

RECORD HOUSES 1956-1966: A DECADE OF SIGNIFICANT INNOVATION
ARCHITECTURE IN A NEW MANNER BY A CANADIAN FIRM
BUILDING TYPES STUDY: SCHOOLS
DESIGN FOR EMERGENCY STANDBY POWER
FULL CONTENTS ON PAGES 4 AND 5

ARCHITECTURAL RECORD

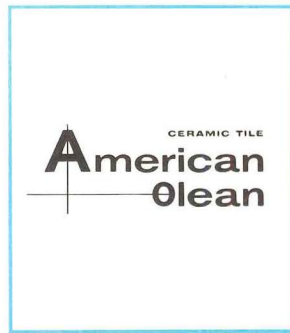
FEBRUARY 1966 **2** A MCGRAW-HILL PUBLICATION TWO DOLLARS PER COPY



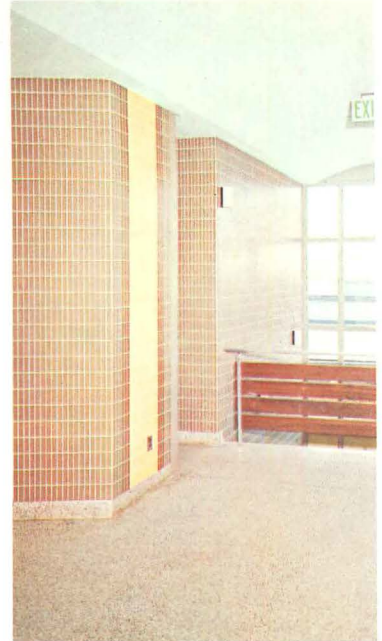
1



2



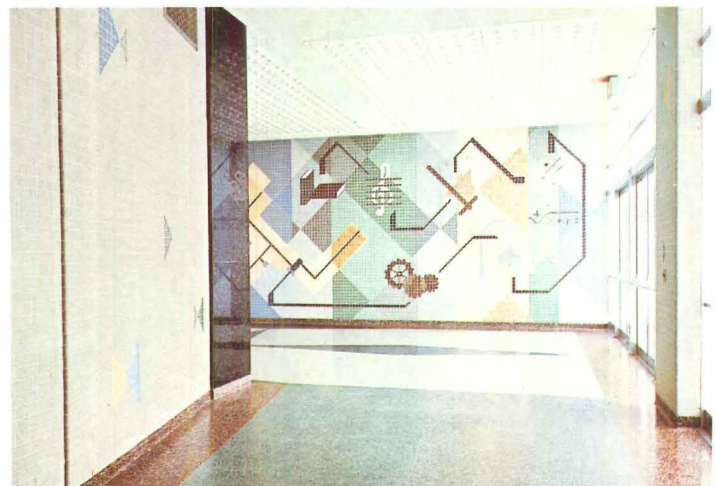
4



5



3



6

To brighten corridors...the trend is to tile

And the new trends in tile are from American Olean. Fresh new colors and textures, lively new decorating-with-tile ideas. For low maintenance costs and the permanent beauty that only the finest tile can give, more and more architects today are specifying American Olean ceramic tile. Write for full color Booklet #1100, "Ceramic Tile In Architectural Design".

1. Middle River Jr. High School, Baltimore County, Md. Wall is 8½" x 4¼" glazed tile in 10 colors. Architect: Fisher, Nes, Campbell & Associates. Tile Contr.: Pete Profili & Company, Inc. Plate 418.

2. Drexel Institute of Technology, Philadelphia. Colorful side wall is scored design SD-5 in 321 Cornflower, 345 Cr. Cobalt, 362 Cr. Charcoal. End wall is in contrasting 370 Cr. Mocha. Architect: Baader, Young & Schultze. Tile Contr.: Belfi Bros. & Co., Inc. Plate 545.

3. Boston University, Boston, Mass. Corridor in ceramic mosaics. Side walls: 1" x 1", Dawn Gray, Dove Gray, Smoke, Haze. End wall: 2" x 2", Haze. Floor: 2" x 2", Smoke and Haze. Architect: Edwin T. Steffian. Tile Contr.: Galassi Co. Plate 411.

4. Collingswood High School, N.J. Wall is 1⅝" Tile Gems® in 21 Cornflower, 64 Lobelia, 63 Flax Blue with Knight design in assorted bright, matte and accent colors on a field of 97 Gardenia. Architect: Howell Lewis Shay & Associates. Tile Contr.: Roman Mosaic & Tile Co. Plate 519.

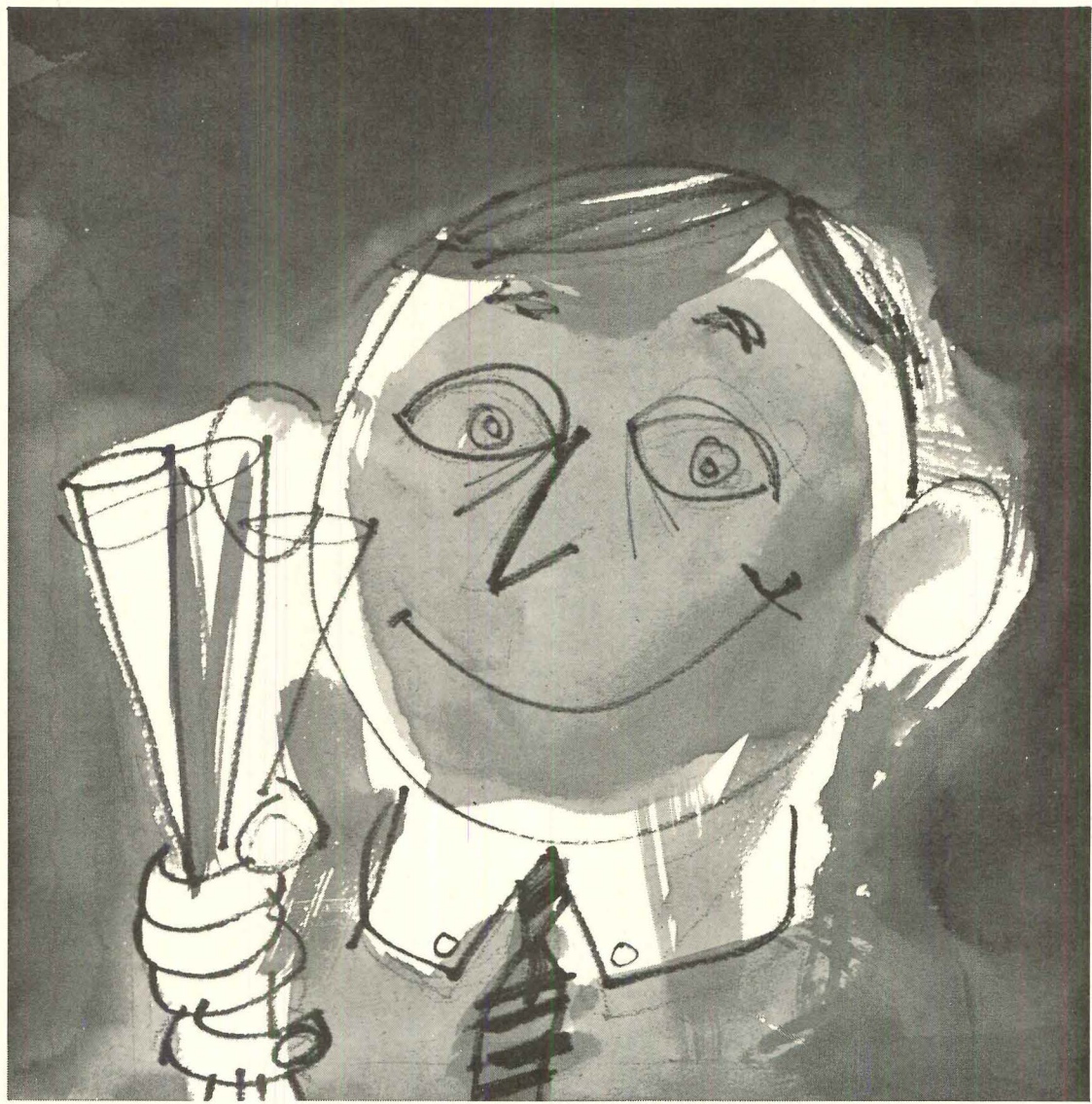
5. W. A. Berry High School, Birmingham, Ala. Walls: scored tile SD-4, 370 Cr. Mocha with stripe of 309 Cr. Yellow. Architect: Davis, Speake & Thrasher. Tile Contr.: Wilson & Daniels Tile Co., Inc. Plate 542.

6. Waterloo High School, N.Y. Tile mural is 2" x 2" ceramic mosaics in assorted colors. Corridor wall and columns: 2" x 2", Haze with accents in seven contrasting colors. Architect: John C. Ehrlich. Tile Contr.: Stearns & Bergstrom, Inc. Plate 543.

American Olean Tile Company—Executive Offices: 2090 Cannon Ave., Lansdale, Pa. Manufacturers of glazed tile, ceramic mosaics and Murray quarry tile.

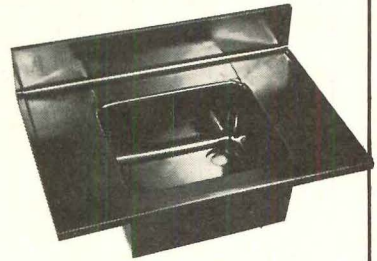
A Subsidiary of National Gypsum Company

For more data, circle 2 on inquiry card



I'm a young architect who specifies **DURCON®** sinks

I'll reach the top because I do good work and insist on the best products. For corrosion resistant laboratory sinks, I use DURCON. It is attractive, light weight, sturdy, low in cost, and will last. When I'm an old architect these sinks will still be in use, and I'll be a wealthy architect because I've done good work and used the best products.



THE DURIRON COMPANY, INC. DAYTON, OHIO



For more data, circle 3 on inquiry card

For more data, circle 4 on inquiry card ◆



Make a beautiful entrance with Westinghouse Electric Stairways



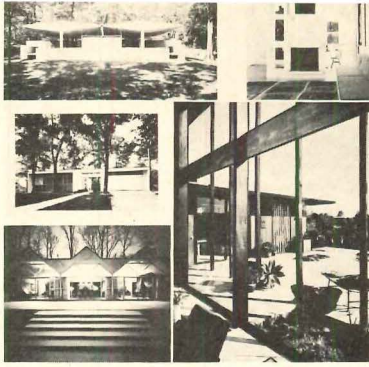
Occidental Life did in their new office building. From the ground up, their new Los Angeles headquarters uses Westinghouse Electric Stairways for an airy and spacious look of the future.

Westinghouse achieves this look with the latest architectural materials. Safety plate glass. Stainless steel. Eye-catching colored handrails.

Other installations include airports, hotels, office buildings, shopping centers. Today, good looks can take you almost anywhere... on Westinghouse Electric Stairways. Westinghouse Elevator Division, 150 Pacific Avenue, Jersey City 4, N.J.



You can be sure if it's Westinghouse



Cover: Record Houses by (clockwise from upper left) architects Ulrich Franzen, José Luis Sert, Liebhardt & Weston, Meathe and Kessler, and Ralph Rapson. Photos: Ezra Stoller, Louis Reens, Douglas Simmonds, Balthazar, Infinity, Inc.

FEATURES

- 125 **RECORD HOUSES 1956-1966: A DECADE OF INNOVATION**
 The architect-designed house has long been considered the single most important laboratory for inventiveness in architectural design. This analysis of 10 years of Record Houses points up just how drastic the changes in fundamental design thinking in both approach and "taste" have been.
- 137 **ARCHITECTURE IN A NEW MANNER BY A CANADIAN FIRM**
 The disciplined forms of four new buildings by architects Affleck, Desbarats, Dimakopoulos, Lebensold and Sise assert an approach to materials, systems, and techniques that is individualistic and inventive, yet controlled by a strong and well ordered esthetic conviction.
- 153 **THE ARCHITECT IN PRACTICE**
 Some brief and useful observations on how one office set up a new design department, how the IRS defines the professional corporation for taxing, how one firm diversified and grew, and how government grants can complicate the design process.
- 157 **ONE GOOD CIVIC CENTER DOESN'T MAKE A CITY**
 Vincent G. Kling's design for a complex of four municipal buildings in Norfolk is an island of calm in a disrupted and changing environment.



Chris F. Payne

BUILDING TYPES STUDY 355

- 163 **SCHOOLS THAT LOOK TO THE FUTURE**
 This month's study examines six new schools designed to meet not just present needs, but the future requirements of changing teaching methods and fast-growing school populations. Postscript: the case for the controversial educational park in our growing cities.
- 164 **LEARNING CENTER FOCUSES ON MULTI-USE LIBRARY**
 A three-building cluster where "the book remains the central business."
- 168 **CLUSTERED UNITS EXPAND EXISTING SCHOOL**
 Four separate houses maintain human scale at an expanding high school.
- 170 **MAXIMUM FLEXIBILITY FOR A JUNIOR HIGH**
 A loose but sensible plan gives this school flexibility for changing methods.
- 174 **FLEXIBLE STRUCTURE FOR PROGRESSIVE PRIMARY SCHOOL**
 A concrete building designed for the simple addition of a second story.
- 176 **GIRLS' SCHOOL PLANNED FOR FUTURE CHANGE**
 A system of flexible interior partitions makes plan change inexpensive.
- 178 **LOW-COST BUT CAMPUS-LIKE TECHNICAL CENTER**
 A specialized facility for teaching specialized skills to high-school graduates.

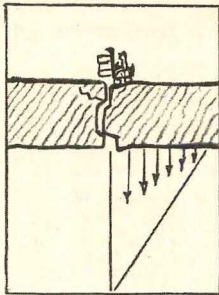


Phokion Karas

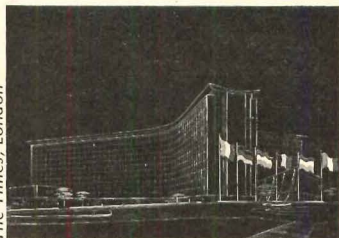
ARCHITECTURAL RECORD

CONTENTS: FEBRUARY 1966

ARCHITECTURAL ENGINEERING



THE RECORD REPORTS



The Times, London

- 180 THREE PROPONENTS STATE THE CASE FOR EDUCATIONAL PARKS
A discussion of the advantages—and the design—of the centralized school.
- 185 SIMPLICITY PRODUCES A NEAT, ECONOMICAL STADIUM
A simple and disciplined system of precast T's gives form to a 17,000-seat stadium at the University of Massachusetts.
- 187 PLANNING FOR RELIABLE ELECTRICAL POWER
A guide by consulting engineer F. J. Walsh to help the architect and engineer reevaluate the requirements of emergency power systems, the applicability of various equipment, and emergency system design.
- 197 BUILDING COMPONENTS
Troublesome cracking of on-grade slabs can be minimized if not eliminated, says engineer William Perry. He details the chief problems, how they happen, and the best design solutions.
- 199 PRODUCT REPORTS
- 201 OFFICE LITERATURE
- 273 READER SERVICE INQUIRY CARD
- 9 BEHIND THE RECORD
"Piazza-Puttering While Rome Burns," by Emerson Goble.
- 35 THE RECORD REPORTS
- 40 BUILDINGS IN THE NEWS
- 44 CURRENT TRENDS IN CONSTRUCTION
- 46 BUILDING CONSTRUCTION COSTS
- 72 REQUIRED READING
- 112 CALENDAR AND OFFICE NOTES
- 312 ADVERTISING INDEX

ARCHITECTURAL RECORD, February 1966, Vol. 139, No. 2. Published monthly except May, when semi-monthly, by McGraw-Hill Publications, a division of McGraw-Hill, Inc. This issue is published in national and separate editions. Additional pages of separate edition numbered or allowed for as follows: Western Section (including *Western Architect and Engineer*), 32-1 through 32-16. EXECUTIVE, EDITORIAL, CIRCULATION AND ADVERTISING OFFICES: McGraw-Hill Building, 330 West 42nd Street, New York, N. Y. 10036. Western Editorial Office: John Hancock Building, 255 California Street, San Francisco, Calif. 94111; second-class postage paid at Washington, D. C. PUBLICATION OFFICE: 1500 Eckington Place, N.E., Washington, D. C. 20002. SUBSCRIPTION RATE for individuals in the field served \$5.50 per year in U.S., U.S. Possessions and Canada; single copies \$2.00. Further details on page 6. POSTMASTER: Please send form 3579 to Fulfillment Manager, ARCHITECTURAL RECORD, P. O. Box 430, Hightstown, N. J. 08520.

ARCHITECTURAL RECORD STAFF

EDITOR

EMERSON GOBLE, A.I.A.

EXECUTIVE EDITOR

WALTER F. WAGNER, JR.

MANAGING EDITOR

JEANNE M. DAVERN

SENIOR EDITORS

ROBERT E. FISCHER
JAMES S. HORNBECK, A.I.A.
MILDRED F. SCHMERTZ, A.I.A.
HERBERT L. SMITH, JR., A.I.A.
ELISABETH KENDALL THOMPSON, A.I.A.

ASSOCIATE EDITORS

WILLIAM B. FOXHALL
JONATHAN BARNETT

ASSISTANT EDITORS

SIDNEY A. ABBOTT
MARY E. ARENDAS
SUSAN BRAYBROOKE
JOHN SAMUEL MARGOLIES

DESIGN

EUGENE H. HAWLEY, Director
ALEX H. STILLANO, Associate
SIGMAN-WARD, Drafting

EDITORIAL CONSULTANTS

EDWARD LARRABEE BARNES, A.I.A.
WALTER GROPIUS, F.A.I.A.
ROBERT F. HASTINGS, F.A.I.A.
PAUL RUDOLPH, A.I.A.

INDUSTRY CONSULTANTS

GEORGE A. CHRISTIE, JR., Economics
CLYDE SHUTE, Statistical
CLIFFORD G. DUNNELLS, JR., Field Research
ERNEST MICKEL, Washington
MYRON L. MATTHEWS and
WILLIAM H. EDGERTON, Building Costs

McGRAW-HILL WORLD NEWS

JOHN WILHELM, Director
DOMESTIC NEWS BUREAUS—Atlanta,
Chicago, Cleveland, Dallas, Detroit,
Los Angeles, San Francisco, Seattle,
Washington, D. C.
INTERNATIONAL NEWS BUREAU—Bonn,
Brussels, London, Mexico City, Milan,
Moscow, Paris, Rio de Janeiro, Tokyo

PUBLISHER

EUGENE E. WEYENETH

ASSISTANT TO THE PUBLISHER

BLAKE HUGHES

CIRCULATION MANAGER

HENRY G. HARDWICK

ADVERTISING SALES MANAGER

JAMES E. BODDORF

COMING IN THE RECORD

PRESSURES FOR CHANGE IN THE ARCHITECTURE OF HOSPITALS

Burgeoning technology in medicine, communications, education, transport and in the building process itself is generating obsolescence in medical facilities almost as fast as the design process can update them. Social pressures, too, including Medicare and a general, more sophisticated affluence, are making new demands for privacy and excellence. The March Building Types Study probes the effects of these pressures on hospital design and outlines the sources and effects of Federal funding.

A STUDENT CENTER FOR M.I.T. BY EDUARDO CATALANO

Catalano's most recent (and most important) building will be presented as an illustration of the developing systems approach of this talented architect. The text will trace the development of his design thinking from the days of his early and most famous building—his house in North Carolina with its soaring roof—to his present still-stronger and bigger-scale work.



McGraw-Hill



Audit Bureau of Circulation



American Business Press, Inc.

ARCHITECTURAL RECORD (combined with AMERICAN ARCHITECT and ARCHITECTURE), title © reg. in U.S. Patent Office, © copyright 1966 by McGraw-Hill, Inc. All rights reserved including the right to reproduce the contents of this publication either in whole or in part. Quotations on bulk reprints of articles available on request. Indexed in Reader's Guide to Periodical Literature, Art Index, Applied Science & Technology Index, Engineering Index, and the Architectural Index. Architectural Record is a McGraw-Hill publication, published monthly, except May, when semi-monthly, by McGraw-Hill Publications, a Division of McGraw-Hill, Inc., 330 West 42nd Street, New York, New York, 10036. James H. McGraw (1860-1948), Founder.

OFFICERS OF McGRAW-HILL PUBLICATIONS: Joseph H. Allen, president; vice presidents: Robert F. Marshall, operations; John R. Callahan, editorial; Ervin E. DeGraff, circulation; Donald C. McGraw, Jr., advertising sales; Angelo R. Venezian, marketing.

CORPORATION OFFICERS: Donald C. McGraw, chairman of the board; Shelton Fisher, president; L. Keith Goodrich, Hugh J. Kelly, Robert E. Slaughter, executive vice presidents; John J. Cooke, vice president and secretary; John L. McGraw, treasurer.

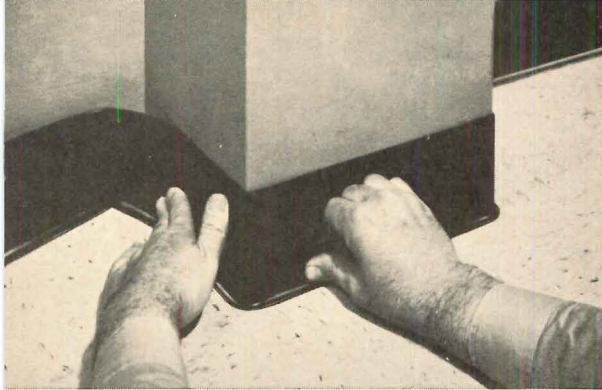
Every effort will be made to return material submitted for possible publication (if accompanied by stamped, addressed envelope), but the editors and the corporation will not be responsible for loss or damage.

SUBSCRIPTIONS: Available only by paid subscription. Publisher reserves the right to refuse non-qualified subscriptions. Subscriptions solicited only from architects and engineers. Position, firm connection, and type of firm must be indicated on subscription orders forwarded to Fulfillment Manager, Architectural Record, P.O. Box 430, Hightstown, New Jersey 08520. Subscription prices: U.S., Possessions and Canada: \$5.50 per year; other Western Hemisphere countries, to those who by title are architects and engineers, \$12.00 per year. Single copy price, \$2.00. Beyond Western Hemisphere, to those who by title are architects and engineers, \$12.00 per year for 12 monthly issues not including Mid-May issue. Subscriptions from all others outside U.S., U.S. Possessions and Canada for 12 monthly issues, not including Mid-May issue, \$24 per year.

SUBSCRIBERS: Address change of address notice, correspondence regarding subscription service or subscription orders to Fulfillment Manager, Architectural Record, P.O. Box 430, Hightstown, New Jersey 08520. Change of address notices should be sent promptly; provide old as well as new address; include zip code or postal zone number if any. If possible, attach address label from recent issue. Please allow one month for change of address to become effective.

UNCONDITIONAL GUARANTEE: The publisher, upon written request, agrees to refund the part of the subscription price applying to the remaining unfilled portion of the subscription if service is unsatisfactory.

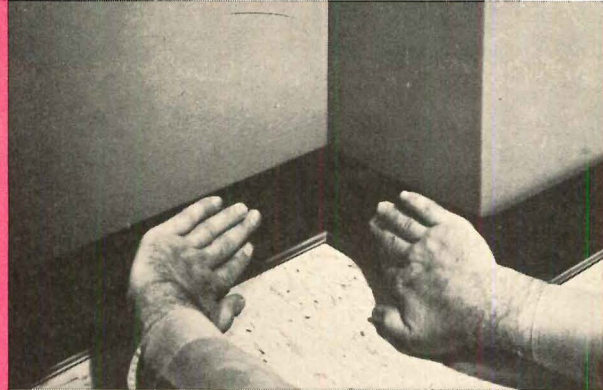
OTHER McGRAW-HILL SERVICES TO THE BUILDING AND CONSTRUCTION INDUSTRY: Arizona Construction News—Chicago Construction News—College and University Business—Construction Methods and Equipment—Daily Construction Reports (Los Angeles)—The Daily Journal (Denver)—Daily Pacific Builder (San Francisco)—Dodge Construction Statistics—Dodge Mailing Service—Dodge Reports—Dow Building Cost Calculator—Engineering News-Record—Home Planners' Digest—Hospital Purchasing File—House & Home—The Modern Hospital—The Nation's Schools—Real Estate Record & Builders Guide—Southwest Builder and Contractor—Sweet's Catalog Services—Sweet's Canadian Construction Catalogue Services—Sweet's Industrial Catalogue Services (United Kingdom).



1. Forming corners right on the job with KenCove eliminates unsightly corner seams.

KENCOVE

FULL-THICKNESS
VINYL
WALL BASE



2. $\frac{1}{8}$ " thickness of KenCove Vinyl Wall Base hides wall irregularities ... for a better-looking job.



3. No accidental kicking off of corners, because base and corners are one piece. KenCove Vinyl Wall Base colors: 10. Heights: $2\frac{1}{2}$ ", 4", 6". Length: 48".

KENTILE
FLOORS

KenCove® Vinyl Wall Base adds quality to any resilient floor. KenCove's accurate cut and uniform shading assure ends that meet together perfectly, quickly. No unsightly seams at corners either, because corners are easily formed right on the job ... are part of the base itself, not separate pieces. No shrinkage problem. And $\frac{1}{8}$ " thickness hides wall irregularities. Samples? Call your Kentile® Representative.



Only banks can afford bronze. Right? Wrong.

Let's be frank.

Copper, brass and bronze are specified because they're better, not cheaper. But here's something you may not know: new design economies can bring the in-place cost of these beautiful metals down to a very competitive level.

The recently renovated entrance of the Boston Safe Deposit and Trust Company is a good example. Original specifications called for .125" gage anodized aluminum extrusion. By redesigning in brake-formed bronze sheet, gages were reduced to .064" through .101".

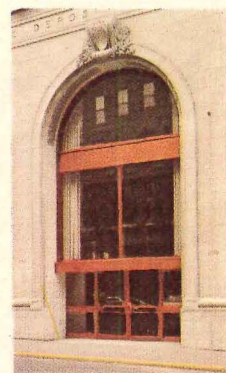
And this reduced the in-place premium on bronze to less than 11%.

Most important, the use of bronze preserved the feeling of dignity and permanence imparted by the marble facade of the building. Add to this the maintenance economies for this high traffic area, and you see why both bank and architect were so pleased with bronze.

Our new brochure, "Copper, Brass and Bronze in Architecture" is full of other fresh ideas, facts, figures and design details. For a copy, just send a note on your letterhead.

COPPER
DEVELOPMENT
ASSOCIATION INC.

405 LEXINGTON AVENUE, NEW YORK, N.Y. 10017



Boston Safe Deposit and Trust Company
Boston, Massachusetts
Architects: The Architects Collaborative
Fabricator: Trio Industries

For more data, circle 5 on inquiry card

PIAZZA-PUTTERING WHILE ROME BURNS

It is not my custom to recommend the reading of *Life* magazine, but there's a first time for lots of things. If you haven't yet seen the "special double issue" of *Life* called "The U. S. City; Its Greatness Is at Stake," you just must not miss it.

It is possible that you will learn something from it, but that's not my reason for mentioning it. It is just that you will certainly be interested in so many pages of *Life* devoted to such a vital topic as the future of the city. If it does nothing else but jump up and down and yell, "Isn't it EXCITING?" I shall have to insist that excitement about the city is constructive. And even if, on occasion, you feel like jumping up and down in protest to some statement or feature, well, it's good to expose even the crazy ideas to the light of public opinion.

Right now I am going to start my protesting, though the line is not new in this column. My protest is a question: will anybody want to live in that exciting city?

Let me take a minute, however, to comment on a comment of Peter Blake's (this is another first). Peter said, in *Life*, about architects, "most of the best known keep puttering away at their piazzas..." I have raised my voice to urge architects to get busy with city problems, but if Peter means by piazza-puttering the architect's normal concern with human scale and

human environmental necessities, then you'll find me in the piazza.

The *Life* presentation does not ignore human considerations: there is much space devoted to Negro ghettos, transportation and other human requirements and problems. But it does reach for the spectacular when it presents architectural "solutions." There are "marvels to choose from" like satellites, mega-structures, linear cities and platform towns. Some Princeton professors have modernized the old linear city of Le Corbusier (circa 1930); a U. of I. team has done a mega-structure, multi-platform city unit of 100,000 people for Chicago, and so on.

There is also the one about covering over slum sections, say Harlem, with a new city suspended from a mammoth space-frame structure. The author does not tell us what is to happen to Harlem down there underneath, or its problems.

If the population is going to double, maybe numbers will compel us to use mega-this and mega-that. But if the population doubles, the human problems will more than double. And the bulldozer won't answer them.

I had an odd dream the other night, and perhaps it is germane. It seems that, in this brave new world, every individual wore a combination communication and computer gadget. As you went about your business you were in touch with the whole world, and vice versa. At one point my gadget

started yelling at me, "Buy Touser's Breakfast Food." The volume was so strong it would bowl you over, that is unless you responded hurriedly. You responded by pushing a "yes" button on your transmitter. Then the noise ceased, the order was duly delivered, and the price deducted from your salary.

In that twilight zone between nightmare and wakefulness I realized that that command to buy was mere lip service to individual choice and freedom.

And so it might be in the world of the linear city, the mega-thing made necessary by population statistics, or by technological efficiency. It would be stupidly inefficient to allow individual families to select and cook their own meals. No more lobster dinners. No candle-lit little suppers. Why should each family be allowed its own kitchen, in the first place? Or maybe in the first place why bother with individual families anyway—they're really not very scientific.

Well, I still like the words, quoted here before, of August Heckscher, vice chairman of Urban America, Inc. (which publishes *Architectural Forum*):

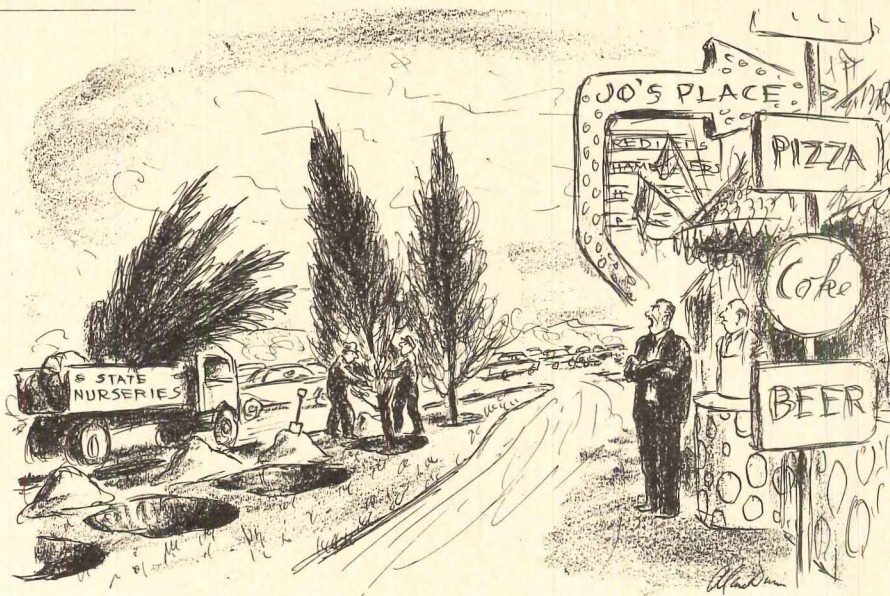
"The result of technological forces—combined with increased numbers of people, increased wealth, increased leisure—is to threaten the existence of every geographical place which is separate and distinct, every integrity which gives the individual the possibility of standing apart and meeting the world on his own terms."

And: "The degree to which the spirit of individuality is preserved is closely related to the degree to which we can shape and control the environment."

And don't forget the piazzas.

Emerson Goble

Drawn for the RECORD by Alan Dunn



"Wouldn't you think she'd have enough to do in the White House!"

How criticism affected the Air Force Academy

By now you have perhaps heard that the new \$40-million expansion of the Air Force Academy will not be handled by its original architects, Skidmore, Owings and Merrill, but by a combination of two different architectural organizations.

I shall always remember this item when somebody tells me earnestly how helpful public criticism of architecture is. You will remember that this complex of buildings received criticism as no other has ever had, I should guess—before, during and after construction. Frank Lloyd Wright let go at a Congressional hearing, and so on and on.

Surely nobody is going to tell me that this criticism benefited the original design, aided the cause of good architecture, helped the original architects, or changed any of their thoughts on design. Perhaps it taught the architectural fraternity that governmental departments cannot live with criticism of architecture, and I doubt if that is a very constructive result for criticism to have.

Sources of beauty in architecture

Speaking of joy and stimulus and beauty in architecture, nobody could have made a more dramatic charge into this territory than did Ben Thompson last month in the RECORD. I'm sure you'll remember those pictures of kids playing, of light playing on rain hats, of students walking in the rain.

Thompson, chairman of the department of architecture at Harvard, is determined that education of future architects will include considerable ex-

posure to beauty, the beauty to be found all around us. As for example:

"Architecture, of all possible things on earth, has by nature such a wonderful potential for aliveness. It deals with positive things—actual buildings—so that it is concerned with vital needs and issues of our time. Is there any doubt that architects today are no longer the prettifiers and decorators of a polite society but the builders of the total society at its very core? That is why the shift of emphasis is away from isolated inanimate design—away from the monumental cultural centers occupied by mythical man to the very animated, real buildings of unpredictable, living, breathing man."

Mr. Thompson had a crew out with their cameras, taking for that presentation those reminders of the beauty in our lives. I don't mind saying that there was considerable discussion in the RECORD offices as to the propriety of spending considerable sums and considerable space on the publication of those pictures. Were they indeed too simple for an architectural magazine? And is "beauty" still an anti-intellectual word? Or do you agree that we should push in this general direction?

Write us a note about it.

And now we have "the play of light"

Perhaps an enforced stay at home can be a good idea, if that is what my recent homework represents. I have found another quotation that I can't resist being sure you see. This one (December, page 144) is from Pietro Belluschi, until recently head of the architecture and planning school of M.I.T. About his Equitable Savings and Loan Association building in Portland, Pietro remarked,

"It shows that it is possible again to derive delight from the play of light on the surfaces of a building, and one may say that it is a tentative return to a more romantic architecture."

And "...it was also possible to be concerned with old-fashioned qualities of scale and proportion and color..."

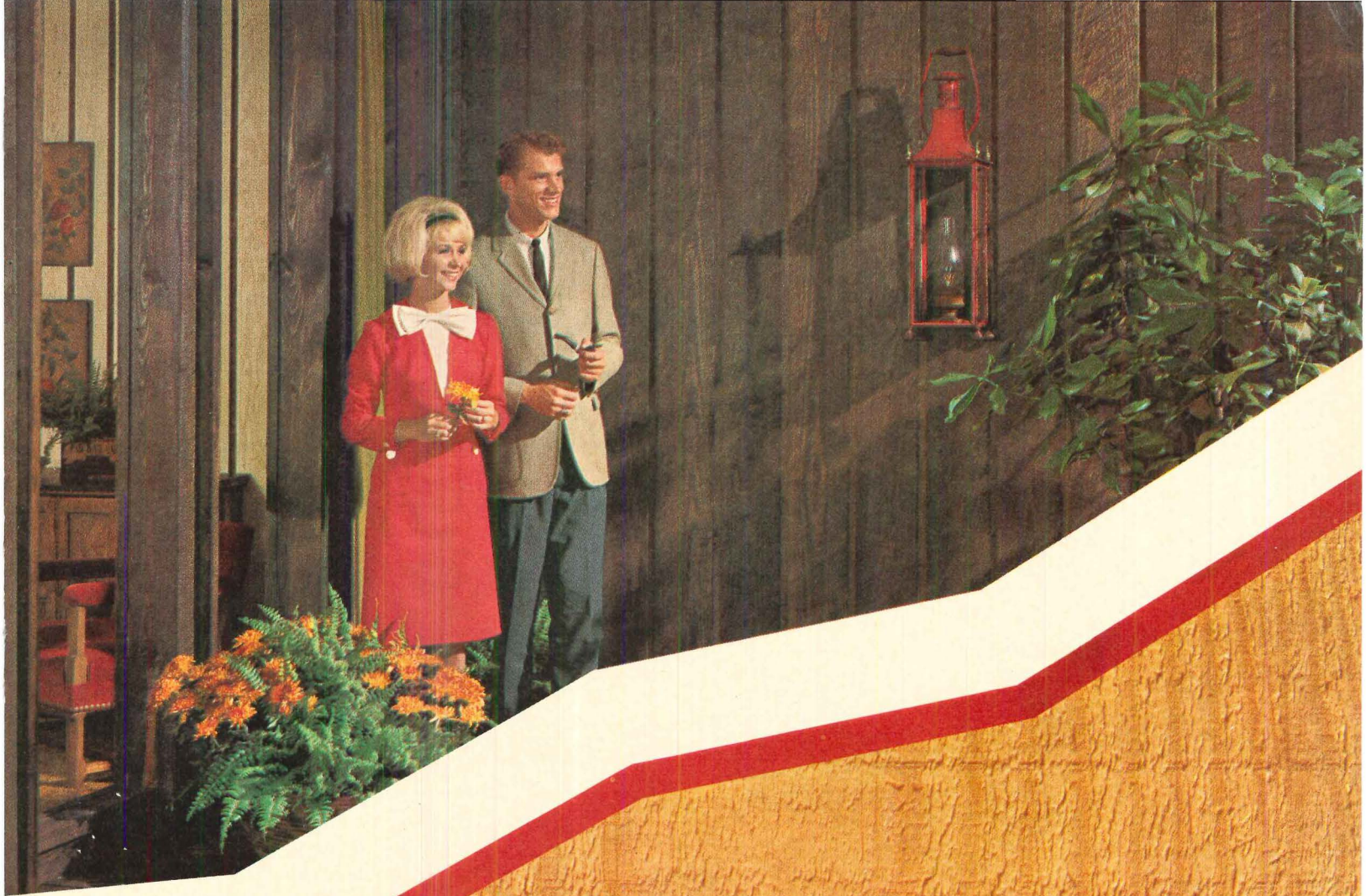
Well, a stay at home is not entirely a negative experience if it brings to attention such declarations by the "name" architects. They could lead us into a great new land at a time when a great new land so badly needs "scale and proportion and color," or even some romanticism.

Eschew the fashion, or Harry, What You Said!

Perhaps the head above is a little cute, but I am perfectly serious in wanting to emphasize what Harry Weese said (December, page 114) about his Columbus, Indiana Baptist Church:

"If present day architecture is ever to mature, it needs to eschew the fashion of the hour and consider the realities of decades. The art of building is not relearned every generation; it is an ongoing thing. . . . The joy and stimulus in architecture is the discovery of fresh combinations of old ingredients appropriate to present problems. Faced with the choice, I would rather be right than contemporary."

Well, it takes a little nerve to eschew the fashion of the hour, but surely the fashions of our day are becoming more and more "by the hour." The word "contemporary" does not have the virtuous ring that it used to have. We can certainly afford to be contemptuous of "contemporary," and in favor of the "joy and stimulus in architecture...."



There's a growing trend— to rough sawn Southern Pine

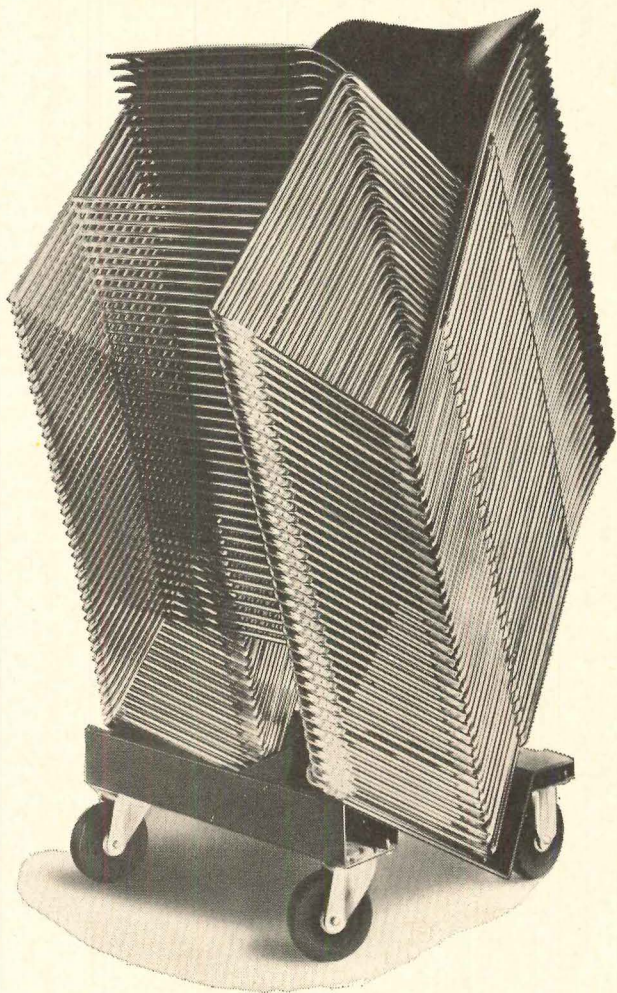
Sculptured, Natural, Modern

Many of today's new homes have exteriors of rough sawn Southern Pine siding. It is easy to understand why.

The sculptured look of this solid lumber creates a modern impression which warmly expresses Nature's beauty. While its charm is extravagant, the initial and long term costs are remarkably low.

A variety of factors assures minimum maintenance. First, the enduring qualities

of Southern Pine lumber—high strength and resistance to wear. Secondly, the exceptional durability of modern stain-type finishes, combining water repellants and preservatives—economical and easy to apply. The texture of the surface further improves the retention of these finishes. Specify Southern Pine from the member mills of the Southern Pine Association. P. O. Box 52468, New Orleans, La. 70150.



**You can't fit
40 chairs
in less space...**

... unless you melt them! No other stacking chairs store away in less space—forty stack just four feet high. The name is obvious—the GF 40/4 chair.

David Rowland's design for mass seating offers a whole new concept in seating with exclusive features no other chair can offer. Its comfort is unequalled. They gang solidly and rigid rows of four can be stacked. Their attractive styling fits anywhere: in dining and meeting rooms, hotels, motels, cafeterias, classrooms, libraries, waiting rooms, lounges and lobbies.

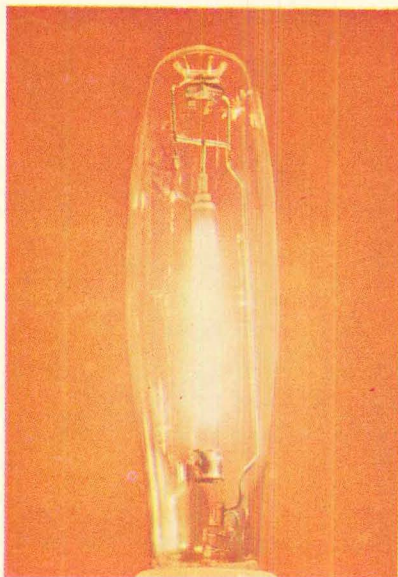
For complete information, contact your nearby GF dealer or branch showroom or write for descriptive literature to Dept. AR-20, The General Fireproofing Company, Youngstown, Ohio 44501.



GF 40/4 CHAIR

**Move over,
sun**

**G-E Lucalox[®]
lamp is here**



Here's the most exciting news in lighting since G.E. introduced fluorescents 26 years ago. It's the amazing G-E Lucalox lamp . . . the first "white" light source to exceed 100 lumens per watt. It's six times as efficient as household incandescents, has twice the efficiency of mercury lamps and half again as much as fluorescents. Easily the most efficient lamp of its type ever made.

The Lucalox ceramic arc tube you see inside this new lamp is no bigger than a cigarette, yet it gives you the light of a string of 40-watt fluorescents over 50 feet long! And the light is a sunny golden color.

Early in 1966 you'll be able to order G-E Lucalox lamps, utilizing a high-pressure sodium vapor in 400-watt size. This is just the first of an exciting new line of compact, high-intensity lamps that will revolutionize lighting indoors and out.

Plan now to put new G-E Lucalox lamps in your lighting future. Call your General Electric Large Lamp Agent or write General Electric Co., Large Lamp Dept. C-544, Nela Park, Cleveland, Ohio 44112

GENERAL  ELECTRIC

For more data, circle 8 on inquiry card



Skyroofs are aglow with design and through Glidden Panelux[®] translucent

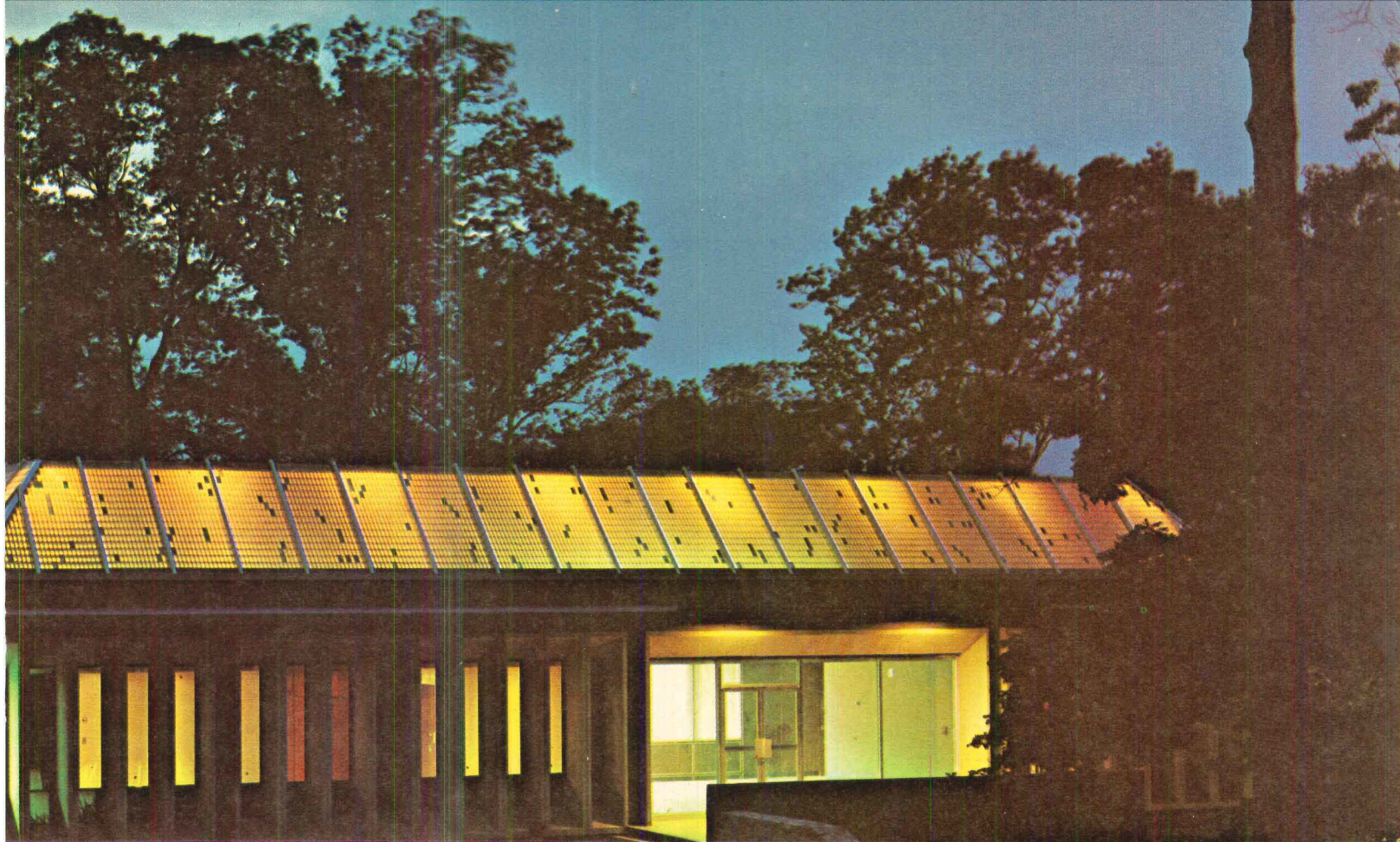


TOP—Aglow with design, color units create random patterns in Panelux glass fiber reinforced plastic faces. Combinations are practically unlimited.

ABOVE—Strong on insulation, Panelux helps maintain even temperatures in buildings. Panel faces with gel coating resist weathering and shattering. Architects: A. Thomas Bradbury & Associates, Wilfred J. Gregson & Associates, R. Schoenberner, project designer.

RIGHT—Flooded with natural light, interiors are cheerful, inviting. Panelux panels reduce glare, transmit daylight, are low in brightness.





interiors flooded with natural light sandwich panels in new Georgia research center

Daylight enlivens cottages in the Georgia Mental Health Institute nearing completion in Atlanta. And daylight is part of the design, with Glidden Panelux translucent sandwich panels for skylighting.

Panels with dramatic color accents transmit natural daylight to each of nine cottages. These cottages, connected with an administration building by underground tunnels, are used for research as well as treatment of mental patients.

Panelux offers a combination of structural strength, insulation value, weather and shatter resistance that cannot be equaled by other panel materials. Whether your plans involve skyroofs, skylights, curtain walls or wall panels, Glidden invites you to consider Panelux.



ARCHITECTURAL PRODUCTS DIVISION

The Glidden Company • 1065 Glidden Street NW
P. O. Box 19923 • Atlanta, Georgia 30325

SOLAR LIGHT TRANSMISSION

MATERIAL	SOLAR TRANSMISSION
1. PANELUX, Type I 1½" thick	43.6%
2. PANELUX, Type I 2¾" thick	37.5%
3. PANELUX, Type II 1½" thick	58.5%
4. Single Strength Glass	85.0%
5. Double Strength Glass	87.7%
6. Plate Glass, ¼" thick	88.0%

One of the primary advantages of PANELUX panels is its transmission of diffused daylight without glare. Tests show the human eye squints when light transmission is above 45 percent.

INSULATION "U" VALUE

MATERIAL	"U" VALUE
1. PANELUX Types I and II	0.425
2. Glass Block	0.560
3. Insulated Glass ¼" Air Space	0.610
4. Insulated Glass ½" Air Space	0.550
5. Insulated Glass 1" Air Space	0.530

"U" value is the overall coefficient of heat transfer. Heat energy is reported as Btu/hr/sqft for each degree Fahrenheit. PANELUX panels possess the best insulation factor of any conventional light transmitting material.

For more data, circle 9 on inquiry card



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.

Their solution called for only two rows of columns on 35-ft centers. And those unusually generous balconies are supported by extensions of the steelwork. It saved weight and costs and went up in only 17 days!



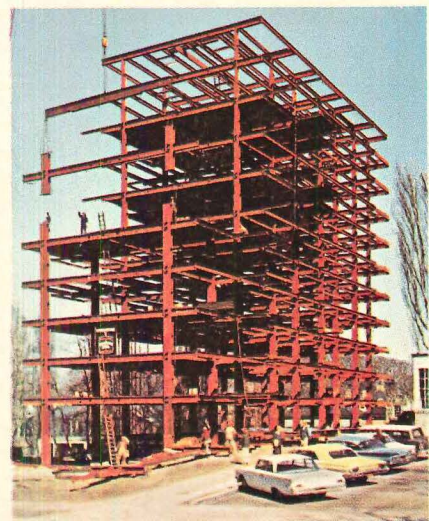
Steel for Strength

BETHLEHEM STEEL

For more data, circle 10 on inquiry card

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

"Goalpost" design resulted in a maximum of shop-welded fabrication. Owner-Builder: BCH Construction Corporation.





(In With The College Crowd)

GLOBAL's been going to some of the best colleges for years. Only **they've** been learning from us! When it comes to quality of construction, freedom from maintenance worries, accessibility of parts, and hazing-proof ruggedness, we score top marks in every exam. Somewhere behind every ivy-covered wall there's a rest room. College knowledge dictates the finest installations—for architects and school administrators the security of a GLOBAL installation is its own award.

Matriculated at:

Barstow School
Kansas City, Mo.
Arch.: Perkins & Will

Dormitory-Dining Facilities
University of Delaware, Newark, Delaware
Arch.: Howell Lewis Shay & Assoc.

Great Hollow Jr. H.S.
Smithtown, L. I., N. Y.
Arch.: Frederic P. Wiedersum Assoc.

Andover Hall Library
Harvard Divinity School, Cambridge, Mass.
Arch.: Shepley-Bulfinch-Richardson & Abbott

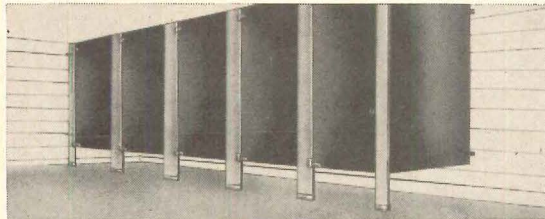
Juniata College Library
Huntingdon, Pa.
Arch.: Hunter-Campbell & Rea

Dormitories & Cafeteria
University of Missouri, Columbia, Mo.
Arch.: Hellmuth, Obata & Kassabaum, Inc.

Dormitory and Dining Hall
State University, Albany, N. Y.
Arch.: Office of Edward Durell Stone

Denton Dormitories
N. Texas State College, Denton, Texas
Arch.: Wilson, Patterson, Sowden, Dunlap & Epperly

Woodrow Wilson School
Princeton, N. J.
Arch.: Minoru Yamasaki & Assoc.



When Only the Finest Is Good Enough

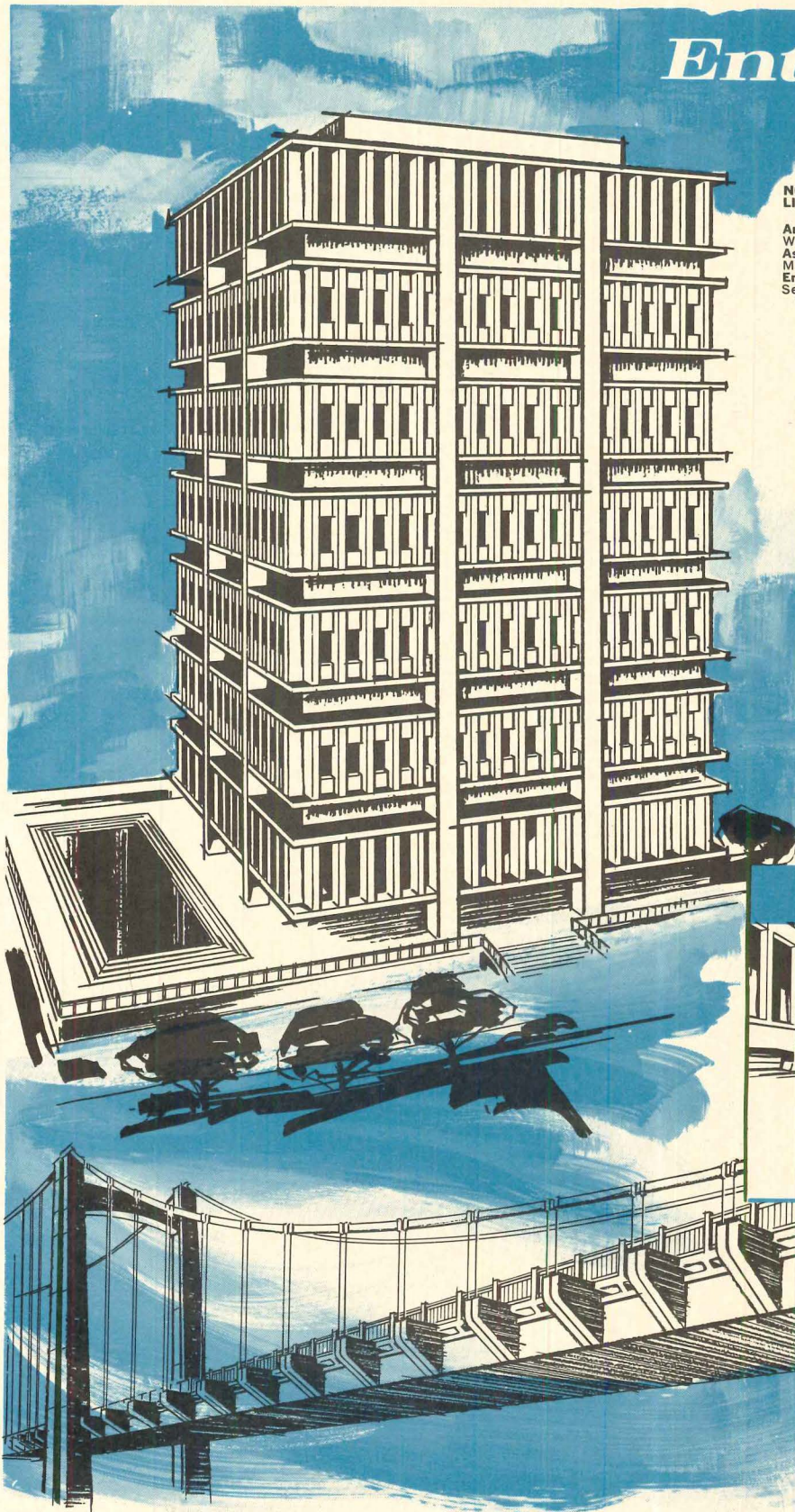
GLOBAL Steel Products Corp.
Subsidiary of **Whittaker**
CORPORATION

95-B Marcus Blvd., Deer Park, Long Island, N.Y. 11729

See our Catalog in Sweet's Architectural File 22b/GL or write for your copy. Also available - Bath and Toilet Accessories Catalog.

For more data, circle 11 on inquiry card

Enter the 1966



**NORTH CAROLINA MUTUAL
LIFE INSURANCE BUILDING**
Durham, N.C.

Architect:
Welton Becket & Assoc.
Associate Architect:
M. A. Ham Assoc., Inc.
Engineer:
Seelye, Stevenson,
Value & Knecht

The purpose of the PCI Annual Awards Program is to recognize excellent design using precast and/or prestressed concrete.

Any kind or type of structure using precast and/or prestressed concrete which was completed within the last three years, or substantially completed by May 31, 1966, within the United States, its possessions or Canada may be entered.

Judgment will be based on:

1. The contribution to the advancement of prestressed concrete.
2. Excellence of architecture, engineering, and/or systems integration.
3. Effective use of the full potential of prestressed concrete.

The nature of each project submitted will influence the weight given to each of these considerations.



**MEDICAL
MERCHANDISE MART**
Lincolnwood, Ill.
Architect:
Fridstein & Fitch
Engineer:
George A. Kennedy
& Assoc., Inc.



**AUTOMOBILE CLUB OF
SOUTHERN CALIFORNIA**
Beverly Hills, Calif.
Architect:
Welton Becket & Assoc.
Engineer:
Stacy & Meadville

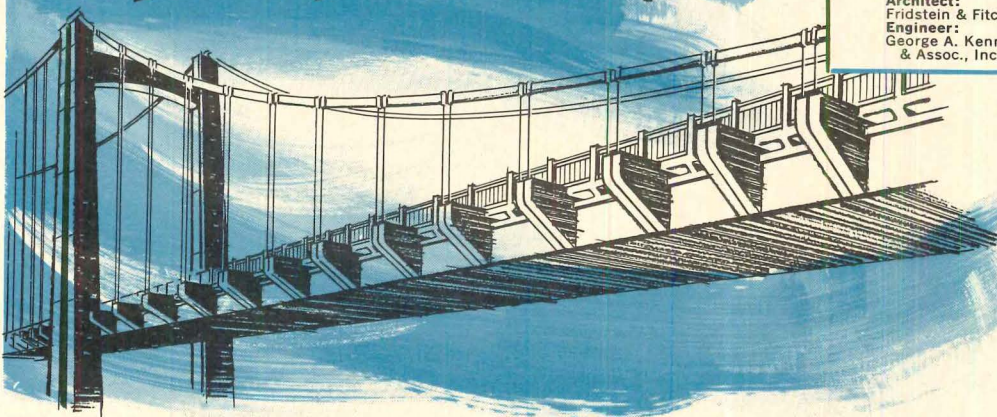
**These PCI Active Members
will be glad to give you complete details
on the PCI Annual Awards Program:**

ALABAMA Solar Cast, Inc., Sylacauga • Southern Prestressed Concrete, Inc., Huntsville, Montgomery
ARIZONA Arizona Sand & Rock Co., Prestress Division, Phoenix
CALIFORNIA Basalt Rock Co., Napa • Castcon, Inc., Richmond • Delta Prestressed Concrete, Inc., Sacramento • Ben C. Gerwick, Inc., Los Angeles, San Francisco • Rockwin Prestressed Concrete, Los Angeles • San Diego Prestressed Concrete, San Diego • Wailes Precast Concrete Corp., Los Angeles
COLORADO Hydro Conduit Corp., Denver • Mack Precast Products Co., Adams City • Prestressed Concrete of Colorado, Denver • Rocky Mountain Prestress, Denver • Southern Colorado Prestress Co., Colorado Springs
CONNECTICUT C. W. Blakeslee & Sons, New Haven

FLORIDA Capitol Prestress Co., Jacksonville • Concrete Structures, Inc., North Miami • Dura-Stress, Inc., Leesburg • FinRock Industries, Inc., Orlando • Hughes Supply Inc., Orlando • Jume Prestressors, Inc., West Palm Beach • MeeKins-Bamman Precast Corp., Hallandale, Cocoa • Pre-Cast Corp., Miami • Prestressed Concrete, Inc., Lakeland • Southern Prestressed Concrete Co., Inc., Pensacola, Panama City • Strescon International Inc., Miami
GEORGIA Augusta Concrete Products Co., Inc., Augusta • Concrete Materials of Georgia, Inc., Atlanta • Macon Prestressed Concrete Co., Macon, Atlanta
HAWAII Concrete Engineering Dept. of H. C. & D., Ltd., Honolulu
IDAHO Ready-to-Pour Concrete Co., Idaho Falls, Boise
ILLINOIS Crest/Schokbeton Concrete, Inc., Chicago • Material Service, Division of General Dynamics Corp., Chicago • Midwest Prestressed Concrete Co., Springfield, Rochelle • Precast Building Sections, Inc., Chicago • Swanson Cast Stone Co., Inc., North Aurora

INDIANA Construction Products Corp., Lafayette • Kuert Concrete Inc., South Bend
IOWA A & M Prestress, Inc., Clear Lake • Cedar Rapids Block Co., Cedar Rapids • Midwest Concrete Industries, West Des Moines • Prestressed Concrete of Iowa, Iowa Falls • C. W. Shirey Co., Waterloo • Wilson Concrete Co., Red Oak
KANSAS Prestressed Concrete, Inc., Newton • Sunflower Prestress, Inc., Salina • United Prestress Co., Wichita
KENTUCKY Breeko Industries, Louisville • Dolt & Dew, Inc., Louisville • Precision Prestressed Products Co., Inc., Henderson
LOUISIANA Belden Concrete Products, Inc., New Orleans • Gifford-Hill & Co., Inc., Shreveport • Mid-State Prestressed Concrete, Inc., Alexandria • Prestressed Concrete Products Co., Inc., Mandeville
MAINE Structural Concrete Co., Auburn

MARYLAND Laurel Concrete Products, Inc., Laurel • Strescon Industries, Inc., Baltimore
MASSACHUSETTS New England Concrete Pipe Corp., Boston • San-Vel Concrete Corp., Boston
MICHIGAN American Prestressed Concrete Inc., Detroit • Precast/Schokbeton, Inc., Kalamazoo • Price Brothers Co., Detroit • Superior Products Co., Detroit
MINNESOTA Creflex Companies, Elk River • Lysne Construction, Inc., Austin • Prestressed Concrete Inc., St. Paul • Wells Concrete Products Co., Wells
MISSISSIPPI Jackson Ready-Mix Corp., Jackson
NEBRASKA Ideal Cement Stone Co., Omaha • Nebraska Prestressed Concrete Co., Lincoln • Wilson Concrete Co., Omaha



**CANADA'S HUDSON HOPE
SUSPENSION BRIDGE**
British Columbia, Canada
Engineer:
Phillips, Barratt & Partners
Basic Concept:
Col. H. H. Minshall
Contractor:
Hans Mordhorst, Ltd.

Prestressed Concrete Institute Awards Program

An Award of Merit will be given to each winning entry.

An award will be given for the bridge demonstrating the best application of prestressed concrete.

ELIGIBILITY: The Awards program is open to all registered architects and engineers practicing professionally in the United States, its possessions and Canada, except Directors of PCI and all Active Members and their employees.

SUBMISSION OF ENTRIES: Entries must be made by the designer of record. An entry shall consist of the following:

1. Proper name of entry, type of structure and location, name of architect, engineer and owner, and the date of completion. Anonymity of entries will be preserved throughout the judging. An envelope identifying the entrant and containing the required information shall be affixed to inside back cover of the entry.
2. Concise discussion outlining the advantages achieved by the use of precast or prestressed concrete, typed on 8½" x 11" sheets.
3. A minimum of two 8" x 10" photographs

and one 35 mm color slide of the completed precast or prestressed concrete portions of the structure. Detailed photographs, plans, perspective drawings, or large scale details if considered significant by the entrant.

4. Design computations and specifications if they show to a greater extent the design aspects of the entry.

All the above to be bound in ring or other type binder approximately 10" x 12". Entries to be received not later than May 16, 1966, at the Prestressed Concrete Institute, 205 W. Wacker Drive, Chicago, Illinois 60606.

The Jury of Awards is composed of six nationally recognized architects and engineers (4 architects, 2 engineers).

JURY OF AWARDS: Entries will be judged by the Jury of Awards which includes Morris Ketchum, Jr., FAIA, national president of the American Institute of Architects, W. J. Hedley, national president of the American Society of Civil Engineers, and J. Neils Thompson, national president of the National Society of Professional Engineers.

NOTIFICATION OF AWARD: Notification of Awards to entrants will be made as soon as practicable after judging is completed.

OWNERSHIP AND PUBLICATION OF ENTRIES: All entries and all material submitted with entries shall become the sole property of PCI.

Since one of the purposes of the PCI Awards program is to encourage new and advanced architectural and engineering approaches in the use of precast or prestressed concrete, the Prestressed Concrete Institute shall have the right to make all entries and all material submitted with entries available through publication and dissemination editorially, or in advertisements in its own or other publications. This shall include the right to publish photographs and names of any and all award recipients without compensation.

The decision of the Jury of Awards shall be final.

By taking part in the program, the contestant agrees that he or she shall have no claim against the Jury of Awards or any member thereof, or the Prestressed Concrete Institute or its individual members.

Address all communications concerning this Awards program to:
Prestressed Concrete Institute
205 W. Wacker Drive, Chicago, Ill. 60606

1966 Award Winners



S.A.E. FRATERNITY HOUSE
UNIVERSITY OF FLORIDA
Gainesville, Fla.
Architect:
Gene Leedy



VENTURA SAVINGS AND LOAN
Buenaventura, Calif.
Architect:
William L. Pereira & Assoc.
Engineer:
Woodward Tom Assoc.



MacARTHUR/BROADWAY OFFICE BUILDING
Oakland, Calif.
Architect:
Irving D. Shapiro & Assoc.
Engineer:
T. Y. Lin, Kulka, Yang & Assoc.



COLUMBIA RIVER BRIDGE
near Kinnaird, B.C., Canada
Engineer:
Choukalos, Woodburn & McKenzie Ltd.
with Prof. R. Morandi



MacKINNON AVENUE OVERCROSSING
San Diego, Calif.
Also—
VICENTE CREEK BRIDGE
near Monterey, Calif.
Engineer for both:
California Division of Highways

PRESTRESSED CONCRETE INSTITUTE
205 West Wacker Drive • Chicago, Illinois 60606

Gentlemen: I plan to enter the 1966 PCI Awards Program. Send me illustrated review of past PCI Award winning structures.

Name _____
Firm _____
Address _____
City _____ State _____ Zip _____

PRESTRESSED CONCRETE INSTITUTE
205 W. WACKER DRIVE
CHICAGO, ILL. 60606

ARCHITECTURAL

STRUCTURAL

NEW HAMPSHIRE Structural Concrete Corp., Laconia
NEW JERSEY Braenstress, Inc., Wyckoff • Formigli Corp., Camden • Kenvil Newcrete Products, Kenvil
NEW MEXICO Hydro Conduit Corp., Albuquerque • Ick Crain, Inc., Hobbs • Prestressed Concrete Products, Inc., Albuquerque
NEW YORK Metropolitan Prestressed Concrete, Inc., Whitestone • Prefabricated Concrete Co., New York • Winkrete Pre-Cast Co., Inc., Syracuse
NORTH CAROLINA Arnold Stone Co., Greensboro • Concrete Materials, Inc., Charlotte • North Carolina Products Corp., Raleigh, New Bern • Piedmont Construction Co., Winston-Salem
NORTH DAKOTA North Dakota Concrete Products Co., Bismarck
OHIO Concrete Masonry Corp., Elyria • Price Brothers Co., Dayton

OKLAHOMA Hydro Conduit Corp., Oklahoma City • Thomas Concrete Products Co., Oklahoma City
OREGON Empire Pre-Stress Concrete of Oregon, Portland • Morse Brothers, Harrisburg • Ross Island Sand & Gravel, Portland
PENNSYLVANIA Dickerson Structural Concrete Corp., Youngwood • Eastern Prestressed Concrete Corp., Philadelphia • New Enterprise Stone & Lime Co., Inc., New Enterprise • Pennsylvania Prestress, Inc., York • Schuykill Products, Inc., Cressona • Turbotville Black Co., Turbotville
SOUTH CAROLINA Greenville Concrete Co., Greenville • Prestress Concrete Co., Charleston
TENNESSEE Breeko Industries, Nashville, Franklin • Dixie Concrete Pipe Co., Inc., Nashville • Knox Concrete Products, Inc., Knoxville

TEXAS Atlas Structural Concrete, El Paso • Baass Concrete Co., Victoria • Crowe-Gulde Prestressed Concrete Co., Amarillo • Span, Inc., Dallas
UTAH Otto Buehner & Co., Salt Lake City • Utah Prestressed Concrete Co., Salt Lake City
VIRGINIA Concrete Structures, Inc., Richmond • Shockey Bros. Inc., Winchester • Southern Block & Pipe Corp., Norfolk
WASHINGTON Associated Sand & Gravel Co., Everett • Central Pre-Mix Concrete Co., Spokane • Concrete Technology Corp., Tacoma
WISCONSIN Eau Claire Prestress, Inc., Eau Claire • Hufschmidt Engineering Co., Milwaukee • F. Harbail Co., Green Bay • J. W. Peters & Sons, Inc., Burlington • Prestressed Concrete Products Corp., Verona • Spancrete Industries, Inc., Milwaukee • Tri-City Concrete Products, Wisconsin Rapids

CANADA Alberta: Con-Force Products Ltd., Calgary, Edmonton, Lethbridge • Stoy Concrete Products Ltd., Calgary • **British Columbia:** Concrete Technology (B.C.) Ltd., Richmond • Graybar Precast Limited, New Westminster • Superior Concrete Products Ltd., North Vancouver • **Manitoba:** Halls Associates Mfg. Ltd., Winnipeg • Precast Ltd., Winnipeg • **Supercrete Ltd., St. Boniface • New Brunswick:** Joseph A. Likely Ltd., St. John • **Strescon Limited, Lancaster • Newfoundland:** Lundrigan's Concrete Ltd., Corner Brook • **Nova Scotia:** Pyramid Structural Concrete, Ltd., Halifax • **Ontario:** A.B.C. Structural Concrete Ltd., Brampton • Artes Concrete Ltd., Maple • Bear Precast Concrete Ltd., Scarborough • Cooke Structures, Ltd., Burlington • Pre-Con Murray Ltd., Toronto • Ryan Builders Supplies Ltd., Windsor • Sandrin Precast Ltd., Weston • Schell Industries Ltd., Woodstock • Siporex Co., Toronto • Standard Prestressed Structures Ltd., Toronto • Wilson Concrete Products Ltd., Belleville • **Quebec:** Gresham & Archibald Ltd., Montreal • Dufresne Engineering Co. Ltd., Montreal • Francon Ltd., Montreal • Schokbeton Quebec Inc., St. Eustache • Spancrete Ltd., Longueuil

This advertisement sponsored by PCI Active Members

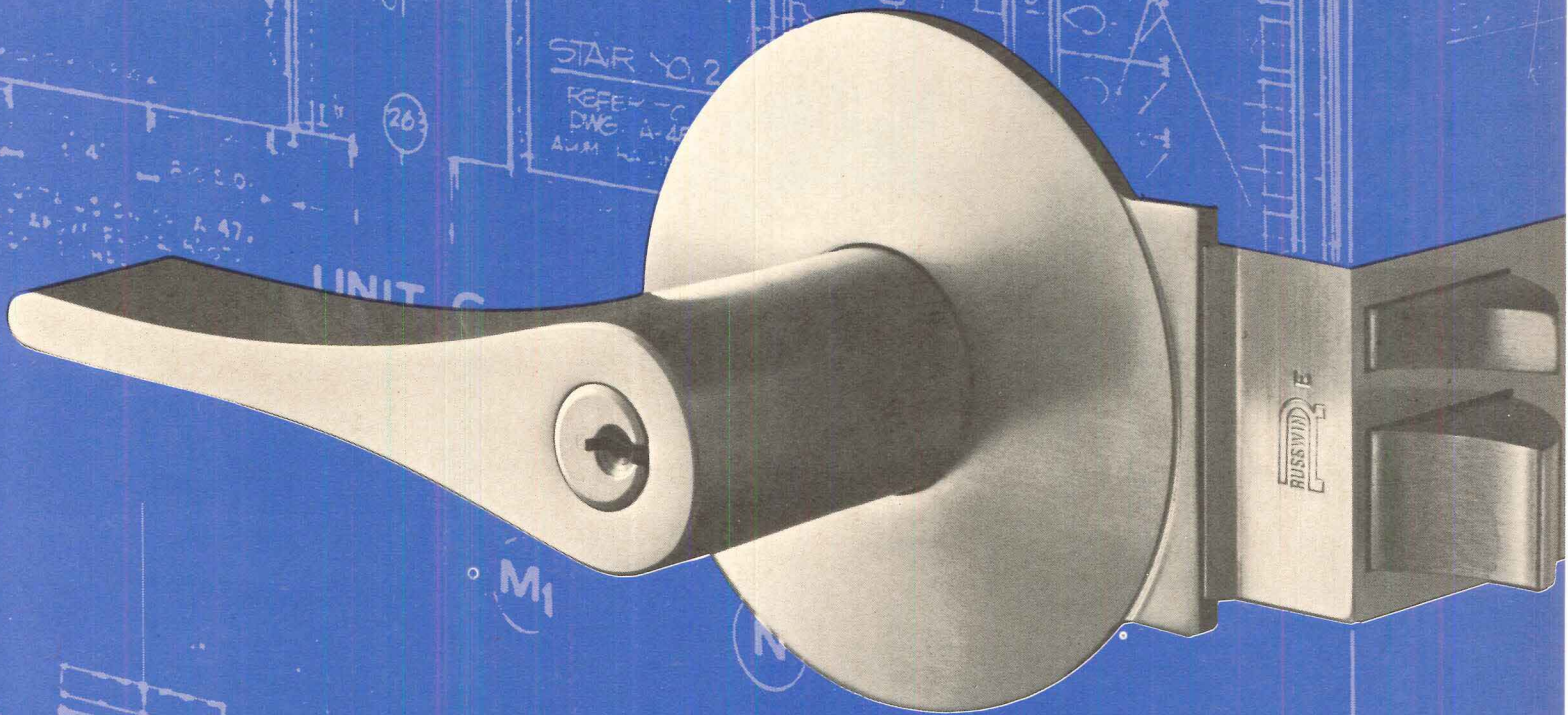
For more data, circle 12 on inquiry card

Planned for wear and tear!

Planned to resist high-traffic abuse.
Planned to provide reliability where the
action is heaviest . . . in schools,
offices, hospitals, and stores. The
Russwin Uniloc* Lockset! Here is stylish
security in a choice of dramatic doorware
designs. Functional beauty with built-in
stamina. Factory assembled units go in fast.
Can't be installed wrong. Outlast the
building. Precision parts work smoothly
millions and millions of times.
For action on your specifications, call
Russwin, Division of Emhart Corporation,
New Britain, Connecticut 06050.
In Canada — Russwin Lock Division,
Belleville, Ontario.

*Trademark





COPY DOOR

CLASSROOM

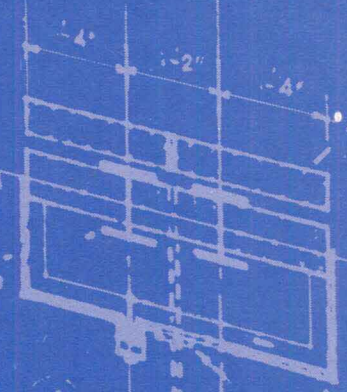
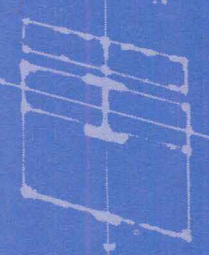
CORRIDOR

STAR NO. 2

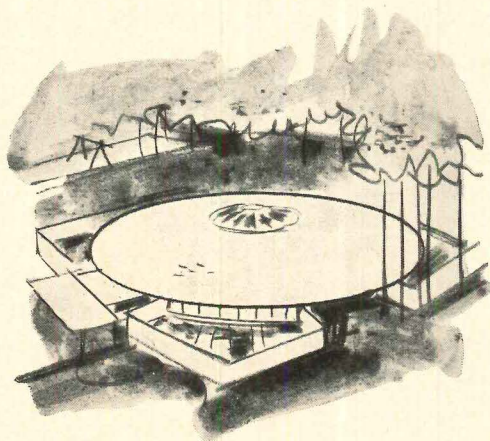
BOYS TOILET RM.

GRS TOILET RM.

RUSSWID



**We don't care what
shape you give a school.
Nesbitt unit ventilators
quietly blend with any
room, with the
building, with
each other.
Nothing could
be more fitting.**



Hexagon structures, irregular shaped rooms, domed ceilings — these are the new modern shapes in schools that call for a new flexibility in climate control equipment. Nesbitt unit ventilators were never more appropriate for air conditioning and heating.

Why? Because pipes go where ducts can't. The simplicity of supplying chilled water or hot water to unit ventilators permits you to put them anywhere — on the floor or ceiling — concealed or exposed. What could be more fitting.

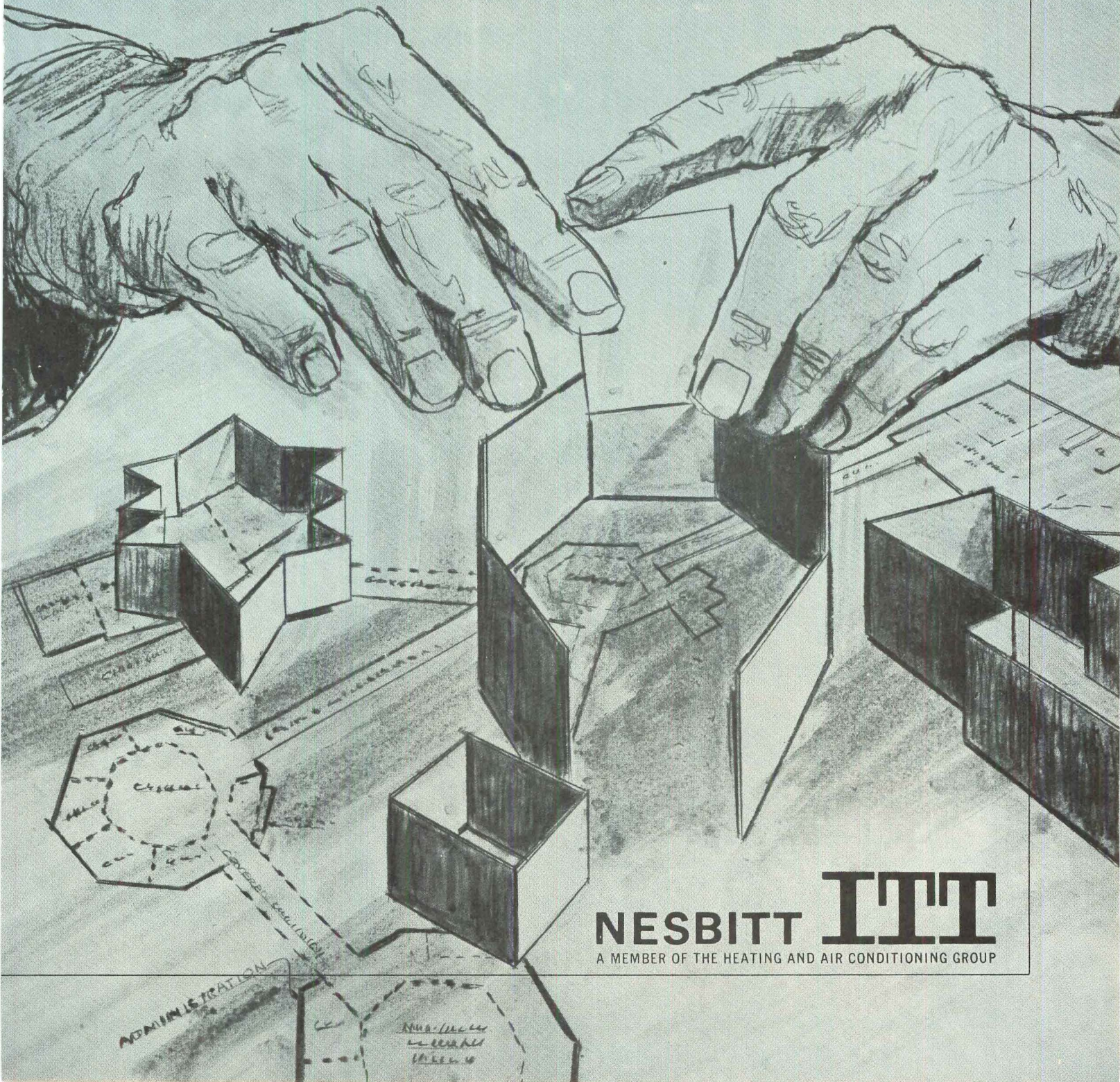
What's more, the Nesbitt line is quiet. Visually quiet...styled to work right along with your designs. Where you want the equipment visible, Nesbitt colors, textures and patterns form an integral part of the line so that each unit blends with the room, with the building, with each other.

It's no accident. The entire Nesbitt line was styled by Paul McCobb, one of America's leading contemporary designers. Now you have the freedom to organize various arrangements of Nesbitt classroom cabinets

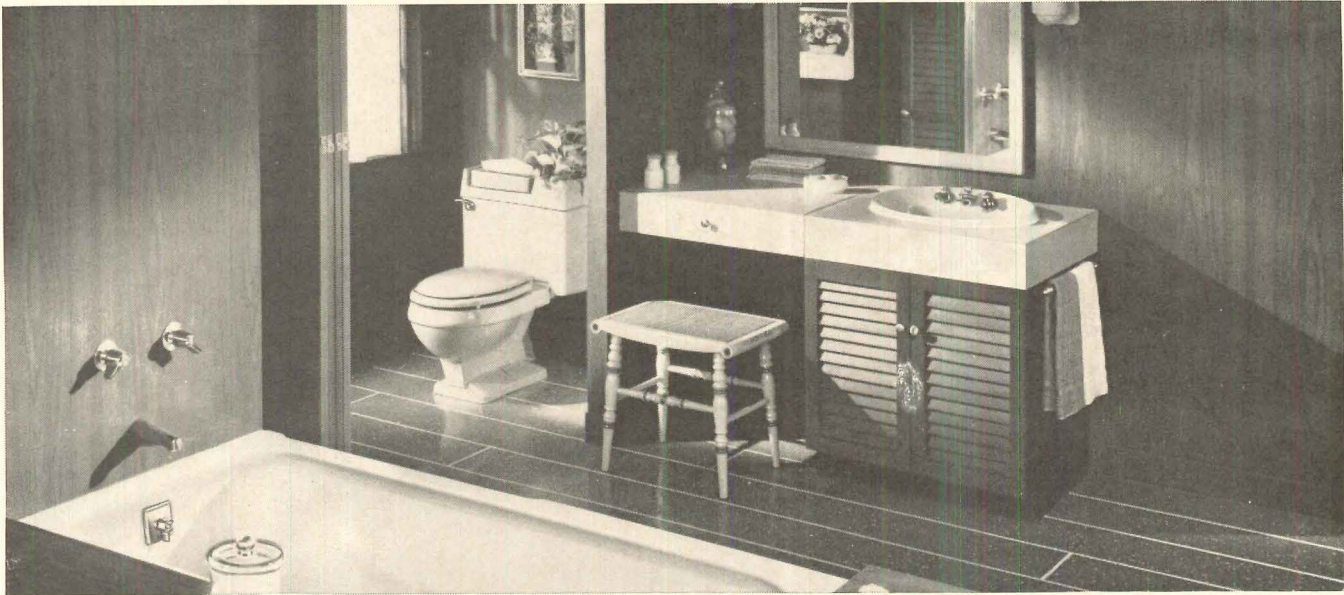
and select the units that unify all your design elements.

Whether you're creating a new building or planning a renovation, think about Nesbitt—the year-round unit system for round shapes, square shapes, any shapes.

Need more proof? A Nesbitt representative will be glad to talk to you about the versatile unit system in the next school you design. Write ITT NESBITT, a division of International Telephone and Telegraph, Philadelphia, Pa. 19136.



NESBITT ITT
A MEMBER OF THE HEATING AND AIR CONDITIONING GROUP



People who come from homes furnished like this...

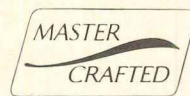


...return to hotels and motels furnished like this

People like homey surroundings. That's why the finest hotels and motels use Eljer Master Crafted residential fixtures. Their color, style and quality make even the most particular guest feel at home.

Eljer Master Crafted fixtures are designed to require minimum upkeep with smooth, flowing lines that are easy to clean. Their lustrous finish withstands hard usage. Their exposed surfaces are acid resistant to preserve their inherent good looks and provide the ultimate in sanitation. Finally, they cost no more than conventional fixtures and are available in white or color.

See your Eljer representative for complete details. Or write to Wallace-Murray Corporation, Eljer Plumbingware Division, Dept. AR, P.O. Box 836, Pittsburgh, Pa. 15230.



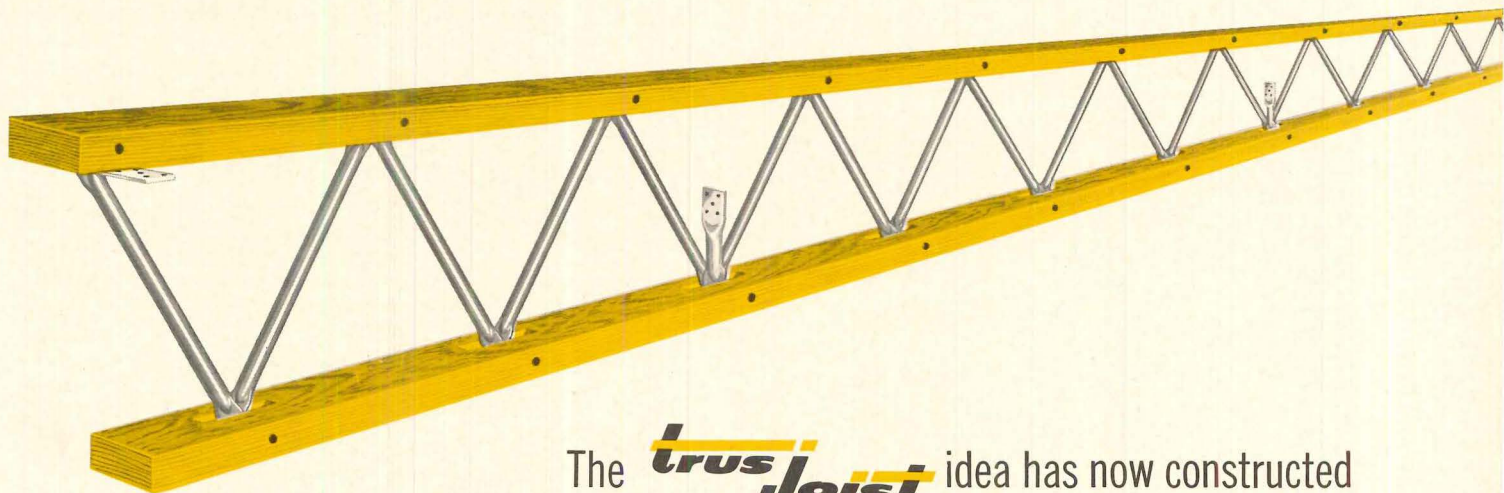
ELJER
SINCE 1904 FINE PLUMBING FIXTURES

For more data, circle 15 on inquiry card



No army
can withstand
the strength of
an idea
whose time has come

—Victor Hugo



The **Trus Joist** idea has now constructed more than 4,000 schools, shopping centers and commercial buildings of every type

Trus Joist is the perfect blend of wood and steel for roof and floor structural systems... light in weight and yet provides clear spans up to 100 feet.

All this plus custom design and three week delivery.

Profiles? Parallel, tapered, pitched, curved, or almost any shape...and economy is still the byword.

Many other savings too — T J's light weight economizes on footings, foundations and bearing walls. Most sizes can be erected by two job carpenters. Nailable top and bottom

chords provide for easy attachment of low cost roofing, ceiling or flooring materials — open webs for duct work.

Deflection is minimal even in long spans while temperature change poses no problems.

More information? Load tables? Engineering data? Write for our free design manual.

Trus Joist is a money-saving, work-saving system that's balanced, precision engineered and custom made to the architect's specifications.

Good idea?

... an idea whose time has come.

SEE
US IN
SWEET'S



Pats. No. 3,137,899 & 3,019,491
Other Pats. Pending

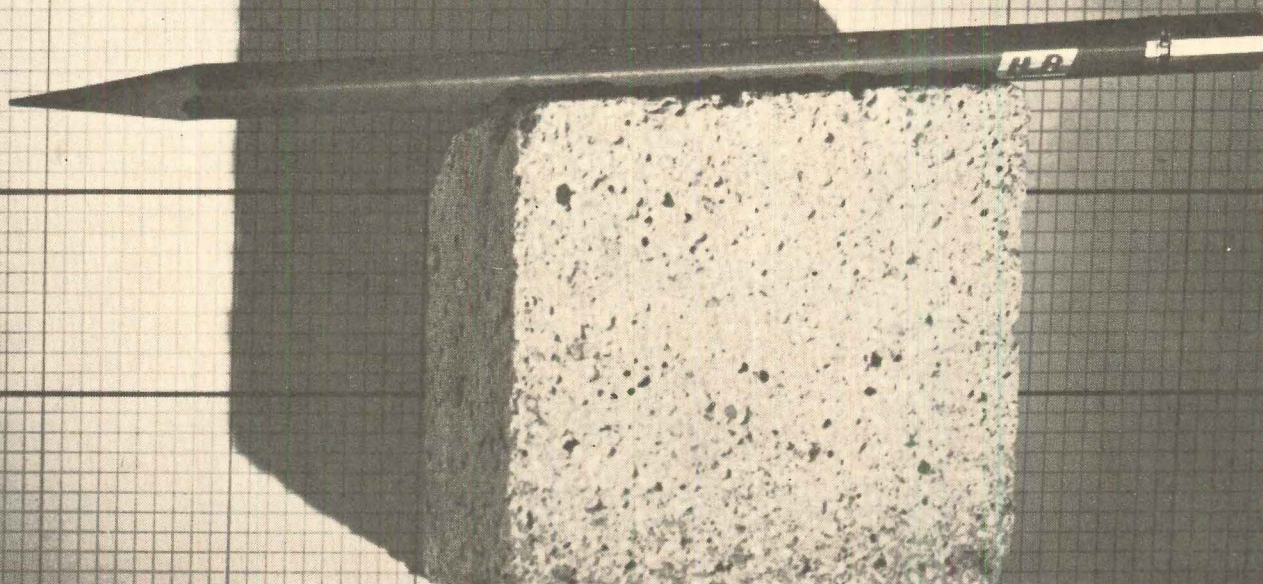


GENERAL OFFICES
BOISE, IDAHO
RT. 1, HIWAY 20
83702

Plants at: BOISE, IDAHO ■ PORTLAND, ORE. ■ SAN FRANCISCO ■ PHOENIX, ARIZ. ■ DUBUQUE, IOWA ■ LOS ANGELES ■ Soon in: ATLANTA, GA. ■ CALGARY, CANADA

For more data, circle 16 on inquiry card

a new slant on roof insulation



Actual size cube, cut from Permalite roof deck.

Permalite lightweight aggregate concrete gives you all the insulation you'll ever need on a flat roof deck. Just pour it on. And while you're pouring, give yourself a bonus with a **slope to drain**.

Form saddles, cants and crickets too. No problem. Easily placed; strong; fast drying. What could be smoother. **One** application with **one** material poured in place gives you a clean, permanent, insulated deck with "K" factors from 0.51 to 0.77—with positive drain in a pitch as low as $\frac{1}{8}$ " to 12".

Cost? **Less** than other monolithic decks of equal insulating value. Ask your local Permalite man, or write for more information.

Permalite®

World's Largest Selling Perlite Aggregate



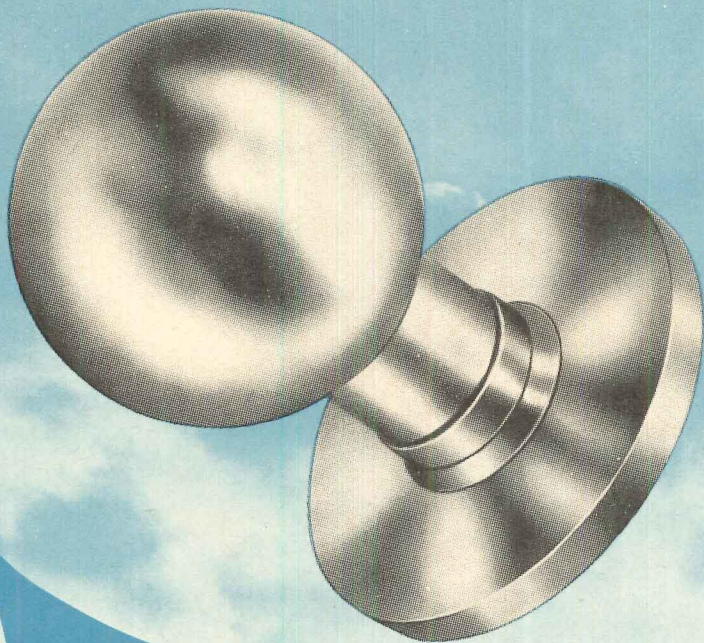
BULLETIN G3-65
Permalite concrete,
plaster and masonry fill.

Great Lakes Carbon Corporation • 630 Shatto Place, Los Angeles, Calif. 90005

For more data, circle 17 on inquiry card

LOCKWOOD'S New Tempest Design

Takes the World BY STORM



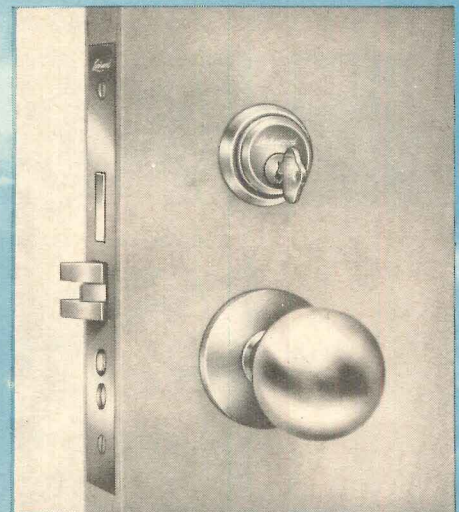
There seems to be something about a perfectly **round** knob and a perfectly **round** rose and a perfectly **round** cylinder that makes architects wild about putting them on a perfectly **SQUARE** door.

Maybe it's because this Tempest trim is an approach to design in builders' hardware that's as fresh as an ocean breeze.

Or it could be that they just like the solid feel of that round knob in their hands.

We like to think it goes deeper than that because underneath that Lockwood trademark is the finest mortise lock ever made.

With or without Tempest trim, it will run circles around any other lock in the world.



Tempest's big sister, the Sphere Design, features a 2 1/4" diameter knob.



LOCKWOOD HARDWARE DIVISION

INDEPENDENT LOCK COMPANY **IDCO**
Fitchburg, Massachusetts

For more data, circle 18 on inquiry card

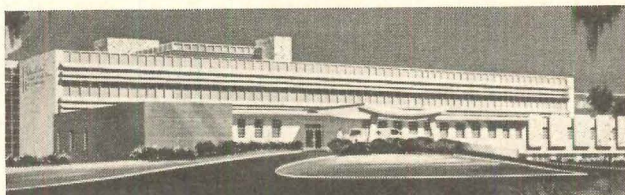
for hospital walk-in



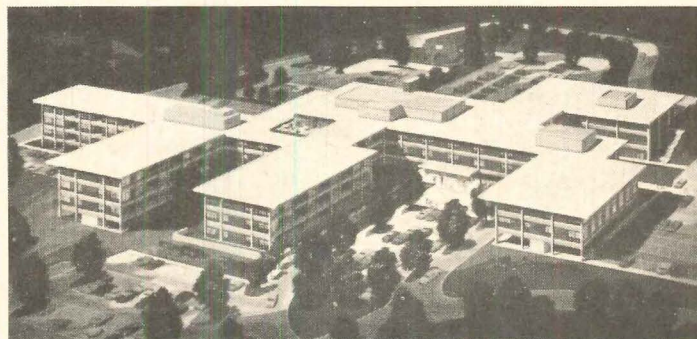
Maryland Veterans
Administration Hospital



Mercy Hospital
Wilkes-Barre, Pennsylvania



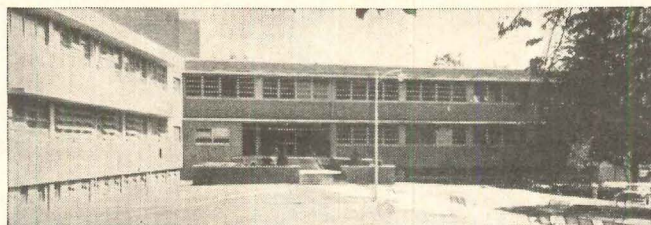
Florida Sanitarium and Hospital
Orlando, Florida



Greater Baltimore Medical Center
Baltimore, Maryland



Eastern State Hospital
Williamsburg, Virginia



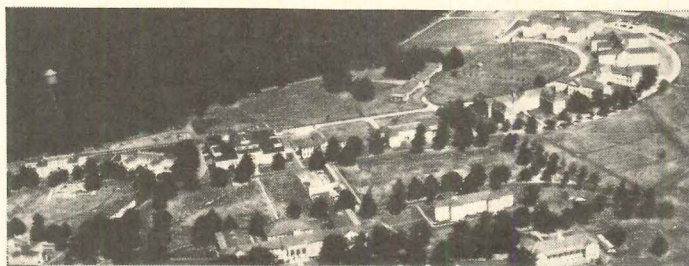
Norristown State Hospital
Norristown, Pennsylvania



New York State Rehabilitation Hospital
West Haverstraw, New York



John F. Kennedy Memorial Hospital
Stratford, New Jersey

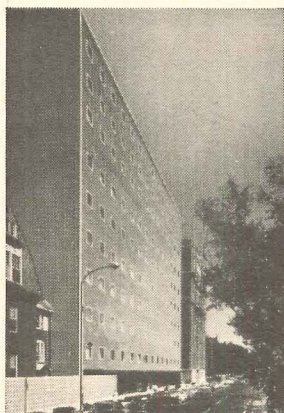


Veterans Administration Hospital
Perry Point, Maryland



University of Colorado Medical Center
Denver, Colorado

refrigeration needs... specify Bally prefabs

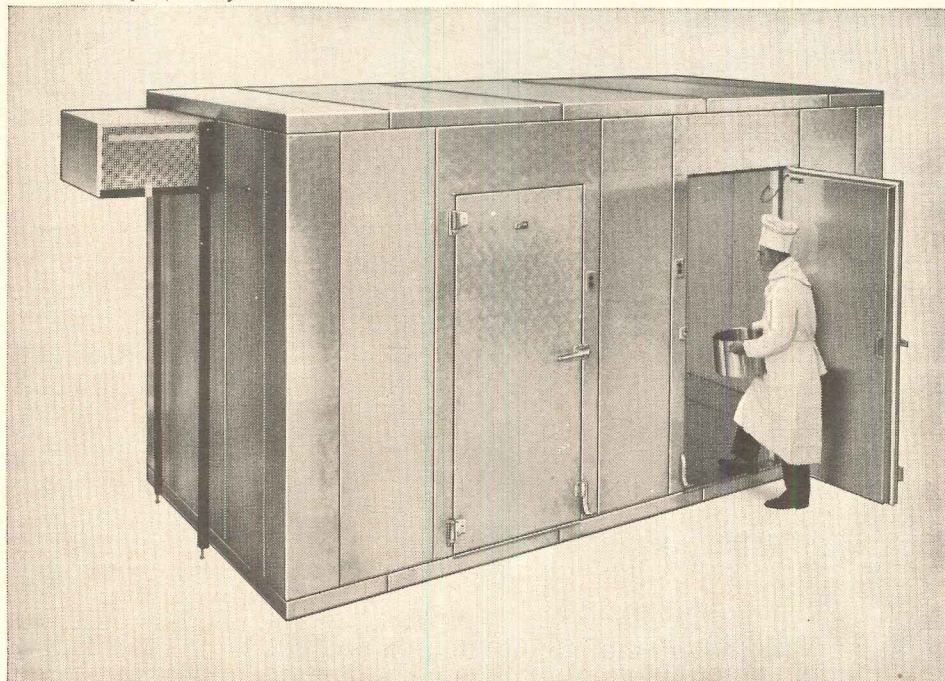


Hospital of the University
of Pennsylvania
Philadelphia, Pennsylvania

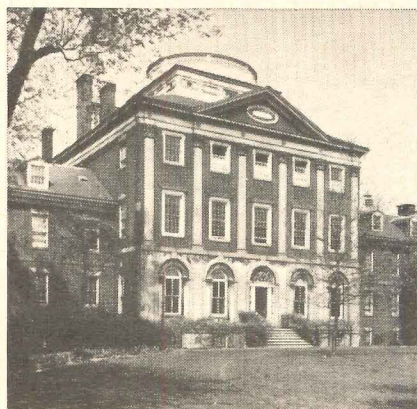
These hospitals, like many other institutions and places of business, are benefiting from Bally Walk-In coolers and freezers with revolutionary construction techniques and design features. Bally has set a new high in refrigeration efficiency.

When you specify Bally you can be sure that your clients will get many advantages not found in conventional prefab Walk-Ins...never available in on-the-site "built-ins"...and at far lower cubic foot cost than "reach-ins". There is never a need to accept an "or equal" or a substitute. Bally Walk-Ins are available to all dealers everywhere at uniform published prices. *Write for Fact File with new brochure, specification guide and sample of urethane wall.*

See Sweet's File 25a/Ba.



Bally Case and Cooler, Inc.
Bally, Pennsylvania



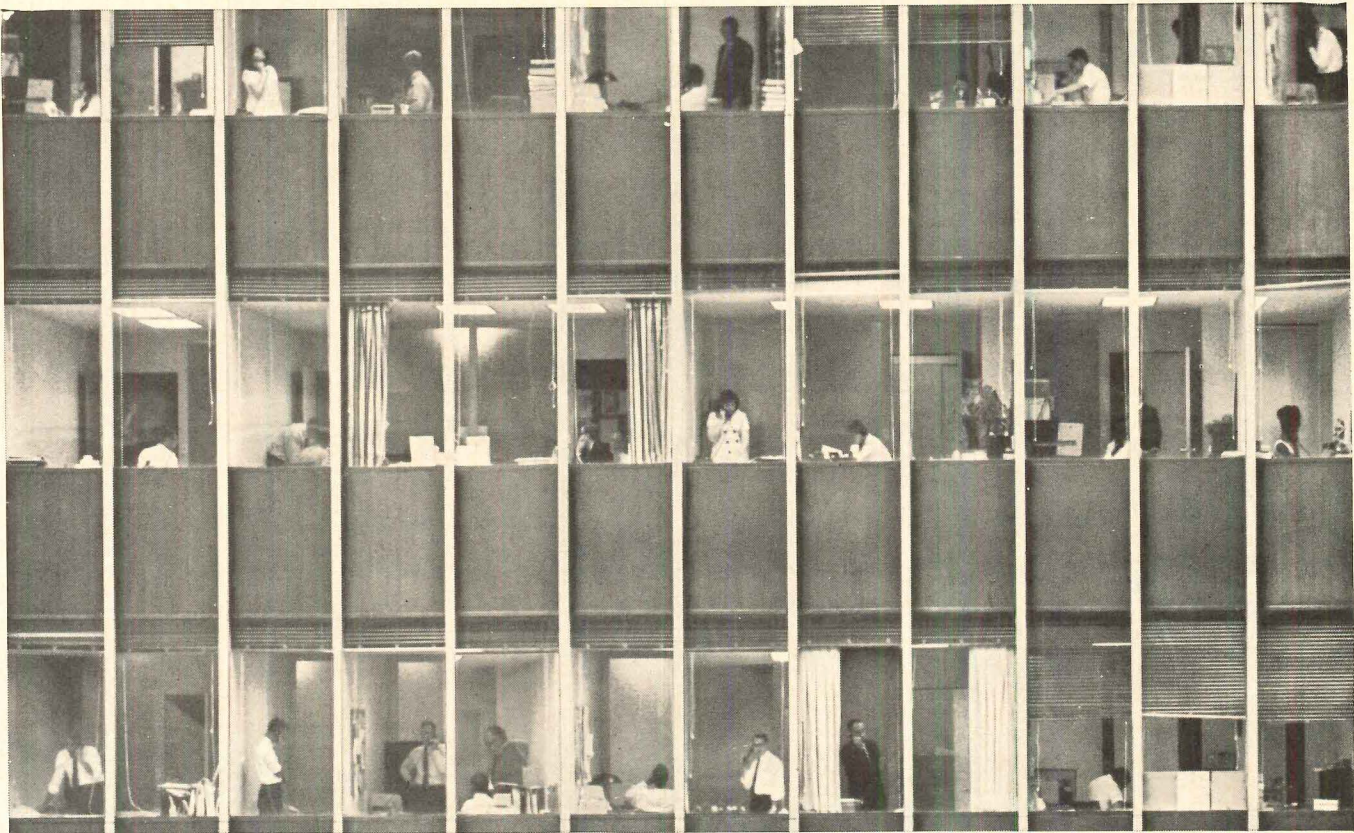
Pennsylvania Hospital
Philadelphia, Pennsylvania



Sinai Hospital of Baltimore, Inc.
Baltimore, Maryland

Copyright 1965, Bally Case and Cooler, Inc., Bally, Pennsylvania

For more data, circle 19 on inquiry card

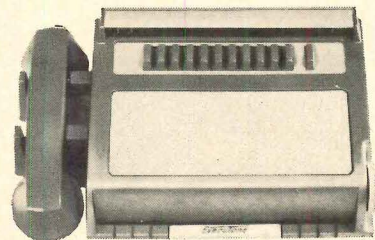


Are you 500 people?
Or 5?



Executone intercom can cut your monthly phone costs.

And pay for itself in the bargain. Because an Executone company-wide intercom (500-station or 5) reduces costly callbacks. Breaks switchboard bottlenecks. Takes inside calls off your phones. Frees lines for incoming-outgoing *customer* calls. Tie in our pocket-page or a sound system and you get those important calls even when you're not at your desk. You're in touch with anybody and everybody in your company—and vice versa—instantly. Provable savings on your monthly phone bill will pay for your Executone system . . . giving you the benefits of *two* channels of communication for less than the cost of one! Whatever your business. You can depend on it.



Executone

For a portfolio of literature showing how Executone intercom can cut your phone costs, write Executone, Inc., Dept. M-5, Austell Place, Long Island City, N. Y. 11101

For more data, circle 20 on inquiry card

For more data, circle 21 on inquiry card

Our wallboard has the lowest cost two hour fire rating:

Bestwall is the original glass fiber reinforced wallboard. Bestwall Firestop, in various assemblies, meets Building Code Requirements and carries the Underwriter's Laboratories, Inc. (UL) Label for ratings from 45 minutes to 3 hours—with the economical Semi-Solid Partitions earning 1, 2 and 3 hour ratings.

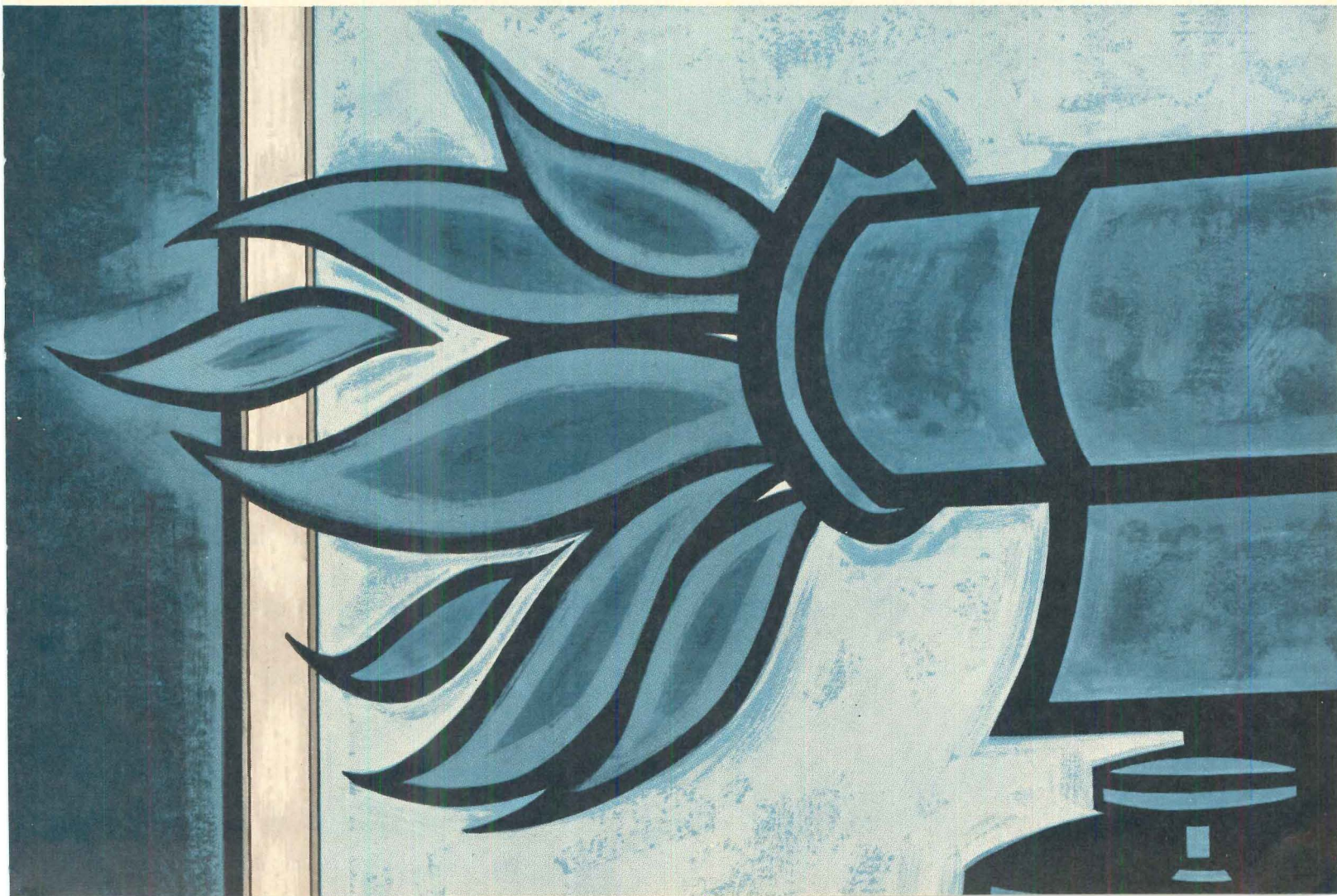


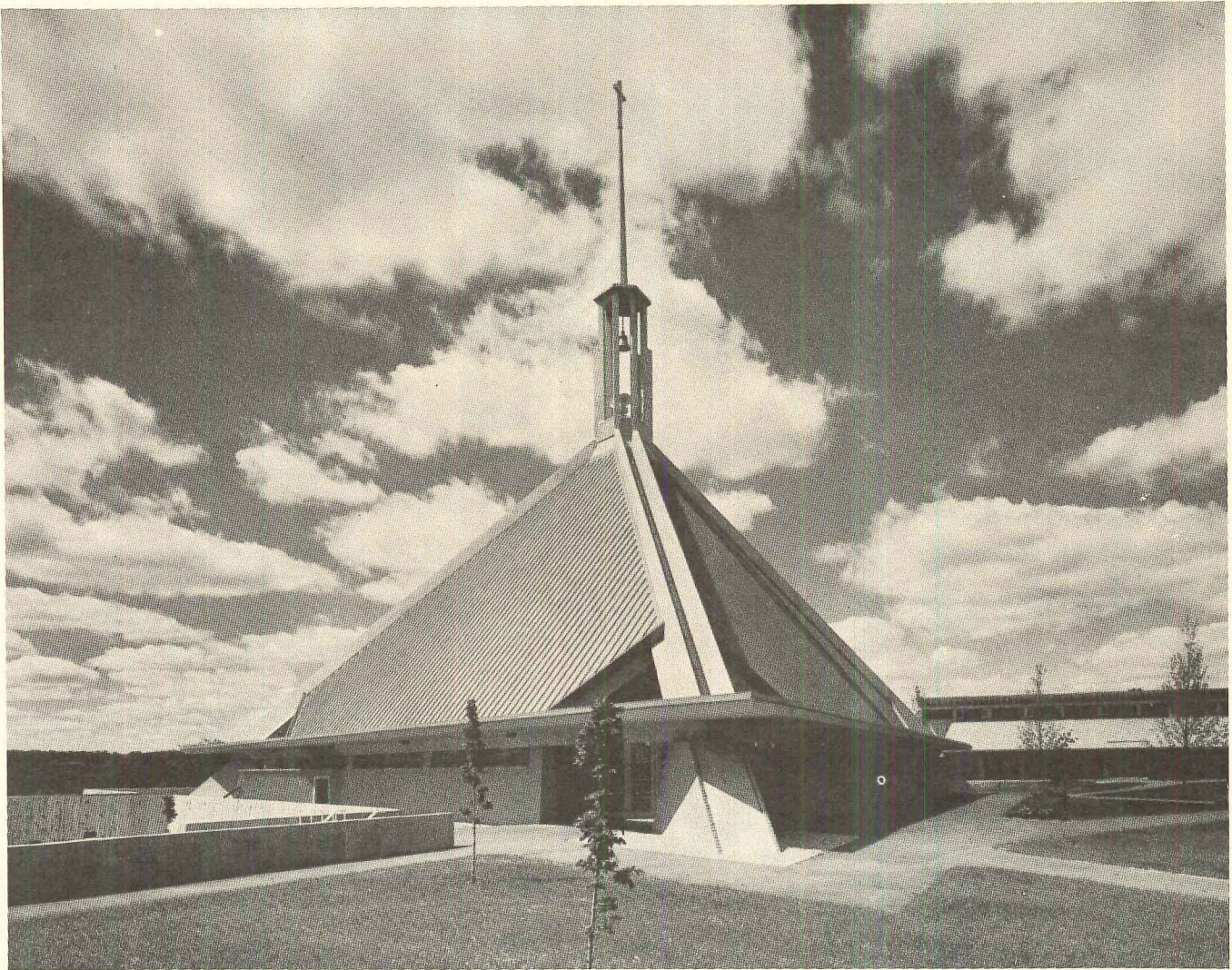
GEORGIA-PACIFIC



GYPSUM DIVISION

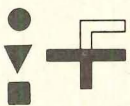
2 INDUSTRIAL BOULEVARD, PAOLI, PENNSYLVANIA





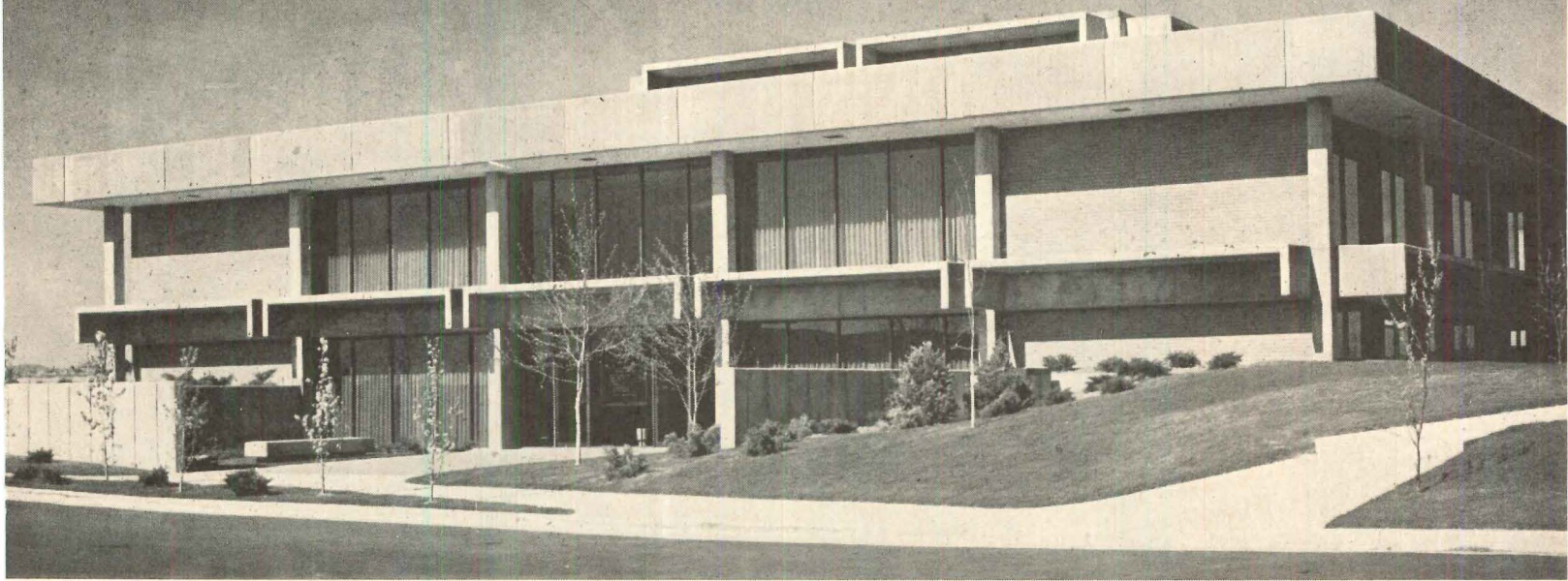
Concordia Lutheran Junior College — A College of the Lutheran Church, Missouri Synod—Ann Arbor, Michigan
Architect: Vincent G. Kling, FAIA Philadelphia, Pa. Roofing Contractor: Detroit Cornice & Slate—Detroit, Michigan

ROOFS, ARCHITECTS, AND IMAGINATION. On the one hand, there is a renewed interest in visually significant roofs. And on the other, there is a notable increase in the specification of Follansbee Terne. We believe that both of these trends happily reflect a greater emphasis on purely imaginative elements in contemporary architecture, a welcome departure from the "anti-septic line". And both are essentially interdependent, for terne is unique among roofing materials in that it provides maximum creative latitude at relatively modest cost.



FOLLANSBEE STEEL CORPORATION Follansbee, West Virginia *Follansbee is the world's pioneer producer of seamless terne roofing*

For more data, circle 22 on inquiry card



The Denver Tech Center chooses Arkla and Gas for "the ultimate" in multi-zone air conditioning.

Control Data Corporation and Honeywell, Inc., already have built facilities at the new Denver Technological Center. Part of the planned creative environment: Arkla Chillers for cooling.

The Arkla units furnish cold water and gas-fired boilers supply hot water to a highly flexible dual-duct distribution system. Mixers at the various zones blend warm and cold air so precisely that personnel in adjoining offices can dial temperature differences

of 6 to 8 degrees. And the quiet absorption cooling system requires little maintenance.

Gas costs for this automatic year-round conditioning are very low. Learn more about the flexibility, efficiency and economy of Arkla Gas equipment. Call your local Gas Company Sales Engineer. Or write: Arkla Air Conditioning Company, 810 East Franklin, Evansville, Ind.

AMERICAN GAS ASSOCIATION, INC.



For heating and cooling... Gas makes the big difference

For more data, circle 33 on inquiry card

**A HILLYARD SPECIFICATION
FOR RECREATION AND
ATHLETIC FACILITIES**



New Mid-South Coliseum, Memphis, Tenn. / Architects: Furbringer & Ehrman; Robert Lee Hall & Assoc.

**HAVE A HILLYARD ARCHITECTURAL CONSULTANT
DETAIL SPECIFICATIONS ON
TROPHY[®] GYM FLOOR FINISHING**

DESCRIPTION: A seal and a finish specially formulated for wood gymnasium floors to give a light, durable, slip resistant playing surface that will resist rubber burning and marking.

SPECIFICATION AND HOW TO APPLY: An epoxy seal and finish. Apply with lambswool applicator. Seal coat fills porous wood surface. Additional seal coat may be required on highly porous wood. Game markings, using Hillyard Gym line paint, are painted in before finish coats are applied. Two finish coats are required. See Sweets Arch. File for detailed specification.

COVERAGE (Average): Trophy Seal — 350 sq. ft. per gallon. Trophy Finish — 500 sq. ft. per gallon.

TECHNICAL DATA: N.V.M.: Trophy Seal—28%, Trophy Finish—40%. Color: Gardner (typical) 4-5 (extremely light). Drying time: 7 hours to overnight (depending on humidity). Produces a glare free surface with proper light refraction. Exceeds all standards for abrasion resistance.

Non-darkening—eliminates need for removing or sanding off finish for 10-15 years.

GUARANTEE: Controlled uniformity. Vacuum-packed. When applied according to directions and under supervision of a Hillyard representative, all claims for the product are guaranteed—provided containers are received at job site with factory seal unbroken.

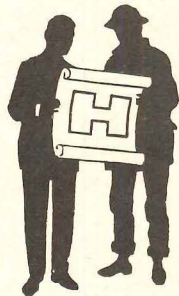
MAINTENANCE: Regular treatment with Hillyard Super Hil-Tone dressing for conditioning and dust control.

APPROVALS: Maple Flooring Mfrs. Assn., Institutional Research Council. Listed by Underwriters' Laboratories as "slip resistant". In use: 12 years on all major basketball tournament floors.

REFERENCES: Sweets Architectural File, section 13n
Hi

A.I.A. File No. 25G
A.I.A. Building Products Register

Free follow-up "job captain" service protects your specifications. A graduate Hillyard Architectural consultant will gladly consult with your specification writers on proper, approved procedures and materials for the original treatment of any type floor you specify. Write, wire or call collect.



HILLYARD
FLOOR TREATMENTS

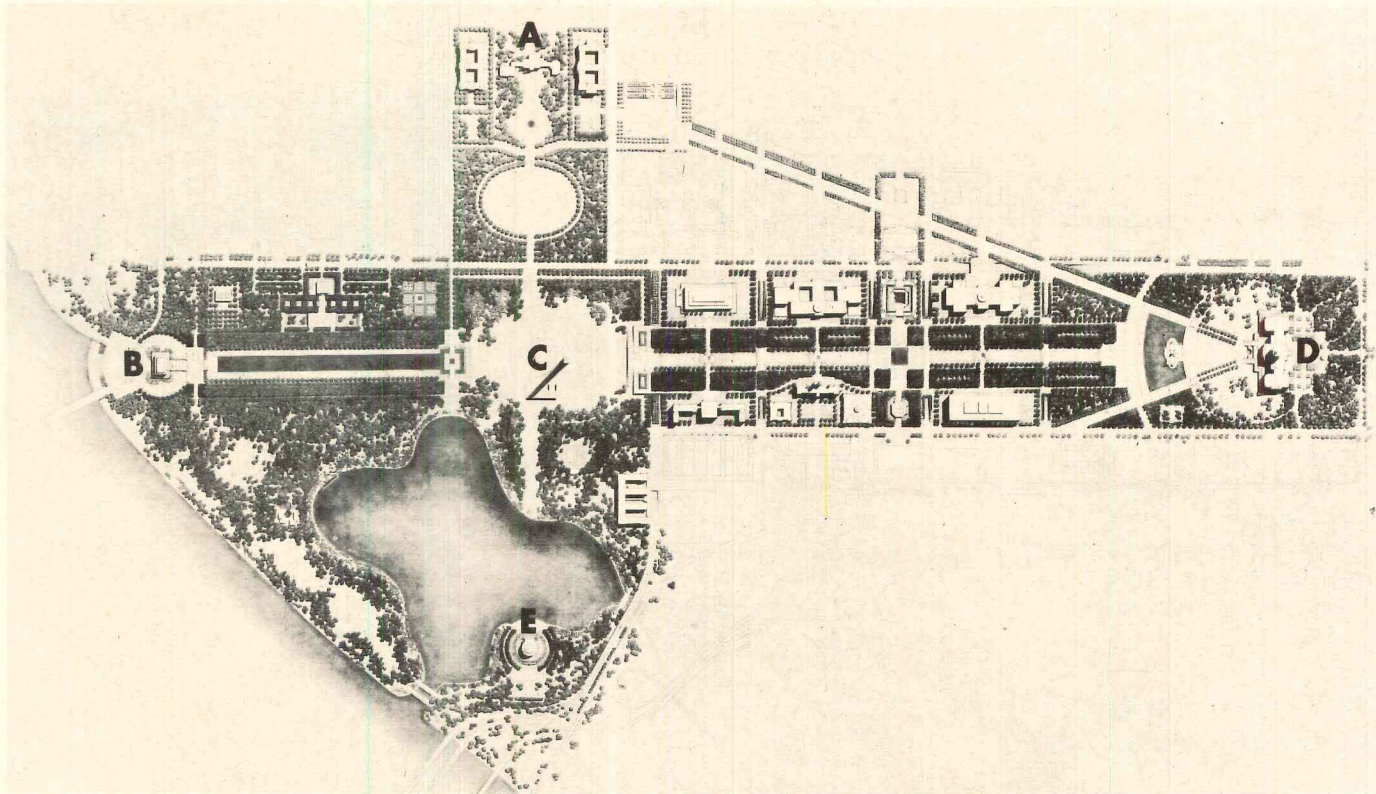
ST. JOSEPH, MISSOURI U.S.A.
TOTOWA, NEW JERSEY
SAN JOSE, CALIFORNIA



SINCE 1907

The most widely recommended and approved treatments for every surface

For more data, circle 34 on inquiry card



A: White House; B: Lincoln Memorial; C: Washington Monument; D: The Capitol; E: Jefferson Memorial

Mall plan will accommodate high density of tourists

The long-range plans for development of the Capitol Mall in Washington, D.C., prepared by Skidmore, Owings & Merrill, were designed "to come up with a gracious way of handling many people." The plan calls for depressing all roads underneath the Mall from the Capitol to the Washington Monument. Trees would be planted at close intervals on either side of the Mall to create a formal atmosphere. From the Washington Monument to the Lincoln Memorial, the reflecting pool would be lengthened to surround a pedestrian island. North of the pool, where there are now office buildings, would be located a tourist center, a restaurant and a rose garden.

The highly formal east-west mall would be in marked contrast to a north-south park which would extend from the White House, intersecting the formal axis at the Washington Monument, to the Jefferson Memorial across the Tidal Basin. A Japanese tea garden would be located behind the cherry trees along the Tidal Basin, and cherry

trees would be added around the Washington Monument grounds. Also included in the plan would be parking areas removed from the mall's neighborhood, with shuttle buses providing commutation. Only minibus vehicles would be permitted along the Mall. The Mall itself, from the Capitol to the

Washington Monument, would be dug out slightly in between blocks so that a series of levels and terraces would be provided.

The Board of Directors of the American Institute of Architects passed a formal resolution commending the Mall proposals. Morris Ketchum Jr., president of the A.I.A., praised the plan as "magnificent planning which, like all master plans, is flexible. The basic principles are admirable. The plan will convert the Mall to a far more lively area, attracting people at all hours . . ."

Weaver will lead HUD, President finally announces

Dr. Robert C. Weaver was named by President Johnson last month—at last—to head the new Department of Housing and Urban Development. Named as Under Secretary was Robert C. Wood, head of the Political Science Department at the Massachusetts Institute of

THE RECORD REPORTS ON:

Physical education building lighted by clerestory	66
Student housing has 268 private patios	66
Design stresses "sobriety and proportion"	66
Hong Kong pier nears completion	122
Headquarters combines warehouse and offices	286
Office building renovation respects former traditions	290
Gymnasium facility is designed for sloping site	294
Texas apartments designed for difficult site	298

Technology. The appointment of Dr. Weaver, who had been Administrator of the Housing and Home Finance Agency, ended a long period of speculation over whether or not the President would appoint him and why the appointment was delayed. HUD has been in existence since November 9, 1965 without a Secretary.

Mr. Johnson said of Dr. Weaver, "I believe him to be exactly the right man to pursue the goal of bringing the full measure of the Great Society to our urban areas and of carrying forward the major new urban programs that I will propose to the Congress . . ."

Roche will design post office—Cummins contributes fees

The Columbus, Indiana firm of Cummins Engine Company, as part of its architectural enhancement program, has donated the services of Kevin Roche, chief designer of Eero Saarinen and Associates, for the design of a post office in that city. "As far as we know," said Postmaster General Lawrence O'Brien, "this is the first time the services of a nationally prominent architect have ever been donated to the Post Office . . ."

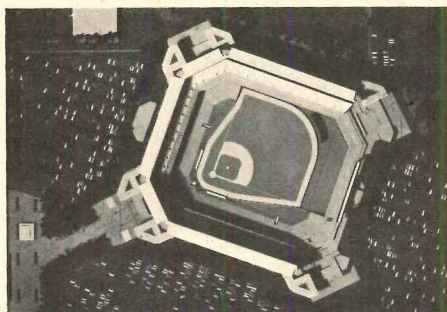
President Johnson proposes Department of Transportation

In his State of The Union message, delivered on January 12, President Johnson not only made it plain he will continue to push his "Great Society" programs, but suggested some new ones. Of special interest to architects are the President's proposals dealing with urban development, pollution and transportation.

President Johnson proposed a Cabinet level Department of Transportation to correlate activities presently scattered in 35 government agencies.

In the urban development area, the Chief Executive promised to submit proposals for rebuilding "entire sections and neighborhoods containing in some cases as many as 100,000 people." His proposals will "reward planning for the growth of entire metropolitan areas."

As for the pollution problem, the President said: "We must undertake a cooperative effort to end pollution in several river basins—making additional funds available to help draw the plans and construct the plants that are necessary to make the waters of our entire river systems clean—and make them a source of pleasure and beauty for all of our people."



Philadelphia Phillies reject rectangular stadium plan

A controversy has arisen in the plans for a new multi-purpose stadium in Philadelphia (January, page 43). According to George Harrison, executive vice president of the Philadelphia Phillies Baseball Club, the program favors football rather than baseball. The football people need 65,000 permanent seats with 7,000 temporary seats, where the baseball needs call for 45,000 to 50,000 seats. In addition to the over-all size of the structure, Mr. Harrison objects to "the rectangular confirmation of the structure which parallels the foul lines beyond first and third bases, so that spectators seated in these areas would be oriented towards the outfield and would have to turn their heads to see the infield." Mr. Harrison said that he realized that a perfect compromise in a multi-purpose stadium was impossible, but revisions have to be made.

The stadium is a joint venture of George M. Ewing Company, architects and engineers; Stonorov and Haws, architects and planners; and McCormick-Taylor Associates, consulting engineers.



... the last white line is crossed

One-time-Stanford-tackle John Carl (Rock) Warnecke was not only nominated as a Sports Illustrated Silver Anniversary All-American for "exceptional success in life." He won.

Museum honors Mies with exhibit on 80th birthday

The Museum of Modern Art is honoring Ludwig Mies van der Rohe on the occasion of his 80th birthday with an exhibit of more than 70 drawings (from the Museum's collection) of projects and buildings, including the famous 1919 drawings of an all-glass skyscraper proposed for Berlin. The exhibit will run from February 2 to March 20. Mies's actual date of birth is March 27, 1886.



Multi-use Learning Center offers maximum flexibility

The Multi-use Learning Center developed for the Phoenix Union High School System in Phoenix, Arizona is a circular building containing four 200-seat lecture halls and a central unit consisting of a stage and 600 seats. By use of turntables under the four lecture halls, the central auditorium can be expanded to seat 800, 1,000, 1,200 or 1,400. The concept was evolved by Phoenix architects Cartmell and Rossman under a grant of \$20,000 from the Educational Facilities Laboratory of the Ford Foundation. There are no plans yet to build a prototype, but the cost would be \$600,000.

Obituaries

Frederick J. Kiesler, avant-garde architect and sculptor, died December 27 in New York City at the age of 75. Born in Vienna, Mr. Kiesler was a member of the De Stijl group in Europe before coming to the United States in 1926. Mr. Kiesler was better known for scenery designs (he was scenic director for the Juilliard School of Music from 1933-1957) and for architectural concepts, like the "endless house," which were renowned from exhibitions, than he was for completed work. His major completed building, designed with Armand Bartos, was "The Shrine of the Book" in Israel (June 1965, page 20).

Alberto Giacometti, Swiss-born sculptor of "matchstick figures," died January 12 at age 64. A retrospective exhibition of his work was held last summer at the Museum of Modern Art in New York.

What our new ceramic ceiling material does best



is last.



We call this acoustical ceiling material Armstrong Ceramaguard™. Others have called it the longest lived material ever developed for fabricated acoustical ceilings. Small wonder:

Ceramaguard is unusually resistant to moisture. It can't be hurt by freezing or thawing. It has exceptional rigidity and span strength (even soaking wet, the panels won't sag). It washes easily, takes washing repeatedly (special acrylic finish has five times the scrub-resistance of standard paints). It's even resistant to chlorine atmosphere (Ceramaguard has been used successfully in enclosed swimming pools).

So much for permanence. The rest is just as good. Acoustical efficiency—excellent (NRC Specification Range: .60 to .70; Average Attenuation Factor: (40 decibels). Light Reflectance—excellent (84% average). UL Fire Hazard Classification—Class I (noncombustible). UL Time-Design Rating on floor-ceiling assembly—2 hours (with suitable

floor). Installation—fast (easy-to-install gridwork, easy-to-handle 2' x 2' or 2' x 4' lay-in panels). Design—

the handsome (and versatile) Travertine pattern. Now for the savings. Since Ceramaguard is moisture resistant, it can be installed whether your building is closed or not; whether wet work is going on or not; without special precautions for ventilation or drying. And the completed assembly is fire retardant, so you don't need any intermediate fire protection above the suspended ceiling. All this adds up to both time and dollar savings. As much as six weeks and 30¢ a square foot in some cases.

Like to know more about Armstrong Ceramaguard? Just ask. Armstrong, 4202 Rock St., Lancaster, Pa.

Ceiling Systems by **Armstrong**

For more data, circle 1 on inquiry card

Imagine all you'd like to do on an urban redevelopment project, with no holds barred.

And most likely you'll find that thin, efficient Barrett Urethane Insulation is what you need to blend your roofline with your design.

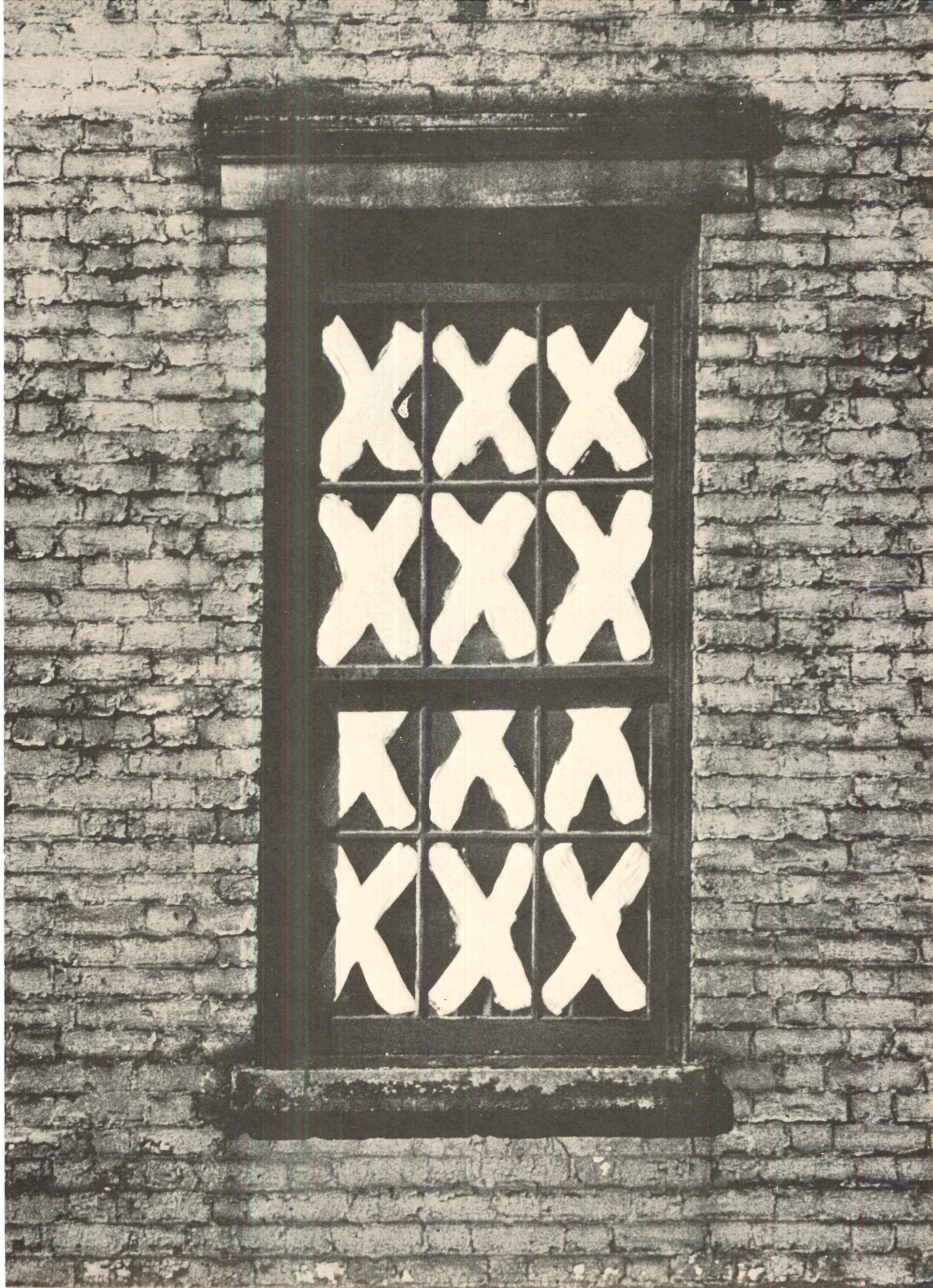
Ideal, too, for today's modern buildings with year-round temperature control. Because Barrett Urethane Roof Insulation, with its low K factor of 0.13, gives maximum year-round thermal efficiency. Does it better than any other type of insulation.

BARRETT
BUILDING MATERIALS

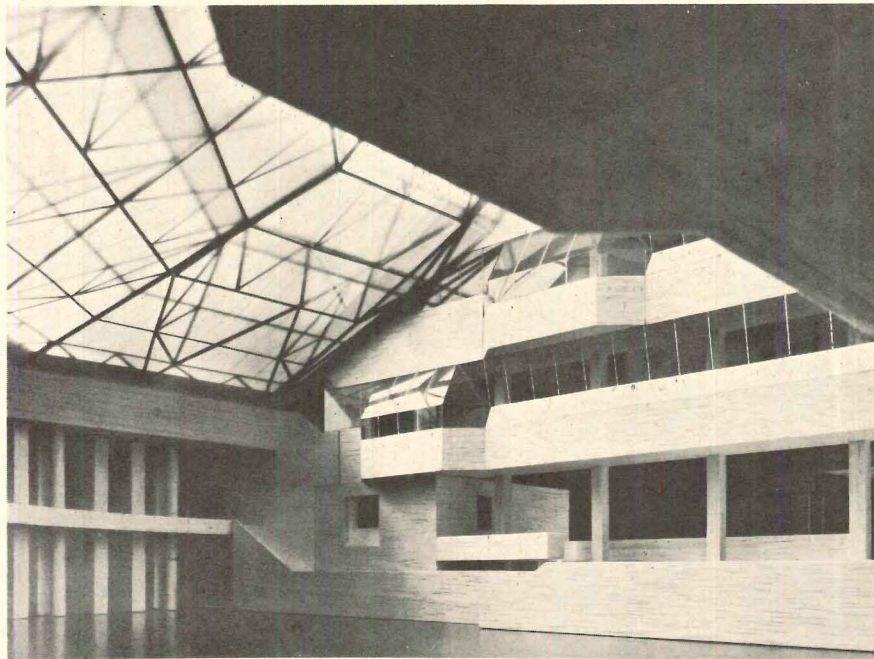
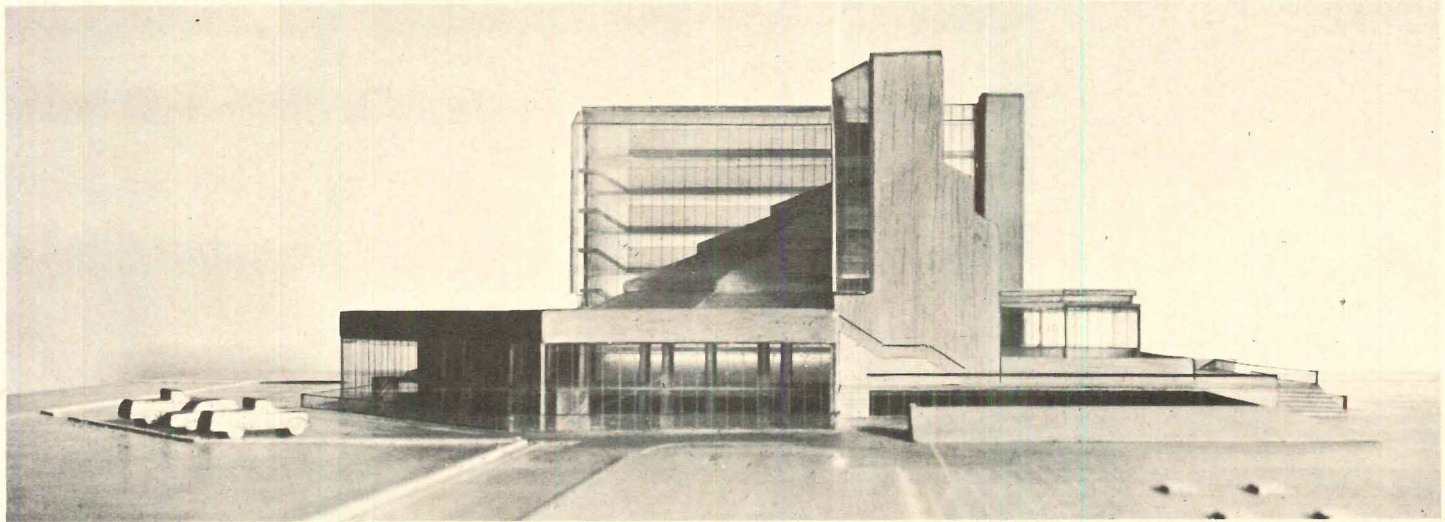


Dept. AR-2, 40 Rector Street, New York, New York 10006

For more data, circle 35 on inquiry card

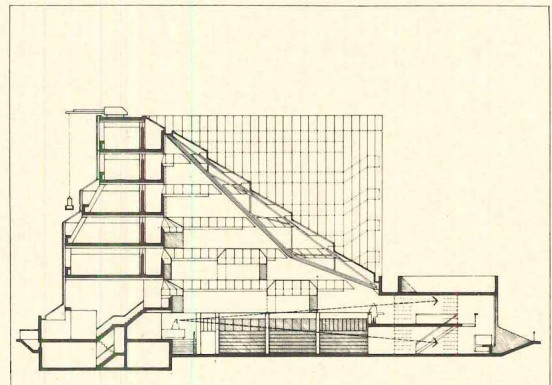


John Donat

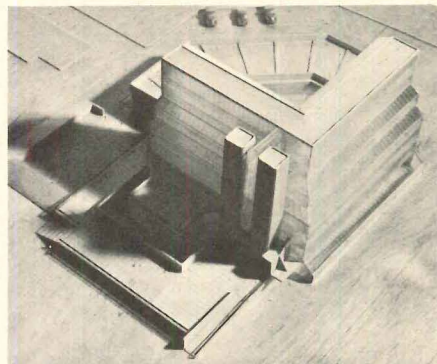


Brecht-Einzig

Left: Corridors around the upper floors are designed as tiers of galleries which appear under the roof lantern and over-look the reading room. Steel tube trusses are used for the "lean-to lantern" of the reading room.



History faculty integrates separate functions within a single articulated structure



John Donat

The History Faculty at Cambridge University in England, designed by James Stirling, has lecture rooms, office, and common rooms for 53 staff members and 746 students. Within the basic L-shaped structure, and under the glass "roof lantern" are a reading room for 280 students, and a library which has 12,600 feet of shelving in quadrant. The building has a tile and glass exterior.

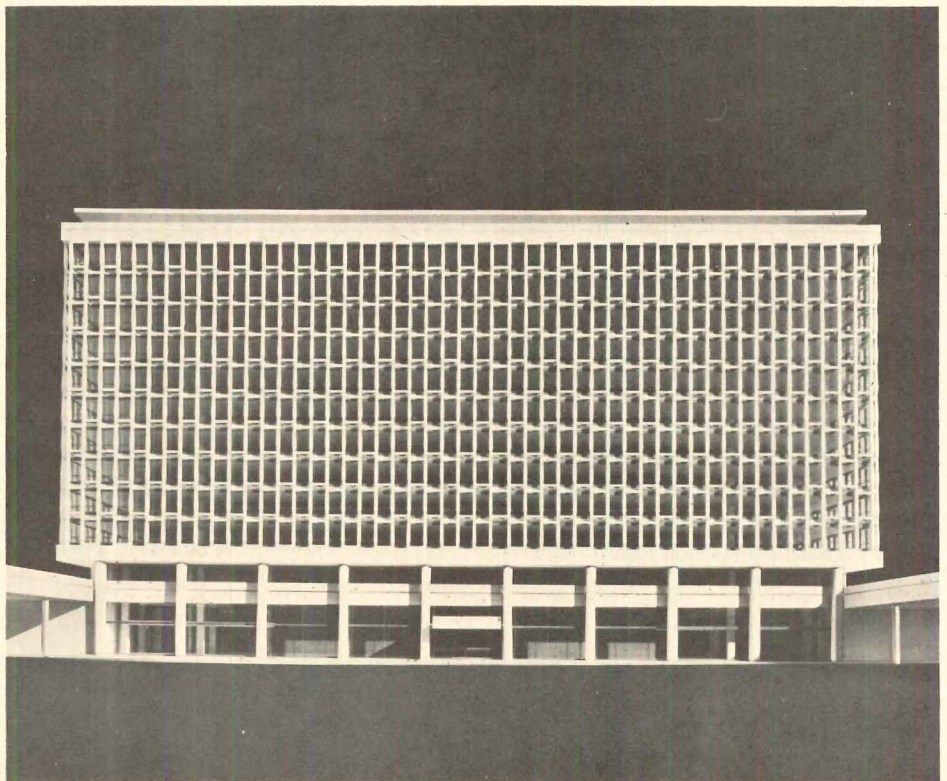
According to the architect, the reading room has the greatest density

of occupation and, therefore, is at ground level. Staff and student common rooms are at first- and second-floor level, and above are the seminar rooms. Staff rooms are on the top two floors. Student movement around the lower levels is by stairs, leaving the elevator relatively free for service to the top floors. Structural consultant for the \$942,798 building is Felix J. Samuely & Partners and mechanical and electrical consultant is H. Gregory & Partners.

Robert MARTIN

Office building contains 800-seat underground theater

The new home of Belgium's Credit Communale in Brussels will have a peristyle facade made up of units shaped like squared-off "A's," linked in a diagonal pattern with hooped neoprene and steel units (neoprene units can be replaced by hydraulic jacking). The 18-story, 280,000-square-foot structure will have four full levels underground. Competition-winning architects are Lambrechts, Grockowski and de Laveleye, and Van Impe and Delfosse.



BICC photos



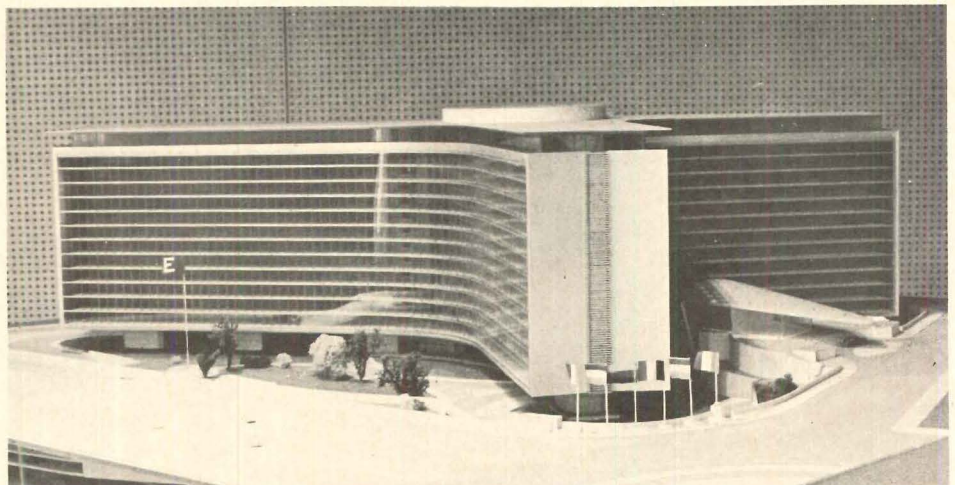
English theater will serve as "lecture theater" for university

The Nuffield Theater at Southampton University in England, which has an auditorium and stage clad in copper, is integrated with the University's new Arts Faculty Building, sharing entrance hall, foyer, cloakrooms and some catering facilities. Architects were Sir Basil Spence, Bonnington & Collins.

The Times, London

Belgian office building has floors slung from steel beams

The \$40-million Berlaymont Administrative Center, now under construction in Brussels for completion in 1969, is designed with floors slung from massive preflexed steel beams atop a concrete central spine. Zoning regulations restricted the height of the structure to 13 stories, so half of the building's 1.225 million square feet is below grade. The building will house the Common Market, Euratom and the Coal and Steel Pool. Architect is Lucien de Vestel.



Office of Foreign Buildings is proceeding with its building program

The building program of the Office of Foreign Buildings, Washington, D. C. is once again active after a period of inactivity enforced by cuts in appropriations. The OFB has received normal

appropriations for 1964, 1965 and 1966. The result: seven major projects under construction and 11 major projects under design. Serving on the architectural advisory panel to the OFB are John

Lyon Reid, Dean Joseph R. Passonneau of the School of Architecture, Washington University, and Lawrence B. Anderson, dean of the School of Architecture and Planning at M.I.T.



Office building.



Embassy residence.

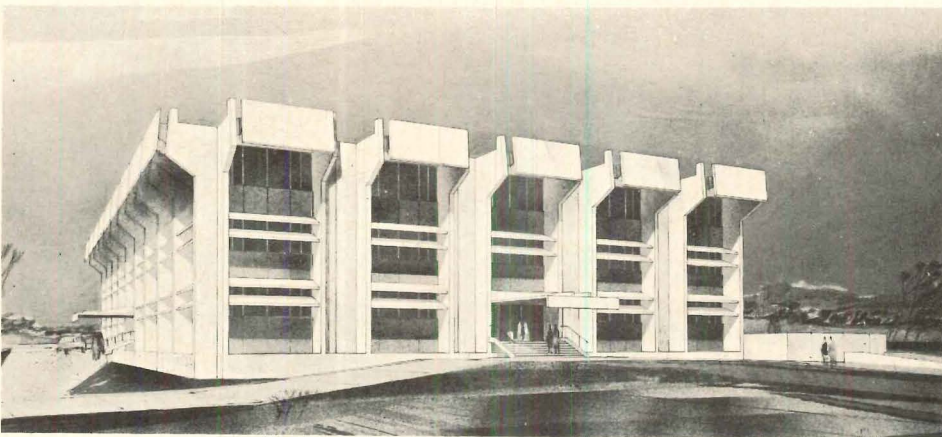
United States Embassy and related facilities, Mogadiscio, Somalia, East Africa. These facilities, costing a total of \$1.5 million, use site-produced materials (concrete block, concrete joists, terrazzo tile, stucco and plaster) since Somalia does not yet have a building industry of any sophistication. Aluminum sliding glass frames will be imported, but easily

obtained teak has been widely used. Architects are Holden Egan Wilson & Corser. Design associates for the preliminary concept of the office building were Daigert & Yerkes with Albert G. Mumma Jr. Structural engineers are Throop & Feiden and mechanical engineers are Paolo E. Squassi and Kluckhuhn & McDavid Company.



Staff housing.

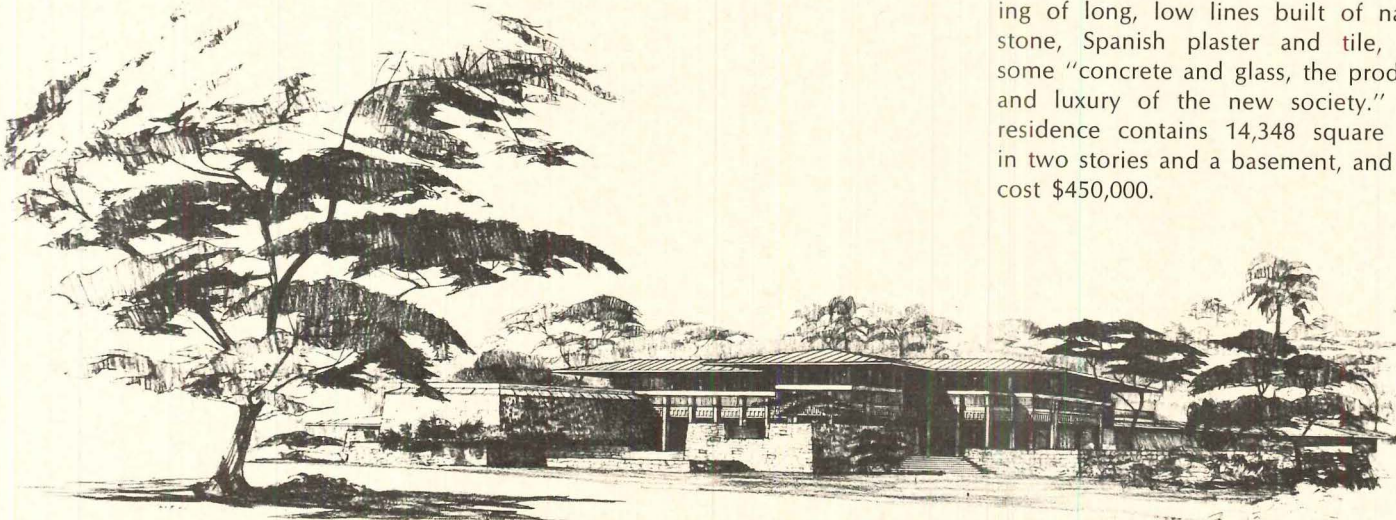
United States Consulate General, Madras, India. The building will consist of three floors wrapped around a courtyard. Exterior materials are cast-in-place, exposed-aggregate concrete, with native granite spandrel panels. The first floor will contain the major public facilities—the visa area and the lower level of the two-story-high USIS library. The remainder of the second floor will contain USIS offices, and the third floor will have consulate offices. An auditorium seating 200 will be located in the basement. Architects are Burk, Lebreton & Lamantia.



United States Ambassador's residence, Manila, Philippine Islands. Architects Callister and Payne describe the residence as follows: "Essentially, our con-

cept has evolved from the best of the environment that we experienced in Manila. A long tradition of native ways seemed to meld into hundreds of years

of western influence. There seemed to be the flavor of the Philippine-Spanish days with the mere emergence of some American ideals." The result is a building of long, low lines built of native stone, Spanish plaster and tile, and some "concrete and glass, the products and luxury of the new society." The residence contains 14,348 square feet in two stories and a basement, and will cost \$450,000.

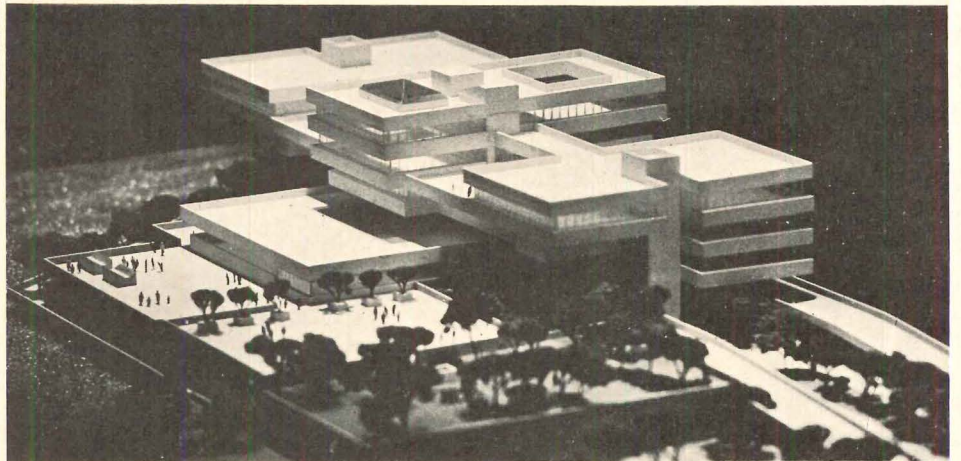




Married students housing will contain 216 units

Eastgate, a 30-story structure which will house married students and faculty at the Massachusetts Institute of Technology, will provide 216 efficiency, one- and two-bedroom apartments. Architects for the \$4-million, cast-in-place concrete structure are Eduardo Catalano in association with Crawley Cooper, Robert Brannen and Paul Shimamoto. The tower will be connected by a raised plaza to the recently completed Hermann Building (right) designed by the same architects (November, 1965, page 40). Completion: 1967. General contractor is Vappi and Company, Inc.

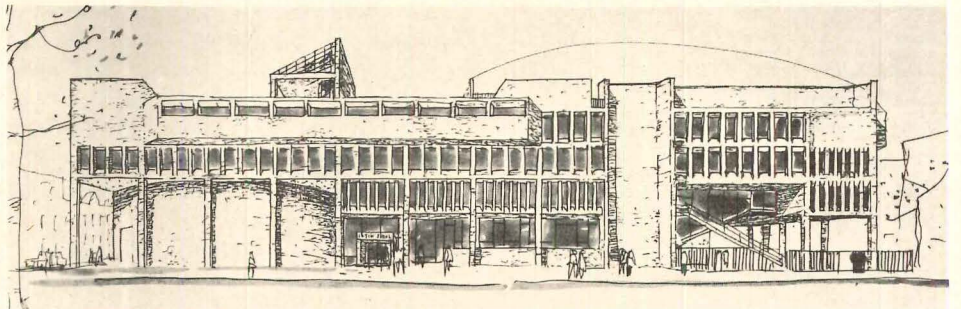
Arie Shapira



U.N. school will be built on New York waterfront

The latest proposal for the United Nations International School will place it on the East River in New York City where pier 73 now stands. Formerly, the school had been planned for a site adjoining the United Nations (May 1965, page 344). The structure, designed

by Harrison & Abramovitz, is a six-story concrete building. It will have a separate auditorium and will act as a community center as well as a school. It will be financed by \$7.5 million from the Ford Foundation and \$1 million from the Rockefeller Brothers Fund.

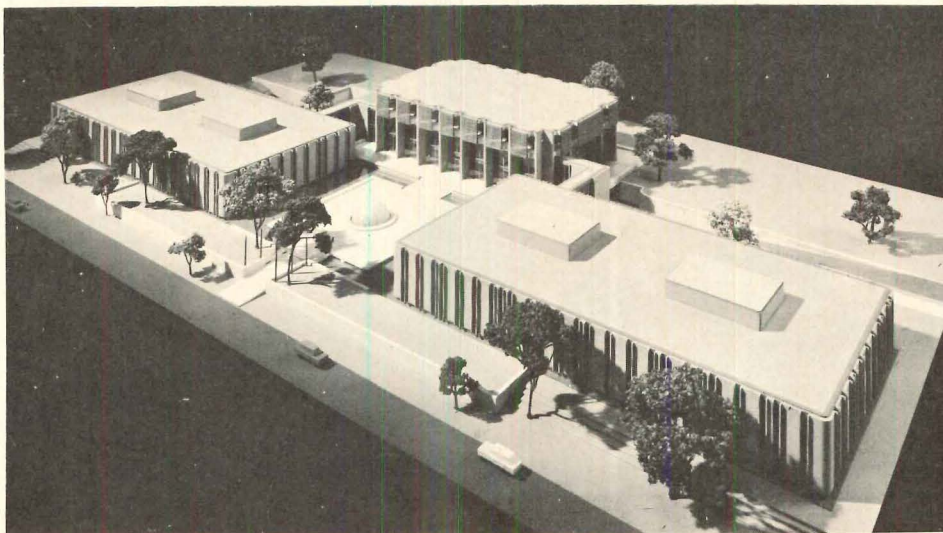


School will have roof recreation area under dome

The new upper school building of The Latin School in Chicago is a four-story structure of concrete-frame and brick construction. The \$2.5-million project, which will accommodate 300 students, will contain a theater-auditorium for

450, basketball court with seating for 300, swimming pool and a roof recreation area covered by an air-supported plastic dome. Completion is set for the fall of 1968. Architect for the structure is Harry Weese & Associates.

Hedrich-Blessing



Headquarters designed to be "quiet and dignified"

The corporate headquarters for Abbot Laboratories in Chicago were designed by the Perkins & Will Partnership to be "quiet, dignified, and perhaps even understated." The corporate unit consists of a central three-story corporate officers' building and two adjoining buildings—one for staff employees and one for divisional employees. The buildings will be faced with brick, with rounded brick used at the corners, windows and entrances. The roofs of the structures, visible from surrounding areas, will be finished with crushed green granite. Completion: 1967.

Architect-designed projects up 9 per cent as 1965 construction sets still another record

BUILDING IN 1965: Part 1

Architects will be glad to learn that the types of building activity they normally associate with the market for their services expanded just about twice as fast as the average for all categories of construction in 1965.

Total contract value for new construction, as measured by F. W. Dodge, once again topped all previous years' records, reaching and even slightly surpassing the \$49-billion mark for the 12 months just ended. And in this big and multifaceted market, the total of architect-designed projects (the sum of all nonresidential buildings as well as certain types of residential buildings—apartments, hotels and motels, and dormitories, but excluding single-family housing) ended up nearly 9 per cent, or \$2-billion bigger than in 1964. That compares very favorably with the good-but-not-great gain of 4 per cent for total construction contract value last year.

The real story of construction growth in the mid-Sixties is told by the performances of just a few key individual build-

ing types in the non-residential area:

With a healthy advance of nearly 15 per cent in 1965, industrial and commercial building extended the strong advance of several years' duration. In the early phase of that expansion most of the growth was concentrated in contracts for manufacturing plants; by 1965 the emphasis was shifting as commercial building (stores and offices, in particular) began displacing industrial building as the main driving force with gains in the neighborhood of 20 per cent.

Following closely behind this group of business-related building types in 1965 was the category of institutional buildings which achieved a gain in contract value for the year of well over 10 per cent.

Educational facilities and dormitories not only account for the biggest portion of the institutional building group, but in the year just past provided just about all of its growth. College and university construction was booming in 1965 at all levels—academic, research, administrative, and residential. Dormitory projects alone were up by more

than one-third over 1964's already high volume, while laboratories and libraries were showing even larger increases. This general area of higher educational building promises to be a very strong market for several years ahead.

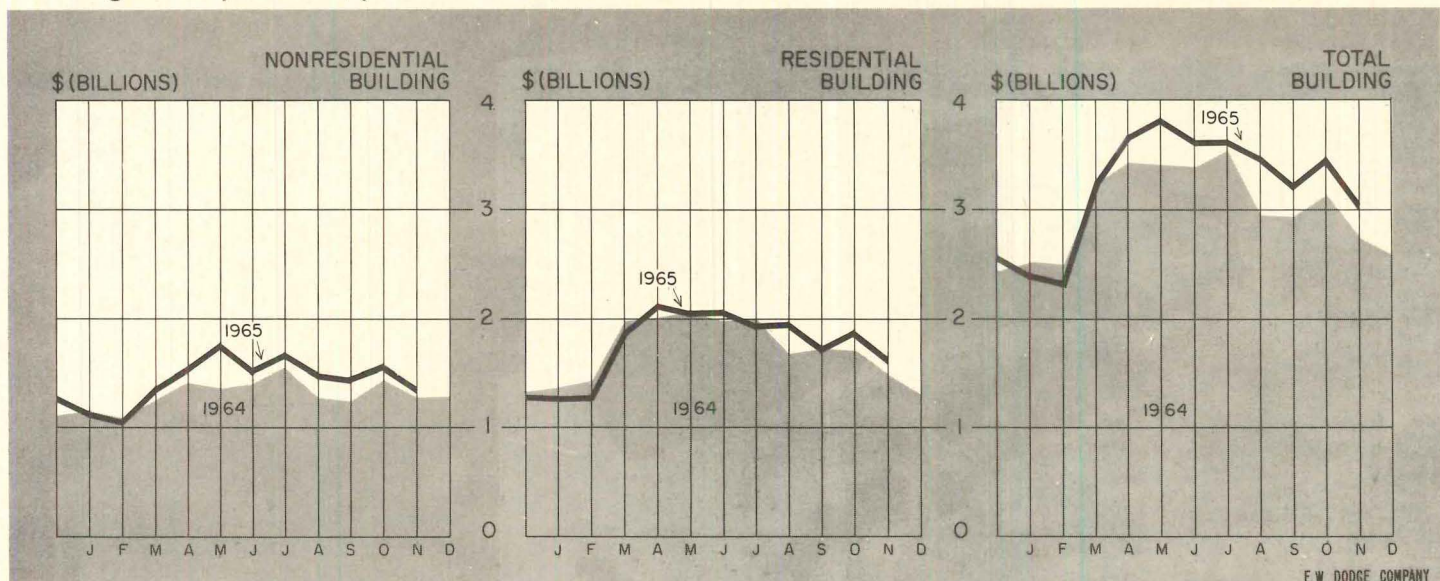
Hospital building contracts, which showed a decline of a little over 5 per cent in 1965, saw the interruption of a sharp upward trend which brought a doubling in annual value between 1960 and 1964. There is every indication that the vigorous upward trend will be resumed soon.

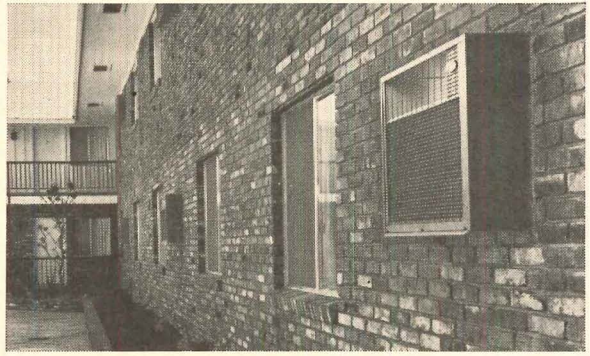
Residential building managed a modest increase in total value during 1965, but the gain was restricted mainly to single-family homes. The residential building market, which has been going through a moderately severe correction over the past two years, spent most of 1965 digesting previous excesses while edging slowly back from the low point reached at the end of 1964. Rental building bore the brunt of the cutback, and while 1965 brought some indications of recovery, apartment building was still off the pace at year-end.

Next month: A regional look at 1965 building.

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

Building activity: monthly contract tabulations





Flush inside...or flush outside!

Each of these Carrier condensing units powers a central ducted heating and cooling system—a system ideal for garden-type apartments.

Why? It gives each tenant individual control of heating and cooling—with quiet movement of clean, conditioned air—to each room all year long.

It offers the owner low first cost, takes up no land space and no floor space, either.

It teams with a gas- or oil-fired furnace, or with an all-electric fan-coil unit indoors.

And the architect can work them into

this building design in a number of unobtrusive ways. Let them project a few inches from the wall . . . and they disappear from view on the inside. Fit them flush outside . . . and let them project into a closet, utility room . . . or, as in the picture above, into a brick buttress that serves other purposes.

Other parts of this Carrier system?

Refrigerant tubing with quick-couples at both ends for a fast, clean connection to fan-coil or furnace.

An all-electric fan-coil that can power air through long duct runs—does it quietly from any spare space—above a

closet, in a furred-down ceiling, a crawl space or attic.

Only 13½ inches high, it heats with electric strip heaters or a hot water or steam coil.

Or, Carrier furnaces can provide heat and air movement from a closet, attic or crawl space location.

Details? Your Carrier dealer will be glad to give them to you.

You'll find him listed in the Yellow Pages. Carrier Air Conditioning Company, Syracuse, New York 13201. Represented in Canada by Carrier Air Conditioning (Canada) Ltd.

Carrier Air Conditioning Company

More people put their confidence in Carrier air conditioning than in any other make

For more data, circle 36 on inquiry card

BUILDING CONSTRUCTION COSTS

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

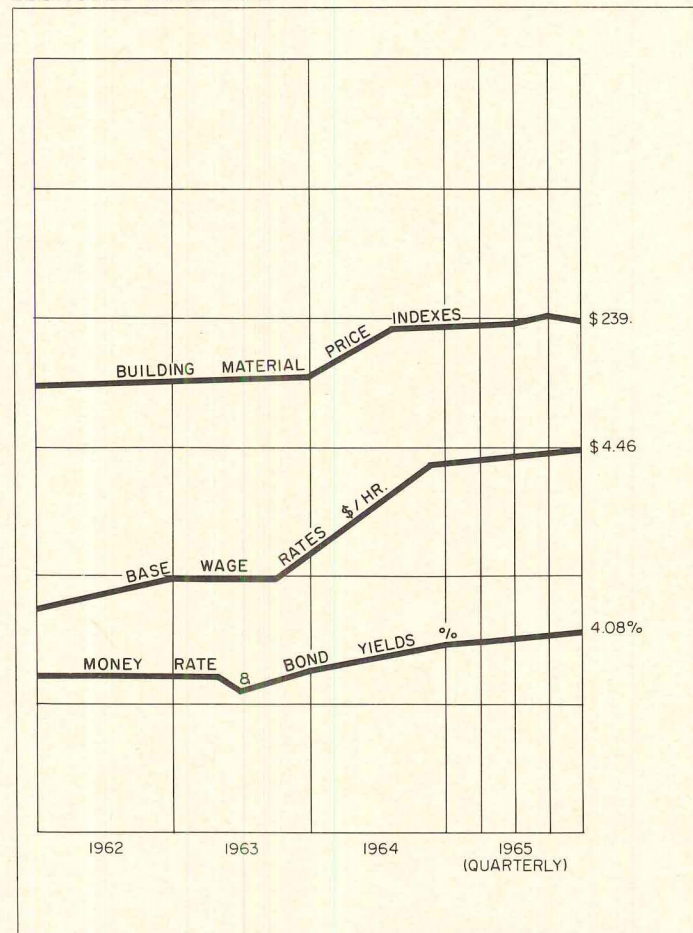
William H. Edgerton
Manager-Editor, Dow Building Cost Calculator,
an F. W. Dodge service

NOVEMBER 1965 BUILDING COST INDEXES

Metropolitan area	Cost differential	1941 averages for each city = 100.0		% change year ago res. & non res.
		Current Dow Index residential	non-res.	
U.S. Average	8.5	278.1	294.6	+2.05
Atlanta	7.2	307.3	325.9	+2.52
Baltimore	7.9	273.8	291.2	+1.92
Birmingham	7.5	250.9	269.8	+1.87
Boston	8.5	247.4	261.8	+2.21
Chicago	8.9	301.3	316.9	+1.69
Cincinnati	8.8	261.8	278.2	+1.70
Cleveland	9.2	279.5	398.6	+3.31
Dallas	7.7	255.5	263.8	+1.67
Denver	8.3	280.2	297.8	+2.43
Detroit	8.9	274.8	288.5	+2.66
Kansas City	8.3	246.2	260.6	+2.43
Los Angeles	8.3	278.4	304.5	+3.15
Miami	8.4	268.3	281.6	+1.23
Minneapolis	8.8	271.6	288.7	+0.84
New Orleans	7.8	245.7	260.3	+2.59
New York	10.0	283.2	304.6	+2.65
Philadelphia	8.7	271.3	284.8	+2.10
Pittsburgh	9.1	254.6	270.6	+1.24
St. Louis	9.1	269.2	285.2	+3.22
San Francisco	8.5	345.0	377.5	+0.81
Seattle	8.4	247.5	276.6	+0.89

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

ECONOMIC INDICATORS



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

Metropolitan area	1941 average for each city = 100.00							1964 (Quarterly)				1965 (Quarterly)			
	1952	1958	1959	1960	1961	1962	1963	1st	2nd	3rd	4th	1st	2nd	3rd	4th
U.S. Average	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	288.7	284.9
Atlanta	223.5	277.7	283.3	289.0	294.7	298.2	305.7	277.2	279.3	280.5	280.6	280.5	281.0	284.7	285.7
Baltimore	213.3	251.9	264.5	272.6	269.9	271.8	275.5	258.0	259.9	260.1	260.9	261.2	264.1	264.9	265.6
Birmingham	208.1	233.2	233.2	240.2	249.9	250.0	256.3	246.1	247.9	251.3	252.1	251.7	252.6	256.3	257.8
Boston	199.0	230.5	230.5	232.8	237.5	239.8	244.1	302.2	304.5	305.1	306.6	306.5	307.3	310.2	311.7
Chicago	231.2	273.2	278.6	284.2	289.9	292.0	301.0	310.0	312.3	313.4	313.7	313.9	317.9	320.6	321.5
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	272.9	274.0
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	290.8	292.3
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	259.5	260.8
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	292.7	294.0
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	283.5	284.7
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	255.0	256.4
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	295.8	297.1
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	276.6	277.5
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	283.9	285.0
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	255.1	256.3
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	296.0	297.1
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	279.5	280.8
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	265.9	267.0
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	279.9	280.9
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	367.7	368.6
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	267.8	268.9

Costs in a given city for a certain period may be compared with costs in another period by dividing one index into the other; if the index for a city for one period (200.0) divided by the index for a second period (150.0) equals 133%, the costs in

the one period are 33% higher than the costs in the other. Also, second period costs are 75% of those in the first period ($150.0 \div 200.0 = 75\%$) or they are 25% lower in the second period.



VERSATILE BORDEN PRESSURE LOCKED GRATING

Borden's Pressure Locked steel grating is used extensively as the flooring of the continuous balconies surrounding the new Washington, D. C. German Chancery building shown here. An integral part of the design of this striking 95,000 sq. ft. steel-and-wood-framed structure, the grating adds the practical advantages of sun shading, ease

of window cleaning, and requires no maintenance.

Available in many subtypes, Borden's Pressure Locked Type B, approved for all general purposes, was chosen for the above application. For complete information on this and other grating types, including Riveted and All/Weld in steel or aluminum, write for . . .

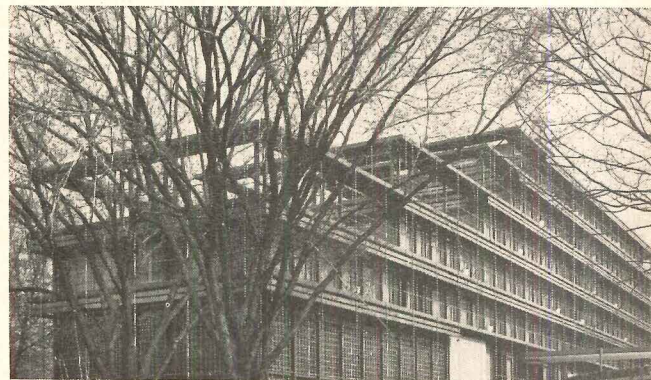
a free copy of
The 16-page Borden Grating Catalog

BORDEN METAL PRODUCTS CO.

MAIN OFFICE: 822 GREEN LANE, ELIZABETH, NEW JERSEY
• Elizabeth 2-6410

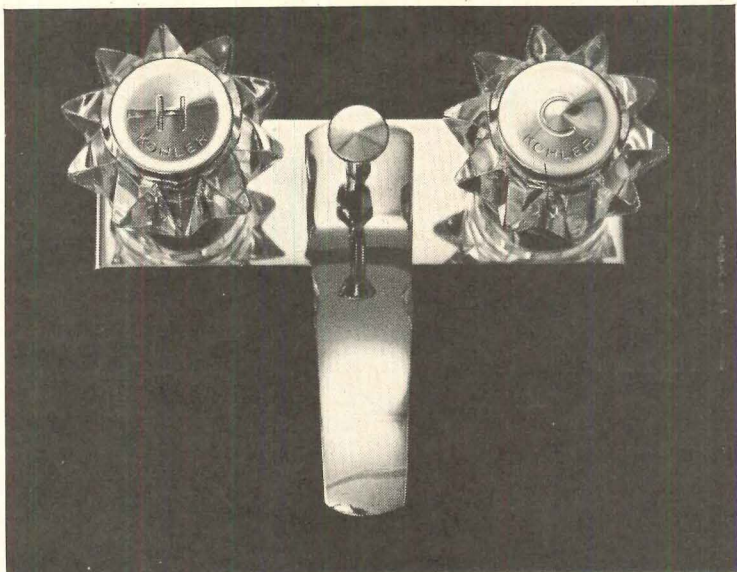
PLANTS AT: LEEDS, ALABAMA; UNION, NEW JERSEY;
CONROE, TEXAS

When in New York City, see our exhibit at
Architects Samples, 101 Park Avenue

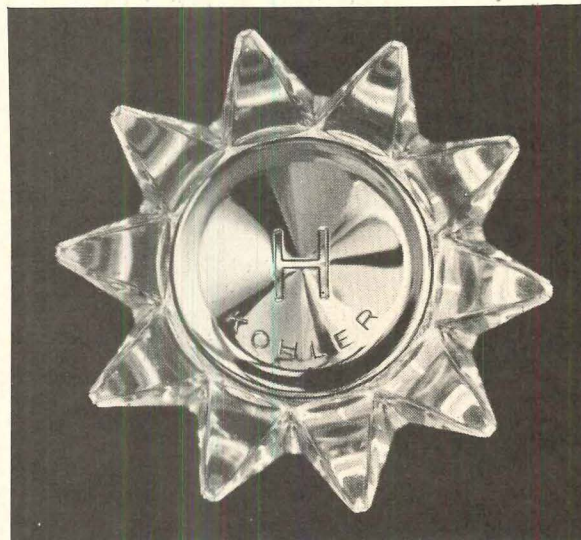


For more data, circle 37 on inquiry card

ARCHITECTURAL RECORD February 1966 47



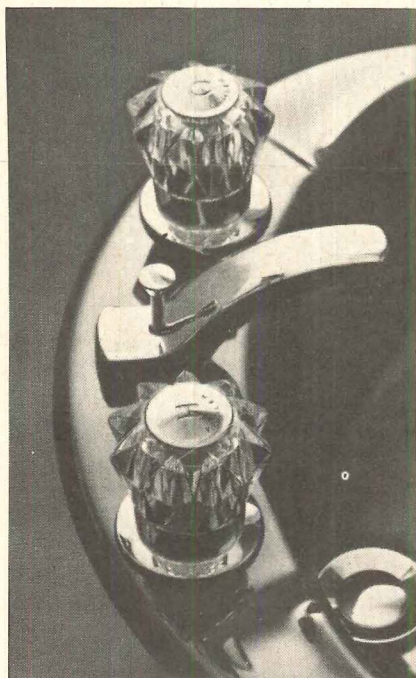
SPARKLE! These are the new *Flair* fittings, by Kohler. Of diamond-bright acrylic.



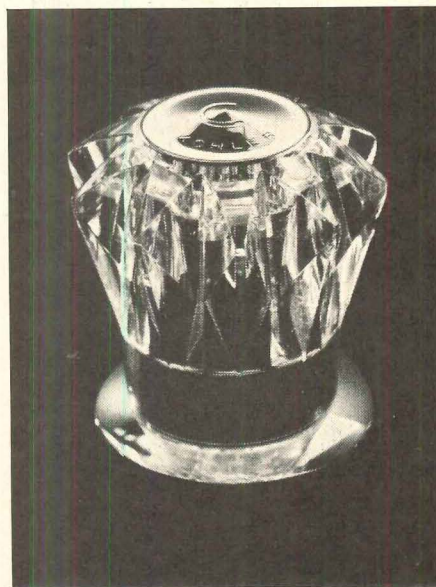
SPARKLE! Clean of line, crystal clear, *Flair* fittings have a gem-like radiance.



SPARKLE! *Flair* fittings add the crowning touch to Kohler fixtures. Great with the new accent colors!



SPARKLE! *Flair* fittings are genuine Kohler fittings, through and through . . . acrylic and brass in the traditional quality of Kohler.



SPARKLE! Sparkling ads featuring *Flair* fittings are selling your customers now.

ADD SPARKLE TO YOUR SALES...ADD FLAIR!
FLAIR FITTINGS

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 38 on inquiry card

CONFORMISTS!



Krueger's Versatile New MODULAR SEATING

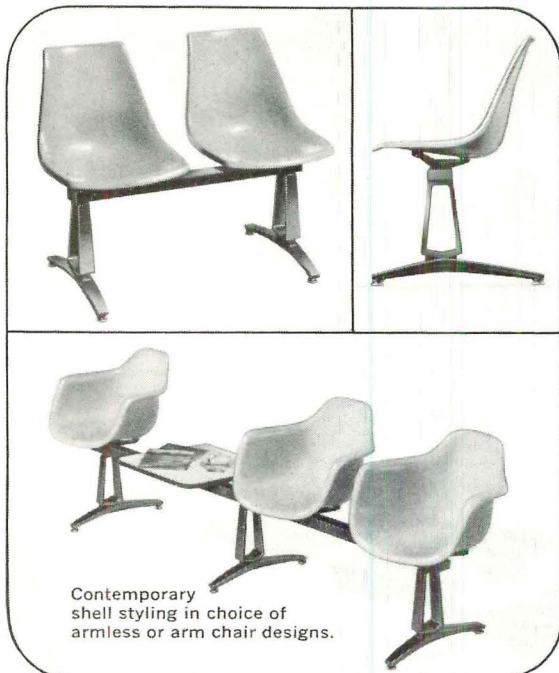
...conforms to any room size, space and seating requirement – with inviting comfort and heavy-duty durability!

Wherever people wait – seat them comfortably on Krueger Modular Seating units. Colorful, posture-curved fiberglass shells and carefree plastic-top tables are rigidly mounted on smartly-styled cast iron bases in two, three and four-unit variations – free-standing, ganged in-line or back-to-back. For added luxury, specify armless shells, foam-cushioned and fully upholstered in Naugahyde Chromata or a heavy-duty textured fabric. Take full seating advantage of any room, any size, with custom styling and selection of Krueger's New Modular Seating designs.

Write for complete information and
All-New Complete Line Catalog

KRUEGER

METAL PRODUCTS COMPANY • GREEN BAY, WIS • 54306



Contemporary shell styling in choice of armless or arm chair designs.

For more data, circle 39 on inquiry card

SHOWROOMS: CHICAGO, 1184 Merchandise Mart
LOS ANGELES, 8815 Beverly Blvd.

You don't need a king's ransom...



to afford Benjamin Spartan Lumi-Flo[®]



Lumi-Flo can take care of lighting and air-handling problems and be careful of budgets at the same time. Here's how: You start with a rigid deep-drawn housing. Then add a frameless lens with heat-removal dampers. Make sure the heat-removal slots are less than a 1/2 inch wide and that each damper has its own piano hinge. Next, insist on a frameless lens that fits flush with the ceiling. Include another set of dampers in the housing for air supply. Pack each lens and door frame in its own styrofoam protector.

Finally, make sure it's manufactured in the most efficient lighting plant in the country.

©Thomas Industries Inc.

Ours.



THOMAS INDUSTRIES INC.
207 E. Broadway • Louisville, Ky. 40202

KINNEAR

REGISTERED
ROLLING DOORS

First choice
for
Over 70 years

—for maximum efficiency of door operation and maintenance

As the pioneer and originator of the interlocking slat curtain, the name KINNEAR has become synonymous with rolling doors the world over. And a highlight review of the benefits Kinnear Rolling Doors offer the building designer, contractor and owner makes it readily apparent why this has come about.

- Space-saving, upward-coiling design — out-of-the-way of damage.
- Rugged, heavy-duty, all-metal construction — for durability and maximum weather, fire or intrusion protection.
- Designed to withstand minimum wind velocity of 88 m.p.h. (for greater resistance when higher velocities are specified).
- Triple protected **galvanized** steel interlocking slat curtain — a design originated by Kinnear.
- Especially suited to electric power operation with choice of electronic controls.
- Every door is "Registered" for life-extension — for permanent maintenance and parts replacement.
- Available with combination curtain endlock and weatherlock for extra-tite requirements.
- Backed by a time-proven, nation-wide consulting, installing and maintenance service organization.

When you specify and insist on Kinnear Rolling Doors, you can do so with the confidence of complete satisfaction to you and your client. Write TODAY for current catalog — or call your local Kinnear Representative for counsel on your current projects.

KINNEAR[®]
ROLLING DOORS
Saving Ways in Doorways
SINCE 1895

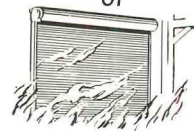
The KINNEAR Manufacturing Company & Subsidiaries
1863-80 Fields Avenue, Columbus, Ohio 43216

FACTORIES:
Columbus, Ohio 43216 — San Francisco, Calif. 94124 — Toronto, Ont., Canada

Offices & Representatives in All Principal Cities; listed in Yellow Pages under "doors."



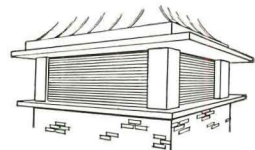
also manufacturers
of



FIRE DOORS



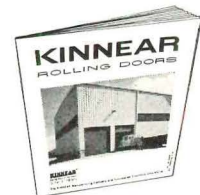
ROLLING GRILLES



COUNTER SHUTTERS

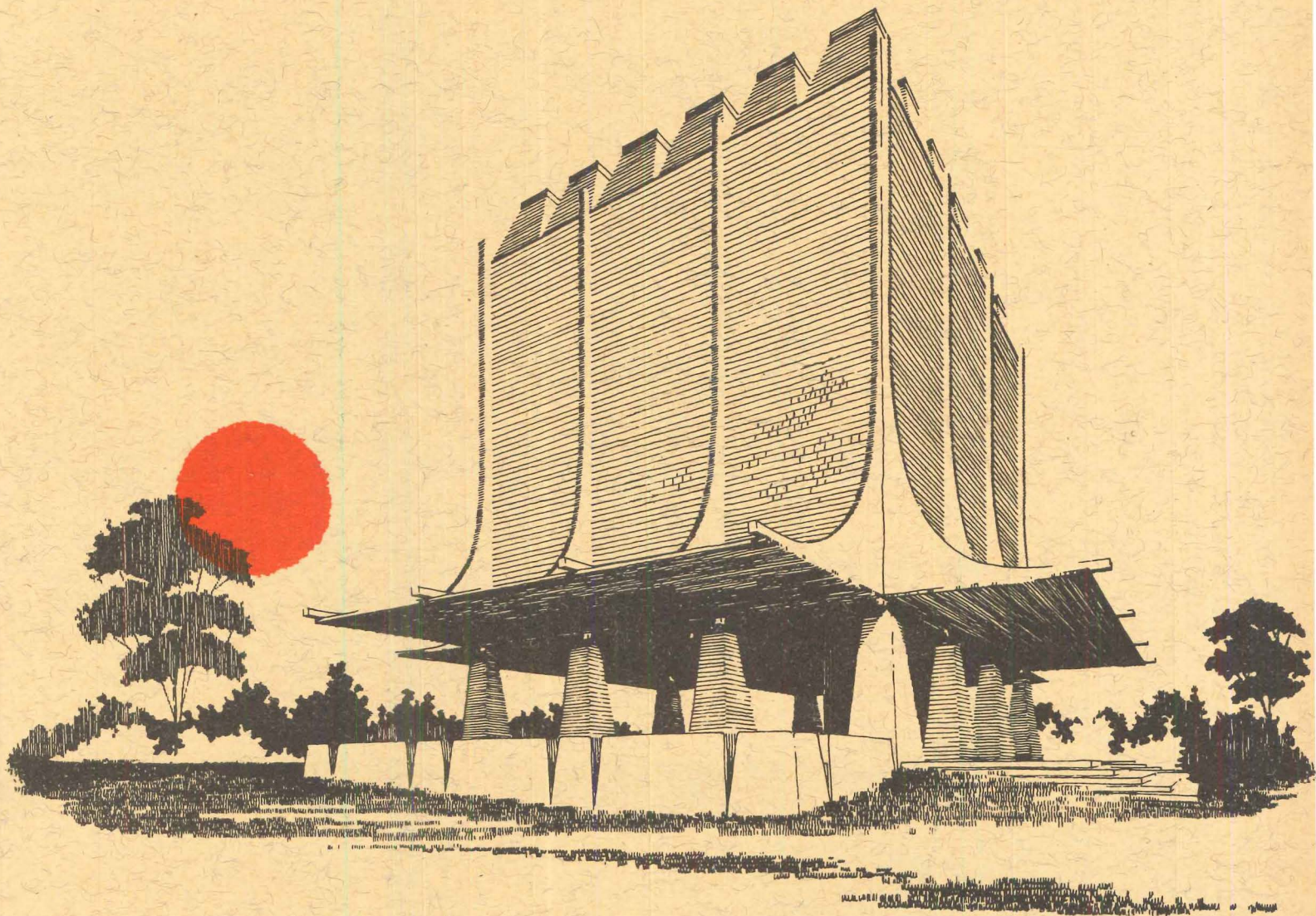


RoL-TOP DOORS



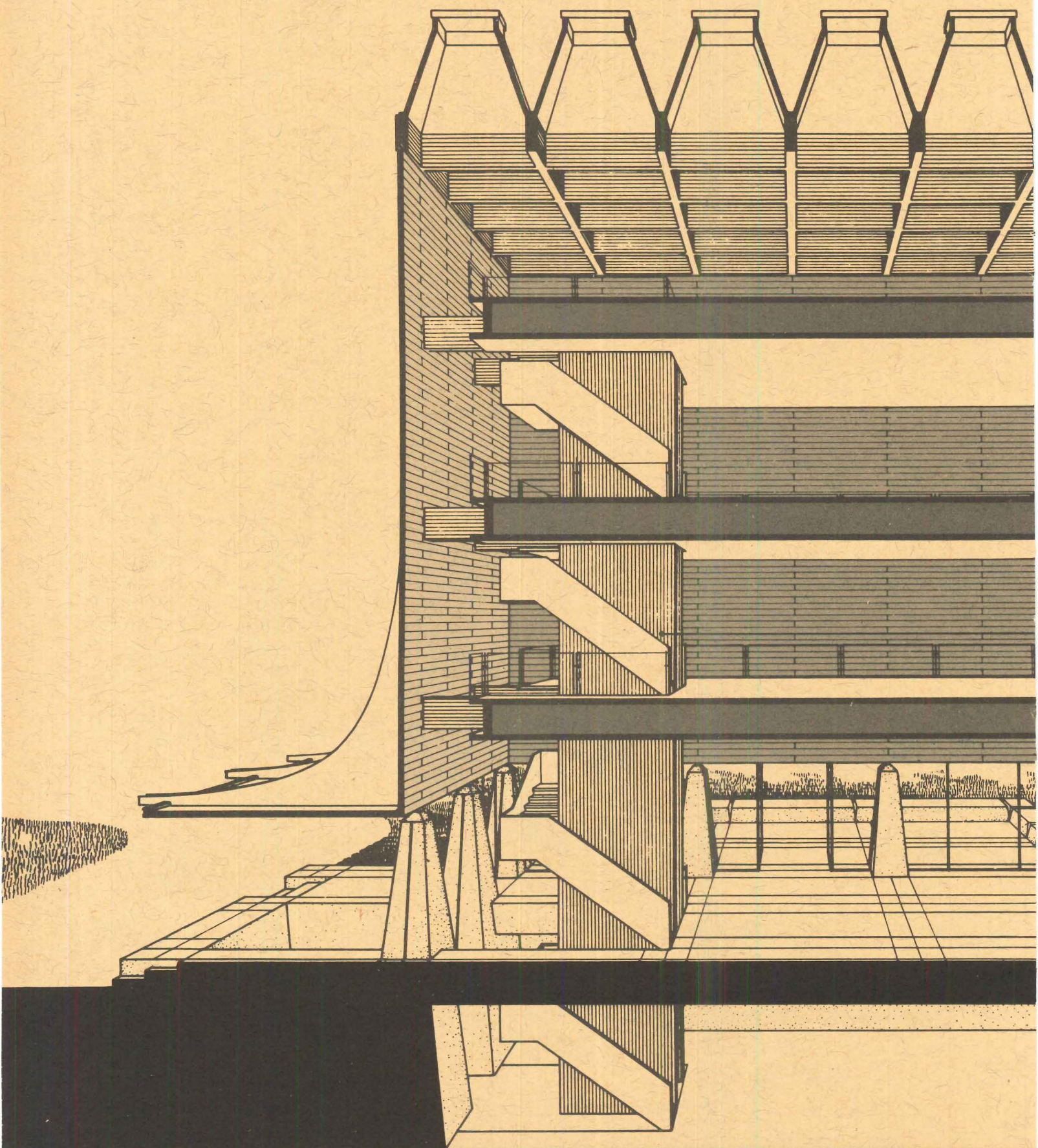
Write for Copy of
Latest Complete Catalog

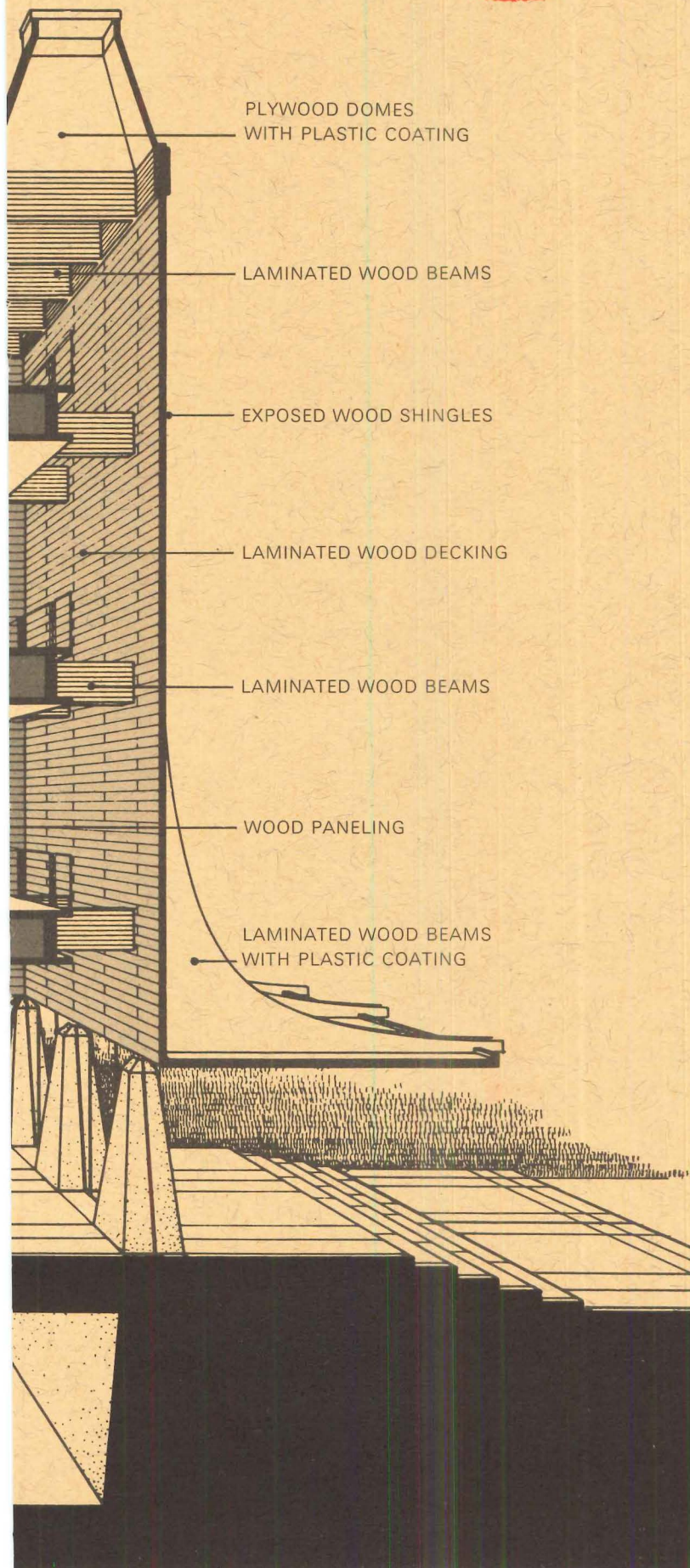
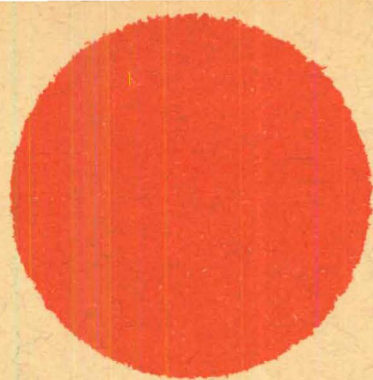
Mark Hampton Designs a Community Art Center in Wood



One of a series of design innovations commissioned by Weyerhaeuser Company.

Weyerhaeuser Company has commissioned a number of leading architectural firms to create design innovations which highlight the potential of wood in public and commercial buildings. This original design by Mark Hampton, AIA, of Tampa, Florida, is the fourth in the series.





**“A sculptured form,
designed to inspire
local enthusiasm for
the arts.”**

“The emerging emphasis on culture throughout America continues to bring new challenges to the architect. More and more smaller communities are asking for buildings designed to accommodate a variety of local fine arts activities.

“The building is a sculptured form, designed to inspire local enthusiasm for the arts. The cubical volume is contained in a diaphragm of laminated wood decking exposed on the interior and sheathed in wood shingles on the exterior. The exposed laminated wood ribs, in their sweeping shape, add an extra dimension of beauty and strength, and the horizontal cantilever serves as a shelter for the building’s entryway and exterior courts. The ribs are weather protected by a white plastic coating.

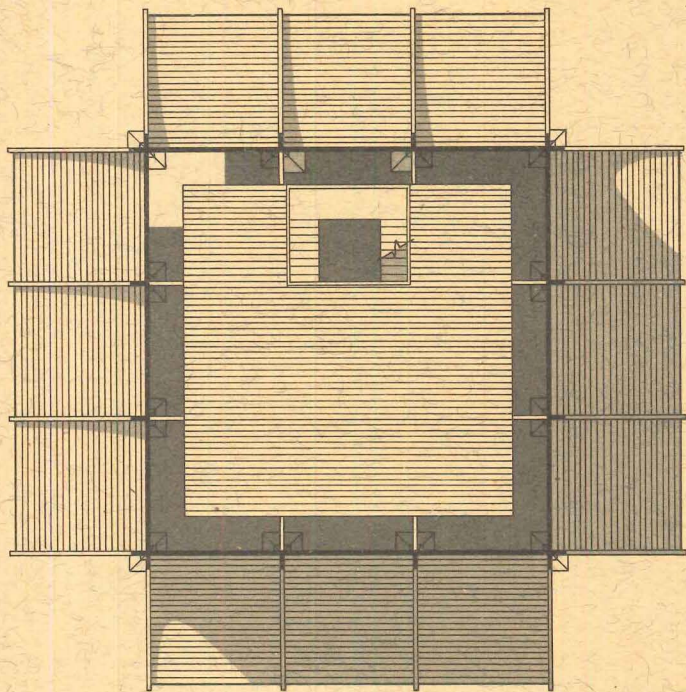
“A laminated wood ceiling grid frames a series of plywood skylight cubes. This allows natural light to flood the upper studio floor and because each floor is a free floating platform, this light also washes the Gallery walls below. Supplemental lighting is hidden from sight in reveals around the perimeter of the floor platforms.

“Paintings will be exhibited on the perimeter walls of wood decking bleached to a neutral gray. A system of movable freestanding panels made from three foot by seven foot doors also provides flexible exhibition space for smaller paintings, graphics and prints.

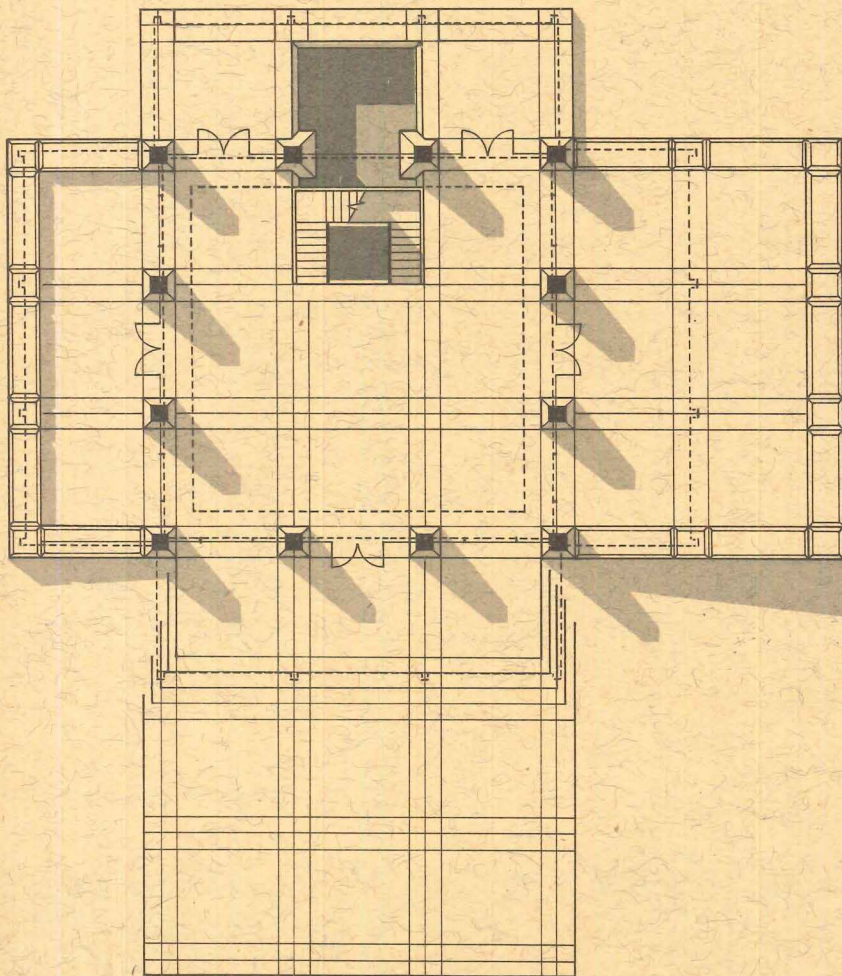
“A hydraulic lift allows easy vertical movement from floor to floor. Exposed shafts are finished in wood paneling.

“The ground floor which extends outward onto open sculpture courts provides a platform for the building. Pilotis lift the sculptured form above the platform plane; thus an invitation is encouraged to the visual experiences within.”

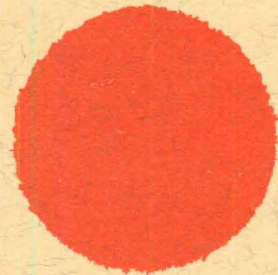
Mark Hampton



TYPICAL GALLERY FLOOR



GROUND FLOOR



“The cubical volume is contained in a diaphragm of laminated wood decking...”

Mark Hampton's Art Center is a dramatic example of how the imaginative use of wood can solve complex problems of form and space—at reasonable cost.

And Weyerhaeuser offers a complete line of high quality architectural wood products designed to meet the needs of the most exacting specifier.

From planning through construction of your project, we back these products with the Weyerhaeuser Architectural Services Program. It's designed to provide the architectural profession with quick access to a highly comprehensive information service. Specially trained Weyerhaeuser field representatives are close at hand to offer you complete technical and engineering data on all our architectural wood products.

Call your Weyerhaeuser Architectural Representative for more details. Or write us at Box B-2113, Tacoma, Washington 98401.

 **Weyerhaeuser**



\$24,500 SAVING: 35,400 sq. ft. Fair Park Gardens Apartments, Little Rock, Ark. *Architect:* Cowling and Roark, A.I.A., Little Rock, Ark. *Electrical Engineer:* George Ellefson. *Contractor:* Glenn Henry, Little Rock, Ark.



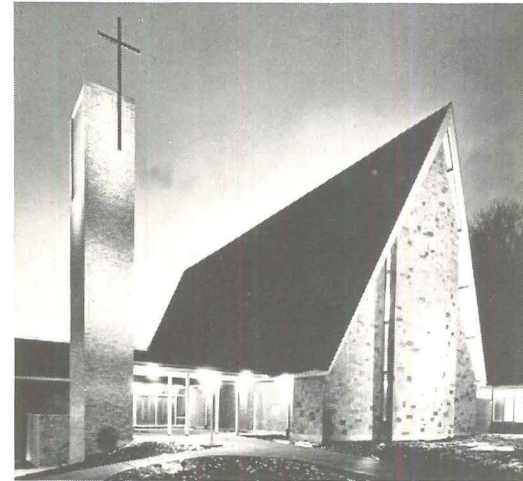
\$20,000 SAVING: 19,000 sq. ft. Den-Mar Nursing Home, Rockport, Mass. *Architect:* Di Meo Associates, Stoneham, Mass. *Engineer:* Joseph Sestito & Associates, Malden, Mass. *Contractor:* Feldman Construction Co., Rockport, Mass.



\$10,000 SAVING: 5,200 sq. ft. Home Federal Savings and Loan Association of Cincinnati Building, Wilmington, Ohio. *Architect/Engineer:* Richard R. Grant, A.I.A., P.E., Wilmington, Ohio. *Contractor:* A. P. Eveland and Sons, Wilmington, Ohio.



\$13,700 SAVING: 120,000 sq. ft. Wachovia Bank and Trust Co. Building, Raleigh, N.C. *Architect/Engineer:* A.G. Odell & Associates, Charlotte, N.C. *Contractor:* T. A. Loring Co., Goldsboro, N. C.



\$10,000 SAVING: 18,500 sq. ft. Gloria Dei Lutheran Church, Forestville, Conn. *Architect:* Jeter & Cook, Hartford, Conn. *Engineer:* James S. Minges & Associates. *Contractor:* Wadhams and May Co.



\$63,000 SAVING: 675-student, 60,000 sq. ft. Hampshire High School, Romney, W. Va. *Architect:* Robert J. Bennett, Morgantown, W. Va. *Engineer:* Ballard & Mayfield, Canton, Ohio. *Contractor:* Baker & Coombs, Inc., Morgantown, W. Va.



\$7,000 SAVING: 9,400 sq. ft. McIntosh Stamping Corp. plant, Berne, Ind. *Designer/Builder:* David Poor Construction Co., Warsaw, Ind. *Engineer:* Berne Electric Co., Berne, Ind.

Look how all-electric design can cut first costs!

More and more architects and engineers are finding that all-electric design, with flameless electric heating and cooling, can hold down first costs for clients in buildings of all types through the elimination of such items as boiler rooms, fuel tanks, stacks and long pipe or duct runs.

Annual costs can also be reduced, since simpler control systems and lower maintenance require fewer employees.

Moreover, because of the wide variety of equipment types to choose from, all-electric design permits greater architectural freedom and flexibility. Expansion becomes easier, too. And all-electric design can also provide from 5% to 10% more

◆ For more data, circle 42 on inquiry card

usable floor space for additional building capacity.

For more facts about the proven advantages of applying all-electric design to your industrial and commercial buildings, call your local electric utility company. They will welcome the opportunity to work with you.

This plaque identifies a modern building, meeting the standards of electric heating, cooling, lighting and other applications set by Edison Electric Institute.

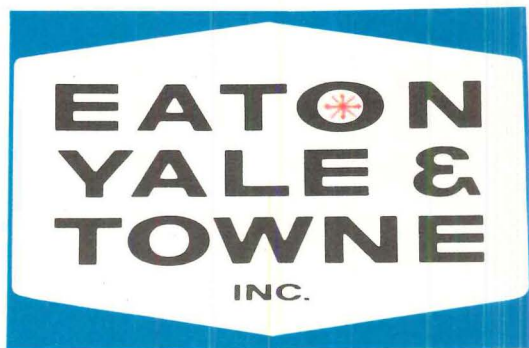
BUILD BETTER ELECTRICALLY

Edison Electric Institute, 750 Third Ave., New York, N.Y. 10017



For more data, circle 43 on inquiry card

For more data, circle 44 on inquiry card ◆



NEW NAME FOR EATON MANUFACTURING COMPANY

New Dimensions in Service

On January 1, 1966 Eaton Manufacturing Company merged its wholly-owned subsidiary, Yale & Towne, Inc., into the parent corporation and adopted a new name.

The strengths and resources of both of these diversified producers of capital goods, materials handling equipment, automotive and consumer products, locks and hardware now reinforce each other. This will mean increased operating efficiencies and expanded dimensions of service to consumers, business and industry — domestic and international.

EATON YALE & TOWNE INC. • 100 Erieview Plaza • Cleveland, Ohio 44114

Tested...Trusted Products Since 1868

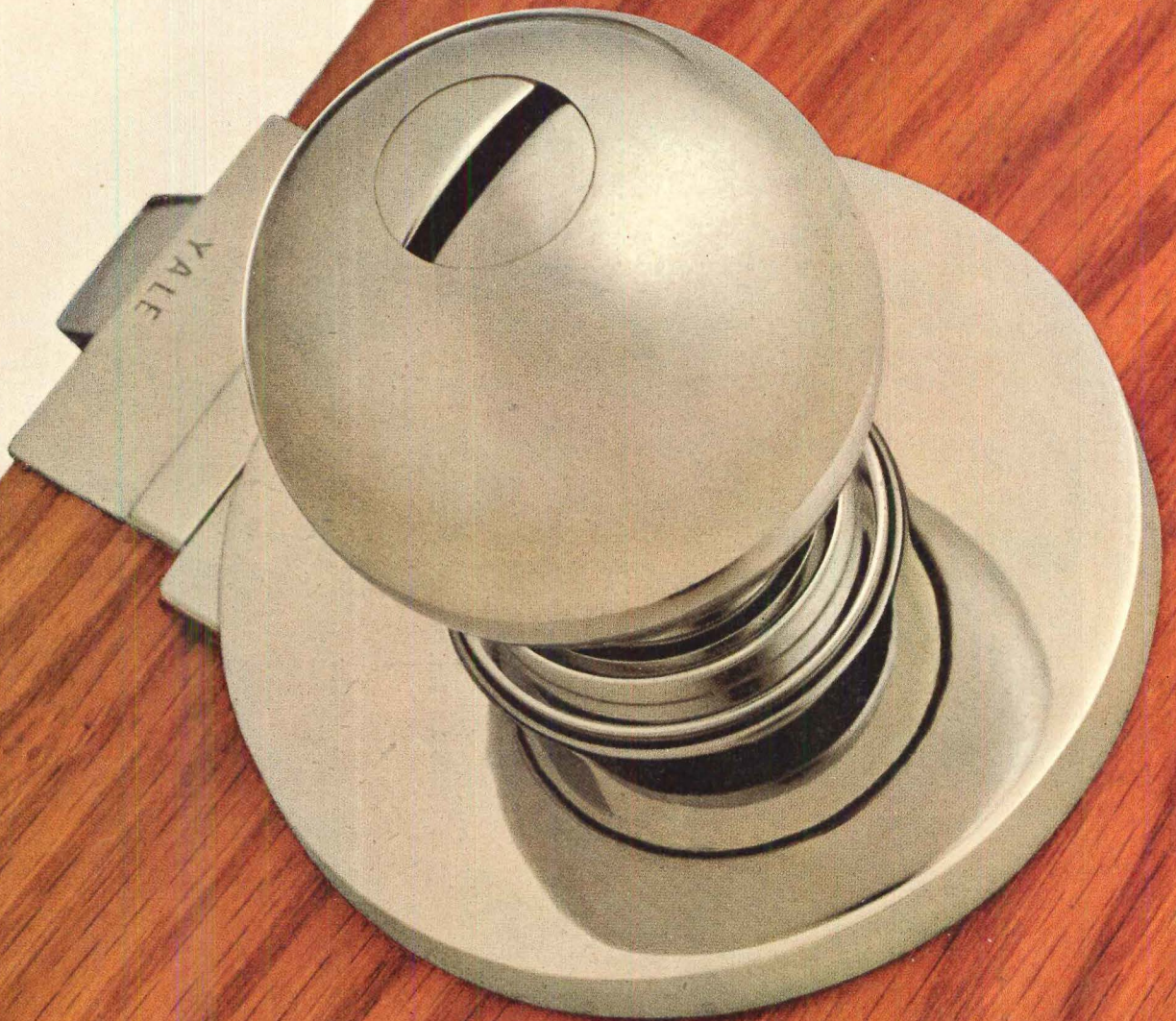


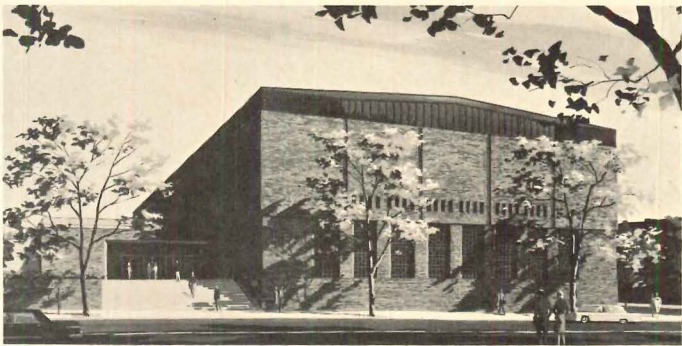
For a complete description of EATON YALE & TOWNE, write today for a copy of our 28-page full color book entitled "New Look for Tomorrow."

KNOB APPEAL

Naturally we design locks to protect. But we don't forget the other prerequisites. Like personality. Every door deserves one. So we design our locks to combine beauty with the brute. It's not easy to come by. But isn't knob appeal worth it?

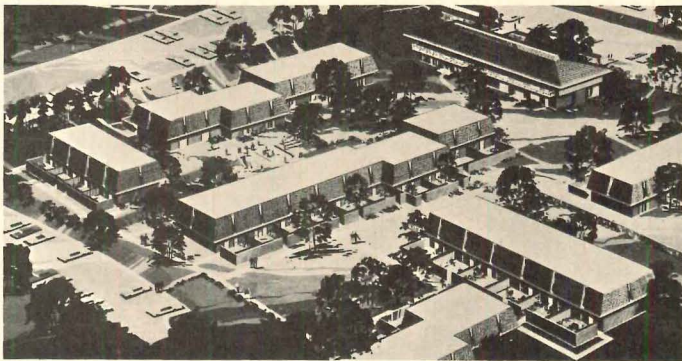
YALE[®] LOOKS AS GOOD AS IT LOCKS
THE FINEST NAME IN
LOCKS AND HARDWARE





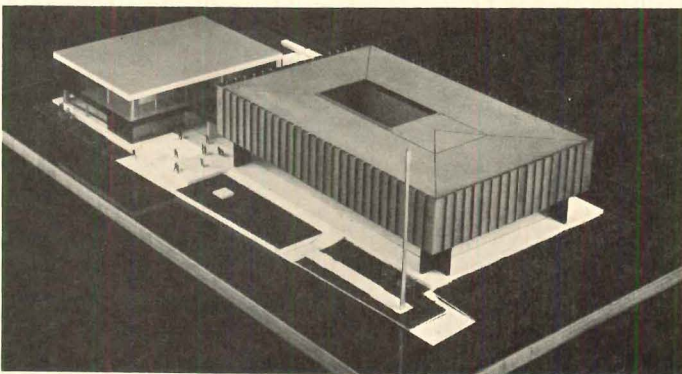
Physical education building lighted by clerestory

Construction has started on the \$2-million physical education building at the University of Pennsylvania in Philadelphia. The structure, which has a gross area of 71,028 square feet, will provide an Olympic-size swimming pool with grandstands for 1,000, a gymnasium, and squash and basketball courts. Architects are Stewart, Noble, Class and partners and the general contractor is the Aberthaw Construction Company.



Student housing has 268 private patios

This 300-unit married-student housing complex at Iowa State University is a two-story, \$3.25-million multi-building project within a landscaped setting to provide maximum privacy. Each of the units will contain two bedrooms and most will have private outdoor patios. Architects for the nearly completed project are Savage & Ver Ploeg; the general contractor is William Knudson & Son.



Design stresses "sobriety and proportion"

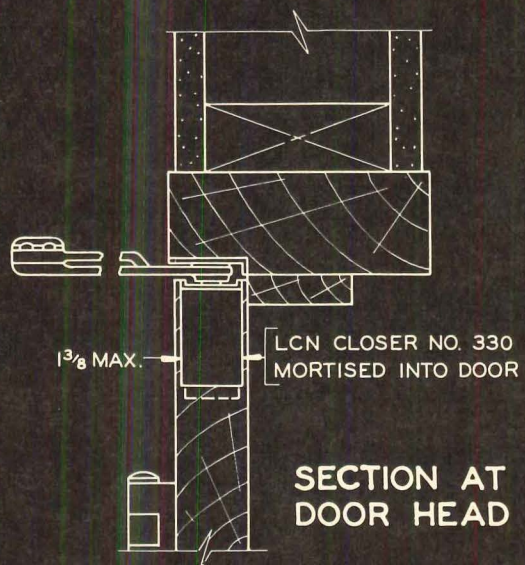
The Czechoslovakian pavilion for EXPO '67, to be held in Montreal in 1967, has a common entrance serving the culture hall and restaurant. The culture hall is glazed on the first floor with a fully enclosed second floor while the restaurant will alternate glass areas with solid slabs. Competition-winning architects are Miroslav Repa for exteriors, Frantisek Cubr for interiors.

Application Details

for LCN concealed-in-door closer
installation shown on opposite page

The LCN series 330 closer's main points:

- 1 Closer concealed; arm only exposed; excellent for interior doors where appearance counts
- 2 Door is hung on regular butts
- 3 Fully hydraulic, with adjustable hydraulic back-check to protect walls, etc.
- 4 Power adjustments at soffit plate and shoe
- 5 Choice of regular arm, hold-open 90-140° or 141-180°



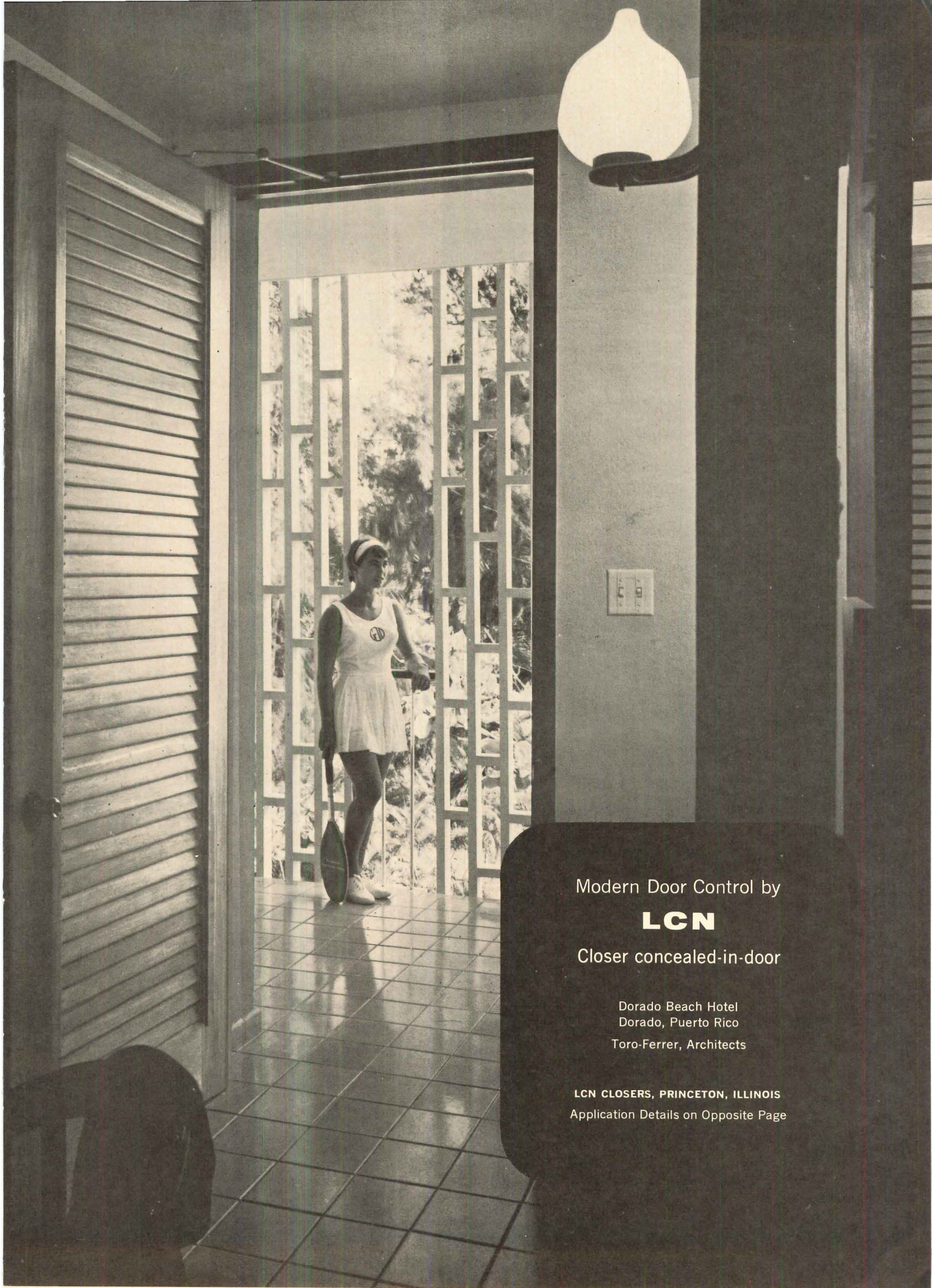
Complete Catalog on request
or see Sweet's 1966, Section 19e/Lc

LCN

LCN CLOSERS, PRINCETON, ILLINOIS

A Division of Schlage Lock Company

Canada: LCN Closers of Canada, Ltd.,
P. O. Box 100, Port Credit, Ontario



Modern Door Control by

LCN

Closer concealed-in-door

Dorado Beach Hotel
Dorado, Puerto Rico

Toro-Ferrer, Architects

LCN CLOSERS, PRINCETON, ILLINOIS
Application Details on Opposite Page

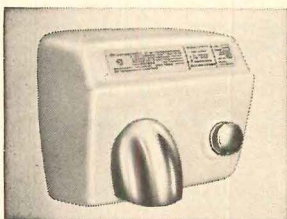
3 facts you should know

1 Drying hands with paper or cloth towels is obsolete. Medical tests prove that *only* electric hand drying (evaporation, *not* absorption) is most effective in getting hands thoroughly dry and minimizes the dangers of disease.

2 Paper and cloth hand drying in washrooms costs *nine times more* than modern electric drying.

3 World electric hand dryers are specified by more architects and engineers than all other brands combined. Only World Dryers have *all* of the features essential to good, service-free drying over the years.

Wire for electric hand drying... specify the world's most respected dryer...



WORLD
ELECTRIC
HAND
DRYERS

WORLD DRYER CORPORATION

616-22 West Adams Street Chicago 6, Illinois

PLEASE SEND MORE INFORMATION

NAME _____

FIRM _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

For more data, circle 48 on inquiry card

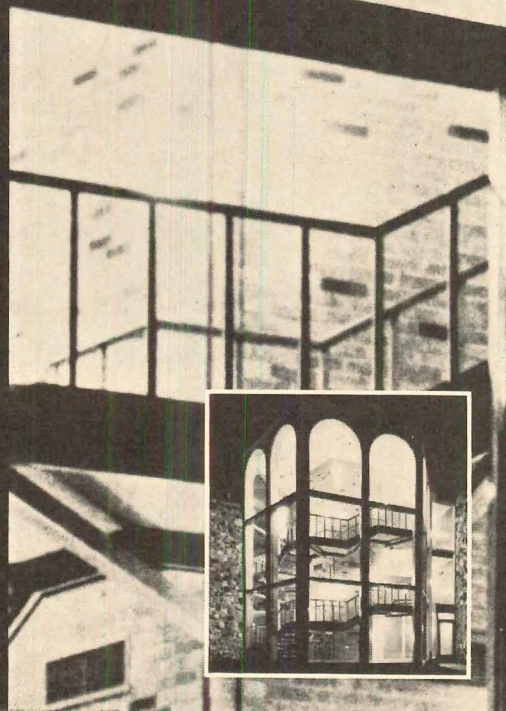
Radius tops— design flexibility with Therm-O-Proof insulating glass.

Therm-O-Proof insulating glass is available in over 200 different design combinations: Trapezoids, triangles and circles; with clear, tinted, heat absorbing or rolled glass; in sizes from 60" x 190" down to 8" x 8" and everything in between. If we haven't got the design you have in mind, we'll do everything possible to make it for you.

Quality too, is paramount in every unit we produce. Continuous attention to detail and quality control are two reasons Thermoproof will be around for a long time to serve you. And there's a 10 year warranty on every unit to back up this quality.

Your building schedule is important to us also. Popular standard sizes are shipped in three days, and most non-standard sizes in three weeks or less.

That's Thermoproof... DESIGN FLEXIBILITY—QUALITY—SERVICE—and a real desire to work with you. Try us.



Imperial House Apartments, Kenosha, Wisconsin. Architect: Sheldon Segel, A.I.A., Milwaukee, Wisconsin.

Therm-O-Proof
INSULATING GLASS

Made more ways—
to fit more ideas.

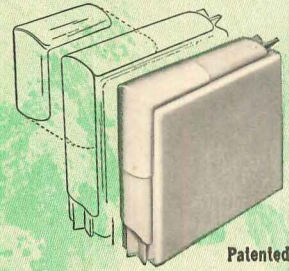
See Sweets $\frac{7a}{Th}$

Thermoproof Glass Company
4815 Cabot Avenue
Detroit, Michigan 48210
subsidiary of
Shatterproof Glass Corporation
44 years of glass experience

For more data, circle 49 on inquiry card

For more data, circle 50 on inquiry card

Why cover the corner when you're going to paint it?



Patented U.S.A.

Every exposed corner of every Weis toilet compartment—
partition, door and stile is capped with a stainless steel
corner reinforcement. Eliminates destructive
welding, brazing and grinding which removes protective zinc coating.

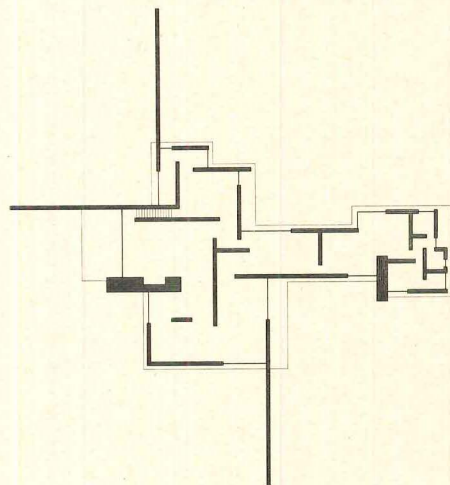
*Another Weis idea for greater
protection—longer life!*



Mies van der Rohe

MIES VAN DER ROHE: *The Art of Structure*. By Werner Blaser. Frederick A. Praeger, 111 Fourth Ave., New York, N. Y. 10003. 229 pp., illus. \$25.00.

Architect Blaser brings together in this elegant volume a group of buildings and projects designed by Mies, and organizes them into groups representative of types of construction. Since the proper study of Miesian architecture is Miesian construction, such an arrangement makes more sense than the more usual chronological organization. Each building or project is presented briefly, with a moderate amount of text, so the handsome drawings and photographs



are given — appropriately — a chance to tell the story. One wishes the examples might have been covered in greater depth; the book has more the flavor of a sampling than of definitiveness. Nonetheless, its lessons are worth learning, and the volume worth recommending.

The graphic design of the book — which is beautifully printed — is striking, and, I am afraid, self-conscious. There are generous areas of white paper and dramatic bleed pages, but the square page format has the double disadvantage of being static in character and not ideally suited to the generally vertical or horizontal shapes of architectural photographs. Thus, a large number of photographs and drawings are extended across the center gutter, with resulting visual discontinuity and annoying distortion at the break line. The designer's use of *sans serif* type gives the book a

dated, 1930 look, and makes reading more of a chore than would a more legible type.

In the larger sense, however, one cannot overlook the importance of Mies in the architectural scene, or belittle the tremendous influence of his ideas and architecture — upon both young and well established architects, in this country and in several others. In this confusion of change and the eternal "something new" in which we live, there is a certain comfort in the consistency and quiet poetry of Miesian architecture. And something to think about when he writes — in the book's foreword — "I believe that architecture has little or nothing to do with the invention of interesting forms or with personal inclinations."

James S. Hornbeck, A.I.A.

Stained glass

STAINED GLASS: AN ARCHITECTURAL ART. By Robert Sowers. Universe Books, Inc., 381 Park Avenue South, New York, N. Y. 10016. 128 pp., illus. \$12.50.

Stained glass is at once both a "lost art" and a medium being more and more widely used in secular architecture as well as in churches. But the author confesses that "to this day stained glass remains, even for some of our most distinguished artists and architects, a singularly intractable medium." Why?

Mr. Sowers' answer is that "no skill or technique is lost, but that several things are very much confused." First of all, "the phenomena of light is per-

haps less understood than anything else." He demonstrates how it is not actually the coloring of the glass but the effective placement of compositions of colored glass in front of a light source that forms the basis of stained glass designing. Also, "stained glass more than any other art is dependent upon a viable architectural base for its very existence. If the art is not hopelessly lost the architect must possess a sense of how this art can be made to function as an architectural element without in the process being reduced to insignificant decoration."

In an earlier book, *The Lost Art*, the author made a case for the revival of stained glass. Here he analyzes the basic hindrances to that revival, beliefs he has arrived at after 10 years of designing stained glass windows for new buildings.

His text is very informative and should be useful to architects. The book is beautifully illustrated — many of the photographs are in color and many are given a full page. The text and illustrations are well coordinated. This is not a collection of the highly publicized works of stained glass but includes the lesser known, and experimental as well as the well known like Ronchamp, Maria Königin and the First Presbyterian Church in Stamford.

Parking in the city

METROPOLITAN PARKING STRUCTURES, A Survey of Architectural Problems and Solutions. By Dietrich Klose. Frederick A. Praeger, 111 Fourth Ave., New York, N. Y. 10003. 248 pp., illus. \$18.50.

The parking problem is a frustrating situation which thrives wherever vast metropolises exist. The author, an architect and teacher of urban planning, has gathered together more than 80 architectural problems and their solutions, answers which he obtained from architects, engineers, city planners and traffic managers. He has arrived at the same or similar conclusions as the Buchanan Report, "Traffic in Towns," (June 1964, page 78).

continued on page 74

THIS MONTH'S BOOKS

REVIEWS

Werner Blaser, "Mies van der Rohe: The Art of Structure".....	72
Giorgio Boaga and Benito Boni, "The Concrete Architecture of Riccardo Morandi".....	80
Claudius Colin, "Helmut Jacoby Architectural Drawings".....	74
Dietrich Klose, "Metropolitan Parking Structures, A Survey of Architectural Problems and Solutions".....	72
Robert Sowers, "Stained Glass: An Architectural Art".....	72
Books Received.....	98

If you're not specifying paint

you're asking for it.

Give your client the longest-lasting masonry finish. Specify a PLIOLITE® binder.

Chemically inert PLIOLITE resins are unaffected by alkalis in masonry. Grip and hold even on a chalky stucco wall.

Dry to a tough film that resists humidity, temperature extremes, industrial fumes—every common cause of paint failure.

PLIOLITE binders have proven their durability over 20 years. They're included in

eight government specifications. And used by more than 100 paint manufacturers. We have a list telling who they are. Ask for it. Goodyear Chemical Data Center, Dept. N-84, P. O. Box 9115, Akron, Ohio 44305.



GOOD YEAR
CHEMICALS

For more data, circle 51 on inquiry card

THERE'S NOTHING EQUAL ABOUT "OR EQUAL"

It's a specification phrase that does a disservice to clients and suppliers alike. Builders of quality equipment don't like it. Price-cutting suppliers of inferior goods hide behind it. But it's still included.

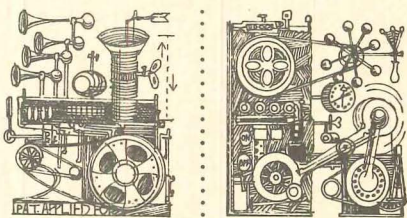
Presumably, "or equal" gives fair treatment to all; encourages many suppliers to bid. But it actually has a reverse effect: causing buyers to select equipment on price alone by implying that all bids cover equipment of equal quality. And, emphasis on price favors second-rate products. Quality is penalized.

Obviously, no two products are ever really equal; especially complex equipment. And, no two companies offer equal know-how or equal service.

Base bid specifications assure quality, preserve competition

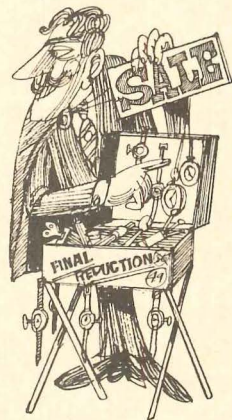
The Base Bid specification does away with many of the evils of "or equal." It's prohibited only for certain Federal work.

In a "Base Bid with Alternates" specification, accurate definition of



Obviously, no two products are ever really equal.

quality is assured; maximum competition is preserved. Contractors can price their bid with confidence.



Price-cutting suppliers of inferior equipment hide behind it.

As a result, lower prices prevail; and you and your client can decide on quality, price, design, life and service of a product in advance.

Each item is clearly defined as to quality, capacity, function and performance. The manufacturer's name and model number are given.

Choice is up to the owner, architect and engineer; not the suppliers.

The contractor isn't forced to "shop" to cut his bid. He knows what he and his competitors must furnish. If he objects to a specified brand, he may request a change.

Importantly, quality suppliers are not penalized. Quality and price differences are out in the open. Buyers can specify as much quality as they want and need.

"Favoritism" to the client

Any judgment on quality will be subject to cries of "favoritism," but the professional knows that this is no excuse for not making the judgment. Favoritism? Yes—to the client.



Buyers can specify as much quality as they want.

Architect, contractor, and manufacturer can all share in a job completed as it was conceived (and specified). And, in the last analysis, the owner of such a building benefits most of all.

The solutions can be subdivided into two categories: general correlations drawn from town planning and structural problems of parking facilities associated with urban areas and, in most cases, with the central business district; and the results achieved when parking facilities are provided in conjunction with specific buildings. In the latter a synthesis must also be reflected in the structural design of the building.

The correlations of the first category are associated with the redeveloped city since, as experience in Philadelphia has shown, it is rarely possible to solve the parking problems of a city in a single move. The aim of the more piecemeal approach is a city-wide differentiated system of traffic facilities. The survey indicates that the traffic situation in our cities can be fundamentally changed by this systematic provision of parking facilities. However, the point is made that the parking problem can only be solved on the basis of town planning considerations—and not in isolation. All of the considerations concerning the systematic accommodation of parking in the town center are based on the assumption that the motorist cannot leave his car at the curb. Underground garages, multi-story garages with straight and helical ramps, and mechanical parking installations are the technical possibilities described.

The possibilities of combining parking facilities with department stores and shopping centers, office and bank buildings, and hotels and housing estates are examined in the second part of this survey.

The book contains over 700 diagrams and photographs which illustrate American, European and Australian experiments in the parking dilemma. The text appears in German in addition to the English translation.

Jacoby renderings

HELMUT JACOBY ARCHITECTURAL DRAWINGS. Introduction by Claudius Coulin. Frederick A. Praeger, 111 Fourth Ave., New York, N. Y. 10003. 108 pp., illus. \$13.75.

Helmut Jacoby's mastery in the field of architectural rendering has attracted eminent architects to his studio. Here is a portfolio of his works with a capable introduction by Claudius Colin which includes long excerpts of Mr. Jacoby's thoughts.

It is Jacoby's aim to show a pro-
continued on page 80

Honeywell

What
wash fixtures give
you twice the
cleaning power
?



BRADLEY DUO WASHFOUNTAINS!

Twice, because space-saving Duos can serve two students at one time. Yet, they extend only 16" from the wall! And they're trim, colorful, attractive. So, progressive architects use Duos throughout modern schools: classrooms, cafeterias, and science and art rooms.

Foot-operated Duos are doubly sanitary, too: hands touch only a spray of clean, tempered water, never germ-laden faucets. And the bowl is automatically rinsed clean by the running spray. Result: Duos are

also ideal for food handling areas and first aid rooms.

Finally, Duos save water and water heating costs, maintenance time, and installation costs.

Choose from a rainbow of beautiful colors and stainless steel. But always choose Bradley Duo Washfountains — they belong in modern schools!

For details, see your Bradley representative. And write for latest literature. Bradley Washfountain Co., 9159 Fountain Drive, Menomonee Falls, Wisconsin 53055.



For more data, circle 52 on inquiry card



NEW! POLYESTER-EPOXY COATING BREAKTHROUGH...

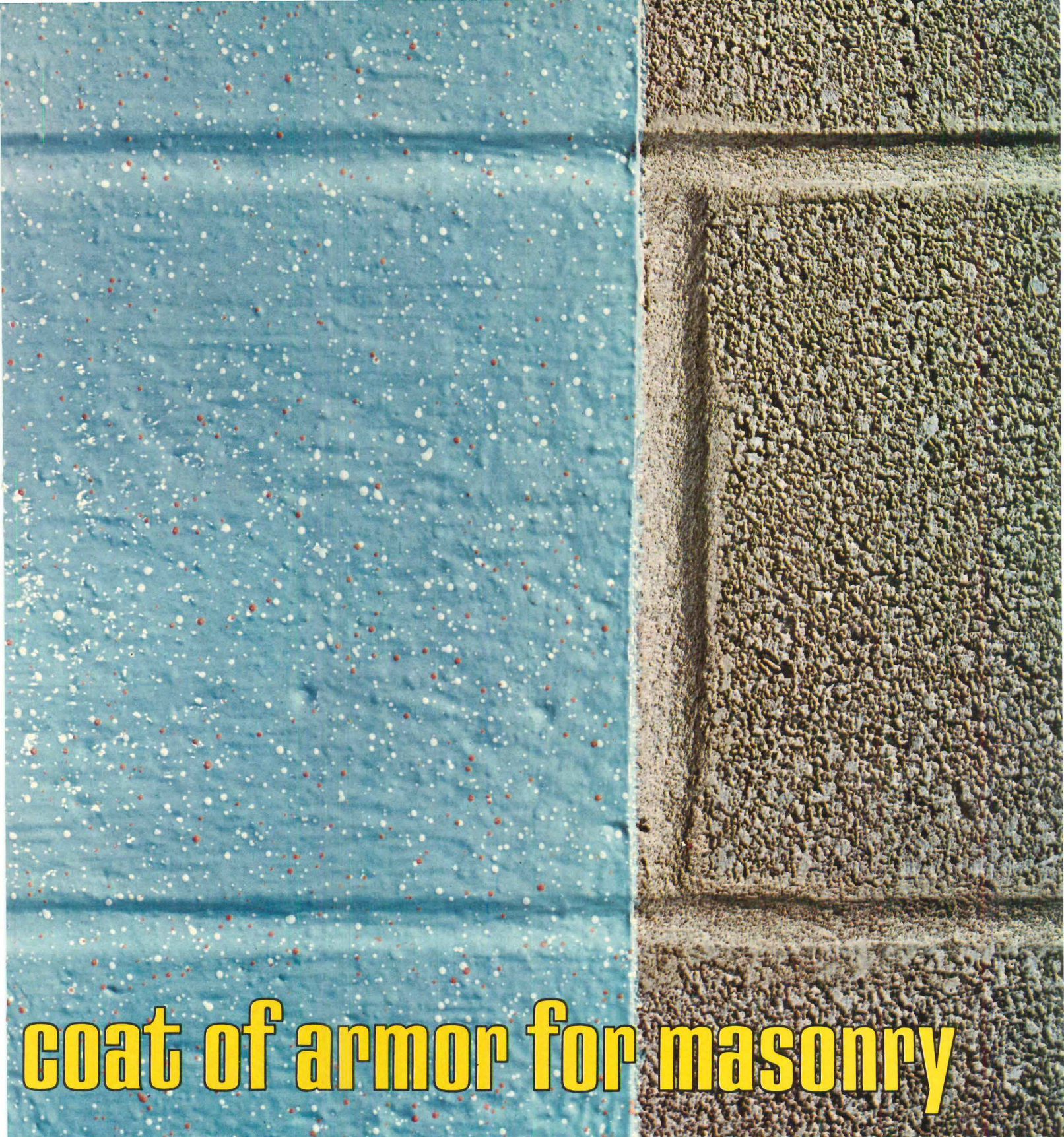
Glid-Tile Epoxide creates a

Glid-Tile Epoxide beautifies interior and exterior masonry while providing armor-like protection. A new polyester-epoxy resin is the secret.

Glid-Tile Epoxide is a high-solids, high-build coating that can be brushed, rolled or sprayed; it seals porous mortar joints. Saves material and application time.

Glid-Tile Epoxide resists abrasion, impact, many chemicals. Scuff marks, crayon, food stains wipe off easily. Available in gloss or semi-gloss. Pastel colors. Spatter or web finish.

See your Glidden Architectural Consultant for complete specifications and a listing of trained applicators.



coat of armor for masonry

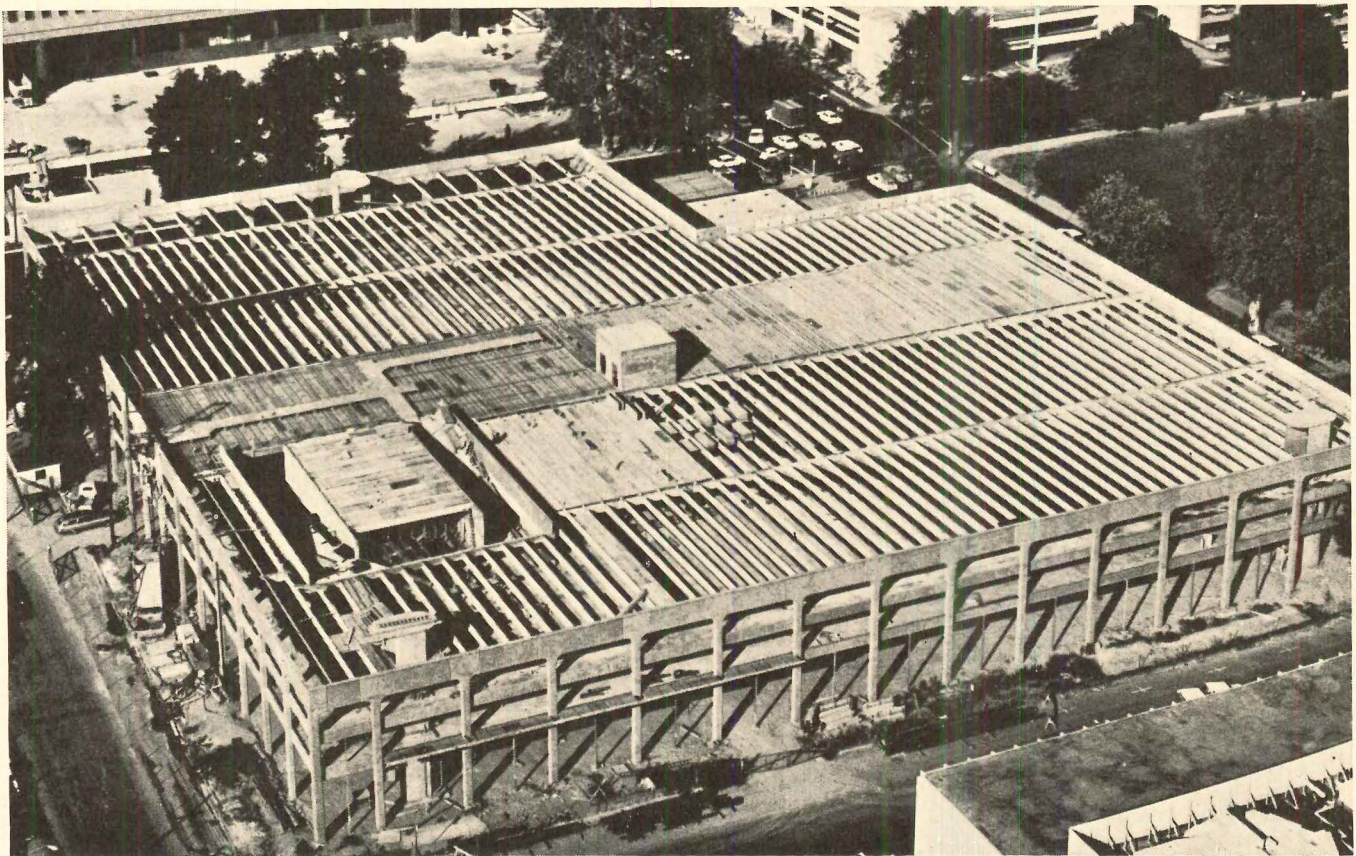


Washroom walls coated with nonporous, chemical resistant Glid-Tile Epoxide offers lasting beauty and durability. *Photo: Fire Station, The Second District Headquarters, Louisville, Kentucky. Architect: Tafel and Schickli. Painting Contractor: J. H. Whitehouse & Sons Painting Company.*



COATINGS AND RESINS
MAINTENANCE DIVISION
CLEVELAND, OHIO 44115

For more data, circle 53 on inquiry card



Another Sacramento, California, improvement with prestressed concrete

This 800-car parking garage and commercial site is a new addition to the Sacramento redevelopment area. Parking is provided on two upper floors and roof, with rental space for 12 businesses on the ground floor.

All girders and joists in the new structure are of prestressed concrete. Inverted T joists are 60 feet long, have depth of 20½ inches, flange of 14 inches. Rectangular beams are 16 inches wide, 26 inches deep and 22 feet long.

This project provides another example of the use of prestressed concrete to meet special needs. Prestressed concrete provides a unique combination of advantages: Fast erection, simplicity in finishing, a minimum of maintenance, local availability, high strength-to-weight ratio, wide acceptance and adaptability to creative design.

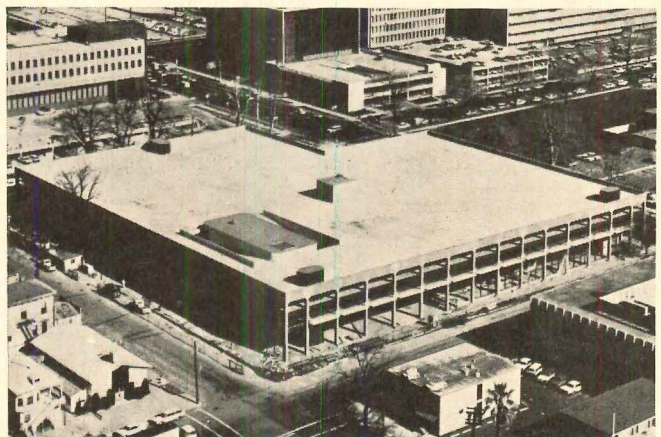
Delta Prestress Concrete, Inc., Sacramento, California, relied on Armco and the dependable Union TUFWIRE® Strand for this project. More than 600,000 feet of TUFWIRE Strand was used.

A comprehensive booklet on TUFWIRE Products for prestressed concrete is available. Write for it on your business letterhead. TUFWIRE and other Union Wire Rope Products are made by Armco Steel Corporation, Department W-406, 7000 Roberts Street, Kansas City, Missouri 64125.

Prestressed Concrete Produced: Delta Prestress Concrete, Inc.,
Sacramento, California

Planning, Architecture, Engineering: Leo A. Daly Company, San Francisco, Calif.

General Contractor: Continental-Heller Construction Co., Inc.,
Sacramento, California



ARMCO STEEL

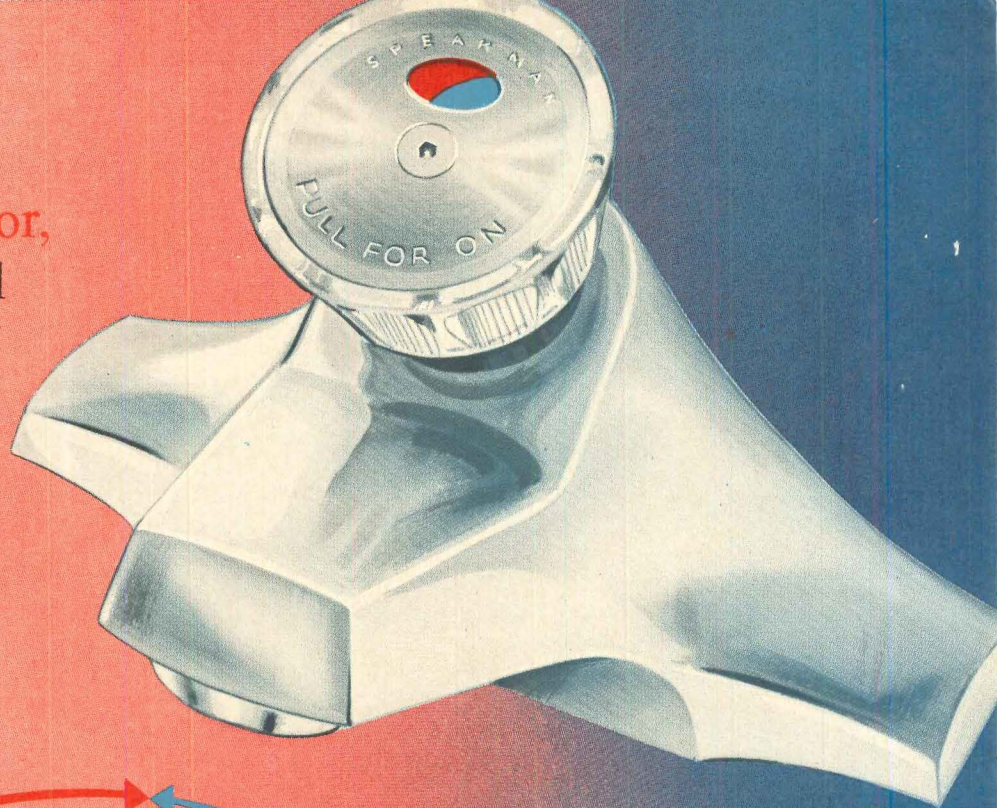


For more data, circle 54 on inquiry card

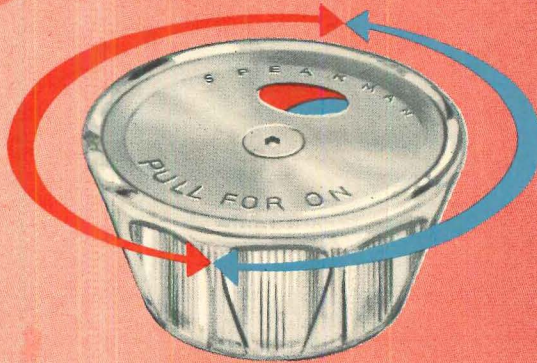
For more data, circle 55 on inquiry card

SPECIFY EXCITEMENT!

This exciting new way to control water, **with color**, makes other single control valves old-fashioned!



LEFT FOR HOT



RIGHT FOR COLD

SPEAKMAN
colortemp[®]
for lavatory,
shower and bath

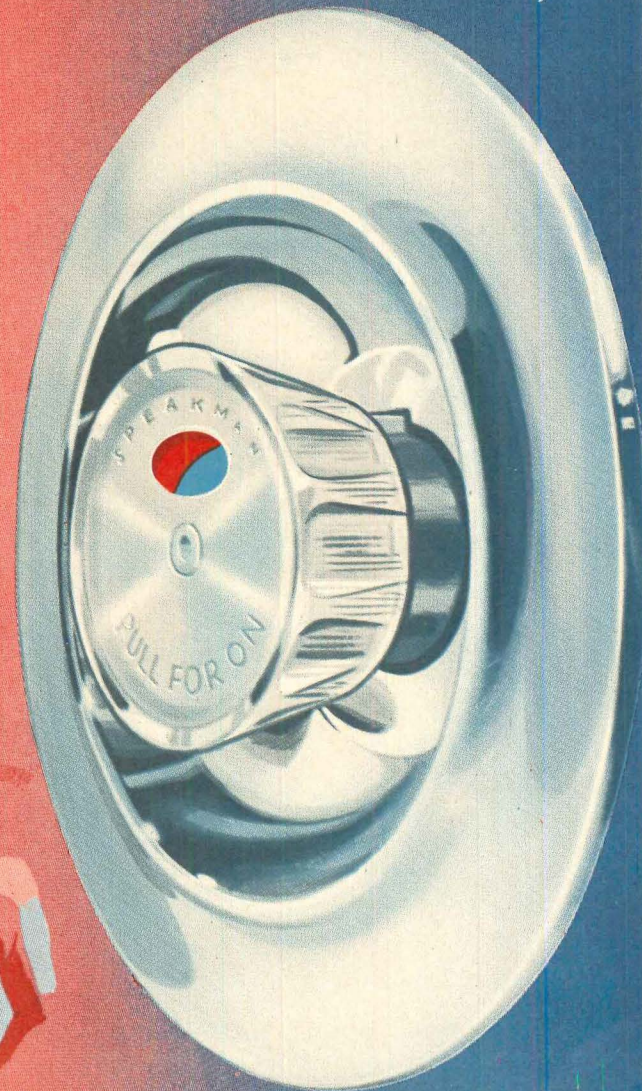
Dial left to full red for hottest water. Dial right to full blue for coldest. In-between for exact temperature desired.

This remarkable push-pull faucet brings new beauty and functional luxury to the lavatory, bath or shower. The Colortemp dial, a Speakman exclusive, shows water temperature *in color* merely at the turn of the dial. The cartridge push-pull faucet controls water flow so easily children never forget and leave the water running. An extra plus is the advanced styling in solid brass with beautiful chromium finish.

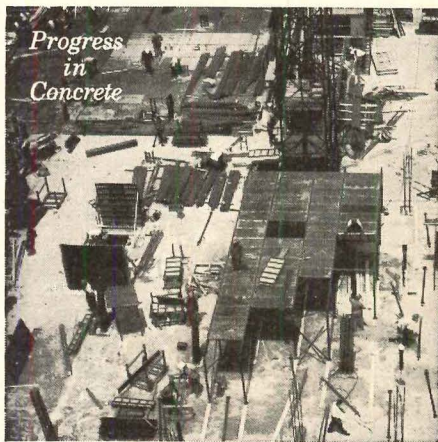
When you specify Colortemp faucets you specify a new cartridge concept that eliminates lubrication needed by ordinary gliding cylinders. Yet Colortemp gives longer wear . . . after one-half million "on-off" tests the patented Speakman cartridge cylinder still operated with smooth silent ease. One reason is Du Pont "Teflon" at friction points, the same remarkable material that prevents sticking in cooking utensils. For complete details and specifications see the new revised Speakman master catalog.



SPEAKMAN® COMPANY
Wilmington, Delaware 19899



continued from page 74



SLAB SHORE SYSTEM
NEW METHOD OF FLAT SLAB
FORMING FOR MULTI-STORY
HIGH-RISE CONSTRUCTION



Symons Slab Shore System uses Symons standard Steel-Ply Forms, normally used for vertical wall forming, for all decking requirements. Material adaptability, ease of assembly, speed of erection and stripping are among its advantages over conventional flat slab forming.

Almost any slab forming requirement up to 15' in height is made possible by combining tubular steel shores and extensions. Under normal loading conditions, each shore can support up to 60 sq ft of formed deck with a minimum of lateral bracing.

Forms are set on sliding ledger angles; securely held without clamping or connecting hardware. Forms strip easily, without disturbing stringers or shores. System eliminates reshoring; allows more reuse of forming equipment.

Symons Slab Shore System, including all component parts, is available for rental with purchase option.

Free field service and engineering layouts are available for all jobs. Using this service increases the benefits of the System . . . means a better job, at a lower cost.

CONCRETE FORMING EQUIPMENT
SYMONS MFG. COMPANY
122 EAST TOUHY AVE., DES PLAINES, ILL.

MORE SAVINGS FROM SYMONS

For more data, circle 56 on inquiry card

jected building exactly as it will look when it is built. "This might be called an impossible undertaking," states Mr. Jacoby, "because such a drawing would have to take into account different station points, seasonal changes, variations of daylight and artificial lighting, as well as changing weather conditions. The stationary elements would have to be shown in ever new relationships to the moving objects. Even the subjective impressions of future viewers who will approach the building in varying moods should be taken into consideration. If we want to continue this speculation, we will also have to take into account the changes adjacent buildings and the whole neighborhood may be subject to. No matter how true I try to be to reality, reality will always be somewhat different. Some architects believe it is better to ignore the surroundings and to draw only the building itself—as if it were a statue or a monument. Others prefer impressionistic sketches that leave it to the imagination of the viewer to flesh out according to his own ideas. In my experience, the professional requirements are more than that: they demand minutely accurate drawings."

Morandi

THE CONCRETE ARCHITECTURE OF **RICCARDO MORANDI**. By Giorgio Boaga and Benito Boni. Frederick A. Praeger, 111 Fourth Ave., New York, N. Y. 10003. 234 pp., illus. \$20.00.

This retrospective collection of Morandi's work has great value for those who are interested in this engineer's technique with concrete. His activity has been prolific indeed. Recognition of his worth became more firmly established with the construction of the Storms River Bridge in South Africa, the bridge over Lake Maracaibo in Venezuela, the Polcevera viaduct at Genoa, the project for the Sports City in Teheran, the systems for saving the temples of Abu Simbel, and the buildings for the Fuimicino International Airport in Rome.

The authors have composed an impressive volume. The text explains Morandi's work clearly, and the photographs and drawings which illustrate the constructions are sufficiently numerous. Mr. Morandi's thoughts on the design of structures appear in the introduction.

The drawings reproduced for this book range from the simple line sketch to the meticulously detailed rendering. All are sensibly left to speak for them-

continued on page 98

Place your floodlights on a Pedestal - with superior Wide-Lite* features!



Fits All Types of Fixtures!

Functional Beauty!

3-Member Construction for Greater Strength!

Pre-Wiring Cuts Costs!

Aluminum or Steel!

Extra Ballast Room!

Pre-Aligned Anchor Bolt Kit!

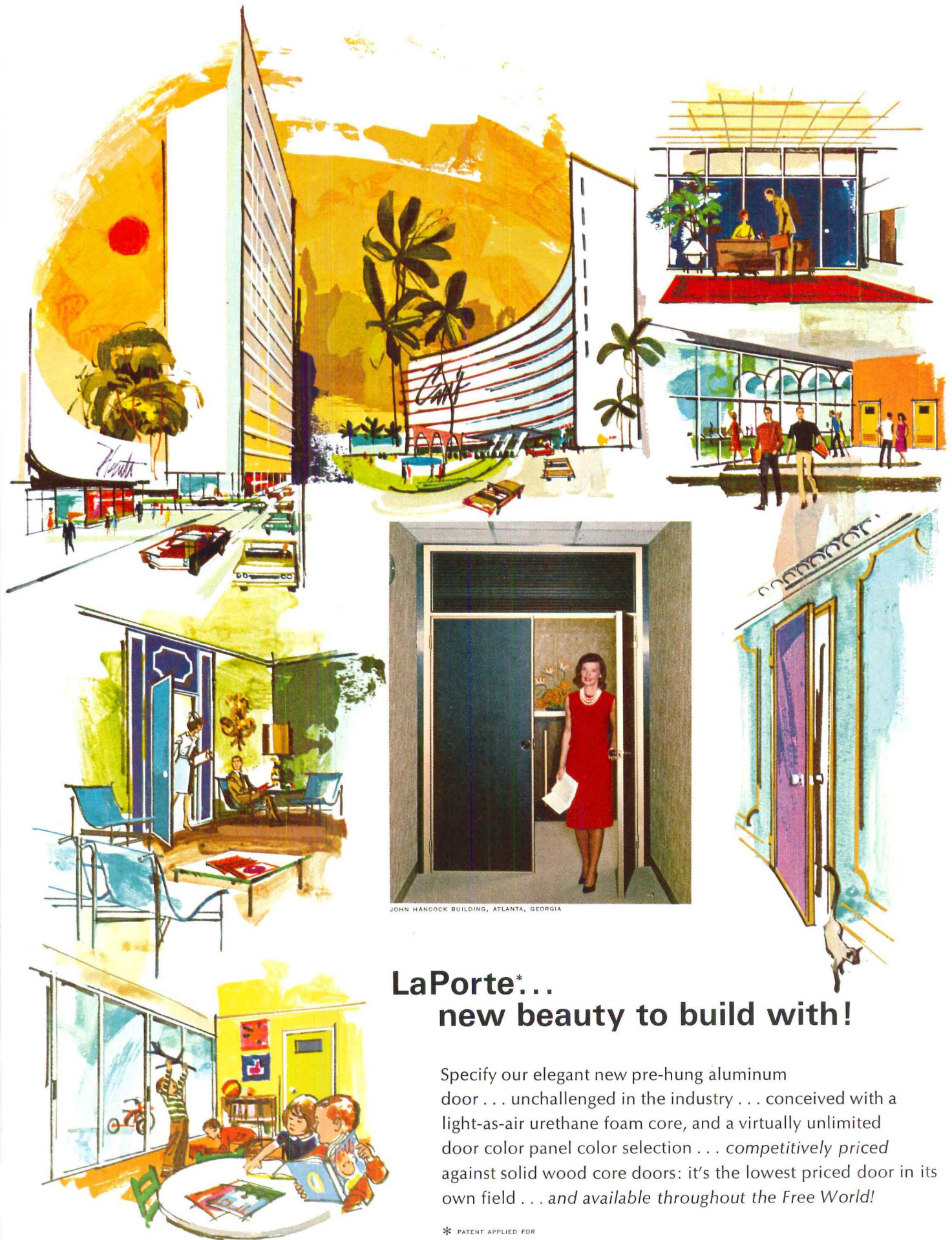


Floodlights • Ballasts
Indoor Luminaires • Poles

WIDE-LITE CORPORATION
A Division of Esquire, Inc.
4114 Gulf Freeway
Houston, Texas

*Trademark of Wide-Lite Corporation

For more data, circle 57 on inquiry card



**LaPorte*...
new beauty to build with!**

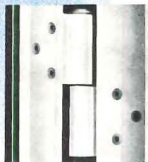
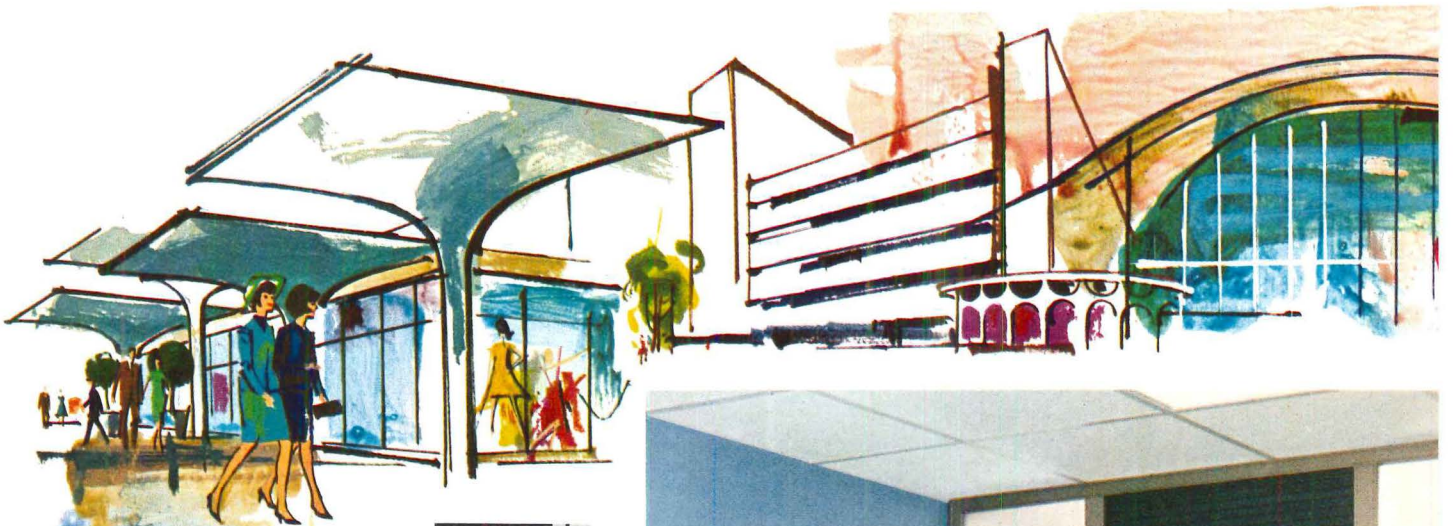
Specify our elegant new pre-hung aluminum door . . . unchallenged in the industry . . . conceived with a light-as-air urethane foam core, and a virtually unlimited door color panel color selection . . . *competitively priced* against solid wood core doors: it's the lowest priced door in its own field . . . *and available throughout the Free World!*

* PATENT APPLIED FOR

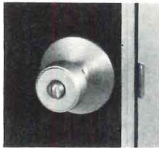
ENGINEERED FOR DISTINGUISHED ARCHITECTURE . . .



Atlanta • Chicago • Cleveland • Dallas • Paramus, N. J. • Los Angeles • Export throughout the Free World



LaPorte Hinges are not handed . . . have been used on doors weighing 4 times as much as LaPorte.



Distinctive Hardware . . . standard knob is simple, functional . . . optional choices are unlimited!



An IN-A-RALE Closer can be installed into this door. Adjustable closing, sweep, latching speeds . . . back check.



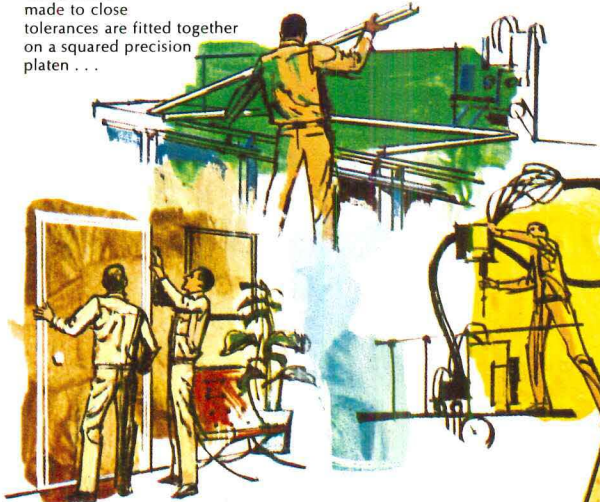
JOHN HANCOCK BUILDING, ATLANTA, GEORGIA





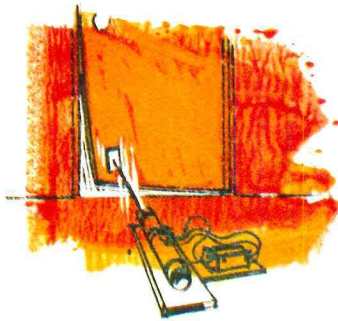
Next time you set your mind to dreaming ... think of us!

Components
made to close
tolerances are fitted together
on a squared precision
platen . . .

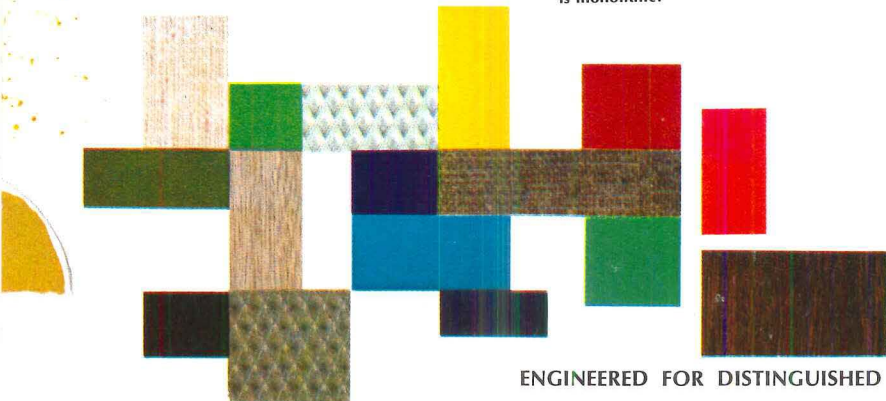


Urethane foam in a measured amount is pumped under pressure between door panels . . . Urethane foam instantly fills the door cavity . . . under pressure, it spreads and fills every tiny space and actually becomes the tough, rigid inner door . . . As the urethane foam cures, it locks and bonds LaPorte components together forever with a strength unsurpassed in the industry . . . So simple, so precision made . . . LaPorte and frame should be the last thing you install before you make your punch list . . .

There's only one limit to your use of LaPorte! It's your own imagination! Let your mind soar . . . this is the door you've hoped for! LaPorte is trim . . . architect designed . . . it's light weight, every part bonded by tough urethane . . . foamed-in-place to create a monolithic structure that will outlast the buildings it serves. ▶ LaPorte installs in only ten minutes; it's virtually destruction-proof! It resists condensation, sweating, warping, mildew and dry rot deterioration. It muffles sound . . . insulates twice as efficiently as the next best material on the market; and it's heat resistant, actually self-extinguishing! ▶ It's breathtakingly colorful. Available in wood tone panels . . . and in a color range as wide as your own imagination! ▶ Put LaPorte to work. See Sweet's, your Amarlite representative, or write to Amarlite, Division of Anaconda Aluminum, Main Office, P. O. Box 1719, Atlanta, Georgia 30301.



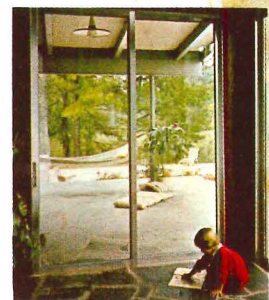
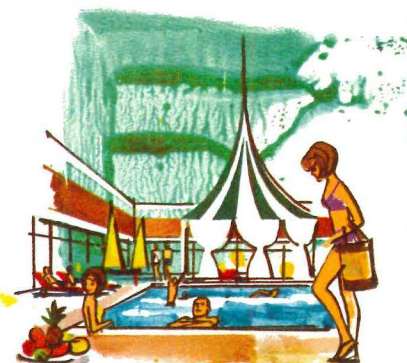
Only Amarlite LaPorte
is monolithic!



ENGINEERED FOR DISTINGUISHED ARCHITECTURE . . .

Amarlite[®]
OF ANACONDA ALUMINUM

Atlanta • Chicago • Cleveland • Dallas • Paramus, N. J. • Los Angeles • Export throughout the Free World

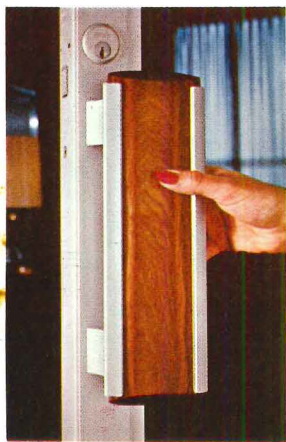


Amarlite makes it all...

From the matchless LaPorte to curtain wall... Amarlite, one of the most modern and complete aluminum fabricating facilities in the World... engineers products for distinguished architecture! Here, we make the finish more beautiful... the tolerances more precise... the package more perfect! *Next time you set your mind to dreaming... think of us.*



100 NORTH MAIN BUILDING, MEMPHIS, TENNESSEE



ZACHRY, ATLANTA, GEORGIA



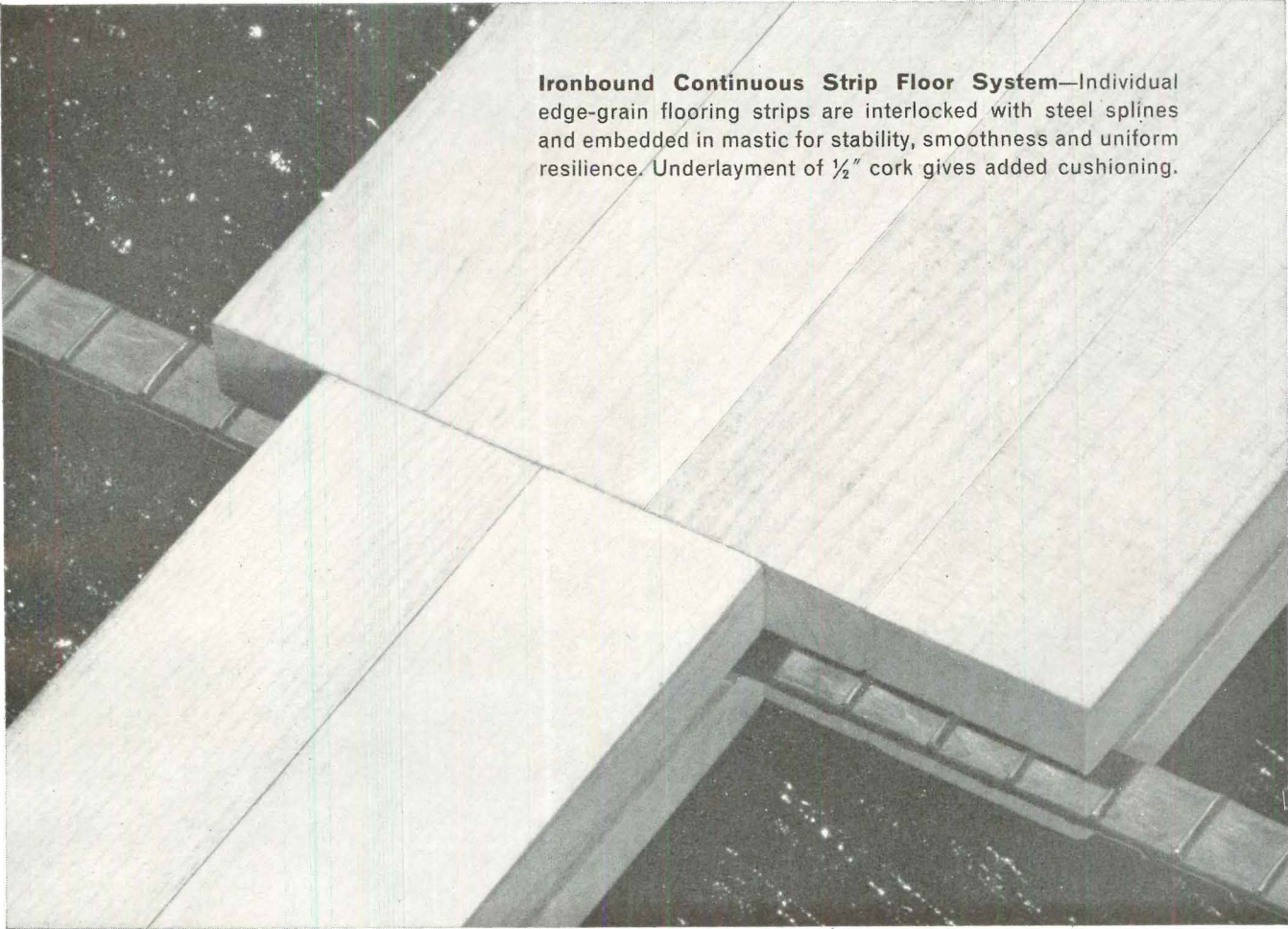
<p>Entrances</p>	<p>Curtain Walls</p>	<p>Store Fronts</p>	<p>Windows</p>	<p>LaPorte</p>	<p>Sliding Doors</p>
------------------	----------------------	---------------------	----------------	----------------	----------------------

Catalogs Available!

ENGINEERED FOR DISTINGUISHED ARCHITECTURE . . .



Atlanta • Chicago • Cleveland • Dallas • Paramus, N.J. • Los Angeles • Export throughout the Free World



Ironbound Continuous Strip Floor System—Individual edge-grain flooring strips are interlocked with steel splines and embedded in mastic for stability, smoothness and uniform resilience. Underlayment of 1/2" cork gives added cushioning.

Robbins *Ironbound*® Northern Maple Floor guarantees resilience, stability, low-cost upkeep



Cleburne County Gymnasium, Heflin, Ala.
Architects: Chas. H. McCauley and Assoc., Birmingham, Ala.
Installer: E. P. Cuthrell Flooring Co., Birmingham, Ala.

In gymnasiums, auditoriums and many other areas, the Robbins IRONBOUND floor system gives maximum satisfaction. Installation of MFMA Northern Hard Maple edge-grain flooring by this superior method (see photo above) is made and guaranteed by experienced, franchised applicators, and backed by Robbins.

From coast to coast, Robbins IRONBOUND Floors give trouble-free service and low-cost upkeep in schools, colleges and other institutions with exacting floor requirements. For detailed data on floor systems and name of nearest authorized Robbins installer, write: Robbins Flooring Company, Dept. AR-266, White Lake, Wis. 54491. See our catalog in Sweets.



ROBBINS FLOORING COMPANY
Dept. AR-266 White Lake, Wisconsin 54491

Send complete information
 Advise name of authorized installer in this area

Name _____
Firm _____
Address _____



For more data, circle 58 on inquiry card

For more data, circle 59 on inquiry card

When the stock moved out, stock Andersen Windows moved in!



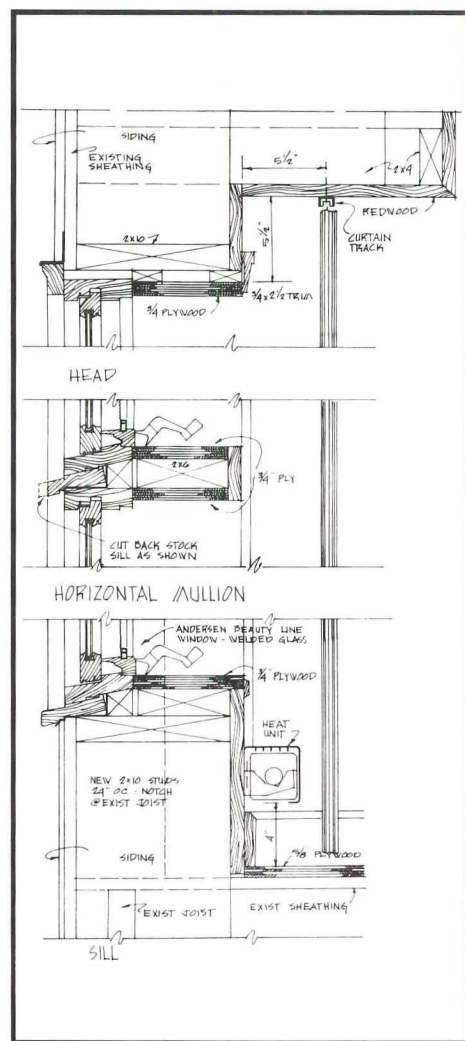
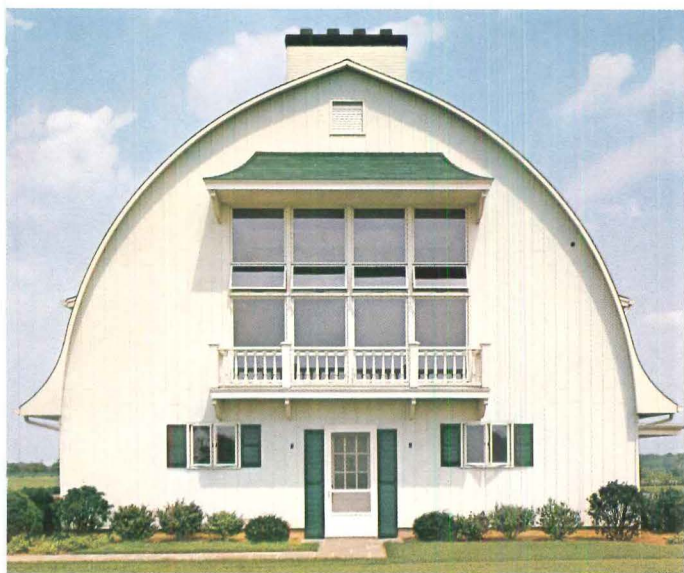
Hominy Hills Country Club, Colts Neck, New Jersey. Architect: Derick B. Kipp, A.I.A., Montclair, N.J. Builder: Charles Hagerman, Colts Neck, N.J.

This architect turned a cattle barn into the elegant Hominy Hills Country Club, Colts Neck, N.J.

And once again, stock Andersen Windows came through in beautiful style. Andersen Casements, Gliders, and Beauty-Lines

(3 of 6 available types) were able to contribute greatly to the architect's design scheme. Without being obtrusive. Almost like they were designed for this job alone.

That's the way Andersen Windows always perform. In conventional designs. Or under the most bizarre, most difficult circumstances. Or on monumental remodeling jobs like this. Or on the avant garde creations of the day.



Windows: Andersen Casements, Gliders, and Beauty-Line* Windows with welded insulating glass.

Here, **extra-weathertight** Andersen Windows are combined with welded insulating glass. Golfers can cool off after a tough 18 holes in efficient, economical air conditioned comfort. Winter fuel savings are significant, too.

Equally important, Andersen Windows are **built to operate smoothly, silently, almost effortlessly** 'til the cows come home.

Need more proof that getting involved in custom millwork may be a waste of time? Call your Andersen distributor for a Tracing Detail File. Or check Sweet's.

Andersen 
Windowalls*
*TRADEMARKS OF ANDERSEN CORPORATION
 ANDERSEN CORPORATION • BAYPORT, MINNESOTA 55003
Window Beauty is Andersen

Fiberglas roofing tape completely unitizes a roof. Holds the joints together. Firmly. Tenaciously. Moisture can't seep through. With Fiberglas roofing tape there are no cracks. No crevices. No loss of first mopping ply.

Fiberglas tape works well with all roof insulations. But it works even better with Fiberglas insulation. Together, they're a team. A system. Maintenance-free for years. And less expensive in the long run. Make it a real long run.

Use the whole system and reduce your roofing failures.

For more information on the Tape Joint System, write Owens-Corning Fiberglas Corp., Industrial and Commercial Division, 717 Fifth Ave., New York, N.Y. 10022.

OWENS-CORNING
FIBERGLAS
THE ROOF IS THE TOP

What's mopped on top
stays on top of a Fiberglas* taped joint.

ROOF-TAPE



*T-M (REG. U.S. PAT. OFF.) O-C.F. CORP.

Dividend Engineering—to stretch your building dollar while improving building performance.

For more data, circle 60 on inquiry card

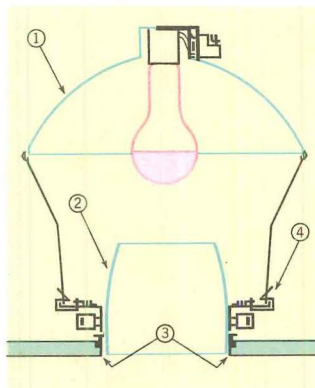
For more data, circle 61 on inquiry card



general downlight

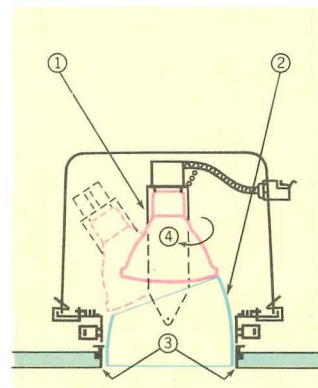


adjustable accent light



SILVER BOWL REFLECTOR

① Total light is directed upward to ellipsoidal Alzak® reflector which focuses light through ② small molded black phenolic cone aperture—retained in ③ reversible (Duo-Cast) die cast trim. ④ Spring loaded latches permit removal of housing for access to splices and/or top relamping.



ADJUSTABLE ACCENT LIGHT

① Lamp holder support gives up to 35° of vertical angle adjustment. ② Molded, high heat aperture shield in ③ reversible (Duo-Cast) die cast trim ④ rotates through 358° horizontal arc with positive stop. Lamp/shield relationship consistently maintained. May also be used in sloping ceilings.

matched look for many needs. Calculite.®

The difference is in the light. Not the look! From general illumination to fully flexible accent lighting—completely recessed Calculites deliver a variety of lighting effects with look-alike units. Silver Bowl Reflector downlights provide widespread general illumination with minimal source identification. Adjustable Accent Light features easy adjustment for focal lighting. In both units black aperture cones fully shield the source, eliminate distracting brightness, and create a matched look. For maximum versatility, reversible Duo-Cast* trim provides flush trim in plaster ceiling or minimum width overlap in dry ceiling construction. Twenty-five basic Calculite groups (with more than 100 variations) offer a remarkable range of lighting techniques: general or supplemental accent lighting; vertical surface illumination; sharp or soft-edge beam patterns; minimum or articulated source identification. For the clean look . . . see look-alike Calculites at your nearest Lightolier distributor. Check the Yellow Pages or write to Lightolier, Jersey City, N. J. 07305 for brochure 44.

LIGHTOLIER®

Showrooms: 11 East 36th Street, New York;
1267 Merchandise Mart, Chicago; 2515 South
Broadway, Los Angeles; 1718 Hi-Line Dr., Dallas.

*TRADEMARK

PATENTED — U. S. A. & CANADA

Planning an on-the-go office building? Specify a

Recordlift

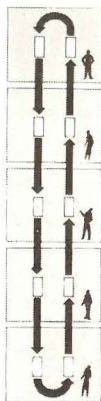
VERTICAL MAIL CONVEYOR BY



**Standard
Conveyor**



Phoenix Mutual Life Insurance Co., Hartford, Conn. *Architect:* Harrison & Abramovitz. *Contractor:* George A. Fuller Co.



The ultra-modern office buildings seen here differ greatly in architectural style—yet they do have one thing in common to give them remarkable functional efficiency.

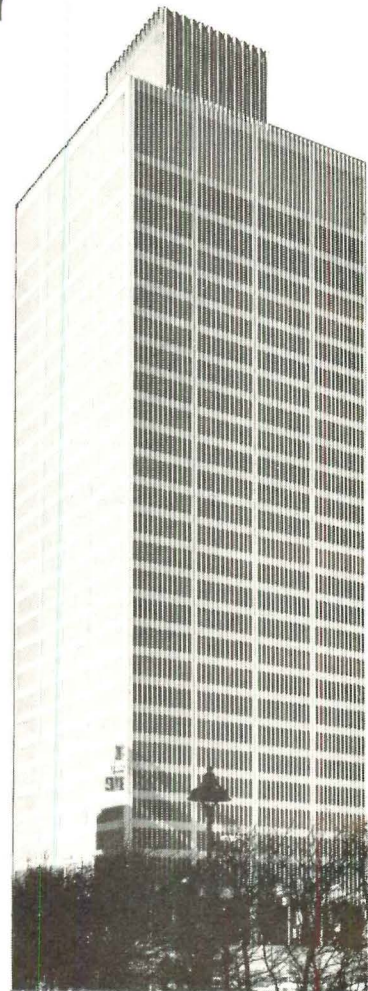
It's a STANDARD CONVEYOR *Recordlift* Vertical Mail Conveyor System, schematically illustrated at the left.

By providing fast, selective distribution of inter-floor mail and supplies, a *Recordlift* cuts operating costs by saving 100's of mailboy and messenger man-hours daily. Operation is

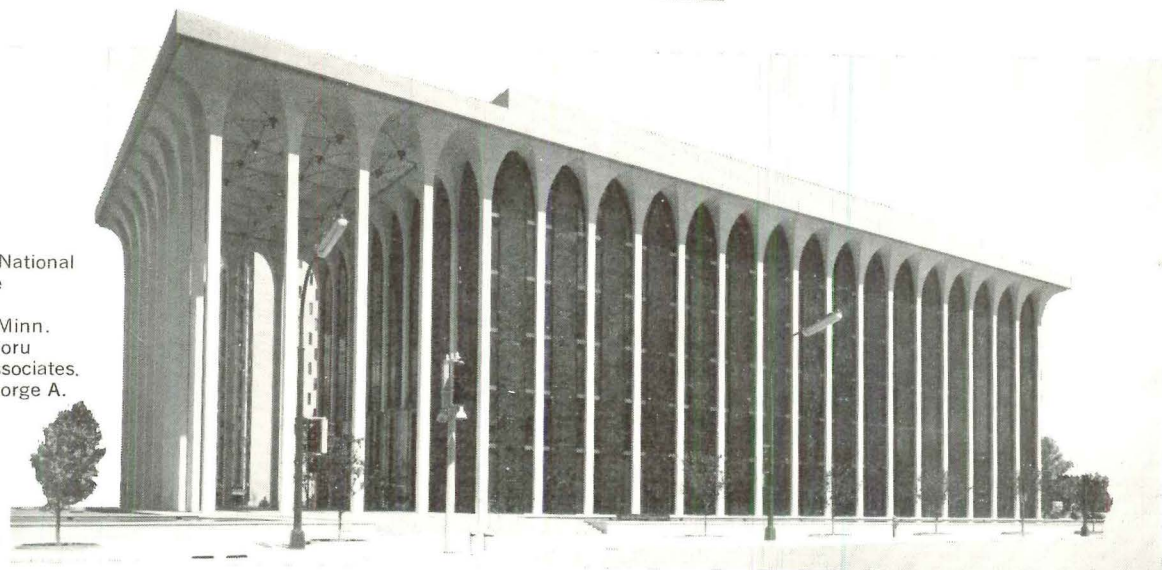
completely automatic . . . all you do is load the container, set the address and *Recordlift* delivers. *Automatically.*

It's the *proven* way to solve office building distribution problems! Ideal for hospital use, too!

Get details. Write for new illustrated *Recordlift* Bulletin 153. Describes operation, shows various addressing systems, gives dimensional requirements. Standard Conveyor Company, 312-A Second St., North St. Paul, Minn. 55109.



Michigan Consolidated Gas, Detroit, Mich. *Architect:* Minoru Yamasaki — Smith, Hinchman & Grylls. *Contractor:* Bryant & Detwiler Co.



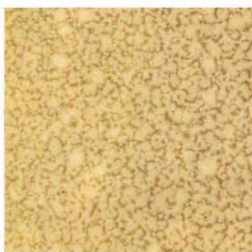
Northwestern National Life Insurance Company, Minneapolis, Minn. *Architect:* Minoru Yamasaki & Associates. *Contractor:* George A. Fuller Co.

For more data, circle 62 on inquiry card

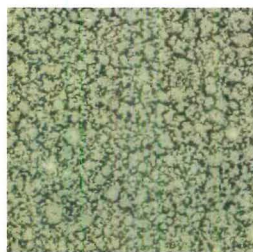
For more data, circle 63 on inquiry card

for entry ways...dining areas...enclosed patios

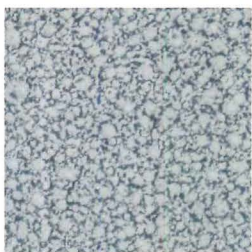
ETRUSCAN ceramic tile



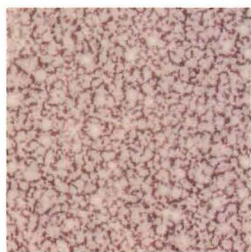
680 Etruscan Gold



610 Etruscan Sage



650 Etruscan Blue



640 Etruscan Rose



630 Etruscan Silver

Your first impression of an entry area with Etruscan tile is one of carefree elegance. Floors gleam softly with any of the 5 rich, beautiful colors—Etruscan Sage, Silver, Rose, Blue and Gold. (680 Etruscan Gold shown in photo above) □ Available in large 6" x 6" flat tiles, Etruscan can be used effectively in entrance areas, breakfast or dining areas, enclosed patios and many other areas. Glazed surface will not scratch or scuff, never needs waxing. Combines lasting beauty with easiest, no-expense maintenance. Etruscan also can be used effectively for accent walls. Sample kits available to architects, decorators and builders who write on their business letterhead. Address Dept. — E6.



The Cambridge Tile Mfg. Co., Cincinnati, Ohio 45215



Jamison Food Service Doors match your brightest, cleanest, most sanitary interiors



Lightweight Jamolite® plastic doors offer modern, attractive appearance. Door in foreground is cooler door. Jamolite freezer door with Frostop® is in background.



Jamison FS double cooler and freezer doors in hotel kitchen are completely stainless clad for easy cleaning and bright appearance.



NSF APPROVAL

National Sanitation Foundation Testing Laboratory, Inc. has awarded seal of approval to Jamison Metal Clad and Jamolite Food Service Doors as meeting high public health standards.

In food service installations throughout the country, attractive Jamison doors are by far the leading specification. For better appearance, for easier operation and longer life, the top choice is Jamison! Write for catalog data to Jamison Cold Storage Door Co., Hagerstown, Md.



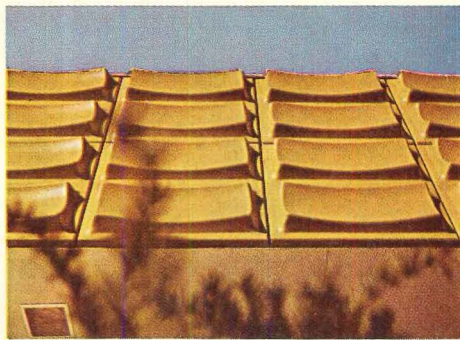
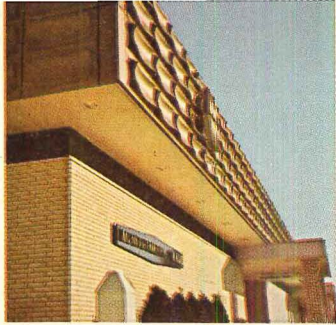
See-Thru plastic door for food service is transparent, lightweight and easy to operate. Door is acrylic plastic, 1" thick.

JAMISON

COLD STORAGE DOORS

For more data, circle 64 on inquiry card

For more data, circle 65 on inquiry card



For sculptured facings ... PLEXIGLAS

Calumet Shopping Center, Munster, Indiana, is an outstanding example of the form, color and texture effects achieved with formed facings of PLEXIGLAS® acrylic plastic. Because PLEXIGLAS forms easily, panels can be produced economically in sculptural shapes which can't be obtained with most widely-used facing materials.

Note the varying patterns of high-light and shadow on the Calumet Shopping Center panels, caused by the changing position of the sun.

PLEXIGLAS is rigid, strong and weather resistant. It is light in weight and inexpensive to install. PLEXIGLAS is available in a broad range of semi-opaque and translucent colors.

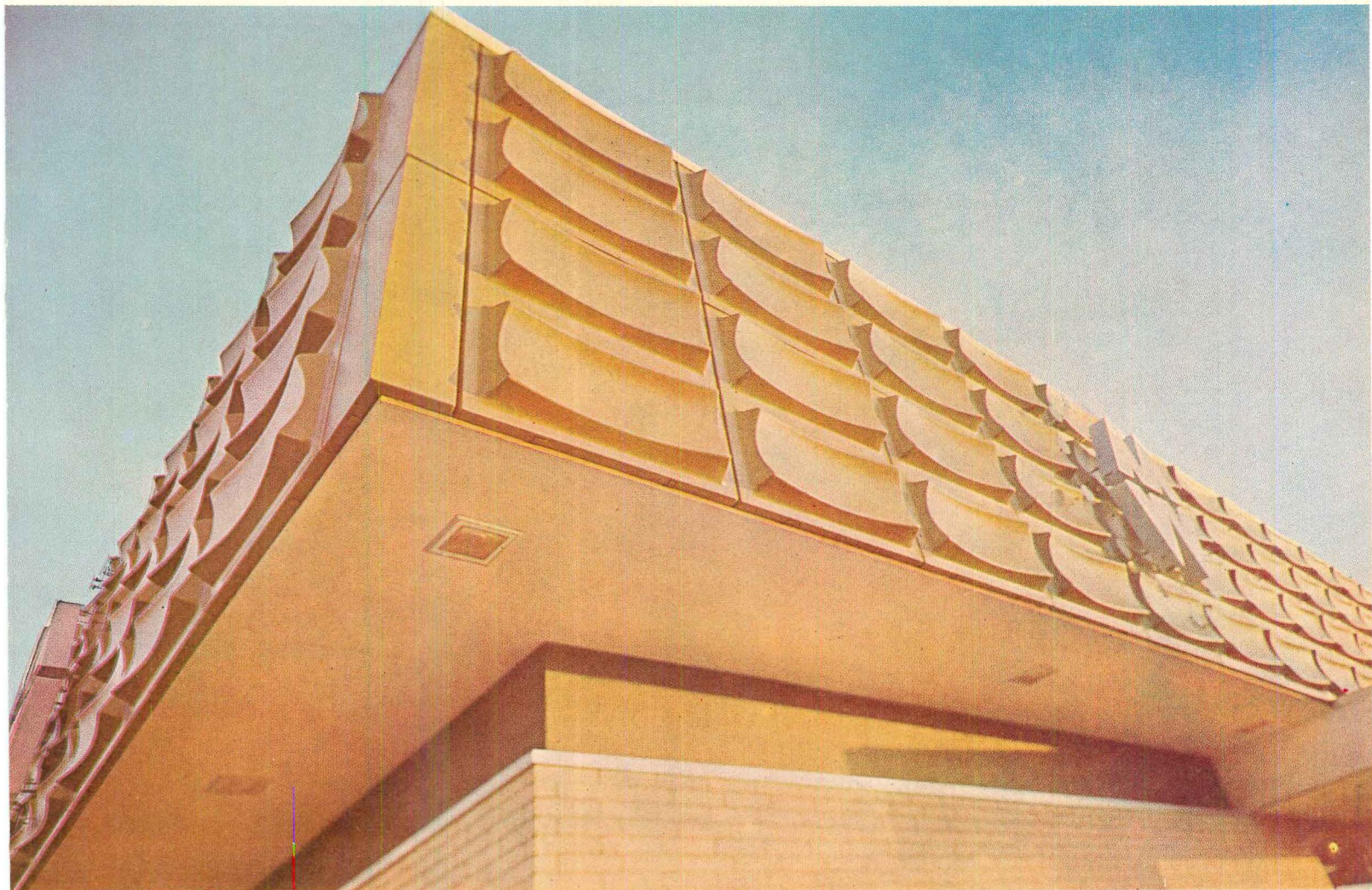
Translucent panels may be back-lighted for luminous facades.

For further information on the design possibilities with facings of PLEXIGLAS, write for a copy of our brochure, "Plexiglas for Facing Panels."

**ROHM
& HAAS** 

PHILADELPHIA, PENNSYLVANIA 19105

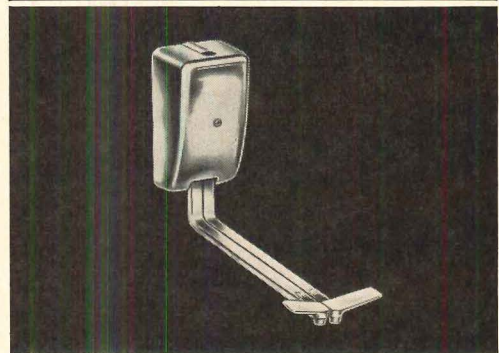
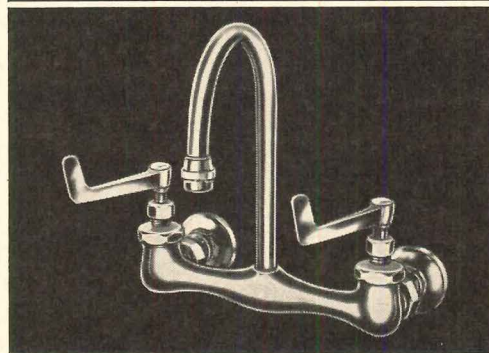
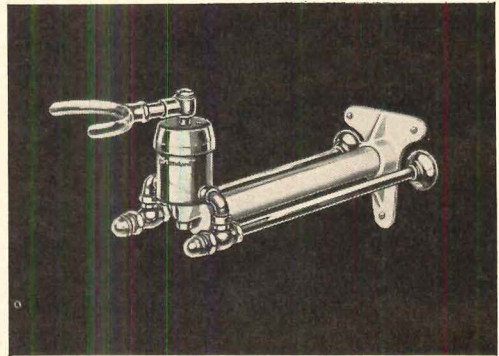
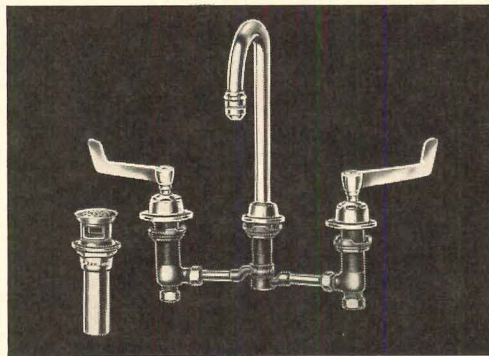
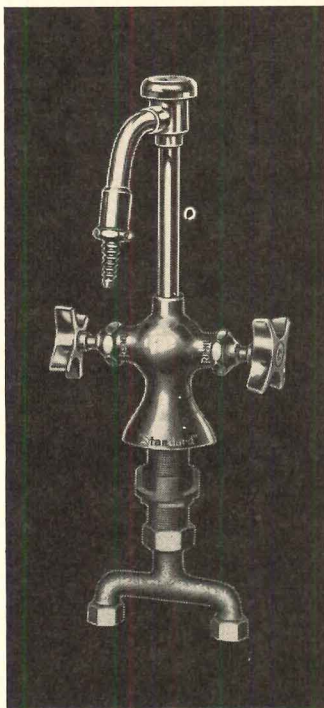
EDWARD J. DE BARTOLO & ASSOCIATES, OWNERS AND DEVELOPERS, YOUNGSTOWN, OHIO © TRADEMARK REG. U.S. PAT. OFF., CANADA AND PRINCIPAL WESTERN HEMISPHERE COUNTRIES. SOLD AS GROGLAS® IN OTHER COUNTRIES.



American-Standard brings you

Hospital fittings that are best any way you turn

-hand, wrist, elbow, knee or foot!



The special-purpose fittings you get from American-Standard give top performance because *we design the action to the needs of the job*. We never compromise or try to fit "universal" working parts into such unlike units as conventional, wrist-action, knee-control or pedal valves. □ Our hospital fittings are of lifetime brass. They're heavily coated with Chromard*, most

*TRADEMARK AR&SS CORP.

durable of chrome finishes. As an extra convenience, most fittings now have color-coded index buttons—red for hot water, blue for cold. For the biggest selection now and the least maintenance in the future, see your American-Standard representative. Or write American-Standard, Plumbing and Heating Division, 40 West 40th Street, New York, N.Y. 10018.

AMERICAN-STANDARD



For more data, circle 66 on inquiry card

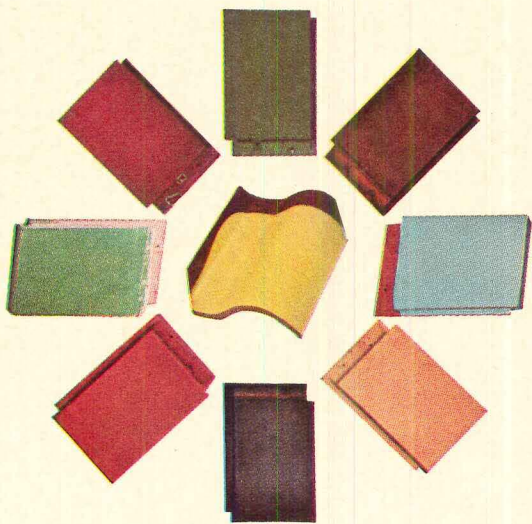


*Harris Memorial Methodist Church
Honolulu, Hawaii*

*Architects:
Wilson Associates, Inc., Honolulu*

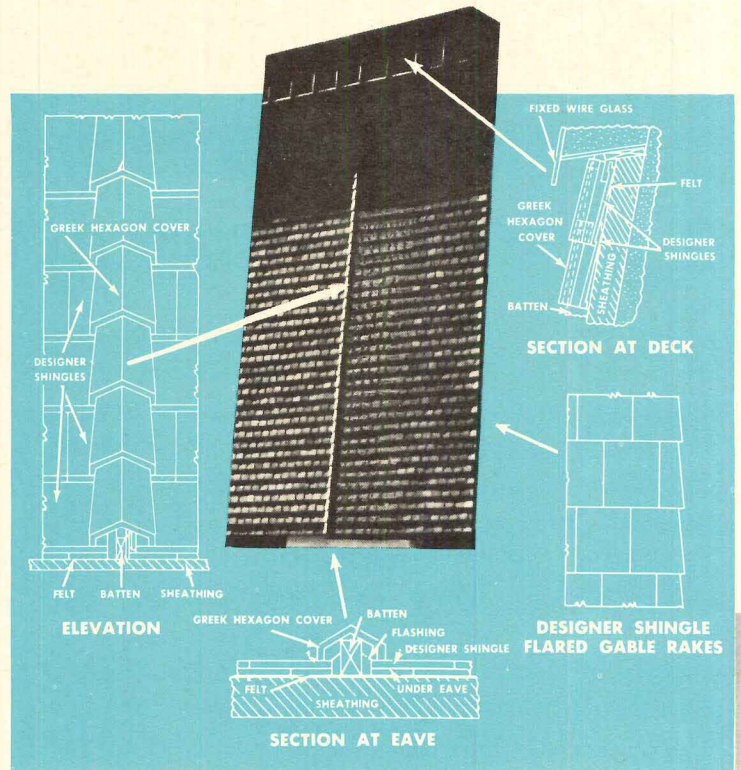
*Roofing Tile:
Ludowici-Celadon*

When the Roof Becomes a Major Element in the Design...



**WIDE SELECTION OF OTHER
PATTERNS, TEXTURES & COLORS**

*Our representatives are always available to
assist you on your special roofing problems*



LUDOWICI-CELADON CO. 75 EAST WACKER DRIVE, CHICAGO, ILL. 60601

Manufacturers of quarry tile, the nation's largest producer of roofing tile and NAILON Facing Brick

For more data, circle 67 on inquiry card



Suppose you run a 2700-bed hospital:

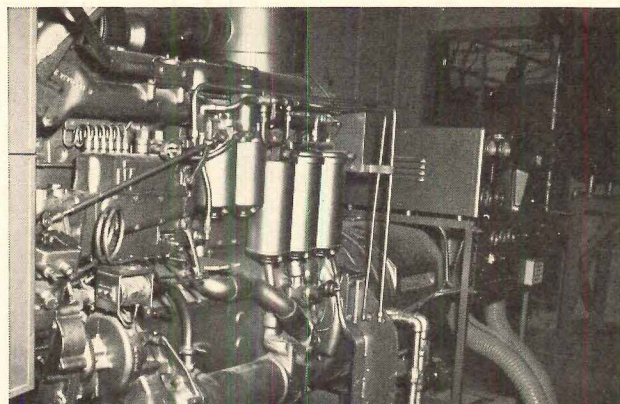
What do you do when the lights go out?

When the big November blackout turned the power off at Kings County Hospital Center, Brooklyn, International® engines went on. Six of them. Driving 150 and 75 kw generators to supply key areas of seven buildings—including corridors, blood bank, operating rooms, food storage and X-ray centers.

The engines ran continuously—just as they were supposed to—until power was restored eight hours later.

Kings County prepared for an emergency before it hit. And they're not through with their power modernization program. By May they'll have nine International engines on standby duty.

How about your emergency power—is it as good as it should be? Get the facts on International engines. They start fast and easy. Run when the chips are down. Write Engine Information, International Harvester Company, Melrose Park, Illinois 60160.



Power when there isn't any: International UDT-429 Diesel drives a 75 kw generator. 150 kw generators are driven by International UDT-817 engines.

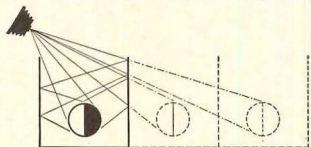
IH INTERNATIONAL
ENGINES

For more data, circle 68 on inquiry card

PILKINGTONS lead the world in glassmaking



There's no more searching test of a glass than to make it into a mirror, and reflect an object in it again and again. There's no doubt which glass makes today's finest, truest mirrors. It is Float glass invented and developed by Pilkingtons.



Pilkington glass is made or processed in up-to-date plants in nine countries, and behind every product are the vast resources of some of the glass industry's largest laboratories, working on quality control, and on research and development. Pilkington research and development produced Float glass which, with its new clarity and brilliance, outdates Plate glass in modern building, for mirror making and for toughening into safety glass. For the finest glass specify Pilkingtons.

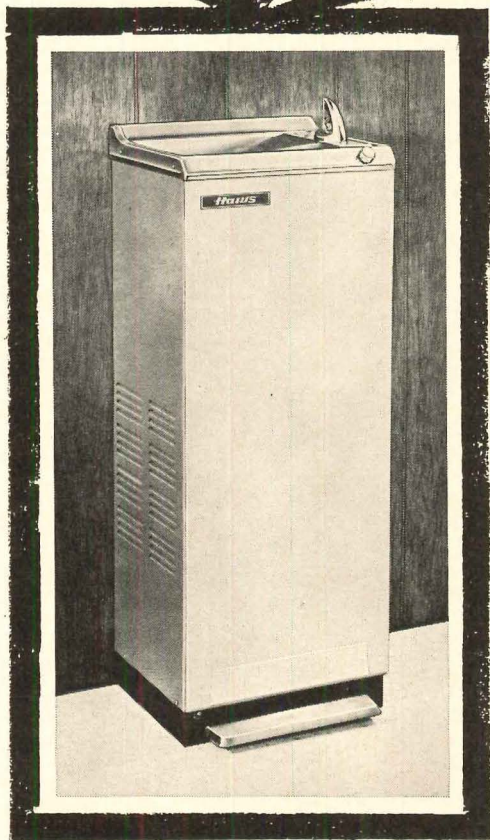
There's an up-to-the-minute glass in the Pilkington range for every building need: Float • Plate • Sheet • Patterned • Wired • Heat-Absorbing • British Structural Glass • 'Armourplate' and 'Armourcast' Doors • Coloured Cladding Glass Domes • Glass Blocks • 'Insulight' Double Glazing Units • Diffuse Reflection Glass • Louvre Blades

For further information please write to: U.S.A. Sales Dept., Pilkington Bros. (Canada) Ltd., 55 Eglinton Ave. East, Toronto, Ontario
PILKINGTON BROTHERS LIMITED, ST. HELENS, LANCASHIRE, ENGLAND.

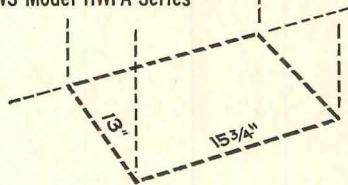
FOR MODERN BUILDING SPECIFY GLASS BY PILKINGTONS—INVENTORS OF FLOAT

For more data, circle 69 on inquiry card

HAWS WATER COOLERS



HAWS Model HWFA Series



put
refreshment
in a
compact
package

High output and space-saving design join naturally in this Haws floor-mounted cooler. It projects just 13" because it's flush-wall mounted, and occupies less than 1.5 sq. ft. of floor space.

Trim as it is, this Haws cooler offers capacities up to 22 gph—enough cool refreshment for 264 people an hour, hour after hour. Specify a Haws cooler for your next project. In Cool Mist Grey enameled finish and stainless steel receptor, they complement every modern decor. Haws coolers are also available with vinyl-covered front panel in grey or tan, or finished entirely in stainless steel. Write or call:



HAWS DRINKING FAUCET COMPANY

1441 Fourth Street • Berkeley, California 94710

For details and information on other Haws products—see your Haws catalogs on drinking fountains, emergency eye/face-wash fountains, drench showers and decontamination equipment; and dental fountain/cuspidor units.



REQUIRED READING

continued from page 80

selves. The black and white reproductions are presented, for the most part, in full-page format.

BOOKS RECEIVED

1965 PROCEEDINGS OF THE ASTM. American Society for Testing and Materials, 1916 Race St., Philadelphia, Pa. 19103. 950 pp. \$12.00.

THE GALVESTON THAT WAS. By Howard Barnstone. The Macmillan Company, 60 Fifth Ave., New York, N. Y. 10011. 224 pp., illus. \$12.95.

MANUAL CRITICAL PATH TECHNIQUES FOR CONSTRUCTION. By F. Thomas Collins. Know-How Publications, Box 7126, Landscape Station, Berkeley, Calif 94717. 193 pp., illus. \$9.80.

FOR THY GREAT GLORY. The Building of Washington Cathedral. By Richard T. Feller and Marshall W. Fishwick. Washington Cathedral, Mount Saint Alban, Washington, D. C. 20016 pp., illus. \$15.00.

FORTS OF THE WEST. By Robert W. Frazer. The University of Oklahoma Press, Norman, Okla. 246 pp., illus. \$5.95.

REBUILDING CITIES. By Percy Johnson-Marshall. Aldine Publishing Company, 320 West Adams St., Chicago, Ill. 60606. 374 pp., illus. \$15.00.

DOOBIE DOO. By Ivan C. Karp. Doubleday & Company, Inc., 277 Park Ave., New York, N. Y. 10017. 206 pp. \$4.50.

ROOFS IN THE WARM HUMID TROPICS. By Otto Koenigsberger and Robert Lynn. Percy Lund, Humphries & Co., Ltd., 12 Bedford Square, London WC1, England. 56 pp., illus. \$3.00.

THE ORTHODOX BAPTISTRY OF RAVENNA. By Spiro K. Kostof. Yale University Press, New Haven, Conn. 171 pp., illus. \$15.00.

THE ARCHITECTURE OF THE ROMAN EMPIRE. By William L. MacDonald. Yale Publications in the History of Art, 17. Yale University Press, New Haven, Conn. 211 pp., illus. \$17.50.

MODERN CHURCHES OF THE WORLD. By Robert Maquire & Keith Murray. E. P. Dutton and Co., Inc., 201 Park Avenue South, New York, N. Y. 10003. 160 pp., illus. Paperbound, \$1.75.

ASPECTS OF CIVIL ENGINEERING CONTRACT PROCEDURE. By R. J. Marks, A. Grant and P. W. Helson. Pergamon Press Inc., 44-01 21st St., Long Island City, New York 11101. 220 pp. Paperbound, \$3.95.

TEESSIDE INDUSTRIAL ESTATE FOR THE BOARD OF TRADE AND THE INDUSTRIAL ESTATES MANAGEMENT CORPORATION FOR ENGLAND. Report and Development Plan 1964 prepared by Napper Errington Lee Collerton Barnett Allott, 133 Osborne Road, Newcastle Upon Tyne 2, England. 85 pp., illus.

THE TOWN OF FINCASTLE, VIRGINIA. By Frances J. Niederer. The University Press of Virginia, The Rotunda, Charlottesville, Va. 68 pp., illus. \$3.00.

THE AMERICAN ASSOCIATION OF ARCHITECTURAL BIBLIOGRAPHERS PAPERS, Vol. 1. Edited by William B. O'Neal. The University Press of Virginia, The Rotunda, Charlottesville, Va. 128 pp. \$5.00.

SCHOOL ENVIRONMENTS RESEARCH 2: ENVIRONMENTAL EVALUATIONS. By the School Environments Research Project, Architectural Research Laboratory, The University of Michigan, Monroe at Tappan, Ann Arbor, Mich. 48104. 186 pp., illus.

SCHOOL ENVIRONMENTS RESEARCH 3: ENVIRONMENTAL ANALYSIS. By the School Environments Research Project, Architectural Research Laboratory, The University of Michigan, Monroe at Tappan, Ann Arbor, Mich. 48104. Unpaged, illus.

COMMERCIAL TIMBERS OF THE WORLD. By F. H. Titmuss. Chemical Rubber Co., 2310 Superior Ave., Cleveland 14, Ohio. 277 pp., illus. \$15.00.

For more data, circle 70 on inquiry card



Over one million bricks were replaced by Plasteel aluminum panels while the hospital continued its day-to-day operation.

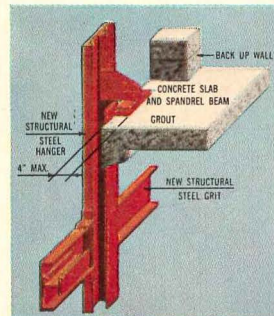
Plasteel Aluminum Panels Revive VA Hospital

To replace the brickwork of the 14-story Veterans' Hospital in Boston, the U.S. Corps of Engineers needed special insulated metal panels. They had to maintain design and structural criteria while keeping wall weight to a minimum. Plasteel Products Corporation of Washington, Pa., suggested the right prescription with Alcoa® Aluminum, and they were selected to supply 140,000 sq ft of bright new porcelain aluminum panels insulated with polyurethane.

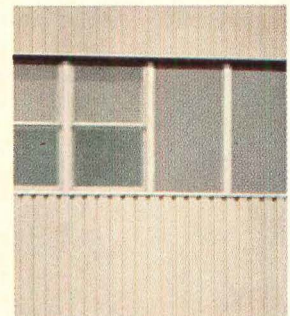
Plasteel Products excels in the fabrication of protected metals for the building industry and is an acknowledged leader in the production of porcelain aluminum panels. This job particularly required extensive modular planning. The modular package design improved the architectural features and resulted in a more economical renovation. To save installation time, Plasteel partially assembled the spandrel panels at its plant and shipped them partially built-up to the site.

Insulated aluminum curtain walls offer many unique advantages. They are colorful, strong and lightweight. They reduce installation time, cut heating and cooling costs and reduce maintenance problems. But best of all, insulated aluminum panels improve the appearance of any building . . . new or old. For more information to meet your needs, simply write Plasteel Products Corporation, McAdam Ave., Washington, Pa. 15301.

Architect & Engineer—Weiskopf and Pickworth, New York, N. Y. • Consulting Architect—Eggers and Higgins, New York, N. Y. • General Contractor—Gevyn Construction Corp., White Plains, N. Y.



A new metal subframe to carry the aluminum window and spandrel panels was tied into the original reinforced concrete frame.



Deep-fluted Plasteel spandrel panels, manufactured from Alcoa Aluminum, were partially preassembled at the fabricating plant.




Plasteel

PRODUCTS CORPORATION
McAdam Ave., Washington, Pa. 222-7400 Area Code 412

For more data, circle 71 on inquiry card



SD51F
24"W x 34½"H x 25"D

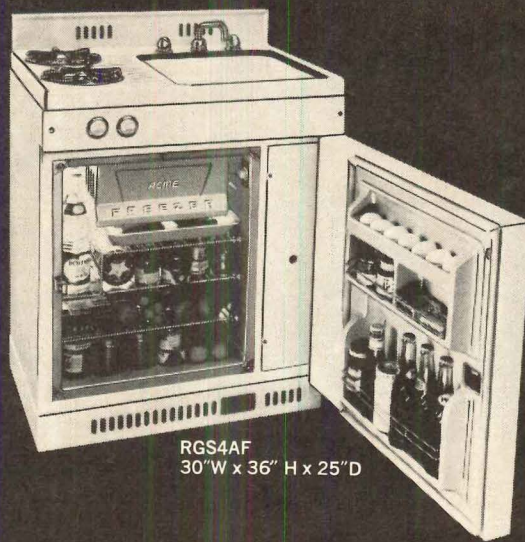
ACME *America's most complete line of compact kitchens*

Made by the oldest and largest manufacturer of compact kitchens to the exacting standards required for rugged institutional use. Write for catalog.

see our catalog in Sweet's 



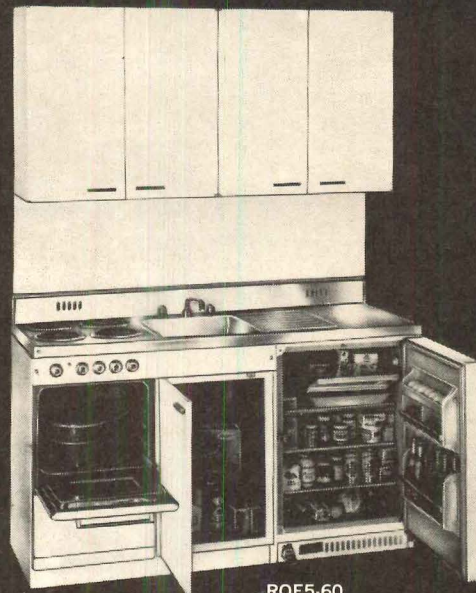
RE5F
27"W x 36"H x 25"D



RGS4AF
30"W x 36" H x 25"D



ROE5
48"W x 36"H x 25"D



ROE5-60
60"W x 36"H x 25"D

ACME NATIONAL REFRIGERATION CO., INC.

Offices and Factory: 19-26 Hazen Street, Astoria, N.Y. 11105 • Mailing Address: P. O. Box 188, Astoria, N.Y. 11105

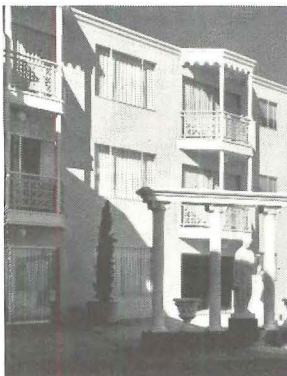
For more data, circle 72 on inquiry card

For more data, circle 73 on inquiry card ♦

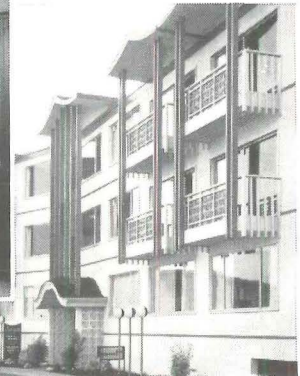
This man is Henry Doelger. One of the nation's largest builders.



These two luxury apartment houses in San Francisco are his. Both are dramatically and lavishly appointed. Both are carpeted with Gulistan.



THE OLYMPIAN



THE MANDARIN

Naturally.

Why Gulistan "naturally"? Henry Doelger knows. We can give you reason-after-reason. Quote statement-after-statement from builders and managers alike. But it all boils down to this: Beauty? Unexcelled! Range of colors, textures, designs and fibers? Unbeatable! Wearability? Unsurpassed! Total economy? Unparalleled! With every Gulistan Carpet Performance Rated* for heavier traffic.

For complete description of the many Gulistan lines and services see our full-color catalog in Sweets Architectural File. Or write:

Gulistan Commercial Department
 Gulistan Carpet Division
 J. P. Stevens & Co., Inc.
 295 Fifth Avenue, New York, N.Y. 10016

GULISTAN[®]
 CARPET
 DIVISION OF J. P. STEVENS & CO., INC.

*TM

◆ For more data, circle 73 on inquiry card

For more data, circle 74 on inquiry card

For more data, circle 75 on inquiry card ◆

Judgment at Lauderdale:

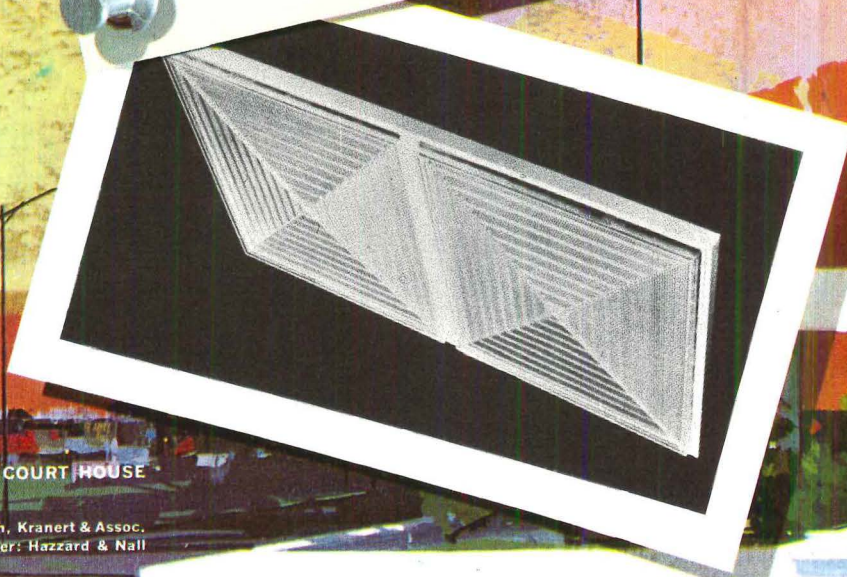
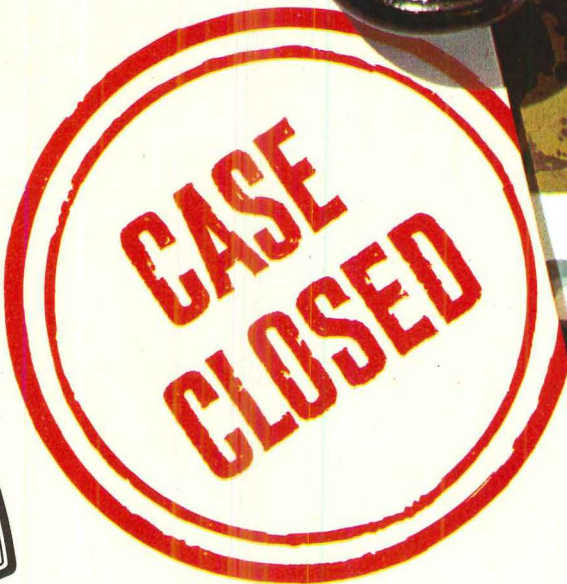
SINGLE-SOURCE, COORDINATED LIGHTING WINS APPEAL IN ALABAMA COURT HOUSE CASE!

"Melding a variety of fixtures into a functional yet smooth-looking lighting system can get pretty complicated" says Malcolm E. Smith, A.I.A., of Northington, Smith, Kranert & Associates, architects. "Particularly in the Lauderdale County Court House where we had some definite ideas requiring fixtures not available in standard designs. That's where Day-Brite entered the picture. Besides standard styles which met our requirements, they also had the facilities to come up with everything we needed, on a custom basis. I can't say how much time and trouble was saved by having all our needs filled by one manufacturer. But it was considerable. And we achieved exactly what we wanted, with no design compromises. The results add up to mighty convincing testimony in favor of a one-stop source for lighting."

CUSTOM DESIGNING is just one of several ways in which Day-Brite can make a valuable contribution to your lighting needs. To learn more about these services, contact your Day-Brite representative. He's eager to help. For the best solution to any lighting problem, look to Day-Brite...where the creative answers are coming from.

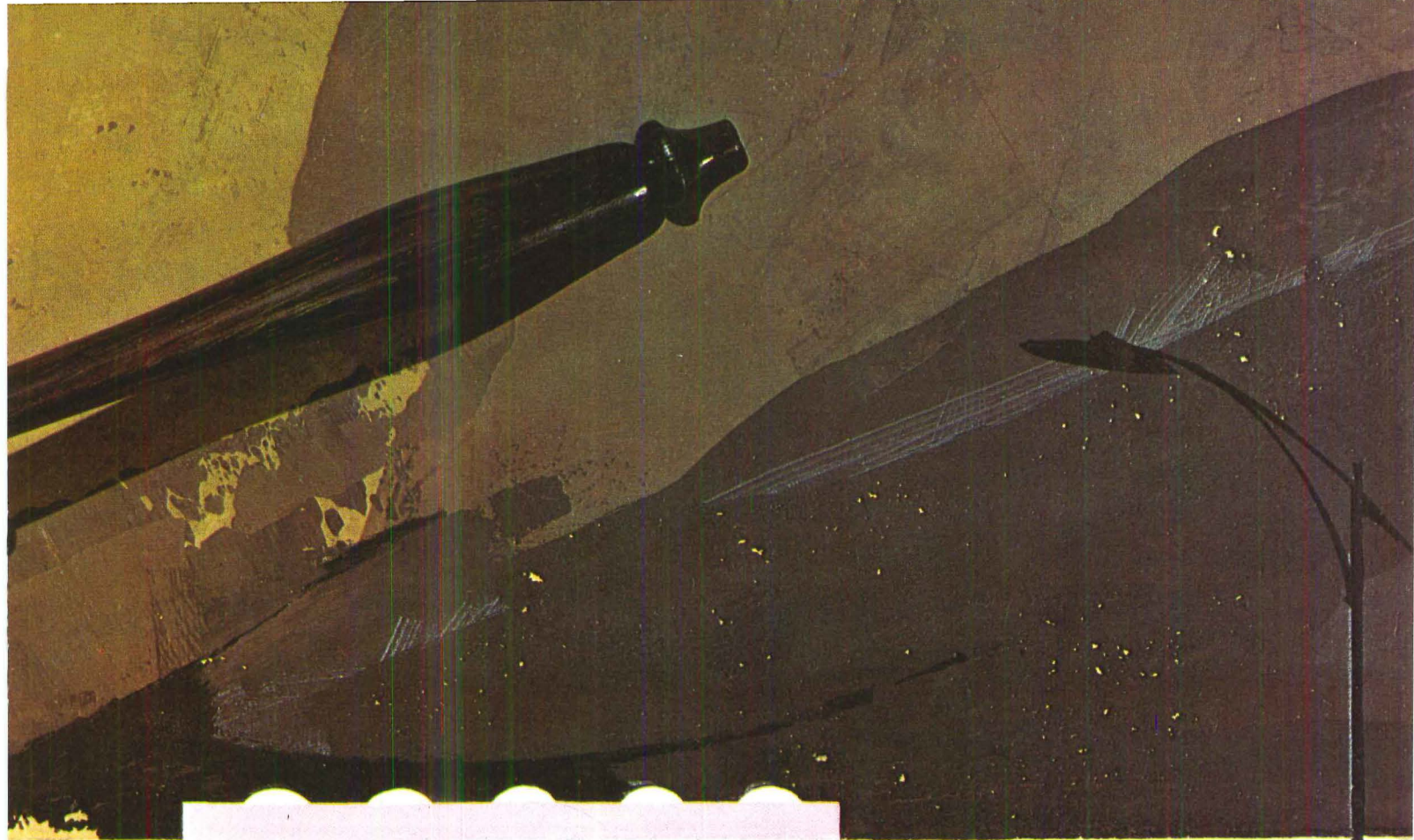


DAY-BRITE LIGHTING A DIVISION OF EMERSON ELECTRIC
5411 BULWER AVE. ST. LOUIS, MO. 63147



LAUDERDALE COUNTY COURT HOUSE
Florence, Alabama

Architect: Northington, Smith, Kranert & Assoc.
Consulting Electrical Engineer: Hazzard & Nall





In 1958, only Tremco knew how good its **MONO**[®] was...

LASTO · MERIC

1-Part Acrylic Terpolymer Sealant

NOW EVERYONE KNOWS—For over eight years, architects and contractors have relied on MONO to weather-proof construction joints on thousands of buildings of every type the world over. This wide acceptance and proved performance provide proof that the powerful adhesion of MONO offers maximum security against sealant failure: no leaking joints; no building owner complaints; no costly callbacks.

COMPETITORS AGREE—After eight years, other sealant manufacturers have recognized the superiority of MONO, the original 1-part acrylic terpolymer sealant. They are now preparing to introduce acrylic based sealants of their own which

will seemingly resemble the performance characteristics of MONO. But none can hope to provide the reliability of MONO. Why not? Experimental acrylic formulations will require time consuming research and extensive field applications on many job sites. It could be costly for you to become a testing ground for acrylics without proved performance.

RELY ON THE LEADER—At today's price of construction, don't risk sealant failures. Rely on the proven leader, MONO.

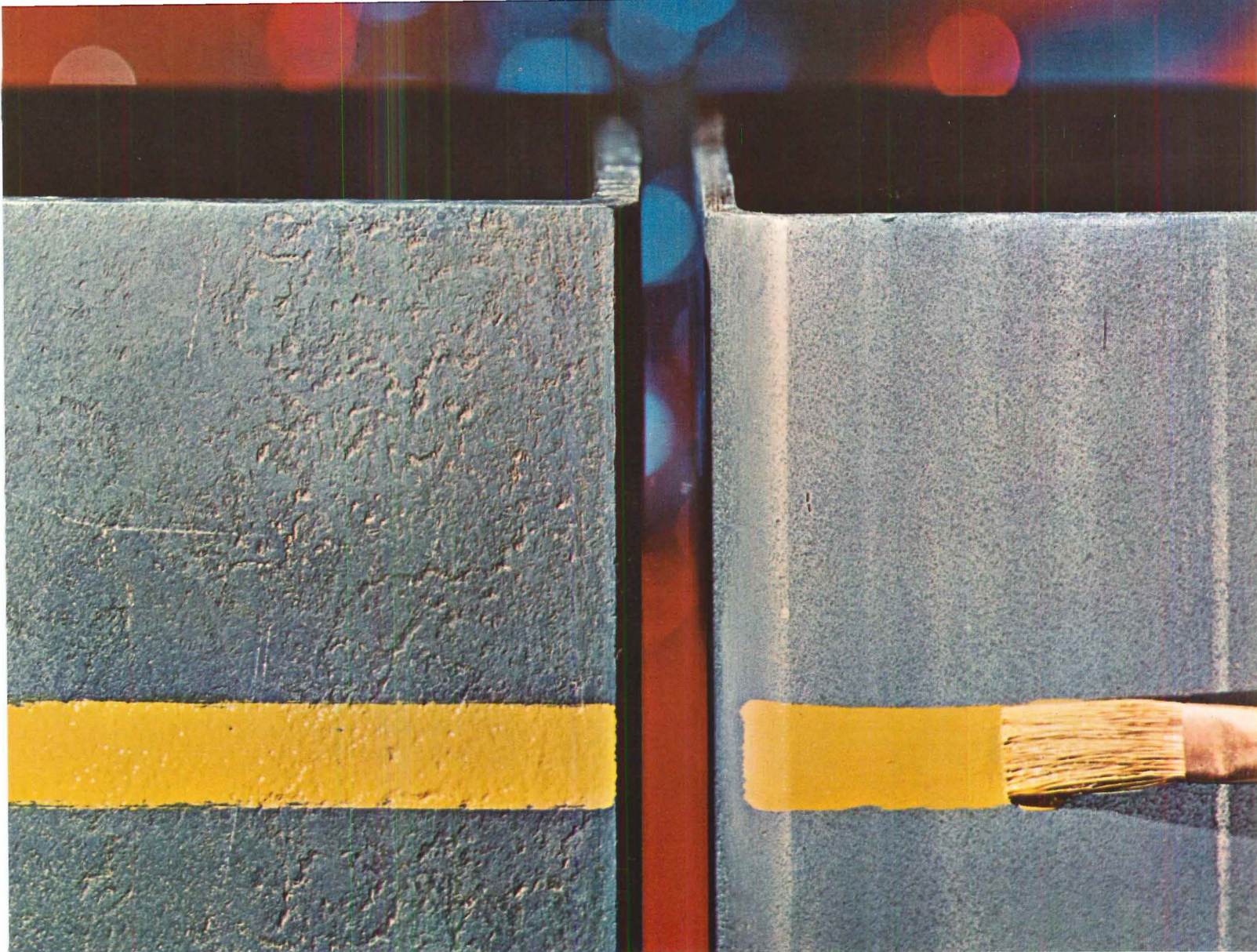
For MONO glazing and caulking recommendations, contact your local Tremco Field Advisor, or see SWEET's Architectural File 3c/Tr, or write us.



THE TREMCO MANUFACTURING COMPANY
Cleveland, Ohio 44104 • Toronto 17, Ontario

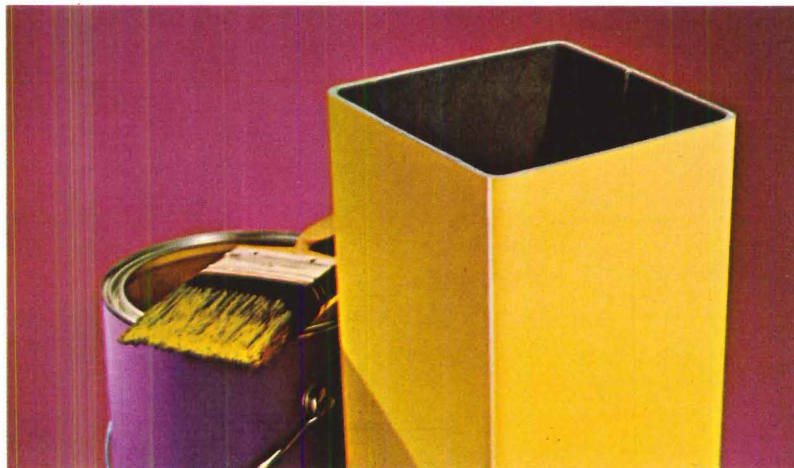
For more data, circle 76 on inquiry card

For more data, circle 77 on inquiry card



Which surface do you prefer?

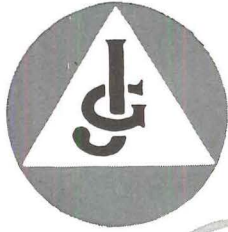
The clean, smooth one that takes paint beautifully, of course. *Bethlehem's* surface. We get it by *cold-forming* our hollow structural sections from blast-cleaned steel sheets and plates (instead of *hot-rolling* them). And we give you 155 sizes and gages, square and rectangular, with which to design. Good reasons to specify Bethlehem?



BETHLEHEM STEEL CORPORATION, BETHLEHEM, PA.

BETHLEHEM STEEL





OVERHEAD DOOR HOLDERS



provide a cushioned stop . . .

that absorbs the shock of violent openings, avoids damage to glass, jamb, door, wall, hinges and other hardware and cuts down maintenance and repair costs.



hold the door open . . .

during heavy traffic—at school dismissal, factory or office “quitting” time or when the theatre lets out. Heavy wear and tear of continuous opening and closing of the door is avoided.



overhead installation is “out-of-the-way”

Wide choice of styles to meet varying budget and installation requirements.

	GJ 100 • 200 concealed in top rail of door. Finest for exterior and interior doors.		GJ 70 for low cost installations.	<p>specifying</p> <p>is demanding quality</p>
	GJ 90 the outstanding surface type. For exterior and interior doors.		GJ 300 Series—Friction type for interior doors. Concealed or Surface.	
	GJ ARISTOCRAT. Most “practical” for hard usage.		GJ 500 Series with shock absorber. Finest for interior doors.	
	GJ 80 good quality for moderate cost installations.	<p>GLYNN • JOHNSON CORPORATION 4422 no. ravenwood ave. • chicago 40, illinois</p>		

For more data, circle 78 on inquiry card

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.



LEVOLOR *Riviera*

a venetian blind of invisible beauty

Levolor Lorentzen Incorporated, 720 Monroe Street, Hoboken, New Jersey

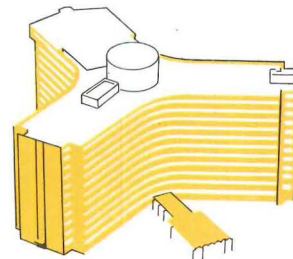
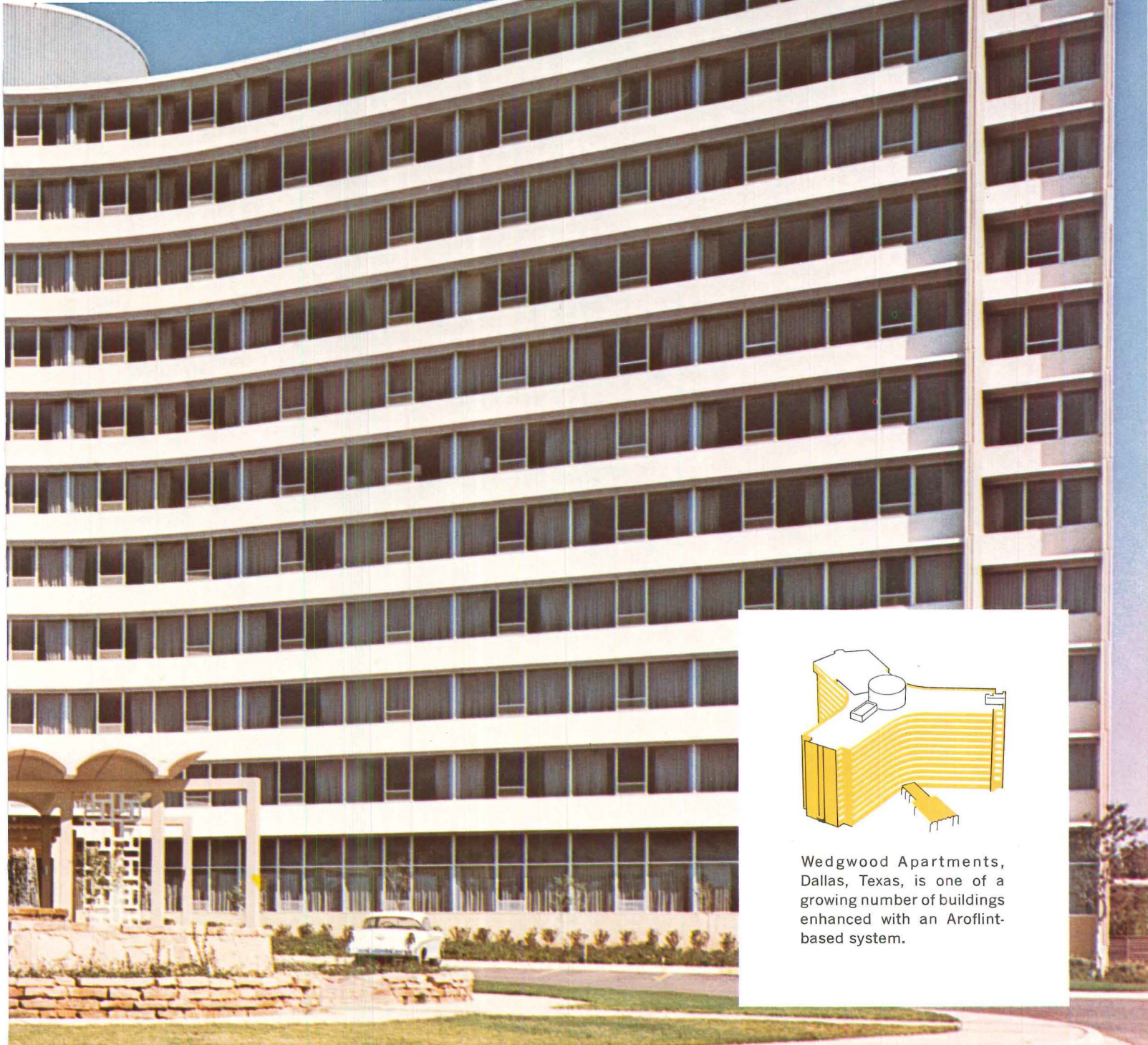
For more data, circle 79 on inquiry card

For more data, circle 80 on inquiry card



11-STORY OVERCOAT

*Looks like ceramic,
costs less than glazed brick,
goes on like paint,
provides lasting, tile-like beauty*



Wedgwood Apartments, Dallas, Texas, is one of a growing number of buildings enhanced with an Aroflint-based system.

Wedgwood Apartments, Dallas, Tex., Walter W. Ahlschlager, Architect

The brilliant glazed appearance of the new Wedgwood Apartments overlooking Dallas, Texas, has been achieved with an Aroflint 505 based coating system.

Coating the exterior of the 11-story structure with this new coating system afforded the beauty and brilliance of glazed materials—at savings of up to \$2 per square foot.

An Aroflint-based coating system opens up intriguing possibilities in many exterior and interior applications. It can be applied equally

well over masonry, wood or metal . . . comes in gleaming white or bright pastels that resist fading or yellowing, or in clear finishes to accent a distinctive exterior. Like paint, it can be applied by brush, spray or roller.

The Aroflint 505 system combines the high film build, hardness and chemical resistance often associated with epoxies, urethanes and polyesters. At the same time, the Aroflint 505 system has proven far superior in color and gloss retention.

(The United States Patent Office has recognized the uniqueness of Aroflint 505 by granting Patents 3,218,274 and 3,050,480)



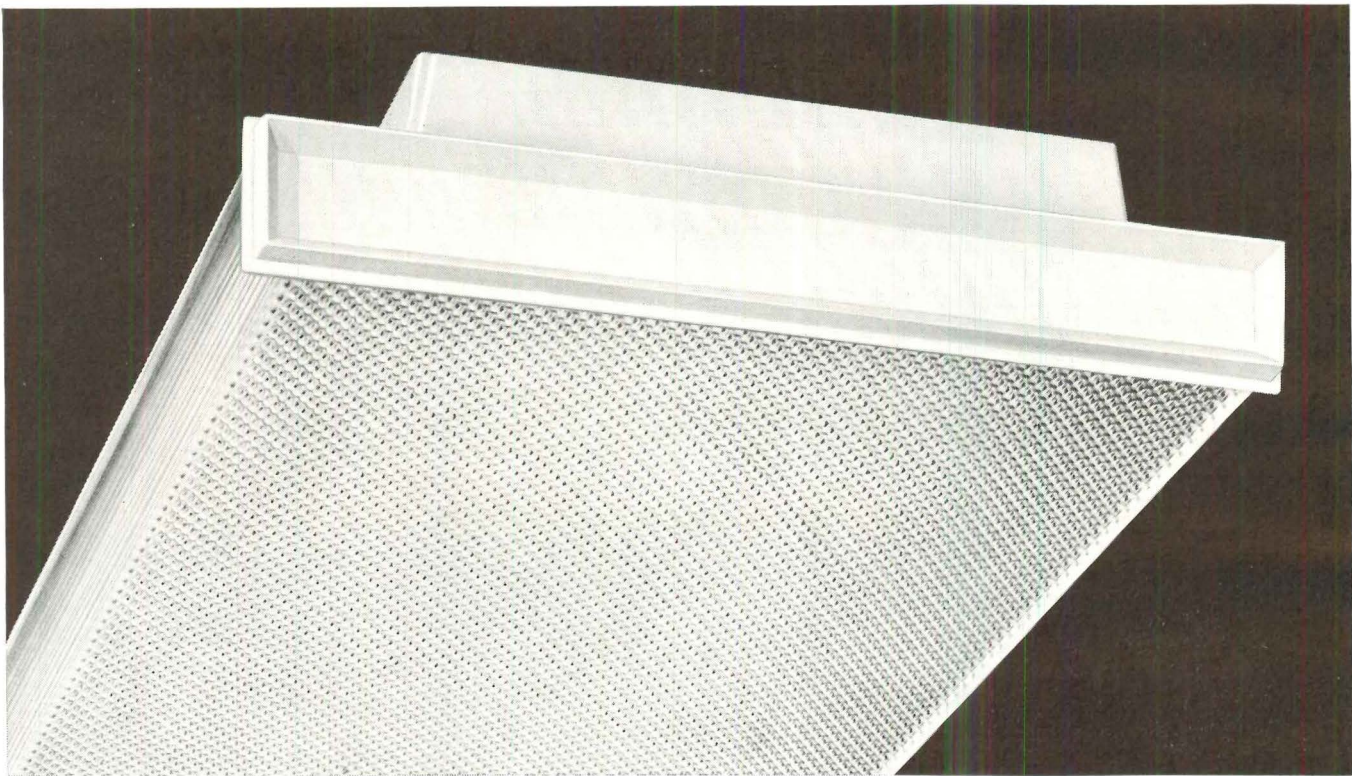
ADM CHEMICALS

ARCHER DANIELS MIDLAND COMPANY

733 MARQUETTE AVENUE, DEPT. 38

MINNEAPOLIS, MINNESOTA 55440

Now—a low-cost high-performance luminaire with a Tedlar*-clad polystyrene diffuser guaranteed not to discolor for 15 years.



*Tedlar is DuPont's registered trademark for its PVF film.

LPI-8-211

A Tedlar*-clad polystyrene diffuser has been added to the LPI Highlander series of surface-mounted luminaires. The Tedlar film protects the polystyrene from U. V. discoloration and adds to the diffuser's shatter resistance as well. In 1981, Highlander luminaires you specify today with Tedlar-clad diffusers will still be virtually as free from discoloration as the day they were installed. If one does discolor before 15 years, though, we'll replace it free. Best news of all, the cost is only slightly more than that of unprotected polystyrene.

Highlander series luminaires are simple and economical to install. Both the 2-lamp 4-foot and the 4-lamp 8-foot units are UL-listed for direct surface mounting on combustible cellulose fiber-board ceilings. No spacers required.

Ingenious mechanical features, as well as superior materials guarantee the Highlander's good appearance permanently. For example, centering clips and the end cap design ensure that the diffusers will always remain centered. The end cap design also permits a nearly unbroken plane of light when the luminaires are installed in rows. Since the Highlander is only $2\frac{3}{4}$ inches deep (apparent depth only $1\frac{1}{8}$ inches), it blends attractively into the ceiling.

This crisply styled series is ideally suited for schools, offices, and stores. Highlander prices will appeal to you, especially if you're on a tight budget. You'll find all the features of

major importance, including basic LPI quality, included in Highlander luminaires. For complete information, call your LPI representative, or write to us for the details if you wish.

LPI® **FLUORESCENT LIGHTING**

Lighting Products Inc., Highland Park, Illinois 60036

For more data, circle 81 on inquiry card



Food Laboratory, Bishop Dwenger High School, Fort Wayne, Indiana

Architect—Mox Pohlmeyer & Assoc.

St. Charles
CUSTOM CLASSROOMS
 ...beautiful, inspiring,
 practical and enduring

Space is utilized for maximum efficiency. Beauty is given masterful expression. Practicality, storage and maintenance are treated with the respect they deserve. Result: teaching is pleasanter, learning is easier, courses are more fascinating. If your school project includes food and sewing laboratories, arts and crafts classrooms or other casework requirements, call on St. Charles.

30 years of leadership in creating custom casework

Write for our free School Storage Furniture Catalog
 ... 72 pages of ideas, plans, illustrations and information.

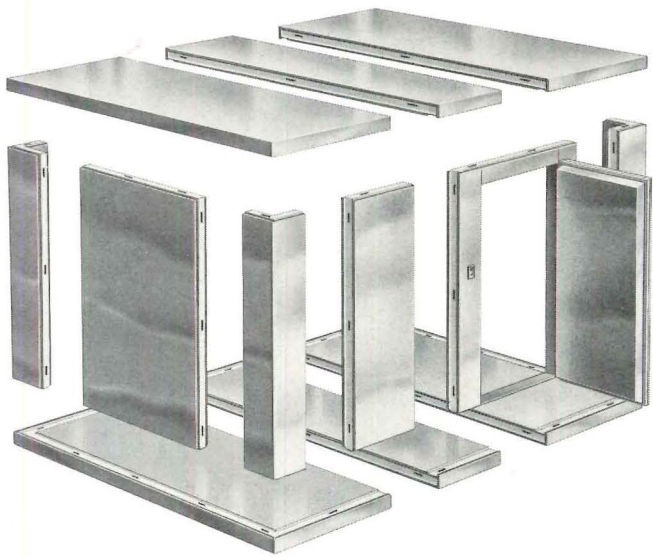
Sewing Laboratory, Bishop Dwenger High School, Fort Wayne, Indiana



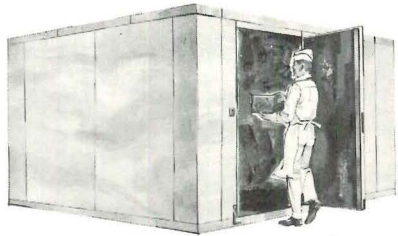
**CUSTOM SCHOOL
 STORAGE FURNITURE**

**ST. CHARLES MANUFACTURING COMPANY
 ST. CHARLES, ILLINOIS**

SCHAEFER LETS YOU PUT THE PIECES TOGETHER

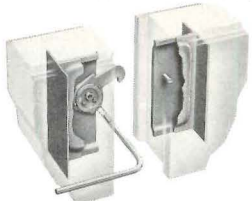


for a
**WALK-IN COOLER, FREEZER
OR COMBINATION**
that fits your design... exactly

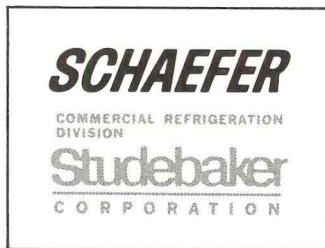


The modular, pre-fabricated design of Schaefer walk-in coolers, freezers and combinations gives you complete design flexibility, with a unit that will fit virtually anywhere—indoors or out. Schaefer "Froth Foamed" urethane insulation permits thinner wall construction—only 3 5/8"—for more usable capacity, at the same time providing full protection even under tropical conditions. A full line of accessories and either self-contained or remote refrigeration equipment lets you customize a Schaefer walk-in to your client's precise needs. Glass doors are available for merchandising applications in all types of stores.

Consult Sweet's Catalog or write Schaefer for complete information

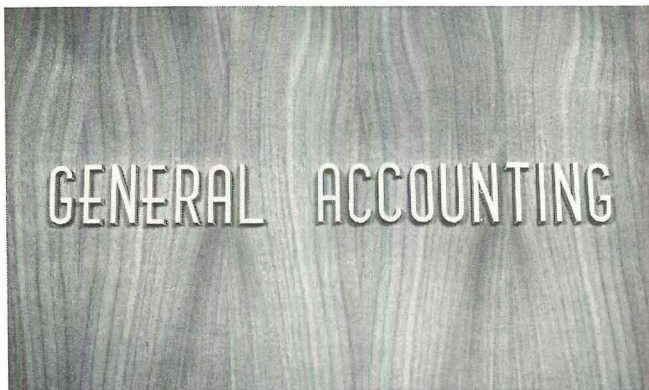


Schaefer's Lock-a-Line panel locking system provides a positive foam-to-foam seal, makes the walk-in easy to erect, expand or relocate.



801 WASHINGTON AVENUE NORTH • MINNEAPOLIS, MINNESOTA 55401
 FACTORIES IN MINNEAPOLIS • ABERDEEN, MARYLAND • GALT, ONTARIO

For more data, circle 82 on inquiry card



Distinctive accent for prestige interiors...

METAL LETTERS BY KNIGHT

ANY OFFICE or building puts its "best face forward" ... at low cost ... when you use Knight Metal Letters and Numbers. Designed by master craftsmen, these distinctive three-dimensional letters are cast in solid bronze or aluminum. There are sizes for every need, styles for any decor ... in oxidized, polished or satin finishes. All are easily applied to doors and walls without drilling ... actually cost less than painted lettering.

ANOTHER LUXURY TOUCH: Personalized desk name plates in solid bronze with polished Moderne letters. WRITE FOR FULL INFORMATION.



H.W. Knight & son inc.
METAL LETTERS & FIGURES

14 Lane St., Seneca Falls, N.Y.

For more data, circle 83 on inquiry card

FIND THESE CAREY BUILDING PRODUCTS FAST IN YOUR NEW 1966 SWEET'S ARCHITECTURAL FILE



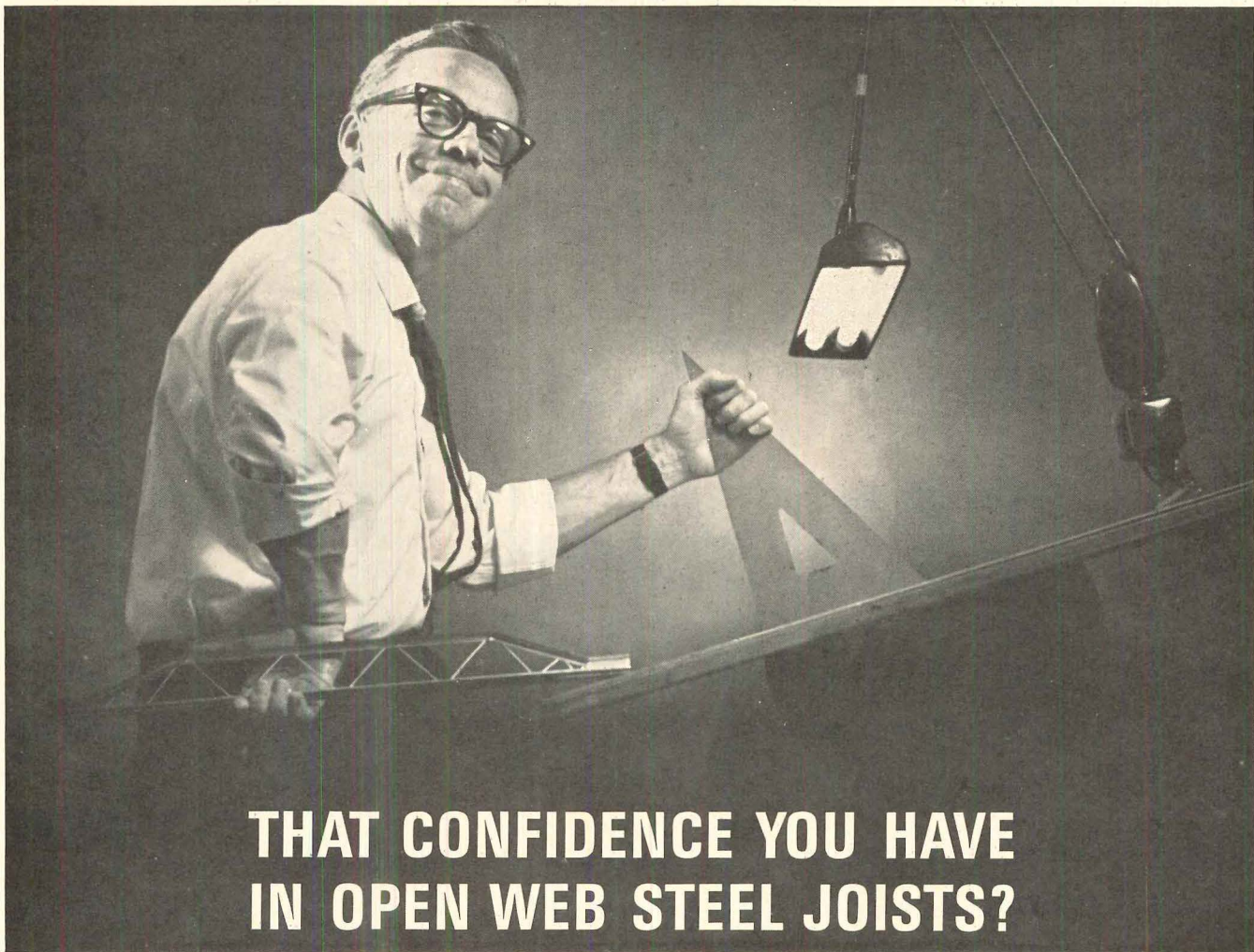
CAREY PRODUCT CATALOG	INDEX NO.
Fire-Chex Roofing Shingles	8c Ca
Built-Up Roofing	8a Ca
Structural Insulating Panels	8b Car
Corrugated A/C Roofing-Siding	8b Ca
Asbestoseal Vapor Barrier	9 Cae
Waterproofing & Dampproofing	9 Ca
Bathroom Cabinets/Accessories	26d Mi
Access Doors	16k Mi

For additional copies of any of the Carey Product Catalogs listed above, write:

Dept. AR-266 • The Philip Carey Mfg. Company • Cincinnati, Ohio 45215.

PHILIP
Carey[®]

For more data, circle 84 on inquiry card



THAT CONFIDENCE YOU HAVE IN OPEN WEB STEEL JOISTS?

Chalk a lot of it up to the Steel Joist Institute!

Since 1928, a hard-working organization of dedicated men has been quietly helping to elevate the standards of a multi-million dollar industry.

The organization: the Steel Joist Institute.

Its purpose: to expand knowledge of open web steel joists; to encourage their use in modern building practice; to establish design and performance standards among joist manufacturers.

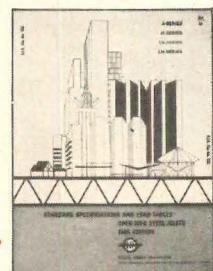
You benefit directly from this work by the Steel Joist Institute. You can feel a justified confidence when specifying open web steel joists, knowing that the researched design and simplified members that have improved joist performance are yours from many dependable sources.

Complete technical information on high strength open

web steel joists is contained in the 1966 edition of specifications and load tables, just published.

1966 Edition, Specifications and Load Tables for High Strength Open Web Steel Joists

FREE! 32 pages of technical information; all you need for fast, accurate specification of joists to carry uniform loads on spans up to 96 feet. Covers J-Series, LA-Series, H-Series, LH-Series joists. Send coupon today.



6510

STEEL JOIST INSTITUTE

DuPont Circle Bldg., Washington, D. C. 20036

Please send a copy of the 1966 Specifications and Load Tables to

NAME _____

FIRM _____

ADDRESS _____

CITY _____ STATE _____ ZIP CODE _____



STEEL JOIST INSTITUTE

DuPont Circle Bldg., Washington, D. C. 20036

For more data, circle 85 on inquiry card

ON THE CALENDAR

FEBRUARY

8-10 21st Annual Conference and Exhibit, Reinforced Plastics Division, Society of the Plastics Industry—Edgewater Beach Hotel, Chicago

MARCH

7-11 Annual Convention, American Concrete Institute—Benjamin Franklin Hotel, Philadelphia

7-11 22nd Annual Technical Confer-

ence, Society of Plastic Engineers—The Queen Elizabeth Hotel, Montreal

20-23 Second Annual Meeting, Solar Energy Society—Somerset Hotel, Boston

21-24 Industrial, Institutional and Commercial Building Conference—Public Auditorium, Cleveland

29 Fifth Annual Technical Meeting and Exhibits, American Association for Contamination Control—Shamrock Hilton Hotel, Houston; through April 1

APRIL

17-21 The Second North American Conference on Campus Planning and College Building Design—University of Illinois, Urbana, Ill.

30 Sixth Annual Conference of the U.S. Institute for Theater Technology, Inc.—University of Toronto; through May 2

OFFICE NOTES

OFFICES OPENED

Myron L. Fetch, architect, has opened an office at Doylestown, R. D. #2, Bucks County, Pa. 18901.

W. Caldwell Smith, A.I.A., has opened an office at 374 East Paces Ferry Road, N. E., Atlanta 30305.

NEW FIRMS, FIRM CHANGES

Bolt Beranek and Newman Inc., a research and consulting firm of Cambridge, Mass. has formed a consulting group for the planning, programing and operating of theaters, concert halls and auditoriums.

Joseph S. Zajchowski, Alfred A. Calcagni, A.I.A. and **Richard B. Frazier, A.I.A.** have formed the architectural firm of **Calcagni, Frazier and Zajchowski**, 86 St. Paul St., Burlington, Vt.

Robert H. Chapman, A.I.A. and **John M. Garber, A.I.A.** have opened two offices for the practice of architecture and the provision of planning services at 29 Claremont Ave., New York City 10027 and 2109 St. James Ave., Cincinnati 45206.

Peter Randall Stark has joined **Curtis and Davis Architects** to head the project development staff of the firm's New York City office.

Vernon DeMars and **Donald Reay** have terminated their partnership. Mr. Reay has opened **Donald P. Reay, Architect & Planner**; Mr. DeMars and **John Wells** have formed **DeMars and Wells, Architects** and have appointed **Edward J. Bennett, Jack T. Sidener** and **Robert D. Hill** associates. Both offices, 2161 Shattuck Ave., Berkeley, Calif.

Dean Kennedy & Associates, Architects have become **Kennedy-Basom-Grieco Associates** of 750 South Atherton Street, State College, Pa.

Peter A. Thomas has become a partner of **Morehouse and Chesley, Architects** which will consequently be known as **Morehouse, Chesley and Thomas**, Lexington, Mass.

continued on page 115

At The  New York Hilton Hotel it's

HYDROMENT JOINT FILLER

for quarry tile
and brick pavers

NEW YORK HILTON HOTEL
Architect:
William B. Tabler
General Contractor:
Uris Building Corp.
Tile Contractor:
A. Tozzini
Tile Works, Inc.

When you specify Hydroment Joint Filler you're giving your clients "joint insurance" because this tight, non-shrinking material provides long life and easier, faster clean-up and maintenance. Superior to conventional tile grouts, it's easier to apply on the job, eliminates conventional mixing errors! Specify Hydroment for quarry tile and brick paver installations in kitchens, cafeterias, hotels, restaurants, hospitals, food plants and industry. Comes in seven architecturally designed colors, natural, black and white.



PORTLAND HILTON HOTEL

Architect:
Skidmore, Owings & Merrill
General Contractor:
Anderson-Westfall Co., Inc.




Tile Contractor:
Multnomah
Tile Co.

TILE-MATE is at The Portland Hilton, too!

Tile-Mate is the high shear bond strength self-curing thin bed mortar. Excellent workability. Setting bed need only be $\frac{3}{32}$ " to $\frac{1}{8}$ " thick. Use Tile-Mate inside or out with ceramic tile or glass mosaics over dry wall board, foam styrene, concrete block or any masonry surface! Available four ways: Tile-Mate TCA 763, Tile-Mate Sanded, Neat Tile-Mate, Tile-Mate concentrate.

catalog on request!

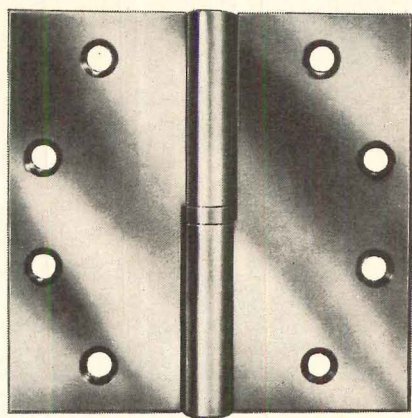
THE UPCO COMPANY 4805 Lexington Ave. • Cleveland, O. 44103

a subsidiary of  **United Shoe Machinery**

For more data, circle 86 on inquiry card

They said all hinges look alike?

HOGWASH!



Take the McKinney Moderne.

Notice how horizontal lines,

which normally clash with the architectural decor, are held to an absolute minimum. Flush bearings help to make the Moderne the narrowest hinges available. Clean, slim and trim . . . the modern design that most completely meets the architects' demand for unobtrusive and functional simplicity.

Performance? Moderne hinges, with non-magnetic bearings of oil impregnated stainless steel riding on durable nylon T bushings, have maximum vertical load carrying ability. And the elongated nylon bushings are wrapped around pins of non-magnetic stainless steel to minimize lateral wear and assure long, smooth service. Pins cannot rise and are non-removable for greater security.

All hinges alike? Don't you believe it! Check the styling and you'll pick McKinney.

McKinney

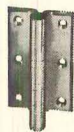
McKinney Sales Company, Scranton, Pa. 18505



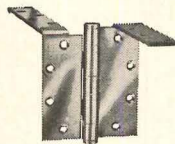
Full Mortise Bearing Hinge



Full Mortise Olive Knuckle



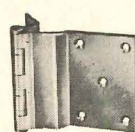
Full Surface Bearing Hinge



Full Mortise Anchor Hinge



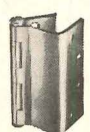
Full Mortise Wide Throw



Half Surface Wide Throw



Full Mortise Asylum Hinge



Half Mortise Wide Throw

FOR HARDWARE YOU CAN DEPEND ON... FROM A MANUFACTURER YOU CAN DEPEND ON... SPECIFY MCKINNEY.

For more data, circle 87 on inquiry card

**This canopy was
under flood water for 8 days,
yet was *completely undamaged!***



The roofing is RUBEROID T/NA 200® (made with Du Pont TEDLAR*)

In 1964, the Ohio River rose 6 feet above the entrance canopy of Cincinnati's Sunlite Pool. Eight days' immersion left the roofing completely intact, however. The Ruberoid T/NA 200 membrane kept its attractive whiteness after simple cleaning. It still adhered tightly to the



After the flood water receded, the canopy was completely unharmed! Canopy was prefabricated of Ruberoid T/NA 200 and stressed-skin plywood by Batavia Plywood Fabricators, Inc., Batavia, Ohio. The Sunlite Pool is part of Coney Island Amusement Park in Cincinnati.

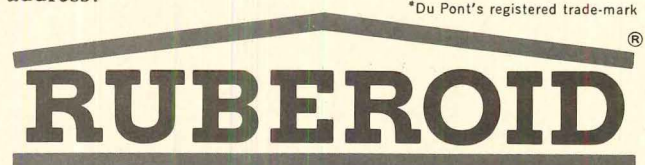
plywood base—still was water-tight. A good indication of its *long life* under normal service!

Ruberoid T/NA 200 is as versatile as it is rugged. It was specified because it was the *only* roofing material that could conform to the scalloped curves of the canopy. It's flexible and tough—fits unusual contours of any slope.

This revolutionary roofing is easy to apply, too. Goes on quickly with conventional roofing techniques.

For complete facts on Ruberoid T/NA 200 for institutional, commercial and industrial designs, contact this address:

*Du Pont's registered trade-mark



The RUBEROID Co., Dept. AR-2
TECHNICAL SALES & FIELD ENGINEERING DEPT.
733 Third Avenue, New York, N. Y. 10017

For more data, circle 88 on inquiry card

continued from page 112

Mueser, Rutledge, Wentworth & Johnston, consulting engineers of New York City, have announced that **Salvatore V. De Simone** has become a partner and **James D. Parsons** a senior associate.

Seibert & Hunter, A.I.A., Architects, **Jeffrey L. Shute** and **Robert L. Plumley** have formed **Seibert, Hunter, Shute & Plumley, A.I.A., Architects**, Medford, Ore.

Julius W. Sih, formerly Shie, has opened a firm for structural engineering consultation, **J. W. Sih & Associates, Inc.**, at 203 N. Wabash Ave., Chicago.

Eberle M. Smith Associates, Inc., architects and engineers of Detroit, announce that **Edward Hammarskjold** and **Joseph C. Watts** rejoined the firm and that **Vernon L. Wheeler**, formerly of Wheeler, Becker and Associates, Inc., is now a member of the firm.

Smith Haines Lundberg & Waehler is the new name of the New York City architectural firm of **Perry Coke Smith**, **Charles Haines**, **Robert S. Lundberg** and **Frank J. Waehler**.

Smith, Hinchman & Grylls Associates, Inc., Detroit architectural, engineering and planning firm, has appointed **Thomas H. Klausmeyer, A.I.A.** an associate.

Roy E. Hunt has become vice president of the soils and foundation engineering firm of **Joseph S. Ward and Associates**, Caldwell, N. J.

John Carl Warnecke and Associates, architects and planning consultants, main offices in San Francisco, have appointed **John Bruce Webb** an associate.

Frederick P. Wiesinger and **Eugene P. Holland** have opened the office of **Wiesinger-Holland Structural Engineers**, 127 North Dearborn Street, Chicago.

Allen J. Wright and **Carson K. C. Mok** have formed **Wright & Mok Consulting Engineers** at 817 Silver Spring Ave., Silver Spring, Md. 20910.

NEW ADDRESSES

Daniel Comm Associates, architects, 10 South, New City, N. Y.

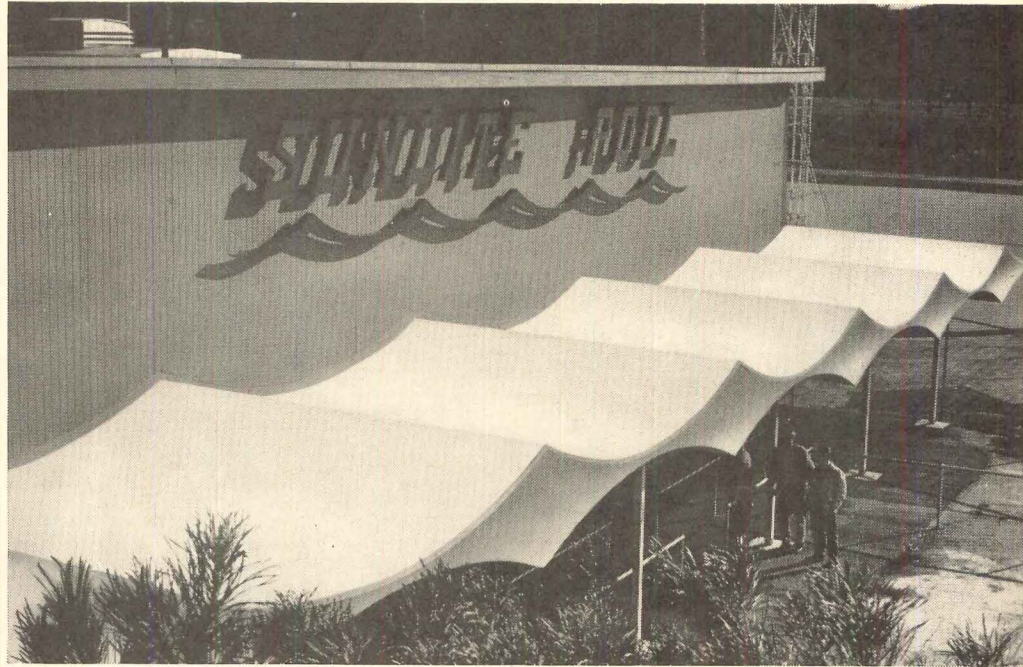
Gray and Karolyi Associates, architects and engineers, 265 Little Tor Road South, New City, N. Y.

West Coast headquarters of **Victor Gruen Associates**, architectural, planning and engineering firm, 6330 San Vicente Blvd., Los Angeles 90048.

Lundquist & Stonehill, Architects, 539 East 81 St., New York City 10028.

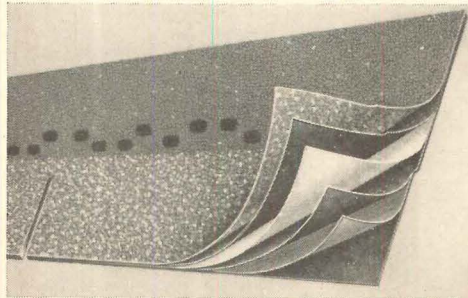
Phelps-McCleskey, Architects, 205 North Conception Street, Mobile, Ala.
Zywotow & Eckert, A.I.A., Architects, 304 S. 12th St., Newark 07103.

...tough roofing from RUBEROID®



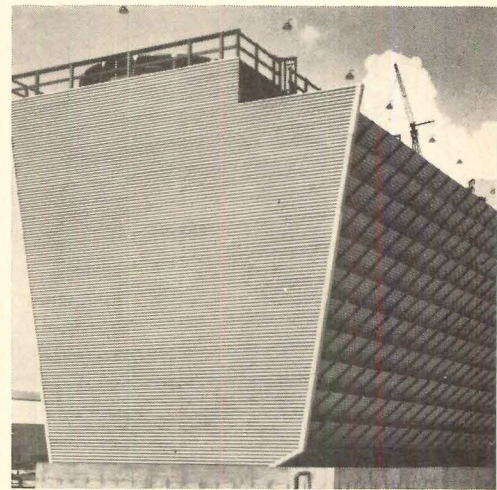
and

fire-resistant shingles



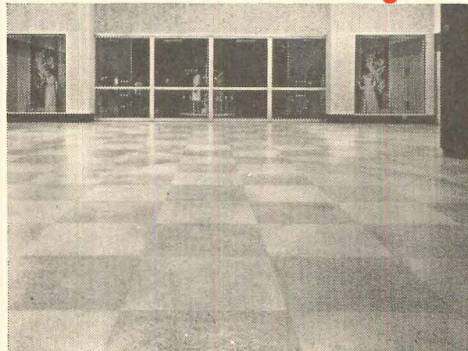
Ruberoid FIRE-GUARD 325-lb. residential shingles feature a built-in, special fiberglass blanket, in addition to other flame-resistant layers. U.L. puts these self-sealing shingles in top Class A rating for fire and wind resistance. Good looks too, in 6 modern colors!

corrosion-resistant siding



Ruberoid Corrugated Asbestos Sheets are an economical, weather-proof and fire-proof construction material for industrial buildings. This combination of cement and asbestos gives maintenance-free service *indefinitely!* Impervious to corrosive atmospheres. Easy to assemble without sheathing.

wear-resistant flooring



Ruberoid offers the most widely varied line of vinyl asbestos floor tile. Pattern shown above is ROYAL STONEGLOW® which combines the looks of stone with the practicality of vinyl asbestos. There are dozens of other exciting patterns to choose from.

When you have a tough, challenging building problem, call in Ruberoid. We specialize in imaginative answers to every-day and brand-new questions for every type of building. We make dozens of accepted, proven products—backed by almost 80 years of experience!

RUBEROID®

The RUBEROID Co., Dept. AR-2-A
TECHNICAL SALES & FIELD ENGINEERING DEPT.
733 Third Avenue, New York, N. Y. 10017

For more data, circle 88 on inquiry card

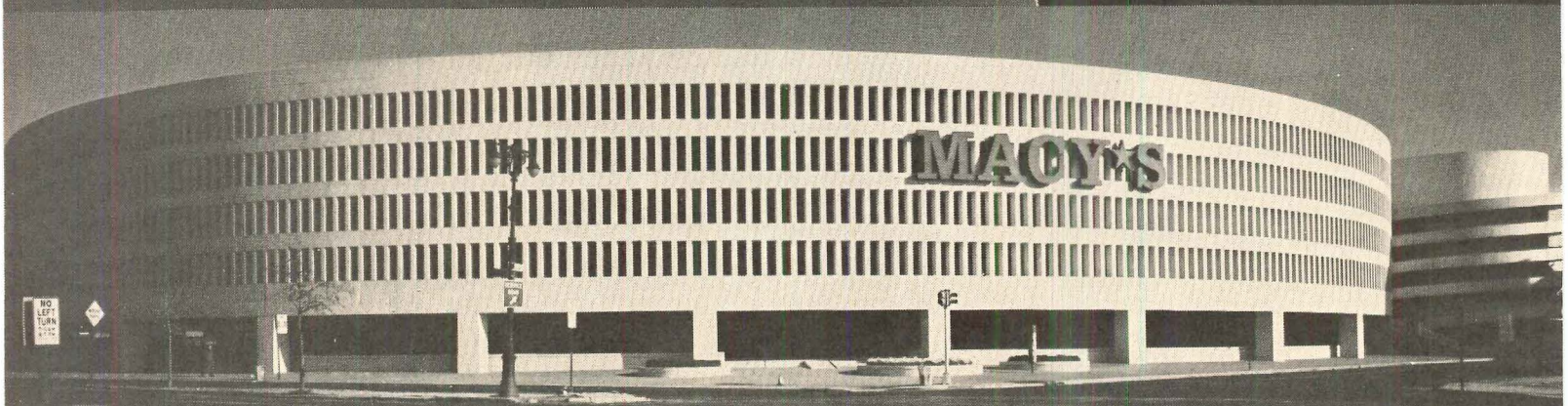
Around and around it grows with cast-in-place white concrete

The 426-foot-diameter exterior concrete wall of this new store-in-the-round is wrapped around a multi-story parking garage. This, in turn, is wrapped around a three-story shopping area that is 314 feet in diameter. Cast in place with concrete made with ATLAS WHITE portland cement, the wall supports the weight of five parking decks. The open design that provides ventilation for the parking area becomes a five-strand necklace of light at night. Daytime beauty of the coliseum-like structure was enhanced by sandblasting the surface to expose the white aggregate in the matrix of gleaming white concrete. ■ White cement has the same setting and strength properties as gray cement. The only difference is its uniform white color. Ask your concrete contractor for information about ready-mixed concrete made with ATLAS WHITE cement, or write Universal Atlas, 100 Park Avenue, New York, N. Y. 10017. "ATLAS" is a registered trademark. WS-3

Atlas

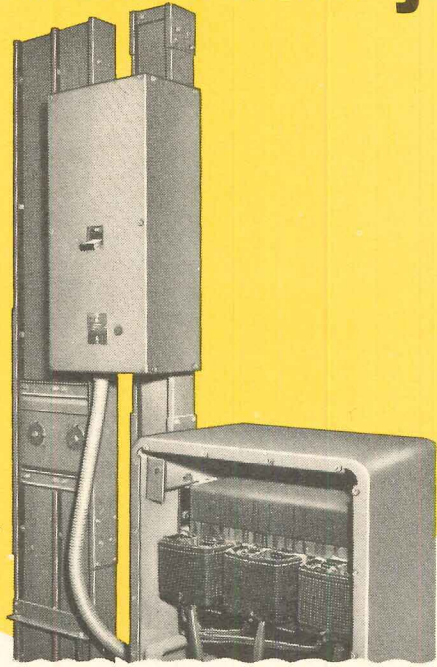
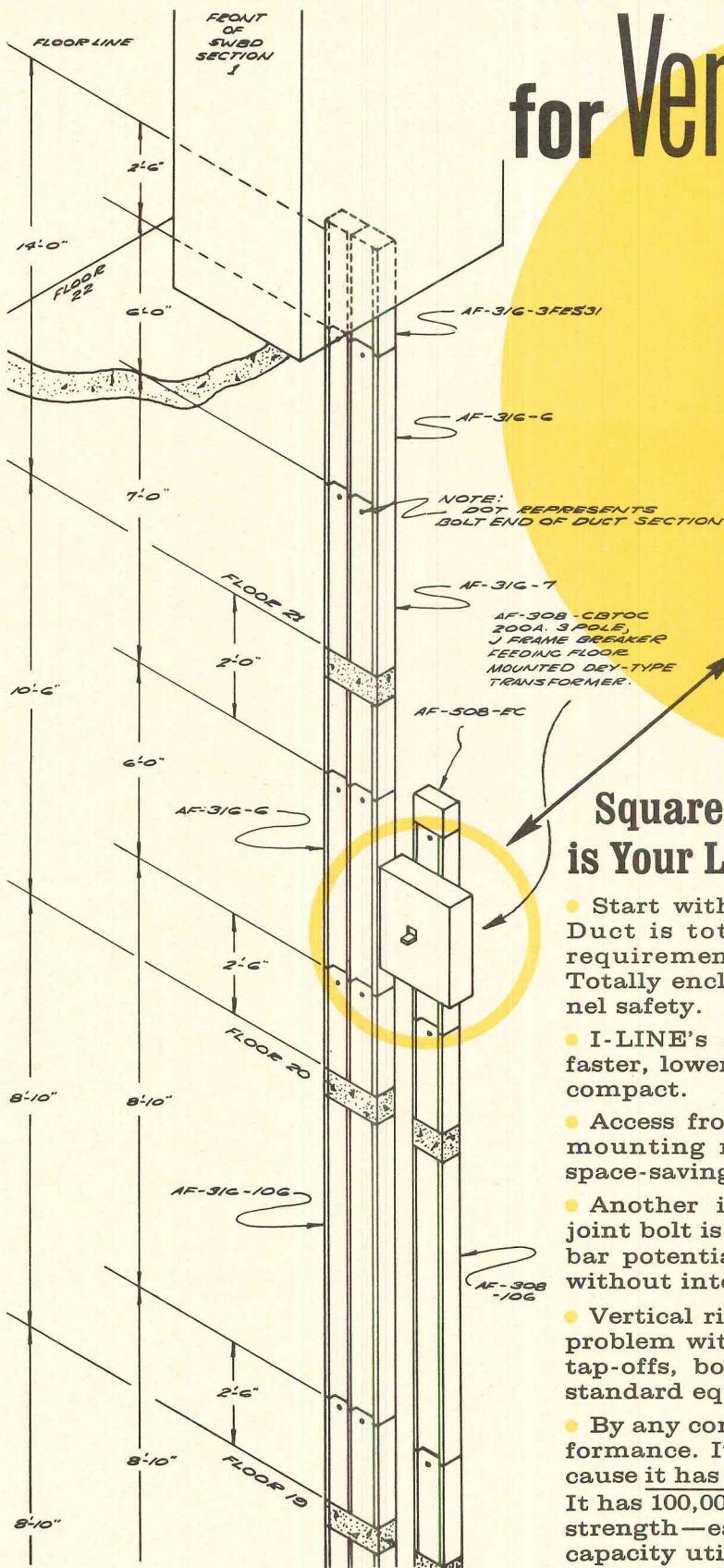
WHITE CEMENTS

US Steel Universal Atlas Cement Division of United States Steel



Macy's Queens Department Store, Long Island. **Architect:** Skidmore, Owings & Merrill; **Structural Engineers:** Seelye, Stevenson, Value & Knecht, Inc.; **General Contractor:** Walter Kidde Constructors, Inc.; **Concrete Subcontractor:** Corbetta Construction Co.; **Ready-Mixed White Concrete:** Certified Industries; all of New York.

for Vertical Riser jobs



Square D's I-LINE[®] Feeder Duct is Your Logical Choice — *Here's Why...*

- Start with this basic advantage—I-LINE Feeder Duct is totally enclosed, thus meets NEC code requirements without expensive modifications. Totally enclosed design also means greater personal safety.
- I-LINE's exclusive one-bolt joint means easier, faster, lower-cost installation. Light in weight and compact.
- Access from any side for joint assembly enables mounting near walls or ceilings—an important space-savings feature.
- Another important safety feature—the I-LINE joint bolt is always at ground potential—not at bus bar potential. So, it can be checked for tightness without interrupting the power.
- Vertical riser applications need tap-off units—no problem with I-LINE. A complete line of compact tap-offs, both plug-in and bolted, is available as standard equipment.
- By any comparison, I-LINE is outstanding in performance. It keeps voltage dips to a minimum because it has the lowest reactance of any feeder duct. It has 100,000 amps., RMS, symmetrical short circuit strength—easily meets the requirements of high capacity utility networks.

Write for Bulletin SD-148. Address Square D Company, Dept. SA, Mercer Road, Lexington, Kentucky 40501



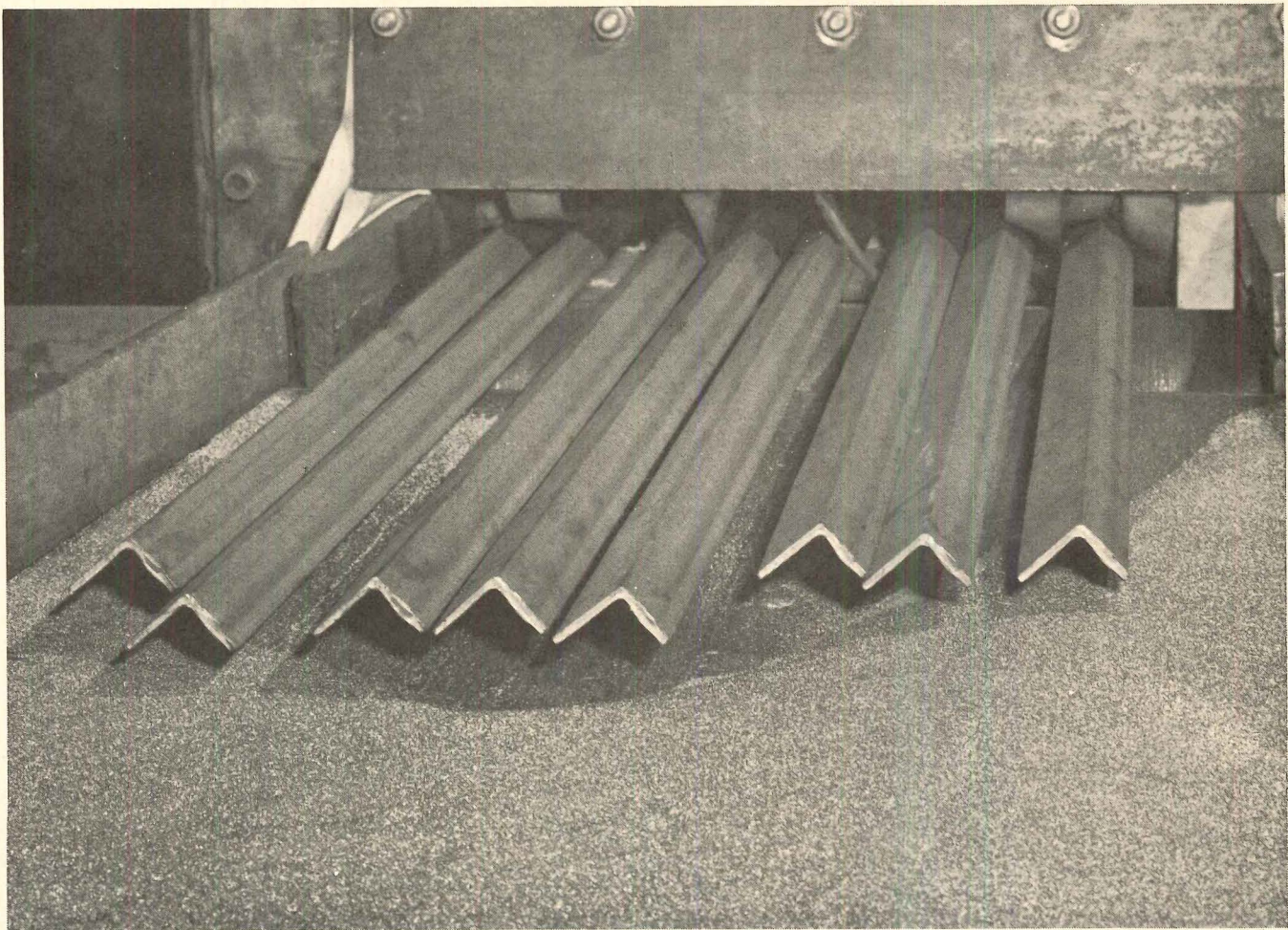
SQUARE D COMPANY

wherever electricity is distributed and controlled

DE 642

◆ For more data, circle 89 on inquiry card

For more data, circle 90 on inquiry card



Q. *Why does Laclede clean joist chord angles?*

A. To build a **BETTER** open web steel joist!

Take a tour through Laclede's joist plant, and you'll find a lot of quality control operations going on, right on through the production line.

For instance: all the angles which will be fabricated into top and bottom chords for joists are carefully cleaned by shot blasting. Mill scale developed from hot rolling

is thus completely removed, leaving surfaces clean for better welding and tighter paint adhesion.

And so it goes. A cleaning operation here. An additional weld test there. Constant on-line dimensional checks. Anything and everything that will make the final product better is standard procedure at Laclede. Laclede makes the special effort for quality that a customer should demand of any competitive product. And it's worth all the trouble! This quality in steel joists will be yours on every job if you specify Laclede.

6501



LACLEDE STEEL COMPANY

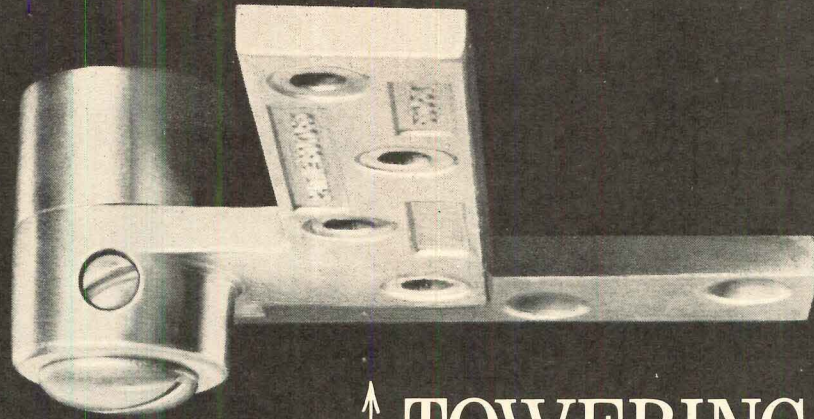
St. Louis, Missouri 63101

Producers of Quality Steel for Industry and Construction



For more data, circle 91 on inquiry card

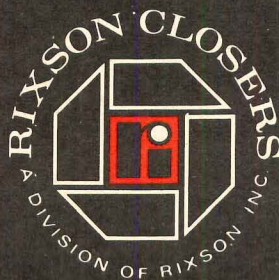
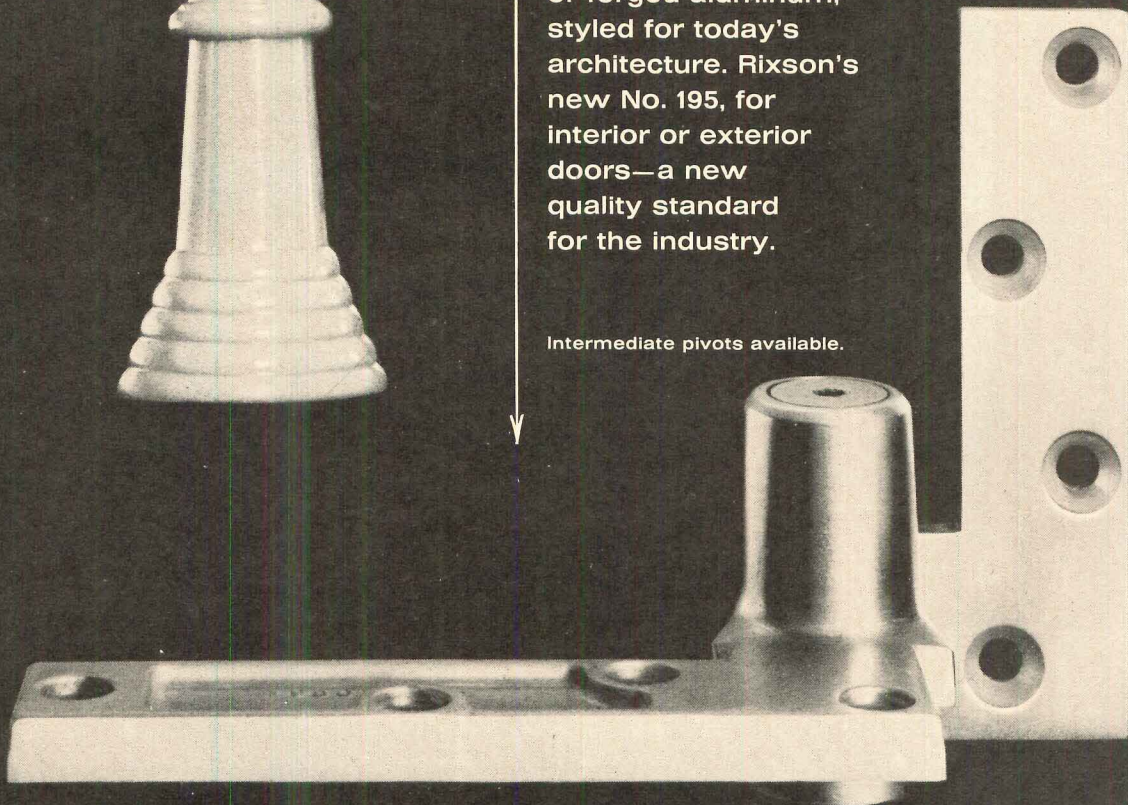
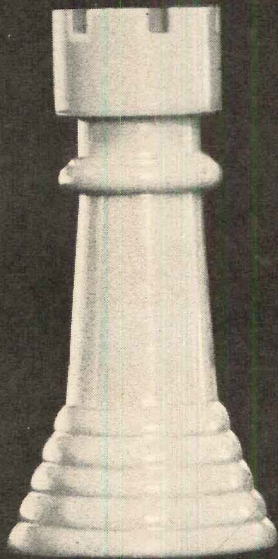
For more data, circle 92 on inquiry card



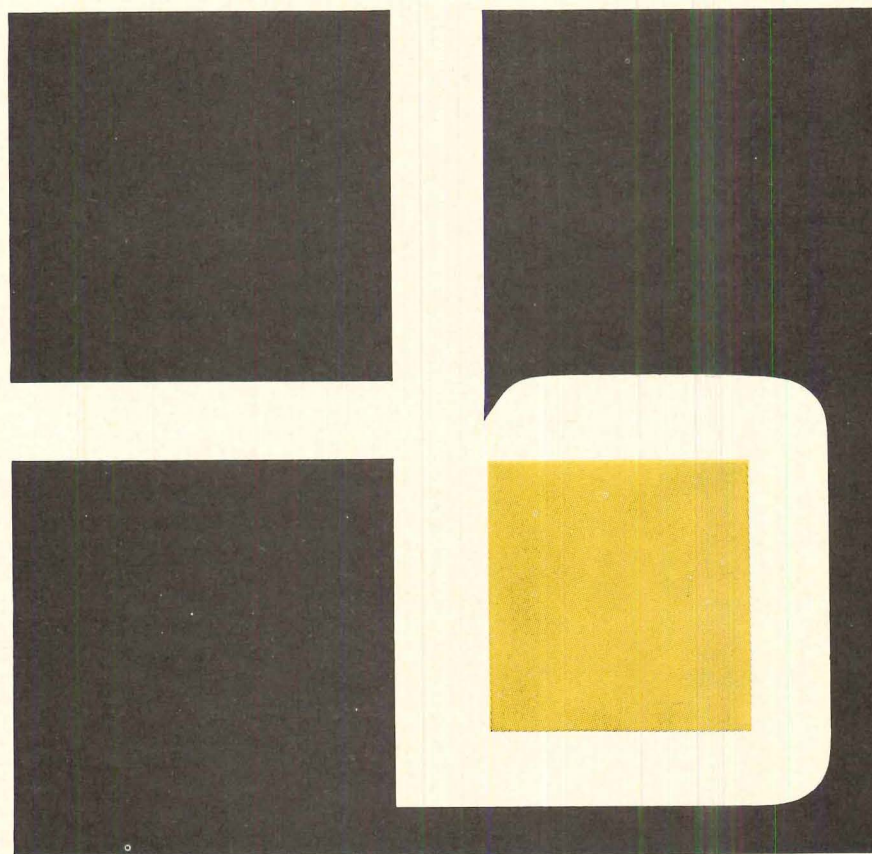
TOWERING

Now, the strongest pivot set of its kind ever made: Rixson's new No. 195, made from forged bronze or forged aluminum, styled for today's architecture. Rixson's new No. 195, for interior or exterior doors—a new quality standard for the industry.

Intermediate pivots available.



FRANKLIN PARK, ILLINOIS
REXDALE, ONTARIO, CANADA

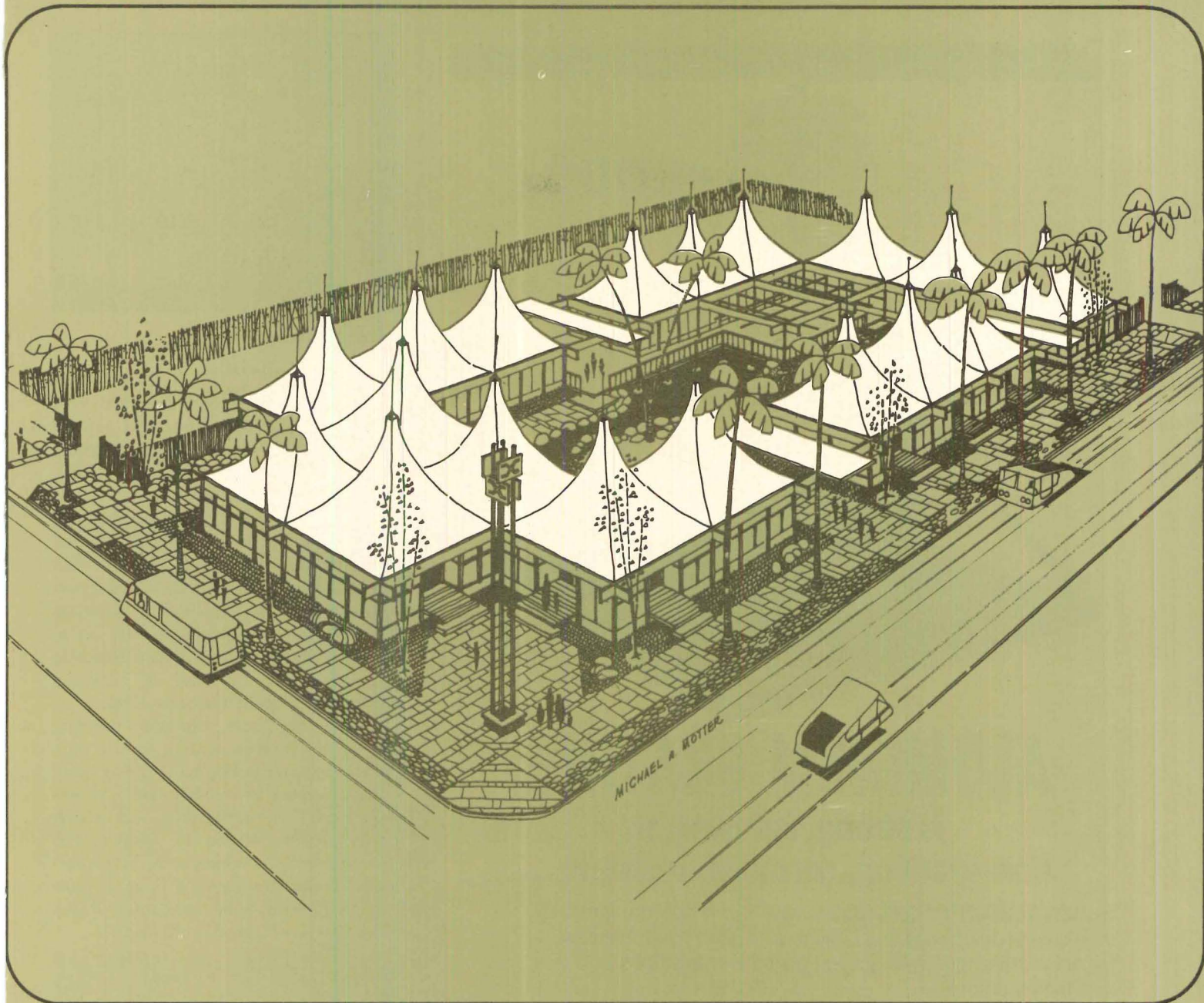


BAYLEY

NEW MARK, OLD TARGET—Have you seen the new William Bayley mark of quality and service? Our tradition of highest quality in metal windows and curtain walls is 88 years old. Our service, however, is strictly 1966. We use our new mark to remind you we're putting new ideas into windows, more application assistance on your project, assured on-time delivery at your site. The target: your satisfaction. The William Bayley Company, Springfield, Ohio. Request our newest catalog today.

For more data, circle 93 on inquiry card

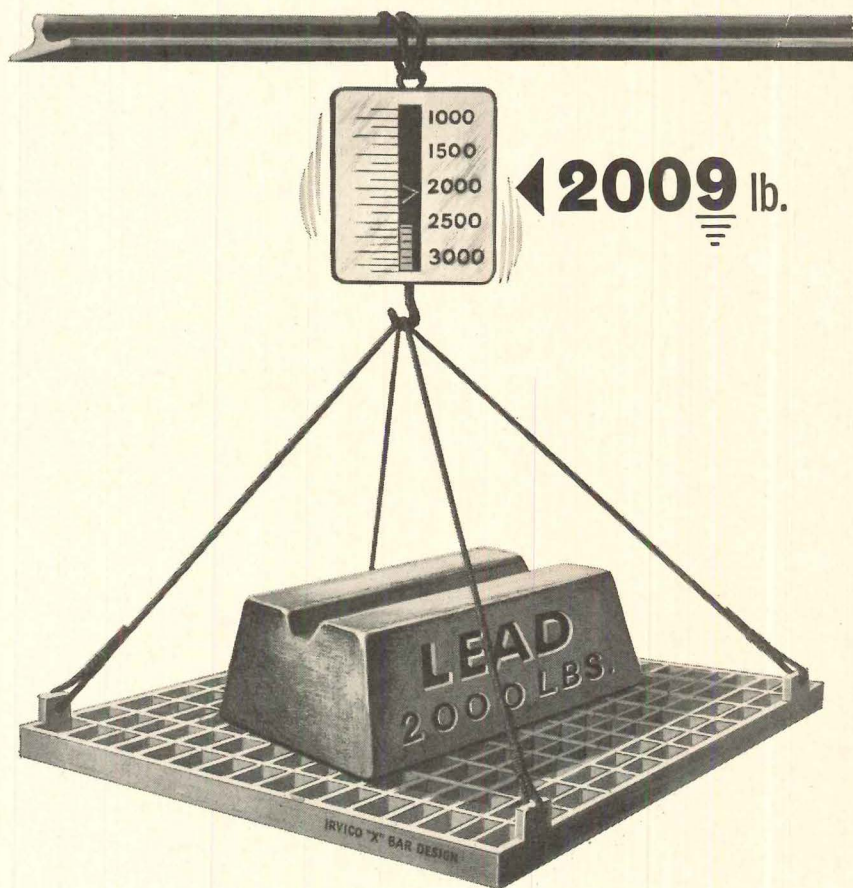
For more data, circle 94 on inquiry card ♦



Go ahead, raise the roof. We'll cover for you.

Let yourself go. Design a roof that looks the way you want it to look. Be bold. Be exotic. Unconventional shapes are no longer a problem. B.F. Goodrich has a remarkable new roofing system that conforms to unusual contours, works on steep slopes. Its name is BFG One-Ply. One-Ply is a laminate of DuPont Hypalon® synthetic rubber backed with neoprene-bound asbestos. It's light. Flexible. Easily installed. Fire resistant. Self-flashing. And so watertight, we guarantee it five years against leaks. Efficient on flat roofs, too. Find out more by writing BFG Building Products, Dept. RE-16, Akron, Ohio 44318.

B.F. Goodrich
ONE-PLY ROOFING



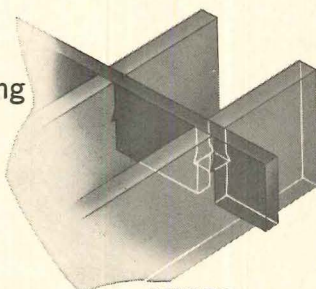
ALUMINUM GRATING

is strong, lightweight,
non-sparking, corrosion resistant...

IRVICO ALUMINUM GRATING is ideal for industrial flooring, stair treads, walkways and marine catwalks. It can be used for decorative and architectural purposes, anodized in non-fading colors.

It is available in 21 different types, plain or serrated, in a wide variety of standard sizes. Our free brochure on aluminum grating includes illustrations of the types, tables of safe loads, standard panel sizes, weights and illustrates uses of the grating.

With Irvico grating, you get superior workmanship, perfect fit, and dependable service. Be sure that your grating will be engineered and fabricated to meet your exact requirements. **SPECIFY IRVICO.**



IRVICO X-BAR DESIGN
features positive interlocking crossbar.

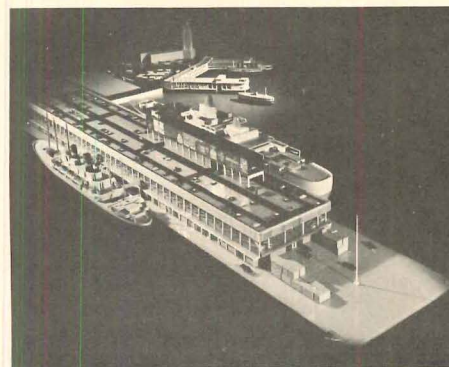
IRVICO®

IRVING
SUBWAY GRATING CO.
DIVISION OF HARSCO CORPORATION

THE ORIGINATORS OF THE GRATING INDUSTRY

50-62 27th St., Long Island City, N.Y. 11101 • 1819 10th St., Oakland, Calif. 94623
460 E. Donovan Rd., Kansas City, Kan. 66115 • Enrejados Irving De Mexico S. A., Mexico 18, D.F.

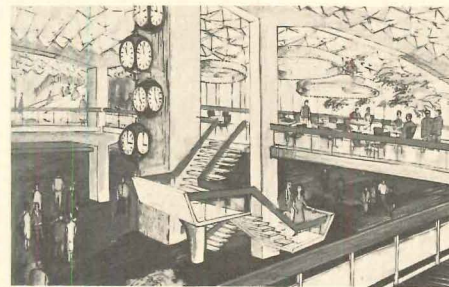
For more data, circle 95 on inquiry card



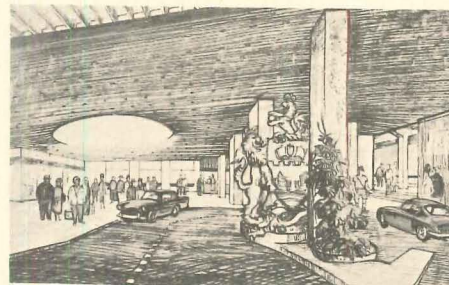
Hong Kong pier nears completion

A 1,250-foot-long and 500-foot-wide marine pier in Hong Kong will contain berthing space for four ocean-going liners, a 190,000-square-foot transit cargo shed, two shopping floors, a passenger concourse covering 332,000 square feet and two parking floors. The pier, designed by English architect Taylor Woodrow, will provide the first permanent facilities capable of handling the 120,000 sea passengers who arrive in Hong Kong annually. The structure is owned by Hongkong & Kowloon Wharf & Godown Company, Ltd.

The four-story terminal building stands on cylinders resting on the pier, which is supported by 1,217 pre-stressed concrete piles, driven between December, 1963, and March, 1965, and varying in length from 40 feet to 100 feet. The use of precast concrete units in the terminal building allowed a large proportion of the work to be completed off site. Completion is scheduled for March.



Driveway leads to entrance and then continues to two parking floors above which provide space for 1,200 cars.



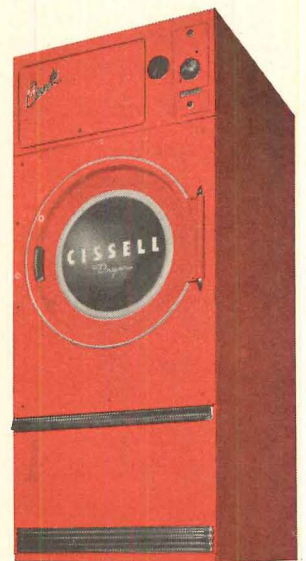
Main lobby runs the full 48-foot height of the two-story shopping center. A restaurant is on upper level, and escalator connects all floors.

Cissell dryers like to live it up, too!

The Cissell Petite Dryer is specially designed for high rise apartments. It's as easy to install on upper floors as it is in a basement or ground floor service room. Convenient size (48" high, 28 $\frac{3}{4}$ " wide, 30" deep), light weight and easy venting simplify installation. And the Cissell Petite has all the features tenants want. Two temperature settings — 150 degrees and 185 degrees. Non-wrinkling cool-off period. Fast drying — ten pounds in twenty minutes. Big 16-pound dry weight capacity basket with 28" drop to assure soft, fluffy drying. No-snag perforations to protect the most delicate clothes. Available for gas or electric operation . . . in any color to match your decorative schemes. Want bigger capacity for special applications? Cissell makes a full line of laundry dryers, including the 25-pound dry weight capacity Compact. W. M. Cissell Mfg. Co., Inc., Louisville, Ky.



Petite



Compact

CISSELL®

For more data, circle 96 on inquiry card



Architect: Hanney & Sanders • Mechanical Contractor: Central Air Conditioning Co.
Consulting Engineer: Hysom-Peugh & Assoc. • General Contractor: Dondlinger & Sons—all Wichita

Another new school community cooled by Carrier...powered by a Gas total energy system.

The Carrier absorption refrigeration unit cools more than one school building. It services the entire Bishop Mark K. Carroll High School complex ... including teacher housing, chapel, auditorium, gymnasium, classroom and administration wings.

But what really sets this Wichita installation apart is the energy source. The Carrier equipment is energized by steam produced by heat recovered from the Gas engines, which generate all the electricity needs of the school. Building heat also originates with the engines—completing the efficient, low-cost Gas total energy system.

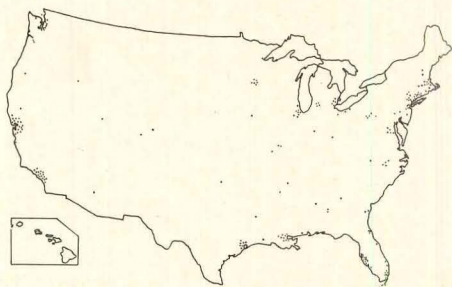
Whether or not your next project justifies the advanced Gas total energy concept, it certainly deserves Gas-powered Carrier cooling. For more information, call your local Gas Company sales engineer. Or write: Carrier Air Conditioning Company, Syracuse 1, N. Y.
AMERICAN GAS ASSOCIATION, INC.

For heating & cooling...Gas is good business 

For more data, circle 97 on inquiry card

RECORD HOUSES 1956-1966

A DECADE OF INNOVATION



In the 10 years since 1956, Record House awards have been made by ARCHITECTURAL RECORD to 143 architects, for 214 houses and to their owners, in 34 states. Taken as a group, these houses form a significant documentation and cross section of the better work of the period, from worthwhile experimentation to sensible, sound design. To help give a clearer perspective of what actually has developed in these 10 years, a selection of the houses is shown on these pages in roughly chronological order of their publication in Record Houses, with notes on some of the trends or passing fancies they have represented. There has been no attempt to rank or grade them in any particular order. The limited number shown reflects only the limitation of space.

The real laboratory for inventiveness in architectural design has long been the architect-designed house. The reasons are many and some are obvious, the ubiquity of houses being not the least of them. Houses are relatively less costly, are built for one client instead of boards or committees, and are designed by almost every architect; indeed the reputations of many architects are founded on significant house designs.

Ten years ago, Record Houses was launched by ARCHITECTURAL RECORD to document this inventiveness, and to help stimulate it by annual awards to architects and clients.

Ten years is not a long period in architecture, but in reviewing the 10 issues of Record Houses it represents, one becomes increasingly conscious that there have been some radical changes in fundamental design thinking, both in approach and in "taste," during the decade.

Many, if not most, architects active in designing houses have drastically altered their "styles," though it is true that some have used the period to refine their established idioms: Neutra is still Neutra, and Mies is eternally Mies.

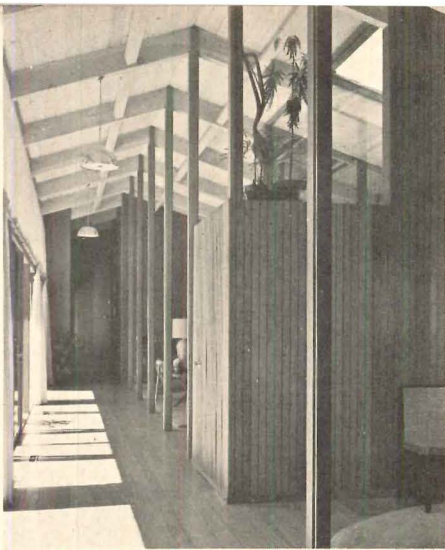
The "ideal" house of the more sophisticated circles, as well as of the general public, is quite a different thing now from what it was in 1956. Indeed,

there are even those who say they consider the whole idea of a house outmoded. The fact is that there are far more really excellent contemporary houses being built now than before, and — happily for the education of the general public — with far more attention from all facets of the press.

Few can deny that the 10-year-old Record Houses have retained a remarkable degree of freshness and suitability. But, by and large, the newer houses are bigger, more complex, more conspicuously opulent—even if some of the symbols of opulence and status have also altered. And all this in the face of constantly rising costs. For a broad, simple analogy, one might say that the modest, open, tightly budgeted, two-dimensional "house of cards" of 1956 has metamorphized into a more intricate, more closed, more costly, three-dimensional "house of blocks."

In the avant garde, 1956 found us toying with some new forms, but generally it was still a somewhat Miesian era: elegant, and deeply concerned with spatial arrangements of Mondrianesque planes. The house by Bolton and Barnstone on the cover of the first issue of Record Houses is a fairly representative example. A close runner-up for influence was the warm naturalism of the "Northwest School," of which Bellus-

Roger Sturtevant



1956: Anshen and Allen use exposed post-and-beam structure to define space in builder house.
©Ezra Stoller Associates

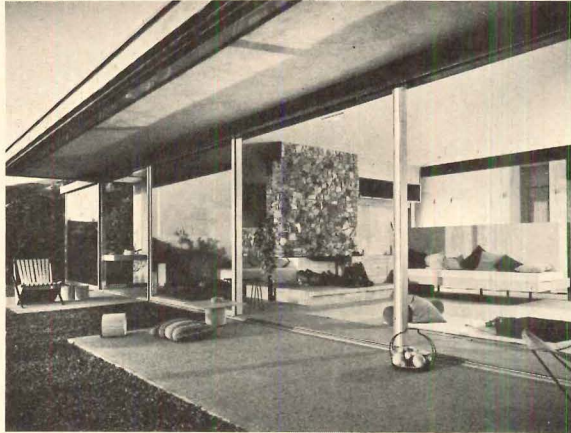


Julius Shulman

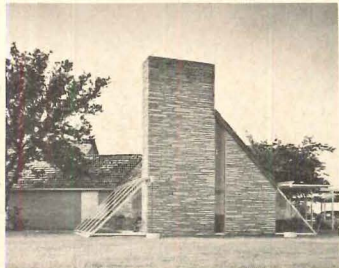
1956: Rudolph experiments with three-level cantilever design.



1956: Franzen's own house places airplane-roofed glass pavilion on light podium.
Julius Shulman



1956: opposite, top, an early example of modern atrium by Schweikher & Elting; bottom, disciplined Mondrianesque interior by Bolton and Barnstone.



1956: steel A-frame by Truett Coston is an innovation in design.
Joseph W. Molitor



1956: neo-classic symmetry of plan and structure by Cecil Elliott.

1956: texture and eyebrow sun-shade characterize Breuer house.



Ben Schnall

chi's wooden houses are prime examples. For want of better terms, houses were often categorized as being of the "hard" or "soft" school of design, and each had some very vocal adherents.

"Honest expression of structure," "modular dimensions," "utility," and "functionalism" were still by-words and dominant standards of design judgement. The search for "spaciousness," as opposed to any attempt to add *real* space, was in full swing and nurtured such concepts as indoor-outdoor rooms and gardens, flexibility and multi-use areas, storage walls and minimal furnishings, and sometimes sheer optical illusion.

Besides that of Mies, the design philosophies of Wright, Gropius and Corbu were, then as now, the deep roots of much that was done. But another name was lurking to be added to the list—that of Louis Kahn, whose teachings and 1952 museum at Yale were generating a strong following. His carefully rationalized concept of boldly expressed "service towers" has spawned a readily discernible progeny, even if the family resemblance is often only visual.

A more immediate influence was being exerted by two highly publicized houses built in 1949, houses which typified diametrically opposed concepts:

Marcel Breuer's house for the garden of the Museum of Modern Art, and Philip Johnson's own house. The former, as we all recall, was steeped with binuclear privacy, butterfly roofs and "natural" materials; the other, utterly simple openness boxed in by steel and glass. And of course, both were, different as they seem, out-growths of the Bauhaus efforts: the Breuer one more or less in the Gropius vein, the Johnson one obviously after Mies. However, there is one outstanding similarity. Though totally different, each tended to relegate the mechanics of structure and utility (in its purely mechanical sense) to a secondary position vis-a-vis the organization and handling of space. The Johnson house probably marked the peak of one clearly defined trend (which Johnson, himself, no longer visibly follows), while the Breuer gently forecast another.

But each was a stimulus to what followed: the near fetish of the post and beam (in whatever material) to "free" interior arrangements, the expansion of the picture window into the window wall, the open family-room-kitchen, living-dining areas, the Barcelona chair, steel as a house material, and many other items relate to the Johnson concept; the Breuer house can be associated with more defined rooms,

Hedrich-Blessing

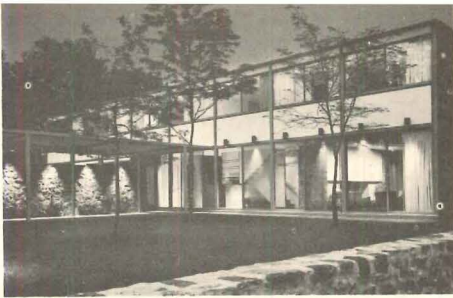


Fred Winchell

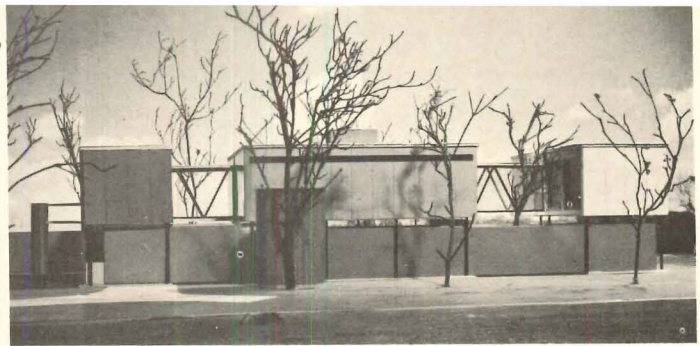


RECORD HOUSES 1956-1966

Ben Schnall



1959: Integral lighting used by Eliot Noyes to dramatize house's architectural form.



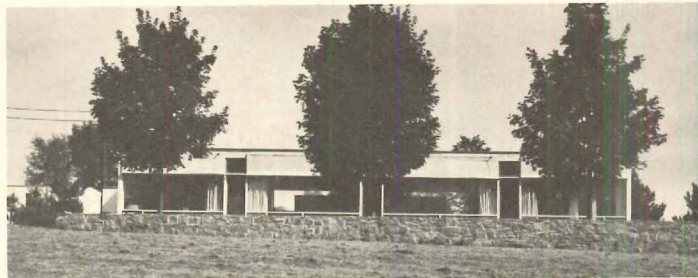
Ben Schnall

1957: Lawrence, Saunders & Calongne achieve three-unit zoning.



1957: George Nemeny demonstrates growing concern with shed roofs.

Ben Schnall



Opposite, top, 1958: disciplined romanticism by Johansen; middle, 1959: wood and colored glass in rustic house by Barnes; bottom, 1960: Franzen's podium balances pavilion under umbrella roof.

1957: Barnes builds a platform house in the country for his family.



1958: Victor Lundy shelters house beneath free-standing, wood arches.

Ben Schnall



1958: Chard Webb achieves a sense of order in compact steel-frame.

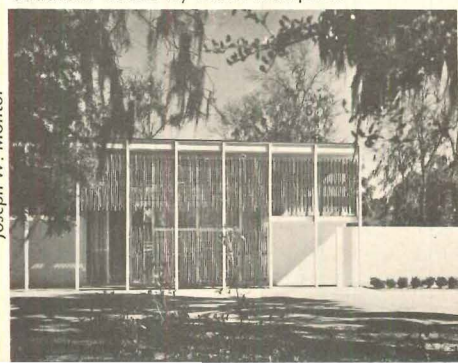
©Ezra Stoller Associates



1959: Rudolph develops bolder form: increases living levels to five.

1960: wood grilles give shelter to southern house by Mark Hampton.

Joseph W. Molitor



zoning (for sound, use, privacy), linked pavilions, pattern as a design element, and of course the shed roofs inherent in the wings of the "butterfly." Certainly, neither house was the first to do any of these things, but they functioned as quite efficient pep pills to stimulate further action.

In the first, 1956, Record Houses, the criteria used to select the majority (20) of the houses clearly echoed the mood of that moment, having: a "price range in that middle bracket which permitted some initiative in design—above the minimum, pared-down budget and below the absolute luxury class where economy is not a consideration; suitability for typical-size-family living, with three or four bedrooms; adaptability to an average site."

One by one, in the succeeding issues, all these were dropped as standards for selection, obviated by the rising economy, by the rise in first, second and retirement houses, by a decline in the baby boom, and by the increasing desirability of (and methods of building on) bypassed and "odd" sites. And a number of builders discovered the value of better architecture in lower-cost houses.

The kernel of the criteria that remained for the awards was simply the best architecture that could be dis-

covered—each house best for its own program and money available, and contributing something of significance in new ideas or the refinement of older ones, without encouraging the uselessly self-conscious, wild confections.

However, in 1956 too, along with the 20 houses for "family living," nine were published apart in Record Houses as frankly experimental or "adventurousome." Among them were an A-frame by Truett Coston, a house by Paul Rudolph with some (at this writing) rather hesitant level changes and cantilevers, and a house by Jones & Emmons with a loft plan and movable partitions. All these concepts multiplied, it seems, infinitely—both in houses and other building types.

Within a short time, none of these houses would have warranted an adventuresome label. The "new freedom," as we then called it, was loudly proclaimed and led to all sorts of structural and design muscle-flexing: spectacular cantilevers, windowless houses, hyperbolic paraboloids, cork and metals and plastics all over the place, and of course all those grilles. Everyone seemed determined to test the generally held assumption that "now we have the means to build anything we want."

But in the process, a whole dictionary of useful new design techniques

Robert Damora

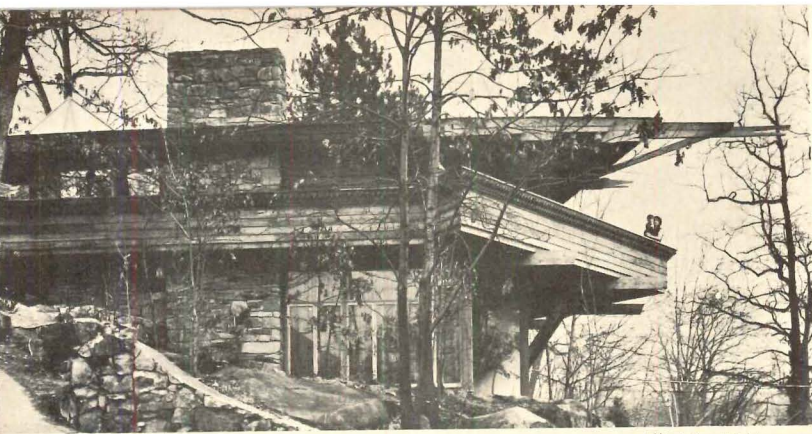


Ben Schnall



Robert Damora



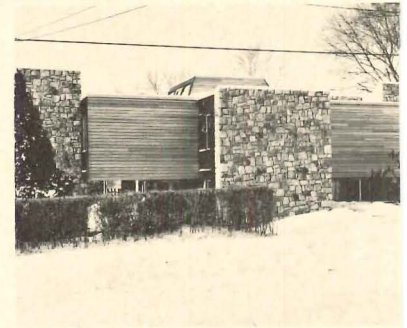


Elliot Erwit-Magnum

RECORD HOUSES 1956-1966

1961: imaginative use of wood in Wright idiom by Roy Johnson.

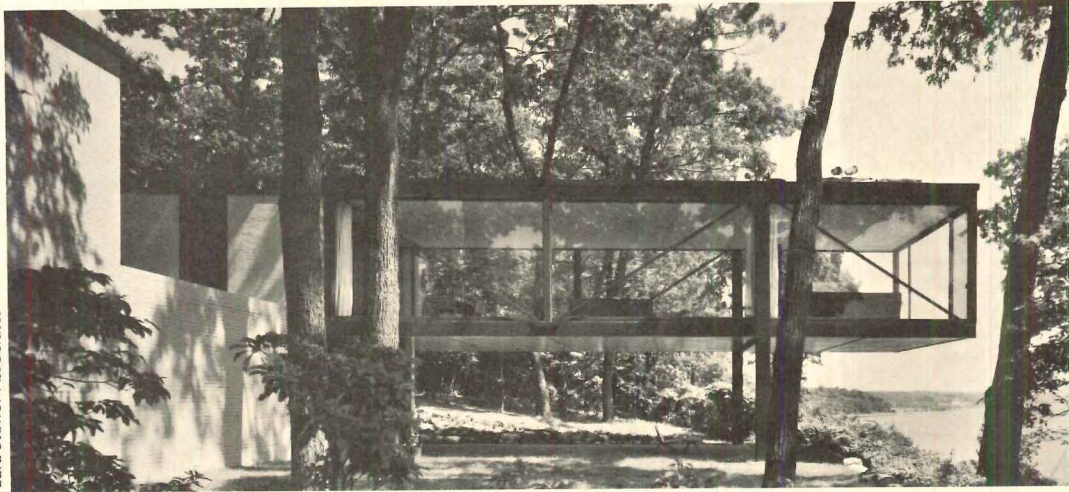
Marc Neuhof



1961: Frank Schlesinger introduces service towers in the style of Kahn.

1963: Opposite: soaring laminated arches by Jules Gregory with muted color tones demonstrate the influence of Japan.

1962: glass living pavilion by Philip Johnson after Mies.



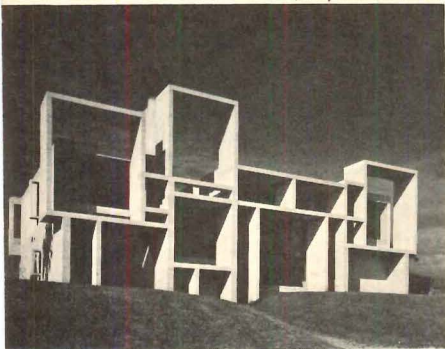
© Ezra Stoller Associates

Baltazar Korab



1961: Meathe, Kessler's V-shape roofs dramatize family house.

Joseph W. Molitor



1963: sculptured concrete forms by Rudolph advance to many levels.

1963: in this addition by Franzen the podium in effect becomes the house.



© Ezra Stoller Associates

was added to our architectural vocabulary. It also pretty well ended any argument that certain materials and design ideas or appearances were limited to specific building types: concepts were bandied back and forth, from designs for churches to houses to filling stations to schools... on and on. And a lot of materials—notably concrete block, aluminum, and steel—gained a new respectability. Renewed favor was also openly given to regionalism, and to historic and foreign antecedents. Insect-ridden areas added back the screened porch (as a "Florida Room"), overhangs and "eyebrows" shaded hot sun, pitched roofs fended off snow, and central courts gave protection from winds. Neo-"neo-classic" houses proved, once more, that "formal" balance can be pleasing. And the East, (near to far, and notably Connecticut, Delhi and Japan) surged forth again as a major design "influence." In short, modern house architecture bolted from family traditions for a while, even changed its name to "contemporary," then grew up a bit and reclaimed its somewhat Victorian relatives.

Centers of influence, however, seldom reign in solitude for long. After encountering the East, architecture met the Mediterranean, where visually enchanting villages cascade in clusters of

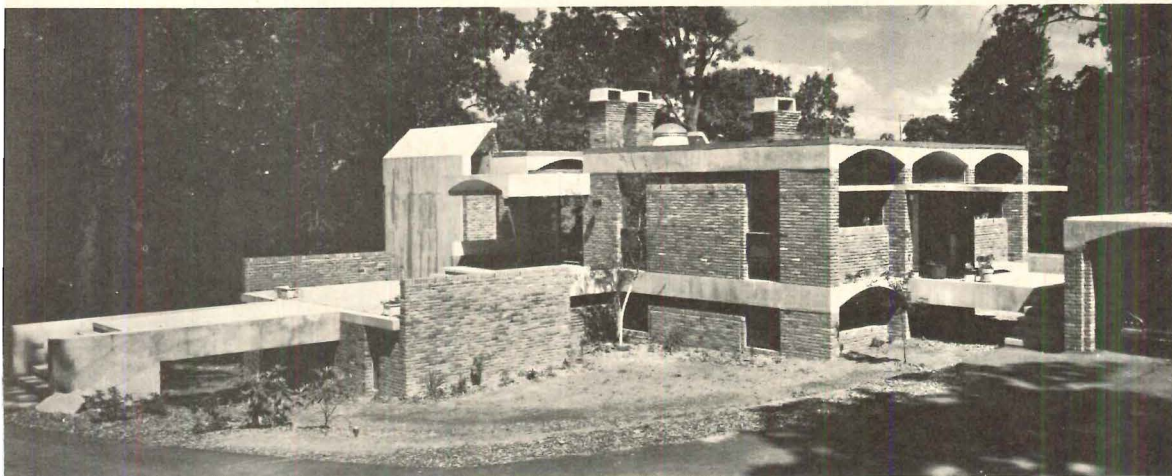
truncated cubes down the hillsides, from Spain to the Greek Isles. And, more recently, it would seem that some quick visits have been made to the remaining Crusader castles. There are certainly spates of current houses that tilt the mind in those directions.

But, style aside, probably the major change in these 10 years is the basic attitude of architects towards house design. Technology and science still held a dominant hand in 1956; but a resurgence of interest in "art" was beginning, and everyone was also beginning to admit that most houses were in "neighborhoods." Today, after the safari into methodology, there is a decided shift of emphasis by many architects. As an example, when we asked about his personal change of views over the decade, Ulrich Franzen wrote the following: "What is required today is the recognition that the dignity of man and the quality of his life, in an industrialized urban society, is the central problem. We feel that solutions which mortgage the experiences of life and the dignity of daily existence to some future goal are inhuman. Therefore, an architecture which is only concerned with universal values, dreams of perfection and gestures in the direction of a technological paradise seem curiously out of place from where I stand. Today,



Charles R. Pearson

Marc Neuhof



1964: strong expression in brick and concrete by Tasso Katselas.



Morely Baer

1964: elegant steel frame house by Ellwood shows Miesian influence.

Opposite, top, 1963: Keck and Keck use gently curved facade to encompass view of lake. Bottom, 1964: Roy Brinkley achieves traditional charm with contemporary design.

1964: Edelman and Salzman's design makes use of all-steel components.

Marc Neuhof



1964: builder house by Mary Lund Davis to sell for \$5995.

Joseph W. Molitor



©Ezra Stoller Associates



1964: I. M. Pei creates arches of bearing brick and poured concrete.

1964: Henrik Bull's four pavilions form well zoned builder house.



Ernest Braun

the evolution of a perfect style as a means of restoring harmony to our environment is of little or no interest. The architectural problem is of every day—today—not tomorrow. The architect must provide the tangible experiences of existence. Technology and science are tools—useful only when appropriate to the quest of creating an architecture and environment for man. Architecture then becomes not the celebration of technology or science—but the celebration of man and his life by the forms and spaces it creates."

In other words, the emphasis seems to have shifted from the how to the what, even to the why; from the method to the building itself; from the functionalism of chores to the function of living, maybe to humanism. Perhaps, all the way back to that vaguely romantic idea of "home"!

Franzen's work, for example, has gone through an evolution fairly typical of many architects, especially the younger ones. The first issue of Record Houses featured his own house—an airplane-roofed tour-de-force which reveled in innovative technique, a glass pavilion hovering on its light podium. We even developed a technique of adding candid photos to the usual architectural ones, in our presentation, to demonstrate the livability of the

house. Year by year, Franzen's podiums outgrew his pavilions in successive designs, until the solid masonry gained equal billing, then dominated in stolid shafts and towers. On the interiors, clean-cut openness evolved into variety and chiaroscuro.

As noted earlier, another style evolution was Paul Rudolph's rising concern with levels and sculptural forms. In 1956, we were very intrigued with his one-level drop in an open-plan living area adjoining a fireplace (what ever became of the conversation pit?), and we relegated a three-level house he designed to the adventurous category. Its tidy cantilevered wings rested on a simple podium of concrete block. A number of years and houses later came the Milam residence—an assertive, involved, geometric sculpture of concrete block and of seemingly countless levels and spaces.

Yet another conspicuous and evolving change can be seen in Edward Larabee Barnes' houses. Always true to an intellectual as well as esthetic ideal, Barnes was designing "platform houses" in 1956—crisp, flat-topped, and often neatly balanced, white structures, raised above natural fields on well-tended earth podiums. Somewhat later came his "woodland houses"—informal, rambling, russet-colored homes punctuated

Hedrich-Blessing



Hedrich-Blessing





Marc Neuhof



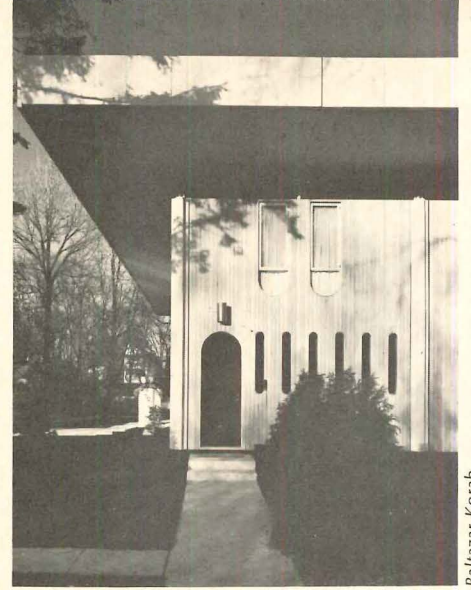
Joseph W. Molitor

Robert Lautman



1965: skylight and porthole windows distinguish Jacobsen's compact design.

1965: oval slit windows enliven Meath Kessler's disciplined house.



Baltazar Korab

1965: opposite, top, Richard Meier creates simple, sculptured interior and uses effective color contrast; below, Elting applies modern techniques to traditional regional concept of the country house.



Frank Lotz Miller

1965: Colbert's light pyramids dominate a monumental-style house.

Alexandre Georges



1965: John Portman uses exploded columns to define space.

Joseph W. Molitor

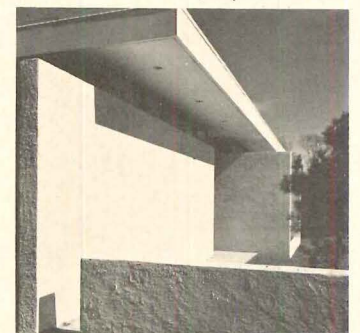
by occasional roof peaks fitted with colored glass. And, lately have come the village-like compounds of artfully fenestrated, but very simple, single-material, shed-roofed units. No label seems to have been applied to these as yet, but to fill the gap, one would-be wit has dubbed them "Barne's barns." But no anonymous farm architecture these. Their influence has been great.

One could go on at some length in documenting this swing from relative simplicity to fairly involved designs in the work of individual architects. These three have been singled out because of the considerable, and sustained, attention their work has attracted during the decade. All this exposure, plus the fact that all have done some teaching, add up to a considerable influence. It is astonishing how many of the houses done recently by very young architects bear a marked resemblance to the work of Barnes, Franzen or Rudolph.

It is not astonishing, though, that another trend has gained strength in these years. The increase in town houses, row houses, houses set in walled-in lots, was inevitable with the increasing density and rising land costs in suburbs as well as central cities. Of all the prototypes for this sort of house, probably one of the most interesting

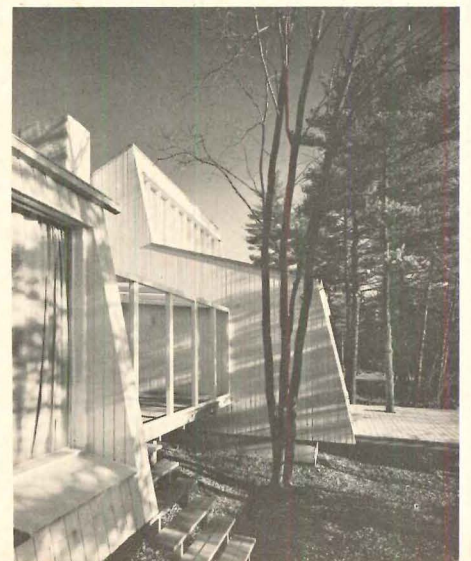
is José Sert's own house, published in 1959. Based on a central-courtyard, partially shed-roofed scheme, and with simple, white, but dramatically shaped interiors, bedecked with brilliant-colored pieces of art and handicraft, the house still represents a major force in current tastes.

As mentioned earlier, costs have had a steady, over-all rise, which it seems probable will continue. William Edgerton, of McGraw-Hill's Dow Services, has provided us with some pertinent comments: "For 10 years, average U.S. construction costs have increased at an almost even rate of 2.5 per cent per year, with a slowing down to 2 per cent per year recently evident in the Southeastern, South Central, and New England regions. Some annual increase can almost always be expected due to the long-term inflationary nature of our economy. The actual increases, however, have been due almost entirely to increases in wage rates and fringe benefits paid to construction labor. Although building materials manufacturers have faced and met demands from their workers, they have managed to increase their efficiency and productivity at the same time, thus maintaining (or even reducing, in some instances) very stable selling prices. The productivity and efficiency of con-

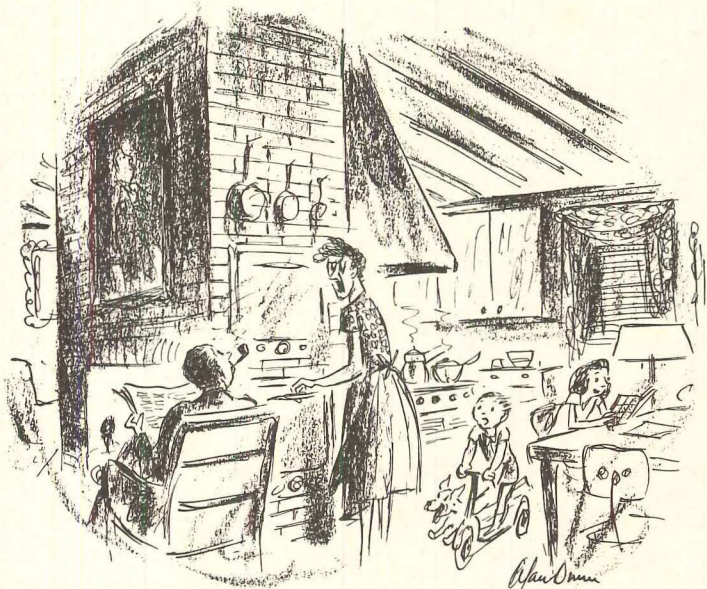


1965: Herbert Newman achieves sculptural simplicity in concrete.

1965: sophisticated handling of shed roof in house by Earl Flansburgh.



Louis Reens



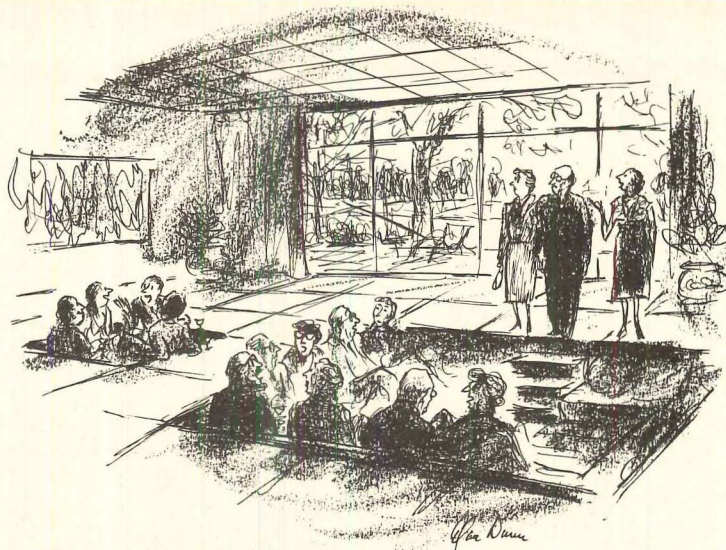
1957: "I sure miss the good old days when I could tell everybody to stay out of the kitchen!"

Alan Dunn has kept a critical eye on the evolution of Record Houses over the years.

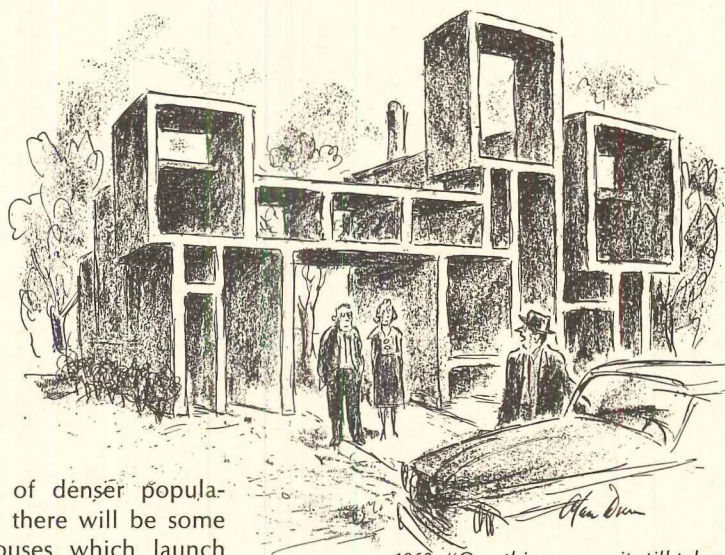
struction labor has not kept pace with its increased compensation, causing a continuing rise in total building costs. The results of this increase are nothing short of amazing: the \$7,500 dream house of 1941 came with a price tag of \$14,850 10 years ago, and today costs \$20,205; office buildings in the current \$25.00 per square foot class cost \$9.27 in 1941 and \$17.50 just 10 years ago. Residential land costs per lot have increased even more: 47 per cent nationally in the last four years alone!

"Our crystal ball indicates quite clearly a 2 to 3 per cent increase in the cost of construction across the country in 1966, with less than 10 per cent of this increase due to materials price increases."

Such prognostication is, indeed, more difficult in architectural design. The seeds of what will come are undoubtedly with us now—but even with careful nurturing, which ones will germinate and flower? There are some that seem fairly obvious: a continuing development of the more three-dimensional design approach—with, perhaps, some increasing subtleties; more architect involvement with all design facets (interior design, landscape, neighborhoods); continuing influence of bigger houses on the smaller ones, as well as on other building types; and more attempts to provide better livability,



1960: "That one is for small talk."



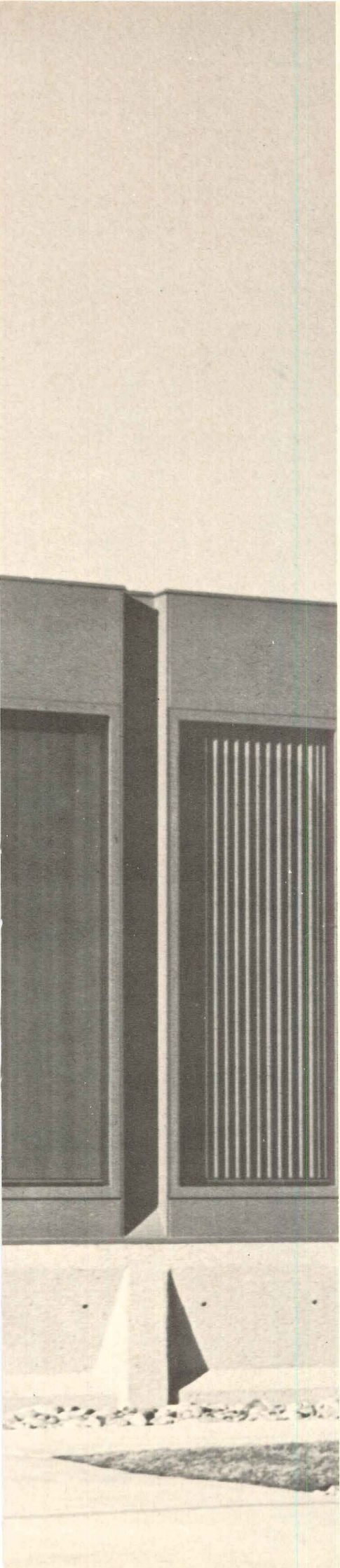
1963: "One thing more—it still takes a heap o' livin,' you know—"

especially in areas of denser population. And obviously there will be some stimulating new houses which launch the careers of some new architects, some reactionaries, some extremists.

But the inevitability of continuing change is quite clearly demonstrated by a recent remark of a fledgling architect about a certain new house: "But you couldn't like *that*—it looks like something out of the 1940s!"



1961: "Do I have to live in a 'statement'? Can't I just have a home?"

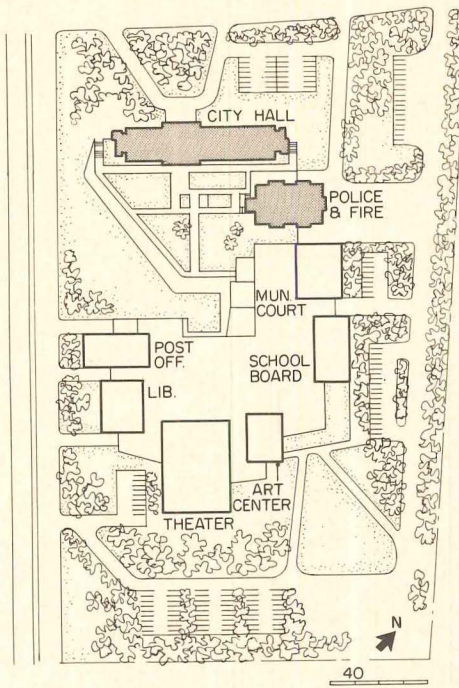


*AFFLECK
DESBARATS
DIMAKOPOULOS
LEBENSOLD*

& SISE **FIVE ARCHITECTS IN CO-PARTNERSHIP
ESTABLISH A NEW STANDARD OF QUALITY
FOR CANADIAN BUILDING**

This Montreal based firm—known informally as “ARCOP,” a name short enough to be stenciled on their hard hats—was founded in 1953 by five men who had known each other as students or teachers at the School of Architecture, McGill University, in Montreal. As their names suggest, the partners are of varied cultural backgrounds and share five languages among them. The firm’s cosmopolitanism, and its juxtaposition of Turks, young and not so young, may account for the special quality of its work, which is marked by avoidance of fashionable clichés and scorn for the creation of monuments to individual self-expression—in favor of an emphasis on inventive control of materials and construction processes, and fine detailing. Affleck, Desbarats, Dimakopoulos, Lebensold and Sise first joined forces to enter a competition for the design of the Vancouver Queen Elizabeth Theater and Vancouver Civic Theater. They won first prize and the commission. Since then the firm has grown to approximately 140 persons and has completed over \$42.7 million worth of work not including the \$85 million Place Ville Marie done in collaboration with I. M. Pei and Associates. Work currently on their boards or under construction will cost over \$128 million, and includes large urban complexes such as Place Bonaventure, now under construction in Montreal (to be published in a future issue); and multi-theater cultural centers(see “Canadian Center for the Arts in Ottawa,” December 1964). The spectacular growth of ARCOP can be attributed in part to Canada’s building boom—which has lately become “for Canadian architects only” under new legislation designed to keep U.S. firms on their own side of the border except as associates. But more importantly, the ARCOP partners’ big share of the work has been earned by the consistent vigor and precision of their architecture

Chris F. Payne Photos



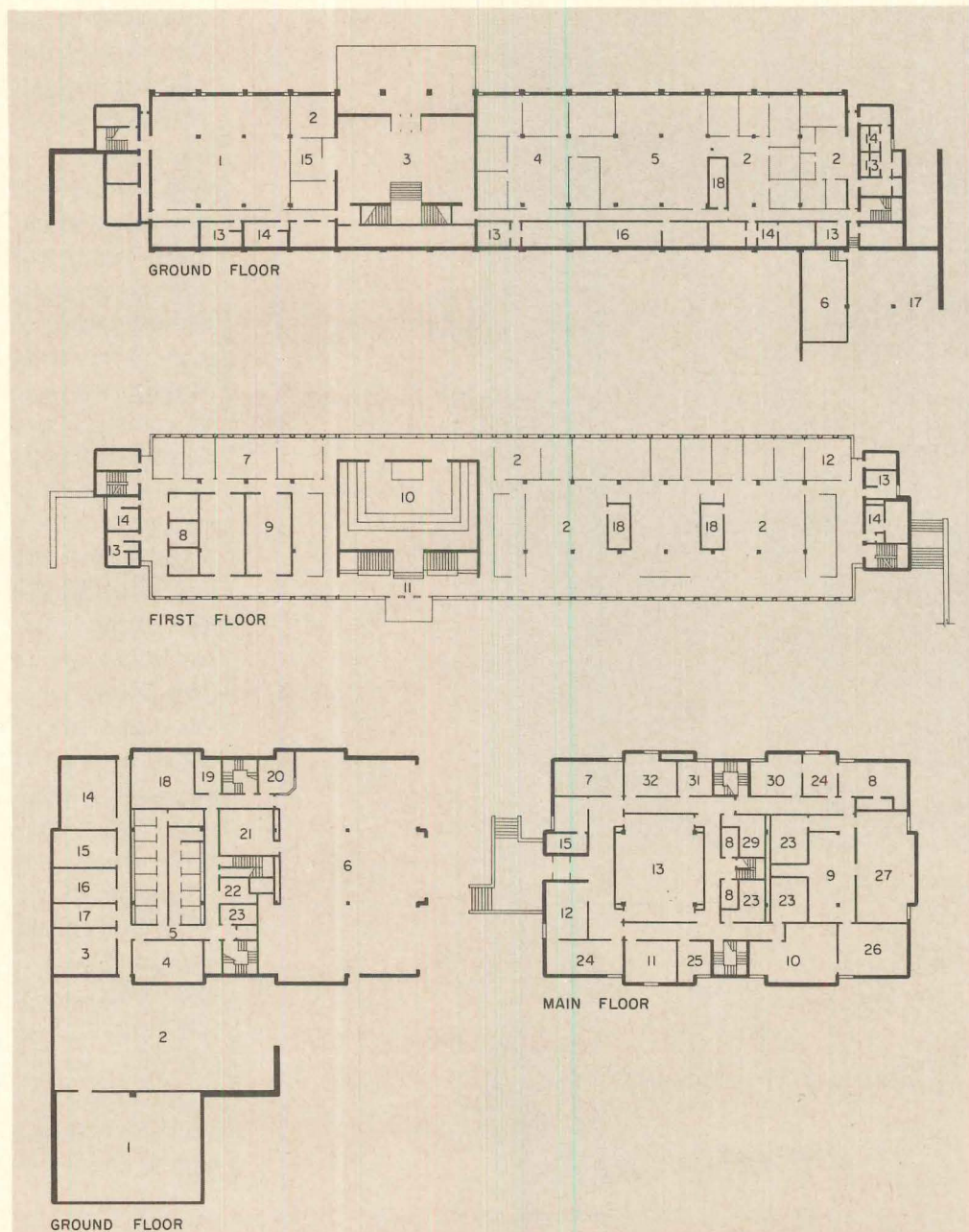
CITY HALL

- | | |
|---------------------------|--------------------------|
| 1. Cafeteria | 10. City Council chamber |
| 2. Offices | 11. Main entrance |
| 3. Lobby | 12. Treasurer |
| 4. Engineering | 13. Men |
| 5. Drafting | 14. Women |
| 6. Electrical sub-station | 15. Receptionist |
| 7. Mayor's office | 16. Archives |
| 8. Aldermen's offices | 17. Garage |
| 9. Committee rooms | 18. Vaults |

JAIL AND FIREHOUSE

- | | |
|--------------------------|----------------------|
| 1. Furnace room | 17. Darkroom |
| 2. Garage | 18. Storage |
| 3. Detective offices | 19. Inspector |
| 4. Police offices | 20. Dispatcher |
| 5. Cells | 21. Hose-drying room |
| 6. Fire-truck garage | 22. Storage |
| 7. Court offices | 23. Men |
| 8. Fire Chief | 24. Secretary |
| 9. Firemen's quarters | 25. Captain |
| 10. Policemen's quarters | 26. Dressing Room |
| 11. Chief of Police | 27. Lounge |
| 12. Officer in Charge | 28. Cells |
| 13. Municipal court | 29. Women |
| 14. Storage | 30. Assistant Chief |
| 15. Vault | 31. Judge |
| 16. Laboratory | 32. City Clerk |

**A CITY HALL,
JAIL AND FIREHOUSE,
DESIGNED WITH A PLAN
FOR THE FUTURE,
COMPLETE THE FIRST STAGE
OF LAVAL CIVIC CENTER**



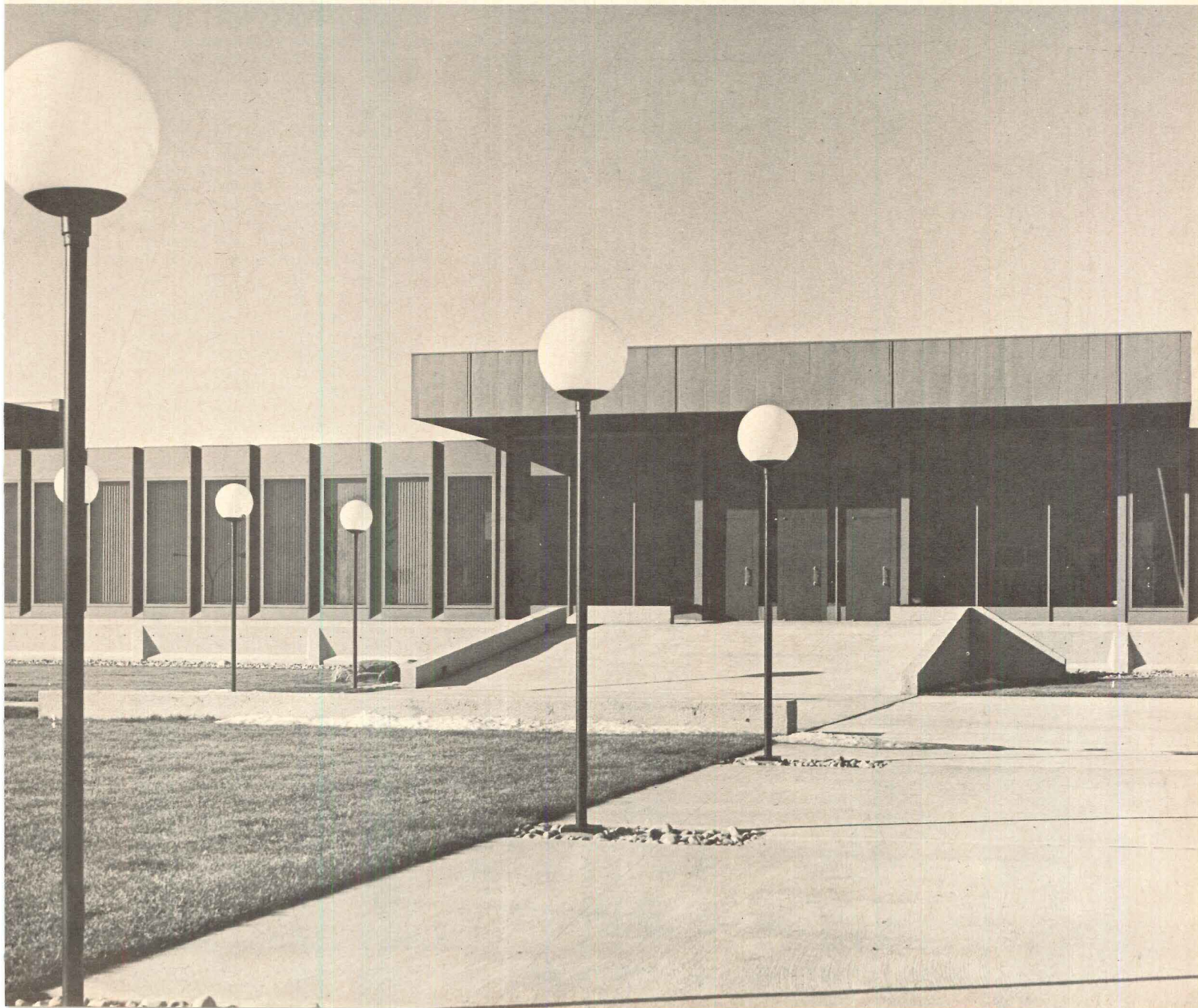
THE SITE PLAN FOR THE CITY OF LAVAL CIVIC CENTER IN QUEBEC

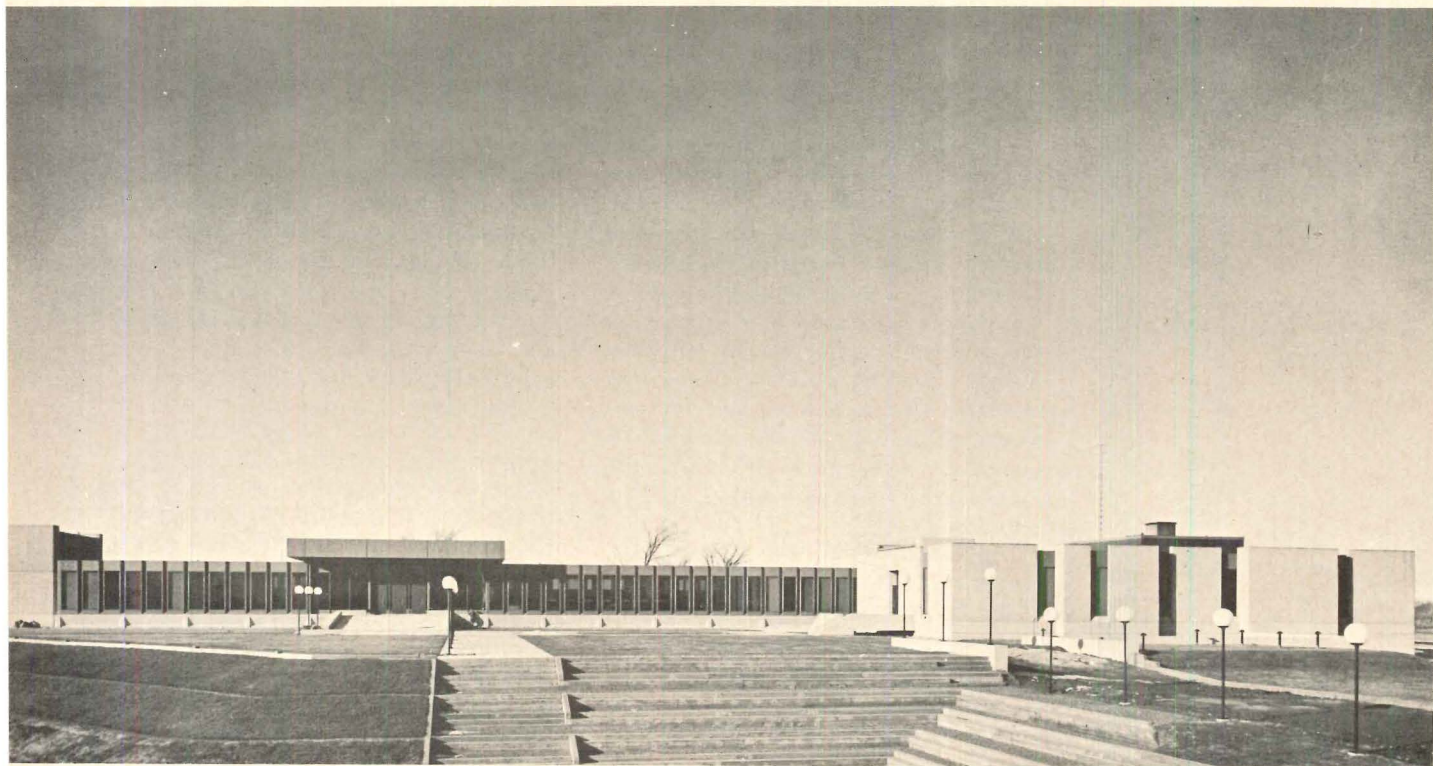
will be developed in increments as the surrounding area grows. Right now two newly completed buildings stand in a vast empty plain, and the town whose nuclei they will someday become can be seen in the distance. The city hall and the combined jail and firehouse were constructed first, on a plaza which consists of a raised earth platform which will eventually conceal a garage. A sunken open-air amphitheater will serve as both a focal point for the projected ensemble and a link to the not-yet-developed portion of the complex: a municipal court, post office, library, theater, art center and offices for the schoolboard.

The main pedestrian and automobile approach is on the northwest and leads directly to the city hall public lobby on the ground floor which gives access to those offices frequently visited by the citizens. A secondary but more ceremonial entrance on the raised plaza,

shown in the photograph below, leads directly to the council chamber, and to a corridor which connects the more formal and private administration spaces on the first floor. The jail and firehouse also has a ceremonial entrance at the plaza level leading to the present municipal court room, which will eventually relate to the main facade of the projected municipal court building. Police and fire vehicles have a separate driveway leading to garages at the ground level underneath the plaza. Six on-site parking areas are planned.

Architects: *Affleck, Desbarats, Dimakopoulos, Lebensold & Sise*; partner in charge: *Guy Desbarats*; interior design: *Margaretha Martijn*; project manager: *Guy de Brouwer*; design developer: *Eva Vecsei*; town planning consultant: *Norbert Schoenauer, A.M.T.I.C.*; structural engineer: *J. M. Marceau & Associés*; mechanical and electrical engineers: *L. Scharry & Associates*; acoustical consultant: *N. J. Pappas & Associates*; general contractor: *The Foundation Company of Canada.*

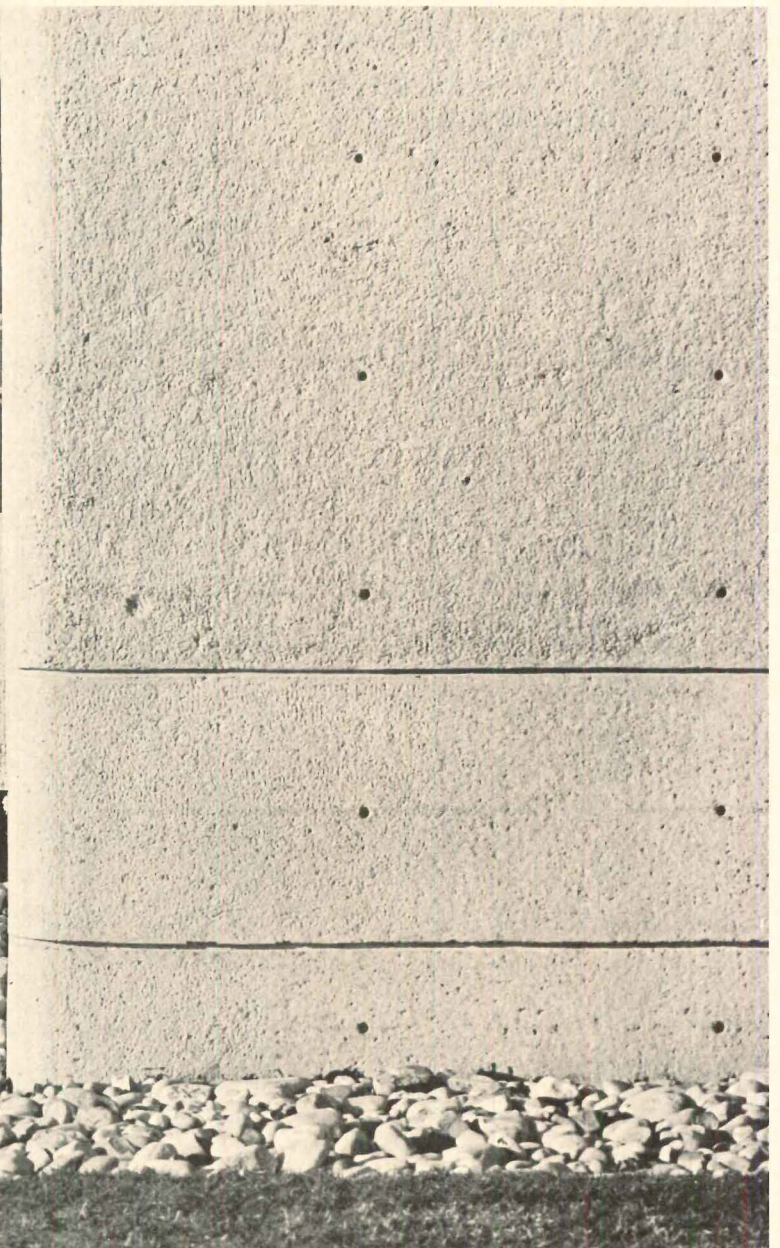
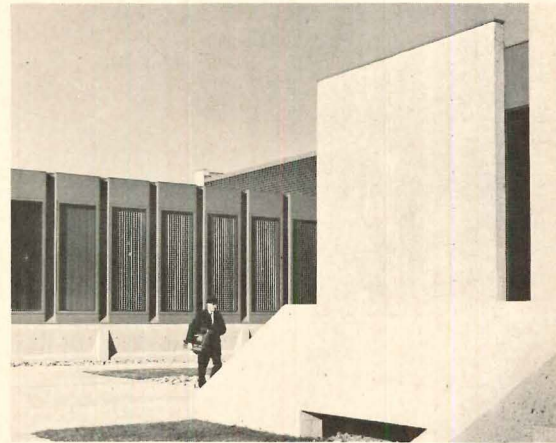


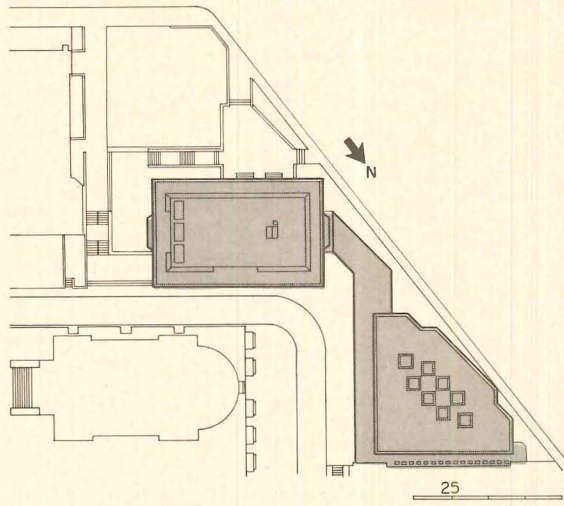


The over-all design of the completed buildings appears in the photograph above, which looks toward the raised plaza. The steel-sheet metal wall which encloses the upper level of the city hall is set within a strong frame created by the reinforced concrete base and two end towers. The refined detailing, smooth surface, and dark-brown matte finish of the steel structure contrasts effectively with the bush-hammered concrete texture of its base and towers. The adjoining police and fire building is built entirely of reinforced concrete with the same surface treatment. The plaza and the ramps are edged by poured concrete walls, and the stairs and the amphitheater are constructed with red cedar trunks, detailed in the manner of traditional wood railway structures. The council chamber interior is shown below.



ARCOP'S attention to detail is evident in the handling of the concrete and steel surfaces, and in the design at the juncture of the building bases and ground. The sheet-steel wall is a bearing element which transfers the loads of the steel-framed roof either to the concrete girders and columns or to the continuous concrete walls at the ground floor perimeter. The vestigial buttresses which project at third points along the base of the city hall at the plaza level assert the columnar module of the structure. Crushed stone surrounds both structures. Indentations in the concrete were left by the formwork.

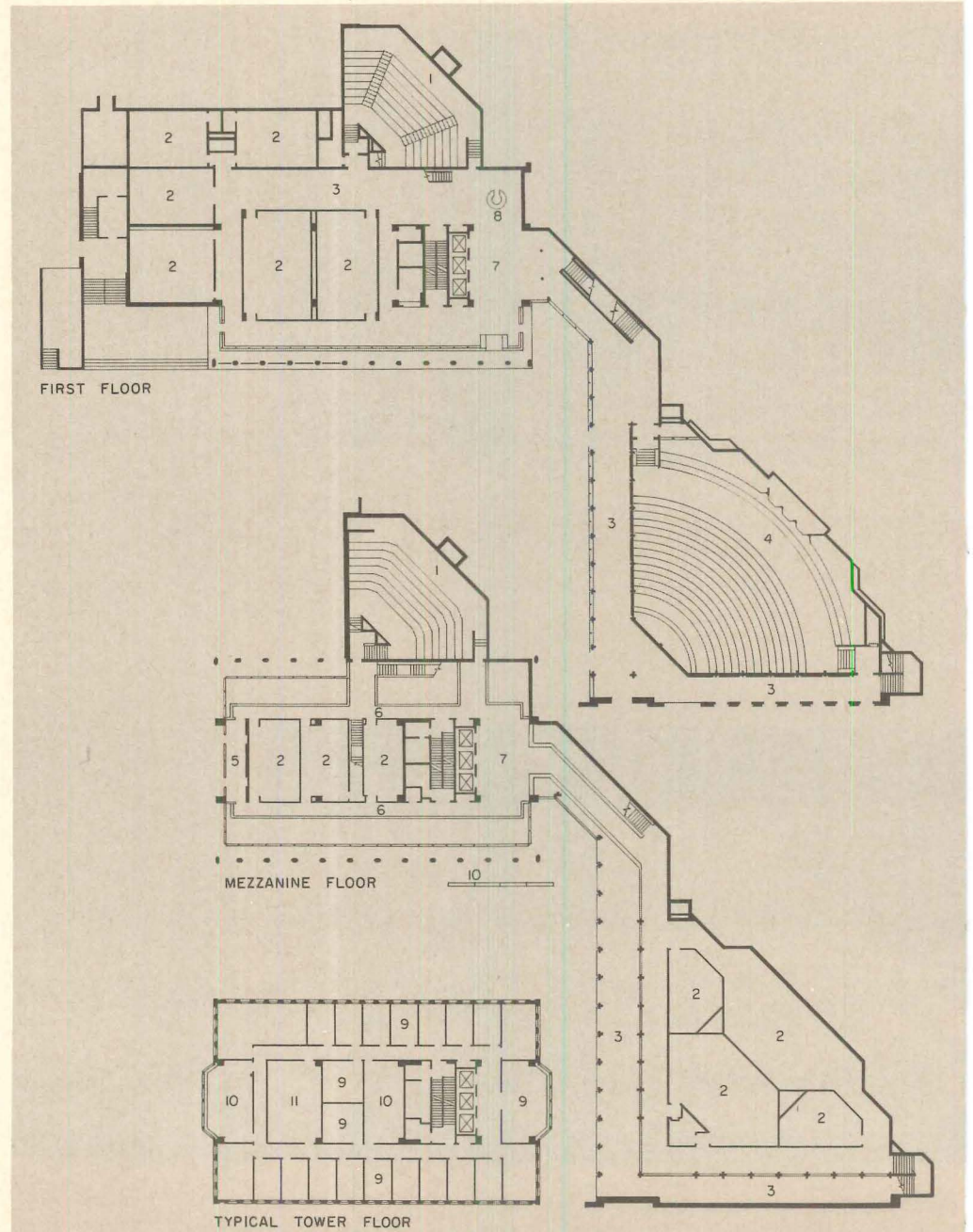




STEPHEN LEACOCK BUILDING

- 1. General auditorium
- 2. Lecture rooms
- 3. Gallery
- 4. Lecture auditorium
- 5. Entrance
- 6. Balcony
- 7. Elevator lobby
- 8. Ticket booth
- 9. Offices
- 10. Seminar
- 11. Classroom
- 12. Teaching assistants

**A WELL PLANNED SCHOOL
FOR ARTS AND SCIENCES
ON A CONSTRICTED SITE**



THE STEPHEN LEACOCK BUILDING AT MCGILL UNIVERSITY WAS DESIGNED

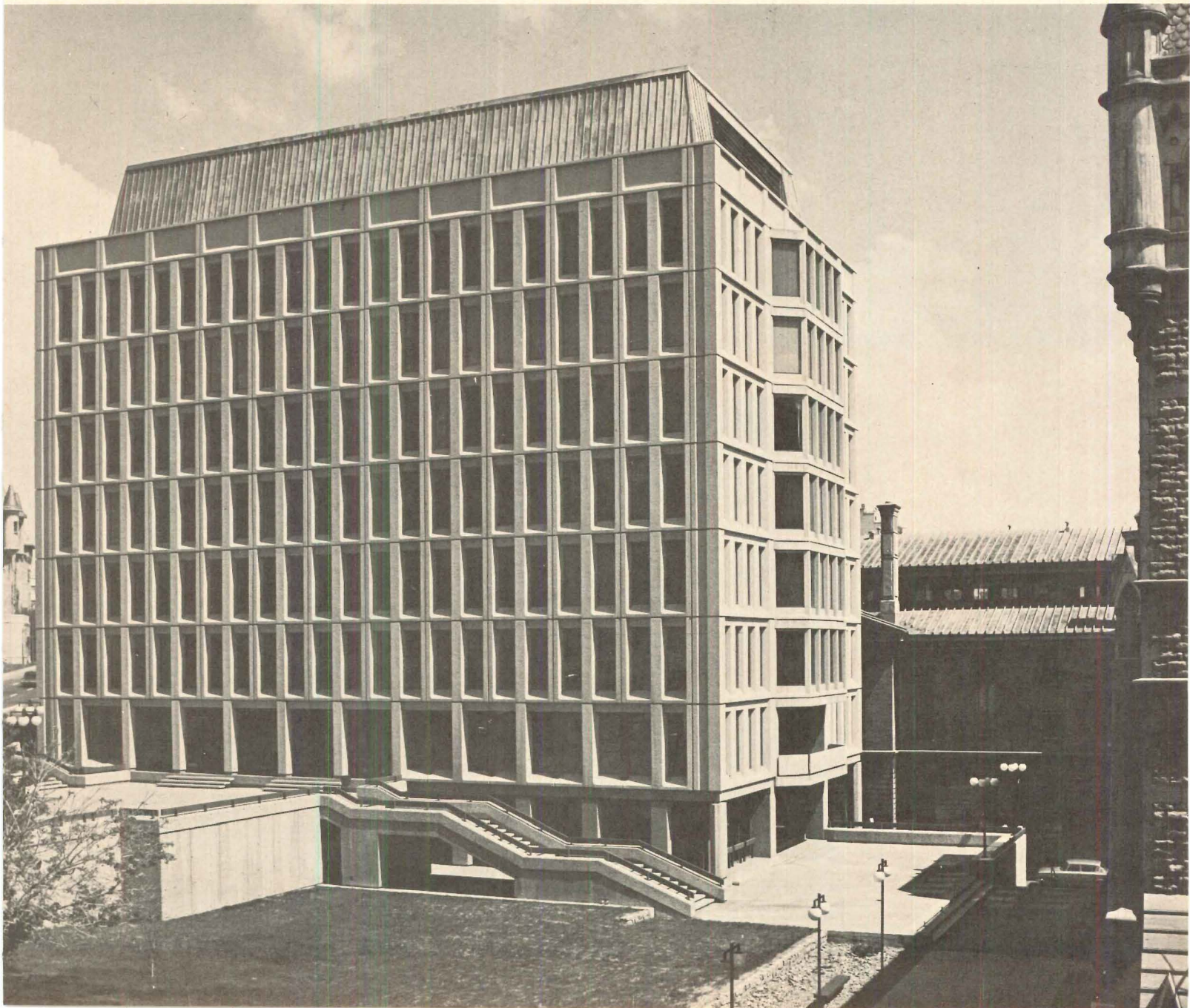
for the expansion of the faculty of arts and sciences to the west and south-west of the original arts building, on a plot with a less-than-ideal shape. The solution for the first stage of expansion was a low link to the old arts building following the diagonal street line and culminating in a ten-story tower. Raymond Affleck, the partner-in-charge, describes the organization of space as follows: "The two main elements of the program consist of a great variety of lecture rooms ranging in size from 30 seats up to 200, and including 650 in the large Leacock Auditorium. These lecture rooms were distributed through the three lower floors, which are easily accessible to mass student circulation. . . . Faculty offices, graduate study rooms, seminars, etc. were placed in the tower block where they could be serviced by elevators. The student facilities such as common rooms, undergraduate reading rooms, and the like are

grouped on the lowest tower floor, situated vertically between the lecture rooms and the smaller facilities above.

"It was found that the grouping of lecture rooms as interior spaces and the location of circulation along outside walls with splendid campus views worked out better than the traditional system of interior corridors.

"Cast-in-place concrete was used at the lower levels whereas modular-load-bearing precast concrete floor and wall panels were found to be more appropriate for the tower. Mechanical equipment housed on the roof of the tower was given a copper hat to match the copper roofs of older campus buildings."

Architects: *Affleck, Desbarats, Dimakopoulos, Lebensold & Sise*; partner-in-charge: *Raymond T. Affleck*; project manager: *Thomas E. Blood*; job captain: *Allan Thomas*; structural engineers: *Eskenazi & Baracs*; mechanical and electrical engineers: *Jas. P. Keith & Associates*; lighting consultant: *William C. Lam*; contractor: *The Foundation Company of Canada*.

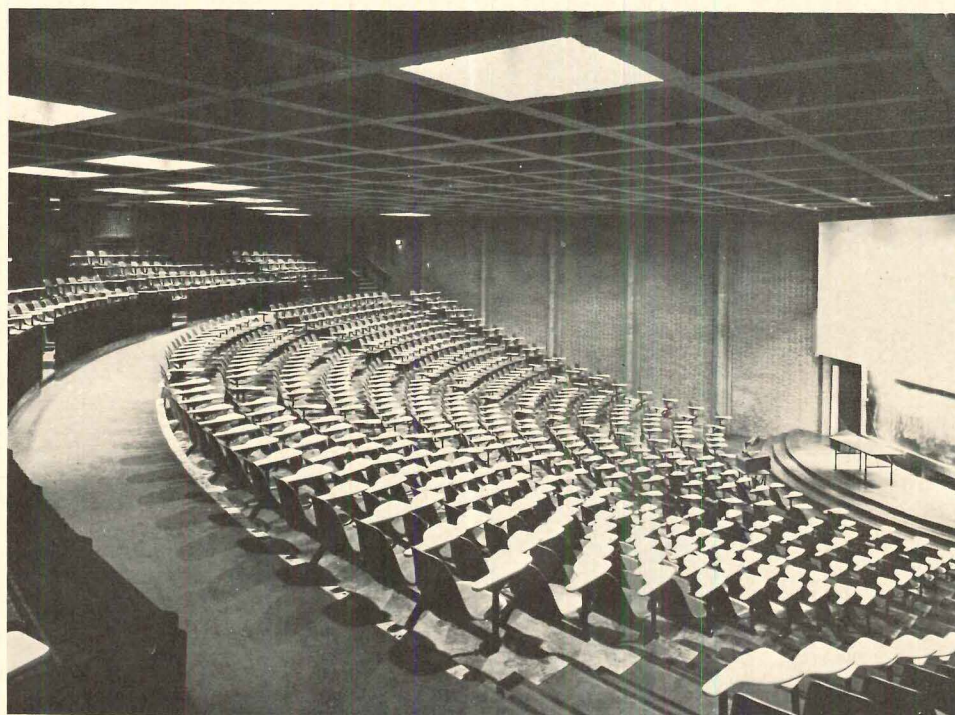


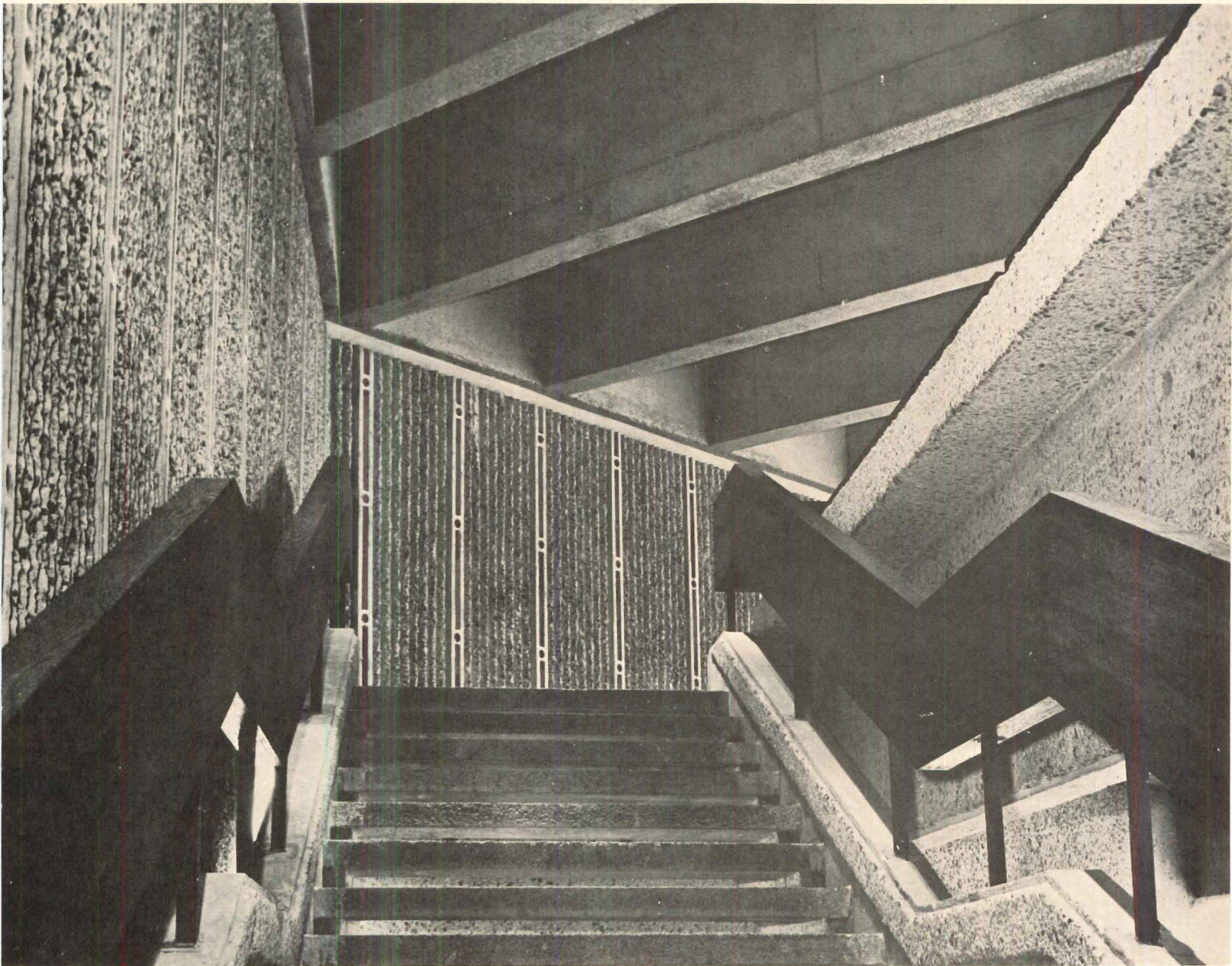
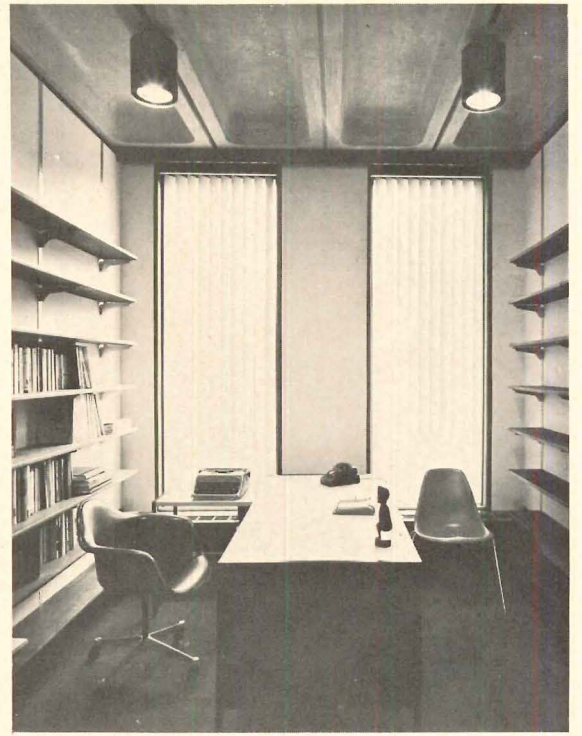


han-sa



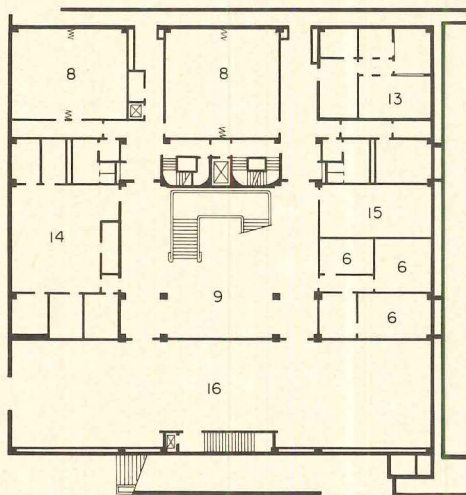
The key to the site solution is the link structure in the photograph above which contains the 650-seat auditorium below grade shown at the bottom of this page and several large lecture rooms at the mezzanine level. The two-level corridor shown at left is located at the base of the tower and affords fine views of the campus. Meeting rooms, like the one shown above opposite, are in the tower's central core. Faculty offices, like the typical one on the opposite page, are on the perimeter. Interior materials are consistently of the character shown in the stair photograph, and were chosen to withstand student punishment over the years.



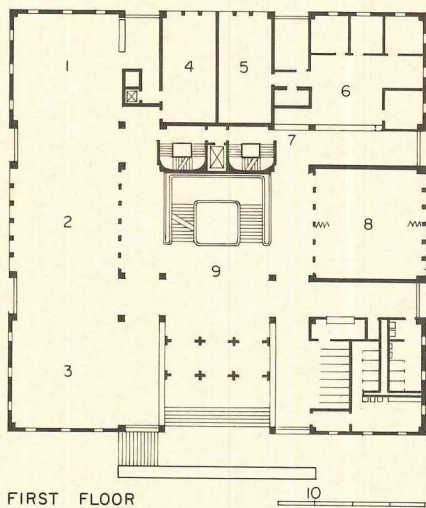


han-sa

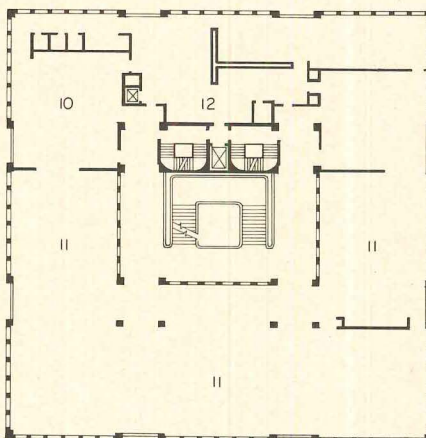
STUDENT CENTER
REFLECTS A CLEAR
AND DISCIPLINED SYSTEM



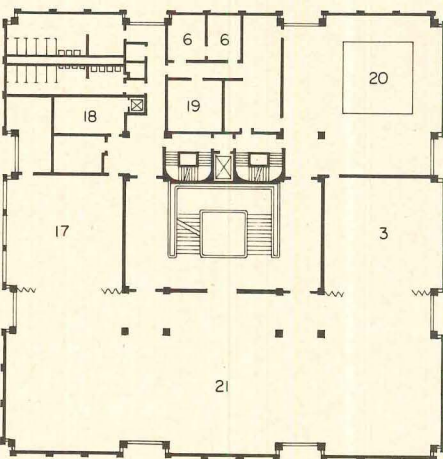
BASEMENT FLOOR



FIRST FLOOR



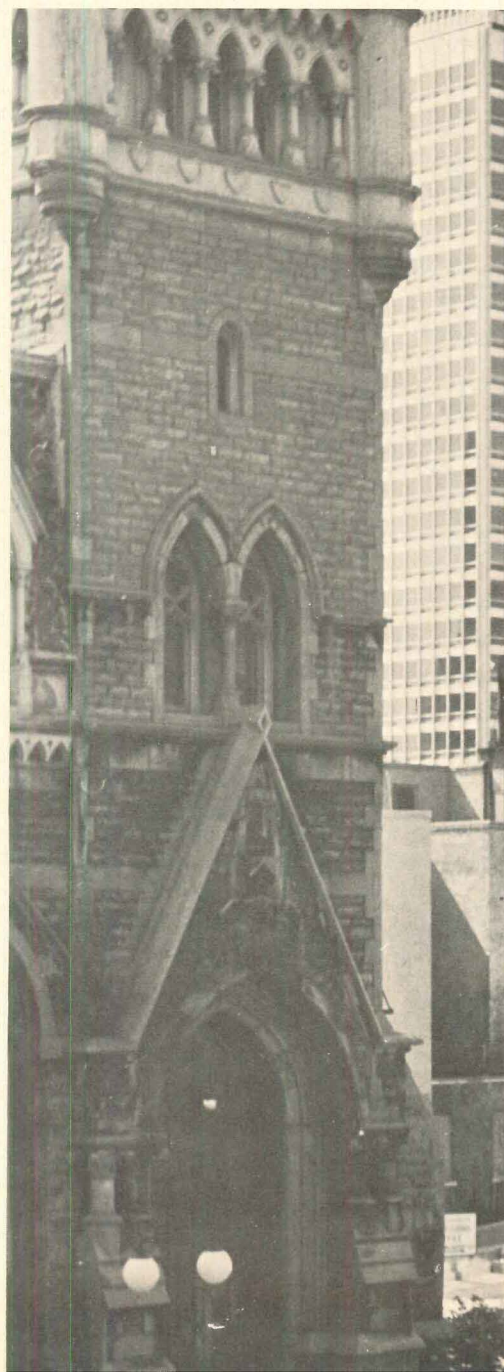
SECOND FLOOR



THIRD FLOOR

UNIVERSITY CENTER

- 1. Coffee lounge
- 2. Exhibit lounge
- 3. Lounge
- 4. Reading and dining
- 5. Council room
- 6. Offices
- 7. Tickets
- 8. Meeting rooms
- 9. Lobby
- 10. Cafeteria
- 11. Dining
- 12. Kitchen
- 13. Studio
- 14. McGill Daily
- 15. Post graduates lounge
- 16. Bookstore
- 17. Music room
- 18. Servery
- 19. Make-up room
- 20. Rehearsal theater
- 21. Ballroom



THE MCGILL UNIVERSITY CENTER USES THREE KINDS OF CONCRETE:

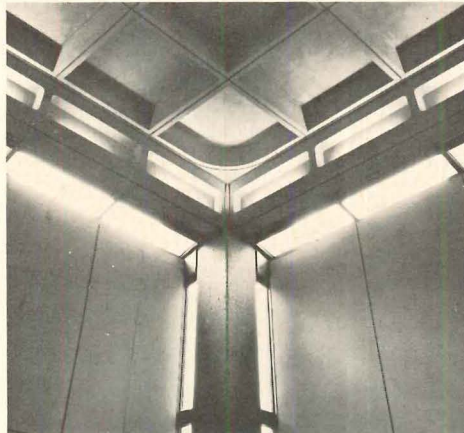
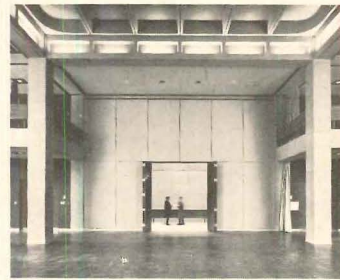
precast and prestressed, precast only, and cast-in-place. Precasting has advantages for a small site such as this one, with little room for the storage of materials; and it makes sense, of course, in a cold climate like Montreal's, since the pouring can be done off the site under controlled conditions. Having made their choice of material and structural system, the architects developed an organizing principle for this building which is so clear and well articulated that it can be quickly perceived by an examination of the main facade below, with the aid of the plans.

Since precast concrete is an advantageous material only when there are many identical members to be cast, re-using the same forms, partner in charge Guy Desbarats established an essentially symmetrical concept which required two separate exterior panel systems of many units. One system, which encloses the second floor, con-

sists of 72 units, each five feet wide and nine feet, six inches high. On the first floor 18 more of these units appear, six at a time, at the center of each secondary facade. The third and fourth floors are enclosed by 36 two-story panels, 10 feet wide and 27 feet high, set in groups of three. The first-floor walls at each corner are cast-in-place and project in front of the precast, prestressed girder to indicate they are non-structural. Columns are also cast-in-place. Two vertical glass-enclosed slots on each facade mark the short spans within the structural grid. Just below the cornice is a series of skylights.

Architects: *Affleck, Desbarats, Dimakopoulos, Lebensold & Sise*; partner in charge: *Guy Desbarats*; project manager: *Thomas E. Blood*; job captain: *I. Reichman*; structural engineer: *McMillan & Martynowicz*; mechanical and electrical engineers: *T. G. Anglin Engineering Co.*; lighting consultant: *William C. Lam*; general contractor: *Douglas Bremner Contractors & Builders Ltd.*

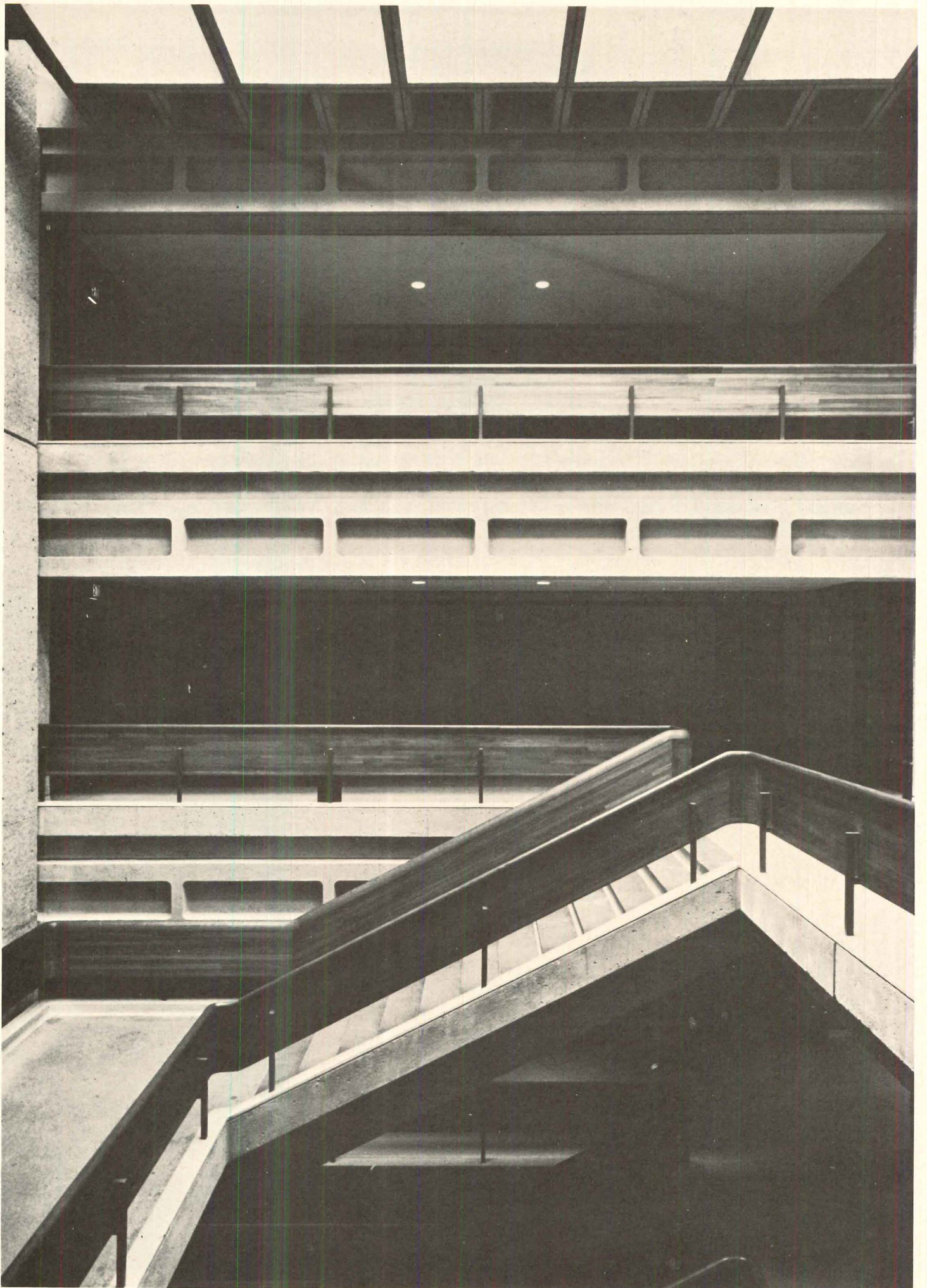


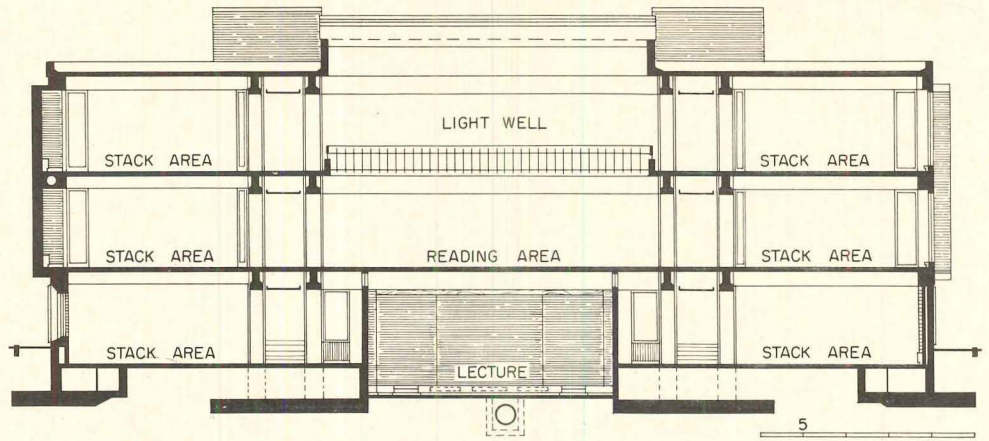


Designing the ballroom to work within the system proved difficult, because the interior column clusters, which posed no difficulty in the planning of the lower floors, arrive abruptly in the ballroom. The solution was to make them carry projecting balconies for spectators. Two sets of interior wall panels, of differing acoustical properties, are removable and interchangeable. The reflective panels are made of two layers of wallboard covered with vinyl fabric. The absorptive panels have three-inch fiber glass batts, covered with an expanded metal screen with a surface of sound transparent fabric.



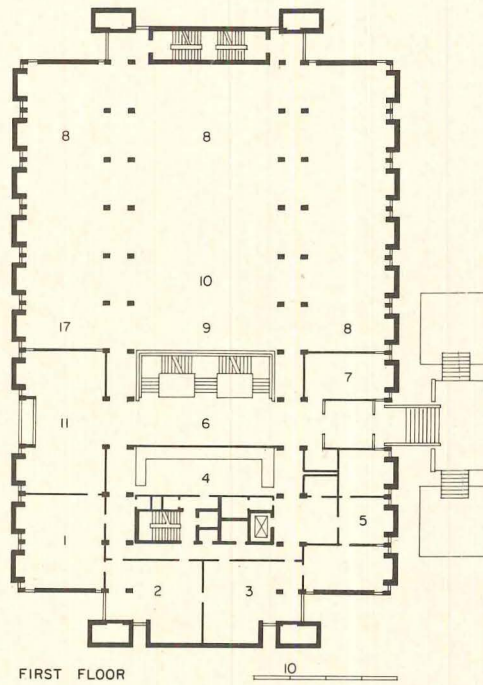
The modular coordination of the structure is well expressed on the inside. At left is the lounge. The ceiling is of exposed precast ribs into which are set precast concrete ceiling panels. The floors, stairs, landings and skylight grid within the central staircase bay are cast-in-place. Stiffeners at five-foot intervals on the girders emphasize the module. These girders have been cast with special slots in the lower flange to conceal fluorescent tubes. On each floor the space between the bottom girder flange and the underside of the shallow slab on the short spans is used as duct space and return air plenum. The laminated stair rail has a solid wood cap.





Mechanical and electrical ducts are located in the four towers at ends of the building. Ductwork is carried underneath the short spans.

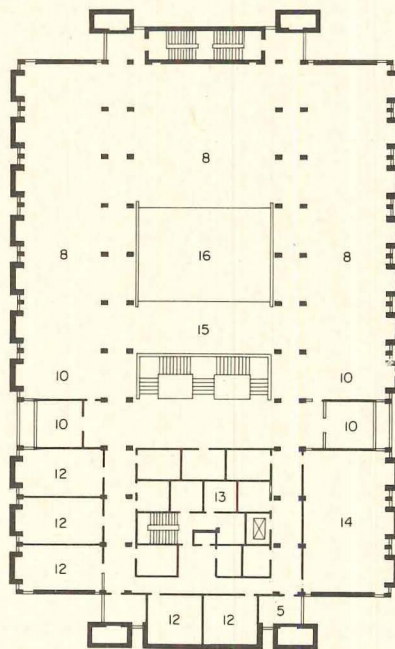
QUIET ARCHITECTURE
FOR A QUIET PLACE



FIRST FLOOR

LIBRARY

- | | |
|---------------------|-------------------|
| 1. Office | 9. Reference area |
| 2. Work room | 10. Reading area |
| 3. Cataloging | 11. Office |
| 4. Circulation desk | 12. Seminar |
| 5. Offices | 13. Study rooms |
| 6. Foyer | 14. Microfilm |
| 7. Coats | 15. Periodicals |
| 8. Stack area | 16. Light well |
| | 17. Bibliography |



SECOND FLOOR



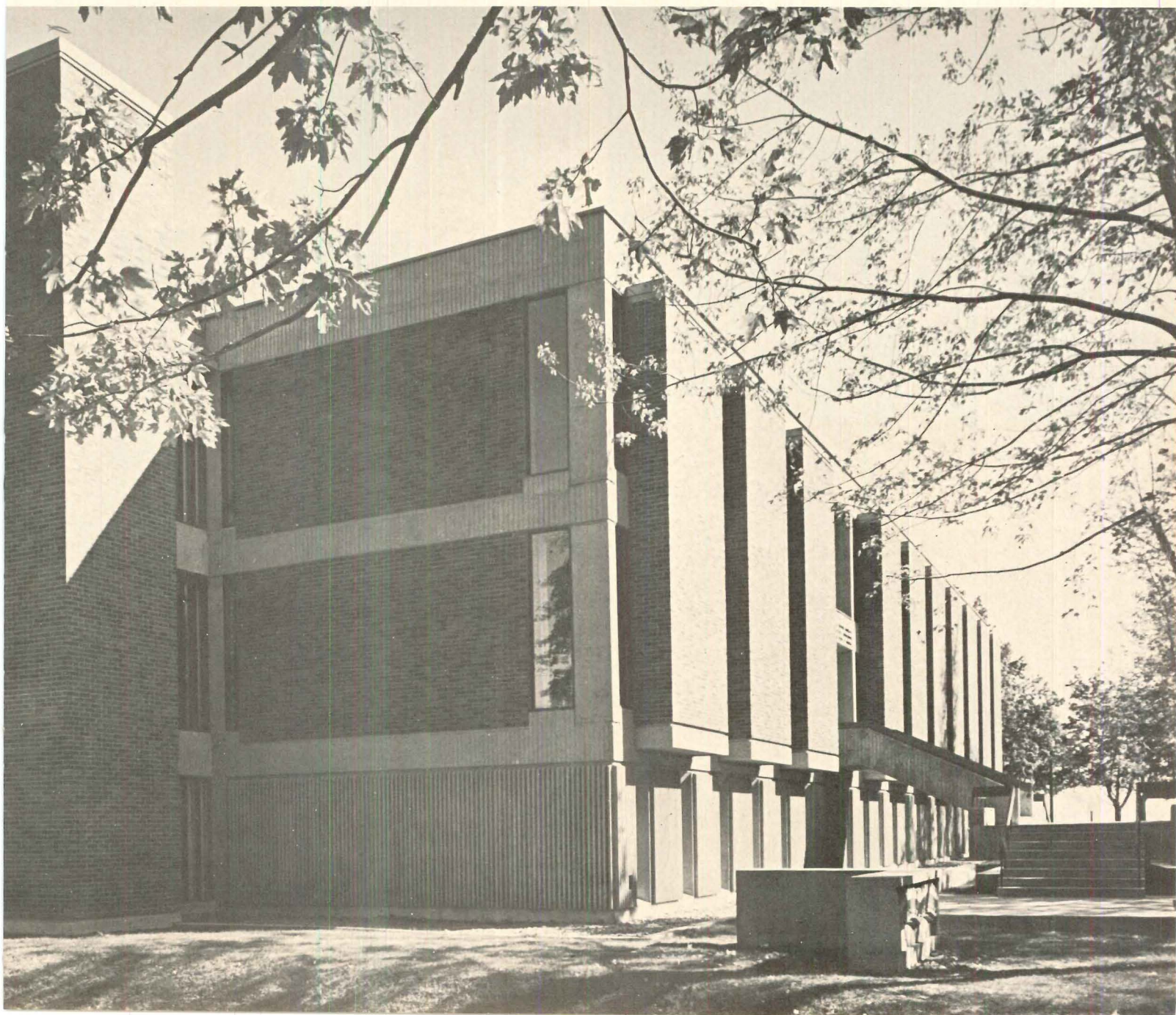
THE GEORGE P. VANIER LIBRARY AT LOYOLA COLLEGE IN MONTREAL

—like the Stephen Leacock building— is a far more conservative design solution than either the City of Laval Civic Center or the McGill University Center —but no less handsome. In its scale, structure and handling of materials, this library reminds one of the approach to design best represented by the work of The Architects Collaborative. The ARCOP partners acknowledge a familiarity with the better architecture in the Northeastern United States, indeed point out that Cambridge is not too far from Montreal and that McGill University recognizes Harvard. Since all four buildings were designed at approximately the same time the quiet manner of the library cannot be attributed to an earlier approach to architecture. It therefore becomes clear that the design character of ARCOP's work varies from building to building, partly because each solution reflects the attitudes of the individual partner in charge, but

more importantly because of the extent to which each building is a meticulous answer to well defined problems.

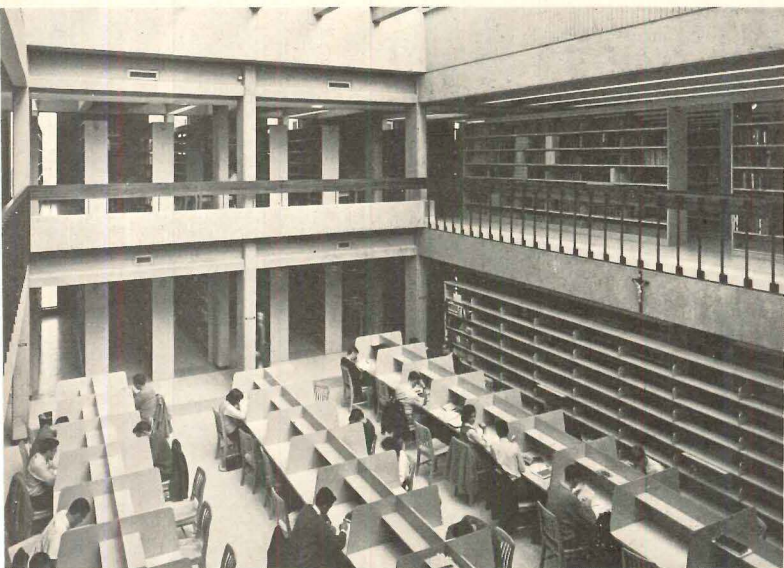
According to Fred Lebensold, the partner in charge, this building's silhouette and choice of materials were selected to blend harmoniously with the existing buildings of the college. "The whole college is planned in a series of precincts and it is hoped that the new library building will form the beginning of a new precinct on the site." The building was designed for future expansion on the main axis of the entry hall. The basement includes a lecture hall and book storage areas. The stacks hold 150,000 books.

Architects: *Affleck, Desbarats, Dimakopoulos, Lebensold and Sise*; partner in charge: *Fred Lebensold*; project manager: *James Donaldson*; structural engineer: *Dr. Felix M. Kraus*; mechanical and electrical engineers: *Brais, Frigon & Hanley*; lighting consultant: *William C. Lam*; general contractor: *Douglas Bremner Contractors & Builders Ltd.*

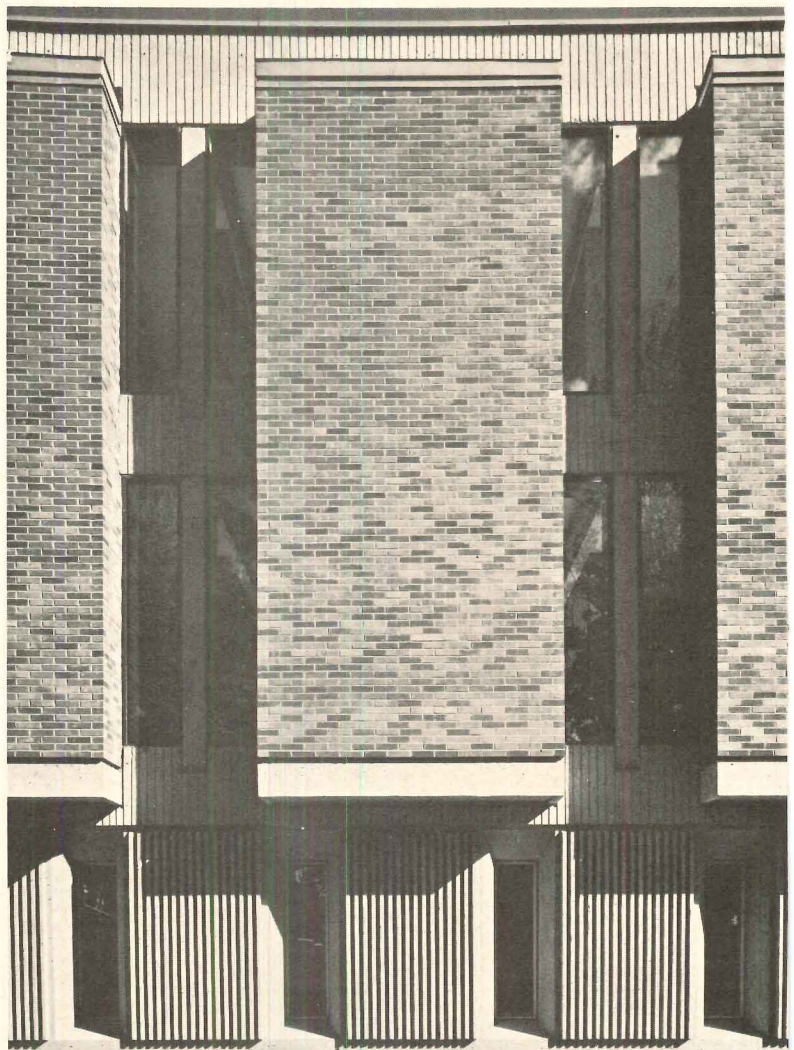




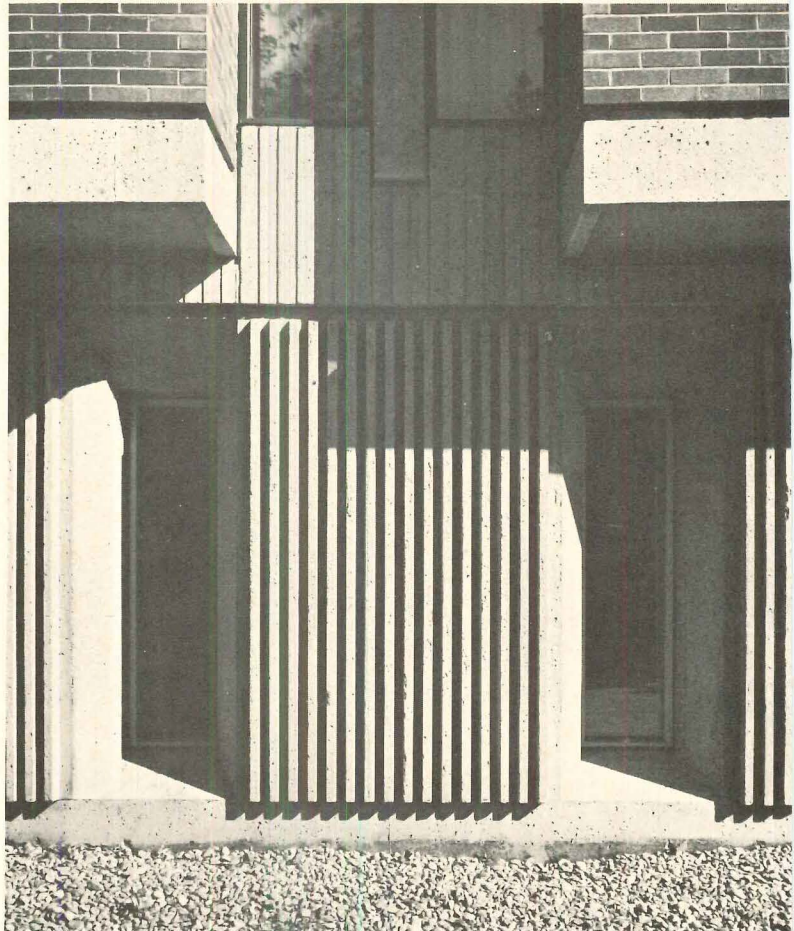
The structure seen from the exterior consists of cast-in-place columns and girders which rest on a heavy concrete basement wall. The projecting brick walls enclose a convector on each floor and a concealed vertical pipe space for the heating risers. Each concrete element receives separate surface articulation. Heavy striations left by the formwork help define the base of the building, and the deep window reveals increase its apparent mass. The formwork pattern of the girders is less pronounced and the column faces have no vertical lines.



In the major interior spaces, the structural framing is left exposed. The long spans of the stairhall and the reading area are framed by precast, prestressed concrete beams. Both spaces extend from the first floor to the roof and are covered with plastic skylights.



han-sa



han-sa

CURRENT PRACTICE INNOVATIONS

DEFINITIONS

OBSERVATIONS

New design department puts all disciplines to work on building concepts

In an earnest effort to bring creative minds from many disciplines to bear on *design* phases of the architectural process, Smith, Hinchman & Grylls Associates, Inc. have regrouped key individuals from architectural, structural, mechanical and electrical departments into what is essentially a new "design" department.

"By moving these people closer together physically in a design department," says Robert F. Hastings, president of the firm, "We hope to develop a more comprehensive and effective interplay that will broaden the base of the design function in keeping with the complexities of structures in the modern world. The purpose of the new arrangement is to more firmly establish the concept of a building in early stages of design through better communication of ideas among various disciplines that must be employed in its ultimate development.

"Creativity is not an exclusive province of architects among the building professionals. It is a habit of mind evinced by contributions of many other individuals whose talents must be brought to bear upon complete integration of the building. Obviously, it is a characteristic more evident in some individuals than in others. Obviously too, the selection of individuals for assignment to such a department must be done with the utmost care. But the importance and complexity of today's design problems call for a real effort to bring these disciplines together in a practical and workable way."

How it works

Those who are assigned to the new department will be divorced from production routine so that their energies

can be devoted to design problems. It is expected that about half their time will be devoted to basic research problems, while the other half will be applied to crystalization of actual building concepts.

The flow of work will follow the normal path of acquisition and execution except that development of the concept of the building and execution of preliminary design will be more intimately exposed to the modifying disciplines of all professions in a more truly creative interplay. Among practical rewards of such an arrangement would be added assurance that the ultimate concept will produce better architecture and will proceed through production phases more smoothly and rapidly.

Management of the new department, or more properly the design enclave, will be clarified as problems develop. The individuals assigned to it will still report to the heads of the departments from which they are chosen but in a manner somewhat removed from the day to day disciplines implicit in their former relationships. They will have access to resources of all departments, but the basic objective is to bring all of these resources together in a unified complex so that the ultimate building design will reflect total cognizance of all disciplines.

"If the idea can be made to work in spite of its manifold psychological hazards," says Mr. Hastings, "It will help solve some of the basic problems of today's architectural practice. These problems are even now reflected in the interdisciplinary efforts to revise curricula in some architectural schools. But they are problems that need solving in the working world right now, and this is one conscientious attempt to do so."

Instant interiors: ask about our lay-a-way plan

A straw in the wind of competition for architects' interior design departments is a discount purchasing plan courtesy card which came in the mail recently from a furniture manufacturer-distributor. One side of the card offers "free interior decoration and unconditional service guarantees." The offering seems to be confined to home decoration in

various styles. A curious line describes the establishment as "a show room to the trade—admission by this card only." Not to quibble at the possible inconsistency of a line on the other side of the card which says "use me—save me—or pass me on," one really has to wonder what "trade" is being offered free interior decoration. If interior dec-

orators are the trade, as one sometimes hears them call themselves, this furniture company seems to be offering to do their work for them. Or is the company really in competition with its own and only customers? Anyway, we are urged to "ask about our lay-a-way plan" and are assured that deferred payments can be arranged without interest charges.

IRS defines professional corporation for tax purposes

More than half the states permit the corporate practice of architecture and they tax incorporated firms accordingly. Not so the Federal Government. While the Internal Revenue Service has no objection to professional service corporations as such, the interpretation filed early last year (T.D. 6797, Federal Register, February 3, 1965) clearly denies corporate tax status to firms "merely because the organization was so labeled under local law."

The A.I.A. has entered a formal protest supplemented by documented response from members, but to no avail. No court test can be made, of course, until after 1965 tax returns have been filed.

No attempt is made here to take up cudgels. But since some corporations in some jurisdictions still may be able to meet the standards of the new regulations, a summary of some of the fine print of the Internal Revenue dictum may be pertinent as the tax year enters another round of analysis and interpretation of the code.

The regulation points out that a particular organization might be classified as a trust under the law of one state and a corporation under the law of another. Similarly the term *partnership* is not limited to the common-law meaning of partnership in many jurisdictions. Thus, while local law must be applied in determining the legal relationships of members among themselves and with the public, the Internal Revenue Code takes the position that labels applied by local law are in and of themselves of no importance in the classification of organizations for purposes of federal taxation.

A professional service organization is treated as a corporation only if it has sufficient corporate characteristics to be so classified. Organization for profit is not enough. In professional service cor-

porations, says IRS, relationships of members to each other, to employes, to clients and to the public are inherently different from the relationships characteristic of an ordinary business corporation. In determining the nature of these relationships, consideration must be given to the character, articles of association, by-laws and all other facts pertaining to such relationships as they exist in the usual course of the practice of the particular profession.

Continuity of life

A professional service organization does not have continuity of life, within the meaning of the Code's definition of a business corporation, if removal of one member for any reason will cause the dissolution of the organization. A business corporation has a continuing identity as an entity which is not dependent on a shareholder's active participation in the production of income of the corporation. Furthermore, the shareholder's right to a share in profits is not legally dependent upon his participation in the production of the corporation's income.

The IRS contends that the interest of a member of a professional service organization generally is inextricably bound to the establishment and continuance of an employment relationship with the organization, and he cannot share in the profits unless he also shares in the performance of the services in a real way.

If a member or his estate is required to dispose of this interest in the organization when the employment relationship terminates, the continuing existence of a professional service organization depends upon the willingness of its remaining members to acquire his interest. The continuing existence of such a service organization is similar to that of a partnership and is essentially different

from the continuity of life possessed by an ordinary business corporation.

Centralization of management

Centralization of management is another key characteristic in the IRS definition of an ordinary business corporation. A professional service organization does not have centralization of management where the managers do not have the continuing exclusive authority to (1) hire and fire professional members and other employes; (2) determine compensation of members; (3) establish the conditions of employment; (4) determine who will be accepted as clients; (5) decide who will handle each individual case or matter; (6) set policies; (7) set fees; (8) decide what records are to be kept; and (9) determine the times and amounts of distributions of earnings.

Although a measure of central control may exist in a professional service organization, IRS contends that where members retain traditional professional responsibility they cannot have the continuing exclusive authority to determine all of these matters. Instead, control is no more than that existing in an ordinary large partnership which has one or more so-called managing partners and in which a member retains traditional professional autonomy and his traditional responsibility of the professional person to the client. Such measure of central control is essentially different from that existing in an ordinary business corporation, according to IRS.

Limited liability

A professional service organization has the corporate characteristic of limited liability only if the personal liability of its members (towards obligations of the firm) is no greater than that of shareholder employes of a business corporation. If, under local law, a mutual agency

relationship similar to that existing in an ordinary partnership exists between members of a professional service organization, that organization lacks the corporate characteristic of limited liability.

Transferability

In an ordinary corporation, free transferability of interests exists when a shareholder can transfer his interest even if the so-called right of first refusal is granted to other shareholders. That right applies only to an interest which is a right to share in the profits, assets and management of the enterprise. However, if the interest of a member of a professional service organization is inseparable from his continuing employment with the organization, and the transfer of such interest is subject to a right of first refusal, that interest is subject to a power in the other members to determine not only who is to be employed but also who may share in the profits. That power is "a substantial hindrance upon the free transferability of interest."

Therefore, says IRS, if a member may transfer his interest to a qualified

person who is not a member only after having first offered his interest to the other members, the corporate characteristic of free transferability of interest does not exist.

Where the action is

In testimony before the Internal Revenue Service, William H. Scheick, executive secretary, and Frank J. Whalen Jr., legal counsel for A.I.A., registered opposition of the A.I.A. to the then (March 5, 1964) proposed amendment of the IRS regulation. In summarizing the status of corporate practice of architects in the United States, Mr. Whalen pointed out that corporate practice is permitted in about 39 jurisdictions out of 53 comprising the 50 states, the District of Columbia, the Canal Zone and Puerto Rico, subject, of course, to local definition.

Noting that classification is difficult because the matter is affected not only by state architectural registration statutes and general and special state corporation statutes, but also by administrative rules and interpretations made by the various registration boards, Mr. Whalen

testified that 21 jurisdictions permit practice of the corporation as *such*, provided that certain limitations are met. Four prohibit practice of the corporation as *such*, but authorize the corporation to contract for and to render architectural services provided they are the responsibility of a registered individual. Three others (New York, Connecticut and Massachusetts) permit corporate practice provided that a prescribed grandfather clause is met containing cut-off dates of 1929, 1933 and 1957 respectively. One state (California) permits corporate practice with virtually no limitations.

Official statistics concerning the present extent of the use of corporations for architectural firms have not been compiled generally, but a preliminary survey reported by Mr. Whalen indicates that in each of three states, California, Michigan and New York, there are more than 100 corporations. In New York there are 119, all under the 1929 grandfather clause exempting firms of prior establishment from compliance with regulations against the formation of corporate professional practices.

Diversification induces rapid growth of a school-oriented firm

The working staff of Tarapata-MacMahon Associates, Inc. increased from 38 in 1964 to 67 at a recent count in 1965. A sixth principal (Richard K. Albyn) joined the firm early last year. Asked the reasons for this seemingly sudden expansion of a firm that was established in 1956, principal Mark Jaroszewicz reviewed a history of slow but steady growth over a long period during which the firm was somewhat specialized in the educational field. The collapse of several proposed school bond issues caused financial difficulties to some similarly specialized firms, and Tarapata-MacMahon decided to diversify. Beginning

about three years ago, each of the principals made concerted efforts to acquire various kinds of business. Departments of the organization were set up to offer comprehensive services in a variety of fields. An urban planning department was set up (it handled the award winning Central Plaza Development in Canton, Ohio in association with Johnson, Johnson and Roy) and the interiors department was increased from one to four people and is still growing (partly to handle complete interiors design for the new General Motors Institute). The result has been accelerating growth.

The firm operates on a principle of vertical client responsibilities in which one of the principals functions as administrator for each project. In addition, each principal has horizontal responsibilities within the organization. Charles MacMahon Jr. is president in charge of general management; Peter Tarapata is executive vice president and director of design and planning; William J. Hayes, vice president, is responsible for production operations; Mark Jaroszewicz, Maurice B. Allen Jr. and Mr. Albyn are each vice presidents with major design and planning responsibilities in addition to direct client contacts.

Government construction grants generate over-regulation of plans, New York architects protest

One of the effects of government spending for construction through the various programs of grants, subsidies and guarantees now rapidly expanding at federal, state and municipal levels is an increasing complexity of regulatory supervision.

Qualifying surveillance by those who dispense public funds can hardly be regarded as intrinsically undesirable by the tax paying public. But the effects of regulation emanating from a multiplicity of concerned government bodies can be

vexing if not stultifying to both the fiscal and creative aspects of architectural practice as it is generally understood.

Government programs for the development of health facilities provide a case in point. In a report titled "The

Effect of Regulatory Agencies on Hospitalization Costs in New York State," the New York Chapter American Institute of Architects points to an "unimaginably complex" system of regulatory agencies with overlapping and frequently conflicting requirements. The architects state that much of the time and expense in building a hospital is spent in attempting to obtain the approval of a multitude of federal, state, municipal and private agencies, each one of which has rules and regulations to enforce which require submission of building plans and extensive background data on the institution and its region.

The last straw

Although architects had been coping with these burgeoning bureaucratic requirements for many years, the ultimate protest was triggered by still another state regulation (New York's Metcalf-McClosky Act) put into effect in 1964. It has the laudable intent of eliminating unnecessary duplication of medical facilities and providing for their better distribution by controlling construction on the basis of public need. The State Department of Social Welfare and State and Regional Hospital Review and Planning Councils are assigned the "awesome responsibility" of determining whether or not any medical institution may or may not proceed with construction plans with any hope of bringing them to pass.

It was with considerable shock, says the report, that architects first obtained their application forms from the area office of the State Department of Social Welfare. The forms, some 14 pages in themselves, require complete data on the institution and its region, including such abstruse information as the financial reliability of hospital directors, the competence of its staff, demographic information about population in the area to be served and kinds of existing services now provided within that area.

The architects contend: "The question must now be faced as to whether or not medical facilities can continue to develop under this unimaginably complex situation."

The fact is, the report says, that experienced hospital architects practicing in New York State are so aware of the disaster a disapproval by any one of the many agencies may bring to a project that they tend to advise their clients against any proposal that might even risk a disapproval. Thus, an artificial limit is set on advances in hospital design and construction that could effect savings in hospital costs.

The partial list of approving agencies gives some idea of the complexity

of this problem. While no single project would require approvals from the entire list, each of the agencies claims jurisdiction over hospital construction in New York State.

AGENCIES WITH JURISDICTION
OVER HOSPITAL CONSTRUCTION
IN NEW YORK STATE

FEDERAL AGENCIES

- Bureau of the Budget
- Department of Defense
- Department of Air Force
- Department of the Navy
- Veterans Administration
- Department of Justice
- Department of Labor
- U.S. Housing & Home Finance Administration
- Community Facilities Administration
- Office of Education
- Office of Vocational Rehabilitation
- Public Health Service

STATE AGENCIES

- N.Y.S. Department of Health
- N.Y.S. Hospital Facilities Program
- N.Y.S. Division of Hospital Review and Planning
- N.Y.S. Bureau of Maternal and Child Care
- N.Y.S. Bureau of Tuberculosis Control
- N.Y.S. Narcotic Control Section—Executive Division
- N.Y.S. Environmental Sanitation
- N.Y.S. Department of Mental Hygiene
- N.Y.S. Department of Social Welfare
- N.Y.S. Department of Public Works
- N.Y.S. Department of Labor
- N.Y.S. Education Department

MUNICIPAL AGENCIES

- (Varies, depending on location, the following is for N.Y.C.)*
- Planning Commission
 - Building Department
 - Fire Department
 - requires separate filings for oxygen, sprinklers, interior fire alarm, exterior fire alarm, refrigeration, standpipe, fire prevention, involving a number of bureaus.
 - Department of Water Supply, Gas and Electricity
 - Department of Health
 - Division of Hospitals and Institutions
 - Maternity and Newborn Division
 - Department of Hospitals
 - Department of Air Pollution Control
 - Department of Highways

The type of health facility, its geographical location, its financing, and its ownership determine the applicability of these agencies' requirements.

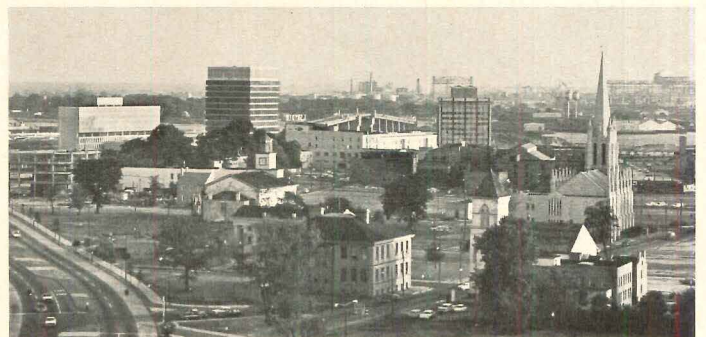
The Chapter's hospital and health committee has outlined a research program to develop a comprehensive index of all hospital codes and regulations in order to lay a factual basis for development of an effective statewide program of guidance and regulation.

"There is some overregulation everywhere," points out one observer, "But don't forget that 40 per cent of the money to build hospitals is now coming from federal and state sources. Without that money, there wouldn't be all that work, and one can't reasonably expect to get tax money without some regulations."

ONE GOOD CIVIC CENTER DOESN'T MAKE A CITY

Vincent Kling's design for Norfolk's municipal buildings creates an island of calm in a disorderly environment

Lawrence S. Williams, Inc. photos



The Civic Center's pedestrian precinct can be reached only by automobile...

Louis A. Oliver



Haycox Photographic, Inc

1

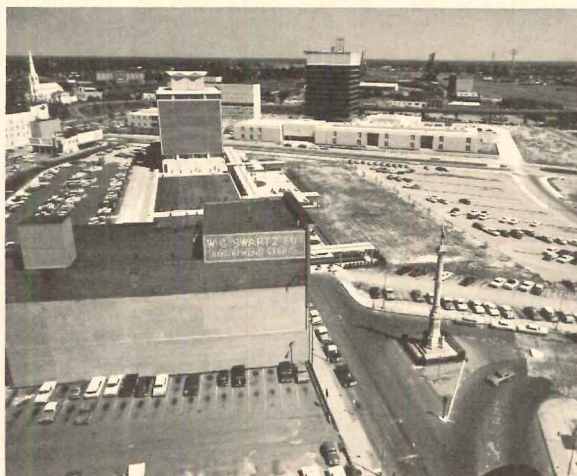


2

The geometrically landscaped plaza in the Norfolk Civic Center is a quiet and orderly place, where low masonry buildings form a setting for the square, glass-enclosed tower. This civic space, obviously designed to be walked through, is surrounded on three sides by major traffic arteries. Construction will soon begin on a fourth highway, which will isolate the Center completely. Four lanes of traffic away, across St. Paul's Boulevard, is another pedestrian mall (4, 5) organized on a completely different grid. There is no physical connection for the pedestrian, and no architectural connection either. Instead there is a clear confrontation between two approaches to urban design: the one followed for the Civic Center, the other taken by the rest of Norfolk's renewal.

Norfolk was one of the first cities in the country to have an urban redevelopment program, and its guidelines were set at a time when massive slum clearance and extensive highway construction were the unquestioned basis of every city's renewal strategy. There is no doubt that there was much in Norfolk that deserved to be cleared, and that improved automobile circulation was needed. Clearance removed the old honky-tonk East Main Street district and vast quantities of ramshackle slums (2, 3); and new roadways improved existing lines of communication. But clearance also eradicated the historic scale and texture of the city, leaving the surviving buildings alone in a wasteland where the street signs were the only other landmarks.

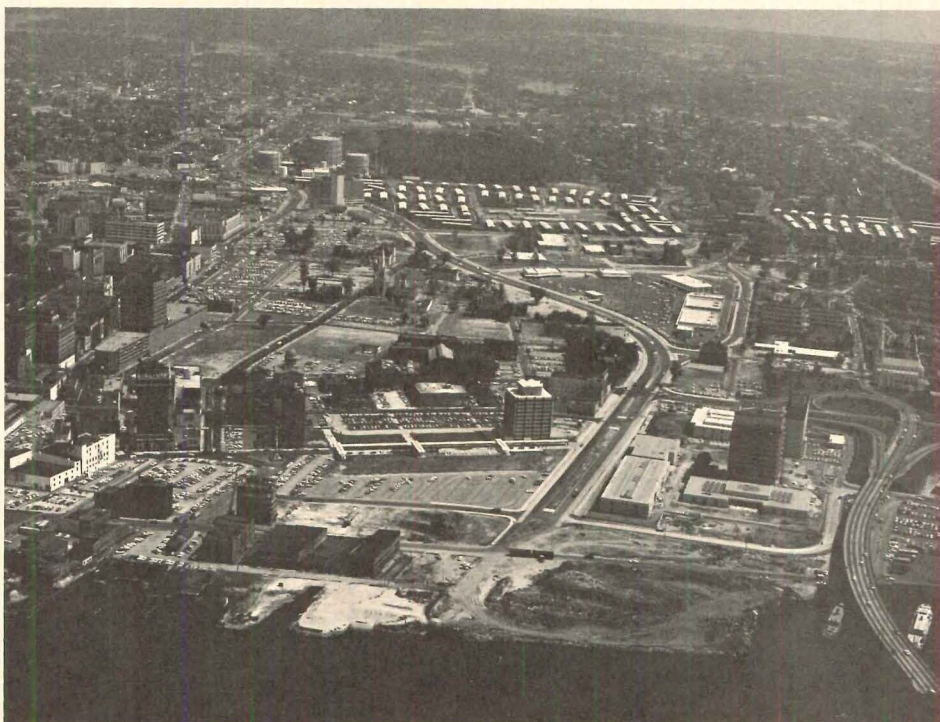
A downtown redevelopment plan was drawn by Charles Agle in the mid-1950s (1). It was essentially a concept



3

Haycox Photographic, Inc. photos

VU Photos



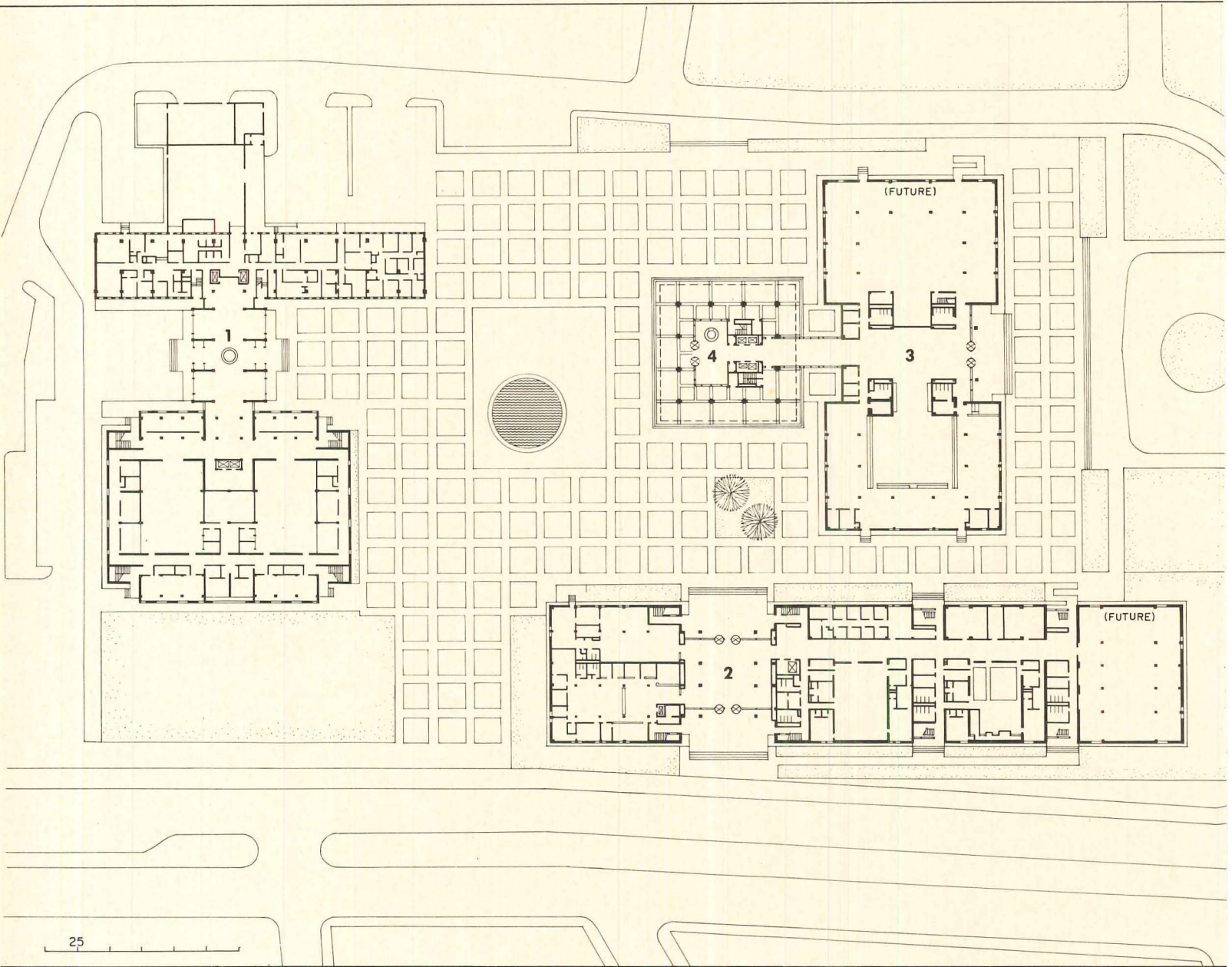
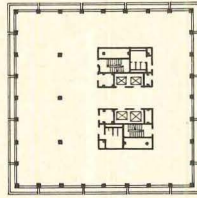
4



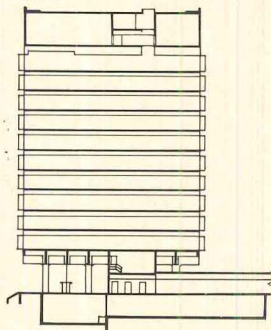
VU Photos

5

Organizing all city functions in one place reduces operating costs 15 per cent...

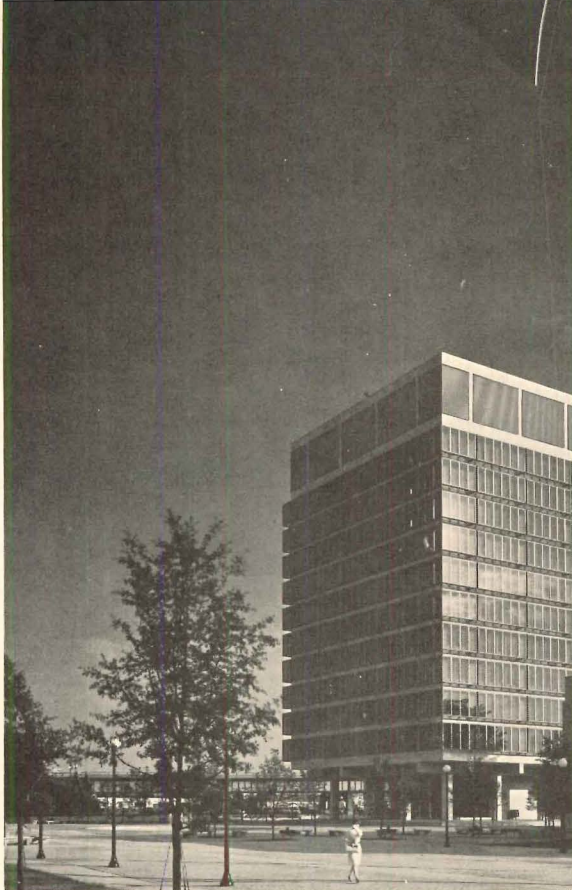


1) Public Safety Building; 2) Courts Building; 3) Public Service Building; 4) Office Tower

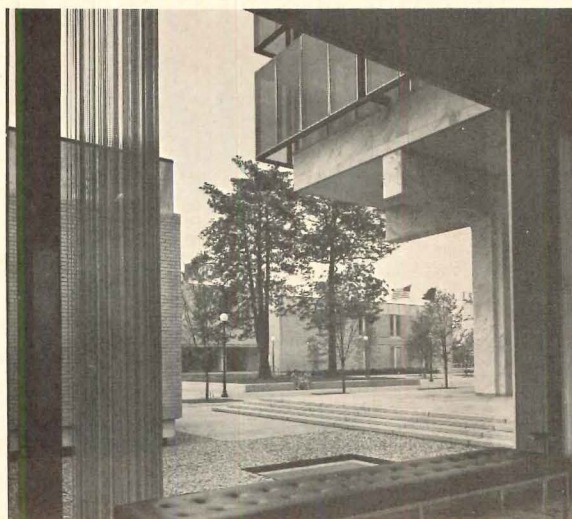
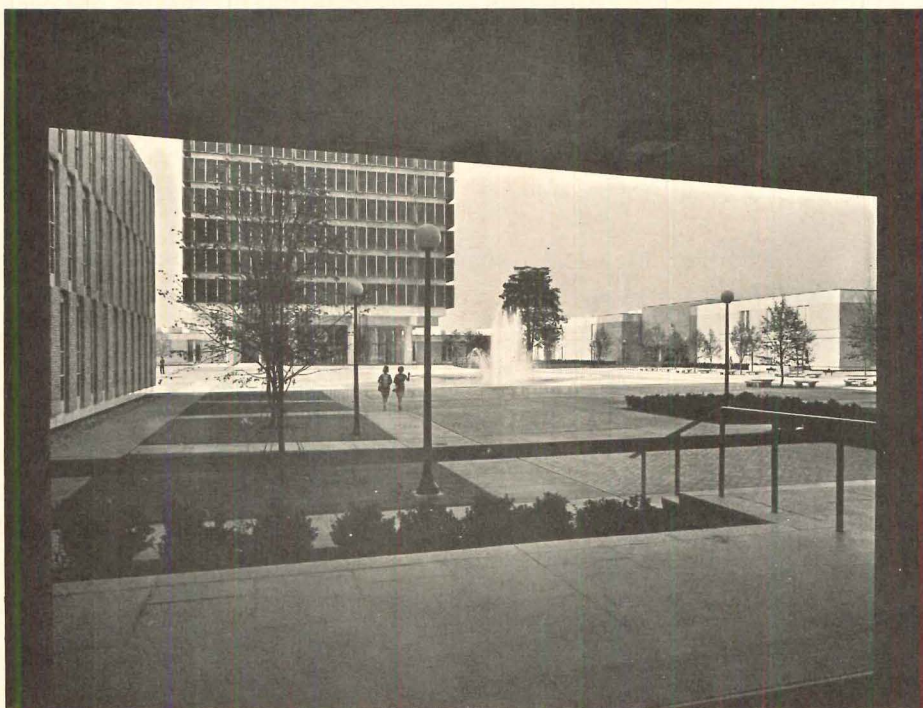


study which embodied basic decisions on the location and massing of buildings without being specific about programs or architectural character. Such studies are a necessary part of redevelopment programs, but they seldom seem to survive translation into actual buildings. In the case of Norfolk, increasing traffic that followed the completion of the bridge and tunnel network linking Norfolk to the other Tidewater cities has further distorted the original plan. The result, so far, has been that the Norfolk redevelopment program appears to have been carried out on a pragmatic, project-by-project basis; and its dominant motifs are high-speed highways and extensive surface parking.

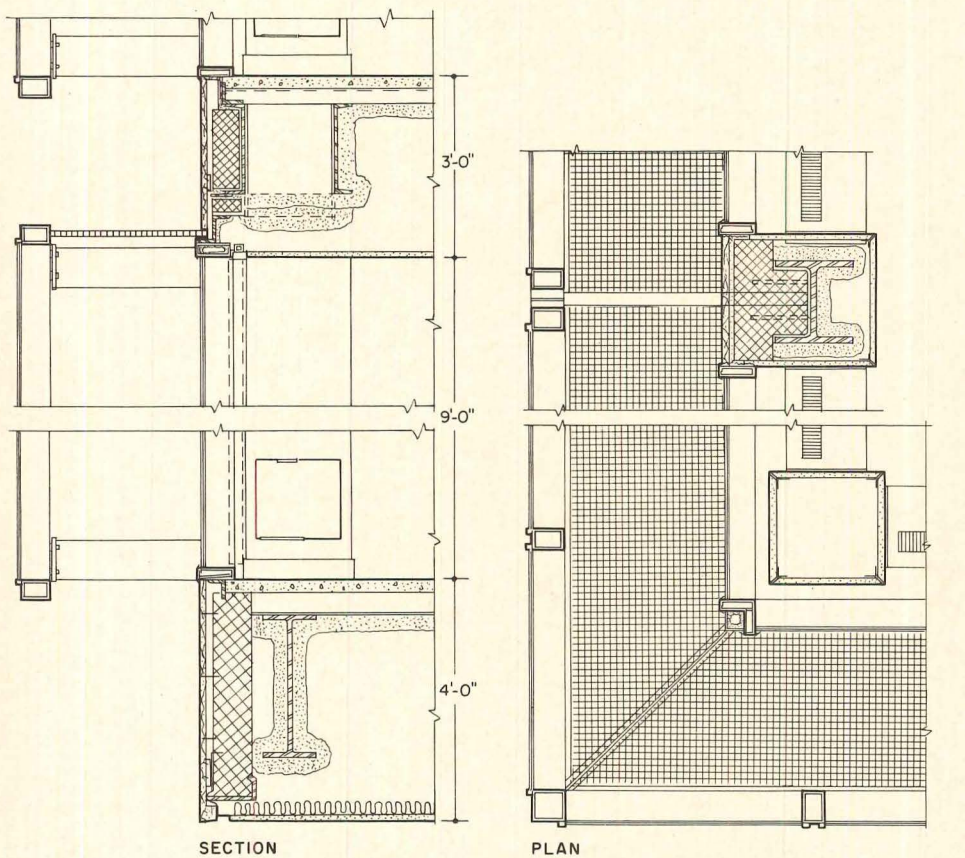
The Civic Center complex consists of four elements: The first to be completed was the Public Safety Building (August, 1961, pages 111-114). This building contains city courts, police headquarters and the jail. Then, while elements of the Agle plan went up across the street, work began on the final three components of the center: a State Courts Building; the Public Service Building, containing the tax and licensing functions with which large numbers of people have direct contact; and the 11-story glass tower, which contains administrative offices and the City Council chamber. When the over-all design was announced, Vincent Kling commented: "It has been estimated by our space planning consultants that the complete integration of government agencies in this Center will reduce the cost of city administration by some 15 per cent below the cost of a scattered and decentralized operation."



Lawrence S. Williams, Inc. photos



Double glass skin cuts glare, wraps building in thermal blanket



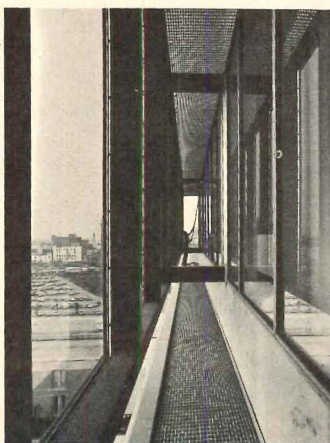
The Public Service Building contains a large sky-lit hall with counters on three sides, permitting large numbers of people to wait in line during periods of peak use. About 80 per cent of the people coming to the Center on business go directly to this room, so it is placed where it is immediately accessible to those arriving by car. A glassed-in link connects it to the office tower and the plaza.

In order to have good views from the office tower and still insulate the building from excessive heat and glare, a screen of $\frac{3}{8}$ th-inch heat absorbing glass was hung on a steel Vierendeel truss system three feet away from the outer skin of the building itself. This screen reflects or dissipates over half of the solar energy that hits it, and half of the remaining energy is reflected by the building itself. A horizontal grill helps diffuse glare and acts as a walkway for window washers. There is evidence that the warm air caught between the two layers of glass acts as a blanket of insulation during cold weather.

The final construction cost of the Civic Center was just over \$28 a square foot. The second construction phase was financed entirely out of operating funds and surplus revenues, saving Norfolk some \$3 million in interest charges.

THE NORFOLK CIVIC CENTER, Norfolk, Virginia. Associated architects: *Vincent G. Kling and Oliver and Smith*; project managers: *John F. Larkin and Waverly C. Ormond*; project designer: *S. J. Vernon* of Vincent G. Kling office; structural engineers: *Fraioli-Blum-Yesselman*; mechanical engineer: *Charles S. Leopold, Inc.*; general contractor: *Blake Construction Company*.

Lawrence S. Williams, Inc.



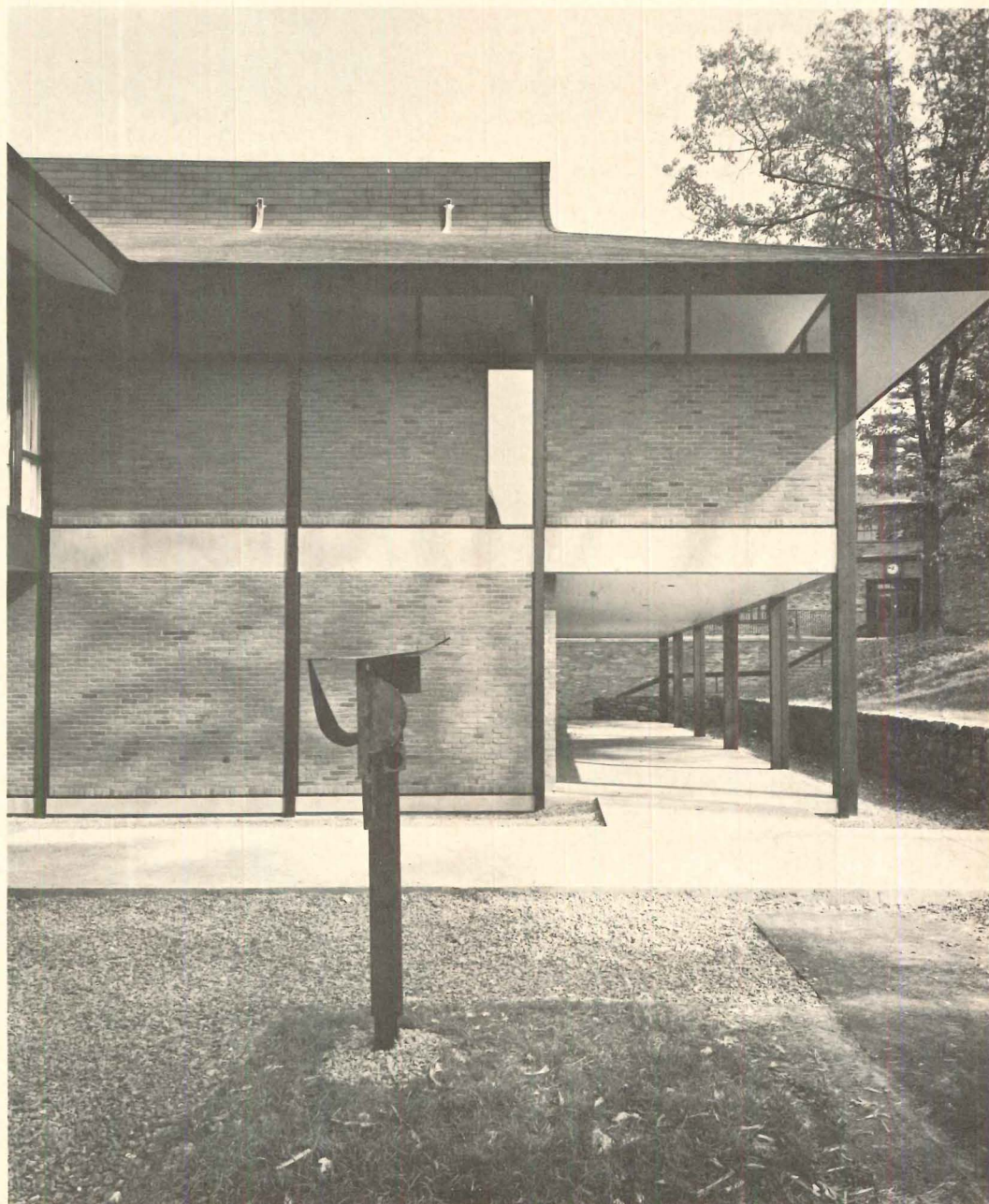
SCHOOLS THAT LOOK TO THE FUTURE

All the schools in this study have a considerable investment in the future. Many of them anticipate fairly dramatic increases in enrollment and have planned for physical expansion by allowing for an additional floor or wing, by grouping individual buildings so that another can easily be added, and by placing communal facilities within easy reach of any planned additions.

As educational trends and teaching methods continue their rapid development, any new school must inevitably be carefully designed to accommodate these changes, if the building is not to be quickly outdated. Flexibility of use has been achieved in a number of ways. Most of these schools make extensive use of movable partitions; in some cases central auditoriums can be subdivided to form a base for team teaching; libraries can often be expanded into resource centers for different kinds of teaching aids.

In large schools, many of which expect to become larger, care has been taken to give human scale to the buildings so that students can maintain their own identity and develop individual talents. In some of these schools, academic sections are divided into separate "houses" to give a family type of unit with which each child can identify. Interiors are generally warm and friendly with informal areas where staff and students can meet in small groups.

The individual school studies are followed by a discussion of the "educational park" — a school campus system proposed by a number of experts as a solution to some of the pressing educational and social problems of our cities.



C. Thurston Chase Learning Center, Eaglebrook School, Deerfield, Massachusetts.

LEARNING CENTER FOCUSES ON MULTI-USE LIBRARY

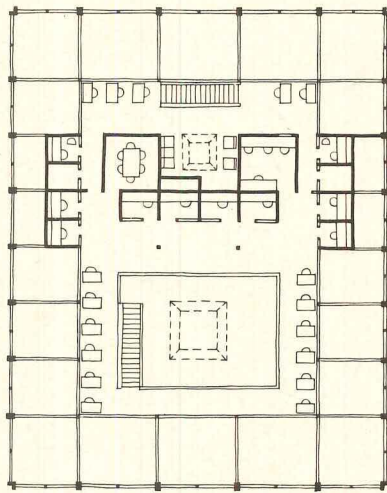
School days are often described as the "happiest days of our lives," but many of us with memories of somewhat run-down, impersonal buildings are inclined to regard this description as typical of the romanticism with which we sometimes look back at youth. However, if we had spent our school days in an environment half as pleasant as that created for the boys of Eaglebrook School, we might concede there was some truth in the observation after all. The design and execution of the new buildings, the way they are grouped in relation to the existing buildings, and the educational principles they incorporate, all combine to make this one of the most interesting and attractive new school complexes in the country.

The final design for the new buildings is the culmination of intensive study by the architects (The Architects Collaborative and Campbell, Aldrich & McNulty), the Stanford Research Institute, The Educational Facilities Laboratories, (which gave a grant for development of the system), and by a number of individual consultants. The resulting scheme is a group of three buildings (see plans opposite): one housing classrooms, a language laboratory and an audio-visual classroom; one housing meeting hall and library; and the third including a science wing with a small planetarium.

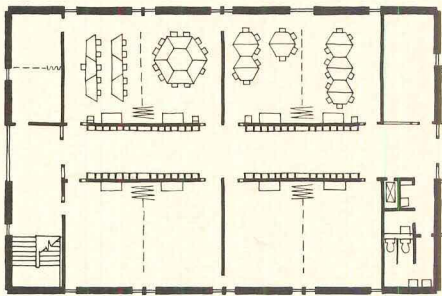
The focus of the complex — both physically and educationally — is the library (see photos on following pages) which is placed over the meeting hall in the center building. The main floor of the library consists of a large, carpeted room with study tables for students and bordered by book stacks. A glass-fronted librarian's office, conference room, and five departmental offices, each large enough for five or six members of the faculty staff are also included on this floor. In addition, a central work area is provided to give an opportunity for developing team teaching projects. In addi-



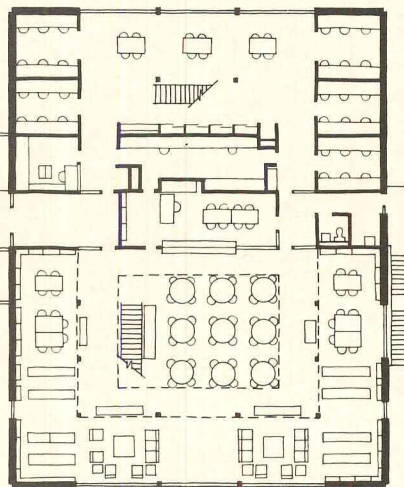
A small "link" building connects the library and classroom blocks. The main floor of the link consists of



LIBRARY MEZZANINE

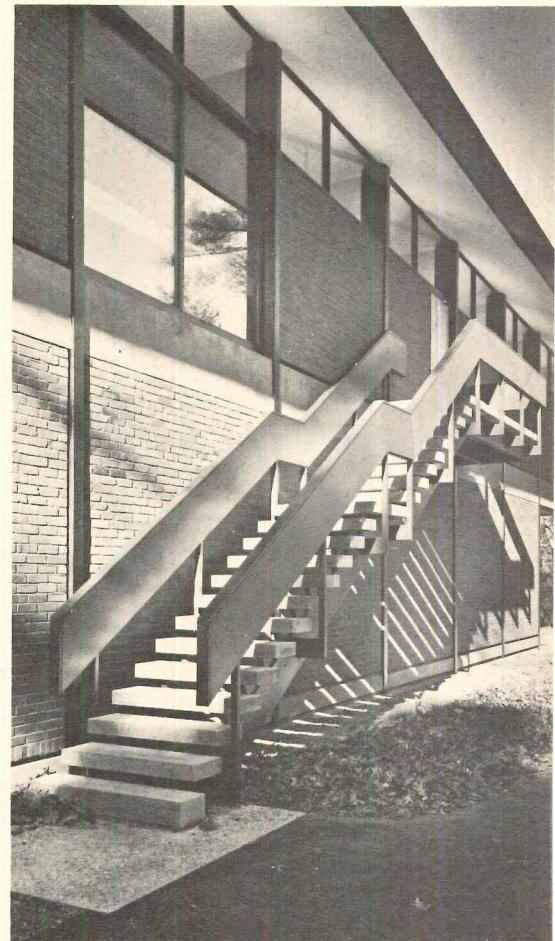
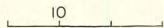


CLASSROOM BLOCK

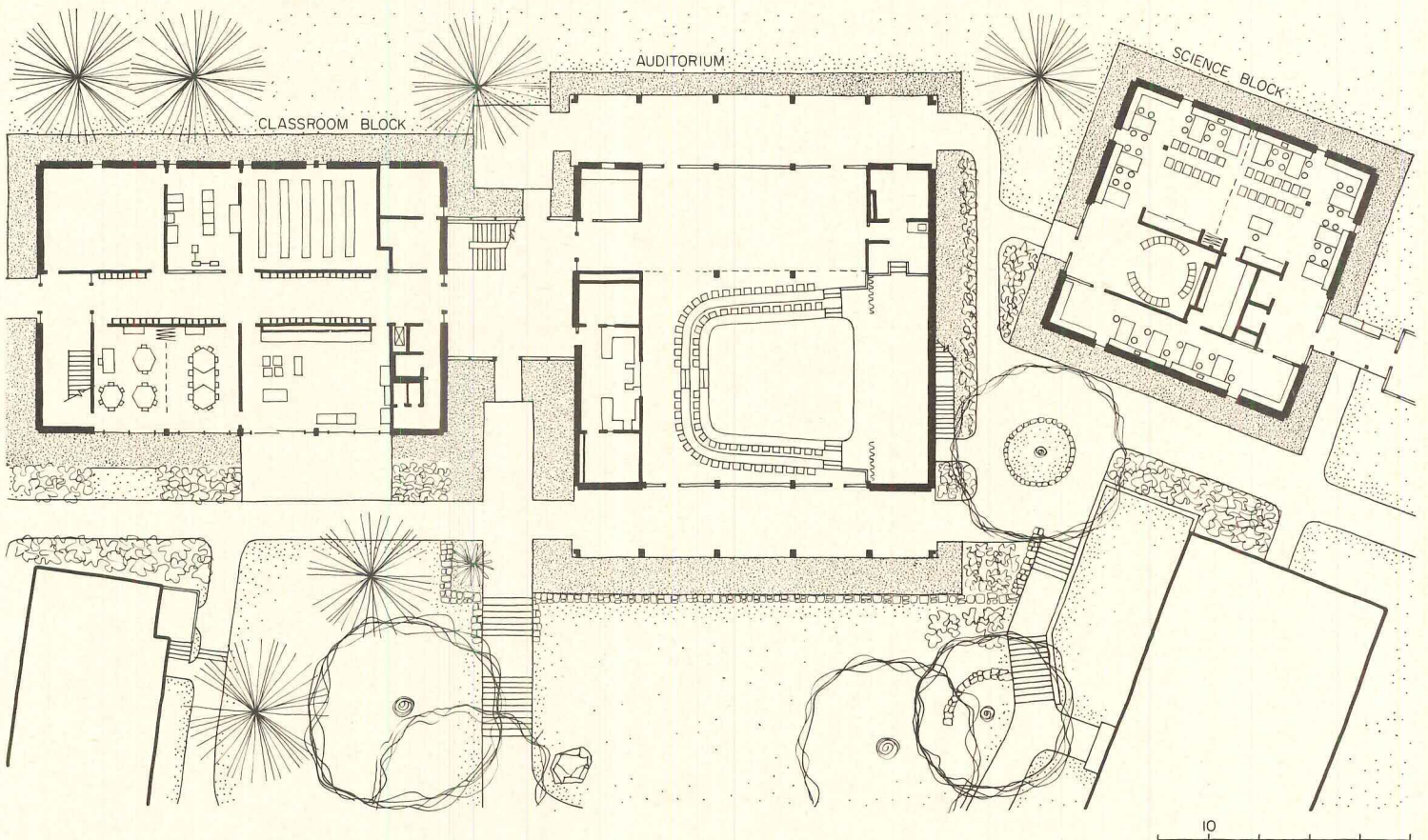


LIBRARY

SECOND FLOORS



Louis Reens photos



an entrance lobby and open staircase. The headmaster's office on the second floor has easy access to both library and classrooms, and a view over the campus.

SCHOOLS

EAGLEBROOK SCHOOL FOR BOYS

tion to conventional library facilities, a mezzanine above has been planned to give opportunities for individual student-teacher programs making use of the most up-to-date teaching aids and methods. There are 10 small rooms, each for two people, equipped with language lab and TV facilities, and two larger rooms for groups of four to five people. Space is provided for 18 student study carrels and individual research areas for faculty members which adjoin a small, informal lounge area. Storage space is included for records and microfilm as well as for books.

These plans in effect achieve "a library-centered school where the book remains the central business of the place," but where ample provision is also made for all the latest teaching methods and equipment. The school is planned to encourage close personal contact between staff and students, and the needs of the faculty members have been given the kind of imaginative consideration all too often denied them.

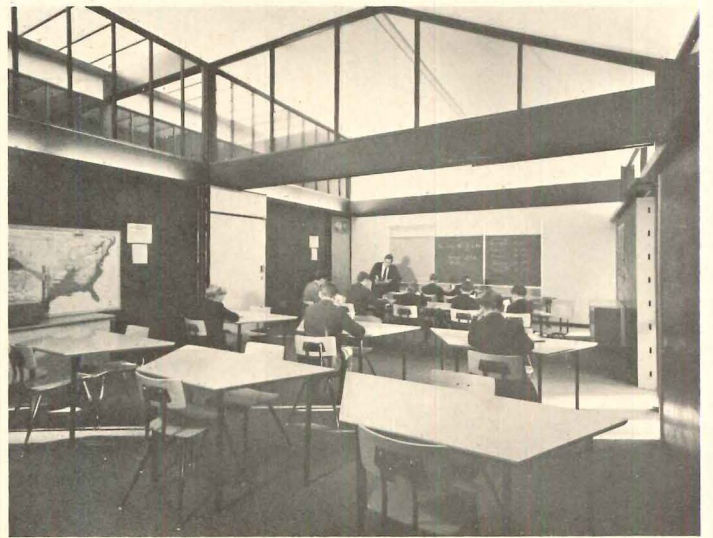
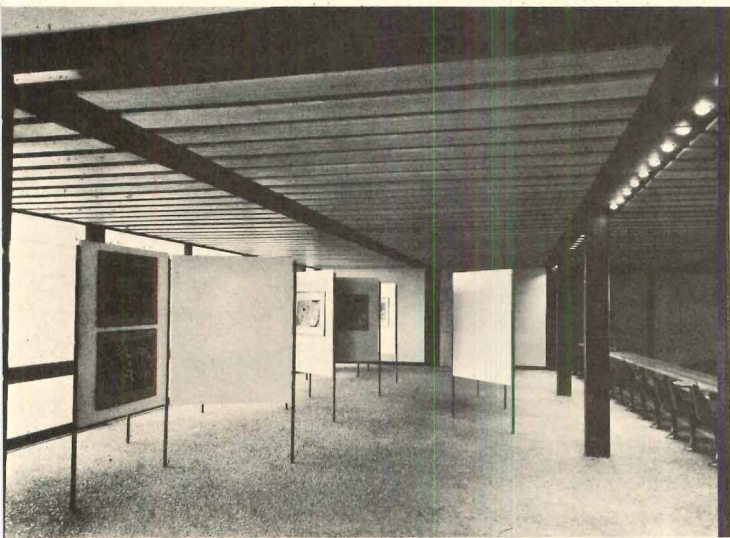
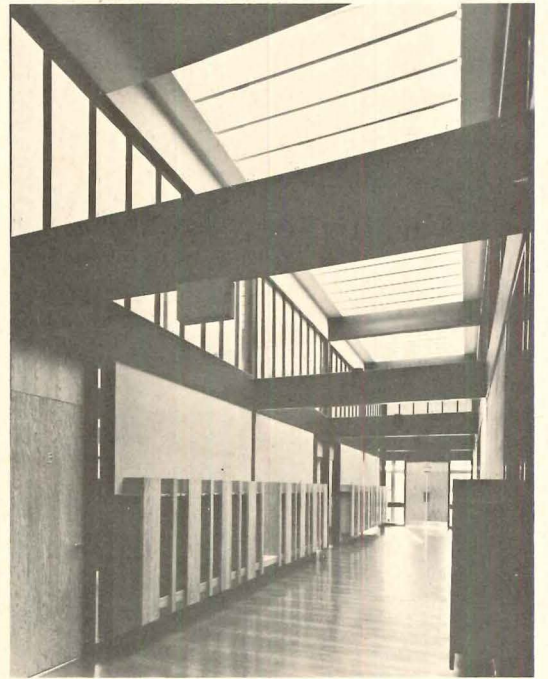
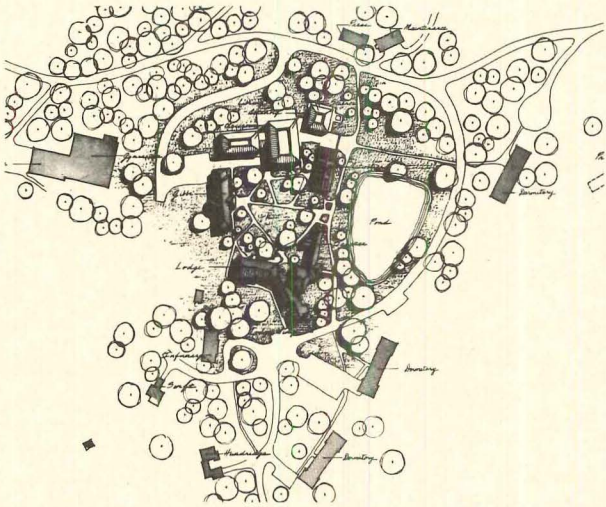
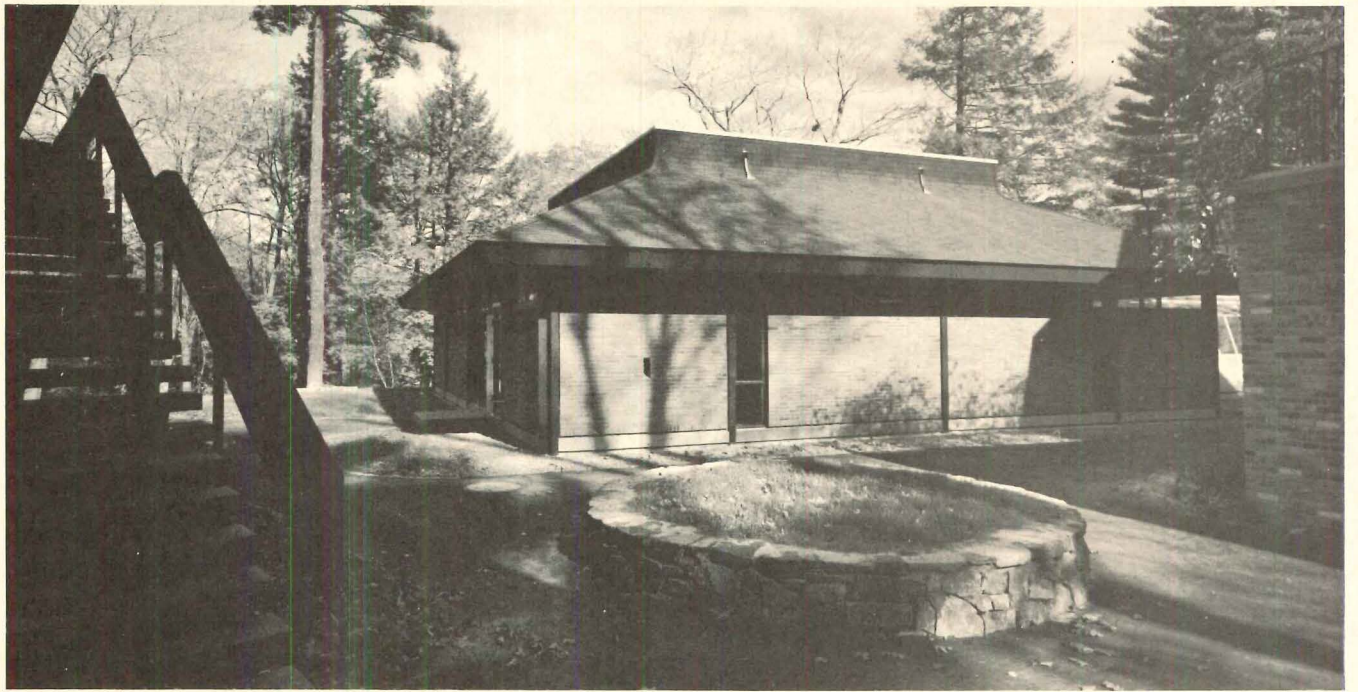
All of the school facilities have been planned with an eye to the future. Movable partitions between classrooms make possible large and small groupings as required, and the meeting hall is a suitable base for team teaching programs. The language laboratory, modern furnishings and equipment, television monitors, projection equipment to encourage the use of film media, and the provision of a small planetarium are all indicative of a progressive approach to education.

Structure of the building is essentially steel and concrete with brick and concrete walls and plywood roof decks with built-up asphalt shingle. A large skylight gives additional daylight to the library area.

C. THURSTON CHASE LEARNING CENTER, EAGLEBROOK SCHOOL, Deerfield, Massachusetts. Architects: *The Architects Collaborative*—project team: Sarah P. Harkness, Herbert K. Gallagher, Sherry Proctor; and Campbell, Aldrich & Nulty—project team: Walter Campbell, Carmen di Stefano; structural engineers: Souza and True; mechanical and electrical engineers: Jackson and Moreland; lighting design: William M. C. Lam; educational consultants: Donald Mitchell, Robert Anderson.



Interiors of the school have a light, spacious feeling, but sufficient warmth and intimacy so that students d



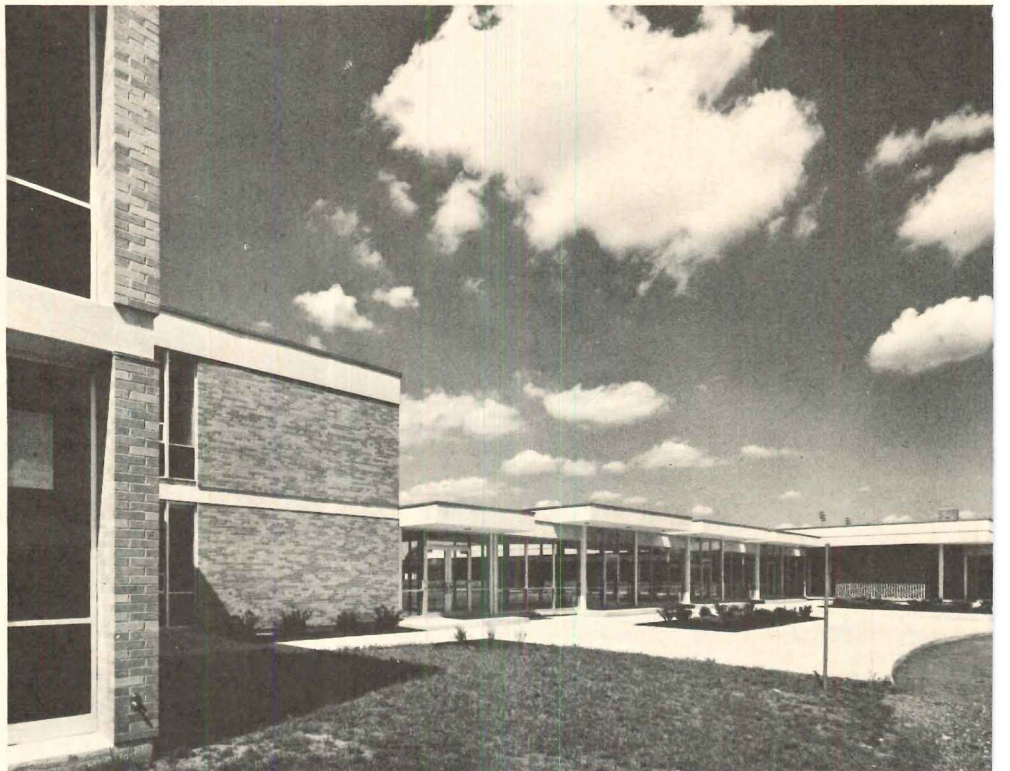
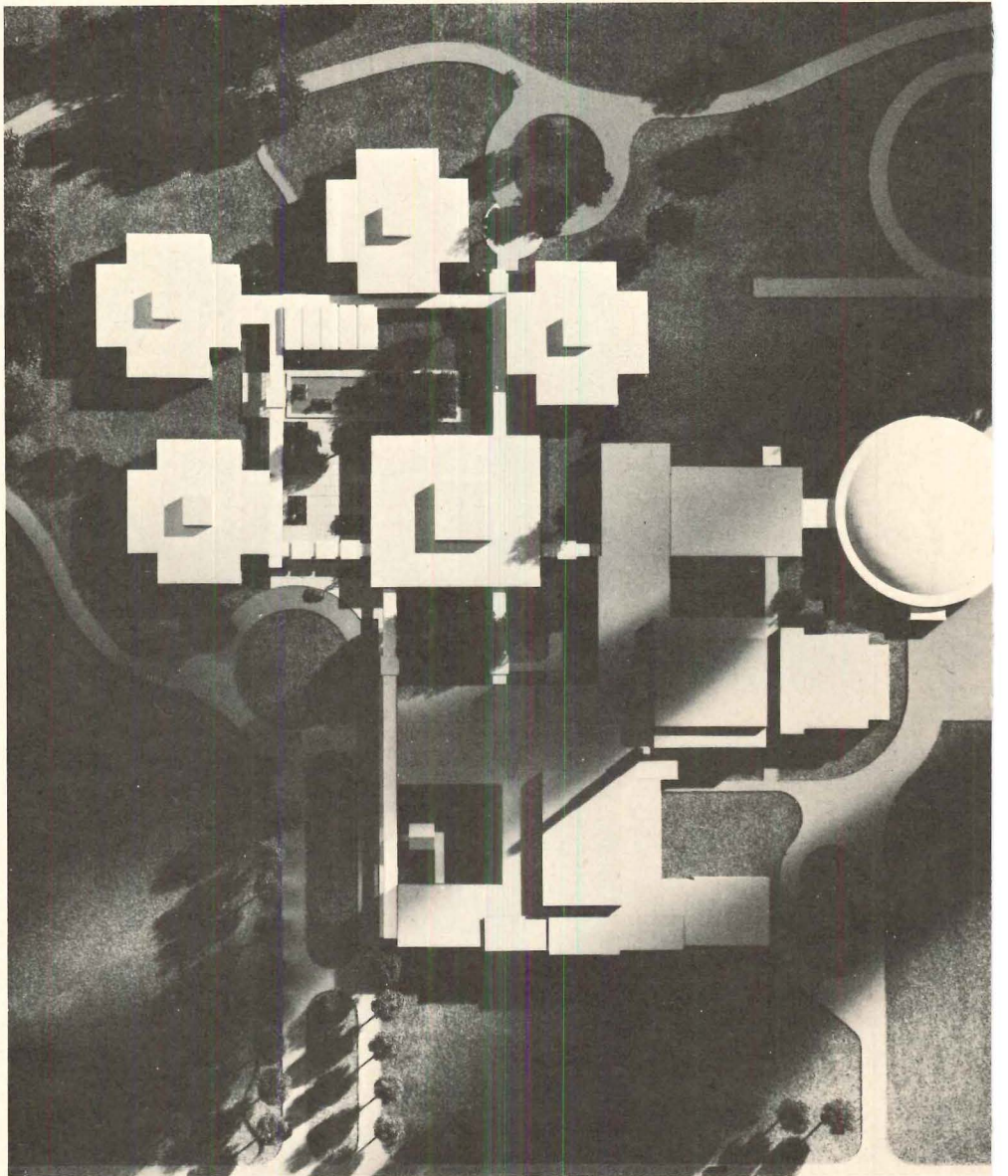
ose a sense of their own identity. The open planning of the library is modified by smaller spaces and furniture groupings arranged for individual study.

CLUSTERED UNITS EXPAND EXISTING SCHOOL

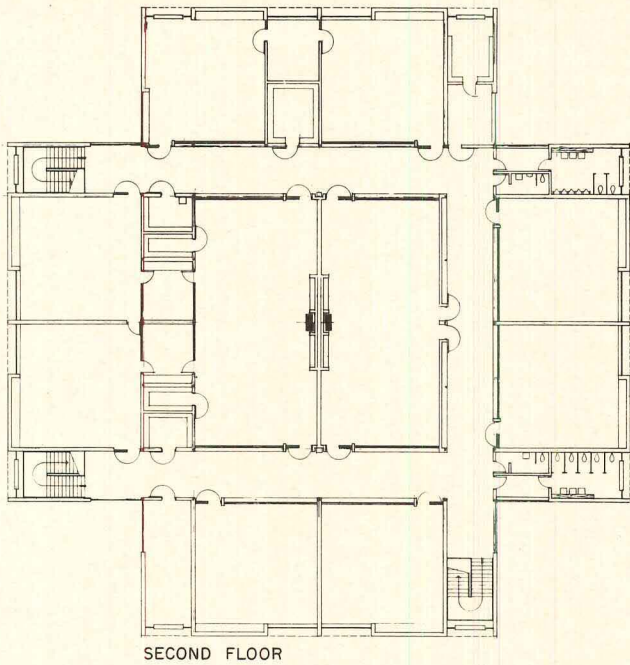
Faced with the problem of providing an extensive expansion to an existing high school, the architects of this extremely interesting scheme concluded that "a single high school, if properly organized into a decentralized campus of smaller sub-schools or 'houses,' could provide the necessary individual pupil identification inherent in a small school, while furnishing a scope, depth and variety of resources, staff and facilities which only a large integrated plant can offer." Four cross-shaped houses are grouped within a road loop and around a large, carefully developed social court and a resource center (reference and teaching aids library). Each of the two-story houses contains all general academic and science facilities for 600, as well as an administrative unit and a commons area for assemblies, lectures and dining. The food is supplied from a central kitchen. Several classroom groups are interconnected by folding walls for possible team teaching.

The existing building was remodeled to provide two additional houses and areas for specialized instruction. The resource center is located for easy access from all areas. The new buildings are light steel frame with brick panel walls.

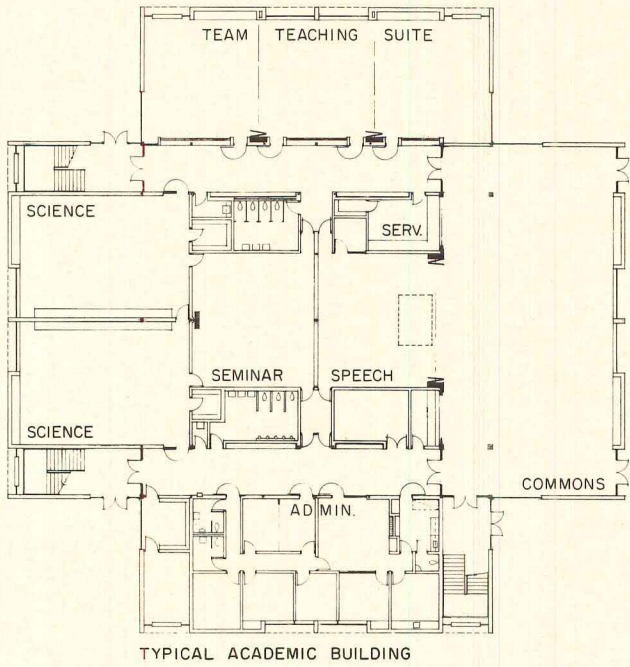
SOUTHFIELD SENIOR HIGH SCHOOL, Southfield, Michigan. Architects and engineers: *Tarapata-MacMahon Associates, Inc.*—partner in charge: *Peter Tarapata*; landscape architects: *Johnson, Johnson & Roy*; contractor: *KNC Associates, Inc.*



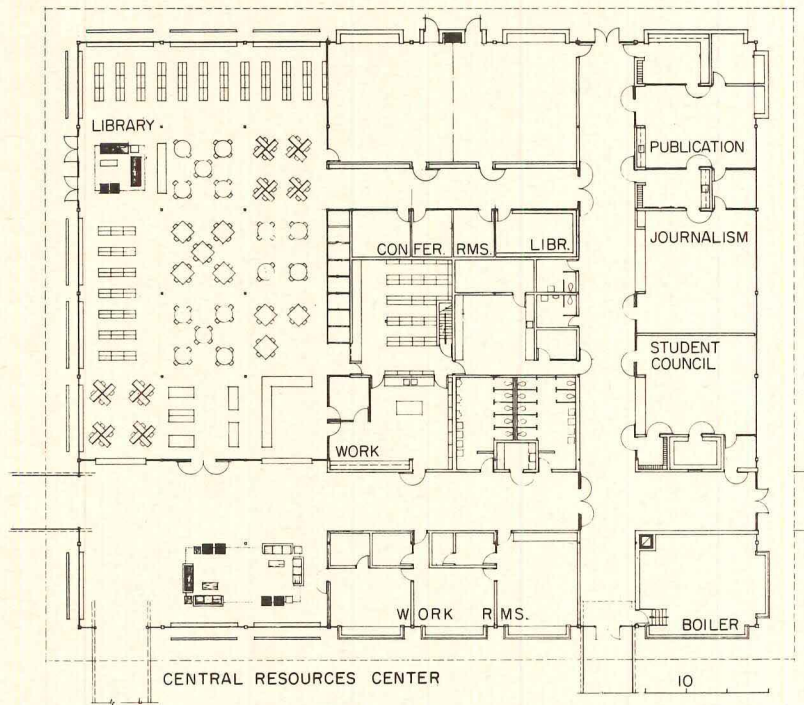
The need to achieve human scale in a rapidly expanding senior high school prompted grouping of four



SECOND FLOOR

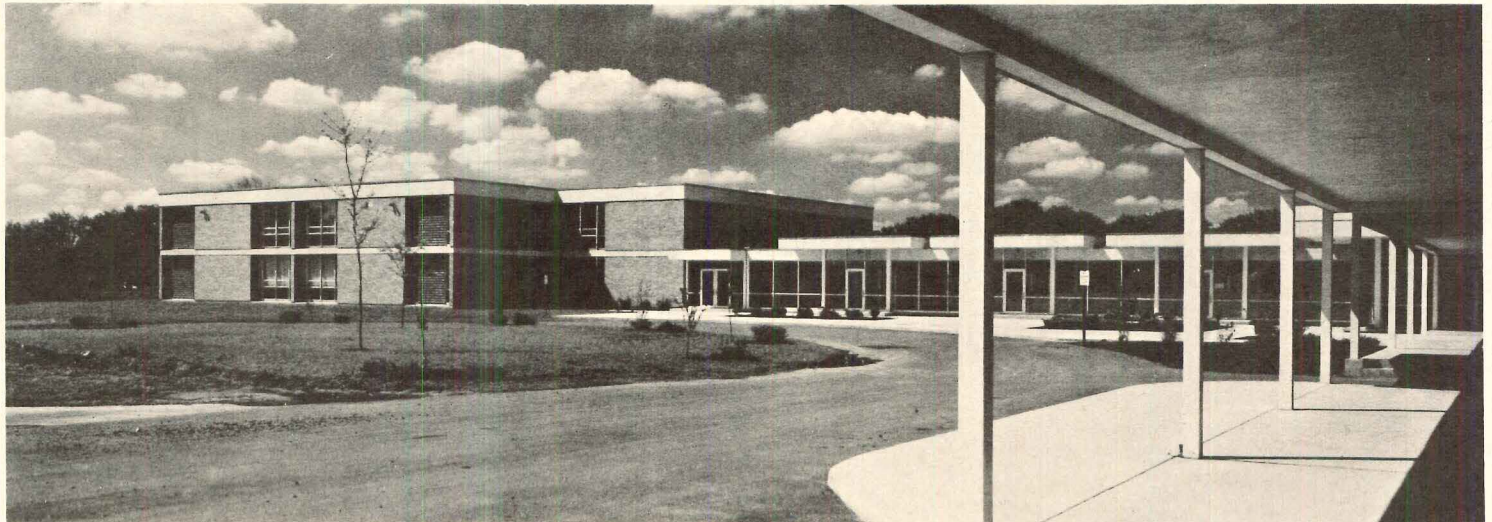


TYPICAL ACADEMIC BUILDING



CENTRAL RESOURCES CENTER

Balthazar photos

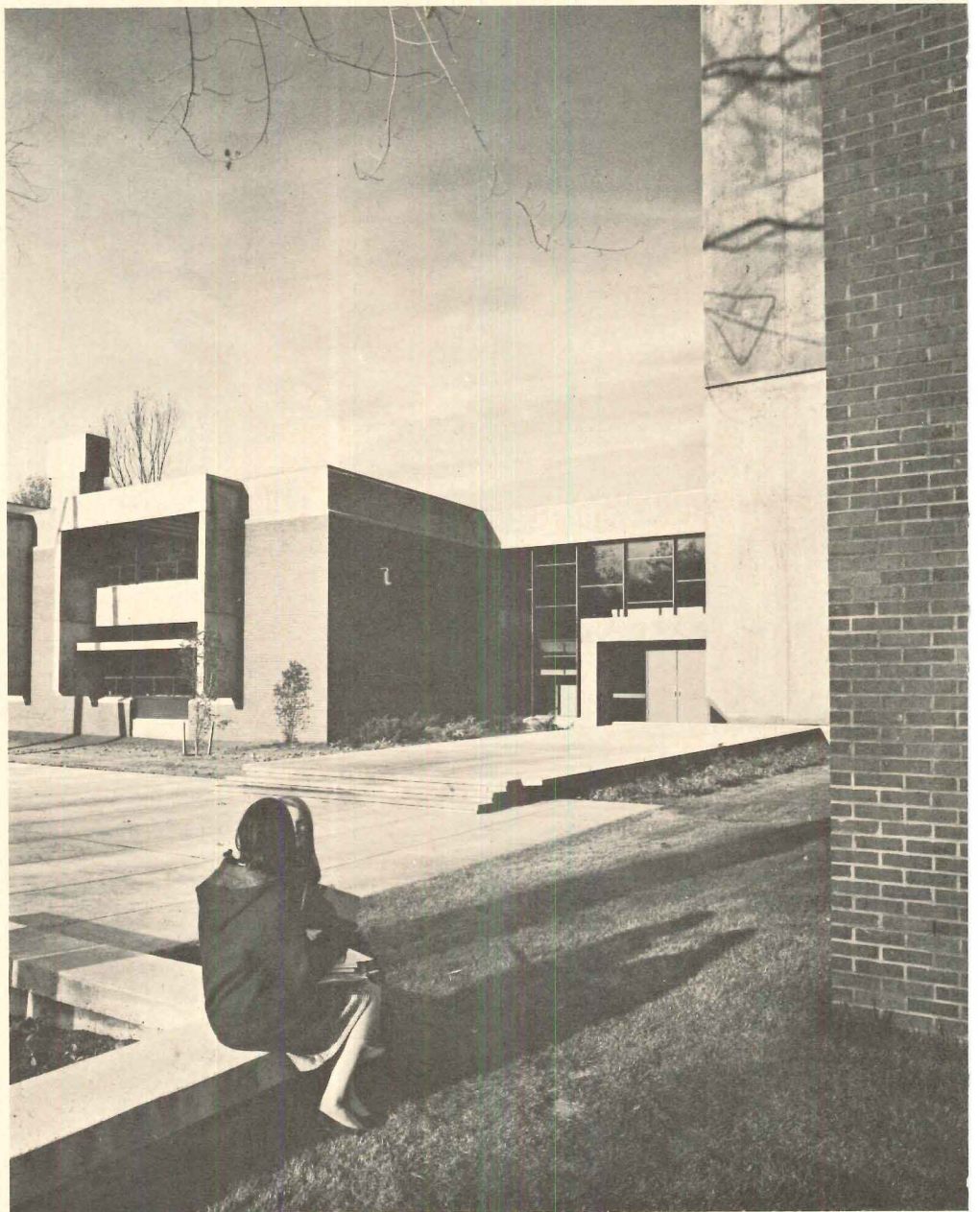


academic buildings around a central resource center. The area between buildings, surrounded by covered walkways, provides a pleasant "social court."

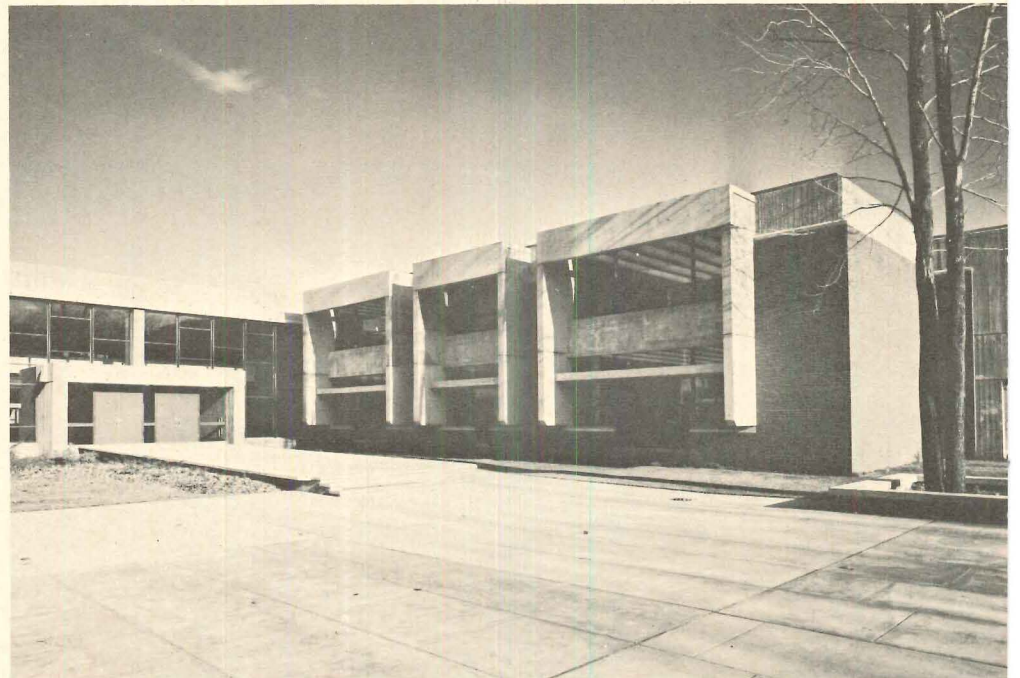
MAXIMUM FLEXIBILITY FOR A JUNIOR HIGH

This handsome school is an excellent example of a structure designed for a fairly standard, departmentalized junior-high program, but capable of simple and inexpensive adaptation to new organization and teaching methods.

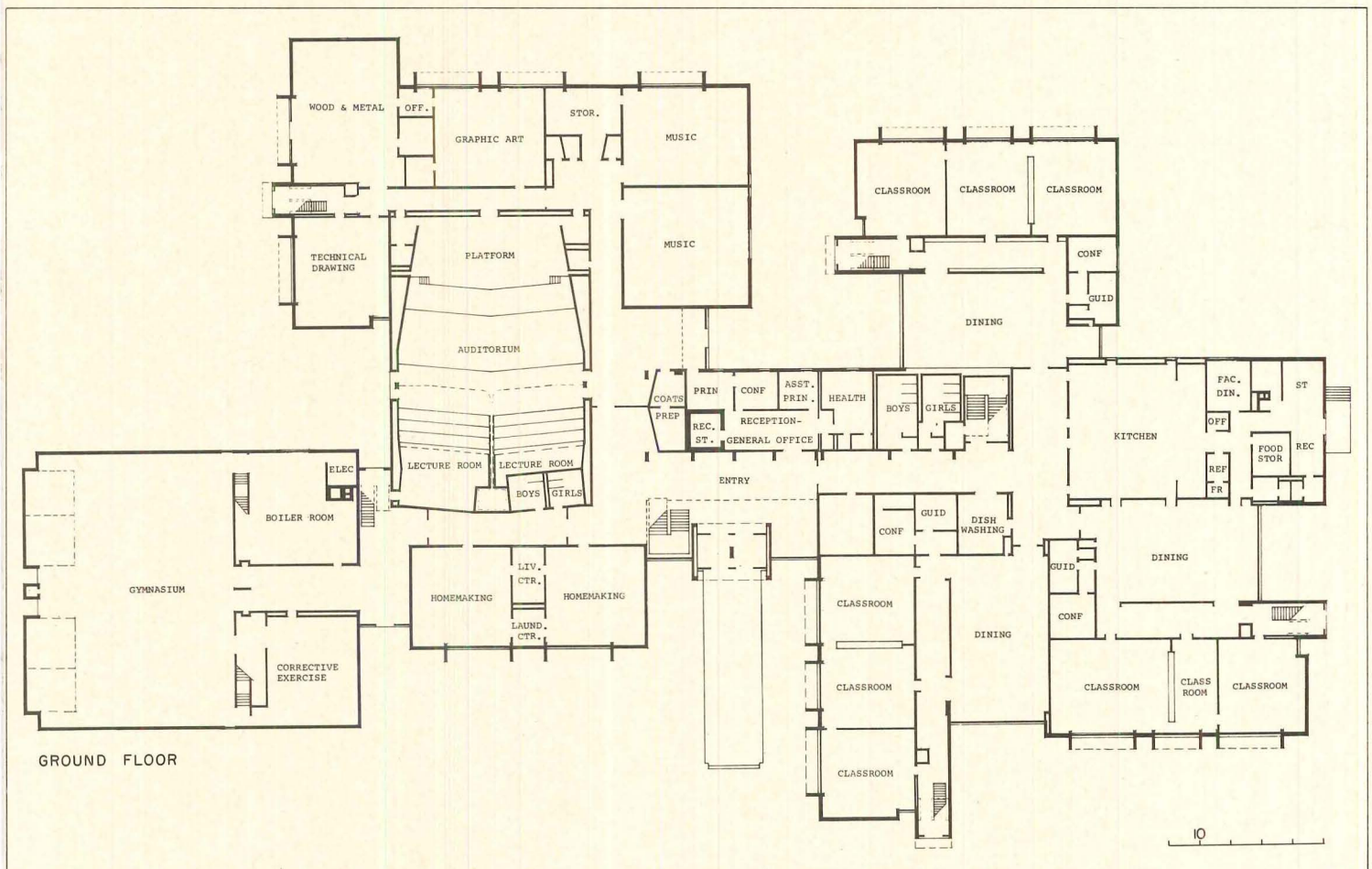
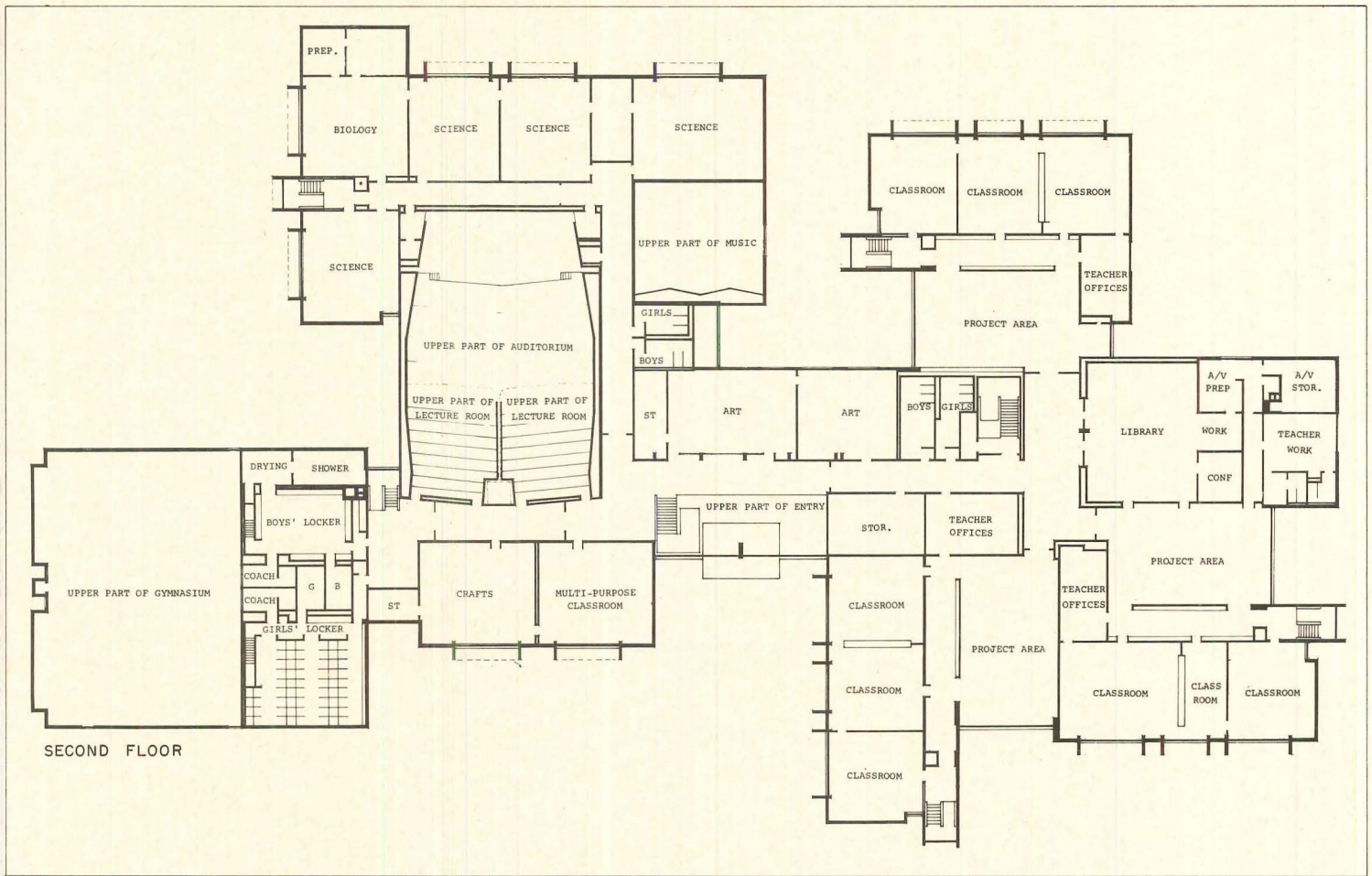
The school is loosely but sensibly organized in an irregular plan, with direct and fairly short circulation corridors. The gymnasium and auditorium are placed with related facilities in two connecting wings, and classrooms (grouped into three houses) pinwheel out from a library center on the upper floor of a third wing. Inherent throughout the planning is an effort to reduce the scale of the building to maintain student identity. Each house has its own dining area, project-study area and lockers, and its own identifying color (blue, green or ochre) on doors and the like. Many of the classrooms are fitted with easily removable walls to create larger-sized spaces when, and if, they are needed. Thus the many varieties of spaces included in the plan could easily be adapted for a team teaching program. The auditorium, also designed with this potential change in view, is divisible into three medium-sized lecture halls, or can be used as one big assembly space. The current project areas could be adapted and related to the library as an expanded resource center. Although the actual library area is comparatively small, the surrounding spaces could easily be converted into individual



Phokion Karas photos

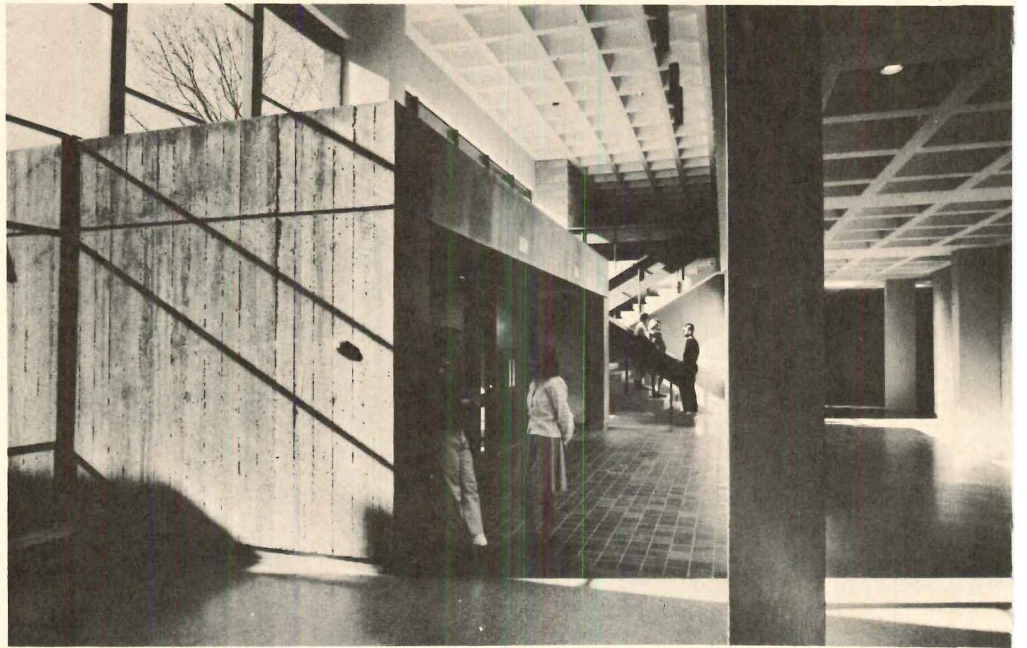


The strong concrete, brick and glass elevations are softened by the rather informal layout of the plan.



Small courtyards are created where children can talk and play. The three separate "houses" at right end are connected to "shared facilities" by administration.

KENNEDY JUNIOR HIGH SCHOOL



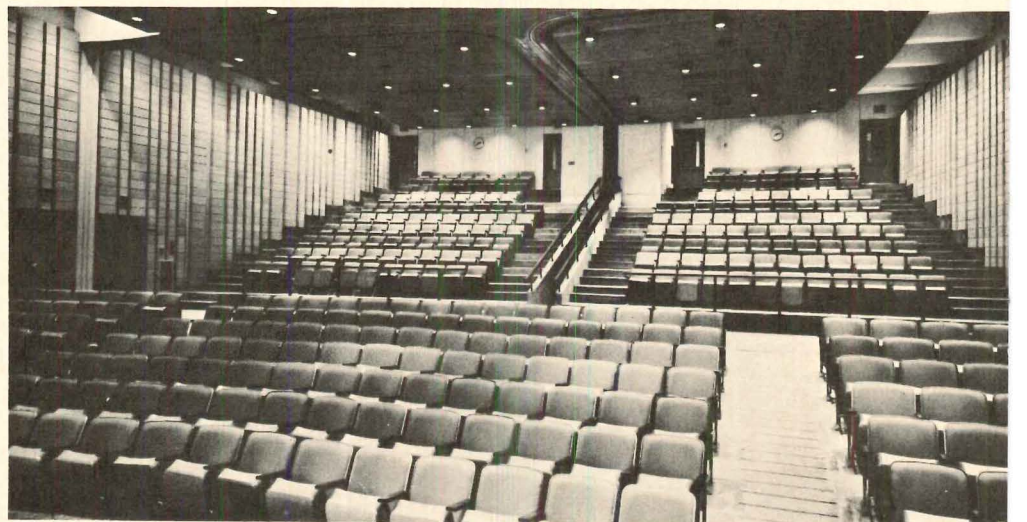
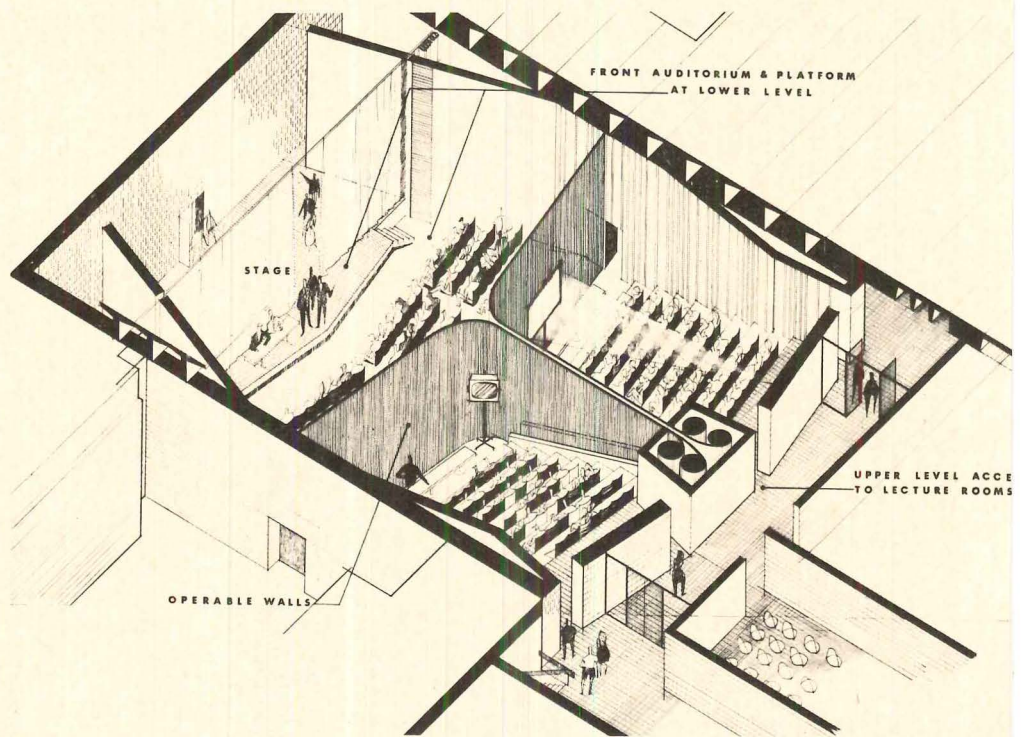
carrels and group study rooms. There are plans for future expansion of the library in the angle between it and the adjacent house.

The building has a present capacity of 900 pupils, and was planned for the future addition of a fourth house for an additional 300 children.

In addition to the main central administration offices, each of the houses has its own suite of offices for guidance counselors and administrative personnel. Adjoining are spaces for seminars, small group instruction and conferences.

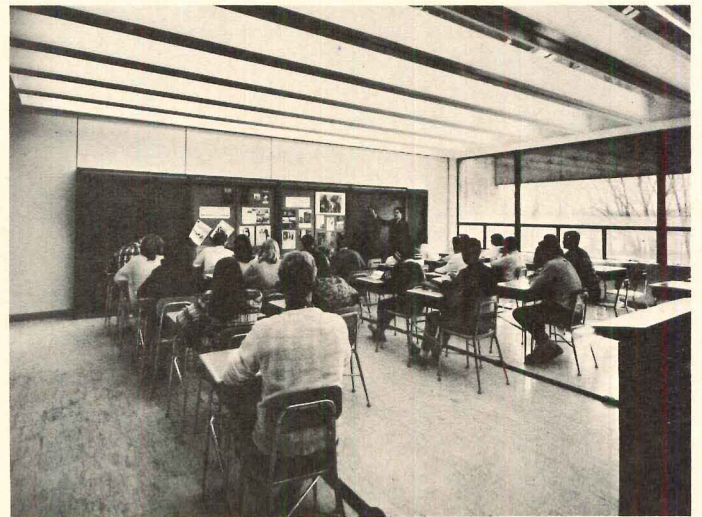
Structure of the building is poured in place concrete with brick and exposed concrete exterior walls.

The Educational Facilities Laboratories' report on Middle Schools comments that "Only time (an approved New England commodity) can tell whether Natick school people and their architects have produced a truly flexible building—so that no matter which way the curriculum swings, this building will swing with it. The evidence on hand supports the belief."



Planning of the school has taken into account the future possibilities of team teaching. The auditorium can

KENNEDY JUNIOR HIGH SCHOOL, Natick, Massachusetts. Architects: *Davies & Wolf, Freeman & Flansburgh, Associate Architects—job captain: M. Wyllis Bibbins*; structural engineers: *Stressenger & Adams*; mechanical engineers: *Souza & True*; landscape architect: *Carol R. Johnson*; acoustic consultants: *Bolt, Bernaek & Newman, Inc.*; consultant: *Evans Clinchy*; contractor: *C. R. Burns & Sons*.



be subdivided into three separate rooms for this purpose. Classrooms are designed to relate easily to the library, which can expand into a resource center.

FLEXIBLE STRUCTURE FOR PROGRESSIVE PRIMARY SCHOOL

K-4

The architects were asked for a building "to house a modern educational program in an atmosphere at once appealing to the children, and pleasant, efficient and most workable for the teachers," with "sufficient physical flexibility to accommodate future changes in teaching methods." Further, it was designed to be "up-to-date in concept and function, but to blend into a traditional residential neighborhood."

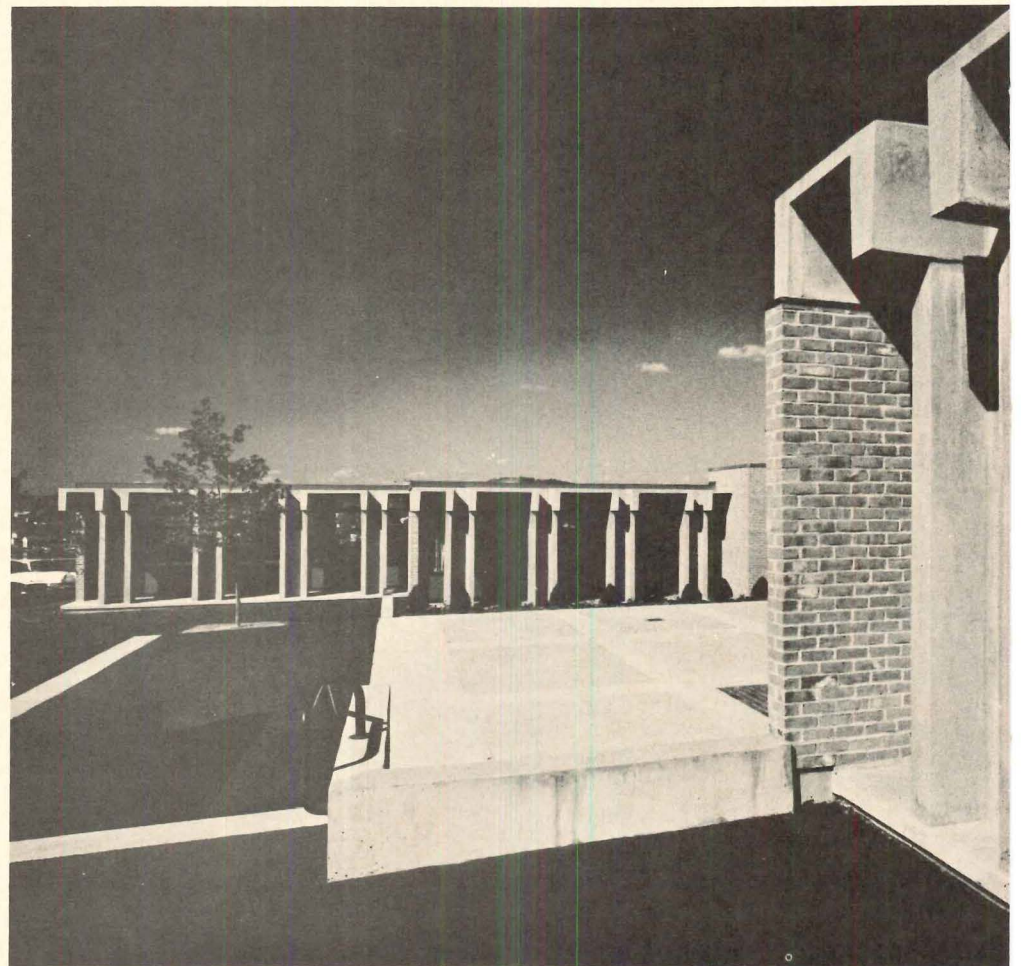
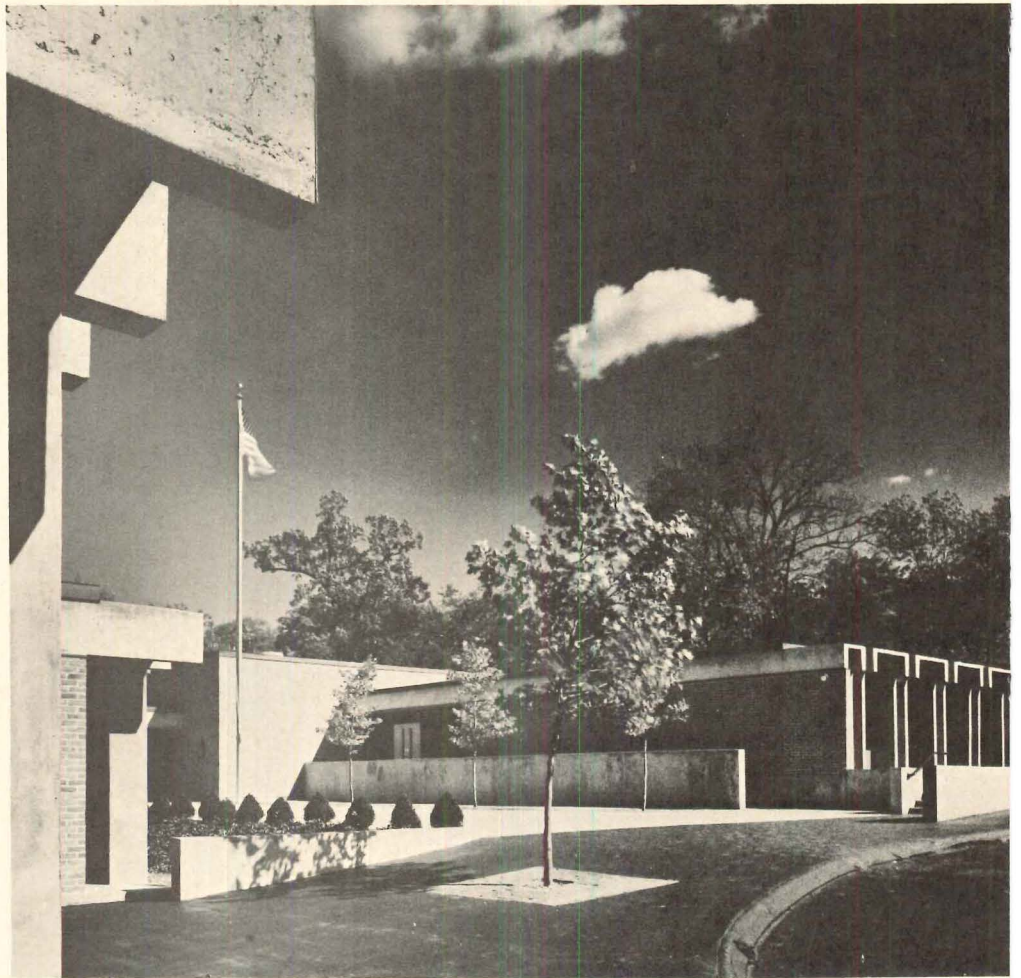
The Quinnipiac school satisfies all these requirements and provides what should be a stimulating environment for 290 children from kindergarten through fourth grade. Future expansion of the school will be accommodated by adding a second floor similar in appearance to the academic wing of the building.

Flexibility within the building was achieved in a number of ways. Each classroom has a simple shape, and is provided with movable equipment, so that individual teachers can arrange the room to suit the specific needs of their program. Two pairs of classrooms in both the completed structure and the planned addition have movable common walls to allow for larger groupings of students and cooperative programs between teachers, if desired.

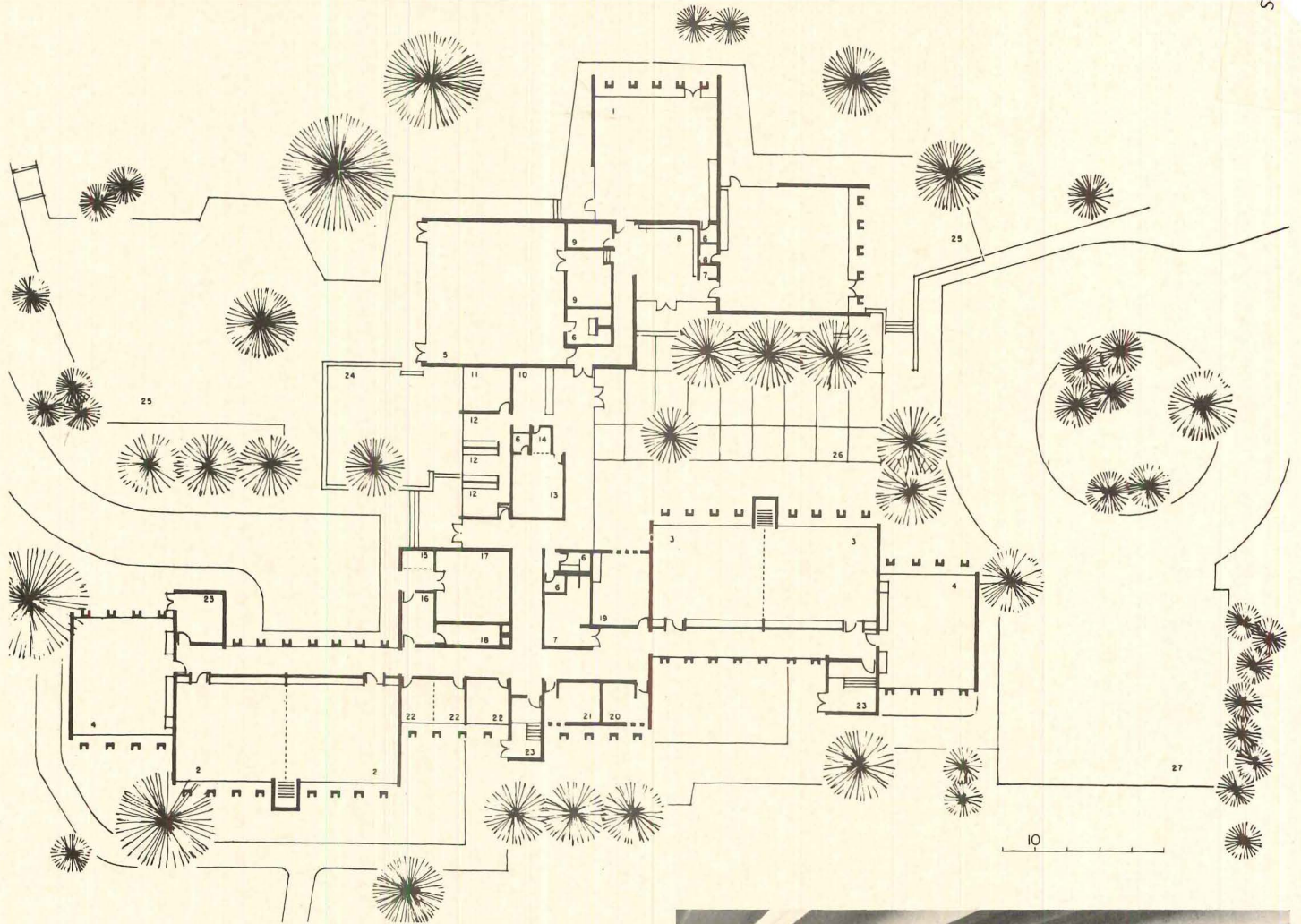
The basic structure of the building—reinforced concrete channel columns and beams—permits the addition of the second story without the need for interior columns. The open spans, in turn, permit complete rearrangement of partitions.

The interior surfaces are exposed concrete and brick, and the floors are carpeted, to keep maintenance to a minimum and to provide a good background for colorful displays of art work.

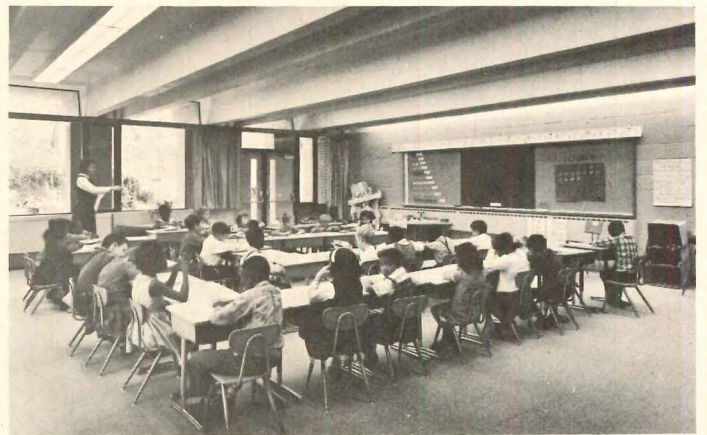
QUINNIPIAC SCHOOL, New Haven, Connecticut. Architects: *The Perkins & Will Partnership, Granbery Cash & Associates*; structural engineers: *Henry Pfisterer*; mechanical and electrical engineers: *Hubbard, Lawless & Blakeley*; landscape architect: *Office of Dan Kiley*; contractor: *Ames Construction Co.*



Concrete channel columns will accept a second story with little or no visual or structural disruption.



- | | | |
|-----------------|------------------|--------------------|
| 1. Grade 1 | 10. Receptionist | 19. Work room |
| 2. Grade 2 | 11. Principal | 20. Girls toilet |
| 3. Grade 3 | 12. Office | 21. Boys toilet |
| 4. Grade 4 | 13. Health | 22. Conference |
| 5. Kindergarten | 14. Cot | 23. Stairwell |
| 6. Toilet | 15. Mower | 24. Garden |
| 7. Custodian | 16. Receiving | 25. Play yard |
| 8. Coats | 17. Boiler | 26. Entrance court |
| 9. Storage | 18. Incinerator | 27. Parking |



Louis Reens photos



The building has been sited to take advantage of a view over a river and to allow the use of an adjoining city park as a pleasant playground for the children.

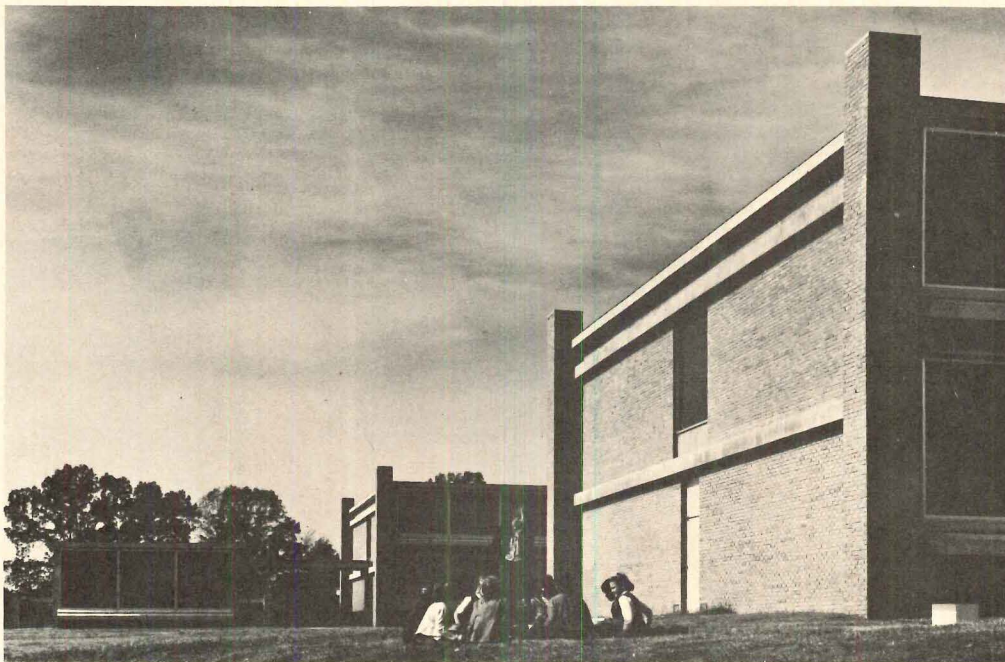
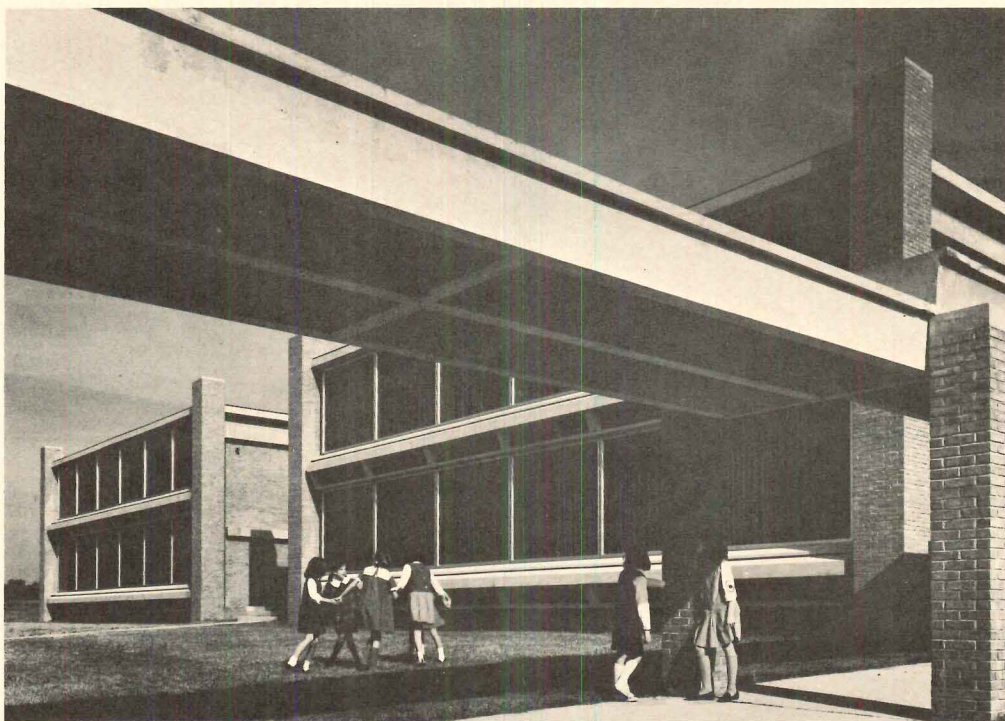
GIRLS' SCHOOL PLANNED FOR FUTURE CHANGE

This private school for girls is planned for a current enrollment of 500 in grades from kindergarten through the twelfth, but the plans show an expansion for an additional 500 students, and provision for easy changes of any interior partitioning to accommodate varied and/or changing teaching methods.

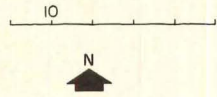
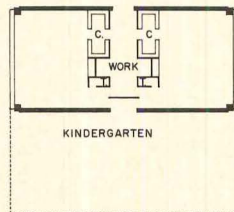
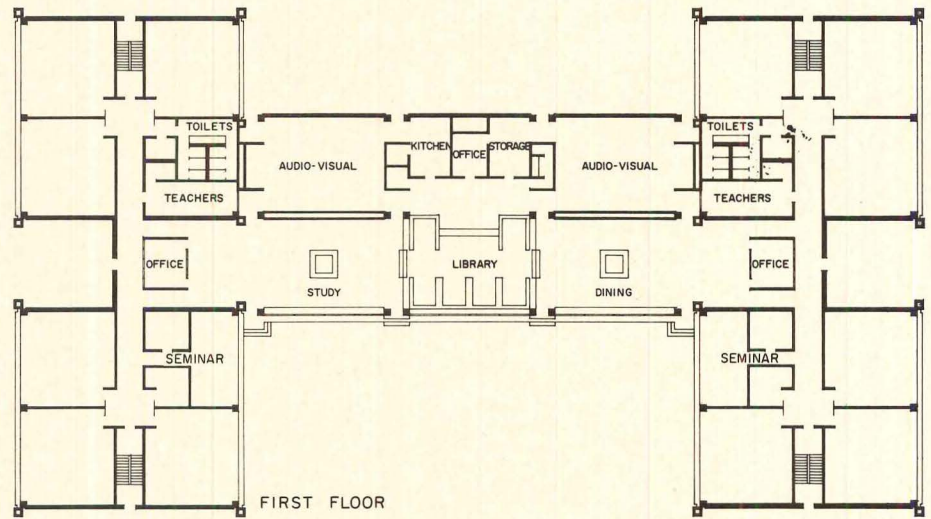
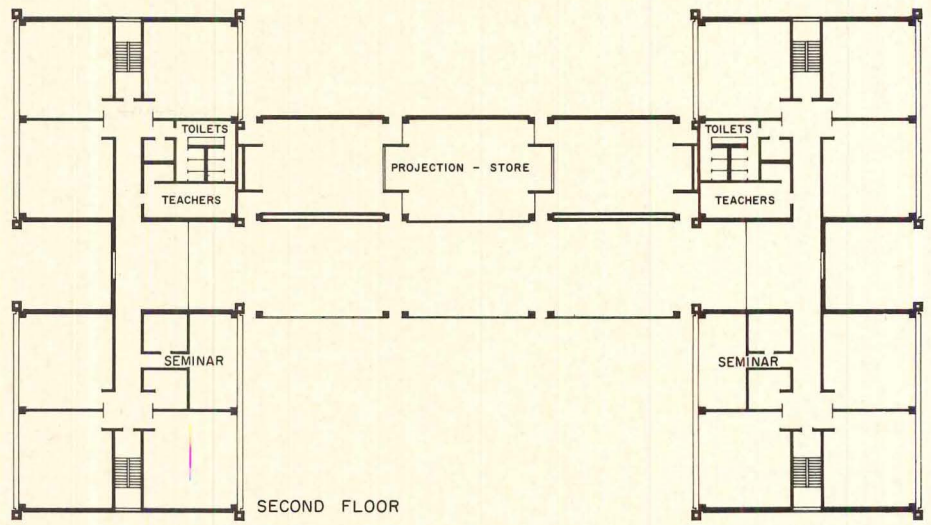
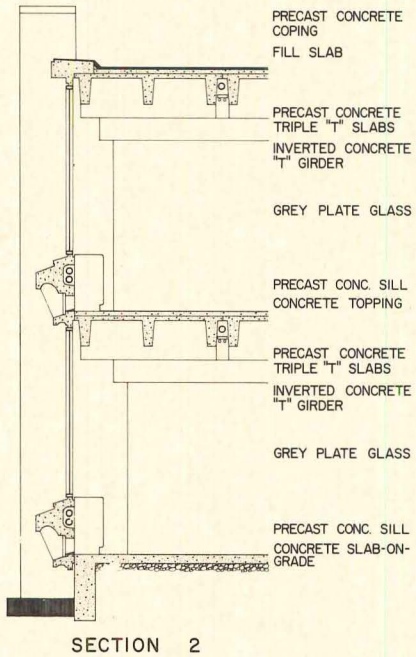
There are 24 classrooms, two large audio-visual rooms and a number of smaller seminar rooms arranged in an H-shaped plan on two levels. The teaching wings are linked by a large, pleasant hall with study rooms, the library, and a dining area which can double for additional study or lounge space. Food is provided by an outside catering service, which—the school administrators feel—gives significant savings on equipment, space, personnel, maintenance and the like.

To add to the flexibility of interior partitioning, all mechanical systems are ranged around the perimeter of the building in a special sill-and-spandrel unit, which also includes louvers for fresh air intake and exhaust. The structure of the building is concrete, with triple-T-slabs. The per-square-foot cost is reported to be about \$15.

HUTCHISON SCHOOL, Memphis, Tennessee. Architects: *Office of Walk C. Jones, Jr.*; structural engineers: *Gardner and Howe*; consulting electrical and mechanical engineers: *Allen & Hoshall*; contractor: *Seth E. Giem and Associates*.



Classroom wings at ends of the building are linked by a library and study area with two audio-visual rooms.



Alexandre Georges photos



This allows considerable freedom of circulation and flexibility of use. Perimeter mechanical services and easily varied partition system give extra flexibility.

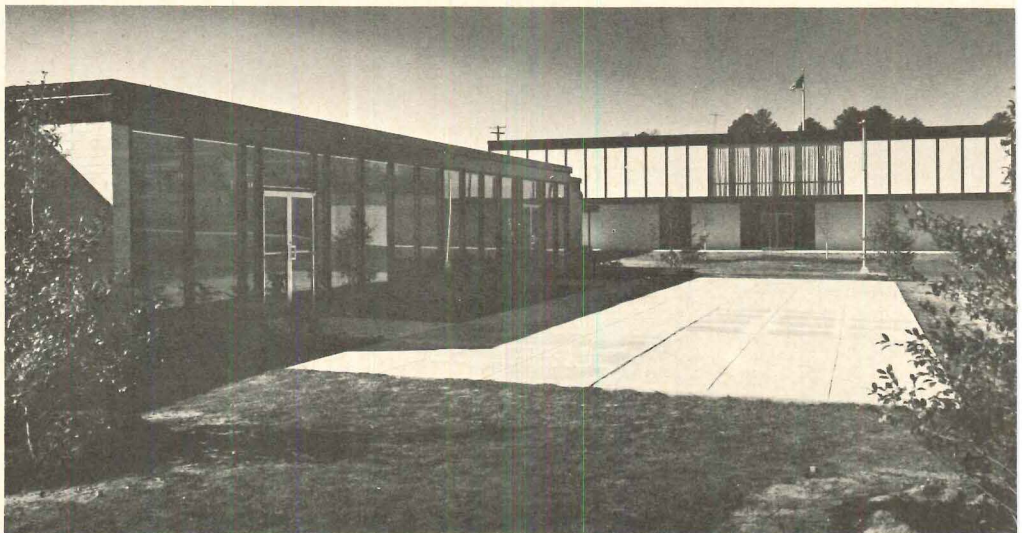
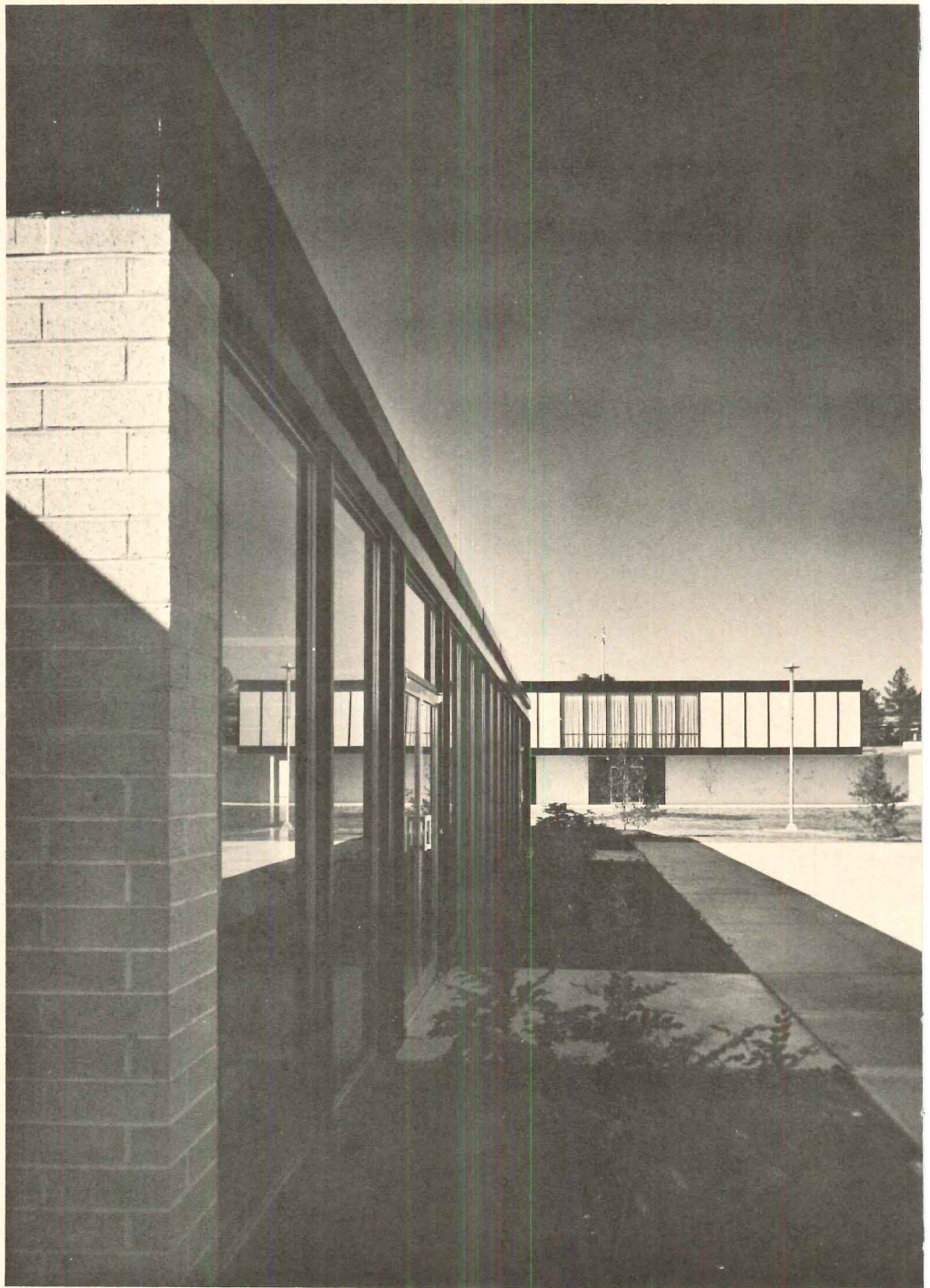
LOW-COST BUT CAMPUS-LIKE TECHNICAL CENTER

The Richland Technical Education Center is an unusual facility for teaching specialized technical skills to high school graduates. The design provides three separate buildings—two of them air conditioned—to house administrative offices, laboratories and classrooms, and a shop area—all in an environment which has much of the feeling of a university campus. This was achieved, the architect reports, at a cost of less than \$10 per square foot.

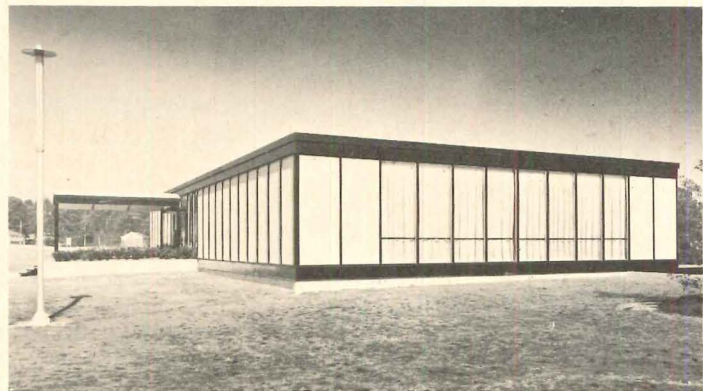
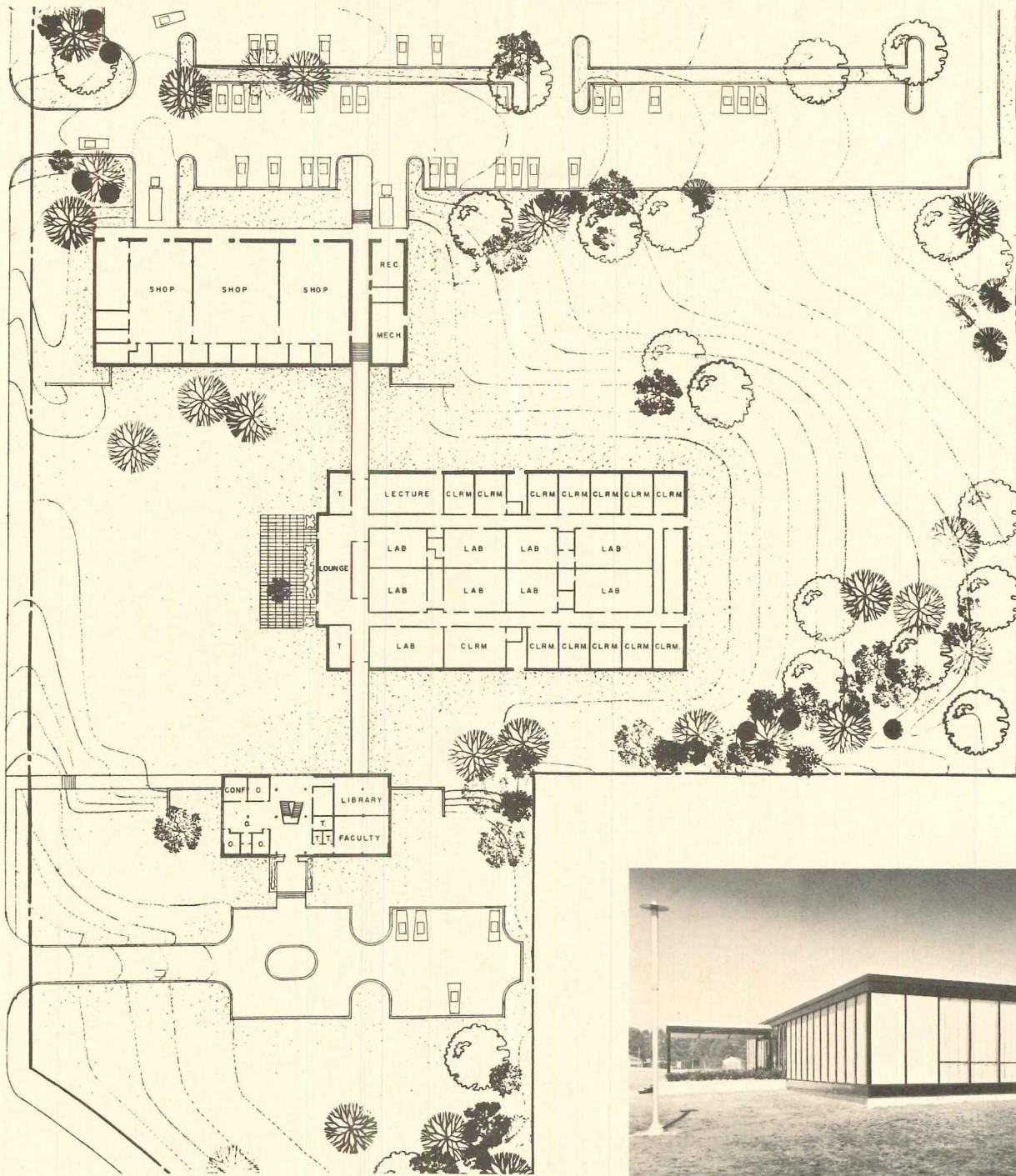
The buildings were designed to take advantage of a sloping site. The administration building, which contains office spaces, library and faculty office, overlooks the rest of the campus from a higher level, and is connected by a covered walk to the classroom and laboratory building, where a snack bar and glassed-in lounge are also housed. Windowless classrooms and laboratories are all fully air conditioned. The shop building is not air conditioned, but includes service openings which face away from the other buildings towards student parking areas.

The administration building — constructed of prefabricated, insulated panels and glass areas in an exposed steel frame — contrasts effectively with the other two buildings, with their bearing walls and exposed steel roof structure. But despite the contrast the three buildings together constitute a well-balanced whole. The students should indeed “not just acquire the necessary technical skills, but also experience some of the wider social and environmental benefits more often associated with a university campus.”

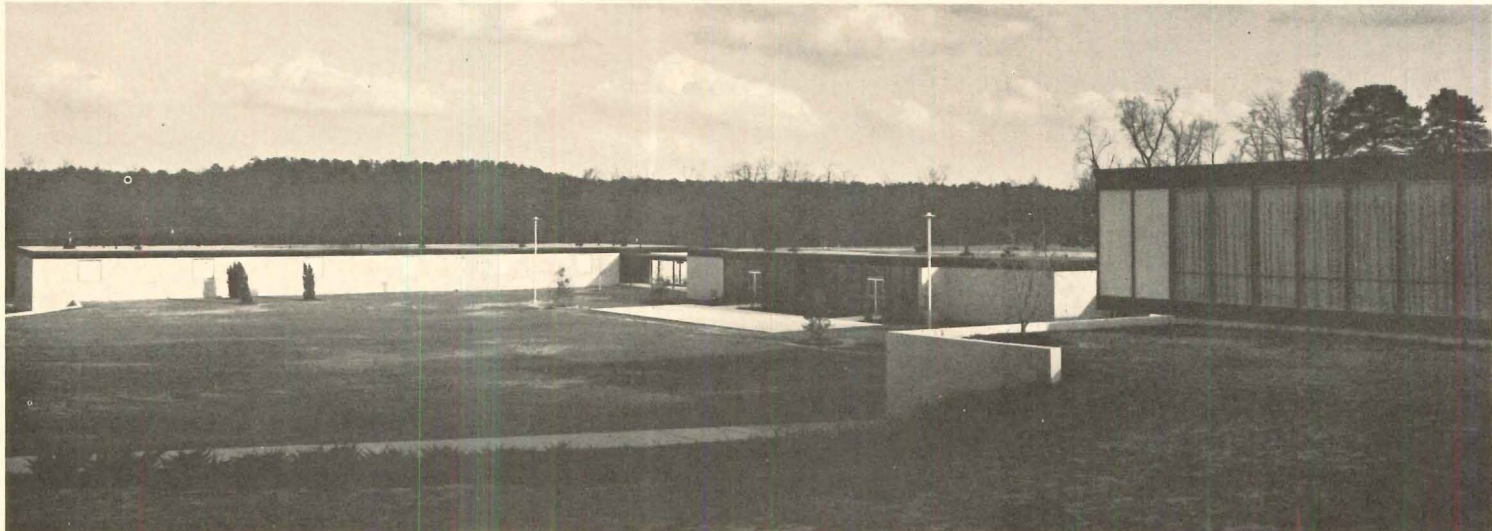
RICHLAND TECHNICAL EDUCATION CENTER, Columbia, South Carolina. Architects: *Lyles, Bissett, Carlisle & Wolff.*



The three buildings of this technical school — designed to accommodate a sloping site — are linked by



Gordon H. Schenck Jr. photos



covered walks. Administration building has exterior walls of glass and insulated panels, other buildings have painted steel fascia and utility brick surfaces.

THE CASE FOR EDUCATIONAL PARKS

The preceding pages have explored some of the design ideas being used to handle one kind of change in our schools—the need for enough flexibility to keep pace with changing teaching methods and booming school populations.

Other new design concepts are needed to cope with the accelerating change in our social and economic structure—the demands of the Great Society for the best possible education and opportunity for all students.

One much-talked-about solution—controversial because it questions the time-honored system of neighborhood schools—is the educational park. Under this system, all levels from kindergarten through high school would be accommodated in a single complex large enough to serve the whole community.

On the pages that follow, three leading proponents of the educational park—Dr. Max Wolff, sociologist and consultant on school desegregation to several communities; Dr. Esther Rothman, psychologist and principal of a New York City high school, and architect Leopold Berman—answer questions highlighting the problems and advantages and the architectural challenges of the educational park.

Are there school systems which have already developed or are developing educational parks?

Dr. MAX WOLFF: I have been proposing the "educational park" as a new type of centralized school system for several years, but the first actual park was started two or three years ago in Fort Lauderdale, Florida. In spite of the schools which exist in every neighborhood and community served by the educational park, requests for admission to the park are about two to one to the spaces presently available for pupils. Pupils are transported to the park from a distance of up to fifteen miles. There is another educational park called Cité des Jeunes near Quebec. One of the purposes behind the creation of this park was to offer a meeting ground for pupils of French and English background attending separate schools.

Pittsburgh is working on detailed plans for educational parks, as is New

York City. Other communities presently discussing and planning educational parks are as varied as Mount Vernon, New York; Philadelphia; East Orange, New Jersey; Los Angeles; Chicago and Cleveland.

Could the educational park be a factor in helping reverse the decline of our cities?

WOLFF: The city, for its own survival, must counteract the development of ghettos of the socially deprived with their attendant despair and discontent. Continuing concentration of poverty in more and more sections of our cities will make it practically impossible for them to sustain themselves and to be the impetus for further growth of the country. By counteracting the ghetto, both the concept and the reality, the city will counteract its growing image as the jungle of our industrial society. The development of a modern, high-

quality public education system may well be the essential ingredient in reversing the present decline of our cities.

The educational park would, in my view, be the most promising frame for such a development. In it, the best the city has to offer would be made available to all the teachers and all the pupils alike. No status would be connected with any specific school because all of them would belong to this community school complex. In smaller cities, one such center would suffice. In larger cities, a number of equally well-endowed centers would be established.

No private institutions can compete with the educational park if local government recognizes the importance of making it the glowing symbol of what the city is able to offer its children.

Can communities expect state and federal support for the development of educational parks?

WOLFF: Yes. For one thing, educational parks, carefully planned, should be more economical than neighborhood schools of comparable quality. Further, almost all states have provisions of legal participation in the costs of pupil transportation, which is a factor in this concept.

In addition, New York State, for one, plans to submit to its legislature this spring a law offering financial support of measures specifically geared to counteract socio-economic and racial segregation. And a number of Federal acts invite applications for financial support for all kinds of innovations in the development of such educational facilities as educational parks. These include Urban Renewal Act, Community Mental Health Act, Civil Rights Act, National Defense Education Act, Elementary and Secondary Education Act, and Economic Opportunities Act.

Would most children have to be bused to school and will travel adversely affect them?

WOLFF: It would never be necessary to transport all children attending an educational park; in the densely populated areas of our cities, many of the pupils will live in the vicinity of the park and—with proper protection—be able to walk to school. For the smaller children in need of transportation, special facilities will be made available; measures are at present being worked out to make sure that the bus ride will not be "lost time," and to solve specific traffic problems in the context of overall traffic plans.

Dr. ESTHER ROTHMAN: Many educators do argue that the child needs the se-

curity of a school near his home. But how do they know that an out-of-neighborhood school is not as desirable as an in-neighborhood school? Surely thousands of children who have traveled to attend private schools have not been damaged by their experience... The question should rightfully be: "Is the school to which the child travels a good one?" The answer is obvious. It is not the traveling that is important. It is what the child travels to that is important.

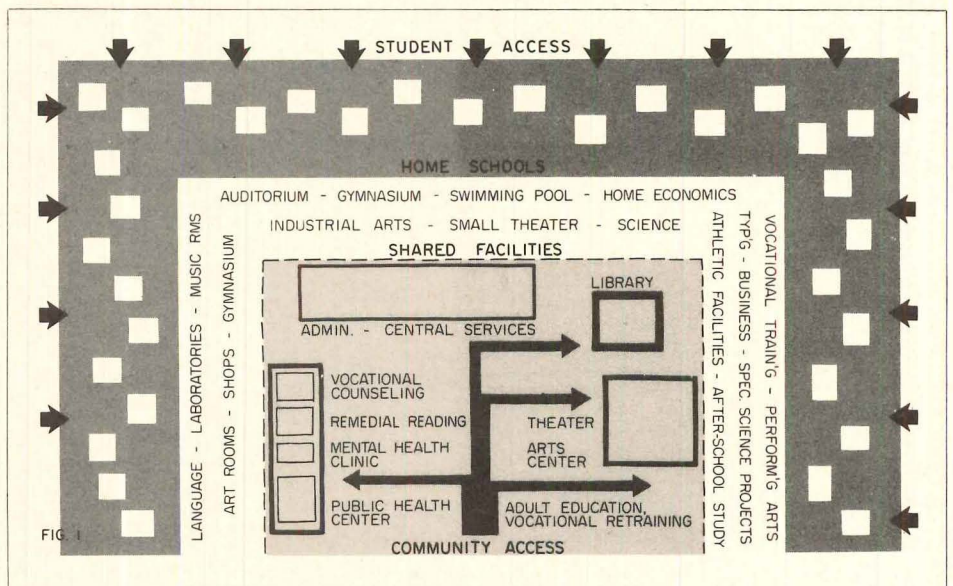
What advantages does the educational park hold over many individual schools?

WOLFF: With the creation of the educational parks, substantial economies are effected through the full-time use of auditoriums, gymnasiums, libraries, science buildings, art and music facilities. In the neighborhood schools, where such facilities exist at all, they are idle more than half of the time. A cluster of 25 schools does not need 25 auditoriums or gymnasiums, but 25 fully-equipped neighborhood schools do. Instead of the construction of school after school with identical and often inadequate facilities, the educational park combines the buildings on a single site and places facilities such as administration, gyms, libraries, health centers, in separate central facilities buildings serving all the classroom units.

The greatest virtue of the educational park is the educational value received for the investment made. The libraries, music rooms, language laboratories, remedial centers, science labs and athletic fields and facilities that would jointly serve the cluster of classroom units comprising the educational park can incorporate the most modern advances known to educators and architects. The professionals staffing these special facilities will themselves be specialists and all the children will equally receive the most advanced education now obtainable, even in the most favored neighborhood school.

What educational program do you envisage for the educational park?

ROTHMAN: In the educational park, it is essential that children, particularly in the elementary grades, be grouped within each school on the basis of age and social maturity, and not on grade level, achievement or ability. Thus children would not be grouped by first, second, or third grades, but rather by age groups. Five- to seven-year-old children might be considered as one grouping; eight- to ten-year-olds another grouping, and



so on. Instructional groups could vary with the group and with the subjects being taught. Some five-year-olds would be studying arithmetic with seven-year-olds, while some six-year-olds might be reading with 11-year-olds. Ability grouping on specific age levels would be completely discounted, for it must be finally recognized that ability groups tend to reinforce segregated groups.

The high schools will be comprehensive in the true sense of the word, offering programs for the extremely gifted as well as the retarded. The curriculum will offer courses in the sciences, for instance, as well as in the automotive trades. In addition, a relatively unexplored area will be added—that of school work programs.

The high school would include industrial and work buildings providing many different kinds of setting for legitimate work to be done. For advanced students, the work experiences could be challenging, creative and realistic. For handicapped children, the work experiences could be in the context of a sheltered workshop.

For those children who are in need of very specialized teaching skills—for example, those who have any disabilities—special classes would have to be formed within several school buildings. In an educational park, it would be possible to group these children at need. For example, disturbed children are often not disturbed every minute of the day, every day of the week. They should be able to filter in and out of other groups, depending upon the activity and the setting. Similarly, other handicapped groups need not be isolated as so often they are now. There can be many activities which all children can share and some activities which only some children can share. In this kind of flexible grouping, talented and creative children

have a unique contribution to make and a unique lesson to learn. Beginning at this early stage of education they can see themselves as contributors to society. In addition, they can clearly see that children who are handicapped are not really different but only have a different set of circumstances.

The educational park setting would provide a unique opportunity for teacher training. Experimentation in all areas could be carried out and brought directly to the teacher in the classroom. Universities and colleges could correlate their courses to fit into the over-all educational structure of the park for some advanced courses. In this way, the park would truly be a center of learning. The teachers would be students as well as teachers and learning would take place on all levels.

What about adult education and the use of facilities by the community?

WOLFF: The educational park and its excellent equipment can serve as a vigorous center, as diagrammed in Figure 1, for adult community life after regular school hours: for education, training and retraining for new trades and professions, for entertainment and recreation, for art and music and hobbies. Health facilities, a necessary ingredient in every educational park, will serve also the community-at-large. If properly constructed, the educational park will help in responding to the justified demand for more open space in our cities.

Thus, for the parent and for all others in the community—the park can become the focus of community living.

What are the challenges for the architect? →

WHAT ARE THE CHALLENGES FOR THE ARCHITECT?

LEO BERMAN: For architects, this educational park concept offers an unparalleled opportunity. They must apply the best elements of school design already in existence, and spare no effort to make the educational park the most imaginative and efficient environment for learning and teaching.

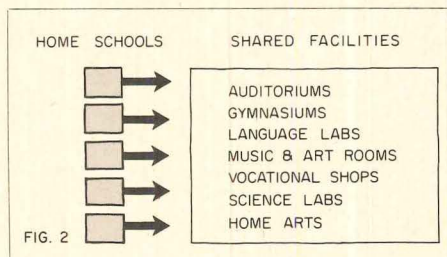
The exciting social and educational goals must be matched by new planning and design approaches. An educational park could easily become massive, impersonal and institutional, while what is needed is exactly the opposite: a building and a program in scale with the child and his needs. It should not stand as an ivory tower, but as an integral part of the city, interwoven in the fabric of the community. Its size will almost surely require that the land be acquired through an urban renewal program. If this is coupled with the improvement of the surrounding neighborhood, then the educational park could serve as stimulus for both physical and human rehabilitation.

Each child has individual needs, problems, potentials, all of which can be recognized and attended to only in an intimate atmosphere where the child can identify with the school and be known by teachers and administration. An essential element, therefore, of the educational park would be the home school units, to which 400 to 600 children would be assigned. This would be a significant improvement over present practices in many city schools, where enrollments of as many as 1,500 in elementary schools, and 5,000 in secondary schools, are not uncommon.

Within each home school there would be a number of classrooms vary-

ing in size, with enough flexibility to allow for a variety of new programs and teaching methods in the future. For example, it is now recognized that children from slum neighborhoods often require smaller classes for proper learning. Just as important are the more intangible elements not very often found in our city schools. They must be friendly, cheerful, imaginative and intimate. The scale and size of the buildings could vary with the age of the children, providing an element of novelty and excitement as they progress from the lower to the higher age levels.

Adjacent to the home schools would be those facilities which are shared by several of them (Figure 2). In the lower grades some of these would be auditoriums, language laboratories, music rooms, gyms and swimming pools. In the upper grades, in addition, there would be shops, industrial arts, science and home economics labs, theater and dance facilities. Besides the greater economies made possible by the better utilization of these specialized activities, they will be designed for their specific use and will not have to serve a multiplicity of functions as is often the case in smaller schools.



One of the most obvious problems when dealing with as many as 10,000 or 15,000 children is the question of access. They would approach their respective home schools from several streets and through many entrances (again, see Figure 1). Buses would be separated by changes in level from the children coming to school on foot. Within the educational park itself the lines of communications between the home schools and the shared facilities must be well organized for a minimum of walking distance and cross traffic.

At the core of the complex will be all the central facilities used by the whole educational park and some which are also shared with the community.

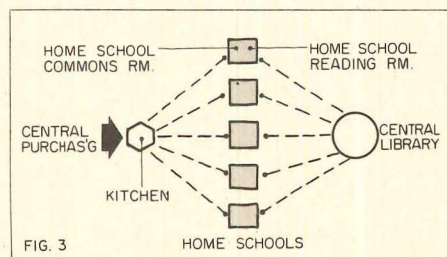


FIG. 3

Each home school will have its own reading room (see Figure 3), but there will also be a central library and resource center which will serve the more specialized needs of students and faculty, perhaps also be combined with a public library. Special rooms will be provided for research and study program preparation. It will also serve as the center for educational television broadcasts.

While each home school should have a certain amount of administrative autonomy, there will be a central administration and services building (see Figure 4). This is where general policy

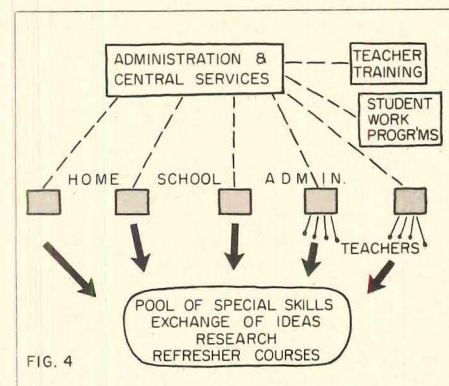


FIG. 4

would be made, and programs like teacher training and student work would be coordinated. It would also provide for social contact between teachers in the various schools.

Food service will be handled from a single large kitchen, thus effecting economies in equipment and purchasing. Hot food will be catered to each home school (see again Figure 3) where as few as 100 children might eat in a commons room. Counseling services and remedial reading programs will also be centrally located, adjacent to the clinic and mental health center, the latter serving the community as well.

A large theater and auditorium, well equipped for stage and musical productions will be used for programs in the performing arts by the schools and visiting groups.

The central facilities which form the core of the educational park might be grouped around an open space which would then become a neighborhood square and park, active both day and night. Dances, club meetings, athletic events, adult education, community meetings, all would contribute to a close relationship between school and community. In the amorphous landscape of most of our metropolitan areas it will act as a visual focal point for the whole district. The impact of such a symbol on the surrounding areas might be significant, helping stabilize the neighborhood, encouraging new housing, and providing a stable anchor for community life.

M.I.T. auditorium roof passes weathering tests

The new lead-sheathed roof of M.I.T.'s Kresge auditorium has weathered over two years of sun, snow and rain without need of maintenance, reports the school's plant engineering department.

The sheet-lead roofing replaced a roofing system of acrylic resin and stone mix over 2-in. concrete fill and 2 in. of insulation. The original installation ran into trouble because of movement in and between the insulation and fill layers, due to changes in weather and sunlight. (The insulation and fill layers were not bonded or secured to the structural concrete.) Eventually the concrete topping ruptured, resulting in cracks up to 1/2 in. in width.

To solve the problem, the concrete fill was first scored 1/2-in. deep on 48-in. centers. Then steel studs were anchored in the structural slab to tie the fill to the slab. This fill, although anchored, could crack along the predetermined scored lines. Next a mesh of stainless steel wire was welded to the studs and to itself on 2-ft centers. Finally, 2-ft-square sheets of 6-lb soft lead were slipped into the wire grid and lapped 2 in.; all edges were than welded with a small torch.

Some fresh approaches to environmental research

An English researcher's ideas on what environmental research is and how it should be conducted were presented by Dr. R. G. Hopkinson in his inaugural lecture as Haden-Pilkington Professor of Environmental Design and Engineering in the University of London. Prior to this appointment, he headed lighting research at the Building Research Station.

He pointed out that observations of what people feel about a particular en-

vironment (visual, aural, or thermal) is only so much raw material until and unless it can be digested into some basis for design and engineering techniques. The first aim of research in environmental physics, he said, should be to establish building standards based on the psychological and physiological needs of building occupants. The second aim should be to develop architecturally or technically valid technologies for achieving these standards in real buildings. The third aim should be to develop methods of evaluating completed buildings to see whether the standards for subjective reaction had been met. Dr. Hopkinson pointed out that if standards of this kind could be arrived at, the decision as to whether or not to adopt them would become primarily an administrative one. In the face of proven desirability, such matters as cost and individual tolerance to imperfect standards would be weighed.

Although environmental physics has been given an increasing amount of attention both in England and in this country, and a number of research projects have been undertaken, results have been disappointing, perhaps because insufficient thought has been given to translating subjective data into practical design terms. Dr. Hopkinson's work in the lighting field while at the Building Research Station was largely concerned

with relating results of the study of the individual with practical lighting technology, which should indicate that his program will have a sound basis.

Destroying buildings for engineering knowledge

While much load testing has been done on structural components such as beams, columns and frames, practically none has been done that tests finished buildings to failure. But next month, this type of testing is scheduled to take place on three World's Fair structures. The three chosen are conventional types, since test information on these obviously will have more widespread application than that of unorthodox structures. Originally suggested by the American Society of Civil Engineers, the project is under the auspices of the Building Research Advisory Board. Planning and supervision of the testing is being done by Jack R. Janney of Wiss, Janney, Elstner and Associates of Des Plaines, Illinois.

The three structures, all in the Belgian Village, include the Rathskeller, which has a 120-by-180-ft waffle slab; Bourbon Street, a 400-ft-long bar joist structure, with spans from 16 to 30 ft, and the Chimes Tower, a 50-ft-high structural-steel framework.

There are four stages to the project:

1. Plans, drawings and specifications.
2. On-site observation of existing stress characteristics.
3. Methodical destruction to test designed stresses, destruction stresses, vibration tolerances, seismic loads, flexure and shear.
4. Laboratory model buildings to reproduce conditions for further testing, accuracy of model testing proce-

THIS MONTH'S AE SECTION

Simplicity produces a neat, economical stadium	185
Planning for reliable electric power	187
Building Components: minimizing cracks in on-grade slabs	197
Product Reports	199
Office Literature	201

dures, and additional research on the effects of the building's composite action.

Only the first three stages, estimated to cost \$200,000, are included in the project at the moment.

B.R.A.B. hopes the study will show how well engineering designs are carried out in the field—by testing concrete composition, steel reinforcing placement and other internal construction details. "The contractor, the designer, the component manufacturers, etc. had no idea we'd be tearing apart the building scientifically," says a B.R.A.B. spokesman.

As far as is known, there have been only two previous buildings scientifically destructed after use. One was tested in Africa by clay product interests, and the other was a timber structure from the 1939 San Francisco Exposition.

More industry scientists to do research at NBS

Expansion of the National Bureau of Standards' Research Associate Plan to include two new research projects—one on construction materials and one on fire protection—may have important implications for the building industry. Under this plan, industrial groups sponsor research associates to carry out experiments in an area selected for its interest both to the sponsoring body and to the nation as a whole. The research assistants are paid by industry but carry out their work in the Bureau laboratories in association with Bureau staff.

Two industrial chemists, Dr. William F. Brucksch of the U. S. Rubber Company and Dr. Joseph F. Clark of the Grace Chemical Company have recently been sponsored by the Manufacturing Chemists' Association to study the processes involved in the weathering of plastics. Their work is designed to complement research already under way at the NBS building research laboratory where colorimetric techniques have been devised for measuring the accelerated degradation of plastics.

The other project with implications for the building industry is a study of fire prevention through the use of experimental models in the NBS laboratory. The research associates appointed for this study are Dr. John Rockett and Lawrence Orloff, whose work is sponsored by the Factory Mutual Engineering Division. The aim of this study is to help in designing fire protection systems for large structures such as industrial plants.

An airport design that goes 'round in circles

Tests recently completed by the U.S. Navy indicate that a circular airport may have significant advantages over traditional airports both in safety factors and in the economics of space. The main runway would take the form of a banked track which would form a circular perimeter around the airport. The control tower would be at the very center of the airport, and would have an unobstructed view of every portion of the runway. A circular passenger terminal would in turn form a ring around the control tower, and its outer wall would face the runway, providing a maximum number of loading positions for planes. Taxi-ways and high-speed turn-off ramps arranged rather like spokes on a wheel, would connect loading areas with the runway. The result would be that aircraft would have an infinitely long runway on a much smaller site than that used for conventional airports—even those which now suffer severe runway length limitations.

Test landings and take-offs were conducted by pilots of the US Naval Weapons Evaluation Facility using General Motors proving ground at Mesa, Arizona. Pilots reported that they were surprised by how easily take-off and landing could be accomplished, that the circular runway provided exceptional lateral stability, and that crosswinds were no longer a factor.

Other advantages of the circular plan were reported to be that several planes could take-off simultaneously; on a diameter of 10,000 ft, three planes could take off at the same time.

Clean Water Act gets quick industry reaction

The stick—fear of Federal intervention—may prove more effective than the carrot — clean water — in the fight against pollution of our waterways. The powers and intentions of the Federal government as expressed in the Federal Water Quality Act of 1965 seem to be sufficiently strong to convince even those individual companies most resistant to the idea of Federal intervention that the government means business. The Act in effect says that if individual states do not adopt acceptable standards for the quality of interstate waters by the middle of 1967, the Federal government will impose its own standards and see that they are enforced.

The President of the U. S. Chamber of Commerce, Robert P. Gerholz de-

fends his opposition to federal intervention on the grounds that individual effort is likely to be more effective: "I submit that better results will emanate from voluntary and cooperative efforts of municipalities and state governments to conserve and redeem water resources than from programs handled by Washington's many agencies."

John E. Wood, president of Frontier Chemical Company's Division of Vulcan Materials Company, at the 15th semi-annual meeting of the Manufacturing Chemists' Association cited federal intervention as a strong reason for individual companies to assist the states in developing and enforcing acceptable standards: "If we don't elect to do so, we have only ourselves to blame if the standards and the enforcement take on some of the undesirable aspects of a bureaucratic approach."

Three volumes sum up environmental research

Results of a five-year project surveying what is known about the effect of physical environmental factors on the learning process have now been published by Architectural Research Laboratory at the University of Michigan. The School Environments Research Project, sponsored by the Educational Facilities Laboratories, Inc. originally brought out a 765-page volume, entitled "Environmental Abstracts." This volume presented, in lively and highly readable form, condensations of over 600 documents significant in relating environment and human behavior.

The final two volumes in the series are now available: SER 2: Environmental Evaluations and SER 3: Environmental Analysis. SER 2 is a collection of technical papers prepared by the project staff attempting to summarize state of the art. A number of the chapters deal with the physiological aspects of light, sound and heat and how these factors affect some aspects of human performance in accomplishing tasks. But the over-all effect of environmental influences on human behavior appears to be treated mostly in the first chapter on "Interactions of Man and His Environment."

SER 3 is an outline of what the staff believes belongs in environmental research. For example, they include under, "What Constitutes the Learning Environment:" cosmic factors, human factors and cultural factors. SER 1 is \$15.00 a copy, SER 2 is \$5.00, and SER 3 is \$4.00; all are available through the Publications Distribution Service of the University of Michigan, 615 East University, Ann Arbor, Michigan.



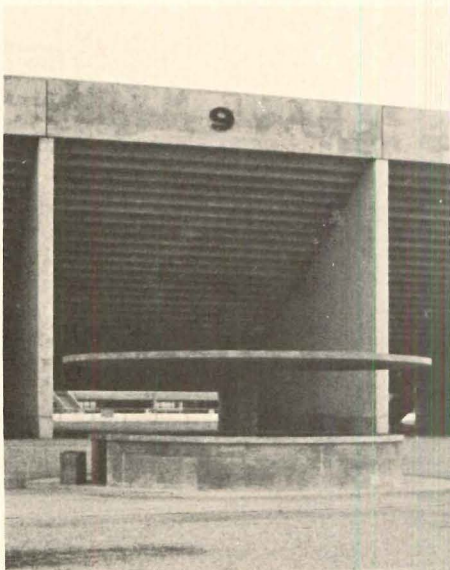
Simplicity produces a neat, inexpensive stadium

Not structural gimmickry, but careful use of standard precast elements was the key to the design of a 17,000-seat stadium in Massachusetts

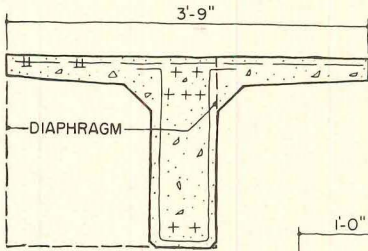
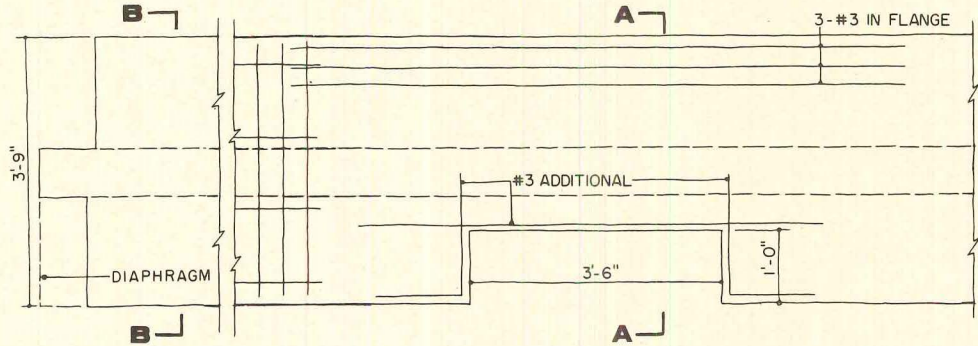
Attention to detail paid off both in cost and design quality in this stadium for the University of Massachusetts at Amherst. Careful organization of seating, supporting walls and stairs led to the simple and disciplined lines seen in these photos. Further, the architects eliminated clutter by putting ancillary facilities outside the stadium itself: locker rooms and public washrooms are in the long rectangular building, and refreshment stands are in the small circular structures seen in the top photo.

While precast elements have been used for the seating in many recent stadiums, the span here is 50 ft instead of the usual 25. The seating is comprised of modified single-Ts bearing on poured-in-place walls; diaphragms at the ends of the Ts keep them from over turning.

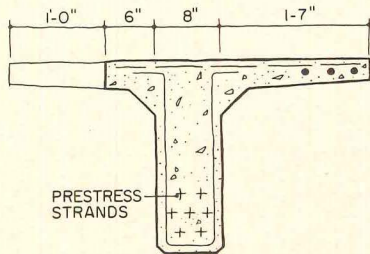
Design of the stadium, which cost less than \$100 per seat, was a collaborative effort between the office of Paul Weidlinger, engineer, and the New York office of Skidmore, Owings & Merrill.



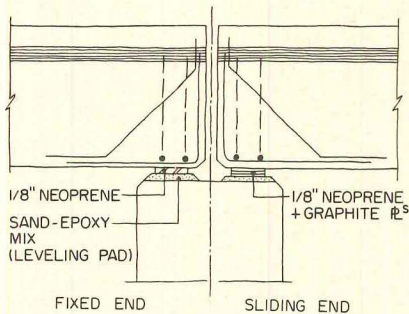
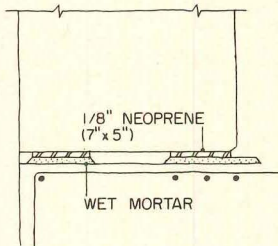
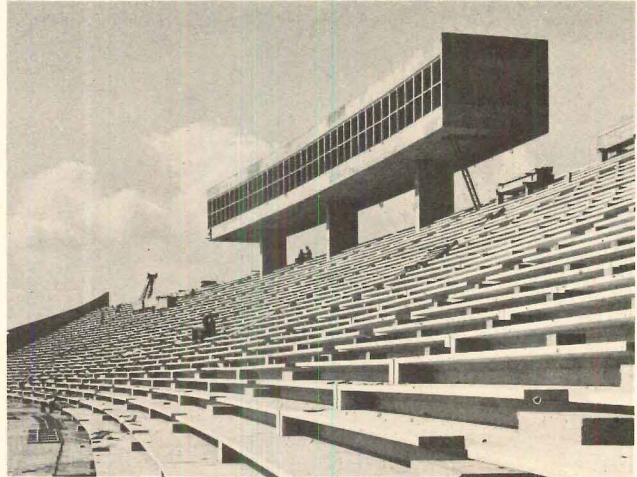
Modified Lin T's spanning 50 ft are arranged in an arc to improve sight lines. They are notched in the center to allow for steps, and have diaphragms at the ends to prevent tipping. The diaphragm is shown in section A-A, notching of the T in section B-B. The diaphragm and web of the T are supported on poured-in-place walls as shown in the drawings at bottom of the page. Photo was taken before wood seats were installed.



SECTION B-B

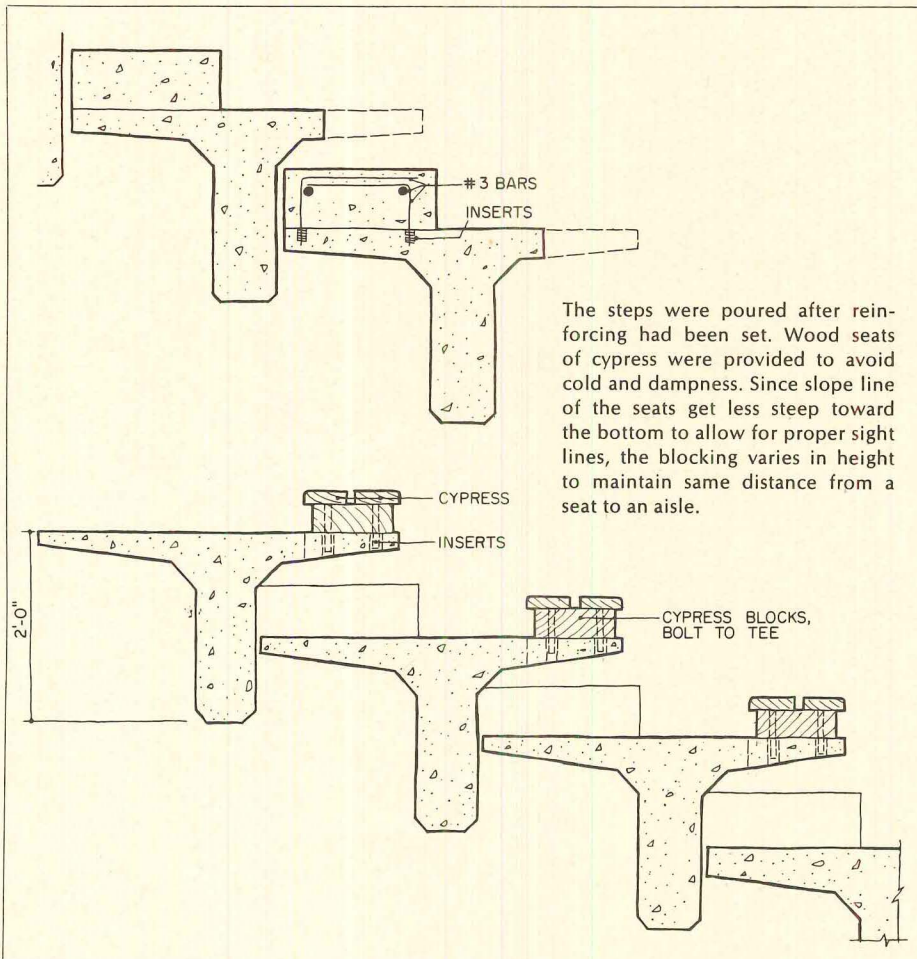


SECTION A-A



FIXED END SLIDING END

To provide for expansion of the 50-ft-long Ts, bearing is designed so that the T can both slide and rotate at the free end, but only rotate at the fixed end. The free end rests on a combined pad of neoprene and graphite. The fixed end has only a neoprene pad. Leveling for the Ts is by grout.



The steps were poured after reinforcing had been set. Wood seats of cypress were provided to avoid cold and dampness. Since slope line of the seats get less steep toward the bottom to allow for proper sight lines, the blocking varies in height to maintain same distance from a seat to an aisle.

PLANNING FOR RELIABLE ELECTRIC POWER

By F. J. Walsh, Consulting Engineer

The massive power blackout of last November exposed serious deficiencies in the "fail-safe" reliability of utility networks and systems. As a result, architects, engineers and building owners planning new buildings are asking themselves what they must provide to protect life and limb. The fact that scores of people were trapped in stalled elevators dramatically underscores the inadequacy of present code requirements.

Providing for egress is the minimum that an emergency system should do. Some occupancies require a higher degree of protection than others, so that normal, important building functions can continue. Obviously, in a hospital, the emergency system should provide power and light for operating rooms, diagnostic equipment and patients' life-sustaining equipment and for selective use of any elevators.

This article is concerned primarily with emergency power systems for hospitals, but much will apply to institutional and commercial buildings. It will describe the various systems involved in providing for power continuity, how the reliability of power sources and distribution systems can be judged, and the planning involved in designing for various normal, essential and emergency loads.

The reliability concept

The mistake is frequently made of equating an emergency system with provision of standby power. But overall reliability of power continuity depends on two distinctly separate elements: the power source, and the system that distributes the power.

This holds true whether the system is a utility company, an on-site power unit for a building, or local unitary engine-generator or battery source serving individual loads within a building.

Obviously, power source reliability requires that any generating plant must:

Be capable of being self-started, without reliance on any outside power supply;

Have adequate energy supply under all possible contingencies;

Be capable of continued operation and generation of power, even though there may be disturbances within the distribution system. For example: In a power supply system, surges which occur for various reasons such as failure

of a generating plant or a large supply line are all reflected back into each generating plant through the distribution system.

Design for power-distribution-system reliability is becoming increasingly complex particularly because building systems are using more power fed from higher-capacity utility-company network systems. The trouble is that utility networks are allowed to continue to feed into building systems which have become obsolete and hazardous. Building owners are not required to up-date their electrical systems since codes are not retroactive.

Thus to make sure a distribution system is highly reliable will require:

a. Proper system design and proper application of all equipment, with periodic updating and re-thinking through how the entire system operates;

b. Proper operation; and control of power use with suitable instruments and recorders;

c. Proper maintenance, testing and replacement of system elements and components.

The Federal Power Commission report of December 6 points out, surprising as it may seem, that prior to the blackout of last November, most power companies did not have standby power for their individual generating plants to assure power source reliability. This was the principal reason for the long delay in return of power, as in the case of New York's Consolidated Edison system. Also, the FPC report indicates that various of the other criteria stated above are still inadequately met. One utility company executive was quoted, anonymously, in the New York Times, as saying "it looks as if we'll have to re-think our system."

Undoubtedly, the immediate steps being taken by electric utility companies to correct obvious inadequacies will limit any possible future blackout to a much shorter period. While reliability problems eventually will be solved, repetition of the same type of chain reaction power failure is still possible.

The November blackout involved a failure in reliability of both power distribution systems and power supplies of the utilities, with resulting complete failure of power supplies to owners' distribution systems. By and large, electrical systems for new buildings are de-

signed only with standby provision against the single contingency of failure of utility company power supply, and not for continuity in case of faults in the building's distribution system.

Working out the nature and extent of provisions needed to assure continuity of power in a hospital can be complex. The reasons: the critical type of occupancy and the fact that hospitals are subject to many more regulatory agencies and code restrictions than other buildings. Logical planning must take into consideration all types of possible failure, internal and external; the extent of possible damages; and evaluation of the probability of simultaneous failures.

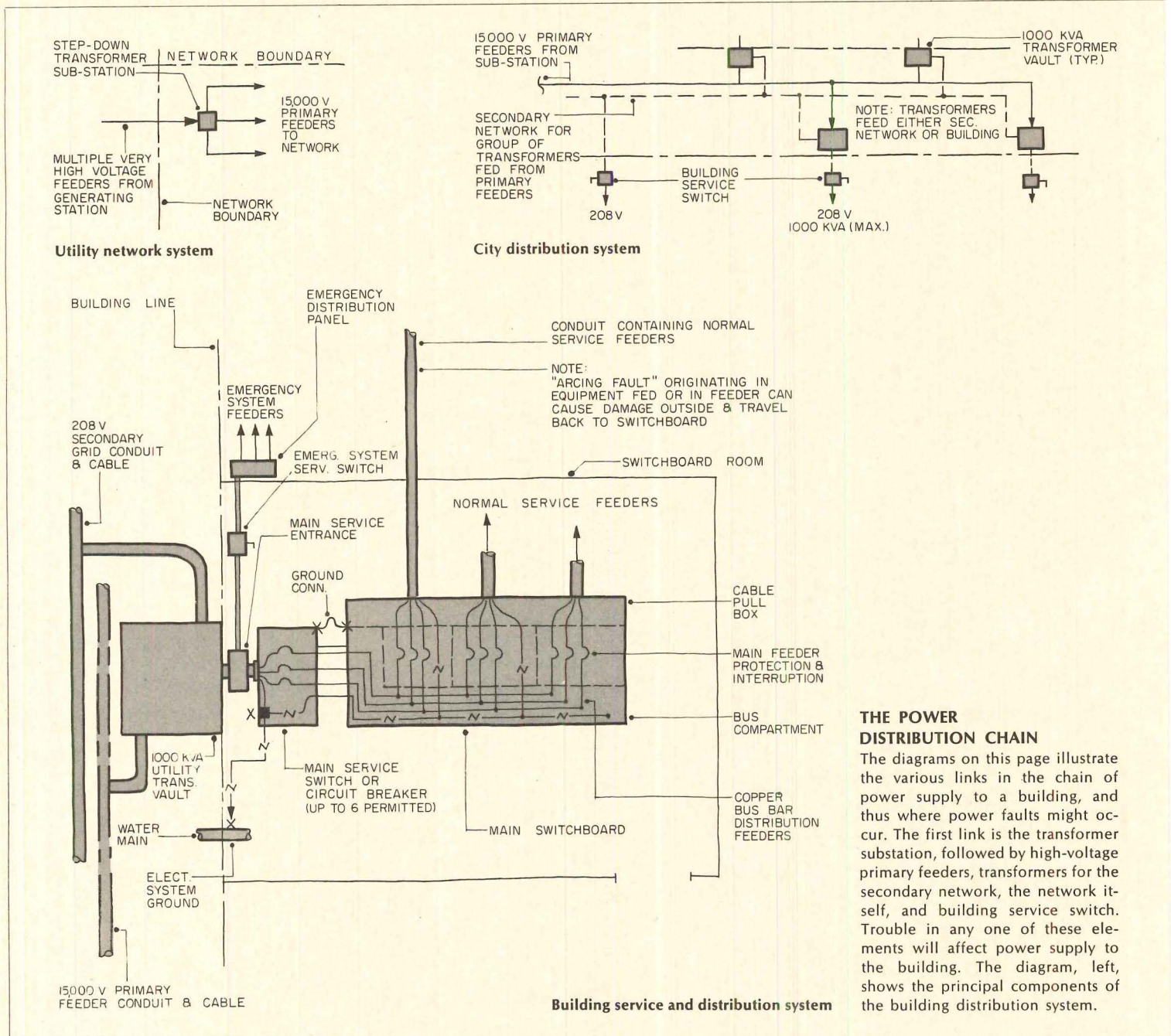
State and municipal codes and ordinances now require separate power distribution and supply systems to provide lighting necessary for egress and power for various alarm systems in places of public assembly and hospitals. These segregated systems are termed "emergency systems" and are intended to function regardless of main service and switchboard failure caused by internal building fire or other disruption.

Continuity for a hospital

In practice, a hospital in almost every case would be served through two utility company transformer vaults, separate service switches, and separate switchboard rooms. Present minimum design standards would call for automatic throw-over of emergency power supply in the event of failure of power supply at a single service entrance point.

This arrangement, in its basic form, represents the minimum called for by the National Electrical Code. (Electric power supply from batteries is also considered as an alternate.) The trend, we must assume, will be a general upgrading of these requirements to include additional on-site standby power.

The design of segregated systems should allow for the inclusion of obvious loads beyond the mandatory loads called for by code. It is a matter of judgment and economics whether other loads are best served by additional segregated systems, through the normal electrical distribution system, or by some other means such as local batteries. Loads to be considered include: diagnostic equipment; essential refrigeration, fans and sump pumps; elec-



THE POWER DISTRIBUTION CHAIN

The diagrams on this page illustrate the various links in the chain of power supply to a building, and thus where power faults might occur. The first link is the transformer substation, followed by high-voltage primary feeders, transformers for the secondary network, the network itself, and building service switch. Trouble in any one of these elements will affect power supply to the building. The diagram, left, shows the principal components of the building distribution system.

tronic equipment for central record keeping and for patient monitoring.

Power sources—how reliable; how fast a start

Utility company supplies: Some possibility of complete outage must be presumed, regardless of the number of separate utility company services from different substations.

Power supplies from stored prime energy sources: Various energy sources can be converted directly to electric power; or converted readily through an engine driving a generator, without the need of auxiliary power or energy for start-up. Examples: battery power,

stored compressed air or steam.

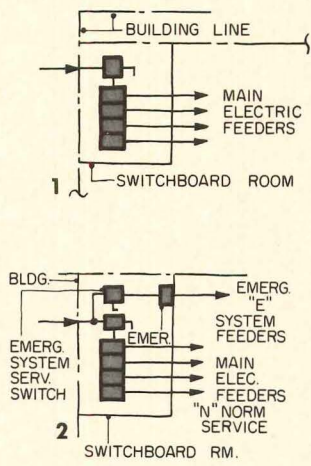
Prime energy from district steam utility. A highly reliable source for operating pumps, refrigeration compressors, etc.

Battery source power is immediately available if batteries are charged. Today's battery systems have greater capacity and reliability, and more flexibility in utilization. Alternating current can be produced by solid-state current inverters. Both lighting and motor loads can be served.

Internal combustion engine generator plants require auxiliary power for cranking over the engine, or, in the case of the gas (spark-ignition) engine,

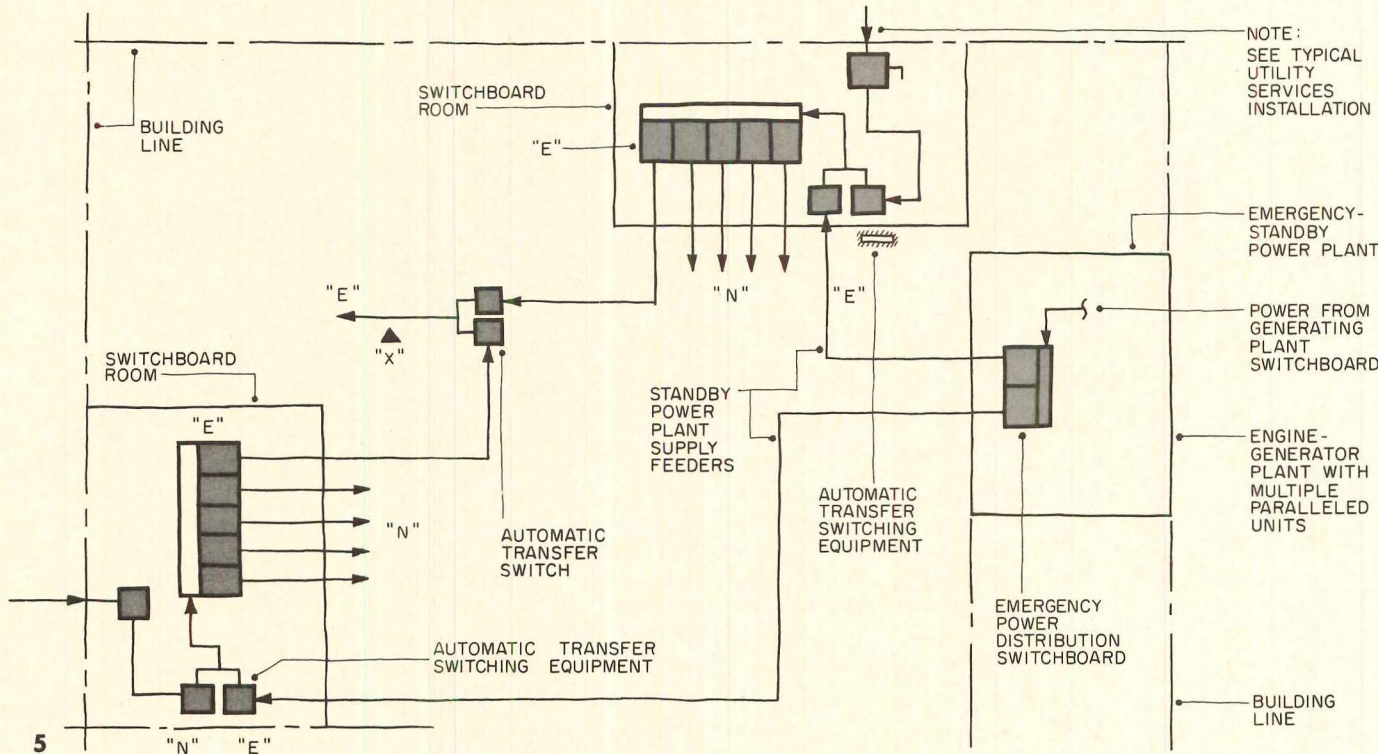
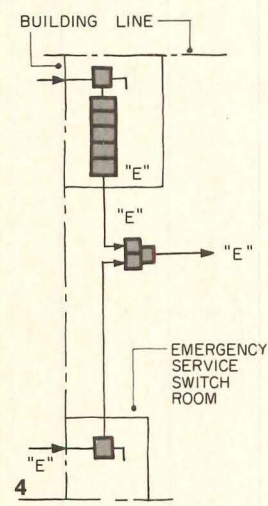
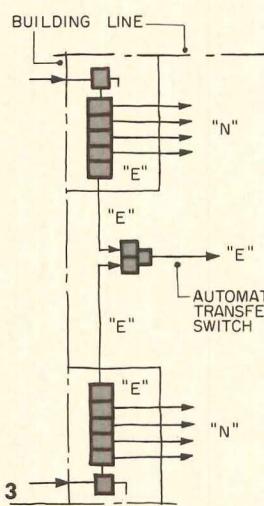
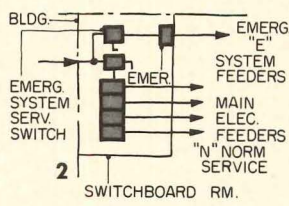
electric energy for the spark. Both types of engines are capable of self-sustained operation at a small fraction of their normal operating speed. Compressed air or a battery-energized electric motor is used for starting. Engines can be started within a few seconds, as long as they are kept warm.

Gas turbine generators require an auxiliary power source to bring the turbines up to speed and to provide power for compressing the combustion air at operating speed. The gas turbine is not capable of self-sustained operation until it is brought almost to full speed. Where the fuel supply is gas, and the gas supply is not from high



RELATIVE RELIABILITY

1. Single utility service, service switch and distribution switchboard. No emergency wiring system. Least reliable type of system.
2. Single main utility service, service switch and distribution switchboard. Separate emergency service switch, switchboard. More reliable than (1).
3. Two main utility service switches and associated distribution switchboard. More reliable than (1) or (2)
4. Single main utility service switch and distribution switchboard with separate emergency utility service and switch. More reliable than (1), (2) or (3).
5. High-reliability power and distribution system utilizing emergency standby power plant. Most reliable.



NOTE: SEE TYPICAL UTILITY SERVICES INSTALLATION

pressure mains, gas compressors and a high-pressure gas storage tank must be provided. Light fuel oil or bottled gas also can be used. Required starting time would vary from perhaps 10-15 seconds for a small unit to one minute for a unit on the order of 750 kw. As with all turbine-type heat engines, starting problems and relative need for attended start depend on size and degree of complexity of the unit. Start could be by battery-energized starting motor.

With a steam plant, the operation of the entire plant depends on the continuous generation of steam at adequate pressure. Steam boiler plants depend in varying degrees on an adequate

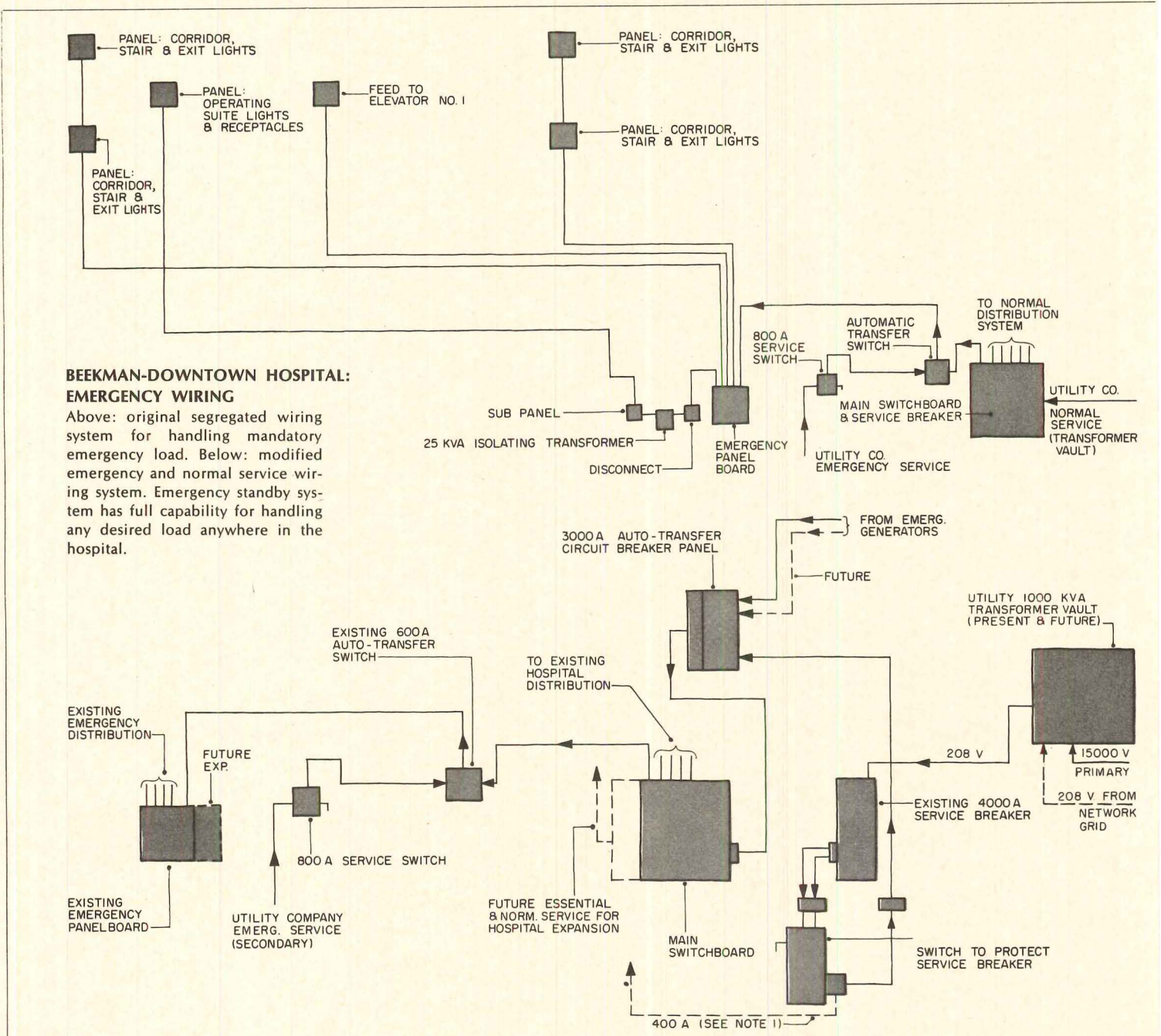
supply of auxiliary electric power for start-up. Once a plant is in operation, energy for plant auxiliaries can be steam or electricity. Some hospitals have their own steam power plants with partial on-site power generation, but rely on the utility for all additional power. Where the present steam plant is not used to produce electric power, this should be considered. Since district steam companies are usually owned by electric utilities, they do not permit steam use for on-site generation.

An emergency steam-engine-driven generator, whether of the reciprocating or turbine type, would have to be of the simplest design for building application

and would be an adjunct to a basic boiler plant. Reciprocating engine units can be started, regardless of size, in about 10 minutes. Small non-condensing turbine generators of about 50 kw size can be started in the same time. Turbine units of 1,000 kw might take as much as an hour for a safe start. Start-up of steam units requires an operator. Units can be kept "on the line" with a minimum load, but operating cost is excessive unless all steam exhaust can be used.

Emergency stand-by power vs. an on-site electric power plant

There are three factors to evaluate: Start-up time factors. Regardless of a



hospital's normal electric power source—utility company or on-site power plant supply—code requirements covering critical lighting and power loads demand that this electrical load be reenergized within 10 seconds.

In some cases, back-up electric battery power for critical light and power could be combined with steam-engine-generated electric supply to satisfy the time criterion.

All types of internal combustion engine generator units, as well as smaller gas turbine generator units, are capable of starting and taking over load within the 10-second limitation mentioned.

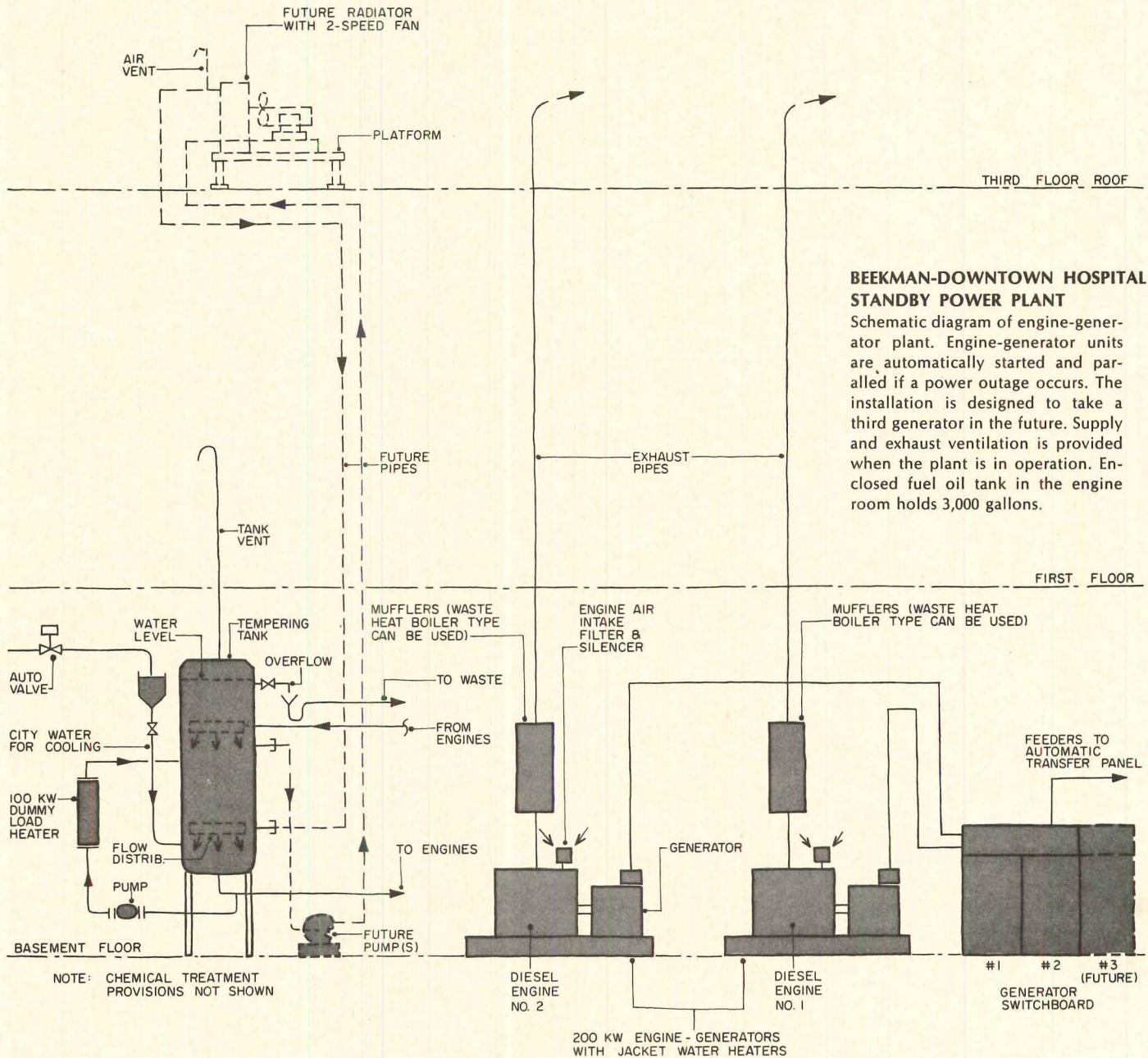
Reliability of service continuity. Where a power plant is used for emergency stand-by service, it must periodically be run "hot" (under adequate minimum load) to avoid the harmful effects of low-capacity operation common to all types of engine equipment. N.F.P.A. Bulletin 76 of 1962 indicated a 5 per cent possibility of emergency generator set failure to start.

Obviously, one way to increase plant reliability is to increase the number of units handling the load. This is mandatory for on-site power to allow for scheduled down-time. The increased operating hours of on-site equipment reduces its relative reliability compared

to that of the same equipment reserved exclusively for stand-by power.

Partial on-site generation operating continuously year-round could be used to handle all electric loads above a firm base load, with possible over-all savings. This equipment could also serve as stand-by. But provisions would have to be made for gradual shifting of load from one source to another and "dumping" part of load normally handled by the on-site plant.

Combined usage. Since an emergency generator is conceded to be mandatory for hospitals, this equipment might be considered for multiple uses to improve over-all economy. Also worth



**BEEKMAN-DOWNTOWN HOSPITAL:
STANDBY POWER PLANT**

Schematic diagram of engine-generator plant. Engine-generator units are automatically started and paralleled if a power outage occurs. The installation is designed to take a third generator in the future. Supply and exhaust ventilation is provided when the plant is in operation. Enclosed fuel oil tank in the engine room holds 3,000 gallons.

considering: the value of recovering rejected heat from engine jacket water and exhaust gases. An example would be a dual-drive for compressor and/or generator, with normal refrigeration compressor load dumped when emergency stand-by electric power is required.

This arrangement is also possible when a steam-turbine-driven compressor is used. Its disadvantage is extremely slow start-up when the centrifugal compressor is not already being run for air conditioning. This arrangement would be more practical when the compressor is used in a central heat pump installation, with compressor

running year-round, or when there is a continuous year-round demand for all the exhaust steam.

Quality of electric current supply

Utility company electric current supply—in terms of voltage, frequency stability and waveform characteristics—is almost impossible to match with power produced in an on-site plant. For example, only the tremendous energy capability available from utility-company supply feeders and networks allows the starting of large size motors on customers' premises without voltage dips.

Further, technological advances in electric generator and voltage regulator

design render almost obsolete much of the equipment used in on-site plants as little as 15 years ago. This is particularly true of the electrical equipment available for matching with the new high-speed internal-combustion engine-generator sets designed to meet very precise requirements of the military. This means that continuous normal operation is feasible for any size facility requiring precise power supply (for example, a laboratory, parts of a hospital, or computer installation).

The starting point for design analysis of any emergency stand-by or normal on-site electric power is to establish the necessary minimum current charac-

teristics which will allow satisfactory operation of each load served. For this reason, the engineer cannot simply take a packaged engine-generator set off the shelf, based on its ability to perform according to the minimum requirements given in a code.

Where a few small loads require very precise and stable power it would be advisable to utilize stabilizing type regulators rather than to use two different engine generator sets with the one of these sets being reserved to provide precise power for steady power loads, lighting, for example.

Sudden power demands

Provisions to allow for increased electric power demand from an emergency standby plant can be relatively simple, if it is reserved strictly for this purpose. This is less true where the plant is also used for partial on-site electric power generation, or is normally used to provide power for air conditioning.

Design of the standby generator plant must consider normal maximum surge current demand, both from intermittently cycled motors serving pumps and compressors, and from elevator motors. The nameplate rating of the generator cannot be exceeded by more than a small amount without a marked falling-off of total energy capability, with excessive and unpredictable falling-off in voltage. The instantaneous voltage dip caused by maximum instantaneous surge current will depend upon inherent generator voltage regulation. For instance, it should be expected that a 20 per cent voltage dip would result from an instantaneous load application of 100 per cent of generator rating. Thus, limiting any voltage dip to 5 per cent for an occupancy such as a hospital would necessitate sizing the emergency generator plant at at least four times this surge value. Plant capacity to handle the accelerating current of one 40 h.p. elevator motor generator set would be in the order of 300-400 kw.

Power supply and internal distribution for a typical downtown building

For simplicity, the reliability diagrams shown on page 189 are limited to buildings served by the most reliable type of utility company supply—a network grid system in a downtown metropolitan area, on page 188.

In these installations, the engineer is concerned almost exclusively with the protection and clearing of electrical faults involving: (1) main service switchboard and protective devices; and (2) main switchboard switching and protective devices, and their associated feeders, interconnecting copper bus and equip-

ment enclosures. A typical basic service and distribution installation is illustrated in the large sketch on page 188.

Actually, most electrical failures—excluding those which are purely accidental in nature—could be prevented. However, achieving such reliability would require replacement or upgrading of much obsolete electrical equipment; improved maintenance, test and power-usage-control procedures; and a knowledge of the limitations of existing equipment and engineering design guides.

Emergency systems

Emergency electrical distribution systems, are those mandatory systems which are *absolutely* essential to maintain or protect life or health.

Lighting for safe building egress and lighting and power for equipment and tasks immediately essential for protecting and maintaining life or life processes (such as in a hospital) constitute a relatively small power requirement. For an occupancy such as a hospital, portions of which must continue to function as close to normal as possible, return of full power to most elevators must be almost immediate, with delayed return of power permissible for many of the other essential functions.

Power to certain critical fans, pumps, heating system components, etc., might be considered indirectly in the emergency category, regardless of occupancy type.

The segregated emergency systems designated "E," in the "power reliability evaluation diagrams," refer to minimum basic and absolutely essential code or regulatory emergency systems.

Increased reliability results from addition of an emergency standby power plant—as illustrated in the diagram showing a typical installation. There are many possible modifications. For an existing building requiring a considerable number of loads to be served in addition to minimum essential emergency loads, re-wiring costs could be excessive; feed through main switchboards with selective load dumping would prove more practical.

While it is the consulting engineer's responsibility to design for a particular degree of reliability, he does not have a free hand in this matter. First of all he must be guided by certain code and regulatory authority requirements. Secondly, he must be guided by the owner's evaluation of the essential operating loads to be served, and of the amount of time outage allowable for each load. Then the engineer will make an independent review of the loads, particularly with regard to possible future additions

to the emergency system, and to maintenance of essential mechanical loads such as sump pumps.

Regardless of building type, there are no adequate "design guides" on emergency standby power plant design or electrical distribution system wiring.

Architects and consulting engineers working on hospitals are familiar with the recommendations of N.F.P.A. Bulletin 76 of 1962, "Essential Electrical Systems for Hospitals."

This bulletin was excellent in many respects, particularly for its evaluation of the relative critical nature of the electrical loads to be served and for its specific recommendations on operation and maintenance. But this bulletin and its 1965 revision more or less ignore the practical aspects of over-all electric system design reliability and economics. Also no distinction is made between power source reliability and distribution system reliability. The 1962 edition called for extensive segregation of electrical systems and left little to the discrimination of the consulting engineer and the hospital administrator. The 1965 revision has been modified extensively to make most recommendations optional rather than mandatory.

Design for a New York hospital

The emergency standby power installation for the 200-bed Beekman-Downtown Hospital in New York City, A. Gordon Lorimer, architect, is unique in terms of over-all basic concept and in certain important design details. The system, designed by the author, and put into operation in 1963, is designed for utmost reliability through automatic paralleling of engine-generator sets and for very high quality power through the use of modern voltage regulator equipment. Upon failure of power to the normal utility service feed, two 200 kw engine generator units are started simultaneously, paralleled and are ready to take load within 10 seconds.

The standby power was fed through the main switchboard which minimized rewiring costs and allowed complete flexibility via selective use of facilities. Such arrangement gives complete freedom in hospital planning and future relocation of facilities.

The Beekman power plant design is, in effect, a simplified version of the multiple unit power plants installed for the Project Mercury and Gemini tracking stations. The consulting engineer now has at his disposal highly advanced generator and voltage regulator equipment for small internal combustion engine-generator application, primarily as a result of requirements set by the military about 10 years ago.

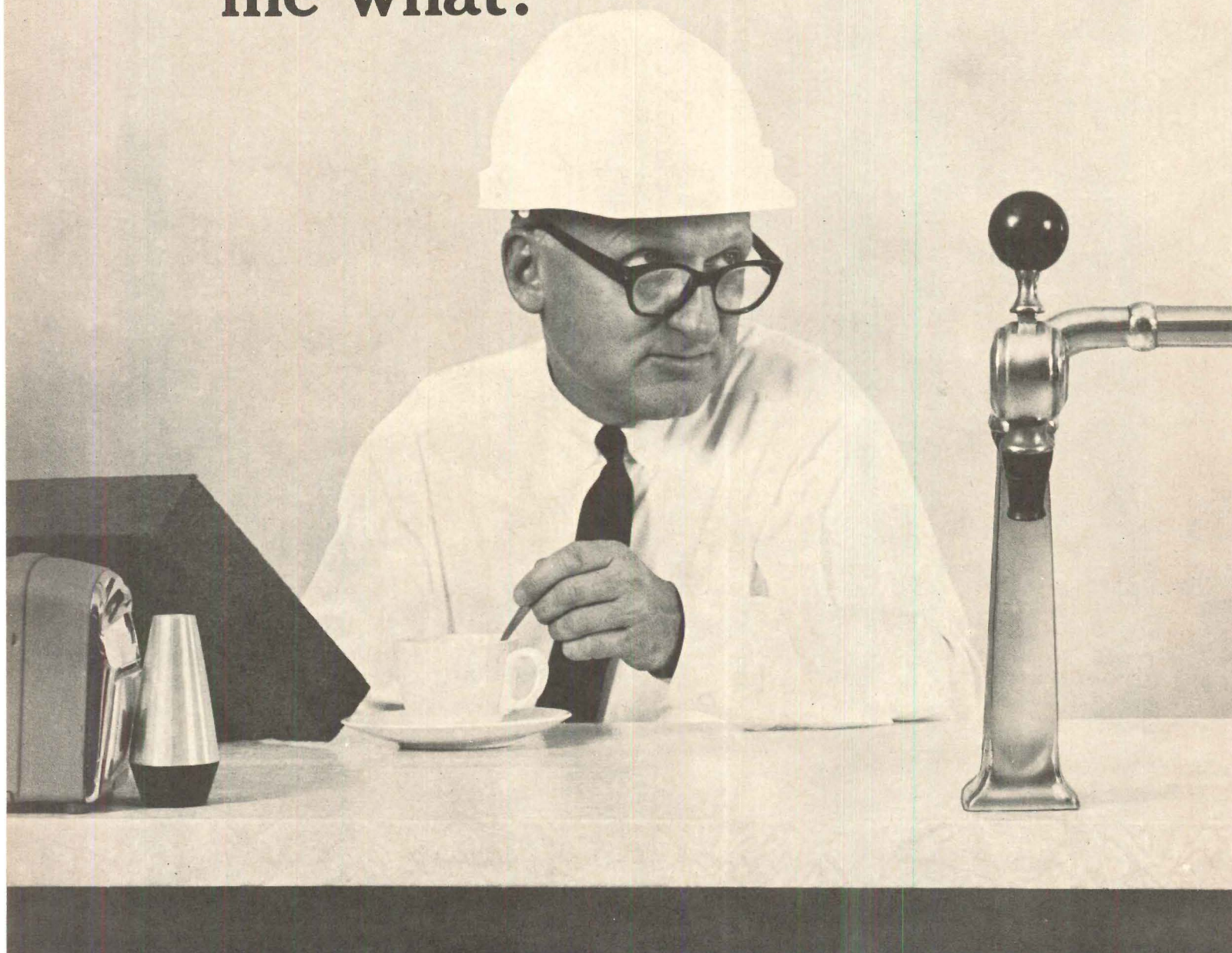


DRAMA in architecture beautifully serves drama in the performing arts: for the new Fine Arts Center at the University of Oklahoma, Tulsa architect A. Blaine Imel selected a slender steel Fenmark grid system to carry the grayed glass of the foyer; and cellular steel longspan "D" panels for the floor and roof. A contemporary classic utilizing all the advantages of the latest structural systems by FENESTRA. A representative will call at your request. Fenestra Incorporated, Lima, Ohio 45802.

FENESTRA

For more data, circle 98 on inquiry card

Permalite Sealskin Roof Insulation gives me what?



New Super-Bond Self-Surface

You get a big new plus in Permalite Sealskin: An integrally formed, self-surface that locks the board to the membrane with a solid, uniform bond. The new surface resists bitumen soak-up, establishes a uniform tack line between board and membrane. Totally, new Permalite Sealskin is the ideal roof insulation board for Class 1 metal deck construction.

P. S. (Permapak System): GLC provides three permanent, U. L. and F. M. listed roof elements

which combine to provide high efficiency thermal and vapor control for Class 1 metal deck construction:

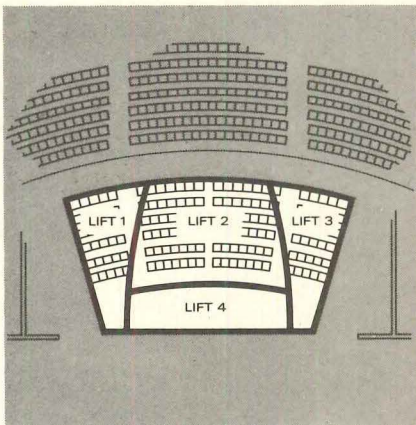
1. Permalite Mineral Roof Insulation Board.
2. Permalite Aluminum PVC Vapor Barrier.
3. Permalite Cold Adhesive.

All carry U. L. and F. M. labels and are available from one source, insuring undivided responsibility for delivery and performance. Write for samples and literature.

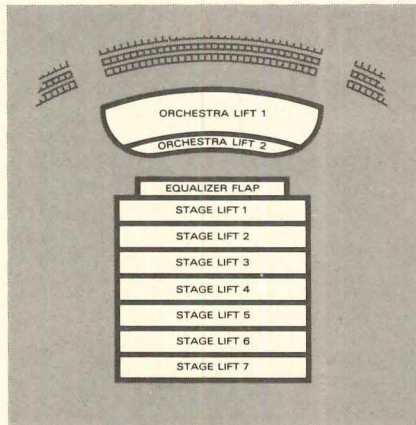
Request "THE GLC STORY," a brochure covering the many products, services and facilities of Great Lakes Carbon Corporation.

stars of stage, opera, and nightclubs

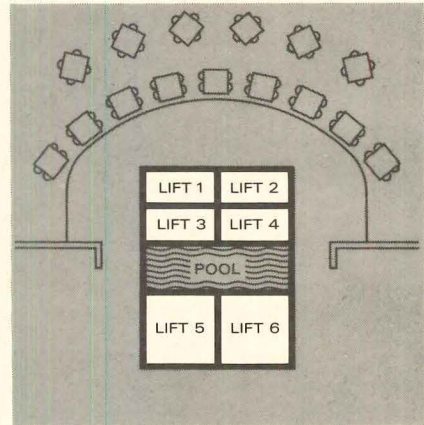
DOVER STAGE LIFTS



Loeb Drama Center, Harvard University—Four Dover Stage Lifts are used to create a theatre that easily converts for three different kinds of staging.



Metropolitan Opera House, New York City—The new home of the Metropolitan is equipped for fabulous stage effects with seven Dover Lifts on stage and two in the Orchestra.



Stardust Hotel, Las Vegas—Six Dover Stage Lifts, operating in combination or independently, bring performers and sets into view from below stage level.

These diagrams illustrate three of the more than 100 entertainment centers equipped for flexibility with Dover Stage Lifts. Dependable, smooth-running Dover hydraulic lifts produce elaborate theatrical effects, save valuable floor space, and help in the design of multi-use halls. There are practically no limitations on platform size, lifting capacity and systems for controlling combinations of lifts. For theatres, concert halls, opera houses, auditoriums, night clubs, wherever you need a rising stage, specify Dover Stage Lifts. Send your preliminary requirements for analysis and recommendation.



DOVER CORPORATION, ELEVATOR DIVISION
Dept. L-1 P.O. Box 2177, Memphis, Tenn. 38102—Toronto, Ont.

For more data, circle 100 on inquiry card

Minimizing cracks in on-grade slabs

By William C. Perry, Kalman Floor Company

Cracks in concrete floors is a subject that is increasingly important to owners of industrial buildings. First, the edges of cracks often deteriorate rapidly as they are pounded by materials handling vehicles. Second, a cracked floor is difficult to keep clean, and in food plants, for example, sanitary standards cannot be met unless the cracks are repaired. Third, cracks detract from a plant's well-kept appearance. While they can be repaired, the disfigurement remains.

What can be done to eliminate or reduce the number of cracks in concrete floors? Fortunately, the precautions do not involve overly complicated installation procedures or design requirements, because the two basic causes are easily pin-pointed. They are (1) dimensional stability of the concrete; and (2) stresses induced into the concrete from adjacent structural members.

However, two qualifications should be made: Crack-free concrete surfaces cannot be designed and installed with success guaranteed; despite the best efforts by all concerned, some cracks may occur. A crack-free surface is desirable; but in many industrial plants a few small random cracks are not important. Some cracks are only "cosmetic" in nature. Others are thicker and deeper — sometimes extending all the way through the cross section of the slab — and these almost certainly will produce trouble.

Since most industrial buildings today use slab-on-grade construction, this article deals only with that type of construction. Structurally reinforced slabs are of a different nature and are influenced by several factors not present in the ordinary slab-on-grade.

■ The first area of potential trouble is the sub-grade itself. This is so obvious that one hesitates to mention it—yet it is so often overlooked that one must mention it. The on-grade concrete floor is no better than the grade on which it is placed, for if the soil subsides or expands, the floor on which it is placed will inevitably crack.

■ Concrete shrinkage, however, is probably the most important factor affecting slab-on-grade cracking. Shrinkage occurs as the slab loses the water which is in excess of that which the cement can use during hydration.

Shrinkage actually takes place in two steps. It first occurs during the "initial set" while the concrete is relatively plastic. Stress induced from this cause seems

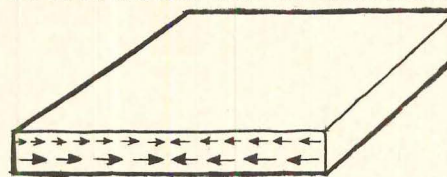


Figure 1: top of slab, exposed to air, shrinks faster than bottom, causing tendency to curl.

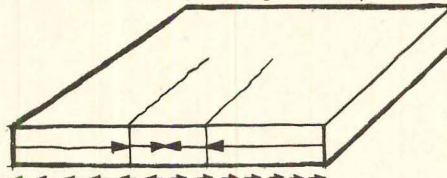


Figure 2: slab cracks when its strength is less than resistance of sub-grade. Cracks usually occur in middle-third of panel.

largely absorbed. Some small amount of stress, short of that needed to crack the slab, undoubtedly is induced by setting shrinkage. (In unusual temperature and quick-drying conditions this phase of shrinkage will actually cause cracks, during final set.)

The next stage of shrinkage is caused by drying of the slab. Drying shrinkage starts when curing is ended and the escape of water from the concrete is no longer prevented. It takes place over a long period of time, most rapidly immediately following the termination of curing. Under continuous drying conditions it is generally considered to be about 80 per cent complete at the end of a year.

Thus, the ill effects of shrinkage may not be seen for some time. If no other complicating factor were present, even this stage of shrinkage would not cause cracks. If the slab were free to move, no stress would be induced (see figure 1).

But a complicating factor in this process is sub-grade drag. The natural inward

movement of the slab caused by shrinkage is resisted by the friction set up between the bottom of the slab and the top of the sub-grade. When the stresses set up in the concrete exceed the tensile strength of the slab, a crack develops (see figure 2). It is this factor which makes drying shrinkage the real culprit in causing cracks in slabs on grade. If the slab could be placed on a friction-free surface, unrestrained, no tension would build up and no cracks would occur. A patented process involving zinc sheets under the slab takes advantage of this in the construction of skating rinks.

■ The most important factor affecting shrinkage is the volume change resulting from high water content. Without controlling this factor, other provisions cannot produce their maximum effectiveness. In fact, it is safe to say that without adequate water control, other crack control provisions are worthless.

Only 2.8 gallons of water is needed to hydrate each bag of cement. But the average 3,000 psi ready-mix concrete will have in the order of 5.5 gallons of water per sack of cement in 2- to 3-in. slump concrete. The extra water is needed for workability.

As this free water escapes by evaporation, concrete shrinks. The shortening can be as much as $\frac{3}{8}$ in. in 100 ft.

A maximum slump of 3 in. is not unreasonable and certainly reduces shrinkage noticeably compared to concrete placed with higher slumps.

While it is impossible to be exact in this matter, experience indicates that above 3-in. slump, excessive shrinkage cracking can be anticipated.

■ Other factors which must be taken into account are: aggregates, cement content, curing, and temperature. Coarse aggregate should be increased as much as possible and, ideally, the sand fineness should be lower than 30 mesh. The reason is that as the coarse stone content is increased, the ability of the mix to shrink will be diminished because the stones themselves in contact with each other will make it difficult for the mass to move.

The value in reducing the sand fines (for this discussion anything below 30 mesh) is that the smaller particles con-

tain more surface area for a given volume of materials. This, in turn, necessitates an increased quantity of cement paste, and, therefore, an increased quantity of water—all of which increases the stress build-up when the slab begins to dry after curing.

In addition, both fine and coarse aggregates must be as dense as possible. Otherwise, the aggregate will contain sufficient water to "mask" the appearance of the mix. The mix might appear to be low in slump, but the water content will actually be high and the resulting volume change high.

Because of the general assumption that the higher the compressive strength the better the floor, extra cement often is used as a safety factor to make sure the floor will be as strong as it should be. Unfortunately, the results are sometimes the reverse of what is hoped for.

When an "extra bag of cement" is used without regard to other factors, excessive cracking often appears because cement is also a factor affecting drying shrinkage. This is not to diminish the value of cement in obtaining good surfaces. For years, we have used a 12-bag mix in deferred toppings; but the aggregate design and water control is such that it can benefit by this high cement content.

Temperature of the mix itself is often not considered, except for winter placing, but in terms of dimensional stability it can be quite important. If concrete of high temperature is placed, as during the summer, the base dimension is increased since heated materials expand. Thus, the shortening of the base dimension involves not only the change due to drying, but also an additional change as the slab temperature drops with lower ambient temperatures. The additional slab shortening due to temperature drop can significantly affect floor cracking. If concreting must be done when the temperature is high the concrete should be cooled to a temperature at least as low as that of the sub-grade.

■ If a deferred topping is used, shrinkage cracks in the surface can be further minimized. There are two reasons for this:

First, since the surface is deferred, it is not, normally, installed until the base slab has hardened. This means that some shrinkage will have taken place in the slab. Therefore, the stresses normally put into the surface from this cause will not be present. The only shrinkage of note then will be that caused by the topping itself.

Second, since deferred toppings can be installed with a higher percentage of aggregate and with adequate water con-

trol, shrinkage will be minimal. Naturally, if the base slab cracks after the topping is installed, the topping will also crack.

Thus, despite the greatest care in slump, concrete temperature, aggregate, cement control, even during the most desirable weather conditions, shrinkage may still occur. And cracks almost certainly will develop unless some provision for shrinkage stress control is provided. There is yet another precaution:

■ Stress relieving joints should be placed in the floor to "prelocate" cracks. In general, the panels so formed should be square. An excessive length-width ratio (more than 1½ to 1) will almost surely result in a crack, normal to the long axis, in the middle third, regardless of block size. Naturally, the smaller the panels, the less likelihood of shrinkage cracks occurring. But if very small panels are cast, the result may well be a surface with an undesirable number of joints.

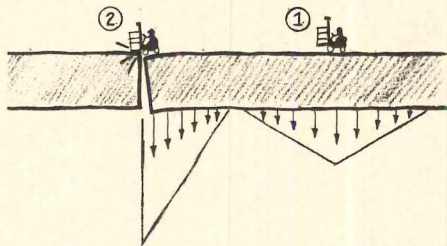


Figure 3: weight is uniformly distributed at (1), but at construction joint (2), where no load transfer exists, slab edge is depressed.

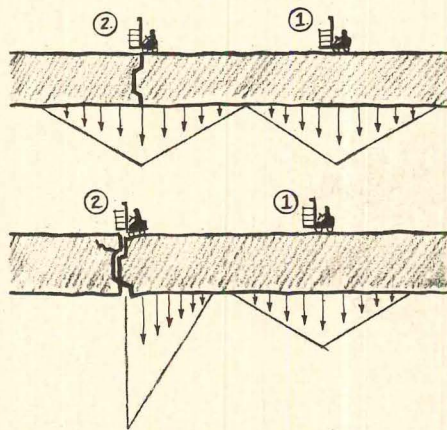


Figure 4: a concrete key works at first, but fails to distribute load as the slabs pull apart.

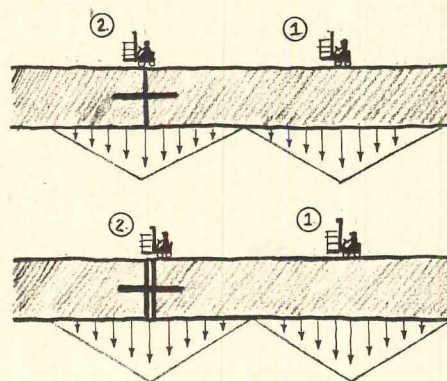


Figure 5: steel dowel continues to distribute load even after slabs shrink and pull apart.

According to the Portland Cement Association, and others, it is desirable to limit spacing between joints to the 20- to 30-ft range and we believe this recommendation is soundly based for average construction procedures. With above-average design and construction procedures, joint spacing can be increased to 40 ft with only slight extra risk of random cracking.

■ There are two methods of creating these panels—the checkerboard method and the strip-pouring method. While both produce the panel size desired, the strip-pouring method holds the most advantages. Checkerboard, or alternate bay, placing is so named because each bay is poured independently of its neighbor. Neighboring bays are not cast until the adjacent bay has been in place for 24 hours or more.

The thought behind the checkerboard method is that by pouring one bay at a time, shrinkage stresses will be lessened because of the complete separation from the adjacent bay. This result is obtained. However, by casting the bays in this way, an abnormally large number of construction joints are formed—actually twice as many as would be formed in the strip-pouring method. This is not desirable. Construction joints are to be avoided wherever possible because of their vulnerability to rapid deterioration under traffic. Construction joints should never be allowed to intersect, but should always be on column centerlines, in buildings with normal column spacing, for the point of intersection will be highly vulnerable to damage.

There are several reasons for this:

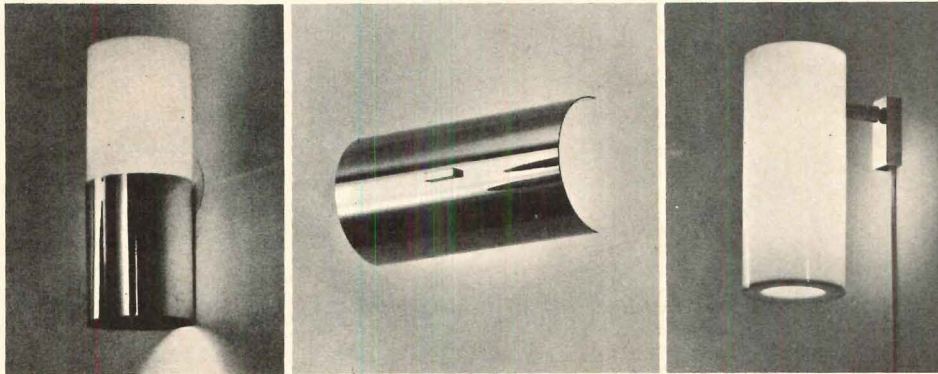
1. One is the problem of slab curl. When drying shrinkage occurs, the shrinkage develops initially on the surface and only later on the remaining portion of the slab, because the surface is exposed to the air before curing protection is applied and after that protection is removed. This produces a tendency for the top portion of the slab to pull slightly, raising the edge. When this happens—and it happens much more commonly than is usually thought—it seldom raises both sides of the joint the same amount. The high side is more vulnerable to impact.

2. Any joint formed by bulkheads has a tendency to be weaker than the rest of the floor. This is because the float and trowel machines are round and are not as efficient at bulkheads as in the rest of the floor. Hand troweling of the edges—and a lot of it—is the only way to strengthen these edges properly.

3. Bulkhead construction joints cost more than saw-cut contraction joints.

continued on page 204

for more information circle selected item numbers on reader service inquiry card, pages 273-274



Wall-mounted contemporary lighting

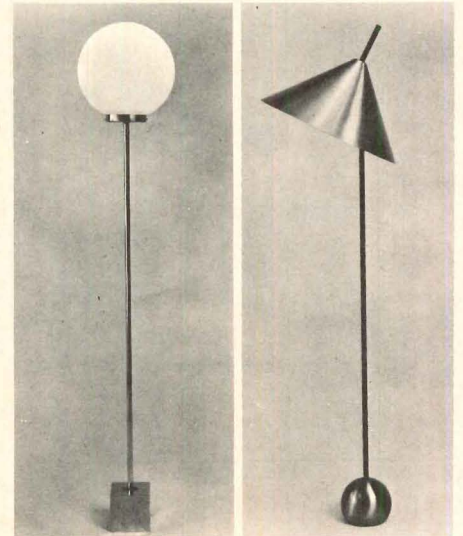
These plastic and metal indoor lighting fixtures are part of a coordinated line of indoor and outdoor wall units featured in a recent series of catalogs.

The metal half-cylinder is particularly useful for closets and for lighting shelf areas, and can be mounted vertically as well as horizontally. The shield is available in polished chrome, matt black or white finishes in four different sizes and can be used with 60-, 75- or

100-watt lamps depending on the size of the unit.

The cylinders are made of translucent plastic and/or metal, can be tilted 45 deg. in all directions and rotated 355 deg. Metal hardware is available in polished brass, polished chrome or matt white. Outlet box or wall pinup attachments are supplied. ■ Habitat Inc., New York City.

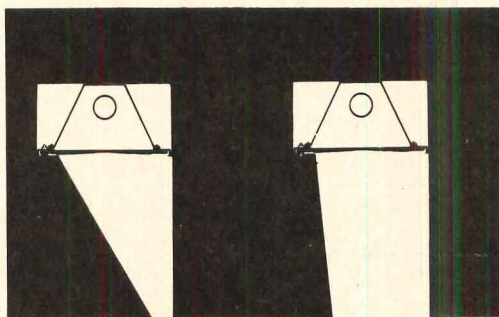
Circle 300 on inquiry card



Small floor lamps

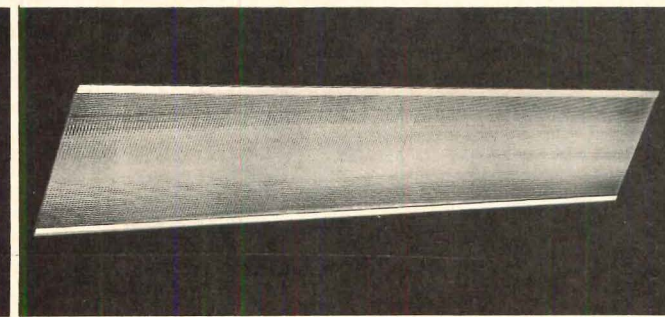
The "Tin Hat" and globe floor lamps shown here have an over-all height of 53 in., which makes them particularly suitable as arm-chair reading lamps. Both are for use with 100 watt bulbs.

■ Koch and Lowy Inc., New York City. *Circle 301 on inquiry card*



Fluorescent lens for vertical surfaces

A new prismatic lens specially designed for lighting murals, facades, control panels, wall-mounted exhibits and other indoor and outdoor vertical surfaces is made of injection-molded acrylic plastic and can be supplied in sizes up to 9 in. by 47 in. Correct transverse positioning of the lens can direct light at any oblique angle between zero and 15 deg. Various degrees of light concentration can be



achieved by proper adjustment of the lens elevation. Oblique distribution is obtained by means of longitudinal prisms molded in the face of the lens. Transverse flutes in the back of the lens keep brightness low, give a uniform appearance and serve to shield the lamps. ■ Holophane Company, Inc., New York City.

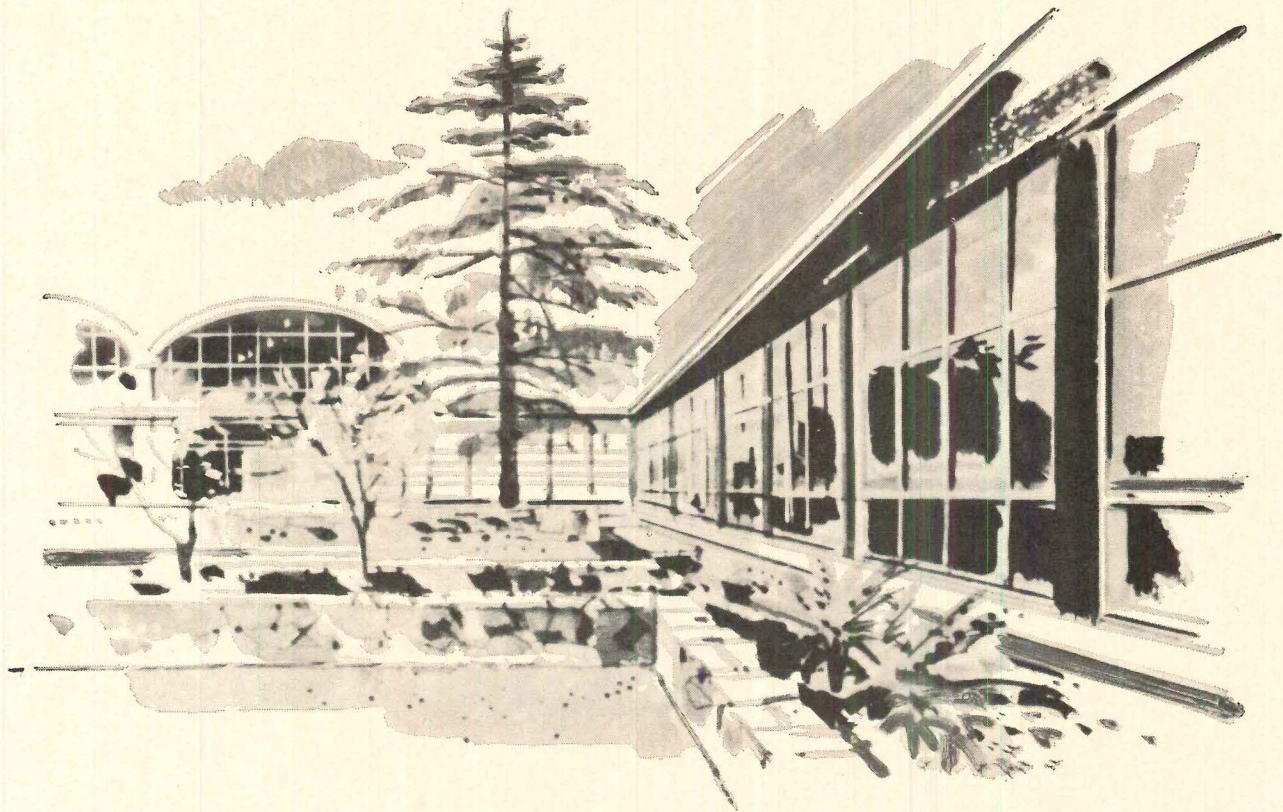
Circle 302 on inquiry card



...and a new quartz-light fixture

Designed for use with the 1,000-watt, T-6 quartz iodine lamp (right) for general purpose floodlighting, this new fixture features a hinged rear lamp housing so that lamps can be quickly and easily changed. The lamp can operate in any position and realign itself. ■ Shalda Lighting Products Company, Ardsley, N. Y.

Circle 303 on inquiry card
more products on page 208



NOW, FOR THE FIRST TIME—

"SERVO-COMMUNICATIONS"

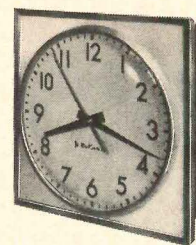
a complete school communications system
from *one* reliable manufacturer.

Total communications . . .

the effective combination of Sound, Time
Signals, Telephone, Intercom, Clock, Fire
and Vandalism protection services from
one local supplier. Advantages? All systems
are planned together to work together.
All servicing, too, from *one* reliable
local source.

Designed for school modernization or new
school building.

SERVO-COM is *one-of-a-kind*. For
complete information call your local
distributor or write to :



DUKANE CORPORATION

COMMUNICATIONS SYSTEMS DIVISION

DEPT. AR-26, ST. CHARLES, ILLINOIS 60174

CS-122

For more data, circle 101 on inquiry card

CONCRETE DESIGN / A series of technical advertisements giving detail drawings and recommended uses for different types of concrete construction has been reprinted in the form of a loose leaf folder of structural data sheets. Among the subjects covered are: concrete floor joints; concrete slab design; precast balconies; hyperbolic paraboloids; dome shell roofs and a number of other types of roof construction; demountable classrooms; exposed aggregates; and reinforced concrete columns. ■ The Portland Cement Association, Chicago, Ill.

Circle 400 on inquiry card

CERAMIC TILE / A 16-page brochure gives colored illustrations of the different designs available in the *Contours CV* line of 12-in.-square decorative tile modules. A brief note is also included on the work of the design team (directed by Millard Sheets) which was responsible for the unusual handcrafted effect. ■ Interpace, Los Angeles, Calif.*

Circle 401 on inquiry card

EXPOSED STEEL DESIGN / A quick reference handbook designed to acquaint architects with the latest advances in this field gives information on the whole range of steels available for exposed application in painted or unpainted state. The booklet, "Exposed Steel Architectural Design Details," is in looseleaf form and is divided into seven basic sections dealing with: general history of use of exposed steel; fire protection; availability; bare steels; fabrication and erection of unpainted steel; finishing and painting specifications. ■ United States Steel Corporation, Pittsburgh, Pa.*

Circle 402 on inquiry card

LAMPS AND LIGHTING / Some 250 contemporary lamps and lighting accessories are illustrated in a new 60-page catalog. Many of the designs shown originated in Europe; of particular interest are a collection of lamps by Raak of Amsterdam and a series of colored glass pendants from the furnaces of Vetreria Vistosi on the island of Murano. ■ Koch and Lowy Inc., New York City.

Circle 403 on inquiry card

PLYWOOD FOLDED PLATES / This type of glued roof construction is the subject of a well produced 24-page booklet. Span tables for spans from 24 to 100 ft. cover six different plate slopes from 20 to 45 degrees and eight bay widths from 7½ ft. to 22½ ft. Connection details and refinements for design modifications such as wing panels and overhangs are included in the roof systems described. Stages in on-the-job assembly of the plates are explained by means of a series of detail drawings. ■ American Plywood Association, Tacoma, Wash.*

Circle 404 on inquiry card

INFRARED HEATING-LIGHTING / A collection of application data sheets is designed to give comprehensive information on some of the most popular commercial and industrial uses of electric infrared fixtures. Each data sheet includes specifications, photos and diagrams showing fixture, wiring and mounting techniques required to produce heat and light in specific situations. Data on the information sheets is based on studies of actual installations. ■ Luminator Inc., Plano, Tex.

Circle 405 on inquiry card

DATA ON CEILINGS / Up-to-date information on the *Celo-Flow* acoustical, air distributing ceiling system is given in a series of three booklets. One booklet contains product description and guide specifications, the second covers design application, and the third gives details of a series of air dispersion tests. These tests were conducted to compare the downward penetration of air through *Celo-Flow* perforated tiles and conventional slotted ceiling material. ■ The Celotex Corporation, Tampa, Fla.*

Circle 406 on inquiry card

ARCHITECTURAL METALWORK / A wide range of components for metal railings, curtain-screens and trellises is displayed in a 40-page catalog. Detail drawings and renderings of assembled units are included as well as dimension tables and written descriptions where necessary. ■ Julius Blum and Company, Inc., Carlstadt, N. J.*

Circle 407 on inquiry card

KITCHEN PLANNING STANDARDS / To assist kitchen planners to keep pace with the development of new standards, this publication offers a scoring system for counter and storage space and arrangement, which enables plans to be tested before building or remodeling is undertaken. The scoring system also allows for the detection of weaknesses in existing kitchens. New standards recently introduced by the Building Research Council take into account more frequent use of the dishwasher in conjunction with growing popularity of built-in surface cooking units and an increase in the number of small appliances in common use in the kitchen. Price 15¢ from ■ University of Illinois Small Homes Council, Building Research Council, Urbana, Ill.

Circle 408 on inquiry card

NEW TYPE OF DOOR HINGE / *Roton Continuous Hinges*, which run the full length of the door and have the appearance of an architectural trim rather than a conventional hinge, are described in a foldout brochure. Advantages of the new hinge are said to be high load-carrying capacity; ease of installation and maintenance; elimination of danger of finger catching; and built-in weather-proofing, sound-proofing and light-proofing qualities. Details of installation and operation are set out in two supplementary pamphlets. ■ McKinney Sales Company, Scranton, Pa.

Circle 409 on inquiry card

ARCHITECTURAL GLASS / Different kinds and applications of laminated glass are discussed in a 12-page booklet, which includes photos of installations, and charts and tables giving details of sound and heat transmission. Among the six types of multi-purpose laminated glass discussed in the brochure are *Acousta-Pane* which is said to stop sound without obstructing vision and *Frost-Lite*, a new laminated white-toned glass that combines opacity with a high level of light transmission. ■ Amerada Glass Corporation, Elk Grove Village, Ill.*

Circle 410 on inquiry card

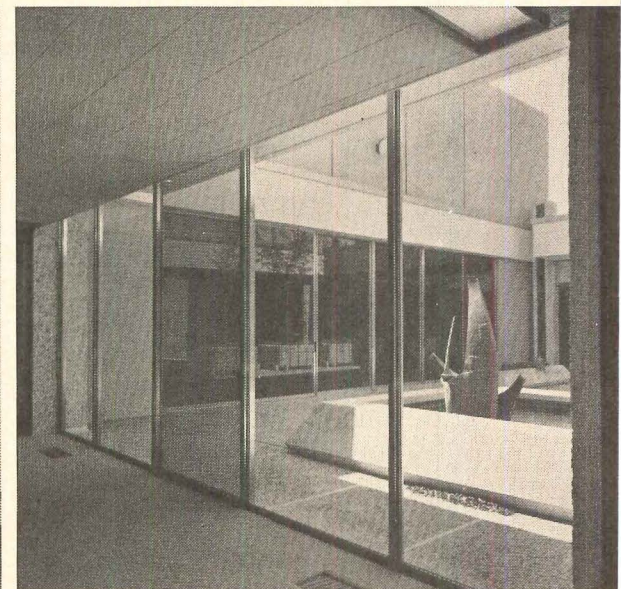
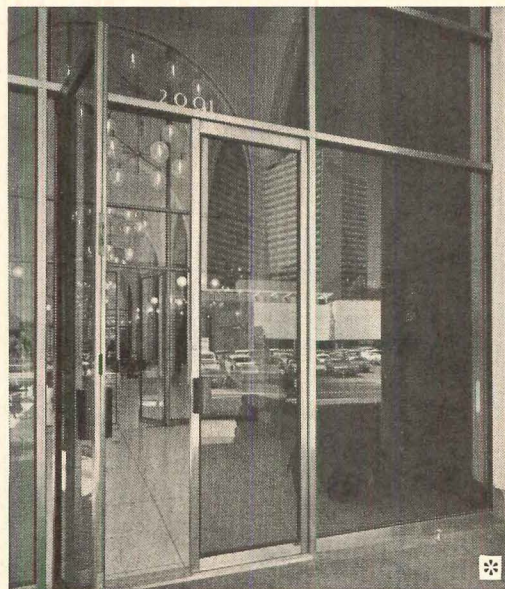
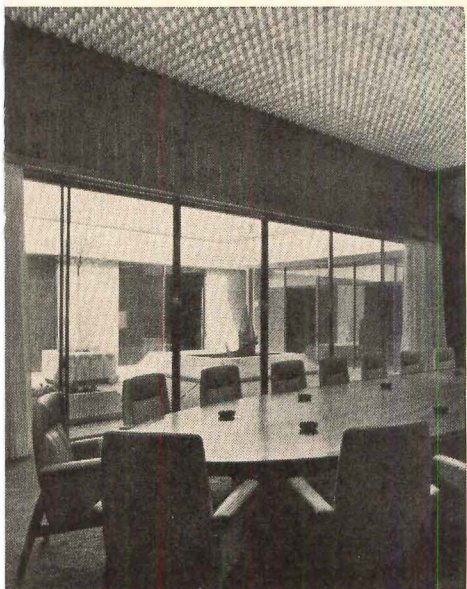
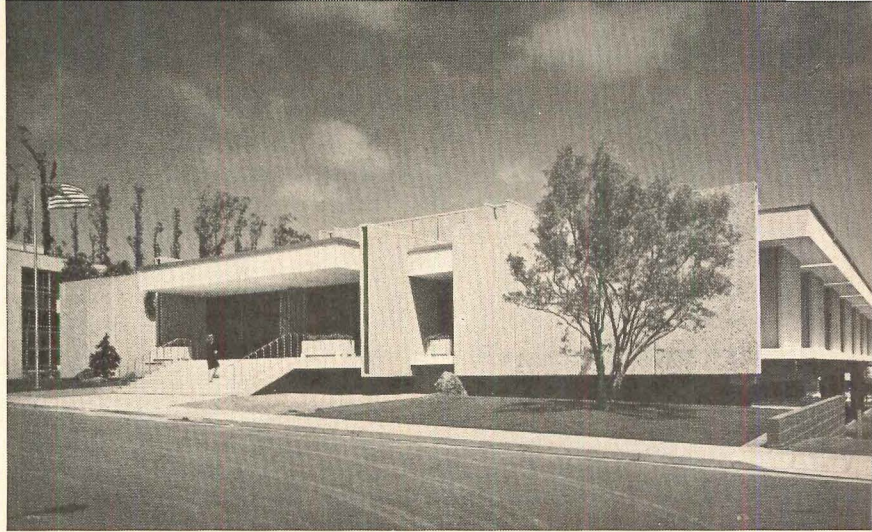
*Additional product information in Sweet's Architectural File

more literature on page 256



OPEN
INVITATION
TO ARCHITECTURAL
ELEGANCE





Sumitomo Bank of California* and Western Conference of Teamsters Building/Shigenori Iyama, A.I.A., architect
 Entrance doors by The Alumilene Corporation, Providence, R.I./Sliding doors by Carmel Steel Products, Downey, Calif.

The strength of lustrous stainless steel eliminates the unnecessary, unsightly bulk that obstructs natural light. Its warp-resistance keeps doors and frames perfectly aligned and snug-fitting, so heat stays in and weather stays out. Its rugged resistance to forcible entry stops intruders, adds maximum security. And of course, its resistance to corrosion and marring means minimum maintenance.

Yet with all these practical advantages, stainless steel doors and entrances invite architectural elegance too. They enrich airy facades; they brighten massive masonry; and they gleam—lastingly and appropriately—

in city streets or country highways.

Now—as the result of new fabrication techniques—slim-line doors and entrances of stainless steel are available from stock at a price that puts them within reach of every architectural budget. Contact the manufacturers credited above for detailed information on stainless doors and entrances. Write to our Architectural Services for further information on stainless steel.



Jones & Laughlin Steel Corporation
 STAINLESS and STRIP DIVISION • Detroit 48234

For more data, circle 102 on inquiry card

continued from page 198

Strip pouring, by comparison with the checkerboard system, reduces the number of construction joints by half. The division of the strip into relatively square blocks to minimize shrinkage stress build-up is achieved by creating stress relieving joints, about one-fourth the slab thickness in depth. (For a rough slab these joints can be created with a chisel or T-bar—providing a straight line is created; for finished surfaces the joint usually is created by sawing.) When

shrinkage stress builds up, the stress will accumulate at this built-in plane of weakness, resulting in the opening-up of some, or all, of the concrete beneath the cut. This opening will be irregular, however, causing an aggregate interlock between the sections. Thus, the joint will hold itself together in the vertical plane.

Because of the moving loads in any industrial plant, any two adjacent slabs must be together, or will move independently of each other as loads move across the construction joints. If adequate

provision for the transfer of this moving weight is not made the following deficiencies may result: edge raveling, a hollowing-out of the earth foundation beneath the joint, and eventual cracking of the slab several feet behind the joint.

There are two designs normally used to transfer moving weight evenly into the floor at a construction joint. The keyed construction joint is the traditional weight transfer mechanism. This joint is created by inserting a beveled piece of wood on the wooden bulkhead to create a depression in the side of the construction joint. This depression is then filled in by the next day's pour, thus, in theory, "keying" the pours together. But the joint rarely remains tight. As the slabs shrink, the key loses contact with its matching recess. Then, as a weight moves over the joint, the slabs move. There are, therefore, inherent drawbacks to this design (see figure 4). Further, the upper lip of the key is quite often broken-off when the bulkhead is stripped.

The other method of providing for weight transfer, seems to perform its function better and has a greater factor of safety in heavy service. It uses steel dowels— $\frac{3}{4}$ -in. round by 12-in. long, and placed on 12-in. centers. This design ties the adjacent slabs in the vertical plane but allows free movement in the horizontal plane. Less steel has been successfully used for lighter loads. By greasing the dowel, the slabs can move freely in shrinkage and yet the joint opening is never wide enough to cause the row of dowels to bend (see figure 5).

Reentrant corners are the designer's nightmare when trying to produce a floor with as few cracks as possible. A reentrant corner, of course, creates a notch or indentation in the field of the floor. It is, therefore, the place where stresses will concentrate. Since these are natural areas of stress concentrations there is no way to avoid a crack (except by being lucky) unless stress relieving joints can be run off the point of the reentrant corner. If this is not possible then a series of, perhaps, three bars (deformed) placed in the slab at a point off the corner will hold the crack together when it develops, and, possibly (again if one is lucky), this reinforcing might prevent the crack.

It is obvious that crack control in concrete floors demands attention to many details. Yet the details are far from overly complicated. But the most that can be hoped for is crack control and not crack prevention.

the intercom with the "built-in brain"

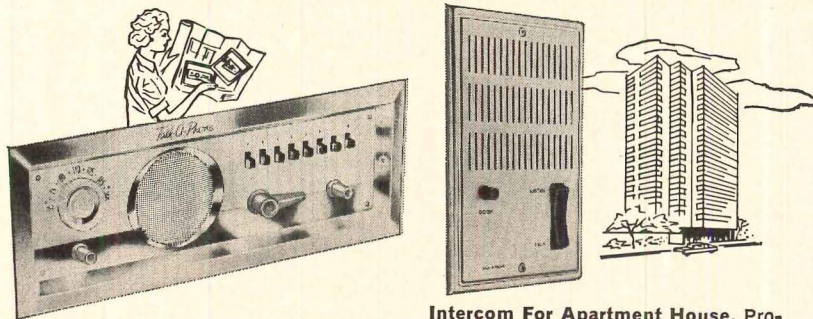


for office and industry

New **TALK-A-PHONE**

Distinctively styled, with more dependability and higher efficiency than any Intercom ever developed . . . yet sensibly priced. Meets every Intercom need of office and industry. Proportioned like a book to lie flat on the desk . . . only 3 inches high. Combines the look and feel of fine grained leather with the strength and rigidity of steel. Beautifully finished in charcoal gray with brushed chrome side panels. From a 2-station system to an elaborate installation, you can do it better and more economically with Talk-A-Phone. Pays for itself many times over.

TALK-A-PHONE . . . "Has Everything. Does Everything." The accepted standard of quality and dependability in Intercommunication for over a third-of-a-century.



Intercom For The Home. Enjoy comfort, convenience and peace of mind. From any room you can . . . Listen-in on baby, children or sick room . . . Answer outside doors . . . Talk to anyone—upstairs or downstairs, inside and out . . . Enjoy radio. Distinctively styled. Beautifully finished. Easily installed.

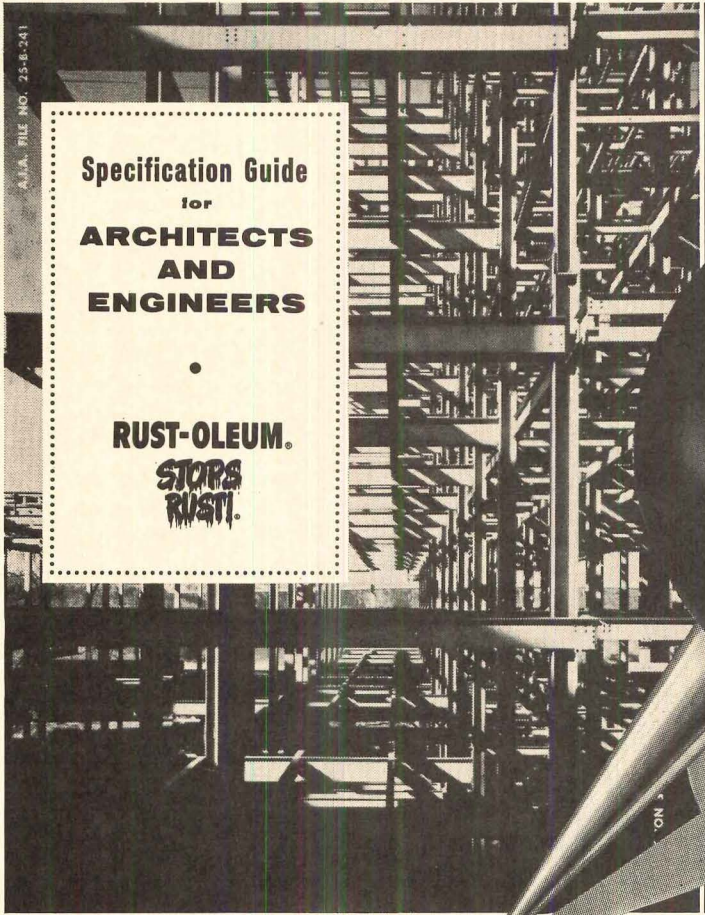
Intercom For Apartment House. Provides instant and direct 2-way conversation between any Apartment and Vestibules—in buildings of any size. Greater performance with these exclusive Talk-A-Phone features: • Ample volume without "boom" • Automatic privacy • Individual volume selection for each apartment • Built-in Buzzer.

Send for Free Catalogs...

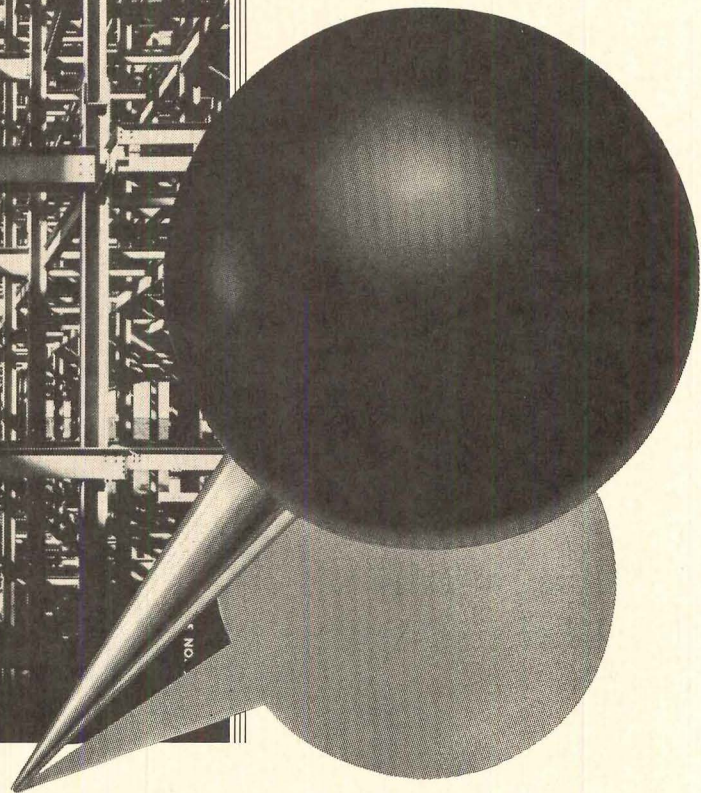
Dept. AR-2

TALK-A-PHONE CO., 5013 N. Kedzie Ave., Chicago, Illinois 60625

For more data, circle 103 on inquiry card



**PINPOINT THE PROBLEMS!
THE ANSWERS!**



This complete Specification Guide for Architects and Engineers opens new doors to long life protection!

Much more than a specifications guide, this important manual pinpoints coating problems by material, location, use and service conditions. Then—it pinpoints the answers including recommendations for Rust-Oleum coating systems, surface preparation, application, short form specifications and a selection of almost 150 color standards.



From primers to top coats, there's a long life Rust-Oleum coating system for almost every need—all with a worldwide reputation for lasting economy. Your Rust-Oleum Field Engineer will be happy to work with you on your specifications—and will follow through on job-site application. Clip coupon to your letterhead for the facts.

RUST-OLEUM
STOPS RUST!

Rust-Oleum Corporation, Evanston, Illinois
Haarlem, Holland

.....CLIP COUPON TO YOUR LETTERHEAD.....

Rust-Oleum Corporation, 2419 Oakton Street
Evanston, Illinois 60204

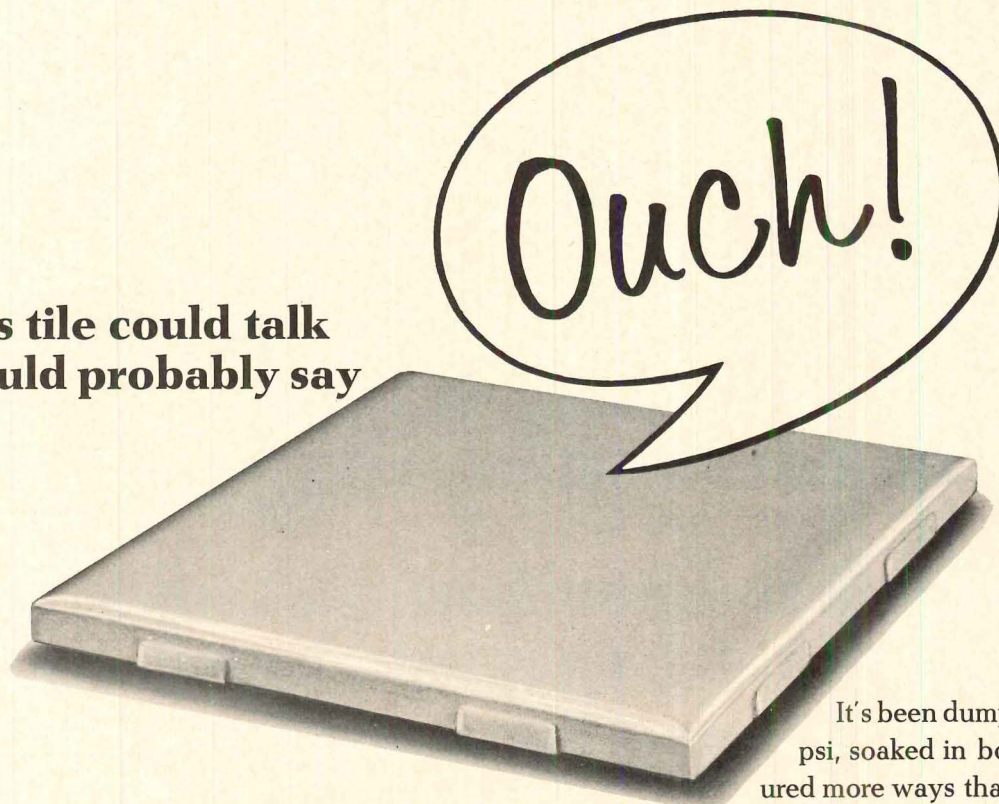
Gentlemen:

- Please send me _____ free copies of the Rust-Oleum Specifications Guide For Architects and Engineers (form No. 6408). Also include _____ free copies of "Long Life Facts."
- Please have a Rust-Oleum Field Engineer call.



For more data, circle 104 on inquiry card

**If this tile could talk
it would probably say**



It's been dumped in steam at 100 psi, soaked in boiling water, measured more ways than a beauty contest winner, peered at for visual defects and given a thermal shock test for good measure. In all, it's gone through 11 tests to make certain that it's good enough to bear the mark "Certified Tile." All part of a program by the Tile Council to provide you with a positive way of getting the qualities you look for in ceramic tile.

"Certified Tile" meets the highest standards of the industry as determined by independent laboratory testing and carries this triangular certification mark. You can rely on it.



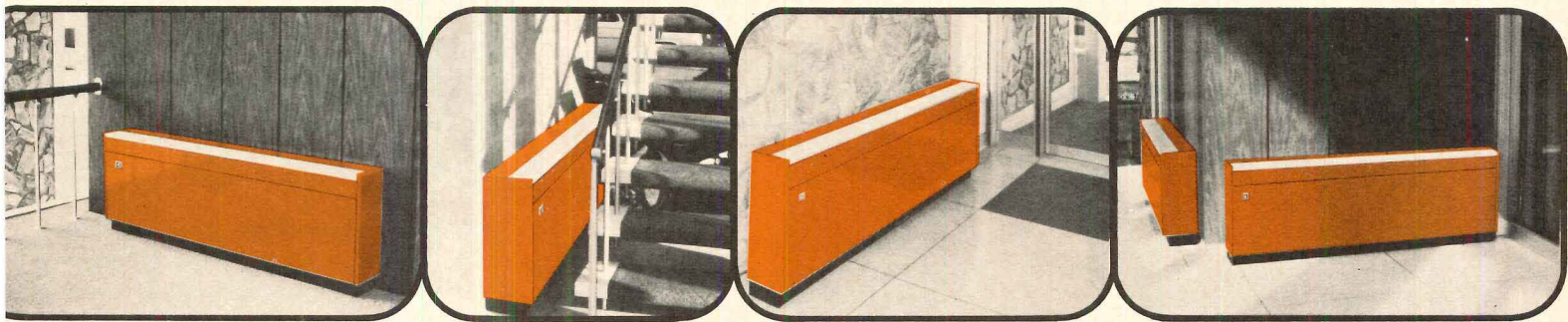
For further information about certified quality tile write: Tile Council of America, Inc., 800 Second Ave., New York 10017.

MEMBER COMPANIES: American Olean Tile Co., Inc. • Atlantic Tile Manufacturing Co. • Cambridge Tile Manufacturing Co. • Carlyle Tile Company • Continental Ceramic Corporation • Florida Tile Industries, Inc. • General Tile Company • Gulf States Ceramic Tile • Highland Tile Company • Hoffman Tile Mfg. Co., Inc. • 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 • Pomona Tile Manufacturing Co. • Redondo Tile Company • Ridgeway Tile Company • Sparta Ceramic Company • Stylon Corporation • Summitville Tiles, Inc. • Texaramics Inc. • United States Ceramic Tile Co. • Wenzel Tile Company • Winburn Tile Manufacturing Co.

For more data, circle 105 on inquiry card



It cost \$22,130.00 to build this room.



Flexibility of design and a beautifully styled, neat and trim cabinet line only 9" in depth. Easy installation—exposed, recessed or concealed for floor, wall and ceiling in five sizes including 800 CFM.

**The Only Permanent Fixture In It Is The
SATELLITE CABINET AIR CONDITIONER!**

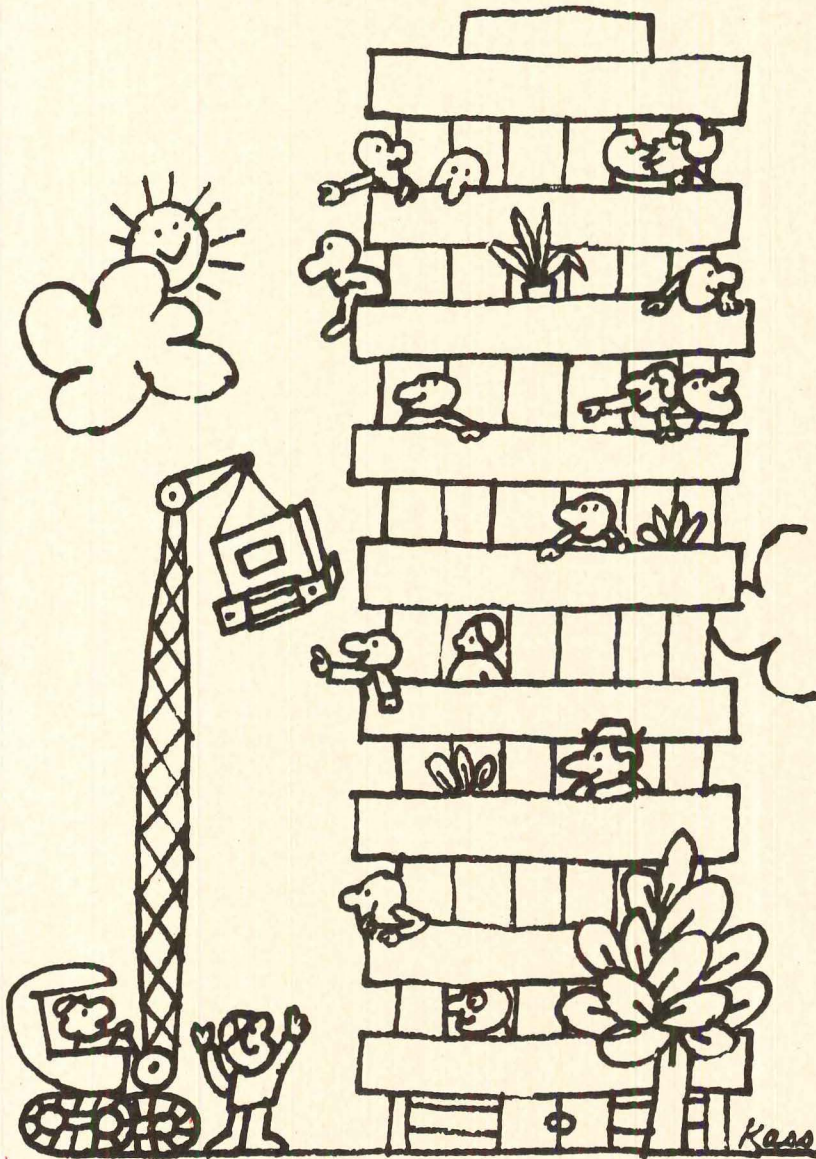
moral: You can't afford to skimp on this fixture.
Specify Schemenauer Satellite.

SCHEMENAUER
H O L L A N D , O H I O

MANUFACTURER OF THE MOST **THOUGHTFULLY ENGINEERED** PRODUCTS

For more data, circle 106 on inquiry card

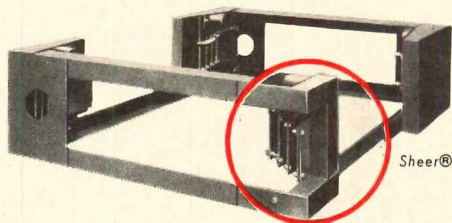
continued from page 199



Troy liberates the laundry

And you. The exclusive Troy® vibration-isolating suspension system frees you to put the laundry where it's most logical. Now Troy's big washer-extractor-conditioners can be on any floor that will bear the weight. No need for a concrete foundation. You can suit the laundry to your design, not design around the laundry.

Only Troy offers the exclusive fused rubber-steel "sandwich" design. These isolators completely eliminate bulky steel springs and hefty hydraulic shock absorbers. Actually there are no working parts at all, and no lubrication or maintenance. Depend on the free-thinking people at Troy to find the best way out of a shaky situation.



Sheer® vibration isolation suspension



TROY LAUNDRY MACHINERY

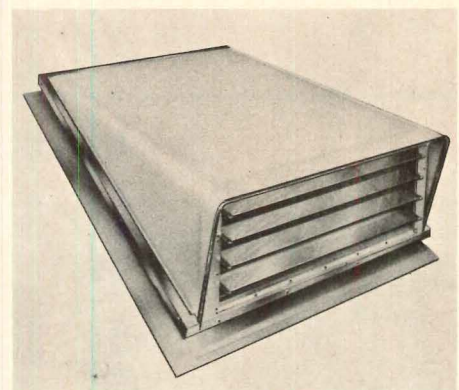
A DIVISION OF AMETEK, INC.
EAST MOLINE, ILLINOIS

For more data, circle 107 on inquiry card



WOOD OFFICE FURNITURE / A new line of walnut and cherry wood furniture includes three groupings: *The Director* in traditional Italian provincial style and the *Richelieu* (photo) and *Advantus* contemporary series for executive and general office use. The groups include desks, credenzas, chairs, tables, etc. Progressive suspension on the file drawer exposes the complete drawer when fully extended. All interior parts of the *Advantus* series are of die-form steel. ■ Croydon Furniture Corporation, New York City

Circle 304 on inquiry card

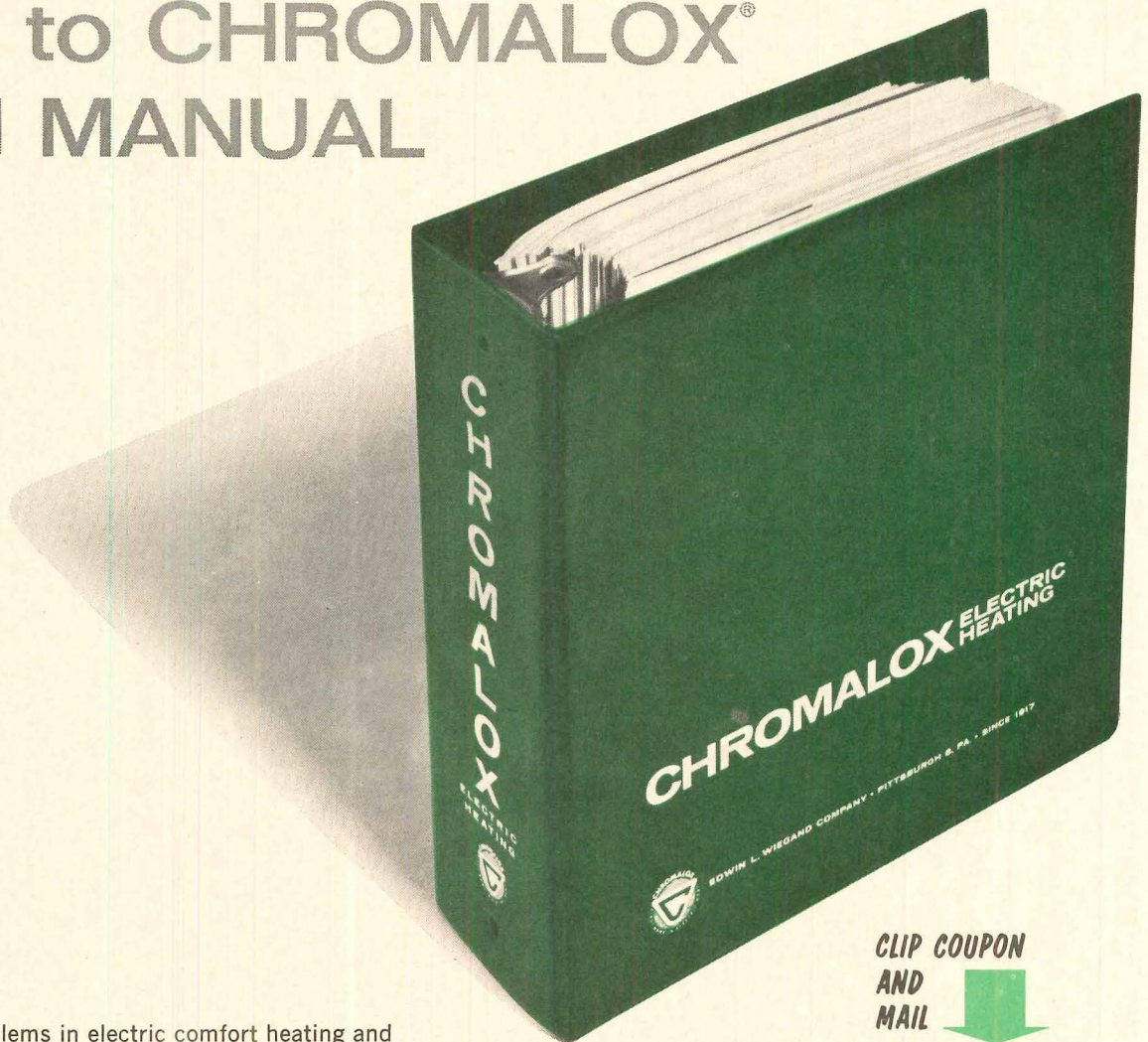


WINDOW SKYLIGHT / The *Ventalite* 30 in. by 42 in. skylight, designed specifically for pitched roofs, features a louvered ventilating window which can be operated by a crank-type handle to open the louvers to any desired position. The overhang of the skylight dome shelters the window from rain, while an aluminum interior screen provides insect protection. The skylight frame is 6063-T5 aluminum, and the one-piece dome is acrylic plastic. Heat transmittance through the dome is said to be less than that of a dormer window. ■ RayMar Inc., Dallas, Tex.

Circle 305 on inquiry card

more products on page 232

for detailed specification
information about all
**electric comfort
heating/cooling,**
look to **CHROMALOX[®]**
180M MANUAL



**CLIP COUPON
AND
MAIL** 

There are no problems in electric comfort heating and cooling that you cannot resolve with the technical information and equipment contained in Chromalox 180M Manual. This over 700 page compendium gives you all the facts needed to specify and properly apply the full line of electric comfort heating/cooling equipment designed specifically for schools, churches, office buildings, stores, apartments, airline terminals, stadiums, etc.

Refer to your registered copy of Chromalox 180M Manual. And if there isn't one in your office or your copy needs updating, better let us know right away!



CHROMALOX
electric HEATING/COOLING

EDWIN L. WIEGAND COMPANY

7741 THOMAS BLVD., PITTSBURGH, PA., 15208

- I have Chromalox 180M Manual but it needs updating.
- I do not have the Chromalox 180M Manual on electric heating/cooling. Please arrange to get me a registered copy.

NAME _____

AFFILIATION _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

WC-83 A

For more data, circle 108 on inquiry card



Pep Rally 1966

Jump and shout!

We're making all this noise because we want you to find out for yourself how much the Simmons Dorm Line is in the swing of things.

You see, Simmons workmanship starts with a welded steel frame that simply cannot warp, twist, crack or break, ever. It's handsome without being bulky.

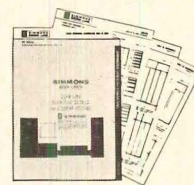
If you specify Simmons built-ins or free-standing furniture, you have complete control of coordination of colors

and finishes. Choose from 14 colors and three types of high pressure melamine plastics in four wood grain finishes. What a selection! Individualize each room. Vary the color scheme without changing the basic wall color.

Now one flexible standard dorm furniture line meets every dormitory need with a wide range of sizes, components and designs. And taste always judges Simmons clean and simple design as timeless.

See what we're cheering about. Hold

your own Simmons Pep Rally soon. We'll bet you hold another in 1966.



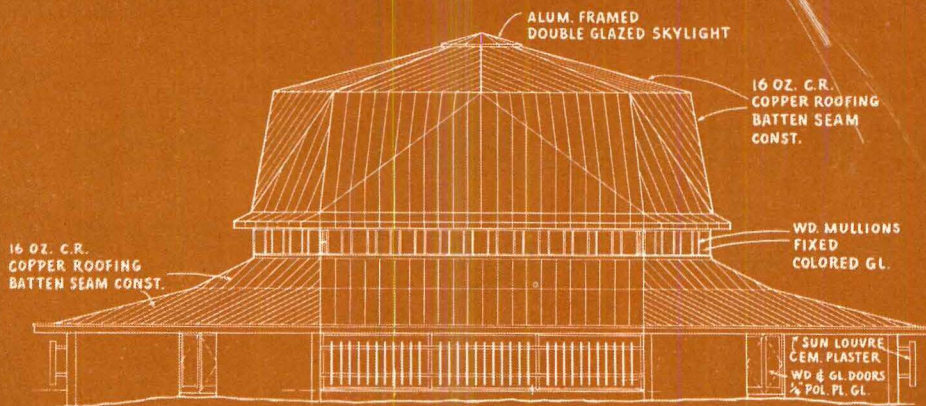
Free! Attach this ad to your letterhead for our new Work Saver portfolio of acetate overlays. It will make your specification of built-in furniture easier and faster.



SIMMONS

CONTRACT DIVISION • MERCHANDISE MART • CHICAGO 54, ILLINOIS

For more data, circle 109 on inquiry card



SYNAGOGUE OF THE CONGREGATION SONS OF ISRAEL, Lakewood, New Jersey. Note the imaginative use of battens to accentuate the numerous changes of roof planes of this novel octagon-on-octagon roof design. Batten seam dome and roof were constructed of 9 tons of Revere 16 oz. cold rolled copper by J. N. BEARMORE & COMPANY, INC., Sheet Metal Contractor, Asbury Park, New Jersey. Installation was made as recommended in Revere's "Copper and Common Sense." General Contractor: BRITTON CONSTRUCTION CO., Asbury Park, New Jersey. Revere Distributor: FABLE & COMPANY, INC., Philadelphia, Pa.

*octagonal
synagogue
wears
lasting*



CROWN of COPPER

Synagogue of The Congregation Sons of Israel, Lakewood, New Jersey, designed by DAVIS, BRODY & ASSOCIATES AND C. J. WISNIEWSKI, Architects, New York

Here is yet another example of how the architects, by "designing with copper in mind," created the unusual without sacrificing the practical.

Copper does exactly what they wanted it to do, esthetically as well as structurally. Because of its richness, color, texture, and its maintenance-free characteristics, copper, in terms of the form of the building, was the most appropriate material to select. And, in order to emphasize the various changes of planes of the roof, the batten seam form of construction was used.

Yes, you can do so many more of the things you want to do when you "Design with versatile copper in mind."

FIRST AND FINEST IN COPPER AND BRASS—FULLY INTEGRATED IN ALUMINUM

SEND TODAY for free copy of "Copper and Common Sense," Revere's 140-Page Manual illustrating the design principles and techniques of sheet copper construction. Also free companion piece, "The Revere System of Copper Flashing," for the complete weatherproofing of masonry buildings. Address Dept. "L-4" at address below.



REVERE

COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

Executive Offices: 230 Park Ave., New York, N.Y. 10017

Sales Offices in Principal Cities • Distributors Everywhere

For more data, circle 110 on inquiry card

In Houston . . .

UNI-PRESSURE * SELECTED FOR HOUSTON HOUSE APARTMENTS



A Tankless . . . Constant Pressure . . . Constant Speed Water Booster System

Provides one of HOUSTON'S most modern apartment buildings with water at constant pressure at constant speed at all fluctuating demands.

Uni-Pressure systems are now providing over 400 buildings of all types with the following advantages:

CONSTANT SPEED—No complex speed changing devices

CONSTANT PRESSURE—No "hunting" of control resulting in serious pressure variations

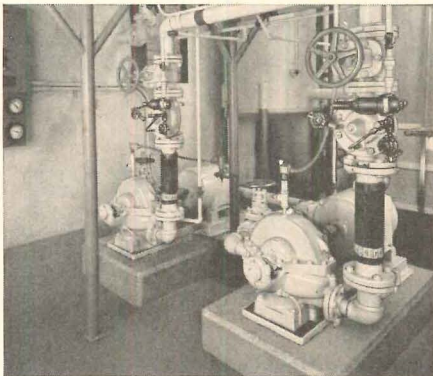
LOWER COST—Normally lower in cost than speed changing systems

LESS SPACE NEEDED—Requires space only for standard pump and motor

STANDARD SIMPLE CONTROL—No complex electrical, mechanical speed changing devices

NO TANK REQUIRED—Eliminates cluttered machinery room

NO SLIPPAGE—Speed changing drives have slippage factor—
as much as 15%



Typical installation photo of a Uni-Pressure System illustrates the compactness of a type II System. This equipment is designed to provide a maximum of 150 GPM and a system pressure of 83 psi.

Owner: The Lumbermens Company,
Austin, Texas

Architects: Charles M. Goodman, Associates, Washington, D. C. and
Irving R. Klein & Associates, Houston, Texas

Mechanical & Electrical Engineers: Bovay
Engineers, Inc. Houston, Tex.

Structural Engineers: Heinzman &
Clifton, Washington, D. C.

©1965 CP-FMC
*Patents Pending

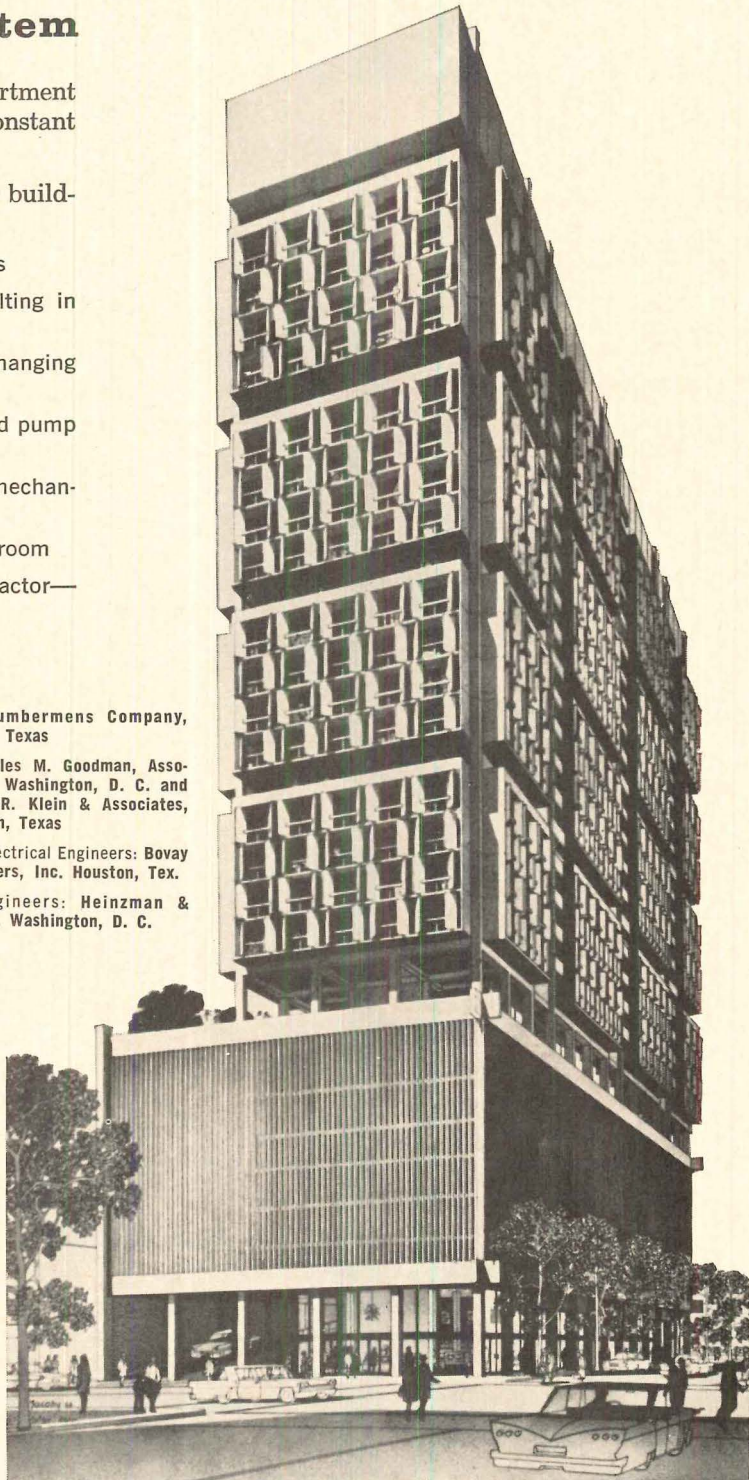
Contact your nearest Chicago Pump distributor, or write direct for complete descriptive Bulletin 110.



HYDRODYNAMICS DIVISION

CHICAGO PUMP

622 Diversey Parkway • Chicago, Ill. 60614



For more data, circle 111 on inquiry card

Exciting Chemical Products To Spark
The Imagination Of Industry



Chemical Product Patent No. 3,225,017 Makes PRC The Big Gun In The Sealant Industry

Not 'Til 1982... Can Anyone Duplicate RUBBER CALK™ Sealant

PRC's technical leadership is proved once again by the issuance of a patent on RUBBER CALK™ 5000 Sealant . . . the **ONLY** patented one-part, polysulfide base sealant in the entire industry.

A creation of PRC's extensive research and development program, RUBBER CALK™ 5000 Sealant was introduced to the construction industry over three years ago. The stable, one container, polysulfide polymer RUBBER CALK™ Sealant that does not require mixing, gained immediate acceptance from architects and contractors on an international scale.

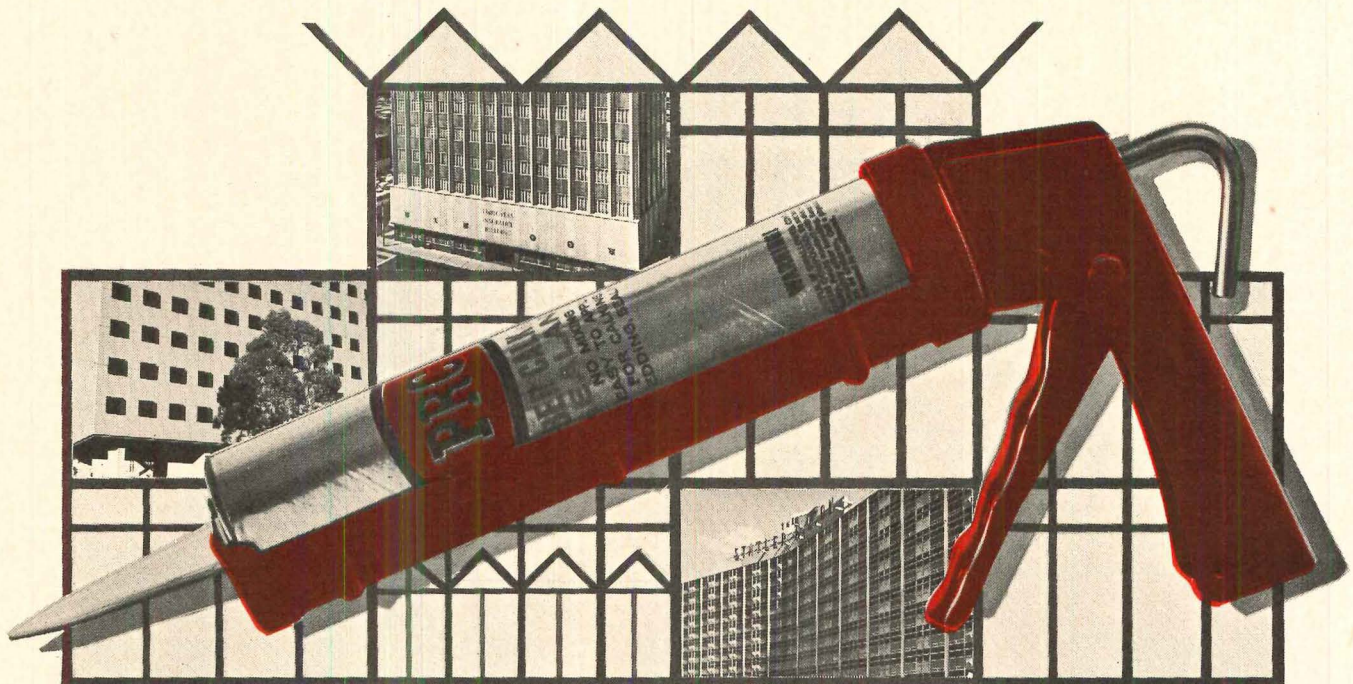
In recognition of the PRC concept, other one-part sealants have appeared on the market . . . and confusion on product super-

iority arose. RUBBER CALK™ 5000 Sealant is now recognized as paramount.

The issuance of Patent No. 3,225,017 by the U.S. Patent Office and the industry-wide acceptance of RUBBER CALK™ 5000 Sealant is clear proof that emphasis on quality, combined with a continuing research and development effort, is the true mark of industry leadership.

When you need a sealant . . . look to Products Research and Chemical Corporation for advancements that set the industry standards.

Write for our catalog of outstanding construction sealants . . . the first choice of architects and contractors everywhere.



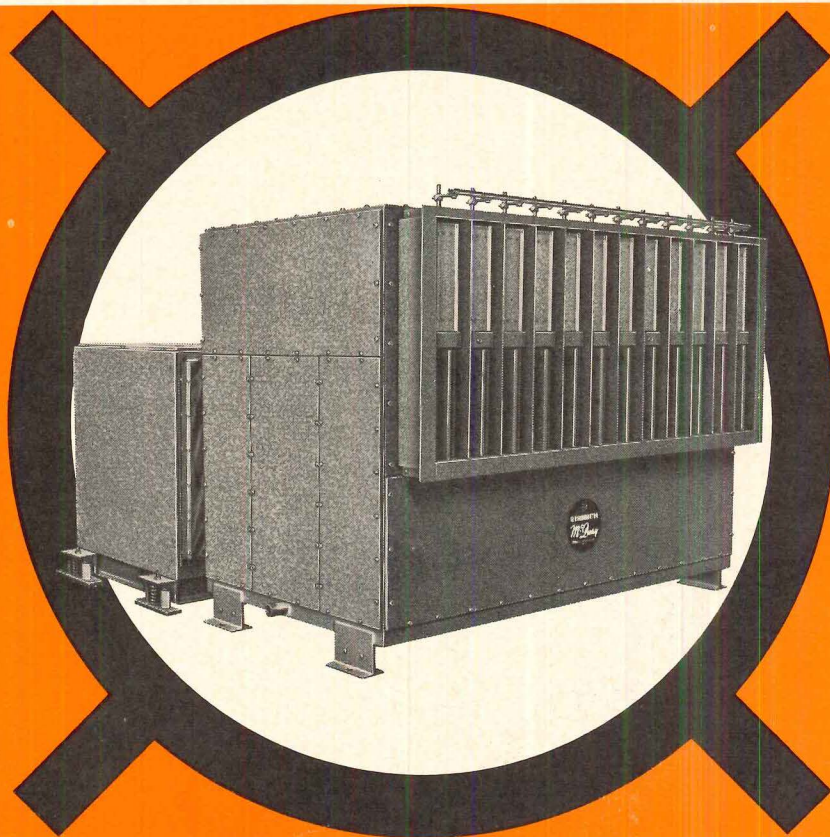
ADHESIVES • COATINGS • SEALANTS

PRODUCTS RESEARCH & CHEMICAL CORPORATION

CORPORATE OFFICES AND WESTERN MANUFACTURING DIVISION, 2919 Empire Ave., Burbank, Calif. (213) 849-3992
EASTERN SALES AND MANUFACTURING DIVISION, 410 Jersey Ave., Gloucester City, N. J. (609) 456-5700

Suppliers To The Construction • Aerospace • Industrial • Electronics • Hydrospace and Marine Industries

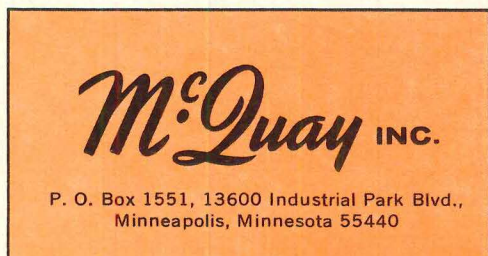
For more data, circle 112 on inquiry card



LOOK TO THE LEADER...McQUAY FOR THE VERY BEST IN CENTRAL STATION UNITS ENGINEERED SPECIFICALLY FOR HIGH STATIC PRESSURE APPLICATIONS

Entirely new—the McQuay High Pressure Seasonmaster line offers versatility of arrangement and compact design. Now you can select a standard unit to meet the most stringent application requirements: available in single zone, multi-zone and double duct horizontal type models, each in 10 sizes; in a wide capacity range, 2,300 through 38,000 cfm; with a complete line of accessories for maximum flexibility.

All components are designed, tested and selected for application in the static pressure range of 5.5 through 9.0 inches of water. Cabinets are ruggedly constructed throughout to assure a smooth running, quiet, vibration-free assembly. Spring vibration isolators are furnished as standard equipment with every High Pressure Seasonmaster fan section.



All McQuay High Pressure Seasonmasters feature air foil fans. All are single fan units offering high efficiency resulting in reduced bhp and noise level. Regardless of the thermal media—chilled water, direct expansion, hot water or steam—you obtain the ultimate in heat transfer because all HP Seasonmasters are equipped with McQuay's time proven ripple-corrugated fin coils (the most copied surface in the industry).

For the complete story, with engineering, application and installation data, see your local McQuay representative, or write for High Pressure Seasonmaster Catalog #580.

AIR CONDITIONING • HEATING • VENTILATING • REFRIGERATION

MANUFACTURING PLANTS AT FARIBAULT, MINNESOTA • GRENADA, MISSISSIPPI • VISALIA, CALIFORNIA

For more data, circle 113 on inquiry card

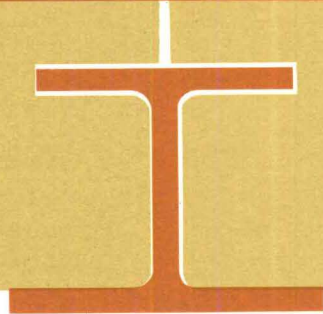
For more data, circle 114 on inquiry card

INGENUITY IN ACTION!

Flintkote presents two important developments in roof deck construction, combining all the recognized quality features of INSULROCK® roof decking.



DUAL TEE



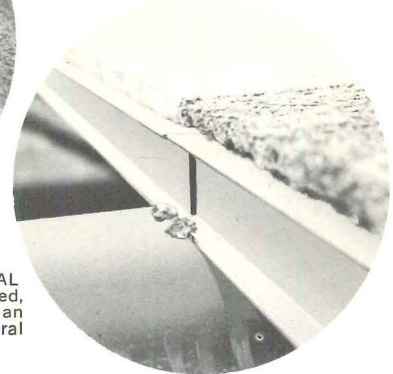
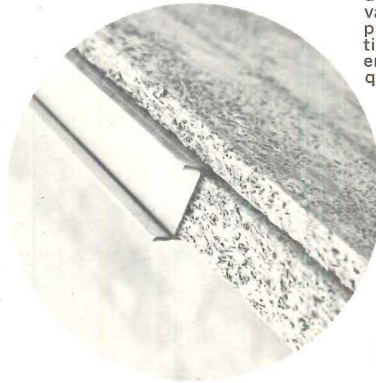
A REVOLUTIONARY IMPROVEMENT IN ROOF DECK INSTALLATION

The New DUAL TEE™ System.

Here is the improvement that makes INSULROCK tile, more than ever, the most versatile roof deck for practically any application within design limitations. The support member is specially designed and made exclusively to fit this new roofing system, producing a "locking" action between the tiles. Eliminates need for grouting. Increases the insulation factor. Reduces condensation.

By all measures, this represents the greatest advance in roof deck systems in more than a decade. The DUAL TEE System lets you make better use of structural capabilities and, in many instances, achieves significant economies.

The DUAL TEE System incorporates a specially designed hot-dipped galvanized tee inserted on the job in the pre-cut groove of the INSULROCK tile. Both components are precisely engineered for a totally integrated, quick, tight, smooth fitting roof deck.



As each INSULROCK tile and DUAL TEE support member is installed, spot welding secures them as an inseparable unit to the structural steel.



Handling of the DUAL TEE System takes a minimum of time and effort. The relatively light-weight INSULROCK tiles go down fast in the hands of experienced, franchised applicators.



Fitting one tile snug up to adjoining tiles is a snap with the new DUAL TEE System. And the roof deck is one flat, smooth surface, eliminating any need for grouting.



Spot weld the support member to the sub-purlin and the DUAL TEE unit is secure — a virtually solid system of interlocked supports and tiles.

THE FLINTKOTE COMPANY

INSULROCK PRODUCTS

General Sales Office: Box 157, Whippany, New Jersey
The Flintkote Company/New York, N. Y.



LONG SPAN

Flintkote translates engineering ingenuity into **action**. Now in two significant developments you get the finest quality roof deck ever made: (1) in longer planks, providing lower in-place cost of application directly on joists, and (2) in the application of INSULROCK tile and the ingenious new DUAL TEE Sub Purlin.

New INSULROCK Long Span Plank

Another dramatic development of Flintkote research! We have actually extended the span of INSULROCK planks by a full 6" over standard plank, considerably lowering in-place cost while maintaining unsurpassed quality and strength of INSULROCK planks. Meets ultimate load requirements of 200 lbs. psf, safety factor of 4 (same as standard plank).

Now it takes fewer planks and fewer joists to build today's finest roof deck with INSULROCK Long Span Plank. And that means **real** economy in your roof deck plans.



INSULROCK Long Span Planks are available in thicknesses of 2" at 42" span, 2½" at 48" span, and 3" at 54" span, in lengths of 84", 96", and 108" respectively.

For the full story on "Ingenuity In Action," get in touch with your INSULROCK Roof Deck distributor/specialist. Or send the coupon today for comprehensive literature, including detail drawings and specifications.

General Sales Office: P.O. Box 157, Whippany, N. J.

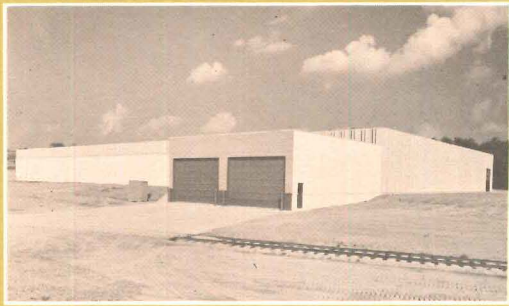
Please send me the full story on "Ingenuity in Action" with INSULROCK DUAL TEE Tiles and Long Span Plank.

Name _____

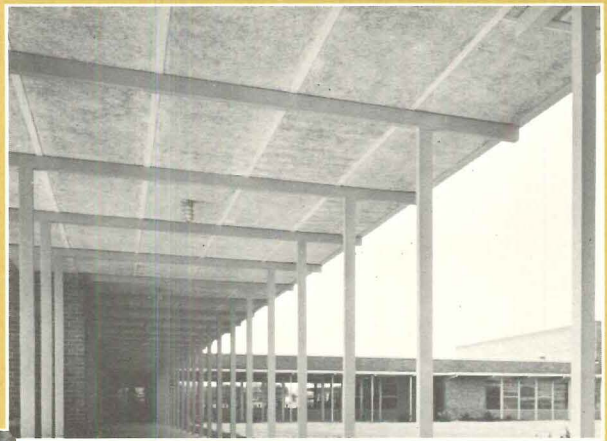
Address _____

City _____ State _____ Zip _____

The many faces...and the many places



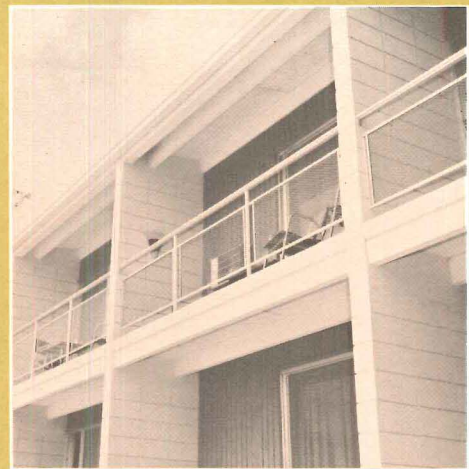
Rubbermaid Plant, Wooster, Ohio



Hillcrest High School, Simpsonville, S.C.



The INSULROCK plant and distribution center located at Richmond, Virginia



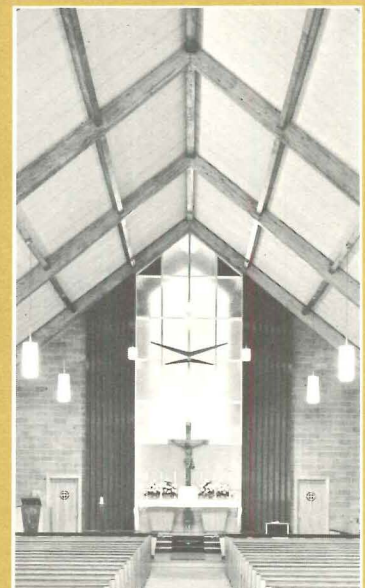
Howard Johnson Motor Lodge
Pensacola, Fla.



Sun & Snow Ski Lodge
Cadillac, Mich.



Home in New Canaan, Conn.



St. Christopher's Church
Parsippany, N.J.

THE FLINTKOTE COMPANY • INSULROCK Products



After daylight comes K-Lite.

(There's nothing in between. Quality-wise, that is.)

We haven't found a way to package a sunny day. But our K-Lite prismatic lenses come close. In fact, K-Lite puts artificial light far ahead of nature's best in many ways.

It's easy to provide enough light with today's lamps and fixtures. The only critical problem is converting high intensities into effective task and space illumination. K-S-H K-LITE PRISMATIC PANELS DO IT.

Why K-S-H? Isn't there an endless choice of panels, louvers and pans?

Yes. *But K-Lite controls the total effect . . .* gives you

proper brightness ratios; no streaks, hot spots or disability glare. It complements your architectural detail. K-Lite stays first-day new, year after year. And it has the lightness, the impact strength that glass can't touch.

It's no small task to design lighting prismatics and emboss them accurately, uniformly, panel after panel. *K-S-H Plastics is the world's largest specialist in this field.*

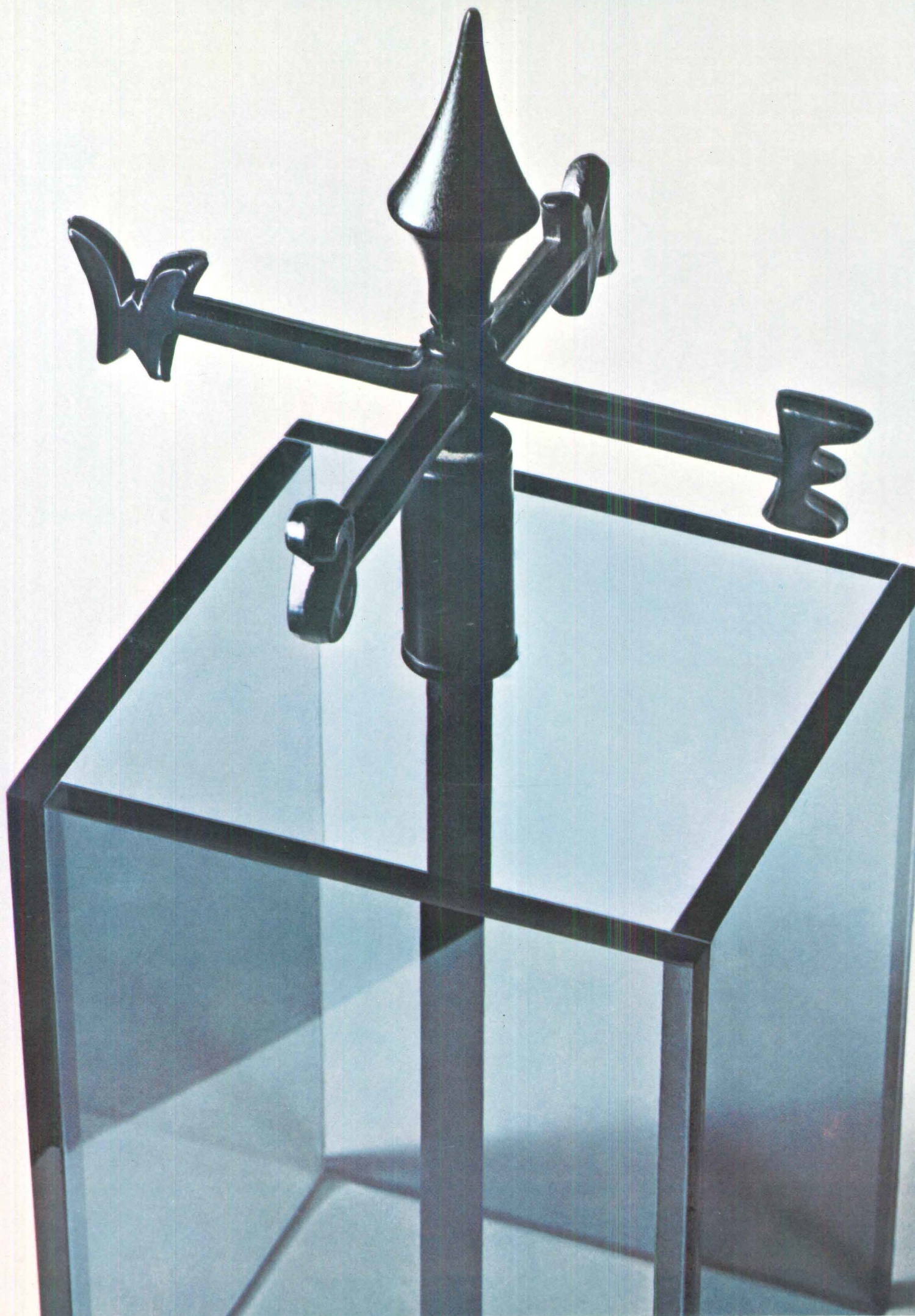
K-LITE® LIGHTING PANELS

K-S-H PLASTICS, INC. • 10212 MANCHESTER • ST. LOUIS, MO. 63122

◆ For more data, circle 114 on inquiry card

For more data, circle 115 on inquiry card

For more data, circle 116 on inquiry card ◆



New environmental control with Glass Conditioning* from PPG

**The glass you select to reduce
the sun's glare on the west side
of a building isn't necessarily
the right glass to use
on the south side or north side.
PPG has the full range of
environmental glass to control glare
and reduce heat gain or loss
for optimum comfort
and economy on every exposure
of any building.**

Your PPG Architectural Representative can bring the advantages of Glass Conditioning to your building. He can help you select the right glasses to provide maximum indoor comfort while contributing materially to lower heating and air conditioning costs. Call him or write: Glass Conditioning Services, Pittsburgh Plate Glass Company, One Gateway Center, Pittsburgh, Pennsylvania 15222.



PPG MAKES THE GLASS THAT MAKES THE DIFFERENCE

*Service mark of the Pittsburgh Plate Glass Company

from Chicago Faucet...

...Your best choice in Laboratory Table Fittings

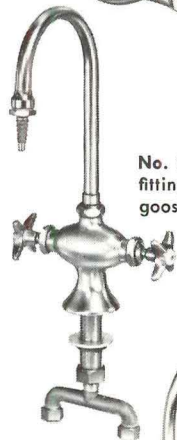
It's a complete choice to begin with, to answer every need in schools, hospitals, industrial laboratories, etc. There are interchangeable operating units for water, steam, or air and vacuum service; cross or wheel handles; polished chrome or sepia and aluminum bronze epoxy finishes. Above all, these fittings offer the famed Chicago Faucet unit construction which closes with the pressure for easier operation and precise flow control. The body of the fitting is not subject to wear; the standard interchangeable unit contains all wearing parts, can be repaired or completely replaced in minutes, and still fits Chicago Faucets made as long ago as 1914.



No. 937—Single fitting for regular water service. Fittings for steam service have insulated plastic handles.



No. 980WH—Single opening turret fitting, with needle valve unit for air service. Multiple opening turrets also available.



No. 929—Deck mounted double fitting with either rigid or swing gooseneck spout.



No. 927—Deck mounted single fitting with either rigid or swing gooseneck spout.



No. 943—Back mounted double fitting with vacuum breaker. Gooseneck spout can be rigid or swing type.

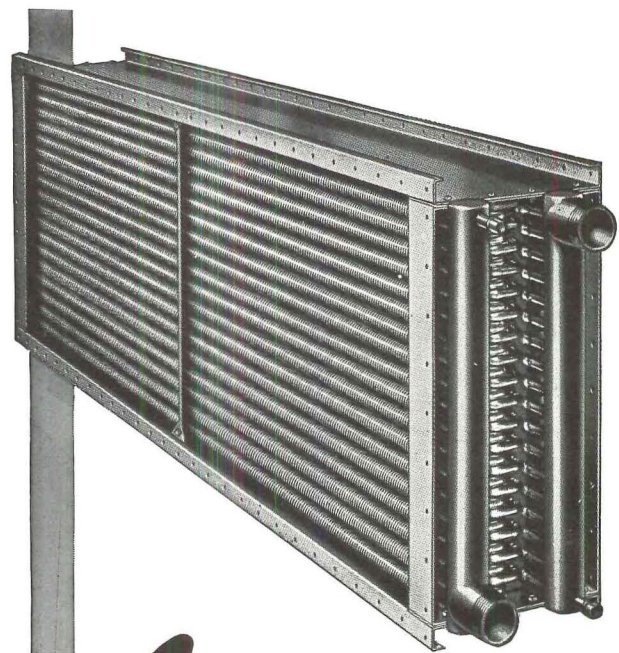
The Chicago Faucet Company
2100 S. Nuclear Drive, Des Plaines, Ill.
(A suburb of Chicago)

CHICAGO FAUCETS®
Last As Long As the Building

Distributed through the Plumbing Trade exclusively.



This NEW Catalog will make you an authority on LABORATORY FITTINGS — has the most comprehensive array of models for just about every use. Write for your copy.



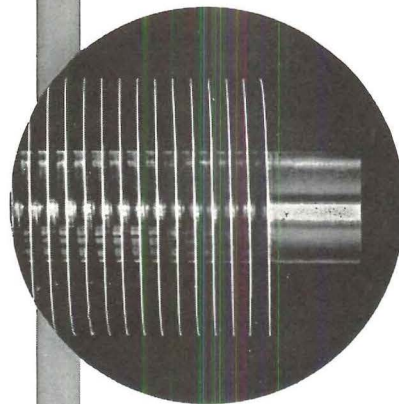
AEROFIN

Smooth-Fin Coils offer you:

Greater Heat Transfer per sq. ft. of face area

Lower Airway Resistance — less power per c. f. m.

Aerofin smooth fins can be spaced as closely as 14 per inch with low air friction. Consequently, the heat-exchange capacity per square foot of face area is extremely high, and the use of high air velocities entirely practical. Tapered fin construction provides ample tube-contact surface so that the entire fin becomes effective transfer surface. Standardized encased units arranged for simple, quick, economical installation.



Aerofin is sold only by manufacturers of fan system apparatus. List on request.

AEROFIN CORPORATION

For more data, circle 117 on inquiry card

For more data, circle 119 on inquiry card



variety of shapes
long lengths • quick erection
wide range of permanent colors
maintenance-free
light, strong
easily cleaned
insulated or non-insulated
for old buildings or new
... we're talking about

Vitralume®

Robertson's answer to
"What's New in
Metal Curtain Walls?"

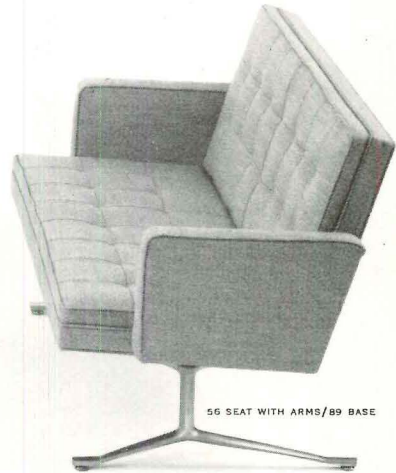
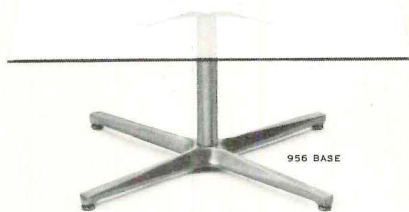
H. H. ROBERTSON COMPANY ARCHITECTURAL PRODUCTS DIVISION

PITTSBURGH, PA.    CONNERSVILLE, IND.

Plants in Ambridge, Pa., Connerville, Ind. and Stockton, Cal.
Sales Offices, Agents and Plants in 60 Countries around the world

Write us for complete details about Vitralume.

®Robertson's exclusive process of fusing
glass to aluminum at approximately 1000° F.



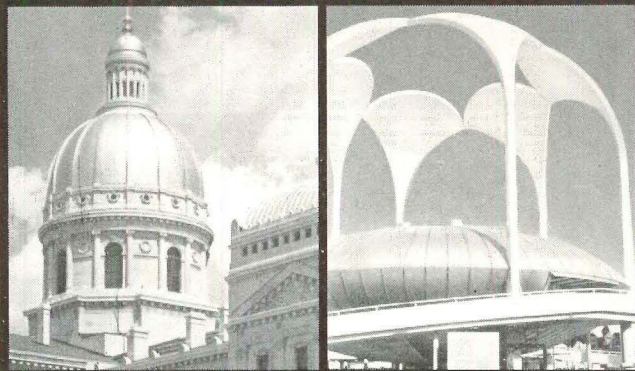
CHF

NORTH CHICAGO, ILLINOIS
SHOWROOMS IN ALL PRINCIPAL CITIES

For more data, circle 120 on inquiry card

DURAGOLD[®]

tarnish resistant golds
for exterior finishes



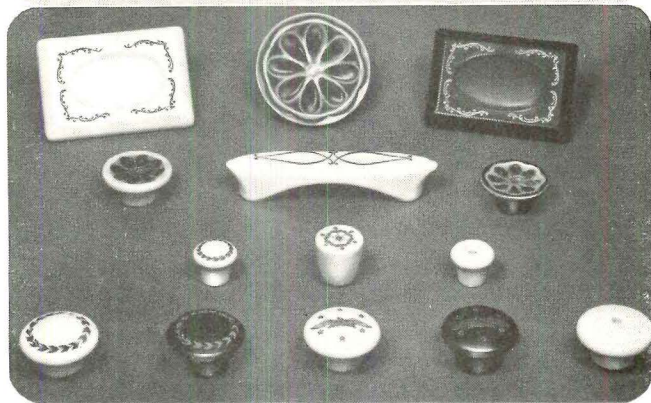
Specify Duragold for bright, economical, durable gold exterior and interior coatings. Shown above, the Indiana State Capitol dome and the Johnson's Wax Golden Rondelle at the New York World's Fair, both covered with coatings containing Duragold pigments. For the names of manufacturers using Duragold, plus a free gold spray can, write or call...



CLAREMONT Polychemical Corp.
39 Powerhouse Rd., Roslyn Hgts., L.I., N.Y. 11577 • 516 MA 1-8800

For more data, circle 121 on inquiry card

Add Elegance at Low Cost with **LENAPE** CERAMIC KNOBS AND PULLS



- American-made, solid ceramic
- Glazed-on colors and designs
- No paint or tarnish problems
- All decorations 22 kt. fired-on gold
- Easy to install, inexpensive
- Wide choice of styles and sizes
- Available in custom decorations

Write, wire or phone.



Lenape Products, Inc.
113 Stokes Avenue, Trenton, N. J. 08605
Phone: (609) 882-7412

For more data, circle 122 on inquiry card



***The only thing about concrete block
that is without variety
is its quality.***

Concrete block, manufactured to **Q BLOCK**[®] specifications, is concrete block at its best

see other side...



The Q Block[®] Program

certification of the highest quality concrete block

The concrete block industry has instituted a national quality control program, designed to provide the architect, designer, builder and owner with maximum assurance of product quality. It is called the Q BLOCK[®] program.

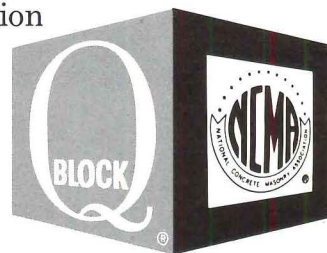
The registered hallmark "Q BLOCK" identifies concrete block which is manufactured to Q BLOCK specifications. These specifications, established by the National Concrete Masonry Association, reflect all the high standards that modern research, technical development and testing facilities can provide. To assure that these high standards are maintained, concrete block manufactured by participants in the Q BLOCK program must be tested at regular intervals. Following each test, the manufacturer is issued a certificate

by the National Concrete Masonry Association indicating he is a qualified Q BLOCK producer.

Now, with this established national quality control program, you have complete confidence that the concrete block you specify by the Q BLOCK name has structural integrity second to none.

The Q BLOCK program puts concrete block in a most enviable position, offering the building industry not only the most versatile, attractive, fire-safe, sound absorbing, care-free product on the modern day market . . . but a building material with a proven reputation for high quality.

Members of the national Q BLOCK program are identified by this registered mark. Look for it whenever you specify concrete block.



Write: Q Block Program • National Concrete Masonry Association • 2009 14th St., North • Arlington, Va. 22201

Sometimes a building material itself can help suggest new concepts in design. This imaginative use of color accents was inspired by permanently colored Glasweld®.



Glasweld's remarkable freedom from maintenance makes it practical for you to use color freely in out-of-reach places such as these orange and yellow panels mounted behind pressure-treated 2 x 3's. A simple hosing down is the only maintenance these and the adjoining black Glasweld sandwich panels will ever need.

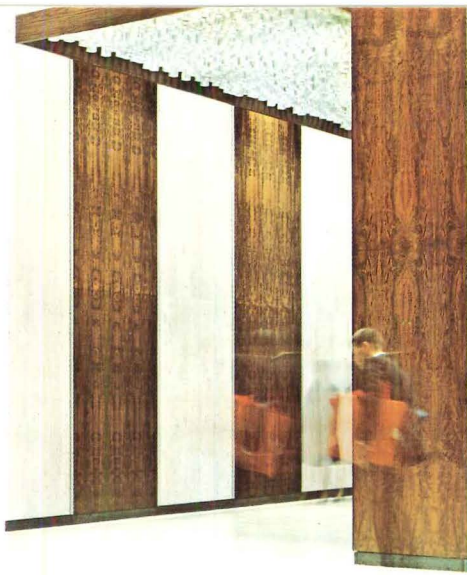
For window inserts, curtain walls, and fascias, Glasweld's unique properties make it a most valuable building material. It is a completely weatherproof asbestos-reinforced panel with a permanently colored mineral surface. Glasweld machines cleanly, appears optically flat, resists impact and abrasion, and is 100% incombustible.

For technical data, write United States Plywood, Dept. AR 3-66, 777 Third Avenue, New York, N. Y. 10017.

**Glasweld®, sold only
by United States Plywood.**

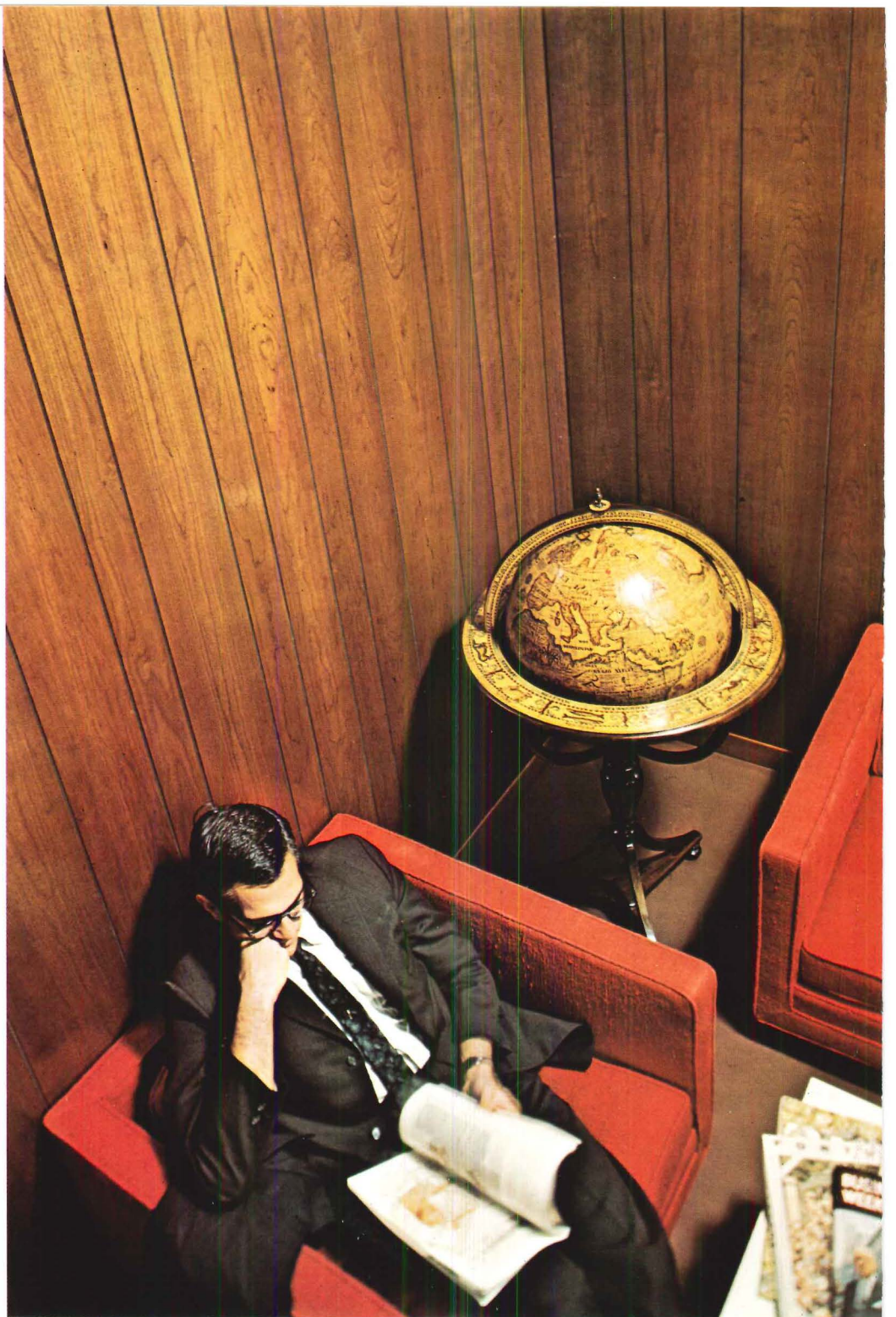
St. Vincent's Infant Home, Towson, Md. Arch: The Office of Gaudreau, Baltimore.





**Not every client
you have is ready
for Weldwood
blueprint matched
architectural paneling.**

**That's why we make
Weldwood Gold Label
paneling, too.**



A limited budget is no reason to forego the matchless warmth of real wood paneling in your designs. The high degree of care that goes into the selection of veneers, the workmanship, and the quality control in the production of Weldwood® Gold Label paneling make it a most excellent architectural material.

The handsome reception area shown here is paneled in Weldwood cherry with the new Patina 2 finish. This 30-step finishing process adds unprecedented character and dimension to each "plank" in the hardwood panels.

Weldwood prefinished paneling offers limitless new design possibilities to you. There are more than 70 different kinds in a wide price range: from exotic teak and rosewood to domestic hardwoods such as hickory and elm.

For assistance in the selection of Weldwood paneling, write United States Plywood, Dept. AR 3-66, 777 Third Avenue, New York, N. Y. 10017.

Only United States Plywood makes Weldwood® paneling.

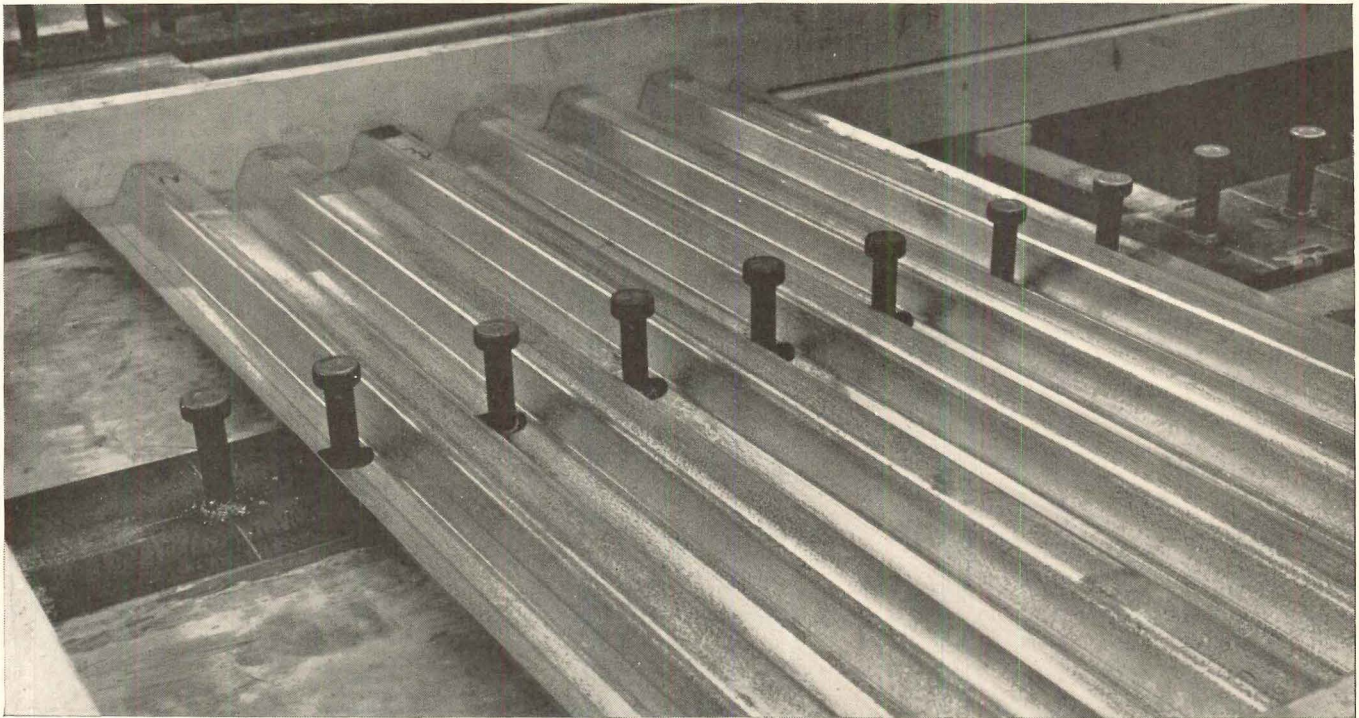
"HERE'S AIRTEMP'S BRAND-NEW, AIR COOLED CONDENSING UNIT. IT'S ALUMINUM-LIGHT! This little sweetheart, the HAR-50 [50 ton model], is light and compact [2,860 lbs., covers 76.5 sq. ft.]. It's the strong, silent outdoor type [aluminum construction in cabinet frame, heat-transfer surfaces and legs]. Of course you'll want to know more about this whole series [20-100 tons]. Just ask my Airtemp friends. They're listed in the Yellow Pages."

Airtemp



◆ For more data, circle 123 on inquiry card

◆ For more data, circle 124 on inquiry card



Slabform with 1½ in. holes for stud connectors welded to steel beam.

Tests prove Bethlehem Slabform structurally sound in composite design

In order to prove that Slabform, Bethlehem's solid steel centering, achieves maximum effectiveness in composite beam design, a number of tests were conducted by our Homer Research Laboratories using Slabform and composite beams.

Three T-beams, all with shear connectors, were used. One supported a reinforced slab cast on Heavy-Duty Slabform, the second had a reinforced slab cast on Extra Heavy-Duty Slabform, and the third had a conventional slab in direct contact with the steel beam.

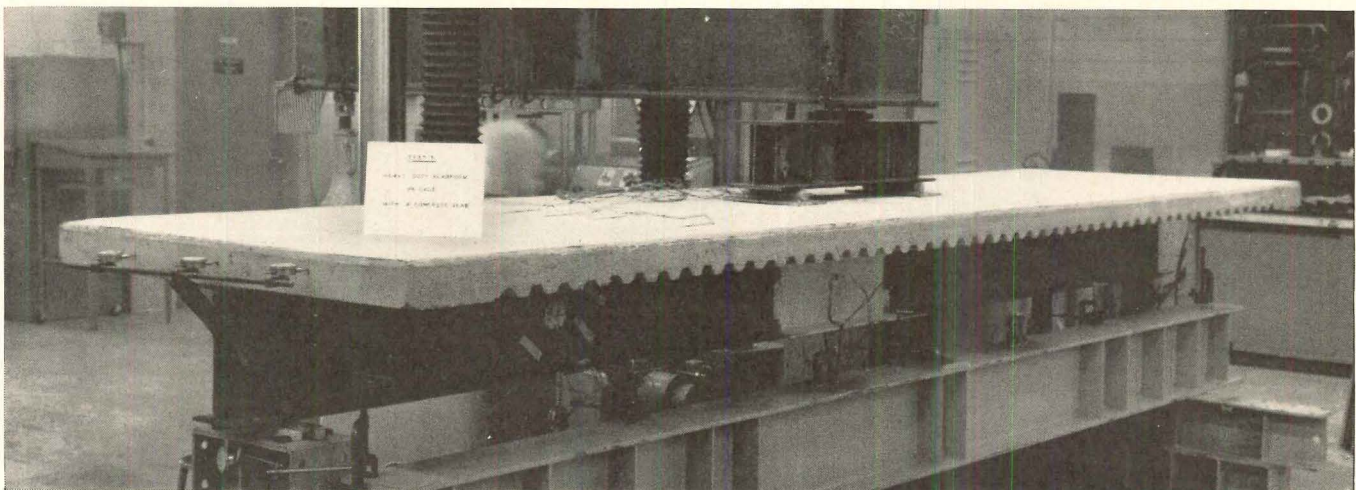
The test results proved that Slabform in no way interfered with the desired steel-concrete interaction. The tests also showed that the Slabform corrugations could be ignored and the beam designed as if the slabs were solid and no openings existed over the beam. (Bethlehem does not supply punched Slabform sheets.)

We'd be happy to give you full details on these tests. Just write or call the nearest Bethlehem sales office. We're at your service. *Bethlehem Steel Corporation, Bethlehem, Pa.*



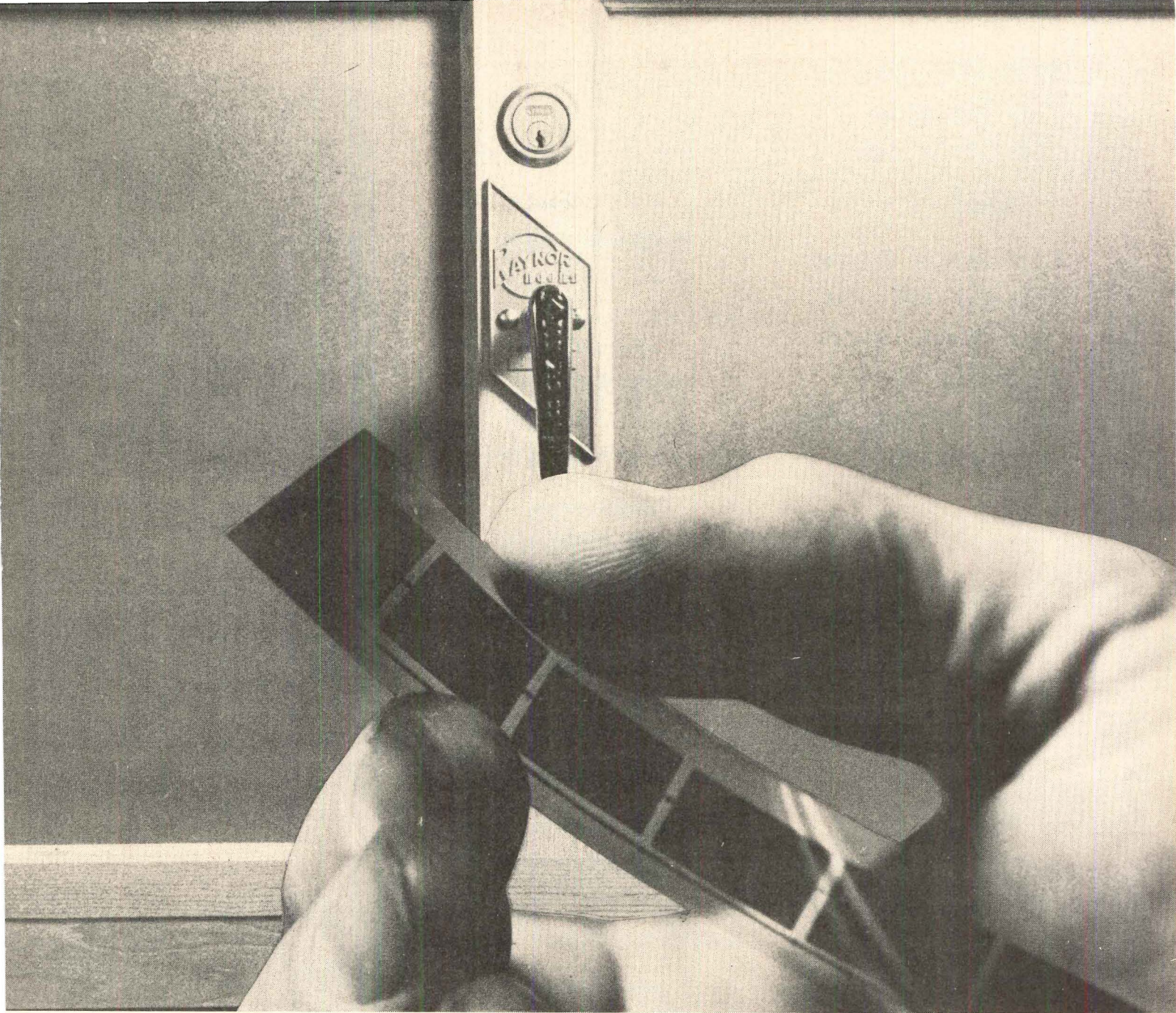
Test set-up contains concrete slab 18 to 26 days old over Slabform. Loads were applied by a 300-KIP, hydraulic testing machine.

**BETHLEHEM
STEEL**



For more data, circle 125 on inquiry card

For more data, circle 126 on inquiry card ▶



Each Raynor overhead-type door is on data film to assure easy replacement of damaged parts. Anytime.

Every Raynor door detail is permanently registered on data film for positive identification and quick replacement of damaged parts years from now. Data film registration is exclusive with Raynor, and covers all Raynor overhead-type doors — wood, Raylon (fiberglass),

aluminum and steel. If a Raynor door is ever damaged or you want to match existing doors for a building addition, Raynor makes it easy. Any time. Ask your Raynor representative about our exclusive architectural shop drawing service — another way you can depend on Raynor.



RAYNOR
The Brand You Can Depend On

Raynor Manufacturing Company, Dixon, Illinois, Dept. H
Please send me free literature on Raynor garage doors.

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

It's All Right To Stack Them Up...

BUT!

Unless You Build Right, All You Are Doing Is Stacking Up Trouble

Today, more and more parking facilities are multi-storied garages, both above and below ground.

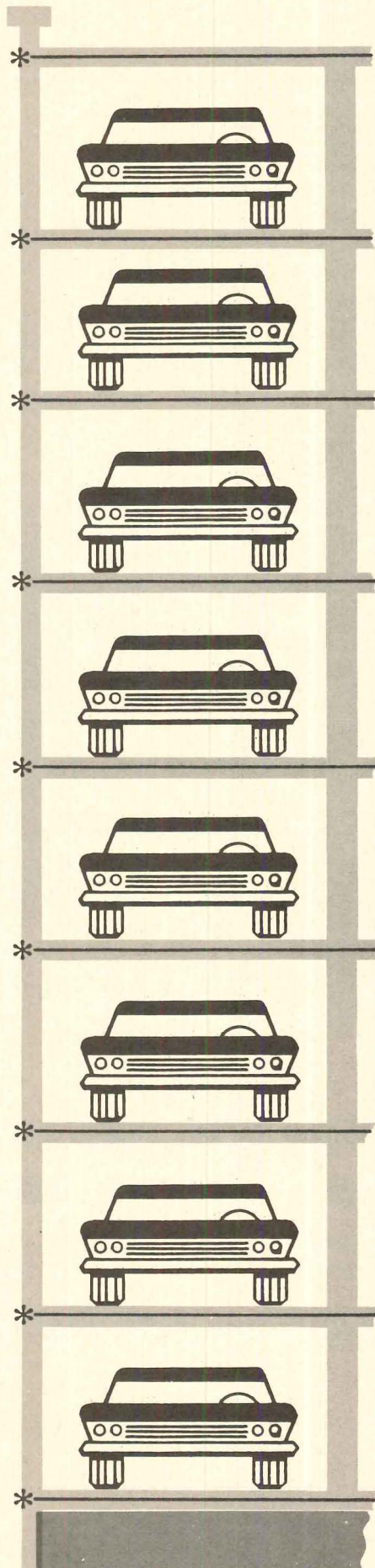
This means avoiding "drip-through" porosity is a vital construction factor.

* Carlisle Sure-Seal Rubber Membrane installed in decks and ramps forms an impassable moisture barrier... completely eliminates "drip-through" and saves your clients thousands of dollars in repairs and possible litigation.

Write today for complete information and specifications. Carlisle Sure-Seal has been both time and torture tested.



SPECIAL PRODUCTS DEPT.
CARLISLE TIRE & RUBBER DIV.
CARLISLE CORPORATION
CARLISLE, PA. 17013

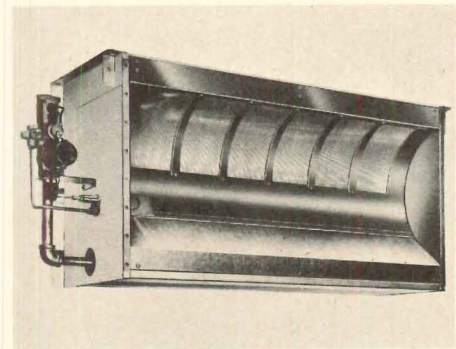


continued from page 208



INSULATION FOR RESIDENTIAL CONSTRUCTION / Urethane foam, previously used mainly for industrial and commercial applications, is now reported to be efficient and practical in residential construction. The urethane foam which is sprayed between the studs on exterior exposed walls will adhere to practically any surface. The average thickness of the foam as applied is approximately 1/2 in. when dry; and the K factor is .14. The foam can be applied at the rate of about 50 square feet per minute. ■ Poly Systems & Chemical Co., Hawthorne, Calif.

Circle 306 on inquiry card

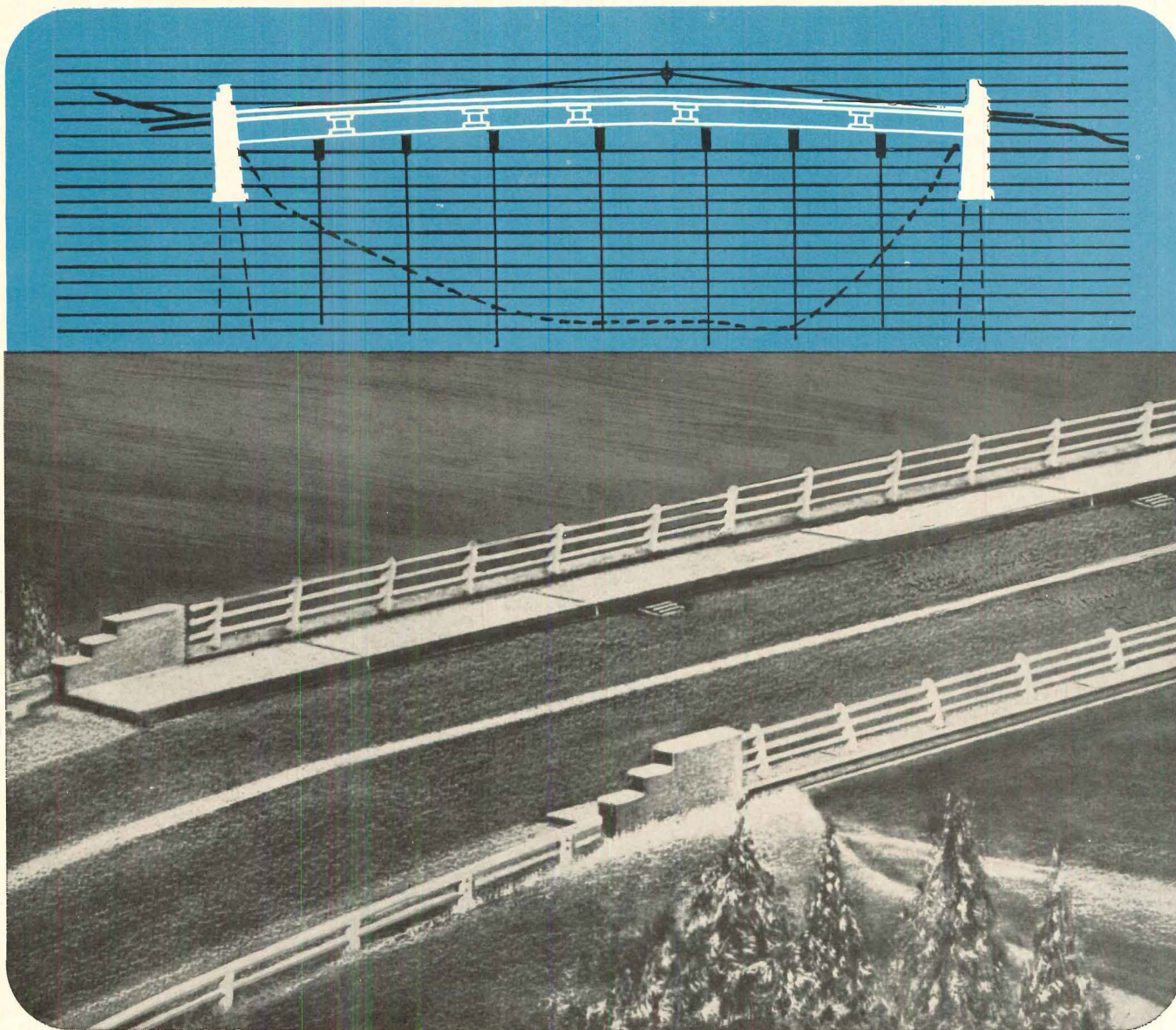


INFRA-RED HEATER / A new gas-fired, cabinet-type, directional heater, which has maximum intensity at 30 deg. downward from horizontal, was designed to provide economical heat in industrial and commercial buildings. The design of the heat emitter is said to enable infra-red rays to be directed over a broader area of floor space than most comparable heaters and is particularly effective as a perimeter heating system. The Model W.60 operates at 60,000 Btu on natural gas, 57,800 Btu on propane gas, and is AGA-approved. ■ Space-Ray Corporation, Charlotte, N. C.

Circle 307 on inquiry card

more products on page 236

For more data, circle 127 on inquiry card



THE FIRST HOT DIP GALVANIZED BRIDGE IN THE U. S. WILL SPAN A RIVER OF MAINTENANCE 20 YEARS WIDE

A zinc skin will provide 20 to 50 years of protection **without maintenance** for this bridge being built over Stearns Bayou near Muskegon, Michigan.

The bridge is 420 feet long with a 30 foot roadway and a 5 foot walk on each side. There are 8 spans, two at 60 feet and six at 50 feet. Design loading is H20-S16-44. All structural members, fasteners and other steel parts are protected against corrosion after fabrication by hot dip galvanizing specified at 2.3 ounces per square foot. Structural

techniques proven successful in a hot dip galvanized bridge opened near Quebec City, Canada, in 1963 assure full friction of fastener contact surfaces **plus** the corrosion resistance of an unbroken zinc coat.

The cost of galvanizing today is surprisingly close to that of a proper paint system. When maintenance costs are considered, galvanizing with its 20 to 50 year life expectancy is by far the most economical.

ST. JOE

ST. JOSEPH LEAD COMPANY

Producers of Zinc for American Industry

250 Park Avenue • New York, New York 10017

ZN-288

BREAKTHRU

BY UNITED



OUGH!

STATES GYPSUM ●



ACOUSTONE Acoustical Tile in new GLACIER pattern presents a deep-fissured surface for ceilings that is unique in its ruggedness, unique in its natural beauty. No problem of monotony in appearance because no two tile textures are exactly alike. No break in the one-surface look because the fissures minimize all joint lines. GLACIER provides a noise reduction coefficient of .80. It is adaptable to all standard installation systems for acoustical ceilings and meets building code requirements as an incombustible product. GLACIER is the latest advance in ACOUSTONE Ceiling Tile...a name that is synonymous with high-quality sound control in construction.

**GLACIER ACOUSTONE* Mineral Acoustical Tile ...
another breakthrough by**

UNITED STATES GYPSUM

For more data, circle 128 on inquiry card

*Reg. U. S. Pat. Off.

New Translucent Suspension System Softens GRID Effect in Illuminated Ceilings!

Introducing the PARATRAK CEILING SYSTEM, the first really different idea in suspension tracks. Parallel translucent plastic channels match the louvers to create ceilings that seemingly float. Slim track design aligns louvers perfectly, yet permits quick, easy removal for periodic maintenance. Only a hint of the suspension system remains... a pleasing suggestion of pattern.

With the plastic PARATRAK system, cross members are eliminated. The self-aligned panels lock in flush with the track for a directed yet uninterrupted sweep across the ceiling. New effects are possible. New visual excitement... and with the plus of reduced installation costs.

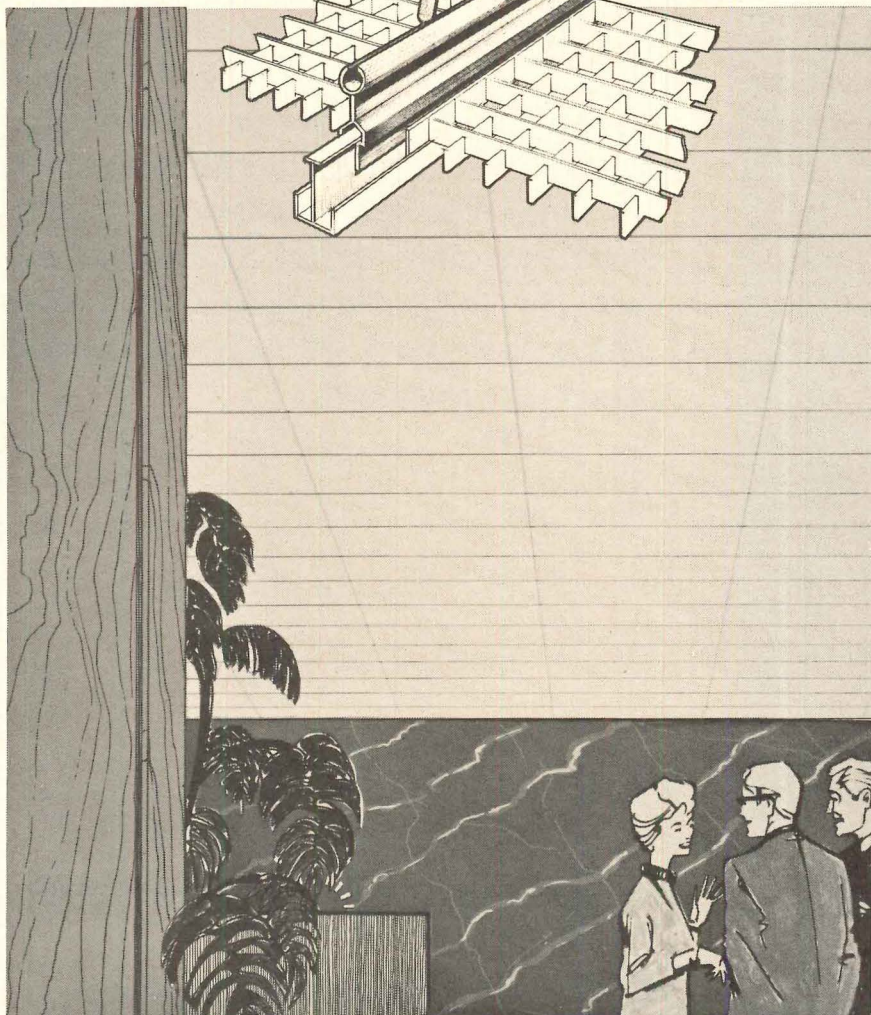
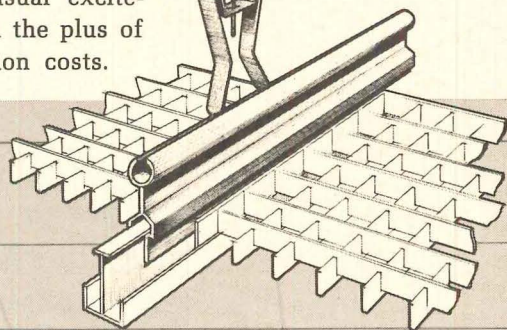
This new ceiling is designed to take the following louvers, both U.L. and F.M. listed for use under sprinklers.

DEMICEL—2' x 4' one-piece molding in light stabilized styrene.

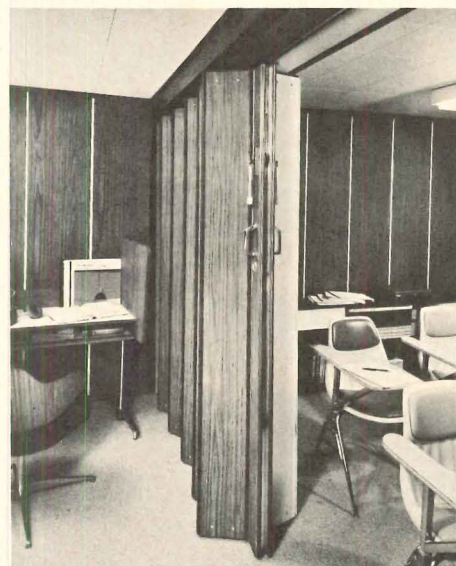
ACRYCEL—2' x 4' one-piece molding in long-life virgin acrylic.

For more information, write Wilson Research Corp., Box 5037, Erie, Pennsylvania, Phone (814) 838-1981.

WILSON

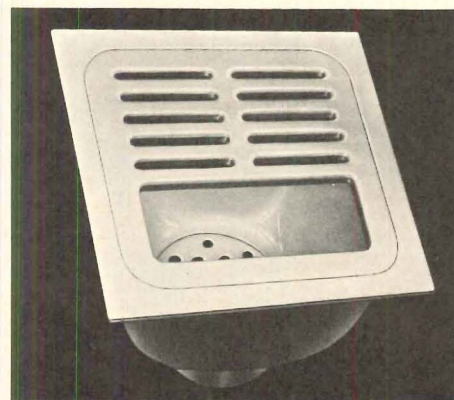


For more data, circle 129 on inquiry card



FOLDING PARTITION / The *SonicWal* (STC 36) vertical wood panel, acoustically-rated partition, has an accordion-type folding action, and consists of dual panels, each lined with sound-dampening material. Heavy-gage-vinyl hinges seal and protect panel edges and provide a cushion between adjoining panels which is said to eliminate panel-to-panel sound reverberation. The dual panel accordion configuration allows each side of the partition to dampen sound independently in a manner similar to staggered stud wall construction. Ball-bearing wheels on each 8-in. module, and 14-gage steel panel support brackets give quiet, simple operation and durability. ■ Panelfold Doors, Inc., Hialeah, Fla.

Circle 308 on inquiry card

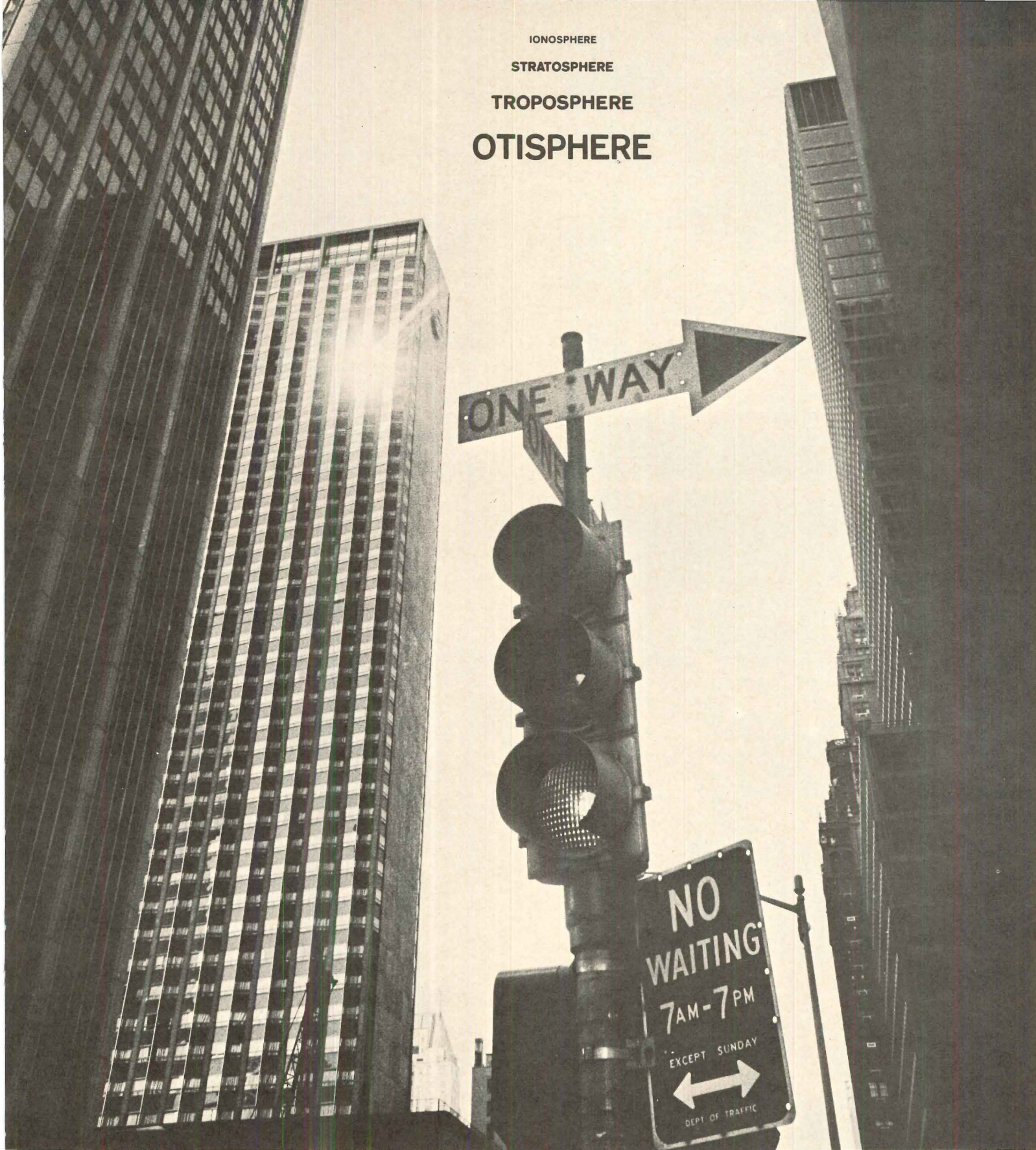


FLOOR SINKS / Enameled cast-iron floor sinks are designed for use in restaurant, kitchens and other establishments where sanitary, easy-to-clean drains are required. The drains are set in concrete flush with the floor and are said to be hard wearing and acid-resistant. ■ American-Standard, New York City.

Circle 309 on inquiry card

more products on page 240

IONOSPHERE
STRATOSPHERE
TROPOSPHERE
OTISPHERE



*Trademark of Otis Elevator Company

In the Otisphere all signals are "Go"

With new "INSTANT ELEVATORING"* just touch the button...and your Otis is on its way. Any time.

This remarkable V.I.P. system of electronic controls automatically adjusts elevating service

to any traffic needs. Anticipates service demands and instantly dispatches cars to where they're needed.

Call your Otis man in on your building designs. Ask him for

complete details on this remarkable Otis development...how "INSTANT ELEVATORING" can be designed exactly to the needs of your client.

Otis Elevator Company, 260-11th Ave., New York, 10001.

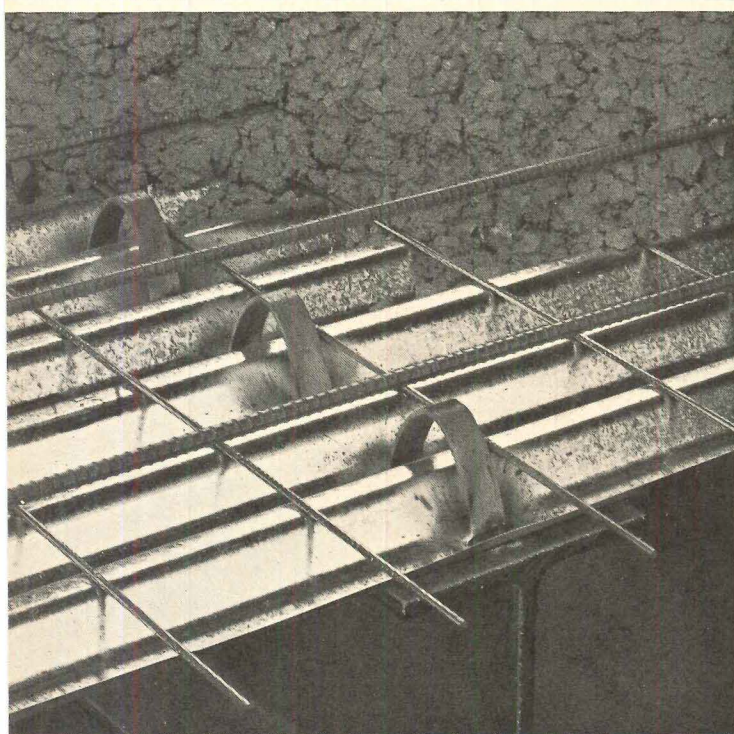
Otis[®]
ARCHITECTS' SERVICE

Electric and Hydraulic Passenger & Freight Elevators • Escalators • Moving Walks • Dumbwaiters • Elevator Modernization & Maintenance • Military Electronic Systems • Gas & Electric Trucks by Baker Division



CORRUFORM AND TUF COR

Lightweight, low-cost, tough-temper steel base for concrete floor or roof slabs over joists or light beams. Easy to handle and place, goes down fast, provides a safe, convenient working deck for trades. STANDARD CORRUFORM for spans up to 3' 6"; HEAVY DUTY CORRUFORM (illustrated) for spans up to 5' 0"; TUF COR, with insulating lightweight concrete, for roof spans up to 8' 0". Available uncoated or galvanized.



COFAR, CEL-WAY, A-E FLOOR

COFAR: the combination form and reinforcement for concrete slabs. With new shear connectors, it is adaptable to composite construction (illustrated). CEL-WAY: the ideal way to electrify structural slabs. Steel cells and new dual service floor fittings put telephone and power outlets where they're needed. A-E FLOOR: Combines air and electrical distribution in one compact floor system, with shallow plenum and steel cells sandwiched between finished floor and structural slab.



ROOF DECK

High-strength steel deck for use with rigid insulation and built-up roof. Extremely lightweight (usually 3 psf, including deck and insulation). For spans up to 14'. Five different patterns, six different gages to choose from. A deck to fit your needs exactly; gives you full value for your roof deck dollar. Protected with durable baked-on enamel primer or tight, hot-dip galvanized coatings.

Complete Floor and Roof Systems

from One Dependable Source:

GRANCO

Here's convenience plus: a single time-saving, trouble-saving source of steel products for floor and roof construction. They give you the strength, performance, and permanence you need at the economy you want. Granco products are easily handled and placed, save on construction materials, keep work schedules moving briskly ahead. They provide design flexibility for today's varied architectural needs, and are adaptable to meet just about every technical problem. Learn more about the many Granco products that are available from this one dependable source. Our floor and roof manuals contain all the information you need. See Sweets file, or write to Granco Steel Products Company, 6506 North Broadway, St. Louis, Mo. 63147. A subsidiary of Granite City Steel Co.



IMAGINATION IN STEEL

For more data, circle 130 on inquiry card

Loyalty

Do you know that fully 16% of the Continental boilers being sold today are going to customers who are already enjoying the economy and efficiency of these outstanding boilers? The loyalty of these "repeat users" reflects their satisfaction and is proof of Continental's economy, dependability, and service year after year. Write for latest catalog.

Continental
Boiler Division

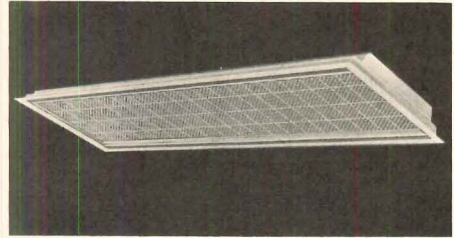


**BOILER ENGINEERING
AND SUPPLY CO., INC.**
PHOENIXVILLE, PENNSYLVANIA

For more data, circle 131 on inquiry card

PRODUCT REPORTS

continued from page 236



LIGHTING AND AIR DISTRIBUTION /

The new line of *Clymatron II* lighting fixtures, used in conjunction with Barber-Colman Company's expanded range of air handling components, provides an efficient system of environmental control. Heat transfer is achieved by directing return air through the lamp compartment. Returned air enters through dirt traps in the ends of the fixture and goes out via top louvers. An air control blade can be adjusted at installation to control the air pattern at any angle. Housing depth of the new *Clymatron II* has been reduced to only 3¹/₁₆ in., while the one-piece embossed steel body and ends makes for additional strength.

The air-handling component line has been expanded to include internally insulated as well as uninsulated supply components. ■ Emerson Electric, Day-Brite Lighting Division, St. Louis, Mo.

Circle 310 on inquiry card



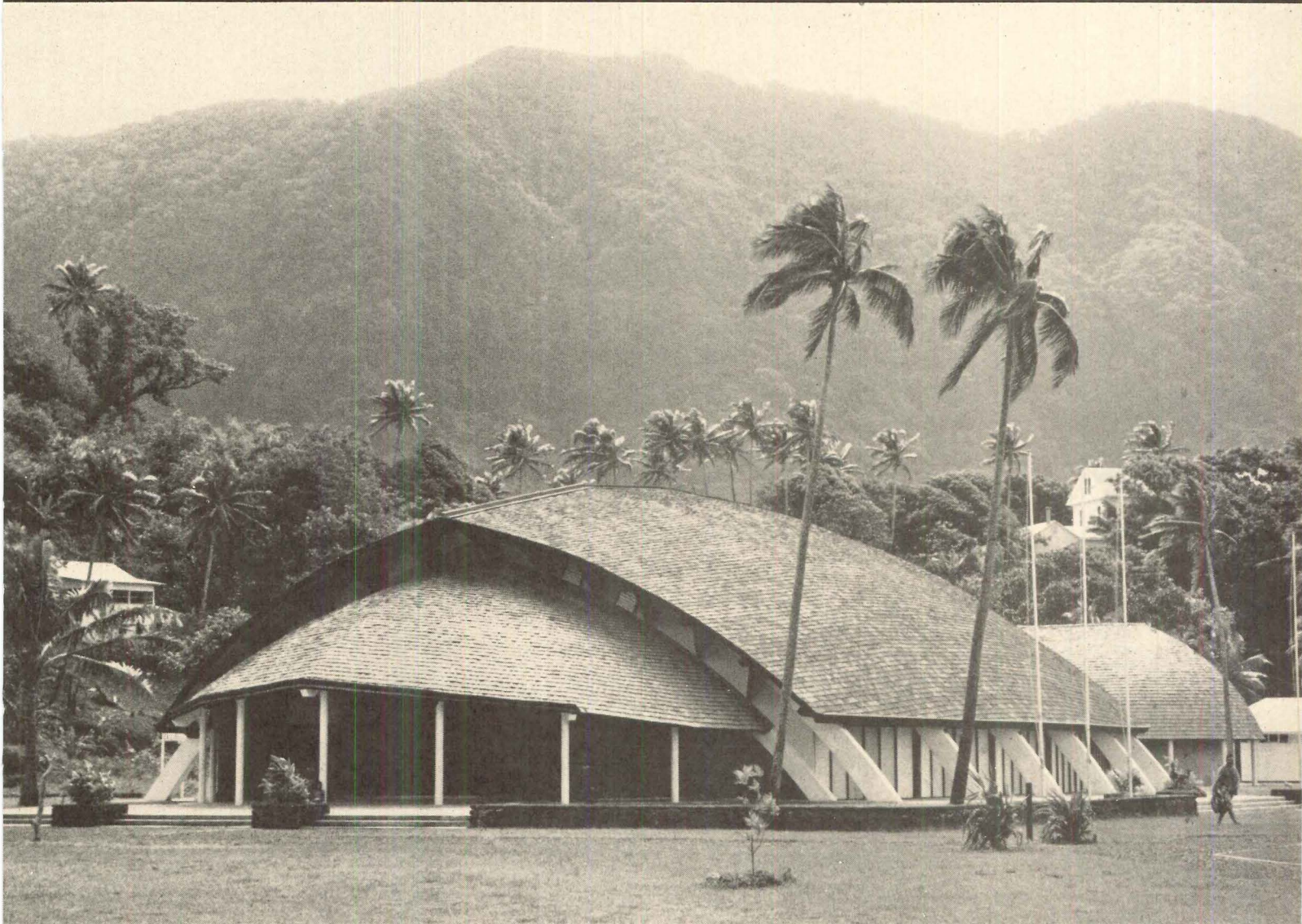
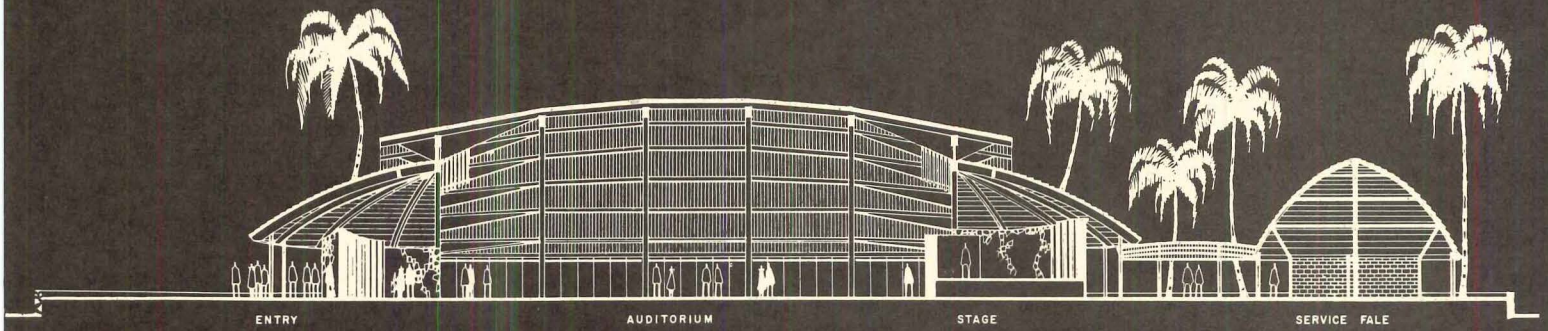
SHOWER CONTROL / Protection from icy blasts or scalding bursts of water can be achieved by use of the *Hydro-guard series 410*, which can sense and correct any fluctuations in supply water pressure. This new control, operating on the pressure-equalizing principle, incorporates a diaphragm which positions poppet valves to compensate for water pressure changes as they occur. ■ The Powers Regulator Company, Skokie, Ill.

Circle 311 on inquiry card

more products on page 245



Civic auditorium, Pago Pago, American Samoa
Architects: Wimberly, Whisenand, Allison & Tong Architects Ltd.
Certi-Split Handsplit/Resawn Shakes, 24" x 3/4" to 1 1/4" with 7 1/2" to the weather.



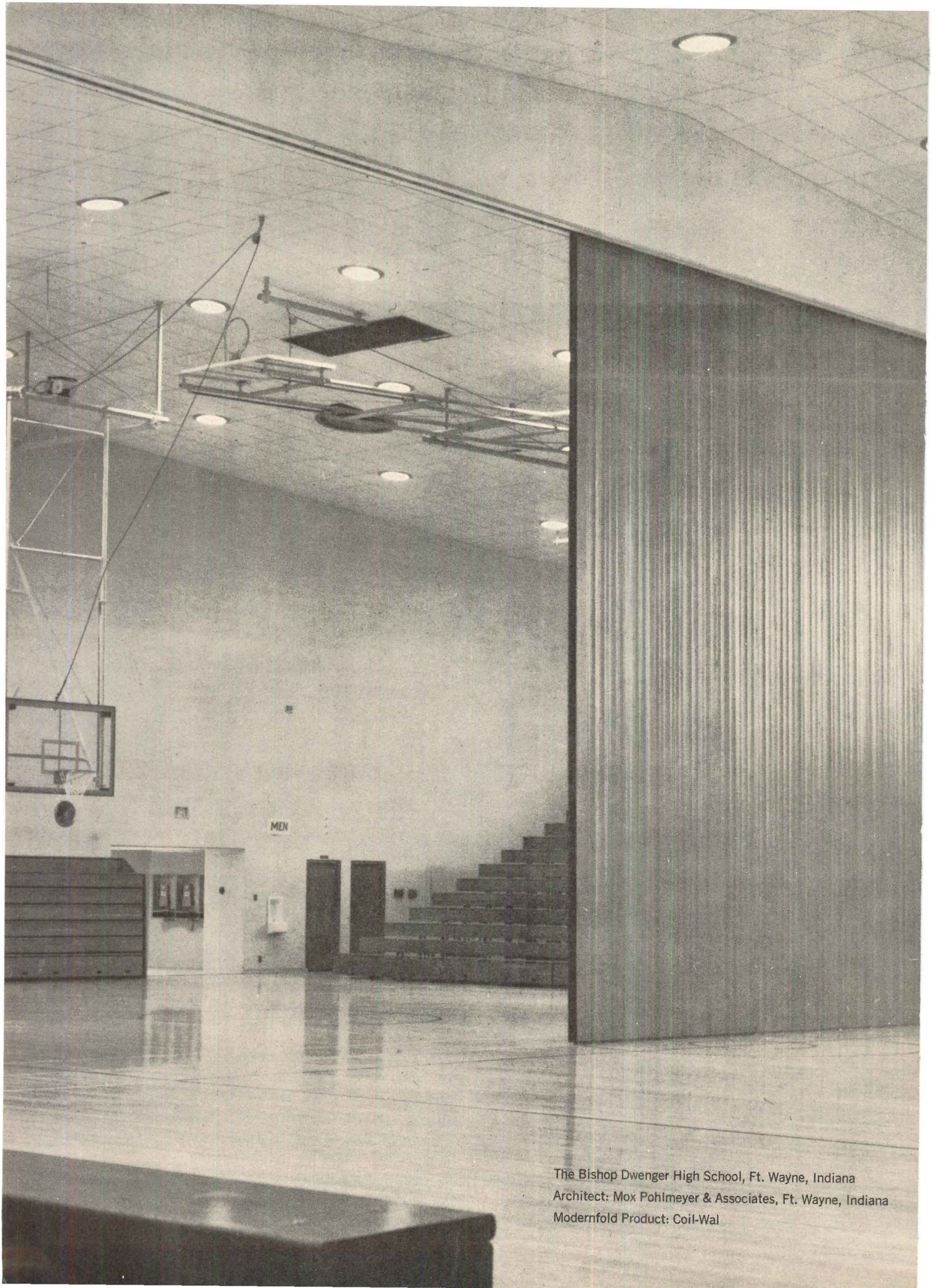
Red Cedar Handsplit Shakes: Very much at home in Samoa.

When the architects began planning some new government buildings at Pago Pago, American Samoa, they faced two major roofing problems. First, what would survive more than 10 years in Samoa's hot, moist, salt-laden air (and occasional hurricane winds)? Second, what would complement the local native thatch roofs? Their attention was steered to red cedar when someone discovered some island buildings with red cedar shingle roofs still in place after 28 years. Further investigation led to life expectancy predictions of 30 to 40

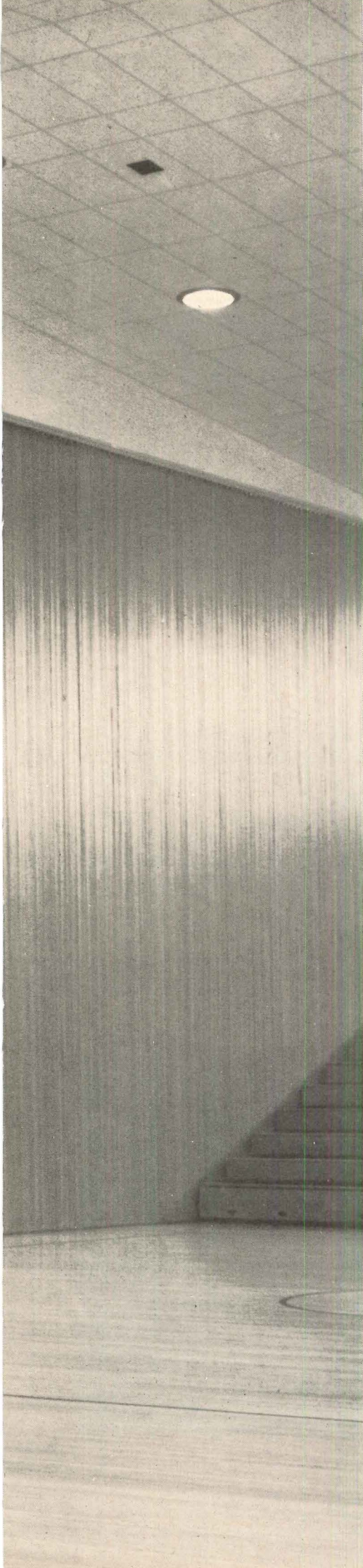
years for handsplit shakes, and to a decision to use them for the roofs of 11 new government houses, 200 individual school units, an airport terminal and an auditorium (shown above). Detailed information on Certi-Split handsplit shakes (and Certigrade shingles) is available in our Sweet's Catalog listing, 8d/Re. Or give us a call. Or write.

RED CEDAR SHINGLE & HANDSPLIT SHAKE BUREAU
5510 White Building, Seattle, Washington 98101
(In Canada, 1477 West Pender Street, Vancouver 5, B.C.)

For more data, circle 132 on inquiry card



The Bishop Dwenger High School, Ft. Wayne, Indiana
Architect: Mox Pohlmeier & Associates, Ft. Wayne, Indiana
Modernfold Product: Coil-Wal



Why does an operable wall manufacturer put over 500 men in the field?

Because we do not yet have 1,000.

With today's rapid acceptance and ever increasing use of Modernfold operable walls, we will soon need at least that many.

Operable wall specialists can't be expert overnight. They have to be trained and knowledgeable about sound control, interior design, construction, engineering, space division and a hundred other things.

We have all come a long way since 1950. School needs changed. Became overcrowded. Educational TV was introduced. Non-graded classes, team teaching and audio-visual aids became most important.

New uses for Modernfold products emerged.

Walls that divide a large gym into space for several P.E. classes. Walls that deaden sounds better than concrete block. Walls 27' high and 150' wide, that move on or off their sub-division jobs electrically with the turn of a key.

Walls with tough vinyl covers. Rugged steel frames. Walls made of coiling wood and wood panels. Walls of aluminum. Walls designed for specific use instead of just one type for every application.

Each Modernfold product is best at certain jobs. Soundmaster. Coil-Wal. Audio-Wall. Woodmaster. Splen-door. Acousti-Seal.

Even though we now have over 500 men working with architects and administrators, in order to better keep up with your needs, we're looking forward to having many more.

We have a full color brochure that illustrates many of our products in use. For your free copy, simply write: New Castle Products, Inc., P. O. Box 353, New Castle, Indiana 47362.

Or, contact your Modernfold man. He is a trained specialist.



For more data, circle 133 on inquiry card

Are the bugs out of all plastic flashings? Just one—

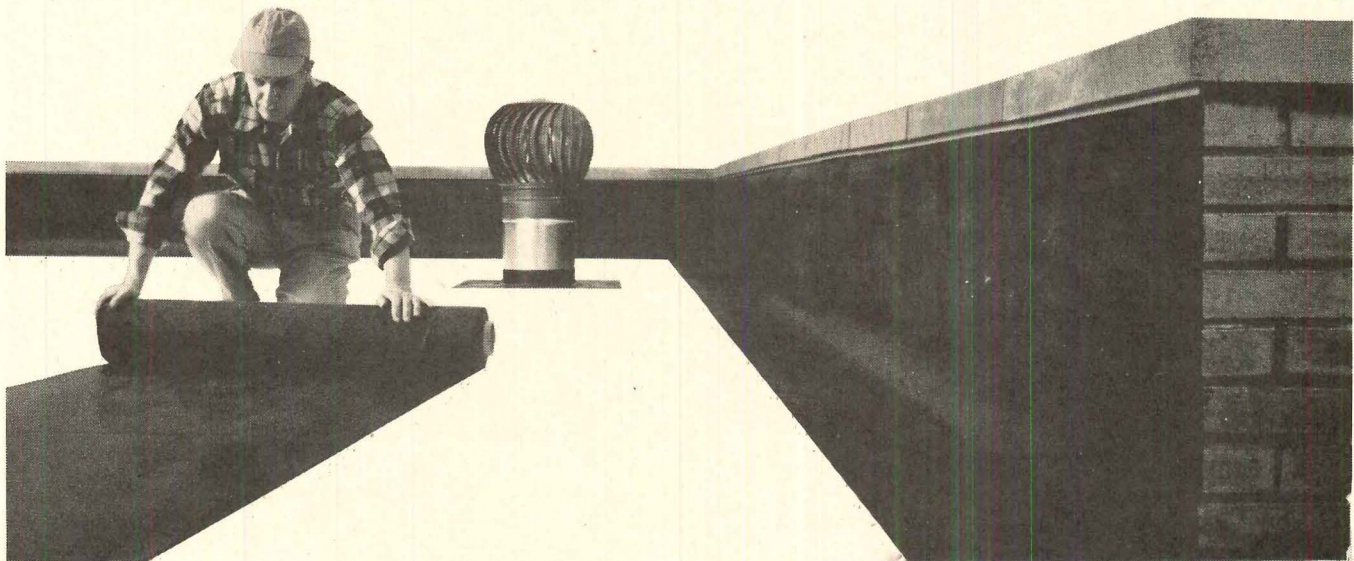
Saraloy 640R.

There are only two reasons for not specifying flexible flashing: (1) you've tried it before with mixed results, or (2) you don't like to try new things. Well, now we think we can reassure you on both counts. Early flexible flashings (and a few that are still around) had their faults. These have been corrected in Saraloy[®] 640R plastic flashing. Second, flexible flashings are

not new. They've been some time reaching the state of perfection embodied in Saraloy 640R flashing. Consider the advantages of Saraloy 640R. Since it's flexible, it can adjust to the building movements that occur. It can withstand extreme roof temperatures—either hot or cold—without thinning out or getting brittle. And it lasts and lasts.

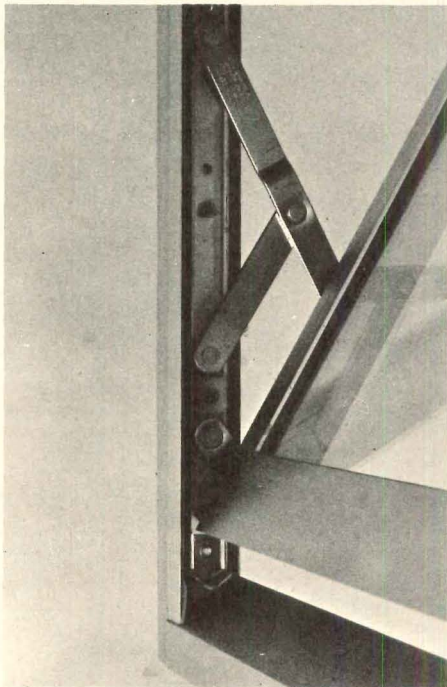
It cuts on-the-job installation costs and is a joy for roofing contractors to work with. Doesn't it sound like it's worth a try?

For more information, contact The Dow Chemical Company, Plastics Sales Department, Midland, Michigan 48640, or consult Sweet's Architectural File 8g/Do.



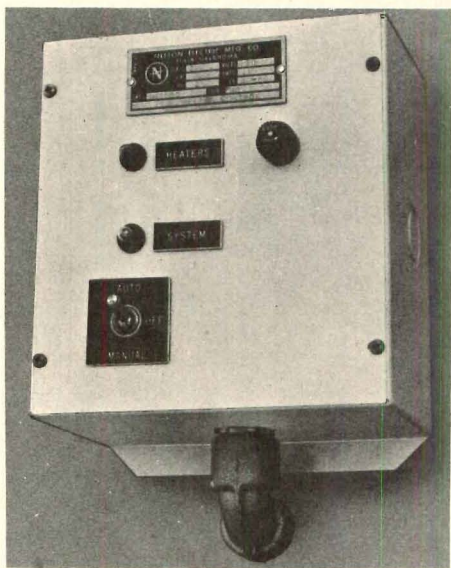
For more data, circle 134 on inquiry card

continued from page 240



PROJECTED WINDOWS / An aluminum vault-action window has a smooth, sloping sill that eliminates weep holes, grooves, fastening, and other obstructions that hold water and dirt. Units are vinyl-weather stripped. There are a variety of sizes and arrangements available. ■ Amarlite, Division of Anaconda Aluminum Company.

Circle 312 on inquiry card

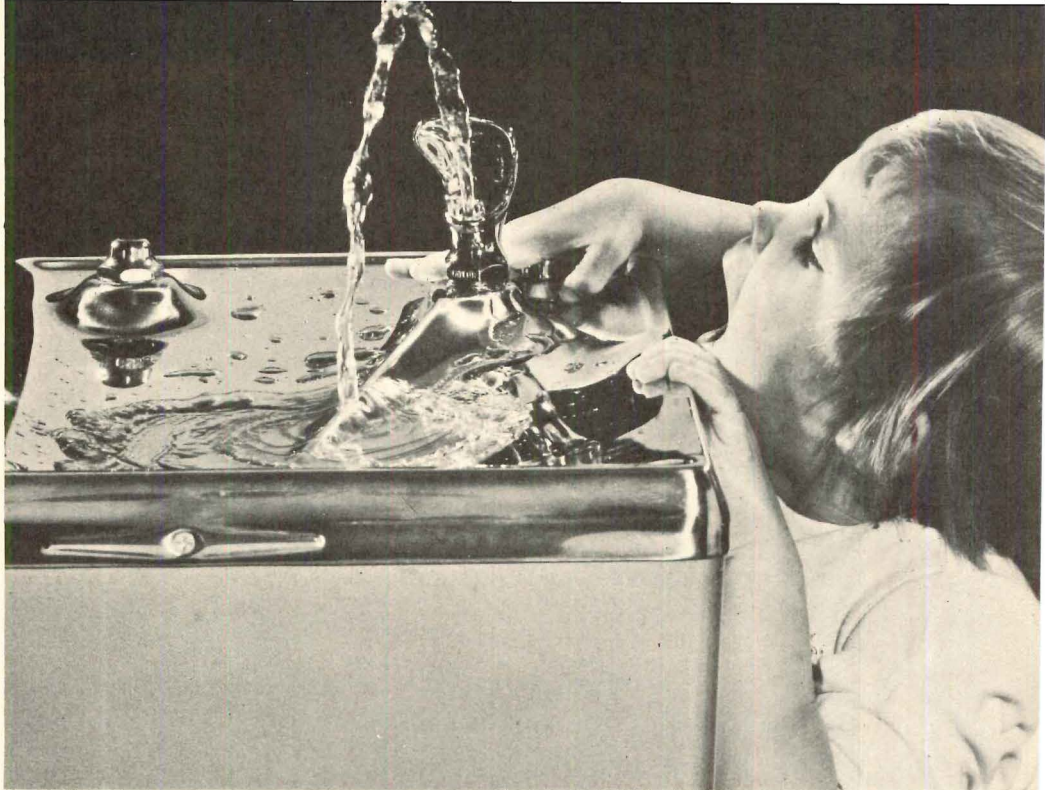


SNOW MELTER CONTROL / This control for electrical heaters imbedded in concrete or asphalt slabs automatically prevents accumulation of snow or ice, and can differentiate between "cold temperature" and "cold moisture" on a surface. ■ Nelson Electric Manufacturing Company, Tulsa, Okla.

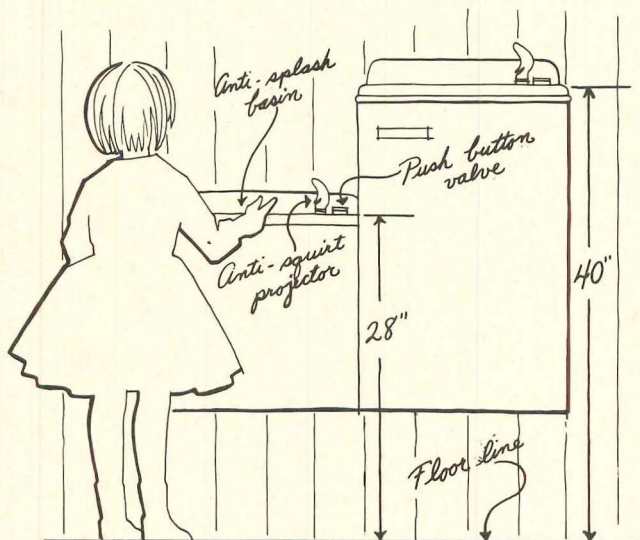
Circle 313 on inquiry card

more products on page 252

For more data, circle 135 on inquiry card



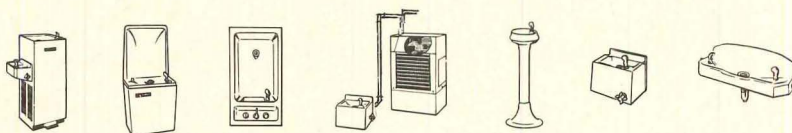
For thirsty kids less than 42" tall



Wall mounted water cooler with low-level accessory fountain — designed with kids in mind. Available in stainless steel cabinet, baked enamel in choice of colors, or vinyl-laminated steel in silver spice, or mocha brown. Write for NEW 1966 Catalog or look us up in SWEET'S FILE or YELLOW PAGES.

Halsey Taylor®

THE HALSEY W. TAYLOR COMPANY
1560 THOMAS ROAD • WARREN, OHIO



Complete line of electric water coolers and drinking fountains

© JAMES LEES & SONS CO., BRIDGEPORT, PA.,
A DIVISION OF BURLINGTON INDUSTRIES

THE SUPERHUMAN CARPET

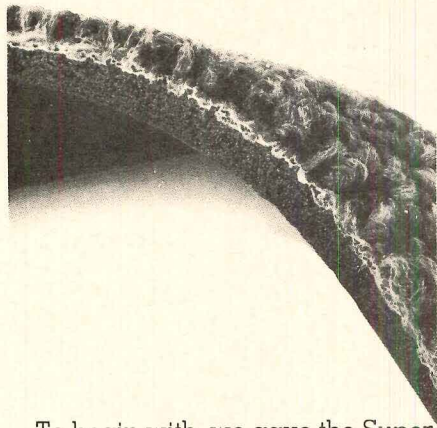
After all, isn't that what you really need in an office? Or a hotel? Or a motel? A superhuman carpet to fill human needs like those of a client who doesn't think he can afford a good carpet? But still doesn't want to settle for traditional hard floor covering?

You could get some pretty good carpets up till now. But none of them could give you enough.

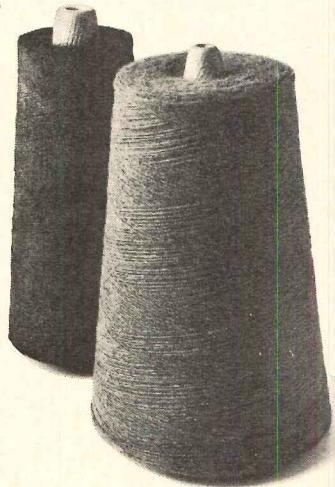
You could get carpets with a good dense pile and a bonded foam back. But they were only 54 inches wide. Or you could get one 12 feet wide, but maybe it wouldn't be foam-backed. Or it was the cost. A lot of good carpets were just out of reach.

You had to give up something. But not any more.

The Superhuman Carpet has all these things. Including an affordable price. And all the other advantages that Lees can give you.



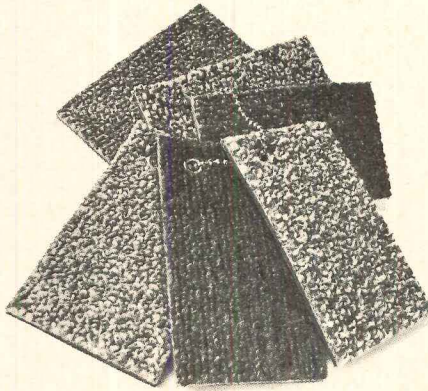
To begin with, we gave the Superhuman Carpet a good dense pile. We made it a tight flat loop that doesn't mat down. And we bonded it to a high density foam rubber back. So it doesn't need a separate pad.



We put 20% more face yarn into it than you'll find in many carpets that cost just as much. Or even more.

**CUMULOFT
NYLON**
®
CHEMSTRAND

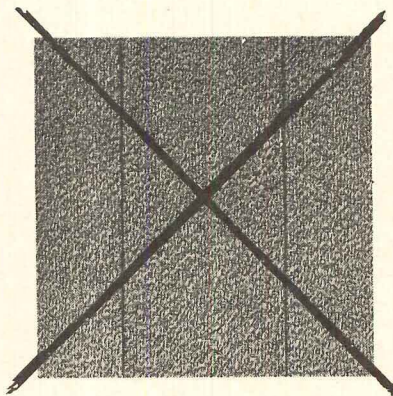
And that yarn is made from a fiber that's tough to begin with. 100% Cumuloft® nylon.



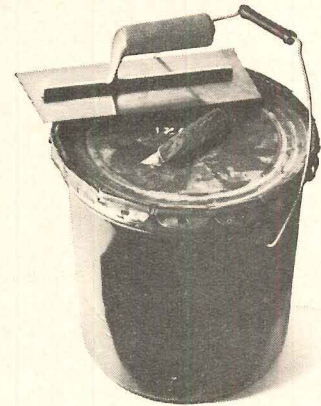
We gave the Superhuman Carpet a broad color line. And we made the surface texture practical. But it doesn't just look practical. It looks good.

← 12' →

We made it a big 12 feet wide. Not a skimpy 54 inches. And we had special machinery built for us so we could make a carpet this dense and 12 feet wide.



Why did we go to all that trouble to make it 12 feet wide? Because when we put it on your floor, you get half the seams you get with 54-inch carpet. And the fewer the seams a carpet has, the better it wears. And looks.



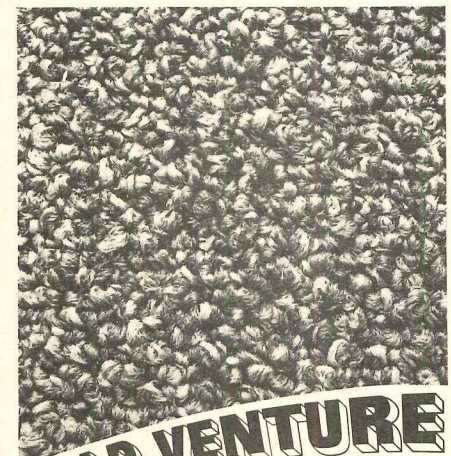
As for installation, the Superhuman Carpet is cemented down. So it won't wrinkle. Or need restretching.



There's one thing that we didn't give the Superhuman Carpet. A superhuman price. It costs a little more than \$1 a square foot, completely installed.

But we did give it all the care and all the rugged inspection every carpet gets before we give it the Lees name.

We also gave it a name of its own. Bold Venture.

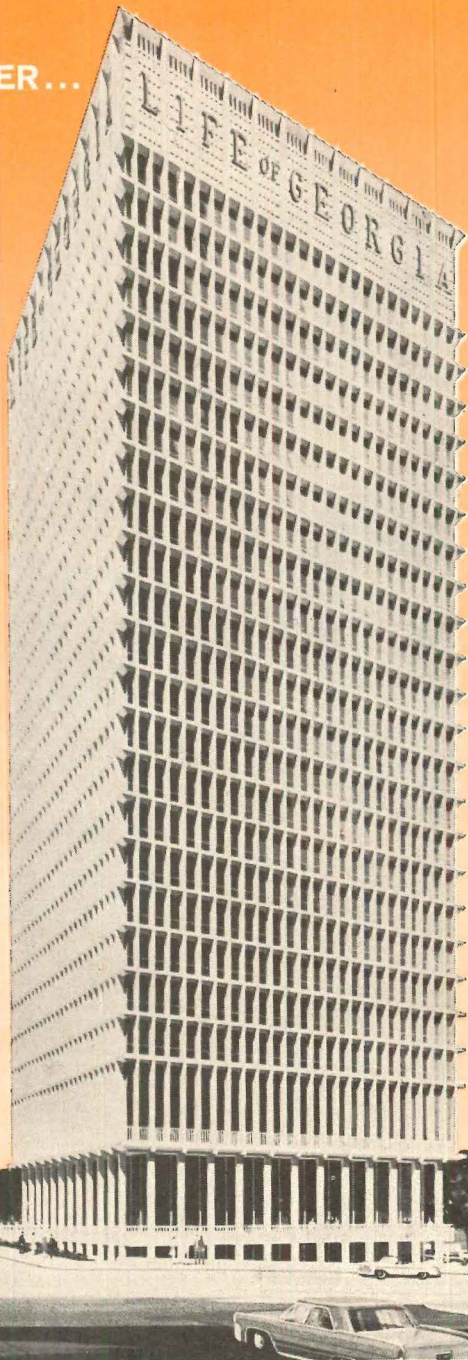


BOLD VENTURE
by **LEES**

Write to us. We'll tell you more about it. Write Commercial Carpet Department, James Lees and Sons Company, Bridgeport, Pennsylvania.

For more data, circle 136 on inquiry card

THINK COPPER...



13 miles of copper plumbing*
save time...
save costs...
save space...

*70,000 ft. of Anaconda Copper Tube in sizes 1/2" thru 6".

Model of Life of Georgia Tower, Atlanta. Architects: Bodin & Lamberson, Atlanta. Associate Architects: Eggers & Higgins, New York City. General Contractor: Daniel Construction Company of Georgia, Atlanta. Engineers: Brewer & Mundy, Charles F. Howe, Atlanta. Associate Engineers: Syska & Hennessy, New York. Plumbing, heating, airconditioning and ventilating: Sam P. Wallace & Co. and the Huffman & Wolfe Co. Anaconda Distributor: Atlas Supply Co., Atlanta.

The firm of Brewer & Mundy had good reason for specifying copper plumbing for this 29-story, 414,200 sq. ft. area building soon to add new beauty to Atlanta's skyline. ■ It is lighter, easier and faster to work with, so installation costs are less. ■ Copper tube and the compact fittings can be placed in areas where other piping would be too bulky and cumbersome. This advantage, if used in the engineering stages, often results in construction economies and more useable space.

The engineering firm also pointed out that "dependability" was probably the most important reason for recommending copper. In multistory buildings, repairs to the plumbing system are difficult and costly work. ■ Copper eliminates the possibility of rust-caused trouble in future years, and solder connections, tube to fittings, are superior to threaded joints for leak-proof joints.

Above is one of many majestic structures, completed or in progress, whose owners will benefit from copper plumbing. Their architects and engineers know that to effect speed, space and labor-saving economies, it pays in the early planning to specify copper . . . Anaconda copper.

Anaconda plumbing products include Copper Water Tube, Copper DWV Drainage Tube, Copper Tube Fittings and Valves, Red Brass and Copper Pipe. For further information, write: Anaconda American Brass Company, Waterbury, Connecticut 06720.

ANACONDA[®]
AMERICAN BRASS COMPANY

65-0734

For more data, circle 137 on inquiry card

Who
provides
an
authentic
design service
for only
a 5¢ stamp
?



Answer: Hartmann-Sanders, world's leading manufacturer of classical columns.

Authenticity of detail and adherence to proper proportions as well as correct material choices and true craftsmanship are the important elements in column manufacturing. It is why we are still, after 65 years, the largest custom-manufacturer of classical columns.

Equally important to the success of the total concept are the design and con-

struction details of the other traditional components: the cornice; the portico; or entablature.

While we are well aware of the architect's historic design prerogative, our exposure to and detailing experience in the classical architectural forms may be of some help to you.

At your request a Hartmann-Sanders Company representative will be happy

to consult with you, our design staff will review your details or if necessary assist in their development. Production responsibility for these items may be assigned to anyone you choose.

This service is provided wherever Hartmann-Sanders columns are used and costs no more than a phone call or a five cent stamp. Our column brochure is, of course, available upon request.

Hartmann-Sanders Company 1717 Arthur Avenue, Centex Industrial Park, Elk Grove Village, Illinois, Phone 312-439-5600



For more data, circle 138 on inquiry card

For more data, circle 139 on inquiry card



Lester can't tell a joke

Or if he can, he won't.
Not on your time.

On your time, Lester's all
business.

He'll talk vinyls. Acrylics.
Epoxies. Sealers.

Talk about what's new in
masonry coatings.

Fire retardants.

Rust-fighters.

And Lester just won't talk
about your color book.

He'll care for it.

Keep it up to date with all of
Devoe's 1086 colors.

And the 1087th, when that
comes out.

The same way he keeps you
up to date. Aply. Accurately.

That's Lester. And Sam. And
Arthur.

And every Man from Devoe.


They don't tell jokes—not on
your time.

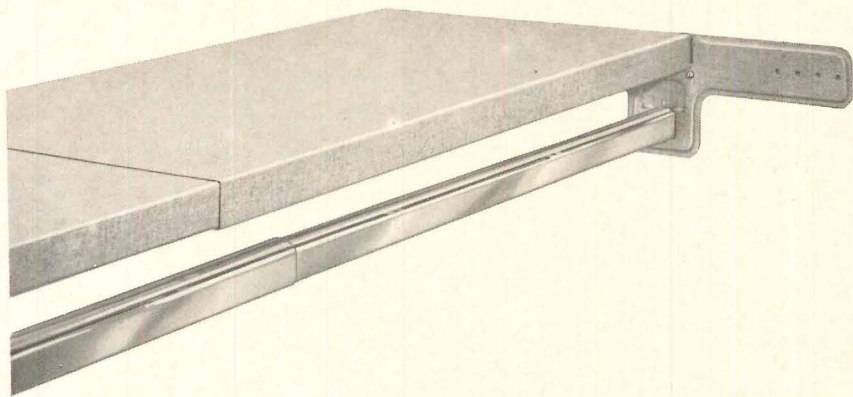
But they do talk your language.

You can depend on
the **Man from Devoe.**



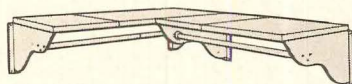
D
DEVOE

A SUBSIDIARY OF  CELANESE CORPORATION OF AMERICA

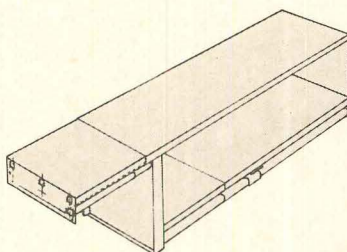


X-panda[®]
SHELF
Maintenance-Free
Glamour-Enameled Steel-Strong

Never needing painting, repair or replacement, all-steel X-Panda Shelves provide a professional, finished appearance to your closets. They are available in a choice of five bonderized enamel factory finishes, with gleaming brushed satintone rods and brackets . . . will support up to 30 lbs. per linear foot . . . can't warp, splinter or burn. These handsome shelves can be affixed to any type of wall construction . . . offwall brackets permit installations in closets with obstructions, such as pipes or ducts. See Sweet's Catalog 38d/Hom . . . A.I.A. File 17-D . . . or send coupon.



X-Panda Shelf is available in depths and lengths to fit all applications.



X-Panda Hi-Lo Wardrobe Shelf features theft-proof snap-in locking device.



Please send literature and specifications on X-Panda Shelf and X-Panda Hi-Lo Wardrobe Shelf.

hc products co. AR

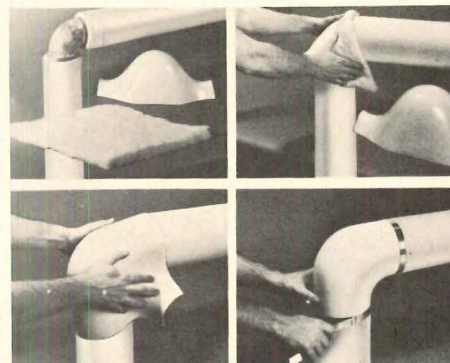
Box 68, Princeville, Illinois, Phone 309-385-4323

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

For more data, circle 140 on inquiry card

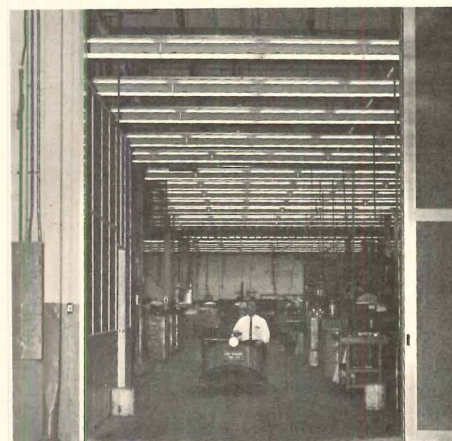
PRODUCT REPORTS

continued from page 245



PIPE INSULATION / Molded, one-piece pvc insulation covers can be fitted around piping and taped, stapled or banded together in a very short space of time. The prestressed design is said to result in a leakproof seam which can be fitted with urethane foam for cryogenic applications, where particularly high insulation qualities are required. ■ Zeston Inc., Perth Amboy, N. J.

Circle 314 on inquiry card



AUTOMATIC DOORS / The basic operating mechanism of this line of fully automatic doors is a simple pneumatic direct drive cylinder-piston system which is actuated by low-voltage electrical controls. A special locking mechanism allows doors to be unlocked, opened, closed and relocked from a remote or local position. Doors will continue to operate automatically even in the case of power failure if the company's special permanent power pack unit is used. Even without use of the power pack, doors can all be operated manually if power is cut off. Although these doors were originally designed for penal institutions, the company reports that they are becoming widely used in banks, plant and apartment entrances and in hospital detention wards. ■ Horton Automatics, Inc., Corpus Christi, Tex.

Circle 315 on inquiry card



See
what happens
when
Contractor
Ed Krygier
meets up with
one
beautiful
frame!

FRAMED

starring sultry

Heather Browne

See Heather install a new FenDry "Clamp-On" frame, complete with a flush-seamless Executive door in ten minutes, fifty-four seconds ...while Ed puts up a conventional frame in the conventional way. FenDry (U. S. patent applied for) is the fastest Drywall frame with a UL Label—and the Executive door is the first standard flush-seamless to earn the UL "B" Label. Send for this new film to show at your next architectural or contractor meeting. Just phone your local Distributor or write Fenestra Door Division, 4040 West 20th Street, Erie, Penna.

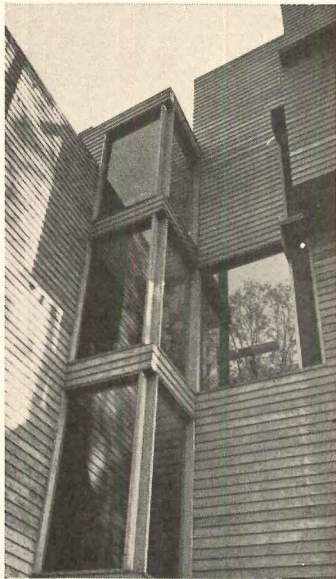
FENESTRA

For more data, circle 141 on inquiry card



Designer: John Fowler, A.R.I.B.A.

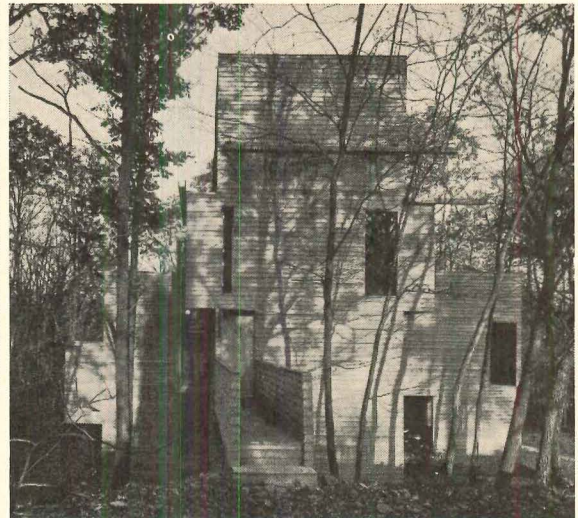
**Go ahead.
Stack it up;
Stretch it out;
Even bring it indoors.
Western Wood siding
loves a good design
challenge.**



Photos: David Hirsch



Western Wood siding is the *real* thing and its potential is unlimited. Here's a design material that gives you freedom of expression and lets you toy with innovation in structure and perspective. Just look at the styles available: Bevel, Clapboard, Board on Board, Board and Batten, Channel Rustic, Drop and Flush-Joint sidings—with variations in each.



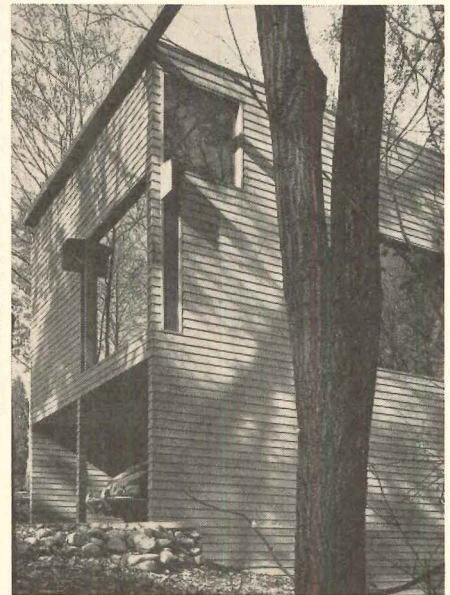
The tough site problem shown here was deftly solved with Western Wood siding and imaginative design. The property is dotted with trees that had to stay; it is narrow and hilly. The result is a home that responds to a natural setting without becoming a part of it. The siding used here has a re-sawn face. Its rough texture makes weathering of nature an asset, not a maintenance problem. Its good looks will mature with the years and scrapes and scuffs will become a part of its rugged character. The Clapboard installation lends itself to the handsome, tailored design. Subtle shadows and definitive lines contribute to the overall impression.



Solid Western Wood sidings come in three surface textures: *resawn* (a refined, sophisticated roughness), *head-rig rough* (very rough) and standard surface (smooth-planed) siding. All three hold finishes like a friend—not only paint, but stains which bring out Western Woods' warmth and richness.

Western Wood siding is the genuine article with natural characteristics that cannot be duplicated. No two boards are ever the same—the grain and pattern of solid wood give individuality to every piece.

Western Wood siding is a familiar material requiring no special tools or instruction for use. It is readily available everywhere. And while it often can be custom-made locally into special profiles, standard patterns and styles offer a wide latitude for creative exterior—and even interior—design.



Send for our new Western Wood Siding Use Guide. And for our new full-color idea book on the many moods you can create with *solid* Western Wood Siding. They are both yours, free.



Western Wood Products Association

Dept. AR-266, Yeon Bldg., Portland, Ore. 97204

Name _____

Firm _____

Address _____

City _____

State _____ Zip _____

For more data, circle 142 on inquiry card

continued from page 201

TERMINAL CONTROLS / Coordinated systems and devices, described as "nerve centers" for modern hydronic air-conditioning installations, are the subject of a 20-page bulletin, No. 1857 entitled "T is for Terminal Controls." The booklet reprints a series of recent articles defining terminal controls, outlining their basic functions and reviewing their application to various types of piping systems. Three types of terminal control design—line-voltage; low-voltage and self-contained mechanical—are dis-

cussed in relation to typical applications. Schematic drawings are included to illustrate different types of system control. ■ American Standard Controls Division, Detroit, Mich.*

Circle 411 on inquiry card

METAL DOORS AND STEEPLES / Two new catalogs describe prefabricated metal church spires and a line of UL approved sliding fire doors. The Spire catalog, No. 35c, discusses five basic types of construction. Specifications are given and typical installations illustrated.

Catalog No. 13c covers a line of single and bi-parting sliding hollow metal fire doors carrying UL's "A" label. Applications, operation and specifications for these doors are discussed in the brochure, which also illustrates opening and closing devices. ■ Overly Manufacturing Company, Door & Frame Division, Greensburg, Pa.*

Circle 412 on inquiry card

DIAZO REPRODUCTION / A new 48-page booklet on adaptation and application gives tips in such areas as reducing design time and making top-quality presentation prints, color-coded progress prints, and large overlay foils for adding colors to the work of architects and designers. ■ Blu-Ray, Reproduction Engineering Corporation, Essex, Conn.

Circle 413 on inquiry card

OFFICE FURNITURE ACCENTS SEAMS / A 16-page brochure pictures and describes the desks, modular units, credenzas, tables and accessories available in a new line of steel furniture and equipment. The *Linear / 7000* Line is named for the linear "reveals" which use a wide range of enamel finishes to provide contrast to the units. ■ Columbia-Hallowell Division, Standard Pressed Steel Company, Jenkintown, Pa.

Circle 414 on inquiry card

CORROSION PROOF INDUSTRIAL FLOORS / A new 24-page technical manual helpful in selecting the right combination of corrosion-resistant flooring materials includes an analysis of problems involving chemical processing, food and metalworking industries. There are comparative analyses of performance as well as installed costs of monolithic toppings, acidproof brick, and floor coatings. A two-page chart helps in making preliminary evaluations for individual conditions. ■ The Ceilcote Company, Berea, Ohio.

Circle 415 on inquiry card

PHYSIOLOGICAL MONITORING / These 25 pages show various practical equipment applications for hospitals and other medical institutions. Of particular interest to the hospital architect are the chapters on the general requirements of the built-in monitoring system. A "check-list" is included. ■ American Electronic Laboratories, Inc., Lansdale, Pa.

Circle 416 on inquiry card

*Additional product information in Sweet's Architectural File

more literature on page 260

our 42nd year

MEETING STILES

Numbers 50M & 52M have Neoprene inserts; #54M has woven pile insert. Available in extruded aluminum or bronze, as indicated.

the most complete and authoritative guide for —

- WEATHER STRIPPING
- SOUND PROOFING
- LIGHT PROOFING
- THRESHOLDS

Zero's 1966 Catalog shows many new products, contains 175 full size drawings.

Write today for your copy

ZERO WEATHER STRIPPING CO., INC.
Our 42nd year of service to architects

415 Concord Avenue, Bronx, New York 10455 • (212) LU 5-3230

SEE OUR CATALOG IN SWEET'S OF WRITE FOR COP.

For more data, circle 143 on inquiry card

origin:
Shang Dynasty, 18-12th Century B.C.
Buckingham Collection
Art Institute of Chicago

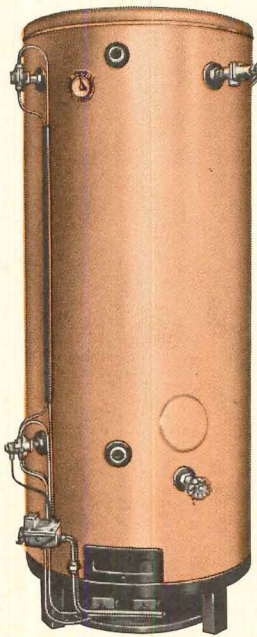


our secret ingredient

This ancient Chinese water heater still works after three thousand years. Light a fire under it and the water bubbles right up—fresh, clear and pure. Have a cup of tea courtesy of the Shang Dynasty.

There's only one reason this water heater has staved off rust and corrosion for more than thirty centuries. It's made of *copper*—the talented metal that water *can't* rust or corrode. And copper is the *only* metal touched by water in a Ruud Copper Sanimaster commercial gas water heater.

You'll be glad to hear Ruud Sanimasters come in all sorts of sizes. Something for every apartment, motel, factory, laundromat, restaurant—something for every place where large volumes of hot water are needed. They're compact enough to install easily near the point of use. If you need more hot water than our biggest unit supplies (300 gallons per hour), Ruud Copper Sanimasters link




together with manifolds. Special Ruud sizing guides make sure you get the right water heater whatever your hot water requirements. Some neat accessories are available, too. Like the Duo-Temp mixing valve that delivers 180 degree water and general purpose hot water at the same time. And there's a circulator that holds the temperature constant at hot water outlets.

And as far as trouble free performance and long life are concerned, our honorable Chinese ancestor is still working after more than 3000 years. We're not implying that the Ruud Copper Sanimaster will last that long . . . but then again . . . it just might.



**YOU GET MORE
IN THE LONG RUN
FROM RUUD.**

see our catalog in Sweet's 

RUUD MANUFACTURING COMPANY • A division of Rheem Manufacturing Co., Dept. AR-2, 7600 S. Kedzie Ave., Chicago, Ill. 60652

For more data, circle 144 on inquiry card

BIG CAPACITY

IN *Small* SPACE

AEROFIN *Smooth-Fin* Heating and Cooling Coils

High ratio of surface area
to face area

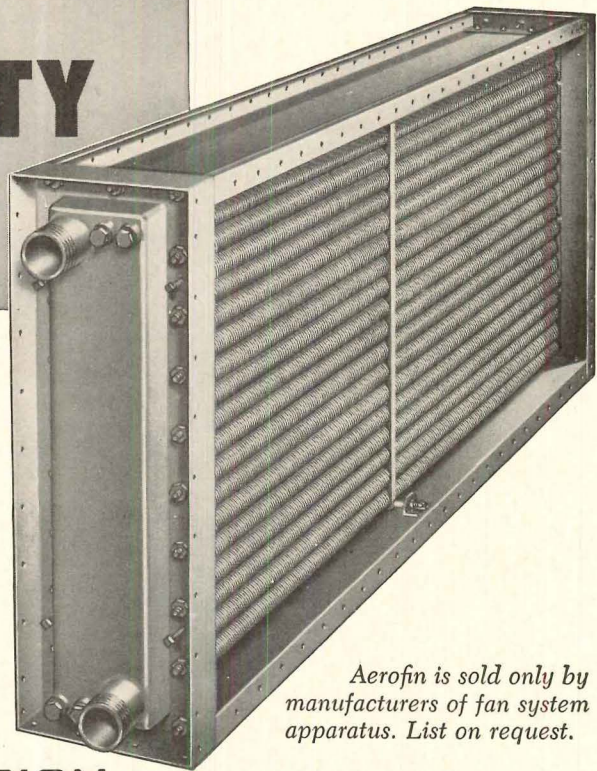
High air velocities without excessive
friction or turbulence

Write for Bulletin S-55

AEROFIN CORPORATION

101 Greenway Ave., Syracuse 3, N. Y.

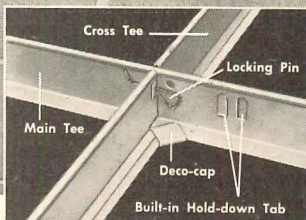
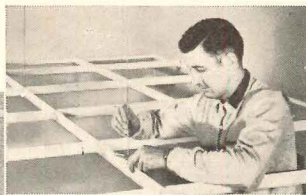
Engineering Offices in Principal Cities



*Aerofin is sold only by
manufacturers of fan system
apparatus. List on request.*

HASTINGS SUSPEND-X

SUSPENDED CEILING SYSTEM



**NOW! A CORROSION RESISTANT
SUSPENDED CEILING THAT HOLDS UP
WHERE ORDINARY CEILINGS BREAK DOWN**

Here is an all aluminum ceiling that is ideal for hospitals, laboratories, swimming pools, kitchens, bathrooms, offices, stores—all of those special problem areas of high humidity or fumes which cause ordinary ceilings to break down.

Aluminum grid and Duratone aluminum panels won't rust or sag, are easy to clean and yet retains an attractive appearance in any room—large or small. Both grid and panels are coated with durable Hastings pure-vinyl white enamel. Rated Class A.

For your next "problem" ceiling, specify and insist on Hastings SUSPEND-X all aluminum suspended ceiling.

ALUMINUM GRID — Roll-formed grid components are strong, lightweight and easy to handle. Carefully engineered to fit together rigidly by means of slots and tabs, locked securely in place for quick assembly without special tools. Locking pins provide tension at joints.

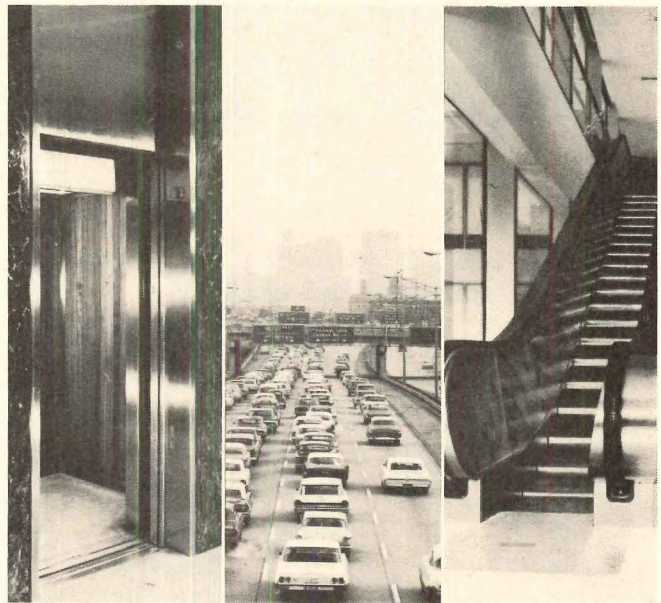
DURATONE ALUMINUM PANELS — Made of non-combustible, perforated .019 aluminum. Rated Class A. Deep-ribbed for great strength, will never sag or lose its shape. Coated with long-lasting vinyl enamel—front and back. Available in 2' x 4' and 2' x 2' sizes; with or without 1/2" acoustical fiberglass pad.

EXCLUSIVE DECO-CAPS snap over cross tee and main tee joints.

WRITE FOR SAMPLES AND FULL DETAILS.

HASTINGS ALUMINUM PRODUCTS, INC. HASTINGS, MICHIGAN 49058

For more data, circle 146 on inquiry card



WE BUILD SUPERHIGHWAYS, TOO. FOR BUILDINGS.

Ours travel from floor to floor, of course.

But, like the concrete and asphalt ribbons that link our cities, they're vital traffic arteries. On the job 'round the clock carrying people to their destinations with speed, comfort, safety.



The elevators and escalators we design and build are second to none . . . products of nearly a century of leadership in invention, innovation and quality ideals.

We back them with service, nationwide. Fast. Expert. Fairly priced.


HAUGHTON
ELEVATORS / ESCALATORS

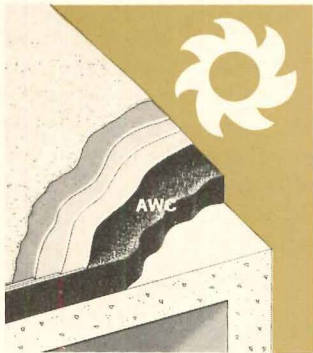
Haughton Elevator Company / Division of Toledo Scale Corporation / Toledo, Ohio 43609

For more data, circle 147 on inquiry card

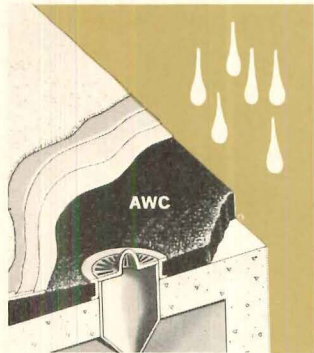
This is the story of a very special fill-type roof deck insulation that can be applied even during sub-freezing weather  because it contains *no* water. 

You are assured of a dependable insulation and a dependable application of this outstanding insulation . . . because it is applied only by trained, licensed applicators in your area.

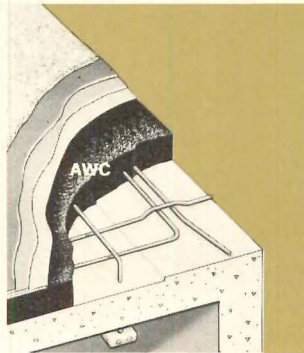
Check these features . . . then specify this insulation by its registered trademark—   *All-weather Crete*®



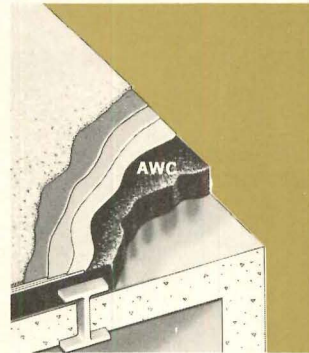
All-Weather Crete offers a K Factor, better than *any* other poured roof deck insulation!



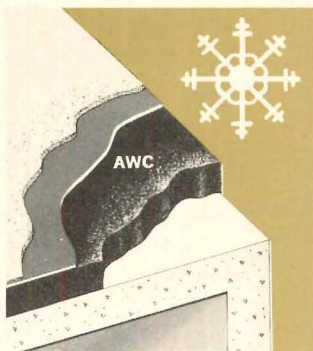
AWC can be sloped to drains thus preventing dead level roofs or water pockets.



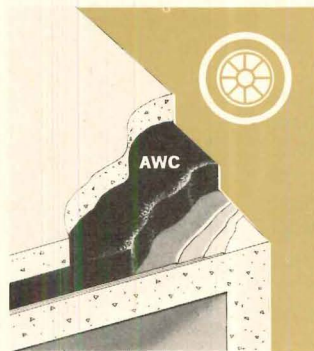
Its amazing working properties make it ideal for covering conduit or other roof irregularities!



Easy removal makes AWC ideal for future floor applications. Even covers reinforcing stubs and beams.



AWC contains no water—can be applied even in freezing weather. A monolithic insulation needing no curing time.



Its great versatility makes it ideal for roof deck insulation, re-roof, parking and plaza decks.



SILBRICO
CORPORATION

6300 River Road • Hodgkins, Illinois 60527

Write today for complete information.

- Roof Decks Re-roof & Future Floor Underground Pipe
 Parking & Promenade Decks Tank Bases Installations List

Name _____

Firm _____

Address _____

City _____ State _____

continued from page 256

SMALL PACKAGED LIQUID CHILLERS / This 8-page bulletin, No. 91-562A, which covers the company's recently developed water-cooled and air-cooled line shows eight space-saving, portable models ranging from a 2- to a 5-ton capacity. In addition to specifications and suggested uses, there are charts showing Btu/hr capacity data and physical data, cooler and condenser water pressure drop. ■ Acme Industries, Inc., Jackson, Mich., and Greenville, Ala.

Circle 417 on inquiry card

COMMERCIAL FOOD REFRIGERATION / A 32-page booklet presents a wide range of sales cases (air-screen type, open frozen food, open meat, etc.), storage freezers and coolers, condensing units, checkout systems, and shelving for retail stores, hotels, restaurants and institutions. There are descriptions and illustrations of each unit with information on dimensions and Btu requirements. ■ Tyler Refrigeration Division, Clark Equipment Company, Miles, Mich.*

Circle 418 on inquiry card

THREE-IN-ONE ROOFING / A fireproof vapor barrier and adhesive have been added to the *Permalite* roof insulation product line to guard against moisture, fire and heat. Complete information on this new *Permapak* system is available in a 4-page company brochure. ■ Great Lakes Carbon Corp., Chicago.*

Circle 419 on inquiry card

ALUMINUM SLIDING GLASS DOORS / A 12-page catalog presents a new line of four separate configurations to meet a wide variety of building situations. There are diagrams for each series as well as architectural specifications and charts with types, sizes and other technical information. ■ Northrop Architectural Systems, City of Industry, Calif.*

Circle 420 on inquiry card

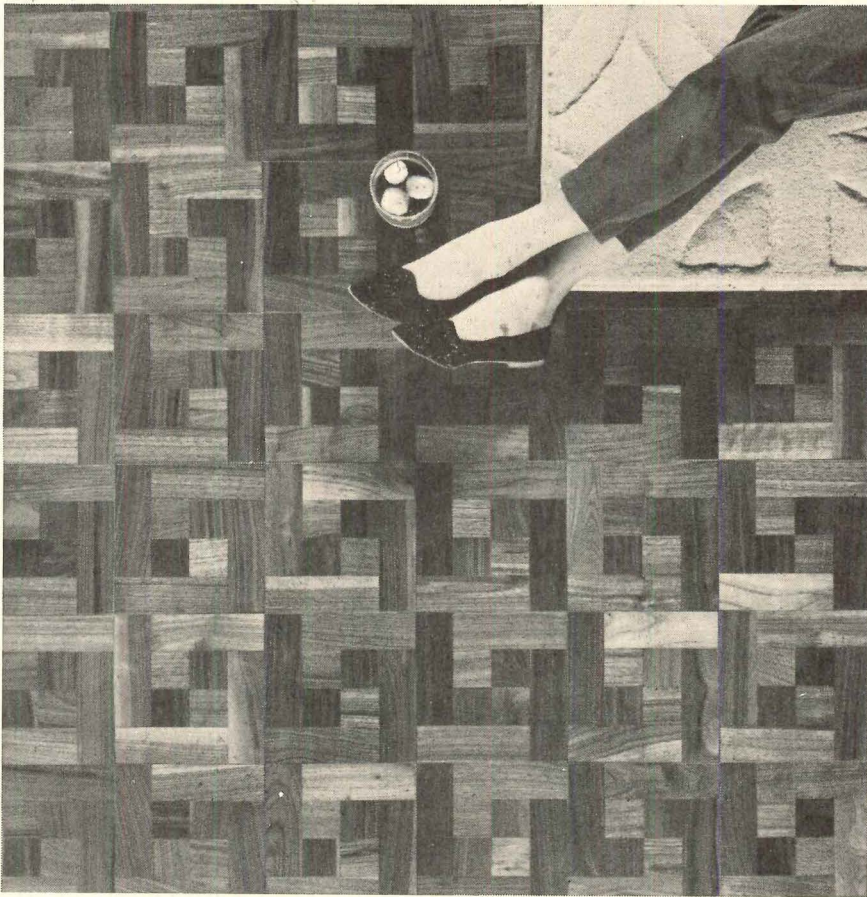
CONTROL OF SOLAR AND LIGHTING HEAT / The *Lite-Therm* System is described as using non-refrigerated water for heat transfer to eliminate the refrigeration of lighting and solar loads during the summer and to heat the building from the lighting during the winter. A 24-page booklet with illustrative drawings explains the process in detail and gives information on installation of the systems and components. Typical explanations include direct and indirect transfer systems, floor piping distribution, air distribution, equipment room layout, etc. The booklet includes a complete set of specifications and an in-depth bibliography for further research assistance. ■ Environmental Systems Corporation, Conyers, Ga.

Circle 421 on inquiry card

HOSPITAL STORAGE AND WORK FACILITIES / The findings of recent nationwide research on equipment value in such areas as central service, utility rooms and sterile storage show eleven major problems which have been identified with construction or installation. This information is presented in an 8-page report which discusses the criteria for hospital shelving. ■ Market Forge Company, Everett, Mass.*

Circle 422 on inquiry card

STEEL LIBRARY EQUIPMENT / This 8-page booklet subtitled "Concepts in Color" describes and shows four types of shelves available in seventeen colors. In addition there are other library products such as tables, and book supports. ■ W. R. Ames Company, Milpitas, Calif.

*Circle 423 on inquiry card***Additional product information in Sweet's Architectural File*

**if you want elegance, buy a chateaux . . .
or specify Monaco**

The "latest thing" in some floor coverings will seem out-of-date in a few years. But magnificent Monaco by Wood-Mosaic is as timeless as the historic Mediterranean patterns which inspired it. Monaco is one of many masterpieces in wood for those who believe every fine home should be unique. Wood-Mosaic floors last generations with little upkeep, flatter every decor. And they cost no more than other fine floor coverings. Write for brochure showing all patterns. Look for us in the Yellow Pages.



Wood-Mosaic

CORPORATION

5000 Crittenden Drive, Louisville, Kentucky 40221

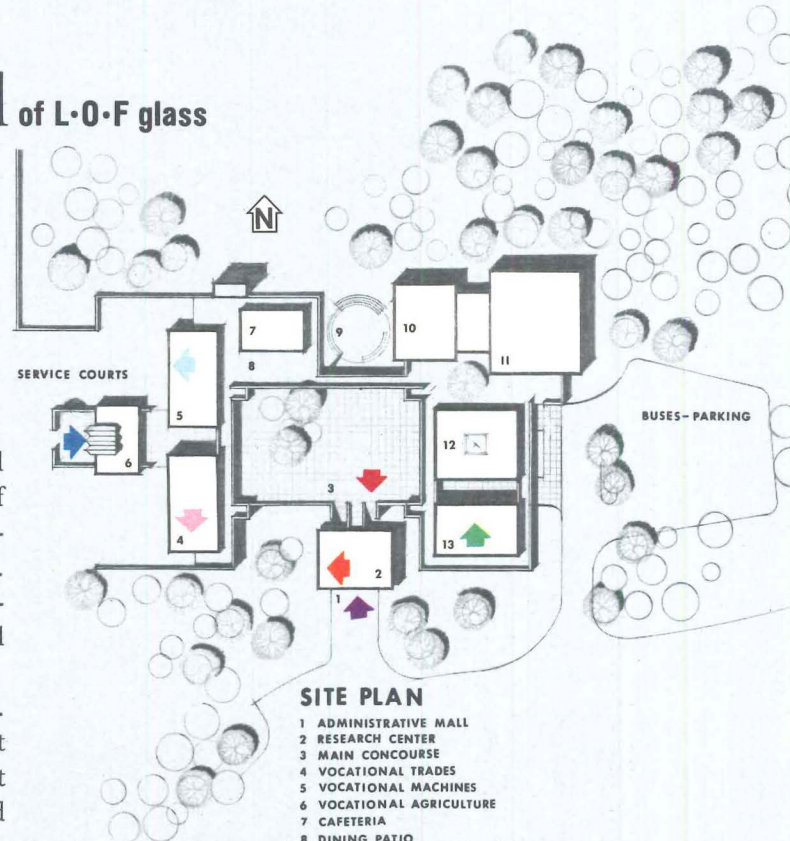
*For more data, circle 149 on inquiry card**For more data, circle 150 on inquiry card* ◆

New design freedom in the **Open World** of L·O·F glass

A "new era" high school for vocational education

Today's vocational school is specifically designed and intended to prepare individuals for meeting the increasing demands of a technological society. It must offer a comprehensive educational program, but with emphasis on vocational training. In so doing, it will enable those individuals to play an immediate role in that society, and what is equally important, it will prepare them to meet the changes that are inevitable.

"Building materials, as such, cannot impart knowledge. But architecture *can* create form and a space environment that is conducive to learning experiences," declared Architect James Foley of Kellam & Foley, Columbus, Ohio, and Indianapolis, Indiana. "Intelligent use of glass permits the



VIEW THROUGH ADMINISTRATIVE MALL

architect to visually expose each student to all facets of this terminal educational process."

L·O·F commissioned this firm to plan a vocational high school which could double for adult education at night. The institution envisioned is shown on these four pages.

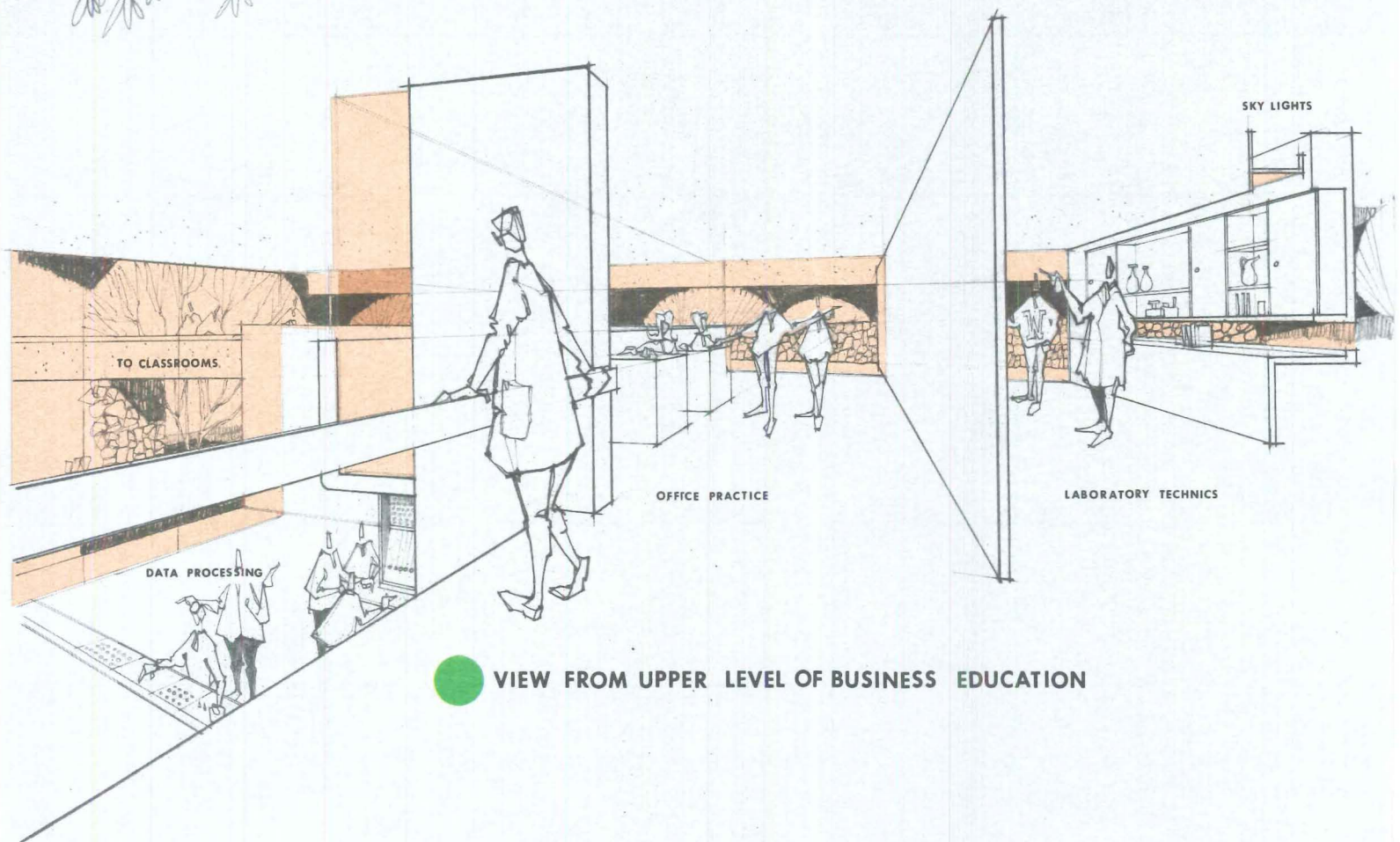
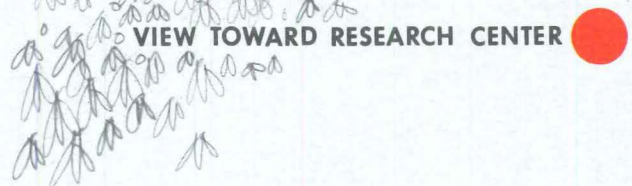
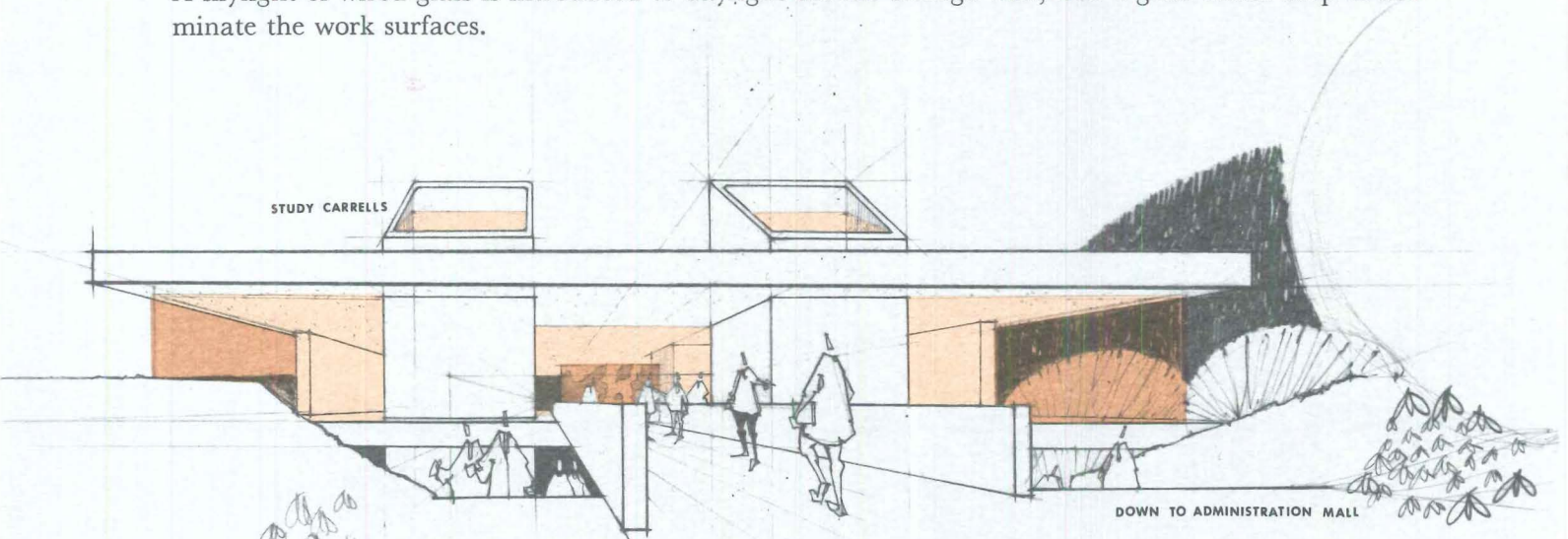
The entrance to the complex is made through an administrative mall located beneath the research center and is essentially four structural forms enclosed with glass walls. Further interior divisions for guidance and counseling areas are made with tinted glass walls to reinforce the special concept of openness.

MADE IN U.S.A.

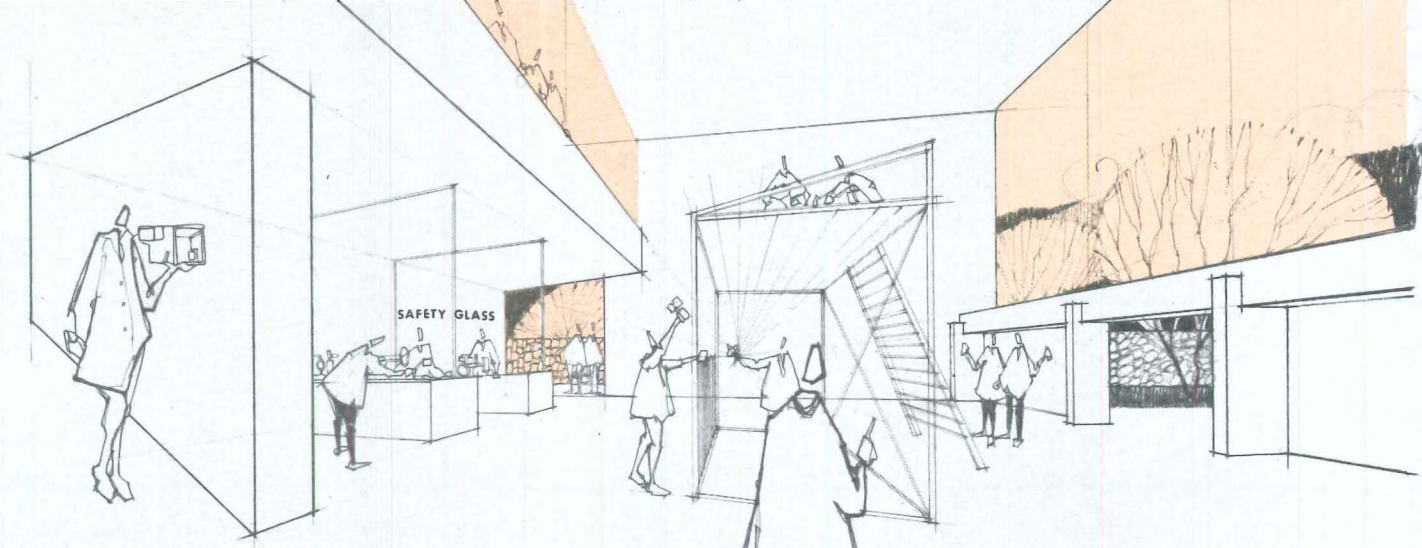


The Research or Resource Center would be walled on all sides with glass and the sense of confinement within the building is dispelled with the butted glass corners. Solar control is achieved within the building by the use of the book storage wall as seen in the accompanying sketch. Four closed study carrells allow for privacy necessary for concentrated study. Light is introduced into these areas from light monitors above.

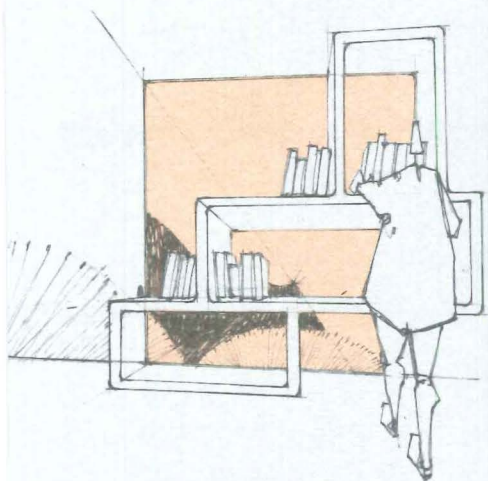
DATA PROCESSING, OFFICE PRACTICE AND LAB TECHNICIAN training areas in this imaginary school would have outside walls of *Parallel-O-Bronze*® plate glass to blend with the stone and to control sun heat and glare. A *Parallel-O-Plate*® wall would separate the Office Practice area from Data Processing. A skylight of wired glass is introduced to daylight the lab storage wall, and a glass vision strip to illuminate the work surfaces.



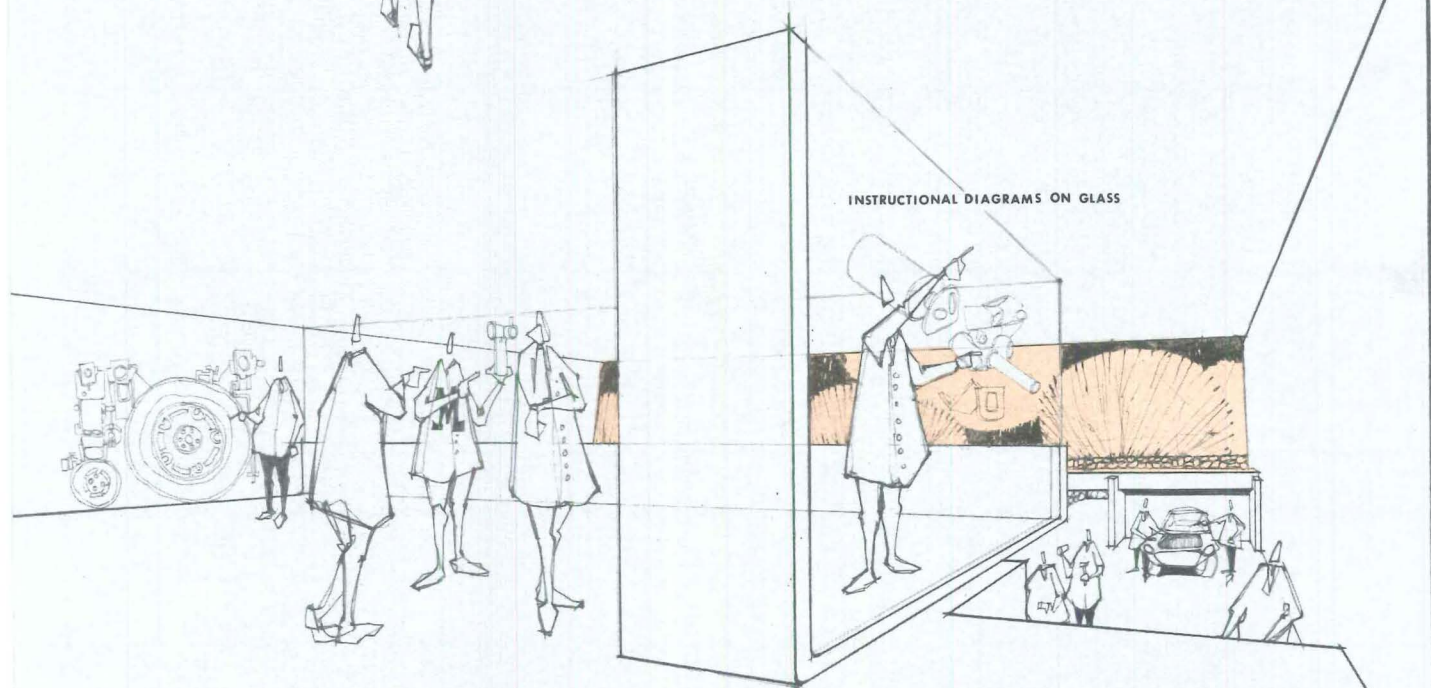
VIEW FROM UPPER LEVEL OF BUSINESS EDUCATION



SHOP LEVEL OF VOCATIONAL TRADES



BOOK STORAGE AT RESEARCH CENTER



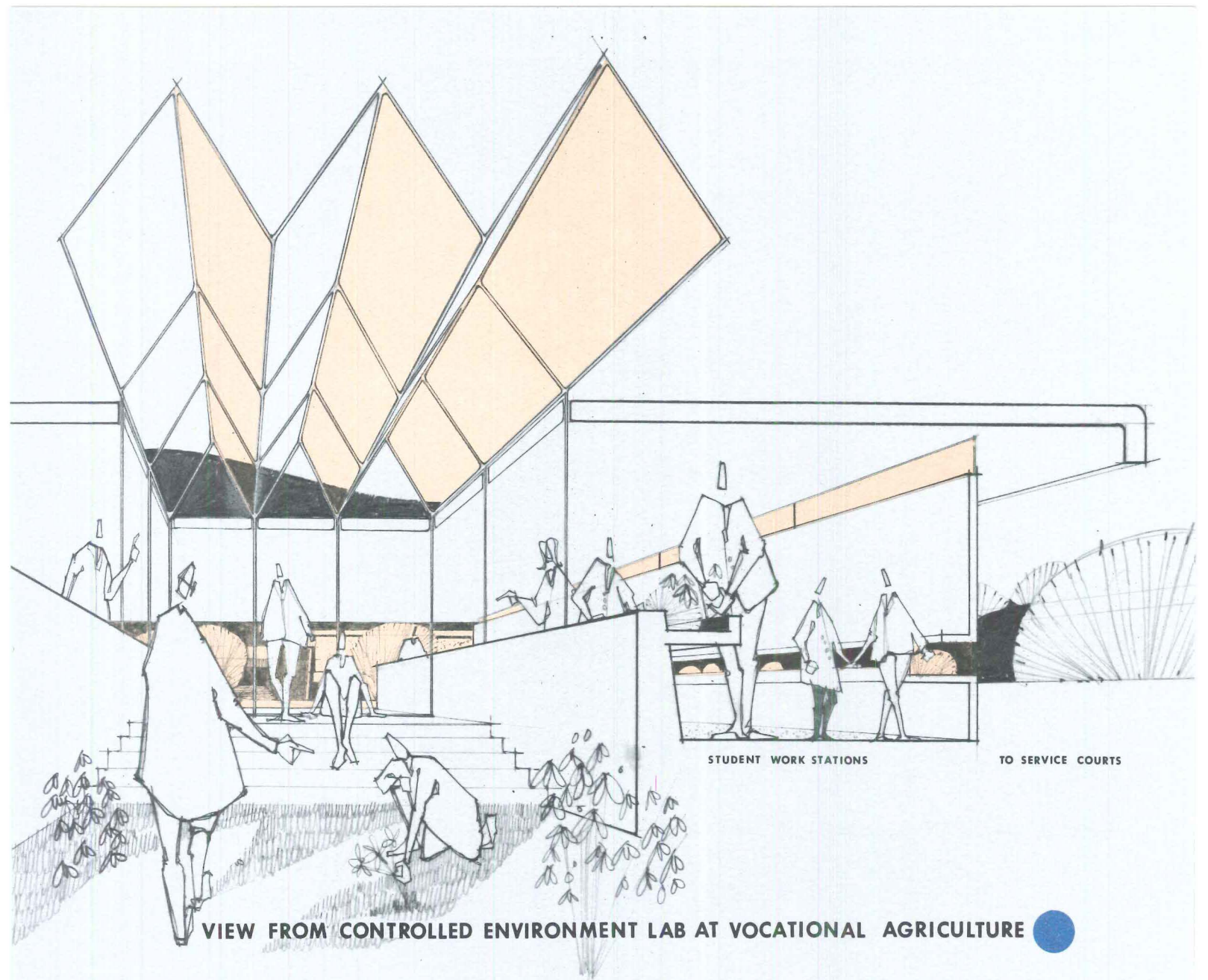
CLASSROOM LEVEL OF VOCATIONAL MACHINES

The TRADE AND INDUSTRY area is planned with a workshop well and related classrooms on the balcony. One-half-inch laminated safety glass partitions would separate machinery alcoves to isolate the noise and for visual student surveillance.

The side glass wall is equipped with a series of transparent overlays. Instructors can illustrate complicated systems and diagrams graphically upon this wall. There is a glass wall separating this room from the shop level for reasons of acoustics, yet it allows visual access to the shop and a full view to the hills.

MADE IN U.S.A.





MADE IN U.S.A.



The VOCATIONAL AGRICULTURE department would have a controlled-environment garden completely enclosed with *Parallel-O-Plate* glass wall and clear wired-glass folded plate mechanical roof to admit as much sunlight as possible. Work areas around the "greenhouse" have vision strips at work-counter level.

L·O·F GLASS FOR SCHOOLS

POLISHED PLATE GLASS

1/4" to 1" **Parallel-O-Plate**[®]
Twin ground for windows and mirrors
3/64", 1/4", 3/8" & 1/2" **Parallel-O-Grey**[®]
Twin-ground tinted plate glass
3/64", 1/4", 3/8" & 1/2" **Parallel-O-Bronze**[®]
Twin-ground tinted plate glass
1/4" & 3/8" Heat Absorbing Plate
Blue-green tint

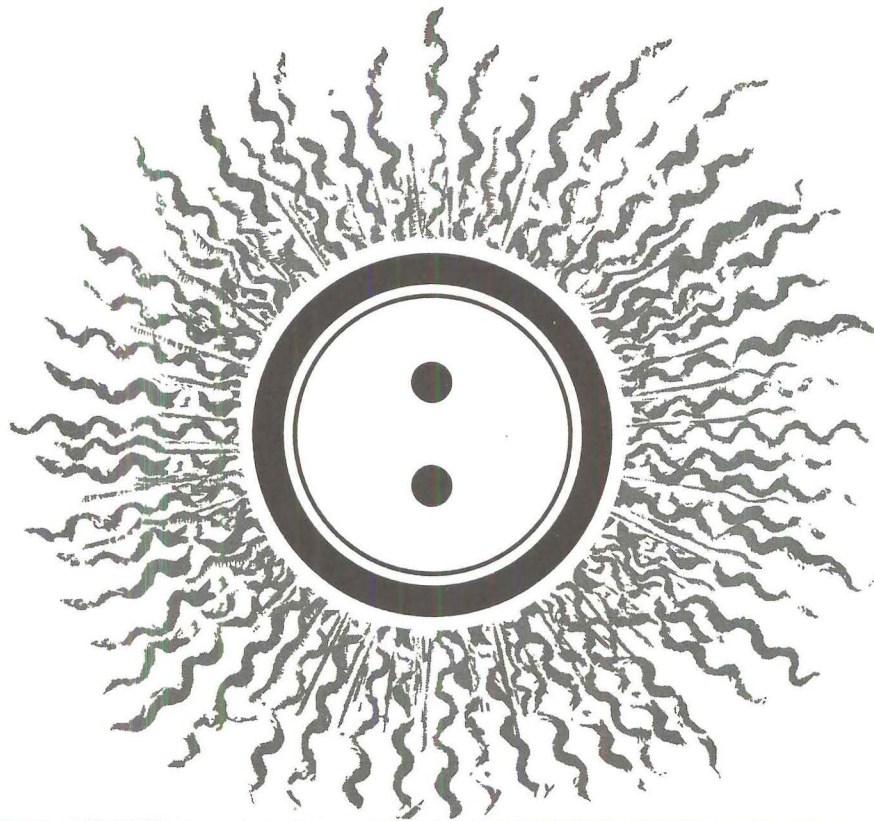
Rough Plate—eight versatile types

INSULATING GLASS—Thermopane[®]
SPANDREL GLASS—Vitrolux[®]
Vitreous colors fused to back
of heat-strengthened glass
HEAT-TEMPERED GLASS—Tuf-flex[®]
Doors and sidelights
WINDOW GLASS—uniform quality
PATTERNED & WIRED GLASS

L·O·F makes a particular type of glass for every purpose in Open World design. Refer to Sweet's Architectural File, or call your L·O·F glass distributor or dealer, listed under "Glass" in the Yellow Pages. Or write to Libbey·Owens·Ford Glass Company, 811 Madison Avenue, Toledo, Ohio 43624.

Libbey·Owens·Ford
Toledo, Ohio

Burned up battling the problem of lamp heat?



Cool it in July, heat with light in February. Specify Quartette, the New Total Integrated Ceiling.

Quartette's absolute control of lamp heat is completely new - concept, unequalled by any other ceiling system.

Quartette's above-lamp air return device carries lamp heat directly into a negative pressure plenum. Exhausts heat in warm weather. Provides a reservoir of heat in winter, ready for reuse in heating cool perimeter spaces.

Quartette is adaptable to conventional heat-of-light reuse components, too.

Only Quartette has everything a ceiling should have:

Beautifully textured appearance, with complete integration of light, air exchange, acoustical control and partition support in every module — and its custom-sized modules fit any interior space. Quartette is compatible with any floor plan because every environmental function is in the ceiling.

Quartette light is amazing, interesting, glare-free. Provides up to 600 foot-candles, or more.

Air diffusion is below lamp level, noiseless and draft-free. Full circulation achieves never-stagnant, always refreshing air exchange.

Quartette repartitioning is simple, fast. Requires only one tool: A screwdriver. No ceiling damage, ever. Affords absolute partitioned space privacy, with maximum architectural freedom.

Quartette has everything. Pays for itself in operating economies.

And Quartette is beautiful beyond words.

**Write for a Quartette Ceiling brochure.
Discover environment control
second only to nature's.**



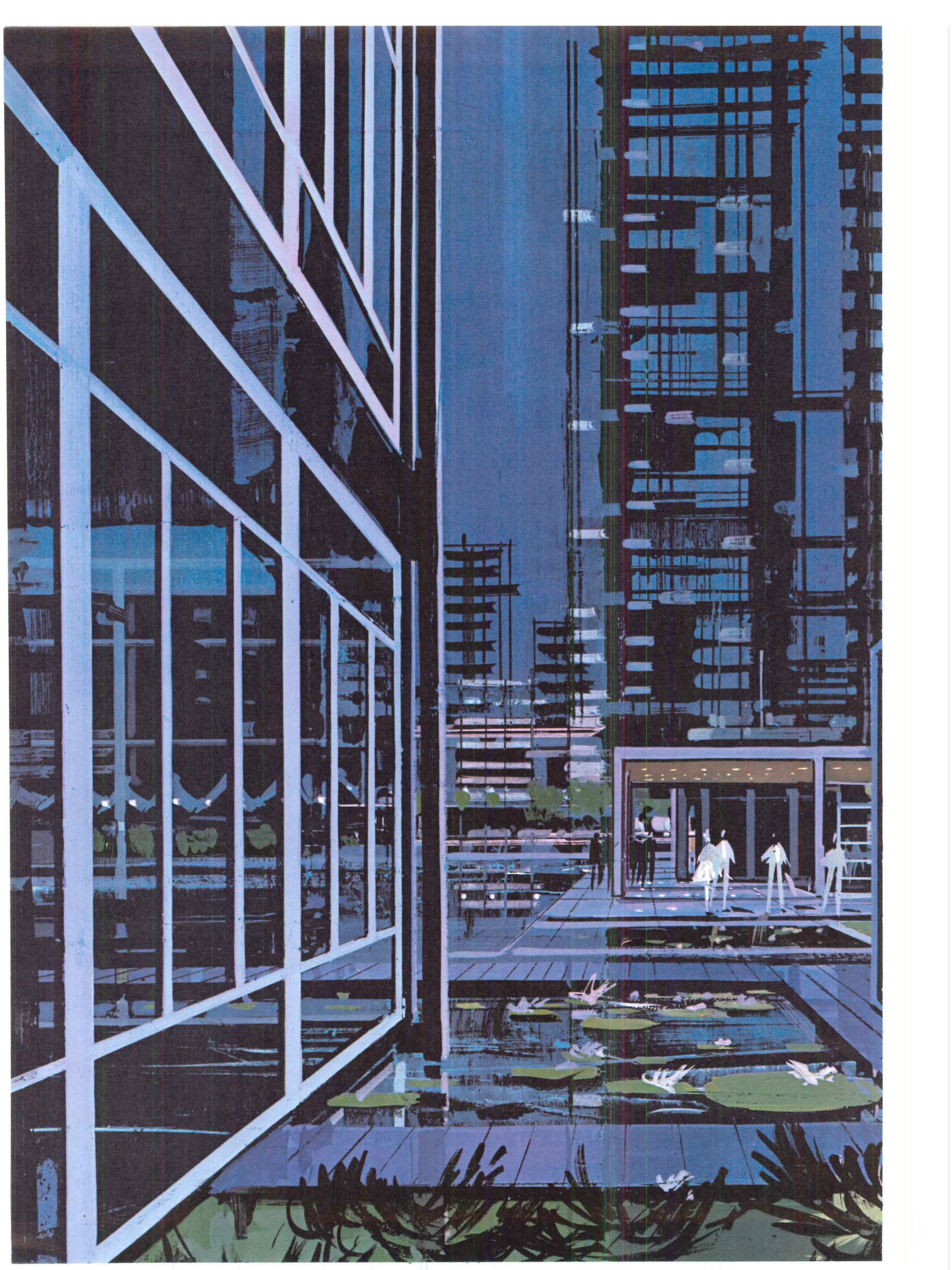
LUMINOUS CEILINGS INC.

3701 N. Ravenswood Avenue
Chicago, Illinois 60613
Phone 312-935-8900

◆ For more data, circle 150 on inquiry card

For more data, circle 151 on inquiry card

For more data, circle 152 on inquiry card ◆





This steel window won't rust.

It's finished
in polyvinyl
chloride.

Polyvinyl chloride is impervious to moisture. We put it on our window four times as thick as paint, using a Ceco-researched method, an exclusive process. This is a resilient finish. It doesn't crack or chip. It gives. We call it Cecoclاد. There is no other finish like it.

The Cecoclاد window is in the price range of a galvanized-and-painted steel window and a hard-coat-anodized aluminum window. The Cecoclاد window needs practically no maintenance. Your client can keep it looking brand new by washing it down with water when the glass is washed. That's all.

We'll be glad to sell you whatever window you want. We make them all. But if you'll take our unbiased advice, you'll specify the Cecoclاد window. It's incomparable.

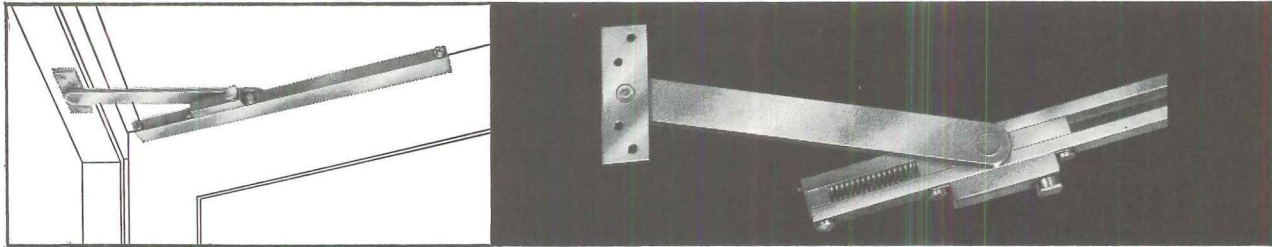
Send for colors, test data, specifications, samples and comprehensive list of projects built with Cecoclاد windows throughout the country. The Ceco Corporation, general offices: 5601 West 26th Street, Chicago, Illinois 60650. Sales offices and plants in principal cities from coast to coast.



CECOCLAD / STEEL WINDOWS

encased in colored polyvinyl chloride four times thicker than paint.

HERE IS THE HEAVY DUTY S&G DOOR CONTROL



SURFACE DOOR HOLDER SERIES SG-1190

This newest model in the wide S&G line of sash and door controls is constructed of sturdy architectural bronze channel 1 1/4" x 3/4". The control knob may be pre-set to hold the door open automatically and the hold-open tensions are adjustable. The SG-1190 is re-

versible for installation on right or left hand doors.

And just like every S&G building hardware product, this door control is built for years of attractive and functional service and is specially designed for heavy duty applications.

**THERE ARE 18 OTHER MODELS FOR YOU TO CHOOSE FROM.
ONE OF THEM IS SURE TO MEET YOUR NEEDS.
WRITE US NOW FOR FULL DETAILS.**



SARGENT & GREENLEAF, INC.
Rochester, N. Y. 14621

Finest name in the building hardware field for 110 years.

For more data, circle 153 on inquiry card

**FIND THESE CAREY
BUILDING PRODUCTS FAST
IN YOUR NEW 1966
SWEET'S
ARCHITECTURAL FILE**



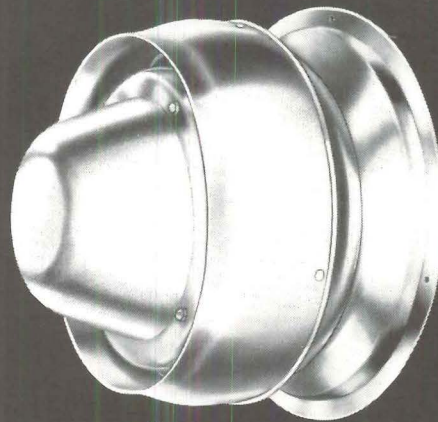
CAREY PRODUCT CATALOG	INDEX NO.
Fire-Chex Roofing Shingles	8c Ca
Built-Up Roofing	8a Ca
Structural Insulating Panels	8b Car
Corrugated A/C Roofing-Siding	8b Ca
Asbestoseal Vapor Barrier	9 Cae
Waterproofing & Dampproofing	9 Ca
Bathroom Cabinets/Accessories	26d Mi
Access Doors	16k Mi

For additional copies of any of the Carey Product Catalogs listed above, write:
Dept. AR-266 • The Philip Carey Mfg. Company • Cincinnati, Ohio 45215.

**PHILIP
Carey®**

For more data, circle 84 on inquiry card

**100%
WEATHER-PROOF**



COOK
TYPE TW
WALL
VENTILATOR

All-aluminum construction. Quiet centrifugal wheel, 7" to 24" diameter. Water drains away from wall, won't leave streaks. Integral conduit. Automatic dampers optional.

See our Catalog ^{20c}/_{Co} in Sweet's, illustrating 24 ventilators, blowers or accessories.

LOREN COOK COMPANY
640 N. ROCKY RIVER DRIVE
BEREA, OHIO 44017

For more data circle 155 on inquiry card



Before we tell you which Mosaic tiles are new,
please notice how everything harmonizes.

Color compatibility is a way of life with us.

Not even new products (so important in keeping our color families versatile) get in the way of this philosophy.

A new Mosaic tile color must blend with our existing colors; with other construction materials. And must have the temperament to stay in the background of your design.

Attributes which happen to apply, you'll notice, to the Faintex #1491 (broad stripe in the free-standing wall); to the new Faintex #1891 (narrow accent stripe in that same wall).

Color compatibility also makes new Golden Olive #6452 (back wall) such a useful color — a perfect foil for browns, greens and yellows.

Even in accent touches like the new Floating Leaf pattern (in the ceramic mosaic floor) you can get the compatibility you desire. You control boldness or subtlety simply by specifying a mix of harmonious Mosaic colors.

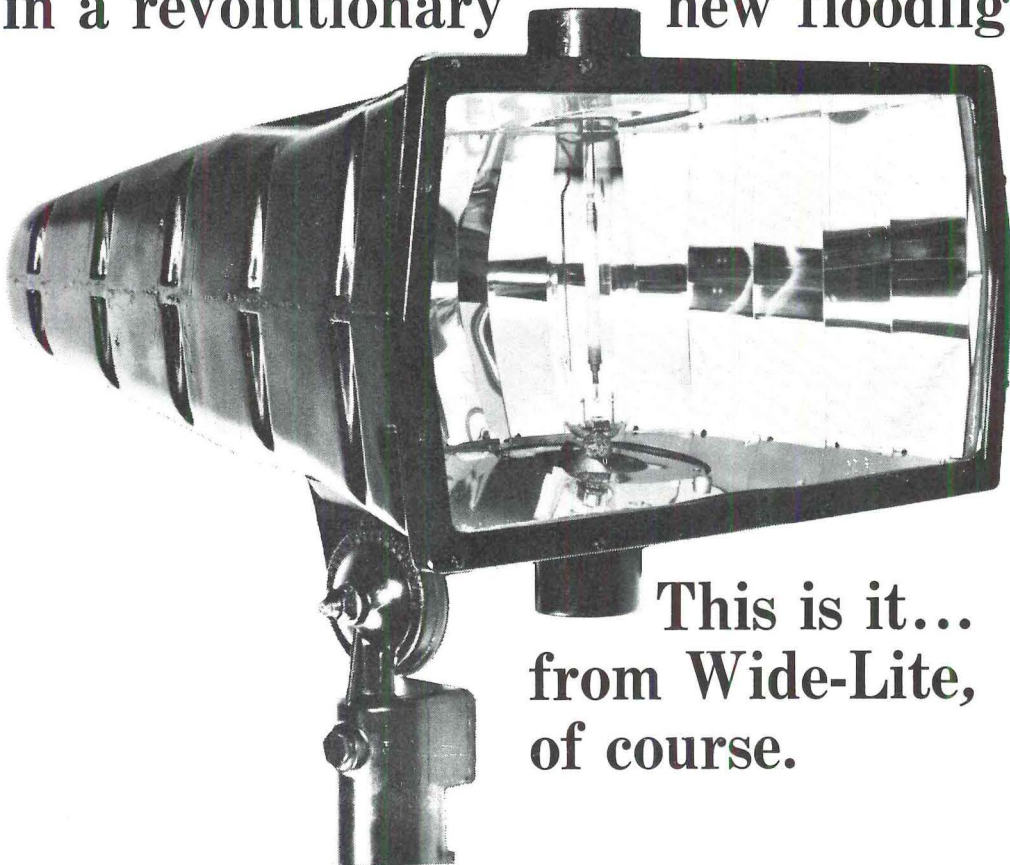
Contact your Mosaic Representative, Service Center or Tile Contractor for price ranges and suggested alternate tiles for the above color plan. See Yellow Pages, "Tile Contractors-Ceramic". The Mosaic Design Department will suggest tile treatments for your design.

Or direct your inquiries to The Mosaic Tile Company, 55 Public Square, Cleveland, Ohio 44113. For comparable colors in the western states, write: 909 Railroad Street, Corona, Calif.

MOSAIC®

"Mosaic" is the trademark of The Mosaic Tile Company

Those revolutionary new light sources
 you've been hearing about will work best
 in a revolutionary new floodlight.



This is it...
 from Wide-Lite,
 of course.

The entirely new Wide-Lite* SW floodlight retains the traditional quality features that have made the "Wide-Lite" mercury vapor fixtures famous—and adds to them advantages that make the SW model ideal for use with all the new light sources.

The SW floodlight installs easily—and is symmetrical in either horizontal or vertical position. All components—including ballast and complete pre-wiring—are within the beautifully compact body. Made of cast aluminum, it shrugs off the effects of time, weather and vandalism. Dirt, moisture and bugs are kept away from the reflector and lamp by a tempered glass lens so tough that BB shots bounce

off it. That means continued lighting efficiency without maintenance expense.

For rapid heat dissipation, the SW unit has cast-in cooling fins, top and bottom. In addition, the lamp and ballast are separated by a unique cooling duct. Also unique is its patented, highly efficient "Wide-Lite" reflector system made up of precisely positioned Alzak aluminum segments which make possible a large selection of patterns. The lamp is held firmly in its proper position by the patented Stabilux socket system.

This new "Wide-Lite" floodlight gives more light with fewer fixtures. Want more facts? See your "Wide-Lite" distributor, or mail the coupon.



**FLOODLIGHTS • POLES • INDOOR LUMINAIRES
 BALLASTS • TRANSFORMERS • LOW VOLTAGE LIGHTING**
 WIDE-LITE CORPORATION
 4114 Gulf Freeway, Houston, Texas
 Also manufactured in Australia, Belgium, Canada and Mexico.

* Trademark of Wide-Lite Corporation

WIDE-LITE CORPORATION
 4114 Gulf Freeway, Houston, Texas 77001 Dept. 24A-225

Please send more information on the new SW series "Wide-Lite" floodlights.

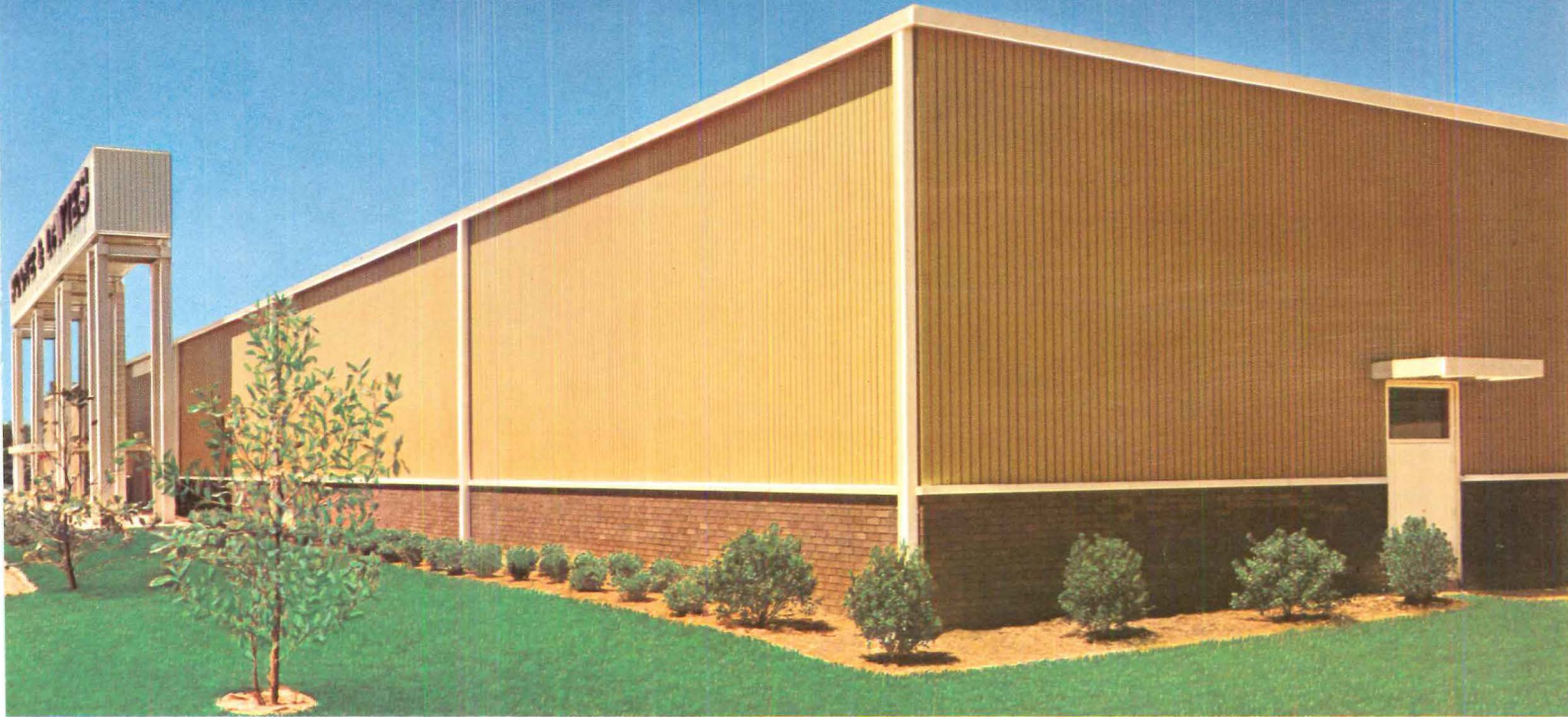
NAME _____
 COMPANY _____
 ADDRESS _____
 CITY _____ STATE _____ ZIP _____
 NAME OF ELECTRICAL CONTRACTOR _____

For more data, circle 157 on inquiry card

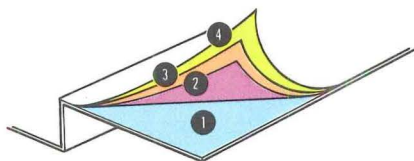
For more data, circle 158 on inquiry card

***The color's baked on
so it won't bake off***

Foote & Davies
Division of McCall Corporation
Plant and Office
Atlanta, Georgia
Architect: Toombs-Amisano & Wells
Atlanta, Georgia
Contractor: Ira H. Hardin Co.
Atlanta, Georgia



***...and you have a choice
of 30 attractive colors
with Inland Wall Systems***



1. Panel is prepared with Inland's exclusive Ti-Co continuous galvanizing.
2. Chromate coating provides a bond between galvanizing and paint.
3. Epoxy resin prime coat serves as flexible base coat for final finish, and prevents flaking.
4. Panel is finished with alkyd melamine paint chosen for hardness and weather resistance.

Inland Steel Wall Systems save on maintenance costs, even after years out of doors. A rigorous exposure test in salt-air climate has proved the weatherability, color fastness and chalk resistance of Inland's two-coat, oven-cured Duofinish.

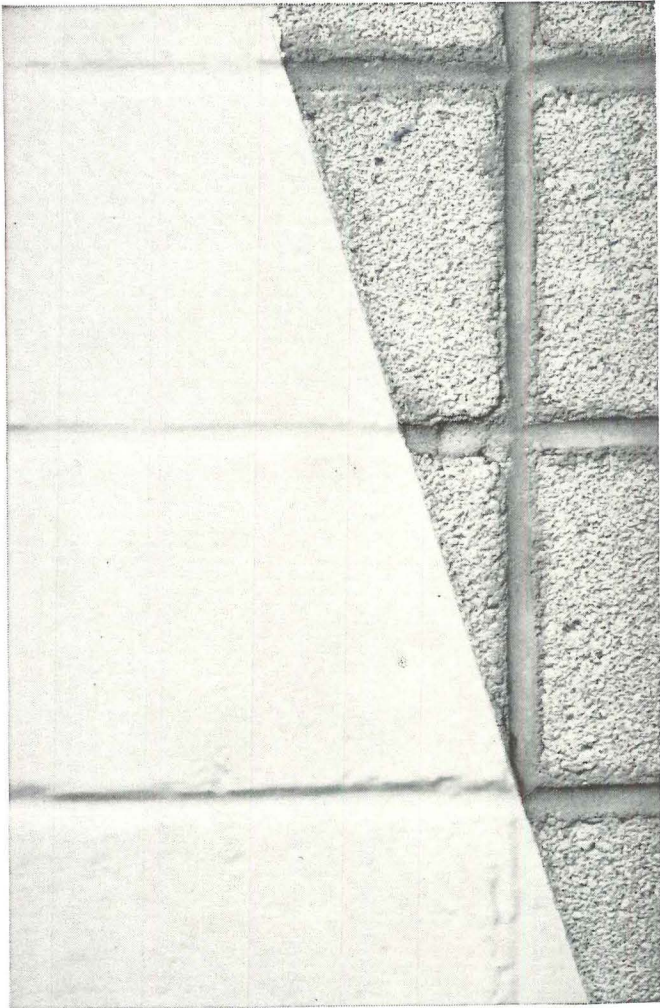
Duofinish gives the designer a palette of 30 weather-tested colors. Inland Wall Systems are available

in 5 different panel profiles, each with its own distinctive configuration and shadow line. Panels may be used insulated, uninsulated, and as fire walls.

For complete information, see Sweet's section 3b/Inl. Or write today for catalog 243 to Inland Steel Products Company, 4107 West Burnham Street, Milwaukee, Wisconsin 53201.

Inland Steel Products





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-2
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

For more data, circle 160 on inquiry card

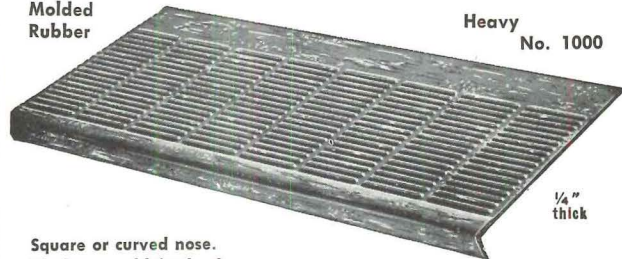
◆ For more data, circle 159 on inquiry card

RC m SPECIFY SAFETY DESIGNED MUSSON HEAVY DUTY RUBBER STAIR TREADS

The durability and economy of these treads will appeal to the building owner. Their clean, attractive appearance and safety appeal to users.

Molded
Rubber

Heavy
No. 1000



Square or curved nose.

Black or marbled colors—

Red, Green, Gray, Mahogany, Walnut, Beige, Birch, Black

These high quality treads are 1/4" thick and full 12" deep. Standard size lengths in stock are 24", 30", 36", 42", 48", 54", 60", 72". They are readily trimmed to exact step size and easily installed on wood, metal, marble, or terrazzo steps.

Specify MUSSON NO. 1000 treads for universities, schools, hospitals, factories, theaters, churches, office buildings and all heavily traveled public stairways.

COMPLEMENTARY, COLOR CO-ORDINATED ITEMS

Musson is your source for matching or contrasting safety designed landing tile, smooth tile, coved stair risers, stringer material in rolls and flat riser material in rolls.

Write For Catalog, Samples and Prices

THE R. C. MUSSON RUBBER CO.

1320 Archwood Ave.

Akron, Ohio 44306

For more data, circle 161 on inquiry card

Sun control is important, economically advantageous, and best accomplished with Lemlar Products.

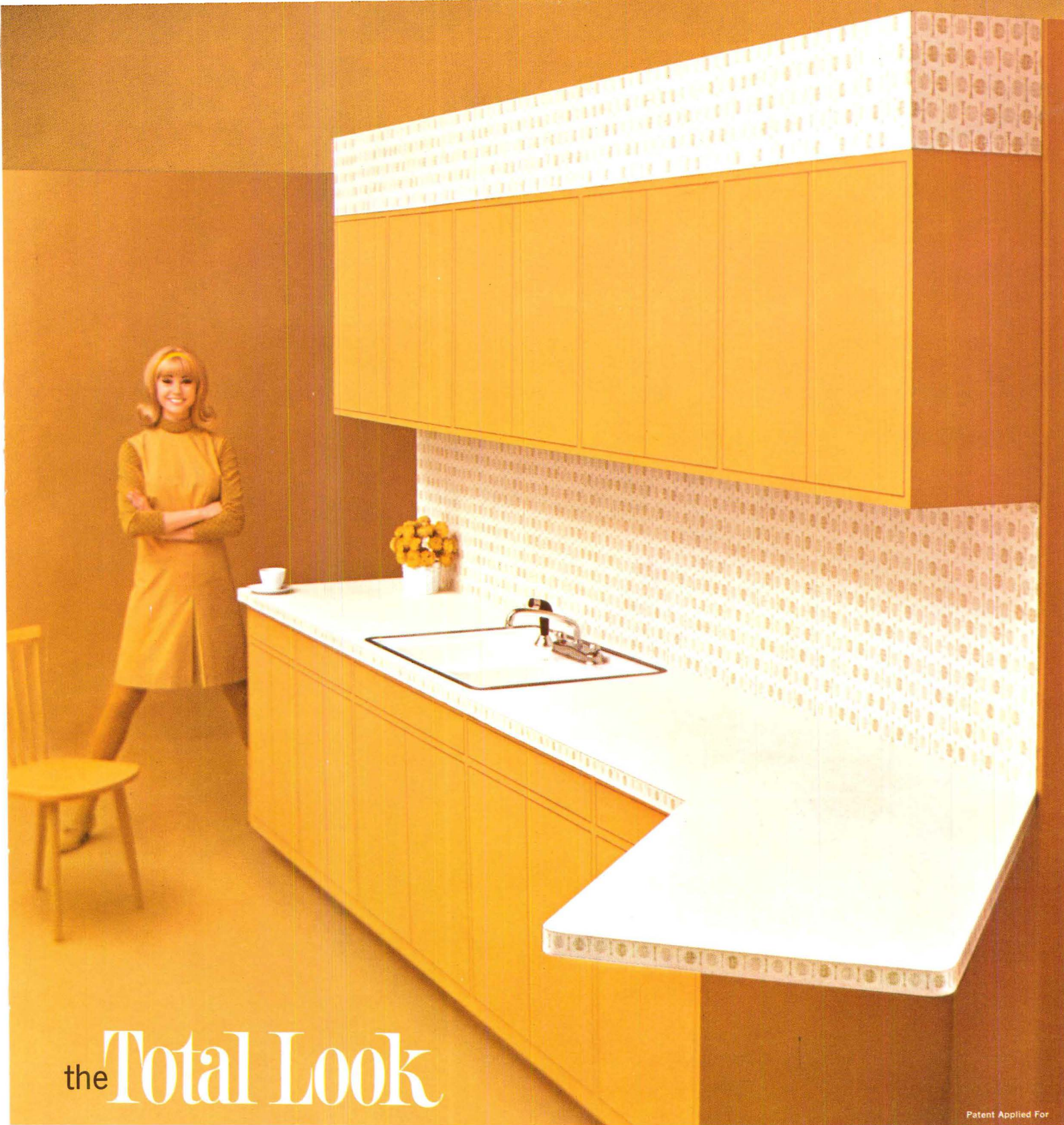
Los Angeles International Airport
Central Control Tower.
Architects:
Charles Luckman & Associates
Welton Becket & Associates
Paul Williams, F.A.I.A.
Mechanical & Electrical Engineers:
J. S. Hamel Engineers, Inc.

LEMLAR

Lemlar Manufacturing Company, Box 2346, Gardena, California 90247
Sales Representatives in All Major Cities

For more data, circle 162 on inquiry card

For more data, circle 163 on inquiry card ◆



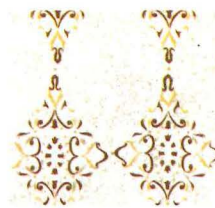
Patent Applied For

the Total Look

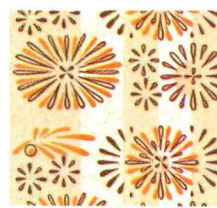
a new concept of color and pattern harmony in Consoweld laminated plastic

The Total Look brings decorative appeal to the heavy service areas of kitchens and classrooms. In addition to coordinated decor, the Total Look extends the functional use of Consoweld laminated plastic to easily-soiled areas—soffit and backsplash — and eliminates the need for frequent redecorating. Ideal for homes, apartments, and domestic science classrooms where smart decor and maintenance-free surfaces are required. Specify Consoweld laminated plastic in any of five Total Look designs. For more information call your distributor, refer to your AIA File folder under Plastics or write direct to Consoweld Corporation, Wisconsin Rapids, Wisconsin.

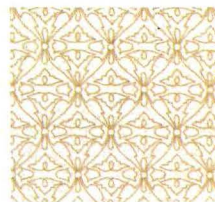
Gold Rondo, above, is available in blue. Counter top is Consoweld Off-White Whisper. Other Total Look designs are shown at the right.



SERENADE



MELODY



CAPRICE



"Land sakes, why doesn't Wheeler get on the stick

...and make a two-lamp Ultima II"

"And," she said, "be sure to build it as sound, sensible and good-looking as the single-lamp Ultima II."

So we did. (You see when we design fixtures we take our cues from the people who'll be using them.)

And the result is the finest semi-indirect fixture of its kind on the market, the Wheeler two-light Ultima II. Perfect for modern constructions calling for higher lighting levels and modular dimensions. Cuts costs too — supplies desired foot/candles with fewer fixtures. Fixture requires fewer pendants. (Pendants can be mounted anyplace — still permitting relamping from above.) Needs no ballast boxes between fixtures.

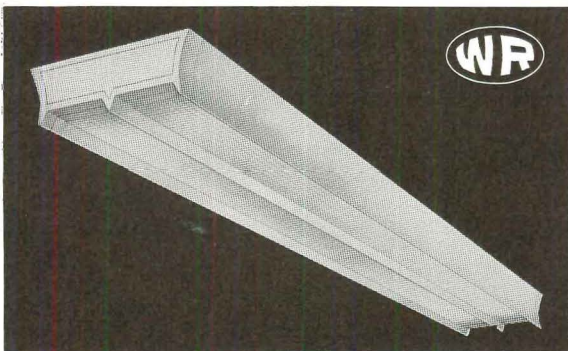
And the smartly-styled two-light Ultima II is quality constructed. From strong, lightweight extruded aluminum. With plastic louvers. (Metal louvers, solid-acrylic or prismatic shielding optional.) Easy to maintain, too, since it has no dust-catching crevices. Available for 4', 6', or 8' 1500-MA lamps.

And our single lamp fixture, the Ultima II? Still a great performer.

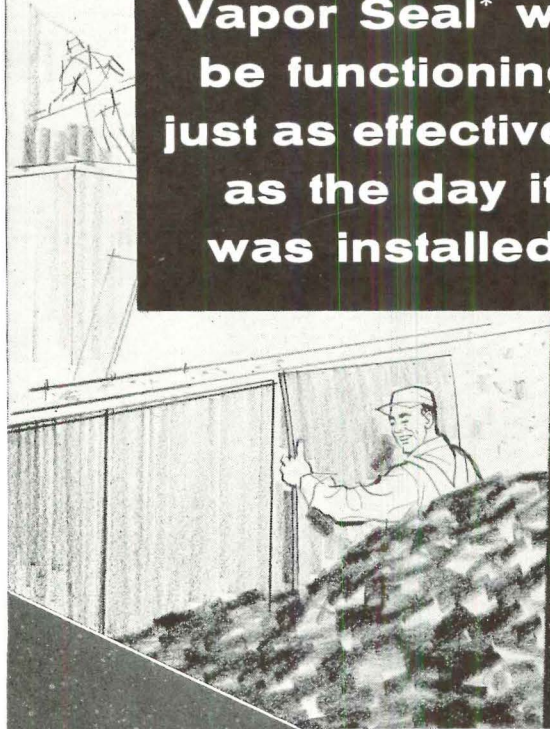
(Even though it is only half the fixture the Double Ultima is.)

For more information on Wheeler's Ultima fixtures contact your Wheeler wholesaler. Or write E. Quintilliani, General Sales Manager, Wheeler Reflector Co., Inc., Hanson, Massachusetts.

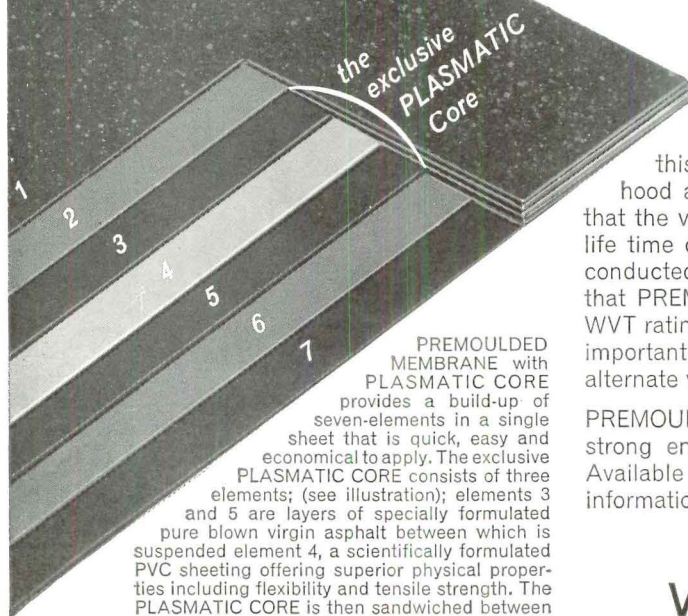
Fixture design by Paul Lamson, Illuminating Engineer



When this little sidewalk supervisor grows up, the Vapor Seal* will be functioning just as effectively as the day it was installed!



THIS STRUCTURE IS
MOISTURE PROTECTED
with
SEALTIGHT
Premoulded Membrane
VAPOR SEAL WITH
Plasmatic Core



PREMOULDED MEMBRANE with PLASMATIC CORE provides a build-up of seven-elements in a single sheet that is quick, easy and economical to apply. The exclusive PLASMATIC CORE consists of three elements; (see illustration); elements 3 and 5 are layers of specially formulated pure blown virgin asphalt between which is suspended element 4, a scientifically formulated PVC sheeting offering superior physical properties including flexibility and tensile strength. The PLASMATIC CORE is then sandwiched between element 2 and 6 which are super-saturated felt liners and then an additional asphalt weather coat, elements 1 and 7, are applied during process of manufacture. We challenge comparison — compare products — compare test results and we believe you too will agree . . . there is "no equal" to PREMOULDED MEMBRANE with PLASMATIC CORE.

***. . . PREMOULDED MEMBRANE with PLASMATIC CORE . . . the only vapor seal offering proven longevity!**

While the little fella' doesn't realize it, those "black sheets" he sees being applied to the basement walls will protect this structure from destructive moisture while he grows to manhood and longer. This *longevity* is important — you must be sure that the vapor seal, installed during original construction, will last the life time of the structure — it cannot be replaced later. Recent tests conducted by the Chicago Testing Laboratory, Inc. prove conclusively that PREMOULDED MEMBRANE with PLASMATIC CORE has a true WVT rating of only 0.003 grains per square foot/per hour and even more important; maintains this rating even after being subjected to destructive, alternate wetting and drying tests; (that's real longevity).

PREMOULDED MEMBRANE with PLASMATIC CORE is rugged and strong enough to handle and install without puncturing or tearing. Available in sheets 4' by 8' and rolls 4' wide by 50' long. For complete information request Catalog No. 756.

W. R. MEADOWS, INC.

41 KIMBALL STREET

ELGIN, ILLINOIS 60122

W. R. MEADOWS
OF GEORGIA, INC.

4765 FREDERICK
DRIVE, N.W.
ATLANTA, GA. 30336

W. R. MEADOWS
OF CANADA, LTD.

130 TORYOK DRIVE
WESTON, ONTARIO
CANADA

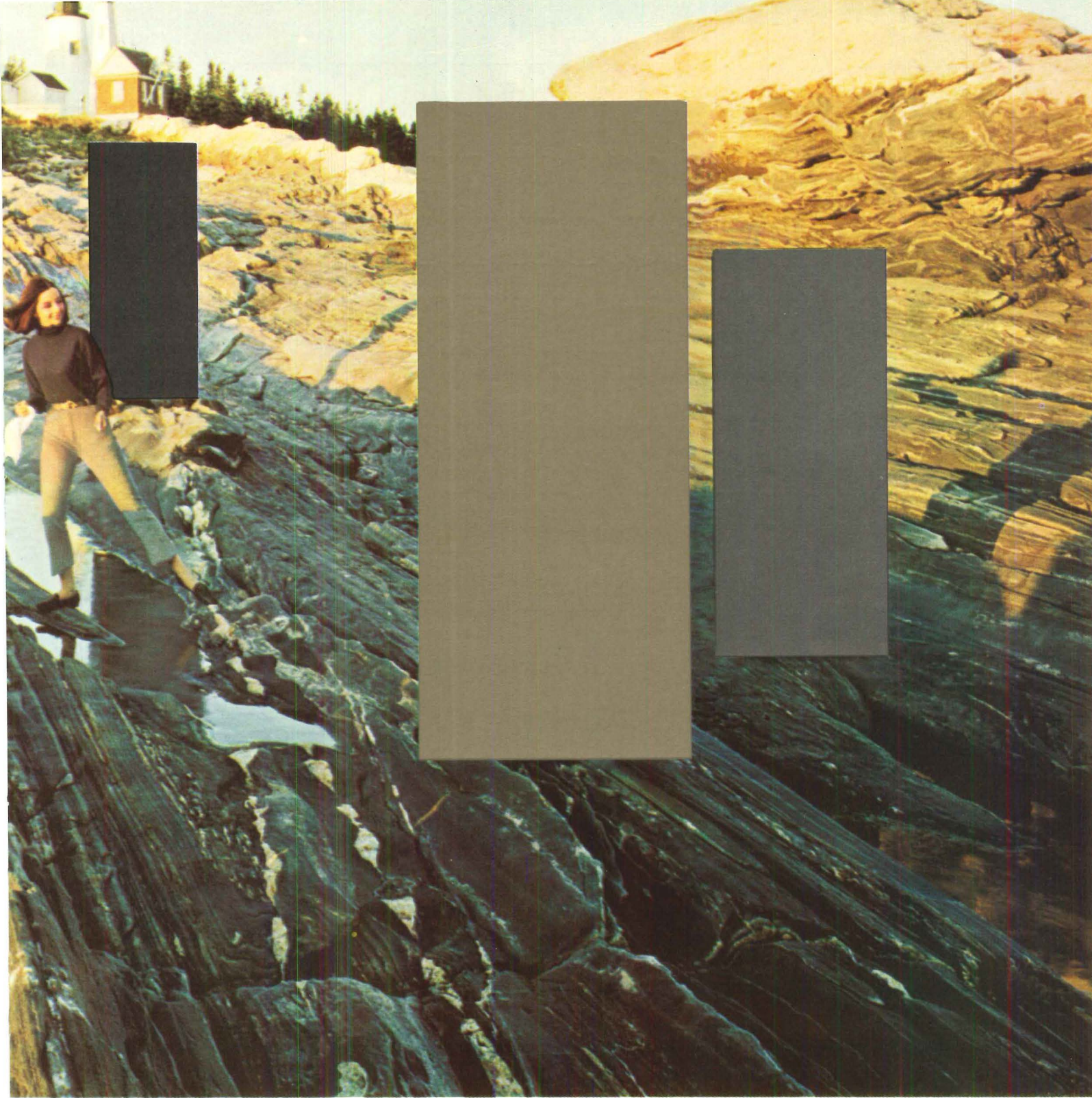
◆ For more data, circle 164 on inquiry card

For more data, circle 165 on inquiry card

For more data, circle 166 on inquiry card ◆



**Change
for the
better with
Alcoa
Aluminum**



The unforgettable beauty of New England is reflected in Alcoa Duranodic finish

As dramatic as nature's primitive handiwork, Alcoa® Duranodic* 300 finish for aluminum has a wide variety of construction uses. With good reason.

The elegant colors—gray, bronze and black—produce either compatible or contrasting definitions. You have a choice of closely matching color ranges, or delicate variations of dark tones, each designed to accentuate the natural beauty of its environment.

Specially controlled alloys and a specialized anodizing technique are used to produce Duranodic 300 finishes. The resulting surface is superior: It's thicker, tougher and longer-lasting than other anodic finishes. On panels, solar screens, windows, mullions, trim and framing, indoors or out, Duranodic 300 finish will withstand the worst of time and wear.

And, like so many other singular achievements in aluminum, Duranodic 300 finish comes only from Alcoa.

For a complete descriptive brochure on Duranodic finishes, call your nearest Alcoa sales office. Or write Aluminum Company of America, 1000-B Alcoa Building, Pittsburgh, Pa. 15219. Alcoa Brings You Action Drama At Its Best . . . "THE FBI," Sunday Evenings, ABC-TV.

*Trade Name of Aluminum Company of America



consider the versatility that **COOKSON** side coiling grilles contribute to any structure

At Night: Protected



By Day: Unrestricted



These two Cookson Side-Coiling Grilles close-off a full 200 feet of store-front.

In the closed position (left) these grilles provide effective security, because they are fabricated from steel rods and links that are strong and durable.

Ready for business (right) the grilles are coiled into compact enclosure boxes to leave the entire store-front fully open for freedom of entrance and vision. Retailers value highly this maximum exposure for product display.

Cookson Grilles—Rolling or Side-Coiling—offer a practical and decorative answer to many closure problems. For concessions, store-fronts, hallways, stairways, courtyards, driveways or garage entrances, the clean lines blend attractively with contemporary design while providing effective protection. Write today for Bulletin 6501, or see us in Sweet's.



When not in use, Cookson Side Coiling Grilles "disappear" into compact enclosures.



"Best Way To Close An Opening"

THE COOKSON COMPANY

700 PENNSYLVANIA AVE., SAN FRANCISCO, CALIFORNIA 94107

For more data, circle 167 on inquiry card



THIS IS

modac[®]

SOLVENT TYPE ACRYLIC COATING

■ Cost of less than 1¢ per sq. ft. per year!!

®

New Jersey Bell Telephone Co., Carteret Dial Central Office Building, Carteret, N. J.

Architect: Frank Grad & Sons, Newark, N. J.

General Contractor: E. G. Robbins Const. Co., Inc., Sea Girt, N. J.

Paint Contractor: J. I. Hass, Jersey City, N. J.

Brick. Precast concrete cornice. Painted with one coat of MODAC. Gold color on soffits. Off-white on walls. Building located in industrial fume area. Effect on MODAC—nil.

■ One-coat protection that really adheres to concrete

For more data, circle 25 on Inquiry Card



Standard Brands, Inc., Pennsauken Industrial Park, Pennsauken, N. J.

Architect: George Ewing & Associates

General Contractor: Wark and Company, Philadelphia, Pa.

Paint Contractor: Cumberland Decorating Co., Buena, N. J.

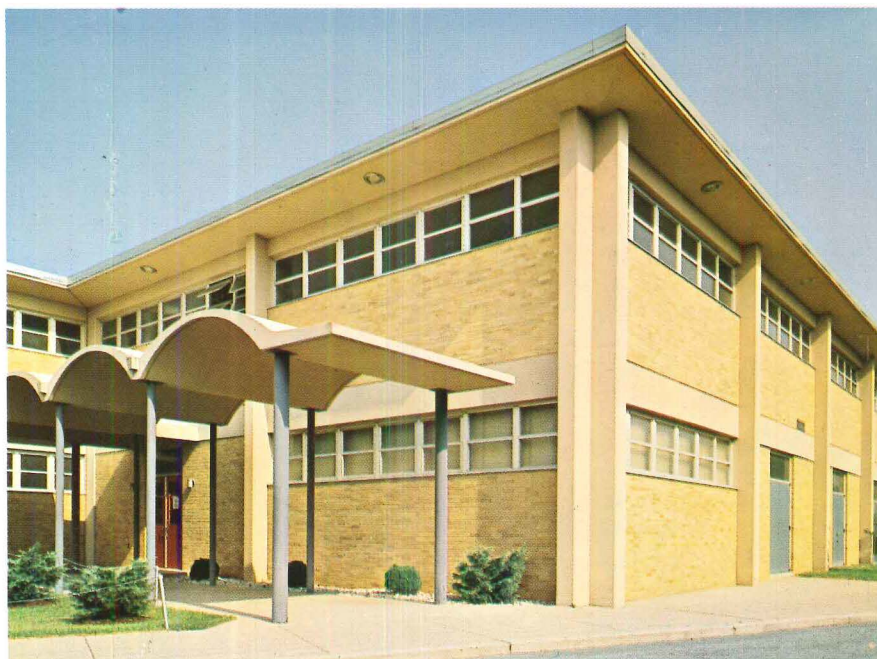
Concrete block. White MODAC applied over entire wall surface. Effect of humidity, city fumes and exhaust smoke—nil.

Why don't you specify MODAC?

MODAC will give you the trouble-free job you have been looking for on concrete block, brick, cinder block and—believe it or not—*poured concrete*.

MODAC provides outstanding adhesion on slick or chalking concrete surfaces because its unique solvent system bites *deep* into the surface. It fills and seals concrete and cinder block as a heavy duty waterproofer. Yet, it provides a breathing film to transmit vapor from within. And MODAC provides color retention far superior to conventional coatings.

MODAC gives you all this in a one-coat film with proven performance in excess of 10 years. And, it lets you provide your client with the appearance so necessary in establishing a desirable corporate image in his buildings.



Drexel Institute of Technology, Drexel Field House, Philadelphia, Pa.

Architect: Young & Schultze (formerly Baeder, Young & Schultze)

General Contractor: M. V. L. Construction Co., Lansdowne, Pa.

Paint Contractor: Murphy Company, Philadelphia, Pa.

Brick with concrete accessories. MODAC applied over concrete soffits, lintels and sills to provide a pleasing, uniform finish to structure. Effect of heavy city atmosphere and varying weather conditions—nil.

MAKE US PROVE THE LOWEST POSSIBLE AMORTIZED COST COMES WITH MODAC.

Write today to:

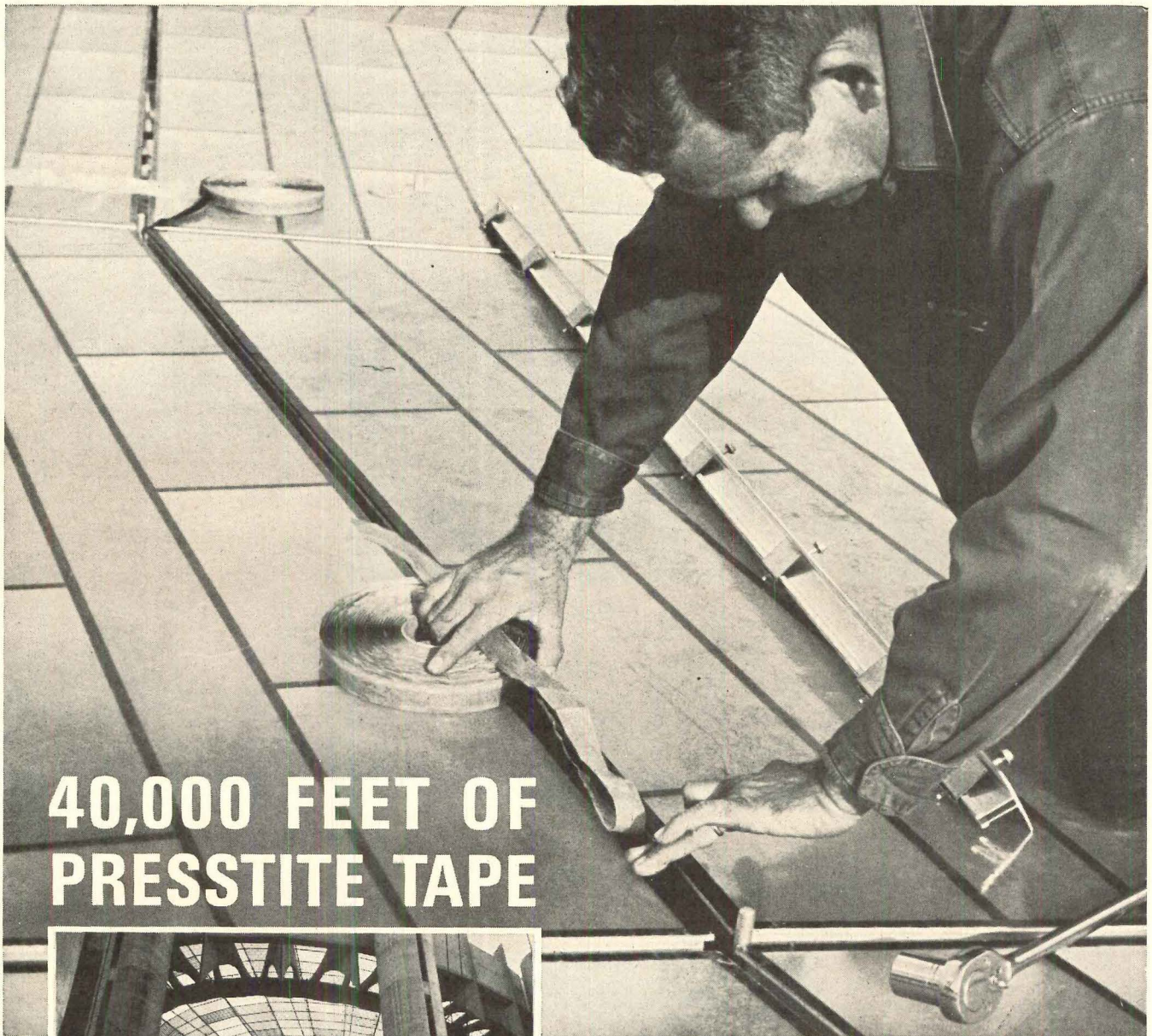
ncc

national coatings corporation

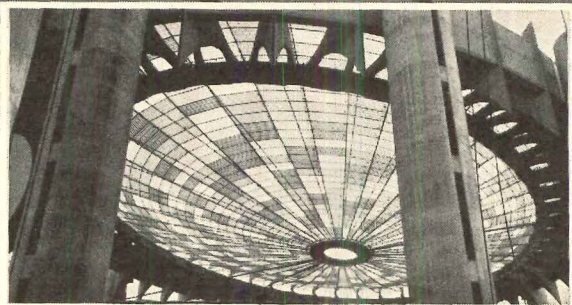
OHIO AND MURRAY AVENUES ■ ATLANTIC CITY, NEW JERSEY 08403

Printed in U.S.A.

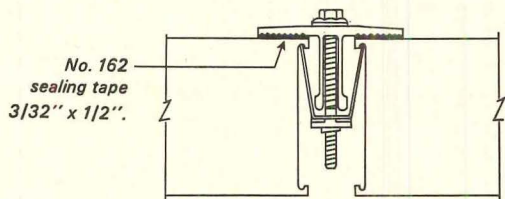
For more data, circle 25 on Inquiry Card



**40,000 FEET OF
PRESSTITE TAPE**



**Seals New York State's
Floating Skyroof ...
*Without a Leak***



Specially designed Kalwall Clamp-Tite System

6327

*Architect: Philip Johnson, A.I.A. / Gen. Contractor: Thompson-Starrett
Sub-Contractor: Winner-Whelan / Translucent Skyroof by Kalwall Corp.*

PRESSTITE's No. 162 Elastic Compound Tape gave "just right" adhesiveness, consistency, and dimensional uniformity—completely eliminated problems of application and clean-up, too!

Only a preformed sealing tape could provide the weather-tight, flexible seal installed around every inch of the 1500 Kalwall translucent fiberglass panels used in this unique cable-suspended roof . . . world's largest of its kind.

The world's largest selection of architectural sealants comes from PRESSTITE . . . soft general purpose PERMAGUMS®, tough tapes with controlled compressibility like No. 162, Thiokol®-base curing types, and specialties like rubber rod joint filler.

Whether you're designing a conventional building or an unusual structure like the New York State Exhibit, there's a specific PRESSTITE sealant for your application. Write us, or see our catalog in Sweet's.

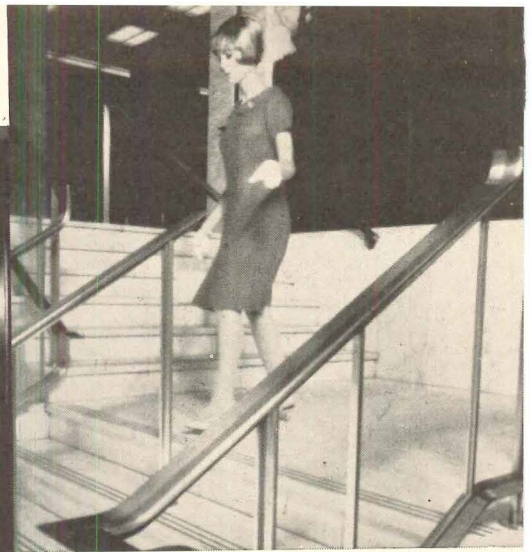
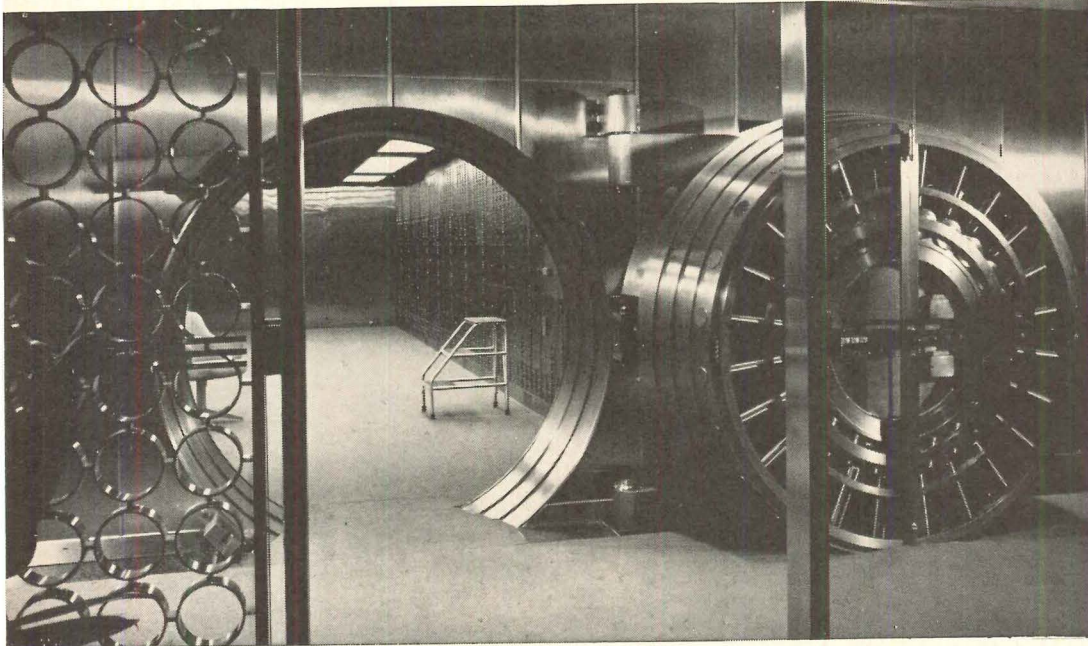
Interchem

Presstite Products

INTERCHEMICAL CORPORATION □ PRESSTITE DIVISION □ 39th & CHOUTEAU □ ST. LOUIS, MO. 63110

For more data, circle 145 on inquiry card

Wells Fargo Bank, San Francisco, Calif.
Architects: Ashley, Keyser and Runge, San Francisco, Calif.
Stainless steel vault door and flanking walls:
The Hermann Safe Co., San Francisco, Calif.

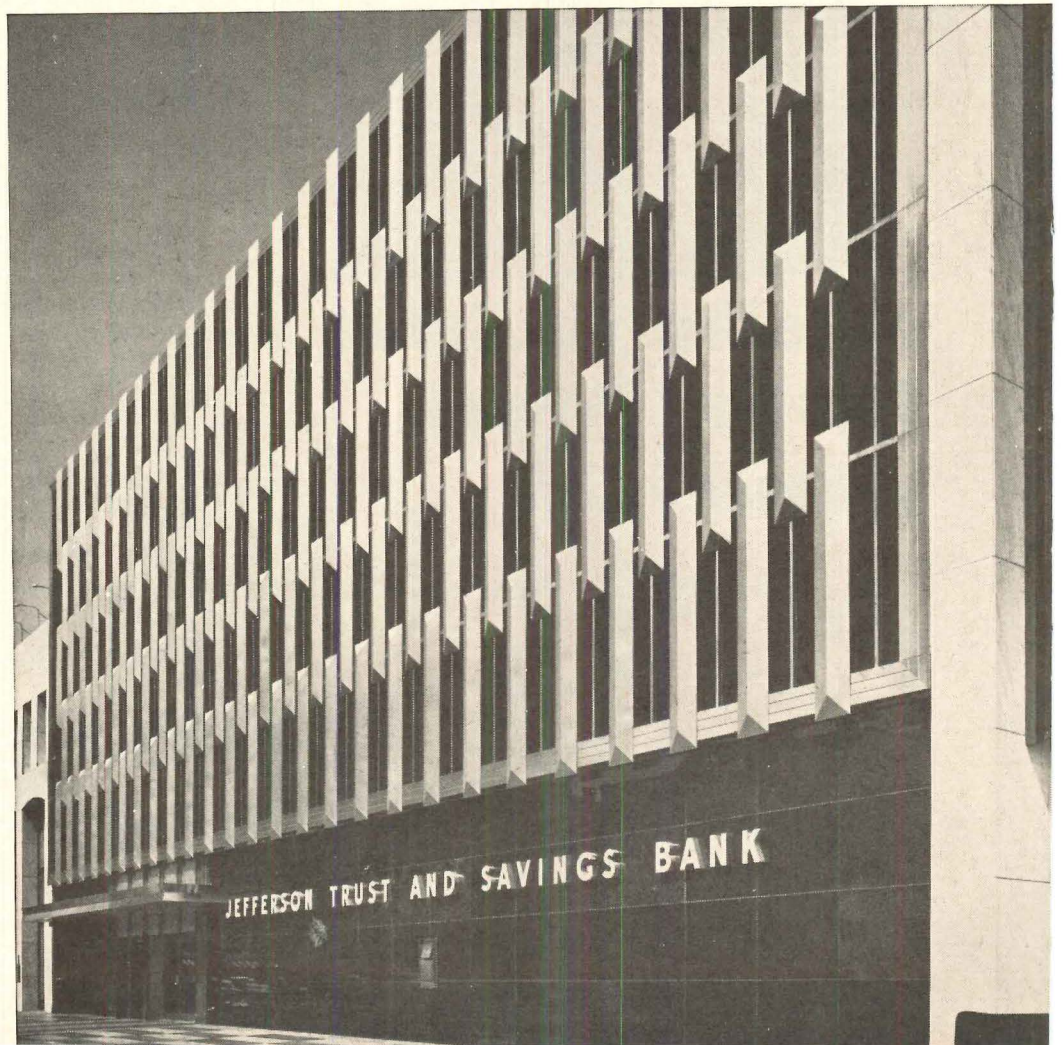


Bowery Savings Bank, New York, N. Y.
Architects: Gibbs and Hill, Inc.,
Consulting Engineers, New York, N. Y.
Stainless steel stair rails:
Trio Industries, Inc., Bridgeport, Conn.

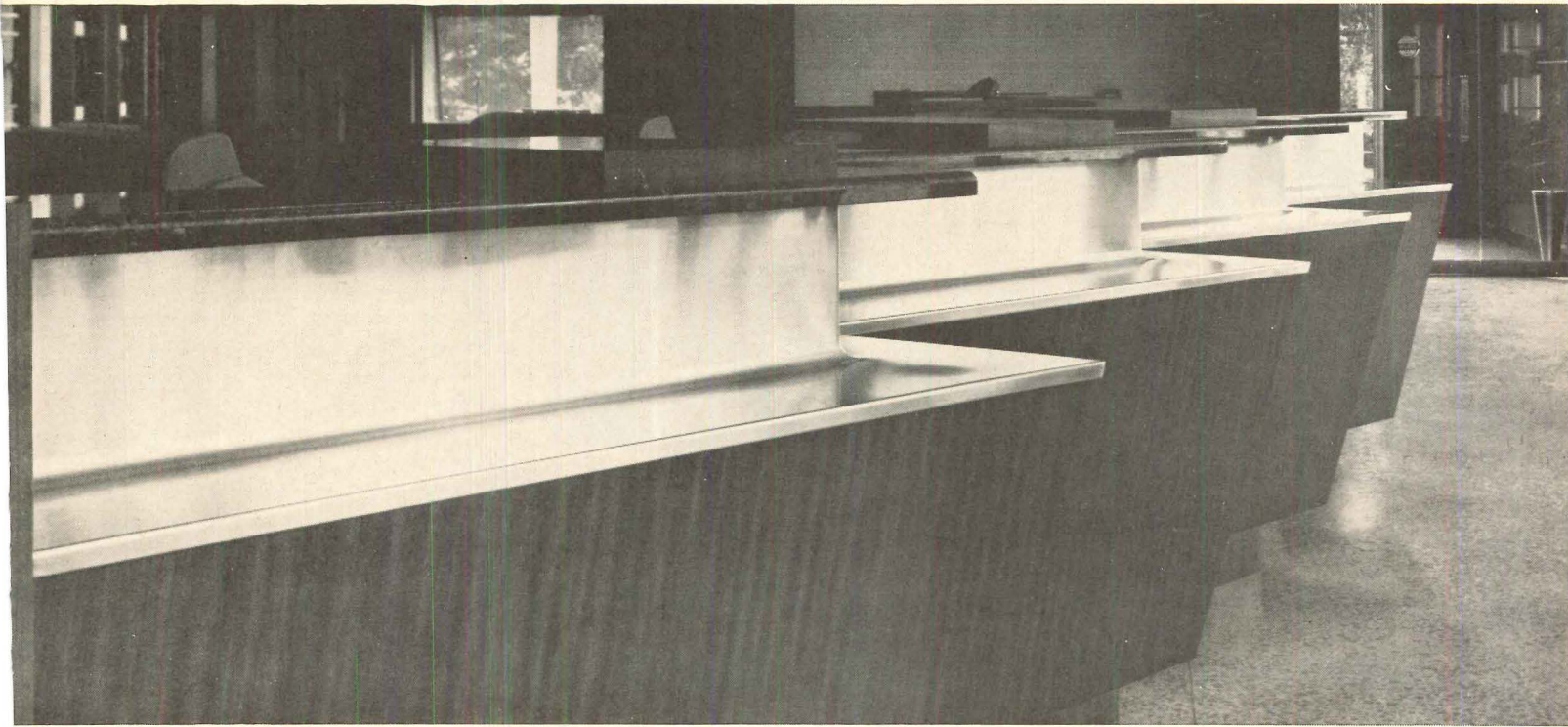


When you design and build with stainless steel

Jefferson Trust and Savings Bank, Peoria, Ill.
Architects: Lankton, Ziegele & Terry, Peoria, Ill.
Stainless steel rigidized panel curtain wall:
Fenestra Incorporated, Lima, Ohio.



For more data, circle 168 on inquiry card



Cayuga Federal Savings and Loan Association, Philadelphia, Pa.
 Architect: Philip Mastrin, AIA, Philadelphia, Pa.
 Stainless steel counters: John A. Robbins, Inc., Philadelphia, Pa.

it's like putting money in the bank.

Architects and builders have more interest in nickel stainless steel than ever. Because it keeps paying dividends for life with lasting beauty, corrosion resistance and low maintenance. And investment in stainless shows immediate returns—its high strength permits the use of light, economical gauges in products designed to meet your budget.

Nickel stainless steel has excellent corrosion resistance. It stands up in almost any atmosphere or climate. There's little danger of corrosion products streaking or staining adjacent materials. Its soft, permanent luster complements, reflects and highlights surrounding materials. Gives buildings a modern, progressive appearance. Gleams beautifully for life and never needs paint—ordinary detergent and water keep it looking like new.

Bank on the advantages of nickel stainless steel for your next design. Find out about available competitive products—including curtain walls, entrances, windows, railings, counters and vaults. And write for Inco's informative "Stainless Steel Architectural Fact Sheet."

INTERNATIONAL NICKEL

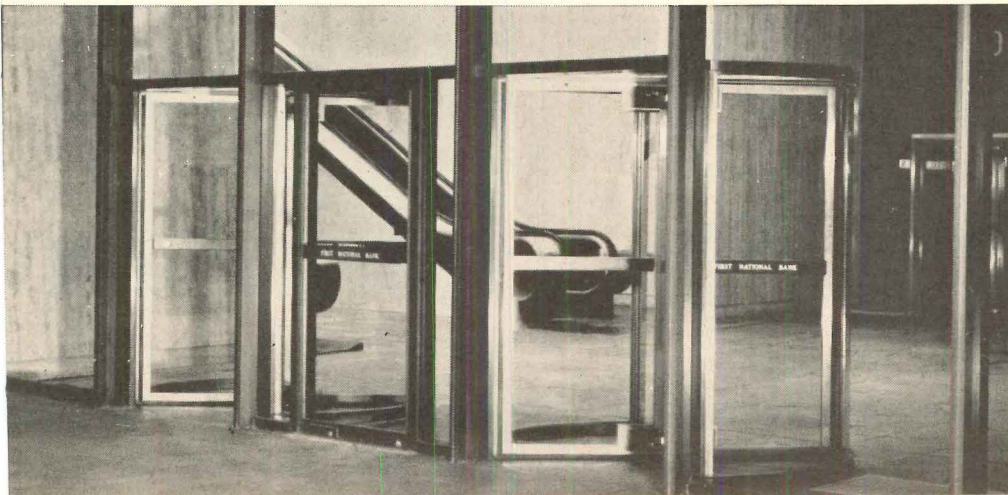
67 Wall Street, New York, N.Y. 10005

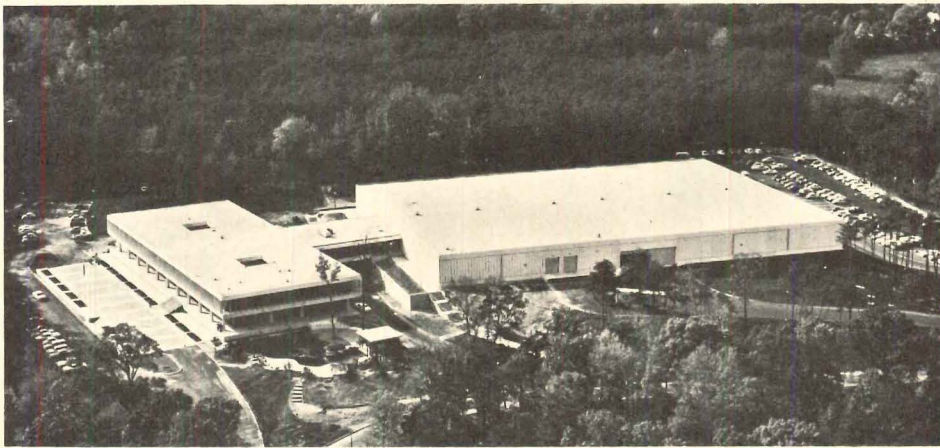
Nickel...its contribution is Quality

First National Bank, Dallas, Texas. Architects: Thomas E. Stanley and George L. Dahl, Dallas, Texas. Stainless steel swinging and revolving doors: International Steel Company, Evansville, Ind.



First National Bank of San Jose, Sunnyvale Branch, Sunnyvale, Calif.
 Architect: Melvin A. Rojko. Consultant: Bank Building & Equipment Corp. of America, St. Louis, Mo. Stainless steel flashing: John B. Shelton Roofing Co., San Jose, Calif.





Headquarters combines warehouse and offices

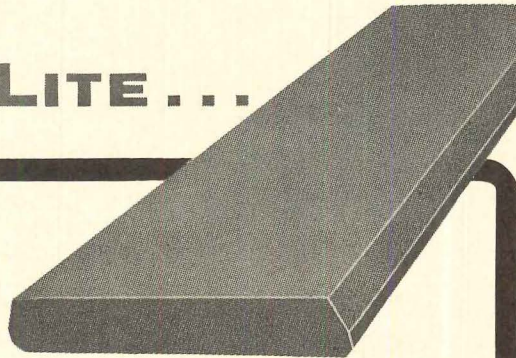
The new headquarters for Capitol Car Distributors, Inc. in Lanham, Maryland just outside of Washington, D.C. combines administrative and warehouse functions in a single articulated structure. The \$4-million facility is located within a 33-acre site. The basic design and concept for the structure was planned by Leon Safrata while Mills, Petticord and Mills were in charge of architectural and engineering services.

In the design, three objectives were paramount: ". . . the natural setting of the land; to secure the largest amount of usable, functional space; and to produce a substantial, dignified design."

The two-story administrative building, precast concrete with exposed aggregate and some brick facing, contains 69,888 square feet. Included within this area are lobby; three training center classrooms; auditorium; cafeteria; sauna; sales, service and parts departments; executive, accounting, and computer offices; and a board of directors wing. The structure is laid out on a four-foot module for interior flexibility.

The 82,640-square-foot warehouse is connected to the second floor of the administration area. Included in the site are reflecting pool, patio, landscape and terraced areas, paved roads, parking, woodland areas. Landscape architect is Ethelbert E. Furlong and general contractor is the George A. Fuller Company.

this is **DULITE** . . .



strong, yet lightweight



Before making a decision on a roof deck, check all the advantages of DULITE precast roof slabs. Lightweight with structural strength . . . insulating value about four times greater than ordinary concrete . . . has .75 noise reduction value . . . 2-hour U.L. rating with resulting insurance savings . . . permanence . . . resistance to fumes, moisture, deterioration for longer life, lower maintenance cost. There's more to tell. Write for details.

**PLUS
additional
distinctive
advantages
that make its
specification
logical**

DUWE

PRECAST CONCRETE PRODUCTS, INC., Box 1277, Oshkosh, Wis.

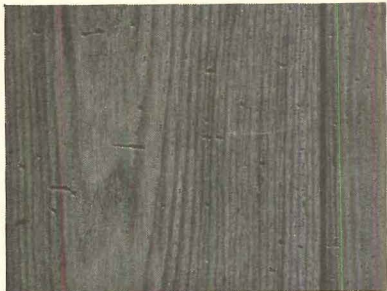
For more data, circle 169 on inquiry card





6625

New Marlite Textured Paneling



Textured Wormy Chestnut

Completely different! Wormy Chestnut! Exclusively Marlite!

Touch it . . . you can feel the texture. Wash it . . . you can't harm its beauty. New Textured Wormy Chestnut Marlite adds exciting depth and dimension to the walls in any room.

Textured Wormy Chestnut reproduces every surface detail of this rare wood. You can actually see and feel the woodgrain textured surface. And Marlite's exclusive soilproof plastic finish resists heat, moisture, stains and dents.

It wipes clean with a damp cloth.

To add a new dimension to your Marlite sales and interior design opportunities, get complete information on Textured Wormy Chestnut — the exciting innovation in Marlite's 1966 line of smart Decorator Paneling. Check with your building materials dealer, consult Sweet's File, or write Marlite Division of Masonite Corporation, Dover, Ohio, Dept. 205.

Marlite[®] plastic-finished paneling

ANOTHER QUALITY PRODUCT OF MASONITE[®] RESEARCH

MARLITE BRANCH OFFICES AND WAREHOUSES: 1721 Marletta Blvd., N.W., Atlanta, Georgia 30318 • 57 Smith Place, Cambridge, Mass. 02138 • 4545 James Place, Melrose Park (Chicago), Illinois 60160 • 1199 Great Southwest Parkway, Grand Prairie (Dallas), Texas 75050 • 777-139th Ave., San Leandro, Cal. 94578 • 1622 Phoebe St., LaMirada (Los Angeles), Cal. 90638 • 39 Windsor Ave., Mineola, L.I. (New York) 11501 • 2440 Sixth Ave. So., Seattle, Wash. 98134

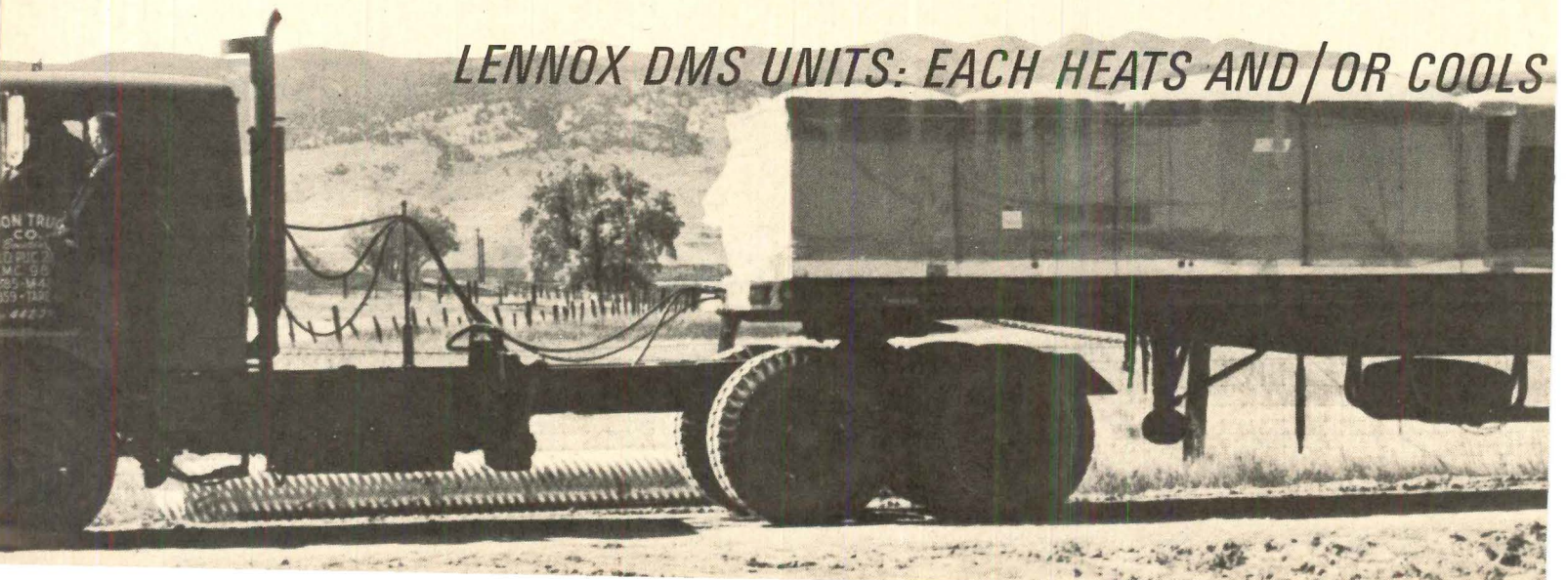
For more data, circle 170 on inquiry card

For more data, circle 171 on inquiry card

ARCHITECTURAL RECORD February 1966 287

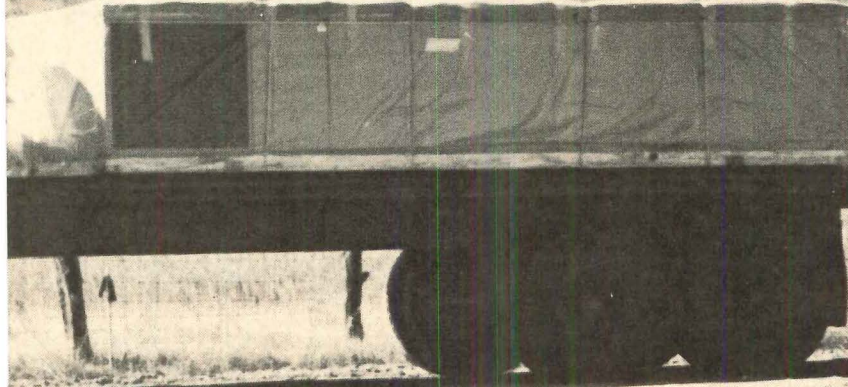
ON TAP: HOT & COLD RUNNING

LENNOX DMS UNITS: EACH HEATS AND/OR COOLS



AIR FOR IBM

12 DIFFERENT AREAS SIMULTANEOUSLY



Two of 10 Lennox DMS units arrive at the job site of new IBM-leased building being built by the Chesapeake Bay Company on the 750-acre Colorado Industrial and Research Campus, Boulder, Colorado.

Before sundown, 10 Lennox Direct Multizone units were nestled, weathertight, atop the IBM-leased building in Boulder, Colorado.

A sleek 42" high silhouette makes them invisible from ground level.

It satisfies varying comfort demands for 12 different zones simultaneously. How? By directing precise blends of heated and/or cooled air to each zone. Zones can be changed at any time.

The DMS control center constantly receives information on temperature conditions. It reads this data. Activates the heater, cooling coil and mixing dampers. These three components, working in unison, then deliver air at the exact temperature needed in the separate zones.

Fresh, outside air is constantly introduced to avoid stuffiness.

Gas, electric or hydronic heat sources available.

When cooling is called for in winter, the DMS uses outside air to provide "free" cooling. One source of responsibility for all controls and equipment — Lennox.

For the IBM building 10 DMS units are being used to provide 220 tons of cooling; four million Btuh heating.

For specific data write: Lennox Industries Inc., 679 S. 12th Ave., Marshalltown, Iowa.

LENNOX
AIR CONDITIONING • HEATING

Office building renovation respects former traditions

The old New York Times Tower at Times Square in New York City lives again—this time as the Allied Chemical Tower. The tower, designed by the firm of Eidlitz and McKenzie, was completed in 1905. The face-lifting operation was under the direction of Smith Smith Haines Lundberg and Waehler, successors to the original architects.

The Times Tower was acquired by Allied Chemical in 1963, stripped to its

steel framework in 1964, and rebuilt from 1964-65. The shape of the original building was retained and was resurfaced with white marble panels and glass. Retained in the new structure are many of the traditions of the old: the moving illuminated news sign around the base of the structure; the out-of-town newspaper stand at the north end of the building; and the lighted ball on a pole atop the tower which is lowered to herald the New Year.

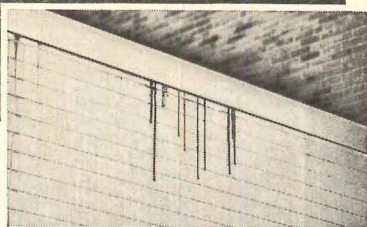
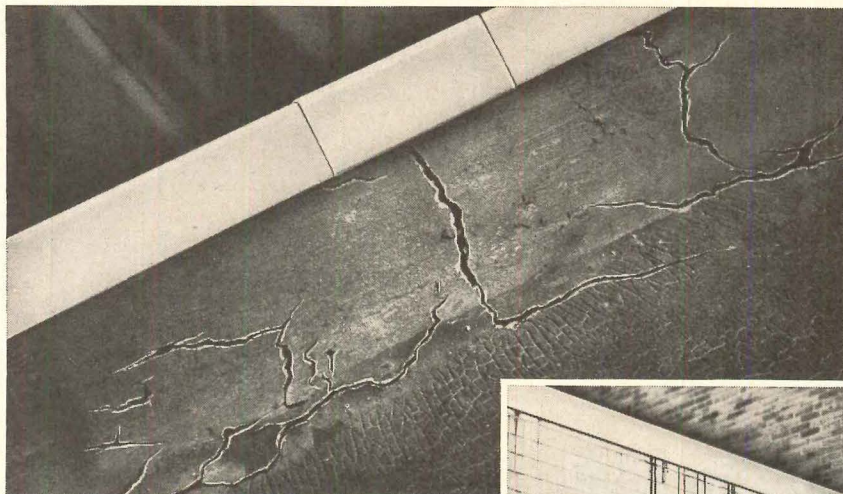
The building has 23 stories and a total floor area of 127,462 square feet.

In addition to office space, the structure will house a restaurant seating 200 on the 15th and 16th floors; and an exhibit area on the first three floors.

The theme of the permanent exhibit, which is open to the public, is "Twentieth Century Man—Creator of New Horizons." Included in the exhibit are a model of a typical moon city; a film of the planned path for NASA's Apollo moon shot; a chemistry display; and daily fashion shows.

General contractor was the William L. Crow Construction Company.

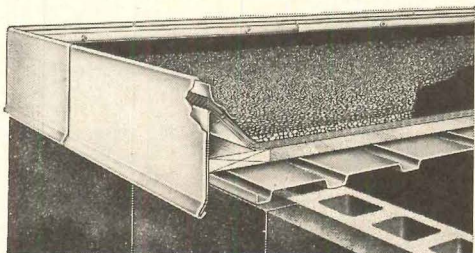
NO CLIENT OF YOURS NEED EVER UNDERGO THIS! *see SWEETS (a) 8G-Hi*



HICKMAN (pat.) FASCIA AND WATER DAM *Safeguard* SYSTEM

Tar drippings on fascia and walls are effectively prevented when the Hickman System is specified. (see Sweet's)

BY PREVENTING cracks in roofing felts where they are mopped to a metal water dam other than galvanized iron, gives absolute control of roof water at the eaves. This cracking is due to the differences in the expansion and contraction coefficients of the felts and improperly selected metals for the water dam. In the Sweet's pages you read how the Hickman System resolves these differences.



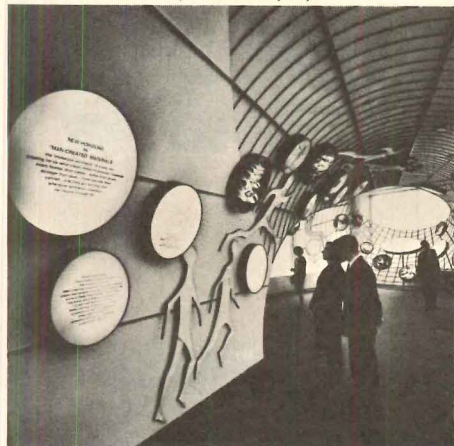
This cut-a-way view of a Hickman installation not only shows the essential units but indicates also that the wall design is enhanced by Hickman "free-floating" extruded aluminum fascia with concealed cover plates. Available in Clear Anodized, Kalcolor, Porcelain Enamel, and Baked Enamel.

WRITE FOR ADDITIONAL SWEET'S PAGES AND FOR INFORMATION ON SPECIAL APPLICATIONS

W. P. HICKMAN COMPANY, INC. 2520 Industrial Row 313-566 8797
Troy, Michigan 48084



Model of moon city in the display.



Part of the chemical display.



For more data, circle 173 on inquiry card

For more data, circle 172 on inquiry card

architectural precast concrete

The only material that gives the durability and beauty of natural stone, the solidity of masonry, economic practicability, wide range of color and texture and, above all, complete plasticity.

design in precast specify

SCHOKBETON[®]

For the best in precast concrete applications, contact the Schokbeton licensee nearest you...

EASTERN SCHOKCRETE CORP.
441 Lexington Ave., New York 17, N.Y.
65 Mountain St. West, Worcester, Mass.
P.O. Box 56, Brandywine, Md.

SCHOKBETON-PITTSBURGH
A Division of The Levinson Steel Co.
37 South 20th St., Pittsburgh, Pa. 15203

CREST/SCHOKBETON CONCRETE, INC.
P.O. Box 328, Lemont, Illinois 60439

PRECAST/SCHOKBETON, INC.
P.O. Box 2088
Kalamazoo, Michigan 49003

MABIE-BELL SHOKBETON CORP.
P.O. Box 1558, Greensboro, N.C.
Peachtree City, Georgia
P.O. Box 47546, Miami, Florida

INLAND SCHOKBETON
A Division of Nebraska Prestressed Concrete Co.
P.O. Box 29208, Lincoln, Nebraska 68529
2582 Long Lake Road, St. Paul, Minnesota 55113
9915 East 63rd Street, Kansas City, Missouri 64133

ROCKWIN SCHOKBETON
Division of Rockwin Prestressed Concrete Corp.
Subsidiary of United Concrete Pipe Corp.
P.O. Box 2536, Santa Fe Springs, Calif.

TEXAS SCHOKBETON, INC.
P.O. Box 52549, Sam Houston Station,
Houston, Texas 77052

BUEHNER-SCHOKBETON COMPANY
301 West 60th Place, Denver, Colorado 80216
640 Wilmington Ave., Salt Lake City, Utah 84106

BASALT SCHOKBETON
A Division of Basalt Rock Company, Inc.
P.O. Box 540, Napa, California

CANADA

SCHOKBETON QUEBEC INC.
P.O. Box 240, St. Eustache, P.Q., Canada

**SCHOKBETON DIVISION
CONCRETE TECHNOLOGY (B.C.) LTD.**
790 Nelson Rd.—P.O. Box 68
Richmond, B.C., Canada

HAYDEN PLANETARIUM, BOSTON, MASS.

STATE BANK & TRUST CO., CHICAGO, ILLINOIS

**Until today there were only
two ways to cover a floor.**



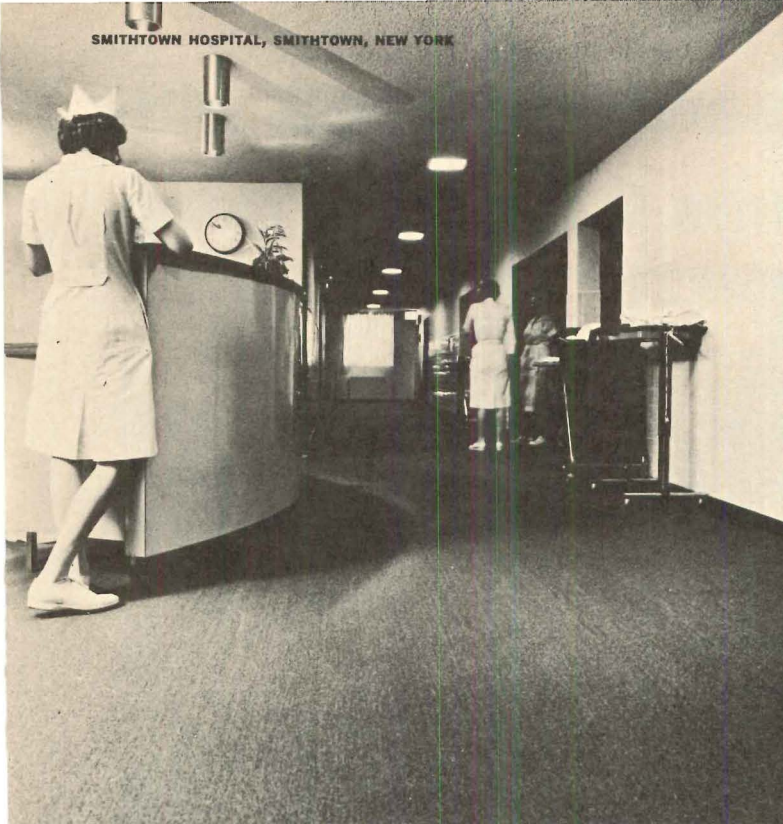
The hard way. The soft way.

**Now here's the right way-
Densylon**

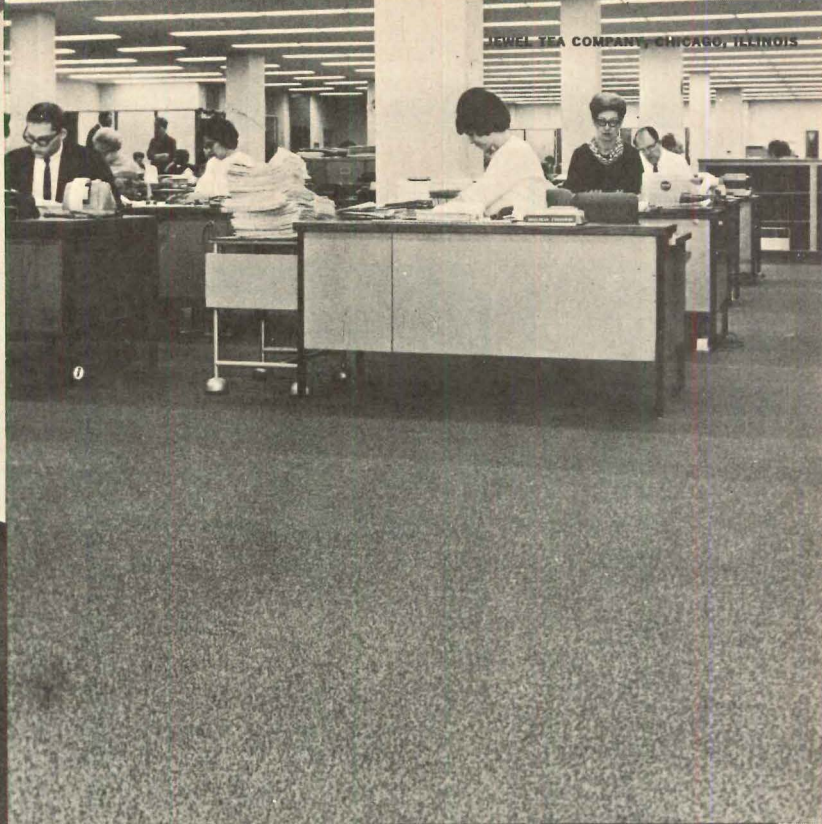
LOFINO'S SUPERMARKET, DAYTON, OHIO

PENN JUNCTION SCHOOL, PATTONVILLE, MISSOURI

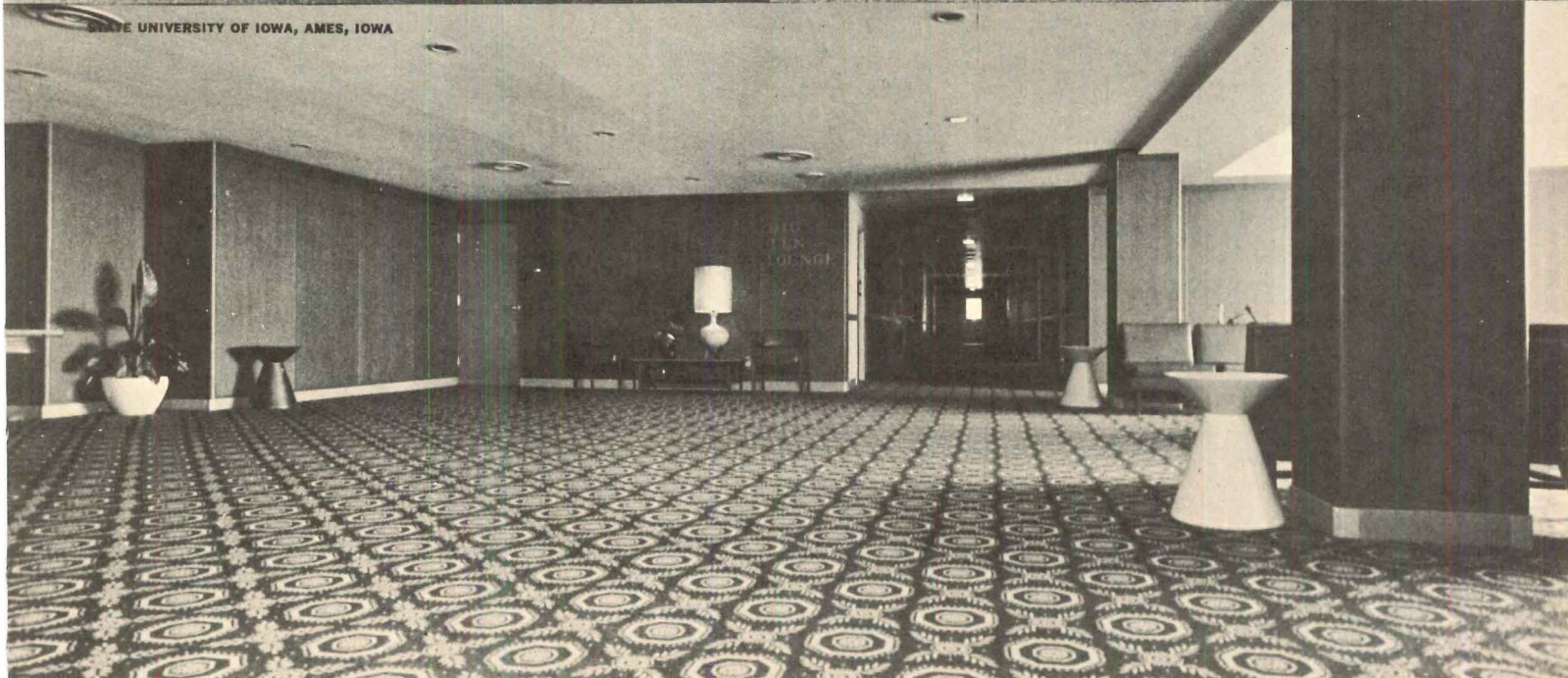
SMITHTOWN HOSPITAL, SMITHTOWN, NEW YORK



JEWEL TEA COMPANY, CHICAGO, ILLINOIS



STATE UNIVERSITY OF IOWA, AMES, IOWA



With Densylon, made with ACE nylon, you can specify carpet where carpeting was never practical before.

And with complete assurance. You can carpet every square inch of every floor in any building. Office buildings. Hospitals. Schools. Banks. Supermarkets. Public buildings. Even automobile showrooms, elevators, and loading ramps.

You can do all this with Densylon*—and only Densylon. Densylon is the only carpet that keeps every promise other carpets can't because it's different from any other carpet. Densylon is carpet turned upside down; tough on top, soft on bottom. ACE™ nylon, Allied Chemical's specially engineered contract nylon in a tightly-twisted, high-density pile is bonded to a 3/16" backing of sponge-rubber. You don't get that with any other flooring.

Densylon's unique pile is so dense that dirt can't sink in. So tight that the pile

can't be pulled up. So tough that furniture legs and spike heels can't mar it. No Densylon installation has ever worn out. Not even the Densylon in the General Electric Pavilion at the New York World's Fair, walked on by more than 15 million persons.

And the biggest pay-off: Densylon actually pays for itself with savings in maintenance alone. Costs at least eighty cents a square yard less to maintain in showcase condition than any other flooring—hard or soft. Vacuums clean in half the strokes ordinary carpets need. Spots and stains—even grease, sponge-mop right off the ACE nylon pile. No scrubbing, waxing, stripping ever.

Densylon's wide spectrum of colors and patterns makes it easy to add prestige,

beauty, quiet, warmth and comfort to every floor—with confidence and economy. There are endless applications for Densylon. Send for complete information.

CCC

10 West 33rd St., Dept. AR-2
New York, N. Y. 10001

Attention: Mr. Oliver A. Wyman

Check Here

Please send complete information about Densylon.

Please send your representative to give us cost estimates on approximately square yards

Name _____

Address _____

City _____ State _____

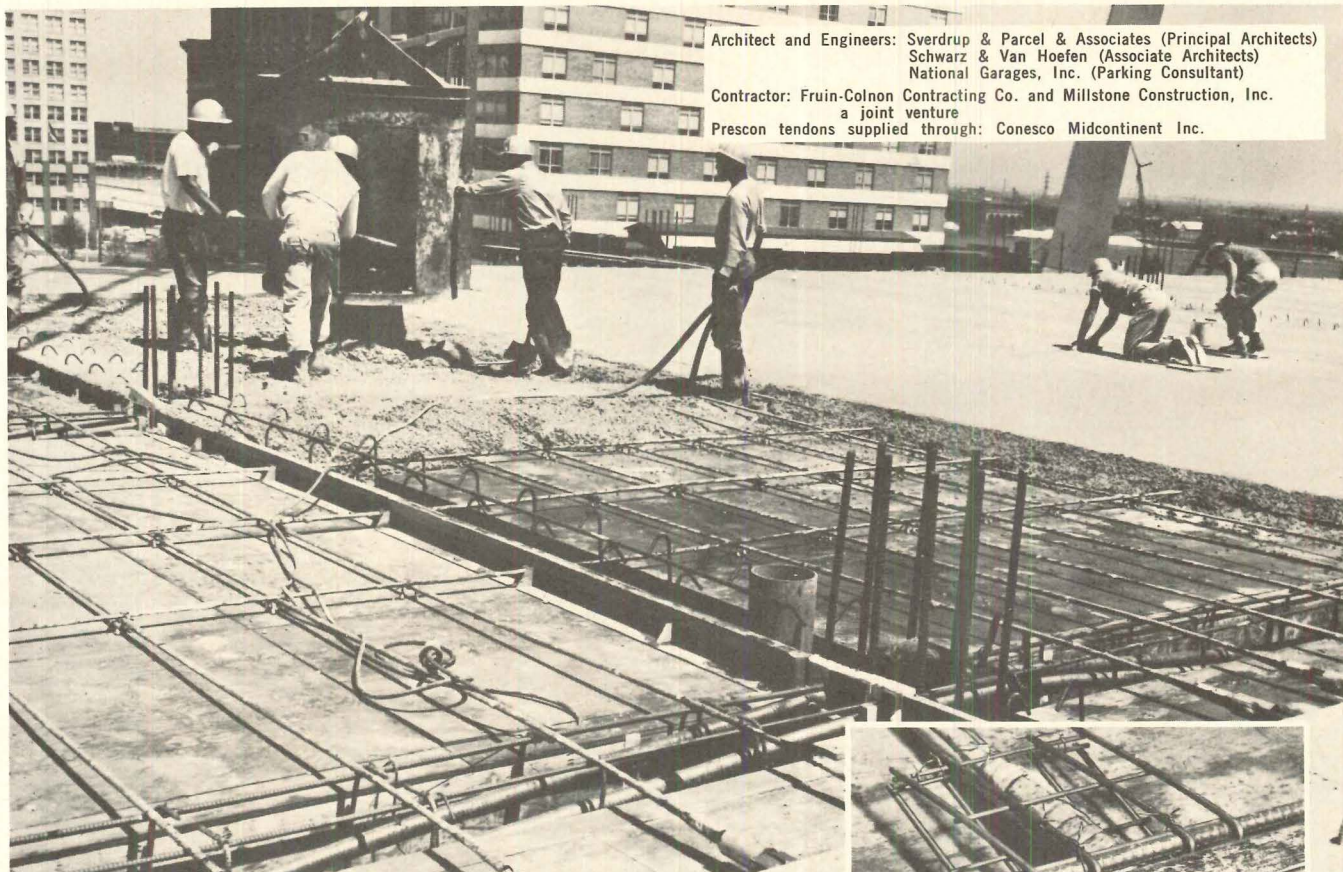
*CCC's trademark for its sponge-bonded, high-density nylon carpet.

Densylon WITH **ACE** 
NYLON BY

Manufactured by **CCC** • Commercial Carpet Corporation, New York City, Chicago, Los Angeles; Canadian Affiliate: C. C. Carpet Co., Ltd., Ontario

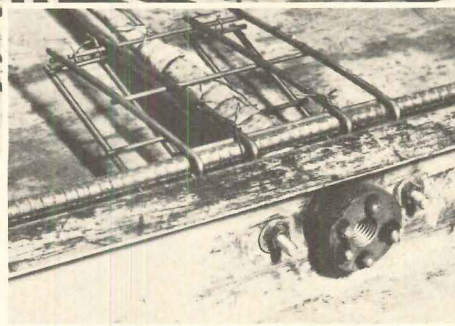
For more data, circle 174 on inquiry card

How to build a parking garage with 54 ft. spans and beams 2 ft. - 3 in. deep



Architect and Engineers: Sverdrup & Parcel & Associates (Principal Architects)
 Schwarz & Van Hoefen (Associate Architects)
 National Garages, Inc. (Parking Consultant)
 Contractor: Fruin-Colnon Contracting Co. and Millstone Construction, Inc.
 a joint venture
 Prescon tendons supplied through: Conesco Midcontinent Inc.

USE THE PRESCON SYSTEM



Internally threaded washer for coupling at construction joint

Stadium Parking Garage East of the Civic Center Redevelopment Corp.'s Downtown Sports Stadium Project, St. Louis, has nine parking decks, each 510' x 216', providing for self-parking 2,640 cars. Levels 2 through 9 have beams (2'3" deep) and slabs (5" thick), both post-tensioned using Prescon positive end anchorage tendons. Concrete for the columns was placed only after the deck and beams to be supported had been post-tensioned. This permitted elastic shortening of the lightweight concrete decks, without restraint.

Transverse tendons, 216' long in both slabs and beams were continuous and were simultaneously stressed from each end. Longitudinal tendons were coupled at construction joints providing continuity. Mastic coated tendons were used in the slabs and grouted tendons in the beams.

If you are concerned with design flexibility or construction costs, or time, you should check the advantages gained from the positive end anchorage Prescon System of post-tensioning.

Write for copies of the Prescon NEWS describing many types of structures using post-tensioning.



© The Prescon Corp. ®

©1965

THE PRESCON CORPORATION

502 Corpus Christi State National Building Corpus Christi, Texas 78401

Atlanta • Baltimore • New York • Boston • Chicago • Memphis
 Dallas • Houston • Denver • St. Louis • Los Angeles
 San Francisco • San Juan • Toronto • Honolulu

MEMBER OF PRESTRESSED CONCRETE INSTITUTE

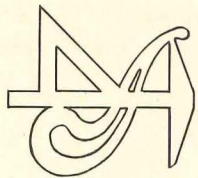
L 65

For more data, circle 177 on inquiry card



Manufacturers of
QUALITY
Pool Products

*Ten Years
of
Growth
through
Integrity
and
Service*

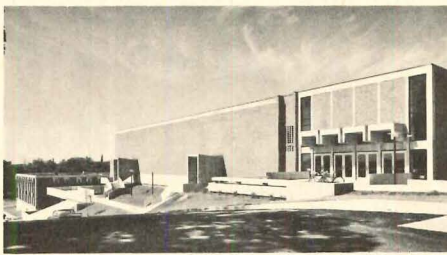


1956 • 1966

PARAGON SWIMMING POOL CO., INC.
PLEASANTVILLE, NEW YORK, U.S.A.

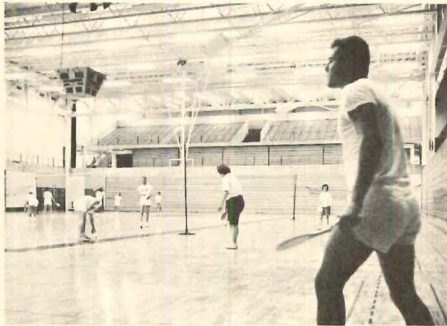
For more data, circle 175 on inquiry card

THE RECORD REPORTS

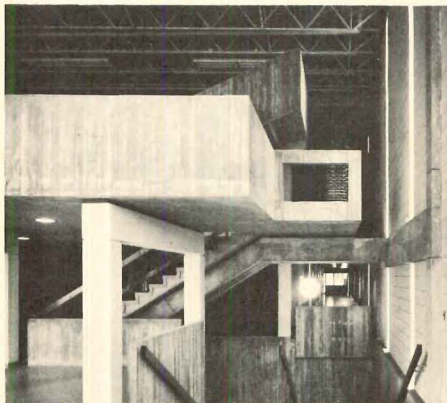


Gymnasium facility is designed for sloping site

Hallenbeck Hall, an instructional building for physical education at Saint Cloud State College, Saint Cloud, Minnesota was designed by Traynor & Hermanson, architects, to conform to a site which slopes 35 feet from north to south. The \$1.9-million structure contains 134,820 square feet.



The upper level—basically of load-bearing construction with reinforced concrete and exposed, precast concrete, tee-suspended slabs, exposed steel joists and steel roof deck—contains varsity and practice gymnasium playing floors, auxiliary gyms (folding bleacher areas), spectator seating, handball courts, gymnastic room, wrestling room and dance studio.



A concrete skeleton system was used in the lower level with exposed steel pan floor and roof construction. Contained in this section are spectator seating, locker rooms, offices, classrooms, custodial areas, and swimming pools.

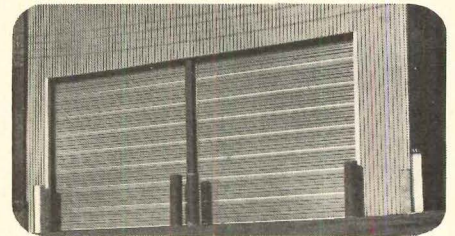
General contractor was the Conlon Construction Company.

For more data, circle 176 on inquiry card

A COMPLETE LINE, A
COMPLETE DOOR SERVICE
FROM ONE DEPENDABLE SOURCE...

specify

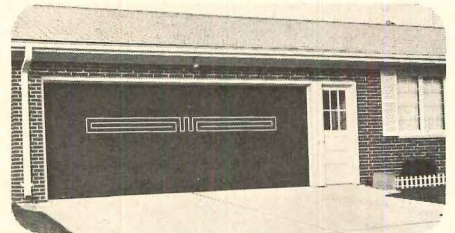
**WAGNER
GARAGE DOORS**



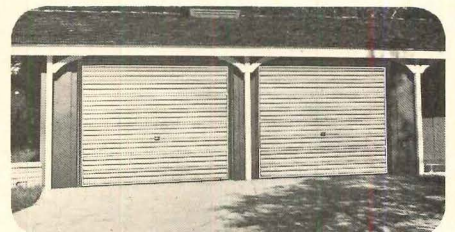
Fiberglass aluminum commercial doors



Wood commercial doors



Wood residential doors



Fiberglass aluminum residential doors

Here's today's finest line of Fiberglass aluminum, Wood and Steel Doors for residential and commercial applications. Available in a full range of types, styles, designs and sizes—including sectional and one-piece overhead models. Electric operators with push-button or radio control. WRITE FOR NEW BULLETIN AR-66CC.

WAGNER
MANUFACTURING COMPANY

Cedar Falls, Iowa 50613

**THE DESIGNS ARE SPECIAL.
THE RESULTS ARE DRAMATIC.
BUT THE BUDGET SAID "STANDARD" DOORS ONLY.**

Athletics

Laboratory

Dressing Room



When their budget says "no" (but your imagination wants "yes") look twice at Republic's new IMPERIAL Full Flush Door line.

First look shows you a handsome, smooth, seamless, quiet door with a snap-in glazing bead feature to tickle your creative fancy. With IMPERIAL you can get any glass or louver treatment you want — and you do it with thrifty production line speed.

Second, the IMPERIAL is a standard cost door that you can specify for everywhere in the job without raising a single cost-conscious eyebrow.

See our IMPERIAL door line both ways and you'll look forward to virtually unlimited "custom" opportunities with standard, stock line economy. It's reversible — no "handing." It hangs square, stays square — won't sag, bind, warp or split, ever. It comes to the site preprimed and prepackaged with a patented universal frame that always fits, all ways.

And, if you have to look fast, remember Republic is the only steel door maker with stock in 15 warehouses, 38 factory offices, and 250 "Men from Manufacturing" at your service — anywhere, anytime.

Send literature on the new Republic IMPERIAL Door so I'll know all about its fully welded complete perimeter channel, its five-step phosphatized rust-inhibiting process, baked-on prime coat, continuous hinge and lock reinforcement, interlocking corners and lots of other reasons to make clients approve my specs.

Name _____ Title _____

Company _____

Address _____

City _____ State _____ Zip _____

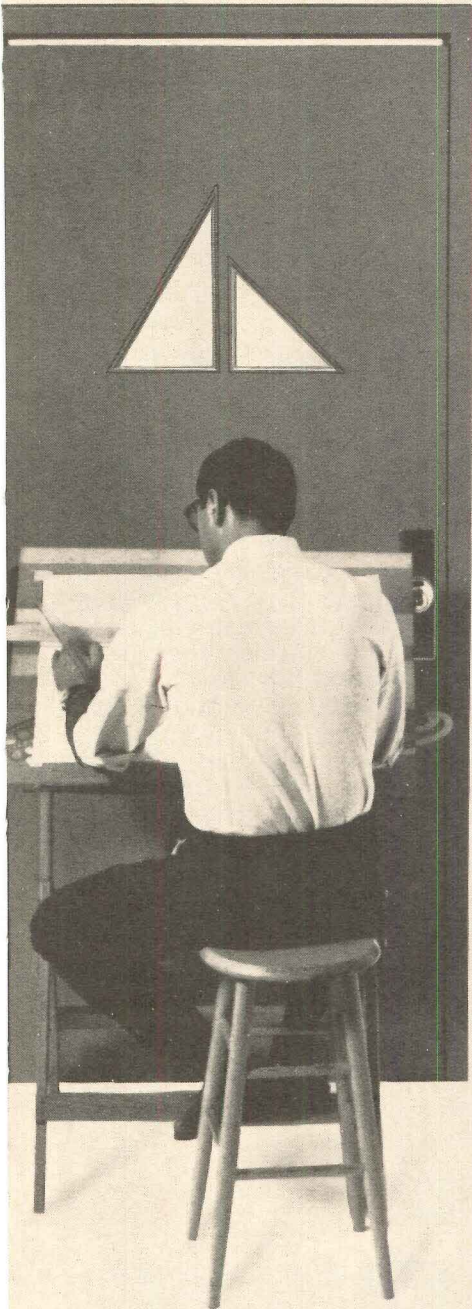


MANUFACTURING DIVISION
REPUBLIC STEEL CORPORATION
Youngstown, Ohio 44505



CALL THE MAN FROM
MANUFACTURING!

Drafting Room



Church



Classroom



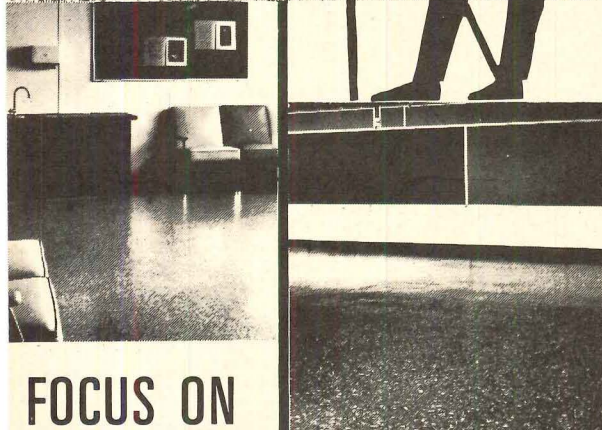
For more data, circle 178 on inquiry card



This STEELMARK of the American Steel Industry on a product assures you it is modern, versatile, economical Steel. Put it on products you sell. Look for it on products you buy.



Harper Leiper Studios



FOCUS ON

Poly-Flec[®]

SEAMLESS
FLOORING of the FUTURE
...TODAY!

For interior, exterior, below grade and multi-story applications . . . for commercial, industrial, institutional and residential construction . . .

26 Specific Benefits

- One-day, no-delay installation
 - 25 colors, unlimited combinations
 - No dirt or bacteria collecting seams
 - Abrasion, scuff and slip resistant
 - Chemical and stain resistant
 - Light Weight—for multi-story applications
 - Permanent glaze—no waxing
 - Easiest to clean—lowest maintenance costs
 - Low competitive cost
 - Nationwide, factory-trained, dealer applicator organization
- plus 16 other advantages

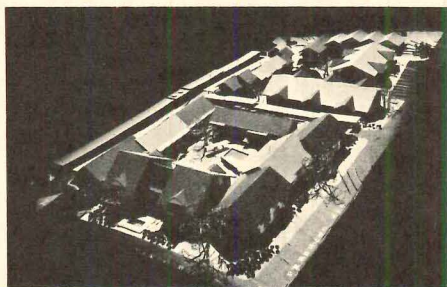
SEE SWEETS ^{13e} Co or
Write Now—

Complete Architectural File, including Poly-Flec sample, specification and product data



CO-POLYMER CHEMICALS, Inc.
12350 MERRIMAN RD. • LIVONIA, MICHIGAN
Phone 421-0800 / Area Code 313
Specialists in Epoxy Resin Formulations
Producers of **EPOXXY** Products

THE RECORD REPORTS



Texas apartments designed for difficult site

A 99-unit apartment development in Fort Worth, Texas was designed by Houston architect Morton L. Levy to utilize a difficult site criss-crossed by ravines and drainage easements, resulting in many leveled terraces, bridges and a natural lake. A prominent feature of the design is the roof line, which according to the architect is "a composition of gables and dormers in several colors, designed both for interest within the project and for the elevated viewpoints which surround the site."

CHANGING YOUR ADDRESS?

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.

ATTACH
PRESENT MAILING LABEL
HERE

NAME

STREET

CITY

STATE

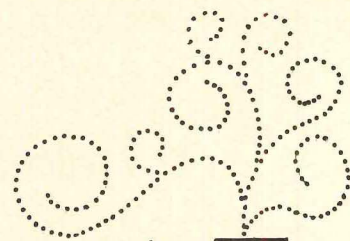
ZIP

FIRM NAME

TYPE OF FIRM

TITLE OR OCCUPATION

Mail to:
Fulfillment Manager
Architectural Record
P.O. Box 430
Hightstown, N. J. 08520



FREE PUMP REFERENCE FILE
TELLS HOW YOU CAN GET

instant water

IN THE HOMES YOU
DESIGN AND BUILD BEYOND
THE WATER MAINS

Red Jacket's new pump reference file "Practical Engineering Information" should be at the side of anyone interested in designing and building homes beyond the water mains. Complete and comprehensive, it covers everything from average water requirements for home and farm, procedures for determining distance to water level, practical suction lifts . . . to water friction tables and how to estimate operating costs.

As a handy reference it will help you be sure you're specifying and installing the right size and type of pump and tank for present and future requirements for any home water system. It's yours for the asking — just clip the coupon!

RED JACKET

P.O. Box 3888, Davenport, Iowa

Send me your file "Practical Engineering Information" for our A.I.A. File No. 29-D-5.

Please have your Red Jacket man call.

Name

Firm Name

Address

City

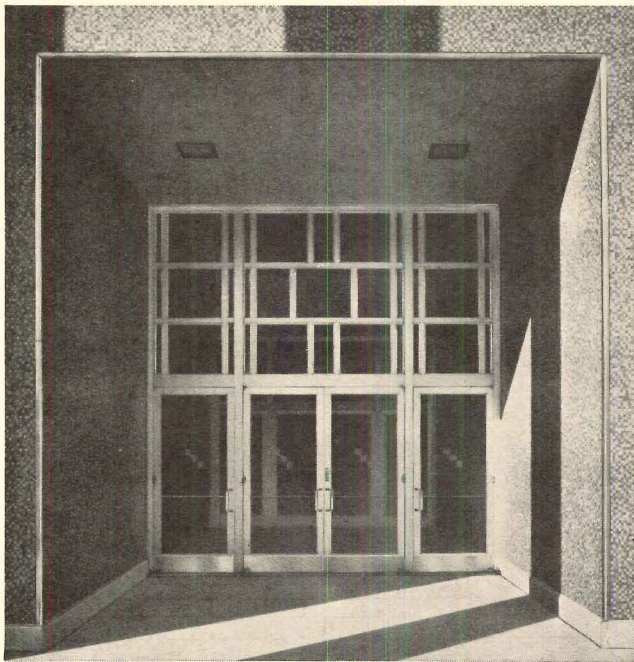
State



RED JACKET
FLUID SYSTEM PRODUCTS
BOX 3888 • DAVENPORT, IOWA

For more data, circle 180 on inquiry card

◆ For more data, circle 179 on inquiry card



Student Union Building, University of Buffalo, Buffalo, N. Y.
Architects: Duane Lyman & Associates, Buffalo.

ALUMINUM SCHOOL DOORS

Plenty of rugged strength combined with a graceful modern appearance makes these Michaels Heavy Duty Aluminum Doors right for the Student Union Building at the University of Buffalo. Standardized design makes them economical. The stiles and rails are heavy-gauge extruded tubing for extra rigidity. For special resistance to twisting, a strong reinforcing bar runs inside the top rail, fastening to both stiles. The custom aluminum column covers and glass framing work seen here also are by Michaels, who supplied aluminum doors, windows, and curtain wall for the entire building. Few architectural metal companies can compare with Michaels for versatility and skill in aluminum, stainless steel, and bronze. Write for details.



THE MICHAELS ART BRONZE CO.

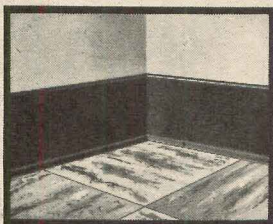
MICHAELS

Mailing Address: P. O. Box 668, Covington, Ky. • Plant & Office: Kenton Lands Road, Erlanger, Ky

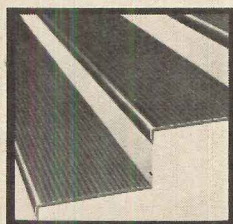
For more data, circle 181 on inquiry card

COLOR-FULL ...that's mercer!

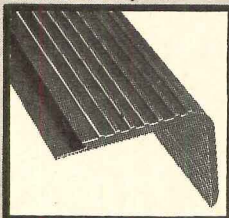
21 decorator colors that are more than surface-deep—run the entire depth of Mercer vinyl products, so they can't chip, rub, wear, or scrape off. They highlight every room, every stairway, in matching beauty—at amazing low cost!



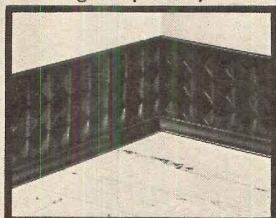
Color Cove Base. (Sizes: 1½" to 6". Straight Base: 2" to 7")



Stair Tread (Maximum Traction) (Available in lengths up to 12')



Step Nosing



"Starlight" Wall Base



mercER PLASTICS COMPANY, INC.

1 Jabez St., Newark, New Jersey • Eustis, Florida

"The Leading Name in Styled Cove Base"
Vinyl Floor, Stair and Carpet Accessories

For more data, circle 182 on inquiry card

For more data, circle 183 on inquiry card

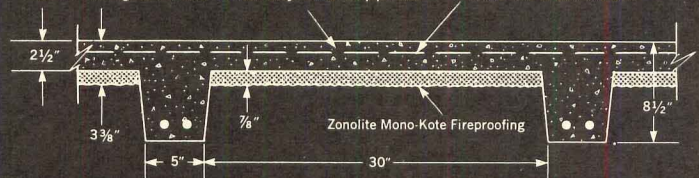
NEW LIGHTWEIGHT PAN-JOIST SYSTEM UP TO 28 LBS. PSF LIGHTER!

Class D-2 Design

Sand-gravel concrete 1:3¾: 4½ mix 3000 psi, to be designed with continuity over supports

Design No. 99-2 Hr.

Wire fabric No. 6 SWG wire 6 x 6 in. mesh.



2 Hr. Fire Rating!

This new concrete and Zonolite® Mono-Kote® pan-joist system replaces the old 4½" thick all-concrete pan-joist with 2 hr. rating. Slashes weight as much as 28 lbs. PSF.

For complete information, send for data sheet MK-100 and complete summary of fire tests on Zonolite Mono-Kote. Zonolite Division, W. R. Grace & Co., 135 So. La Salle St., Chicago, Ill. 60603.

ZONOLITE
GRACE

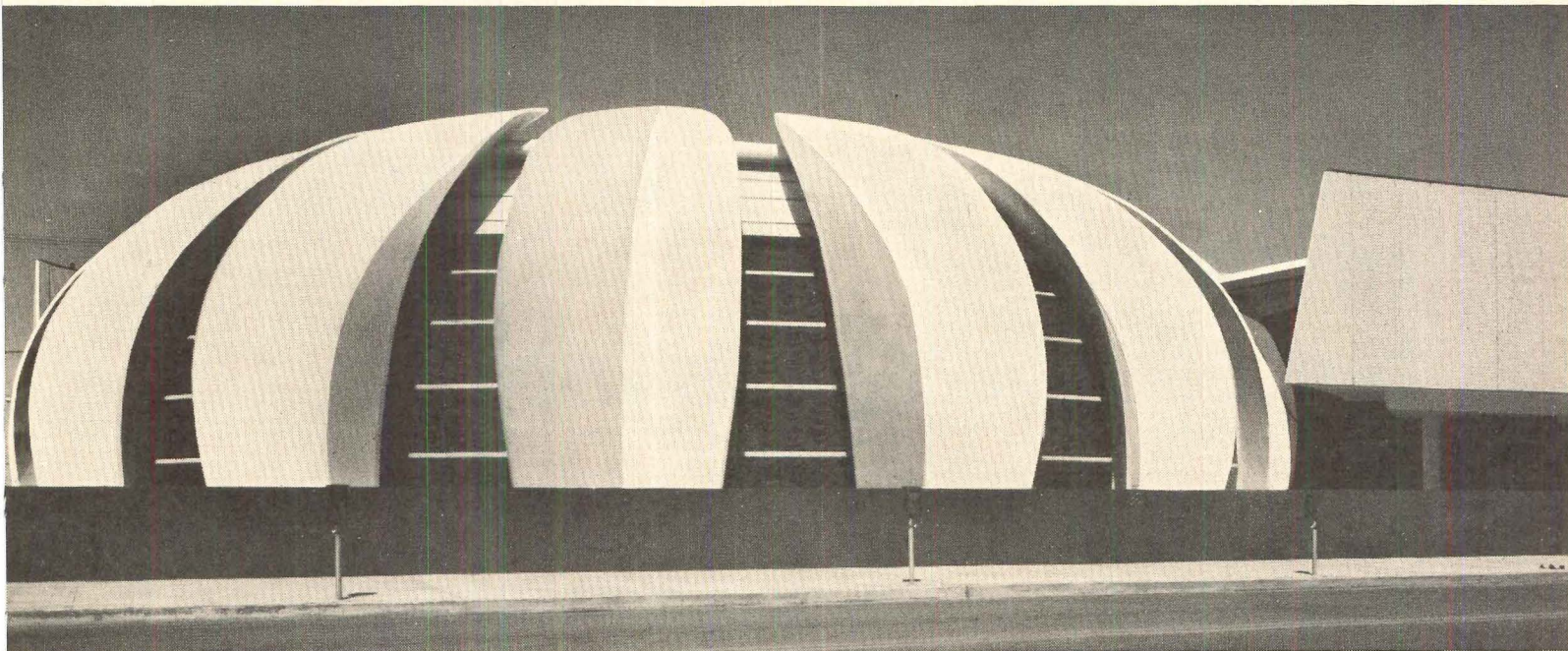
for individuality...



SKREBNESKI

reinforced concrete is the architects' design material

■ The coming of age in architecture in America lets architects exercise with complete freedom their artistic talents for highly creative building design. ■ In this architectural evolution, reinforced concrete is the preferred construction material. It can be molded freely into any contour and shape, and eliminates the many design restrictions imposed by all other construction methods for the achievement of architectural individuality, elegance, and sculptured form. ■ In this unique structure, the architect utilized a monolithic reinforced concrete frame with the large sculptured concrete leaves cast as separate monolithic units on mounds of earth by the contractor. ■ Decide now to utilize the greater design opportunities of reinforced concrete in your next building.



Wyoming National Bank, Casper, Wyoming
Architect: Charles Deaton
Structural Engineers: Ketchum, Konkle, Ryan & Fleming
General Contractor: The B. H. Baker Company



4-65

CONCRETE REINFORCING STEEL INSTITUTE
228 North La Salle Street • Chicago, Illinois 60601



He graduated at the head of his class, but couldn't get a job.

The reason? Everyone thought he came from the wrong school—one for the mentally retarded—even though he was certified employable and well trained.

The employers didn't know that with proper training, the mentally retarded can become a productive part of society. Taking pride in jobs that others might not enjoy. Having better job attitudes, and often better attendance records, because they like their work.

Someday, a mentally retarded person may ask you for a job. As a general office worker, a gardener, a truck loader, a stock clerk, a messenger. Or any job that requires simple skills. Won't you give him a chance to become an asset to your company?

Here are four things you can do now to help prevent mental retardation and bring new hope to the 5½ million people whose minds are retarded:

1. Urge your community to set up workshops to train retardates who are capable of employment.
2. Select jobs in your company that the mentally retarded can fill, and hire them.
3. Accept the mentally retarded as American citizens. Give them a chance to live useful, dignified lives in your community.
4. Write for the free booklet to the President's Committee on Mental Retardation, Washington, D. C.



Published as a public service in cooperation with The Advertising Council

Only Floating Floors® have 100% free under- floor access



and these 15 other advantages for computer rooms.

1. Greater strength—.080" deflection under 1,000 lb. load.
2. Unique design eliminates stringer interference.
3. Precision-made to .005" tolerance.
4. Self-grounding—no mechanical devices needed.
5. Positive locking pedestal head assures stability.
6. All panels completely interchangeable.
7. Fireproof—all metal.
8. Plastic edge recessed into panel—eliminates overhang.
9. Easy to install.
10. Choice of two panel sizes—18 1/4" or 24".
11. One-piece tile covering, if desired.
12. 10-year guarantee on availability of replacement parts.
13. Choice of materials—aluminum or steel.
14. Local distribution assures reliable service.
15. Available throughout the world.

Floating Floors are part of the worldwide National Lead Company, a leader in metals and metal products for the past 75 years.

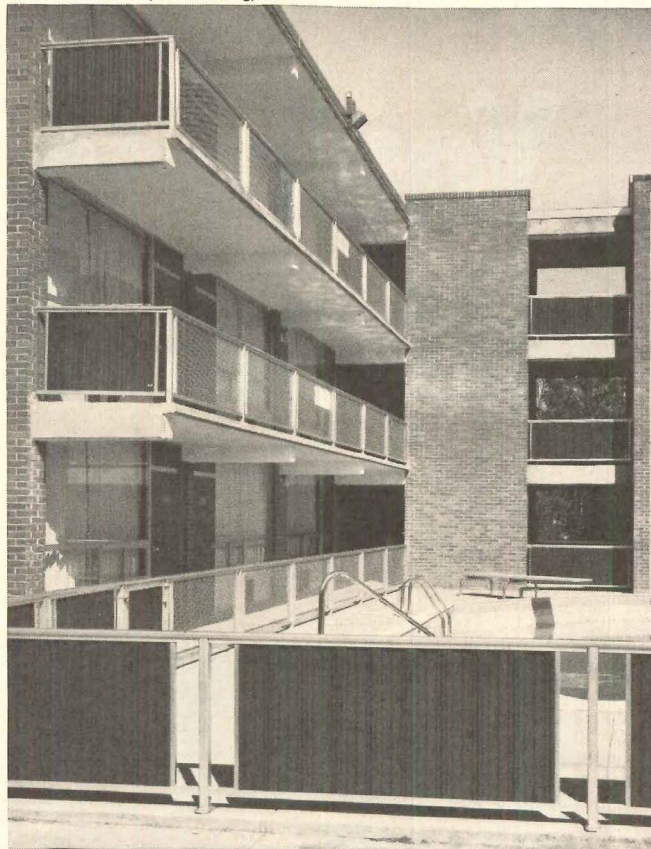
We invite you to compare Floating Floors raised flooring with all others. For further information on either aluminum or steel Floating Floors, write today for detailed brochure.



floating floors, inc.
Subsidiary of National Lead Company
22 East 42nd Street, New York, N.Y. 10017

For more data, circle 184 on inquiry card

Sheraton Motor Inn, Williamsburg, Va.



ANCHOR® RAILING SYSTEMS Functional and Fashionable

Anchor Railing Systems, all beautifully constructed of rust-proof aluminum, are available in a wide variety of attractive designs. You may choose the design, or combination of designs, you want from vertical square pickets, colored panels, and Modernmesh®.

For balconies, swimming pools, walkways and decks, Anchor Railing Systems are your assurance of quality, security, and attractiveness. You can depend on Anchor for beauty and safety . . . at low initial cost and with all the low maintenance advantages of aluminum.

Anchor's national network of company erectors will install any of our railing systems fast and efficiently . . . anywhere in the United States.

For detailed information, call your local Anchor man, or mail coupon for your free, 4-color booklet, "Anchor Railing Systems."



**ANCHOR POST
PRODUCTS, INC.**

Plants in Baltimore, Houston, Los Angeles

FREE, 4-COLOR BOOKLET

Anchor Post Products, Inc.
6228 Eastern Ave., Baltimore, Md. 21224
Please send me "Anchor Railing Systems."

Name.....

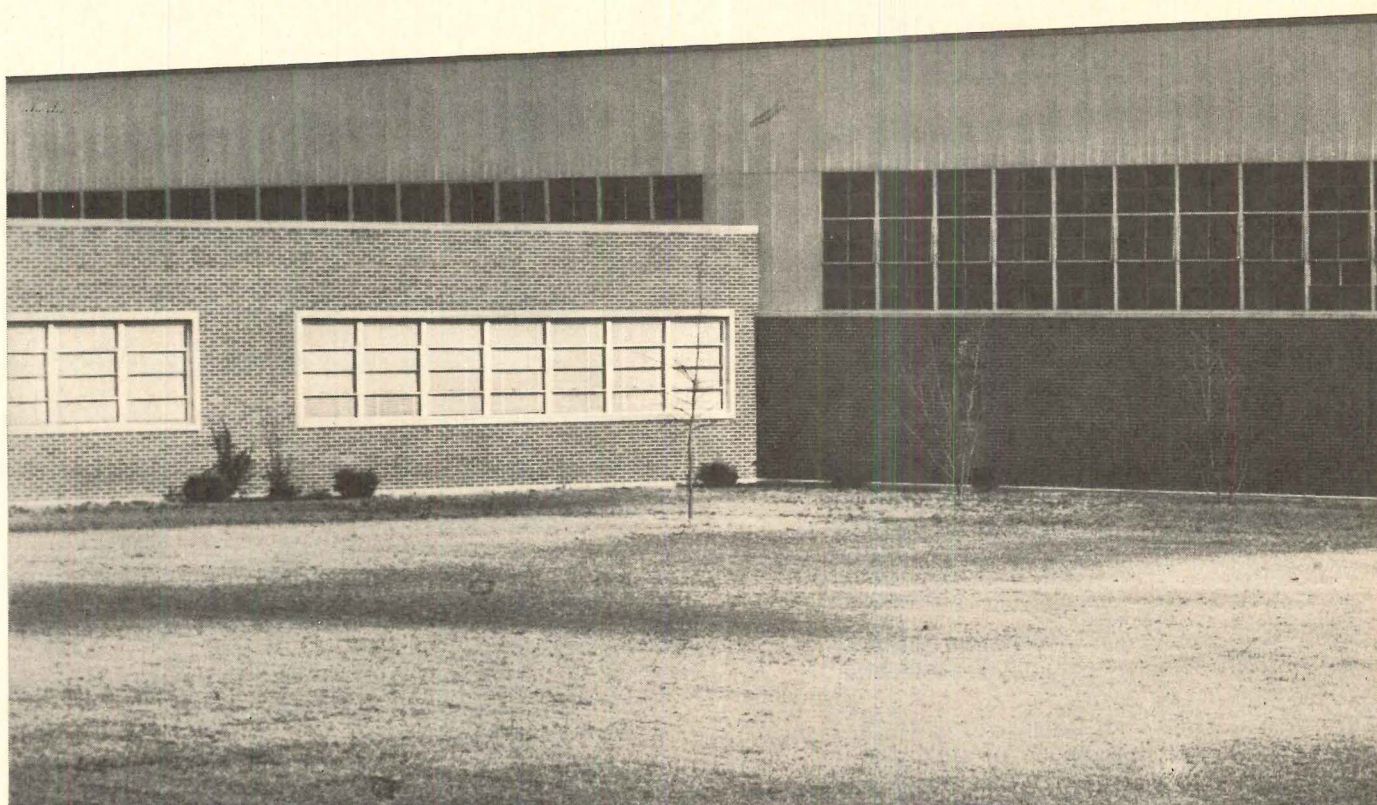
Firm.....

Street.....

City.....State.....Zip.....

For more data, circle 185 on inquiry card

You're looking at a 10 air conditioning and



You can't see it? Of course not. It's only 44"
feature of Fedders' new Adaptopak.

Here are a few more: It's the easiest to install roof-top unit. No flashing, or curbing is needed around the unit. It can even be installed before roofing.

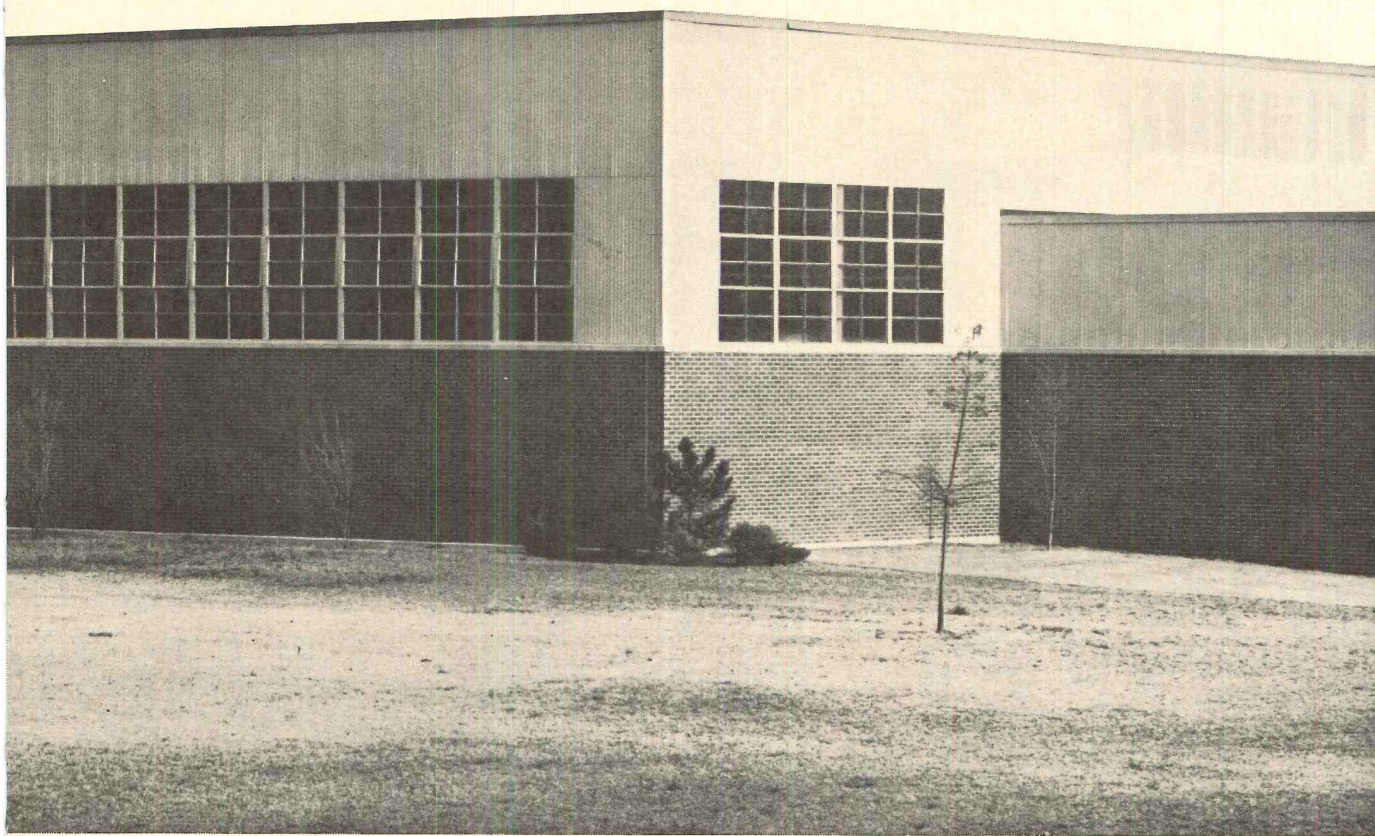
Special isolators reduce vibration to a minimum. Heavy insulation muffles even further the already low operating sound.

A positive combustion blower eliminates unsightly flue stack. Provisions for quick and easy rigging are built into the unit.

And, there's even more: Fedders designed this electric air conditioning, gas heating unit with your requirements in mind. Cooling from 28,000 BTU's to 120,000 BTU's. Heating from 60,000 BTU's to 275,000 BTU's.

Important Note: When specifying roof-top equipment insist that the condensing section be UL listed for outdoor application; insist, too, that the entire air handling and heating section be AGA

ton Fedders roof-top heating unit.



high. But low silhouette is only one great

approved for outdoor application. Fedders Adaptopak carries both these important labels.

We'd like to send you a spec sheet that details why Fedders offers the most outstanding unit available. Don't wait. Mail coupon today!



FEDDERS

Major distribution and service points across the nation
Edison, New Jersey 08817

**ATTN: MR. RICHARD E. IRELAND,
FEDDERS CORPORATION,
ARCHITECTURAL INFORMATION SECTION,
DEPT. G-2,
EDISON, N. J. 08817**

NAME _____

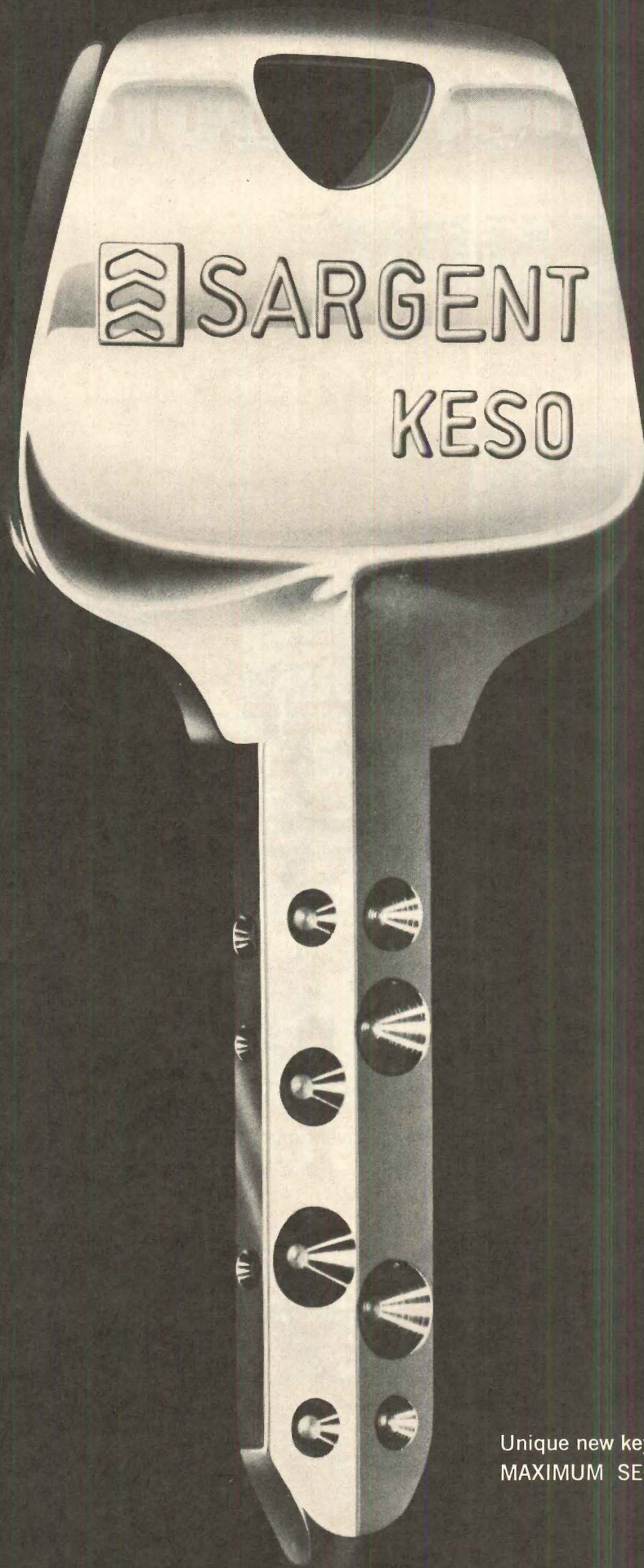
TITLE _____

ADDRESS _____

CITY, STATE _____

ZIP CODE _____

For more data, circle 186 on inquiry card



Unique new key for SARGENT
MAXIMUM SECURITY SYSTEM.

Exclusive . . .

The SARGENT MAXIMUM SECURITY SYSTEM

Pats. applied for

the key too tough to duplicate



The SARGENT MAXIMUM SECURITY SYSTEM key cannot be duplicated on any key cutting machines now in use. Building owners retain absolute control of all keys. Duplicate keys must be ordered from Sargent, and only by authorized persons.

the lock that baffles picking



Multiple rows of interlocking pins bar the way to any picking tool. Only the precision-milled Sargent key for any given lock can operate the cylinder of the SARGENT MAXIMUM SECURITY SYSTEM.

every installation proprietary



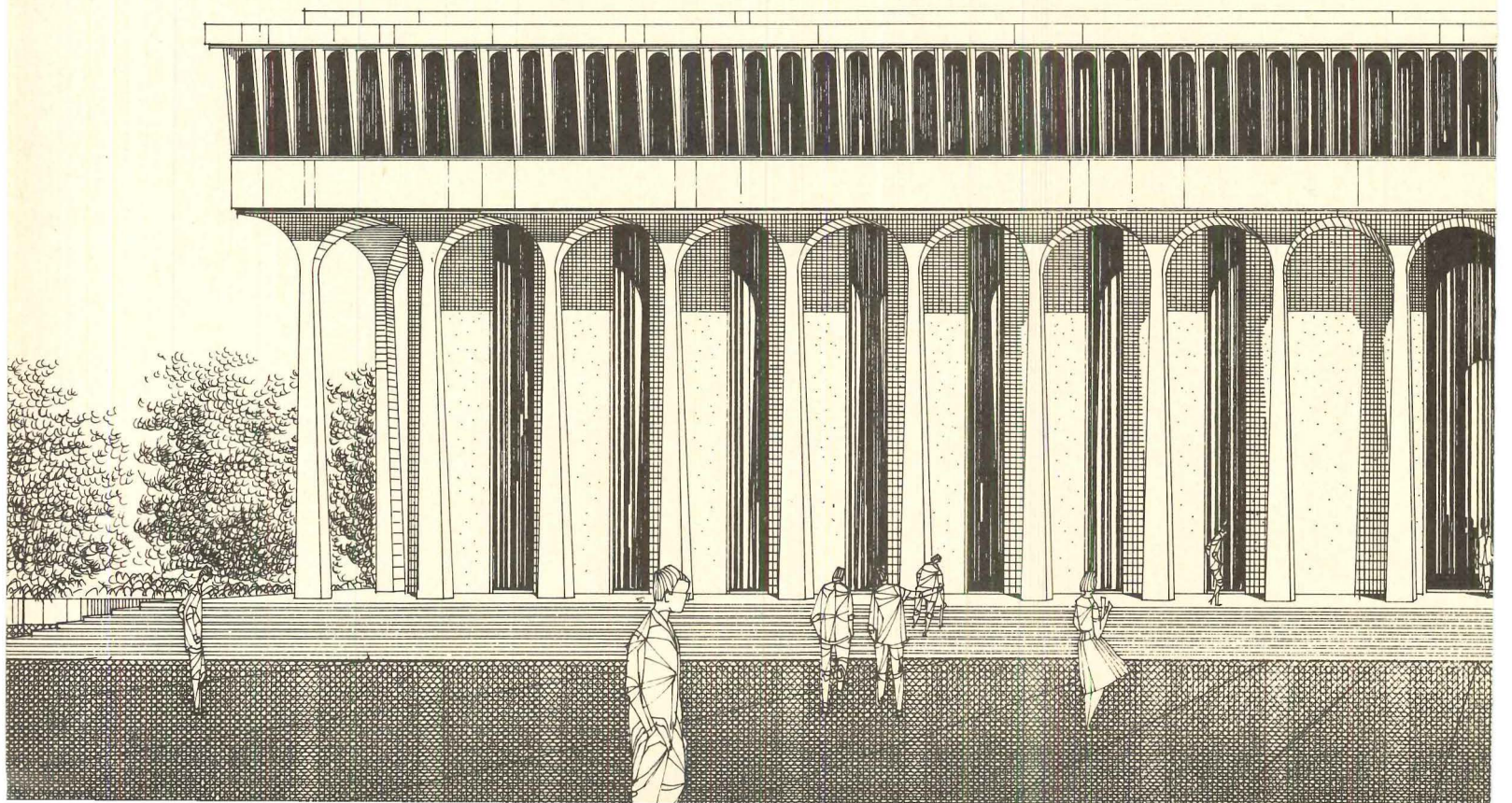
There is no chance of your keying system ever being duplicated. And any SARGENT MAXIMUM SECURITY SYSTEM can be expanded to include additional wings or buildings without ever changing a cylinder. You can avail yourself of fifty times more safe key changes than in conventional cylinders, as well as four new expanded levels of additional masterkeying.

SARGENT MAXIMUM SECURITY SYSTEM cylinders are available in all Sargent architectural locks and exit devices whether standard, removable core, or construction core cylinders. Call your Sargent distributor now for the full story on the greatest advance in lock security in 100 years — or write: Sargent and Company • 100 Sargent Drive, New Haven, Connecticut 06509 • Peterborough, Ontario • Member Producers' Council.

 **SARGENT®**

For more data, circle 187 on inquiry card

Woodrow Wilson School of Public and International Affairs
Princeton University, Princeton, New Jersey
Architects: Minoru Yamasaki and Associates



MORE BUILDING PRODUCT ADVERTISING...

is placed in *Architectural Record* than any other publication. In 1965—the *Record* carried 2834 pages—47.1 per cent of the 4-magazine field. Why this dominance? Because manufacturers and their agencies look hard at the facts...

circulation—more architects and engineers subscribe to the *Record*—pay more for their subscriptions—and the *Record* has the highest renewal rate...

market coverage—these same subscribers design and specify building products for over 85% of the dollar volume of all architect-designed building, as documented by Dodge Reports...

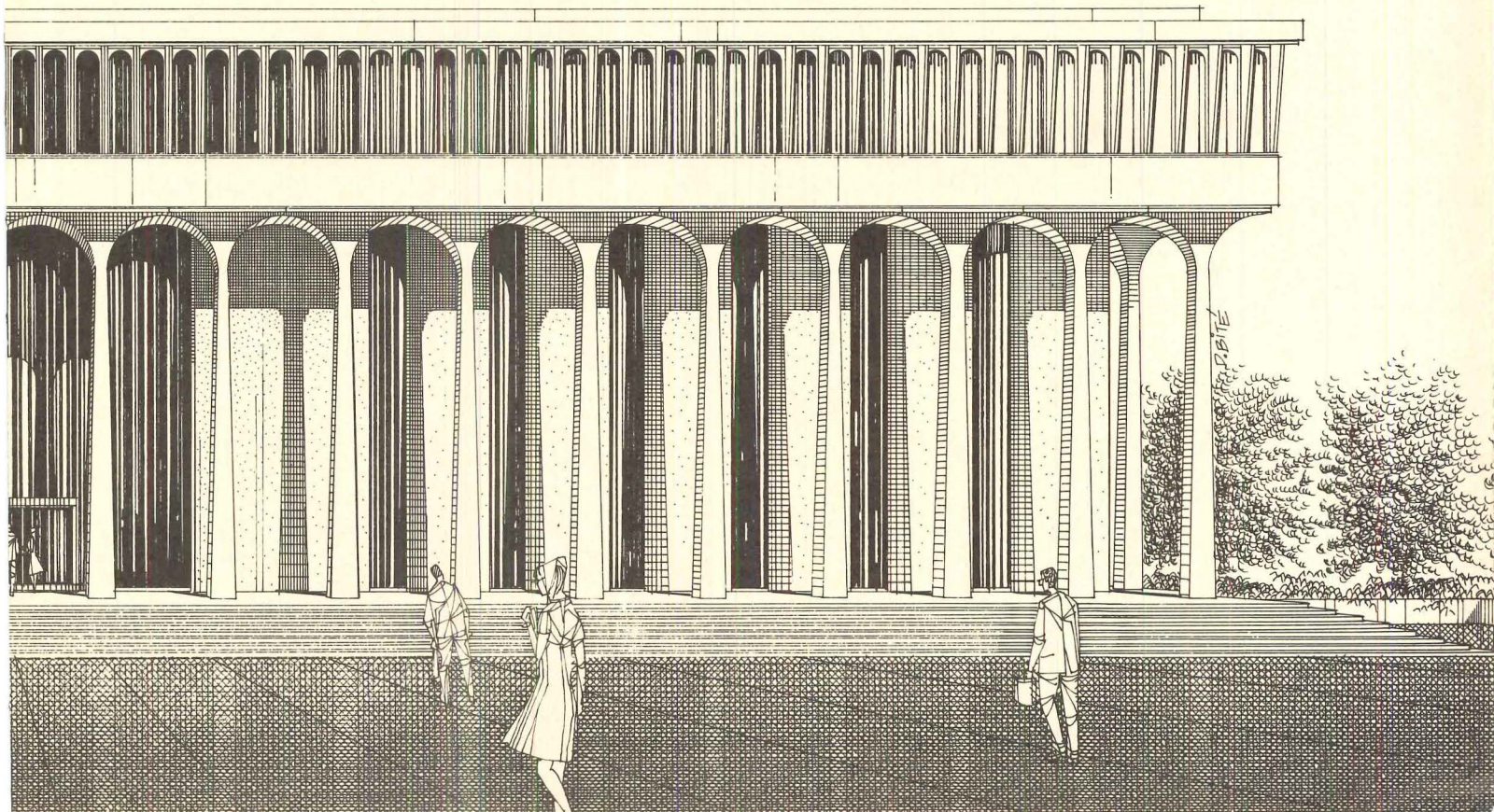
editorial service—*Record* readers find more pages of editorial, more building presentations, more drawings, more photographs, the work of more architects...

readership—the consistent quality of this editorial service has made the *Record* architecture's best-read publication. Architects and engineers have voted *Architectural Record* "preferred", "most helpful" and "most useful" in 196 out of 213 independently sponsored studies...

When one advertising value leads to another and another...you've located the leader...

ARCHITECTURAL RECORD

A MCGRAW-HILL PUBLICATION
330 West 42nd St., New York, N.Y. 10036



Today, Americans hold \$49 Billion in U.S. Savings Bonds ...



an investment equal to 17 million autos.

Autos, homes, educations for our children. That's reserve buying power. At work every day, it strengthens the position of industry, fulfills the ambitions of our citizens and furnishes a continuous stimulant to the American economy.

All this is brought about by millions of workers putting aside a little each paycheck through the Payroll Savings Plan for U. S. Savings Bonds. Painlessly, systematically, these savings add up.

When you bring the Payroll Savings Plan into your plant—when you encourage your employees to enroll

—you're taking part in a mighty sound investment. An investment that has been paying dividends to employers and employees alike—and to a stronger, safer America—for the past twenty-five years.

Contact your State Savings Bonds Director. He can give you complete information on installing and promoting the Payroll Savings Plan in your plant. Or write today to the Treasury Department, United States Savings Bonds Division, Washington, D. C. 20226.



in your plant...promote the PAYROLL SAVINGS PLAN for U.S. SAVINGS BONDS



• The U.S. Government does not pay for this advertisement. It is presented as a public service in cooperation with the Treasury Department and The Advertising Council. •

For more data, circle 188 on inquiry card

Precast white concrete provides complete freedom of form and finish

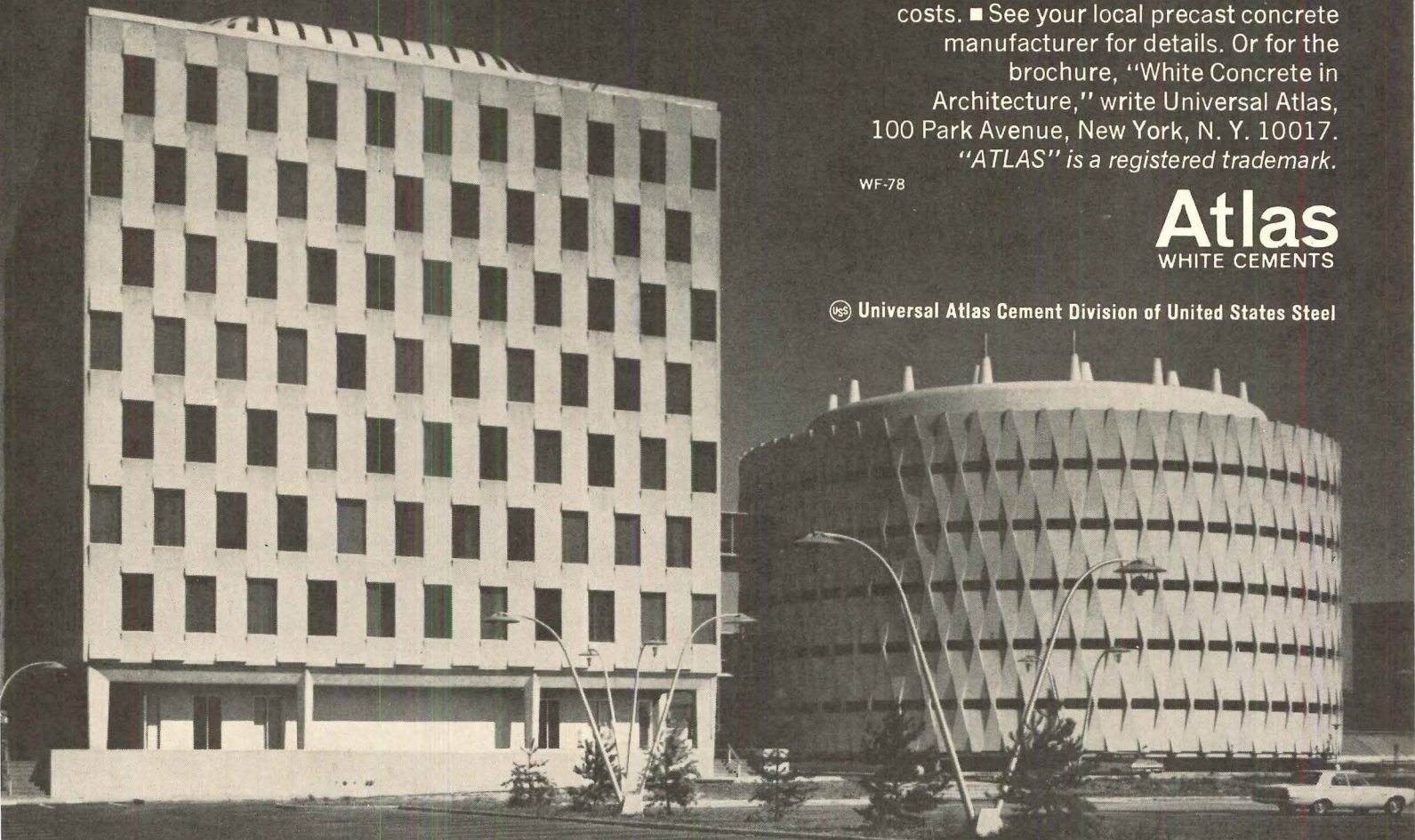
Production of unusual shapes is easy because of the plasticity of concrete as it is being cast. And the surface finish can range from a glossy smoothness to a rugged coarse texture. ■ Made with ATLAS WHITE portland cement, the 1,023 precast concrete panels enclosing this 8-story office building have inclined faces arranged in a checkerboard pattern.

The circular laboratory building is enclosed with interlocking precast, prestressed panels in an hourglass shape. The matrix of white concrete harmonizes with an exposed white quartz aggregate to supply surface interest to the exterior, eliminating additional finishing costs. ■ See your local precast concrete manufacturer for details. Or for the brochure, "White Concrete in Architecture," write Universal Atlas, 100 Park Avenue, New York, N. Y. 10017. "ATLAS" is a registered trademark.

WF-78

Atlas
WHITE CEMENTS

USS Universal Atlas Cement Division of United States Steel



Award-winning concrete office building and laboratory center, New Jersey State Departments of Health and Agriculture, Trenton. **Architect:** Alfred Clauss, Trenton. **Associate Architect:** William C. Cranmer. **Structural Engineers:** Engineers Incorporated, Newark. **Builder:** McCloskey & Company, Philadelphia. **Precast Concrete Panels:** Marietta Concrete Company, Marietta, O.

ADVERTISING INDEX

Pre-filed catalogs of the manufacturers listed below are available in the 1966 Sweet's Catalog File as follows.

- A Architectural File (green)
- I Industrial Construction File (blue)
- L Light Construction File (yellow)

A

- A Acme National Refrigeration Co., Inc. 100
- Aerofin Corp.222, 258
- A-I Allied Chemical Corp., Barrett Div.38-39
- A-I Aluminum Co. of America280-281
- A-L Amarlite Div., Anaconda Aluminum Co.81 to 84
- American Gas Association33, 124
- A American Olean Tile Co.2nd Cover
- A American Standard, Plumbing & Heating Div. 94
- A AMETEK, Inc., Troy Laundry Machinery Div. 208
- Anaconda American Brass Co. 248
- A-I Anchor Post Products, Inc. 303
- A-L Andersen Corp.86-87
- Archer Daniels Midland Co.108B-108C
- Architectural Record308-309
- A Arkla Air Conditioning Co. 33
- A-L Armco Steel Corp. 78
- A-I-L Armstrong Cork Co. 37
- A-L Azrock Floor Products Div.3rd Cover

B

- A Bally Case & Cooler, Inc.28-29
- A-I Barrett Div., Allied Chemical Corp.38-39
- A Bayley Co., William120
- Benjamin Div., Thomas Industries, Inc. ..56-57
- A-I-L Bestwall Gypsum Div., Georgia-Pacific Corp. 31
- A-I Bethlehem Steel Corp.16, 107, 230
- Boiler Engineering & Supply Co., Inc. .. 240
- A-I Borden Metal Products Co. 47
- A-I Bradley Washfountain Co. 75

C

- A Cambridge Tile Mfg. Co. 91
- A-I Carey Mfg. Co., Philip110, 268
- A-I Carlisle Tire & Rubber Div., Carlisle Corp. 232
- A-I-L Carrier Air Conditioning Co.45, 124
- A Ceco Corp.266-267
- Chicago Faucet Co. 222
- Chicago Hardware Foundry Co. 224
- Chicago Pump Co. 212
- A-I-L Chrysler Corp., Airtemp Div. 229
- Cissell Mfg. Co., W. M. 123
- Claremont Polychemical Corp. 224
- A-I Climate Control Div., Singer Co. 314
- Commercial Carpet Corp. 292-293
- Concrete Reinforcing Steel Institute ..300-301
- A Conswold Corp. 277
- A-I Cookson Co. 282
- A Co-Polymer Chemicals, Inc. 298
- Copper Development Association, Inc. 8

D

- Day-Brite Lighting, Div. of Emerson Electric104-105
- A-I-L Devoe & Reynolds Co., Inc., sub. Celanese Corp.250-251
- Dodge Reports32-18-19
- A Dover Corp., Elevator Division 196
- A-I-L Dow Chemical Corp. 244
- DuKane Corp. 200
- A Duriron Co., Inc. 1
- A-I Duwe Precast Concrete Prods., Inc. 286

E

- Eaton Yale & Towne Inc. 64
- A-I Eaton Yale & Towne Inc., Yale Div. 65
- Edison Electric Institute 63
- Electric Heating Association, Inc.271-272
- Eljer Plumbingware Div., Wallace-Murray Corp. 24
- Executone, Inc. 30

F

- A-I-L Fedders Corporation304-305
- A Fenestra, Inc.193, 253
- A-I-L Flintkote Co.215 to 218
- A Follansbee Steel Corp. 32

G

- A-I-L General Electric Co. 13
- A General Fireproofing Co. 12
- Glen Raven Cotton Mills, Inc.32-12
- A Glidden Co.14-15, 76-77
- A Global Steel Products Corp. 17
- A Glynn-Johnson Corp. 108
- A-I Goodrich Co., B. F. 121
- Goodyear Tire & Rubber Co. 73
- A-I Granco Steel Products Co.238-239
- A-I Great Lakes Carbon Corp.194-195
- A-I Great Lakes Carbon Corp., Perlite Dept. .. 26
- Greenberg's Sons, M.32-16
- A Gulistan Carpet, Div. J. P. Stevens & Co., Inc. 103

H

- A Hartmann-Sanders Co. 249
- A Hastings Aluminum Products, Inc.258
- A Haughton Elevator Co. 258
- A Haws Drinking Faucet Co. 98
- A Hickman Co., W. P. 290
- A-I Hillyard Chemical Co. 34
- Holophane Co., Inc.68-69
- A-L Home Comfort Products Co. 252
- L Honeywell 74

I

- A-I-L Inland Steel Products Co. 275
- International Harvester Co. 96
- International Nickel Co., Inc.284-285
- A-I Irving Subway Grating Co. 122
- A ITT Nesbitt, Inc.22-23

J

- A Jamison Cold Storage Door Co. 92
- A-I Jones & Laughlin Steel Corp.202-203

K

- A-I-L Kentile, Inc. 7
- A-I Keystone Steel & Wire Co.32-7
- A-I Kinnear Mfg. Co. 58
- A Knight, H. W., & Son, Inc. 110
- A-I Kohler Co. 48
- A-I-L Koppers Co.49 to 54
- A Krueger Metal Products Co. 55
- K-S-H Plastics, Inc. 219

L

- A Laclede Steel Co. 118
- Latco Products32-16
- A LCN Closers, Inc.66-67
- Lees & Sons Co., James, Div. Burlington Industries246-247
- Lemlar Mfg. Corp. 276
- Lenape Products, Inc. 224
- A-L Lennox Industries, Inc.288-289
- A Levolor Lorentzen, Inc.108A
- A-I-L Libbey-Owens-Ford Glass Co.261 to 264
- Lighting Products, Inc.108D
- A Lightolier, Inc. 89
- Lockwood Hardware Div., Independent Lock Co. 27
- A Loren Cook Co. 268
- A Ludowici-Celadon Co. 95
- A Luminous Ceilings, Inc. 265

M

- A-L Marsh Wall Prods. Div., Masonite Corp.... 287
- A Matthiessen & Hegeler Zinc Co.32-15
- McKinney Sales Co. 113
- McQuay, Inc. 214
- A Meadows, Inc., W. R. 279
- A Mercer Plastics Co., Inc. 299
- A Michaels Art Bronze Co. 299
- A-I Mosaic Tile Co. 269
- A-I Musson Rubber Co., R. C. 276

N

- A-I National Coatings Corp.282A-282B
- National Concrete Masonry Assn.225-226
- A National Lead Co. 303
- A New Castle Products, Inc.242-243

O

- A O'Brien Corp. 276
- A Otis Elevator Co. 237
- A-I-L Owens-Corning Fiberglas Corp. 88

P

- Pacific Gas & Electric Co.32-13
- A Paragon Swimming Pool Co., Inc. 295
- Pilkington Brothers Limited 97
- A-I-L Pittsburgh Plate Glass Co.220-221
- A Plasteel Products Corp. 59
- Prescon Corp. 294
- A Presstite Div., Interchemical Corp. 283
- A-I Prestressed Concrete Institute18-19
- A-I Products Research Co. 213

R

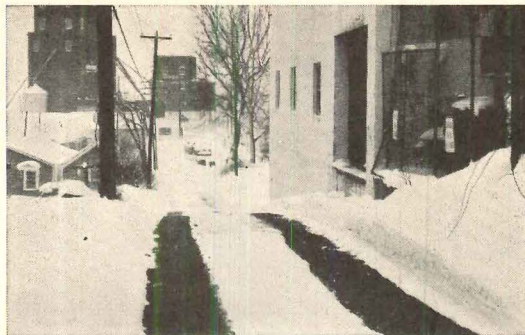
- A-I Raynor Mfg. Co. 231
- A-L Red Cedar Shingle & Handsplit Shake Bureau 241
- Red Jacket Mfg. Co. 298
- A Republic Steel Corp.296-297
- A-I-L Revere Copper & Brass, Inc. 211
- A Rheem Mfg. Co. 257
- A Rixson, Inc. 119
- A Robbins Flooring Co. 85
- A-I Robertson Co., H. H. 223
- A Rohm & Haas Co. 93
- A-L Rolscreen Co.101-102
- A-I-L Ruberoid Co.114-115
- A RUSSWIN, Div. Emhart Corp.20-21
- A-I Rust-Oleum Corp. 205

S

- A St. Charles Mfg. Co. 109
- St. Joseph Lead Co., Metals Div. 233
- A Sargent & Company306-307
- A Sargent & Greenleaf, Inc. 268
- A-I Schaefer, Commercial Refrigeration Div. Studebaker Corp. 110
- Schemenauer Mfg. Co. 207
- A-I Schokbeton Products Corp. 291
- A-I Silbrico Corp. 259
- A-I Simmons Co. 210
- A-I Sloan Valve Co.4th Cover
- Southern California Edison Co.32-8, 32-17
- A-L Southern Pine Association 11
- A Speakman Company 79
- Square D Company 117
- A-I Standard Conveyor Co. 90
- A Steel Joist Institute 111
- Sweet's Catalog Service 313
- A-I-L Symons Mfg. Co. 80
- A-I-L Synkoloid Company32-6

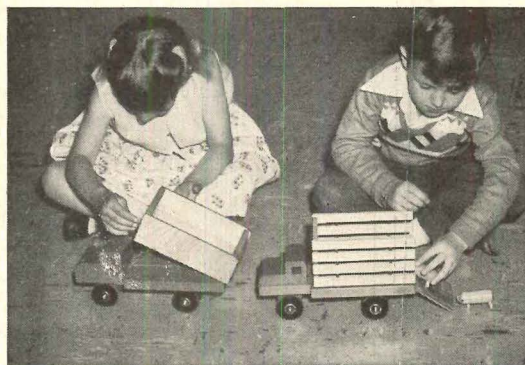
T

- Talk-A-Phone Co. 204
- A-I Taylor Co., Halsey W. 245
- A Thermoproof Glass Co. 70
- A-I Tile Council of America, Inc. 206
- A Tremco Mfg. Co. 106
- A Troy Laundry Machinery Div., AMETEK, Inc. 208
- Trus Joist Corp. 25

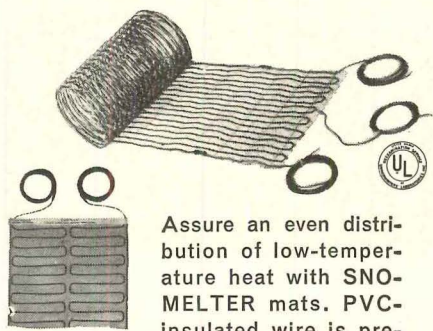


TO **MELT SNOW** OUTDOORS
 OR **HEAT CONCRETE** FLOORS

specify
EASY-HEAT* and *Sno-Melter**
 electric
 heating cable products



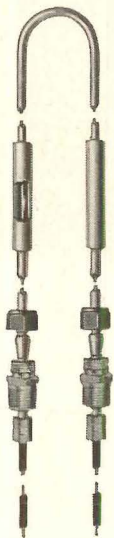
**Wire Mesh and Fiber Mesh
 SNO-MELTER Heat Mats**



Assure an even distribution of low-temperature heat with SNO-MELTER mats. PVC-insulated wire is pre-assembled and anchored in place on wire or fiber mesh. Mats roll out fast, save time and money to install. Embedded in concrete or asphalt, they operate unseen, *automatically*.

**Mineral Insulated
 Heating Cable Units**

Select from over 1000 EASY-HEAT M. I. Cable units. Pre-assembled, 24 to 3782 feet long, 10 to 50 watts per lineal foot. Choice of 120, 208, 240, 277, 480 V. Single or dual conductors, completely insulated with magnesium oxide and a waterproof, gas-tight copper sheath. Has 7' cold lead, 12' insulated pigtail, explosion-proof UL-listed threaded glands.



**Fiber Mesh Concrete
 Floor Heat Mats**



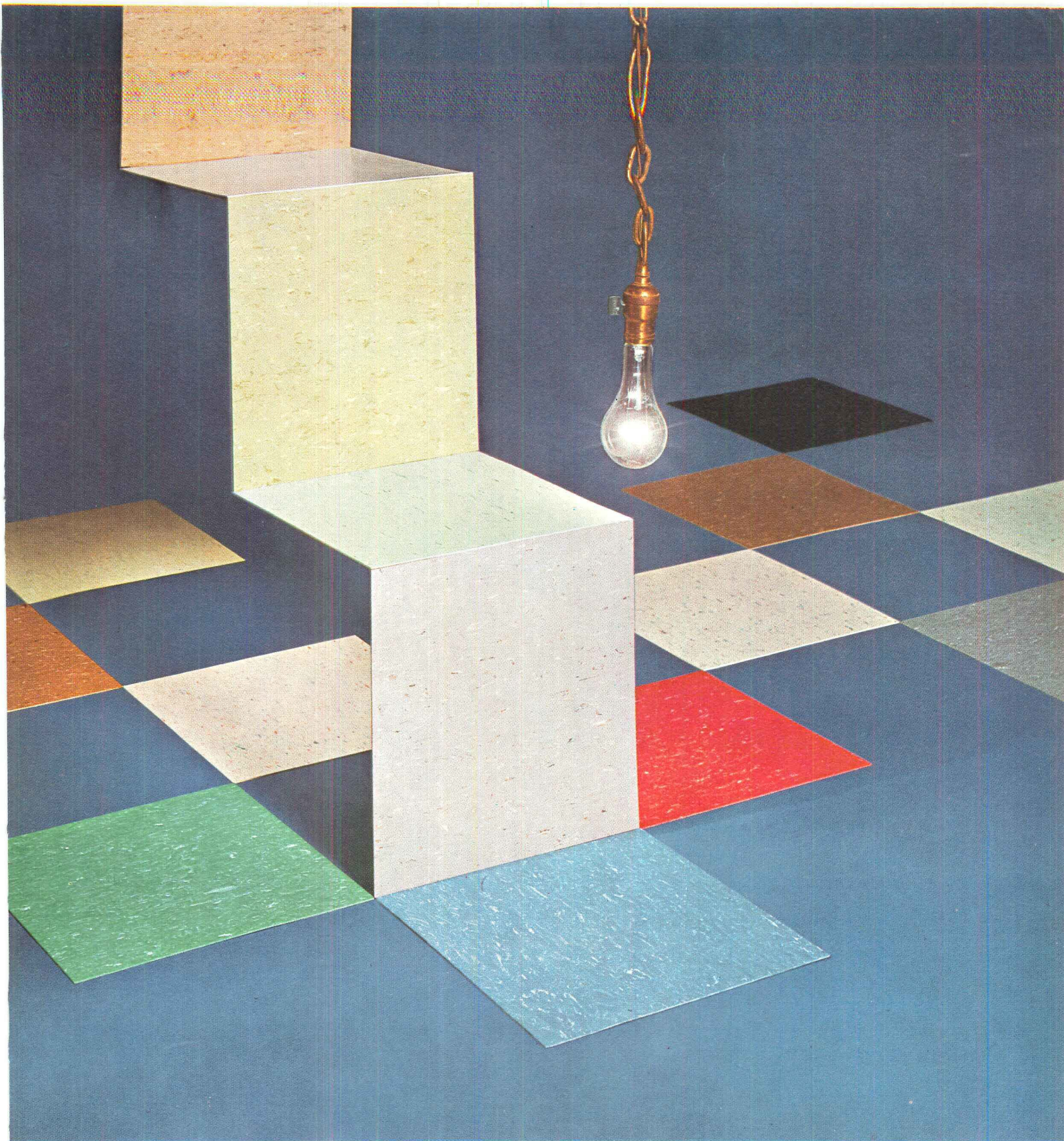
Wherever warm slab floors are desired—factories or schools, etc.—EASY-HEAT Electric Floor Heat Mats, embedded in concrete, offer great flexibility at lowest cost. Factory assembled, PVC heating wire bonded to Fiberglas mesh to provide 10 or 20 watts per sq. ft. of heated area. Mats can be fitted around corners, and curves, columns, fixtures.

Write for illustrated spec folder and cost data on the **COMPLETE** line.

*A Trademark of THE SINGER COMPANY

CLIMATE CONTROL DIVISION
 THE SINGER COMPANY, DEPT. AR-26, AUBURN, NEW YORK

For more data, circle 189 on inquiry card



**Creative styling in a new light:
Cortina Series in Azrock vinyl asbestos tile.**

New Cortina Series offers 16 colorful ways to brighten up the interiors you design. The patterning is clean, clear and subtle—with lacy flecks of soft color through the thickness of the tile, so it won't walk off. The color range of Cortina is exceptional—designed to provide lasting beauty and easy maintenance. Ready now in 12 x 12 size—your choice of 1/8", 3/32" or 1/16" gauges. For floors of unexcelled quality, specify Cortina.

an original floor styling by **AZROCK**[®]

Consult Sweet's Catalog or send for samples. Azrock Floor Products, 500 Frost Building, San Antonio, Texas 78205.

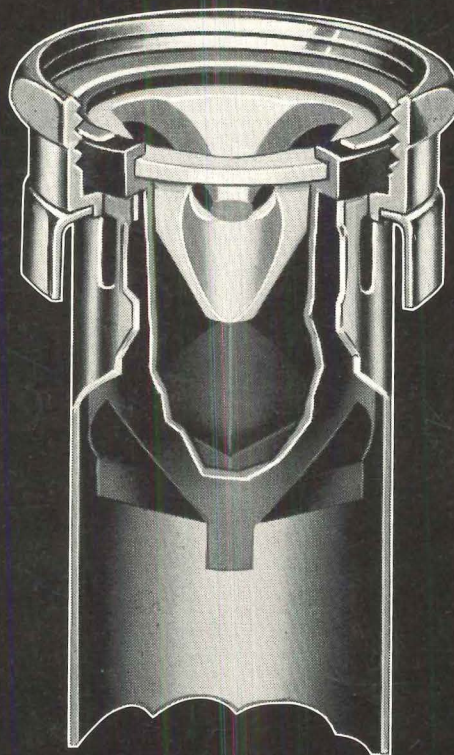


New Quiet-Flush II
ROYAL Flush Valve
with V-500-AA
Vacuum Breaker

The V-500-AA and V-500-A are identical, except that the V-500-AA is constructed with an integral outlet. This eliminates one coupling connection and saves installation time. The V-500-AA is furnished with a $\frac{3}{4}$ ", 1", $1\frac{1}{4}$ " or $1\frac{1}{2}$ " diameter outlet.



V-500-A
Vacuum Breaker



Here's the "Inside Story" of the New Sloan Vacuum Breaker for Flush Valves

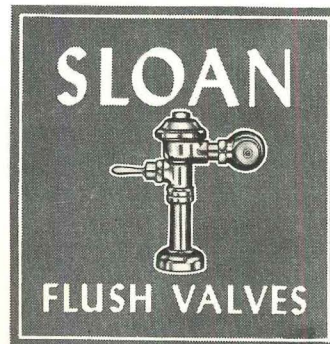
• Over 40 years experience in the development of vacuum breakers for flush valves stands behind Sloan's newly designed Model V-500-AA Vacuum Breaker. Here is another example of Sloan's never-ending effort to improve the quality and performance of its products. The V-500-AA not only performs faultlessly but, with its unique engineering design, back pressure is minimal, permitting the flush valve to operate more efficiently and quietly. Here's how this Sentinel of Public Health provides dependable double protection against back-siphonage:

Under normal conditions the V-500-AA is open to the atmosphere at all times. When a vacuum occurs in the supply line, (1) the one-piece rubber sleeve is instantly drawn against the water ports of the center insert, thus preventing back-flow. Simultaneously, (2)

atmospheric pressure is admitted to the interior through a series of air ports, to prevent any possible vacuum effect on the fixture. Thus the V-500-AA is on guard constantly to protect against back-siphonage, should vacuum conditions occur.

Like the millions of nationally approved Sloan vacuum breakers now in service, the new Model V-500-AA and V-500-A Vacuum Breakers conform to all municipal Plumbing Codes, as well as to U.S. Government specifications.

This is but one of the many innovations recently adopted to further improve the quality, quietness, dependability, ease of installation, low maintenance costs and smart appearance of Sloan Flush Valves. For the Flush Valve of Tomorrow—Today—be sure to specify and insist on SLOAN!



SLOAN VALVE COMPANY • 4300 WEST LAKE STREET • CHICAGO, ILLINOIS 60624