the contrary, depends upon planning as a means to attract desperately needed financial investment to its lagging economy, and the citizens and planners who try to initiate urban development play leading roles in the city's political and economic life. These men do not all agree on priorities or processes or goals. Their arguments, and those of their critics, reach beyond Philadelphia to questions of planning policy which should be raised in every American city.

PRO: "Philadelphia's development and renewal programs have saved its life and created a sound foundation on which to build a more desirable city. Thousands of slum units have been eliminated, the quality of the housing supply has been greatly improved, Center City is on the rebound with property values climbing, and tax returns are growing. The civic improvement programs have resulted in an increase in assessments, reversing a trend of declining real estate values. They have made possible expanded civic services with no recent tax increase. They have brought new investment and business growth to Philadelphia, while at the same time slowing down the exodus of industry. They have made possible the amenities of modern urban living through creation of open space, cultural facilities, hospital and university expansion. In short, if in 1952 the city had not undertaken these massive programs which have made possible its renaissance, Philadelphia would be on its way to becoming a second rate community, small and without influence."

WILLIAM RAFSKY, *Executive Director, Old Philadelphia Development Corporation and Chairman, Community Renewal Program Committee. Former posts: Executive Secretary to Mayor Joseph Clark (1952–54), Housing Coordinator (1954–56), Development Coordinator (1956–58) and Development Coordinator and Redevelopment Authority Director (1958–63).*

Renaissance for Whom?

Philadelphia is not without its advocates of social reform whose voices are heard in the lecture halls at the University of Pennsylvania and at meetings conducted by such old and established civic groups as the Citizens' Council on City Planning and the Philadelphia Housing Association. These "young Turks" assert that Philadelphia's planning establishment has concentrated on physical or "brick and mortar goals" to create but a "renaissance facade" behind which lie the teeming slums, simultaneously neglected by the planners and inadvertently made worse by them. Paul Davidoff, Associate Professor of City Planning at the University of Pennsylvania, believes that a comprehensive city plan should define the economic, educational and social, as well as the physical, goals of the city. Plans for industrial development, for example, should be shaped in part to provide the types of jobs most urgently required. Housing and schools should be located to establish opportunity for racial integration. Davidoff points out that too frequently planners and renewers tend not to suggest the underlying social or economic point of view which their plans implement. "They often attempt to rest their arguments upon physical values such as improved quality of land use in the city. The difficulty with using improved land use as an end is that the argument fails to recognize that land is used to serve members and classes of society having different needs and resources. Land assembly by itself is neither good nor bad; the significant questions are for whom it is assembled and why."

Davidoff believes that the members of the boards of the City Planning Commission and the Redevelopment Authority, who are the public's representatives, should inject contentious issues into the public dialogue so that alternative planning and renewal strategies may be better evaluated. Philadelphia's politicians should publicly commit themselves to specific programs and platforms for the future of the city.

The new breed of reformers in Philadelphia believe with Davidoff that the great social mandate of the Housing Act of 1949: "A decent home and a suitable living environment for every American family," has been tragically forgotten by those responsible for implementing the Federal urban renewal program. Physical renewal under Title I should, they claim, revert back to housing.

William G. Grigsby, Research Associate Professor of City Planning and Associate Professor of Finance at the University of Pennsylvania, states that in the use of urban renewal, American cities have substituted their own goals for the purposeful welfare goals which shaped the Housing Act of 1949. "The catch-all phrase 'related community development' in the Declaration of National Housing Policy has become the tail wagging the dog. The intended beneficiaries of renewal have too often become the victims." [1] Grigsby finds that only one fifth of the $3 billion donated to local communities under the Federal urban renewal program as of March 1964 has been allocated to projects planned to upgrade the housing for the poor. "However defensible this allocation of funds may be, the fact remains that until the shelter needs of our lowest income groups are met, urban renewal will never progress beyond the face lifting of downtown, a few new industrial districts, and the reclamation of isolated residential neighborhoods for upper-income families. For, in the areas of our cities most offensive to eye, nose, and public conscience, disadvantaged families predominate." [2]

Grigsby acknowledges that cities must attract the businesses and income groups which will increase tax revenues, and that in this struggle low income housing must lose its priority. The federal government has had two alternative ways to operate within this local context. As the figures show, it has for the most part chosen to oblige the city by subsidizing projects which increase tax revenues, a large part of which the city must then spend on services to the poor. It could have followed the intent of the Housing Act of 1949, sub-

CON: "I sense . . . a growing criticism of urban renewal, a criticism that arises out of different causes depending in part on one's political beliefs. It is attacked by the right-wing as being a Communist or Socialist 'give away'. It is attacked by the left-wing as a reactionary effort to weed Negroes and other minority groups out of our cities. It is attacked by people who have neither left nor right-wing persuasions, but who happen to be living in the path of the bulldozer, on the grounds that they do not want to move. As a result of this growing controversy, there is an increasing suspicion among American mayors that while urban renewal at one time may have been good politics (it is always good to promise, with Augustus Caesar, that you will take a city of brick and turn it into a city of marble), it perhaps is becoming poor politics. Some of them are beginning to wonder whether, after having been put in office and supported by an urban renewal coalition in their cities, they are going to be left alone on the firing line to answer all the questions raised by the growing disaffection. I think it behooves all of us, therefore, to look deeply into this program and to decide, if we can, where we want to go with it."

DR. JAMES Q. WILSON, *Director of the Joint Center for Urban Studies of the Massachusetts Institute of Technology and Harvard University. An excerpt from his address to the Annual Meeting of the Citizens' Council on City Planning, Philadelphia, June 4, 1964.*

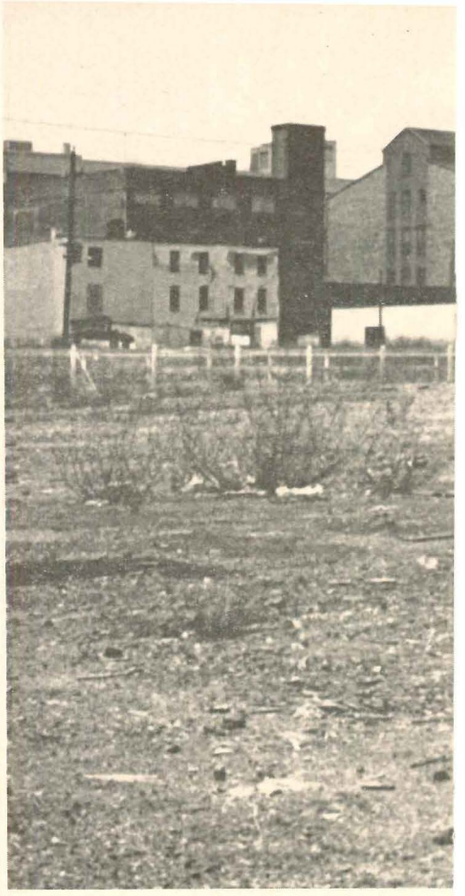
sidized low income housing and let the city chart its own economic course. "Had the second option been selected," said Grigsby, "it is possible that both the short-term welfare effects and the long-run impact on urban structure and costs of renewal would have been more favorable." [3] According to Grigsby the strong voter opposition to public housing and to such proposals as rent subsidies does not exhaust all possibility of the elimination of substandard housing within a reasonable length of time. Politically acceptable means to house the poor can be found.

The Philadelphia Housing Association, a citizen organization founded in 1909 to improve tenement conditions, is currently engaged in the attempt to develop an over-all housing policy for the city. This group which is made up largely of people from academic life, the social welfare profession and the business community, collaborates with the Citizens' Council on City Planning in the achievement of civic goals. Both organizations helped bring about the Democratic reform era which began in 1951, after 67 years of Republican rule, with the election of Joseph Clark, and ended when Richardson Dilworth left city hall in 1962 to make his unsuccessful try for the governorship. The Philadelphia Home Rule Charter which re-established the City Planning Commission was achieved in part through the efforts of these two citizens groups. The present Democratic mayor, James H. J. Tate, who is considered by many to be the product of a political machine opposed to reform, may be less likely to lend an ear to the housing policy proposals of the Philadelphia Housing Association than his predecessors; but these proposals will be summarized briefly here in the belief that, though developed in the context of Philadelphia, they are applicable to other cities as well.

Mrs. Louis P. Dolbeare, Assistant Director of the Association, cites the 1960 U. S. census of housing in establishing that at that time, eleven years after the Housing Act of 1949, 120,000 of the 1,267,000 families in the Philadelphia metropolitan area were living in housing that needed major repairs, and that more than 150,000 families found the cost of shelter beyond their means. These families spent more than one third of their meager incomes on housing. The Philadelphia Housing Association recommendations are aimed at the following goals: Everyone should have an opportunity to obtain a suitable home within his means, as well as maximum possible choice of owning or renting, of housing type and location, regardless of race, nationality or creed; the stock of good housing should be maintained and increased; substandard housing should be removed or rehabilitated as rapidly as possible.

Public housing, urban renewal, code reinforcement and FHA regular and special programs should be continued, although by themselves they are inadequate. To supplement these existing measures the Housing Association makes the following recommendations: *". . . the key to solution of the housing problem is a subsidy program which will enable families below the poverty line, wherever it is drawn, to obtain standard housing. The subsidy should be keyed to the size and income of the family and to the cost of housing available on the private market in the area. Controls should be provided to insure that the subsidy is actually spent for housing and that it pays only for standard housing available at reasonable rates* . . . Our estimate is that $50 million annually would be required to provide adequate shelter for all renters in the Philadelphia metropolitan area with incomes below the public assistance standard . . . The Federal government is now spending for farm price supports, highways or manned space exploration much greater amounts than would be needed for a broad housing subsidy program. . . . By choosing a housing subsidy program as the best alternative for solving the low income housing problem, we are putting major reliance on the existing stock of housing and upon the private market. It is felt that this is the least expensive solution which will at the same time maximize individual choice and minimize direct government activity in housing. We regard

Slum Clearance and Redevelopment: A Slow and Costly Process



Residential clearance and redevelopment projects, some started fifteen years ago, still await the developer. All photographs were made in May 1965.

Land (*above*) is Section 5, East Poplar Urban Renewal Area in North Philadelphia designated by the Planning Commission for redevelopment in 1948.

the subsidy proposal as a supplement to public housing, the traditional program for housing low income families. Public housing has made an important contribution to the welfare of low income families. However, after more than 25 years of activity, there are only 18,000 public housing units in the Philadelphia metropolitan area, compared with 353,000 families below public housing income limits. Thus, even on a greatly enlarged scale, public housing could accommodate only a fraction of the families who need assistance. . . . Our proposal differs in several important respects from the rent subsidy program now before Congress. Our proposal will enable low income families to find shelter in the existing stock of standard housing. The Administration proposal, on the other hand, is aimed at providing new housing for middle income families, those with incomes above the level for admission to public housing. Under our proposal, the subsidy would go to the family; under the administration proposal, the subsidy would go to the developer. . . . *The Housing Association recommends that the terms on which families can obtain mortgage financing on older homes be made more comparable to those provided for new housing, and that loans be made available on a large scale to families in the lower income range.* . . . We believe adoption of our subsidy and mortgage guarantee proposals will lead to a sharp increase in the demand for new housing. Improved mortgage terms would serve low and middle income families, thus providing a market for present owners who wish to sell. Coupled with the subsidy program for low income families, better mortgage terms for used housing would set off a chain reaction affecting the entire market. With the push upward beginning from the bottom, there is good reason to predict that new housing starts would reach the level needed." According to Mrs. Dolbeare, no one has paid any attention to making workable the filtering down process whereby housing becomes available to a lower income group as the next higher group improves its environment. She believes that we shouldn't try to pour water up hill by stimulating new construction for the poor.

The Housing Association also recommends strong code enforcement and a sufficiently flexible urban renewal program to demolish obsolete abandoned housing wherever it may occur, so that the cleared land could be built upon, become part of a land bank or put to some good interim use.

Edwin L. Folk, Executive Director of the Citizens' Council on City Planning has even less enthusiasm for public housing than Mrs. Dolbeare. He has compared public housing costs of $22,000 per unit with the cost of a three bedroom house which can be built privately for $12,000 and

Shown at bottom of the opposite page is a portion of Eastwick; begun in 1950.

Lower middle income housing, North Philadelphia

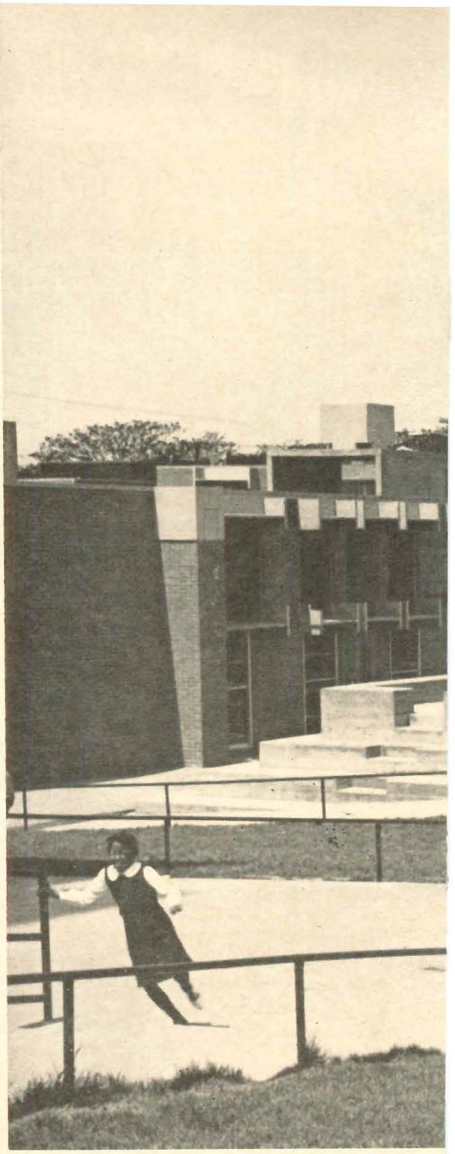
Lower middle income housing, Eastwick, Philadelphia

A Well Designed Ghetto

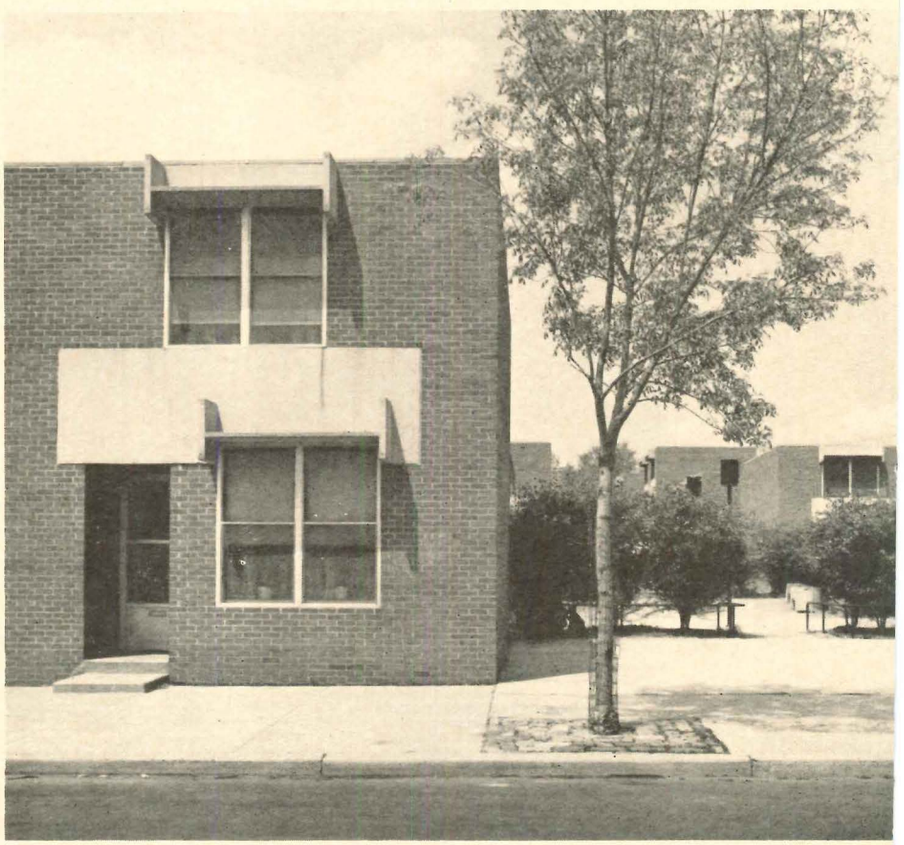
has concluded that publicly financed, privately built public housing has become so costly that its construction cannot be justified. As spokesman for the Council, which has consistently supported the concept of urban renewal, his criticisms of planning and renewal in Philadelphia are moderate and responsible. In a so-called "White Paper" on Urban Renewal in Philadelphia which the Council issued last March, Folk analyzes the costs and benefits of urban renewal as practiced in the last 15 years.

Clearance and Redevelopment

The residential clearance and redevelopment projects conducted in the Temple and Poplar areas of North Philadelphia and the Eastwick project in Southwest Philadelphia (see pages 122-123) many of which were started as long as 15 years ago, are still in execution with only a few small units completed within each larger redevelopment area. "Because these early projects were necessarily experimental, and because the government had not previously attempted to conduct a program as complex as urban renewal, difficulties such as the following were to be expected: (1) The costs and time involved in the conduct of these projects has already far exceeded even the most pessimistic of early estimates; (2) The social problems in badly blighted areas were infinitely more complex than anticipated and the public and private resources proved grossly inadequate to deal with them; (3) In the early days at least, relocation proved extremely difficult and resulted in a very high percentage of relocatees being moved into housing in near by slum areas little better than they had been forced to vacate; (4) The difficulty in providing new moderate or low income housing through private industry became apparent and emphasized the fact that there were no public programs geared toward meeting the housing needs or financial capabilities of lower-middle or low income families. If the word "failure" can be applied with justification to any part of the renewal effort, it is to the clearance and redevelopment activities of the early 1950's. While it is possible that most of the original objectives of these projects may eventually be achieved, the costs to date—public and private,

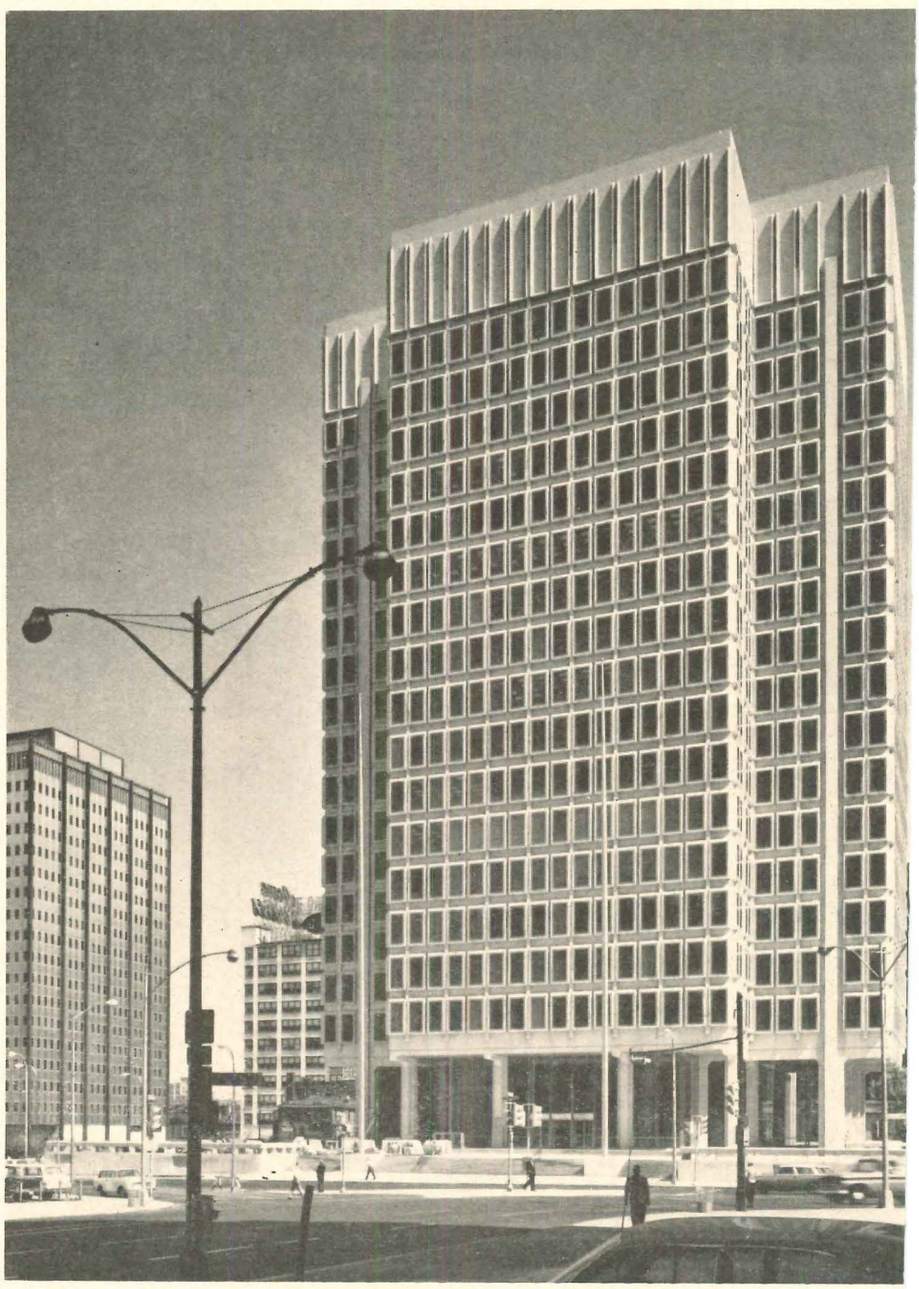


Public Housing in Mill Creek Redevelopment area designed by Louis I. Kahn.



Center City Makes Progress

financial and human—have been too great when measured against the relatively modest benefits which have resulted. The resulting decision to abandon the residential clearance and redevelopment approach has created a void in the renewal program. At present, there is no extensive program to treat acute problems of slums and decay which the original Federal housing acts and the Philadelphia renewal program were intended to correct. The inability to undertake effective alternative programs for residents of these areas has produced and encouraged a growing resentment of and opposition to other elements of the current Philadelphia renewal program. Until such programs are instituted, renewal can not be considered successful in achieving its prime objective."



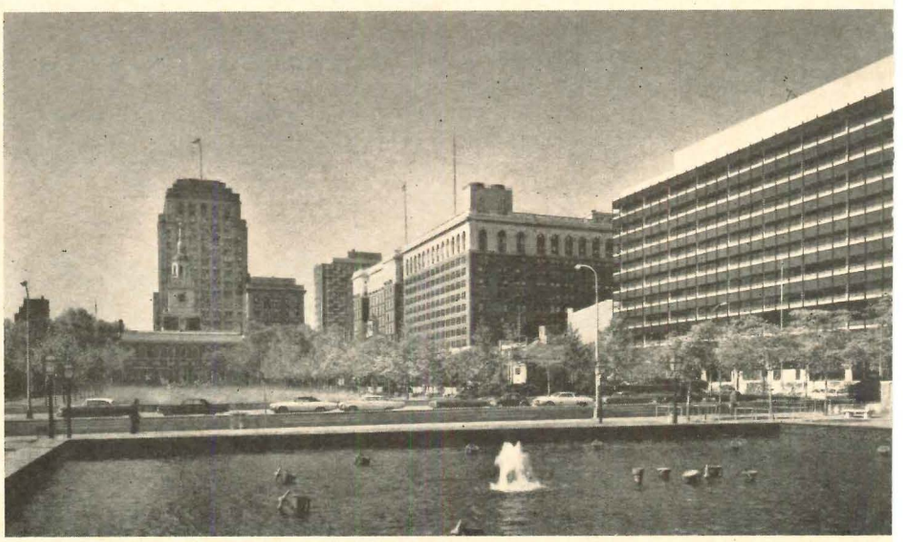
Conservation and Rehabilitation

A residential conservation program begun as an outgrowth of Philadelphia's Central Urban Renewal Area Study conducted in the middle 1950's has produced one project, the Morton area of Germantown, which has been a success to the degree that it has stimulated voluntary rehabilitation. In Folk's view experiences in the Morton project indicate: "(1) The conservation program is significantly slower, more expensive and probably will call for greater use of the power of eminent domain than was originally intended; (2) The number of persons who can not or will not voluntarily improve their properties may result in a greater relocation burden than was intended under the initial

The plans for Center City are being more rapidly fulfilled than elsewhere in Philadelphia. The recently completed high income apartment house facing Logan Circle (*below*) was designed by Stonorov and Haws. Vincent Kling's Municipal Services Building (*opposite page*) nears completion, and within Penn Center (*above*) office towers are rising. Title I was a catalyst for the growth of Center City; other methods of financing were also used.

Center City

concept of conservation; (3) Because of the factors of cost and time, it is questionable that conservation can prevent continued decline in many areas for which conservation now is considered the appropriate approach to renewal; (4) Improvement in public facilities or private dwellings alone may not result in stable neighborhoods unless they are accompanied by health and welfare services planned and conducted as integral parts of a continuing renewal program; (5) The conservation approach can not be applied effectively to areas which have declined to a point where the costs of rehabilitation are out of scale with the resulting values of improved properties."

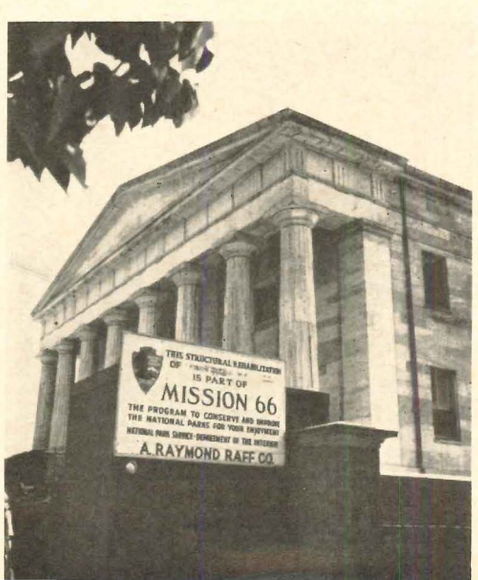


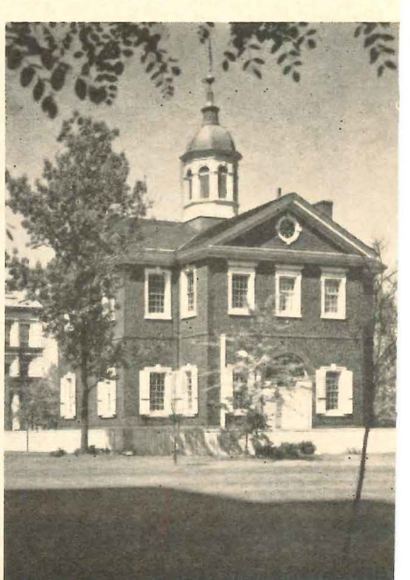
The Rohm and Haas building designed by Pietro Belluschi and the George Ewing Company, now nearing completion, is the first new office building to flank Independence Mall. View is toward Independence Hall.

Center City

Urban renewal has been used in Center City to attract the businesses, industries and high income families that produce the largest tax revenues. It is rapidly becoming, as planned, a handsome central core, a successful realization of sophisticated urban design. (See pages 126-129.) The heart of Philadelphia is indeed experiencing "renaissance" and the goals for which Edmund Bacon has so long fought are being steadily achieved. The critics are unrelenting even here, however, and point to the fact that small businesses are being eliminated, the poor have been forced out, no low income housing has been provided, and only rich architectural history buffs can afford to rehabilitate the Georgian houses in Society Hill according to the standards of historic correctness required by the city. I. M. Pei's townhouses and tow-

The Historic Park area continues to be improved. Shown (*below left*) is the Second Bank of the United States designed by William Strickland (1818-24) and (*below right*) Carpenters Hall designed by Robert Smith (1770-75).



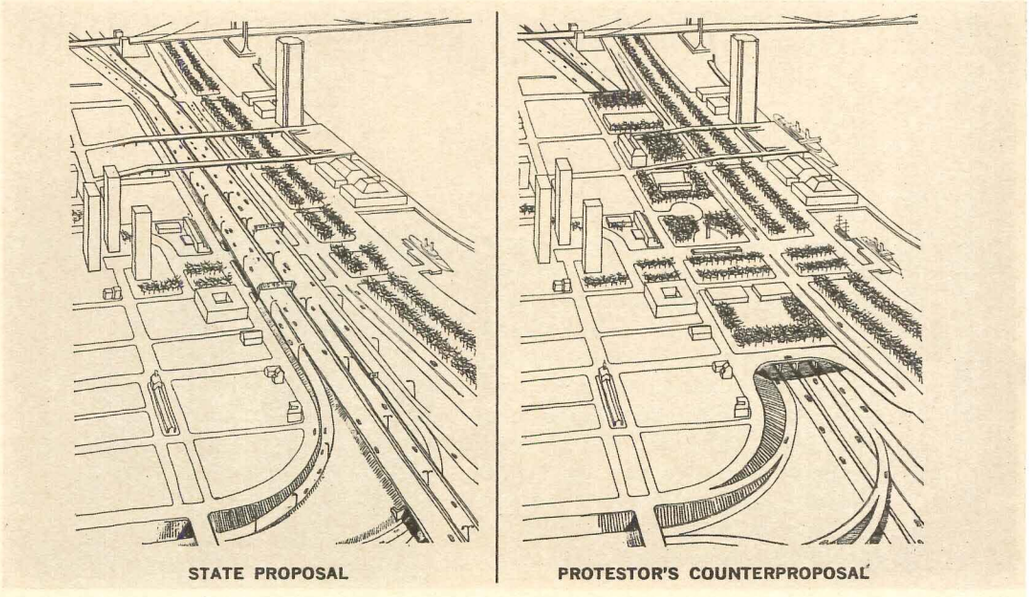


The towers in Society Hill designed by I. M. Pei were carefully sited to relate to certain historic structures designated for preservation. Headhouse, New Market, (c. 1805) has been restored in the hope of attracting merchants to serve the new residents of Society Hill who are without shopping facilities.

ers are beyond the reach of most middle income families. Dr. James Q. Wilson asks, "Should we use urban renewal as a way of subsidizing the rent of upper income families so that they can afford to live closer to the opera house than they would choose to live if they had to pay the whole rent themselves? . . . Using urban renewal to bring well-heeled customers into closer proximity to the downtown department stores may . . . improve all of the community's life or enrich the community's tax base or reduce the demand on public services. But at first blush, it seems to be a public subsidy to keep the department store owner from having to face the hard choice that all business men must sooner or later face: if his customers move away, shouldn't he move with them?"

Institutional Expansion

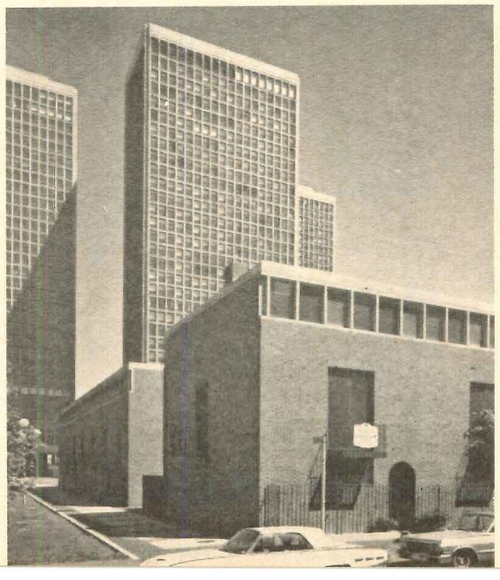
Institutional expansion programs now comprise approximately 12 per cent of Philadelphia's total renewal budget and there have been major expansions of the campuses of the University of Pennsylvania, Temple University (see pages 130-131) and Drexel Institute. Hospitals and other institutions have benefited from this program. Opponents raise the relocation issue or assert that the expansion of these non-profit institutions lowers the tax revenues. Proponents argue that these institutions can not be permitted to leave the city pointing out that they create new jobs and additional income taxes. In addition, according to Folk: ". . . opponents present the compelling argument that reduction of overcrowding and re-

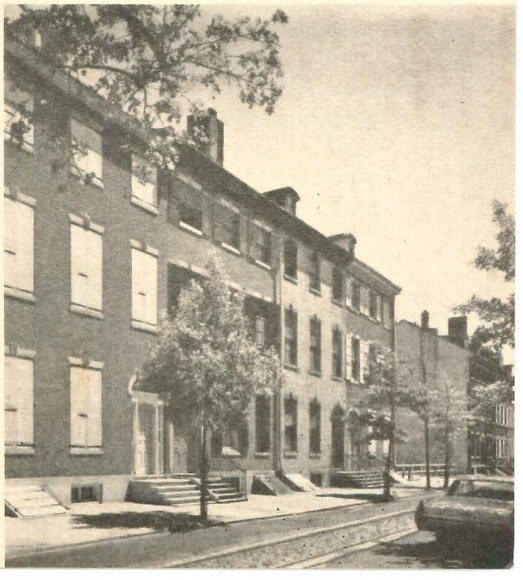


STATE PROPOSAL

PROTESTOR'S COUNTERPROPOSAL

Above: a local furor, only recently abated, arose when Society Hill residents and others discovered that the eleven lane Delaware Expressway was to extend along the river, blocking their access to the proposed waterfront development and marina to be known as Penn's Landing. As the story is told, the good citizens didn't even know about the expressway until the State Highway Department went to Wanamakers and in a rare burst of pride unveiled a $10,000 scale model of the thing. Since the highway has been faithfully indicated for years on maps and diagrams of all sorts which have been used to promote development plans for Center City, it can be inferred that the public only understands models. Now plans call for an underground tunnel along the Society Hill stretch of the expressway, which because of water conditions may cost as high as $70 million. The townhouses designed by I. M. Pei (*below left*) are slowly beginning to sell after standing empty for over two years. Eighteenth century townhouses are being privately restored according to plan.



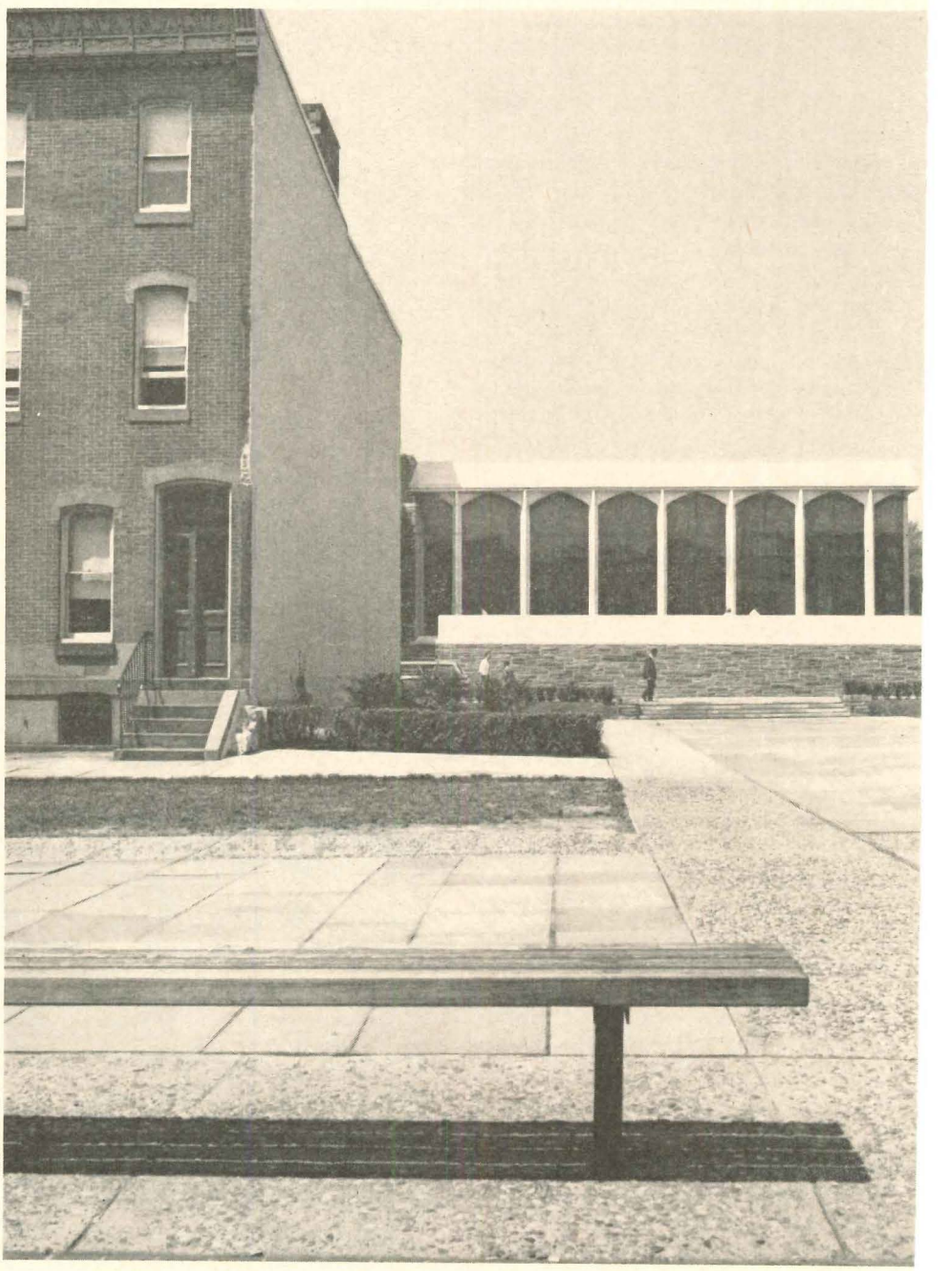


Urban Renewal for Institutional Expansion

placement of obsolete school buildings, development of parks and open spaces in over-built residential areas, and construction of public health centers to serve areas where services are inadequate must receive a higher priority for public expenditures than institutions which are able to draw on private resources and on foundations and on other levels of government for the funds they require for growth and expansion."

New Approaches

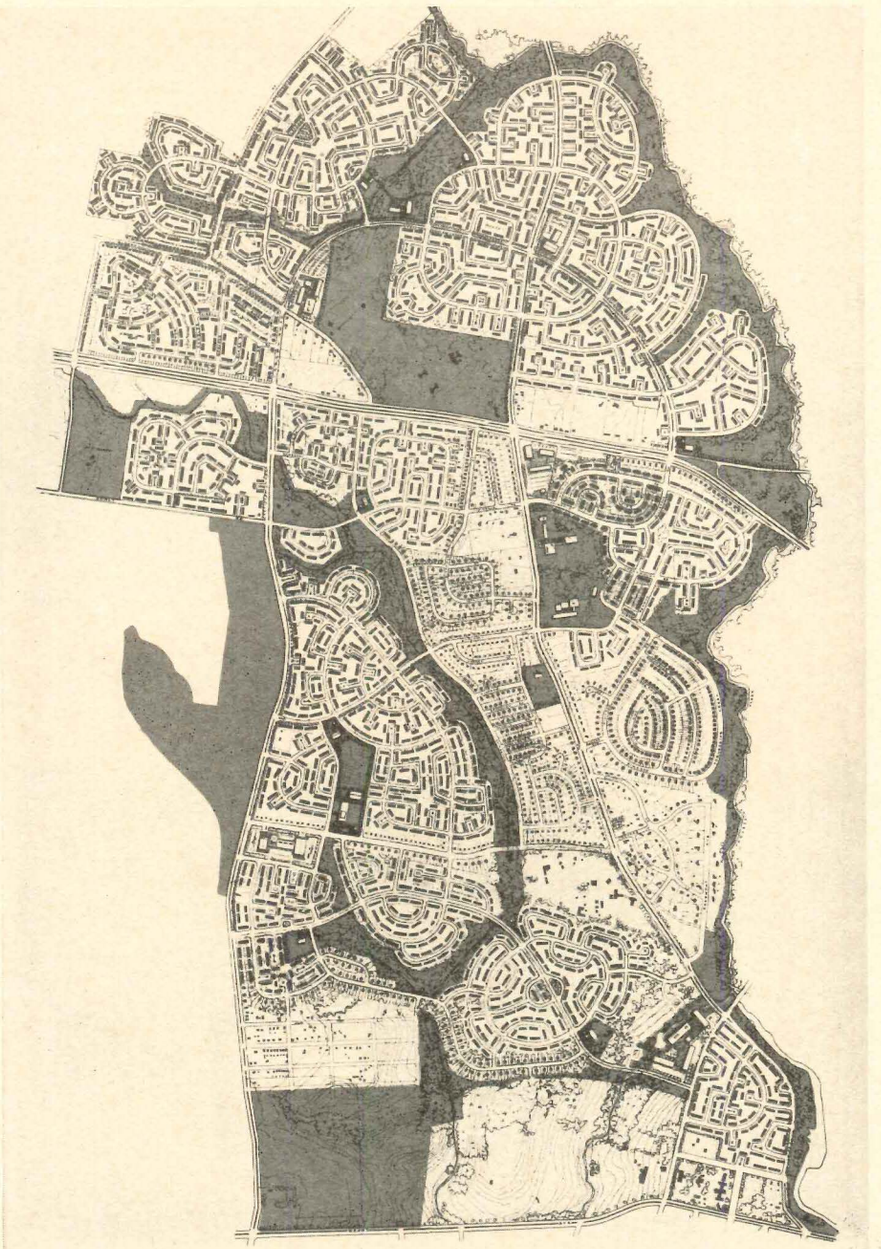
Planners at the local and Federal levels have learned much from the successes and failures cited above and have of necessity become more responsive to the public will. The growing civil rights movement is beginning to effect planning decisions. New legislative tools such as those embodied in the federal anti-poverty program are being developed to supplement existing renewal powers and cities like Philadelphia are using Federal Community Renewal Program grants to pay for more sophisticated, computer-aided research and data gathering methods, to assess past performance, and as a basis for better future decisions. These new planning strategies based on informed social analysis will be described in subsequent articles.



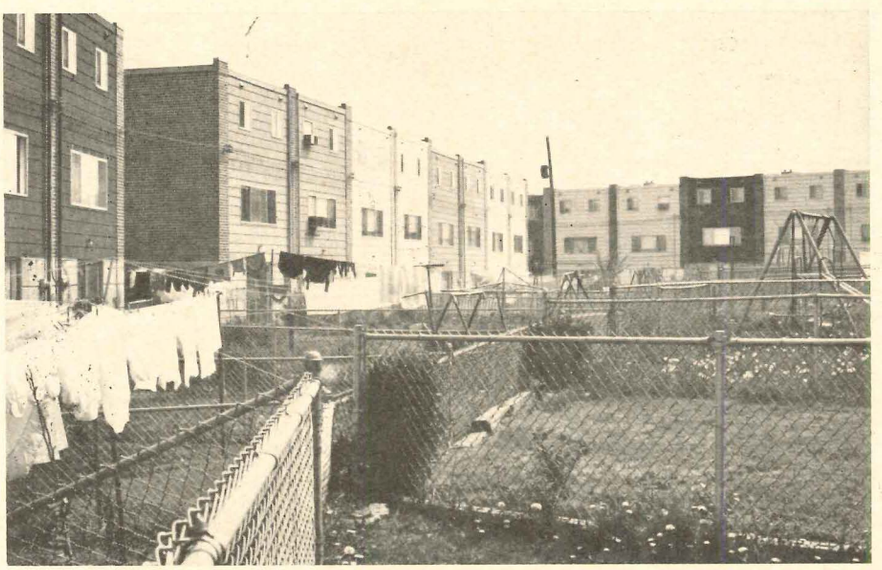
[1] William G. Grigsby, "Housing and Slum Clearance: Elusive Goals." *The Annals of the American Academy of Political and Social Science*, March 1964, pages 107-118.
[2] *Ibid.*
[3] *Ibid.*

Since 1959 the powers of urban renewal have been made available to institutions wishing to expand into adjoining slum areas. Temple University in North Philadelphia has made good use of this provision. In the photograph below a former street has become a campus green. New buildings are by Nolen & Swinburne, the landscape by George Patton.

A Close Look at a Cluster Plan



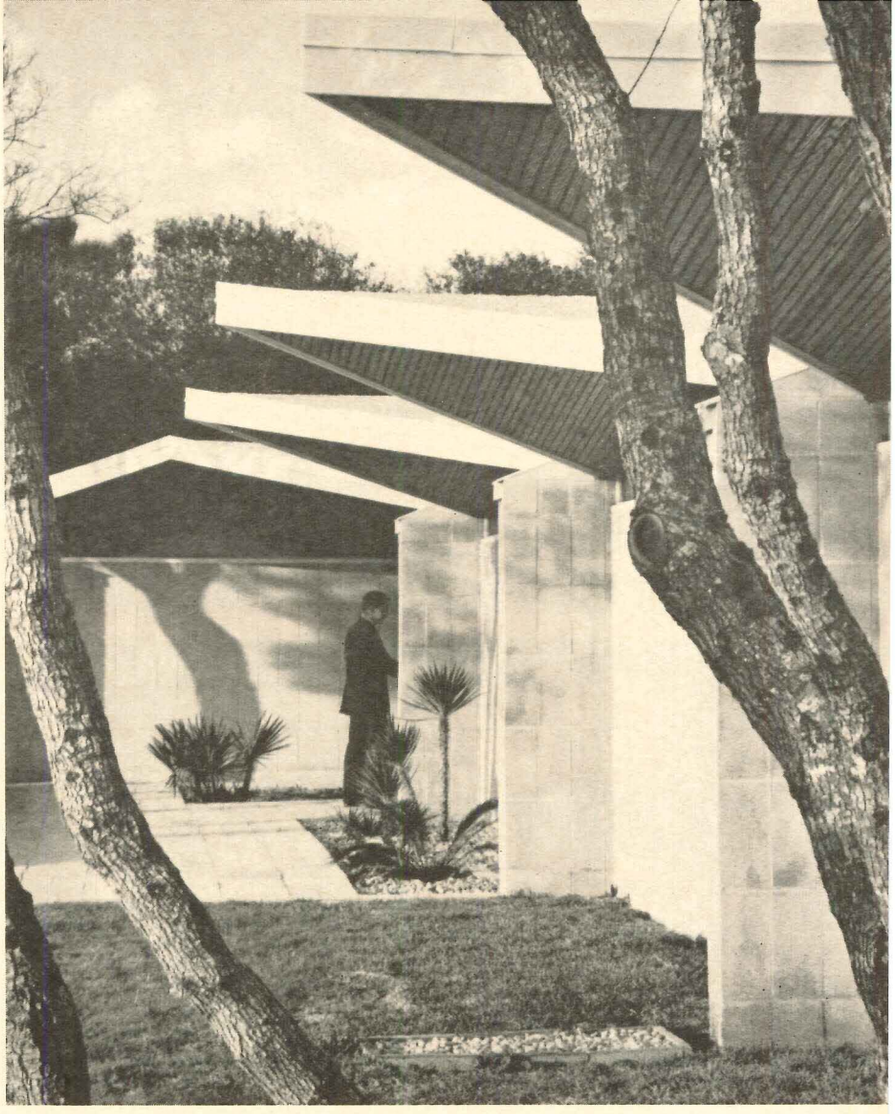
Philadelphia's Planning Commission followed the principles of cluster development in laying out subdivision plots for low cost private housing in the Far Northeast. In plan the curvilinear pattern is pleasing.



Viewed from the ground it becomes clear that standard builder's row house units don't take to curves. Owners of these $11,000-$13,000 three bedroom houses fence off their oddly segmented back yards destroying whatever common amenity a shared use of the open space could offer.

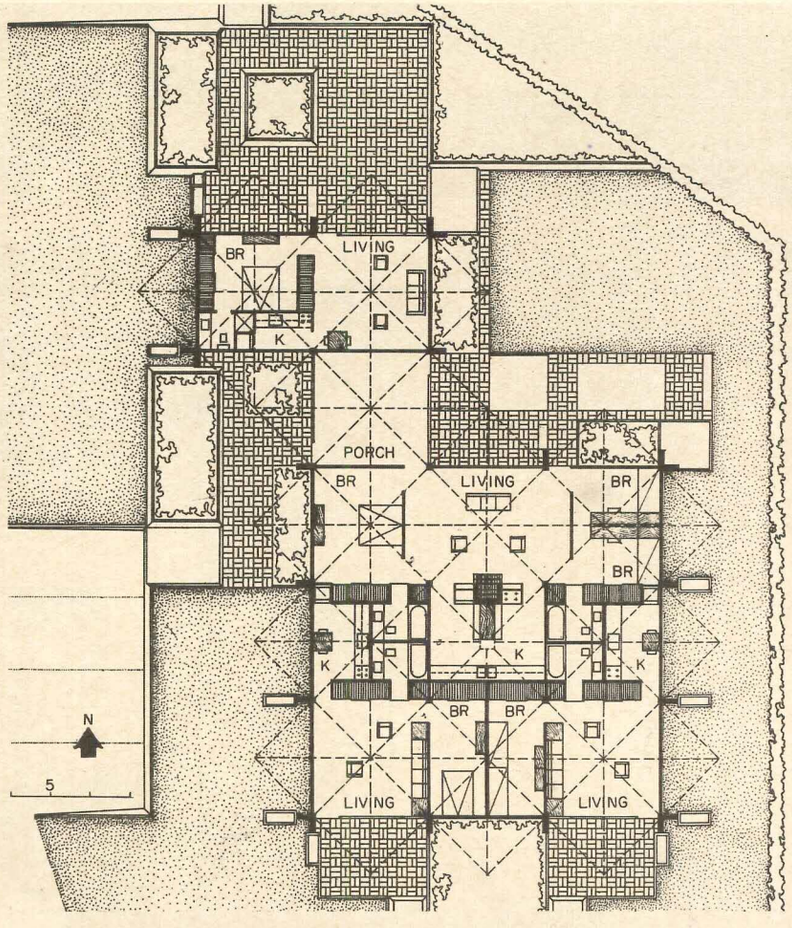
STARTING A SUCCESSFUL PRACTICE

Beginning a New Series on Young Architects Who Do Buildings of Notable Quality with the Work of William Morgan of Atlantic Beach, Florida

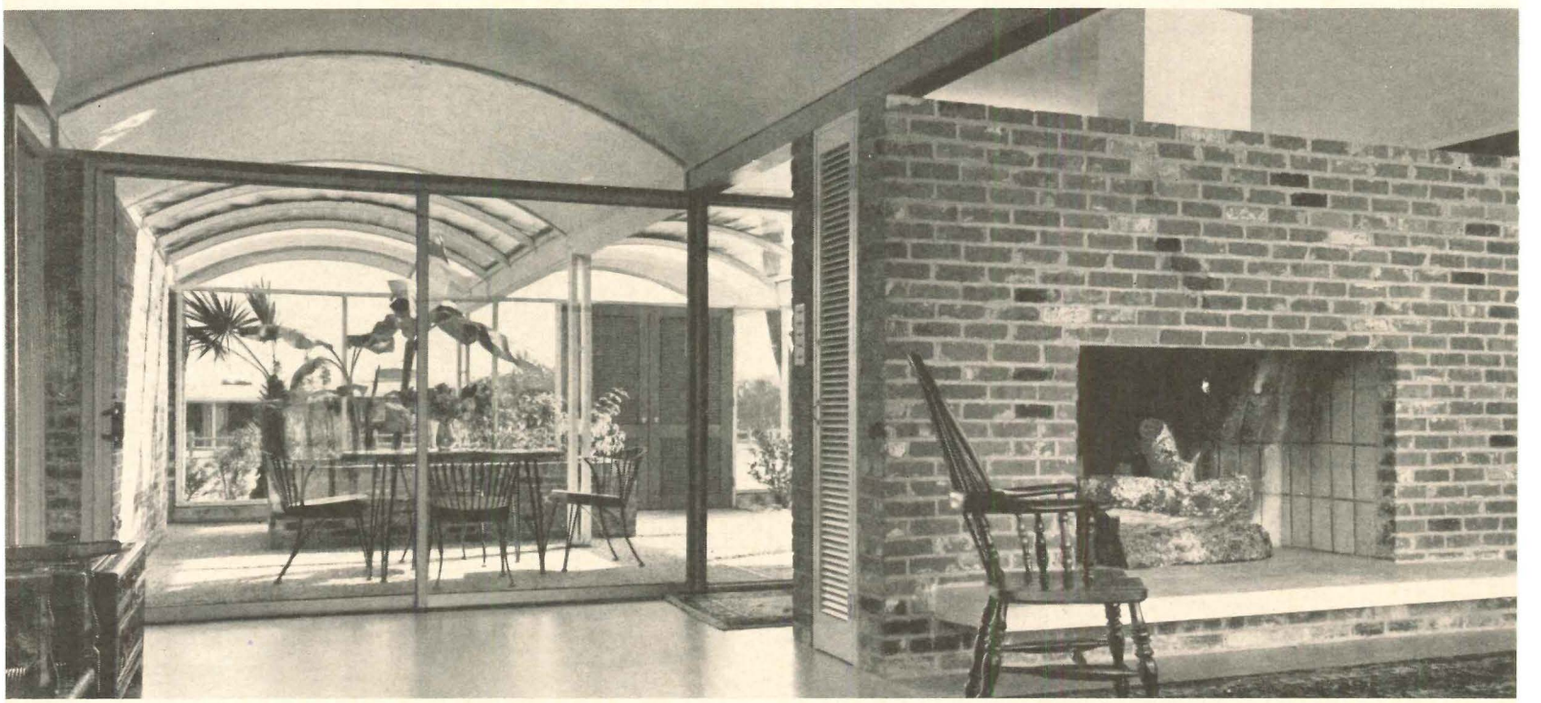


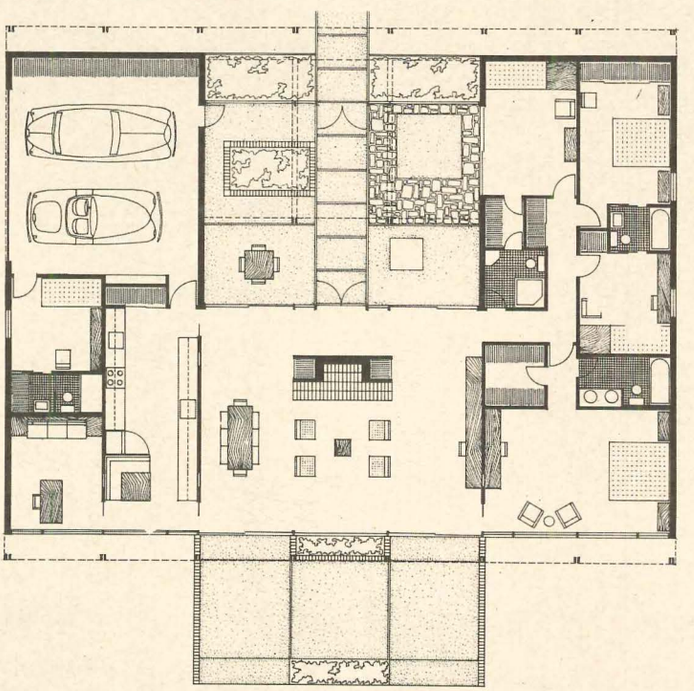
Many young architects would like to open their own offices as soon as they become registered, but most are deterred because they have no capital and no prospective clients. William Morgan of Atlantic Beach, Florida, had no capital and no prospective clients either; but four years ago he opened his own practice, and the result is the work that is pictured on these pages.

At the time he passed his registration exams, Morgan was working as a designer for a large Jacksonville office, and he was able to put together $3,000 of his own money and a $20,000 mortgage to finance building his own house. Instead of an ordinary house, however, he decided to put up the four apartments at the right, live in the largest one, rent two others, and use the fourth as an office. When the building was completed, and after the rental in-



WILLIAM MORGAN'S OWN HOUSE, APARTMENTS AND OFFICE, ATLANTIC BEACH, FLORIDA





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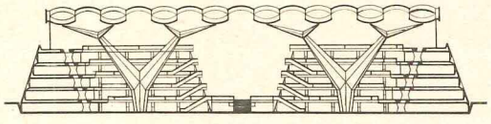
KNOBLOCH RESIDENCE, PONTE VEDRA BEACH, FLORIDA

come had been set against taxes, carrying charges and payments on the mortgage, he found that his house and office would cost him only about $30 a month. In addition, building such a successful property for $23,000 served as an advertisement of Morgan's abilities, brought in some prospective clients, and put his practice on the road to success.

William Morgan was originally a native of the Jacksonville area, but had lived in a number of different places in the northeast before attending Harvard College, from which he graduated in 1952. After service as a Navy officer in the Korean War and on Guam, Morgan returned to the Harvard Graduate School of Design to take his professional degree. While he was in architecture school, he worked for Paul Rudolph, who at that time had a Cambridge office, and, right after graduation in 1957, he spent a summer working for Smith, Hinchman and Grylls in Detroit.

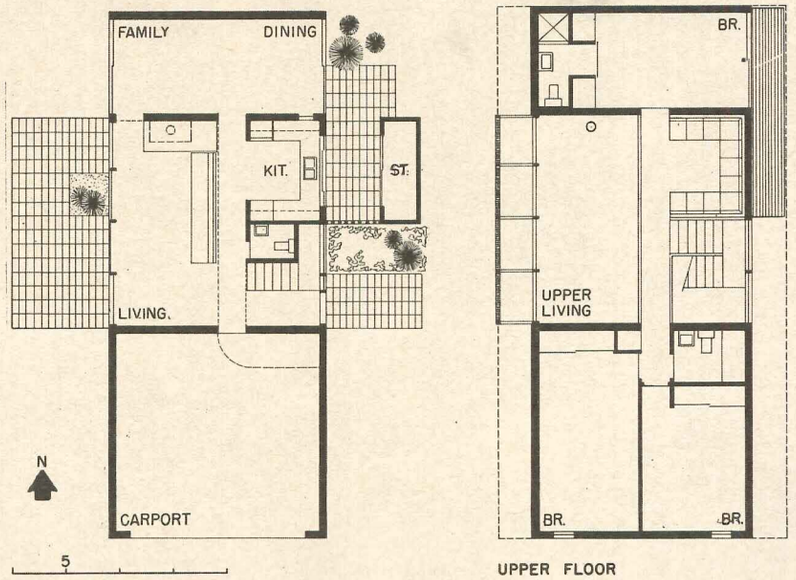
While he was still in school, Morgan found time to participate in the Toronto



City Hall competition with a group of his fellow students, and their design was one of the eight finalists.

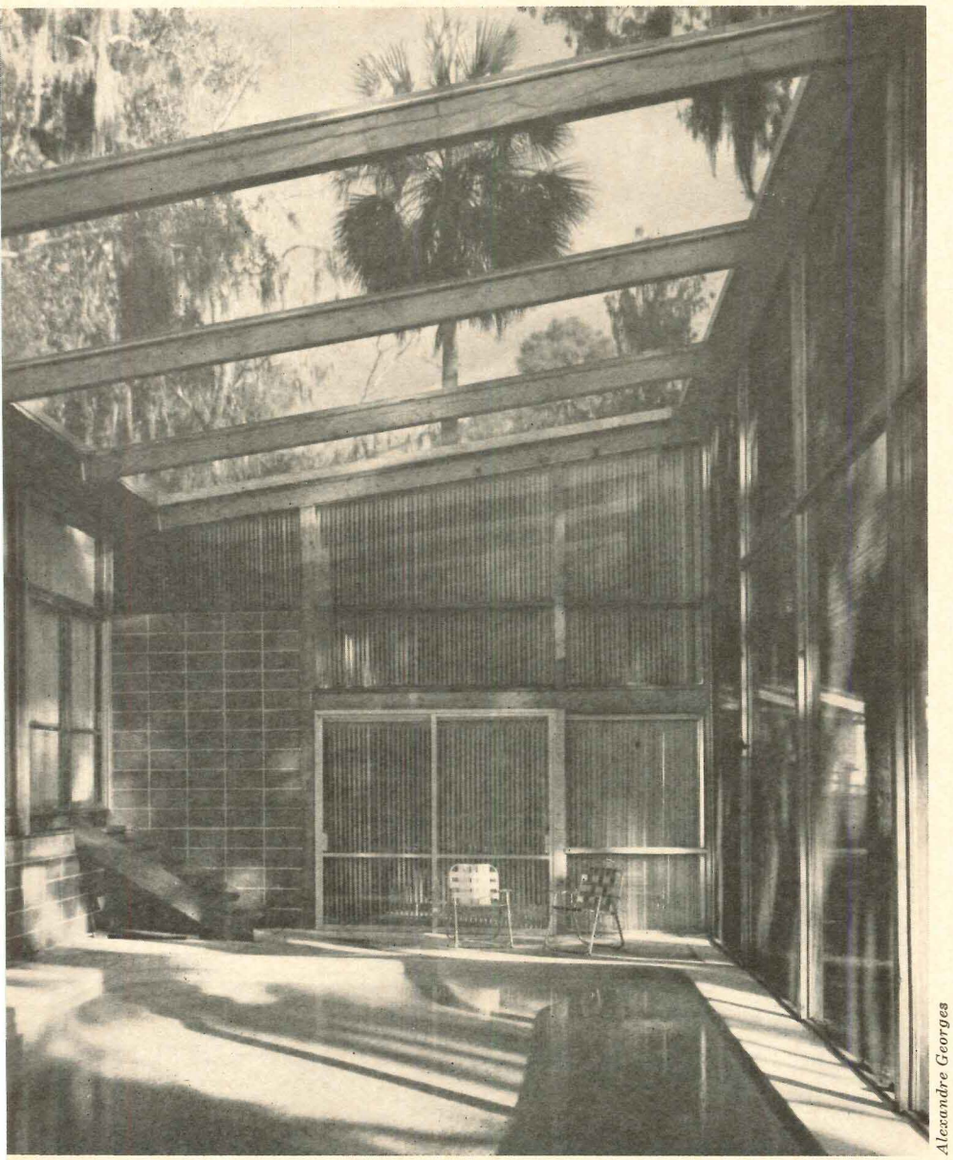
In the fall of 1957 the Morgans went to Italy for a year on a traveling fellowship awarded by Harvard. When they returned, after considering a number of offers and possibilities, they decided to settle in Jacksonville. This decision was already conditioned by the type of practice that Morgan intended to start. In all of his varied preparation, however, one of the most important aspects was probably a summer spent working as a carpenter's assistant while he was a teenager, because from somewhere (surely not from Harvard) he had acquired a just appreciation of how much things cost and how they are built.

Alexandre Georges photos

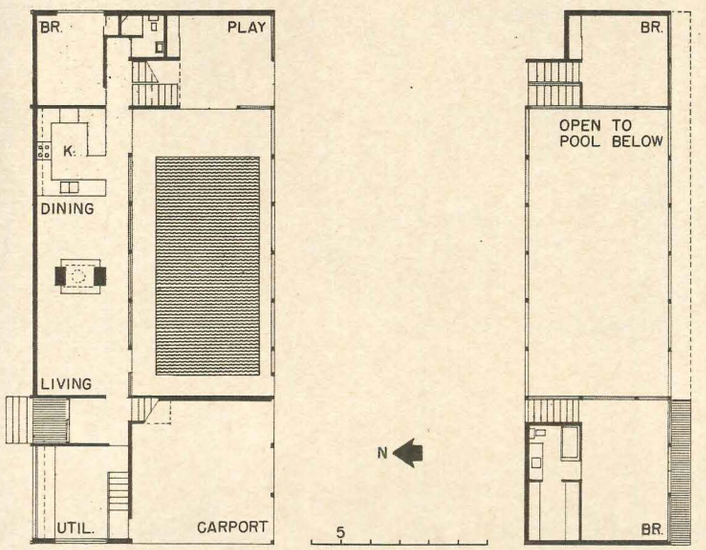


UPPER FLOOR

JAMES RESIDENCE, ATLANTIC BEACH, FLORIDA



Alexandre Georges



WILLIAMS RESIDENCE, JACKSONVILLE BEACH, FLORIDA

Man With a Hammer

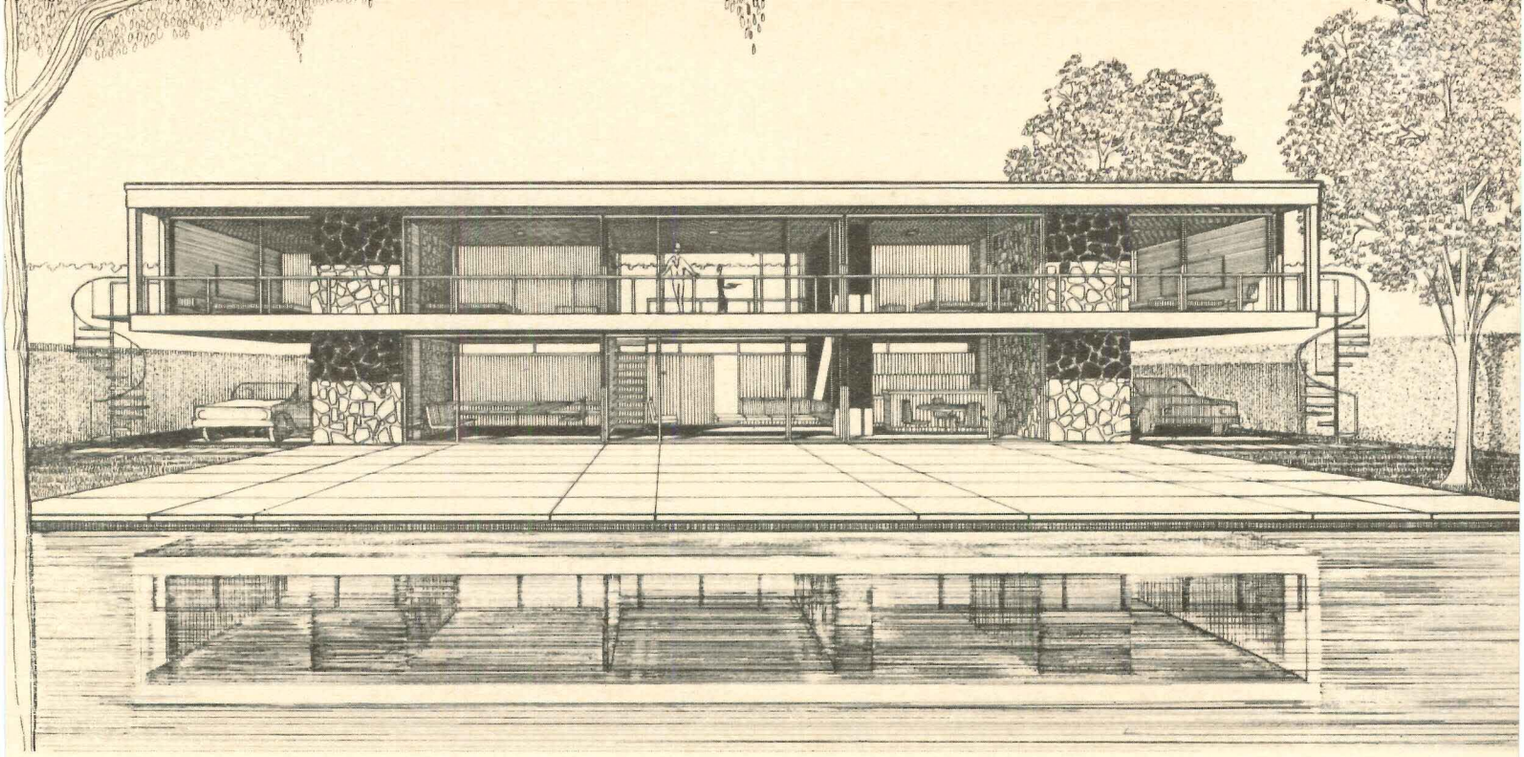
During the construction of his apartment, Morgan had opportunity to draw upon his talents as a carpenter. Obviously, anyone who builds an apartment house for $23,000 has to do quite a lot of the work himself. One of the interested spectators of the construction process was a man named James, who owned the property across the street. As Morgan says: "I guess when he saw me with a hammer in my hand, he figured this was a new kind of architect."

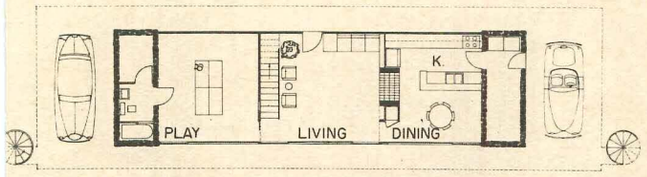
In the end Morgan designed a house for the Jameses. It had three bedrooms, one and a half baths, a kitchen, a dining-family room, and a two-story living room at a cost of $15,000. Of course, building construction is less costly in a warm climate, but this was still an impressive achievement.

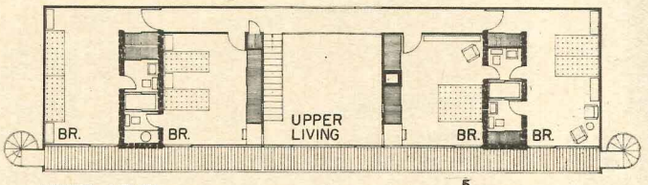
On the suggestion of Joseph W. Molitor, the architectural photographer, who was in the Jacksonville area photographing Paul Rudolph's Milam house, Morgan took some color slides of the James house and sent them to ARCHITECTURAL RECORD. As a result, the James house became an ARCHITECTURAL RECORD HOUSE of 1963 with attendant favorable local publicity and national interest in a house of such high quality built for so low a cost.

In the meantime, a local real estate appraiser who did not know Morgan personally had been impressed by his work and suggested his name to David G. Rawls, the executive director of the Jacksonville Port Authority, whose house had been destroyed in a fire. The new Rawls house was to be relatively large. A RECORD HOUSE of 1965, it ended by costing $37,000. While the Rawls house was being planned, Morgan received other house commissions: the Knobloch house, the Williams house (published in ARCHITECTURAL RECORD in August 1964) and the Williamson house, which the RECORD will publish in detail in the near future.

All of these houses pursue a consistent line of development, with a central







UPPER LEVEL

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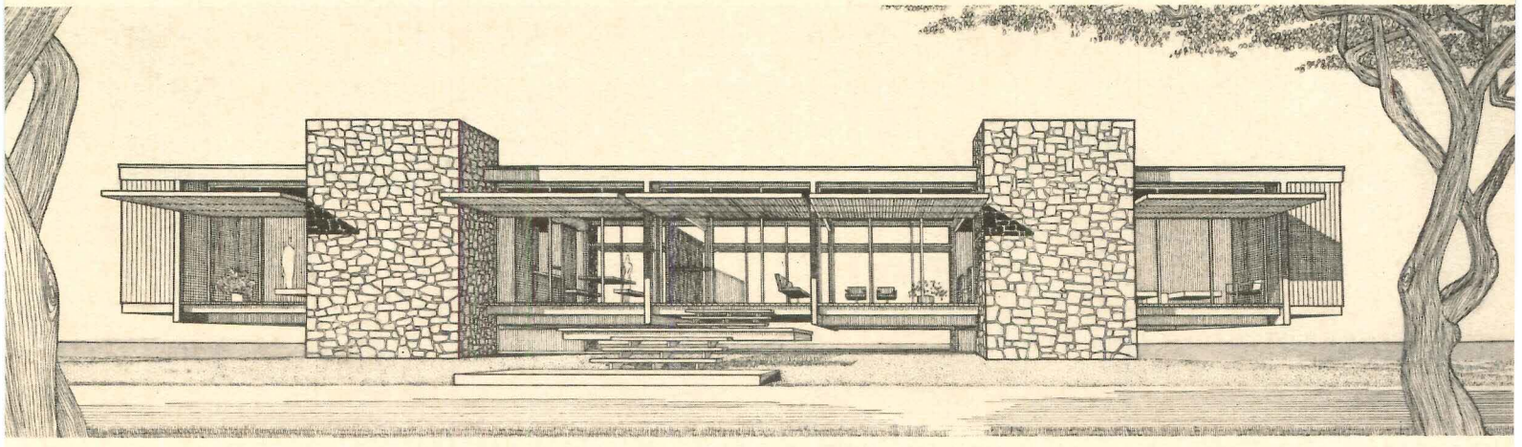
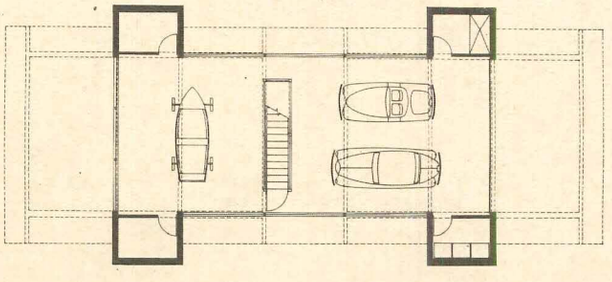
RAWLS RESIDENCE, JACKSONVILLE, FLORIDA





LOWER LEVEL

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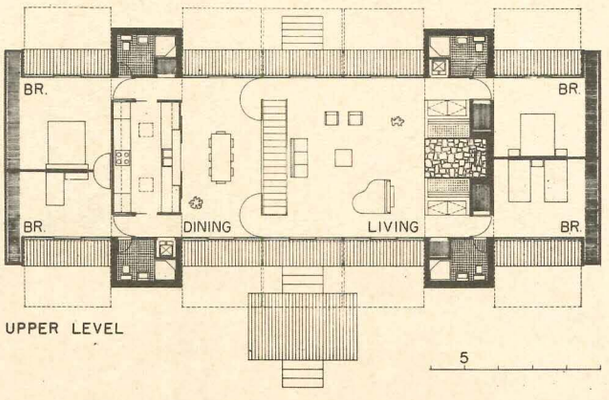

UPPER LEVEL

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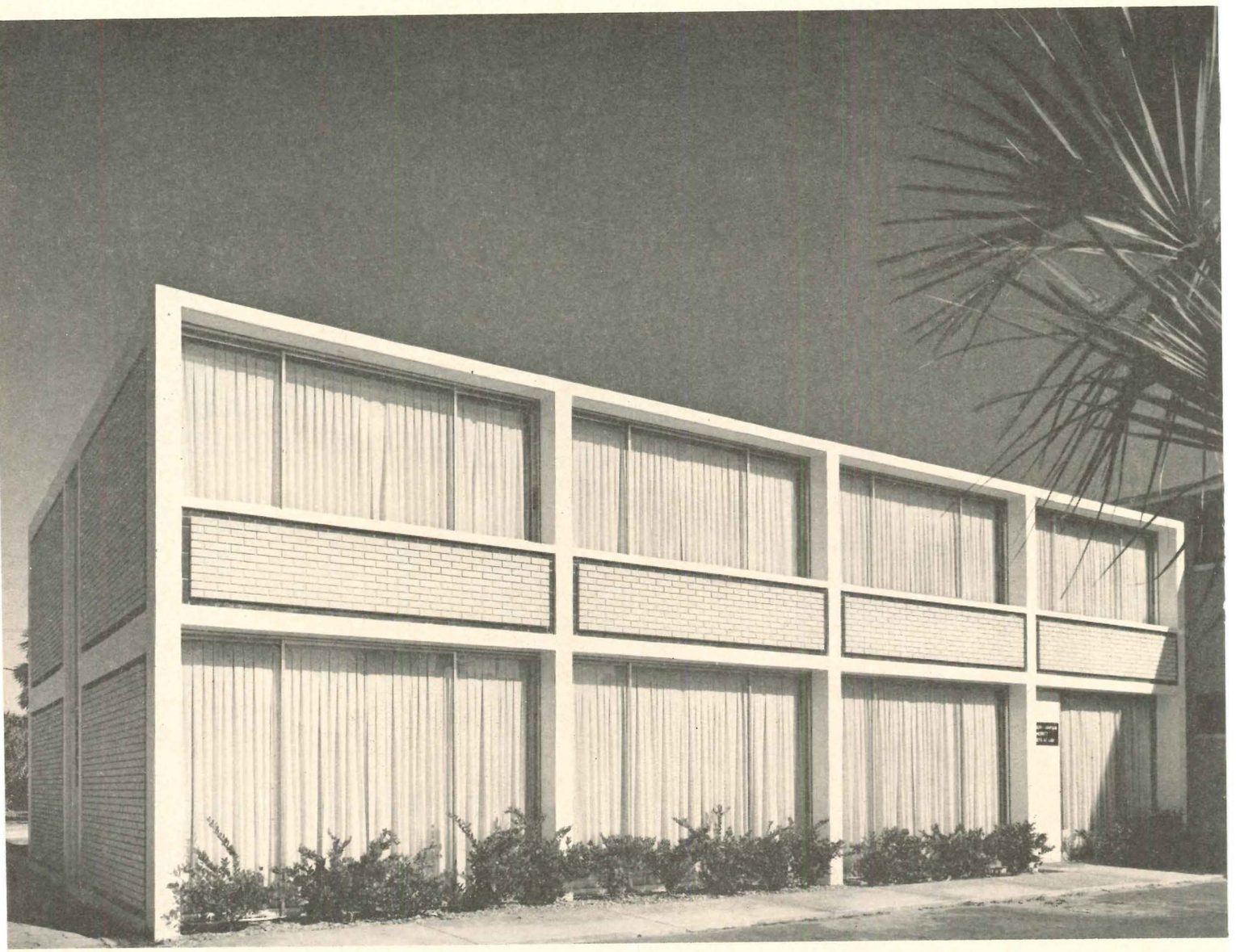
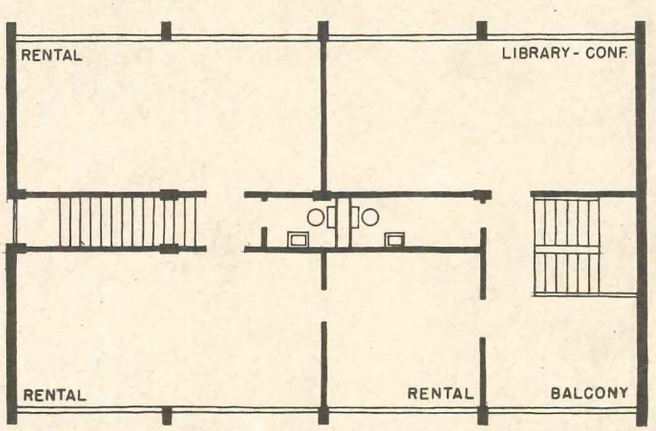
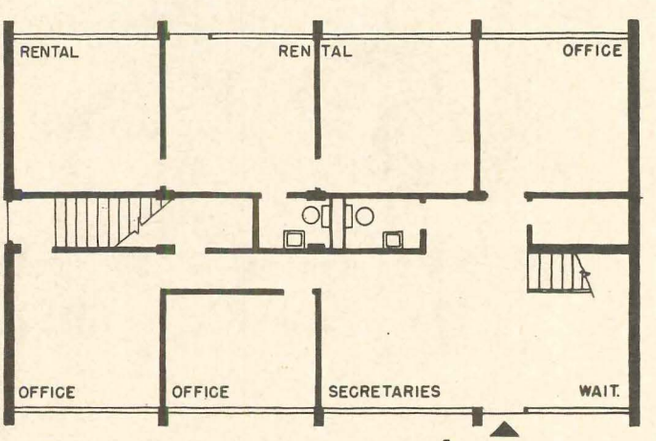
WILLIAMSON RESIDENCE, PONTE VEDRA BEACH, FLORIDA





SECOND FLOOR



FIRST FLOOR

MONTGOMERY, SIMPSON AND MERRIT OFFICE BUILDING, JACKSONVILLE BEACH, FLORIDA

living space—frequently of double height or extended, as in the Knobloch house, by a screened patio—compact utility cores and a generally symmetrical organization.

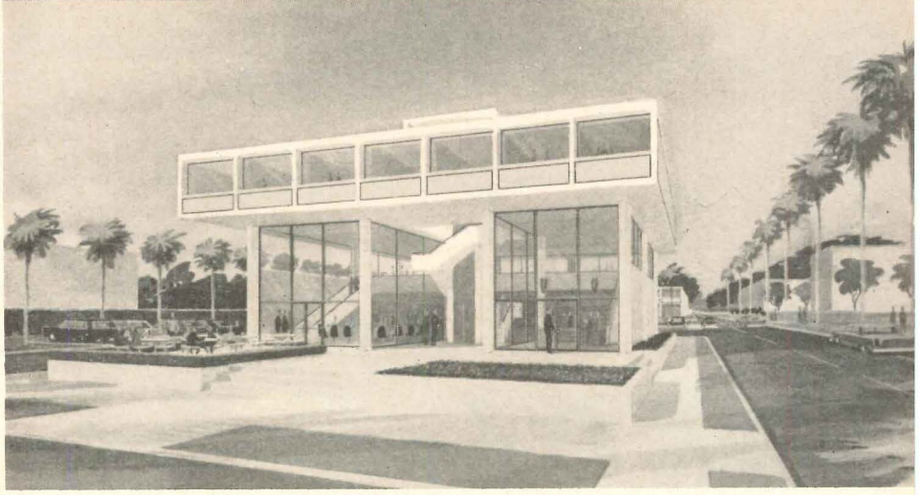
Office Buildings

The contractor for the Knobloch house had an attorney who needed a small office building, and the result was the neat and compact structure at left. This commission led in turn to the office building for Brundage Motors, the local Volkswagen distributor, which was built of tilt-up wall panels, and the offices for the Elk Oil Company, which had a tension roof. Neither of these last two buildings is as successful architecturally as Morgan's other work. He was clearly still feeling his way and lacked the sure touch displayed in his houses. Nevertheless, both buildings are greatly superior to the typical roadside specimen, done without benefit of architect, with which they are competitive in cost. Two other projects designed about the same time are more promising; another office building for the same client as the building at left, and the Community and Services Building, Mayport Naval Base.

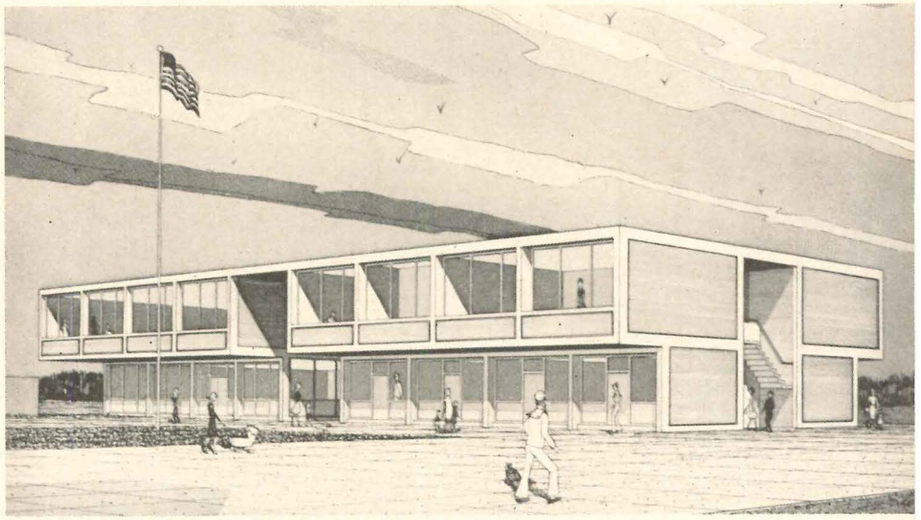
Taking Hold

By the time this point was reached, Morgan's practice was beginning to take hold, although it had not yet turned the corner financially. The children were old enough so that Mrs. Morgan could teach, however, and Morgan's Naval Reserve pay helped. He was able to employ two graduate architects, one of whom is registered; and, following his usual low overhead policy ("we have one drafting table and a whole bunch of packing crates with relatively level surfaces") tried to treat each commission as if it were the only one in the office.

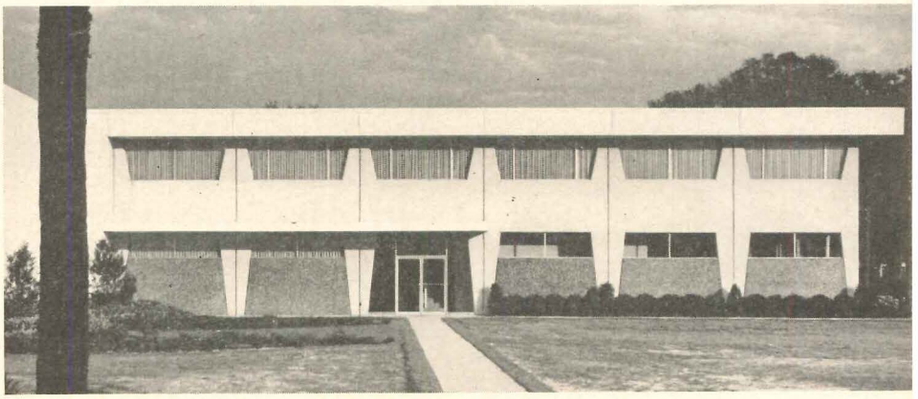
Learning from the example of Paul Rudolph, Morgan uses a fixed office



Project for office building, Jacksonville Beach, Florida

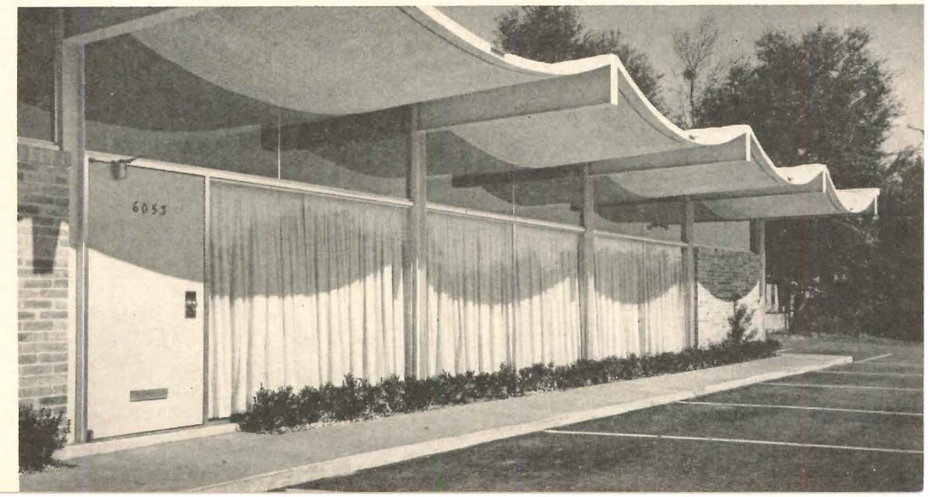


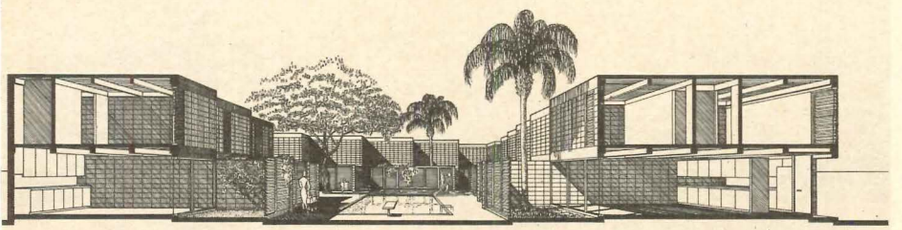
Community and Services Building; U.S.N.B. Mayport



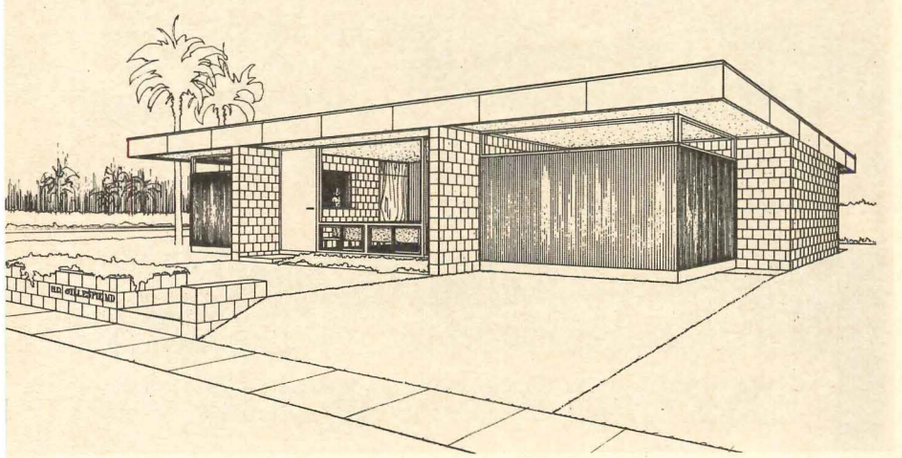
Brundage Motors Offices and Warehouse, Jacksonville, Florida

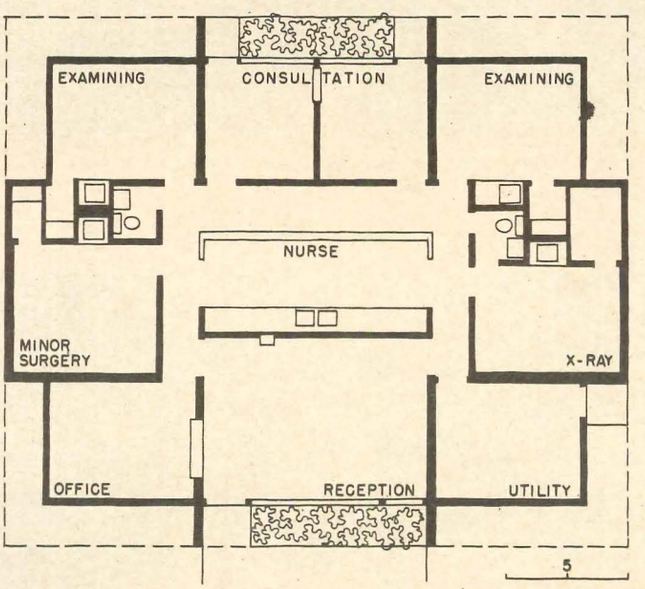
E.L.K. Oil Company Office Building, Jacksonville, Florida





LYDIA STREET APARTMENTS (FIRST VERSION), JACKSONVILLE, FLORIDA





GILLESPIE MEDICAL OFFICE BUILDING, JACKSONVILLE BEACH, FLORIDA

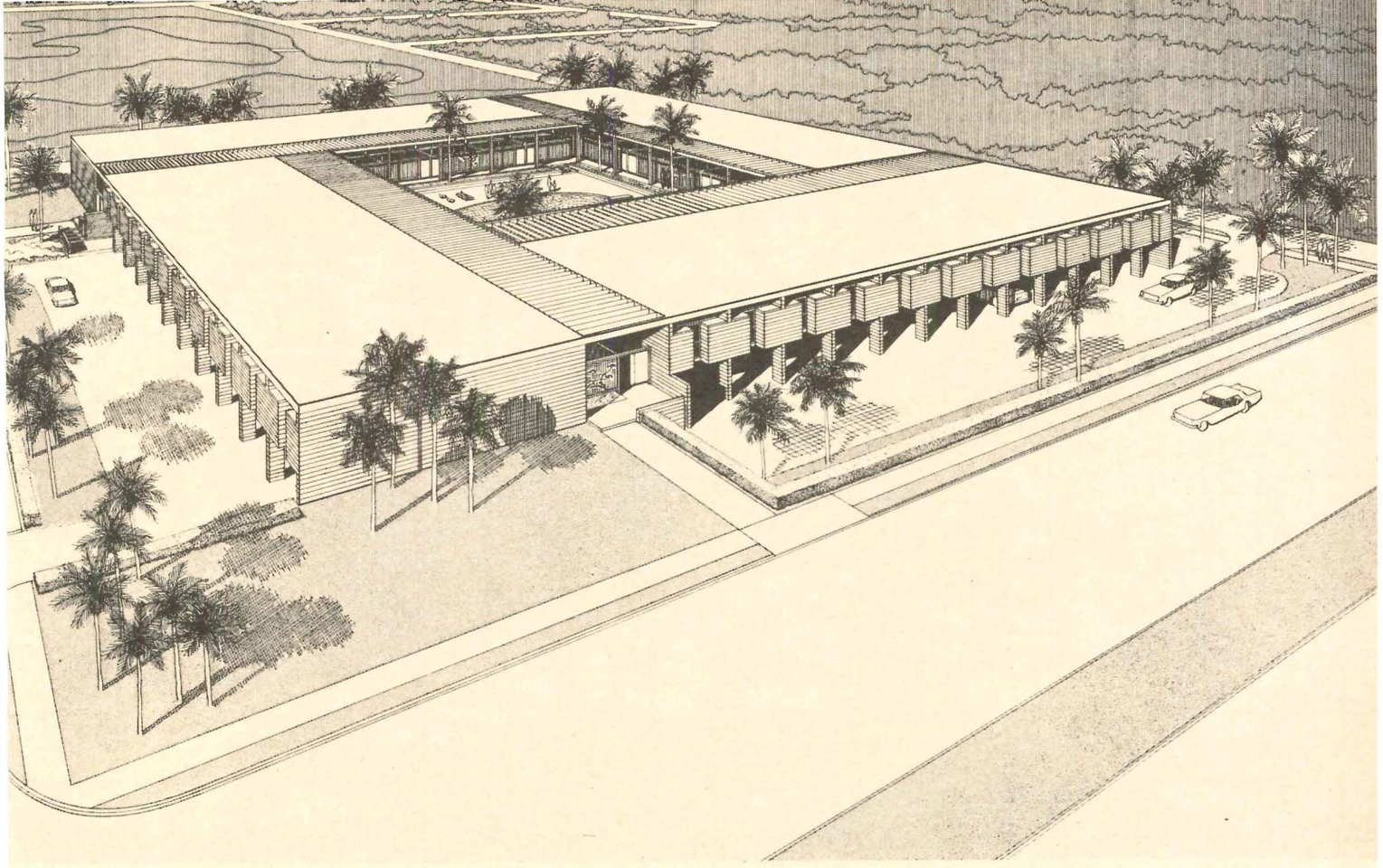
drawing standard, so that one man can take up a drawing where another man left off and automatically select the right pen or lead. The general office atmosphere is informal, however, and the Morgan living room frequently doubles as a reception area for clients.

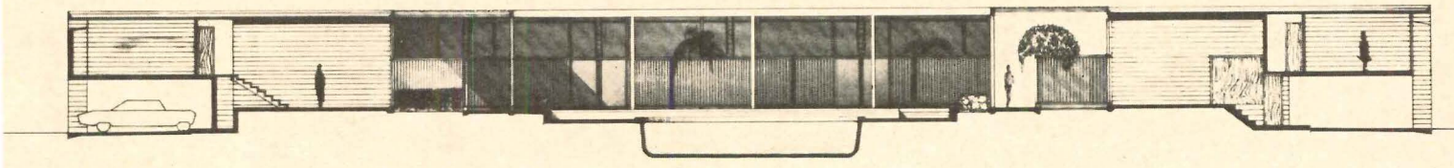
Larger Commissions

The larger commissions began to come in: the Lydia Street apartments, shown at left, which are now under construction in a somewhat reduced form; and the Neptune Gardens apartments shown at right. These two jobs in turn have led to a large hotel with a first-stage budget of a million dollars. In addition, Morgan has continued to turn out highly creditable work such as the Gillespie Clinic and the Hatcher house on the next page.

What It Was All About

William Morgan firmly believes that one does not build up an architectural practice solely to earn a living; in fact, up to this point at least, he figures that he could have made more money working for somebody else. Living as he does in a community with a dearth of large corporations hunting for "prestige" and few wealthy prospective house clients anxious to embark on the art market, Morgan must frequently design for clients who have never used an architect before and have a skeptical attitude about whether one is worth having or not. He has used his opportunities to make designs that are a positive contribution to the environment at different economic levels, solving large and small problems with equal attention. Because of his knowledge of costs and construction he is able to see his designs carried out as he envisaged them. A number of his new commissions have come to him through referral by building contractors, a rare compliment and proof that good design is indeed respected when it is accompanied by good sense.





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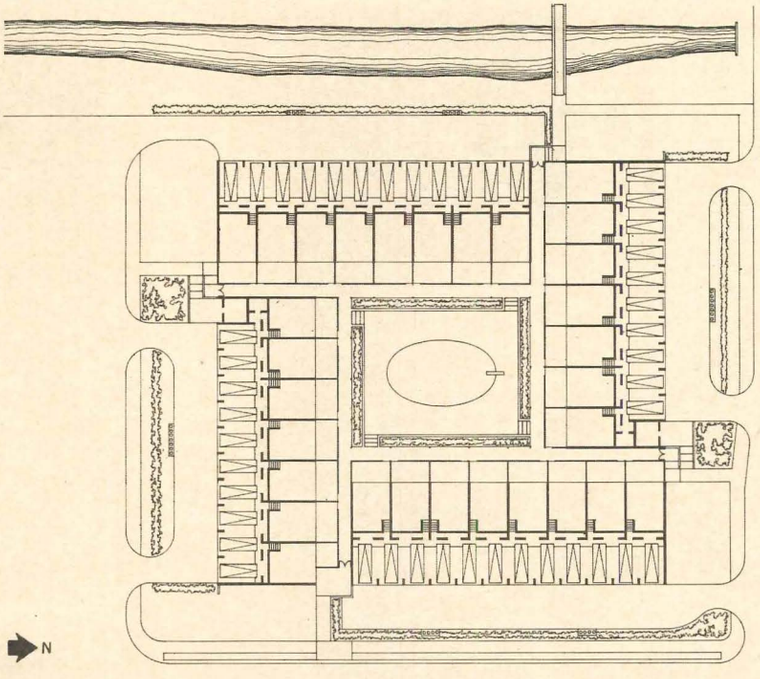

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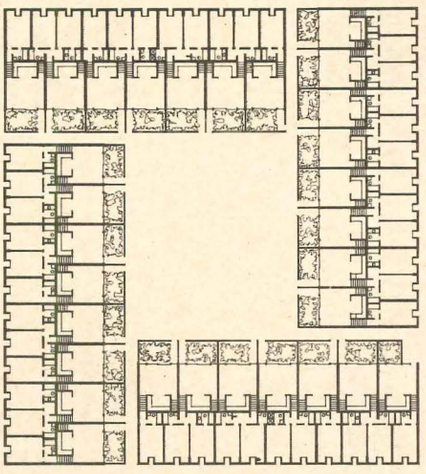
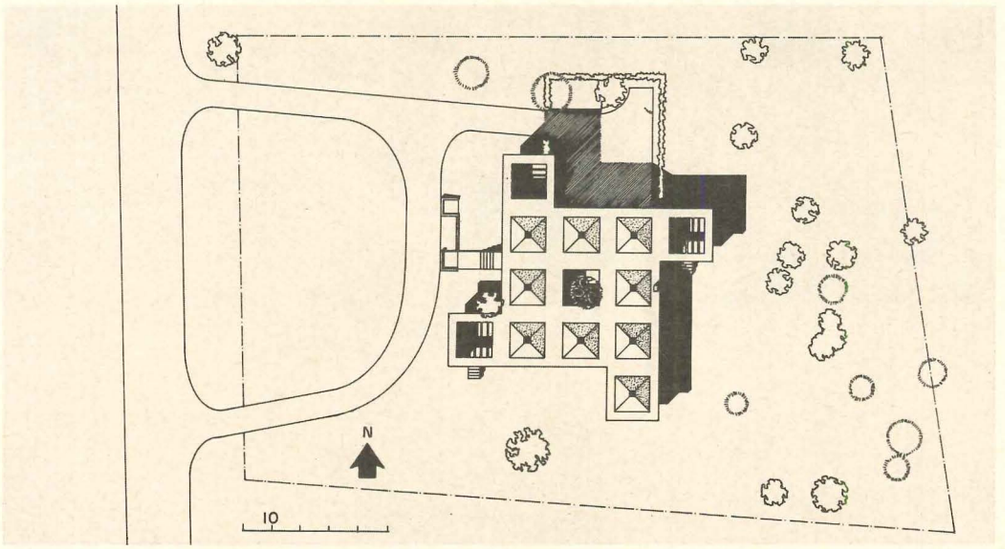
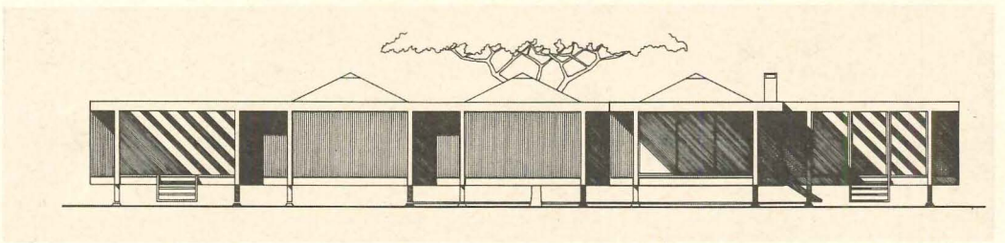


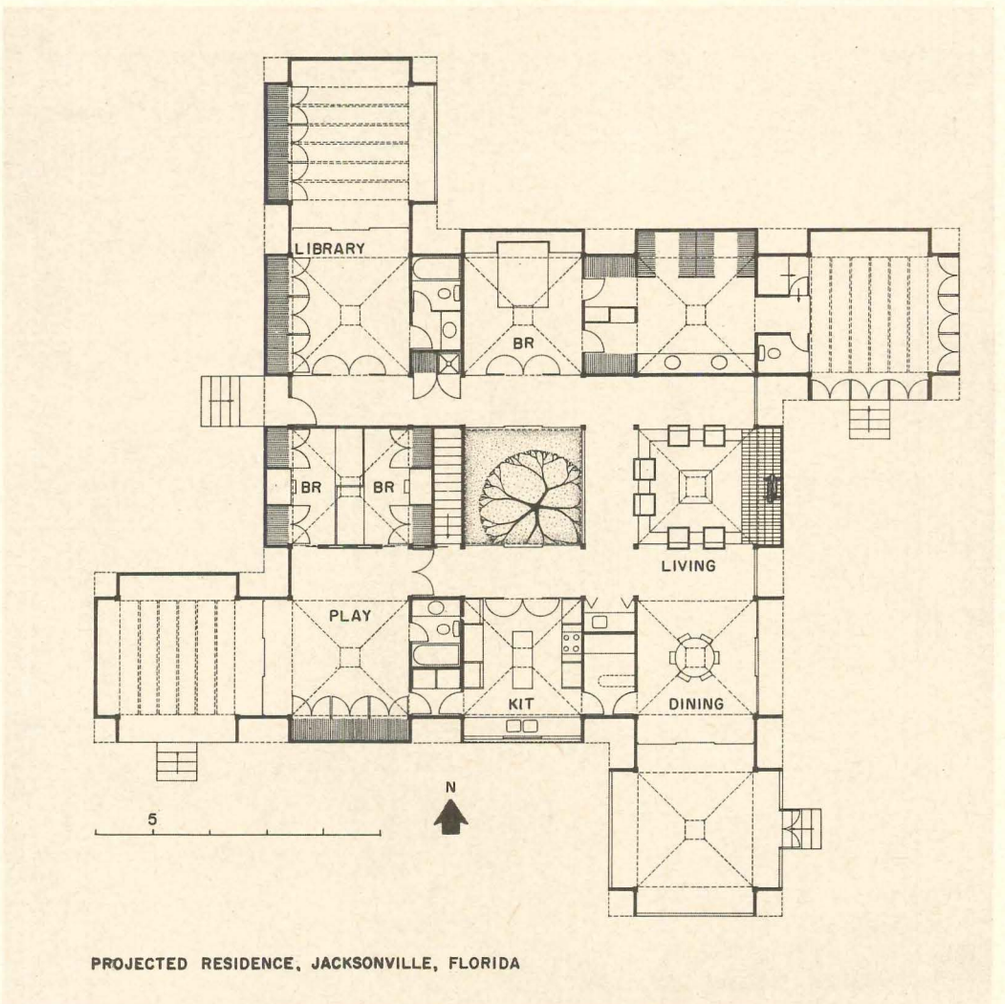
UPPER LEVEL

10

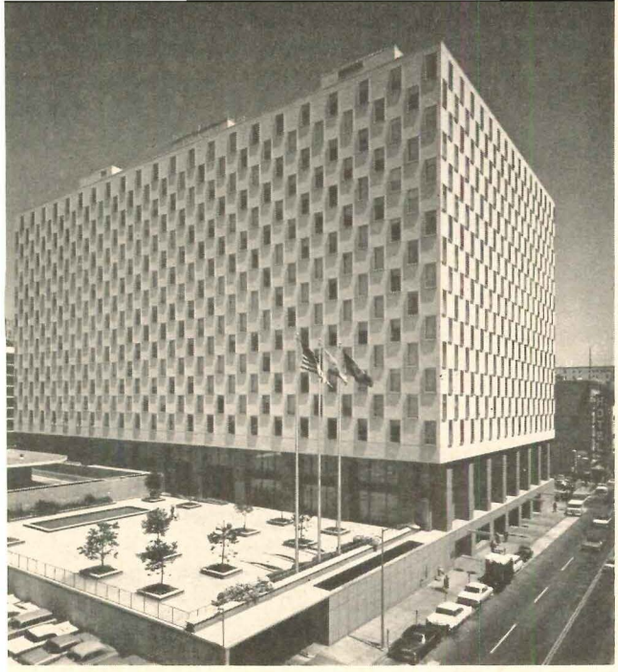
NEPTUNE BEACH APARTMENTS, FLORIDA







PROJECTED RESIDENCE, JACKSONVILLE, FLORIDA



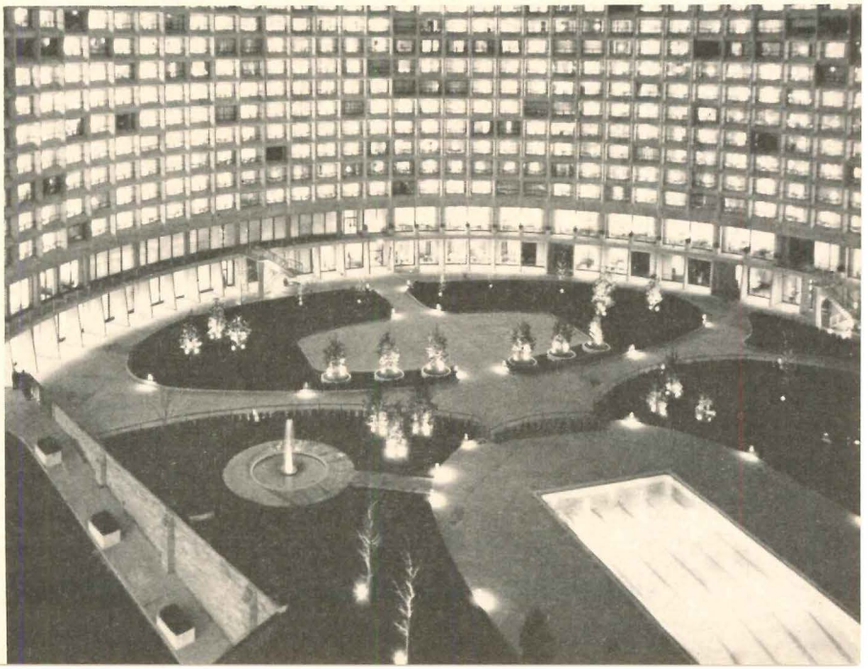
The San Francisco Hilton

The Washington Hilton

THE NEW BIG-CITY HOTEL

In the San Francisco and Washington Hilton Hotels,
with basic similarities of program and capacity
but marked differences in architectural solution,
William B. Tabler deals with the intensified complexities
of urban hotel design

Pools over parking: rooftop at San Francisco (*left*); ground level at Washington (*right*)



The big-city hotel in the United States today has had to respond to two kinds of demand: one for the familiar convenience of the motel; one for the great spaces and capacities required by more and bigger conventions. These demands have increased the size of public and service areas. Huge kitchens must be ready to serve in great variety to multiple dining areas. Huge ballrooms must accommodate thousands, not only guests in residence but those attending from outside. Huge garages must provide for more and more automobiles, resident and transient.

But the central fact of hotel economic life is that guest rooms provide the only really profitable area. Public and service areas, including food service, typically operate at a loss. They exist only to fill rooms with paying guests. To keep the big hotel solvent, then, the increase in service area has been offset by a corresponding increase in the number of rooms. Ratios of room area to total area of the big-city, convention-serving hotel have remained rather surprisingly constant.

Architects' problems in hotel design have changed more in degree than in kind. William B. Tabler, noted practitioner in the field for more than 20 years, observes, for example, that the traffic, noise and service problems of the two most recently completed 1,200-room Hilton Hotels in Washington and San Francisco are bigger and more complex than those of, say, the garageless, 455-room Hartford Statler-Hilton completed in 1954, but their solutions are extensions of the same architectural logic. The in-house garage, separately handled to accommodate both resident guests and those attending functions in a 3,000-capacity ballroom, obviously must have an effect on the structure, layout and appearance of the hotel. But there is nothing pat or predictable about that effect—nothing that could be labeled a structural trend—as the great cube of San Francisco and the gull-wing curves of Washington amply attest.

Similarly, area allocations for food storage and preparation change with the packaging and pre-preparation technology of the supply industries. Proportions of mechanical space change with engineering advances. Even the client's emphasis on one space or another may change as the effects of corporate ownership and experience are felt. Technology and economics, however, are not new in the experience of architects, and the impact of those factors on design is not greatly different in hotels than in other kinds of buildings.

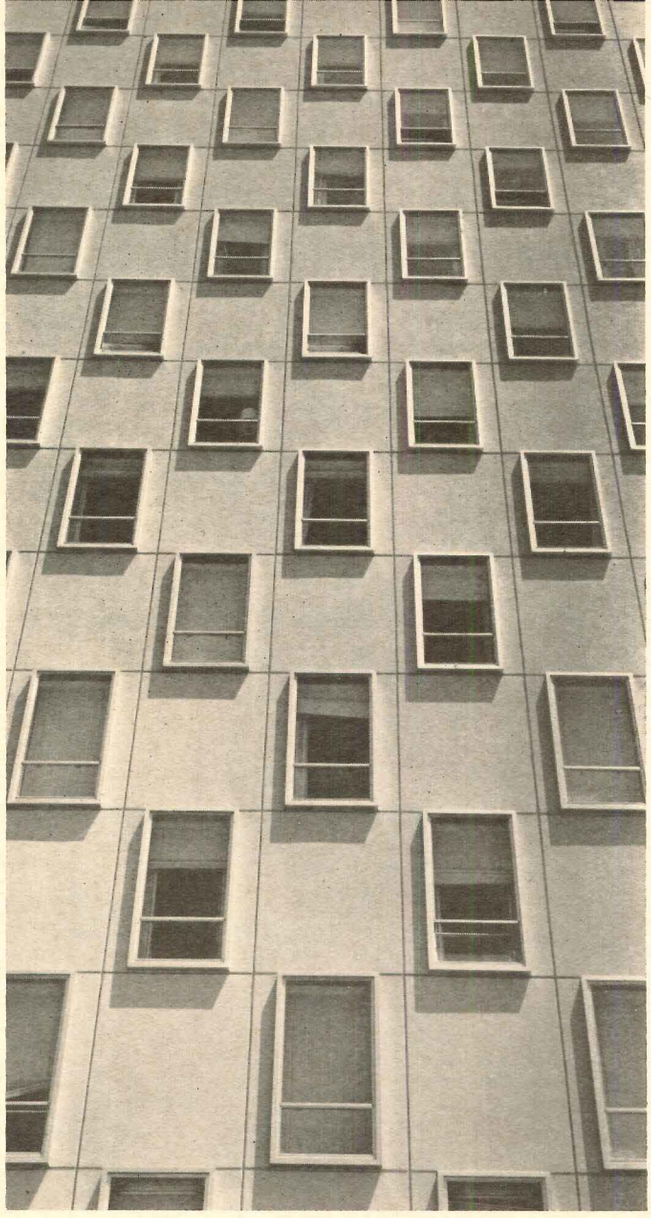
With these precautionary thoughts against undue extrapolation of old data to new design, Mr. Tabler offers a tabulation of about a decade of his designs for Statler-Hilton hotels and inns. Limited comparisons are permissible: the higher room ratios of inns (for obvious reasons); increasing total areas per room; less change than might be expected in the per cent of public and service areas in spite of the inclusion of garages in recent designs.

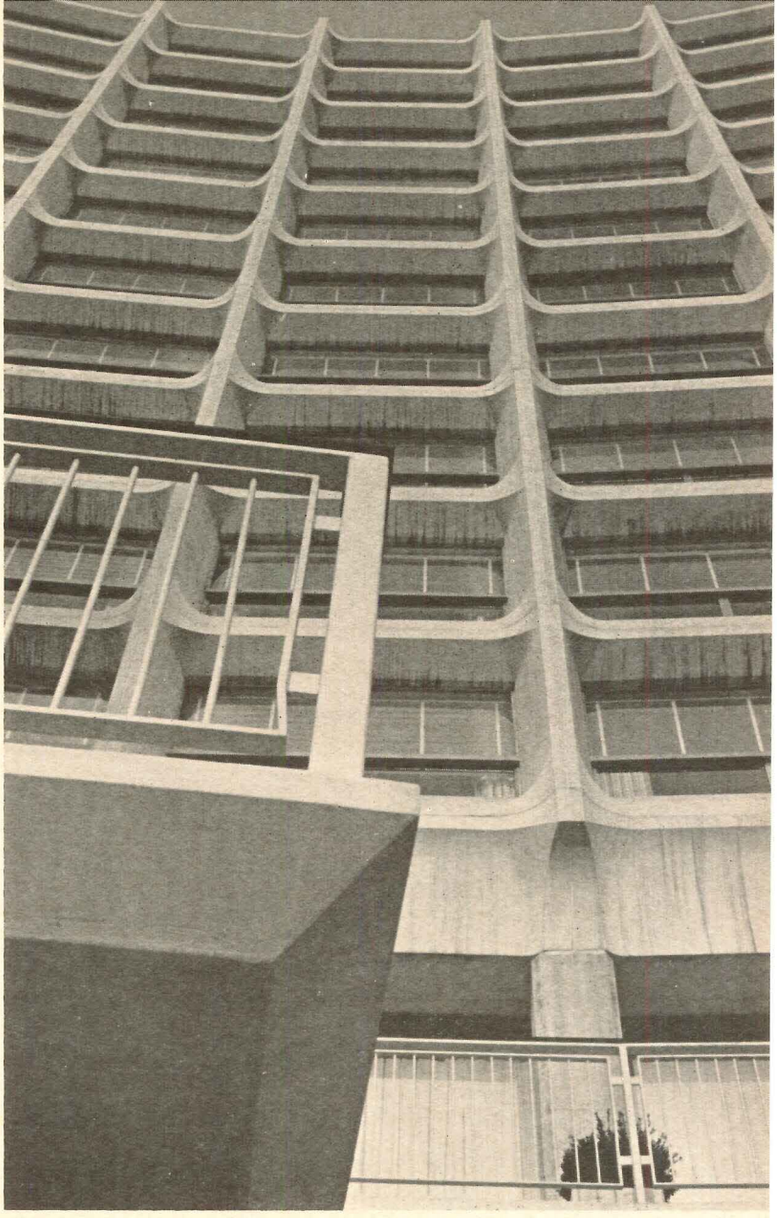
These percentages, it should be pointed out, are not in themselves design goals. They are the results of design solutions. At Hartford, for example, there is a ballroom of some 5,000 square feet plus about as much again in ancillary private dining and assembly spaces, but the real space eaters boosting the ratio to a seemingly up-to-date 51 per cent were probably the oversize fan rooms and shops that current practice might readily contract. Similar modifiers of figures in the table would develop with detailed study of each project. The gross figures in themselves are more useful, within their limitations, than a detailed catalog of dimensions.

HILTON HOTEL AND INN PROJECTS

Asterisk denotes service areas *including garage*

PROJECT	Completed	Number of guest rooms	Type of construction	Gross areas (sq ft)			Area per room		
				Guest rooms (% of total)	service areas (% of total)	Total	On all rooms	On public and service area	Total
STATLER-HILTON HOTEL, Hartford, Connecticut	1954	455	reinforced concrete	146,000 (49%)	151,000 (51%)	297,000	321	331	652
STATLER-HILTON HOTEL, Dallas, Texas	1956	1,001	reinforced concrete	354,750 (59%)	246,333 (41%)	601,000	354	246	600
HILTON, INN San Francisco Airport, Calif.	1959	304	wood construction	128,000 (86.7%)	19,500 (13.3%)	147,500	421	64	458
HILTON HOTEL, Pittsburgh, Pennsylvania	1959	815	reinforced concrete	311,000 (64%)	176,000 (36%)	487,000	382	215	597
HILTON INN, Tarrytown, New York	1961	208	main: steel constr. guest: wood constr.	88,000 (71%)	35,000 (29%)	123,000	423	168	590
HILTON HOTEL, New York, New York	1963	2,200	steel frame	929,500 (62.5%)	556,500 (37.5%)	1,486,000	423	252	675
HILTON INN, Montreal Airport, Canada	1963	300	main: reinf. concrete guest: bearing wall	119,000 (71%)	49,000 (29%)	168,900	399	161	560
HILTON HOTEL, San Francisco, California	1964	1,200	reinforced concrete	439,250 (42.5%)	593,750* (57.5%)	1,033,000	366	495	861
HILTON HOTEL, Washington, D.C.	1965	1,250	reinforced concrete	467,000 (44.5%)	578,000* (55.5%)	1,045,000	374	463	836





Karl H. Reik (San Francisco) and Norman McGrath (Washington) photos

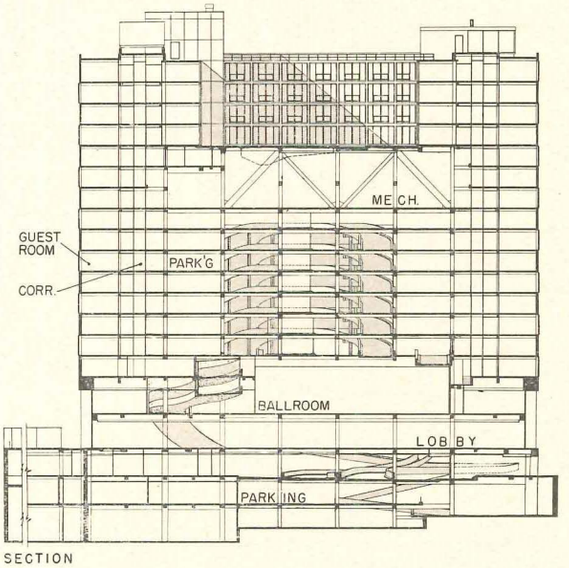
THE SAN FRANCISCO HILTON. A checkerboard pattern of windows permits criss-cross diagonal reinforcement of poured concrete walls to withstand tremors of earthquakes. Aluminum window frames project four inches to generate shadow pattern.

THE WASHINGTON HILTON. Some 1,800 precast, white-aggregate shadow boxes form the outer walls of guest wings. Uniform radii of wings required only two casting shapes, one front and one rear, except where wings meet in the back.

SAN FRANCISCO vs. WASHINGTON: A reinforced concrete, 18-story, anti-earthquake cube on a block-size plot in San Francisco houses a motor-oriented, big-ballroom, convention hotel markedly similar in program and capacity to the pre-cast panel, 10-story, curved-wing Hilton on a five-acre site in Washington, D.C. Gross areas and ratios are shown in the table opposite. A few comparable space allocations in square feet are:

	SAN FRANCISCO	WASHINGTON
boiler room	4,500	4,407
food storeroom	1,500	1,704
bakery	2,000	2,230
main kitchen	8,000	10,619
banquet kitchen	7,000	9,573
ballroom	20,000	30,000
garage (cars)	587	600

The dramatic, physical differences between the two hotels generate naturally out of their locale, site limitations, construction ordinances and expected clientele. In Washington, there is a 90-foot height limitation, but construction underground is not counted against the restricting site occupancy ratio. Hence, the ballroom, exhibition space and parking garage were spread out in a three-level underground structure topped by two street-level plazas which are embraced by semi-circular 10-story wings of guest rooms. In San Francisco, anti-earthquake construction on a small city plot dictated a higher, more rigid structure, with seven layers of room-side parking suspended over the ballroom in the core of the building. A clue to expected clientele may be seen in the ratios of single rooms: 12 per cent in San Francisco; 26 per cent in Washington. Or in the beverage storerooms; 1,750 square feet in San Francisco, 4,224 in Washington—for an international selection of vintage wines!



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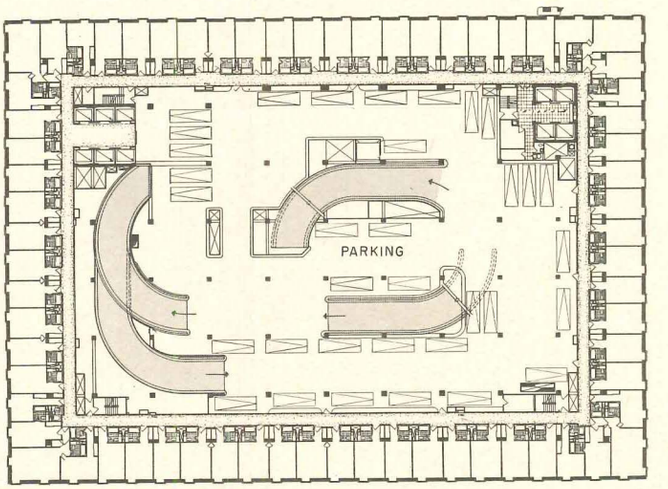
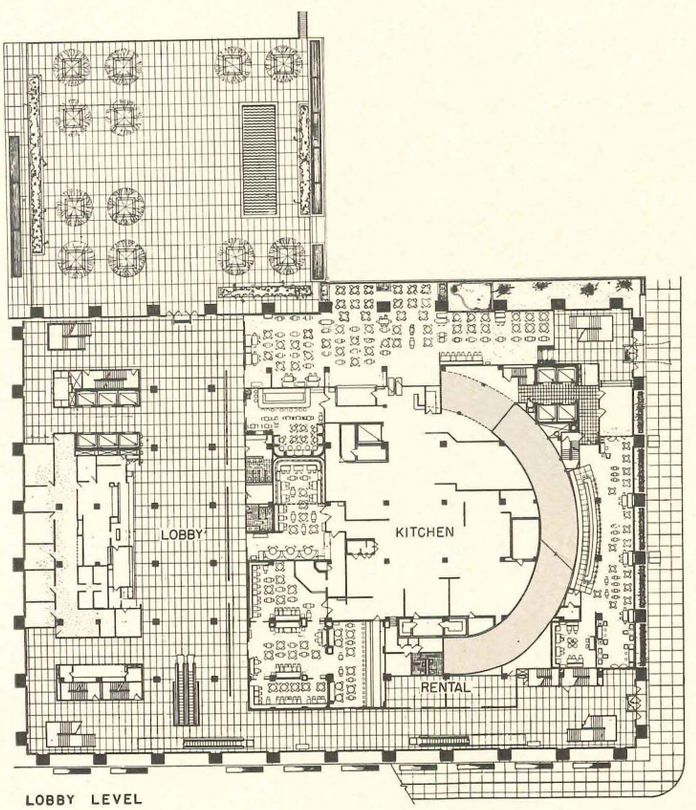
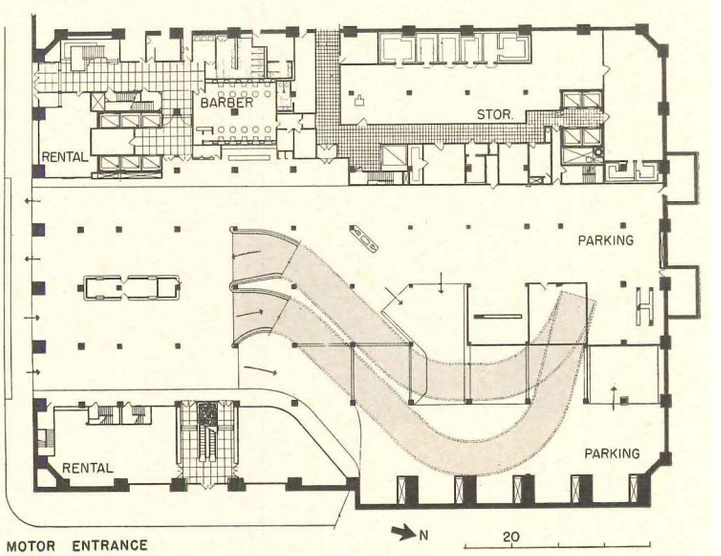
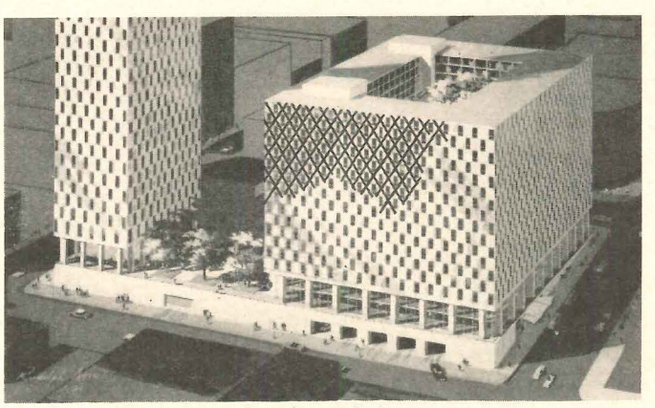


5TH FLOOR & RAMP PLAN

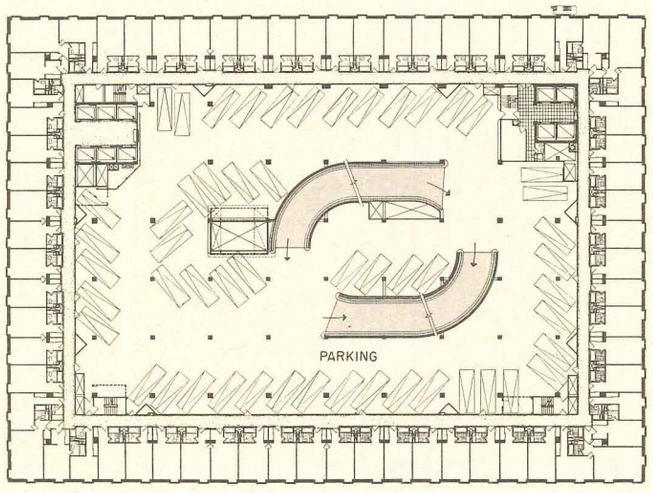


LOBBY LEVEL

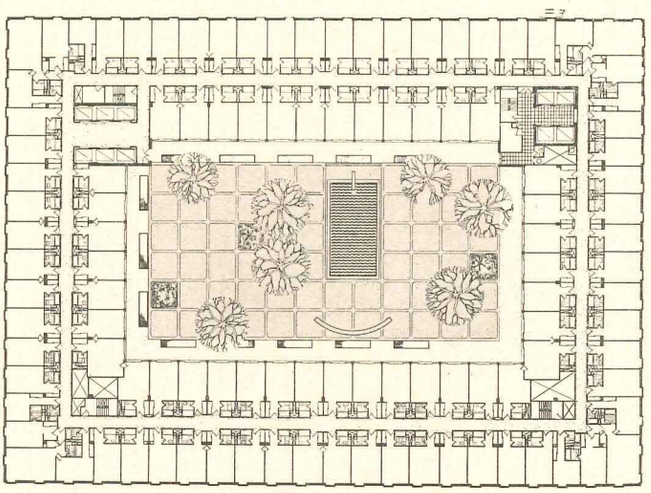



Rendering shows cross-bracing reinforcement

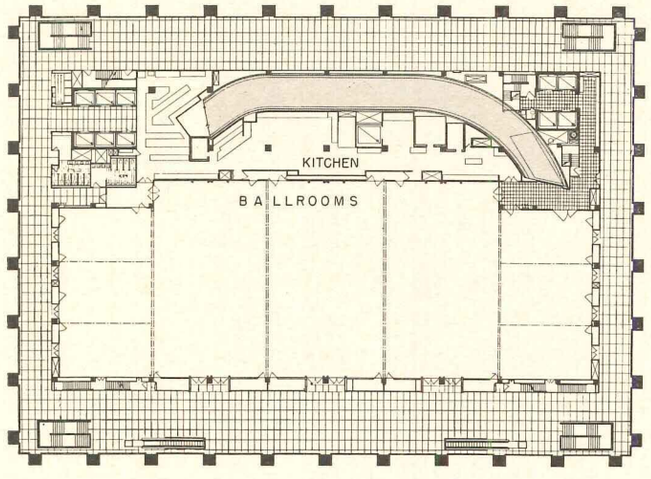
THE SAN FRANCISCO HILTON was conceived as a large downtown hotel with complete convention facilities and also as a motor hotel with self-parking and a swimming pool to compete with local motels. Since the convention-size (20,000-square-foot) ballroom would take up a considerable portion of the less-than-block-size plot, and since no guest rooms would be on the same level or directly above the ballroom, the scheme shown in the drawings above was developed. The ballroom was placed above the street-level lobby in the center of the plan; and ramps lead from the street level around the ballroom to seven levels of guest parking above the ballroom. Guest rooms are



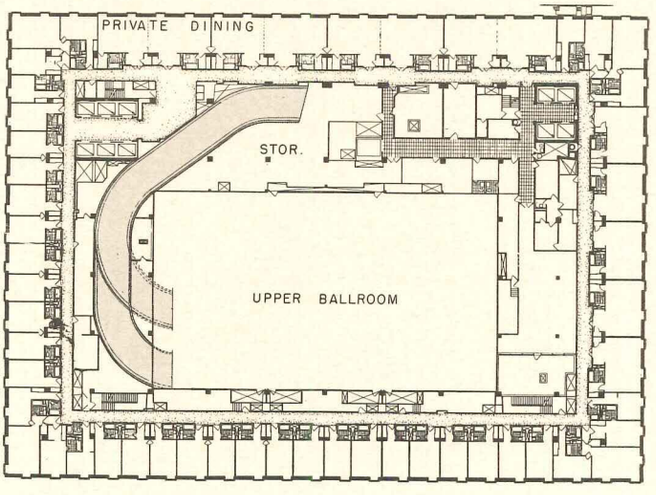
6TH, 8TH, & 10TH FLOORS



16TH FLOOR



BALLROOM LEVEL



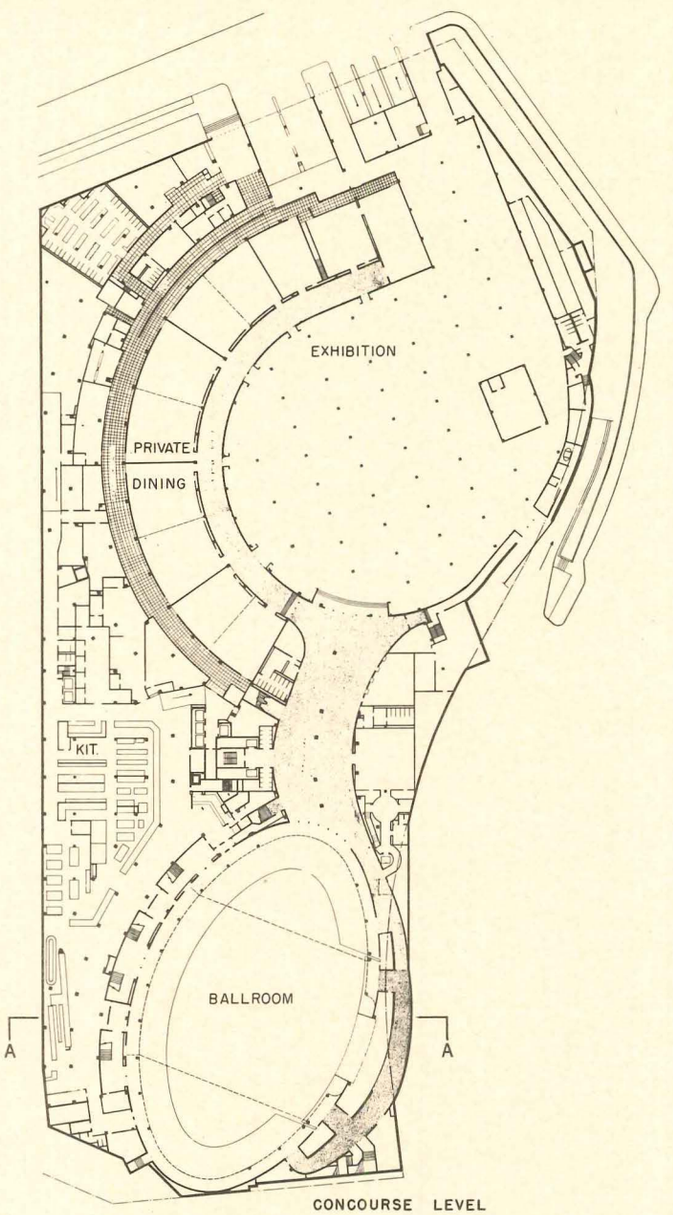
4TH FLOOR

The San Francisco Hilton, San Francisco, California. Owner: Hilton Hotels Corporation; architect: William B. Tabler, Eugene R. Branning, associate in charge; structural engineer: Wayman C. Wing; mechanical and electrical engineers: Jaros, Baum & Bolles; interiors: David T. Williams; general contractor: Cahill Brothers, Inc.; lighting consultant: William Richardson; lighting fixtures: Irene McGowan

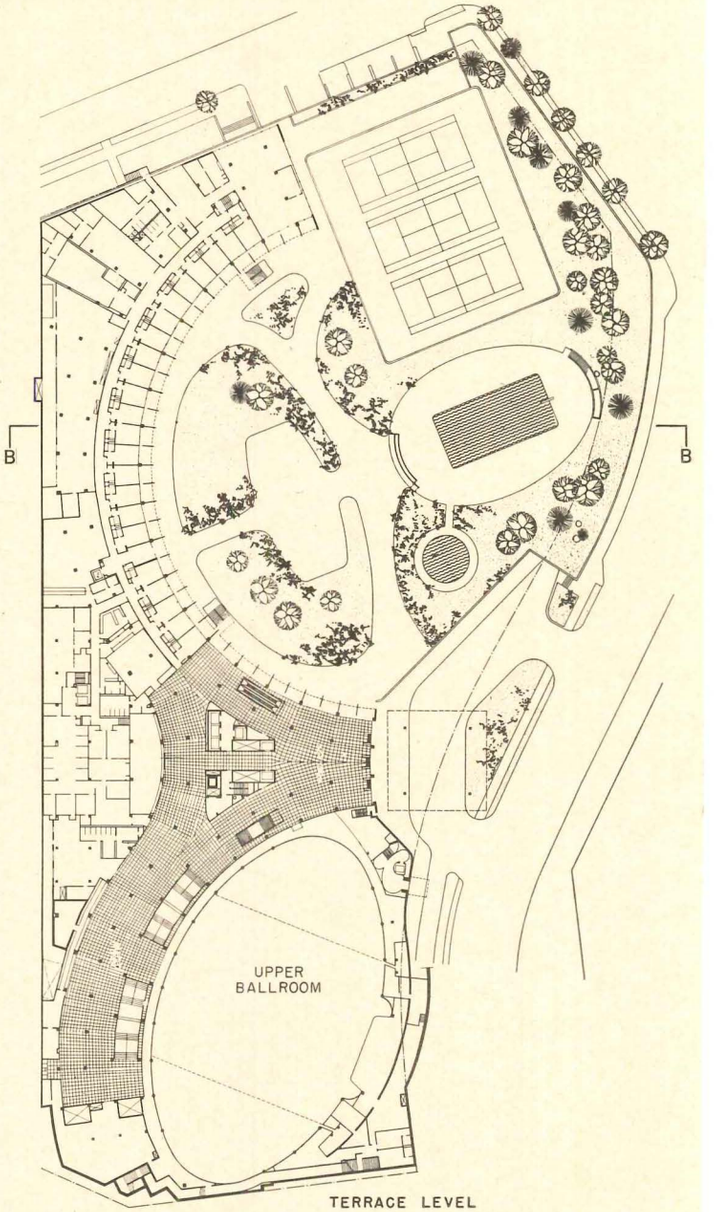
arranged in a hollow square tower around the ballroom-parking complex.

The geometry of such a notion was not difficult, but the weight of such a high parking structure with its necessary up and down ramps for self-parking called for a high-strength steel structure, while the rigidity required to make the guest room tower earthquake-proof called for reinforced concrete. The solution was to suspend the garage structure from nine steel trusses of 100-foot span and three-story depth raised on 18 columns to the 12-to-14 floor level. The room tower was cast around and tied to this structure at key points. Intra-truss spaces are used for mechanical equipment, and the roof over the trusses forms a court with swimming pool in the hollow square of the top four floors. Guests may register from cars as they enter, then drive a four-floor loop around the ballroom to their own floor level where they can park near a marked fire door across a service corridor from their own room door.

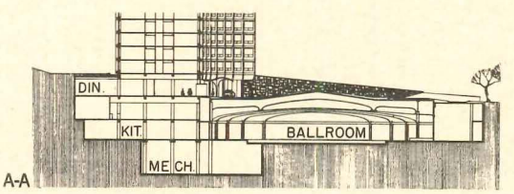
Suspending the garage permits the ballroom to be column-free so that it can be divided by sliding partitions for multiple use. Various specialty restaurants are on the lobby floor, all served by the main kitchen which also handles private dining on the third floor level.



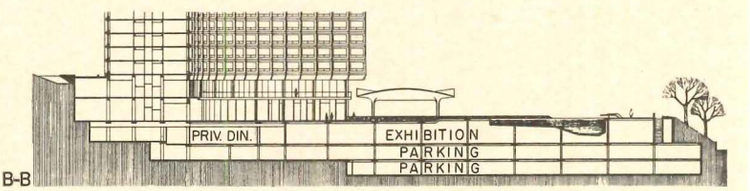
CONCOURSE LEVEL



TERRACE LEVEL

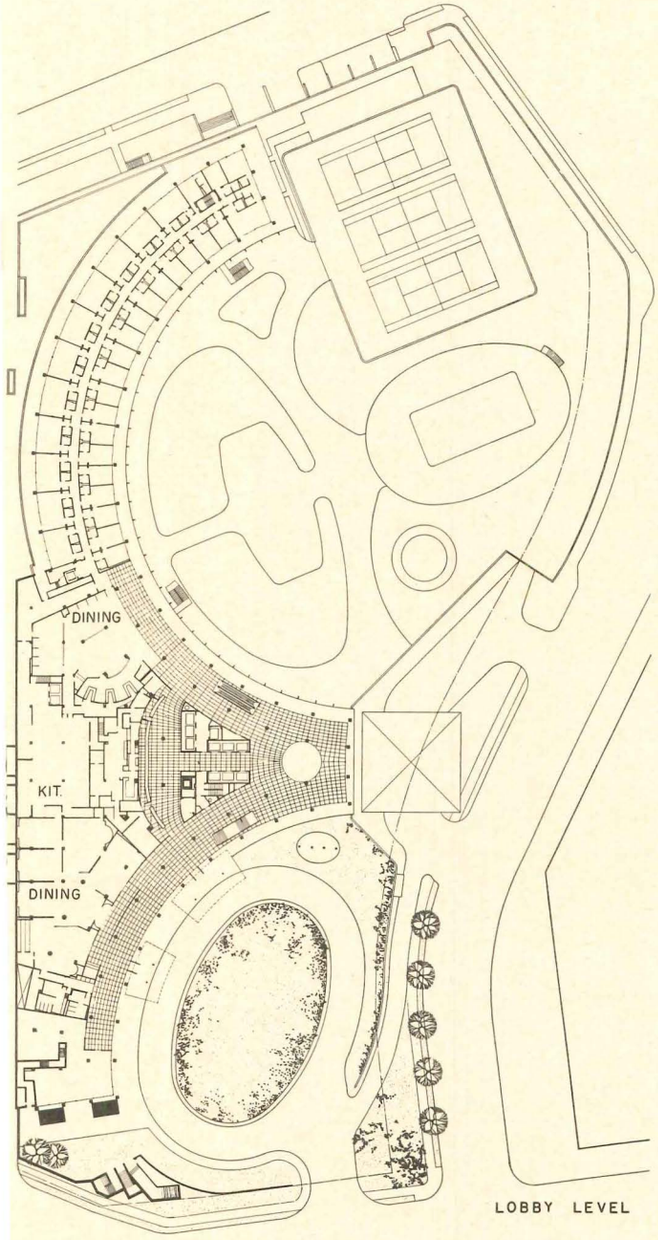


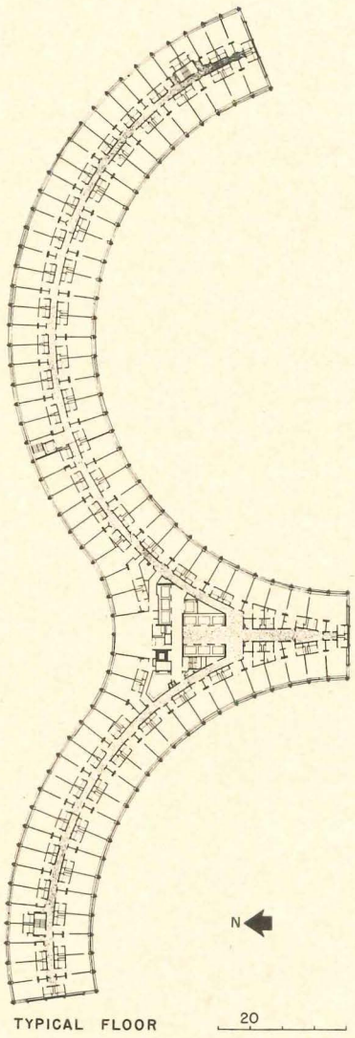
A-A



B-B

THE WASHINGTON HILTON is a combination convention hotel and resort motel, but with some special features deriving from its locale in the Nation's Capitol. The ballroom, for example, is a huge 30,000 square feet and has a special entrance through which the President and heads of state can be driven, then taken by one-story elevator to a special reception room. There is an exhibition area of 50,000 square feet at the ballroom level which can double as parking area. There are dozens of smaller banquet and meeting rooms accommodating from 20 to 500 people. Many of these are equipped with movable partitions for multiple use. There is indoor parking



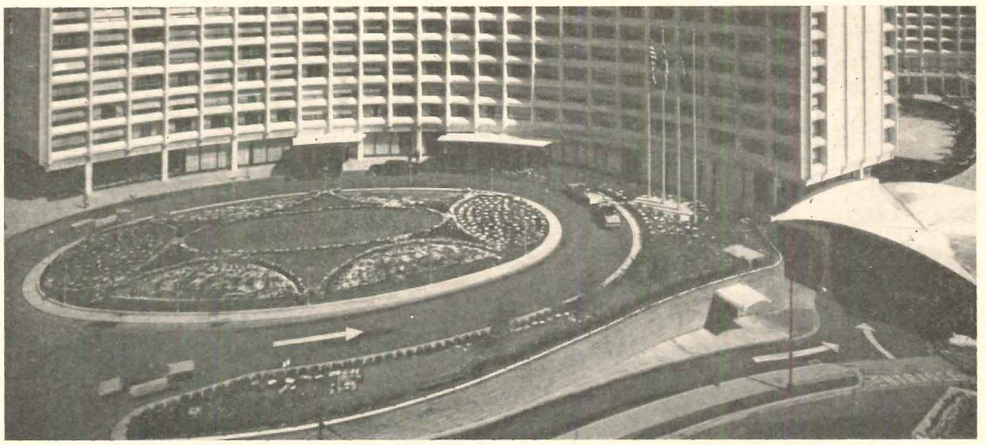


The Washington Hilton, Washington, D.C. Owner: Hilton-Uris, Inc.; architect: William B. Tabler, Eugene R. Branning, associate in charge; structural engineer: Wayman C. Wing; mechanical and electrical engineers: Cosentini Associates; interiors: Statler Hilton Studios; general contractor: Uris Building Corporation; landscape architect: Boris Timchenko; lighting consultant: William Richardson

for 600 cars (166,000 square feet) in addition to the exhibit area.

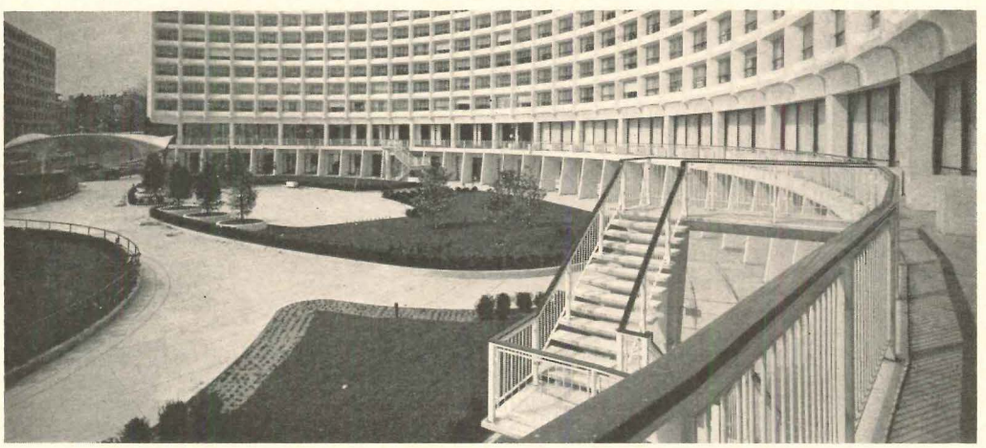
The problem was to establish all of these outsize features within the building ordinance restrictions of 90-foot maximum height and 50 per cent plot coverage; and still to provide 1,250 outside rooms, each with a commanding view of the city. The architect took advantage of two redeeming facts: (1) The highest point of the sloping site could be established as the base of the 90-foot height. This gave him an additional 30 feet of graded down-slope for above-ground access to various lower levels. (2) Underground construction does not count against the site coverage restriction. This permitted him to literally bury the big-area portions of his building under ground-level plazas at two levels.

Roof of the oval ballroom, bridged by giant steel girders (longest of which is 120 feet with 106-inch web), forms the drive-up entrance plaza to the guest lobby level. Roof of the exhibit area forms a recreation and resort plaza with tennis courts and swimming pool. Two levels of parking are below the exhibit areas, with access via down-hill ramp from the canopied drive-up entrance to the ballroom. Thus traffic for hotel guests and ballroom patrons can be completely separate.

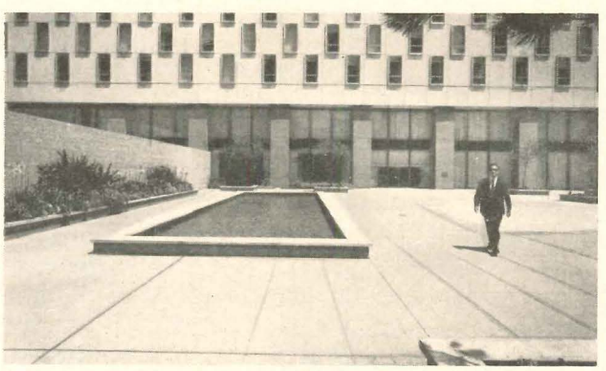


Ballroom roof is Washington's guest entrance plaza

Canopied ballroom entrance to lower lobby with ramp to parking



Resort plaza over parking is faced by two tiers of lanai rooms



San Francisco's plaza over ballroom parking

Eighth-floor parking level at San Francisco

RECREATION

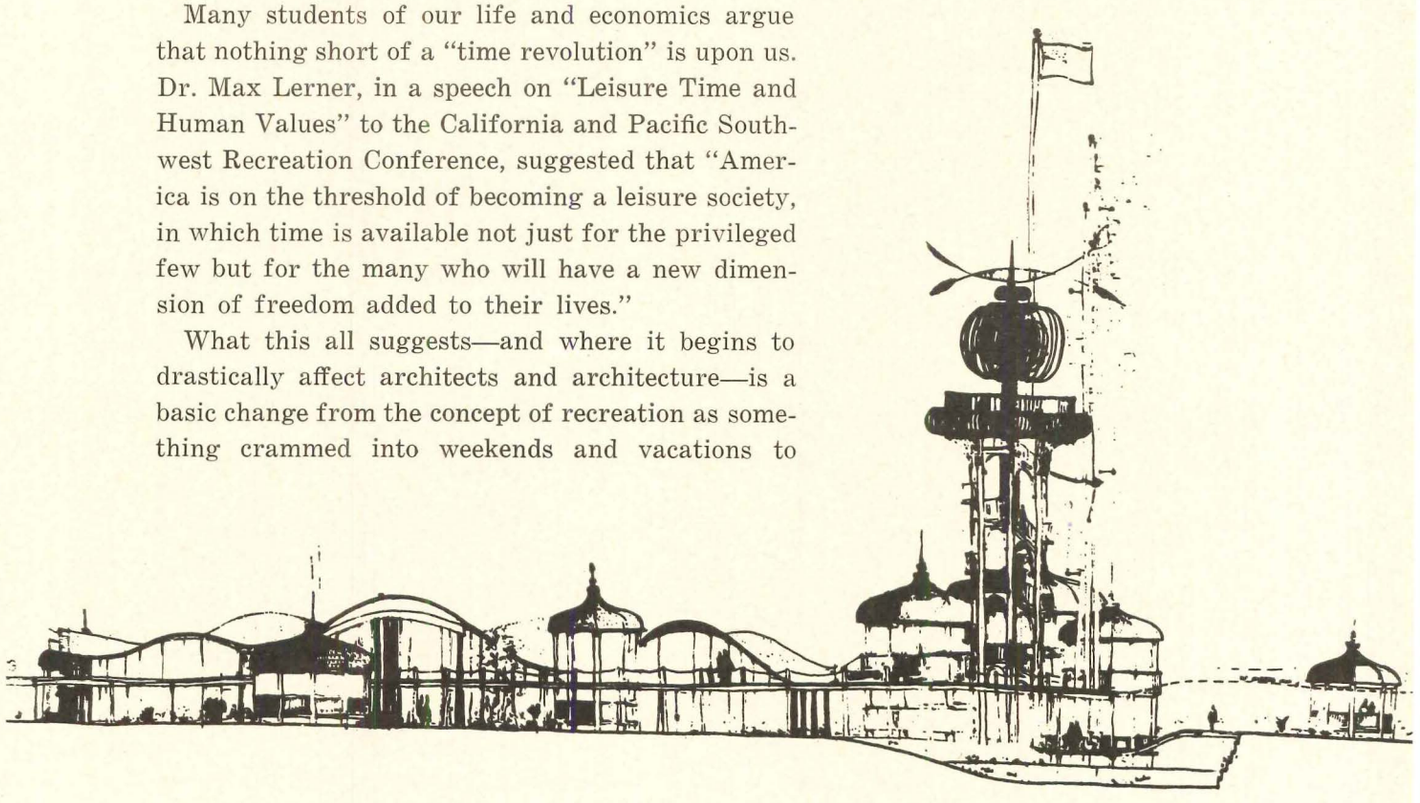
Buildings and Facilities

This is the first of what will almost surely become a continuing series of articles in ARCHITECTURAL RECORD. The reason: the country is on the verge of what must be called a revolution in the concept of recreation, and—of more direct importance to architects and engineers—the amount and variety of recreation facilities that must be planned and built, beginning right now.

In its massive (three-year, 27-volume) study and report to the Federal government, the ORRRC (Outdoor Recreation Resources Review Commission) confidently predicted that since (1) our population will nearly double by the year 2000, (2) a much greater percentage of the population will live in our already crowded urban centers, and (3) almost everyone will have much more leisure time and discretionary income, the over-all demand for outdoor recreation will at least triple in the next 35 years, and the need for recreation facilities in and near cities will increase tenfold.

Many students of our life and economics argue that nothing short of a "time revolution" is upon us. Dr. Max Lerner, in a speech on "Leisure Time and Human Values" to the California and Pacific Southwest Recreation Conference, suggested that "America is on the threshold of becoming a leisure society, in which time is available not just for the privileged few but for the many who will have a new dimension of freedom added to their lives."

What this all suggests—and where it begins to drastically affect architects and architecture—is a basic change from the concept of recreation as something crammed into weekends and vacations to

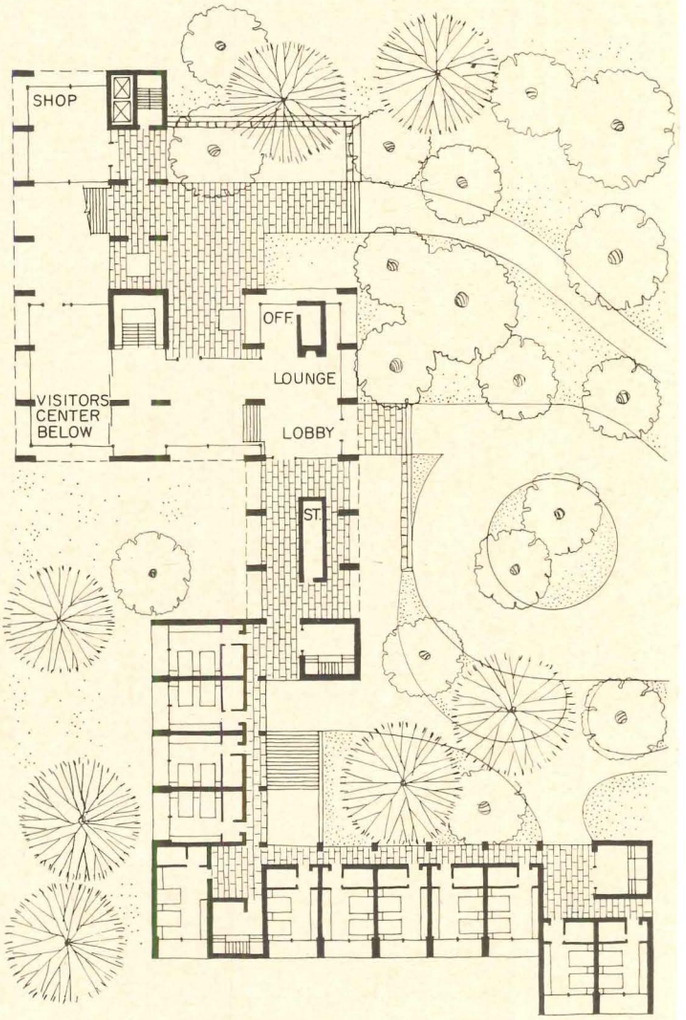


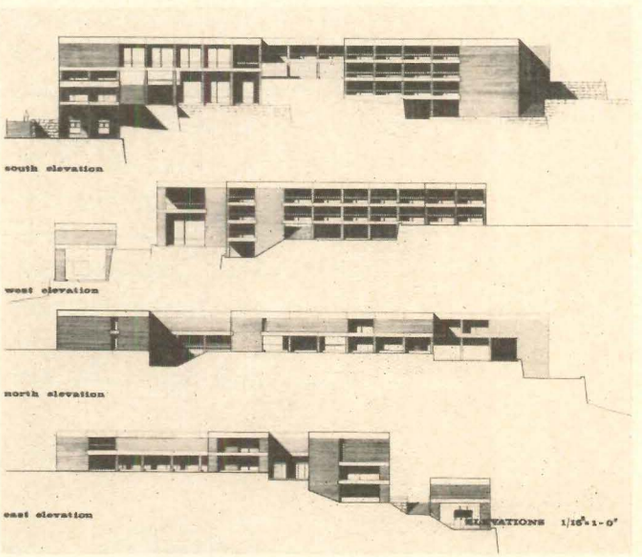
recreation as an integral part of our everyday home and community environment as well as our weekend and vacation environment. The illustrations on these pages were chosen to show some of the wide range and varied types of recreation facilities that are being planned now by architects, from huge national and state parks (see opposite, for example) to places in the canyons between public housing projects for a small boy to throw a ball. The amount of building for recreation is constantly accelerating, however, and there is an obvious need for more and more fresh design thinking.

The opportunity is at hand to do just that on an unprecedented scale; for the Federal government has this year not only made more and better recreation facilities a matter of public policy, but the Congress has backed the policy with enough money (see below) to assure a roaring boom in the planning and development of all kinds of recreation facilities all across the country.

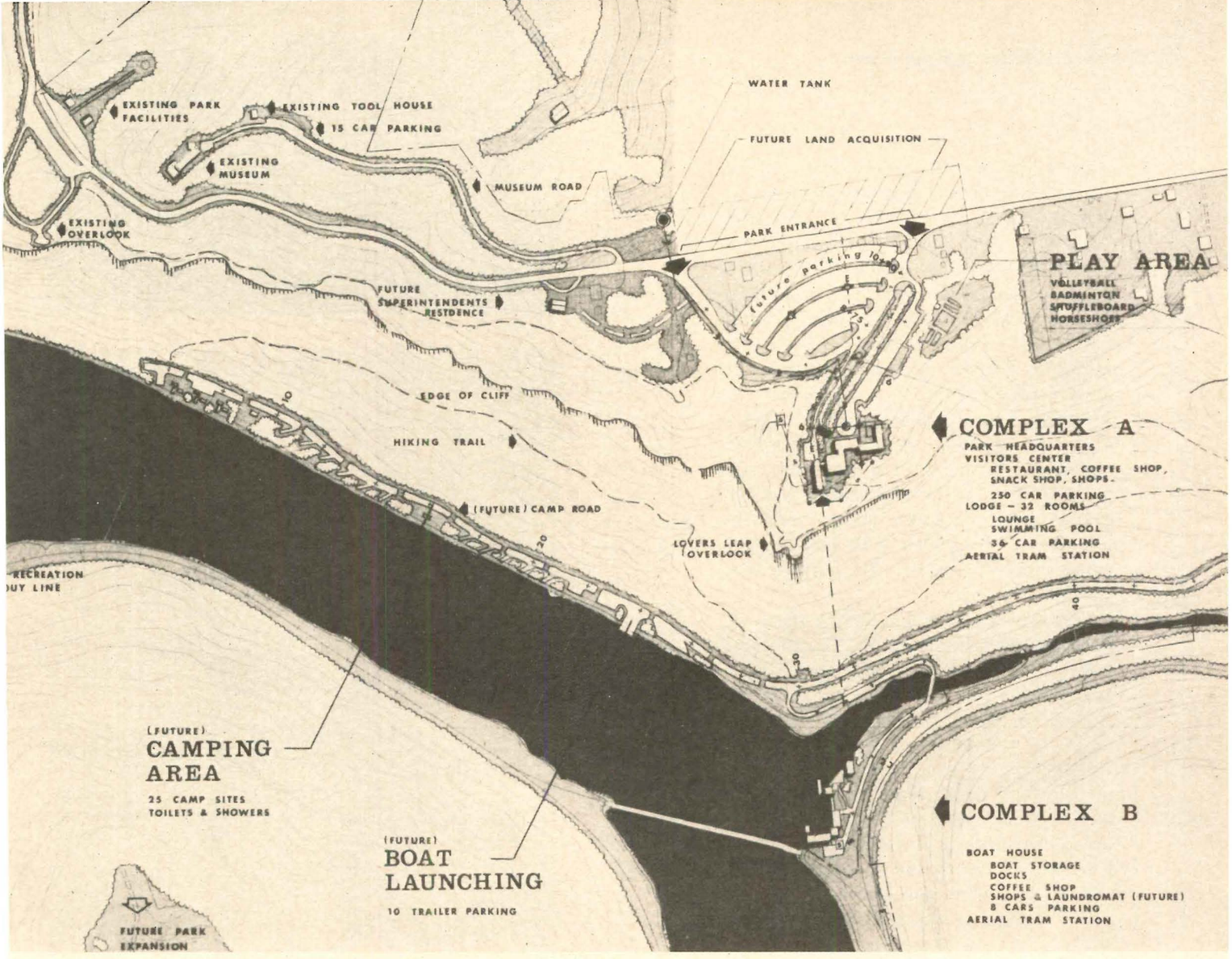
On the national and state level: Congress has lit a fuse. Right now, state recreation agencies are frantically preparing for the shipping off to Washington of "comprehensive statewide recreation plans," the first step in assuring for themselves a fair share of a close-to-$200-million-a-year pot for the acquisition, planning, and development of recreation facilities, which will (enter the architect) need to be studied and thought out, and designed.

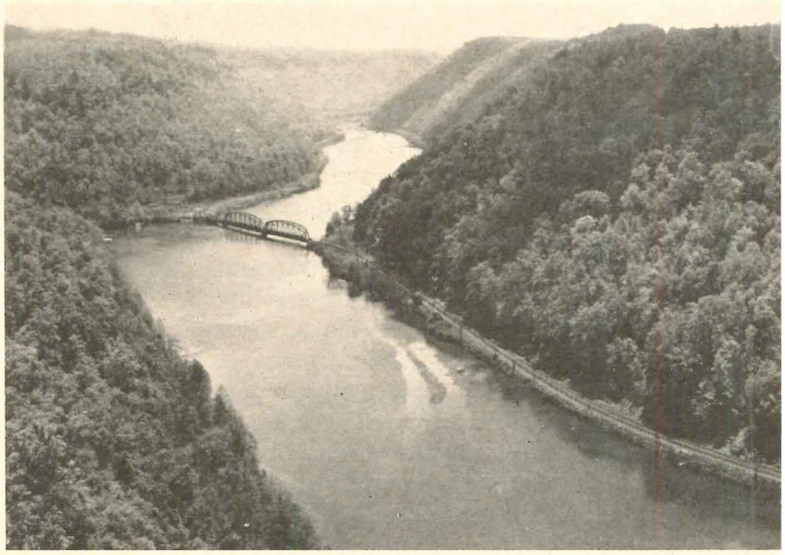
It all began in 1958, when Congress created the Outdoor Recreation Resources Review Commission, headed by Laurance S. Rockefeller. Its 27-volume report, issued in May 1962, suggested, as its main ideas: (1) development of a national outdoor recreation policy; (2) expansion of present recreation programs (under, for example, the National Park Service, Army Corps of Engineers, and Area Redevelopment Administration); (3) establishment of a Bureau of Outdoor Recreation; (4) a Federal grants-in-aid program to the states. Only three months later, in April 1962, the Bureau of Outdoor Recreation was indeed created within the Department of Interior. The BOR's nationwide recreation plan is under development, but meanwhile it has been made





Hawks Nest State Park in West Virginia is one of four new recreation and tourist areas planned for the state by TAC. The parks, which range from 480 acres to 6,000 acres, are being developed with a fund of approximately $25 million created jointly by the state and the Federal Area Redevelopment Agency. The parts are in areas of great scenic beauty,



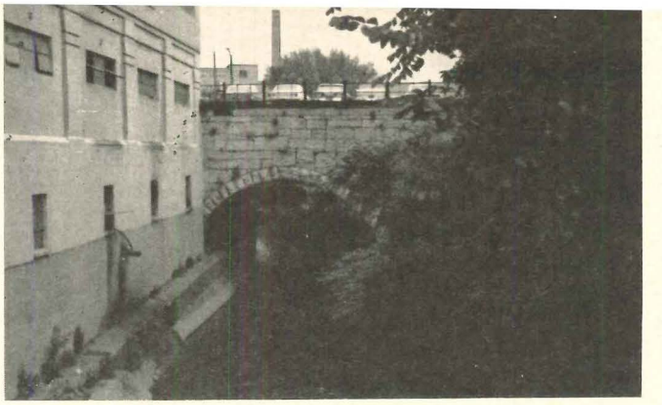


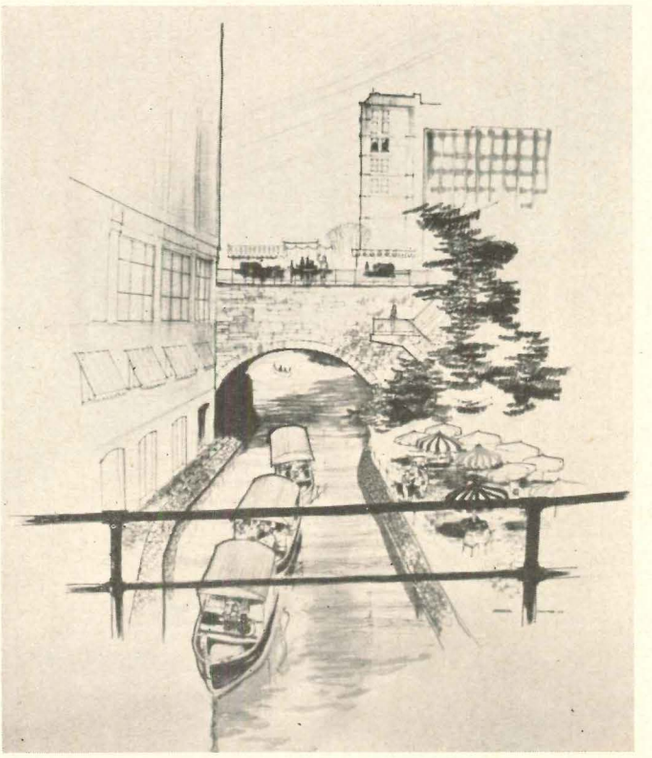
and the development schemes include lodges, golf courses, swimming pools, riding stables, cabins and camp sites, and extensive hiking and riding trails. In all of the new parks, as at Hawks Nest, most of the buildings will be placed on steep hillsides to take advantage of the views, and so are multi-level in concept. Construction materials will be local brick and concrete, stone and wood. Much use will be made of aerial tramways both for ski lifts and transportation. Architects: The Architects Collaborative—Louis A. McMillen, partner in charge, Joseph Maybank, associate, Serge Cvijanovic, job captain; landscape architect: Lawrence Zuelke; associated architects: Irving Bowman and Associates.

responsible for the administration of the single biggest boost yet for recreation, the Land and Water Conservation Fund Act of 1965. It creates a fund expected to make available about $180 million a year for recreation facilities. Of this sum, about 60 per cent will be distributed to the states for acquisition, planning, design and development of land for recreation, on a 50-50 matching basis. The states may in turn designate part of their share for specific county or municipal projects which are "in accord with the state's comprehensive outdoor recreation plan." The remaining 40 per cent will be used by existing Federal agencies to acquire recreation land.

Perhaps the biggest single piece of news for the architect in this development is the Federal government's attitude toward the design of facilities for the land to be purchased under the Act. First, it will be intensively developed for recreation. (In contrast, the land in our national parks has been considered generally inviolate. With a few notable and contemporary exceptions, there has been official resistance to anything except sticks-and-stones architecture, and official insistence on very little of that.) In the National Recreation Areas to be established under the new Act, much greater freedom of action in planning, design and development is proposed. It is official policy that "recreation areas, being new and with no established precedents, permit the introduction of worthy innovations," and that "the highest esthetic standards relating to land use and designated facilities will be required." To this end, the National Park Service, which will administer the Recreation Areas, has already retained Campbell & Wong & Associates to "create an architectural concept" for one of the first Recreation Areas, Point Reye National Seashore, north of San Francisco. NPS also plans, reports its chief architect, John B. Cabot, "to retain, within the next months, four or five other talented architects to do prototype designs that will establish a pattern and ideas for use at the Federal, state, county and municipal levels as development continues."

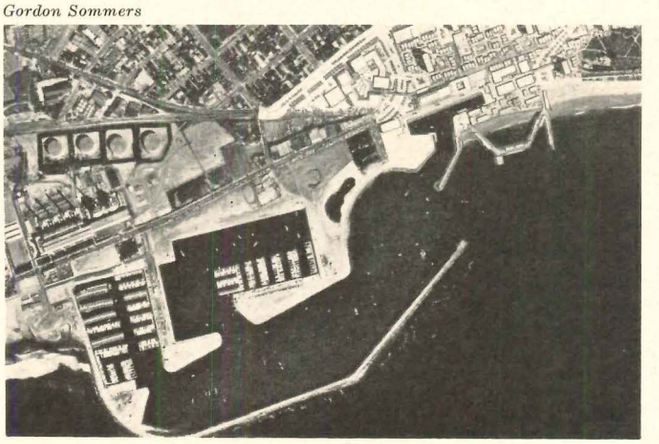
"This new program" says Cabot, "is a real challenge to architects. A lot of new design thinking is needed. There are no



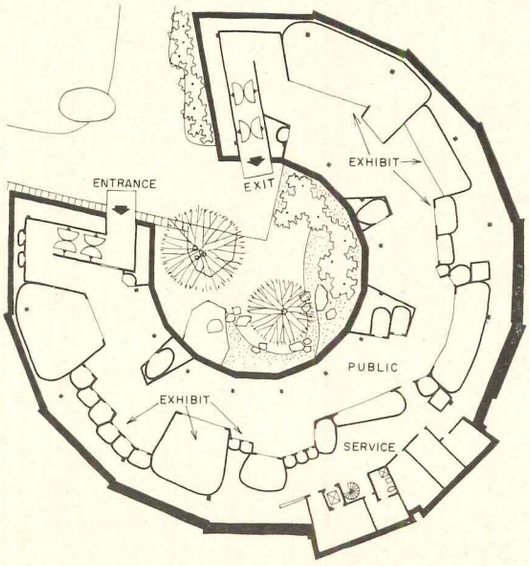


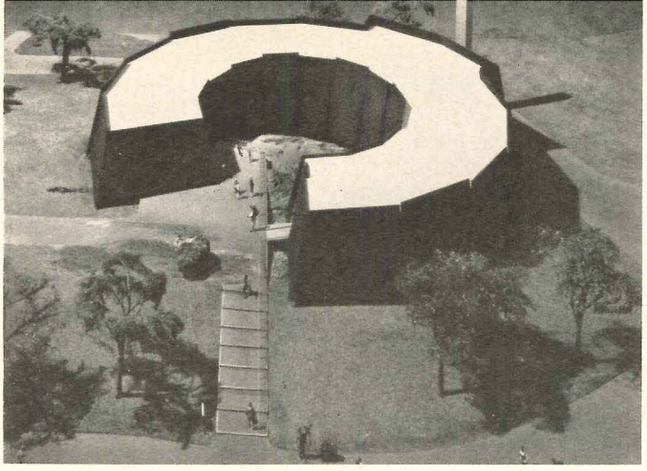
Waterway link from downtown to lakeshore recreation is a delightful feature of a proposed renewal of Lake Onondaga on the outskirts of Syracuse, New York. The trips would, the architect feels, not only be novel and convenient, but "symbolically connect the center of the town to the lake." Architects: Chloethiel Woodward Smith & Associates.

Gordon Sommers



Municipal yacht harbor at Redondo Beach, California, was the first step in what has since developed into a major downtown revitalization, which will include recreation and park facilities between the harbor and the new 50-acre retail and residential core (white area in photo). Architects: Victor Gruen Associates, Ben Southland, partner in charge.

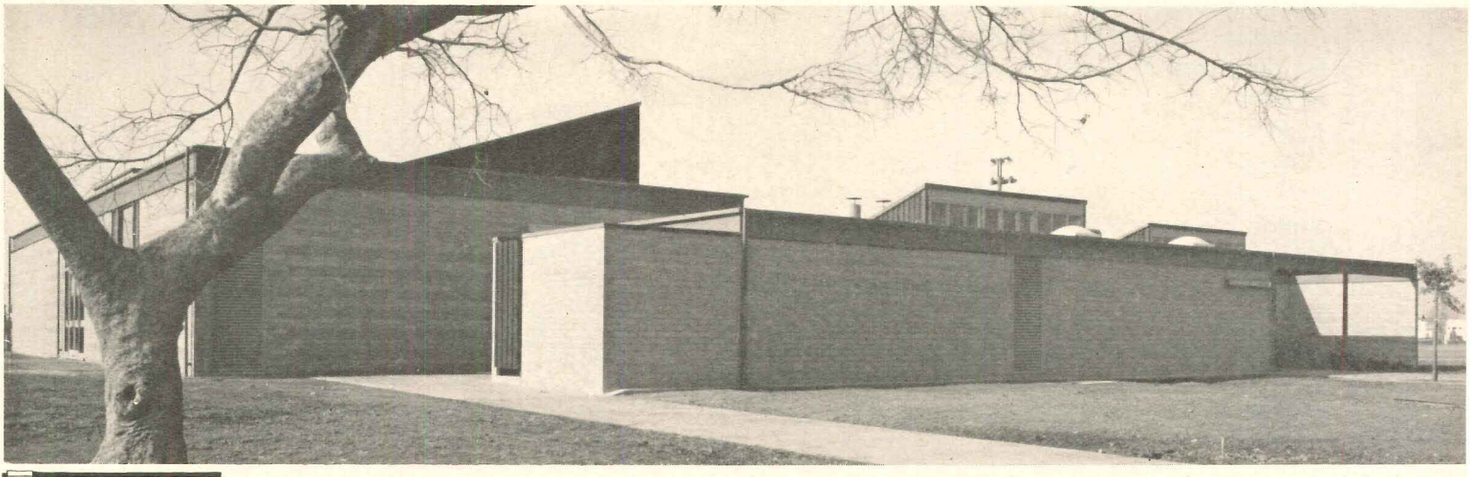


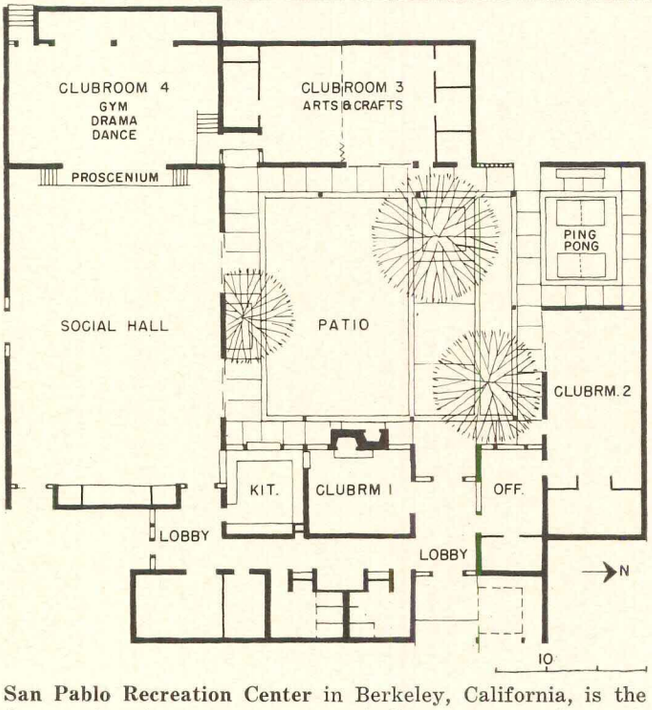


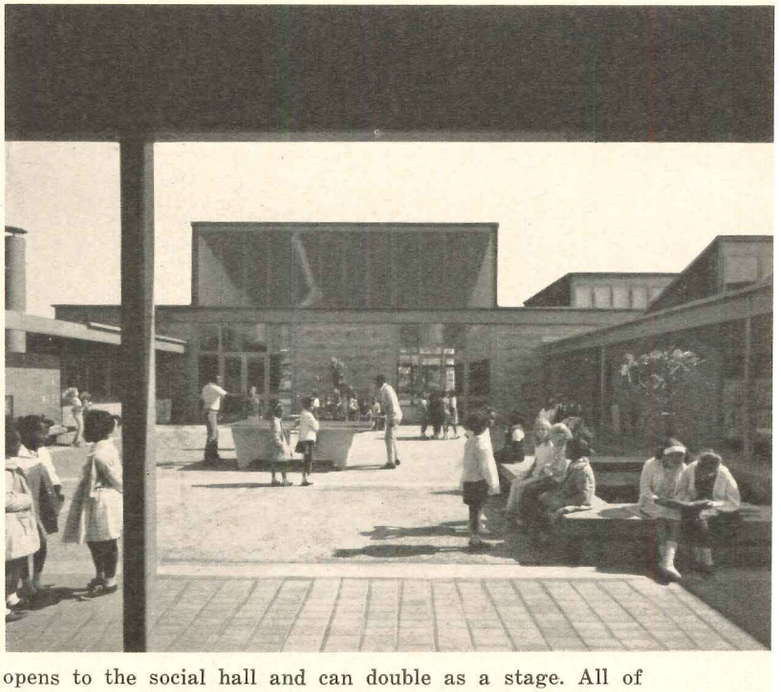
Louis Checkman

The World of Darkness at New York City's Bronx Zoo is designed for daytime display of nocturnal birds and animals, will be lighted during the day by infra-red lighting. The exterior walls will slope inward and be finished with black cast stone panels "to evoke a feeling of primitive, elemental life." Architects: Morris Ketchum, Jr. & Associates.

Karl H. Riek photos







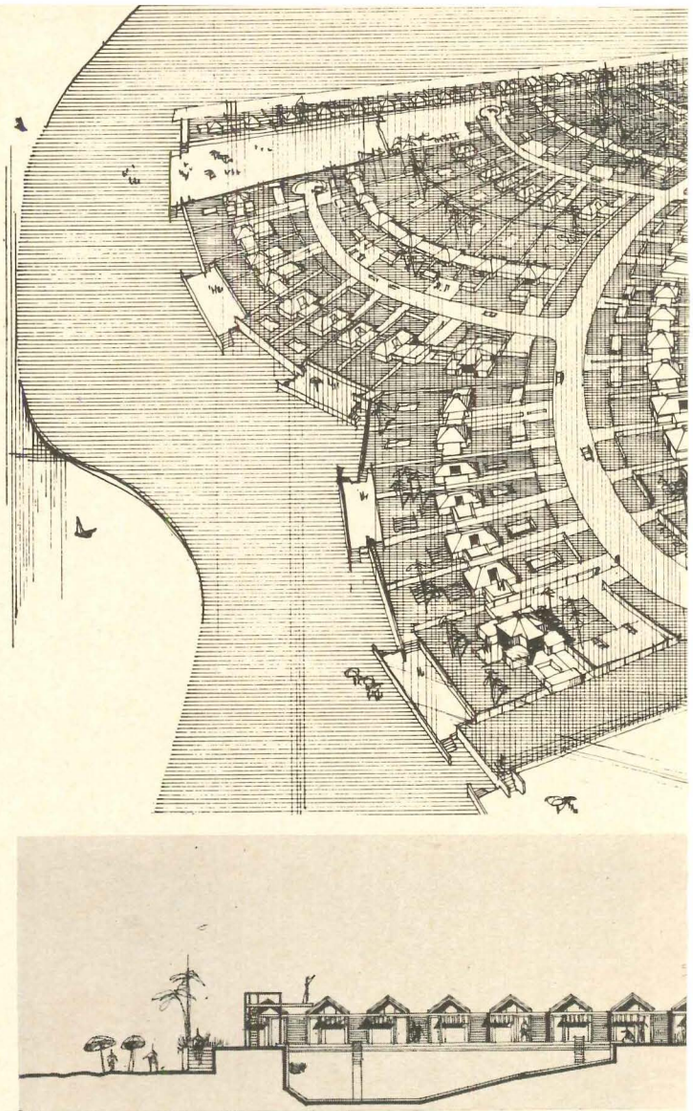
San Pablo Recreation Center in Berkeley, California, is the first project in a program to revitalize a 13-acre city park that has partially run down and has developed principally as a center for active outdoor recreation and sports. This building, designed for "non-athletic" recreation and as a neighborhood community center, has four clubrooms—one of which opens to the social hall and can double as a stage. All of these rooms turn inward to a landscaped patio. Architects: Campbell & Wong & Associates; landscape architects: Eckbo, Dean, Austin & Williams; structural engineer: Eric Elsesser; mechanical and electrical engineers: Yanow and Bauer; general contractor: Chamberlin Construction Company.

real experts because this is a new problem on a new scale. This is a great opportunity for freedom of design."

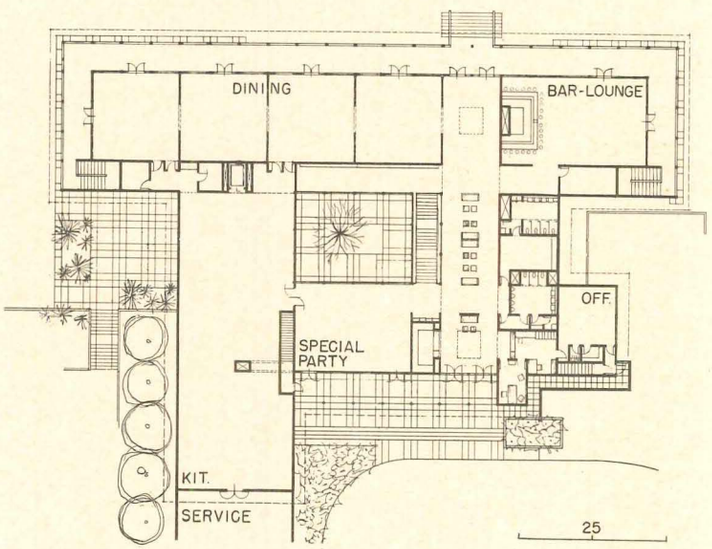
The share of the Land and Water Conservation Fund money going to the states should generate a lot of immediate design activity, since (1) this money specifically can be used for design and development (whereas the Federal government can spend its share only for land acquisition) and (2) money allocated to a state, if not matched and used within two years, "will be re-distributed." Further, many states already have considerable commitments to their own land acquisition and development programs. The most recent example: the California voters' approval last November of a $150 million bond issue for development of recreation facilities. Proposed but not yet voted on: a $400 million program for New York State.

An important part of the design activity generated will be establishing new standards—for there are none now. Everyone is certainly hopeful that there are better design solutions to, say, beach areas near our big cities—what they are waiting for are design solutions from architects and landscape architects and engineers. The money now exists to buy the land and build them.

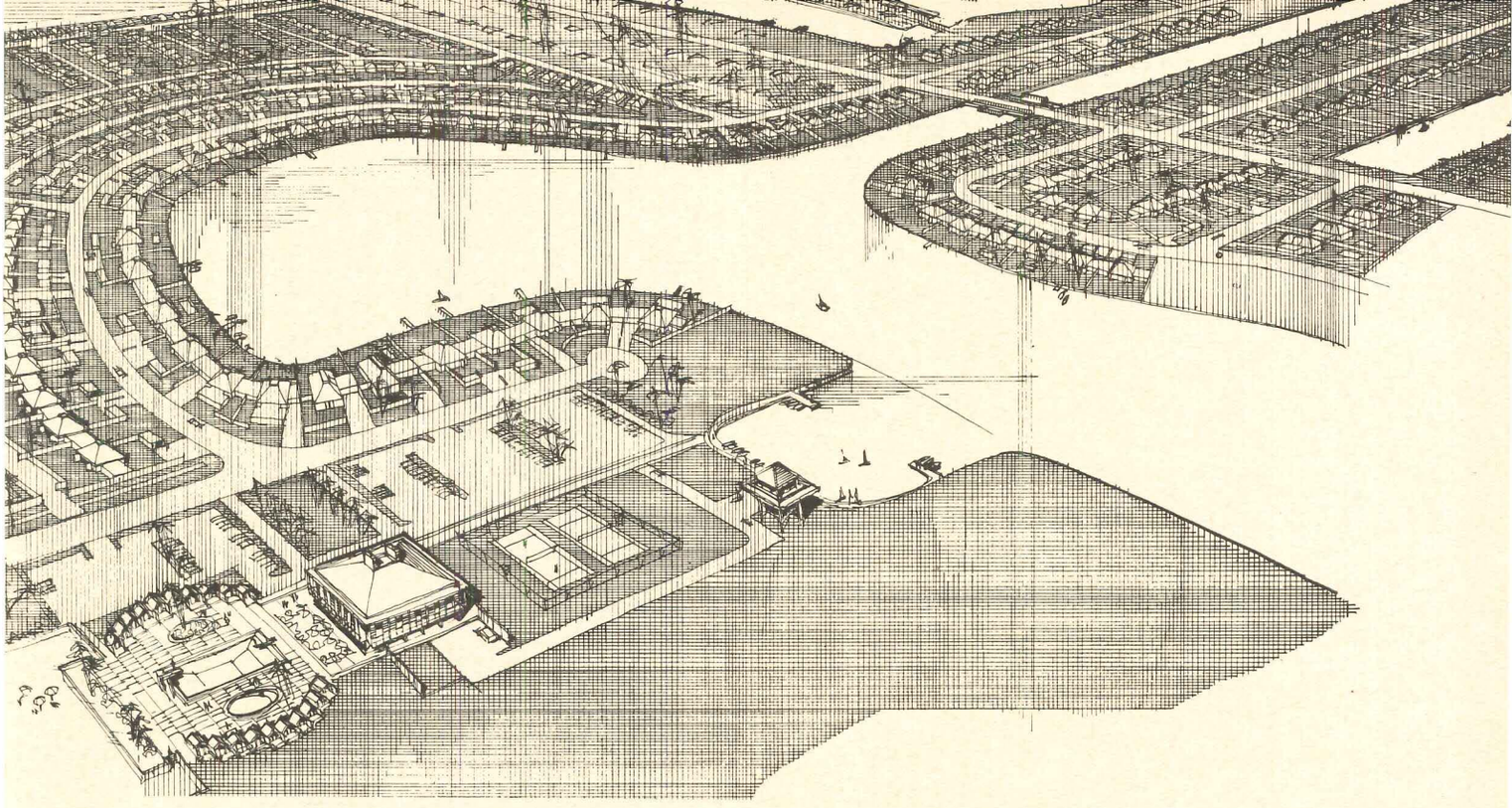
On the urban and municipal level: "more areas of recreation and beauty." While one Federal program gives attention to recreation areas *to serve* urban areas, another Federal program—the Open Space Land Program—is directed specifically at acquiring and assuring open spaces *in* both urban and "urbanizing" areas. This program was enacted in 1961, to preserve open land for "park, recreation, conservation, scenic, or historic purposes . . . in recognition of the fact that available land in or near urban centers is being developed at the rate of a million acres per year." The program, set up under the Housing Act of 1961 and administered by the Urban Renewal Administration, makes grants of 20 per cent to 30 per cent of the cost of land acquisition to "authorized public bodies such as states, counties, special park districts, cities, and towns." There is some confidence in URA that the grants will be upped to 40 per cent and perhaps 50 per cent, and that grants may soon be available not just

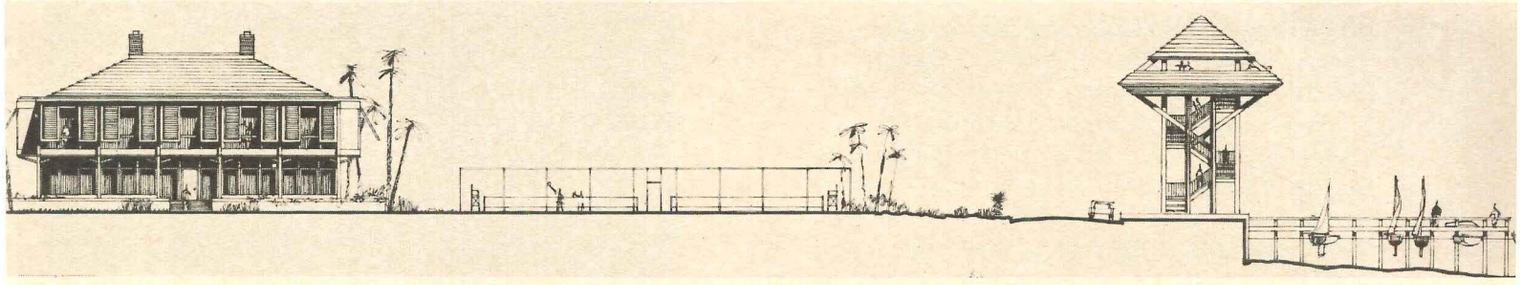


Water recreation is the focal point at Bryan Beach, a 3,000-acre, 8,000-house community under development near Freeport, Texas. The swimming-tennis-boating facilities serve as a link between the beaches on the Gulf of Mexico, at left in both drawings, and a man-made lake which draws water from the Intracoastal Waterway. The area is laid out with pedes-

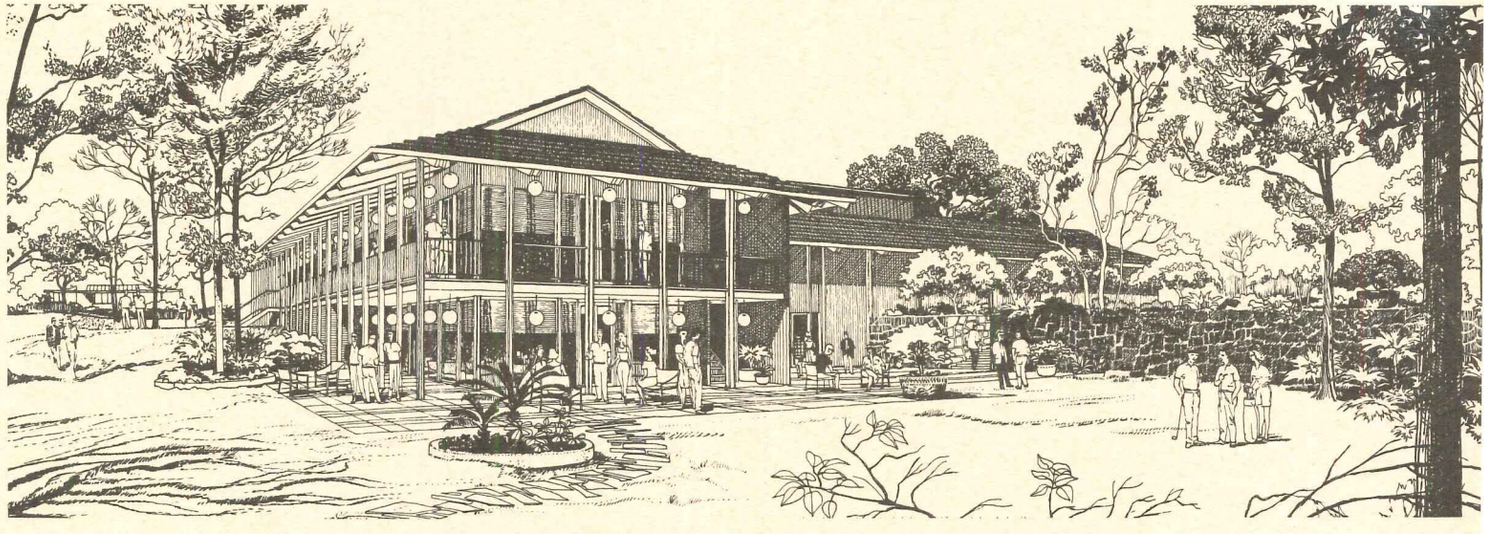


El Niguel Country Club at Laguna Niguel, a 7,100-acre new town near South Laguna, California, is designed as a major recreation and sales attraction. This 40,000-square-foot clubhouse is soon to be built overlooking the 7,000-yard, 18-hole course. The upper-level plan shows how all public rooms open to a wide deck and the view of the course beyond. On the





trian paths which make it possible to reach the club or the beaches on the Gulf with a minimum of street crossings. Bulkheading along all waterfront lots is not only functional (the land had to be filled), but serves to differentiate the private land from the beaches, which by Texas law are public. The aerial view shows the first stage of the project; when a second stage is developed, the club facilities will be in the center of the community. The cabanas are planned for overnight use, since the developer anticipates a number of families wanting to stay at Bryan Beach before their new houses are complete. Architect: Clovis B. Heimsath; developer: Bryan Beach, Inc.



lower level is a grill room, card room, pro shop, locker areas, and storage for golf carts and equipment. Terraces link the building to the 18th hole, tennis courts, and a pool. The course itself is L-shaped, set in a valley, and will provide a pleasant view for hundreds of houses and apartment units built on the surrounding hills. The country club is private and non-profit, is being operated by Laguna Niguel Corporation until such time as there are sufficient property-owner members to take over the management and ownership. Architects of golf clubhouse: Mosher and Drew; golf-course architects: David W. Kent and Company; landscape architects and site planners: Peterson and Befu.

to acquire land but to remove buildings to create parks in congested urban areas. The most recent totals indicate that 360 grants have been made to assist in the purchase of some 132,000 acres ($150 million worth) of land in nearly 300 communities in 36 states.

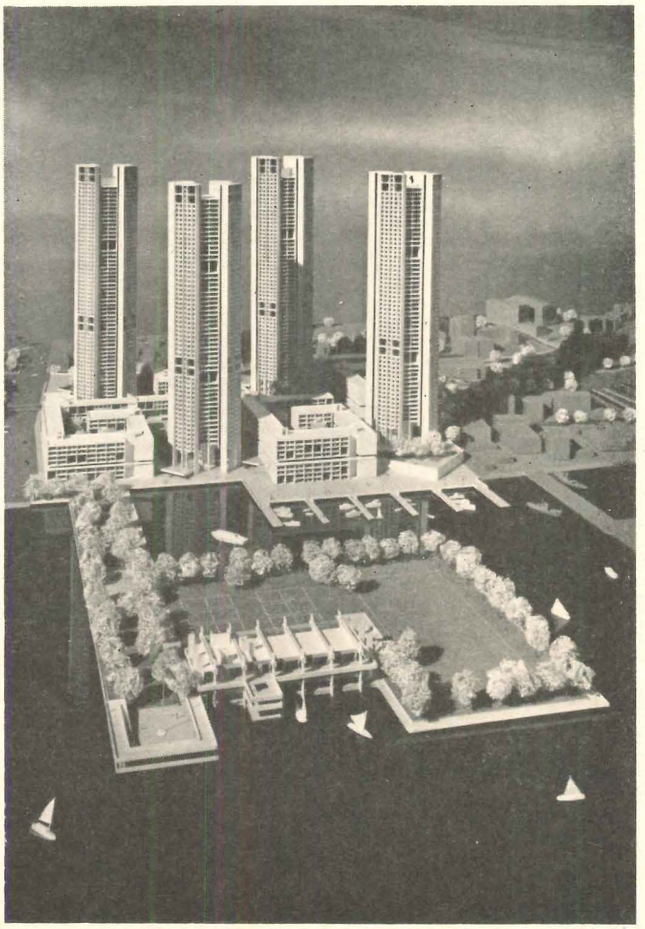
The matter of designed use of this land is getting more and more attention —and specifically, a number of design-demonstration projects are planned. Arthur A. Davis of the Open Space Program explains the reason: "We need to know much more about the needs and requirements for recreation in urban areas. There are no standards—not even for picnic tables and fireplaces."

The problem of urban recreation has, of course, attracted the thinking of some of our best designers (for examples, see photos and drawing at right, and the uniquely thoughtful use of open space in the canyons of public housing by Albert Mayer shown on page 170).

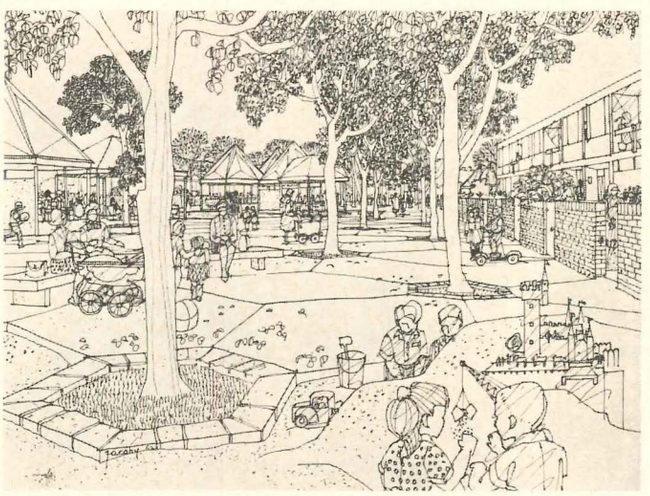
Tiny parks tucked into crowded city neighborhoods are being much talked about. For example: Robert Zion has proposed a series of midtown "parklets" as small as 50 feet by 100 feet—"pools of space removed from the flow of traffic." And Karl Linn of the University of Pennsylvania has proposed "junk playgrounds . . . created on vacant lots and even alleys" and using "discarded telephone poles, large wooden cable wheels, and debris left from razed tenements" as play facilities.

For urban recreation planning on a totally different scale, consider San Diego's Mission Bay Park—4,600 acres of tidelands and water under jurisdiction of the city by grants from the state. This land was, five years ago, a marshy and dismal slough north of the city. The city retained Garrett Eckbo (and he in turn retained Community Facilities Planners) to develop a master plan and over-all concept for Mission Bay "with respect to architecture and landscaping, for use in guiding future construction within the park." Seventy-five per cent of the land is being retained for general public use, 25 per cent is being leased by the city for commercial developments such as "Sea World" and "Vacation Village" shown on pages 164 and 165—and the income from these leases helps maintain the free public facilities. Mission Bay Park is an extraor-

Louis Checkman

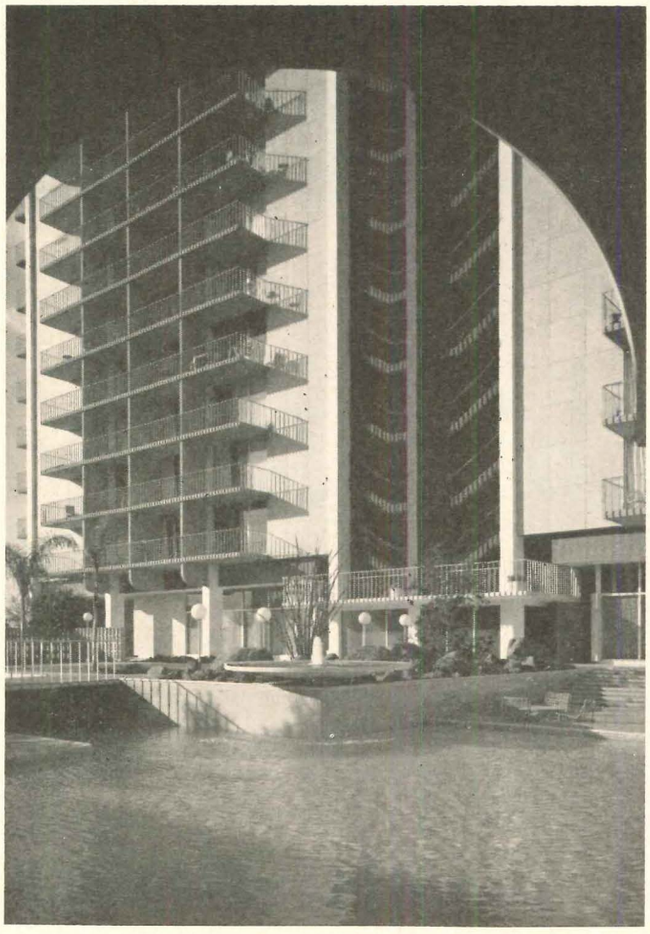


Recreation area at Harbour House, Staten Island, New York, will be built out over New York Harbor on pilings remaining from old wharves. The 10.2-acre area is planned to include a 250-boat marina, tennis courts, a playing field, and indoor-outdoor swimming pool; garden courts will surround buildings "on land." Architects: Kelly & Gruzen.



Playground and neighborhood center, with low-cost prefabricated pavilions, set in a side street closed to traffic, is one of many suggestions made for "prototype neighborhood commons" by Charles F. Goodman for the Fred L. Lavanburg Foundation. They were published in the book **"Life for Dead Spaces";** Harcourt, Brace & World, Inc., New York.

Jerry Duchscherer



Pool at Executive Towers Apartments in Phoenix is not just a recreation facility, but an important and handsome part of the site planning and landscaping. Under the bridge (*left*) is a shallow children's pool. Both pools are flanked by broad decks, shaded pavilions, and spaces for shuffleboard and putting. Architect: Dailey Associates/Planning/Architecture.

David Hirsch

New plaza for Carver Houses, an eight-year-old public housing project in Manhattan, has some formal play equipment, but—more important—abounds in steps to jump on and walls and sculpture to climb on; an invitation to "come on" where once was only "keep off" grass. Architects: Pomerance & Breines; landscape architect: M. Paul Friedberg.

Orlando R. Cabanban

Ice-skating rink at Marina City in Chicago provides not only recreation, but a point of interest in the project's broad plaza. Another level down is the 537-boat marina on the Chicago River that gave the complex its name. Also provided in the plan: an indoor swimming pool, and bowling alleys. Architects and engineers: Bertrand Goldberg Associates.

Sculpture at Stephen Wise Houses in Manhattan is in constant use by the children. Sculptor Constantino Nivola created these animals as well as eminently-climbable fountains and free-standing relief sculpture. Benches around shade trees provide a place for adults to watch. Architect for site plan of plaza and public spaces: Richard G. Stein.

dinary experiment in combined public and private development of recreation facilities—and certainly a prototype for other cities with waste land inside or handy to their boundaries.

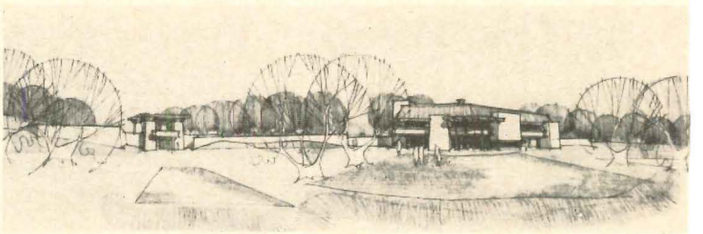
Recreation in housing: a growing attraction. In suburban and urban housing alike, provisions for recreation "close to home"—as an integral part of the planning for the project—are becoming almost commonplace. The reason for this interest in recreation is one that assures more of it: children's playgrounds and golf courses and swimming pools on the roof of high-rise city apartments have proved to be a potent sales booster.

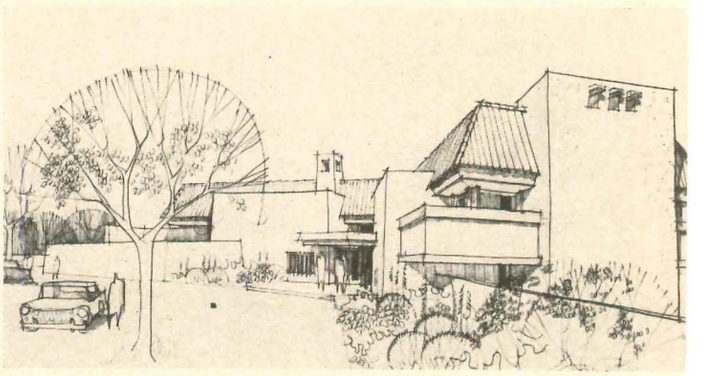
The FHA is actively encouraging this development by, for example, officially promoting cluster plans and planned-unit development, and recreational use of the resulting greenbelts; and by reflecting such facilities in higher valuations for houses.

The new towns being developed are setting—as in many other areas of design—a high standard for recreation. One example: Reston (RECORD, July 1964). Another, 7,100-acre Laguna Niguel in California, is being developed to a master plan by Victor Gruen Associates which includes two golf courses, a series of lakes, a beach club, a riding club, and five-acre parks at each elementary-school site. Further, explains Knowlton Fernald, director of planning and architecture, "Additional recreational facilities have come into our planning in almost every section as we study in detail the topography, engineering requirements, and marketing requirements of Laguna Niguel design.

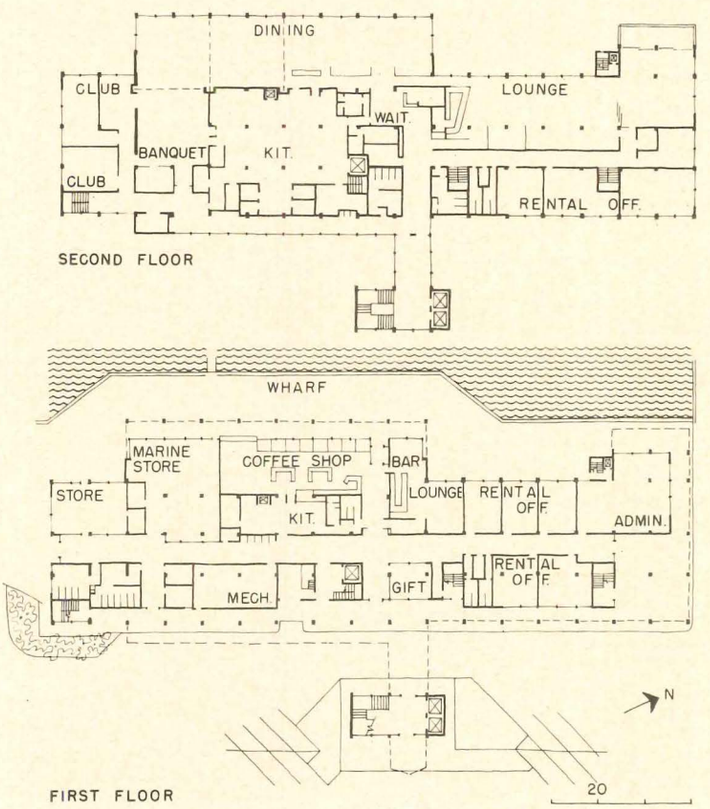
"The inclusion of recreation facilities within planned developments and communities certainly seems advisable because of the ever-increasing interest in sports and recreation of all kinds. To the planner it represents a tool for designing communities of greater beauty and character. To the developer it means a better product to sell."

Of special design interest is the development of more and more communities which are essentially recreation communities—in which most of the houses are planned solely for vacation and/or retirement use. Two current examples: Bryan Beach in Freeport, Texas (see page 157) and Sugarloaf

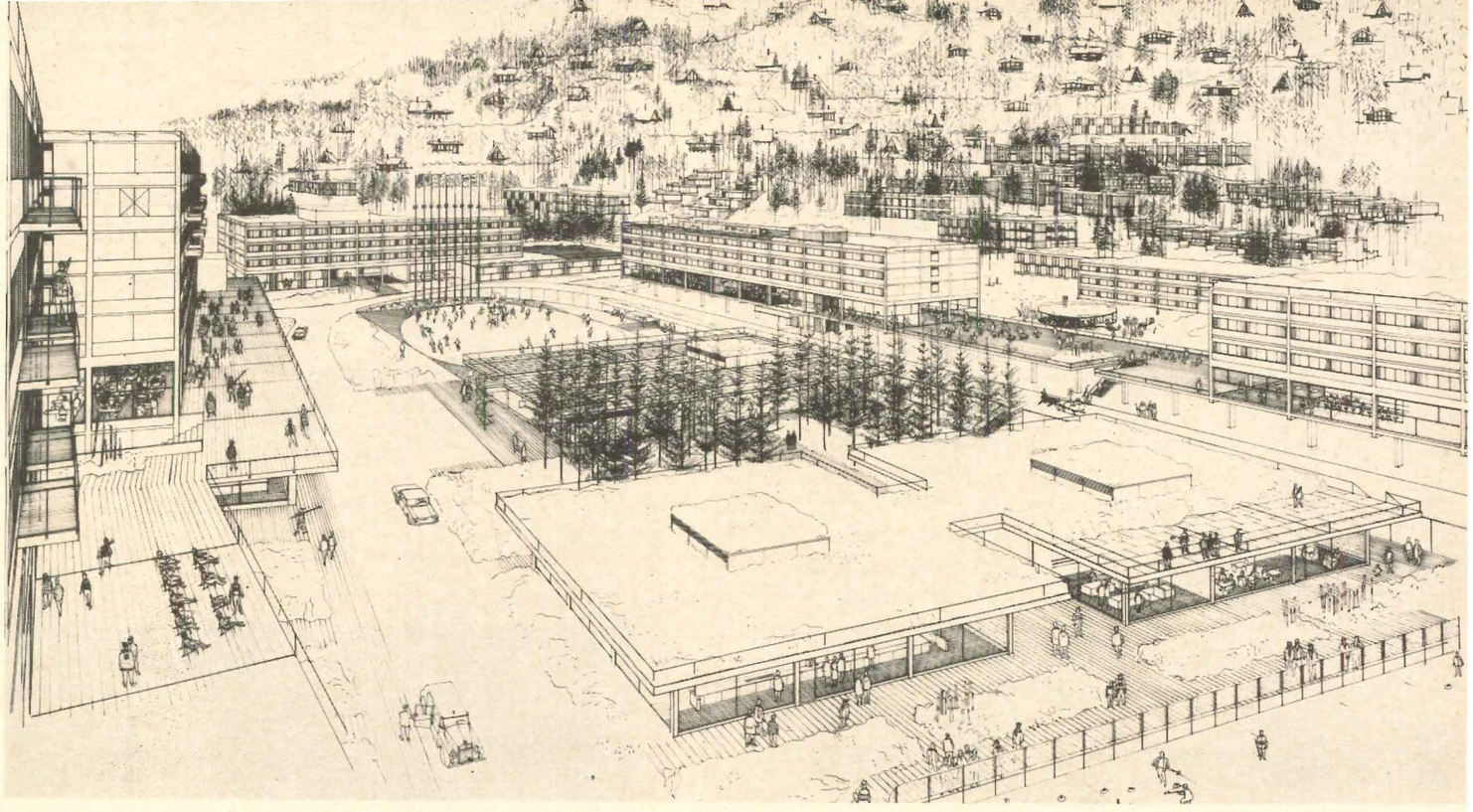




Valencia Golf Club House at Saugus, California, is designed "to reflect the ruggedness and power of the surrounding landscape," and its materials—stucco over wood frame, tile roof, exposed-beam roof framing, brick paving block floors, rough formed concrete retaining walls—echo this theme. Architects: Callister and Payne; contractor: Dinwiddie Construction Co.

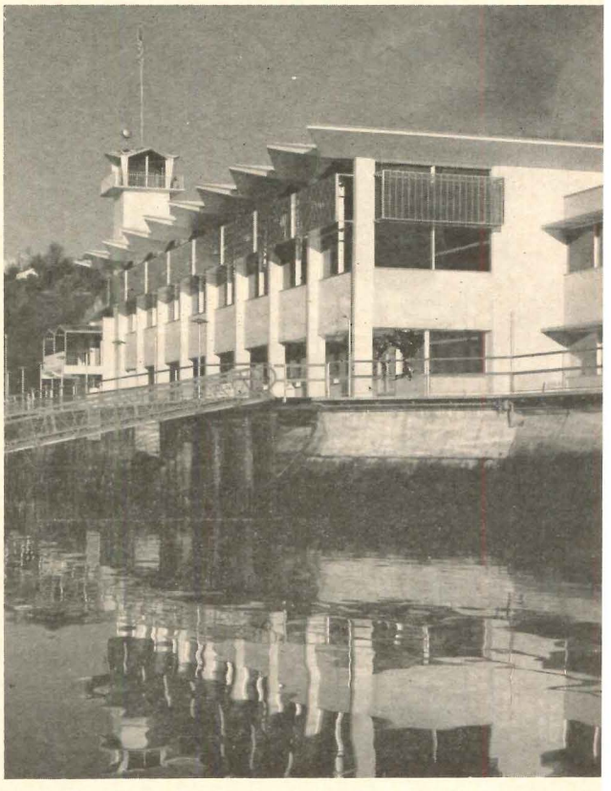


Administration building at Shilshole Bay Marina, Seattle, has most of the facilities of a private club for boat owners leasing slips. The waterfront side of the second floor is devoted entirely to dining rooms and lounges which, through an all-glass wall, enjoy a magnificent view over Puget Sound to the Olympic Mountains. (Gray glass and sunscreens were



Sugarloaf Village, a 1,728-acre recreational development in Kingfield, Maine, is being planned to accommodate some 7,000 people in cabins, hotels, lodges, apartments, and houses; all built—"to create maximum life and vitality"—around this village center, with its shops and hotels, restaurants and outdoor plazas. Though the area's main reason for being is skiing at Sugarloaf Mountain, the site plan proposes a country club, a festival theater, a large hotel development with tennis, golf, and swimming, and other facilities to stimulate summertime use. Construction will begin soon on the first sections of the center. Architect: Richard G. Stein, Leopold Berman, associate; developer: Bigelow Corporation.

Hugh N. Stratford photos



used for sun control, since the view over the water is to the west). This club-like facility can be reached directly from the parking area via an overpass. On the first floor, facing the piers and convenient to the boats is a coffee shop and bar, marine store and other retail shops, and plenty of public toilet facilities. The observation tower, happily reminiscent of a lighthouse, is used for policing the long stretch of slips. The walls are concrete panels faced with exposed aggregate. Architects: Durham, Anderson and Freed; structural engineer: John H. Stevenson; mechanical engineer: Richard M. Stern; electrical engineer: Beverly A. Travis; contractor: Absher Construction Company.

Village (page 161), a project designed to create a new village center in Maine's ski country.

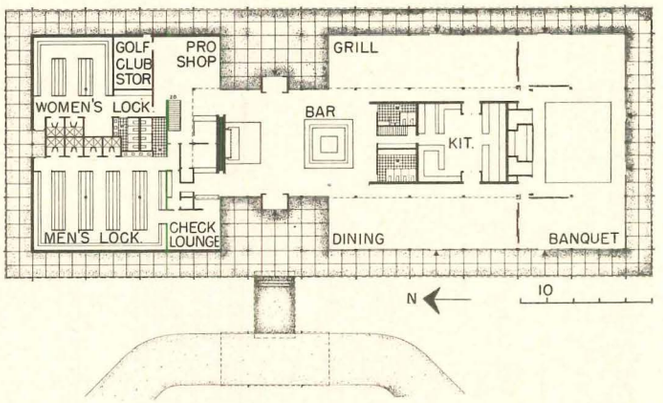
Facilities for active sports: design criteria are needed. One of the major problems in design of sports facilities—whether for the soon-to-be-developed national, state, county or municipal parks mentioned earlier; or for housing developments; or for private clubs—is that there are so few design criteria. Each such facility is a new problem, of course; but there is no real reason for every designer to discover independently (or worse yet, not discover) that the proper orientation for a tennis court in North America is 22 degrees off due north to the southeast and northwest; or that the channel into a new yacht club basin should not be laid out in the direction of the prevailing wind (so that the sailboats must tack out) or that the clubhouse for a private golf club must be planned entirely differently than the club house for a public course. This need for basic design criteria exists not just for the buildings, but for the sports facilities themselves, because more and more architects are being called on to develop the land plans (not to mention feasibility studies) for whole ski developments, equestrian centers, marinas, and the like.

Some information is available from various national organizations: for example, the National Golf Association has published a 100-page book, "Planning the Golf Clubhouse," by architect Harold J. Cliffer.

So the first step in designing a facility for almost any sport might be to contact the national organization involved. (The best place to find it is in the Encyclopedia of Associations, published by Gale Research Company, Book Tower, Detroit 26, which lists 294 "athletic and sports organizations.") Much of the information available will be heavily based on surveys—and while it will give an average picture it will scarcely help in advancing the cause of fresh design. But it is a starting point.

More important, it seems almost certain that in this exploding field of recreation, new design thinking will come thick and fast from now on. It will be worth keeping an eye on.

—*Walter F. Wagner, Jr.*



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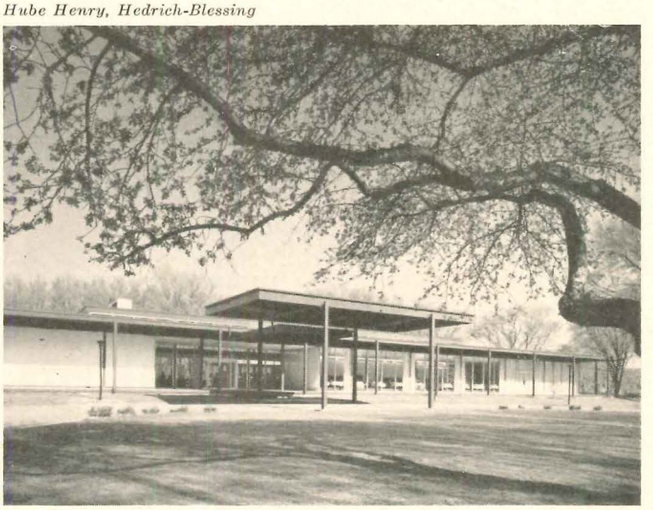
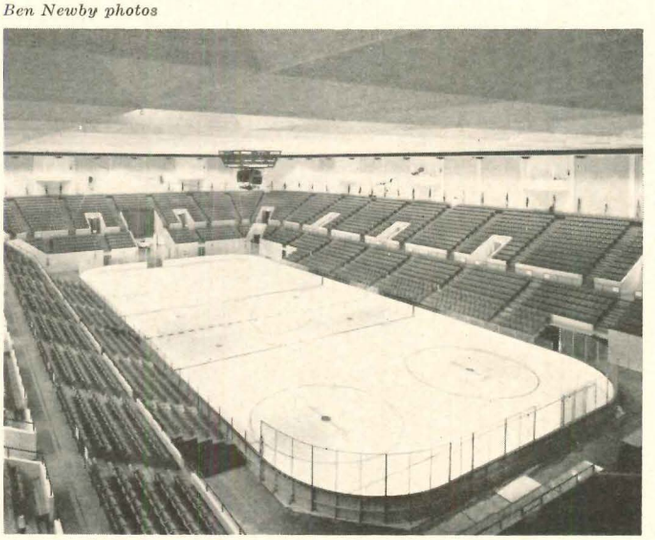


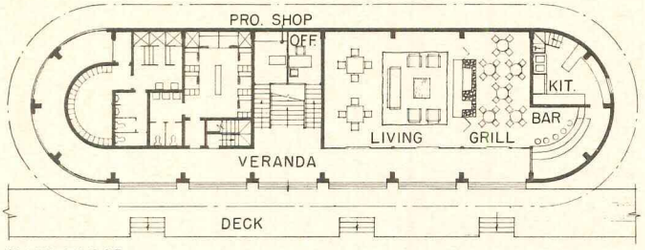
Club house at Old Orchard Country Club, a daily-fee golf course in Prospect Heights, Illinois, is designed around a simple steel structural system. Nearly all-glass walls are set back 10 feet from the roof line to form a shaded arcade all around the building. Architects: Alper and Alper; structural engineers: William S. Silberberg & Associates.

Ben Newby photos



Tulsa Assembly Center is designed for multi-purpose use. The 55,000-square-foot area, which can be converted for ice hockey, can seat 6,500 on permanent seats, another 3,500 on the 24,000-square-foot floor. Steel trusses spanning 240 feet eliminate columns—there's not a bad seat in the house. To the left of the entrance (dark panels in facade) is a 100 foot

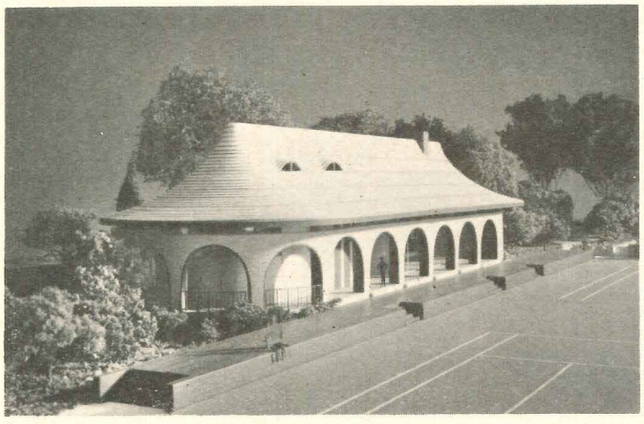
Base lodge at Gore Mountain Ski Center, a facility of the Adirondack Mountain Authority near North Creek, New York, suggests in its forms the surrounding mountains. The tall building—a two-level bar and lounge—is framed with laminated beams and sheathed in a fibrous roof-deck material applied like clapboards. The lower building—which houses a cafeteria on the second level, lockers, ski shops, and a nursery at grade level—has a roof formed by arching plywood panels between trusses. The result is a series of peaks, again suggestive of the hills. Architects: Office of Daniel Chait; project consulting engineer: Arnold Vollmer Associates; contractor: Duplex Construction Company.

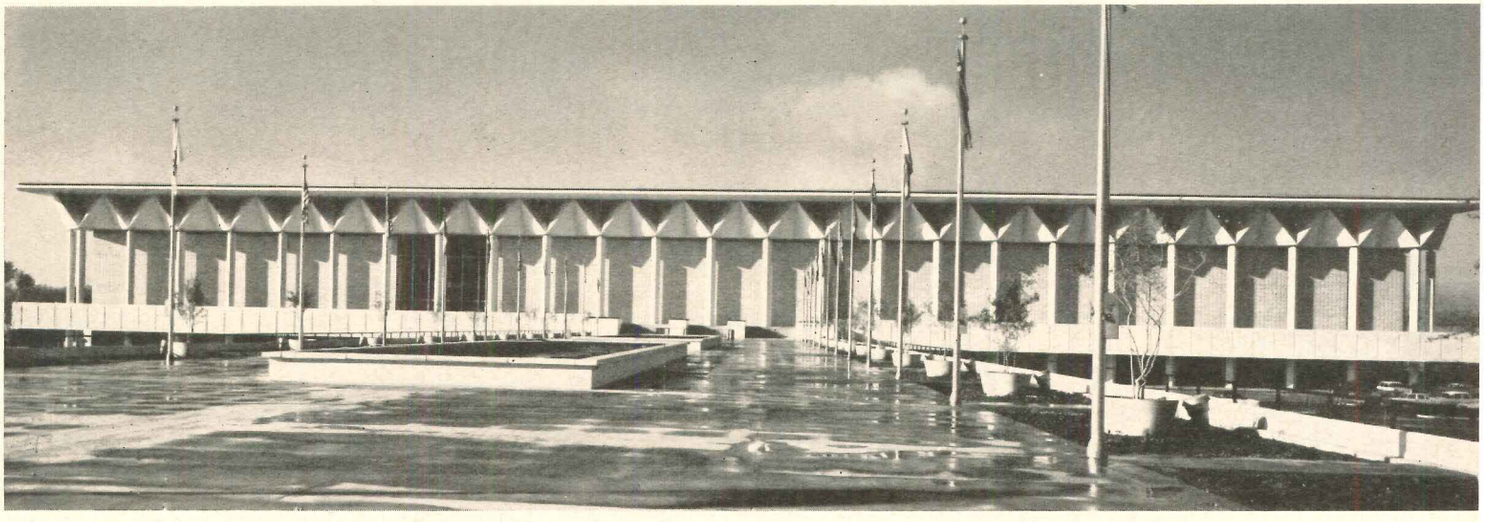


MAIN FLOOR

Mill Valley (California) Tennis Club building has a linear plan to create a good view of all courts from the veranda, rounded ends to ease the sense of crowding on a cramped site. The shingled screen, pierced with arches, is "deliberately reminiscent" of the older building this replaced. Architect: John Louis Field; contractor: Page Construction Co.

Gerald Ratto

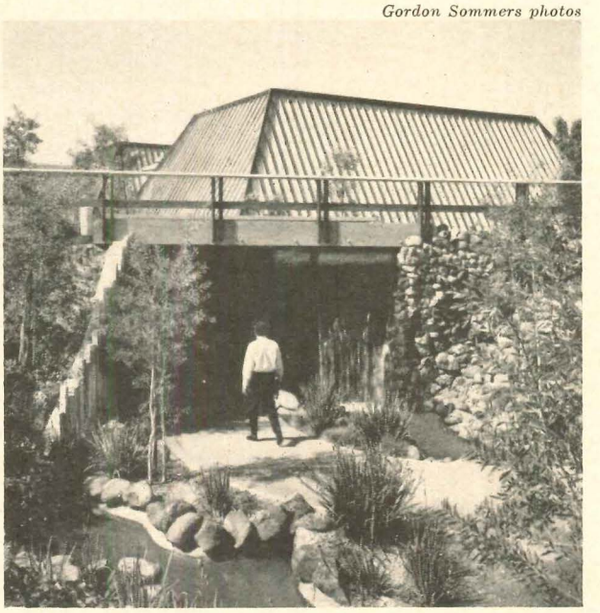




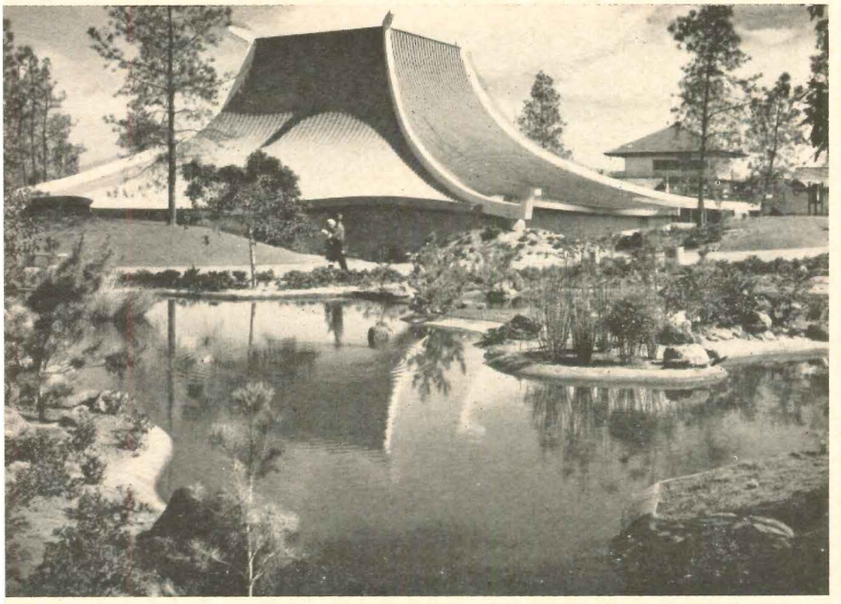
by 200 foot exhibition hall with 22-foot-high ceilings, and doors for large exhibit items up to 18 feet by 21 feet. Above this hall is an assembly hall, seating 1,200, with stage and orchestra pit; and 15 smaller meeting rooms. Heating and air conditioning of each major area is separately controlled. Parking is provided for some 1,200 cars. Architect: Edward Durell Stone; associate architects: Murray, Jones & Murray; structural engineers: Severud-Elstad-Krueger and Associates; mechanical and electrical engineers: Netherton-Dollmeyer-Solnok; lighting consultant: Lighting by Feder; landscape architects: Clarke and Rapuano; general contractor: Manhattan Construction Company.

Gordon Sommers photos

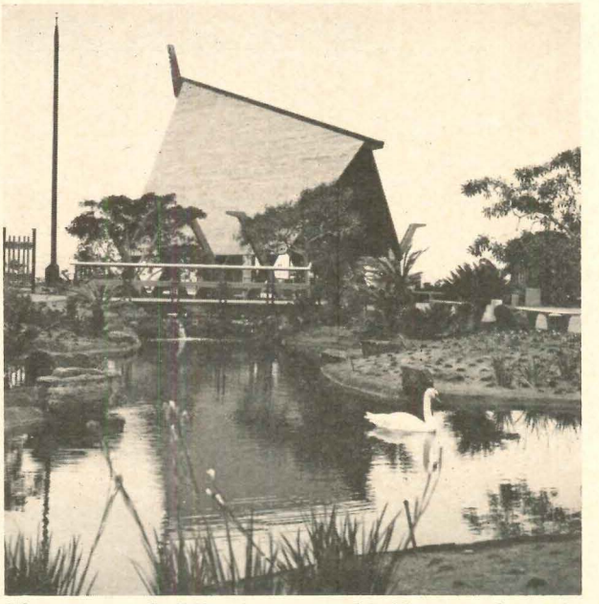
Over-all view of Sea World, showing its lagoons and winding walks



Entrance to Sea Grotto, designed to simulate a cave



The striking underwater theater is set amidst landscaped pools



The entrance building is a covered bridge into the park

San Diego's Mission Bay Park: Sea World oceanarium . . .

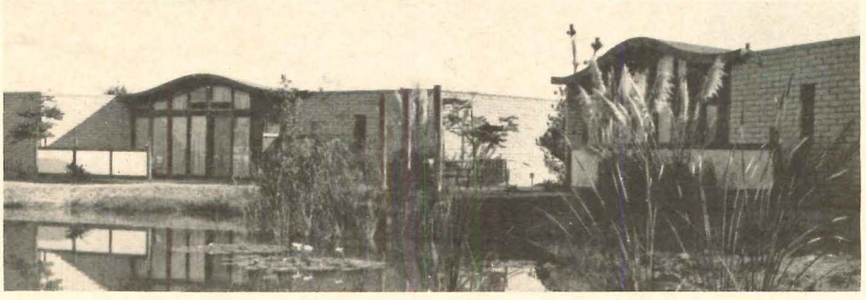
Sea World is a 21-acre concession within Mission Bay, San Diego's unique recreation area described on page 158. It is "an oceanarium as well as a park, educational as well as recreational." Gruen's project coordinator, William Dreiss, explains that the design of the buildings, while fanciful, is also functional. For example: the underwater theater was designed around a 45-foot-square, glass-walled tank. The roof sweeps down from the top of the tank over the audience, which is seated facing the glass walls squarely to minimize distortion. Similarly, the Sea Grotto (photo, upper right), which exhibits reef fish and animals in four large tanks, is submerged below grade, and only the canted roof structures enclosing work spaces above the tanks are visible.

The landscaping is extensive, and the extremely complex system of water supply and circulation to the various tanks and exhibits demanded, the architect reports, "the application of extremely imaginative engineering concepts."

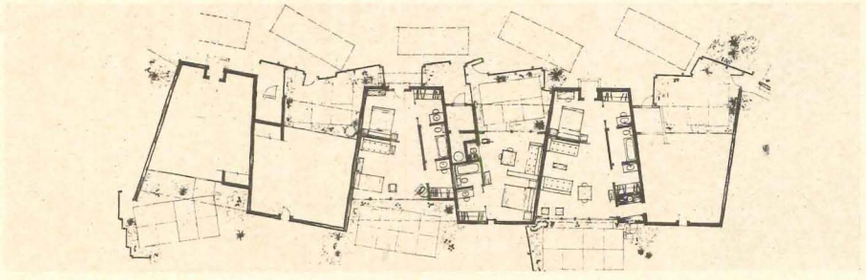
Sea World, San Diego. Architect: Victor Gruen Associates—Ben Southland, partner in charge, William T. Dreiss, project coordinator; engineers: Moffatt and Nichol; landscape architects: Wimmer & Yamada; developer: Marine Park Corp.

George Lyons

In the "village center", wood structure and color is expressed everywhere

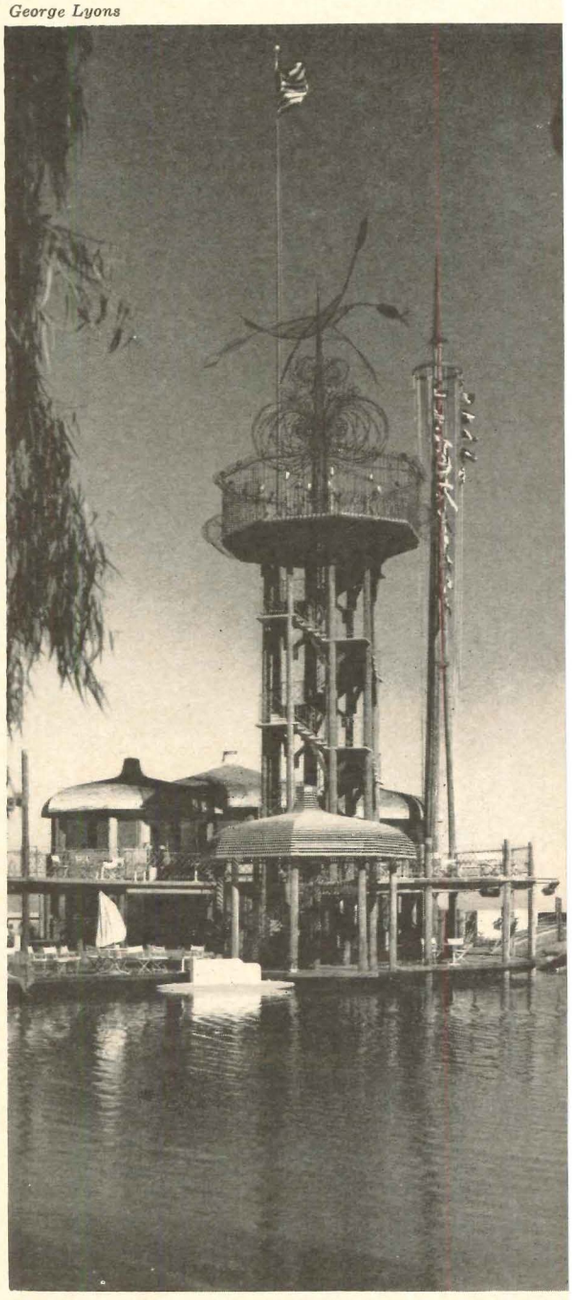


Zach Stewart



In the guest-room units, the same curvilinear forms are carried through

George Lyons



The observation tower: "just for fun"

. . . and Vacation Village suggest fun with fanciful forms

Architect Eldridge Spencer says: "We don't call this a hotel or motel. It is a village . . . planned for family use, and for day use as well as overnight guest use. We want refreshment and expectation for people, and this is what we have meant to create at Vacation Village." One measure of success is this comment from a RECORD editor who stayed there: "The environment transforms you into a lotus eater."

Since the 43-acre island site has an average of six feet of fill, driven wood piles are used to eliminate special foundations for many of the buildings and kiosks—and they are clearly expressed in the design.

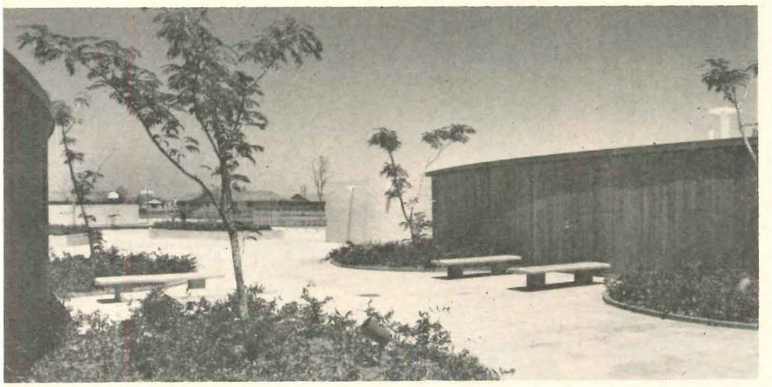
The guest rooms (photo and plan, above left) are sited along winding landscaped roads, and most open directly onto the beach or a fresh-water lagoon. The tower, topped by a rotating "wire sculpture", is just for fun—for climbing and for looking out.

Sports facilities include the beach, three swimming pools, a marina and boat rental, tennis courts, a par-three golf course, and lawn games.

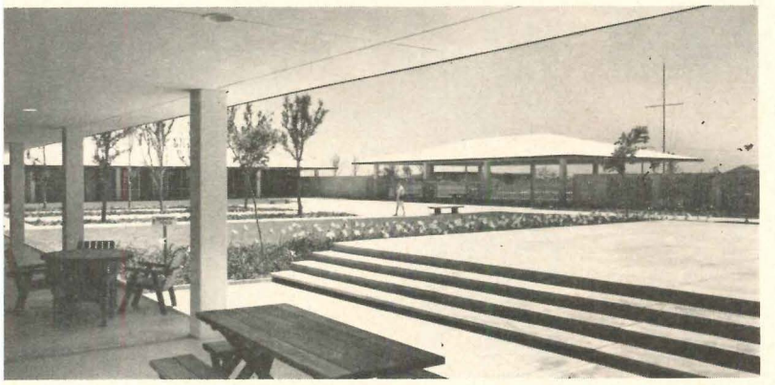
Vacation Village, San Diego. Architect: Spencer and Lee; civil-structural engineers: Lawrence, Fogg, Florer and Smith; mechanical engineer: G. M. Simonson; landscape consultant: Roland Hoyt; contractor: M. H. Golden Construction Co.

Ed Stewart photos

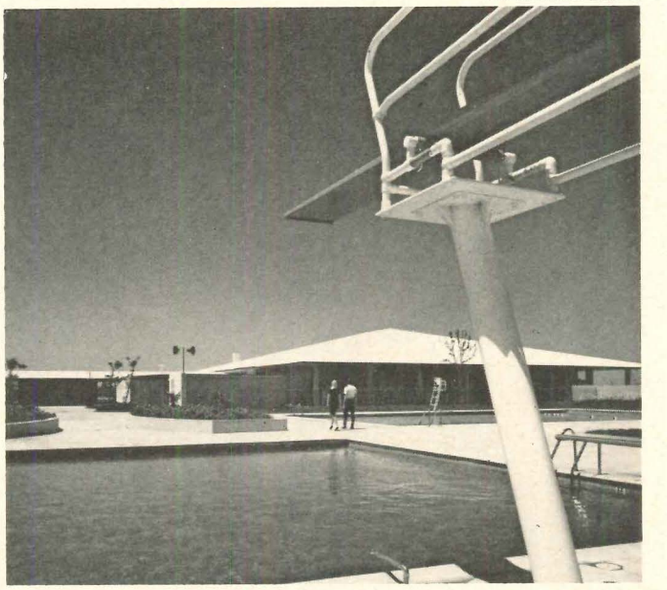
Strong pattern of roofs and columns is evident from the street



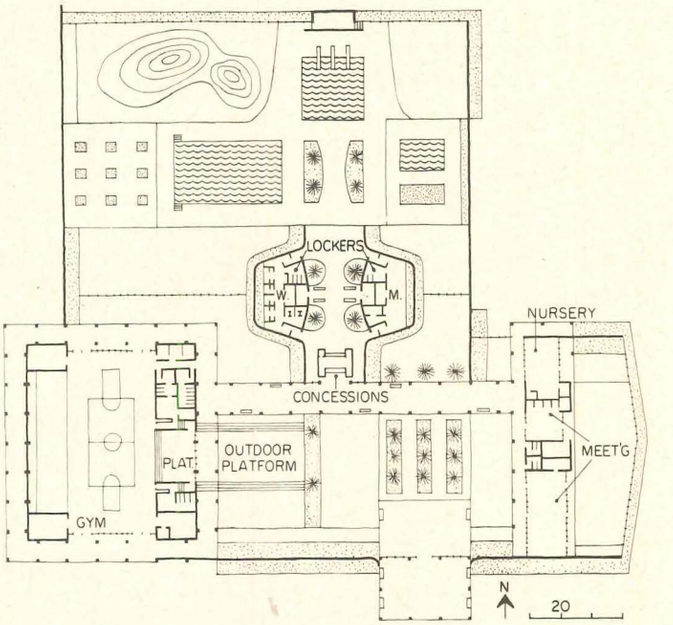
Low bathhouses flank walkway to swimming pool court, at rear



Covered pavilion connects buildings, offers shelter from sun



Blue water and green shrubbery set off the white buildings



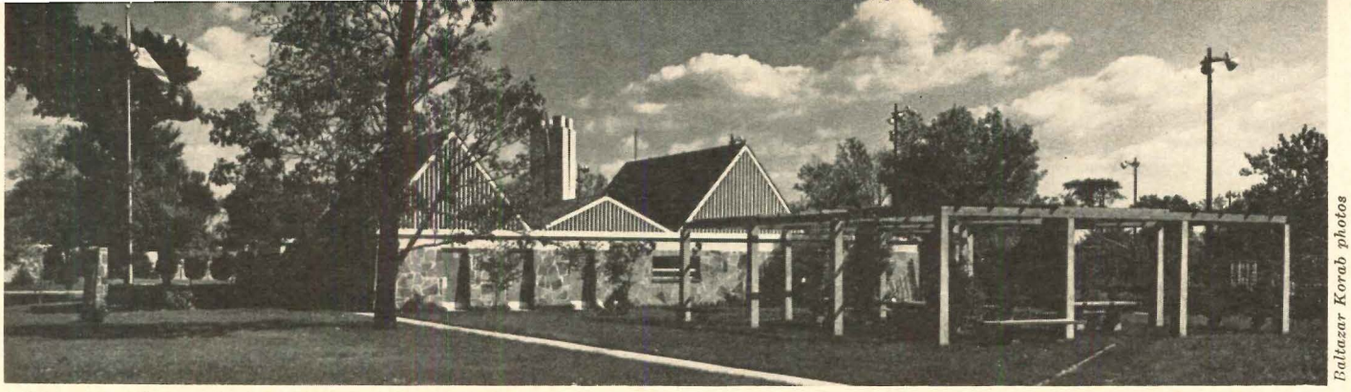
Outdoor spaces are defined by both buildings and landscaping

Recreation center for a new community: organized, unified

This complex was designed as part of the recreation facilities for a large residential development being built adjacent to the NASA Manned Spacecraft Center near Houston. Space for varied activities of adults and children was created within and between four basic units: (1) a gymnasium-auditorium, which opens onto an outdoor platform for dances or parties; (2) an activities building with meeting rooms and a nursery; (3) a roofed-over play pavilion; and (4) bathhouses, flanking the walkway to the swimming pool court. There are three pools: for swimming, diving, and wading.

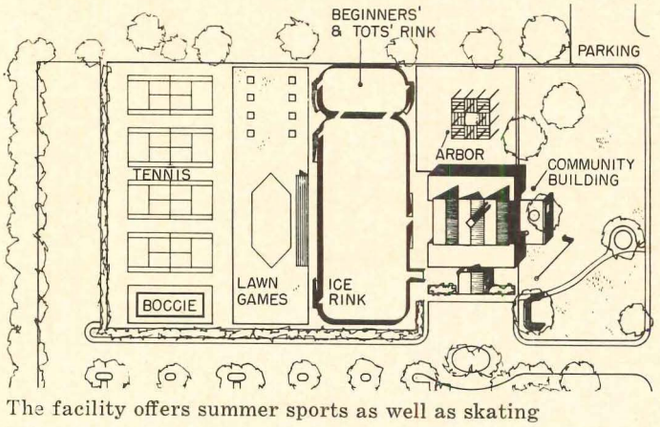
The strongly organized roof system gives definite visual continuity throughout the center; and the buildings, as well as landscaping elements and the surrounding wall and fencing, are used to define outdoor spaces. A large park area is located across the street. Construction is simple: concrete slab and columns, steel roof framing, brick cavity walls, low-transmission glass. The enclosed buildings are air conditioned.

Community Recreation Center, Clear Lake City, Texas. Architects and engineers: Caudill, Rowlett and Scott; general contractor: Del E. Webb Corp.

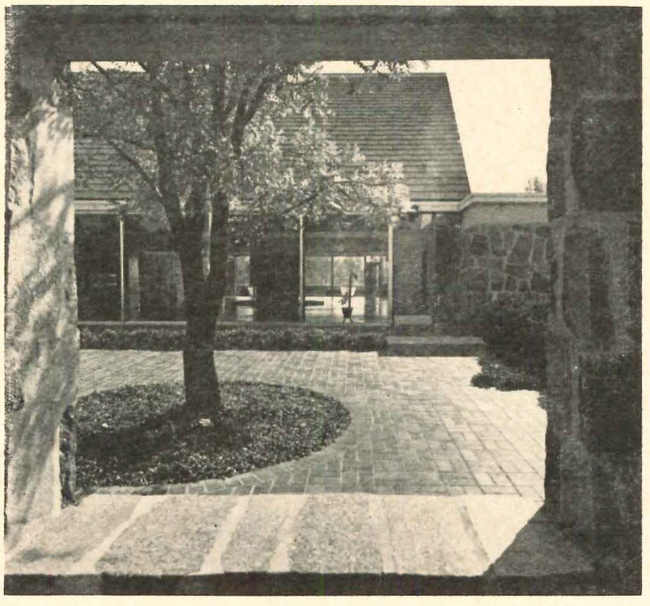


Baltazar Korab photos

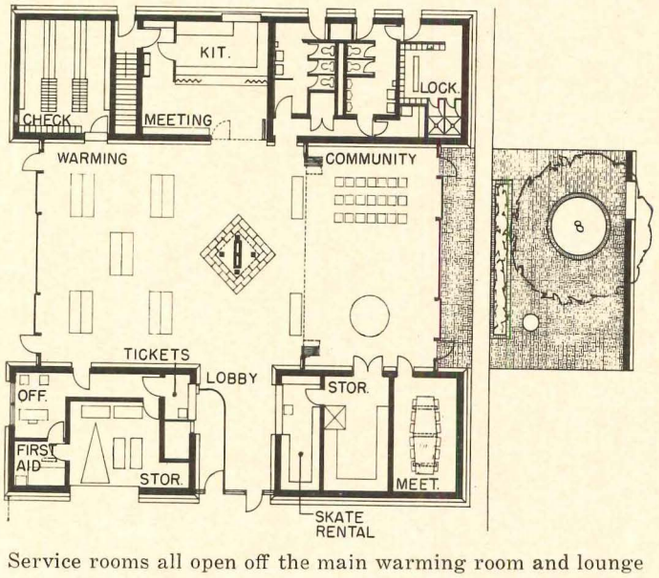
"The materials, the opaqueness, and the symmetry . . . all conspire towards a civic, if informal, character."



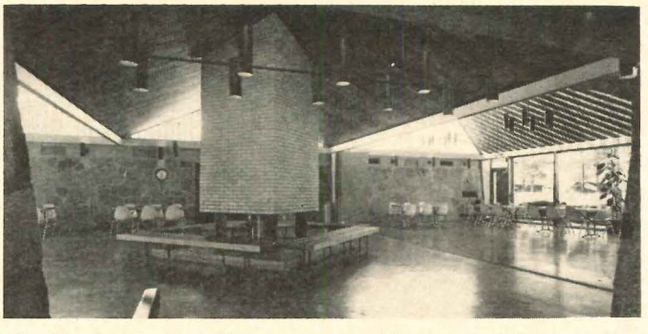
The facility offers summer sports as well as skating



The walled terrace is well away from the noise and activity



Service rooms all open off the main warming room and lounge



The big fireplace: social center on cold winter nights

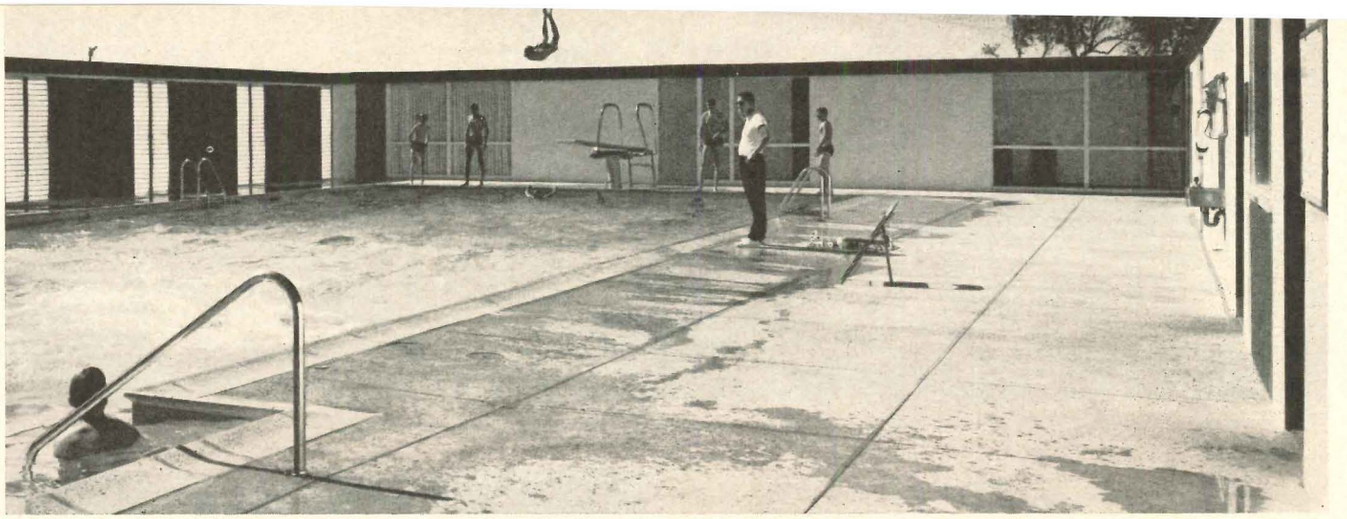
Skating rink in Columbus: "a stage setting"

This small-scaled building is the hub of a privately endowed recreation facility located in a public park. While it is planned primarily as a warming room and lounge area for a skating rink, it also serves tennis and boccie courts. The main room, dominated by the two-sided fireplace and massive chimney, looks onto the rink in one direction and a terraced garden on the other. On the two closed sides the room is flanked by locker rooms, a conference room, Park Board offices, and a rental and repair shop.

The exterior walls are rough-hewn granite; the roof, a folded plate built up of 3½ inch by 4⅜ inch timbers glued and spiked, and received at peaks, valleys and end walls by specially fabricated bent plates and built-up beams.

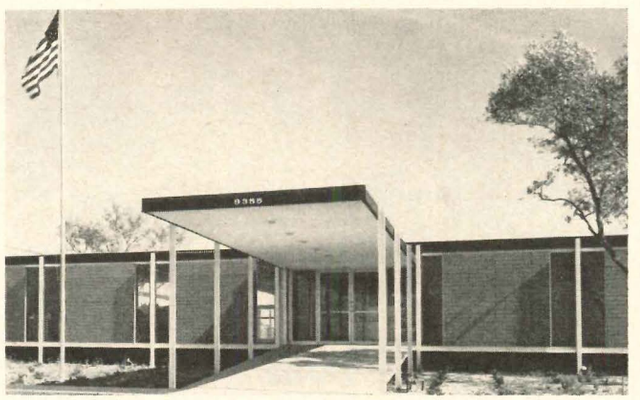
Harry Weese says: "The design is a kind of Black Forest stage setting for exhilarating winter evenings under the stars. But the daytime must also be considered. Hence the permanent natural materials, the opaqueness, and the symmetry; all conspiring towards a civic, if informal, character."

Lincoln Center Skating Rink, Columbus, Indiana. Architects and engineers: Harry Weese & Asso.; structural engineer: Frank J. Kornacker; mechanical engineers: Kravalec & Best.

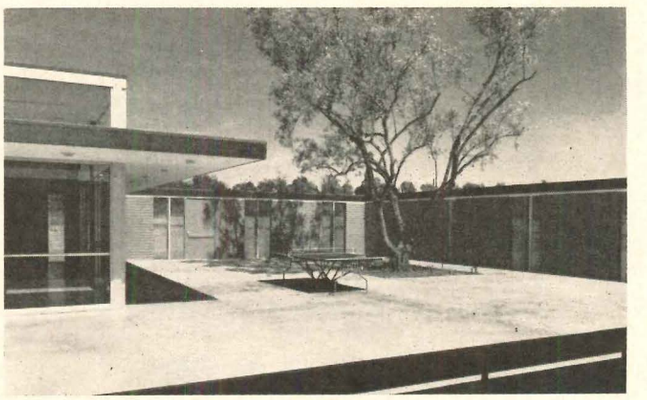


Glasheen Graphics photos

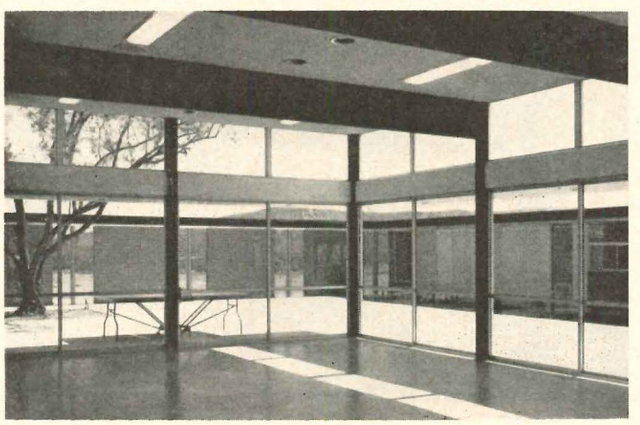
Swimming pool is enclosed by office wing *(rear)*, locker room *(right)*, and walls which repeat the pattern of the facade



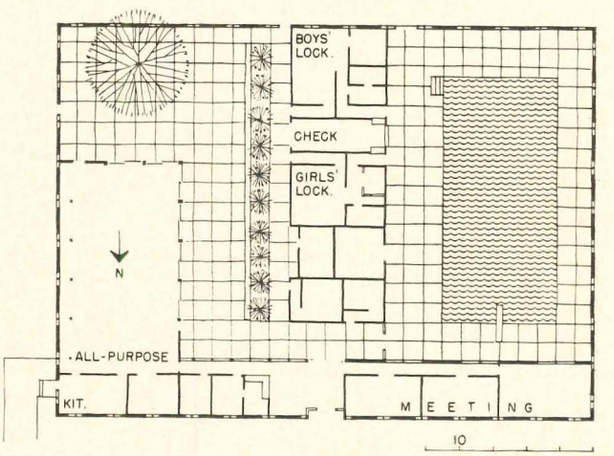
The entry: simple and disciplined. Columns are 12 feet o.c.



Walls around open spaces have grill inserts for ventilation



Multi-purpose room has all-glass walls opening to the court



Locker-room wing separates the pool from the courtyard

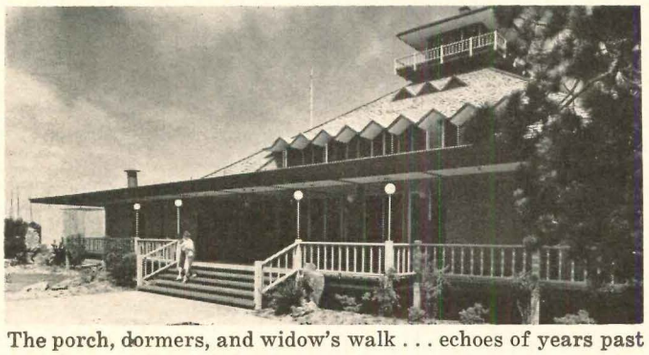
La Jolla YMCA: well-ordered indoor and outdoor space

The simplicity and discipline of Russell Forester's design are obvious in the strict adherence to a 12-foot structural module and six-foot planning module, and in the frank expression of the simple structure and materials. What cannot be shown in the photographs is the sense of gaiety accomplished with color—for instance, the concrete block panels of the exterior wall are painted a bright cherry-red and are framed by off-white columns and slab, and the black fascia.

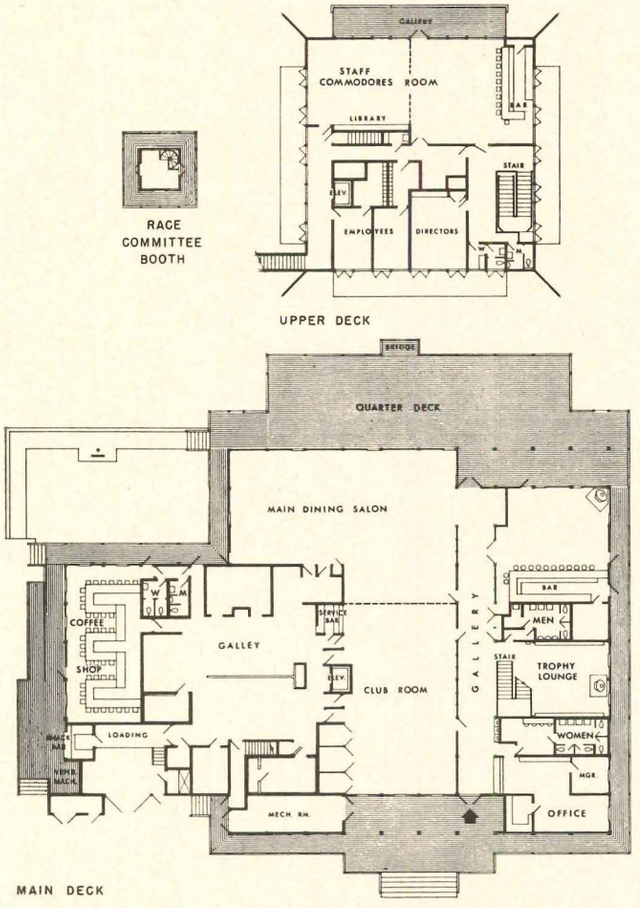
The plan is thoughtful: everyone entering must pass the lobby counter, which gives good control. A buffer of shower and locker room separates the multi-purpose room and courtyard from the noise and activity of the pool. The multi-purpose room, designed primarily for teenagers' dances, can be opened wide to the walled courtyard via sliding glass doors—a solution which allows the young people a sense of freedom but nonetheless provides for necessary adult supervision.

La Jolla Youth Center YMCA, La Jolla, California. Architect: Russell Forester; structural engineers: A. J. Blaylock & Associates; mechanical engineer: Merle Strum & Associates; color consultant: Eleanor Forester; contractor: Callahan Brothers.

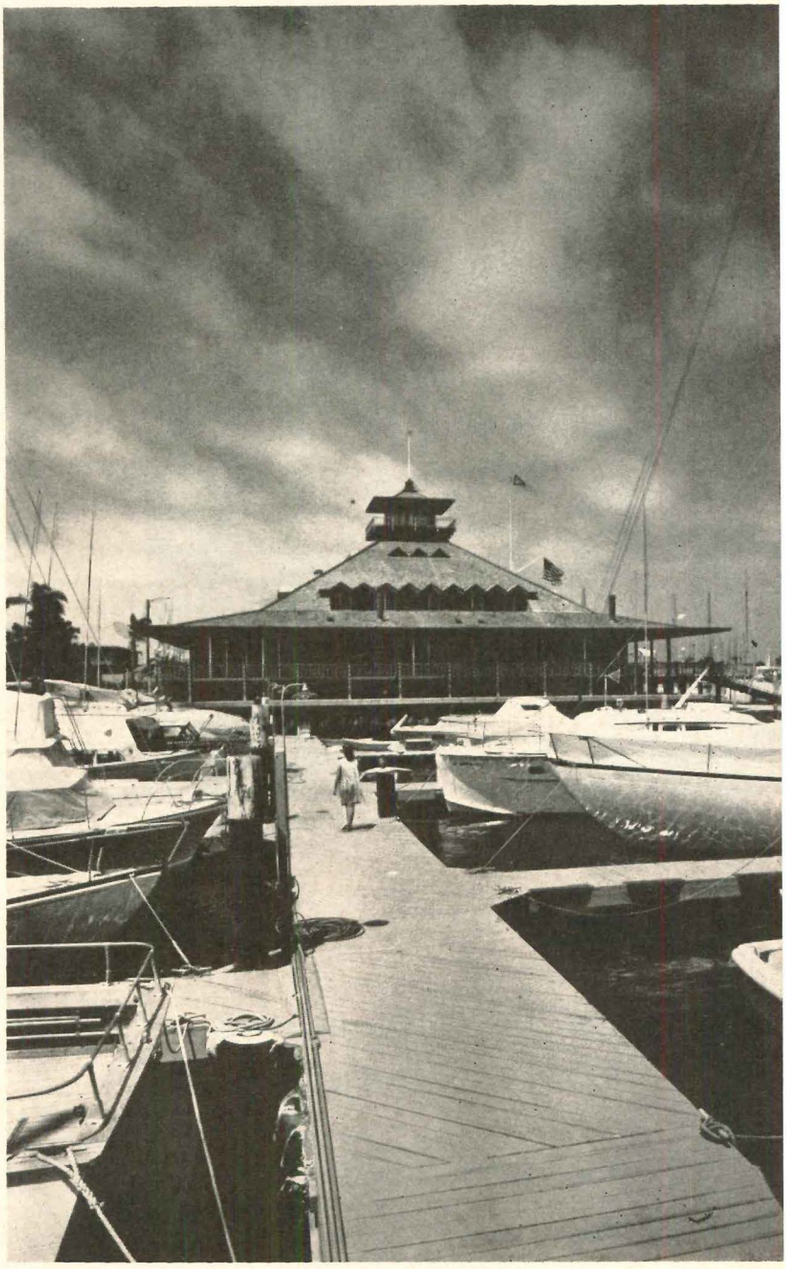
Harry Crosby photos



The porch, dormers, and widow's walk . . . echoes of years past



Wide decks and big windows open all public rooms to the view



". . . it looks somehow as though it had always been there"

San Diego Yacht Club: reflection of a tradition

No one loves tradition more than a sailor, and part of the tradition of yachting has been the big gingerbread barns of clubhouses. So, happily, Frederick Liebhardt's new building—which replaced a 40-year-old clubhouse "firmly entrenched in the hearts of the membership"—looks somehow as though it had always been there. Its big sheltering roof topped by a widow's-walk headquarters for the race committee, its "dormer windows", and its broad, covered porches are all echoes of clubhouses of years past. Yet this is a thoroughly fresh design—informal and practical, planned to work effectively with weekend crowds or weekday quiet. For example, a central kitchen is set up to serve a variety of dining and snack areas, the main rooms can all be divided by movable walls, and the trophy lounge and upper-level rooms offer a retreat from the bustle and activity of the docks and main rooms. The redwood siding and clear cedar-shingle roof weathered quickly in the salt air to a warm and handsome finish.

San Diego Yacht Club, San Diego. Architects: Liebhardt, Weston, Mosher & Drew—Frederick Liebhardt, project architect; structural engineer: John C. Kariotis & Associates; general contractor: Trepte Construction Co.

L. Marinoff

Franklin Plaza: Places to sit, to present plays . . .

Ed Bagwell

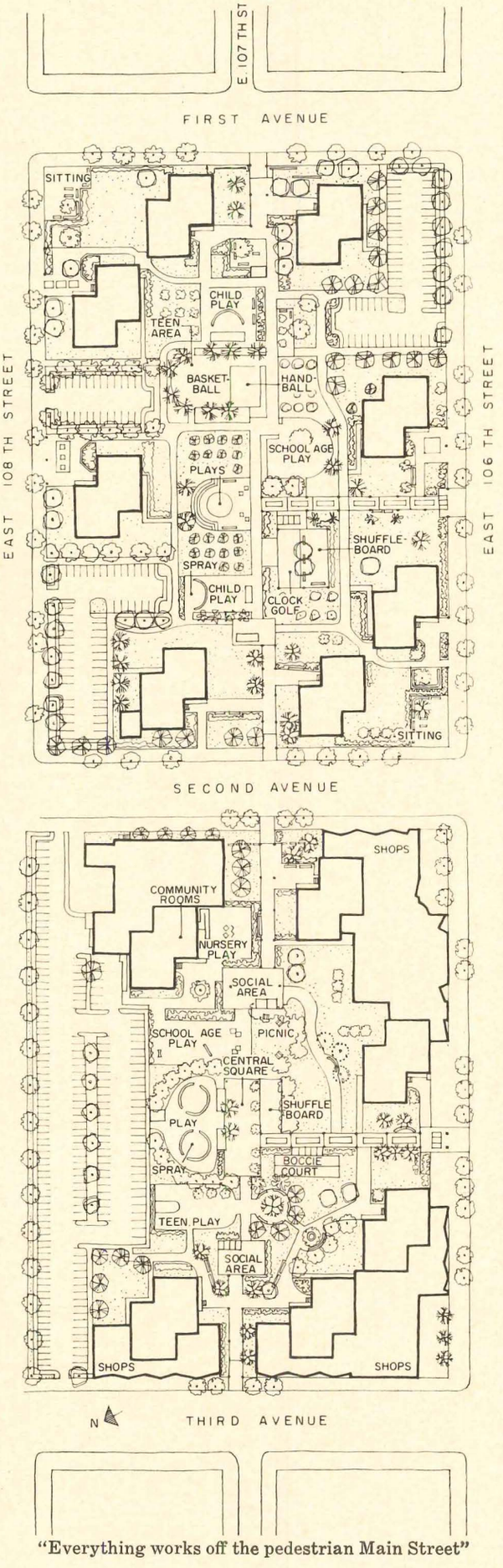
. . . places for recreation for young and old alike

Franklin Plaza: new life for an urban complex

Albert Mayer, retained to design the open spaces between existing buildings designed as public housing, applied to Franklin Plaza his basic philosophy towards community centers (ARCHITECTURAL RECORD, October 1964): "They must create an aura, a sense of pride and allegiance, a visible invitation to those within the development and beyond." His design does just that: it not only provides separated and well zoned social, play, and recreation areas for adults and children of varying ages; but links the buildings into a well knit group. Day or night, its central pedestrian street serves as a link between the buildings and the various outdoor elements, and as "an invitation to all the residents of the area."

Franklin Plaza, New York City. Designer of open spaces: Albert Mayer of Mayer, Whittlesey & Glass; architects: Holden, Egan, Wilson & Corser.

Recreation Building and Facilities



"Everything works off the pedestrian Main Street"

Architectural Engineering

A Lesson in Optics

The latest story on the Houston Astrodome is that the skylights leak. And since the plastic panels have been painted to cut the glare, there's not enough sun to dry out the field; hence tarpaulins are needed in this indoor structure.

But the real lesson of the Astrodome for architects is in optics. What had to happen before fielders could properly see the ball was for the brightness contrast to be minimized between transparent plastic panels and the opaque structural network and infill panels. In addition, the plastic panels were made prismatic to diffuse the light and prevent a patterned image on the inside. This is like having a bright hazy day, rather than a dark blue sky. The best solution, in theory, would be an artificial sky.

The Bass Notes May be Electronic

Electronically amplified sound to produce "artificial reverberation," also known as "assisted resonance," is being increasingly discussed in acoustical circles. As noted last month, such a system has been installed in the Royal Festival Hall in London in an effort to improve low-frequency sound. About a half-dozen installations were made in the Fifties. In 1962 the Russians used a total electronic system in their 6,150-seat Kremlin Palace of Conventions, which was acoustically treated to preclude natural reverberation. This April, conferees at the annual meeting of The United States Institute for Theatre Technology heard a demonstration of a newly developed electronic reverberation system in Purdue University's 6,107-seat Hall of Music. And last month the Acoustical Society of America presented a symposium on auditorium electro-acoustics, including among the speakers two of the British consultants who worked on the Royal Festival Hall.

Such systems appear to have merit where the halls must be multi-purpose, are very large, or both, or where acoustical defects need correction. They can be quite expensive for large halls and would require the service of a skilled recording engineer.

A Course in Architectural Technology

The newly created division of Architectural Technology in the School of Architecture at Columbia University will have a two-fold purpose, according to Dr. Mario Salvadori, head of this department: to help promote coordination of architectural design with technology, and to improve the teaching and practice of the technological disciplines involved in architecture. A one-year course will be made available to engineering graduates in the School of Architecture who will be eligible for a master's degree in building technology.

The School of Architecture, headed by dean Kenneth A. Smith, will have three divisions, the other two being Architecture and Urban Planning.

Higher Brick Bearing Walls

Multi-story brick bearing walls are back, slimmed down. While the renewed interest in the brick bearing wall undoubtedly stems partly from esthetic considerations, it is being abetted by economics.

The relatively few examples that now exist in this country run generally 3-6 stories, sometimes 9 or 10. They are dormitories and apartment buildings in which the interior walls are permanent and fairly closely spaced.

Europeans have been constructing apartment buildings with brick bearing walls for nearly two decades. The tallest known example, an 18-

story structure in Zurich, built in 1957, has exterior walls 15 in. thick.

Brick bearing wall structures seem destined to rise much higher here. For example, consulting engineer William J. LeMessurier of Boston has investigated the engineering feasibility of a 25-story dormitory building, utilizing the STRESS computer program for determining the interaction of wall and floor systems. His study, reported at the National Brick and Tile Bearing Wall Conference, May 27-28 in Pittsburgh, showed that such a building could be built with unreinforced brick cross walls only 8-in. thick. The walls in this example were taken to be 15 ft on center and 52 ft long, interrupted by two openings 4-ft wide. His firm has done bearing wall dormitories for Brandeis, Clark and Princeton.

While brick bearing wall structures show good costs even now, this picture could be improved, engineers point out, if they could design according to allowable stresses given in the codes, and not be restricted by arbitrary thickness vs. height requirements.

Speaking on "Structural Design of Masonry Bearing Walls," Richard M. Gensert, consulting engineer from Cleveland, pointed up some of the practical problems of design and construction. He has designed a number of bearing wall apartment buildings in several Ohio cities and in Pittsburgh.

Concrete floors are a problem, Gensert says, regardless of whether poured-in-place or precast. Cast-in-place floors tend to induce bending in the walls as they shrink during curing. With precast floor sections it is difficult to get even bearing.

Gensert would like to see test data brought up to date, and tests performed on larger size panels.

Attending the conference were 600 architects, engineers, contractors and brick industry members.

One conferee, engineer George C. Hanson of Hanson and Salladay, Denver, was the structural designer for a 17-story load-bearing brick apartment building now under constuction in Denver. There are three buildings in all in the project, Park Mayfair East, the other two buildings being seven and 10 stories. The 17-story building has 9-in. brick cavity walls, with the 1⅞-in. cavity containing grout and minimum reinforcement. The Denver code permits this construction, but the American Standard Building Code Requirements for Masonry (1954), currently under revision, calls for 12-in. thick reinforced walls. The interior walls are 9-in. up to the 11th floor and 6-in. hollow brick for remaining floors. Architects for the project were Anderson and Looms of Denver.

Industrialized Building

Subject of the third Congress of the International Council for Building Research in Copenhagen, August 23-28 will be, "Towards Industrialized Building." This is the European way of saying prefabrication. Topics to be covered include markets, industrial production methods and planning, materials development, functional requirements and development and transmission of knowledge.

What a Computer Does for a 100-story Building

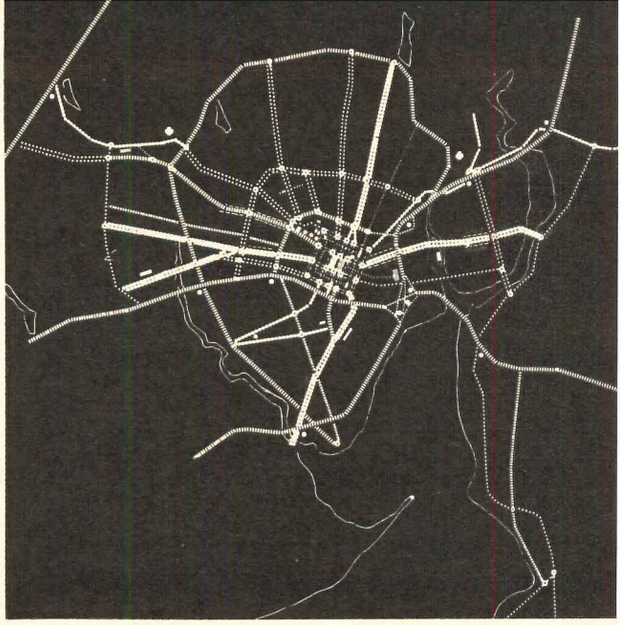
The Chicago office of Skidmore, Owings & Merrill naturally turned to their in-house computer to analyze the structural frame for the 100-story John Hancock Center. The computer permitted their engineers to examine more than 30 structural possibilities. In the stress analysis of the selected design, one step involved the computer solution of a set of 1,500 simultaneous equations.

Post-tensioned Slabs Go Through a Fire

How well post-tensioned lift slabs can withstand severe fire was demonstrated last March when four classrooms of a two-story Los Angeles school were gutted by two separate fires, believed to have been started by an arsonist. Consulting engineer George E. Troxell in a report to the board of education stated that although the worst fire probably lasted 1½ hours and reached a temperature close to 2,000 F, the 27 by 32 ft slabs of 4,000 psi lightweight concrete in the two classrooms affected were deemed safe. Lift-Off tests on the prestressing tendons, on the average, showed no reduction below the working loads.

This Month's AE Section

THE LIGHTING OF CITIES



A hierarchy of lighting connotes
the relative importance and character of city streets
and enhances their information-giving value

By William M. C. Lam Consultant: Coordination of Lighting and Architecture

Public lighting has a much greater affect than has been realized on the visual image of the city and the flow of its traffic. The purposes of public lighting, and good and bad examples, were covered in the first part last month. The general principles developed are now applied in the concluding part to an actual situation, the proposed urban redesign of New Haven, Connecticut.* Broadly, these were to provide an integrated lighting system, which would express the character of the city, would define the different types of streets and their relationships to each other, would provide drivers and pedestrians with information on oncoming traffic conditions and visual orientation to help them to find their way after dark.

The daytime image of the city was also given high priority; the design of the lighting fixtures and the materials in which they were to be executed were selected with the aim of forming a quiet, orderly, repetitive background effect in the general townscape.

Many of the recommendations made in the context of the New Haven scheme may appear to be new because they differ from standard American practice. However, precedents exist either in Europe or somewhere in the United States, for almost all the apparent innovations.

The designs put forward in this scheme are considered to be "practical" and economically justifiable. In many streets, the proposed designs actually achieve their purpose with the maximum of economy. In other cases, where the designs achieve a number of objectives and serve a wide range of functions, the cost of execution is probably higher than would be the straightforward provision of required level of street illumination.

The proposals are based on careful observation of past and current practice, which has been evaluated in terms of visual and design principles. The higher costs of some parts of the scheme would have to be justified in terms of improved safety and comfort, visual appearance, information value, or the creation of a special effect to highlight an important landmark, building or pedestrian precinct. No one, familiar with the American townscape after dark, can doubt that such improvement is desperately needed. The lighting designs in this scheme are put forward as an attempt to bring about some of these badly needed improvements. They are not attempts to be "different," "modern," or to appear "stylish" or luxurious. Since the proposed lighting designs are aimed toward integration of the streetscape, and since signs, signal lights, parking meters are all included —often combined in single units— cost evaluations should be of complete "packages", rather than of lighting alone. Discussion of light levels has intentionally been omitted, since the principles and designs would be valid whatever the decisions of light levels vs cost.

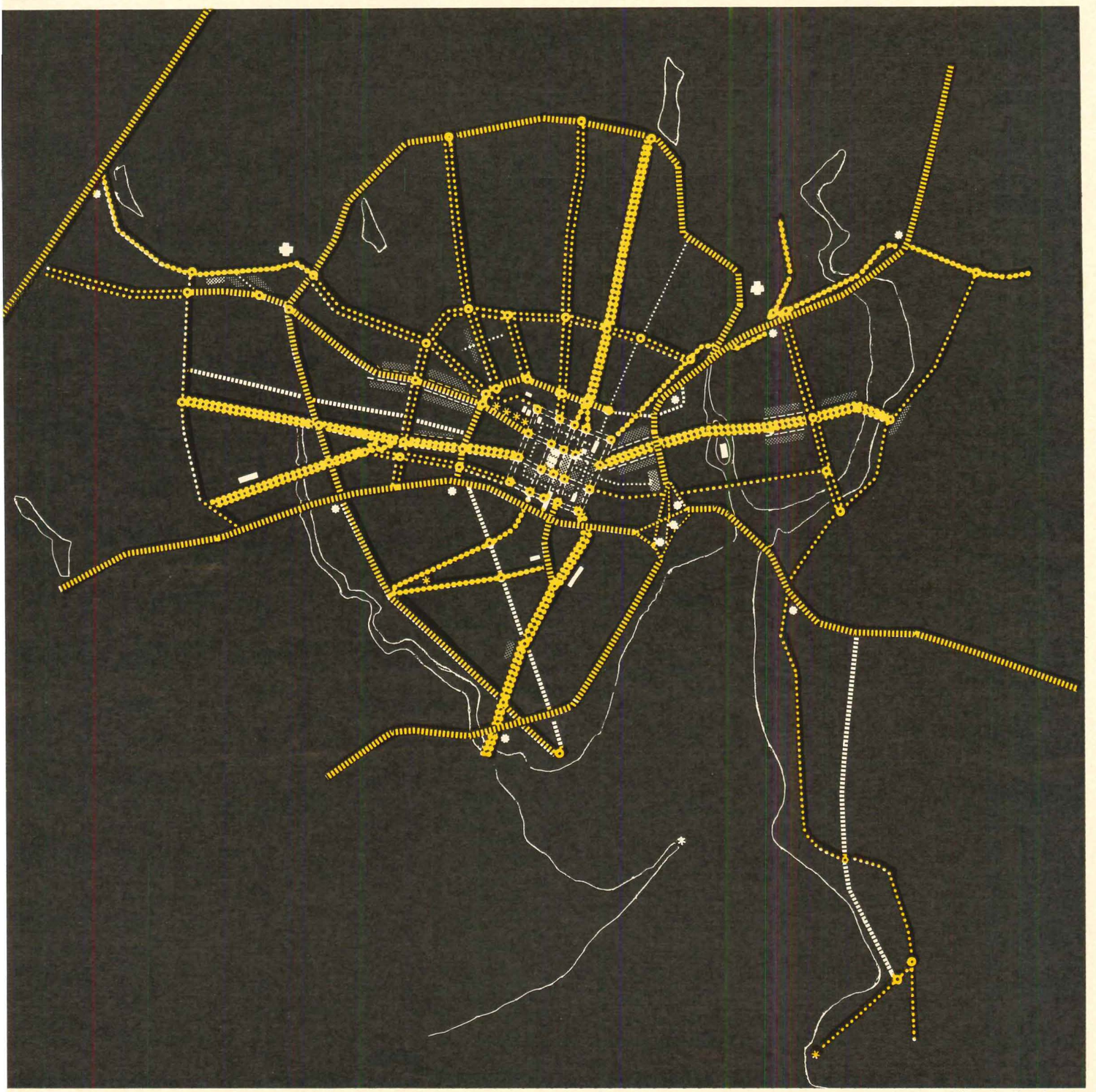
In order to achieve the high degree of design integration envisaged by the authors of this scheme, close cooperation between engineering staffs and the several city departments involved would be required at all stages of the work. It would be particularly important to have design-trained personnel closely associated with every phase in the execution of the street lighting work.

As New Haven is an old and ever-growing city, the lighting design could only be carried out over a long period and as funds are available or other street modifications are made. Changes in the city will certainly demand changes in the lighting plan. While the master plan is not regarded as a rigid blueprint for a perfect system, it is hoped that it will be a valuable first step in establishing an integrated pattern of public lighting at a higher design level than is standard practice today.

The general scheme for the public lighting of New Haven was worked out on the basis of a street hierarchy, in which the lighting expresses the importance of the street as a traffic artery, and is also adapted to the type and speed of the vehicular traffic it commonly receives, the amount and kind of cross traffic, the character of the surroundings, and the extent of pedestrian traffic. These street differences are expressed by differences in size, spacing and placing of the luminaires and by variations in corner treatment. The details of how the hierarchy is worked out in terms of lighting and how the different parts of the scheme fit together are shown in the figures and captions on the following pages.

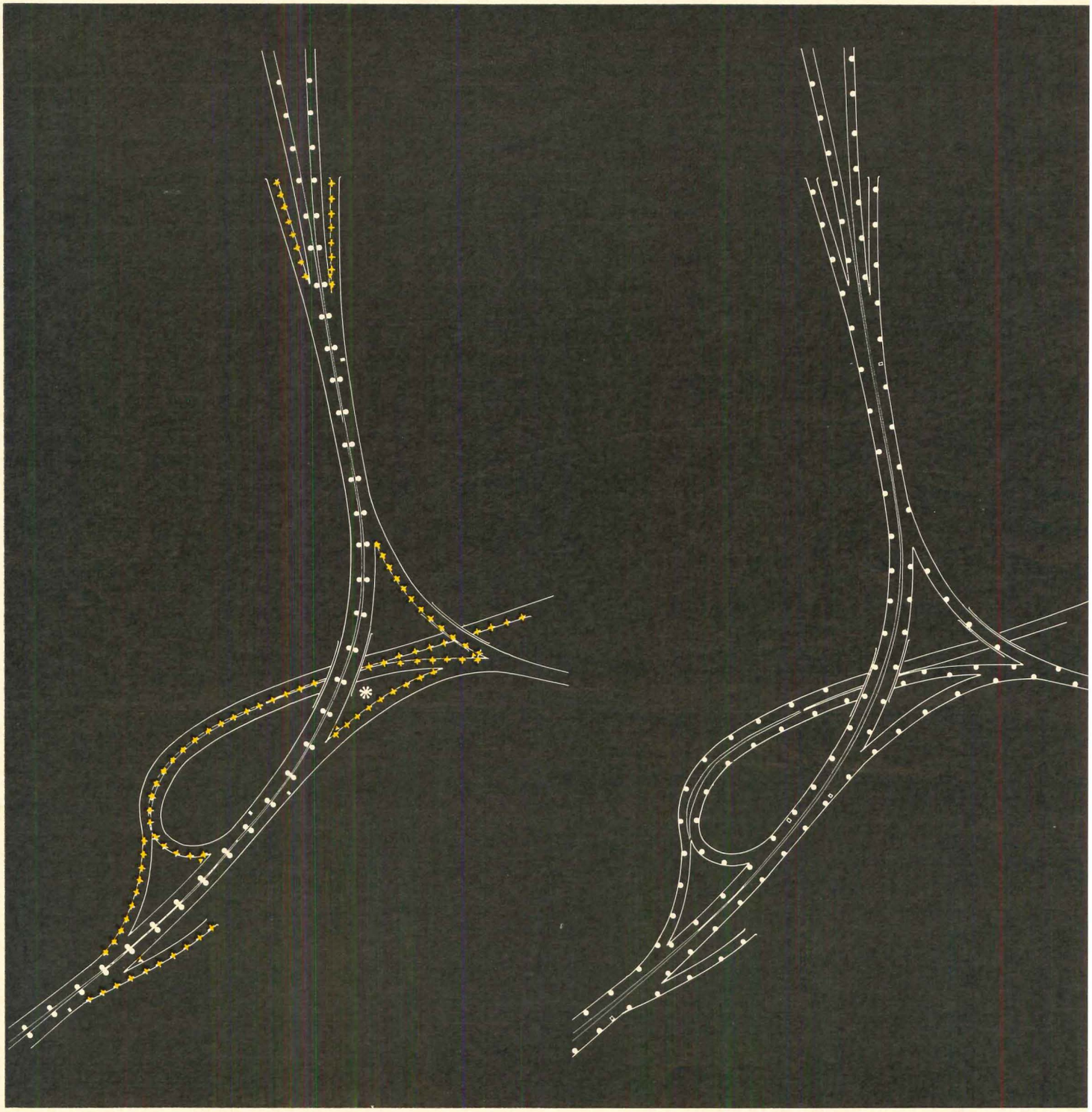
*The material on the following pages is based on a master plan for the public lighting of New Haven which was carried out in conjunction with a study for an urban design plan for the city developed by Rogers, Taliaferro, Kostritsky, Lamb, architects and planners, working with the New Haven City Plan Commission.

New Haven Lighting Plan



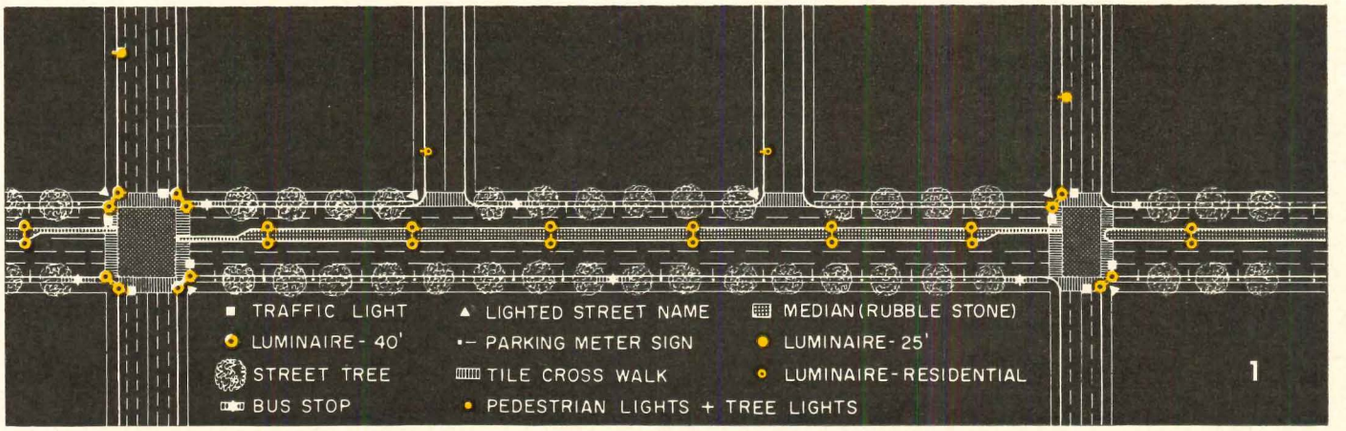
Maps by Ron Izumita

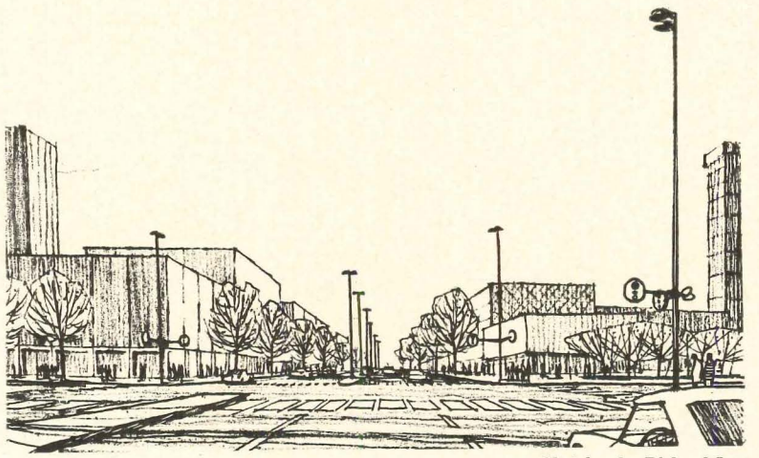
This general lighting scheme for New Haven, Connecticut shows how the lighting was organized to define and establish a definite street heirarchy (details given on the following pages). The lighting of the various streets was designed to suit the types of traffic and to provide information regarding oncoming conditions and city orientation. Special lighted pivots are traffic aids where streets converge in complex intersections. Lighted building monuments and fountains can serve as pivots within the city. Interchanges are marked by pylons 100 to 200 ft high. Terminals, landmarks and squares considered worthy of special treatment are shown lighted. In Europe there is a precedent for the provision of public lighting for landmarks which are owned privately, for which the owners themselves cannot justify installation.



When the lighting poles of a highway are run in a continuous, single line (as in the articulated design shown *left*) the lighting fixtures provide a clear definition of the roadway ahead. In this case the lighting is of closely paired fixtures at the center dividing strip. Low, yellow marker lights, closely spaced, define the exact curvature of the turn-offs. High pylons, capped with exit numbers, should be useful and attractive orientation guides, both from the expressway and from surface streets. In contrast in the conventional lighting approach, *right*, the placement of lighting poles on both sides of the road produces confused and unattractive patterns. In areas where there are bridges (not shown here), the use of luminaires placed at the ends will silhouette them. The lighted bridges will offer a sense of arrival downtown.

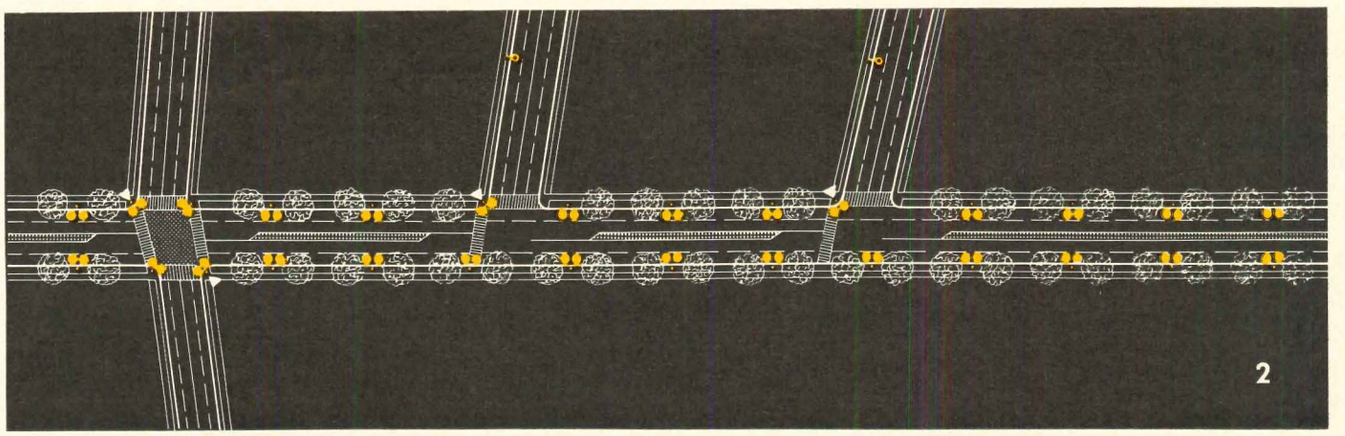
- AUTO LIGHT (HIGH)
- AUTO MARKER LIGHT (LOW-YELLOW)
- INTERSECTION DIRECTIONAL MARKER (YELLOW)
- DESTINATION SIGN (ILLUMINATED BLUE-WHITE)
- TURNPIKE EXIT NUMBER & PYLON (VERY HIGH)

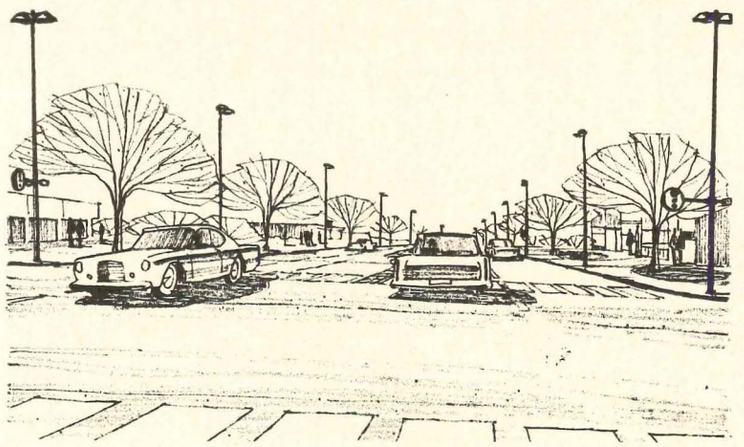




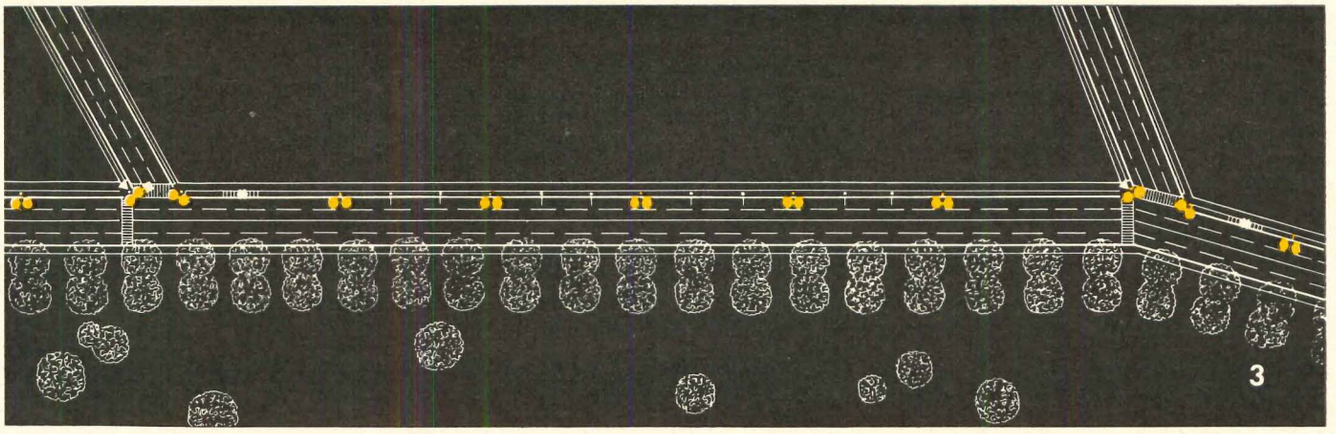
Sketches by Richard Law

1. Regularly spaced, paired mercury fixtures mounted on raised divider strips define a major artery with essentially continuous flow of traffic. Use of walls rather than curb-height islands would help protect the poles from collisions, should add to safety by discouraging pedestrian crossing, and provide some shielding from opposing headlights. In character, this is definitely an automobile-dominant road. When the traffic flow is interrupted by a full intersection, the distinct pattern of a "corner room" clearly indicates a junction, in contrast to the clear but subdued identification of side streets by illuminated signs. Trees are held back from intersections to minimize visual crowding and blocking visibility of the corner patterns of light-sign-signal.

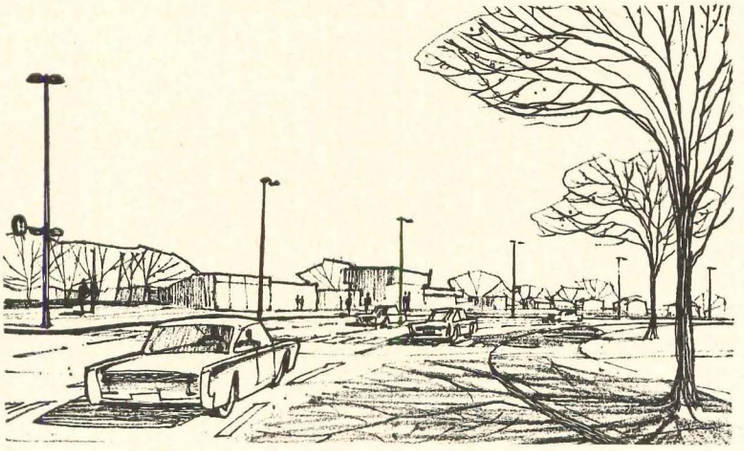


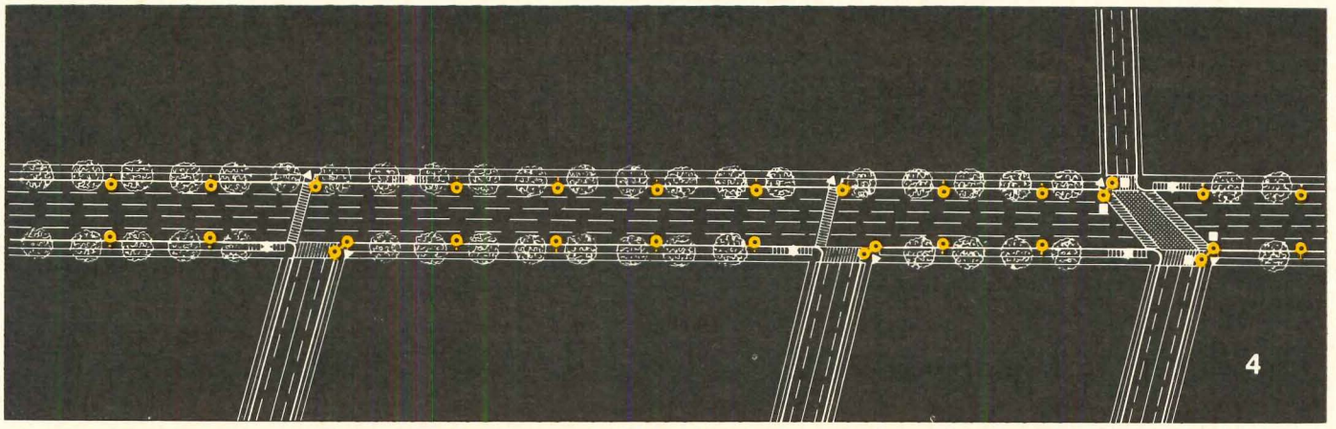


2. Visual-tactile rather than barrier traffic dividers are utilized for those major arteries frequently interrupted by cross traffic. A suitable material might be rubble stone. In this case, paired fixtures at the center division would be neither practical nor desirable pattern-wise (too frequent alternation between divider and corner). Instead, opposite pattern of paired mercury fixtures and highest illumination level mark the most important auto-pedestrian streets.

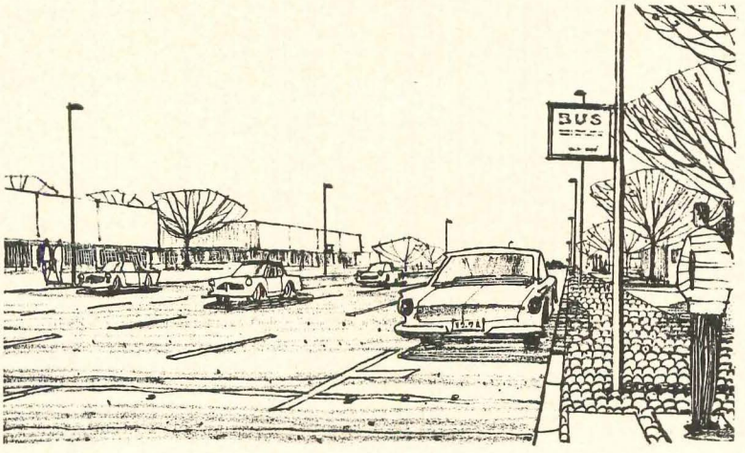


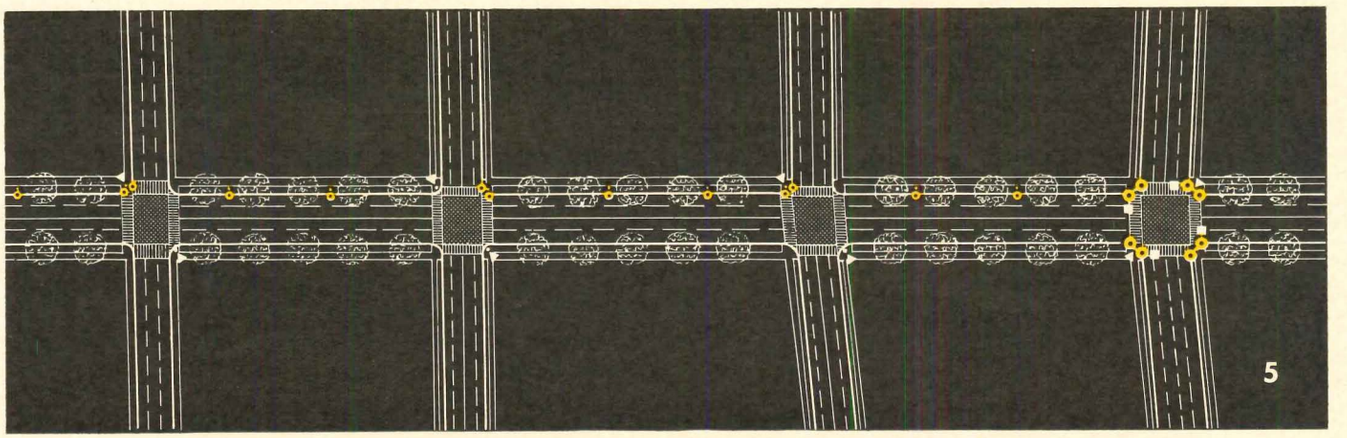
3. Major arteries of narrower width are marked by paired mercury vapor fixtures (25-ft poles) on one side preferably opposite the trees, or view. Corners are indicated positively in the standard manner. The illumination level is made higher at the corners so that drivers and pedestrians will be alerted to cross traffic. The highlighting of corner "rooms" was also designed to encourage pedestrians to cross at these points. Intersections which include a single crosswalk across a major road are marked merely by the illuminated street sign. Major corners were defined as outdoor "rooms" by the relationship of paired luminaires, a significant arrangement of signal lights, illuminated street names, striped crosswalks and change in the pavement color for the enclosed rectangular area of the corner.

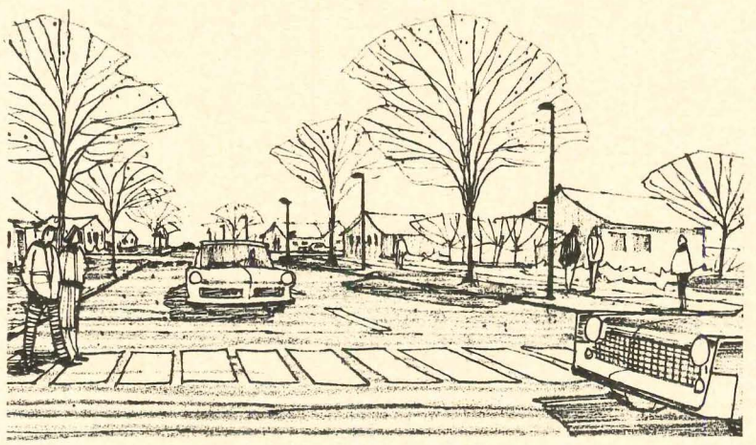




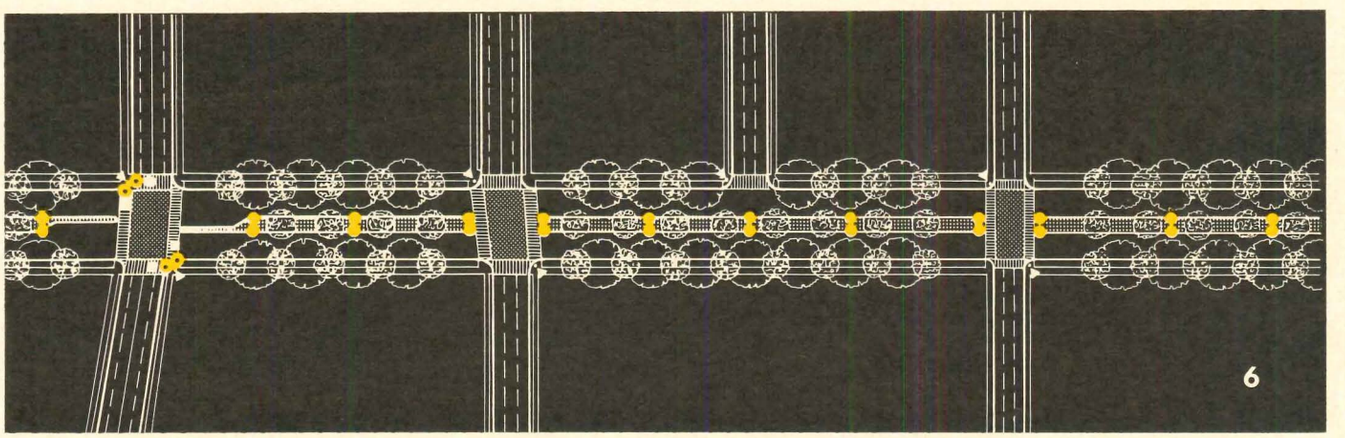
4. Single mercury fixtures placed opposite each other on both sides define a wide second degree artery, where the traffic flow is frequently interrupted by corners. On major routes, such as this and previous illustrations, color-corrected mercury vapor type of luminaires are recommended, which read at night as distinct ellipses, rather than shapeless globs. Staggered spacing was avoided because of the confusing, disorderly patterns which result, particularly on curves.

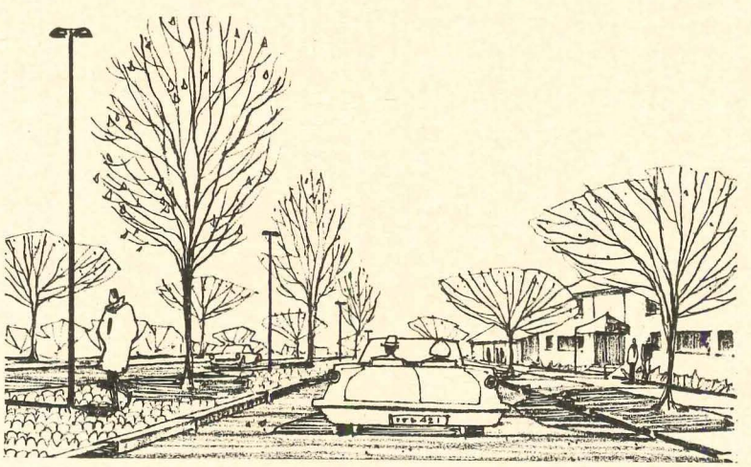




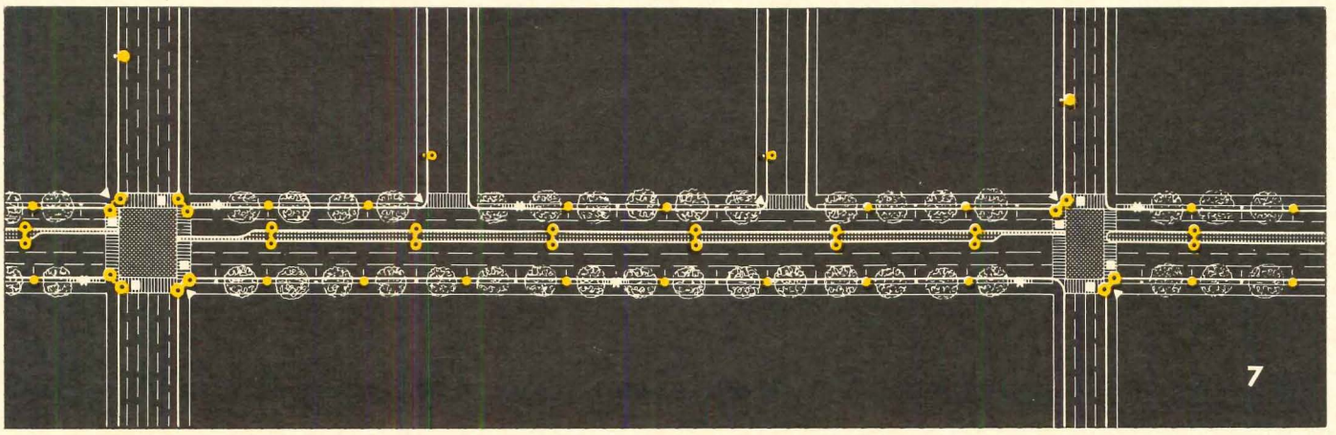


5. A typical residential street is identified by single incandescent fixtures at one side mounted on lower scale poles. Intersections of like residential streets are marked by pairing of incandescent fixtures. Since these occur only on one corner, illuminated street signs are used by themselves on other corners. Intersection with a major traffic artery is again defined by mercury fixtures on 40-ft poles.

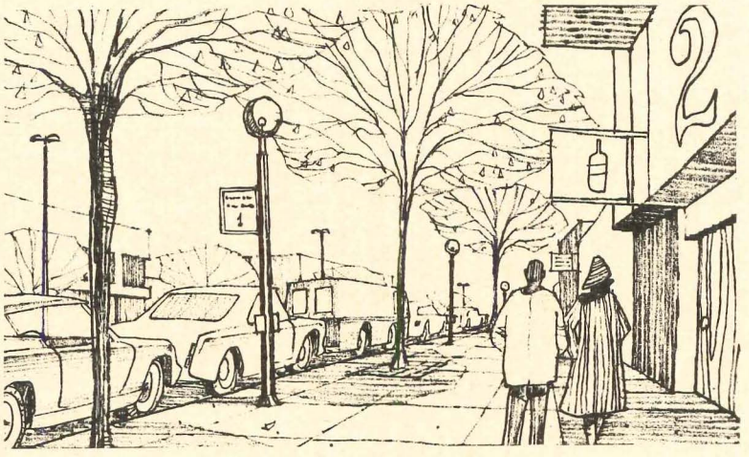


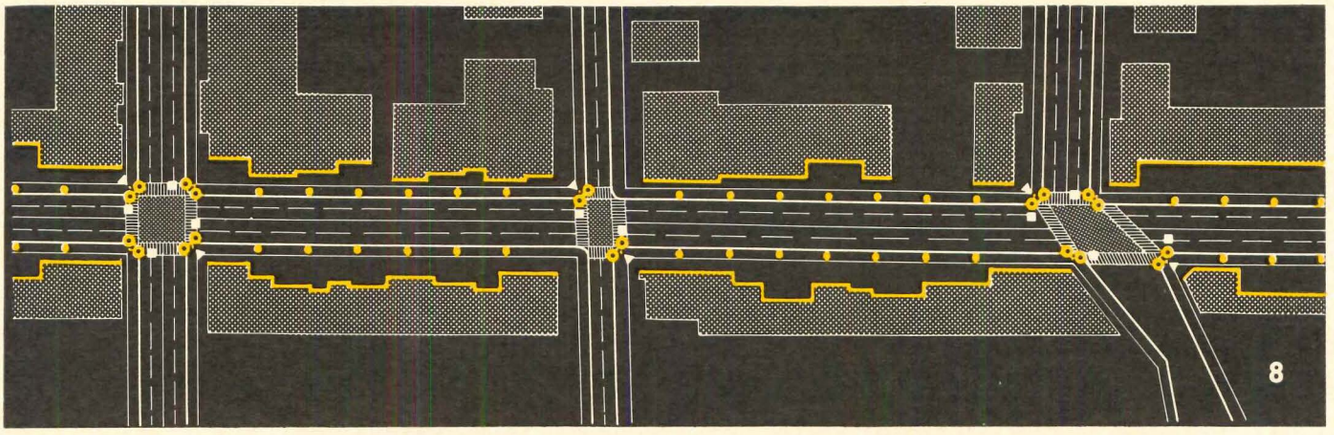


6. Paired incandescent fixtures (25-ft poles) on tree-lined center divider define a residential boulevard with single traffic lanes in each direction. Normal spacing is interrupted to bracket and outline minor through intersections, so that "corner room" intersections appear distinctly different. Intersection with a more highly trafficked street is marked by paired luminaires on 40-ft poles. The lighting is unobtrusive due to the straight-line design of the poles and the close-in location of the luminaires. On the boulevard, the poles merge with the line of trees. In the example at top, the poles blend with the trees and are of appropriate residential character.

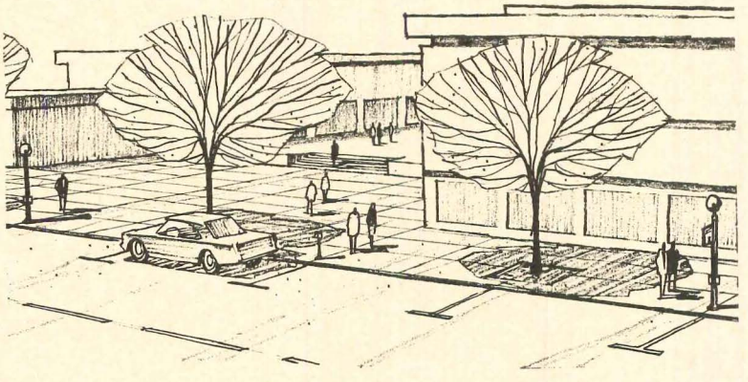


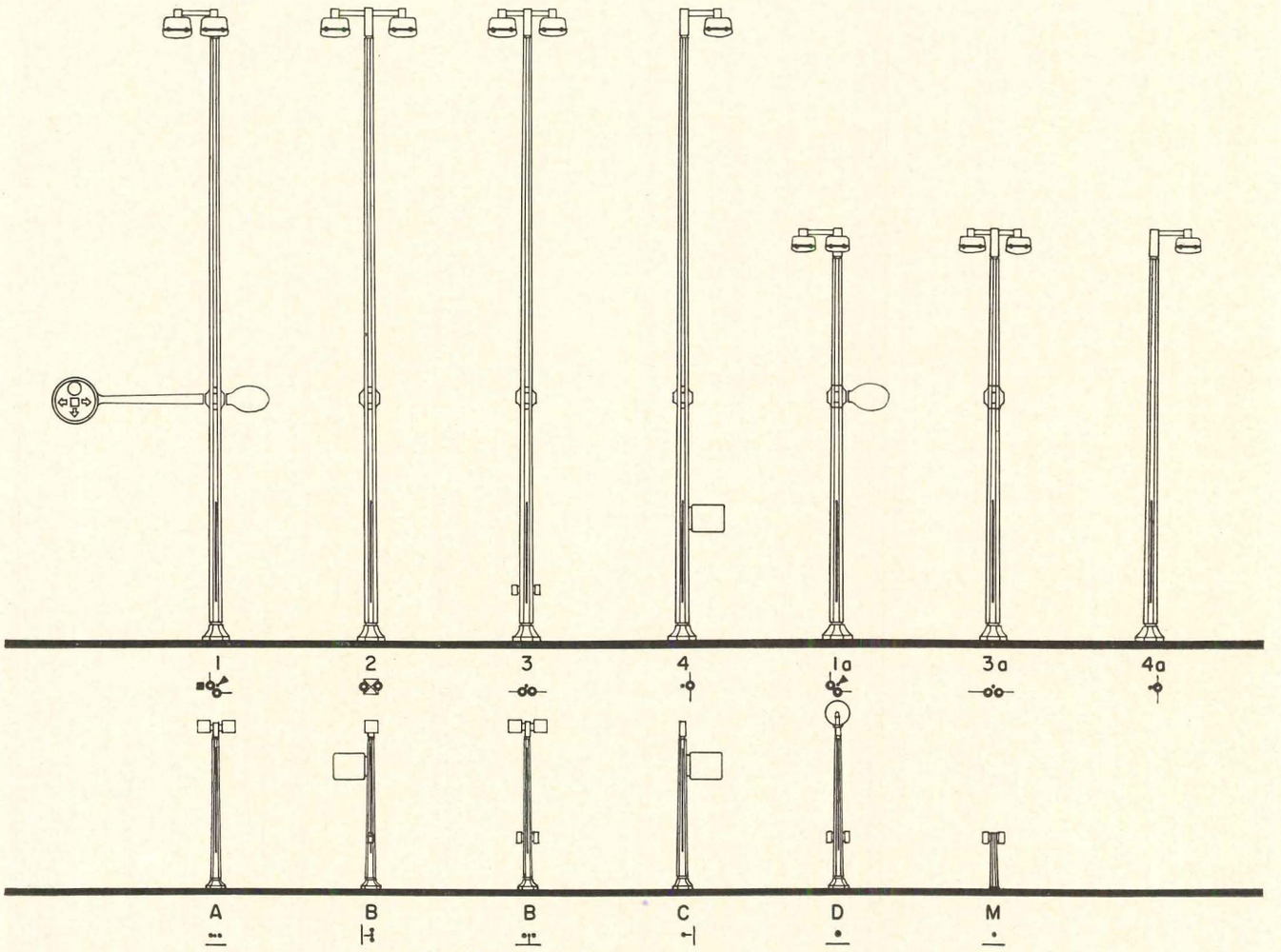
7. Incandescent lights, low mounted to illuminate the trees and highlight the sidewalk, are spaced between each pair of trees when a tree lined area is to be defined for pedestrian emphasis. The close spacing is in scale for pedestrian rate of travel. Upward illumination of the trees makes the area attractive and inviting. The usual disorderly arrangement and clutter of trees, light poles, sign poles and parking meters, and their interference with opening of car doors can best be avoided by using the parking space length as the basic module and placing trees and poles in line with the parking markers. Parking meters should be grouped in pairs and mounted on light-sign poles when available and on poles of similar design quality otherwise.

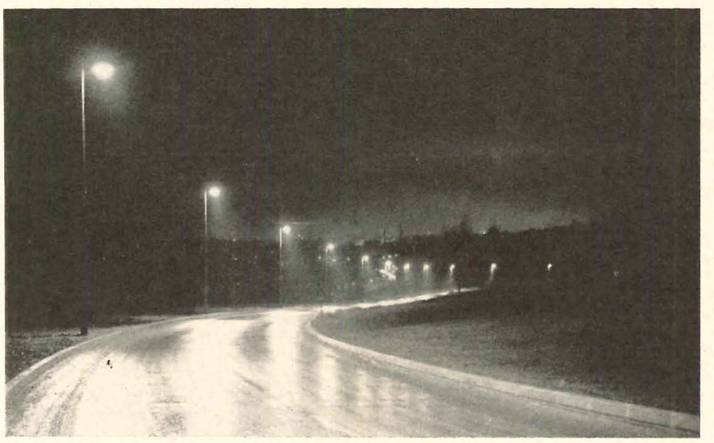




8. Downtown area, where every corner is treated as an "outdoor room", with the mid-blocks illuminated by closely spaced low lights, show windows, and signs. Since the "corner rooms" can provide all the necessary lighting for short blocks and on longer blocks need to be supplemented only at mid-block, the supplementary illumination can be varied from block to block or on different streets, with pedestrian lighting of appropriate style for the area. For example, a fashionable street may have clear filament incandescent lamps. Public buildings fronted with wide promenades may have their entrances defined by clusters of lights. Many long blocks will not need, and would be more attractive without supplementary public lighting: narrow sidewalks bordered by show windows; amusement areas where signs provide required light level.







G. Schanzenbach & Co.

Signs, traffic signals and parking meters are integrated with lighting poles. Fixtures have minimum-length arms for uncluttered daytime appearance (note European example, *above right*) and for the most coherent nighttime pattern when "tight" pairs and clusters are most clearly differentiated from single fixtures. The fixtures are cut-off type mercury luminaires (used extensively in Europe, photo *above left*) because they minimize glare, keep light on the road. Major intersections and routes without obstructing trees would have 40-ft poles. If lighting must be placed between obstructing trees, 25-ft poles would be used. The lower row of sketches shows lighting and parking meters for residential and pedestrian areas. In downtown areas, existing poles (photos, *left*) need not be discarded—new fixtures would give more light.

BASIC FACTORS IN PLANNING ELEVATOR SYSTEMS

A discussion of some fundamental planning considerations frequently overlooked plus a review of the elements that determine elevator plant cost and performance

By Charles W. Lerch, President, Charles W. Lerch & Associates, Elevator Consultants

An initial elevator plan for a new 30-story office building called for 14 elevators to be operated in two banks, seven local and seven express. The final plan as accepted and installed called for a total of 15 elevators to be operated in three banks, five local, five express, and five tower.

It would be expected that the final plan, using one additional elevator, would provide better service. Normally, the greater the number of elevators, the better the service to be anticipated.

In practical terms, however, this change in elevator planning yielded its major benefits in initial cost and in the amount of space required. The 15-elevator plan cost 9 per cent less than the 14-elevator plan. The 15-elevator plan also required a total of 550 square feet of floor space less than the other. In totals, this difference is not too significant. However, the 15-elevator plan took 250 square feet less on each of the top six floors, or a total advantage of 1,500 feet for this premium rental area of this particular office building.

Average time to destination of the plan accepted was 14.8 per cent shorter than that estimated for the first plan; interval of departure was 9.3 per cent longer, and handling capacity was 6.4 per cent less. The difference in the latter two factors was more than offset by the cost and space advantages. The difference in cost was achieved because the arrangement in three banks made possible lower speeds and capacities for some of the cars.

Elevator design for a like building in another city might call for completely different planning, depending on the location of the building, the type of tenant served, the quality of service demanded and the many other factors which control modern elevator planning.

Some very simple basics in planning get overlooked all too frequently. Here are four such basics:

1. Location of Elevators in the Building

This location ought to be close to the main traffic generating entrance, and in morning and evening peaks this may be the door closest to the parking lot. Sometimes elevators are placed so that they will generate traffic for main floor shops. This is understandable, but it is unwise to put the elevators "out of sight" or inaccessible to upper floor tenants.

2. Demands of More than One Heavy Traffic Generating Floor in Lower Part of the Building

This situation occurs in buildings with entrances on two different floors, in hotels where the lobby is above street level, and in buildings with a garage below the street level. The addition of this second traffic generating floor adds 20-25 seconds to the average round trip of an elevator. Considering of escalators in all such instances is recommended.

3. Public Rooms above the Ground Floor

This obviously lengthens round-trip time and diminishes the quality of service provided other floors. The result may be even worse if one or two elevators of a bank are devoted exclusively to serving these public room floors. Added service is the only way to meet this situation.

When a large tenant uses three or more floors, they frequently generate a large amount of interfloor traffic that seriously affects the elevator service.

4. Use of One Passenger Elevator to Handle Freight

This may look good on paper, but it rarely works out. Buildings with more than 300,000 square feet of rentable space usually require a full-time freight elevator operated independently of passenger service. One of the largest buildings (400,000 square feet) in one of the largest cities has no freight elevator. We could cite other such mistakes in recently built large structures.

Measures of Elevator Service

1. The quality of elevator service is usually measured by the two factors: Interval of Departure and Time to Destination.
2. The quantity of elevator service is frequently referred to as the elevator plant Handling Capacity or the number of passengers which can be carried in five minutes.

In a first-class office building, with most tenants occupying less than one floor, excellent service during the morning up peak would be reflected in these figures:

Interval of Departure: 25-30 seconds
Handling Capacity: 13-15 per cent of the building.
Time to Destination: 45 seconds

In the past, much elevator planning has given priority to Interval of Departure and Handling Capacity over Time to Destination. We feel, however, that the Time to Destination is a very important measure. The Interval of Departure and Time to Destination are measures of the passenger waiting and riding time.

It has been argued that, once a person has entered the elevator, the feeling of idle waiting is past. On this basis it has been considered more important to save time getting him into the car than to save it en route to the desired floor. We believe that a *slightly* longer wait is well compensated for by a faster ride with fewer stops. The degree of departure from ideal standards is a matter of judgment based upon a number of variables.

A large group of elevators serving too many floors will provide a very

short Interval of Departure but a poor average on Time to Destination. When the Time to Destination figure exceed 50 seconds during the morning up peak, a substantial improvement in service can be achieved by having more than one group of elevators, with each group serving a lesser number of floors, as was done in the example mentioned at the start of this article.

Determining the performance of a group of elevators can take a fairly scientific approach. The number of stops that an elevator will make is based on the law of probabilities. Acceleration and deceleration time, and running speed are engineering facts obtainable and accurate under ideal conditions and with a properly designed and adjusted plant. Passenger transfer time is based on both formula and human averages.

The major elements which determine elevator service and cost are the number of elevators, location, arrangement, car speeds and the type of control system to be used. In addition to these, performance is a very important measure of value.

Planning the Control System

The fully automated system for elevators in a modern high-rise office building requires controls for the following traffic patterns during the course of a typical 24-hour period:

1. Morning Up Traffic
2. Mid-morning Two-Way Traffic
3. Start of Lunch Hour
4. End of Lunch Hour
5. Evening Down Traffic
6. Concentrated Down Traffic
7. Nights, Weekends, Etc.

Simpler controls are adequate for certain buildings which may use four traffic patterns, such as 1., 2., 5. and 7. or five traffic patterns by adding item 6.

These complex control systems are designed for banks of elevators serving 10-15 stories per bank, with average population density and interfloor traffic. If the area served falls within this range, the multi-traffic pattern system will provide excellent service. If service demands for the area depart from this average in any important degree, it will be wise to avoid specifying a plan with too many controls; they will not get used and they are costly to buy as well as maintain.

The control system, which adjusts itself by measuring the number of calls registered in the car and the number registered at the different landings, is likely to reveal traffic demand sooner than a system which simply measures early or late car arrivals at the terminals. The latter measure is a result of conditions which did exist and is evidenced only after the condition has existed for some time.

Aside from the type of dispatching system and the programs for the control system, there are several other factors in elevator design which contribute greatly to efficient control. An initial group of these factors will include:

1. Car Carrying Capacity and Car Shape
2. Type of Doors and Size of Opening
3. Door Control and Protective Devices.
4. Car Speed
5. Floor-to-Floor Time (this includes door time)

Items 1., 2. and 3. have a more pronounced effect on the efficiency of elevator operation than does Item 4., the car speed. For one, two or even three-floor runs, the amount of time consumed for 500 feet per minute and 700 feet per minute cars to accelerate, decelerate and stop is for all practical purposes the same. The chief advantage in having the higher speed elevators (from 700 feet per minute up to 1600 feet per minute) is obtained with cars which travel 20, 30, 40 or more floors before making the first stop. Higher speeds also contribute to the building's prestige.

Size of Car Important

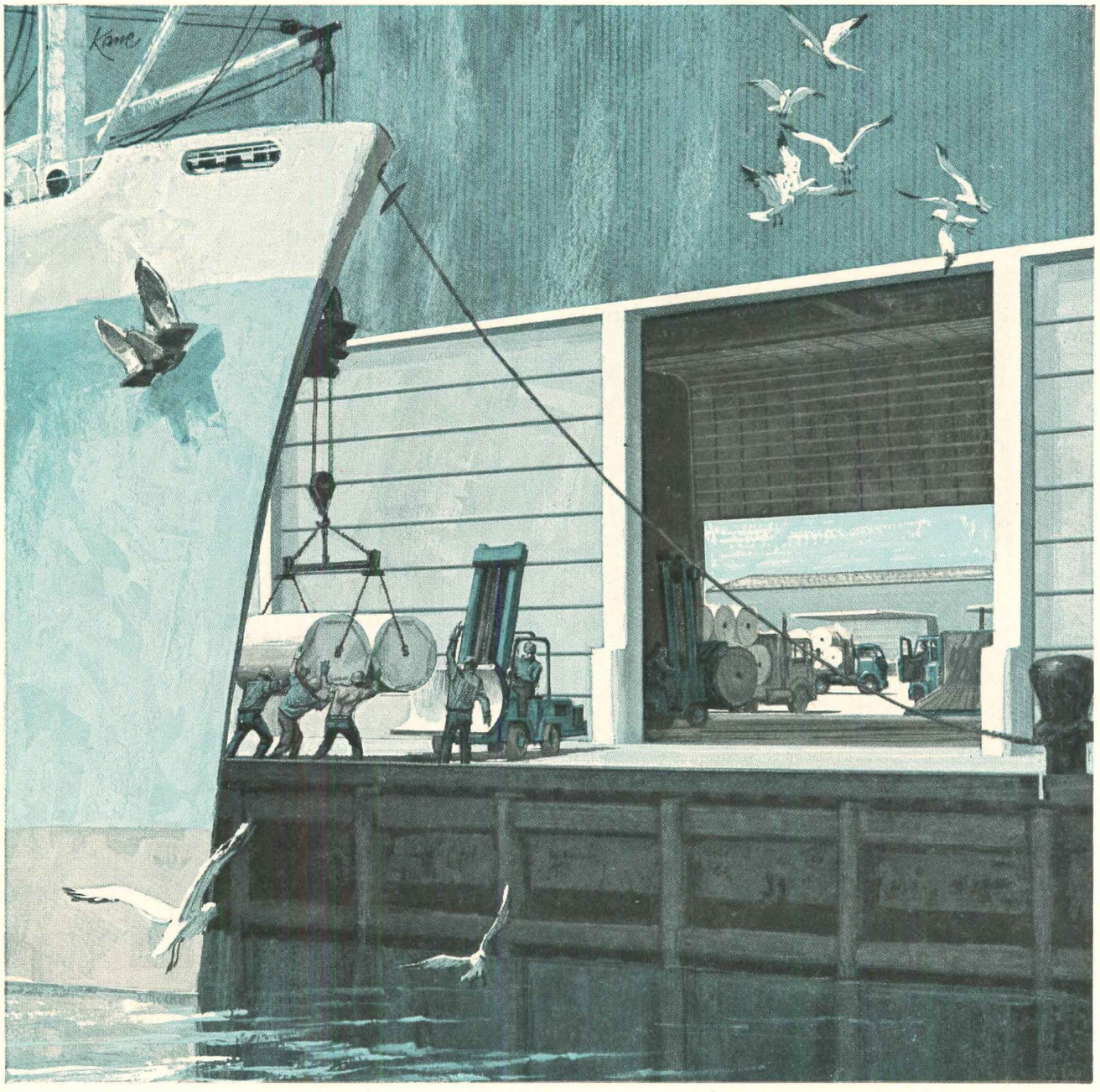
The car carrying capacity and shape, materially affects the performance of elevators and their efficient control. Although the car carrying capacity is determined primarily by the number of passengers it must carry, very large cars may hinder rather than help full control efficiency. With very large cars, passenger transfer time at each stop increases and becomes a prohibitive factor in proportion to the round-trip time taken. If large cars are to be used, a wide and shallow car will be more efficient in reducing transfer time than will a deep, narrow car enclosure.

Even with the ideal type of doors, and size opening, passenger transfer time can be improved by proper use of car position indicators, hall lanterns and floor numerals on door panel wings and on the floor in front of the entrance. To this may be added car entrance controls which are available. They automatically control the time that the door remains open dependent upon the loading requirements.

An even more important factor, perhaps, in increasing passenger transfer time and consequently the round-trip time and time to destination, are the type of doors and the size of the door opening. A very narrow door opening or a very wide door opening both contribute heavily to increased passenger transfer times and/or door operating time, with consequent reduced control efficiency.

Floor-to-floor time is a measure of the efficiency of the elevator in travel from one floor to the next rapidly, smoothly and quietly, with consistent floor accuracy to avoid stumbling hazards. This is a major factor in the design of motor controls and may mean the difference—plus or minus—of one elevator in a group.

Elevator machines, controls and signals are undergoing continuous improvement as are elevator entrances and cars. To draw meaningful specifications requires extensive knowledge as to what is available and how to use it efficiently and economically. For these reasons specifications should not only describe the number, size, speed and capacity along with many other clearly defined details, but should contain a basis of guaranteed performance because performance is a very real measure of value. Recently on the bids of a large building, the performance figure of two major manufacturers showed that one could provide more service with four elevators of a given size, capacity and speed than the other could provide with five elevators. While the four elevators cost more, they cost much less than five of a lower efficiency, aside from the additional space taken by the fifth elevator.



City of New York Newsprint Terminal. Architects: Tippetts-Abbett-McCarthy-Stratton

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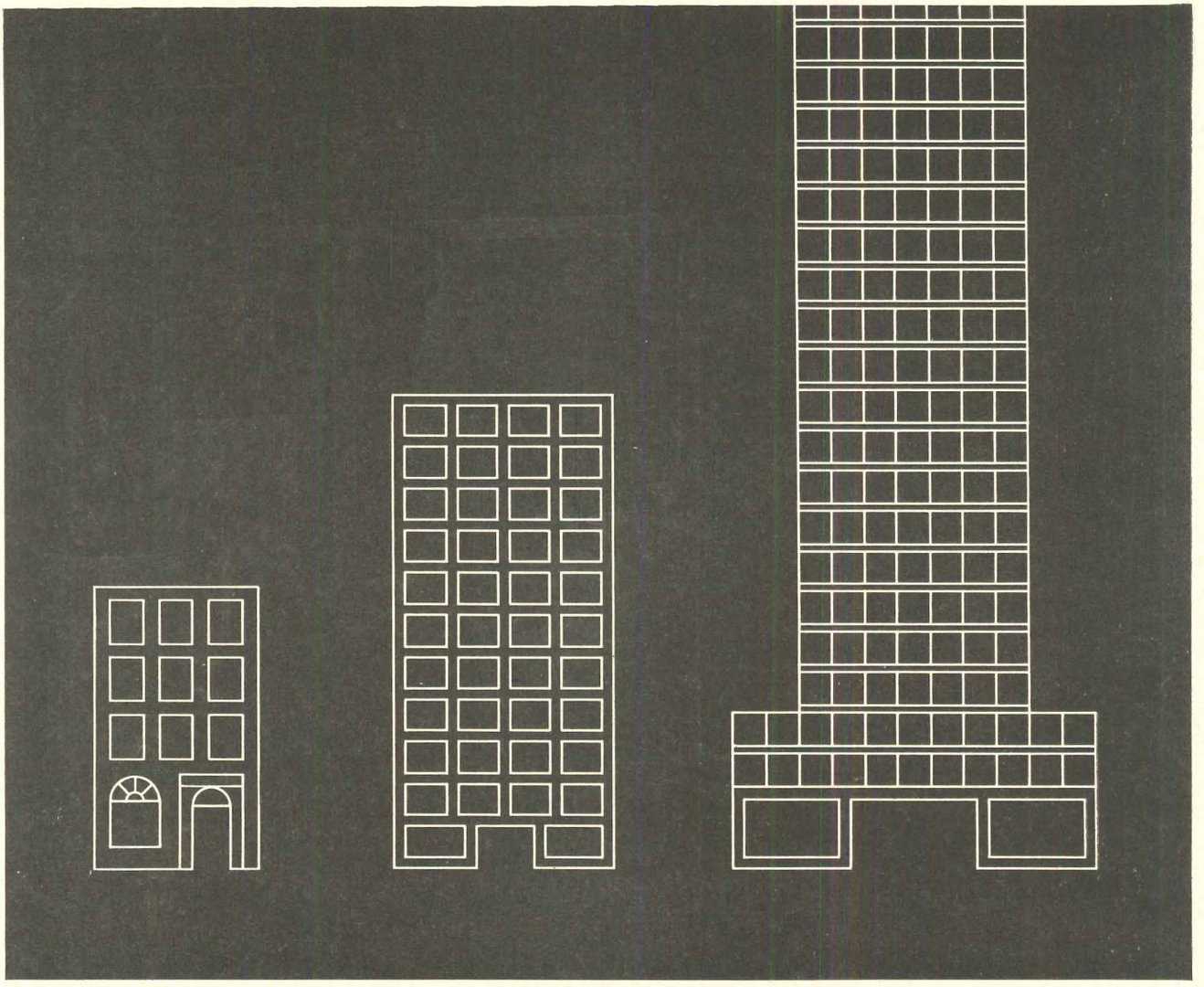
For more data, circle 67 on Inquiry Card



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HOW TO SELECT ACOUSTICAL MATERIALS

Part 1 of an article prepared by the Acoustical Materials Association

In recent years acoustical materials have become increasingly complex in terms of the many quality requirements which they incorporate. At first, only the factor of sound absorption was considered by the architect in his appraisal of the appropriate ceiling tile. Gradually additional services and functions have been added so that currently, with the advent of integrated ceilings, it has become necessary to provide for lighting, air distribution, fire safety, and other factors in the ceiling area compatible with the acoustical material.

The complication presented by these many factors was recognized early by the Acoustical Materials Association, an industry organization which incorporates practically all manufacturers of acoustical materials, representing approximately 95 per cent of the acoustical industry. The A.M.A. member manufacturers realized that, although testing procedures were becoming refined and sophisticated over the years, they could not be reproduced readily so that results would be uniform from company laboratory to company laboratory. Because of the importance of providing architects with objective and accurate performance specifications for acoustical products, the association has appointed official laboratories to test all acoustical materials for the entire industry on an impartial basis and under uniform conditions.

All of the data gathered by these tests is assembled and published yearly in the A.M.A. Bulletin.

The architect, when considering selection of an acoustical material, should use as his basis the following performance considerations:

1. Acoustical efficiency.
2. Sound attenuation.
3. Flame resistance.
4. Appearance.
5. Permanence and maintenance.
6. Methods of installation.
7. Resistance to moisture and other decaying influences.
8. Compatibility with other ceiling and structural components.
9. Economy
10. Light reflectance.
11. Weight of ceiling structure.
12. Accessibility.
13. Size of acoustical material.
14. Thickness.

1. Acoustical Efficiency

The primary function of an acoustical ceiling is to absorb sound. By definition, a material with a noise reduction coefficient of more than .50 is considered an acoustical material. The A.M.A. Bulletin lists coefficients for six frequencies: 125, 250, 500, 1,000, 2,000 and 4,000 cycles per second. The "Noise Reduction Coefficient" (NRC) of an acoustical material is defined as the average, to the nearest multiple of 0.05, of its absorption coefficients at the four middle frequencies—250, 500, 1,000, and 2,000 cycles per second. It has long been recognized that minor differences in the noise reduction coefficient value are of no practical significance since the average listener will be unable to know the difference in an acoustical environment which differs by just a few points in the ceiling coefficient. That is why the "NRC Specification Range" which appears throughout the Bulletin is of more practical value to the architect than the individual coefficients prescribed for specific frequencies. The exceptions to this general rule of thumb occur in specific conditions: (1) where the noise generated within the area consists principally of low, high, or medium frequency sounds—in such instances the selection of acoustical material should follow the specific absorptive quality listed under the frequencies at which these sounds occur; and (2) in central listening areas, primarily concert auditoriums.

The maximum sound absorption that can be provided by an acoustical ceiling is a 1.00 Noise Reduction Coefficient (NRC). This situation exists when all of the sound waves which strike a ceiling surface are absorbed and none are returned. In practice, such material does not exist. The closest practical approach to complete absorption is the NRC range of .90 to 1.0.

All surfaces and finishes of a room which absorb sound must be taken into consideration in weighing the sound absorption quality of any acoustical material. The hard, nonporous interior finish surfaces, such as plaster, masonry, glass, wood, or porous interior finish surfaces including plaster, masonry, glass, wood or concrete will absorb less than 5 per cent of the energy of incident sound waves. On the other hand, porous material which permits penetration of sound waves, or soft material which yields under incident sound pressure can absorb larger amounts of sound energy. Carpets, drapes, upholstered seats and furniture, the clothing of an audience and people themselves provide sound absorption.

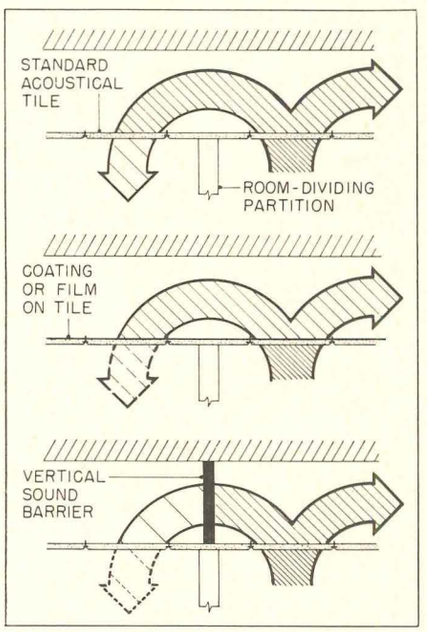
Inasmuch as the size of the room, the number of people occupying it, the type of use to which it is put, and other considerations may differ widely from job to job, it is impossible to precisely list the noise reduction coefficient range of the acoustical material to be used. But, the following guide may be helpful:

1. *Private Office*—This normally requires the highest noise reduction coefficient to be selected, such as .80 to .90.
2. *General Office Area*—.75 to .85.
3. *Schools*—Lower grades normally

require more sound absorption than higher grades. The range to be selected is from .60 to .80.

2. Sound Attenuation

As is well known, it is common practice in new building construction to use acoustical materials as an integral suspended ceiling, leaving a plenum space above for the accommodation of ducts, piping, and utilities. This plenum usually extends over a number of rooms below. Room dividing partitions may be carried



only to the under surface of a continuously suspended acoustical ceiling, or they may extend just above the suspended ceiling but not to the structural ceiling above. Tables of "Attenuation Factors" are provided in the Bulletin to give ceiling performance data under many such circumstances and the A.M.A. has provided tests to cover many such situations.

The acoustical ceiling on either side of the partition, together with the common plenum, serves as a "flanking" sound transmission path which parallels the transmission directly through the dividing partition. If the acoustical ceiling is extremely light or porous, or if it is suspended in such a way as to allow numerous leakage paths around the ceiling units, the transmission by way of the plenum may be considerably greater than that through the partition. The result may be an overall attenuation which may be much less than that which would be expected from the partition alone and it might lead to an unsatisfactory situation.

The "Ceiling Attenuation Factor" can be defined as the noise reduction in decibels due to transmission only by way of the ceiling-plenum path between two rooms.

Sound attenuation requirements of a ceiling depend, in general, on two factors:

1. If privacy of speech is required, meaning that conversation should not be understandable in an adjacent room, the architect should select a ceiling which has a sound attenuation of 35-40 decibels within the speech interference range, which is from 250 to 4,000 cycles.
2. If the adjacent area has excessive noise levels which should be filtered out by the ceiling, then the sound attenuation should be so selected that the reduction brings down the ambient (background) level in the listening room to the generally accepted levels, approximately 40 to 50 decibels in areas occupied by people performing clerical work and higher in areas where production or other functions are performed. Special attention must be paid to sound attenuation at the frequencies where the noise occurs and the ceiling must be selected with these factors in mind.

The Bulletin of the Acoustical Materials Association lists sound attenuation factors in decibels at 11 frequencies. The listing of the 11 frequencies, instead of six for sound absorption, is given because the individual components of sound are much more significant for ceiling sound attenuation than in the case of sound absorption. Thus, it is undesirable and dangerous to use the 11-frequency average as a guide for specifications because two materials with the same average may have widely different individual sound attenuation factors at the important frequencies.

Another important fact is that the weakest link in the chain of transmission will determine the actual privacy which can be obtained within an area. For example, it is of no use to specify an acoustical ceiling with 40 decibel sound attenuation at 2,000 cycles when the partition at that same frequency provides less than the specified ceiling attenuation.

The objective of a meaningful specification should be that each of the components reaches, or is slightly above, the minimum sound attenuation required. Also, close attention must be paid to all other sound paths which may interfere with the components which have been selected carefully.

The Bulletin lists two types of ceiling installation—interrupted and continuous. This means that, in the case of the continuous ceiling, the partition comes up to the under side of the suspended ceiling only. This situation is found principally with movable partitions. The interrupted ceiling design has a partitioning wall, goes through the ceiling level but not all the way to the under side of the roof slab. This is the case with permanent partitions.

In the case of movable partitions, where the partition only goes to the under side of the suspended ceiling, it is sometimes more economical and practical to increase the sound attenuation of the ceiling by extending the partition line within the plenum with a sound barrier type material.

Three important practical considerations, based on laboratory and field testing of suspended acoustical ceilings, should be borne in mind:

1. One of the weak points in the ceiling-plenum transmission path is the joint or seal between the dividing partition and the ceiling, especially if the ceiling is continuous over the top of the partition. Special closure panels are available with some materials and suspension systems for providing a better sound seal at this point. A special insulation blanket laid over the top of the acoustical ceiling and extending out two or three feet on either side of the partition line is sometimes helpful.
2. The performance of a suspended ceiling depends quite critically on how tightly the acoustical tiles or boards are fitted into the suspension system. Loose joints or cracks are especially harmful with materials which, in themselves, have relatively high sound attenuation.
3. The over-all sound attenuation of a suspended ceiling and a dividing partition is governed essentially by the weaker of the two. It is sometimes found that more sound is transmitted through cracks or openings in the partition, which otherwise has an adequate rating, than is transmitted through the ceiling-plenum path.

To be concluded next month

For more information circle selected item numbers on Readers Service Inquiry Card, pages 235-236

ARCHITECTURAL MODELS FROM CLIENT'S VIEWPOINT

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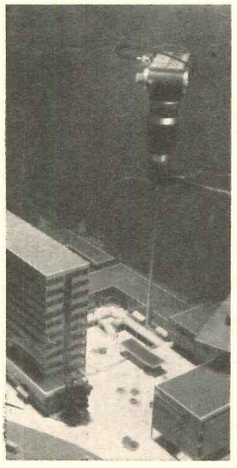
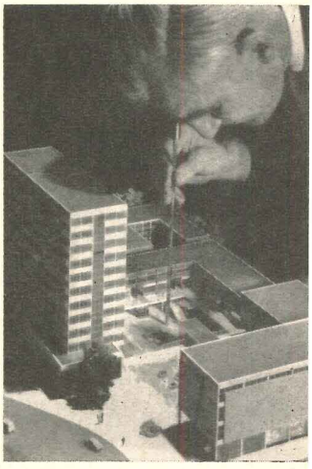
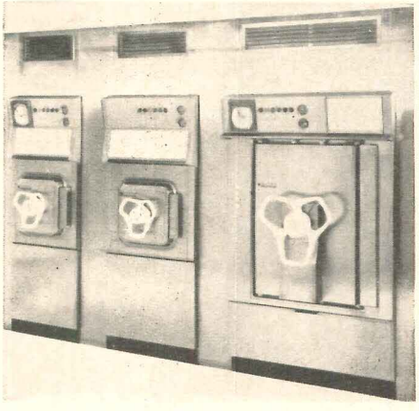
CIRCLE 300 ON INQUIRY CARD







MODULAR WALL ARRANGEMENT FOR HOSPITAL STERILIZERS

The American Sterilizer Company has recently introduced the *Amsco Medallion* redesigned series of sterilizer equipment to provide more efficient function and easier installation. The new equipment provides uniformity of automatic push-button control on all pressure steam sterilizers, and each sterilizer control area is zoned and color-coded for simplicity of operation. The company has, at the same time, introduced a new modular wall, prefabricated of stainless or enameled steel, which simplifies multiple or "bank" installations, and is said to reduce installation costs. The Modular wall includes grilles for exhausting steam to the central exhaust system, thus eliminating the possibility of contaminated condensate "drop-back" on clean loads. Ease of operation is one of the new system's chief advantages. *American Sterilizer Company, Erie, Pa.*

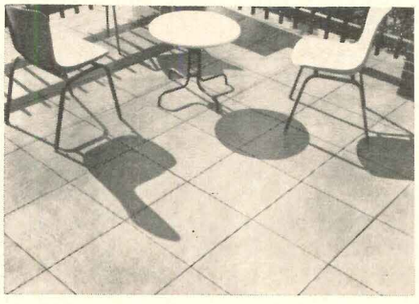
CIRCLE 301 ON INQUIRY CARD

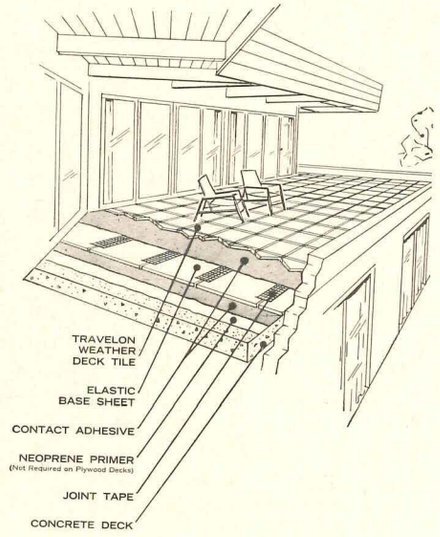
FLOORING AND WEATHERPROOFING FOR OUTDOOR LIVING AREAS

The *Travelon Weather Deck System* has recently been introduced by Armstrong to provide a suitable surface for promenades, decks, balconies and all areas which are subject to a combination of weather and pedestrian traffic. *Travelon* is essentially a two-part weather deck system composed of a waterproof elastic base sheet which is permanently bonded to the deck itself, and an exterior surface of specially formulated resilient tile which is installed on top of the elastic membrane. The base sheet provides weatherproofing for the deck surface while the resilient tile provides a durable and decorative walking surface. The tiles are manufactured in 18 in. squares. *Building Products Division, Armstrong Cork Company, Lancaster, Pa.*

CIRCLE 302 ON INQUIRY CARD

more products on page 194





Office Literature

For more information circle selected item numbers on Readers Service Inquiry Card, pages 235-236

DATA ON EXTRUDED ALUMINUM SKYLIGHTS

"A New Concept in Dimensions Unlimited," a new 12-page, two-color catalog on extruded aluminum and glass skylights is now available. Detailed information is given on standard and custom dome, pyramid and ridge skylights. Included are photos of installations and technical data on the application of skylights for industrial and office buildings, churches, schools, hospitals and houses. Skylight dimensions are given as well as general specifications, and information on materials and erection procedures. *Super Sky Products, Inc., Thiensville, Wis.**

CIRCLE 400 ON INQUIRY CARD

DESIGNATION SYSTEM FOR ALUMINUM FINISHES

The second edition of the Aluminum Association's booklet, "Designation Systems for Aluminum Finishes," is now available. The booklet has been developed as part of the association's program of standardization. The system helps to eliminate confusion arising from the large number of proprietary designations which have been introduced for aluminum finishes, and is broad enough to cover all existing types of finish and to cope with new finishes as they are developed. The booklet divides the finishes into three major categories: mechanical, chemical and coatings. The coatings are further subdivided into five categories: anodic, resinous, vitreous, electroplated, and laminated.

The designation system identifies the mechanical and chemical finishes and each of the five classes of coating by means of a letter, and the various finishes in each class are designated by two-digit numerals.

The seven-page booklet describes in detail the mechanics of the system, and includes examples to show how the system operates. A numerical listing of designations and designation tables contains examples of different finishing methods. *The Aluminum Association, New York, N.Y. 10017*

CIRCLE 401 ON INQUIRY CARD

INSULATION COMPUTER

A computer booklet entitled "Thermeconomy" has been designed to provide a quick method of calculating the amount of *Zonolite Masonry Fill* insulation required for particular jobs. The booklet is operated by a series of pull-tabs, which are devised to give information on various types of wall construction. *Zonolite Division, W. R. Grace and Co., Chicago, Ill.**

CIRCLE 402 ON INQUIRY CARD

ELECTRICAL SPACE CONDITIONING

"Electrical Space Conditioning" is a new General Electric publication which describes how heat can be drawn from lighting fixtures before it enters a room, and can be redistributed wherever needed in a building. This principle can also be successfully applied to the problem of controlling lighting heat in summer, but in this case the heat is exhausted from the building. *General Electric Company, Cleveland, Ohio**

CIRCLE 403 ON INQUIRY CARD

LEAD ROOFING AND FLASHING

A new handbook has been published to provide a source of technical information for those involved with roofing techniques, on the use of lead in roofing and flashing. Detailed drawings are included to illustrate layout in flat pattern, forming of sheets and final installation of all standard joint systems normally used in sheet metal roofing, but with particular reference to the use of lead sheet. Performance characteristics, a table of gauges and complete specifications are included. *Lead Industries Association, Inc., New York, N.Y. 10017**

CIRCLE 404 ON INQUIRY CARD

LIGHTING CATALOG

A 30-page color catalog gives full details of the company's extensive range of lighting fittings, including recessed and semi-recessed downlights, surface-mounted and pendant spheres, cylinders, domes and a number of others. *Markstone Manufacturing Company, Chicago, Ill.*

CIRCLE 405 ON INQUIRY CARD

BROCHURE DESCRIBES NUCLEAR SHIELDING MATERIAL

The development, properties, materials, formulae and protective values of new *Cerama-Shield* nuclear shielding material are described in a 26-page brochure. This new material, which provides protection against the gamma ray, the neutron and the x-ray, can be combined with a number of building materials such as plastic, cement concretes and refractories or used in its natural state. The booklet describes possible applications for the material, which they expect to be especially useful in hospitals and medical establishments where protection from x-ray is required, and possibly also in city bomb shelters. *Osborne Industries, Inc., Los Angeles, Calif.*

CIRCLE 406 ON INQUIRY CARD

NEW BROCHURE ON ACOUSTICAL SHELLS

A new brochure describes the company's approach to the design and manufacture of acoustical shells for auditoriums, field houses and outdoor concert sites. The booklet gives details of how the company operates, and the steps that are taken to assure satisfactory fulfillment of individual requirements. *Stagecraft Corporation, Norwalk, Conn.*

CIRCLE 407 ON INQUIRY CARD

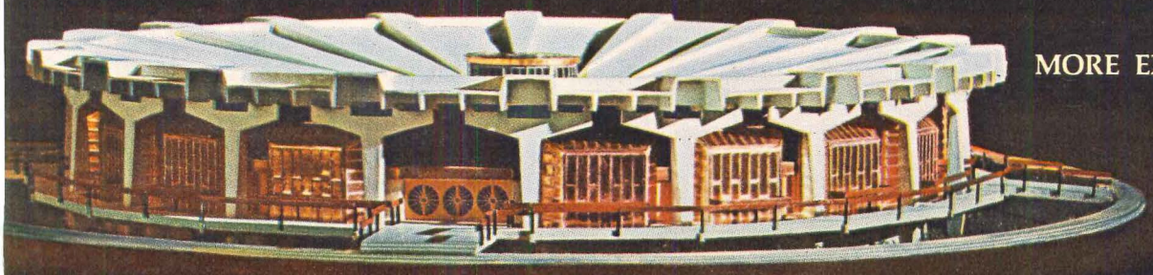
COMPUTER CALCULATION OF HEATING AND COOLING LOADS

A booklet describes a calculation service, provided by the company on a cost basis, to determine heating and cooling loads of buildings and their energy requirements. The load program makes use of computers to correlate all the variables in a situation to arrive at a total peak load for the building. The energy program operates by simulating expected conditions to produce a calculation of a building's yearly energy requirements. *Westinghouse Electric Corporation, Pittsburgh, Pa.**

CIRCLE 408 ON INQUIRY CARD

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

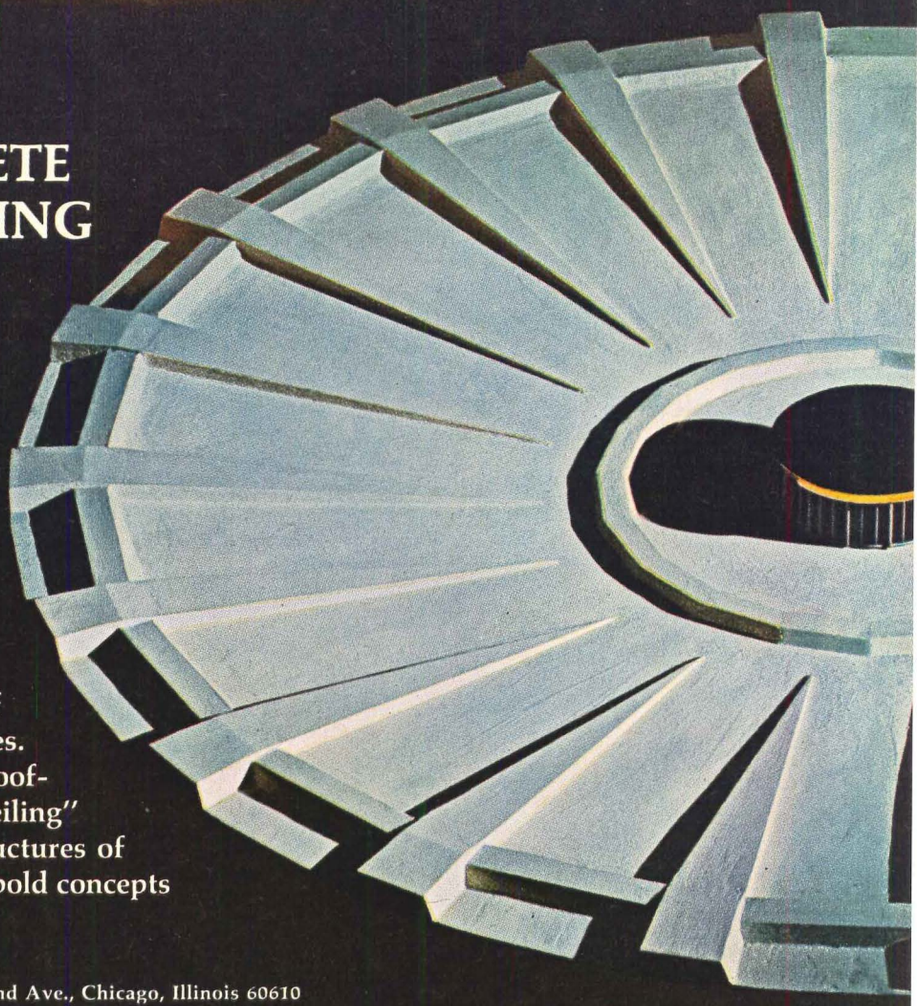
more literature on page 210



THE BEST IDEAS ARE
MORE EXCITING IN CONCRETE

40 WEDGES OF PRESTRESSED CONCRETE ROUND OUT A STRIKING 2000-TON ROOF

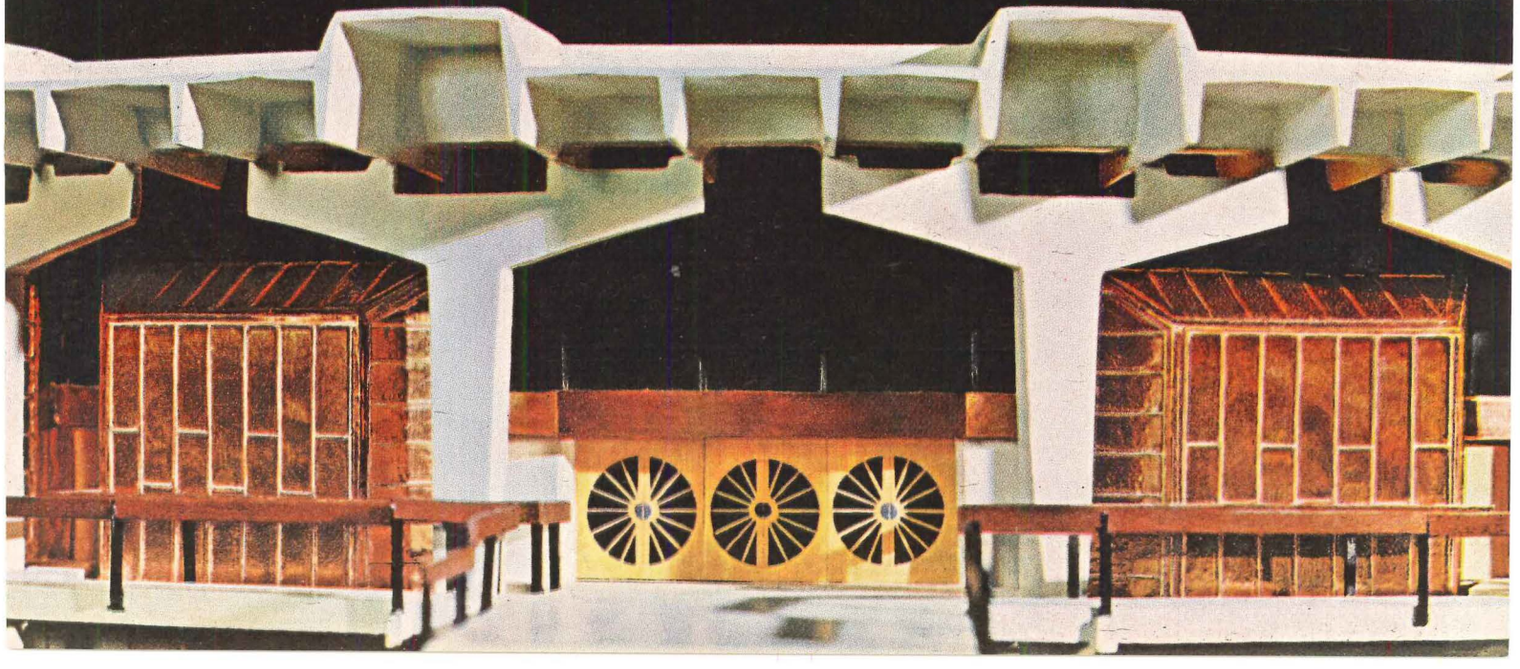
The spectacular new Convention Center in Phoenix is roofed by prestressed concrete wedges supported entirely by peripheral T-columns precast in concrete. Wholly unencumbered interior space, 180 feet in diameter, is effected by this unique design, along with superior acoustical qualities. □ Concrete provided the design versatility needed to achieve exceptional visual interest. The wedge-shaped roof sections, radiating from a center ring, are of alternating flat and "high-hat" double tees. This creates the decorative geometry of the roof-line and also produces a dramatic "beamed ceiling" interior. □ Everywhere today, concrete structures of all types are receiving recognition for their bold concepts and fresh, imaginative design treatments.



Portland Cement Association 33 W. Grand Ave., Chicago, Illinois 60610

An organization to improve and extend the uses of concrete, made possible by the financial support of most competing cement manufacturers in the United States and Canada

Winner, 1964, Prestressed Concrete Institute Awards Program:
Hiway House Convention Center, Phoenix, Arizona.
Architects: Perry Neuschatz, A.I.A., Los Angeles, Calif., Gary Call Associate.
Structural Engineers: T. Y. Lin & Associates.
Contractor: E. L. Farmer Construction Co. of Phoenix.



Royalmetal 6000– handsome new furniture design makes everybody's job easier.

Mail this coupon today for free full-color brochure

Royalmetal Corporation
One Park Avenue
New York, New York 10016

Gentlemen:

Please send me your free full-color 6000 Series brochure.

Name_____

Address_____

City_____ State_____ Zip_____

AR-75

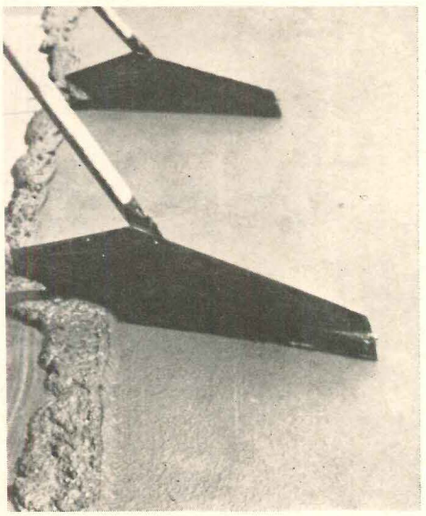
New Royalmetal 6000 lets you match the furniture to the space, the jobs and the people who do them. Desks for *any* function, in any size—in 700 optional color combinations at no extra cost. Credenzas, bookcases and cabinets to match any desk. Chairs in a dozen different styles, with a wide range of upholstery options. And, Royalmetal 6000 furniture has the sophisticated contemporary look of custom furniture. See it, price it before you make any decision. Send the coupon today for the full-color 6000 Series brochure.

ROYALMETAL®

1. Executive desk and matching credenza. Black Plastelle-Enamel with Teak plastic laminate top, bright Royalchrome legs and drawer pulls. Executive posture chair and side chair in gold with walnut wood arms. Bookcase: flush Teak top, sliding glass doors. **2.** Secretarial desk with auxiliary typing platform. Antique brass Plastelle-Enamel, Teak plastic laminate top. Chair: Royalmetal super Tuf-Tex® upholstery in avocado. **3.** Front: double pedestal desk. Copper Plastelle-Enamel, Gunstock Walnut plastic laminate top. Rear: secretarial desk with typing return in Amber Gold, Gunstock Walnut plastic laminate top. **4.** Left: single pedestal secretarial desk with cabinet return. Blue Plastelle-Enamel, blue Royaloid Top. Right: double pedestal junior executive desk, Rosewood plastic laminate top, Blue Velvet Plastelle-Enamel.

Product Reports

continued from page 189



NEW PAVEMENT DRESSING

A new pavement dressing recommended for all new blacktop and asphalt surfaces, if applied 90 days after the new surface is installed, is said to protect the surface for more than twice its life expectancy. Due to the use of silicones in the material, the dressing is particularly resistant to moisture and is also resistant to the destructive effects of gasoline, oil, and other petroleum products. *Revere Chemical Corporation, Cleveland, Ohio.*

CIRCLE 303 ON INQUIRY CARD

OFFICE FURNITURE FOR THE JUNIOR EXECUTIVE

Designed specifically for the junior executive group, the *Area Series* of office furniture was planned to combine good materials, clean cut design and comparatively low cost. Double pedestal desks, executive and secretarial "L" units, storage cabinets, credenzas, bookcases and co-ordinated seating are included in the range. Walnut and wood patterned plastic are the chief materials used. *Domore Chair Company, Inc., Elkhart, Tex.*

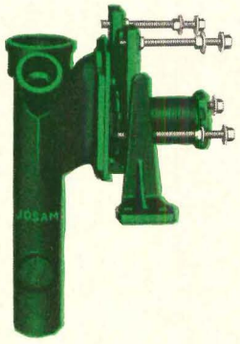
CIRCLE 304 ON INQUIRY CARD

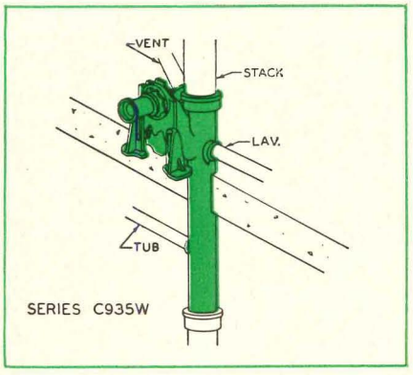
more products on page 198

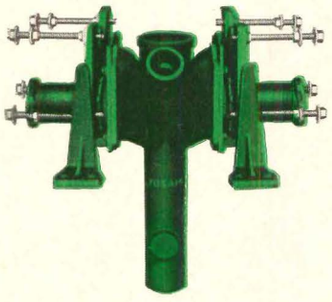
NOW... JOSAM REDUCES THE COST OF OFF-THE-FLOOR INSTALLATIONS

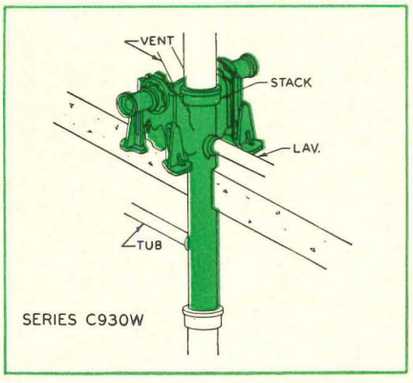
WITH

VERTICAL LONG BARREL FITTINGS





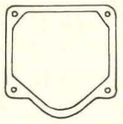




It is generally conceded that off-the-floor fixtures are more sanitary and far easier to maintain than the pedestal type. Now . . . Josam makes them even more desirable by reducing their installation costs. For example, the new Josam Vertical Long Barrel Fittings eliminate caulk joints in the slab, permit water closet, lavatory and bath to be wasted into a single fitting . . . saving material, time and money.

Why take less than the best — when it costs no more to have Josam?

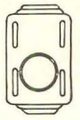
AND OTHER * MONEY SAVING FEATURES



M-150 POSITIONING FRAME
Simplifies alignment of carriers . . . acts as template for wall finish, open design provides accessibility.

COMMON VENT
On double fittings, it saves chase space . . . reduces number of connections.

BULLDOG FEET
Triangular, for extra support . . . short so as not to interfere with finished floor.



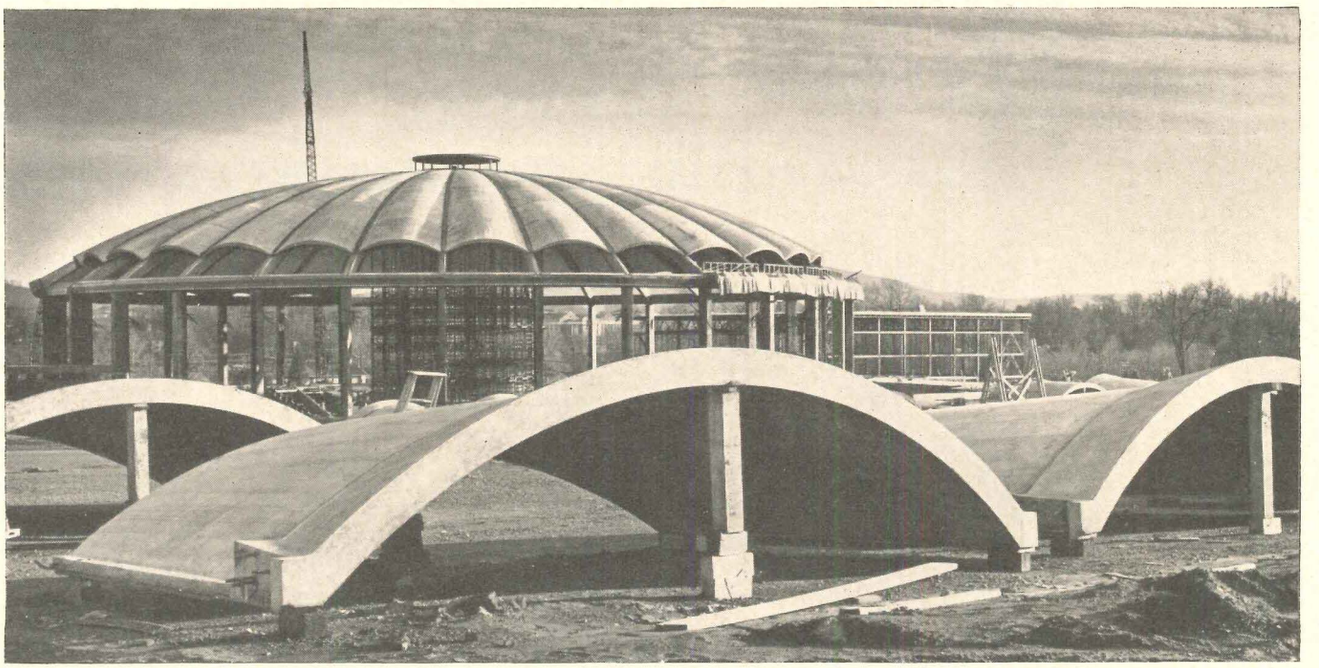
INVERTIBLE FACE PLATE
Permits carrier to fit all types of closets, syphon jet or blow-out.

Write for Manual F-4.

JOSAM MANUFACTURING CO.
Michigan City, Indiana

JOSAM PRODUCTS ARE SOLD THROUGH PLUMBING WHOLESALERS

For more data, circle 73 on Inquiry Card



Eight tapered, thin-shell units make up each section of the roof. They range from a 4′ span at center to a 27′10″ span at roof edge. The edge units are shown in foreground. Peripheral ring is supported by 44′ cast-in-place columns. More than 100 miles of wire was wrapped and post-tensioned around this outer ring.

PRECAST CONCRETE ROOF FOR NEW AUDITORIUM-GYMNASIUM

The unusual roof of the new University of Virginia auditorium-gymnasium is composed of 256 precast thin shell concrete units. Shell sections are placed on precast arched rib beams which are, in turn, supported by a compression ring at center and a tension ring at the perimeter.

LEHIGH EARLY STRENGTH CEMENT SPEEDS THE JOB

All precast members—shells, rib beams and 700 seat risers—were cast on the jobsite. Using Lehigh Early Strength Cement, a fast casting cycle was set up with a minimum number of beds. For example, the two shell casting beds operated initially on a 48-hour cycle. When cold weather arrived, steam curing was added. Shells then reached the required 3000 psi strength in less than 24 hours—cutting the casting cycle in half. Here, as in many concrete jobs, Lehigh Early Strength Cement means faster production of units and on-time construction schedules. Lehigh Portland Cement Company, Allentown, Pa.

Owner: University of Virginia, Charlottesville, Va.

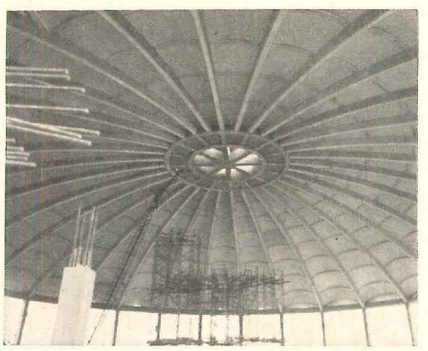
Architect: Baskervill & Son, Richmond, Va.

Architectural Consultants: Anderson, Beckwith & Haible, Boston, Mass.

Consulting Structural Engineers: Severud-Perrone-Fischer-Sturm-Conlin-Bandel, New York, N. Y.

General Contractor: McDevitt & Street Company, Charlotte, N. C.

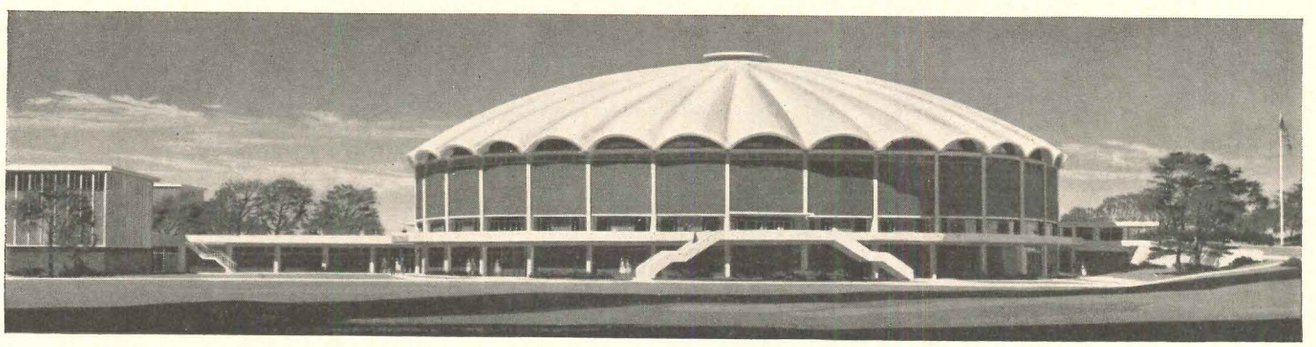
Ready Mix Concrete: Southern Materials Co., Charlottesville, Va.



The architectural effect of the dome interior is most attractive. Compression ring is 52′ in diameter.

LEHIGH CEMENTS

This new auditorium-gymnasium, to be known as University Hall, will provide seating for 9400 persons under the interesting fluted roof. The structure is 87′ high at center; has a 282′ clear span.



You're looking at Philadelphia through a new glass from PPG that shuts out 70% of the sun's heat and has a "U" value of .35

Photo taken through a sample of SOLARBAN TWINDOW simulating typical building location. Camera: 4x5 Calumet, 1/50 sec at f/11 with Ektachrome daylight.

COMPARATIVE PERFORMANCE DATA		U Value	Maximum Heat Gain (BTU/hr./ sq. ft.)	Visible Light Transmittance %
PLATE GLASS				
Regular Plate Glass	¼"	1.1	200	88
Solargray®	¼"	1.1	150	42
Solarbronze®	¼"	1.1	150	51
Solex®	¼"	1.1	150	73
LHR Clear	¼"	1.1	140	47
LHR Solargray	¼"	1.1	110	24
LHR Solarbronze	¼"	1.1	110	27
LHR Solex	¼"	1.1	110	35
SHEET GLASS				
Clear Sheet Glass	3/32"	1.1	205	90
Graylite™ 31	⅛"	1.1	170	31
Graylite 61	3/16"	1.1	195	61
Graylite 56	7/32"	1.1	190	56
Graylite 14	7/32"	1.1	150	14
Graylite 52	¼"	1.1	185	52
HIGH PERFORMANCE (Insulating, Heat and Glare Reducing)				
Clear Twindow®		.60	170	78
Solarban Twindow		.35	65	20
LHR Solargray Twindow		.60	90	22
LHR Solarbronze Twindow		.60	90	25
LHR Solex Twindow		.60	90	32
Solargray Twindow		.60	115	36
Solarbronze Twindow		.60	115	45
Solex Twindow		.60	115	65

INDUSTRY'S MOST COMPLETE LINE OF ENVIRONMENTAL GLASSES.

It's called PPG SOLARBAN™ TWINDOW®—the latest and most effective Glass Conditioning product. It transmits only one third as much heat as regular ¼" plate glass, cutting heat loss or heat gain 66%. And it transmits only about 20% of the sun's visible rays, greatly reducing glare.

What gives PPG SOLARBAN TWINDOW these remarkable properties? Actually, it's two panes of glass enclosing a dry air space. On the air space side of the indoor pane, an exclusive coating reflects 46% of the sun's total energy.

SOLARBAN TWINDOW is the ideal environmental glass in any climate or location. It provides the ultimate in indoor comfort. And the savings in heating and air conditioning costs may more than make up the difference in price.

PPG makes environmental glasses to control the sun's heat and glare on any orientation, of any building, in any environment. For details on these modern glass products, contact your nearest PPG Architectural Representative, consult Sweet's Catalog or write: Pittsburgh Plate Glass Company, One Gateway Center, Pittsburgh, Pennsylvania 15222.

another product for

Glass Conditioning from PPG

*Glass Conditioning is a service mark of the Pittsburgh Plate Glass Company

Pittsburgh Plate Glass Company, Pittsburgh, Pa.

PPG makes the glass that makes the difference

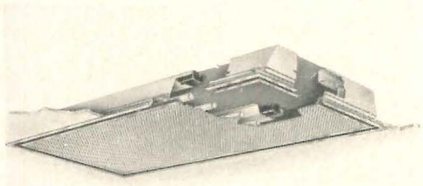
For more data, circle 74 on Inquiry Card

Product Reports

continued from page 194

VINYL FILM COATING FOR PREFABRICATED BUILDING PANELS
Applied in liquid form to stainless steel coil, and heat converted into a continuous film, this viny coating offers surface protection for building panels from before fabrication until construction. The film is then easily removed. *Pre-Finish Metals, Inc., Elk Grove Village, Ill.*

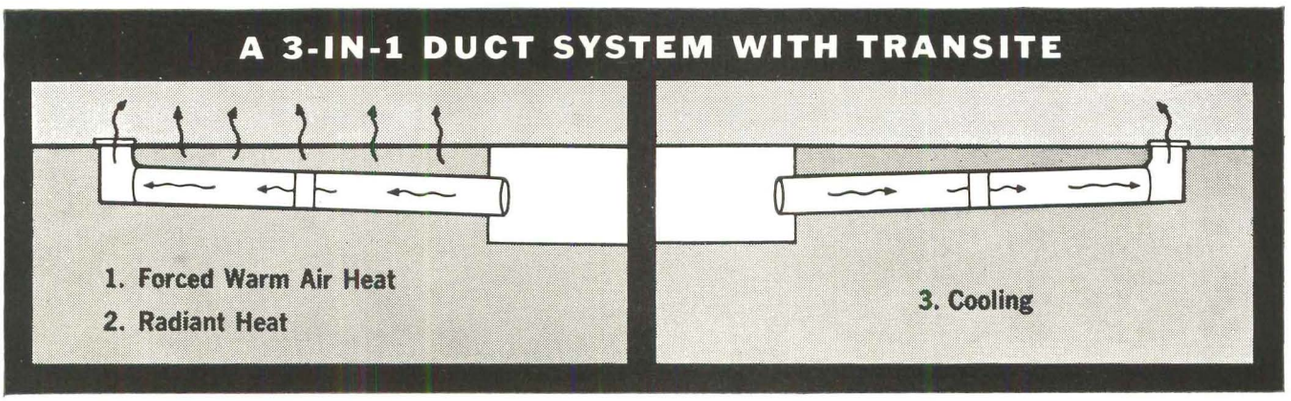
CIRCLE 305 ON INQUIRY CARD



LIGHT-AIR TROFFER SERIES
Light-air troffers in the *Floating Door* series feature extruded aluminum doors and trim. The new series has been developed in association with leading air diffuser manufacturers, so that the units are adaptable to a wide variety of air diffusers. Each standard fixture in the line can be used for supplying cool air, ventilating, exhaust or supplying heat. The floating door design enables the various operating devices to be concealed from view. Fixtures are made in flange, grid, or slip-in types, and can be mounted individually or in continuous rows. *Curtis-Electro Lighting, Inc., Chicago, Ill.*

CIRCLE 306 ON INQUIRY CARD

more products on page 202



Everybody benefits... client, architect, engineer, contractor

When underground Transite* air heating-cooling ducts are used, much valuable space in residential and non-residential buildings can be saved or utilized. And when the underground ducts are Transite, the air heating-cooling system can be more economical, more efficient and easier to install. Here's why:

CLIENT, ARCHITECT, ENGINEER BENEFITS...

MORE FREEDOM IN BUILDING DESIGN – An out-of-the-way Transite Air Duct system gives more opportunities for flexibility in exterior and interior design.

MORE EFFICIENT AIR DISTRIBUTION – With long lengths and smooth bore, Transite conveys air with 30% less pressure drop as compared to sheet metal. Smaller ducts or blowers may be used. Transite is a quiet duct, no "cracking" or "booming."

Transite ducts radiate heat in winter–put warmth into the slab to counteract floor chill. Deliver a full flow of air to registers...provide balanced air conditioning, eliminate need for supplementary heating.

Wide range of sizes (3"-36") with all needed fittings provide for complete design flexibility.

CONTRACTOR BENEFITS

FAST INSTALLATION – Many installation steps are eliminated. Transite needs no blocking-up or tieing down. No extra concrete needed to provide encasement.

Long 10′ and 13′ lengths mean fewer joints. Watertight joints are made quickly with J-M's unique couplings. Transite fittings are factory-fabricated of the same material as the ducts. No time lost in on-site fabrication of fittings.

TOUGH, DURABLE, EASY-TO-HANDLE DUCTS – Transite asbestos-cement ducts don't have to be "babied;" may be stored on the site exposed to the weather. Won't dent, deform or collapse when the concrete is poured. Can't rust, rot or burn; not affected by corrosive soils.

FIND OUT THE FULL STORY

The full Transite story provides more good reasons why slab-on-grade homes, schools, churches, commercial and industrial structures are better built when Transite is the underground duct for an air heating or cooling system. See our catalogue in the Mechanical Products Specification File or mail in the coupon below.

*TRANSITE IS JOHNS-MANVILLE'S REGISTERED TRADEMARK FOR ITS BRAND OF ASBESTOS-CEMENT PIPE AND OTHER PRODUCTS.

JOHNS-MANVILLE PIPE PRODUCTS

JM PRODUCTS

Johns-Manville, Box 362, AR-7, New York 10016
In Canada: Port Credit, Ont. Cable: Johnmanvil

Please send me your manual on J-M Transite Air Duct.

Name_____

Title_____

Company_____

Address_____

City_____ Zone_____

County_____ State_____

For more data, circle 75 on Inquiry Card

For more data, circle 76 on Inquiry Card ➔

ACOUSTIFORM®: new medium-density lay-in ceiling panel by Celotex

Available in broad range of sizes to fit any application, ceiling span or design need

New Celotex Acoustiform panels give you more ceiling design freedom than you've ever had. Your Acousti-Celotex consultant-distributor can supply Acoustiform panels in standard or custom modules from 24″ x 24″ to 48″ x 72″. And at relatively low cost.

Modular flexibility is just one important feature of Acoustiform panels. They keep their dimensional stability even when installed around wet-work or in other high humidity conditions. High sound absorption—NRC range .80-.90. Attenuation values, 35-40. Light reflection, 86%.

New Celotex Acoustiform panels come in four distinctive patterns. Available as Class A (noncombustible) conforming to the 0-25 flame spread classification by ASTM-E-84. Also as Protectone® panels for UL time-rated assemblies.

For samples and guide specifications, call your Acousti-Celotex consultant-distributor. See the Yellow Pages. Or write The Celotex Corporation, 120 South LaSalle St., Chicago, Ill. 60603.

ACOUSTI-
CELOTEX
REG U.S. PAT OFF
PRODUCTS

Product Reports

continued from page 198

STADIUM SEATING

Plastic seats, blow-molded of *Amerflex*—a high density polyethylene plastic, have contoured seat and back areas with slots to provide ventilation. Mounted on specially designed, cast iron enameled standards, the seats are self-rising, to help circulation past them, to prevent water accumulation and simplify cleaning.

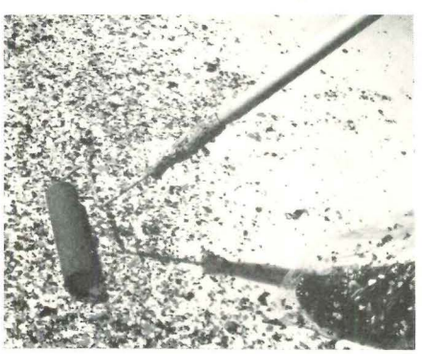
The seats have been specially designed for installation in large stadium areas. *American Seating Company, Grand Rapids, Mich.*

CIRCLE 307 ON INQUIRY CARD

ROLLER APPLIED SEAMLESS FLOORING

Poly-Flec flooring incorporates specially compounded color chips and liquid glaze, which can be applied by a special roller technique to eliminate the need for curing, grinding or grouting. This substantially reduces the cost of application. *Co-Polymer Chemicals, Inc., Livonia, Mich.*

CIRCLE 308 ON INQUIRY CARD



more products on page 206

a specification from Hillyard . . .

for a TERRAZZO SEAL that penetrates, protects, beautifies

PRODUCT NAME: *SUPER ONEX-SEAL®*

DESCRIPTION:

An ester-type penetrating sealer that may be buffed to provide a hard wear-resistant lustrous finish on terrazzo and other masonry surfaces.

SPECIFICATION AND HOW TO APPLY:

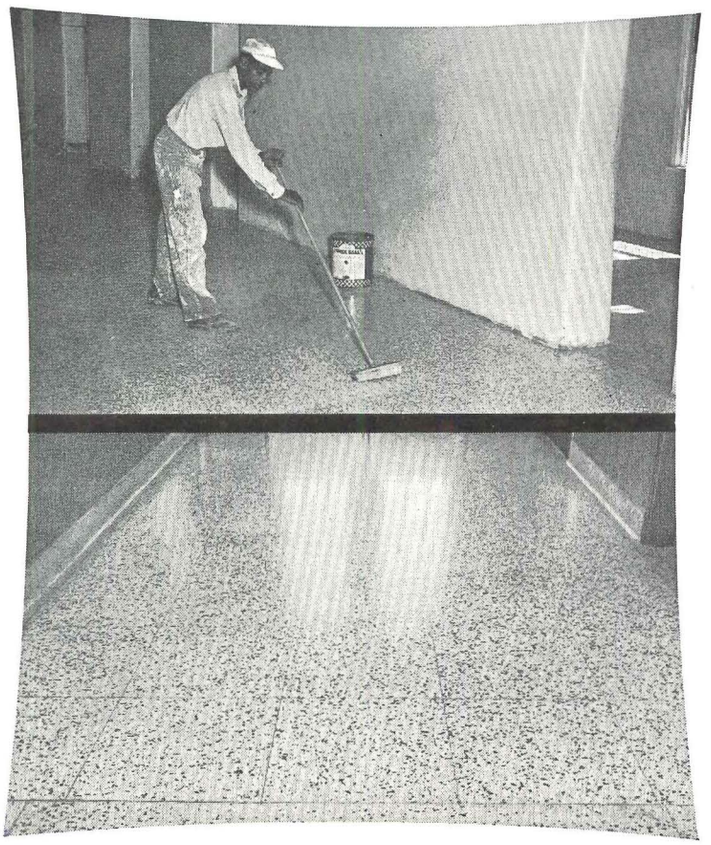
Floor must be thoroughly cleaned and free of stains. Agitate material until uniform. Apply in thin even coat with lamb's wool applicator. Let dry, not to exceed 20-30 minutes until pressure of the fingers pulled across the surface produces a squeeking sound. Buff each coat after application to provide greater lustre. Apply second thin coat and buff.

COVERAGE:

600 square feet per gallon first coat, 900 square feet per gallon second coat.

TECHNICAL DATA:

NVM-10.5% minimum. Film properties: Drying time-45 min. maximum; Appearance-free from particles—semi-transparent; Tackiness-none; Water resistance-no loosening of film, no removal of gloss. General Appearance: Color-light, shall contain no pigments or dyes; Odor-non-objectionable at any time; Viscosity-heavy-bodied liquid mixture.



GUARANTEE:

When applied in accordance with manufacturer's directions, it is guaranteed to meet all claims made for it in the proper sealing and finishing of terrazzo floors.

MAINTENANCE:

Sweep daily with a Super Hil-Tone treated dust mop (do not use an oily mop dressing). Buff periodically. When floor is soiled, clean with Super Shine-All, a safe neutral chemical cleaner. Traffic lanes may be patched in and buffed to blend in with the rest of the floor. Reseal as needed depending upon traffic and kind of use.

APPROVALS:

This is the type of a penetrating seal recommended for use by the National Terrazzo and Mosaic Association. U/L listed relating to fire hazard and slip resistance.

REFERENCES:

Hillyard A.I.A. File No. 25G.
A.I.A. Building Products Register
Sweets Architectural File

A trained professional Hillyard Architectural Consultant will demonstrate SUPER ONEX-SEAL for you, at no obligation. He serves "On Your Staff-Not Your Payroll". Write, wire or call collect.

Since 1907

HILLYARD FLOOR TREATMENTS

St. Joseph, Missouri, U.S.A.
Totowa, New Jersey • San Jose, California

The Most Widely Recommended and Approved Treatments For Every Surface

For more data, circle 77 on Inquiry Card

Stock Andersen Windows complement the orderly, disciplined patterns of a policemen's school

Minnesota Highway and Civil Defense Training Center Architect: Bettenburg, Townsend, Stolte & Comb, St. Paul. Windows: Andersen Casements and fixed glass.

Fittingly, this building expresses in its design the environment in which it will be used.

It exudes strength, masculinity. It is bold, yet disciplined in its conception . . . befitting its role as a training center for the Minnesota Highway Patrol and Minnesota Civil Defense.

There's harmony here . . . an artful blending of individually dominant shapes, materials and textures.

Not surprisingly, Andersen Casement Windows readily become a part of this design scheme. Almost like they were made especially for the job. Not stock windows at all.

But they are. And that's the way all **six beautiful types** of Andersen Windows (hundreds of sizes) perform in every design. They complement the most sophisticated architecture. But they never steal the limelight. Never become obtrusive.

And they're so protective. **Extra-weathertight** to save on heating costs and to keep these patrolmen in draft-free comfort even when the winter winds howl at 30 degrees below.

Could it be that getting all involved in custom millwork is an uneconomical use of time?

See Andersen in Sweet's File instead. Or call your Andersen distributor for a Tracing Detail File.

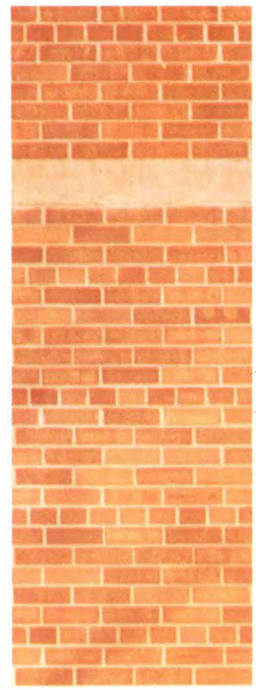
Litho in U.S.A.

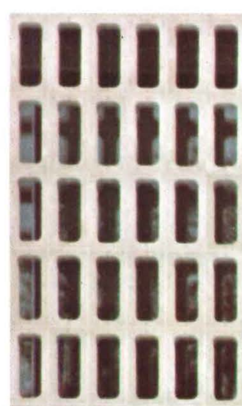
Andersen Windowalls*

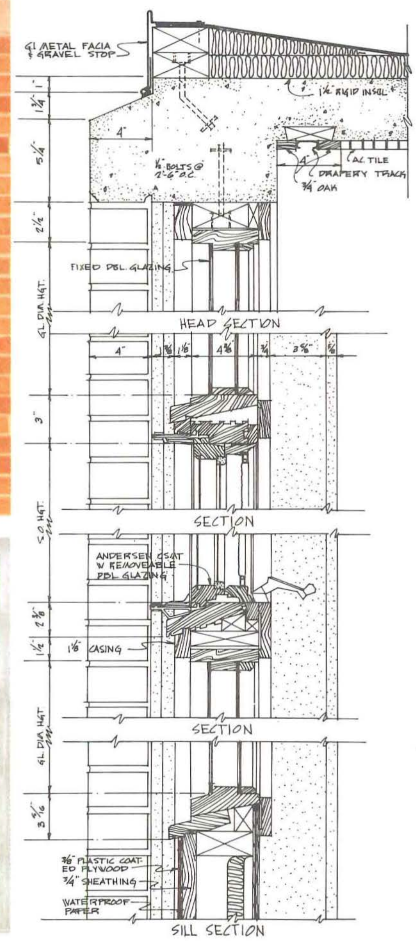
*TRADEMARK OF ANDERSEN CORPORATION

ANDERSEN CORPORATION • BAYPORT, MINNESOTA 55003

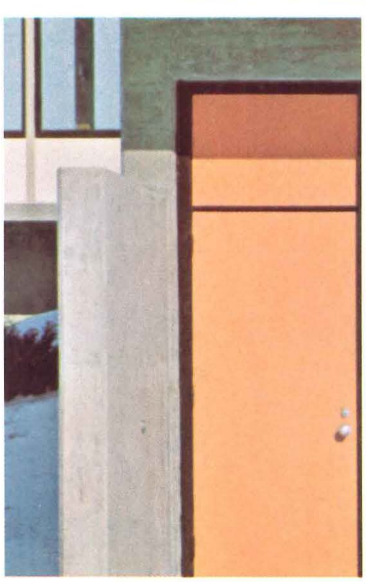
Window Beauty is Andersen

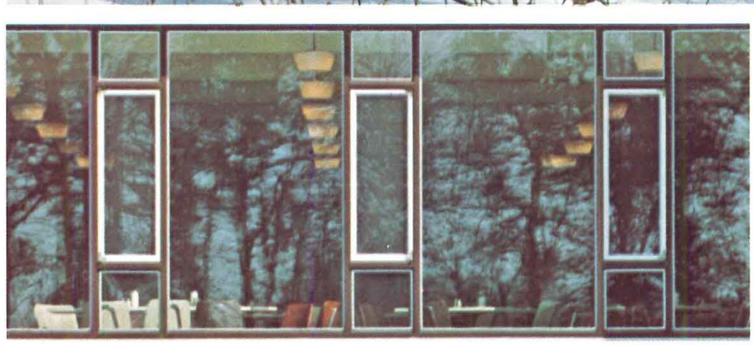






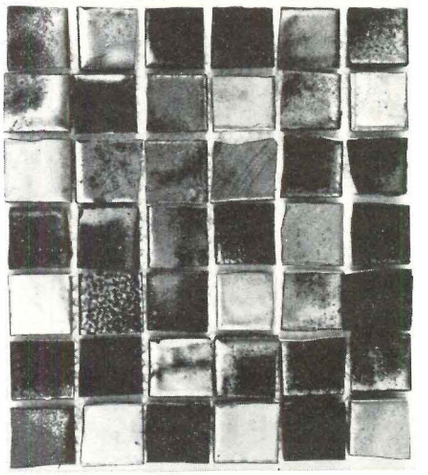
GI METAL FACIA & GRAVEL STOP
1½" RIGID INSUL
4"
½" BOLTS @ 2'-6" O.C.
4"
AC TILE
DRAPERY TRACK
¾" OAK
FIXED DBL GLAZING
HEAD SECTION
4"
1⅛"
4⅜"
¾"
3⅝"
SECTION
ANDERSEN CSMT W REMOVEABLE DBL GLAZING
1⅛" CASING
SECTION
⅜" PLASTIC COATED PLYWOOD
¾" SHEATHING
WATERPROOF PAPER
SILL SECTION
GL DIA HGT
S.O. HGT
GL DIA HGT





Product Reports

continued from page 202



NEW TILES WITH GLITTERING FINISH

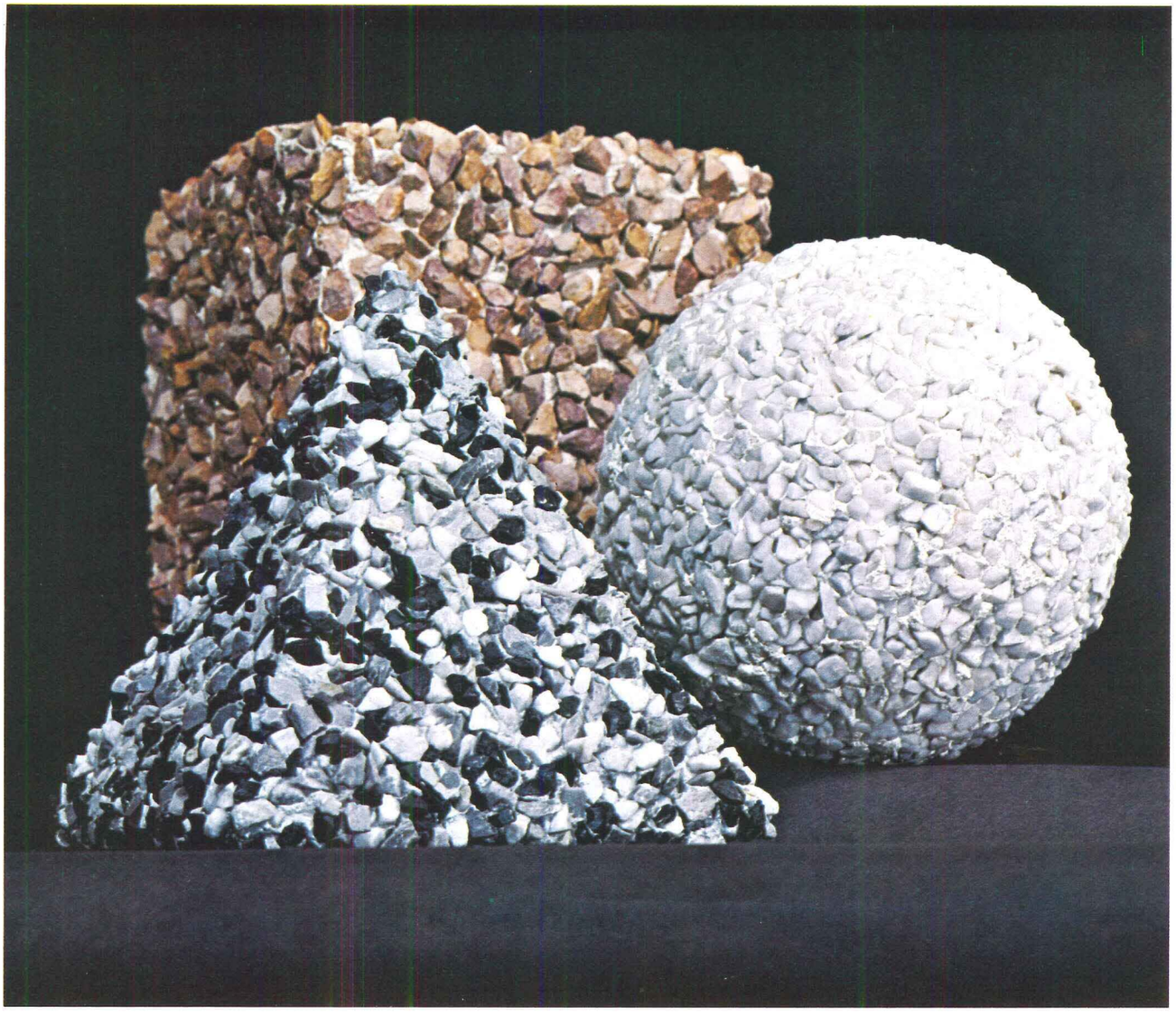
Latco products has added a series of new tiles to the *Venezico* line. The new tiles are available in a wide choice of gold, brass or silver finishes for decorator applications, where a glittering effect is desired. These new vitreous tiles are hand-broken and have all the features of the company's regular tiles. Said to be impervious to extremes of climate, the tiles are suitable for interior and exterior application. Each 12 in. by 12 in. tile sheet is mesh-mounted. *Latco Products, Los Angeles, Calif.*

CIRCLE 309 ON INQUIRY CARD

GROUP OPERATED DISCONNECT AND LOAD INTERRUPTER SWITCHES

The *DK60 Series* of 7.2 KV and 23 KV side-break, group-operated disconnect and load interrupter switches are said to combine functional simplicity with good performance and long service life. On 3-in. bolt circle NEMA class insulators, the *DK-60* switches comply with all applicable NEMA standards. On 2¼ in. bolt-circle insulators, they provide an economical, dependable means of disconnecting and interrupting distribution circuits. The company claims that minimum time and effort are required for installation, and that operating mechanisms are easily assembled and adjusted. Units are available for either vertical or horizontal mounting on wood or steel structures. *James R. Kearney Corporation, St. Louis, Mo.*

CIRCLE 310 ON INQUIRY CARD



FOR A NEW DIMENSION IN ARCHITECTURAL DESIGN

create lightweight exposed aggregate walls with Tuff-Lite

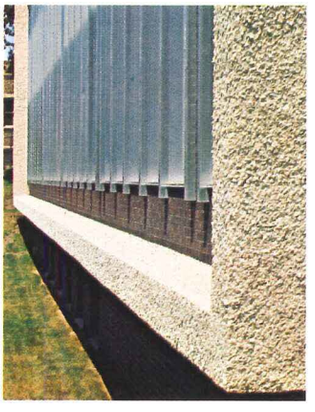
An epoxy-based mosaic wall matrix, Tuff-Lite by Fuller, now makes it possible for designers and architects to exploit the almost limitless potential of depth and dimensional effects of exposed aggregate. Can be used on interiors, exteriors, over concrete block, around corners, columns, in new construction or remodeling.

A totally new concept in the construction of lightweight, exposed aggregate walls, Tuff-Lite can be troweled on at the job site. Adheres securely to concrete, brick, wood or any dry, clean substrate.

Or it can be applied off-the-job to plywood, foam or other material for pre-formed, lightweight, easily handled panels. Tuff-Lite is 8 times lighter than concrete . . . 5 times stronger. Building designs need no special load-bearing properties.

Tuff-Lite is available in any color. Permits you to blend or contrast with aggregate or other construction materials . . . or to create multiple color designs. It retains its color. Is self-cleaning. Will not pit, spall or peel. Will not shrink, chip, crack or craze.

Once troweled on, Tuff-Lite can be seeded with aggregate immediately. Because of its superior bonding power, it gives greater exposure to aggregate . . . chips or stone. Cures in less than 24 hours after seeding.



Exterior of this building is as handsome as when installed in 1962. Has withstood temperatures as low as –40°F. Tuff-Lite walls remain bright and clean. Require no maintenance.

Refer to Sweet's Catalog 3C or Write for Free Brochure.

FULLER'S ADHESIVES HOLD THE WORLD TOGETHER

H. B. FULLER COMPANY

1150 Eustis St., St. Paul, Minnesota 55108, Dept. 210

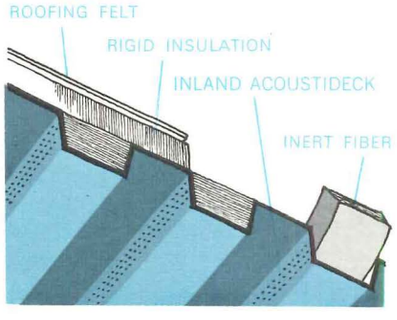
INDUSTRIAL ADHESIVES SINCE 1887

here, there's a ceiling on noise!

Photograph by: William Wollin Studios

Turner High School, Beloit, Wisconsin
Architects and Engineers: Durrant,
Deininger, Domer, Kramer, Gordon; Watertown, Wis. and Dubuque, Iowa
General Contractor: Severson-Schlintz, Inc., Janesville, Wis.

It's Inland Acoustideck®



Perforations in the vertical webs of Acoustideck panels permit entrapment of noise by glass fiber batts field-installed in the ribs under cover of rigid board insulation.

Steel roof deck—and exposed acoustical ceiling with a noise reduction coefficient of up to .70—that's Acoustideck.

This dual-purpose deck goes on fast. There's no waiting on the weather—no waiting for wet-mass material to set and dry. Acoustideck weighs less than half of equivalent poured-in-place or precast construction—carries normal loads over greater spans. You save on structural supports. Acoustideck is protected on both sides with Inland's exclusive, two-coat Duoprimer.

Acoustideck (Type B shown) is part of a complete line of Inland roof systems. See Sweet's, section 2i/Inl. Or write today for catalog 248 to Inland Steel Products Company, 4400 W. Burnham Street, Milwaukee, Wisconsin 53201.

Inland Steel Products

INLAND

EP-50

Office Literature

continued from page 190

BLAST COIL HEATERS

Selected applications of electric space heating by means of *Indeeco* Blast Coil Duct Heaters are presented in a handsome new booklet. Photos of buildings in which these heating systems have been used are accompanied by a brief description of the project, the size of the heating systems used, and the name of the architect, engineer and contractor. Types of buildings illustrated include industrial plants, stores, office buildings, medical buildings and many others. The suitability of the system to provide supplementary heating, auxiliary heat and for use in unattended buildings is demonstrated in this brochure. *Industrial Engineering and Equipment Company, St. Louis, Mo.*

CIRCLE 409 ON INQUIRY CARD

FILM ON METAL CURTAIN WALLS

N.A.A.M.M. has just released a 25-minute sound and color film entitled "Walls of Metal." The film tells the story of metal curtain walls from raw ore processing through fabrication and final erection, and traces the procedure from the architects' design to the completed job. Especially intended for professional architects and architectural students, the film is expected also to appeal to wider audiences. The film may be borrowed without charge by appropriate groups from: *National Association of Architectural Metal Manufacturers, Chicago 1, Ill.*

CIRCLE 410 ON INQUIRY CARD

CORROSION-RESISTANT DRAINLINE SYSTEM

Vulcathene, an integrated, corrosion-resistant drainline system, is the subject of a new 12-page catalog. The catalog lists specifications and dimensions of all *Vulcathene* components—pipe, traps, fittings, sinks and dilution tanks. Data on the physical properties and chemical resistance of the product is also included. Recommended installation and maintenance methods are outlined and the *Polyfusion* technique of heat-fusing permanent, leak-proof joints is also discussed. *Nalgene Piping Systems, Division of the Nalge Company, Inc., Rochester, N.Y.*

CIRCLE 411 ON INQUIRY CARD

WASHROOM EQUIPMENT

A comprehensive line of washroom equipment is displayed in a new illustrated catalog. Towel dispensers, waste receptacles, soap dispensers, litter containers in both floor and wall mounted models are among the items shown. A photo, dimensions, and suggested applications are given for each model. *D. J. Alexander Corporation, Philadelphia, Pa.**

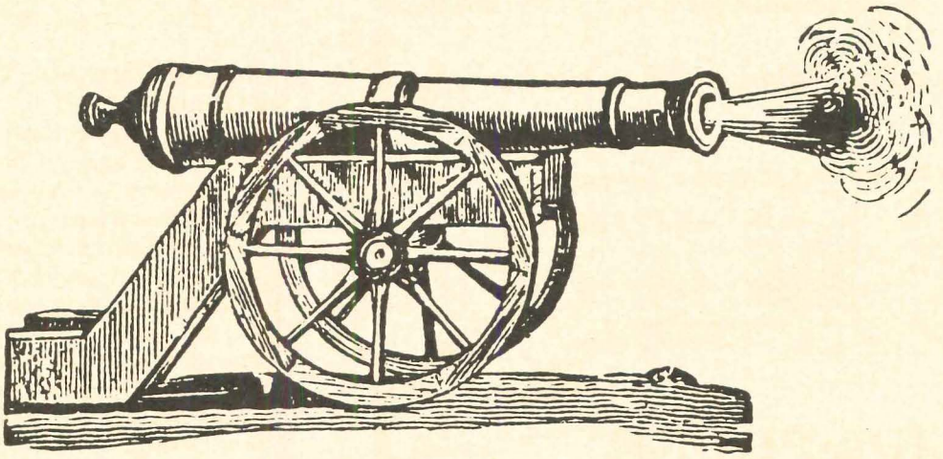
CIRCLE 412 ON INQUIRY CARD

PLAQUES AND MEMORIALS

Examples of typical plaques and memorials designed by this company are shown in an illustrated brochure. All plaques supplied by the company are custom designed and are made from plastic, bronze, aluminum, stainless steel, brass or acrylic plastic. *Best Manufacturing Company, Kansas City, Mo.**

CIRCLE 413 ON INQUIRY CARD

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



REVOLUTION!

IN THE STEEL WINDOW INDUSTRY

Who's the leader?

Why HOPE'S of course!

Not with powder or shot — but with a revolutionary new Steel Window design that reduces air infiltration by over 60% (confirmed by independent testing laboratory).

Get the facts from the nearest HOPE'S district office or HOPE'S representative listed in the yellow pages.

HOPE'S WINDOWS, INC., JAMESTOWN, N. Y.

3M Brand Insulation Adhesive 33 rates zero on flame spread factor when tested against NBFU Standard 90-A ...the first of many reasons for specifying it!

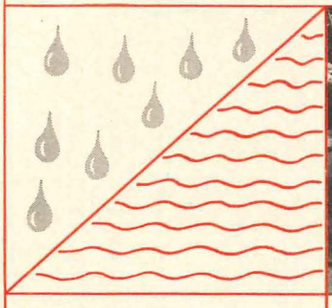
This zero we're proud to brag about. The flame spread rating of 3M Brand Insulation Adhesive 33 (Red) when applied to galvanized sheet metal and tunnel-tested against the National Board of Fire Underwriters Standard 90-A. Zero! The same score as for asbestos cement board! In this same test, Insulation Adhesive 33 rated a modest 3 both for smoke density and as a fuel contributing factor. Fact is . . . you won't find any rival insulation adhesive that equals these low scores.

Results of test conducted in accordance with ASTM E 84-61

	Insulation Adhesive 33	Maximum accepted limits
Flame spread factor	0	25
Fuel contributed factor	3	non-propagating
Smoke density factor	3	50

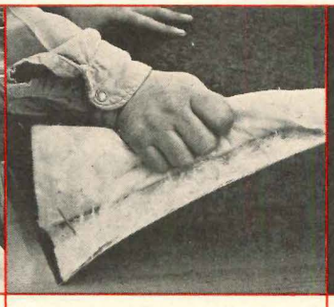
And you won't find any rivals that compare in performance, ease and economy of application. Nubby spray texture, as shown in photograph, provides thousands of tiny dots of adhesive that penetrate into the insulation, grab hold for keeps. This spray pattern, plus high solids content, assures uniform high strength throughout bonded surfaces. Low-pressure spraying with Insulation Adhesive 33 cuts application time 10 to 1 over brushing, 5 to 1 over roll-coating.

Check the additional advantages below, then send for complete data on new, improved Insulation Adhesive 33 and the full line of insulation adhesives and duct sealers from 3M—originators of low-pressure sprayable insulation adhesives. Write 3M AC&S Division, Dept. SBD-75, St. Paul, Minnesota 55119.

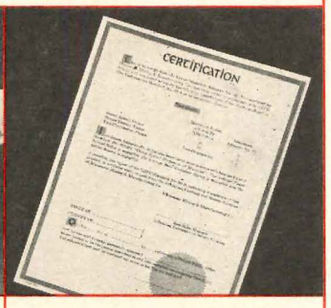


FULL-RANGE HUMIDITY, TEMPERATURE RESISTANCE. Insulation Adhesive 33 withstands high pressures, high velocities in ducts carrying both air conditioned and heated air. Long-term resistance to high humidity in temps from −20 to +250° F.

HIGH COVERAGE, MINIMUM LABOR! Using 3M-recommended spray system, a gallon of Insulation Adhesive 33 effectively bonds about 600 square feet of duct liner. Open time of 5 to 7 minutes permits spraying large areas quickly, conveniently.



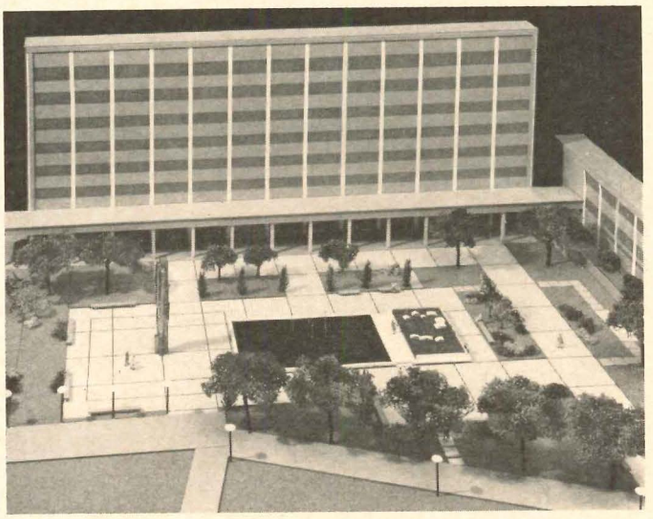
IMMEDIATE TACK. Right-now strength. Here, just seconds after the bond was completed, the insulation delaminates, but the adhesive holds tight. It continues to hold tight even after extensive aging at high temps, does not become brittle.



CERTIFICATION ON REQUEST! 3M will be glad to provide signed certifications that Insulation Adhesive 33 satisfies the requirements of NBFU Standard 90-A wherever desired to fulfill job, architect or code requirements.

Adhesives, Coatings and Sealers Division 3M COMPANY

For more data, circle 97 on Inquiry Card



Stuart Lynn, photos

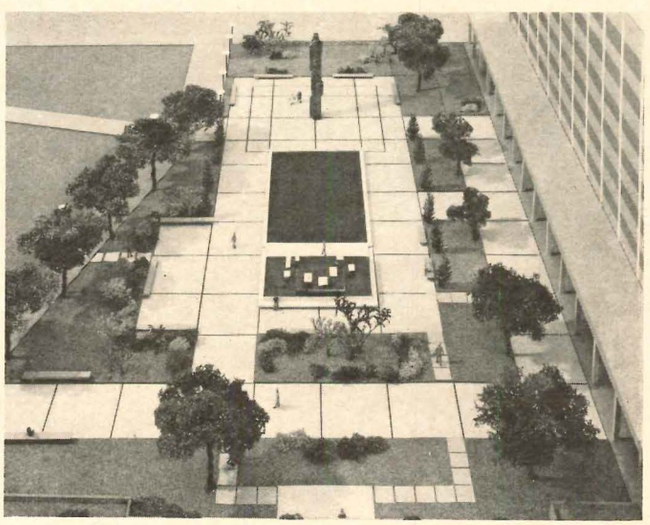
MONUMENT PLANNED FOR NEW ORLEANS

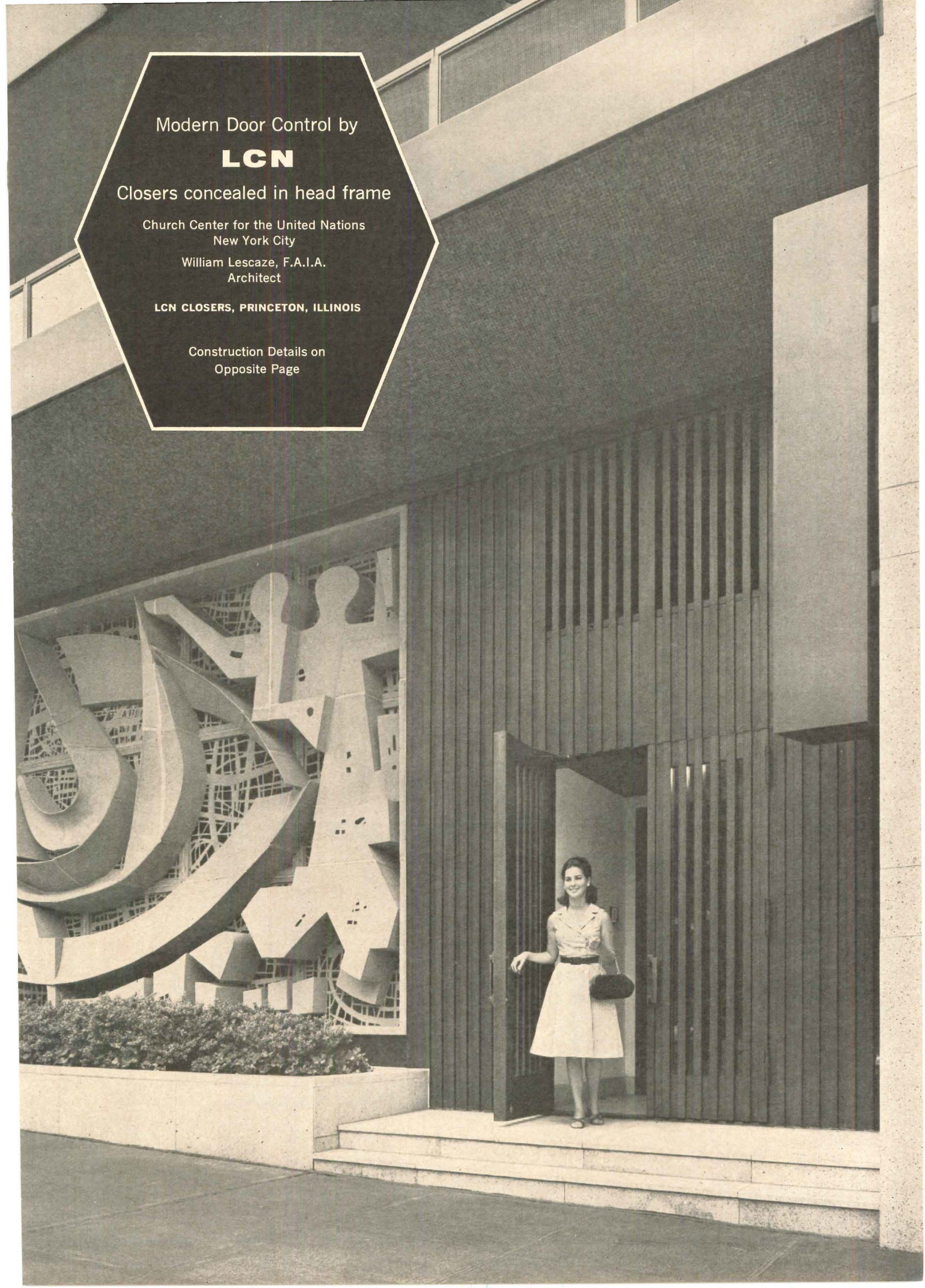
The plans for a monument to the late deLesseps S. Morrison, to be located in the New Orleans Civic Center, have been disclosed by the Governor's Committee for the Morrison Memorial. Architects for the monument are the firms of Mathes, Bergman, Favrot & Associates, August Perez & Associates, and Parham & Labouisse, the same firms which designed the civic center. Sculptor Lin Emery of New Orleans was the designer of the monument.

Morrison served as Mayor of New Orleans from 1946 to 1961 and as United States Ambassador to the Organization of American States from 1961 to 1963. In 1964 he was killed in the crash of a private plane.

A cast-aluminum sculptured shaft will dominate the plaza, rising directly from the exposed-aggregate paving to a height of 40 feet. On this shaft will be a relief representation of the mayor and other relief sculptures representing the mayor's achievements.

Opposing the shaft will be a two-level pool with over-all measurements of 100 by 40 feet. Transition from the higher pool to the lower pool will be by means of a low waterfall. The upper pool will contain a nickel-silver aquamobile of horizontally-composed mobile elements which will be activated by water jets. A 10-foot wide crossover walkway will merge with the pool coping and will serve as a seating area.





Modern Door Control by

LCN

Closers concealed in head frame

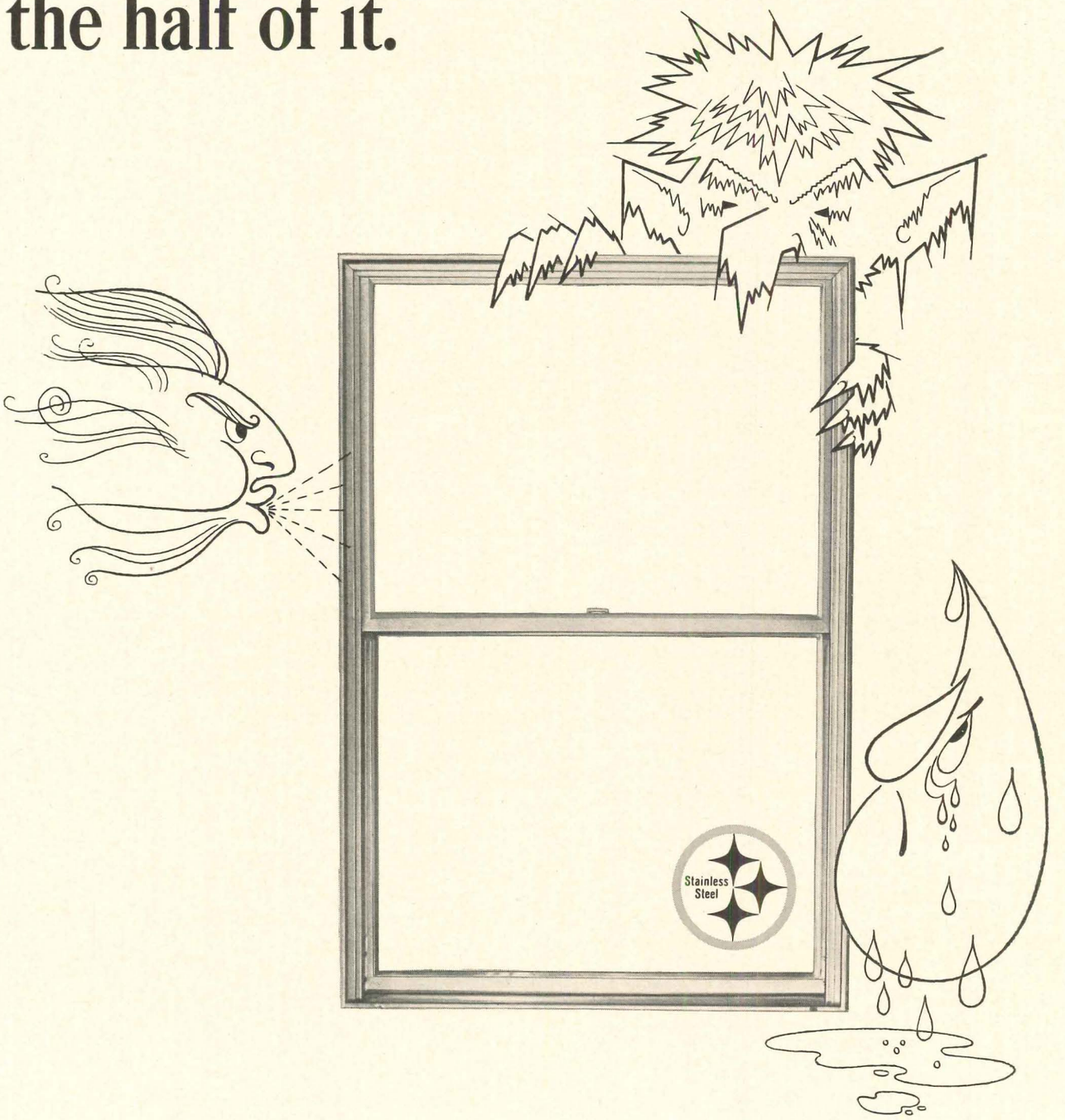
Church Center for the United Nations
New York City

William Lescaze, F.A.I.A.
Architect

LCN CLOSERS, PRINCETON, ILLINOIS

Construction Details on
Opposite Page

Sure, Freedom Windows have passed tests for Air Infiltration and Water Infiltration and Icing and Condensation. But that's not even the half of it.



Freedom Windows are Stainless Steel.

No other window material even comes close to stainless steel. That's fact.

Only FREEDOM WINDOWS of Stainless Steel, in the natural unpainted state of the metal, will *never* discolor. Or pit. Or corrode. Or stain adjacent materials.

They don't need painting, repainting, and repainting *ad infinitum*. They don't need anything but regular window cleaning to maintain their pristine luster. And we mean *luster*, not a dull gray finish.

Nothing blends with other materials like stainless steel. And no other material lasts so long or requires so little maintenance.

FREEDOM WINDOWS cost a bit more, naturally. But that's first cost only. Through several years of service they *save* money. After all, they can outlive *any* building.

We know you've been swamped with blurbs on aluminum, and aluminum is fine in its place. But here's how it compares with stainless:

	Stainless	Aluminum
Ultimate tensile strength	90,000 psi	22,000 psi
Yield point (2% offset)	40,000 psi	16,000 psi
Melting point	2,570°F	1,270°F
Modulus of elasticity $\frac{(E)}{10}$	28	10
Thermal conductivity (Btu/sf/hr/°F/in)	113	1,393
Thermal expansion (°F × 10^{-6})	9.4	12.1

We rest our case.

REPUBLIC STEEL

MANUFACTURING DIVISION
REPUBLIC STEEL CORPORATION
Youngstown, Ohio 44505

CALL THE MAN FROM MANUFACTURING!

MANUFACTURING DIVISION
Republic Steel Corporation
Dept. AR-1772, Youngstown, Ohio 44505

Please send me complete literature on FREEDOM WINDOWS of Stainless Steel.

Name_____

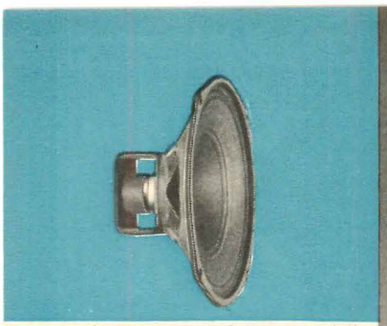
Title_____

Company_____

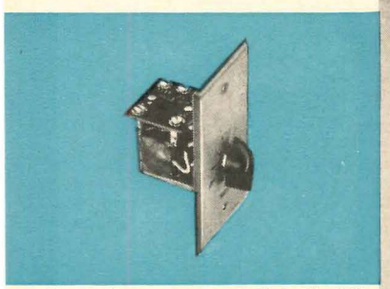
Address_____

City_____ State_____ Zip_____

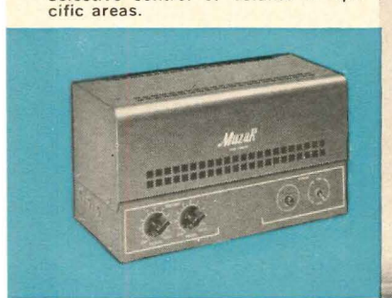
For more data, circle 98 on Inquiry Card



Muzak Speakers and Grilles: Specially designed for full-range reproduction of both music and voice under continuous operational conditions.



Muzak Volume Control: Virtually failure proof, these efficiency tapped-transformer-type units are ideal for selective control of volume in specific areas.



Muzak Amplifiers: Specially engineered for continuous, dependable, heavy-duty performance.

Muzak Microphones: A wide range of reliable Muzak-approved units for all types of systems available for quality sound reproduction.

Wired for sound by Muzak®...

The great new First National Bank in Dallas

Tallest building west of the Mississippi, First National Bank in Dallas is now completely *wired for sound*...the sound of Muzak. And the entire sound system was especially designed by Muzak.

Officials of First National recognized how important Music by Muzak is for improving employee morale. That's why they specified it for their new headquarters. Muzak was selected because of its unique ability to mask noise, boost worker efficiency, and create an atmosphere that is pleasant and stimulating to employees and public alike.

But there's another side to the Muzak story: complete communications systems. At First National, all voice paging, public address and signalling are handled exclusively by Muzak equipment.

Complete Muzak sound systems and components are specially engineered and installed for continuous heavy-duty, dependable performance. They meet highest quality standards for both music and voice distribution. Muzak systems now operate efficiently in thousands of commercial, industrial and institutional installations throughout the world.

To save time and expense, specify Muzak in the early planning stages.

music by Muzak®

MUZAK A Division of Wrather Corporation, 229 Park Avenue South, New York, N.Y. 10003

Argentina, Australia, Belgium, Brazil, Canada, Colombia, Denmark, Finland, Germany, Great Britain, Israel, Japan, Mexico, Peru, The Philippines, Switzerland, United States, Uruguay

For more data, circle 99 on Inquiry Card

MUNICIPAL ARTS SOCIETY GIVES FIVE AWARDS

A bronze plaque, two scrolls and two certificates of merit were presented at the 73d annual meeting of the Municipal Arts Society of New York in New York City on May 10.

Receiving the bronze plaque, the top award, was the CBS Building "as an outstanding example of architecture befitting the city of New York—Eero Saarinen Associates, architects."

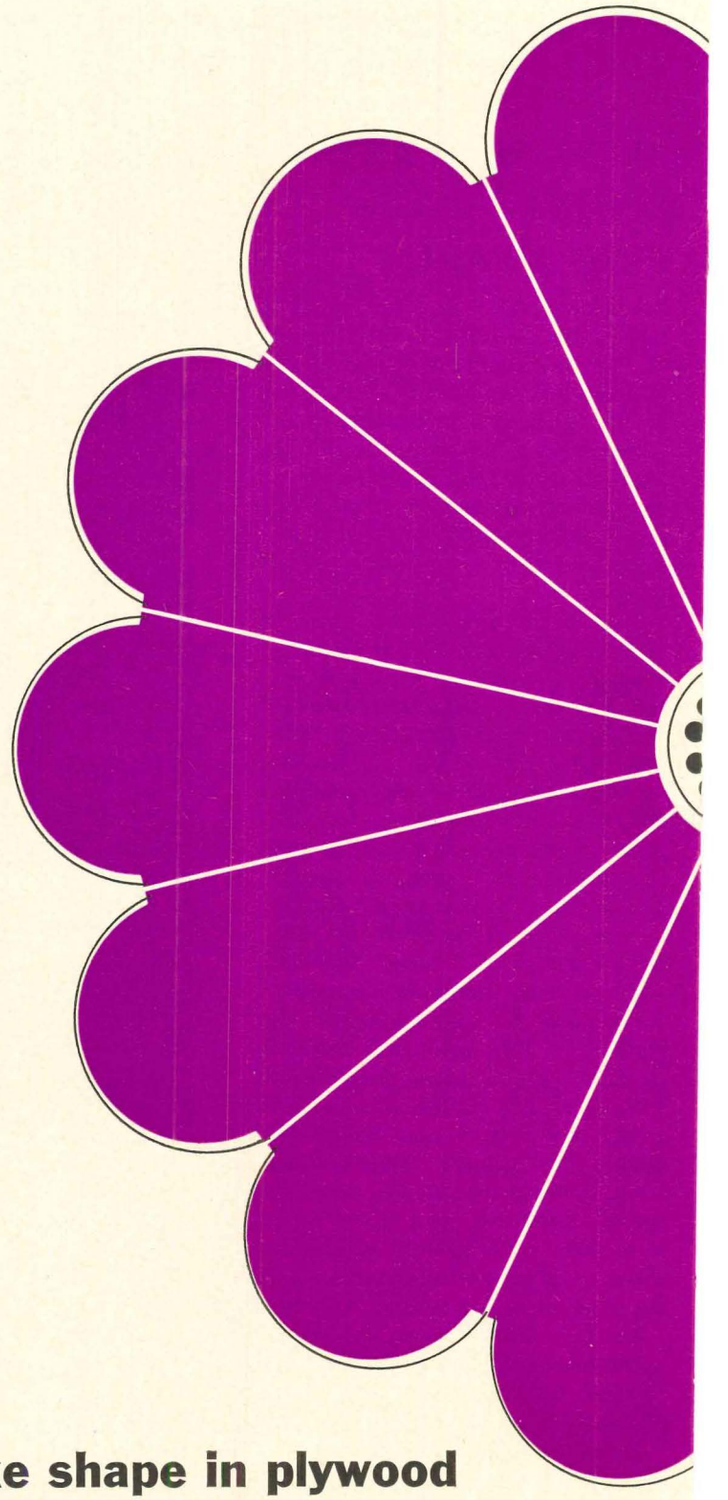
A scroll was presented to the City of New York and to Mayor Robert F. Wagner, Councilmen Seymour Boyers, Richard S. Aldrich, and Robert A. Low, and to Geoffrey Platt, chairman and James Grote Van Derpool, executive director of the Landmark Preservation Commission, for their parts in the enactment of the most "comprehensive (landmark) legislation to date in any American city."

Another scroll was presented to the Triborough and Tunnel Authority and to Othmar Hermann Ammann of Ammann & Whitney, engineers, designer of the Verrazano-Narrows Bridge. This citation read "Since 1934 you have worked in concert to create new links to our Island boroughs: Triborough, Bronx-Whitestone, Throgs Neck, and now, the world's mightiest span. These great structures have proudly maintained the highest esthetic standards set in the Thirties by the George Washington Bridge. Handsome by day and by night, they are, perhaps for our generation, this City's most lasting physical monument."

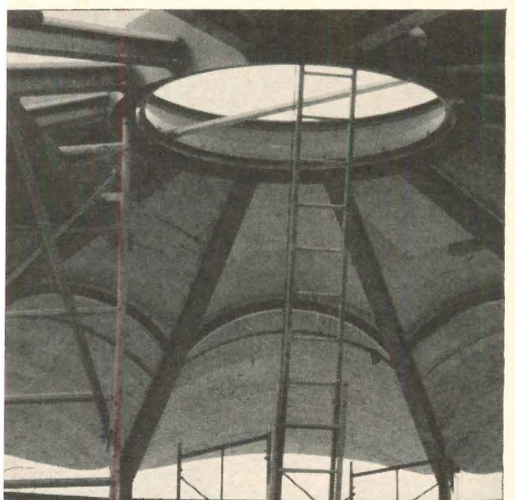
Receiving a certificate of merit was the Metropolitan Museum of Art and Brown, Lawford & Forbes, architects, for the skillful renewal of the galleries, and for the museum's new Thomas J. Watson Library and George Blumenthal Patio. The library was cited for having a "lithe and elegant facade, complementing a rugged Victorian neighbor."

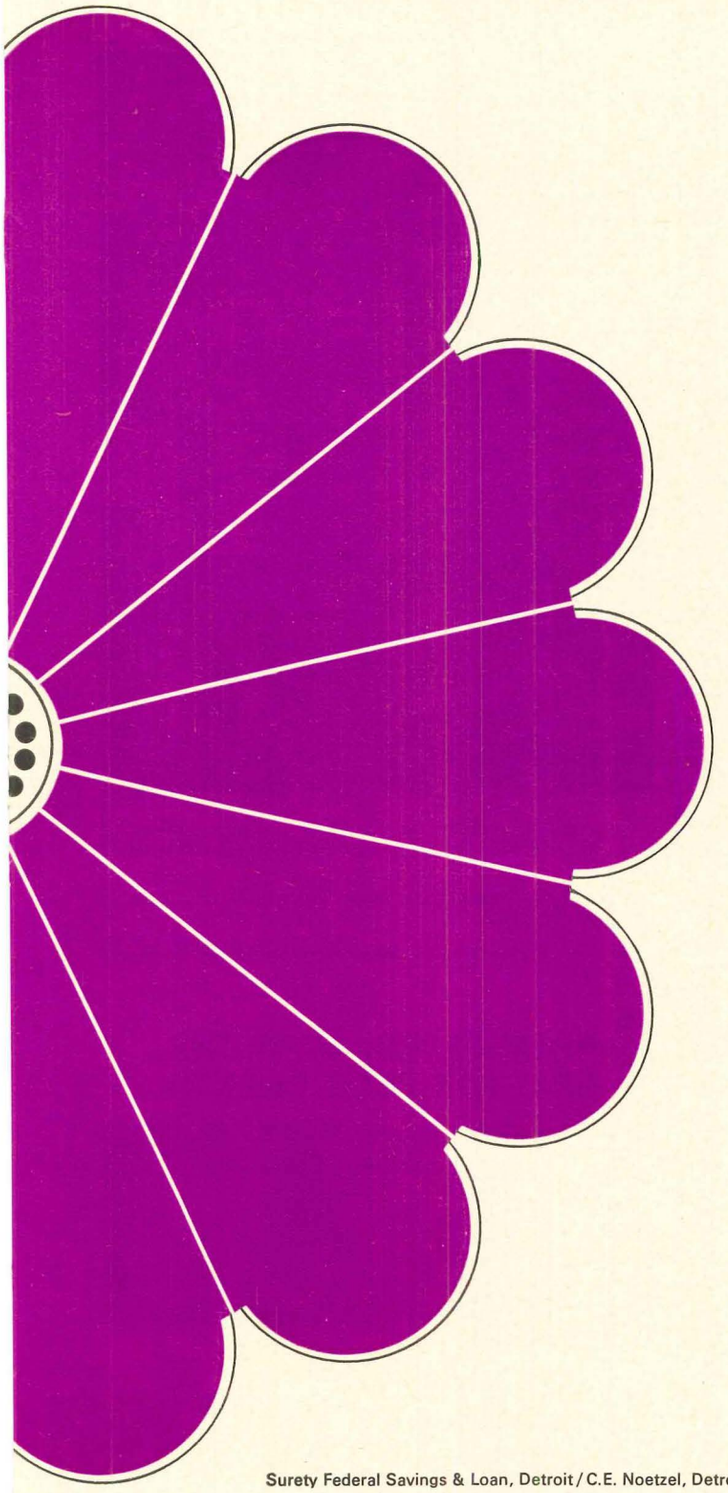
The final certificate of merit was presented to "The Marquesa De Cuevas for halting, at the eleventh hour, destruction of the sequence of town houses along Park Avenue, known as Pyne-Davison Row and to Peter Grimm whose civic vigilance and diplomacy set the stage for this denouement."

For more data, circle 218 on Inquiry Card ➔



the most exciting ideas take shape in plywood



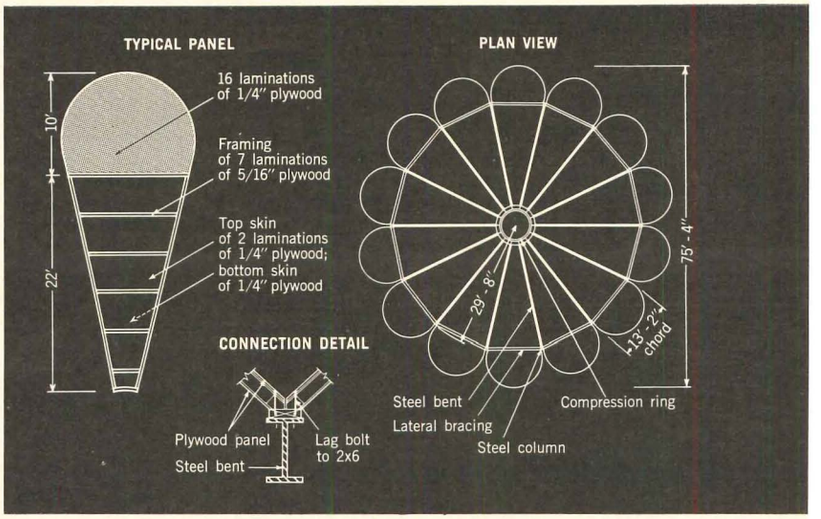


Surety Federal Savings & Loan, Detroit / C.E. Noetzel, Detroit, Architect / Plywood Structural Div., G.H.L. Corp., Auburn Heights, Mich., Fabricator

Fourteen petal-shaped plywood components roof this drive-in bank that blossoms by a busy Detroit highway. It's another case where only plywood could reconcile a demanding design with a tight budget. Concrete was considered but would have cost twice as much. The conical plywood panels were so lightweight and so carefully engineered that they took only three days to install. Whenever your designs call for unusual shapes, high strength and low cost, look into plywood components and structural systems. For more on DFPA plywood, write us at Tacoma, Wash. 98401 (US only).

AMERICAN PLYWOOD ASSOCIATION

TESTED DFPA QUALITY



Deere & Company Administrative Center, Moline, Illinois. Architect: Eero Saarinen and Associates. Engineer: Burns and McDonnell.

Sees, hears, records, reveals, checks, adjusts, alarms, remembers, analyzes, starts and stops, ***and*** *pays for itself within 3 years!*

Now! 1-man Building Control from Honeywell

One man with a Honeywell Automated Control Center can control any building you design.

He sits at a compact control panel. From it he can control fire protection, clocks, security, temperatures, humidity and equipment. In fact, he can handle practically everything except maintenance and repairs without leaving his chair. Constant supervision replaces periodic inspections.

Only Honeywell can design, manufacture, install, guarantee and service *all* the equipment your clients need to control buildings this modern way. Only Honeywell specialists can help you and your engineers coordinate the whole job. One source, one responsibility. Honeywell simplifies building control. We supply everything but the man.

Free booklet for Architects
ONE MAN BUILDING CONTROL BY HONEYWELL

Contains information on the operating economies and applications of automation in controlling all kinds of buildings. Send to Mr. W. N. Wray, Honeywell, Dept. AR7-122, Minneapolis, Minnesota 55408.

NAME

TITLE

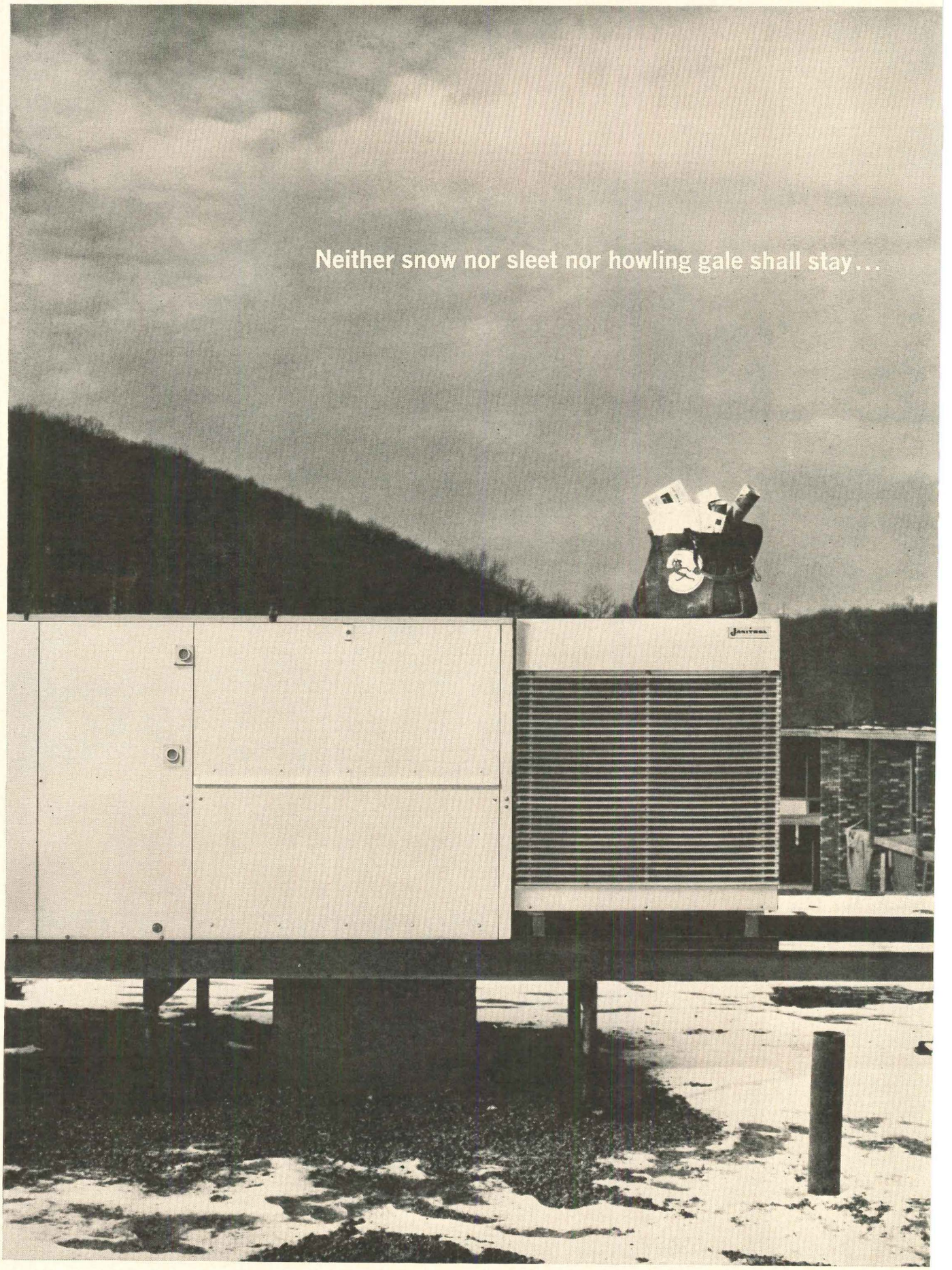
FIRM

ADDRESS

CITY

STATE ZIP

Honeywell


Neither snow nor sleet nor howling gale shall stay...

. . . these rugged Janitrol Skyliner heating and cooling rooftop units from delivering their full rated capacities.

They've been tested under 60 mph winds and rainfall at the rate of 12 inches an hour.

Condensing unit compressors are protected by factory installed crankcase heaters.

A power flue gas exhauster drives out fumes, even against gale-force winds.

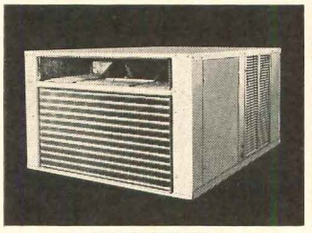
Combustion air intake and fresh air inlets are located above the level of drifting snow.

Each unit is fire-tested at the factory. The whole package is pre-wired and pre-tested for perfect operation before it's shipped. About all you have to do is put it on the roof and plug it in.

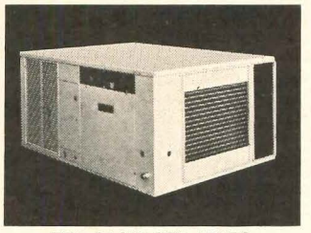
Low, compact, these units blend easily into the overall look of the building. Internal rain rejector baffles eliminate projecting hoods or louvers. Efficient power flue gas exhaust eliminates the need for unsightly flue stacks.

Janitrol offers one of the broadest rooftop lines in the industry: Skyliner units providing up to 22 tons electric cooling and 700,000 Btu heating; Heat Pumps ranging from 2 ton to 10 ton heating and cooling; compact Electric Gas Combination Units (electric cooling, gas heating packages) from 2 ton cooling/65,000 Btu heating to 5 ton cooling/150,000 Btu heating. Also, natural gas engine Skyliner heating and cooling packages, 5 ton and 10 ton cooling and up to 300,000 Btu heating.

Get at least one estimate from your Janitrol dealer. He's in the Yellow Pages. Janitrol gives you more to work with.



HEAT PUMPS



EGC PACKAGED UNITS

JANITROL DIVISION
Midland-Ross Corporation
Columbus, Ohio ☐ Phoenix, Arizona

For more data, circle 103 on Inquiry Card

For more data, circle 108 on Inquiry Card ➔

No matter what kind of a mood your design is in, our tile will go along quietly.

It always does. Mosaic tile is the color-compatible tile.

Any one Mosaic goes with every other Mosaic. The harmony is built right in.

Take the picture, for example.

Notice how the Bluegrass Green quarry tile floor complements our pool of Faientex 1291 Green. And how the accent wall of Staccato 16 Royal Purple keeps its composure in the presence of our side wall of Champagne Glaze 1823 White (see inset).

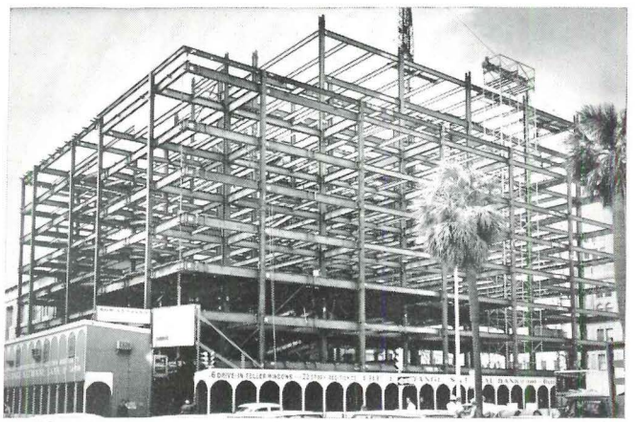
Yet the big thing is that Mosaic tile colors go right along with the most domineering (or delicate) accessories and materials. And willingly.

Even when you put Mosaic tile in the foreground, it stays in the background.

Check your Mosaic Representative, Service Center or Tile Contractor for price ranges of tiles shown, alternate colors, samples and availability.

See Yellow Pages, "Tile Contractors-Ceramic". Or you can write: The Mosaic Tile Company, 55 Public Square, Cleveland, Ohio 44113. In the western states for compatible colors: 909 Railroad Street, Corona, California 91720.

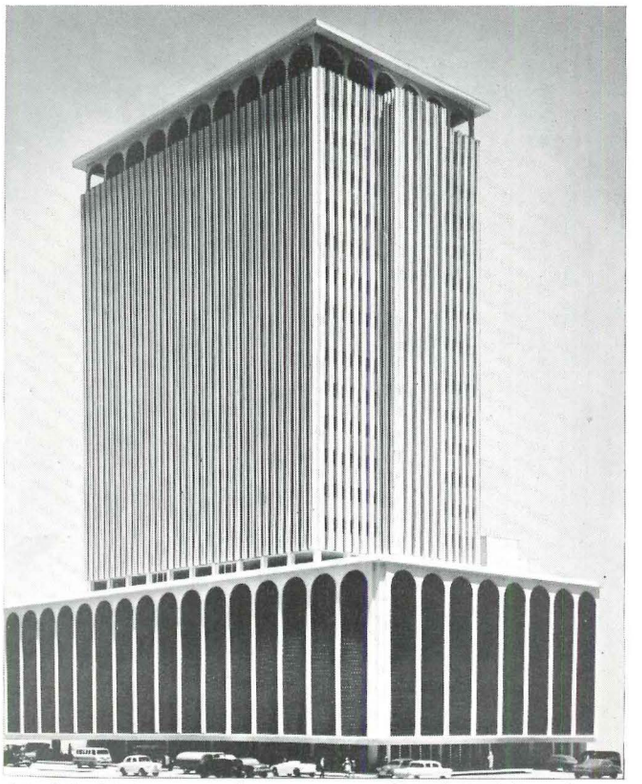
MOSAIC®



34% of the 3,200 tons of structural members supplied by Bethlehem is V50 and V55 high-strength steels. Field connections were welded and high-strength-bolted; shop connections were welded (V Steels are readily weldable).

Redesign in Bethlehem V Steels saved this bank $45,000

A simple redesign of some columns and a switch from A441 to Bethlehem V50 and V55 steels saved $45,000 for the owners of the 22-story Exchange National Bank Building, Tampa, Fla. Bethlehem V Steels are high in strength (45,000 to 65,000 psi min yield), but truly low in cost. If you'd like to know more about these economical structural steels, just get in touch with our nearest sales office.



Model of 22-story Exchange National Bank Building shows ground floor for banking facilities, six-story parking garage, and office tower section with floors designed for composite action.

Owner: Exchange Realty Corp. Architect: Harry A. MacEwen, A.I.A. Consulting Engineers: William J. McGraw, Inc., and Randolph C. Jackson, III, Inc. Fabricator and Erector: Florida Steel Corp. All are Tampa firms. General Contractor: J. A. Jones Construction Co., Charlotte, N.C.

Steel for Strength

BETHLEHEM STEEL CORPORATION, BETHLEHEM, PA.

BETHLEHEM STEEL

BETHLEHEM STEEL

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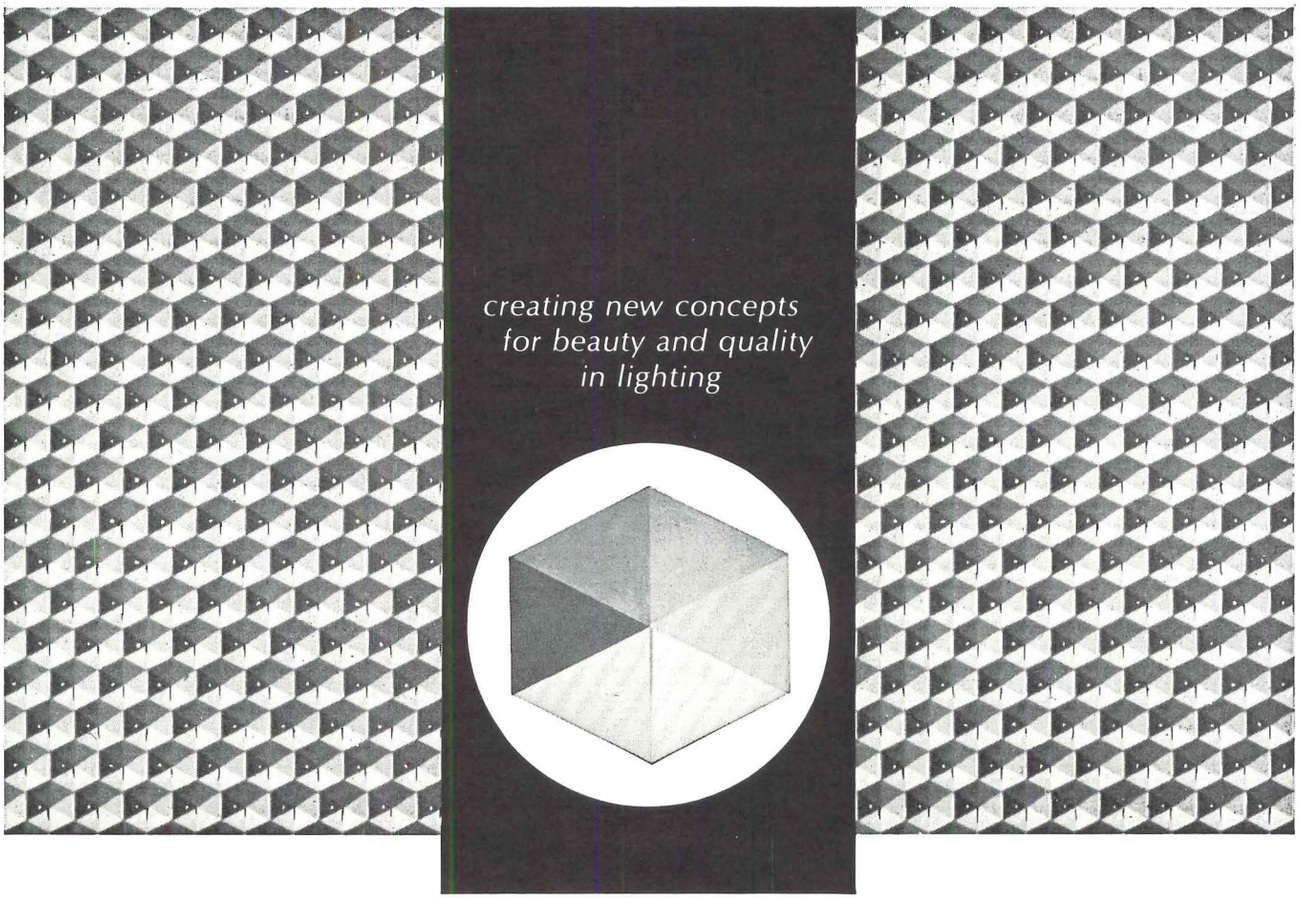

ONE IN A MILLION
(a lighting prism by K-S-H)

It's perfect. The other 999,999 will be, too.

There are 10,000 prisms in a 1 x 4 K-Lite panel. A million of them in many buildings.

If they weren't all perfect, you'd have problems. When prisms have slightly curved surfaces, for example, the light goes wild. You get hot spots and streaks. If the prism angles aren't true, you get high levels of brightness. A single imperfect prism is a visible flaw.

K-Lite plastic panels are made by *lighting* people who fully understand what you want from prismatic fixtures. As a result, far more K-Lite is used than any other plastic lenses made.

The lens is a small fraction of total lighting costs. But it controls the final result. Make sure *your* clients get K-Lite by K-S-H. In acrylic, polystyrene and the new "Tedlar" film-protected. Available from most major fixture manufacturers *if you specify them!*

"Tedlar" is a Du Pont registered trademark

K-S-H PLASTICS, INC.
10212 Manchester • St. Louis, Mo. 63122

K-LITE®
LIGHTING PANELS

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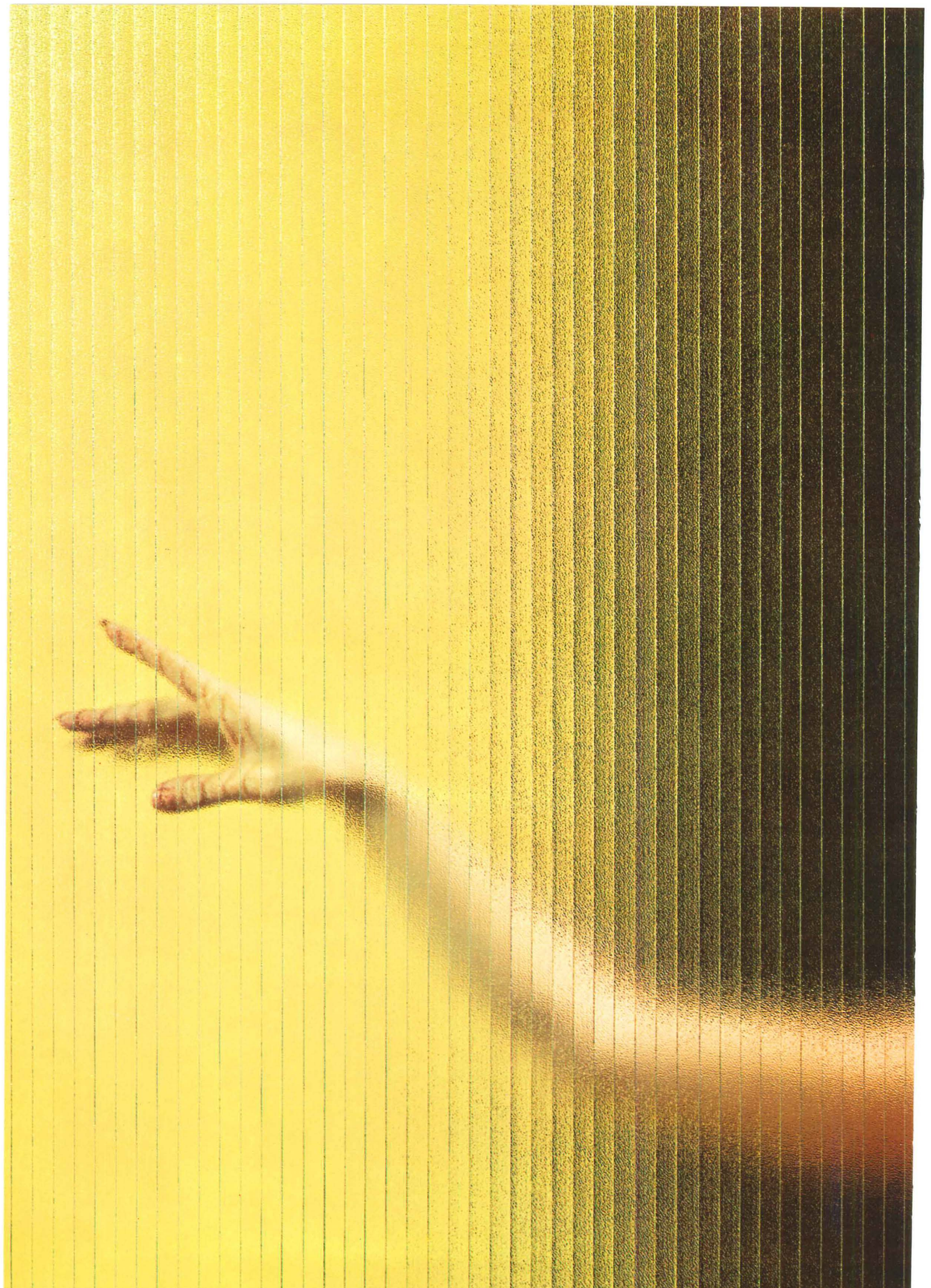


Announcing a totally new type of patterned glass for architectural and decorative glazing!

pinstripe

by ASG
CREATIVE IDEAS IN GLASS

Pinstripe is the *first* patterned glass with a *single-strand wire insert.* It's available now in 7/32″ thickness, in sizes up to 54″ by 120″.

Pinstripe has the forthright, uncluttered good looks that characterize the best in contemporary design. Slender, parallel strands of bright wire spaced one-half inch apart run vertically the length of the glass. These subtly gleaming filaments of steel form the principal design element of the glass, and provide an added measure of protection—Pinstripe meets FHA requirements for safety glass. Pinstripe can be glazed with the wire vertical or horizontal.

Pinstripe has a closely engraved, light-diffusing Finetex® pattern on one surface. Both textured and smooth surfaces have an almost imperceptible ribbed effect that creates a suggestion—and only a suggestion—of classic fluting. Pinstripe passes plentiful light, yet obscures images more than a few inches from the glass.

Pinstripe is available through your local ASG distributor. He'll be happy to show you this newest member of the broad ASG family of architectural glasses. Or, for information and a complimentary sample of Pinstripe, write to: Dept. D-7, American Saint Gobain Corporation, P. O. Box 929, Kingsport, Tennessee 37662.

New from
AMERICAN SAINT GOBAIN

You should know more about Hetrofoam®-based insulation than he does... Do you?

He knows he can install a lot of these big, lightweight sheets fast and easy.

What you should know and he probably doesn't, is that these thin sheets of Zer-O-Cel,* based on Hetrofoam, insulate as well as many others twice as thick . . . that they won't shrink, rot, or let in moisture to rust out internal members.

These are all valid, timesaving, money-saving reasons for specifying fire-retardant Hetrofoam-based polyurethane foam for roof deck and other insulation. Let us tell you more about it. Or give you technical help to solve your particular insulation problem. Write Durez® Plastics Division, Hooker Chemical Corporation, 8007 Walck Road, North Tonawanda, N.Y. 14121.

*Zer-O-Cel is a registered trademark of National Gypsum Company

HOOKER CHEMICALS® PLASTICS

DUREZ PLASTICS DIVISION

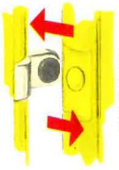
For more data, circle 78 on Inquiry Card

For more data, circle 111 on Inquiry Card ➔

Sanymetals

FORMERLY CALLED (*toilet compartments or partitions*) HAVE ALL THE FEATURES THAT CAN BE BUILT INTO THEM...

THEY'RE CLEAN  hygienically and in design AND THEY'RE STRONG  fully-welded, extra-strength bolts AND THEY'RE PRIVATE  optional access latches...slotted for screwdriver or coin...special key style...blank—for complete privacy

AND THEY'RE SAFE  because they're smooth and flush. Recessed hardware, welded corners, controlled hinges AND THEY'RE QUIET  maximum sound-deadening insulation... theft-proof rubber door bumpers AND SMOOTH, ECONOMICAL, INSTALL EASIER, LAST LONGER AND.....

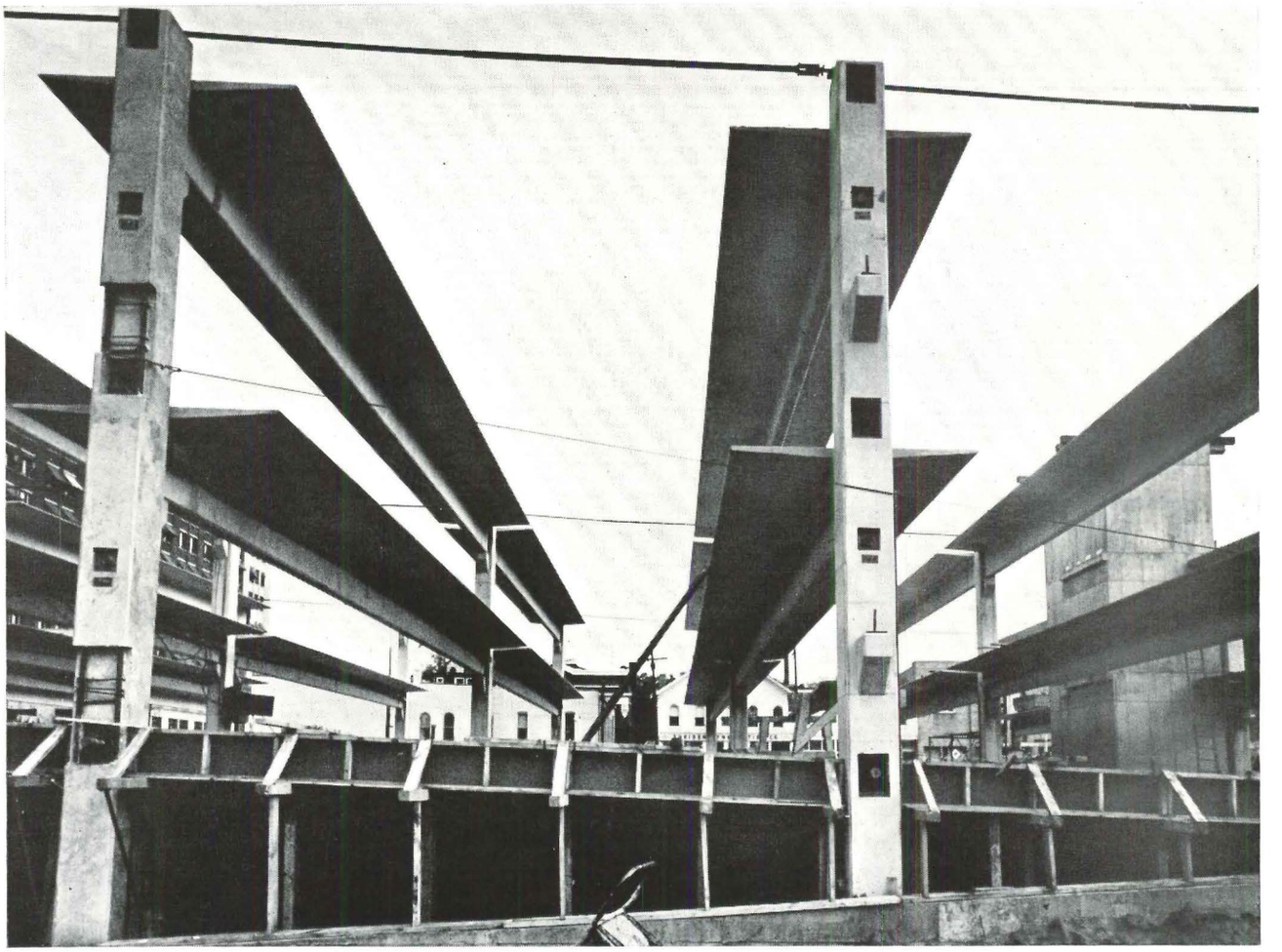
YOU'D BEGIN TO THINK Sanymetals ARE ALL AROUND BEST...

WRITE FOR THE FEATURE STORY

THE Sanymetal® PRODUCTS COMPANY, INC.
1701 Urbana Road, Cleveland, Ohio 44112

ONLY Sanymetal® MAKES Sanymetals

78 prestressed concrete tees, each 59'-8" long were used in Dubuque, Iowa parking ramp.



Engineers: DeLeuw, Cather & Company, Chicago, Illinois
Prestressed Concrete Fabricator: Prestressed Concrete Products Corporation, Verona, Wisconsin
General Contractor: J. P. Cullen & Son Corp., Janesville, Wisconsin
Owner: City of Dubuque, Iowa

Big reason for selection of prestressed concrete in new Dubuque, Iowa parking ramp: SPEED

To build the new Locust Street parking ramp in Dubuque, Iowa, engineers selected prestressed concrete and saved important time and money.

Pile driving and site preparation work for the structure were done while the giant prestressed concrete tees and columns were being fabricated off the site. Then, when the site was ready, the main components of the structure were ready for speedy erection. The fact that the structure was completed and opened for the pre-Christmas shopping season in 1964 is attributed to the use of prestressed concrete. Parking capacity is 449 cars.

This project is another example of the growing acceptance of prestressed concrete construction for a variety of applications. The selection of Union TUFWIRE® Strand for prestressing strand in the giant tees and columns reflects the increasing reliance of prestressed concrete producers on this job-proved product. TUFWIRE Strand, TUFWIRE and other Union Wire Rope products are made by Armco Steel Corporation, Steel Division, Department W-1845, 7000 Roberts Street, Kansas City, Missouri 64125.

ARMCO STEEL ARMCO

For more data, circle 112 on Inquiry Card

SLUMP BLOCK IN RUNNING BOND

This stunning traditional home exemplifies the easy elegance of quality concrete masonry. Dimensions of slump block are 3½″x3½″x15½″, painted off-white. The next time you build, specify Q BLOCK masonry—for added fire-safety, insulation and sound absorption. You'll be glad you did.

Architect: **Kenneth C. Albright**

Q BLOCK® wall creations

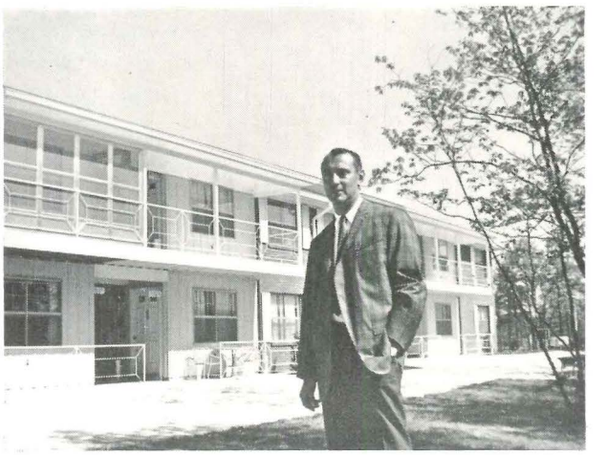
today's smartest way to put quality into every wall!

Q BLOCK masonry, as you know, is the new standard of excellence for concrete block established by the National Concrete Masonry Association. Q BLOCK masonry enables you to design and build with new quality and greater confidence. Only NCMA members can make Q BLOCK masonry, and their products are tested at regular intervals by accredited laboratories to assure that Q BLOCK standards are maintained. Write for the name and address of your nearest Q BLOCK producer.

Look for this Q BLOCK Certification wherever you specify or purchase concrete block.

NATIONAL CONCRETE MASONRY ASSOCIATION • 2009 14th STREET NORTH, ARLINGTON 1, VIRGINIA

Here's how G-E Central Air Conditioners solved the problem of even cooling in the multi-room apartments of Robert Schmertz



"Our apartments, which range up to 1,000 sq. ft. and have as many as four rooms, are laid out so that we prefer 1½- and 2-ton G-E Central Systems to give us even distribution of cooling through ductwork at a low operating cost," says Bob Schmertz of Leisure Village, Lakewood, N. J.

"Because some folks feel the heat more than others, they appreciate the fact that with individual central systems, each apartment has its own separate climate control.

"Of course," Mr. Schmertz says, "we chose G.E. in the first place because we know G.E. makes the most reliable products. And with G.E.'s top engineering design, we can count on the most dependable equipment. We're selling well, thanks in great part to G.E."

Quiet, low-cost G-E Zoneline Air Conditioners solved Ben Cogen's Sherwood Park Apartments cooling problems

"G-E Zoneline through-the-wall air conditioners are amazingly quiet, and their low-installation costs fit our needs perfectly," says Ben Cogen, owner of handsome, new low-rise apartments in Lima, Ohio. "Zonelines are attractive, too, both on the exterior and the interior."

"Our apartments are laid out so that a single G-E Zoneline can air condition our three-room suites, and two G-E through-the-wall units take care of our larger four-room apartments. Each tenant can control the temperature in his own apartment. If repairs are needed, it requires shutting down just one unit, and it slides out of its through-the-wall case in seconds. Actually, we're so satisfied with G-E Zonelines, we're putting 40 more in our new apartments."

There's a General Electric air conditioning system that's right for your installation. Get full details from your G-E representative or write Air Conditioning Department, General Electric, Appliance Park, Louisville, Kentucky.

GENERAL ELECTRIC

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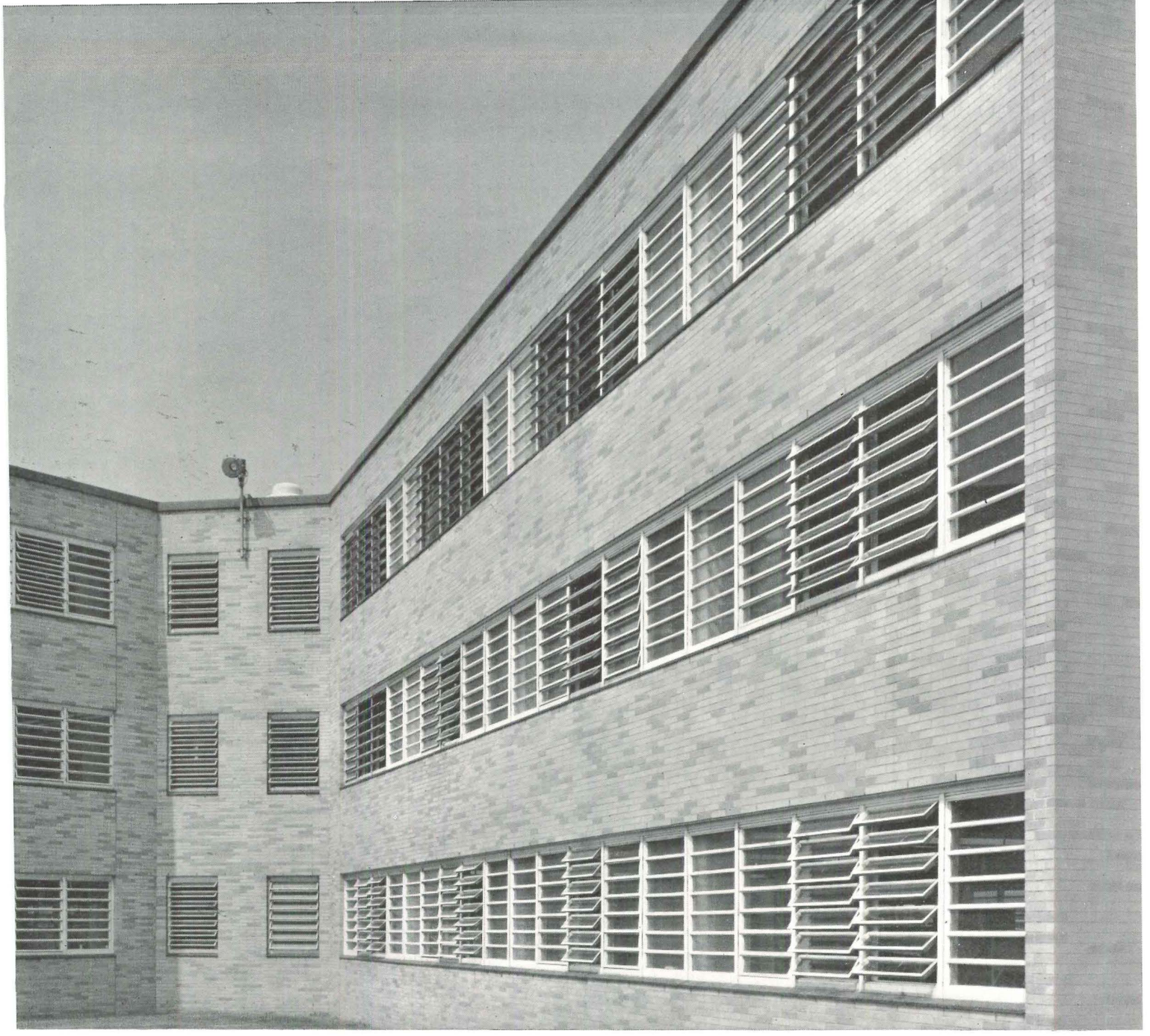


USE BAYLEY WINDOWS WITH RESTRAINT

The new Workhouse of the City of New York on Riker's Island uses moderate and maximum security guard windows by The William Bayley Company for durability and safety. Bayley detention windows are available in steel and aluminum with wide enough style ranges for architectural freedom. Stainless steel windows are on the drawing board.

Bayley institution windows provide optimum structural strength with clean appearance. And the reputation for excellence goes back 85 years. Call in a William Bayley representative on your next institutional job. The William Bayley Company, Springfield, Ohio.

BAYLEY
METAL WINDOWS and
CURTAIN WALLS

Architects: Brown & Guenther, New York City, N. Y. Contractor: John T. Brady Company, Inc., New Rochelle, N. Y.

For more data, circle 114 on Inquiry Card

For more data, circle 115 on Inquiry Card ➔

toilet compartments will never be the same.

at last you have a choice of something more than solid colors

The old restroom is gone forever. In its place, a welcome change: FORMICA® toilet compartments to go far beyond privacy and functionalism. Standards of cleanliness and maintenance economy are in a new realm. Best of all, designers can create an atmosphere to complement any building, any suite.

Of course FORMICA® laminated plastic is available in solid colors: 44 in all. But the big difference is the array of 31 Special Designs available in your color scheme. Both selections are purposely broad to accommodate all your needs.

FORMICA toilet compartments reduce maintenance costs, extend durability. Beautiful FORMICA laminated plastic surfaces, by providing a pleasant environment, inhibit vandals and minimize their handiwork. Impervious to cosmetics, pharmaceuticals, urine, harsh detergents. Easy to keep clean and sanitary. Stays installation-fresh for years. Never requires refinishing.

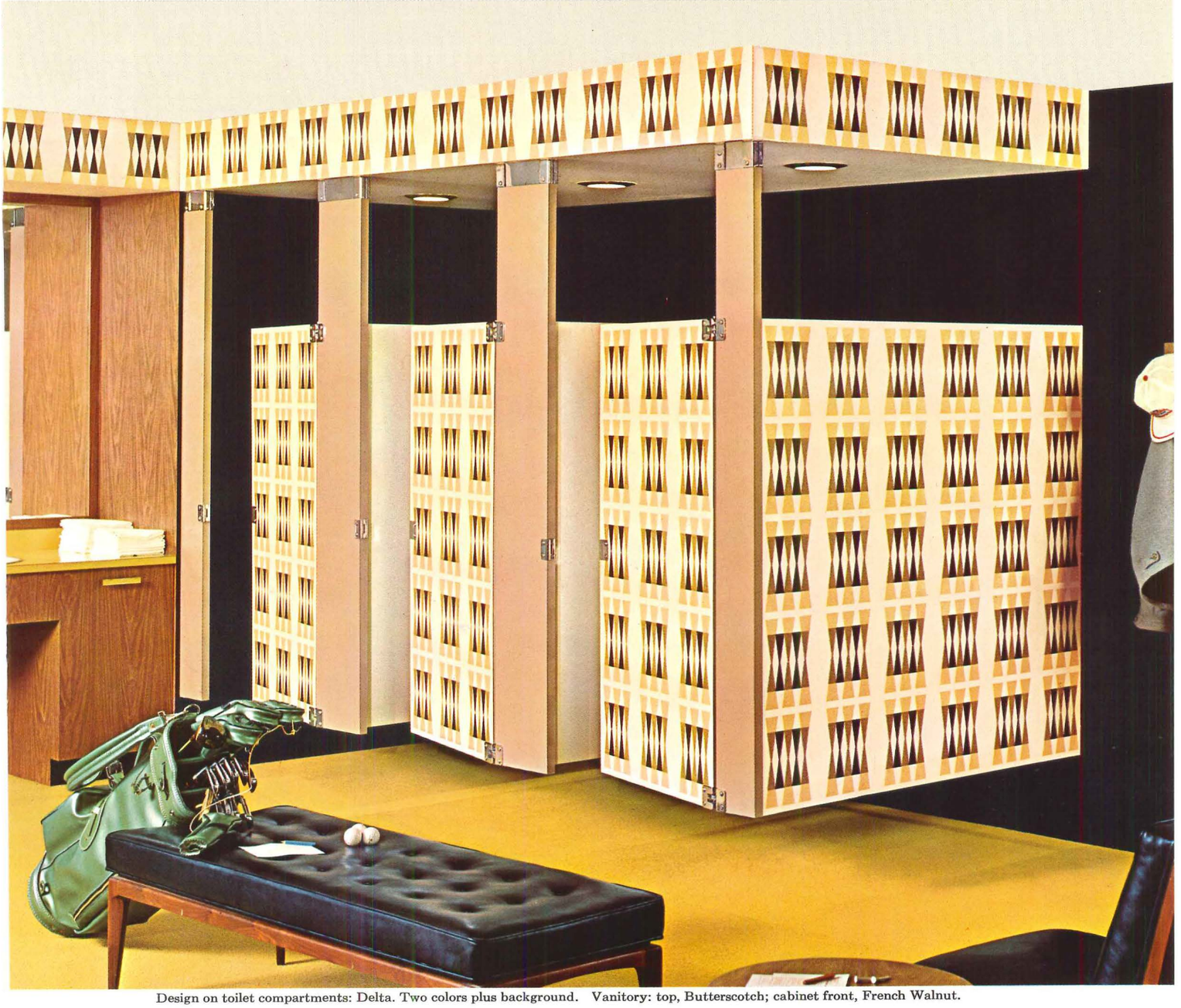
Rust? There isn't any. Spots and smudges? They wipe off. Costly refinishing? Unnecessary. Economical is the word!

See Sweet's File $\frac{22b}{Fo}$ or call nearest authorized manufacturer listed on opposite page.

FORMICA® BRAND *toilet compartments*

FORMICA CORPORATION • CINCINNATI, OHIO 45232 • *subsidiary of* CYANAMID

FORMICA® is our trademark for various products as well as our brand of laminated plastic.



Design on toilet compartments: Delta. Two colors plus background. Vanitory: top, Butterscotch; cabinet front, French Walnut.

AUTHORIZED INSTALLERS LOCATED NATION-WIDE

Qualified fabricators and installers of FORMICA toilet compartments have been authorized throughout the country. See these Authorized Manufacturers for information and quotations. Check this list for name of manufacturer near you or near your job site.

ARIZONA
Phoenix . . . . . C. S. Leach Mfg. Co. 2902 N. 21st Ave.

CALIFORNIA
Long Beach . . . . . Mc Farland Wood Products 1351 Orizaba Avenue
Pasadena . . . . . Amco Corporation 541 S. Fair Oaks Ave.
San Francisco . . . . . Western Plastics Company 3355 17th Street

COLORADO
Denver . . . . . Modern Plastic Laminating Co. 1464 South Acoma

CONNECTICUT
Bridgeport . . . . . Custom Hall, 35 Spruce St.

FLORIDA
Fort Lauderdale . . . . . Formacraft, Inc. 4491 N.E. 6th Terrace
Gainesville . . . . . Wood Products, Inc. 3230 N. Main St.
Hialeah . . . . . AMPCO Products, Inc. 3150 11th Ave.
Tampa . . . . . Oleson Industries, Inc. 5021 N. 22nd St.

GEORGIA
Forest Park . . . . . Murphy & Orr Co. 1014 Main St.

HAWAII
Honolulu . . . . . Honolulu Sash & Door Co. 755 Sheridan Street

INDIANA
Evansville . . . . The Cottage Building Company 462 South Governor
Loogootee . . . . . Carnahan Mfg. Co., Inc.

IOWA
Holstein . . . . . Van Top, Inc.

LOUISIANA
New Orleans . . . . . Bernard Lumber Co. 4333 Euphrosine St.

MASSACHUSETTS
Boston . . . . . Frank B. Curry Co. 560 Harrison Ave.
Roxbury . . . . . Custom Hall, 55 Amory St.

MICHIGAN
Detroit . . . . . Artistan Plastics, Inc. 12001 Greenfield Ave.

MINNESOTA
Minneapolis . . . . . H. C. Osvold Company 2320 N. Second St.

MISSOURI
St. Louis . . . . . Laminated Plastics, Inc. 1630 Macklind Avenue

NEW MEXICO
Albuquerque . . . . . Customcraft Fixtures, Inc. 1215 Fourth St.

NEW YORK
Depew . . . . . Colecraft Mfg. Co., Inc. 90 Neoga Street
White Plains . . . . . James A. Haggerty Lumber & Millwork, Inc. 11 Washington Place

OHIO
Cincinnati . . . . . Formco, Inc. 7745 School Road

OREGON
Portland . . . . . Settergen's Plastics Northwest 228 N.E. 7th Avenue

PENNSYLVANIA
Cheswick . . National Wood Products Company New Flannery Bldg.
Oxford . . . . . Oxford Manufacturing Co.

SOUTH CAROLINA
Greenville . . . . . Fabricated Products, Inc. Augusta Road

TENNESSEE
Memphis . . . . . Keel Manufacturing Company 235 Cumberland
Memphis . . . . . The F. L. Saino Mfg. Co. 66 West Colorado Avenue

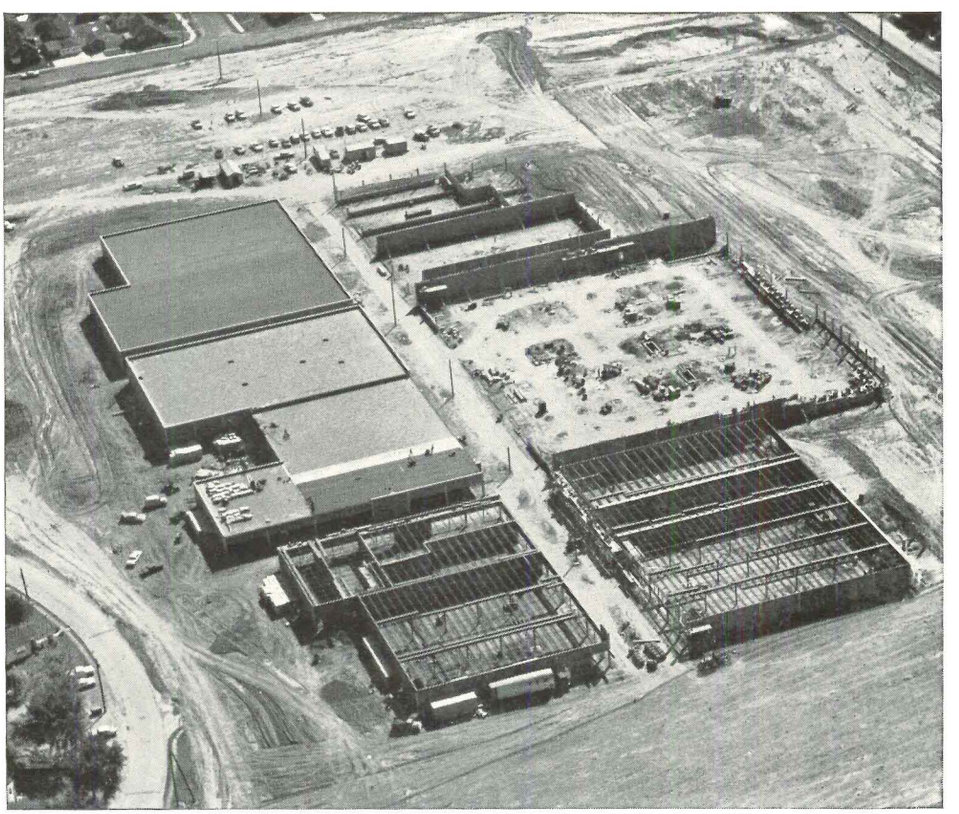
TEXAS
Corpus Christi . . . . . Hawn Sash & Door Co. 401 North Port Ave.
Dallas . . . . . Otto Coerver Co., Inc. 3311 Elm St.
El Paso . . . . . Gibson Fixture & Plastic Co. 3110 Durazno
Houston . . . . . Triumph Storecrafters 3000 Yellowstone

UTAH
Salt Lake City . . . . . Klein's Tri-Cove Co. 1030 So. 6th West

VIRGINIA
Richmond . . . . . Rich Line Mfg. Co. P.O. Box 6972

WASHINGTON
Seattle . . . . . Contour Laminates, Inc. 625 Dexter Ave., No.

Even the shopping centers themselves come packaged* these days for controlled economy



ARCHITECT: COX & FORSYTHE A.I.A., CANTON, OHIO
CONTRACTOR: GIBBONS-GRABLE COMPANY A.G.C., CANTON, OHIO

All framing—long and short-span steel, joists, composite system, V-LOK, columns—decking and ribbed steel centering—compatible in every way, sold, serviced and shipped from a single source—it's saving builders dollars, time, and headaches everyday.

The latest to take advantage of the benefits of the single source is the Gibbons-Grable Company, general contractors who are putting the finishing touches on the $10,000,000 Mellett Mall (pictured above) a shopping center complex in Canton, Ohio.

More than 965 tons of steel were used in the shopping center—all of it perfectly mated at Macomber with coordinated delivery that permitted most efficient construction. "It cut days off our field labor costs," stated Herbert G. Barth. "One source of responsibility makes sense when you're dealing with a quality house like Macomber."

All Steel Framing Components and Steel Roof Deck.

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CANTON, OHIO 44701
SUBSIDIARY OF SHARON STEEL CORPORATION

For more data, circle 116 on Inquiry Card

Everybody's happy with this Square D UNDERFLOOR DUCT INSTALLATION

OWNER of the 400 Army Navy Office Building, Arlington, Va.
"It provided flexible in-the-floor facilities for telephone and power." —**R. N. Fleming**
400 Army Navy Drive Association

ARCHITECT
"It helped reduce floor-to-floor height and enhanced floor appearance."
—**James F. Hogan**
Edmund W. Dreyfuss & Associates

ELECTRICAL ENGINEER
"100-pair cables were easily pulled through ellipsoid inserts. Another good feature—when a phone is moved, its cable can remain in the raceway and the Amphenol connector can be stored in the insert—ready for immediate reactivation."
—**Sidney W. Barbanel**
Consulting Engineer

OFFICE DESIGNERS
"Gave us complete freedom in initial office layout, provided for easy future rearrangement, minimized problem with boxes and service fittings in carpeted areas." —**Sydney G. Rodgers**
Rodgers Associates

We have a bulletin which illustrates and describes this installation in detail. It also explains the advantages of Pyramidal Feed and Ellipsoid Inserts—major Square D design features. For your free copy write:
Square D Company
Dept. SA, Mercer Road, Lexington, Kentucky

ELECTRICAL CONTRACTOR
"Square D duct was a natural for this tough job of in-the-slab installation—it enabled us to complete decks faster and coordinate with other trades."
—**Malcolm Cox**
Walter Truland Organization

SQUARE D COMPANY

wherever electricity is distributed and controlled

For more data, circle 117 on Inquiry Card

Required Reading

continued from page 64

Communities

NEW COMMUNITIES: A SELECTED, ANNOTATED READING LIST. *Compiled by the Library of the Housing and Home Finance Agency, Washington, D.C. 20410. 24 pp. No charge.*

The items included in this annotated reading list comprise a selected list of publications in English on new communities. Most were written since 1950 but older, important studies are contained and foreign publications are included.

FILMS, FILMSTRIPS, AND SLIDES ON HOUSING AND COMMUNITY DEVELOPMENT, A SELECTED BIBLIOGRAPHY. *Compiled by the Library of the Housing and Home Finance Agency, Washington, D.C. 20410. 21 pp. No charge.* Write to the Agency.

This guide to visual aids on housing and community development contains both categorical and alphabetical lists of motion picture films, slides and filmstrips. Content descriptions are noted and rental conditions are indicated for each. All of the visual aids listed have been produced within the last ten years.

CODE ADMINISTRATION FOR SMALL COMMUNITIES. *Technical Guide 19, Urban Renewal Service, Housing and Home Finance Agency, Washington, D.C. 20410. Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. 26 pp. $.30.*

This guide is intended for governing officials of small communities but would offer useful background for architects involved in small-city urban renewal or housing programs. Its aim is to assist in establishing procedures for local administration of a comprehensive system of codes and ordinances in communities of approximately 25,000 and under.

The discussion also covers the legal basis for codes and code enforcement and the organizational and operational procedures for administering the codes.

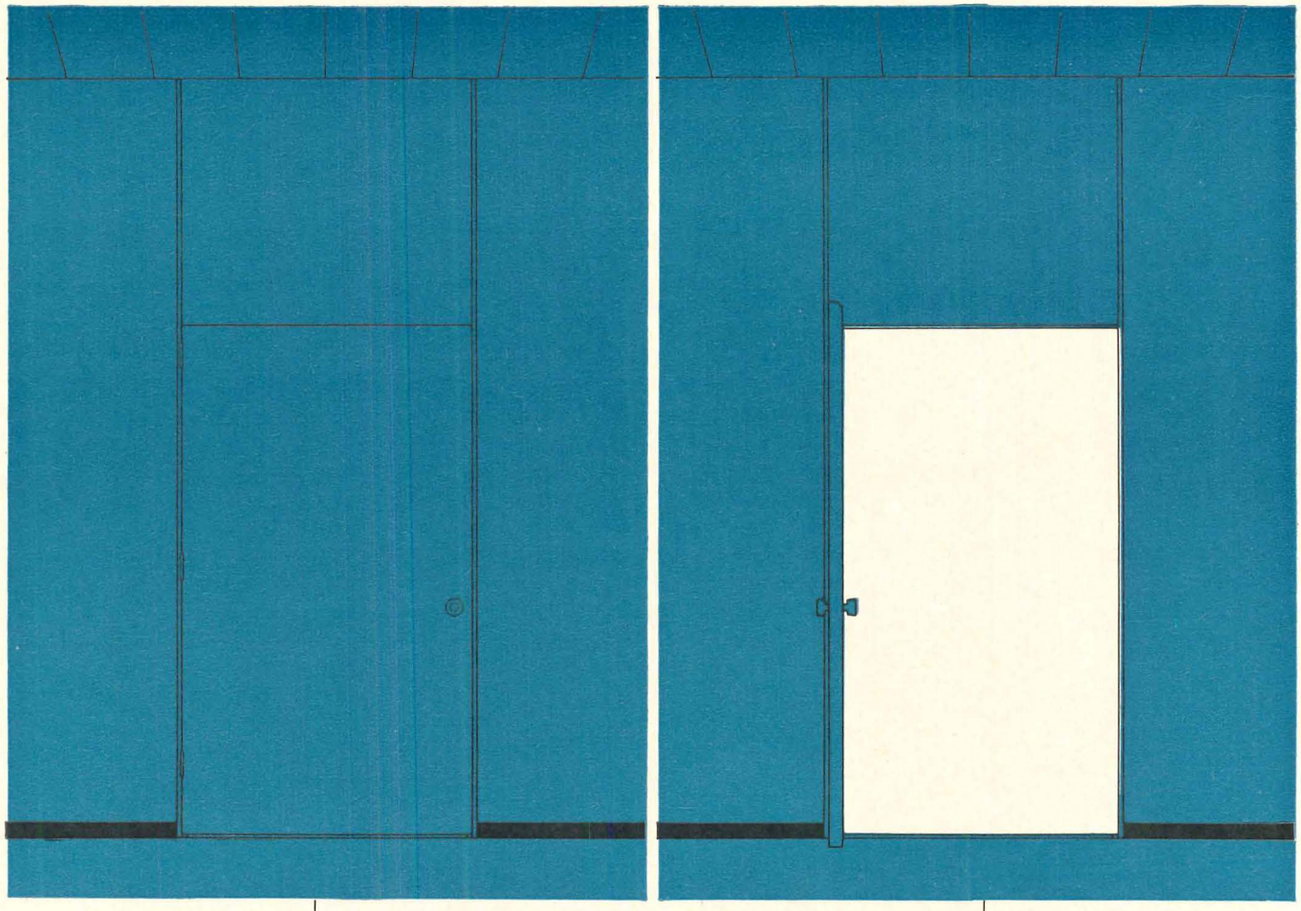
The Theatre

PLANNING FOR THE THEATRE. *By Ned A. Bowman, William Coleman & Glorianne Engel. Department of Speech and Theatre Arts, University of Pittsburgh, Pittsburgh, Pa. 15213. 57 pp. Paperbound, $2.00.*

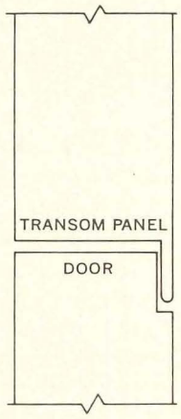
A comprehensive, detailed checklist for use by the architect, his consultants or theater personnel developing an architectural program for any variety of performing arts space is presented in the first section of this book. For facility in use the checklist organization is based on spatial volumes: the building as a whole, the space for audience, the space for acting, etc. The remaining pages contain an annotated bibliography of basic readings, both book and periodical, published since World War II on the subject of theatre architecture.

continued on page 252

A NEW CONCEPT IN METAL: OVERLY TRANSOM PANEL DOOR AND FRAME SYSTEM



What's so unusual about it? It's headless. No transom bar. No lintel. No protrusions (except the door knob). Transom panel rabbets into top of door. Jambs go floor to ceiling. Provides a vertical look. Saves installation costs. Furthermore, it bears up to an "A" fire label from U/L (45 min. to 3 hrs.). Ideal for corridor to stairwell or room entries and lobby to stairwells. Available in singles or pairs, in steel, up to 11′4″ high, with frame trim thickness of only one inch; also in stainless steel with up to 1½ hr. label. It's a new concept in metal: Overly Transom Panel Door and Frame System.

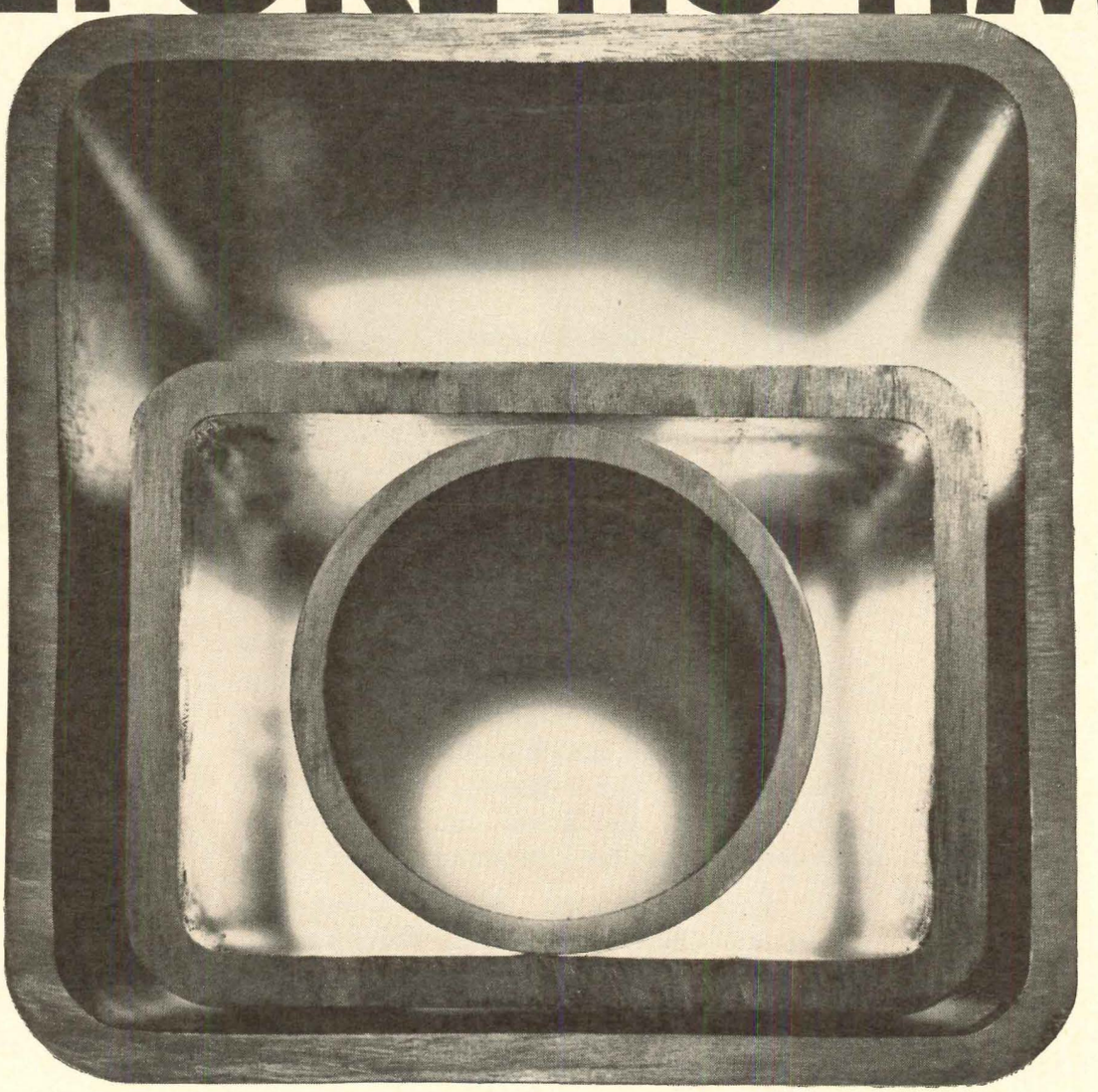


For more information, write to Manager of Product Development, Overly Manufacturing Company, Greensburg, Pennsylvania 15601.

Overly

For more data, circle 119 on Inquiry Card

THREE YEARS BEFORE ITS TIME



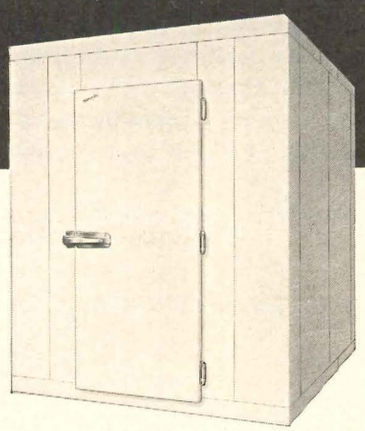
ANY SIZE

TO FIT ANY SPACE

NORRIS WALK-IN COOLERS, FREEZERS, COMBINATIONS

LIGHT WEIGHT

as low as 4½ lbs. per sq. ft. —reduces freight costs



Any size . . . to fit any space . . . describes Norris walk-in coolers, freezers, and cooler-freezer combinations, for Norris walk-ins give you complete installation flexibility. Available with or without floors, Norris walk-ins are pre-fabricated in two- and three-foot wall sections, four-foot door sections (7½′ high), and can be set up in one-foot increments in any size—in almost any space —in new or existing buildings. A light hammer is the only tool necessary.

The modular panels of Norris walk-ins are all-metal, with no wood to absorb moisture, and extremely lightweight. Standard exteriors are bonderized steel finished in white baked enamel, interiors are 22-gauge metal, with custom exteriors or interiors optional at extra cost. Ideal for every industrial, commercial or institutional refrigeration need, Norris walk-ins can be supplied with the correct self-contained or remote refrigeration equipment to meet any application.

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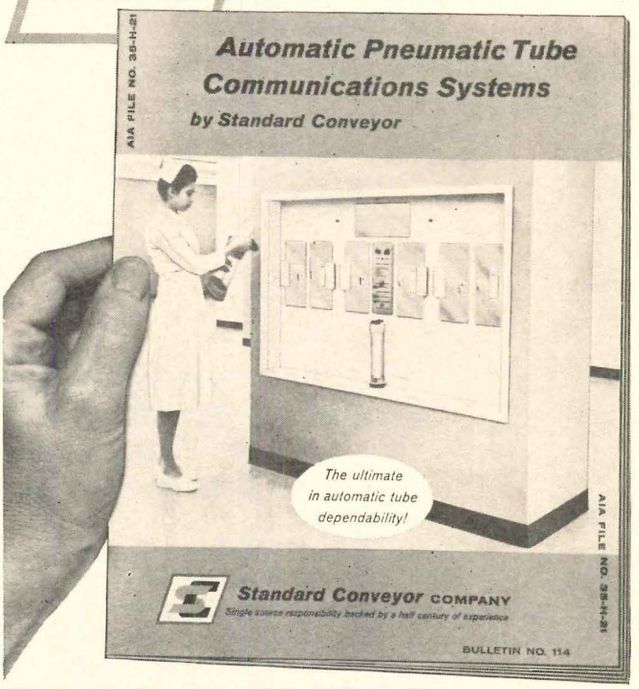
MINNEAPOLIS 8, MINNESOTA

NORRIS—THE FIRST NAME IN MILK SERVING AND STORAGE EQUIPMENT!

For more data, circle 121 on Inquiry Card

NEW All you need to know about



Get your free copy! Describes, illustrates new type automatic tube systems featuring greater dependability, quieter operation. 12 pages. ***Standard Conveyor Co., 312-G Second St., North St. Paul, Minn. 55109.***

For more data, circle 148 on Inquiry Card

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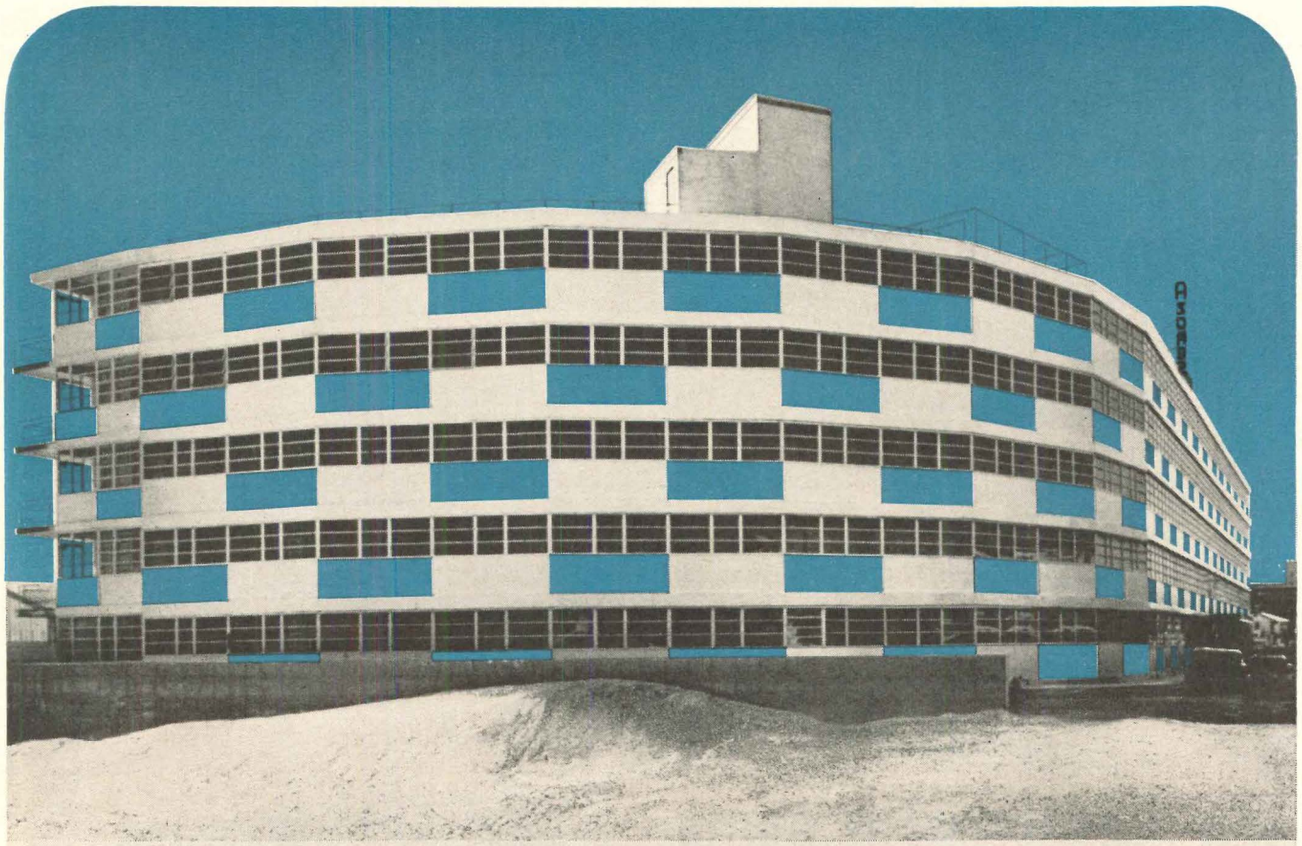


Azores Apartments, Long Beach, Long Island, New York.
Photo courtesy of Brooklyn Paint & Varnish Co. and Shor-Pac Construction Corp.

3-MIL FACE LIFT

...or how an Aroflint-based coating keeps this beach beauty looking great

Not long ago corrosive salt deposits and oxidation scarred the exterior of the fashionable Azores Apartments on Long Beach.

To remedy the situation, the discolored areas were cleaned and a single coat of an Aroflint-based coating system was applied to a film thickness of 3 to 4 mils.

Now the Azores displays an attractive blue and white glazed face that will endure high humidity and corrosive elements for years. (Proved by over four years of exposure tests on other buildings.)

Surface-coating exteriors with an Aroflint-based coating offers opportunities to beautify, protect and add colorful new dimensions to buildings. Savings over traditional glazed materials run up to $2 per square foot.

The medium can be applied by brush, spray or roller over wood, metal or masonry. Mix or match bright pastels, use gleaming white or clear finishes that won't fade or discolor.

To weigh the advantages of using an Aroflint-based coating on your projects, write for full particulars.

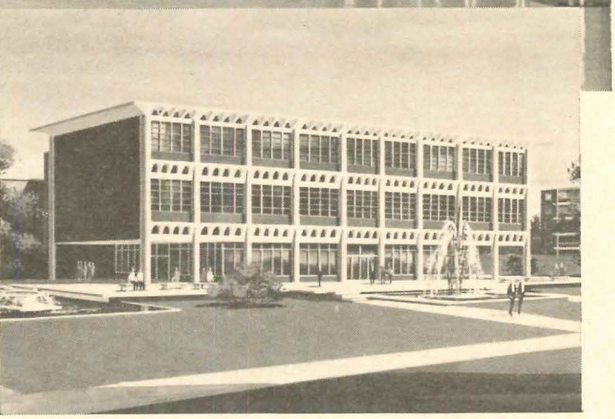
ADM CHEMICALS

ARCHER DANIELS MIDLAND COMPANY 733 MARQUETTE AVENUE, DEPT. 38 MINNEAPOLIS, MINNESOTA 55440

R-10

For more data, circle 122 on Inquiry Card

Architects: Harold A. Casey & Associates, Inc.
Structural Engineer: Saul A. Nuccitelli, Consulting Engineer
Mechanical Engineer: William Tao & Associates
General Contractor: Dondlinger & Sons Construction Company, Inc.



NEW SMS STUDENT UNION POST-TENSIONED by PRESCON SYSTEM FOR 55' CLEAR SPAN

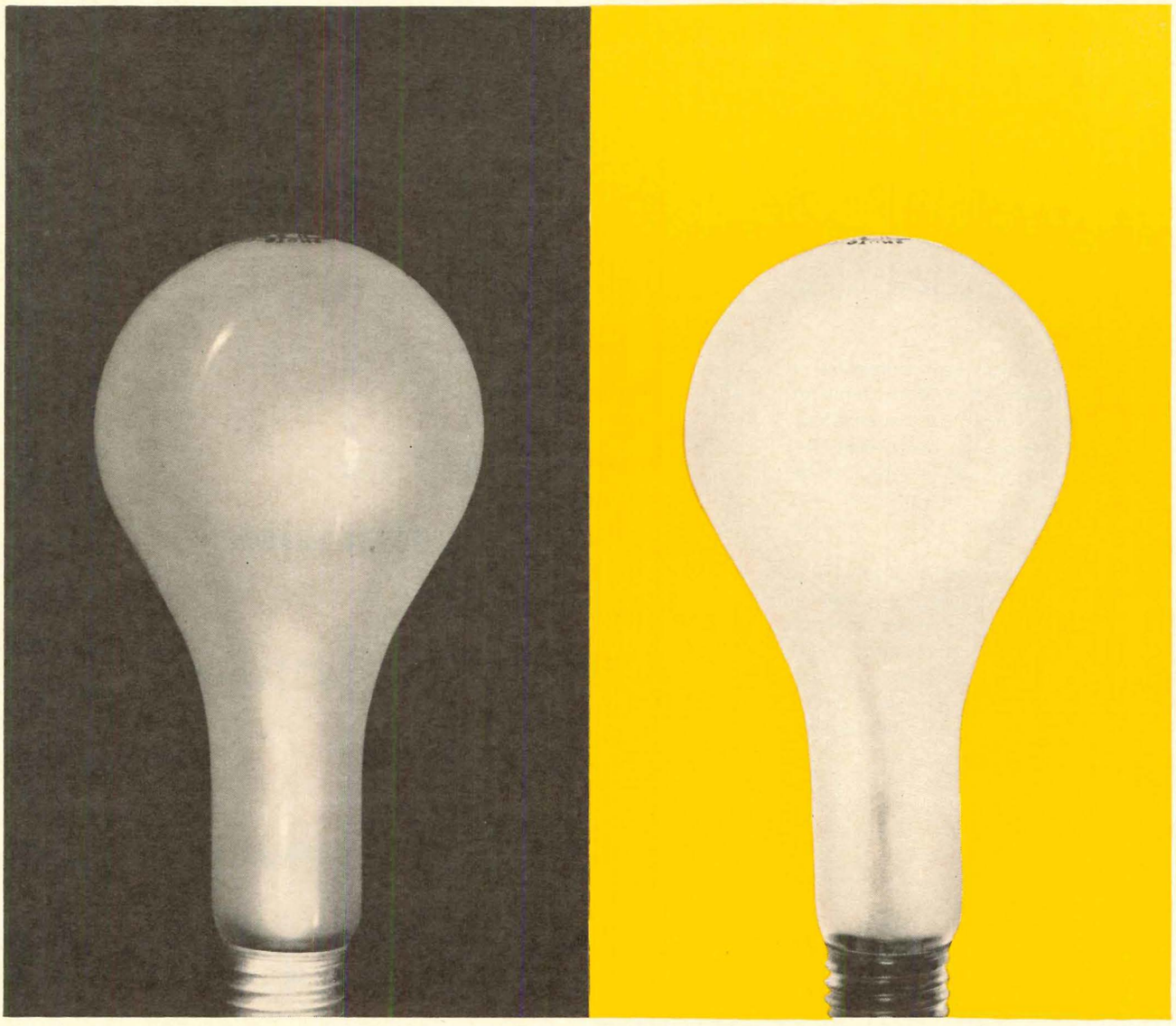
Rib Slabs for Floors and Roof

Prescon positive end anchorage post-tensioning tendons were selected for construction of the Student Union Building at Southwest Missouri State College, Springfield, a part of a $3,590,000 expansion program.

The post-tensioned prestressed second and third floors and the roof of the structure have 4″ slabs with 6½″ wide ribs or joists spaced on 3′-4″ centers. Total depth of the floor construction is 2′-7½″. The roof structure depth is 2′-11″. All concrete was placed monolithically using seven-sack lightweight concrete. Sufficient strength was reached to initiate the post-tensioning operation in 3 to 5 days. Post-tensioning placed transversely in the slabs provided crack control, insuring a seal against possible water leaks, and tendons positioned in the ribs made the achievement of the long clear spans practical.

Camber control in these 55′ spans was almost perfect. Actual field measurements indicated camber varying from a minimum of ⅝″ to a maximum of ⅞″. Post-tensioning, with the Prescon System, further enhanced the design by controlling creep and shrinkage in the concrete.

This is another example of use of the Prescon System by progressive architects, engineers, and contractors to achieve outstanding designs at economical costs. WRITE for Prescon brochures for ready reference material for many other examples and design information.



When power goes off... Kohler comes on

Who can measure the cost of a power failure? When light and heat go out ...when communications stop... when machines and equipment come to a sudden halt. The loss can be staggering.

Good reason to provide *instant* standby power—a Kohler electric plant. Kohler plants feature exciter cranking: It means, simply, that power is restored in the shortest possible time. Takeover is unattended, *completely automatic*.

Kohler supplies electric plants from 500 to 175,000 watts—every one of them boasting the "Marks of Value" shown below. For full information on electric plants you can count on to measure up to the job, see a Kohler dealer, or write Dept. EP5-507, Kohler Co., Kohler, Wis.

KOHLER

MARKS OF VALUE

- ✓ **Exciter cranking.** Quickest, simplest, most positive, trouble-free engine starting.
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- ✓ **Full year warranty.** Comes with every Kohler Electric Plant.

KOHLER OF KOHLER

Kohler Co., Established 1873, Kohler, Wisconsin

ENAMELED IRON AND VITREOUS CHINA PLUMBING FIXTURES • ALL-BRASS FITTINGS • ELECTRIC PLANTS • AIR-COOLED ENGINES • PRECISION CONTROLS

For more data, circle 124 on Inquiry Card

Required Reading

continued from page 244

Architectural History

KEY MONUMENTS OF THE HISTORY OF ARCHITECTURE. *Edited by Henry A. Millon. Essays by Alfred Frazer. Henry N. Abrams, Inc., 6 W. 57th St., New York, N.Y. 10019. 654 pp., illus. $17.50.*

This volume serves as a companion to H. W. Janson's "Key Monuments of the History of Art." Of the architectural monuments in that book, virtually all are included in this work. About this nucleus are grouped new selections, further plans, sections and details.

The development of structural systems and spatial ideas is outlined in the text, which is composed of scholarly essays by Alfred Frazer. These essays precede the picture section—the Ancient World, Asia and America, the Middle Ages, the Renaissance and the Modern World.

Some 800 illustrations cover 425 works of city planning and building. A useful volume for reference.

Hospital Planning

PRINCIPLES OF HOSPITAL DESIGN. *By Hugh and John Gainsborough. The Architectural Press, 9-13 Queen Anne's Gate, London S.W.1. 279 pp., illus. 45.*

An architect and a physician have analyzed the problems of hospital design. Their method includes a thorough-going brief prepared by medical authorities.

The type of hospital considered is the large hospital providing comprehensive service. The particular needs of its various departments are studied. Plans of recent British hospitals are examined and projects by the authors are illustrated and explained.

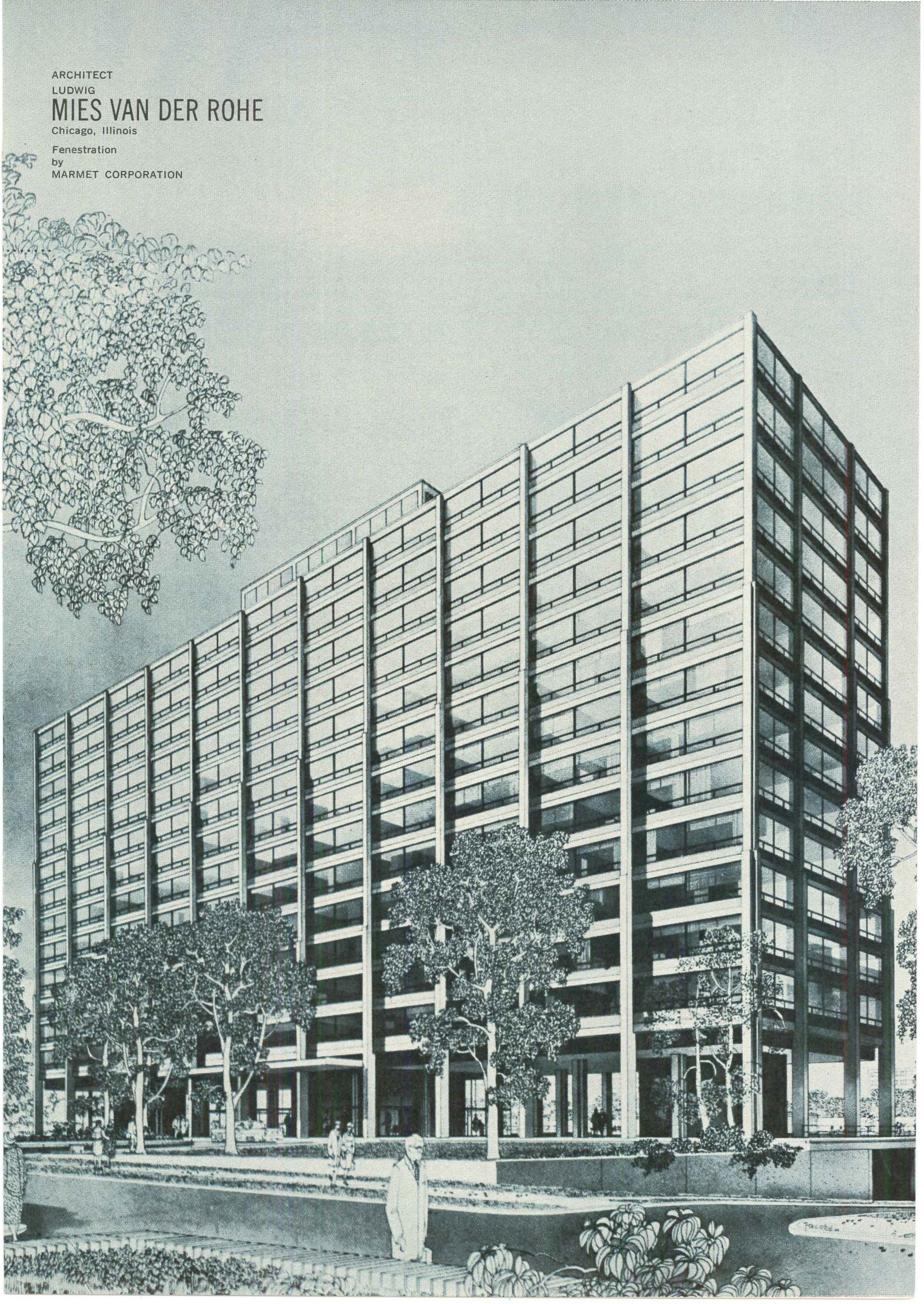
Fallout Protection

NEW BUILDINGS WITH FALLOUT PROTECTION. *Office of Civil Defense, Department of Defense, Technical Bulletin 27. Department of the Army, Office of the Secretary of the Army,*

continued on page 258

ARCHITECT
LUDWIG
MIES VAN DER ROHE
Chicago, Illinois

Fenestration
by
MARMET CORPORATION



This finish is Du Pont TEDLAR®. It outlasts ordinary paint 3 to 1.

Panels with TEDLAR cost 25% more than panels with ordinary paint—and last three times as long.

These panels are surfaced with TEDLAR® PVF film. Because TEDLAR is a film—not a liquid or spray—it forms a completely smooth and uniform surface. It has no thick-thin variations, no pinholes to let in damaging moisture. And TEDLAR is remarkably durable: although it looks like fresh paint, it wears 3 to 4 times longer than paint. Even after years of exposure to sun, rain and frost, panels surfaced with TEDLAR still look new.

TEDLAR is inert, too; however corrosive the atmosphere, this finish will not crack, peel, blister or flake. Stains, even normally stubborn marks, clean off easily, so maintenance is little more than occasional washing to remove dust. Certainly TEDLAR costs 25% more than ordinary paint, but it also outperforms it three to one. For more information, write Du Pont Film Dept., Box 2800, Wilmington, Delaware 19898.

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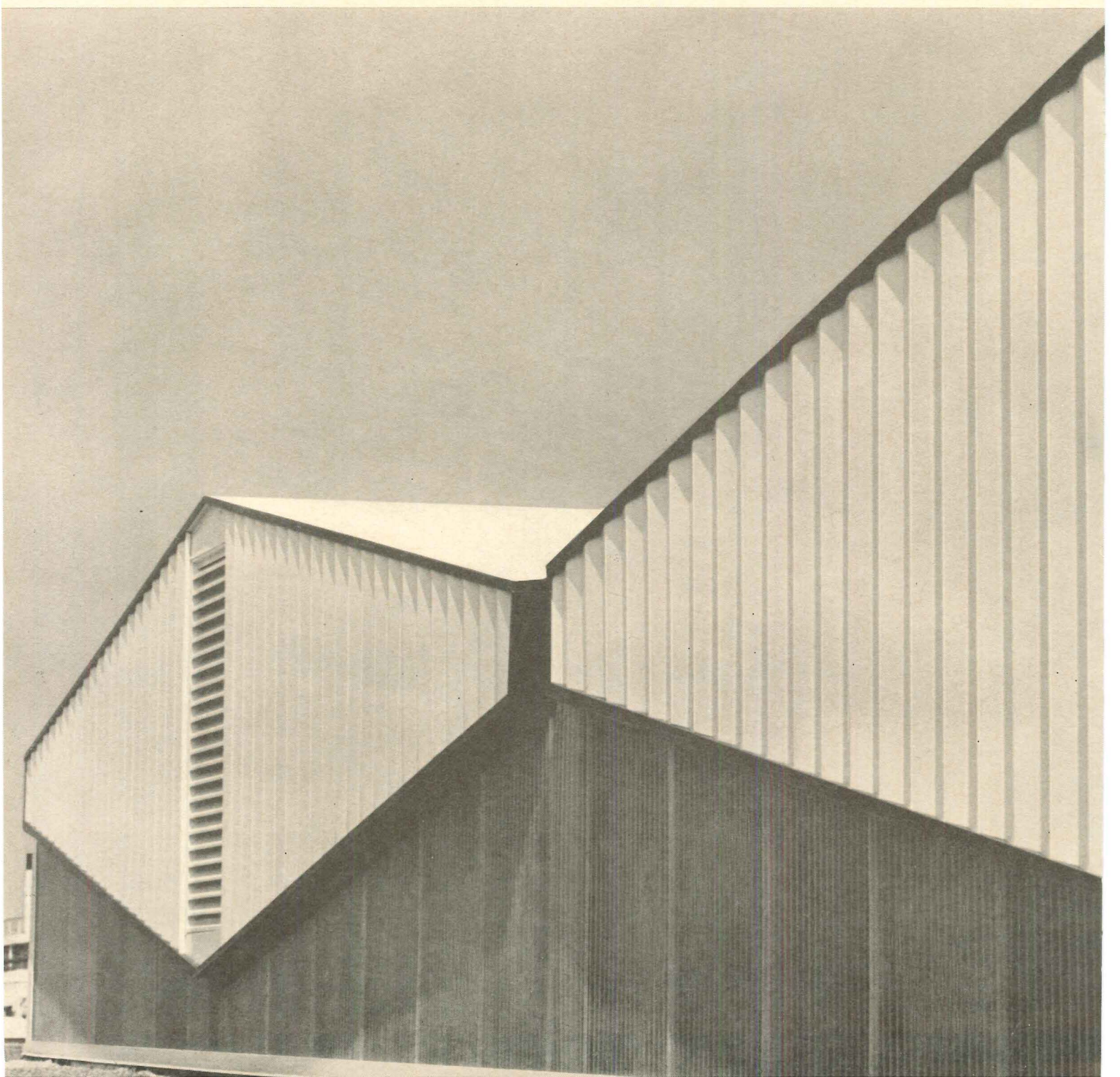
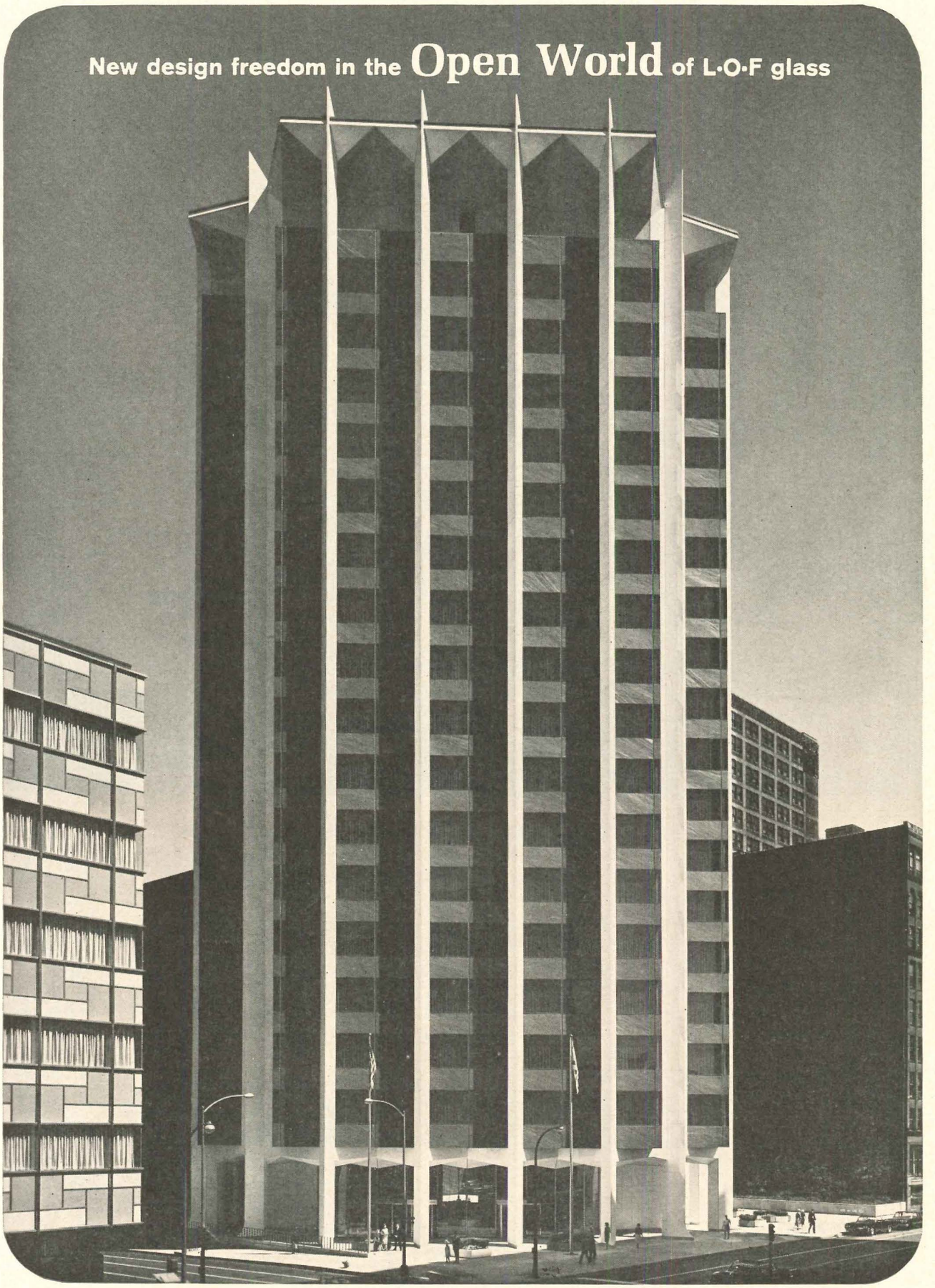
...THROUGH CHEMISTRY

DU PONT





United States Gypsum Building, Chicago, Ill. Architects: The Perkins & Will Partnership.
Glazing Contractor: Hamilton Glass Co., Chicago.

Why is this building glazed with L·O·F Heavy-Duty Plate Glass?

Extra strength was needed to withstand Chicago's blustering gales. So ½"-thick Heavy-Duty Plate was used in the huge ground-floor windows, and ⅜"-thick in the upper-story windows measuring up to 99⅜" x 90¾".

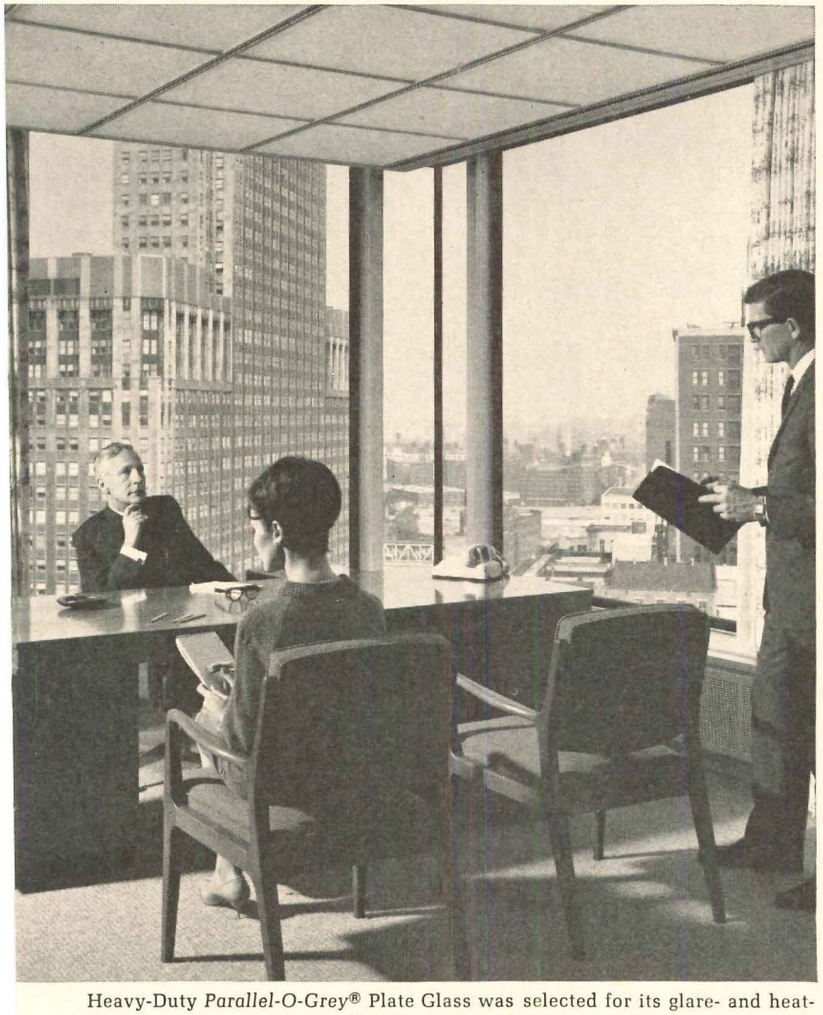
You, too, can design freely, and confidently, with large expanses of glass. No guesswork. No empirical formulas. The data shown in our chart was compiled from exhaustive strength tests by L·O·F on Heavy-Duty Plate. Over 2,000 lights were actually tested to destruction in a pressure chamber to establish the limits for each size and thickness to provide you with trustworthy data. Data is also available for sheet glass.

More information is in Libbey·Owens·Ford's catalog in Sweet's Architectural File 26A. Or call your L·O·F distributor or dealer listed under "Glass" in the Yellow Pages. Or write to L·O·F, 3675 Libbey·Owens·Ford Building, 811 Madison Avenue, Toledo, Ohio 43624.

L·O·F GLASS HEAVY DUTY PLATE GLASS

Libbey·Owens·Ford

Toledo, Ohio



Heavy-Duty *Parallel-O-Grey*® Plate Glass was selected for its glare- and heat-reducing properties, and is ⅜"-thick for strength requirements of the design.

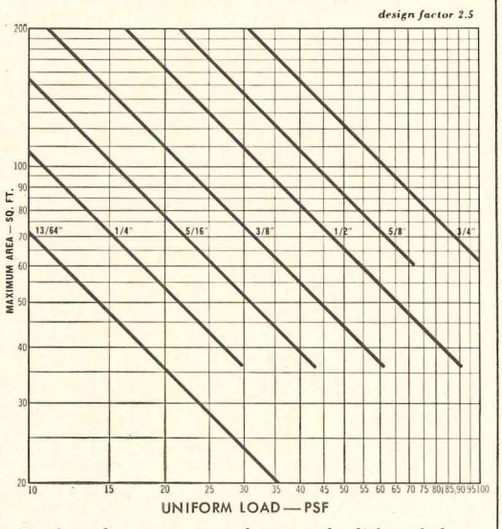
DESIGN-LOAD DATA

Polished Plate Glass

13/64" and 1/4" thicknesses

L·O·F Heavy-Duty Plate Glass

5/16", 3/8", 1/2", 5/8" and 3/4" thicknesses



Graph applies to square and rectangular lights of glass when the length is no more than five times the width.

Values are based on L·O·F published minimum thicknesses. All edges continuously held. Data shown is based on actual tests to destruction. For sizes and thicknesses not shown, or when the length is more than five times the width, consult your L·O·F district office.

Building Code Groups Adopt L·O·F Glass-Strength Data. At the annual meeting of the Building Officials Conference of America and the Southern Building Code Congress, both groups adopted the L·O·F glass-strength data adjusted to the minimum thicknesses for the industry listed in Federal Specification DDG451a.

For more data, circle 128 on Inquiry Card

Required Reading

continued from page 252

Washington, D.C. 20310. 104 pp., illus. No charge.

The Office of Civil Defense of the Department of Defense has issued this report, which contains descriptions, photographs, drawings and cost analysis of 34 new structures with built-in fallout protection. The buildings were constructed throughout the U.S.

More than half of the buildings are schools but other structures included are fire and police stations, office buildings and apartments. A section on "slanting" in design and construction is included. The section deals with the techniques for enhancing and maximizing the existing fallout shelter potential without adversely affecting cost, function or design.

Books Received

THE HOUSE. *By Tessie Agan and Elaine Luchsinger. J.B. Lippincott Company, 521 Fifth Ave., New York, N.Y. 357 pp., illus. $5.95.*

CAREERS IN GRAPHIC REPRODUCTION. *By Earl L. Bedell. D. Van Nostrand Company, Inc., 120 Alexander St., Princeton, N.J. 171 pp., illus. $6.95.*

COLLEGE HILL: A PHOTOGRAPHIC STUDY OF BROWN UNIVERSITY IN ITS TWO HUNDREDTH YEAR. *By Carl Bridenbaugh. Photographs by William Gerold. Brown University Press, Providence, R.I. 02912. Unpaged, illus. $5.00.*

INTERNATIONAL ENGINEERING DIRECTORY. *Consulting Engineers Council of the U.S.A., Madison Building, 1155-15th St., N.W., Washington, D.C. 20005. 229 pp. No charge.*

LIVING ARCHITECTURE: EGYPTIAN. *By Jean-Louis de Cenival. Grosset & Dunlap, 51 Madison Ave., New York, N.Y. 10010. 192 pp., illus. $6.95.*

ACOUSTICS IN ARCHITECTURAL DESIGN, AN ANNOTATED BIBLIOGRAPHY. *By Leslie L. Doelle. Bibliography No. 29, Division of Building Research, National Research Council, Ottawa, Canada. 543 pp. $4.00.*

MODERN ARCHITECTURAL DETAILING. *Edited by Konrad Gatz, Reinhold Publishing Corporation, 430 Park Ave., New York, N.Y. 284 pp., illus. $17.50.*

SCHOOL ENVIRONMENTS RESEARCH, PUBLICATION NO. I: ENVIRONMENTAL ABSTRACTS. *Edited by Harold W. Himes. Architectural Research Laboratory, College of Architecture and Design, The University of Michigan, Ann Arbor, Mich. 765 pp. $15.00.*

PSYCHIATRY AND PSYCHOLOGY IN THE VISUAL ARTS AND AESTHETICS: A BIBLIOGRAPHY. *Edited by Norman Kiell. The University of Wisconsin Press, Box 1379, Madison, Wisc. 53701. 250 pp. $6.50.*

AMERICAN STANDARD PRACTICE FOR INDUSTRIAL LIGHTING. *Illuminating Engineering Society, 345 East 47th St., New York, N.Y. 10017. 50 pp. $.80.*

STRUCTURAL MECHANICS & ANALYSIS. *By James Michalos & Edward N. Wilson. The Macmillan Company, 60 Fifth Ave., New York, N.Y. 10011. 430 pp. $10.95.*

THE ANALYSIS AND DESIGN OF LIGHT STRUCTURES. *By J.B.B. Owen. American Elsevier Publishing Company, Inc., 52 Vanderbilt Ave., New York, N.Y. 10017. 72 pp. $4.00.*

THE BLIND: SPACE NEEDS FOR REHABILITATION. *By F. Cuthbert and Christine F. Salmon. Oklahoma University, Stillwater, Oklahoma. 82 pp. No charge.*

TUTTE L'OPERE D'ARCHITETTURA ET PROSPETTIVA. *By Sebastiano Serlio. Gregg Press, Inc., 171 East Ridgewood Ave., Ridgewood, N.J. 246 pp., illus. $31.00.*

continued on page 274

"All right, just what *is* prestressed concrete?"

How do *you* answer your client—in layman's language—when he asks that question?

As an Institute, we face this task daily. So perhaps you'll be interested in how we handle it.

First thing we do is establish the fact that prestressed concrete is an *architectural and structural material*—a *material* with its own unique characteristics.

Then we go on to describe what this material is and how it is manufactured. We say:

Prestressing places engineered stresses in architectural and structural concrete units—stresses which more than offset the stresses that occur when the unit is subjected to loads. This is accomplished by combining two quality materials: *high strength concrete* and *high tensile steel.*

There are two methods of prestressing. They are *pretensioning* and *post-tensioning.* The commonest, pretensioning, is generally more economical due to its adaptability to mass production in a plant.

PRETENSIONING. High tensile steel strands are stretched between abutments. Concrete is then placed into forms which encase the strands. As the concrete sets, it bonds to the tensioned steel. When the concrete reaches a specified strength the tensioned strands are released. This *prestresses* the concrete, putting it under compression and creating a built-in resistance to loads which produce tensile stresses. Pretensioned prestressed concrete is manufactured in the plant, resulting in completely finished, prefabricated members ready for delivery to the job site.

POST-TENSIONING. High tensile steel strand, wires or bars are encased in tubing or wrapped, positioned in the forms, and then concrete is placed. After the concrete sets and reaches a specified strength, the high tensile steel is then stretched and anchored at the ends of the unit. Effect? Same as pretensioning.

While post-tensioning is sometimes done in a plant, it is most often done at the job site for units too large to be transported or for other unusual applications.

Basically, *pretensioned* prestressed concrete means that the high tensile steel is tensioned *before* the concrete is placed in the forms; *post-tensioned* prestressed concrete means that the steel is tensioned *after* the concrete is placed and has gained a specified strength.

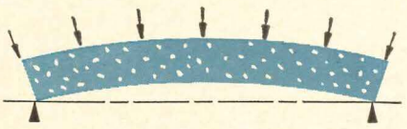
Now, if your client has followed this pretty well, take a pencil and make a few simple sketches dramatizing the chief difference in behavior of an *ordinary* concrete beam and a *prestressed* concrete beam.

ORDINARY CONCRETE BEAM. Even without a load, the ordinary concrete beam must carry its own considerable weight—which leaves only a portion of its strength available for added loads.

Under load, the bottom of the beam will develop hairline cracks.

PRESTRESSED CONCRETE BEAM. Prestressed before it leaves the plant, a slight arch, or camber, is noticeable. Energy is stored in the unit by the action of the highly tensioned steel which places a high compression in the lower portion of the member. An upward force is thereby created which in effect *relieves the beam of having to carry its own weight!*

The upward force along the length of the beam counteracts the load applied to the unit.



Your client will now feel like an expert on the subject! So it's only proper to let him know what *else* prestressed concrete is—namely, the answer to a lot of problems an owner faces.

Prestressed concrete lets him occupy his new building sooner. Prestressed concrete structural units, mass produced in the plant while excavation and foundation work proceeds at the site, are delivered on schedule. In almost every instance, units are erected directly from truck to structure. They fit readily into place shortening total construction time and saving labor costs.

What's more, with prestressed concrete he can increase the value of his building many times—and avoid obsolescence at surprisingly small difference in total building cost. Long spans typical of prestressed concrete eliminate columns, provide more *useable* floor space, more *flexibility* in the use of the building.

Among other economies: No painting or maintenance is required. Durability and fire resistance mean low insurance premiums. Two, three and four hour Underwriters Laboratories service is available on commonly used prestressed concrete members.

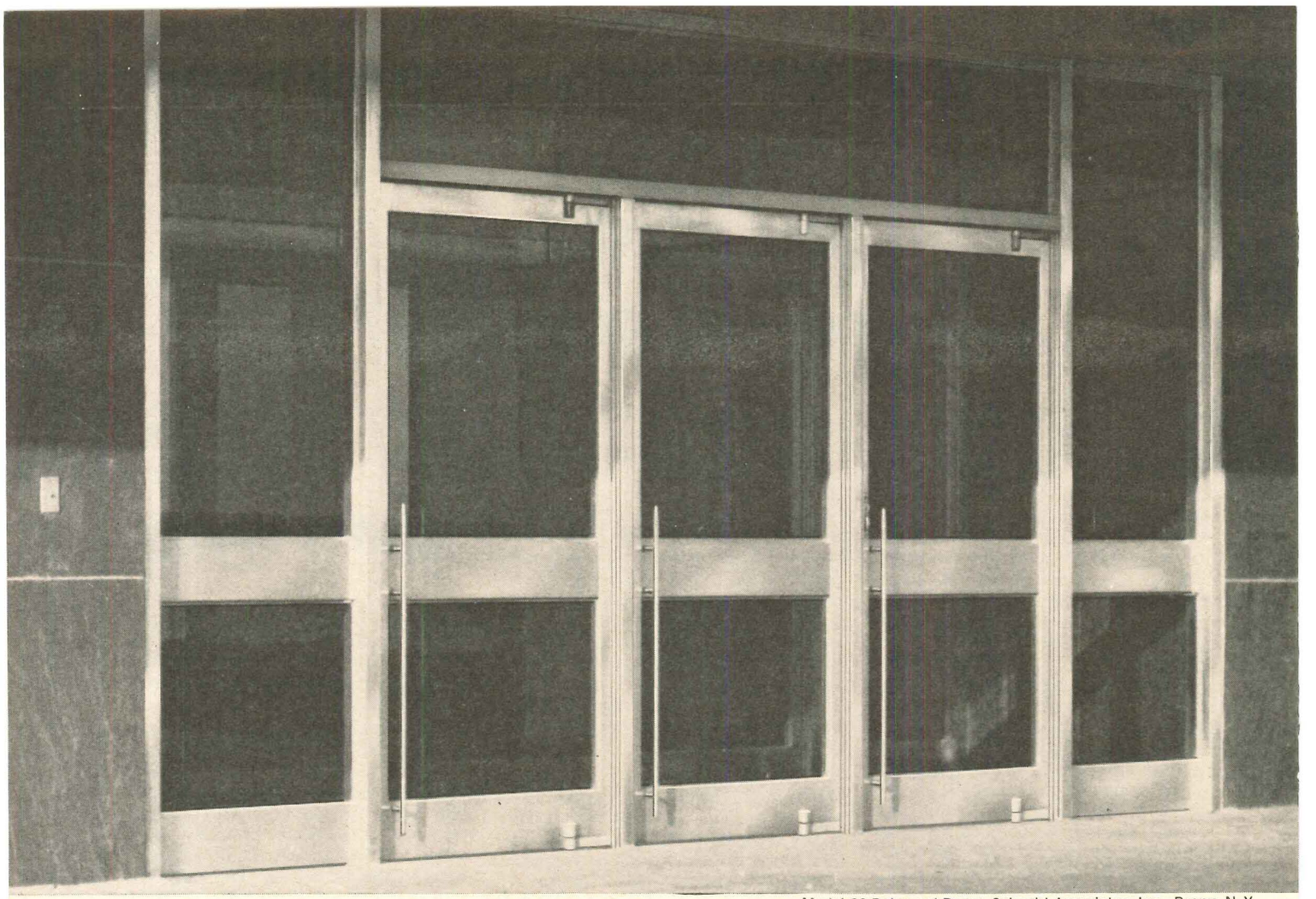
We then suggest he consider using prestressed concrete, a truly 20th century material, if he wants a permanent, quality structure erected in a hurry at a competitive price.

And we invite you to see your local PCI member for standard shapes available in your area.

TYPICAL PRODUCTS: ROOF AND FLOOR UNITS, GIRDERS, BEAMS, COLUMNS, WALL PANELS, SLABS, JOISTS, PILING

PRESTRESSED CONCRETE INSTITUTE

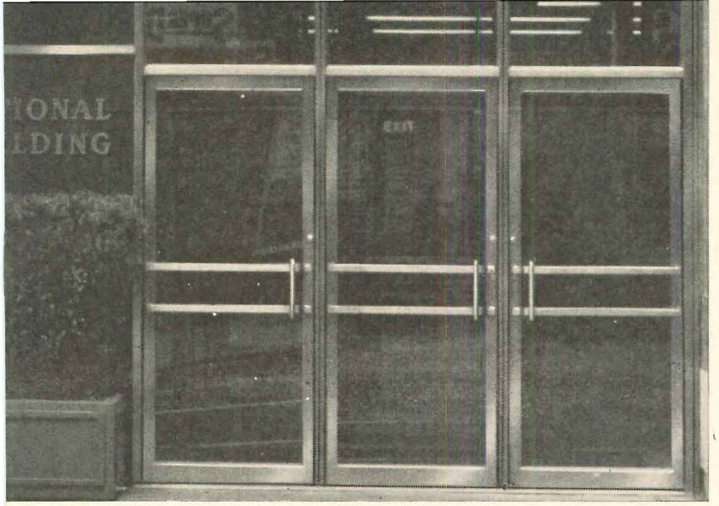
205 WEST WACKER DRIVE • CHICAGO, ILL. 60606



Model 66 Balanced Doors, Schacht Associates, Inc., Bronx, N. Y.

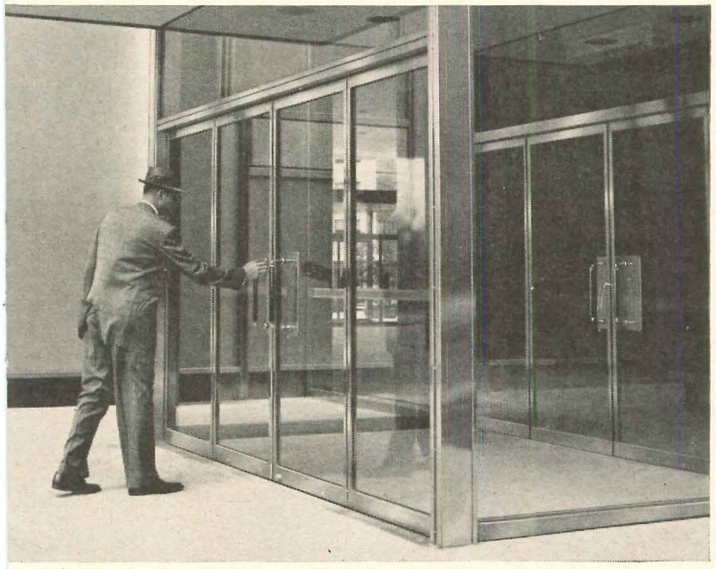
Swing Door, The Alumiline Corp., Pawtucket, R. I.

Now choose the design you want in nickel stainless steel.



Series "200" Doors, Kawneer Co., Niles, Mich.

Balanced Door, Ellison Bronze Co., Jamestown, N. Y.



West Tension Doors, Pittsburgh Plate Glass Co., Pittsburgh, Pa.

Sliding Doors, Carmel Steel Products, Downey, Calif.

The door is wide open.

Almost everybody's making them. And, for appearance, durability, low maintenance and competitive cost, more and more architects are specifying standard revolving, sliding and swinging doors of stainless steel. It's among the strongest of metals, permitting use of narrow stiles and lighter, more economical gauges. The subtle sheen of stainless blends with other materials—complements and highlights its surroundings. And because nickel stainless steel is highly corrosion resistant, it won't pit, tarnish, dull, whiten or deteriorate under normal conditions. It's virtually care-free—washes easily with detergent and water. Low maintenance costs alone often make up any difference in price between stainless and other materials. Best of all, the doors shown here, and others, are readily available. For your next design, consider the advantages of stainless steel for doors—as well as curtain walls, windows, hardware, fascia and railings. And write for Inco's informative series of "Suggested Guide Specifications For Stainless Steel Doors." Their format follows AIA Specification Worksheets.

INCO TRADE MARK

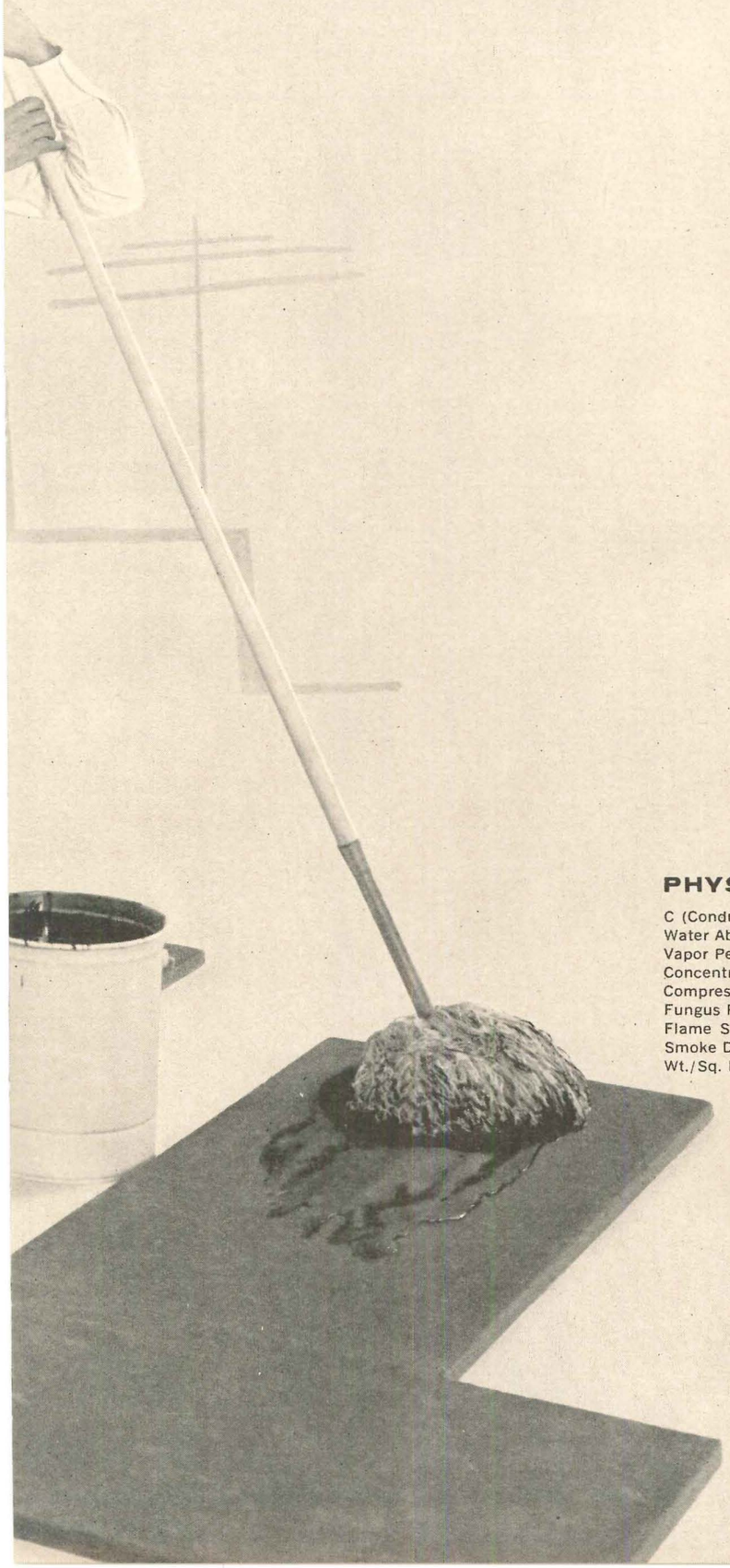
The International Nickel Company, Inc.
67 Wall Street, New York, N.Y. 10005
Nickel . . . its contribution is Quality

For more data, circle 130 on Inquiry Card

INNER-SPACE MISSION

First of 400 Lennox 16-ton DMS cooling units being installed on prototype building of Ford Foundation SCSD project in California.

Who put a seal into this act?



Permalite!

Permalite rigid roof insulation, with its new Sealskin surface

How do you *improve* an insulation board that's already lightest, toughest, most moisture-resistant, non-combustible, permanent, most efficient?

This way: Increase the bonding power with an integrally formed self-surface that grips asphalt like glue. Forms solid uniform bond to roof membrane. We call it Permalite Sealskin.

Adhere to it on your next job. Samples on request from Building Products Dept., Great Lakes Carbon Corporation, 333 North Michigan Ave., Chicago, Illinois. Permalite Sealskin or Permalite Standard rigid roof insulation for UL constructions 1 & 2 and Factory Mutual Class 1 metal deck construction.

PHYSICAL DATA: Permalite Rigid Insulation Board

C (Conductance Value) 1" Nominal Thickness	0.36
Water Absorption (% by Volume)	1.5 @ 2 Hrs. Total Immersion (No Capillarity)
Vapor Permeability	15 Perms @ 73° F. and 51% Relative Humidity
Concentration Load Indentation	1/16" @ 77 lbs.
Compression Resistance	185 PSI (50% Consolidation)
Fungus Resistance	Complete
Flame Spread	25 (Non-combustible)
Smoke Developed	0–5
Wt./Sq. Ft./1" Thick	0.8 lbs. Approx.

RIGID Permalite® ROOF INSULATION GLC

Now you can subdue radiant heat at window areas with PPG Feneshield® fabrics

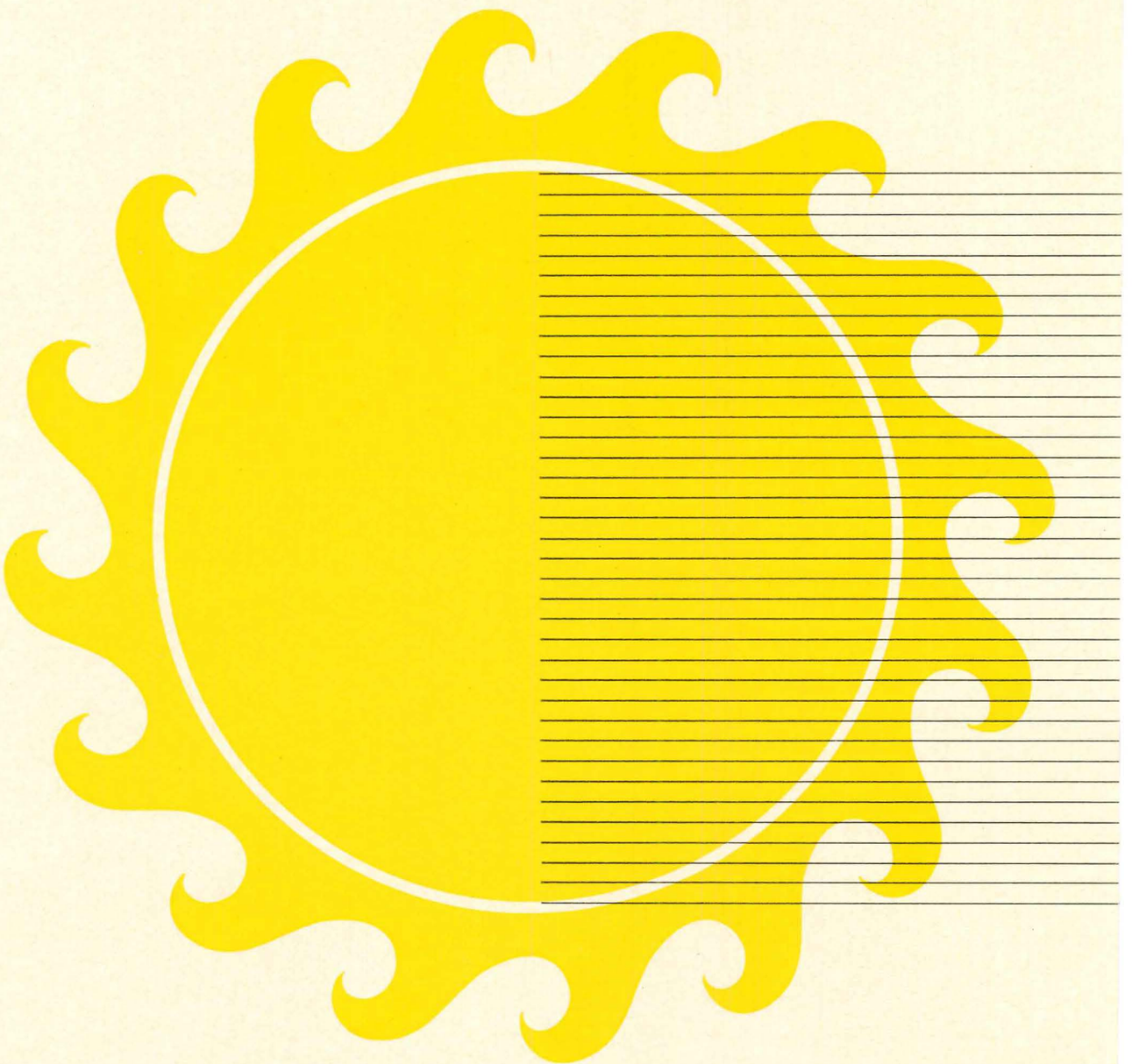
The sunny side of any building on a clear day presents the problem of controlling the amount of heat entering through vision areas. Building occupants working closest to window areas can be uncomfortably warm. If the air conditioning is increased to make them comfortable, people further back from the windows may be too chilly.

One way to handle this problem is to contain the heat at the window by means of Feneshield-fabric window treatment and heat-absorbing vision glass before heat can affect the interior climate.

Mechanical shading devices do limit transmittance of the sun's radiation by reflecting much of it back to the outdoors. But they also tend to absorb the heat they intercept and reradiate it inward.

A practical and economical solution to radiant heat control is the use of Feneshield fabrics, made of PPG Feneshield® fiber glass yarns. Tests conducted by PPG show that Feneshield fabrics produce an astounding reduction in solar heat.

A large percentage of radiant heat from the sun is reflected back to the outdoors by the Feneshield treatment. Heat absorbed by the fabric is removed largely by contact with conditioned air. Very little heat is reradiated inward. Uniform interior comfort is maintained right up



to window. And, of course, air conditioning loads are reduced.

Get technical facts. Results of PPG tests on Feneshield fabrics and other shading devices are yours for the asking. This research has produced a new system, based on fabric characteristics, which provides a scientific method for selecting fiber glass draperies to meet any given environmental control need.

Through the Feneshield rating system, you can also choose Feneshield fabrics to control glare, improve acoustics, enhance a good view or modify a bad one. Moreover, Feneshield fabrics offer you substantial savings in maintenance over other types of shading devices.

Personal help for you. Participating Feneshield fabric drapery converters have authorized drapery fabric presentations which show the wide range of fabric weaves and colors available. They can help you select fabrics for specific installations through the use of PPG technical data. Write PPG for names of converter representatives near you and for technical information. Use the coupon.

PPG® *fiber glass*
...the fiber glass for finer fabrics
PPG makes the Feneshield fiber glass yarns only, not the fabric.

Pittsburgh Plate Glass Company
Fiber Glass Division, Dept. 201
One Gateway Center
Pittsburgh, Pennsylvania 15222

☐ Please send me technical information on Feneshield fabrics.

☐ Please send me names of authorized Feneshield converters.

Name_____

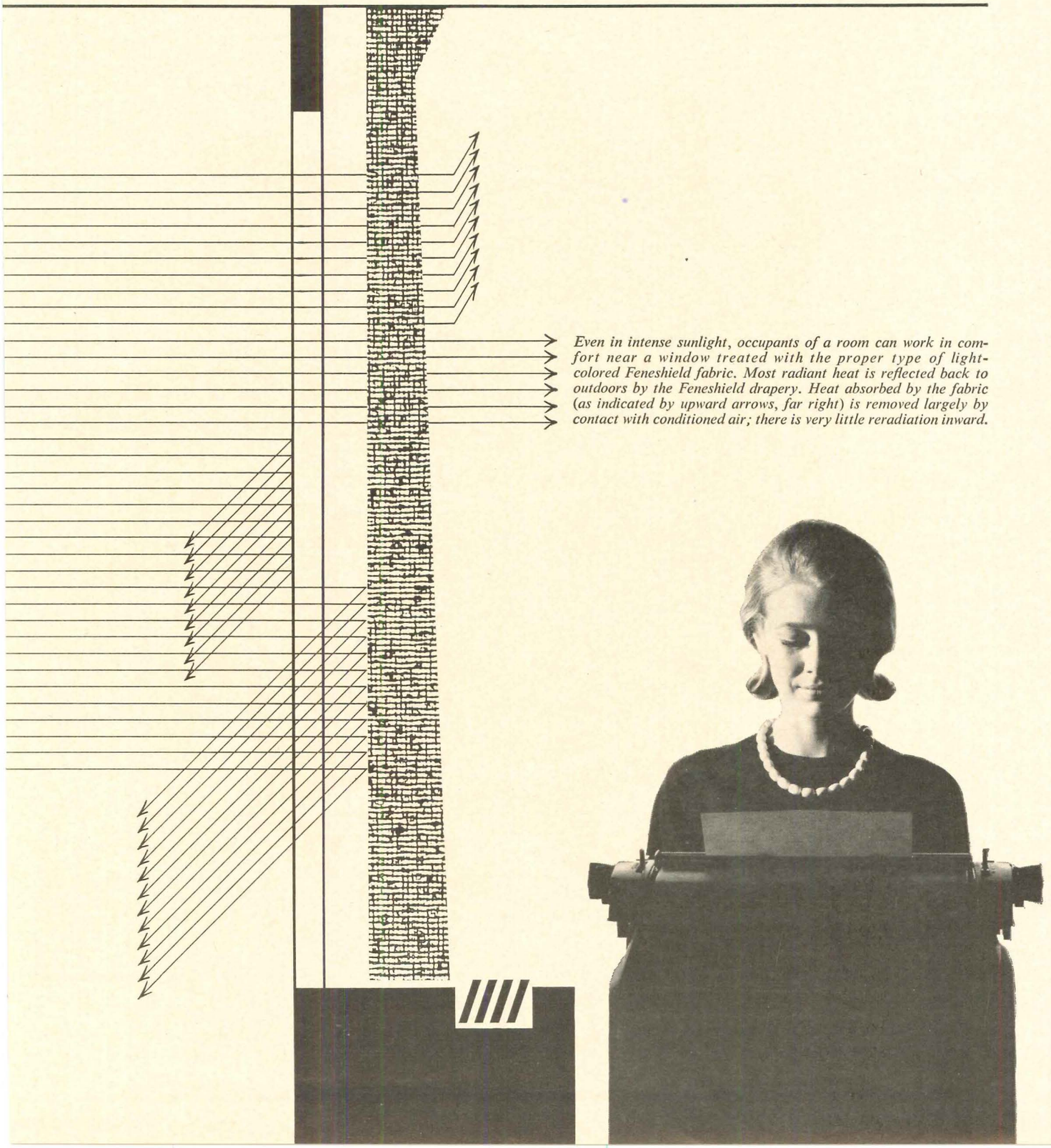
Title_____

Company_____

Address_____

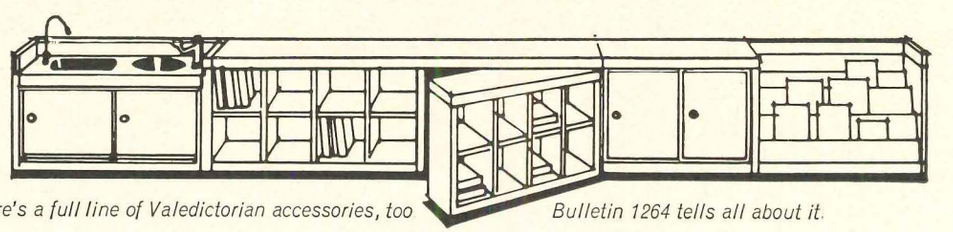
City_____

State_____ Zip Code_____



Even in intense sunlight, occupants of a room can work in comfort near a window treated with the proper type of light-colored Feneshield fabric. Most radiant heat is reflected back to outdoors by the Feneshield drapery. Heat absorbed by the fabric (as indicated by upward arrows, far right) is removed largely by contact with conditioned air; there is very little reradiation inward.

Today, Valedictorian heats this school.



There's a full line of Valedictorian accessories, too

Bulletin 1264 tells all about it.

In 1968, Valedictorian will cool it, too

Let's face it, not every community can build air conditioned schools from scratch. Sometimes it has to wait for more funds.

That's why Modine Valedictorian unit ventilators are such a sound investment for new school designs. Valedictorians handle the entire air conditioning function—or any part of it.

So they meet the immediate need for heating, ventilating and dehumidifying. Then, in 1968 or 1970, you can add the cooling easily. The Valedictorian's high-capacity heating-cooling coil and full insulation mean you needn't spend a dime to convert it to the cooling function.

As a year-round unit ventilator, Valedictorian maintains perfect classroom environment. A built-in "weather center" controls Modine's unique full damper system. It stays sensitively alert to the class needs and responds with fresh, filtered air at the right temperature—before anyone even begins to feel discomfort.

The name is Valedictorian. It comes from Modine in a rainbow of decorator-color enamel and vinyl finishes. And it costs a lot less than you might think.

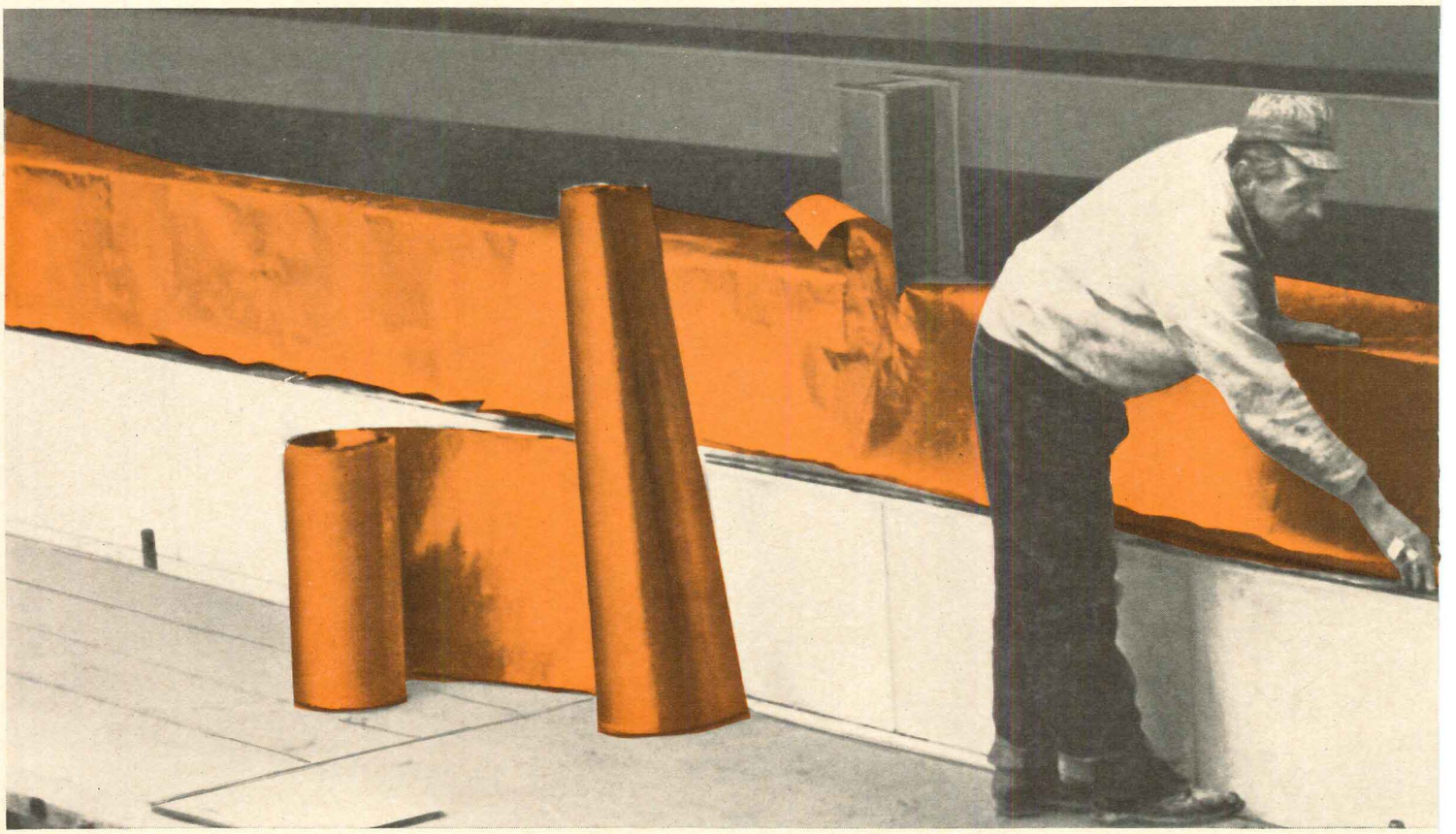
Get all the facts from your Modine Representative or write us at 1510 DeKoven Ave., Racine, Wis., 53401.

V1529

MODINE

For more data, circle 133 on Inquiry Card

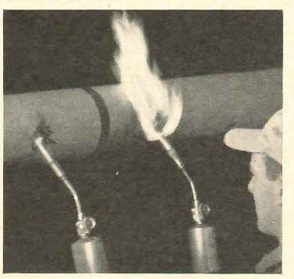
Specify Copper Armored Sisalkraft® to keep out moisture:



SPECIFY THESE OTHER CONSTRUCTION PAPERS AND VAPOR BARRIERS FOR MAXIMUM PROTECTION IN CRITICAL BUILDING AREAS

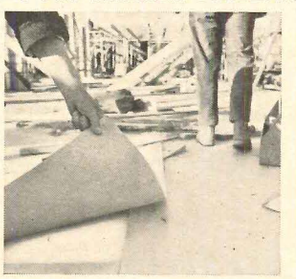
Pyro-Kure® 600

Flame resistant, abrasion resistant vapor barrier for Class I roofs:
PYRO KURE 600. More than twice the moisture resistance of vinyl film. Will not burn when hit with hot asphalt. Approved by Factory Mutual for use with asphalt and Fiberglas® insulation on metal decks.



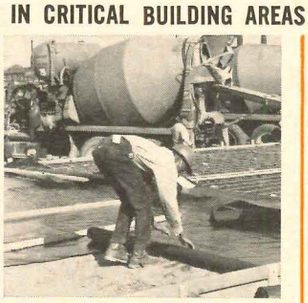
Pyro-Kure

Permanent, noncombustible vapor barriers for pipe jacketing, air conditioning duct insulation and industrial insulation facing: PYRO-KURE® A line of flame-resistant, reinforced laminations with a U/L flame spread rating of "25 or less." Complies with National Building Code standard for noncombustibility.



Curing Papers

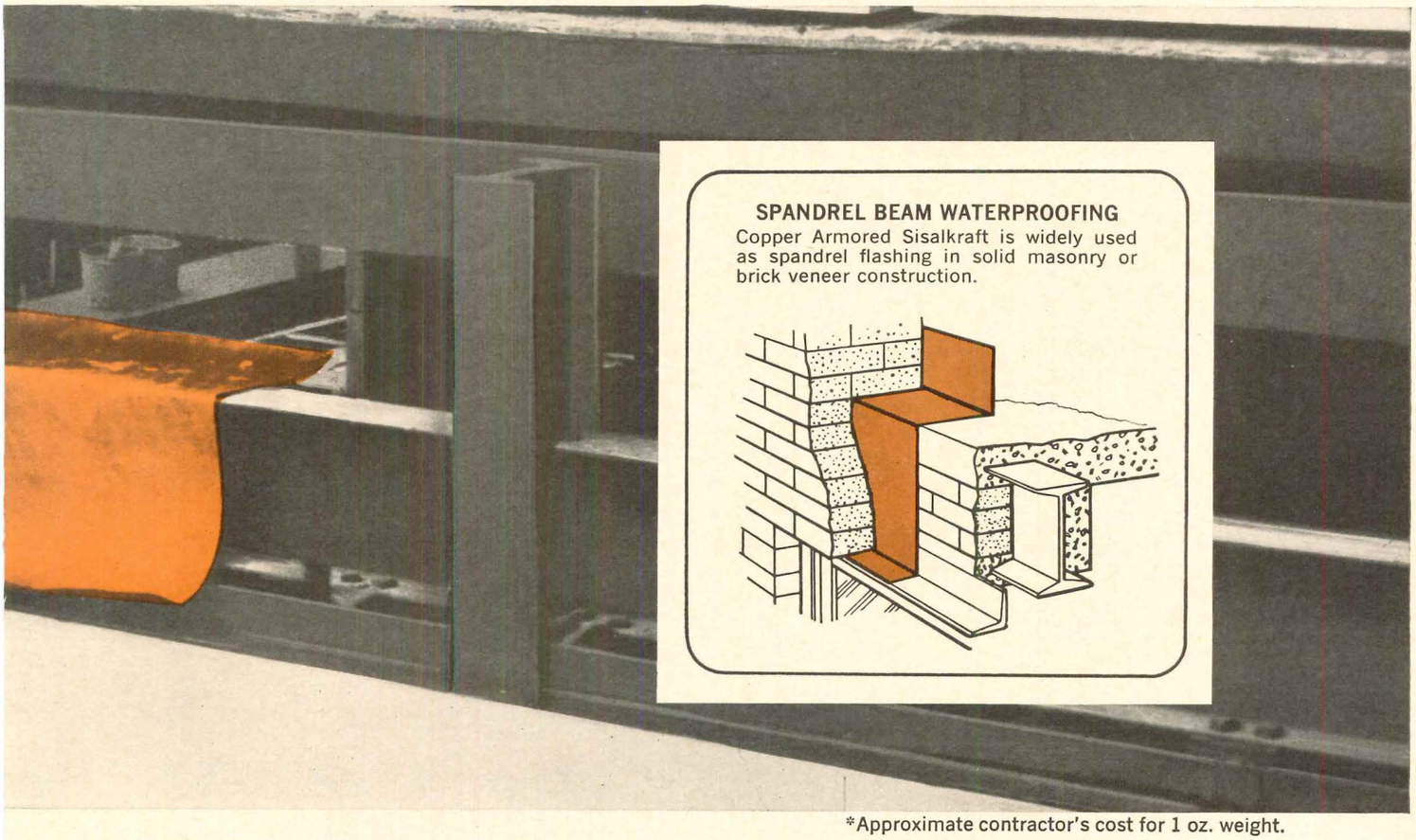
For maximum protection and curing of concrete:
SISALKRAFT® CURING PAPERS. Reinforced, waterproof papers prevent damage and soiling of newly placed concrete slabs. Retards hydration, provides a maximum cure for harder, denser concrete floors.



Moistop

To prevent moisture migration through concrete slabs:
MOISTOP®. A six-ply barrier of reinforced Sisalkraft with black polyethylene film extrusion coated on both sides. Moistop will not rip and tear like plain polyethylene film. Applied under concrete, Moistop helps keep floors dry.

PURE, AGELESS COPPER FOR ONLY 12¢/SQ. FT.*



*Approximate contractor's cost for 1 oz. weight.

Copper Armored Sisalkraft, when used as concealed flashing and waterproofing, has all the properties of much heavier gauge copper at just a fraction of its cost! It is permanent and waterproof (0.00 perms) — provides lifelong protection against moisture penetration at vulnerable points in the structure. In addition, unlike synthetic materials, this quality product gives your client the prestige of copper!

Copper Armored Sisalkraft is pure, pinholefree copper plus a sheet of creped kraft, bonded by asphalt. Reinforcing fibers are imbedded in the center for additional strength. It is extremely flexible, conforms easily to contours, cuts with shears.

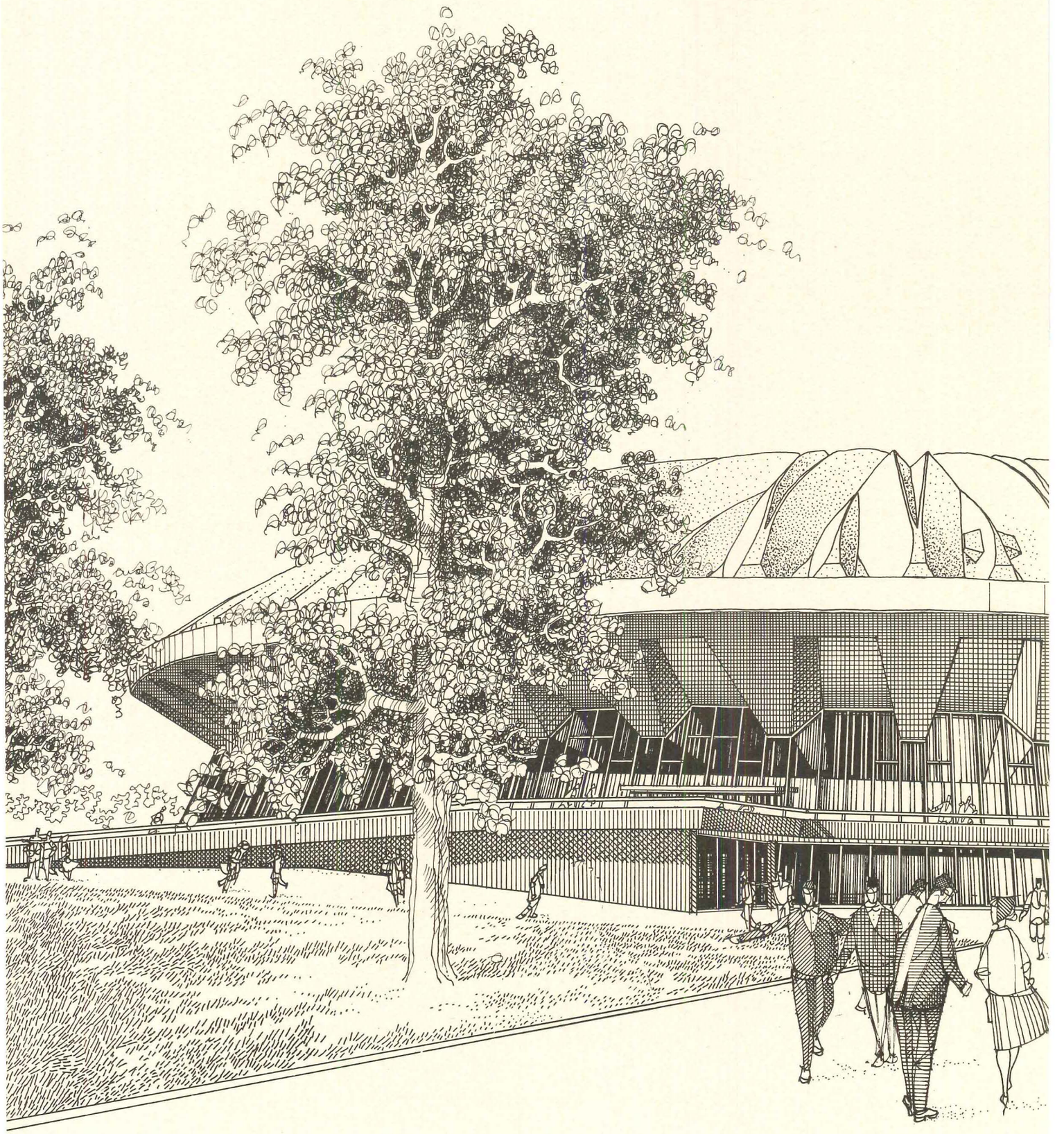
Specify Copper Armored Sisalkraft for all concealed flashings and waterproofing applications such as over spandrel beams, flashing door and window openings, waterproofing shower stalls . . . every place you want the permanence of copper without its high cost. Available in weights of 1, 2, and 3 oz. of pure copper per square foot. Suggested specifications are in Sweet's File 8h/Si.

Send for Samples and Information, including physical property data and suggested specifications. Write, today: Sisalkraft, 73 Starkey Avenue, Attleboro, Massachusetts.

ST REGIS
SISALKRAFT DIVISION

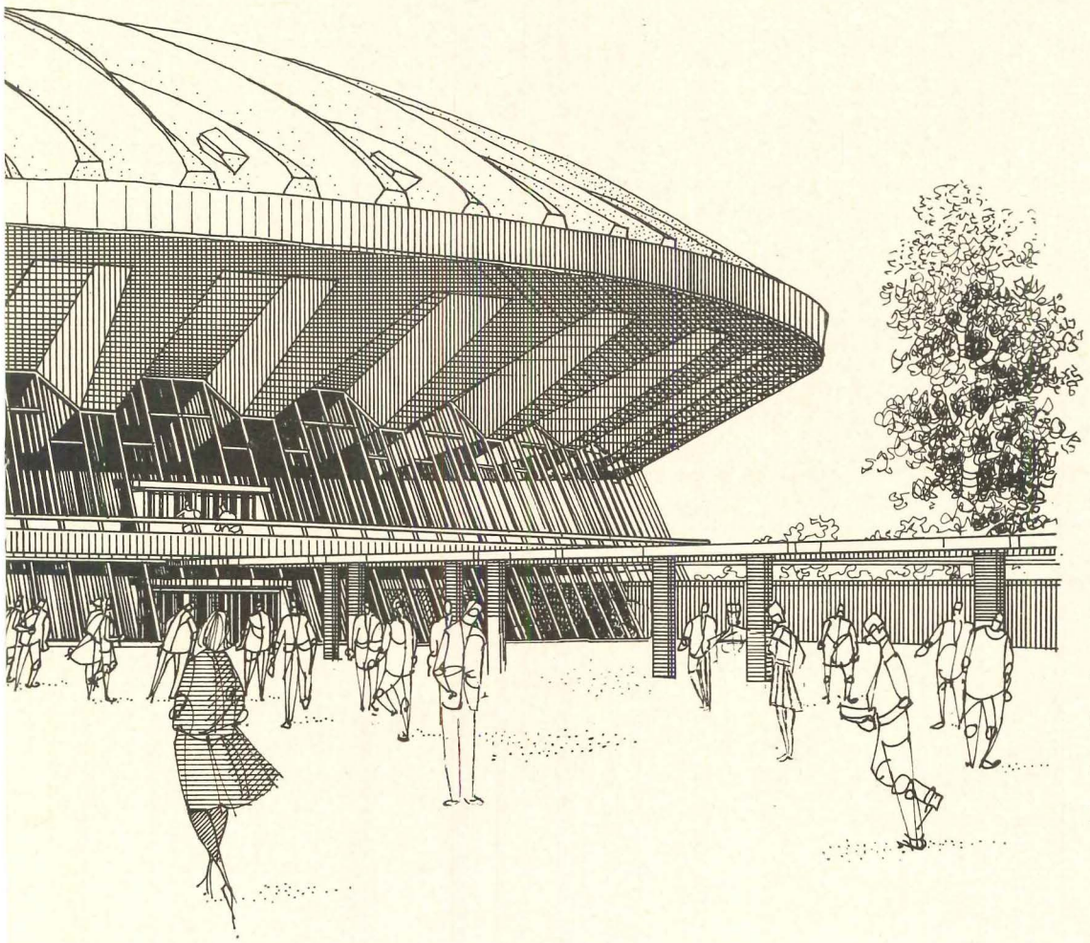
For more data, circle 134 on Inquiry Card

over 85%



# of all architect-designed building is in the hands of Record subscribers, as documented by Dodge Reports

ARCHITECTURAL RECORD
330 WEST 42ND STREET
NEW YORK, N. Y. 10036
A McGRAW-HILL / DODGE PUBLICATION



Assembly Hall, University of Illinois,

Champaign-Urbana, Illinois

Architects: Harrison & Abramovitz

Drawing by Davis Bité

Required Reading

continued from page 258

PLANNING AND LANDSCAPING HILLSIDE HOMES. *By the Editorial staffs of Sunset Books and Sunset Magazine. Lane Book Company, Willow Road at Middlefield Road, Menlo Park, Calif. 128 pp., illus. $1.95.*

A SURVEY OF TELEVISION STATION DESIGN. *By the Editors of Television Magazine. Television, 444 Madison Ave., New York, N.Y. 10022. 76 pp. illus. $3.95.*

FREEHAND DRAWING: A PRIMER. *By Philip Thiel. University of Washington Press, Seattle, Wash. 98105. 127 pp., illus. $4.95.*

STANDARD LAND USE CODING MANUAL. *By the Urban Renewal Administration, Housing and Home Finance Agency and Bureau of Public Roads, Department of Commerce. Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. 111 pp. $.50.*

HUMIDITY AND MOISTURE, VOLUMES III AND IV. *Edited by Arnold Wexler. Reinhold Publishing Corporation, 430 Park Ave., New York, N.Y. 10022. Volume III: Fundamentals and Standards, 562 pp., illus. $25.00. Volume IV: Principles and Methods of Measuring Moisture in Liquids and Solids, 333 pp., illus. $20.00.*

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If you're moving, please let us know five weeks before changing your address. Use form below for new address and attach present mailing label in space provided.

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PRESENT MAILING LABEL
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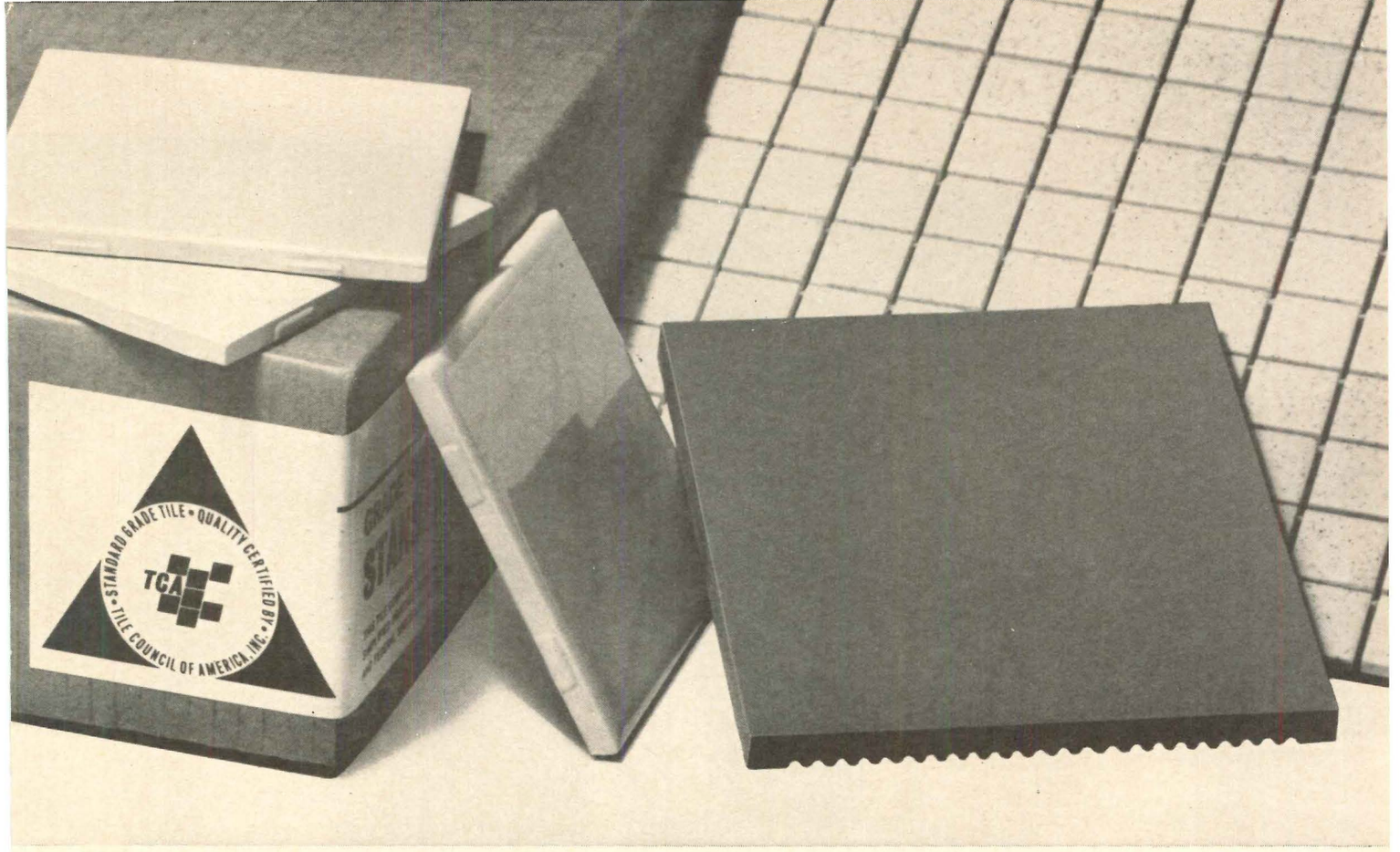
CITY STATE ZIP

FIRM NAME

TYPE OF FIRM

TITLE OR OCCUPATION

Mail to: Fulfillment Manager
Architectural Record
P.O. Box 430
Hightstown, N. J. 08520



You can stake your reputation on this mark

It labels Certified Quality Ceramic Tile

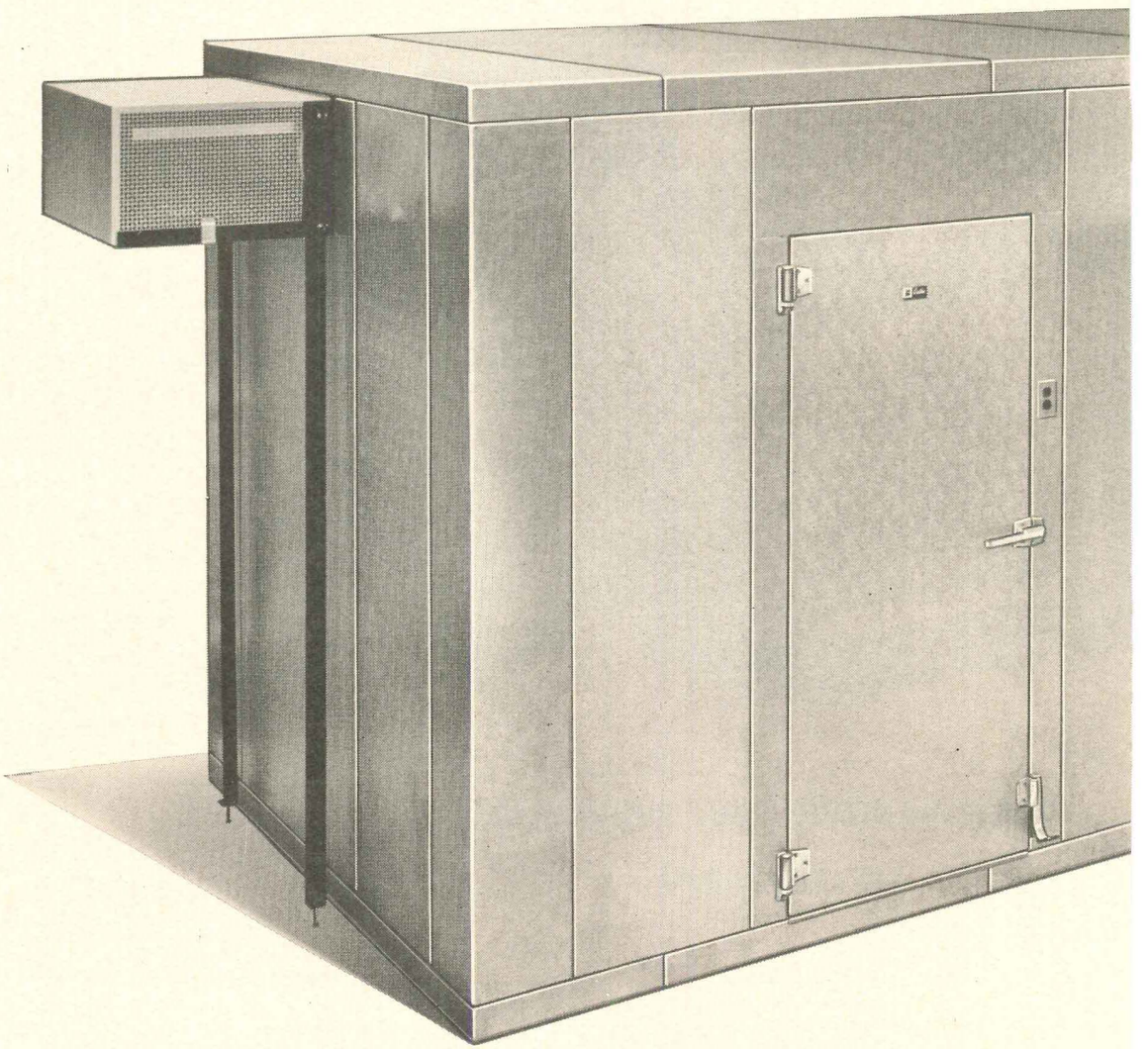
Quality design and construction require quality materials. And the Tile Council of America knows it. That's why we developed the "Certified Quality" program. It means this: You can now select ceramic tile with complete assurance of quality—tile to tile, carton to carton. We put our reputation on it. You can too.

Here's how it works. Tile produced by participating companies now undergoes regular inspections by an independent laboratory. Certified Tile must meet the highest quality standards ever set for the industry. These standards are published by the government in SPR R61-61 and in Federal Specification SS-T-308b.

So why take chances? Specify that each carton of tile shall be Quality Certified and bear the Certification Mark of the Tile Council of America. You will be glad you did.

Tile Council of America INC.
800 SECOND AVENUE • NEW YORK, N.Y. 10017

MEMBER COMPANIES: American Olean Tile Co., Inc. • Atlantic Tile Manufacturing Co. • Cal-Mar Tile Company • Cambridge Tile Manufacturing Co. • Carlyle Tile Company Continental Ceramic Corporation • Florida Tile Industries, Inc. • General Tile Company • Gulf States Ceramic Tile • Highland Tile Company • Huntington Tile, Inc. • International Pipe and Ceramics Corporation • Jackson Tile Manufacturing Co. • Jordan Tile Manufacturing Co. • Lone Star Ceramics Co. • Ludowici-Celadon Company • Mid-State Tile Company Monarch Tile Manufacturing, Inc. • Mosaic Tile Company • Oxford Tile Company • Pacific Tile Company • Pomona Tile Manufacturing Co. • Redondo Tile Company • Ridgeway Tile Company Sparta Ceramic Company • Stylon Corporation • Summitville Tiles, Inc. • Texeramics Inc. • United States Ceramic Tile Co. • Wenczel Tile Company • Winburn Tile Manufacturing Co.



Architects and Food Consultants insist on Bally for job after job. It is because Bally, America's largest producer of sectional Walk-In Coolers and Freezers, has introduced a new standard for Walk-In refrigeration that includes advantages never available in "built-ins".

Today, no other Walk-In has all of these important construction techniques and unusual features that eliminate the "or equal" problem in specifications.

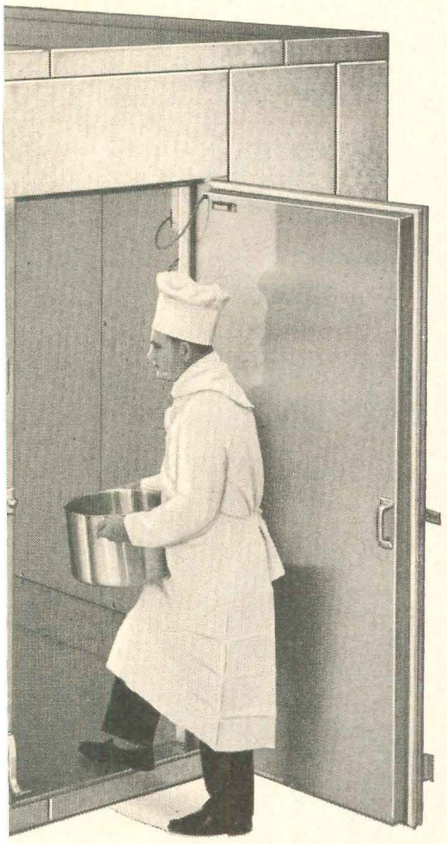
Urethane insulation 4" thick is foamed in place (not frothed). Has efficiency of 8½" fiberglass. Suitable for minus 40° F. temperature.

Assemble any size or shape from standard modular sections. Urethane has 97% closed cells and is ideal for outdoor use.

Superior section strength resulting from urethane foamed against metal skins eliminates need of wood structure. 100% of every section is hospital-clean insulation (no vermin or rodents).

Bally Speed-Lok fasteners join sections quickly and accurately. Unlock easily for enlargement or re-location.

Foamed lightweight door has self-closing hinges, modern hand lock (inside safety release) and convenient foot treadle. Opens and closes with feather touch. Magnetic gasket provides tight seal.



Bally walk-in refrigerators carry this hallmark of quality

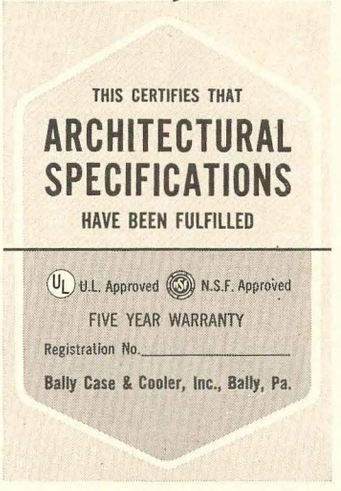
It is our registered guarantee that specifications have been fulfilled with the highest quality workmanship and materials.

Metal interior and exterior provides maximum sanitation. Your choice of hammered aluminum, galvanized steel or stainless steel.

Hermetically sealed refrigeration systems self-contained, available for all size normal and low-temperature Walk-Ins. Easy to install . . . reduce service problems.

Mass-produced and are lower in cost than "built-ins" constructed by building trades. Cubic-foot cost is less than half that of "reach-ins".

When you specify a Bally there is never a need to accept an "or equal" or a substitute. Bally Walk-Ins are available to all dealers everywhere at uniform prices.



See Sweet's Architect File No. 25a/Ba

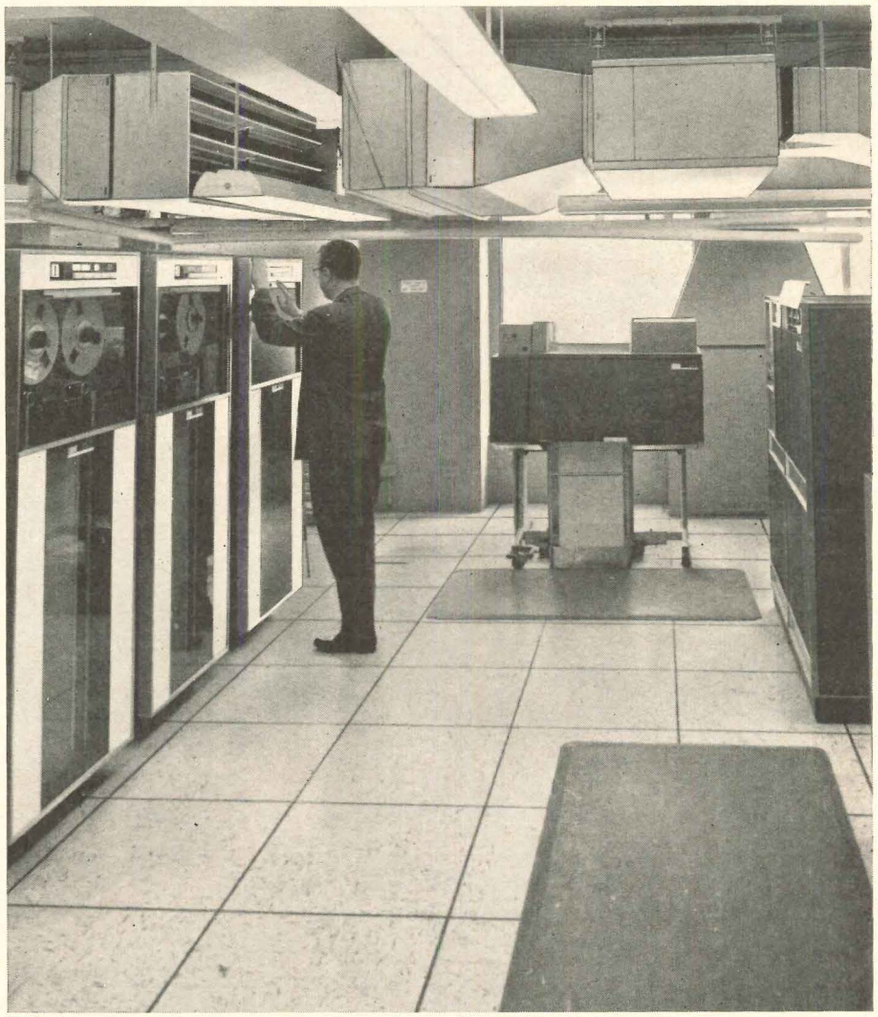
Write for Fact File including 12-page brochure, Specification Guide and Urethane sample. Learn about our on-the-spot engineering program that provides assistance in layout and specifying.

Bally

Bally Case and Cooler, Inc., Bally, Pa.

For more data, circle 138 on Inquiry Card

For a computer room...



MELVILLE SHOE CORP., New York, N.Y. The computer room in this shoe company headquarters is air conditioned by a York "packaged" unit that maintains the temperature and humidity levels required for efficient computer operation. Contractor, Penguin Air Conditioning Corp., Brooklyn, N.Y.

you can depend on YORK AIR

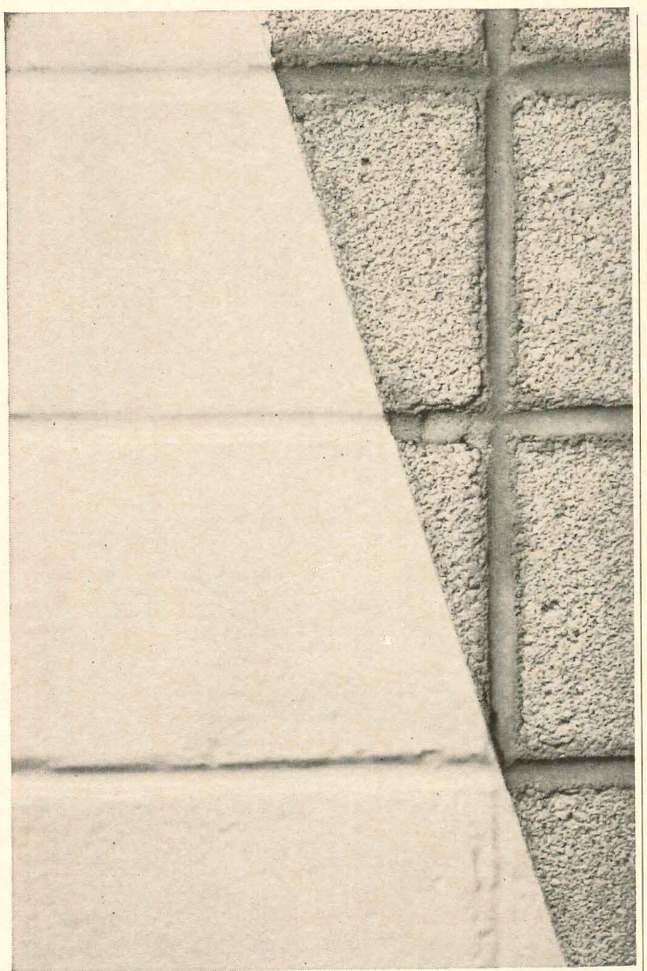
Modern air conditioning systems are required to do much more than provide cooled air. They must create a better climate for business . . . a better climate for living.

In many leading business buildings, York air conditioning is at work in computer rooms, controlling temperature and humidity . . . providing the controlled environment essential to efficient operation of the equipment.

In luxury apartments, hotels and office buildings, York air conditioning systems give each occupant the climate he wants . . . assure year-round comfort for tenants, guests and employees.

Dependable equipment, superbly engineered by the people who have pioneered many of the major advances in air conditioning for over 75 years; dependable people, skilled in helping you design a system that meets your needs. Together, they make the name York synonymous with dependable performance, year after year.

When you specify air conditioning for any kind of building, depend on York! Your nearby York



O'Brien's New *Mira-Plate*

The miracle strength epoxy that goes on like paint, looks and lasts like ceramic tile!

Here's superior protection and tile-like beauty—at a fraction of tile's cost. O'Brien's MIRA-PLATE beautifully coats everything paintable—including new or previously painted plaster, brick, concrete, wood, metal. Ideal for heavy traffic areas. Superior to paint. Defies wear, weather, chemicals, fumes, peeling, and cracking. Unique waterproofing properties defy moisture. Brush it, roll it, or spray it on—and MIRA-PLATE may be recoated or retouched at any time. Many popular colors and attractive fleck patterns. Ask your O'Brien dealer, your painting contractor, or simply send the coupon.

To: The O'Brien Corp., Dept. AR-5
South Bend 21, Indiana

Please send me complete information about MIRA-PLATE, your miracle-strength coating that goes on like paint, looks and lasts like ceramic tile.

NAME_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

The O'Brien Corporation, South Bend 21, Indiana • Baltimore • Oklahoma City • San Francisco • Los Angeles

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Whatever Your Fountain Requirements...

— elaborate or modest — Kim's 35 years of experience are at your disposal.

See **Sweets 39/E** or, better yet, see our 26 min. color/sound motion picture: **"Report on Fountain Design."** Write:

kim

KIM LIGHTING & MANUFACTURING COMPANY, INC.
1467 NO. LIDCOMBE EL MONTE, CAL. CU-3-7621
Manufacturers of display fountains, landscape, swimming pool and mall lighting.

For more data, circle 150 on Inquiry Card

Compare Costs of SNOW WHITE Roofing Marble

SNOW WHITE Roofing Marble costs compare favorably with any other roofing material.

Check these extra features:

- **DOUBLE DE-DUSTED**
- **WEATHERPROOF**
- **LOW FIRE HAZARD**
- **INSTALLS EASILY**
- **CALL OR WRITE FOR FREE SAMPLES AND DESCRIPTIVE FOLDER**

Marble Products Company
67 PEACHTREE PARK DRIVE • ATLANTA, GA. 30309
PHONE: 355-0200 (AREA CODE 404)

Marble Products Company

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Foresight

Foresight was the byword in the late Eero Saarinen's planning of the Dulles International Airport.

Plush mobile lounges whisk passengers effortlessly to the huge silver birds perched on the runways. A veritable forest of millions of trees were strategically planted to cushion the roaring of the jets from the ears of people who will someday populate the area around Dulles but who now don't even exist.

Foresight was used too, in the locksets chosen for this monumental terminal. Lockwood Mortise Locksets—structurally strong and mechanically perfect enough to give faithful service far into the future.

LOCKWOOD

LOCKWOOD HARDWARE DIVISION

INDEPENDENT LOCK COMPANY ILCO

Fitchburg, Massachusetts

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Index to Advertising

PRE-FILED CATALOGS of the manufacturers listed below are available in the 1965 Sweet's Catalog File as follows: (A) Architectural File (green), (IC) Industrial Construction File (blue), (LC) Light Construction File (yellow).

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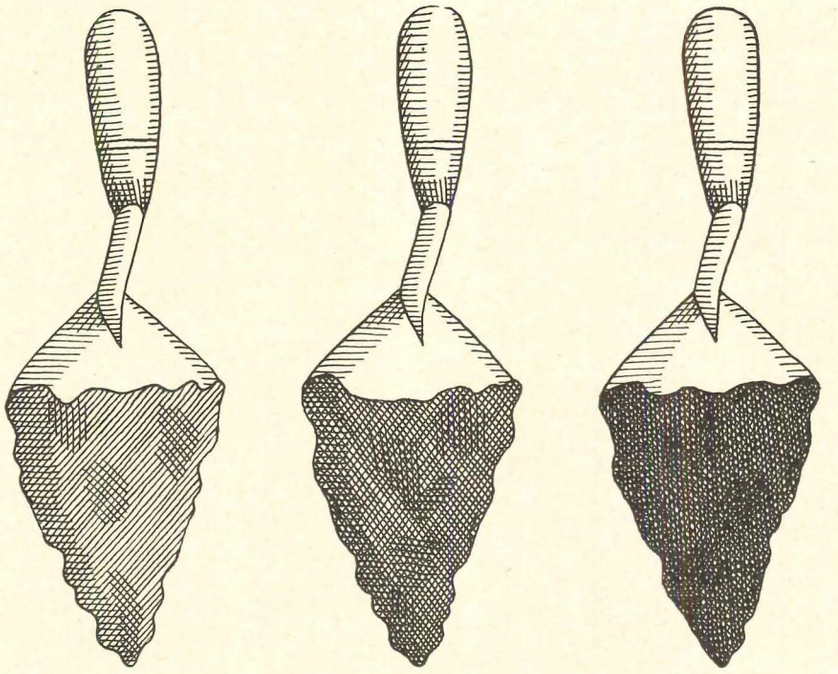

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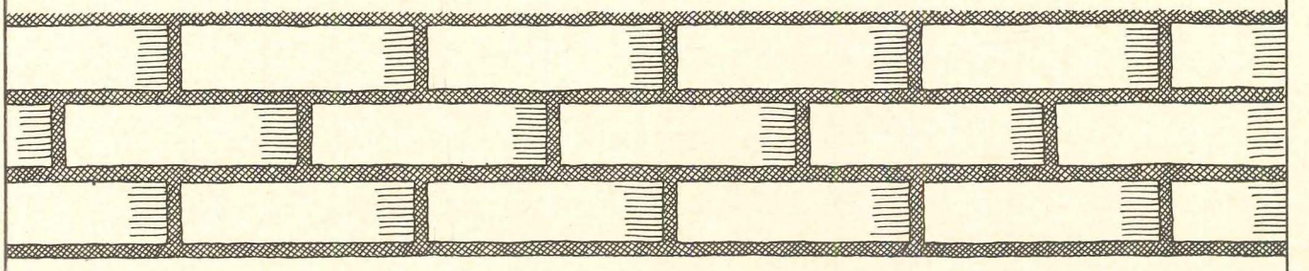

about these mortar joints

Atlas Masonry Cement* makes good workmanship easier.

Mortar joints scream for the wrong kind of attention when they aren't uniform in color throughout a job. Then they detract from the neat, harmonious appearance of a wall. With proper tooling, Atlas Masonry Cement assures a mortar of uniform color . . . because it is the only cementing material used in the mix. All other ingredients are uniformly blended and proportioned. Masons know that waterproofed Atlas Masonry Cement assures mortar uniformity — in workability, color, strength and yield, batch after batch. Everything, except sand and water, is delivered in one bag. Proportioning errors are minimized. It exceeds rigid ASTM and Federal Specifications. Good masonry workmanship comes easier with this product of Universal Atlas Cement, 100 Park Avenue, New York, N. Y. 10017.

USS **Universal Atlas Cement**
Division of
United States Steel

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*Now available in WHITE

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