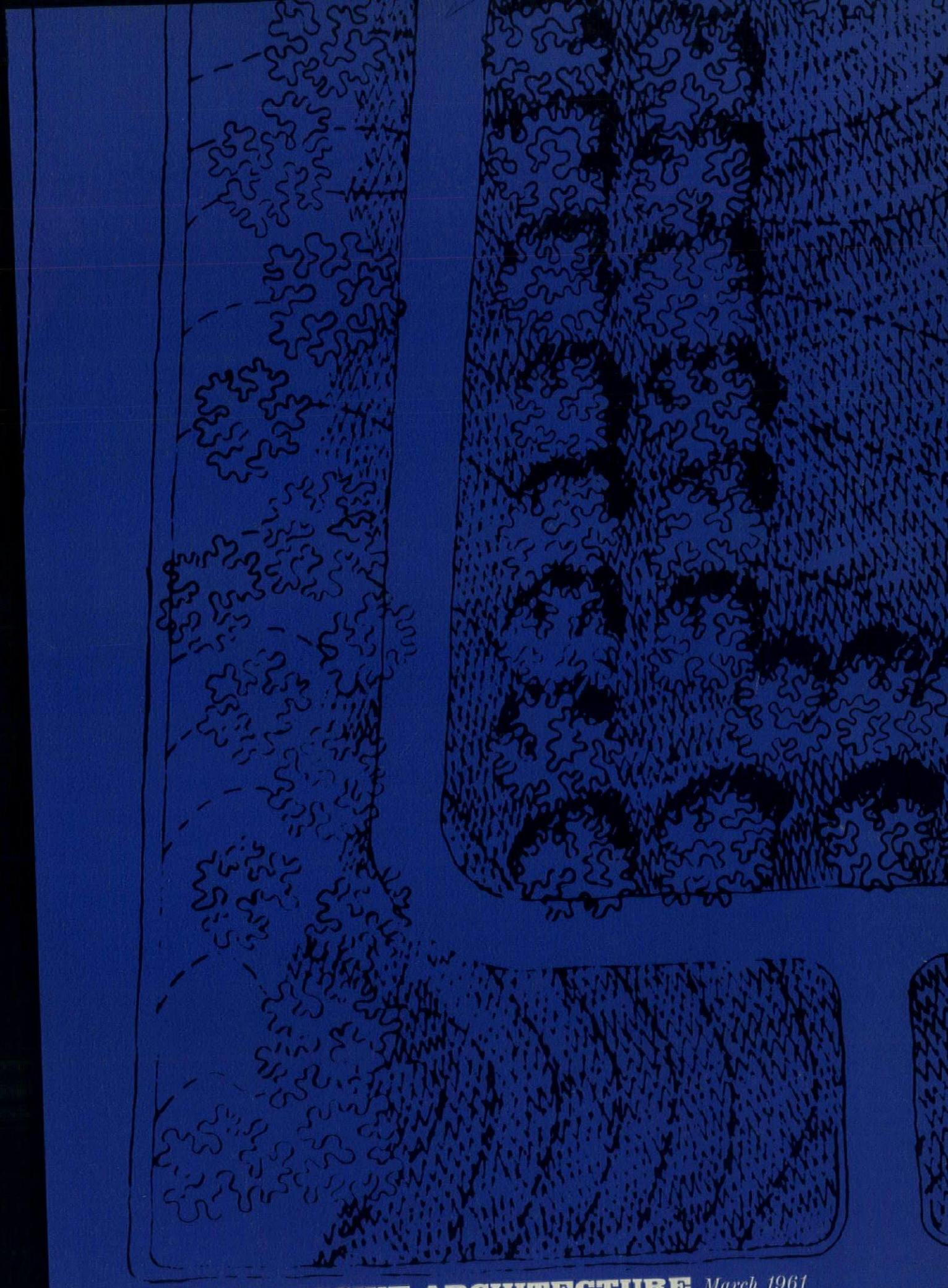
PA-1961-03



unique floor beauty that won't "walk off"...

Vina-Lux® 800 Series

Now, a vinyl asbestos floor tile with distinctive color chip styling that won't wear away under heavy, concentrated traffic. The chip pattern is distributed at every level through the full thickness of the tile. Vina-Lux 800 Series costs no more than ordinary vinyl asbestos tile... yet delivers so much more value.

The Vina-Lux 800 Series can be specified for installation over concrete – even below grade, or over wood subfloors. In 12 fashion-coordinated colors; 9″x 9″ size; $\frac{1}{8}$″, $\frac{3}{32}$″ and $\frac{1}{16}$″ gauges. See Sweet's Catalog or write for samples, color charts and complete architectural specifications – no obligation, of course.

For more information, circle No. 309

AZROCK FLOOR PRODUCTS DIVISION

Specialists in the manufacture of vinyl asbestos tile and asphalt tile flooring

UVALDE ROCK ASPHALT COMPANY • 522A FROST BANK BUILDING • SAN ANTONIO, TEXAS

AZROCK FLOORING PRODUCTS

Koroseal patterns shown actual size (left to right) are: Nassau, Mojave, Straw Weave and Linen Weave.

Bright, cheerful Koroseal wall coverings slash building maintenance costs

Koroseal vinyl wall coverings by B.F.Goodrich add beauty in any building with their rich colors and subtle textures. And their durability and easy upkeep help reduce wall maintenance costs for years to come.

Fabric-backed, flame-proofed Koroseal wall coverings resist scuffs, scratches and stains. They keep their fresh, clean appearance for years with infrequent soap and water wipe-downs. The profit-cutting expense of periodic repaintings, often with complete shut-down of income-producing space, is drastically reduced. For more information or samples, write Dept. PA-3, *B.F.Goodrich Industrial Products Company, Marietta, Ohio.*

B.F.Goodrich

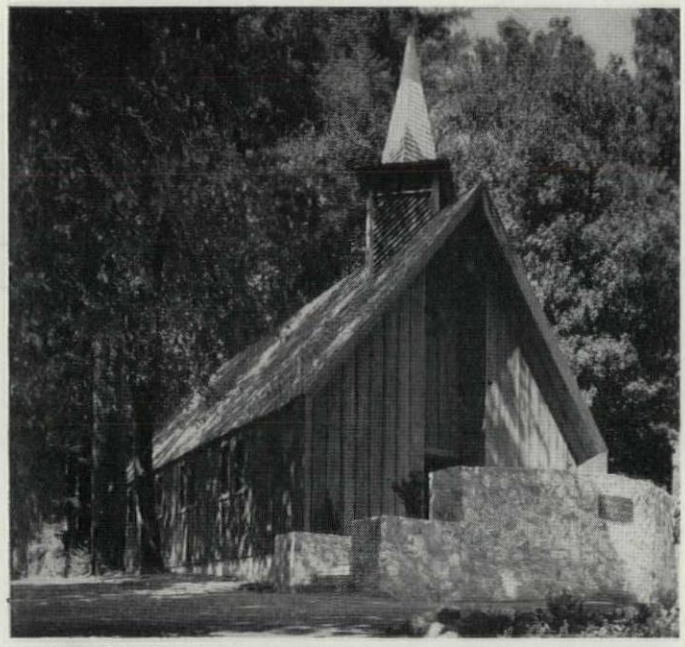
Koroseal®

VINYL WALL COVERING

The hardwood benches, plank-and-beam ceiling, and the heavy arched members in this church interior achieve hushed dignity, a functional honesty that is singularly wood's. Note how all this wood "warms" the cold brick walls. The architect is Edgar Tafel.

Because it creates a natural environment for worship

design the better way with WOOD



A chapel in the woods sets simply, reverently in its site with the natural belonging of board-and-batten siding, shingled roofing, and a louvered wood steeple. Architect: Donald Powers Smith.

The ways of wood work wonderfully, beautifully in church construction . . . have done so through the centuries and are doing more so every year. Wood's inherent strength in columns and laminated beams affords broad, spacious interiors. Its acoustical qualities are ideal for sacred music and the human voice. Decoratively, it is perfectly, arrestingly compatible with materials and designs of every kind.

No other material adapts so well to any situation or any site. Wood's economies and efficiencies are countless. Its workability gives you an age-old material with the eternal promise of new-born freedom. For more information on designing with wood, write:

NATIONAL LUMBER MANUFACTURERS ASSOCIATION
Wood Information Center, 1319 18th St., N.W., Washington 6, D. C.

nlma

for freedom of design, look to **wood**

Gracefully bowed laminated beams supporting a parabolic arch, spacious wood-framed glass areas at either end —all combine to create a wide-open setting for a unique treatment of the crucifix. Note how simplicity of design dramatically demonstrates wood's quality throughout this unusual house of worship. Architect: Orus O. Eash.

Architects: Eugene V. Schaffer & Associates, St. Paul, Minn.
Engineers: Gausman & Moore, Inc., St. Paul, Minn.
Building Gross Area: 50,633 Sq. Ft. **Building Cost:** $12.22 per Sq. Ft.
Heating & Ventilating Cost: $ .83 per Sq. Ft.

room-by-room and school-by-school...

NORMAN SCHOOLROOM HEATING AND VENTILATING SYSTEMS

cut construction costs...and reduce operating expenses

83c PER SQ. FT. installed, provides thrifty, efficient gas heat, plus automatic forced air ventilation in the De LaSalle High School Addition, Minneapolis, Minnesota.

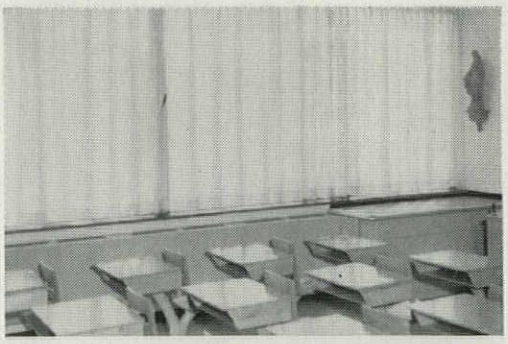
By specifying a Norman Schoolroom Heating and Ventilating System for each individual classroom, the planners of the all-modern De LaSalle High School Addition, Minneapolis, Minnesota, were able to reduce heating and ventilating costs to a mere 83¢ per square foot.

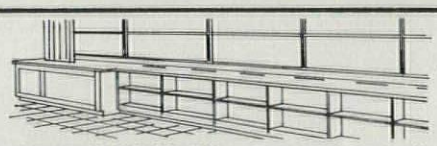
No separate building was necessary to house a central heating plant . . . no tunnels or trenches for ducts or pipes . . . no unsightly chimney . . . no oversizing of boilers or pipes for future expansion. As the school grows additional Norman Systems can be added.

In one low cost package, the Norman Gas-Fired, Forced Air Perimeter Schoolroom System provides complete classroom comfort for each individual room. Fresh outdoor air is automatically blended with recirculated room air to heat and ventilate, with scientific air distribution through perimeter diffusers in Util-i-Duct bookshelf sections. Additional Norman gas-fired units can be installed in non-classroom areas.

Automatic temperature setback with recirculation of room air during unoccupied periods (80% of the school year) keeps fuel bills at a minimum. Servicing is simplified and any maintenance can be quickly and economically performed.

Write today for comprehensive Manual on HVS Horizontal or Inn-A-Wal Counter Flow models.





NORMAN ENCLOSED HVS compact horizontal unit illustrated with Util-i-Duct bookshelf sections

NORMAN INN-A-WAL counter flow furnace in separate heater room, illustrated with economical Wall-i-Duct sections

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THIS MONTH IN P/A

The World's Largest Architectural Circulation.

PROGRESSIVE ARCHITECTURE published monthly by REINHOLD PUBLISHING CORPORATION, 430 Park Avenue, New York 22, N. Y. Ralph W. Reinhold, Chairman of the Board; Philip H. Hubbard, President and Treasurer; Fred P. Peters, Vice-President and Secretary; H. Burton Lowe, Merald F. Lue, D. Bradford Wilkin, William P. Winsor, Vice-Presidents; Kathleen Starke, Assistant Treasurer; Executive and Editorial offices: 430 Park Avenue, New York 22, N. Y. Subscriptions payable in advance. Subscription prices to those who, by title, are *architects, engineers, specifications writers, designers* or *draftsmen*, and to government departments, trade associations, members of the armed forces, college libraries, college students, publishers, advertisers, prospective advertisers and their employes—$5.00 for one year, $8.00 for two years, $10.00 for three years. Above prices are applicable in U. S., U. S. Possessions, and Canada. All *practicing architects* and *engineers* outside U. S., U. S. Possessions and Canada—$10.00 for one year, $16.00 for two years, $20.00 for three years—ALL OTHERS: $20.00 a year. Single copy—$1.00; special issues—$2.00 per copy. Printed by Publishers Printing Company, New York, N. Y.

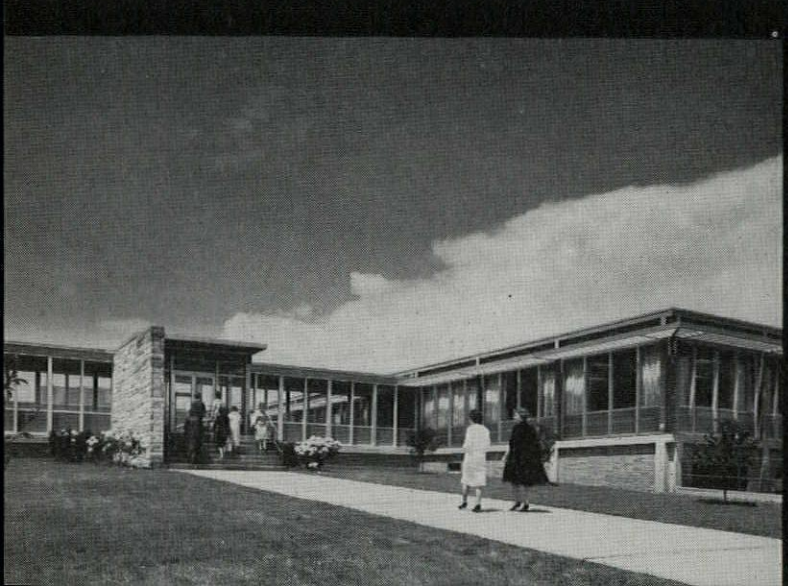
Indexed in Art Index, Architectural Index. Second class postage paid at New York, N. Y. Volume XLII, No. 3

Administrative Headquarters, International Salt Company, Clarks Summit, Pa. Architects-Engineers: Von Storch & Burkavage. General Contractor: Breig Bros. Steel Fabricator and Erector: Anthracite Bridge Company, who fabricated and erected some 450 tons of Bethlehem structural shapes for this building.

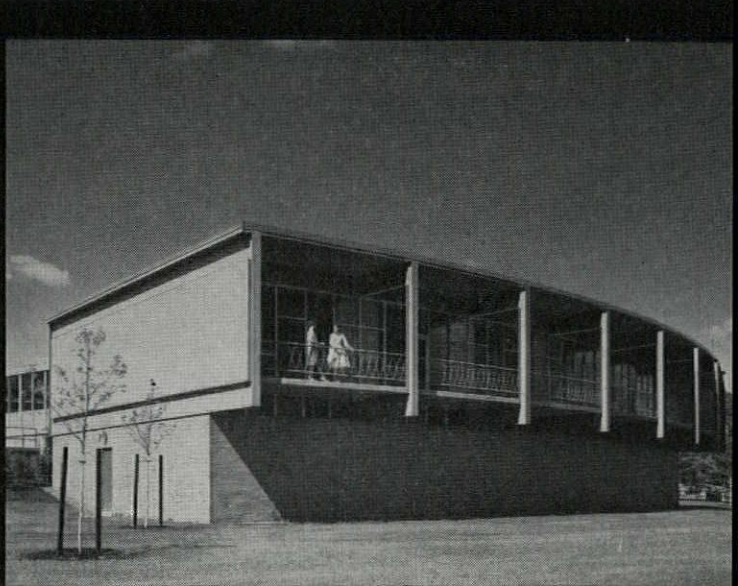
A handsome steel frame for "Salt Headquarters"

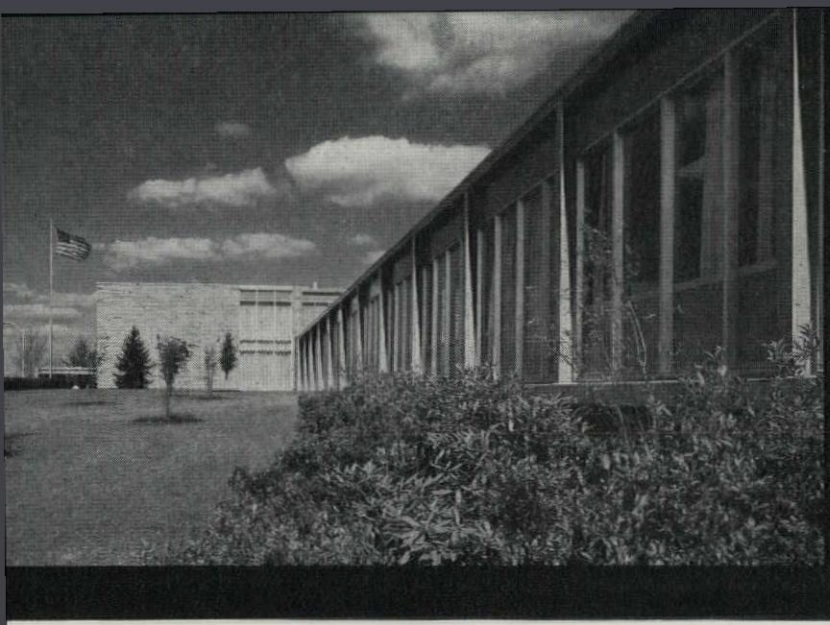
Steel *for Strength . . . Economy . . . Versatility*

Entrance from parking lot. Note unusual effect achieved by hanging roofs on the lower flange of the roof beams, instead of the upper flange.



Balcony of the lounge-cafeteria wing overlooks a beautiful valley. All columns and beams supporting this balcony are left exposed and painted red.





Colorful curtain walls make an eye-appealing exterior. Porcelain-enameled steel panels are blue, steel columns and beams are red.

Steel-framed "floating" staircase dominates the handsome main entrance lobby.

Wherever you look at the new administrative headquarters of International Salt Company, you see steel—exposed structural steel framing, steel roof deck, porcelain-enameled steel panels outside, steel wall partitions inside.

This attractive building dominates a hilltop in a country setting outside Scranton, Pa. Great expanses of glass, glazed to slender steel columns, bring the surrounding countryside inside to join the brightly painted interior. Blue porcelain-enameled steel panels complete the curtain-wall construction, and provide a striking contrast to the exposed steel frame which is painted red.

International Salt wanted a *flexible* building. And they got it, thanks to steel construction. It will be a simple matter to add a new steel frame to the existing one if expansion becomes necessary. The interior steel wall partitions are easy to take down and re-erect, and make possible many variations in room arrangement.

BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY, Bethlehem, Pa. *Export Sales:* Bethlehem Steel Export Corporation

Structural frame is exposed inside, too. Here it lends beauty to the employee lounge and cafeteria (rear), and emphasizes the sturdiness of the structure.

Steel wall partitions throughout the building provide complete interior flexibility.

NOW... a true natural-fissured acoustical tile
for 2-hour fire-rated ceiling assembly

NEW FISSURED PROTECTONE* MINERAL FIBER TILE ...A CELOTEX EXCLUSIVE

Bringing you all the traditional beauty and authentic character that only natural travertine fissuring provides.

Not too bold, not too delicate... new Celotex PROTECTONE* Mineral Fiber Tile offers unusual design opportunities for architects seeking distinctive near-monolithic travertine appearance and high sound absorption (NRC .80) for ceilings requiring 2-hour fire-rated assembly.

Call your Acousti-Celotex distributor for samples, specifications, expert Ceiling Consultation Service. He's listed in the Yellow Pages.

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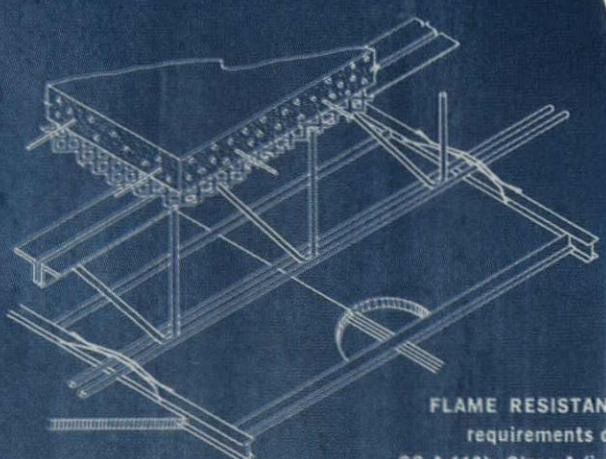
Natural fissured PROTECTONE* Mineral Fiber Tile. Butt edge, 12″ x 12″, kerfed for concealed H & T suspension system. One of the family of Celotex fire-rated acoustical products.



FLAME RESISTANCE: Meets requirements of Fed. Spec. SS-A-118b, Class A (incombustible). Two-hour fire-rated assembly.

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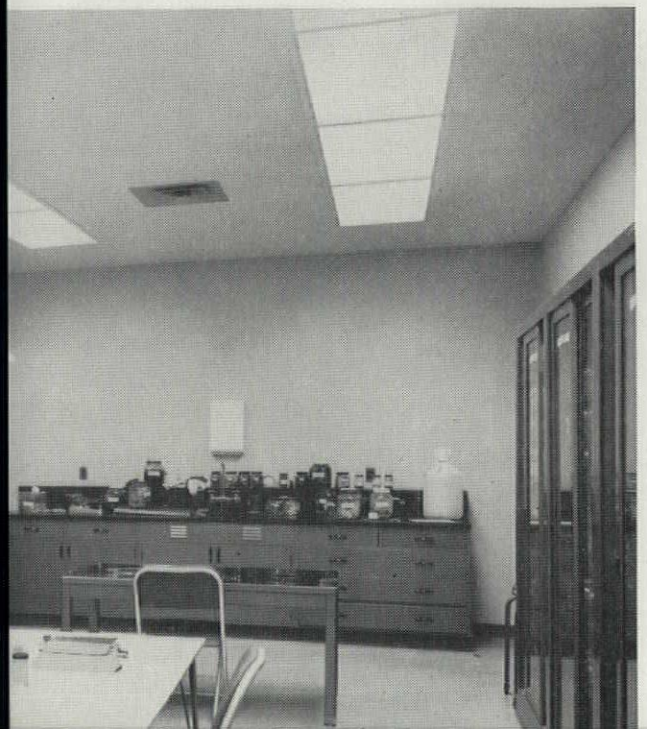
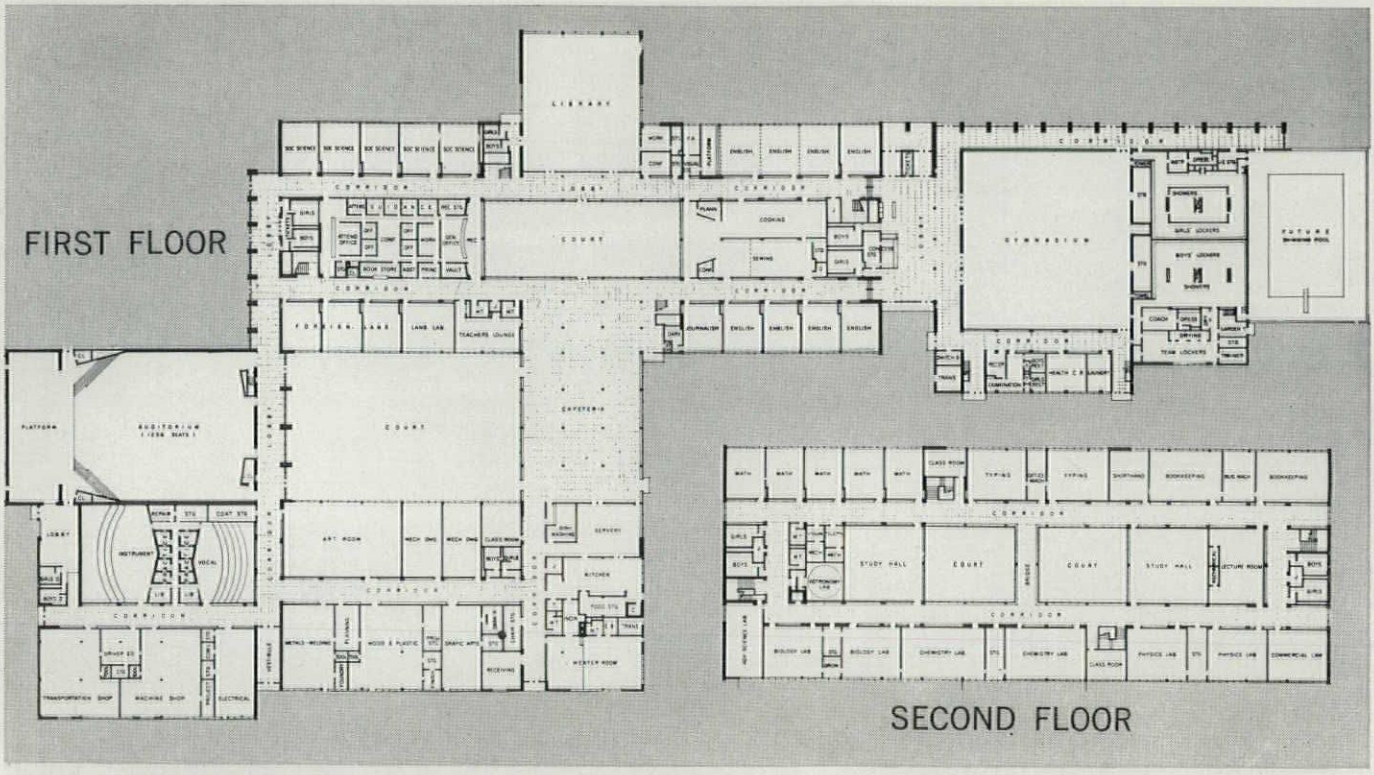
If it's "by CELOTEX" you get QUALITY... *plus!*

Horizontal arrangement of Day-Brite TROFFERS makes waiting area in out-patient clinic look wider, more spacious. Incandescent UNI-FRAME® lens boxes highlight registration desk.

Day-Brite MOBILEX® maintain laboratories at 75 to 100 footcandles to facilitate critical visual analyses.

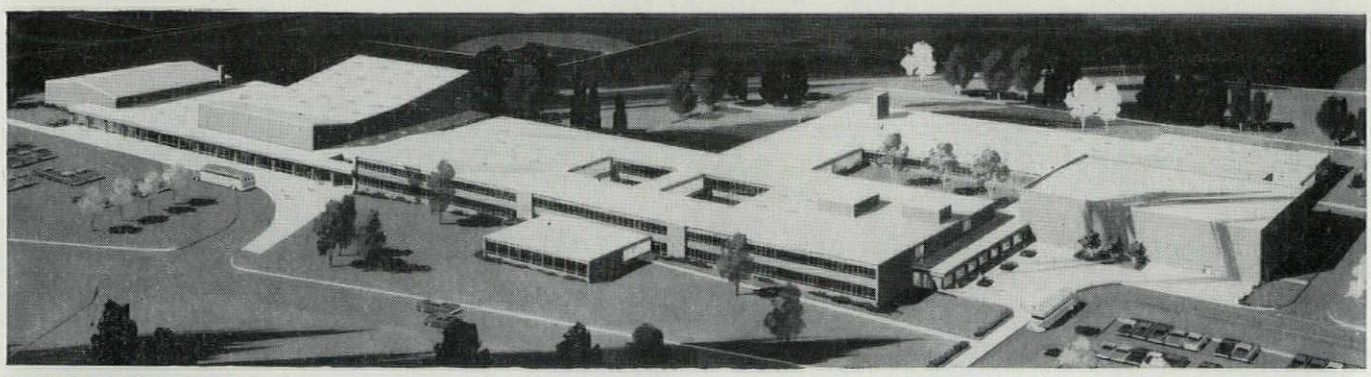


Informal dining room, cheerfully lighted by Day-Brite TROFFERS, typifies tone of the entire hospital.



AT PARMA... the size and scope of the new Valley Forge High School put special emphasis on the need for an efficient Time Control and Program system, free of operational and maintenance problems. This lead to the selection of Stromberg timing. Dependably correct clocks and signals are assured by the precision Master Time Control. This modern time system operates from ordinary lighting circuits. Complete uniformity of time is maintained by supervisory pulses each hour and every 12 hours over a control circuit. Stromberg maintains installation and maintenance service throughout the U.S.A.

A complete catalog — TIME AND SIGNAL EQUIPMENT — prepared for Architects and Engineers — is yours for the asking.



PLANNING THE NEW SCHOOL

A population explosion at Parma, Ohio completely overtaxed secondary school facilities. Rather than expand the old school, construction of the new Valley Forge High School was started in May of 1960 and scheduled for completion in advance of the school year beginning September 1961 at a completed cost of $4,000,000. The new structures — containing 70 classrooms, adequate library, science, language, shop and music facilities, as well as an ample auditorium, cafeteria and gymnasium — is planned to accommodate 2,000 students. Despite these impressive new facilities, plans are now being made for a third secondary school.

The Parma Public Schools, Mr. Paul W. Briggs, Superintendent — were advised in their choice and installation of Time Controls by:

Fulton, Dela Motte, Larson, Nassau & Associates—Architects
Mr. Vincent A. Lombardi — Electrical Engineer
The Doan Electric Company — Electrical Contractor

For more information, turn to Reader Service card, circle No. 328

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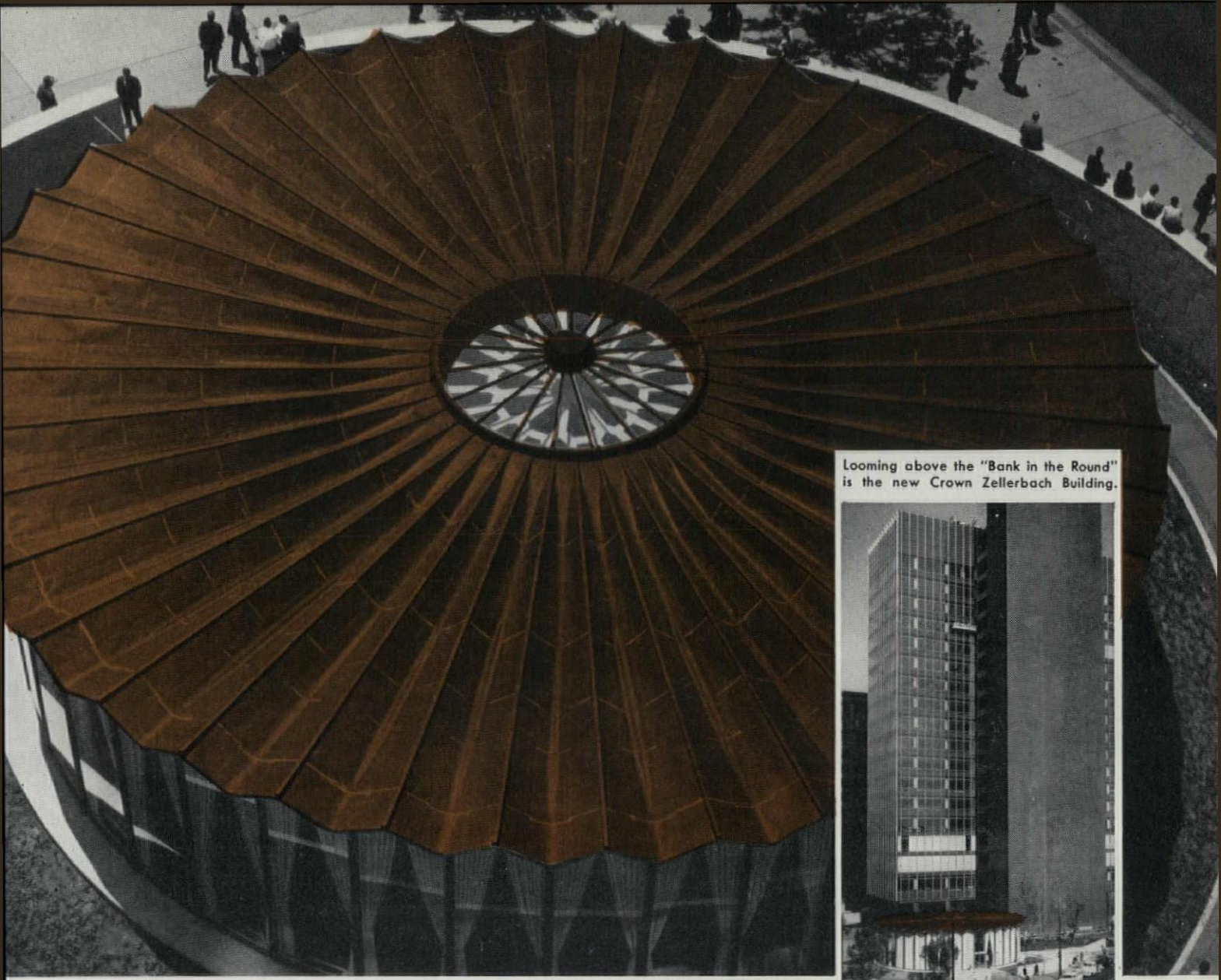

Looming above the "Bank in the Round" is the new Crown Zellerbach Building.

Architect: SKIDMORE, OWINGS & MERRILL: Gen. Cont.: HAAS and HAYNIE: Sheet Metal Cont.: FIRE PROTECTION PRODUCTS. Revere Distributor: PACIFIC METALS COMPANY, LTD. All of San Francisco, California.

"Bank in the Round" a striking example of the great freedom in design that is possible with

REVERE COPPER

The "pleated" roof on the new Wells Fargo Bank American Trust Company building in San Francisco, Calif., is the result of an unusual design problem faced by the architects.

When they designed this ultra modern "Bank in the Round" they knew that many people would be looking down on it from the adjoining skyscraper in addition to those viewing it from the street level. The roof, therefore, could not be an ordinary one. Nor could the bank have a rectangular profile and still stand out against the tall building next to it.

The solution was the "pleated" roof you see above. It contains 12,000 lbs. of 16 oz. cold rolled Revere Copper, in 36" x 96" and 36" x 120" sheets. Copper was chosen to achieve this unusual roof because of its virtually unlimited flexibility in design, its eye-catching appearance (which takes on a striking patina as it ages) and its ease of workability into any desired shape or form.

This is another example of how the architect can dare to be different with copper because copper is so cooperative with his ideas, giving him practically unlimited freedom of design. A good reason to design your present and future structures with Revere Copper in mind.

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COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

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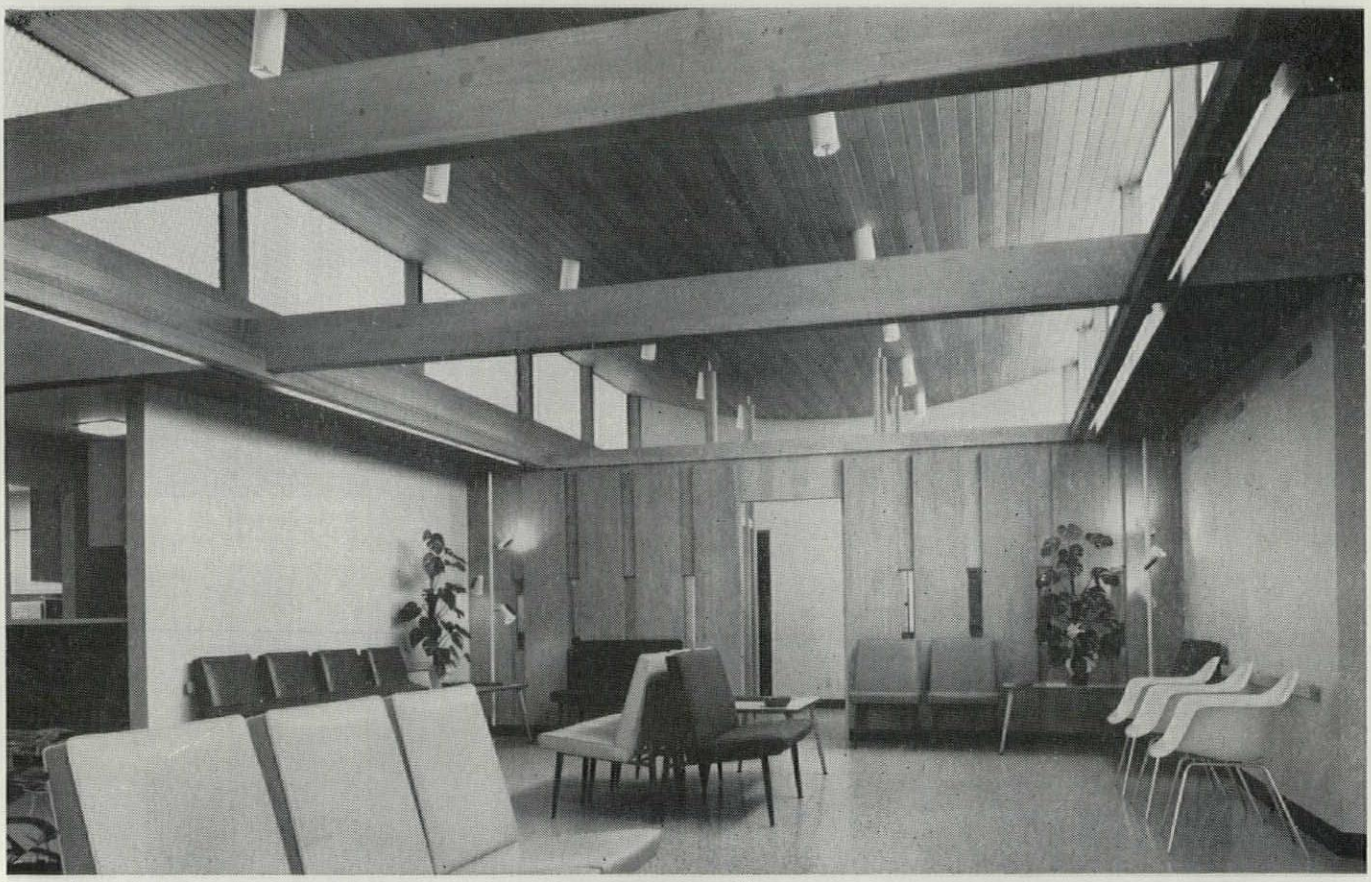
Mills: Rome, N.Y.; Baltimore, Md.; Chicago and Clinton, Ill.; Detroit, Mich.; Los Angeles, Riverside and Santa Ana, Calif.; New Bedford and Plymouth, Mass.; Brooklyn, N.Y.; Newport, Ark.; Ft. Calhoun, Neb. Sales Offices in Principal Cities.

Distributors Everywhere

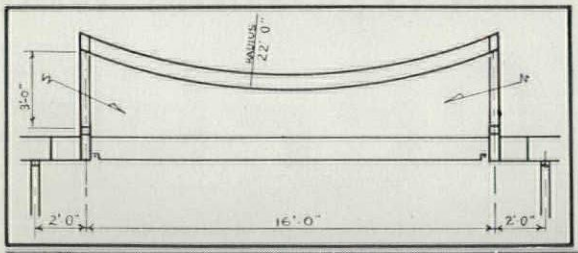


"Problem Solved in Graceful and Economical Manner"

Elimination of the cold "institutional" look was the achievement of Paul H. Kirk & Associates, architects for the Northgate Clinic, Seattle, Washington. "We feel the laminated wood used in the inverted vault for the waiting room ceiling solved our problem in an economical and graceful manner," states Paul H. Kirk, "and other laminated wood in entries and exposed decking areas also gave us a lightness of scale and permanence of surface that are most remarkable."

Rilco laminated wood structural members add warmth and character to any interior — besides offering unlimited design possibilities. All members are carefully processed and bonded together by glues stronger than the wood itself for lasting beauty and minimum maintenance costs.

Rilco arches, beams, purlins are custom fabricated to exact specifications, and shipped to job site on time for fast erection by regular crews — another cost saving feature. Our service engineers will be happy to consult with you, without obligation. Write for further information.

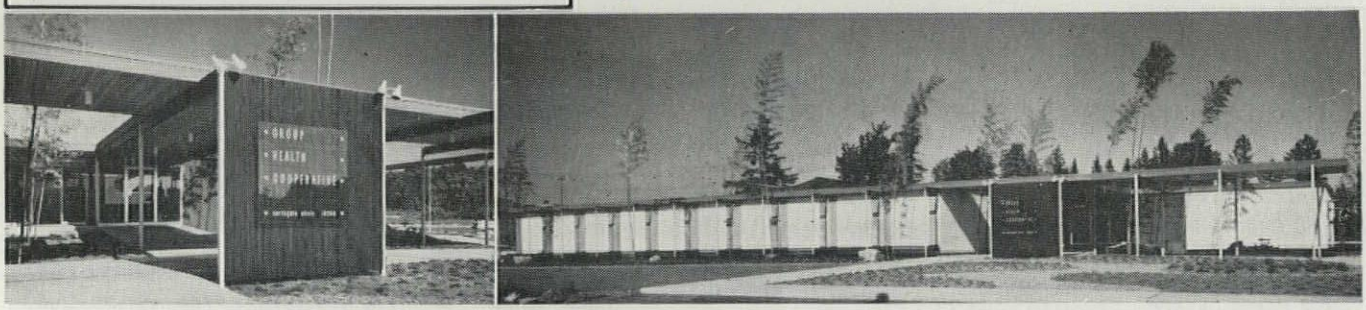


Weyerhaeuser Company

Rilco Engineered Wood Products Division

W 817 1st National Bank Bldg., St. Paul 1, Minn.
District Offices: Tacoma, Wash., Fort Wayne, Ind., Linden, N. J.

Group Health Cooperative, Northgate Clinic, Seattle, Wash. Architect: Paul H. Kirk, F.A.I.A. & Associates, Seattle, Wash. Constructed with 31 Rilco laminated wood curved members 3" x 9¾" in section with 22" radius, 10 flat beams 3" x 11⅞" and 3" x 9¾" in section.



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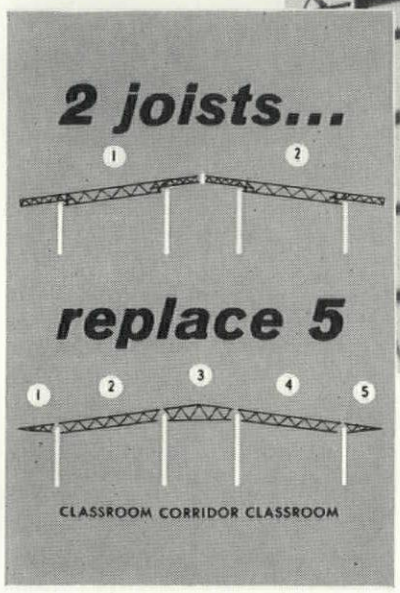


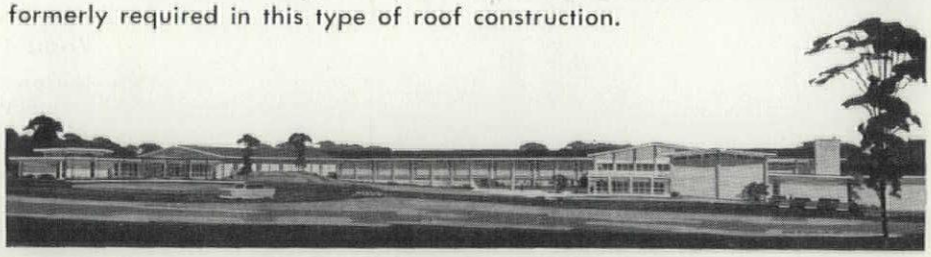
LACLEDE 34′ OPEN WEB STEEL JOISTS

cut time and cost in new school construction

Ladue Junior High School in suburban St. Louis is an excellent example of the way economy and style can be blended in today's school construction.

Cost saving was a pre-eminent factor in architect William B. Ittner's design of this low-flung structure, with its long straight runs, free of costly jogs and bends. Further economy was achieved by allowing the rolling terrain to fall away from the single continuous ridgeline, rather than to follow the contours of the ground with multi-level roofs.

This design concept was based on the selection of open web steel joists as a versatile, economical structural material. Laclede 34′ joists, with special shallow-depth ends, were used to provide an unbroken slope from ridgeline to cantilevered overhang, two joists replacing the five structural elements formerly required in this type of roof construction.



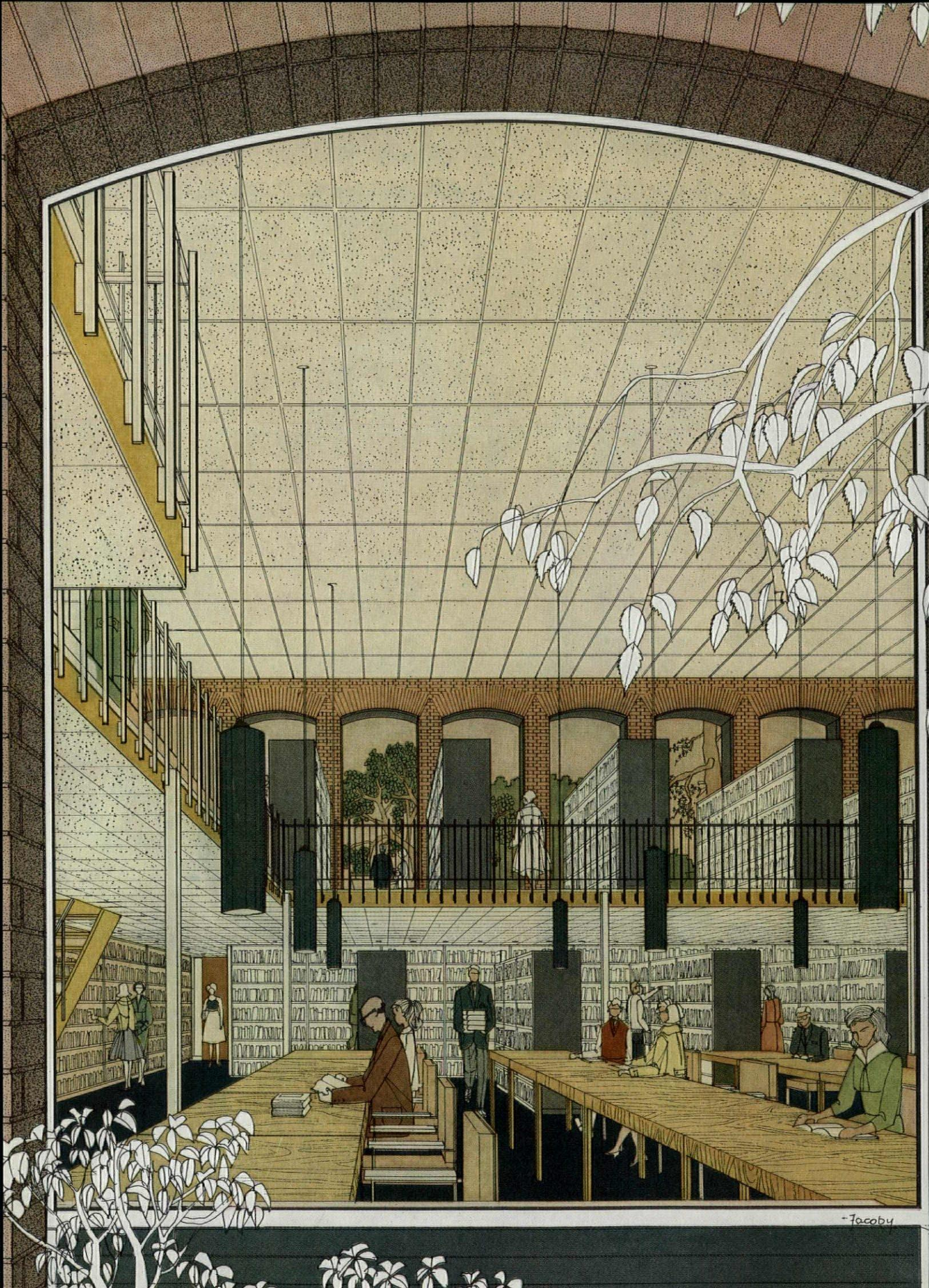
General contractor on the project was Kloster Company. Neal J. Campbell was consulting engineer.

6070

LACLEDE

LACLEDE STEEL COMPANY

SAINT LOUIS, MISSOURI ◆ Producers of Steel for Industry and Construction


Jacoby

From Armstrong: a giant step in fire-retardant ceilings

Now, for libraries: two types of Acoustical Fire Guard—12″ x 12″ tiles and new lay-in units

The main ceiling of the library on the left has the new Acoustical Fire Guard *lay-in* ceiling. The first floor ceiling, which you see just below the mezzanine, is of Acoustical Fire Guard *tile*.

This was the first time-design-rated acoustical tile. Since it was first introduced by Armstrong two years ago, millions of feet have been installed.

The new lay-in system is another great advance in fire-retardant ceilings. Here's why.

Unique New Suspension System

Because of a new type of suspension system, the Armstrong Acoustical Fire Guard lay-in ceiling combines the advantages of an exposed grid system—economy and fast installation—with those of a time-design-rated acoustical ceiling. Here's how the lay-in units work with the specially designed Fire Guard Grid Suspension System* to protect the structural components of a building.

Ceiling Withstands 2000 Degrees

The lay-in unit – because of its composition – can withstand exposure to flames and 2,000-degree heat. The new grid system, designed exclusively to support these units, will resist this same intense heat by allowing its members to expand, thus holding the lay-in units firmly in place. This suspension system is the first to be combined with a lay-in ceiling unit to offer rated fire protection. Both the lay-in unit and the grid system carry the U.L. label.

Underwriters' Laboratories, Inc., has given the Fire Guard lay-in ceiling system a beam protection rating of three hours. Floor-ceiling assemblies combining it with bar joist and slab, as well as with beam and steel floor construction, earned two-hour ratings. In areas which require more protection, Acoustical Fire Guard *tile* can be used. It has U.L. ratings of up to *four* hours.

Cost Low, Savings High

In most cases, the new lay-in ceiling will cost even less than ordinary plaster ceilings on metal lath. And like tile, the new ceiling can save builders up to *two months'* construction time. This means that a building like this library may open two months earlier.

A Choice of Design

The Acoustical Fire Guard lay-in ceiling is now available in both the Classic and Fissured designs. There are two nominal sizes: 24″ x 24″ x 5/8″ and 24″ x 48″ x 5/8″.

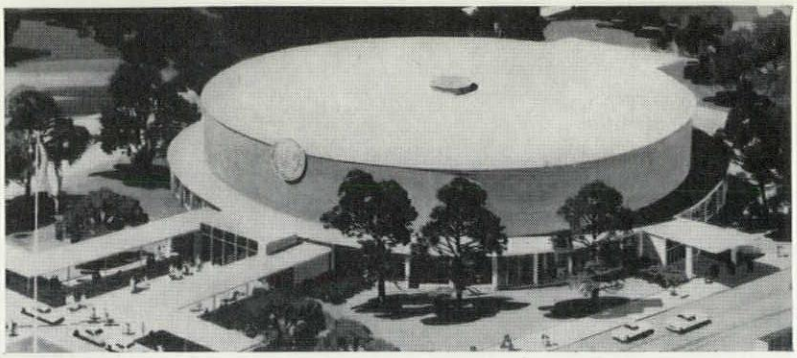
For more information about either Acoustical Fire Guard tile or lay-in units, call your Armstrong Acoustical Contractor (he's in the Yellow Pages under "Acoustical Ceilings") or your nearest Armstrong District Office. Or write to Armstrong Cork Company, 4203 Watson Street, Lancaster, Pennsylvania.

* Patent pending

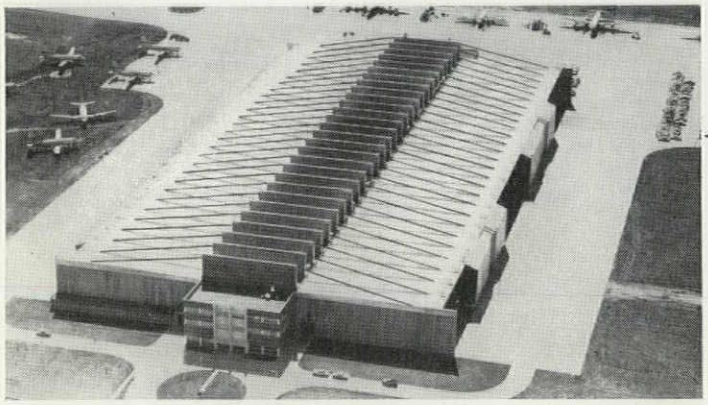
Armstrong ACOUSTICAL CEILINGS

First in fire-retardant acoustical ceilings

Architectural design and rendering by Helmut Jacoby

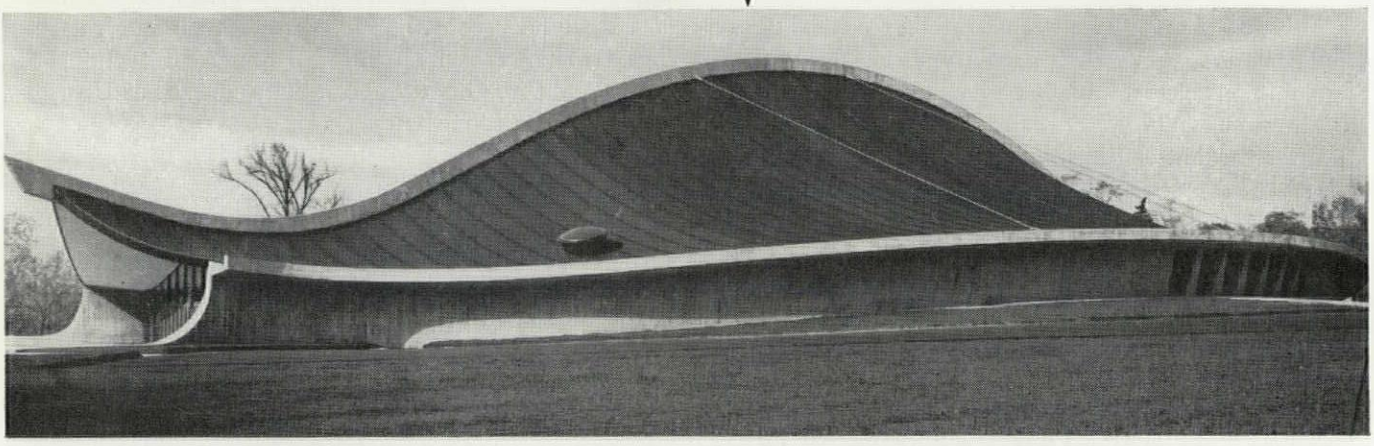


UTICA MEMORIAL AUDITORIUM, N. Y. *Architects:* Gehron & Seltzer, New York City • *Associate Architect:* Frank C. Delle Cese, Utica • *Consulting Engineer:* Dr. Lev Zetlin, New York City • *Contractor:* Sovereign Construction Company, Ltd., Fort Lee, N. J. • *Roof Supporting Structure, Including Cables, Furnished and Erected by Roebling*



TWA HANGAR – MID-CONTINENT INTERNATIONAL AIRPORT, KANSAS CITY • *Designed by* Burns & McDonnell, Kansas City • Ammann & Whitney, *Consulting Engineers,* New York City *Contractors:* MacDonald-Creighton, St. Louis and Nashville • *Cables by Roebling*

YALE UNIVERSITY'S – DAVID S. INGALLS ICE HOCKEY RINK, NEW HAVEN • *Architect:* Eero Saarinen and Associates, Bloomfield Hills, Michigan *Consulting Engineers:* Severud-Elstad-Krueger, New York City • *Contractor:* George B. H. Macomber, Boston and New Haven • *Cables by Roebling*



Hockey, Planes, Buses and Inventories... the suspended roof covers them all with unobstructed beauty

The suspended roof beautifully weds aesthetics and practicality. This daring and down-to-earth design and construction technique has literally "spread its wings" over a number of different structures to the dollars and cents benefit of its builders as well as to the delight of its observers.

Terminals, sports arenas and warehouses are currently enjoying the *unimpeded* scope of movement and view afforded by the roof that needs no columns. Material, man and events *move* under the suspended roof with an ease heretofore unknown. Trucks can turn, planes can be serviced and "every seat in the house" is a vantage point under the suspended roof.

Shown here are a few of the examples of what architects and builders are doing with the suspended roof. We at Roebling seriously invite your inquiries on *any* phase of the suspended roof or other types of suspension systems. Our history includes suspension bridges of every description, tramways, guyed towers and ski lifts. Any means of communication to John A. Roebling's Sons, Bridge Division, Trenton 2, New Jersey, will bring you a wealth of material.

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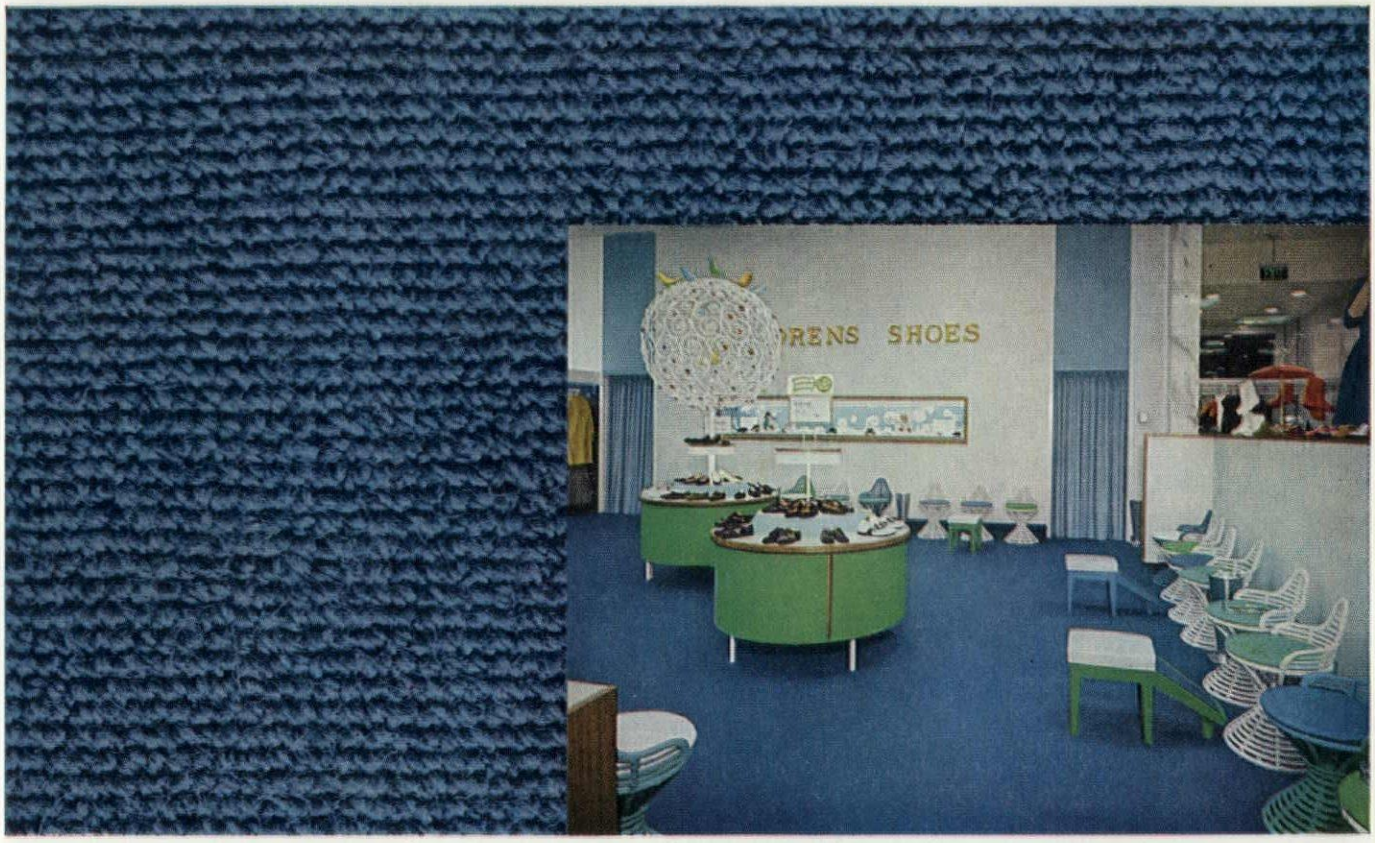
Why carpet  for a shoe department should be specified by the "feet"... 



Shoe Department in the new Meier & Frank Co., Portland, Oregon. Architects: Welton Becket & Associates. Carpet by Gulistan (weave shown in actual size).

In a shoe department everybody looks down. The *right* carpet actually helps make a sale. For example, *solid color* enhances shoes. *Which* color? A cool blue or green—such as the subdued blue Gulistan shown here—best sets off warm leather tones. The close, tight *weave* gives more than long wear. It's easier to walk on. It shows the entire shoe. Shoes "set" high for a better view. *And*, this carpet's extra firmness, combined with extra depth of pile, make new shoes seem more comfortable.

***Every* commercial carpeting job** has uniquely different requirements. Gulistan not only has the *most* experience but . . . the *best* facilities to meet all requirements. That's why Gulistan handles so many important carpeting jobs. Jobs like the world's first atomic surface ship or New York's newest, most spectacular restaurant; Arizona's newest and most elaborate theatre.

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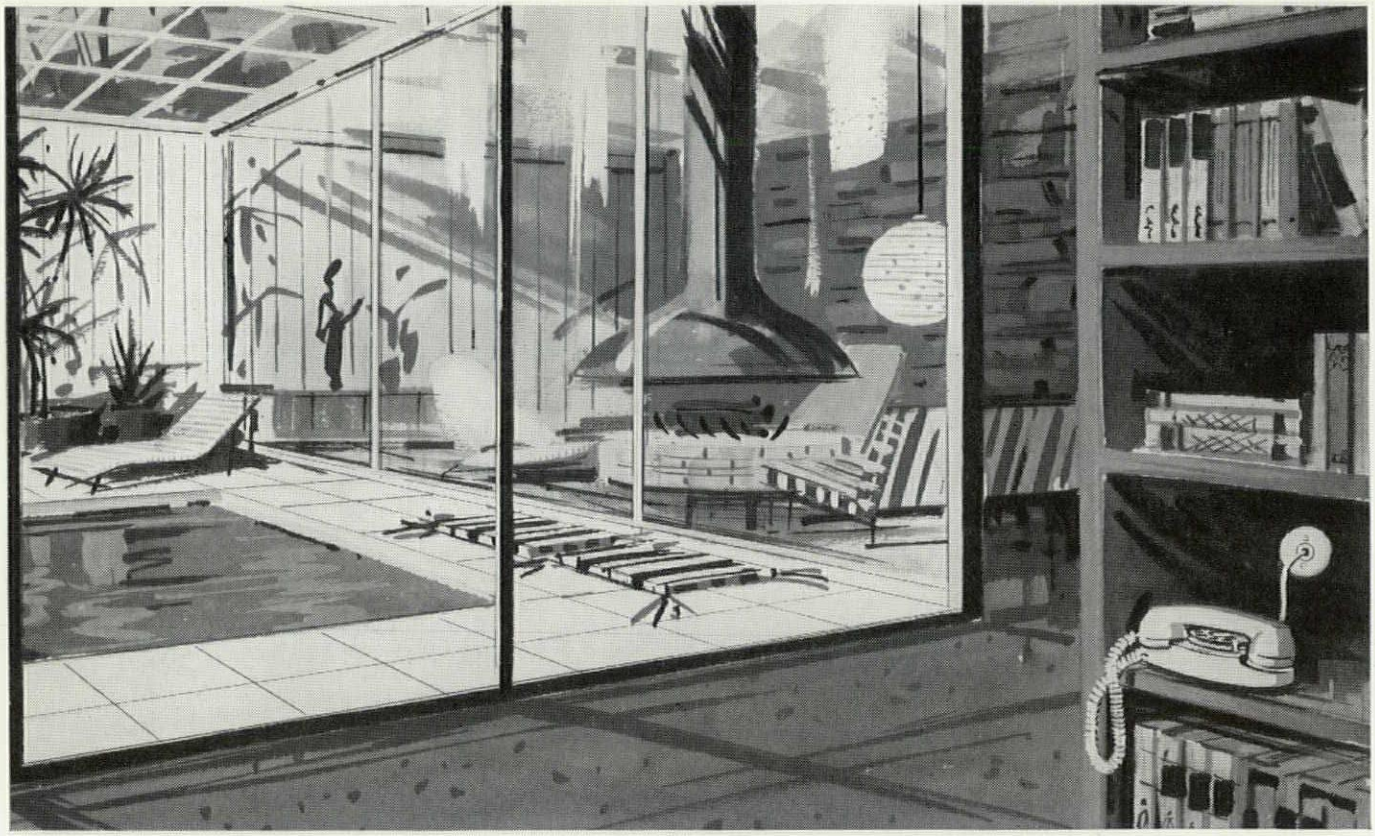
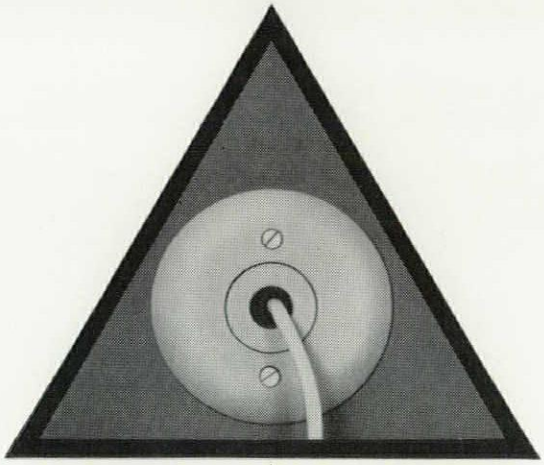


For details of home installations, see Sweet's Light Construction File, 11c/Be.



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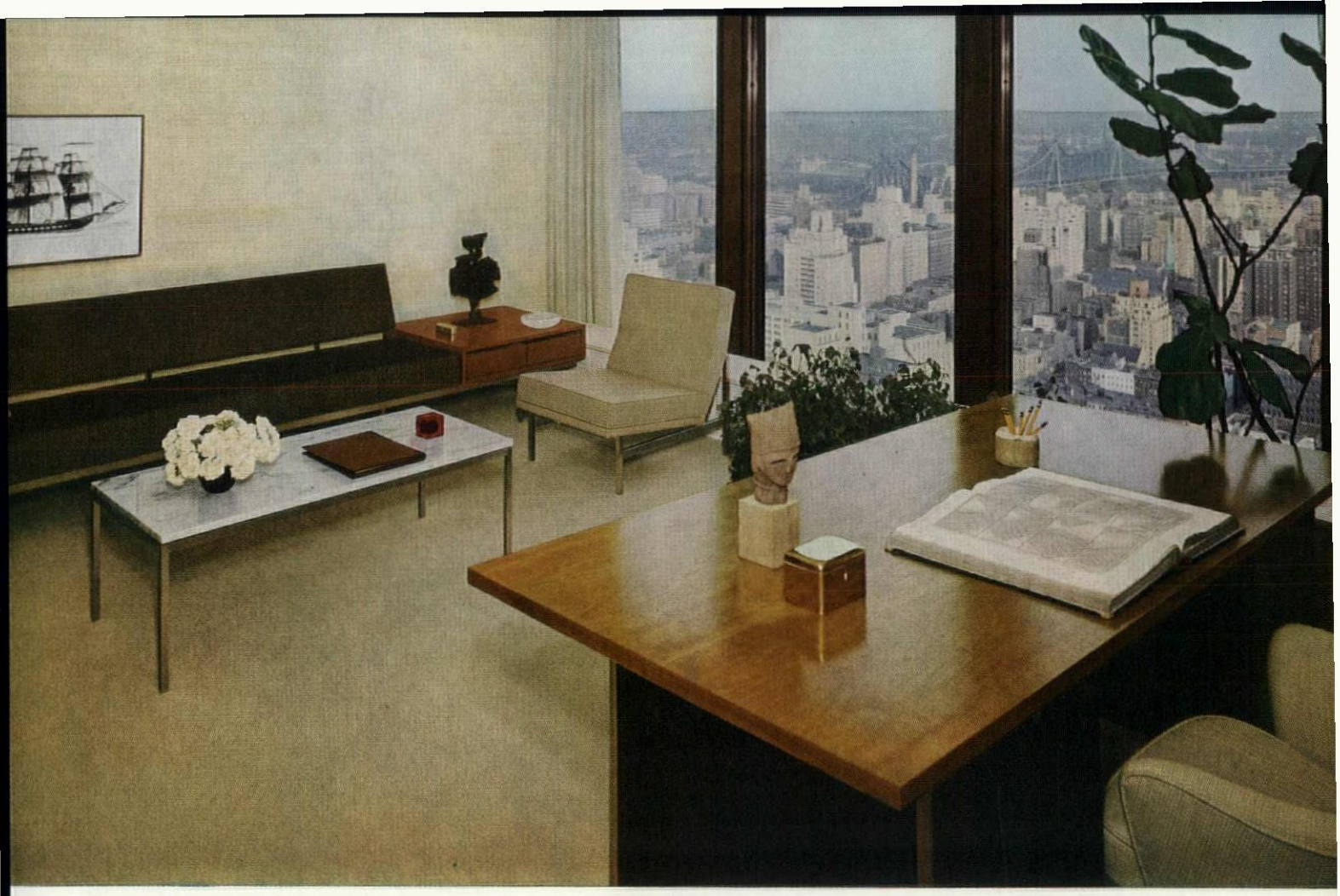

Mies Van der Rohe & Philip Johnson, Architects — Executive office, Trident Oil Corporation — Robert Damora, photograph

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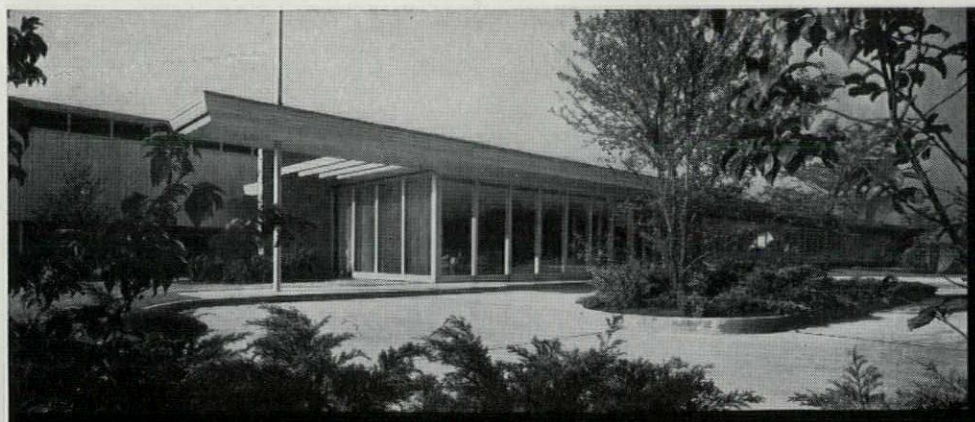

Square D Company, Milwaukee, Wisconsin

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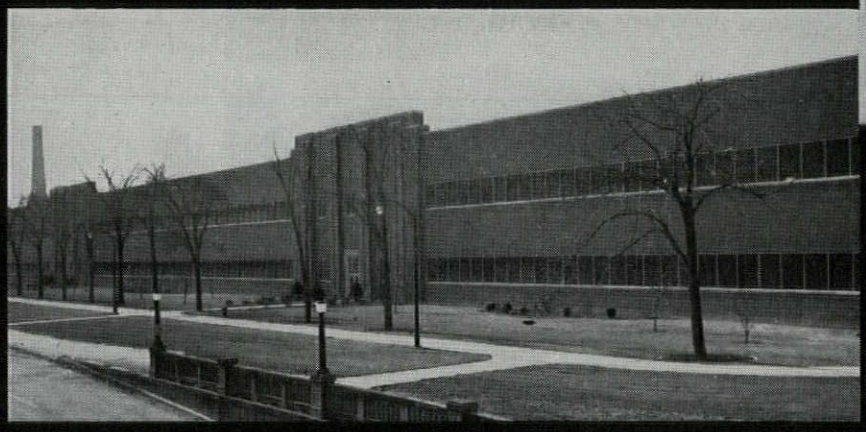

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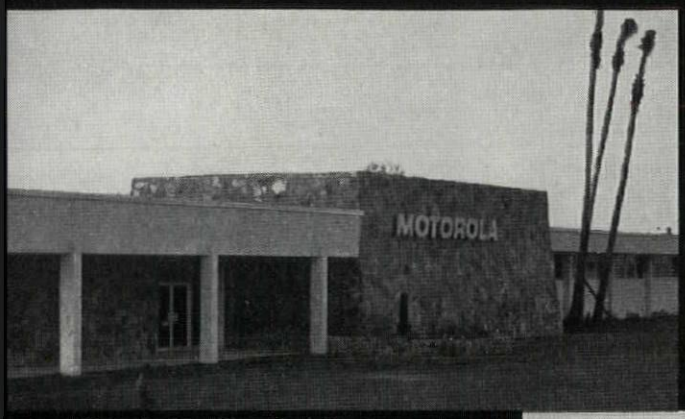
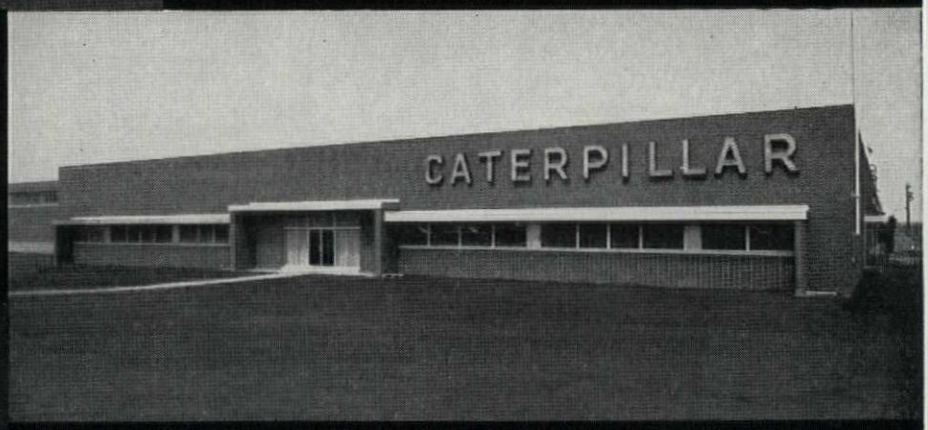
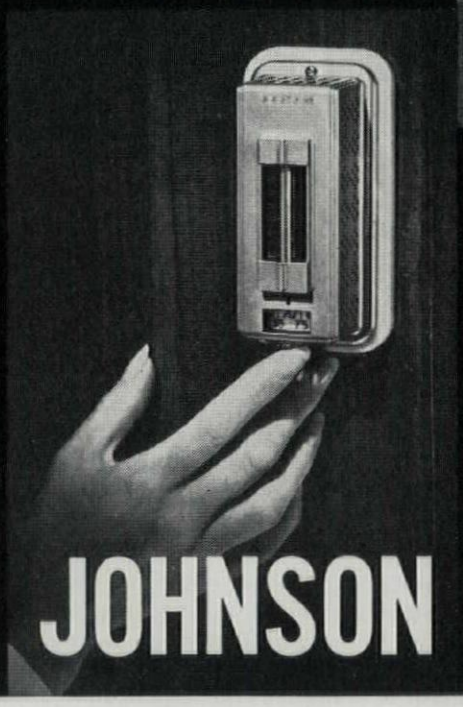


Motorola, Inc., Phoenix, Arizona



Caterpillar Tractor Co., Denver, Colorado



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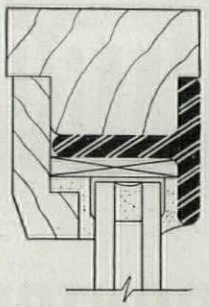

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THE **FIRST CITY NATIONAL BANK** FEATURES

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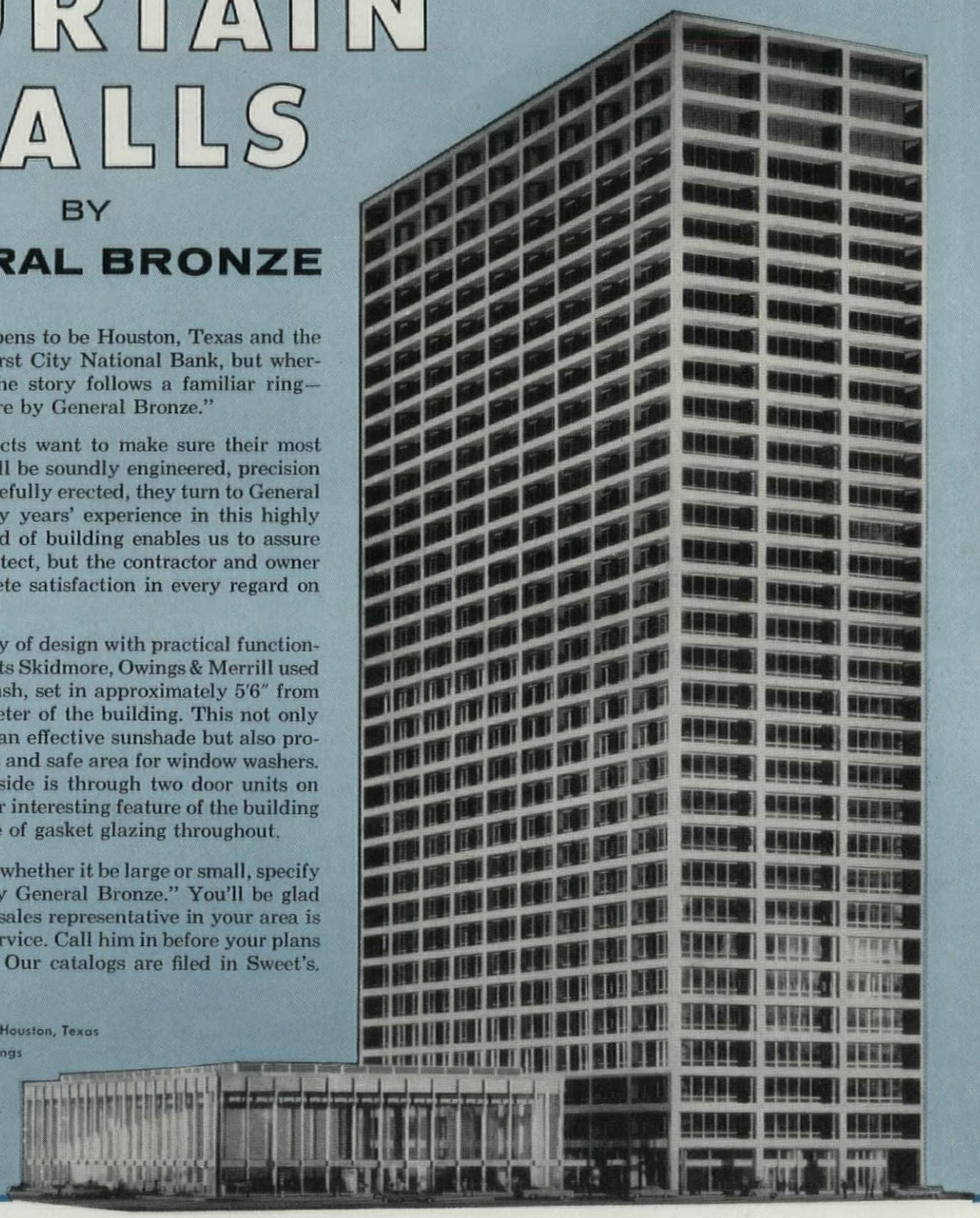

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Total for three months	**$55,851**

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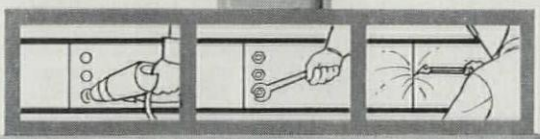

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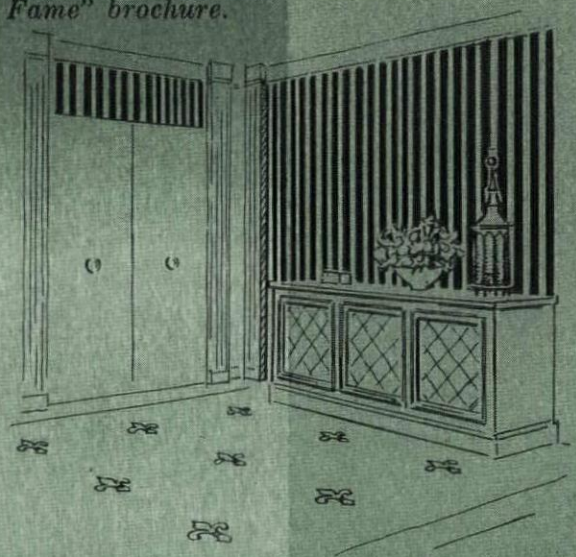

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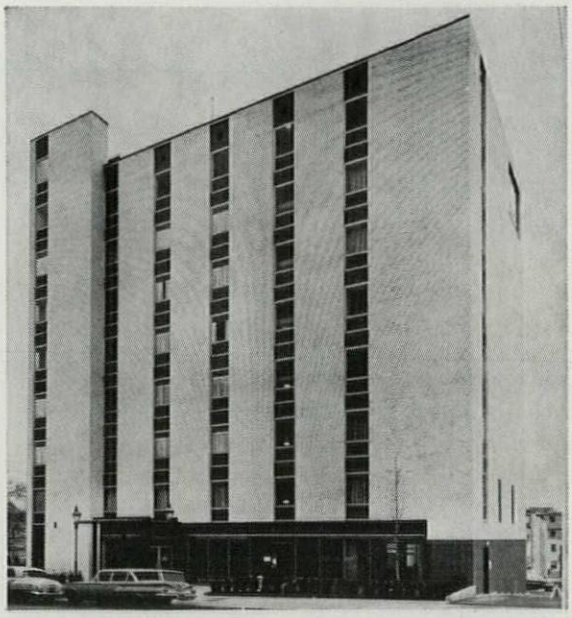
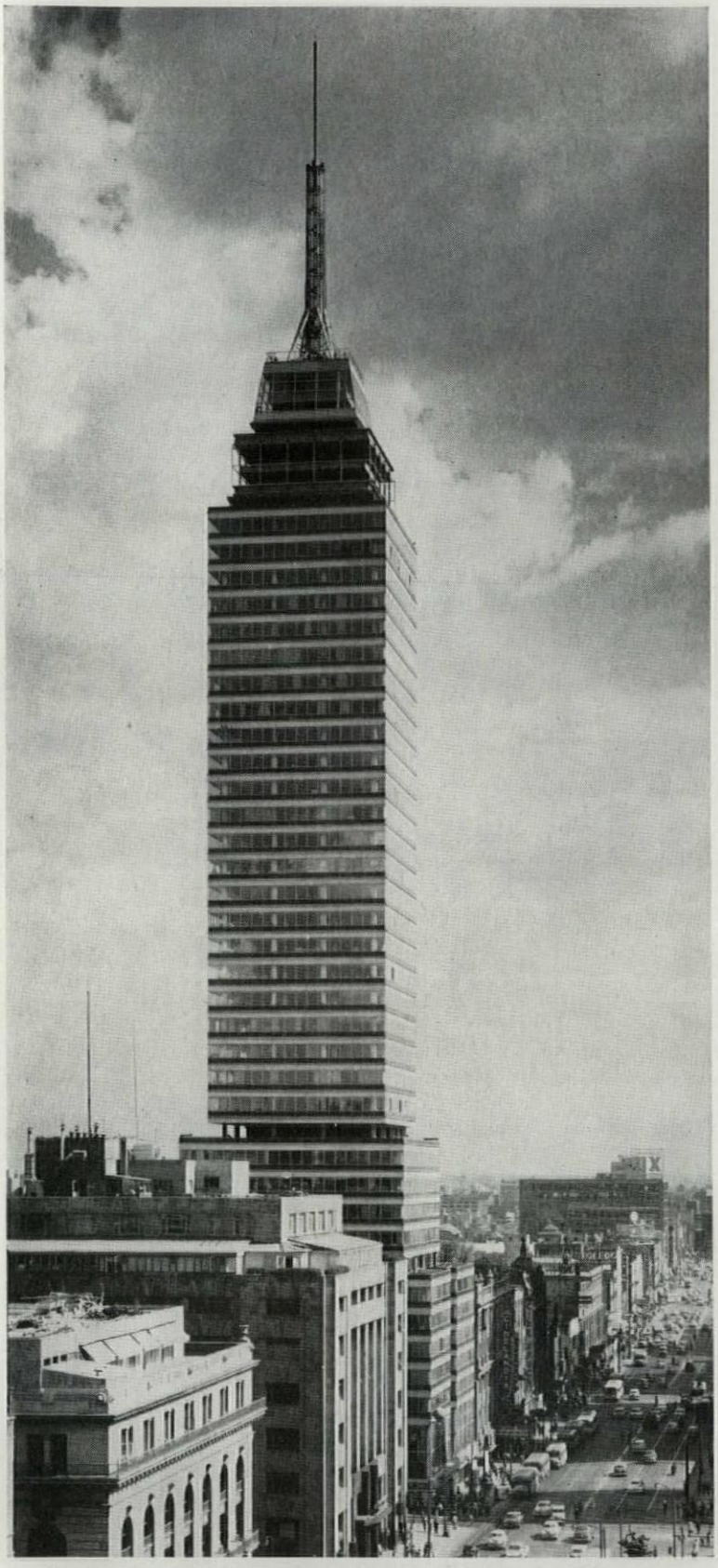


1 PERMALITE PLASTER SYSTEM FIREPROOFS HOTEL: *Clayton Inn, Clayton (St. Louis), Mo.* This 10-story hotel of 66 units, predominantly suites, features interior steel studs, fire-protected by Permalite perlite plaster applied as base coat over perforated rock lath. Over 2,000 bags of Permalite aggregate were used. The light weight of Permalite perlite plaster was also a factor in the construction. Architect: Bernard F. McMahon. Contractor: C. Rallo Construction Co. Plastering Contractor: John Steurer. Permalite supplied by: J. J. Brouk & Co. (All St. Louis, Mo.)



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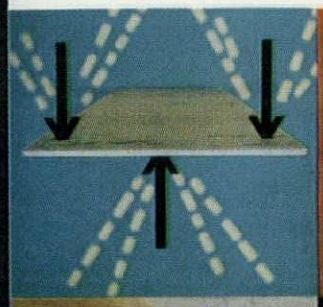

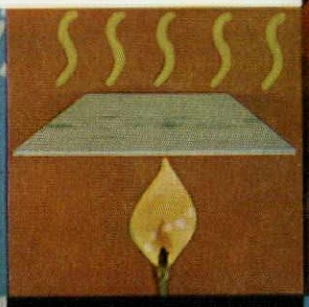

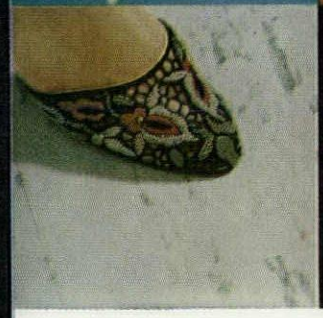

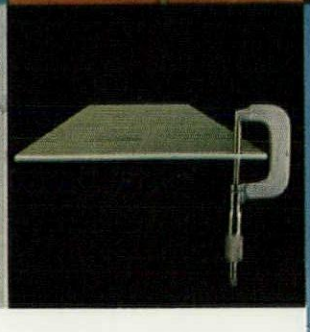

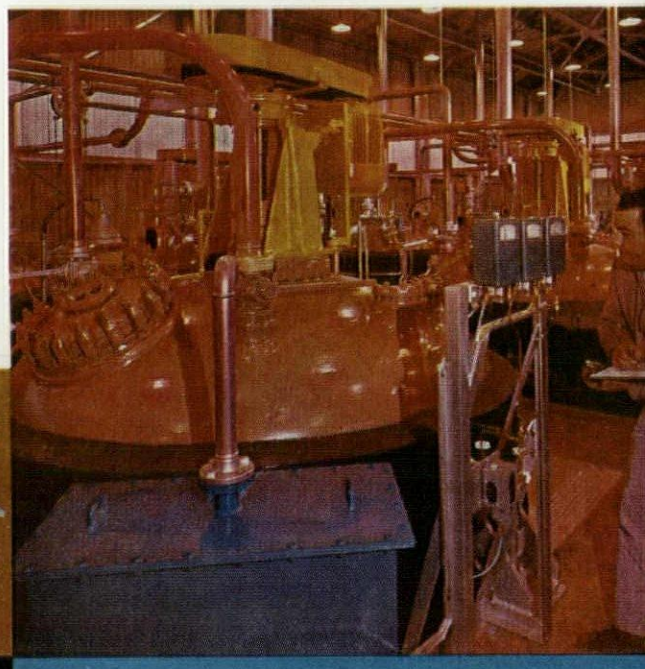

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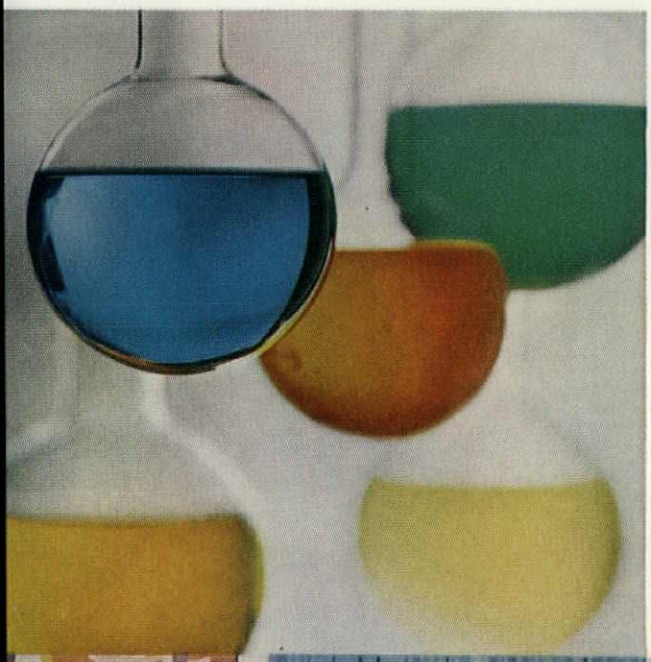

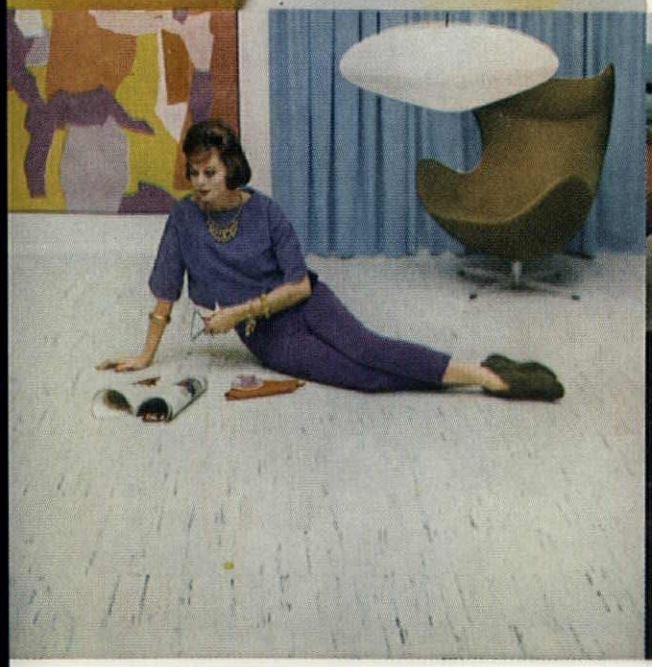

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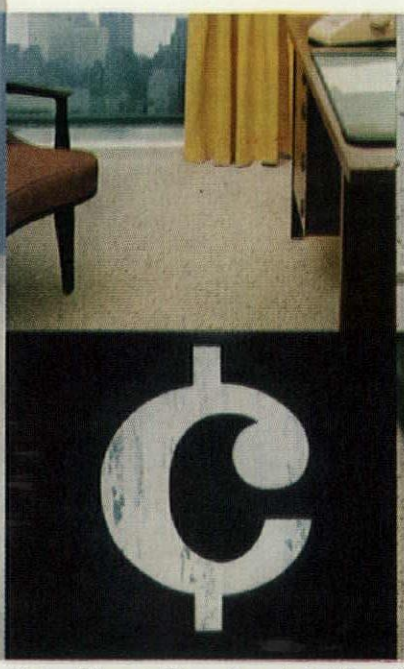

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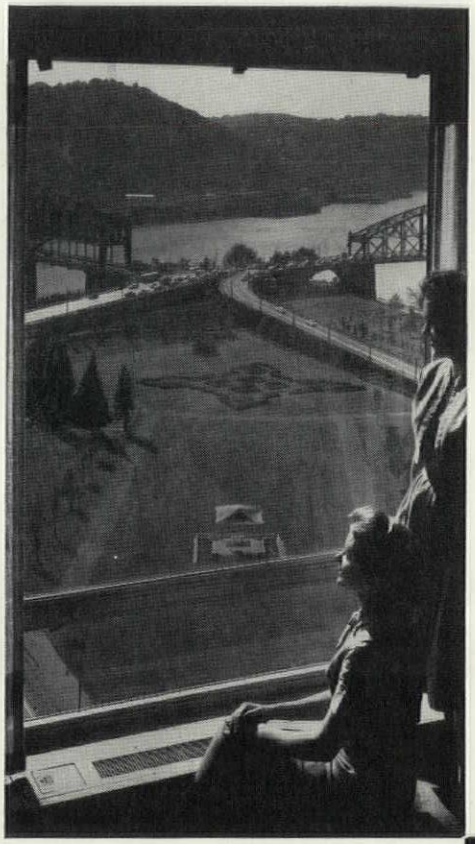
William B. Tabler, Architect, New York. Contractor: Turner Construction Co.

PPG Glass in new Pittsburgh Hilton



Picture window in every room with PENNVERNON GRAYLITE to control sun's heat and glare.

The new Pittsburgh Hilton Hotel is one of the most outstanding buildings in Pittsburgh's Renaissance Program. Located at the point of the Golden Triangle, it is the first building that bursts into view when you enter the downtown area from the west.

The striking appearance was obtained by using glass from PPG. The window glass is PPG PENNVERNON® GRAYLITE™ 61, a glare-reducing heavy sheet glass that shuts out about 26% of the sun's heat. Because of the neutral gray tint the outdoor colors remain true. The opaque areas, which you only notice by looking closely, are Charcoal Gray SPANDRELITE®. This is a heat-strengthened glass with ceramic color fused on the back. The color lasts. SPANDRELITE comes in 18 colors or the custom color of your choice. Its shade doesn't vary from panel to panel and it can be matched years later.

In the main lobby, large panes of PPG SOLARGRAY® Polished Plate Glass give a wide-open view allowing plenty of light to come through. SOLARGRAY reduces the sun's glare. It absorbs about 50% of the sun's heat.

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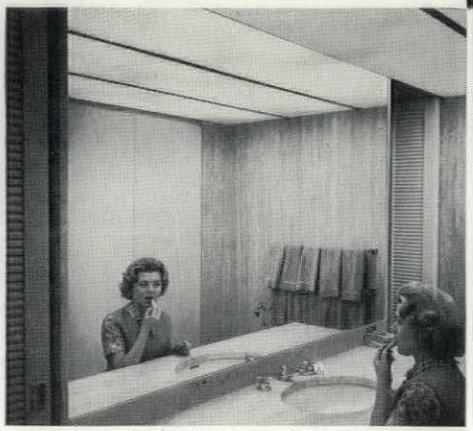
Your Pittsburgh Plate Glass architectural representative will give you specific data on any of these products. Or check the Pittsburgh Glass Products Catalog in Sweet's.

Open view with year 'round comfort and freedom from glare is provided in the dining areas by PPG SOLARGRAY TWINDOW Insulating Glass.



Glamour in glass. Pittsburgh HIGH-FIDELITY® Mirrors add a touch of luxury throughout the hotel.

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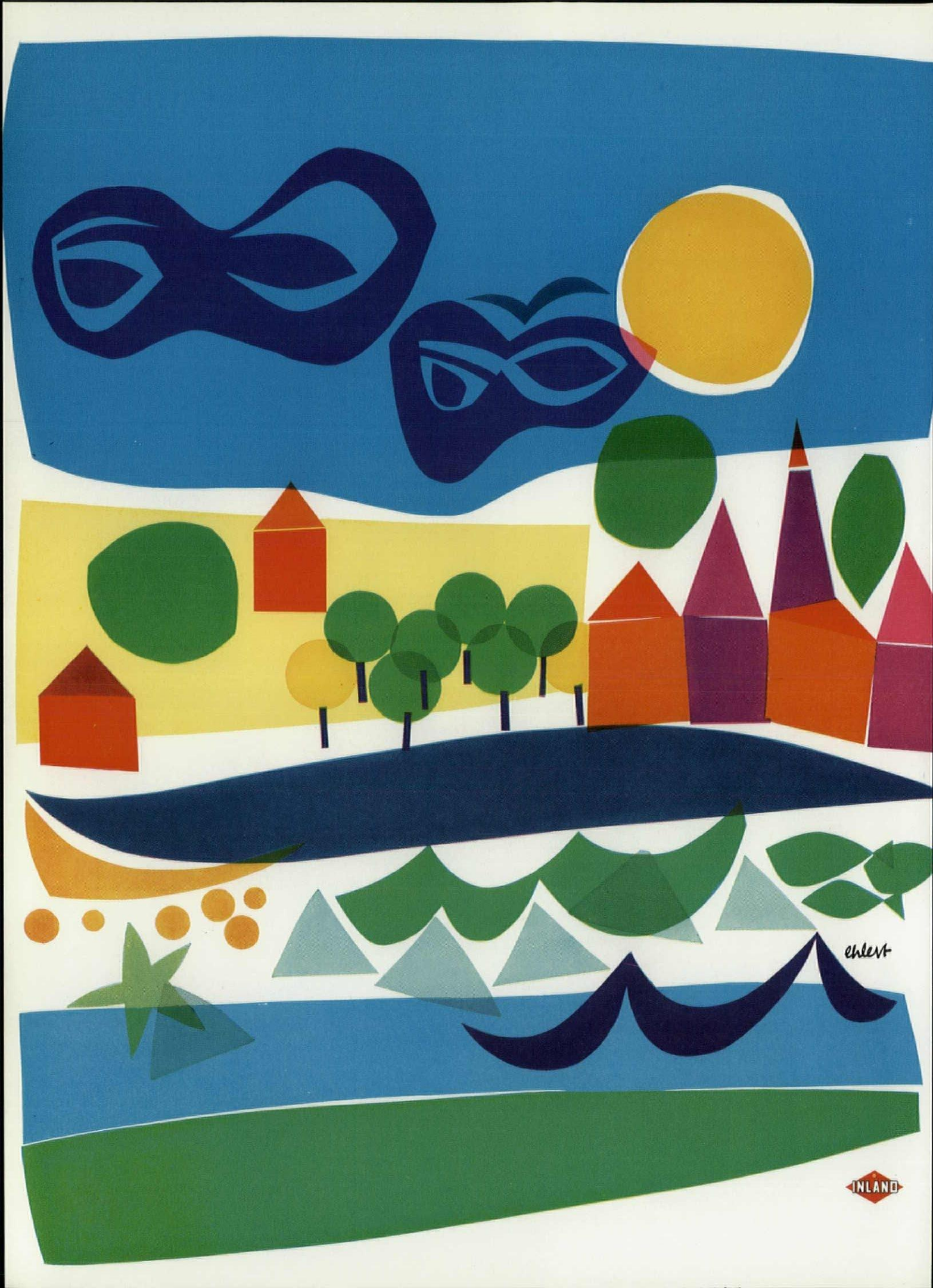
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INLAND

THE MISSION OF THE PROFESSION OF ARCHITECTURE

By Philip Will, Jr., F.A.I.A. President, The American Institute of Architects

I hold that the architectural profession should assume responsibility for nothing less than the nation's MAN-MADE ENVIRONMENT, including the use of land, water and air, AN ENVIRONMENT IN HARMONY WITH THE ASPIRATIONS OF MAN.

For what aspect of the nation's welfare should the architectural profession be responsible? For what are we (or should we be) educated and trained? For the design of buildings? For groups of buildings? For cosmetics applied to the work of engineers? Or is there a more comprehensive mission to which we may aspire? I hold that there is.

If land is debauched, or streams polluted, our air a nauseous mix of soot, fumes, and the lethal gas of industry; if our cities are exploited jungles of disorder and corrupting ugliness; and, if there is little safety and no amenity, to whom can the public look for help, for guidance, for vision? To the realtor? The developer? The politician?

The answer must be: the architect. In one form or another, the solutions to all of these problems lie in the province of design, which is the special province of the architect.

By common consent, a free society looks to each profession to assume responsibility for that aspect of public welfare for which it is qualified by education and training. The successful discharge by a profession of its responsibilities, both individual and collective, brings great rewards in recognition of leadership, in gains both social and economic, and in freedom of action. All gain. The failure of a profession to discharge its responsibility is not long tolerated by a dissatisfied public — and a dissatisfied public appeals to government. Thus, for example, if the public feels its medical needs are not adequately met, the medical profession loses status, freedom, and independence. Doctors become employees of the State. Patients are assigned and the fees are fixed, with far-reaching consequences to this nation's fundamental philosophies. The point is self-evident that solutions must be found for voids in professional service.

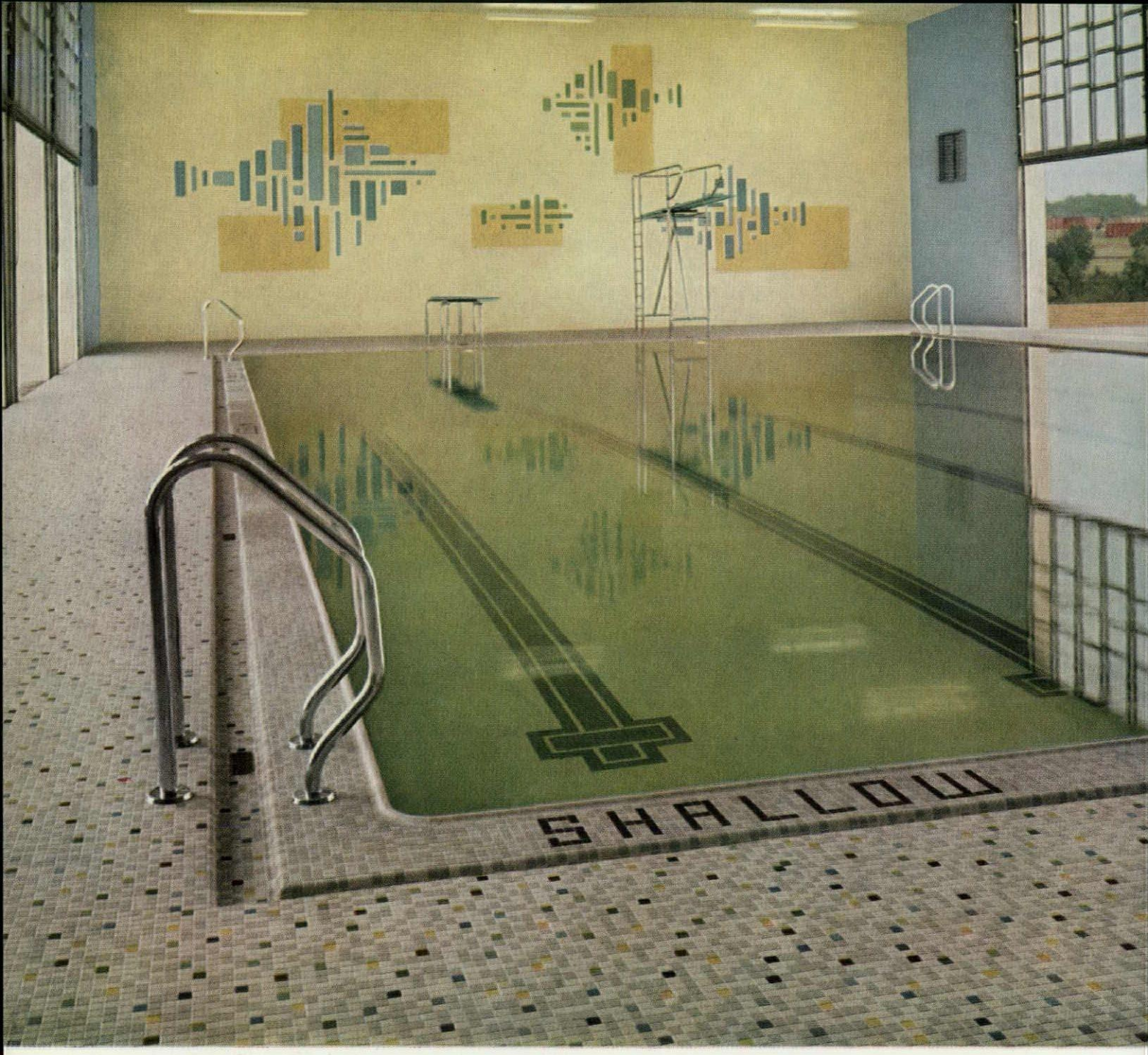
So here is the demand, the challenge. Never before in history has America so needed the design professions. Never before has the opportunity for leadership by the architectural profession been so overwhelming and self-evident.

We are at a crossroads.

To say that the architectural profession is now totally prepared to meet the challenge would be self-deluding. Some individuals recognize the need; a small number are qualified to perform; an even lesser few are willing to act. In reacting to the magnitude of the task, we therefore have much to do and far to go. The longest journey, however, begins with a single step. That first step will have been taken if we can but agree on a definition of our professional mission. The services to be rendered, the skills, education and training required, the necessary organization and methods of practice all will follow as further steps on the way.

The challenge of society's need faces us now — today. The hands of the clock spin with alarming speed. Will we understand and act in time to save the nation from environmental debauchery? Such is unlikely without the vision and leadership of an aroused and dedicated profession of architecture.

As a service to the architectural profession, the building industry, and the general public, the Inland Steel Products Company has published Mr. Will's inspiring concept of "The Mission of the Profession of Architecture," and will provide without charge to all who desire them, reproductions suitable for framing. Write for your copy to Inland Steel Products Company, P. O. Box 393, Milwaukee, Wis.



Back wall mural design by K. E. Froberg. Plate 447

More color, more character—with tile. Of special interest in this new Y.M.C.A. natatorium is the colorful tile mural on the back wall, done in large size glazed tile units. Such decorative treatments add warmth and individuality to pool installations. And by extending the use of tile to walls and other surrounding areas you can reduce maintenance costs through the years. Architect-Engineer: J. E. Sirrine. Write for "Swimming Pool Booklet," No. 801.

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PROGRESSIVE ARCHITECTURE MARCH 1961

NEWS REPORT

Architecture's Monthly News Digest of Buildings and Projects, Personalities, New Products

Crisp new court of University of Minnesota School of Architecture is setting for P/A Design Awards Banquet.

THE PERMACUSHION* FREE FLOATING RESILIENT FLOOR SYSTEM is in use in gymnasiums, armories, auditoriums and ballrooms throughout the United States and Canada. Wherever the project, an authorized installer — represented by a dot on the map — is always nearby to give prompt attention to every detail of the installation.

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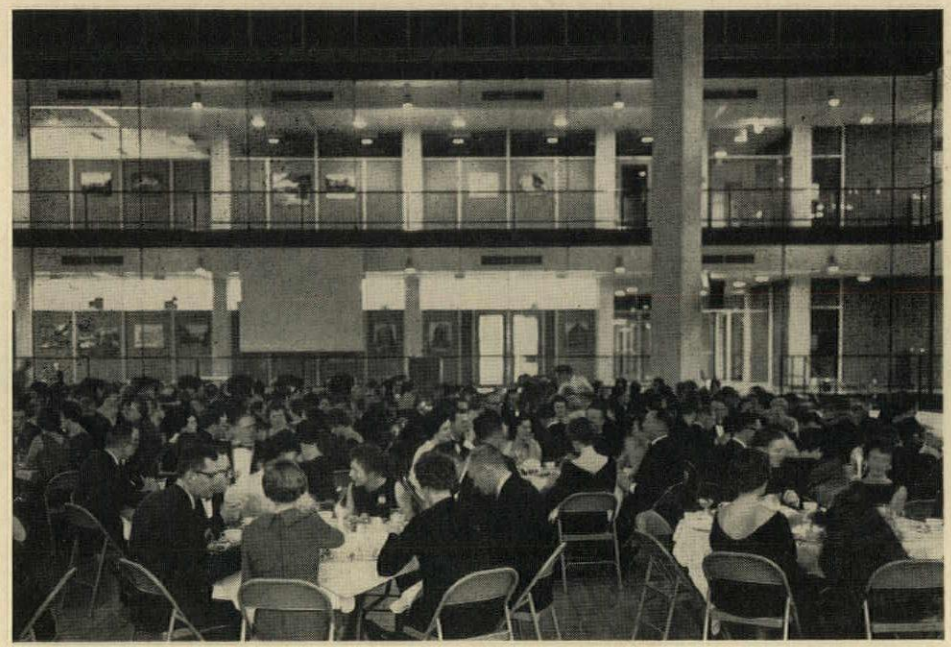
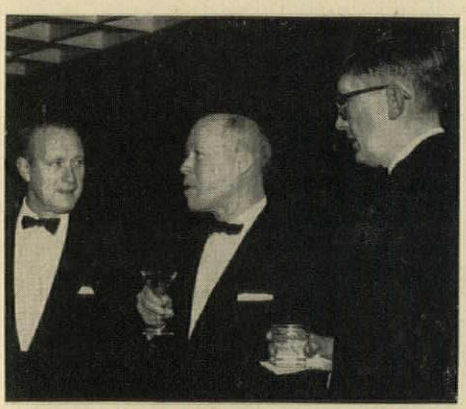


Minneapolis Scene of 8th Annual P/A Design Awards



R. Rapson, J. L. Reid, W. A. Netsch

Mr. & Mrs. William Rupp

MINNEAPOLIS, MINN. For the eighth year in a row, architects and clients assembled from all over the country to receive awards and citations in PROGRESSIVE ARCHITECTURE's Annual Design Awards Program. Scene this January was Minneapolis, chosen because four of a total of 13 awards and citations went to architects in the Twin Cities (JANUARY 1961 P/A).

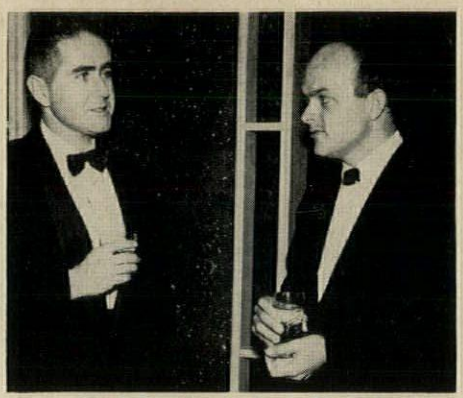
Adding to the excitement normally surrounding the presentation of awards was the fact that, on the evening before the banquet, Thorshov & Cerny's new School of Architecture at the University of Minnesota was dedicated. Speaker for that occasion was Joseph Hudnut, who prefaced his remarks on the future of architecture with an appropriate anecdote: As Adam and Eve were being driven from the Garden of Eden, Eve looked out at the bleak and inhospitable landscape confronting them and began to cry. "Don't worry, darling," Adam said. "Just remember, we're living in a period of transition."

On the evening of Friday, January 20, P/A entertained the Minnesota Society of Architects and distinguished guests at a cocktail party at a local country club, after which the entire party went to the P/A banquet in the great court of the School of Architecture. Following the banquet, John Magney, President of the Society, introduced P/A Editor Thomas H. Creighton, who presented the awards. Jury report was given by Walter A. Netsch, Jr., who commented:

Mrs. Creighton, Oscar Stonorov

Hodne, Grebner, Creighton, Roberts, Isaacson

Dr. H. Engel, Dean A. Spilhaus



Earl Carlin, Robert Ernest

T. H. Creighton, Roy Harrover, Col. Baker

"The problem of a jury such as ours is to find among more than 500 diverse entries projects that are not arguments, but examples. The architect, as an artist, must be responsible, and this awareness of responsibility must be the basis for judging his work.

"Society remembers best the architectural examples—be they Greek or Gothic, Egyptian or Indian, Inca or Japanese—that make men think other men are gods, or can pretend to be. They may be more or less assertive examples, more or less permanent, but they are usually ordered, structured, nonnaturalistic—and always with a commitment, always a totality. This is historically obvious when we think of Chartres or the Parthenon, but perhaps not as obvious when the project is Reid's laboratory in California, Carlin's fire station in New Haven, or Pei's office building in Honolulu. . . .

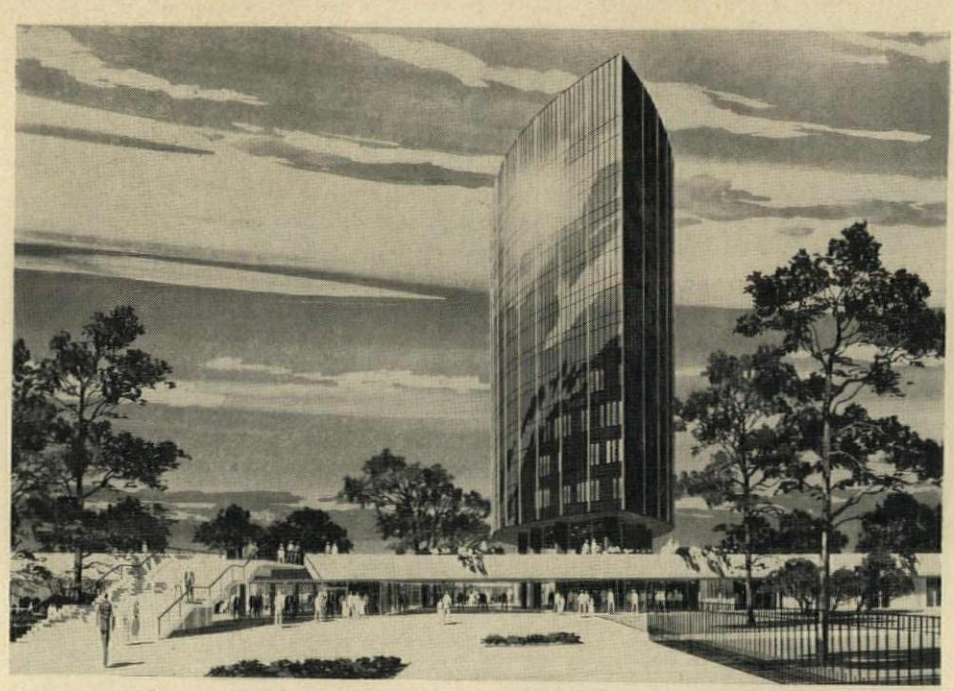
"In the search for a cohesive solution, one answer alone is not required. The problems in most of the winning projects revolved, of course, around human use and the spatial ordering of that use. Whether in the outside corridors of Reid's laboratory overlooking San Francisco, the variety of spaces in Harrover's speech clinic, or the disciplined yet elegant swimming club by Birkerts & Straub, consideration of the individual was surely evident. The architect can be creative, a creative assembler, or simply an assembler. But if the goal is spatial, in the ordering of spaces he will *create* more and *assemble* less."

On the morning following the banquet, as is the custom, a seminar was held at the University to consider two of the winning projects in detail. Attendants included out-of-town architects and clients, faculty, and students of the school. Roy Harrover described the intensive background research that went into the design of Mann & Harrover's project, the municipal air terminal for Memphis, and Robert G. Cerny (The Cerny Associates, architects of the almost-finished Minneapolis air terminal) responded with a knowledgeable critique. Earl Carlin described the social and planning aims inherent in his design of the New Haven Central Fire Station; this project was evaluated by Walter A. Netsch, Jr., who, appropriately enough, had served as a fireman during World War II. Associate Professor Donald Heath commented from the floor that, as a long time fire-fighting buff, he found the station admirable and appropriate.

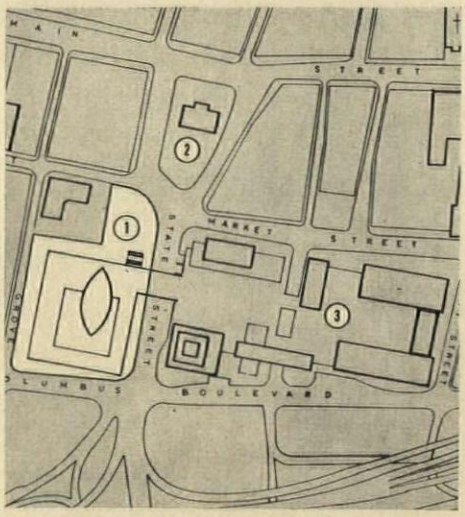
Photos: University of Minnesota

ELLIPSE FOR HARTFORD

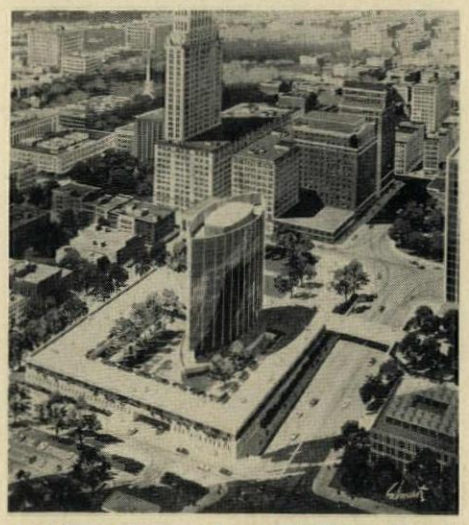
Building a Major Part of "Constitution Plaza"



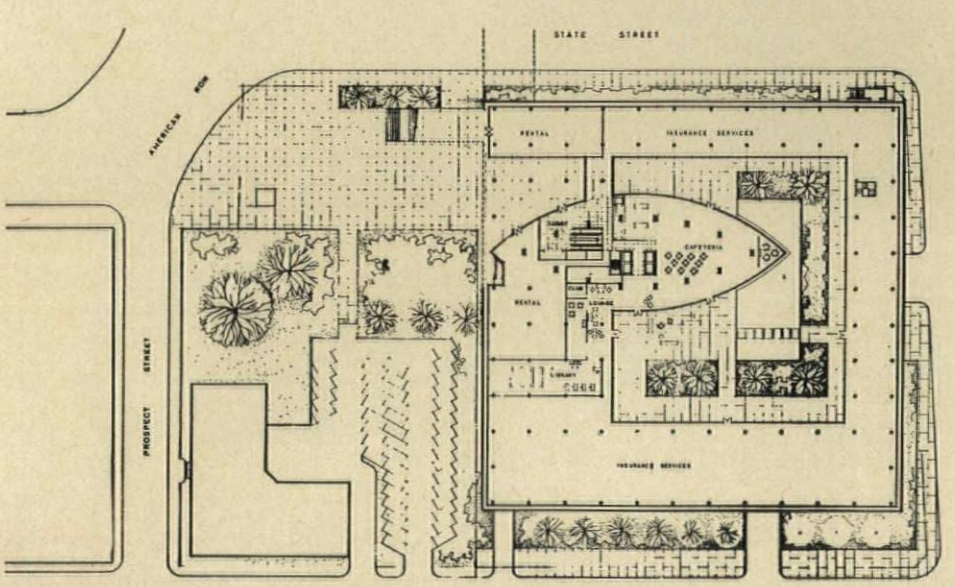
Phoenix Mutual building seen from Old State House Square.



1 *Phoenix Mutual,* **2** *Old State House Square,* **3** *Constitution Plaza*



Aerial rendering shows relation of project to surrounding renewal area.

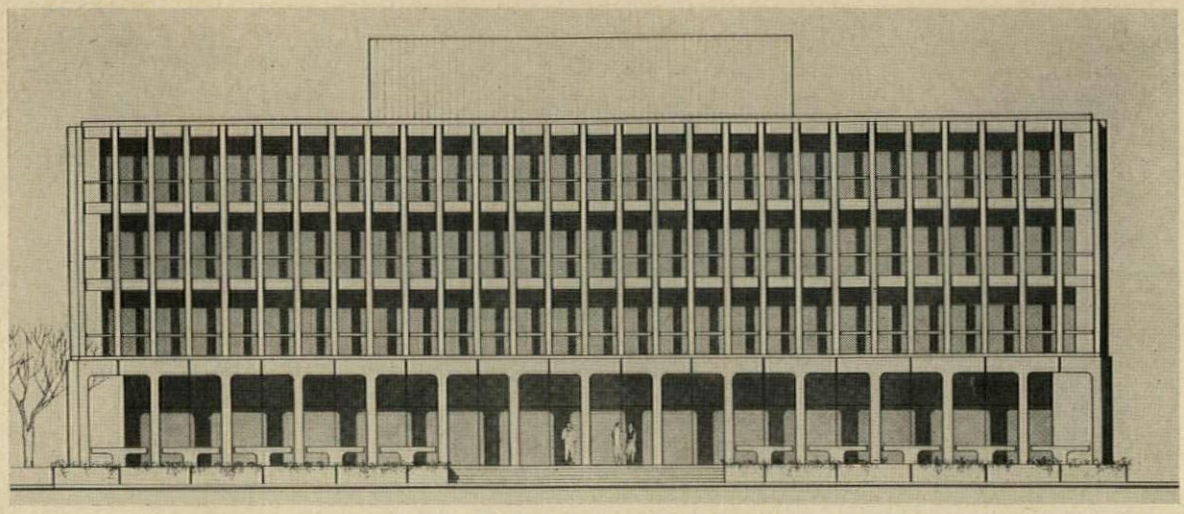


HARTFORD, CONN. A 14-story home office building for Phoenix Mutual Life Insurance Company has been announced in Hartford, the "capital of the nation's insurance business." It will be the first downtown life insurance headquarters erected in more than 25 years. The Phoenix Mutual building will be part of the city's 12-acre, $40 million Constitution Plaza downtown redevelopment program.

The building will be an elliptical, 12-story tower raised above a two-story base containing employee facilities, rental space, and a landscaped courtyard. The lower level of the base will provide entree via a landscaped plaza to escalator and elevator lobbies, insurance services offices, clubroom, lounges, restrooms, and the Phoenix Mutual cafeteria and private rooms. Evening use by the community is planned for many of these areas. The main level will be approached over a formal stairway leading from the plaza below. Central reception and display areas will be in the tower building on this level. The upper plaza level will look down on the employee's courtyard on the lower level.

The 12-story tower will be constructed of glass and "alloy metal" (not yet selected, according to Harrison at the announcement ceremonies). It will provide 133,000 sq ft of office space, 50,000 sq ft to be used for rental offices. The executive floor and board of directors room will be on the top floor. Offices in the tower will have sweeping views north and south of the Connecticut River valley. Asked at the inaugural press conference what means would be used to seal the narrow ends of the elliptical building, Harrison stated that this problem is still under consideration. On-site parking will be provided beneath the building for 300 cars, and additional, surface parking will be available across the street with a special entrance into the building.

A wide pedestrian bridge will connect the Phoenix Mutual building with the rest of Constitution Plaza, thereby availing tenants of all the advantages to be offered by the redevelopment project.

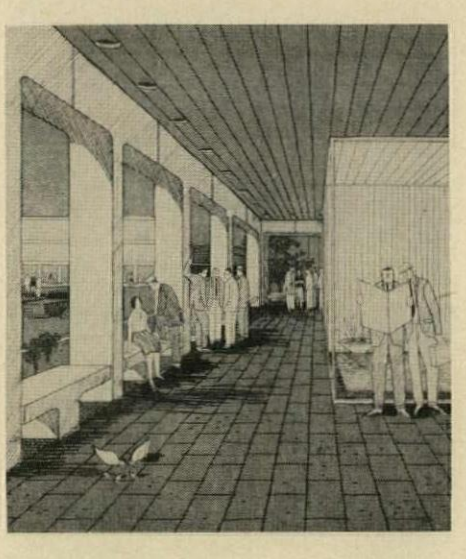


Waitin'-for-the-Robert-E.-Lee Office Building

Galleried Building Will Be Precast Concrete

ST. LOUIS, MO. The proposed office building for Cervantes, Cobb Walsh General Insurance Agency by Schwarz & Van Hoefen (Hanford Yang, designer in charge) will be an attempt to capture in contemporary idiom the warm, old atmosphere of this Mississippi River city.

The four-story building will have 10,000 sq ft per floor, the ground floor being devoted to the offices of various insurance agents. In order that visitors might have hospitable access to these agents, the ground floor will be recessed eight ft as a veranda, with



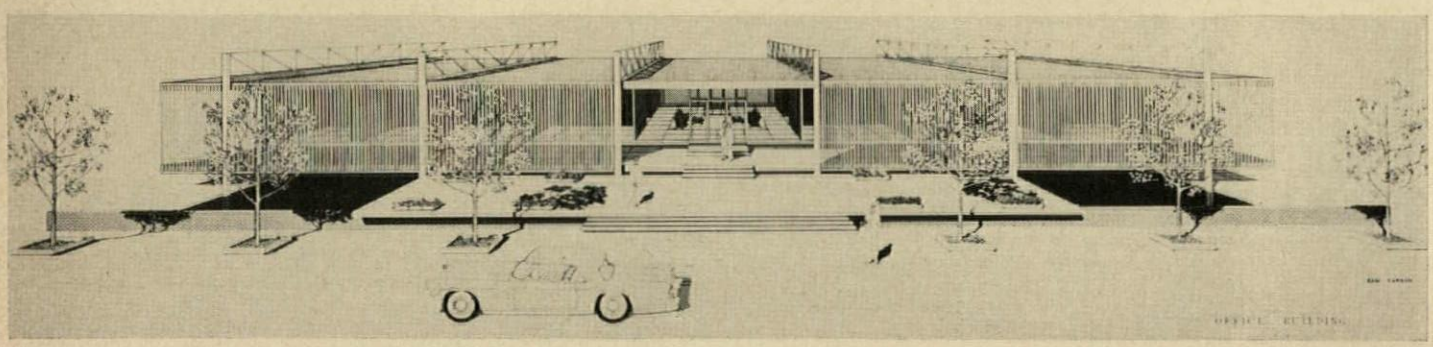
agents' offices opening onto this gallery. The building will be raised on a podium to provide underground parking. Precast concrete with white exposed aggregate will be used throughout for the exterior. The gallery will be paved with old brick, and will have a wood ceiling and glazed walls. Benches between columns on the ground floor will also act as railings. The building will be reached over a wide step-bridge. The project is now in late design stages, and it is anticipated that construction will be begun later this year.

Architect A.F. Schwarz states that the design hopes "to recapture the expression of the St. Louis river boats in the old days."

ALL-ALUMINUM STRUCTURE FOR LOS ANGELES OFFICE BUILDING

LOS ANGELES, CALIF. The projected office building for Acme Metal Molding Company, a subsidiary of Northrop Corp., will have a unique, all-aluminum structural system. Designed by Craig Ellwood Associates, with Consulting Architect Norm Rosen and Consulting Engineer Mackintosh & Mackintosh, the building will act as a three-dimensional showcase for the structural possibilities of aluminum.

Present thinking on the project indicates the use of extruded aluminum columns with aluminum trusses on a 30-ft structural module. Aluminum beams will span truss to truss; high strength, extruded aluminum panels will span beam to beam. A similar beam-and-panel system will be used for the floor. In addition to an exterior screen of 3-in. aluminum I-beams that will surround the glass walls, aluminum will also be used in partitions, suspended ceilings, furnishings, accessories and works of art. The screen will be changed from time to time for variety.



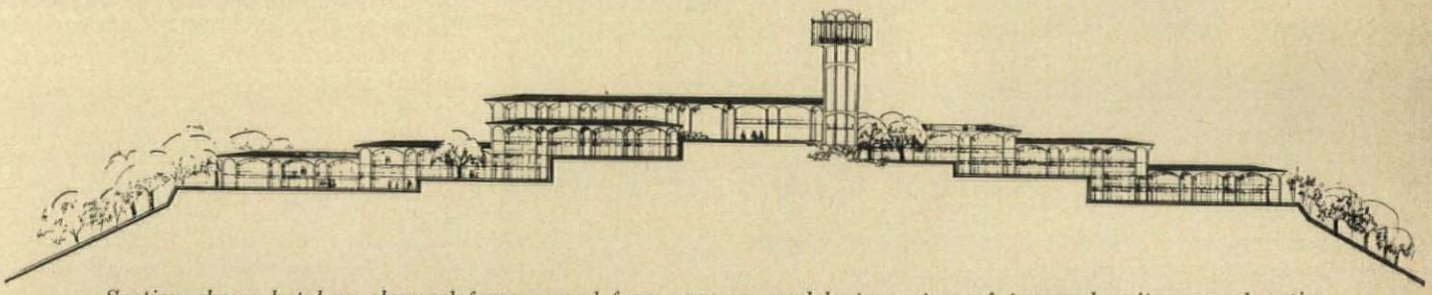
HILL AND SHORE RESORT FOR PUERTO RICO

LAS COLINAS, PUERTO RICO Where a town does not exist today, in a few years there will be a thriving resort community. Bahia Demajagua, southeast of San Juan, will soon begin to be ringed with resort homes, two hotels, and a civic center. This is another leap for the island's tourist accommodations, which increased 190% during the 1950's.

Designed by Curtis & Davis, the resort development will have as its first element approximately 120 resort homes. The houses will be built in clusters of five on the hillsides facing the bay. Five basic designs to encompass differing requirements are being developed for the houses. In future stages, more house clusters will reach back into the hills on all sides of an 18-hole golf course.

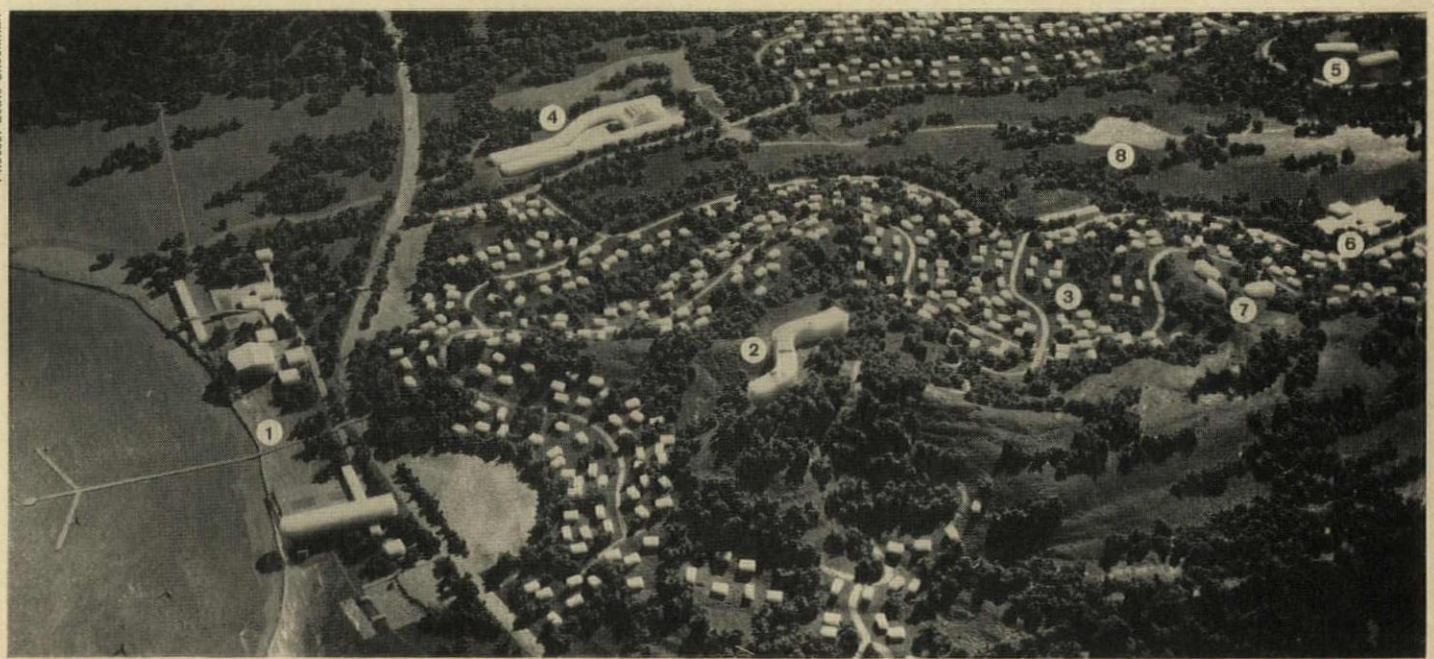
Second phase of the development will be the construction of the beach front, hilltop hotel, and golf course. The hotel will be a series of two-storied units planned around patios and following the terraced slope of the hill up to a focal tower atop which a cocktail bar will afford views in all directions. Public areas such as lobby, restaurants, and shops are planned for the upper and lower terraces. A gondola chairlift will connect the hilltop hotel and the beach.

Future construction includes a full-dress beach development with a smaller hotel, marina and fishing pier, restaurant, lockers, and play areas; a town center with an auditorium for movies, music, and plays; a three-church complex; golf club; co-operative duplex apartments; riding club and stables; and recreation and picnic areas. All of these elements will be fully integrated into the community plan, which has as one of its main aims preservation of the beauty of the site.



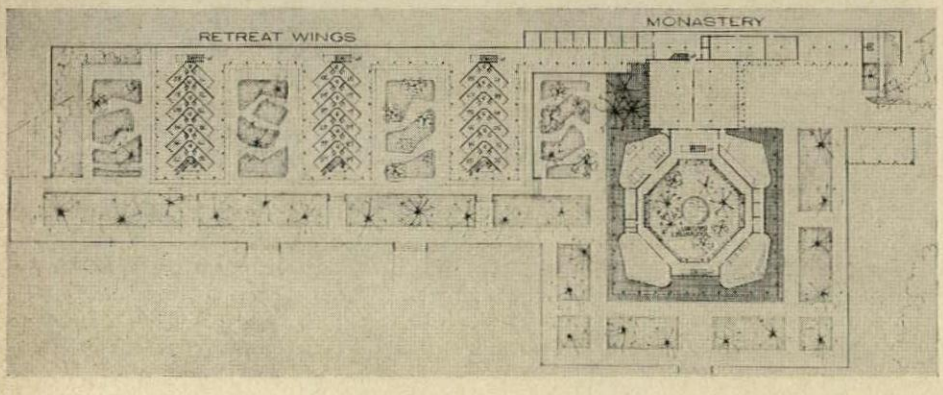
Section shows hotel as changed from curved form seen on models to system of terraced units around patios.

Photos: Louis Checkman



1 *beach development,* 2 *hilltop hotel,* 3 *house clusters,* 4 *town center,* 5 *apartments,* 6 *clubhouse,* 7 *churches,* 8 *golf course*

In-turned Monastery, Galleried Retreat House



PALM BEACH, FLA. A retreat wing for laymen wishing to pass a few days in spiritual meditation and instruction is the main element of St. Paul of the Cross Monastery and Retreat House by Brother Cajetan J. B. Baumann. (Chief Designer: Paul Damaz).

The retreat house will be in the form of three, two-story wings with bedrooms arranged in a herringbone pattern to enjoy views of Lake Worth from deep galleries. In contrast to the open plan of the retreat house, the monastery—a square-shaped wing—will be turned in on an octagonal, cloistered garden. There will be facilities for 22 monks, who will have their own chapel, refectory, kitchen, and community room. The two major elements of the project will be the public chapel, a rectangular structure with three opaque walls, and a fourth wall of stained glass by Jean Barillet, and the administrative and reception area that will contain a lobby for both the monastery and the retreat house.

Structure will be precast, reinforced concrete, with two-story-high columns having wings at the capitals that serve both a functional and a decorative purpose.

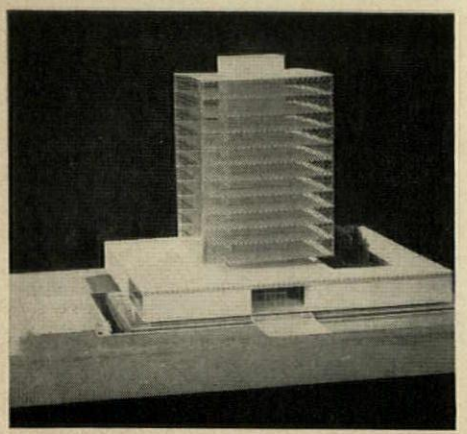
Americans Design Hotel at Foot of the Himalayas

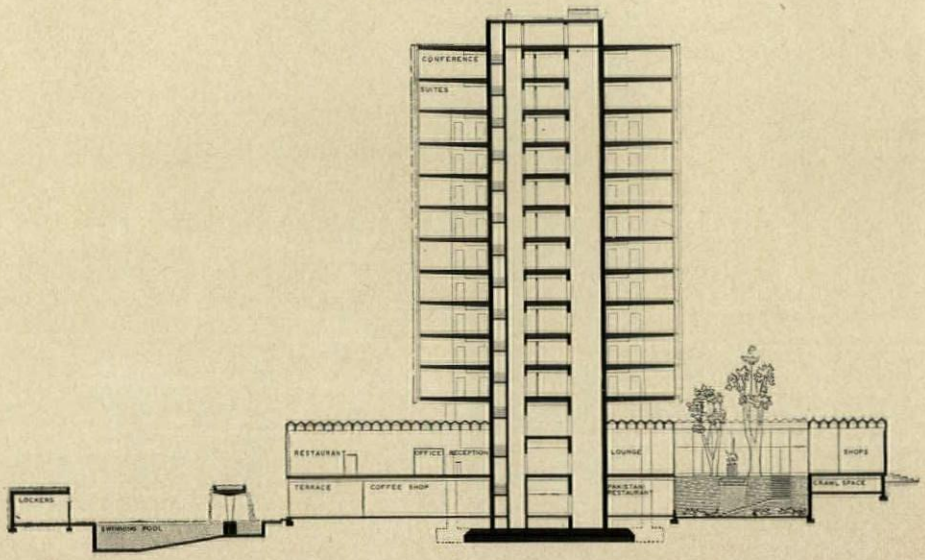
RAWALPINDI, PAKISTAN Picture a firm staffed mainly by Americans that is lucky enough to be Paris-based, with branch offices in Dover, Delaware, Geneva, Tehran, and Karachi. This is Greer-Boutwell & Associates, one of whose current projects is the Oberoi Flashman Hotel in Rawalpindi, Pakistan, at the base of the Himalayas.

The hotel will contain 175 guest-rooms. Public spaces will include a coffee shop, restaurant, night club, banquet hall, conference rooms, swimming pool, and a health center. A special feature will be a Pakistani restaurant.

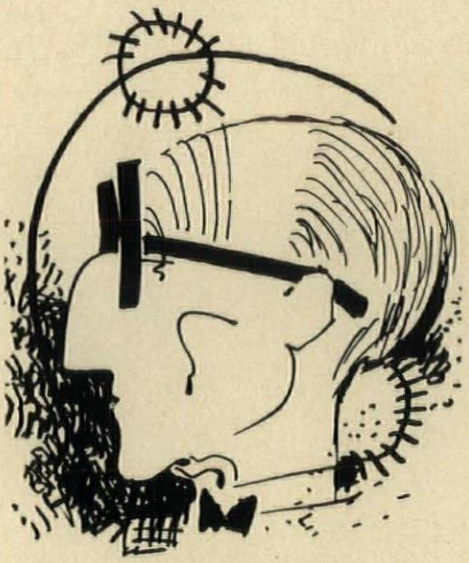
Because it shares the same site as the old Flashman Hotel, "virtually the only hotel in Rawalpindi," the new project had to be very compactly designed. A two-level court will connect with the lobby at the upper level and with the Pakistani restaurant at the lower level.

The hotel will include as many locally produced materials as possible. The reinforced-concrete structure will be designed to withstand moderate earthquake tremors.





PERSONALITIES



This will probably be the last year AIA will give its Gold Medal to a pre-World War I employee of Berliner Peter Behrens. In 1959, the medal went to Walter Gropius, in 1960 to Mies van der Rohe, and this year the list of former employees (at least in the genius category) will be exhausted with the presentation of the medal to **Le Corbusier.** Corbu will be here next month to receive the AIA honor, then to appear as part of Columbia University School of Architecture's series on the Four Great Builders (others: Wright, Gropius, Mies).

With the possible exception of Mies, Corbusier is the *one* master whose shadow is always with us in contemporary design and planning. We see echoes of his Ville Contemporaine in just about every planning or urban renewal project announced. In individual buildings, his influence is almost inescapable—the pilotis, the screens, the tall slabs on the low bases. But his recent departures, if that is what they are, from his own mystique in such buildings as the chapel at Ronchamps and Le Couvent Sainte Marie de la Tourette seem to herald another phase for a man who, at 74, has not ceased to enrich our contemporary architectural heritage.

Other AIA medalists are ANNI ALBERS (craftsmanship), FLORENCE KNOLL (industrial design), EZRA STOLLER (photography); plus the Kemper award for EARL H. REED. Special commendations will go to the Franklin D. Roosevelt Memorial Commission, CBS for "The Big City," and the Philadelphia City Planning Commission.

AIA, which has not been open to charges of being *avant garde* in selecting its Fine Arts Gold Medalists (last year's was Thomas Hart Benton), this year brings itself up to date somewhat by honoring **Alexander Calder.**

Calder, the son of a sculptor who was the son of a sculptor (grandfather's William Penn can be seen atop Philadelphia's City Hall by conventioning AIA'ers next month), studied mechanical engineering at Stevens Institute of Technology and worked as an engineer until he threw it up and moved to Paris at the age of 25. There, after working mainly in wire sculpture and wood, he introduced his stabiles in 1931 and mobiles in 1932. His recent large commissions have been mobiles for the U.S. Pavilion at the Brussels World's Fair and New York International Airport, and a mobile-stabile at UNESCO Headquarters in Paris. "The City," his latest large-scale work, presented in FEBRUARY 1961 P/A (pp. 136–137) is going to the Museo de Bellas Artes in Caracas.

Calder will not receive his medal in person because, lucky man, he is with his family at his country house, Saché, Indre et Loire, in France. "We have an old house called 'François 1er,'" he writes, "partially embedded in the *falaises,* with caves, etc. It's quite handsome, and our daughter Sandra and her husband Jean David-

son (son of Jo) live in an old mill, in the River Indre, hard by." These Calders really make a family thing of sculpture!

MIES VAN DER ROHE received the J. Lloyd Kimbrough Medal of the American Institute of Steel Construction. He is the first architect to receive it.

In June, **Lewis Mumford** will receive from Queen Elizabeth II the 1961 Royal Gold Medal for Architecture on the recommendation of the Royal Institute of British Architects. "Accord-

ing to the London *Times,*" he says, "I am the first nonarchitect to get the medal since it was founded, if one forgets Sir Alma Tadema and Sir Frederick Leighton, who were nonpainters too, and had nothing to do with architecture either, if one overlooks Tadema's classic backgrounds!"

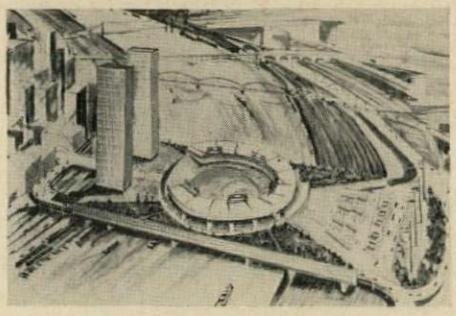
Born and educated in New York (he went to City College of New York, New York University, and Columbia University), Mumford resents statements that he is against urban living. ". . . The frequently repeated story that I am a rural recluse [he spends at least half the year at his country place in Amenia, N.Y.] is an extravagant libel. . . . Except for two years on the campus at Stanford, I have never lived in any place that remotely resembles a suburb: when I go to a city, I want to be in the thick of it, not on the periphery. My new book, *The City in History* . . . should finally settle that canard!"

Well known in the architectural field through his books and his writings for *The New Yorker* (among other magazines), Mumford soon will leave the University of Pennsylvania, where he is a Ford Research Professor in the Institute for Urban Studies, for another Ford position in the Department of Political Sciences at the University of California, Berkeley. "My next book will probably be a coda to *Technics and Civilization* [1934]; or rather, like a Beethoven finale, a second coda, for *Art and Technics* [1952] was the first."

Sketches by Romano Cordelletti

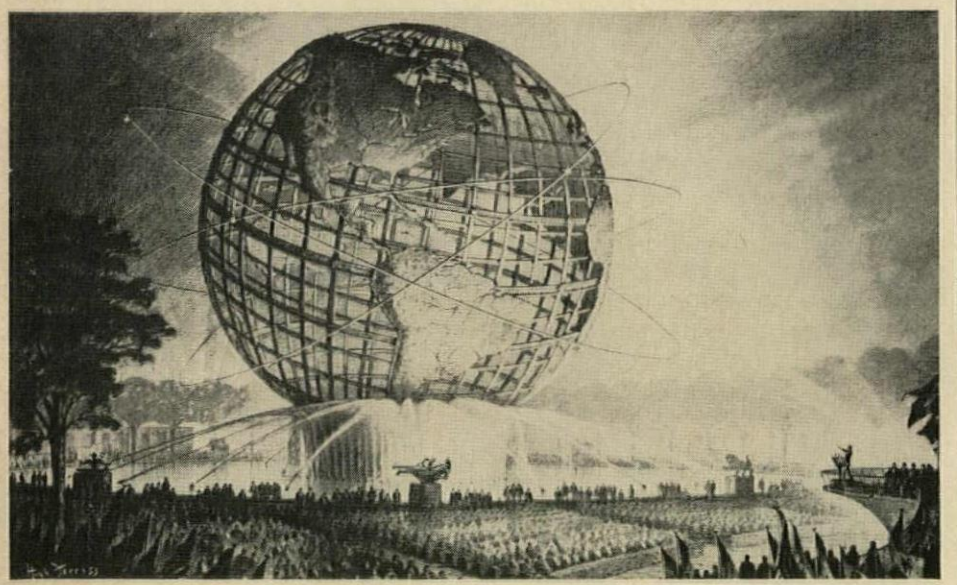
Let's All Gather by the River

A proposal has been made to place Pittsburgh's sports stadium on a platform over the Monongahela River, near the point where it joins the Allegheny to form the Ohio (where the Golden Triangle is located). The plan was presented by Eric Sirko, a businessman, to the NADCO Engineering Co., which asked the advice of a number of consultants as to the feasibility of the project. The engineering problems have been worked out to their satisfaction, and a French architect, Jean de Mailly, has helped conceive the proposed design (shown). The platform would be located between Smithfield and Grant Streets and would be 1200 ft by 600 ft. It would



hold the stadium plus a hotel, a three-tiered garage for 4500 cars, and a marina for small boats. The marina would bring in revenues on rental space for boats, and the parking garage would help solve Pittsburgh's acute downtown parking problem because it would be only a five-minute walk from the downtown area. The two-tier stadium would have no pillars to obstruct the view, and all seats would be covered.

The proposal is now being debated, along with a previous proposal to site the stadium on a 90-acre plot in the Monument Hill section of Northside Pittsburgh. The river-spanning proponents cite many advantages to their proposal: It would not interfere with river traffic because it would be higher than a nearby bridge and would not decrease the channel width; there would be no land acquisition and no loss of previous taxes on the land; more surface transit services that area than the more remote Northside section, and the railroad station is nearby; it would make money on the marina and provide downtown parking spaces. Local public spirit is being roused, and an effort is being made to transfer the power to choose the site from the Stadium Study Committee to the people of Allegheny County. Among the notable groups backing the project are the Pirates and the Steelers.



PLUS ÇA CHANGE . . .

Well, it's been released, and it looks like the set for the "spectacular" finale of a 1930's Warner Brothers musical. All that is missing are Busby Berkeley's tap dancers clogging up and down the ramps to the tune of "You Are My Lucky Star."

The "it" is, as you have no doubt perceived from the above rendering, the "theme symbol" of the 1964–65 New York World's Fair. Its name is "Unisphere," and it will stand, appropriately enough, where the "Perisphere" stood in those dear dead days beyond recall. *Plus ça change, plus c'est la même chose.*

The stainless steel sphere will have as its structure the lines of longitude and latitude. Continents and islands will be represented by steel mesh heavily embossed to show mountains and other geographical phenomena. The 120-ft-diameter sphere will sit on an elevated base, making the total height 135 ft. Three elliptical stainless steel bands will describe orbits around the structure. Around the pool from which the apparition will rise will be located, at each of the twelve points of the dodecagonal base, sculptures representing (wow! what an imaginative stroke!) the signs of the Zodiac. Fountains will jet from the base of the central element and from the sides of the pool. The whole business will be lighted at night.

Clark & Rapuano are the Landscape Architects and Consulting Engineers to the fair. The sphere will be fabricated, erected, and presented to the fair by the American Bridge Division of U.S. Steel Corporation.

CANA Sets Campaign for More Public Commissions

At its recent meeting in New York, the Council for the Advancement of the Negro in Architecture announced plans for a campaign to obtain Federal, state, and municipal commissions for Negro architects. Figures quoted at the meeting indicated that, based on the ratio of Negroes to the rest of the population, Negro architects were not being awarded commissions that in any way approached this ratio. CANA also announced plans for a conference of architectural educators to discuss assisting schools attended by Negroes in the South that would raise the standards of their architectural curriculums.

Maison en Forme d'une Soucoupe Volante

Residents of Hollywood Hills, Calif., probably have been wondering lately if someone has managed to trap a flying saucer in their hills. A new house there is a one-story octagonal structure, sitting atop a 30-ft-high, 5-ft-thick concrete column, and is reached by a four-passenger cable car. The 2200-sq-ft structure has a living area, dining room, kitchen, four bedrooms, laundry, and sewing rooms. It is glazed on all eight sides, has glass mullions and aluminum siding. A plastic sealant and adhesive company,

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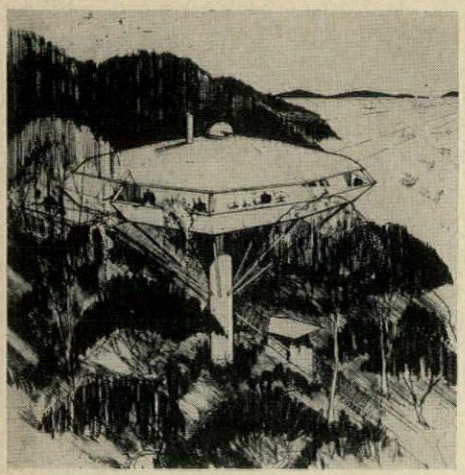
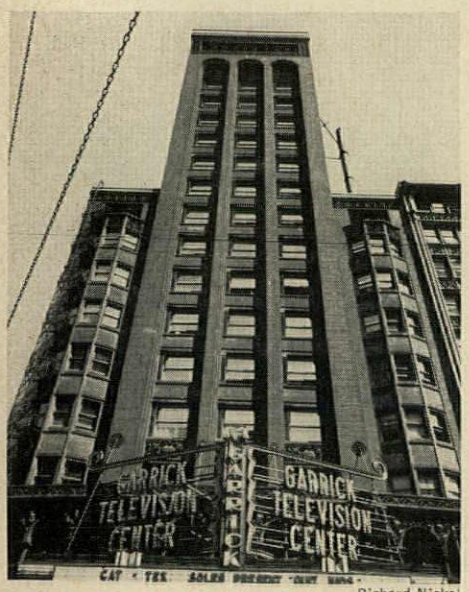


Chem Seal, has sponsored the project and made some special products for it, such as a flexible bedding compound for the steel beams inside the column, so that they can give with the motion of wind and earthquakes. Architect: John Lautner.

The Philistines Win Again

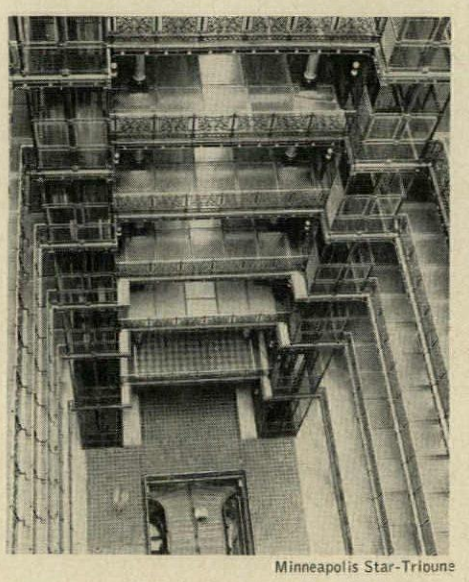
P/A is saddened to report that, after a valiant fight by Mayor Richard J. Daley and a number of organizations including the local AIA chapter, Louis Sullivan's Garrick (formerly Schiller) Theater in Chicago will be demolished to make room for a parking lot. De-



Richard Nickel

spite strong support from the *Chicago Sun-Times*, mention in the architectural press, and out-of-town newspaper publicity that included a handsome spread in the *St. Louis Post-Dispatch*, the sharks prevailed and the Garrick is doomed. One advantage of the lost battle may be the alerting of Chicagoans to their architectural heritage. This included an illustrated guide to the history of downtown Chicago architecture in the Sunday *Sun-Times* by Charles William Brubaker, a member of the Chicago AIA Preservation Committee. Maybe the next one will not go to the barbarians! Incidentally, any last-ditch preservation suggestions would be appreciated by Thomas Stauffer, Chicago Heritage Committee, 5021 S. Dorchester St., Chicago 15, Ill.

The news is equally dismal on two other fronts. In Minneapolis, the fate of E. Townsend Mix's Metropolitan Building seems to be the same as that of the Garrick. A parking *garage* will go here. Visitors to this building will



Minneapolis Star-Tribune

remember its delightful, roof-high interior well, ringed by iron-railed, glass-floored galleries and vertically traversed by caged elevators.

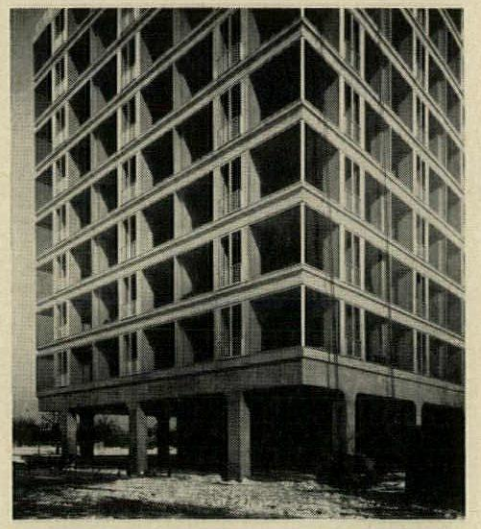
A less well-known but comparably atmospheric building, the old Dakota apartments in New York, also feels

Authenticated News

the heat of the real estate tycoon's breath. The Dakota (designed by Henry Janeway Hardenbergh) stands on 72nd Street and Central Park West, tenanted by notables of the press, stage, screen, and Madison Avenue—people who could, if they wished, move to the East Side into more modern, less charming surroundings. Current negotiations between the land-gourmand and a tenant's committee are exploring the tenant's purchase of the building on a co-operative basis. But anyone who has seen a New York real estate man in full cry after what he regards as a valuable piece of land holds out little hope for the Dakota.

Webb & Knapp Portion of SW Development Opens

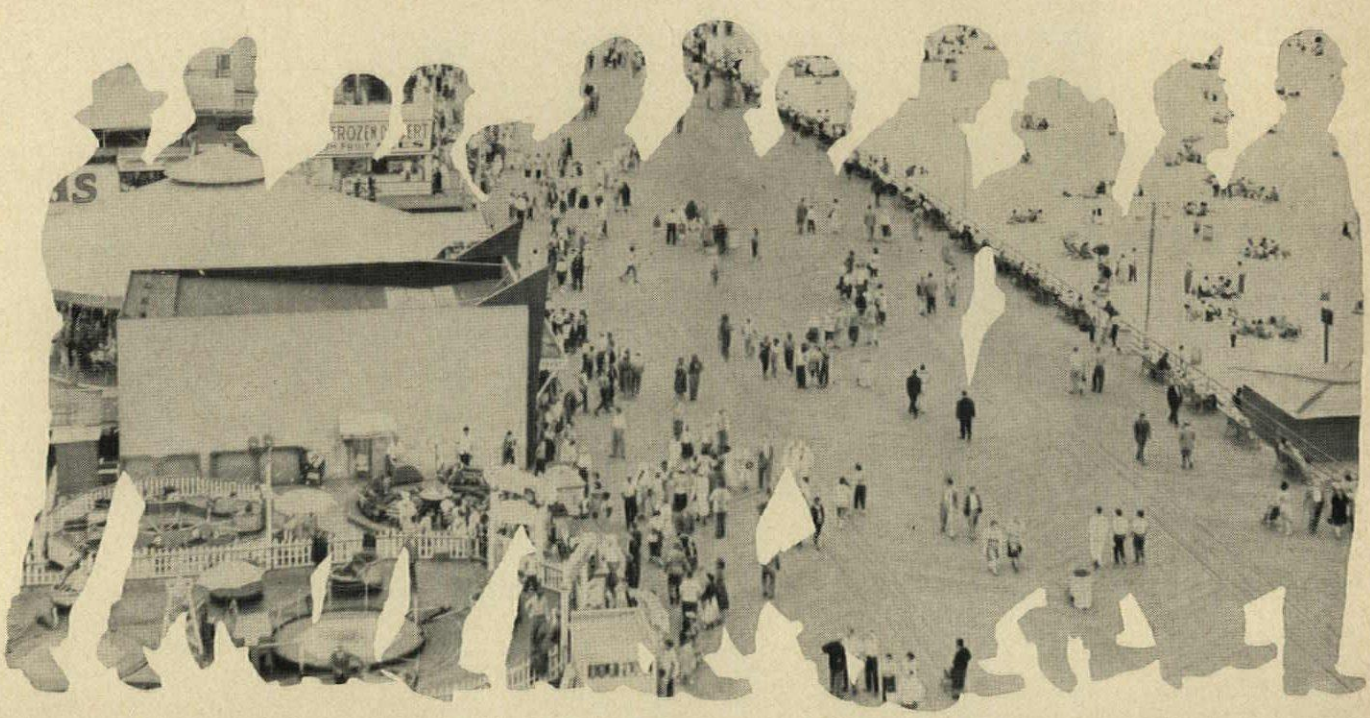
Latest opening in the great southwest redevelopment scheme for Washington, D.C., is the first two apartments in Webb & Knapp's sector (large apartment building by Satterlee & Smith for James Scheuer has been open for some time). "Town Center

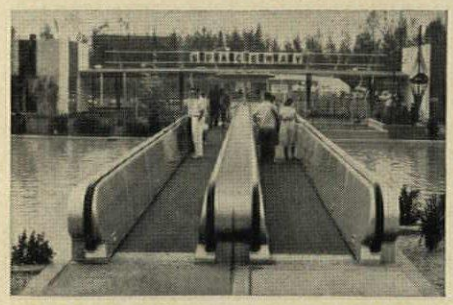


Plaza" ultimately will include four such apartment structures for a total of 512 units, a 17-store shopping center, and a community plaza. The buildings, designed by I. M. Pei & Associates, are of reinforced-concrete construction with windows almost floor to ceiling. An in-swinging, railed window in each room gives the feel of a balcony. At the ground level, each building has a glass-enclosed lobby surrounded by a colonnade. Apart-

Continued on page 70

ELIMINATE PEDESTRIAN TRAFFIC PROBLEMS!





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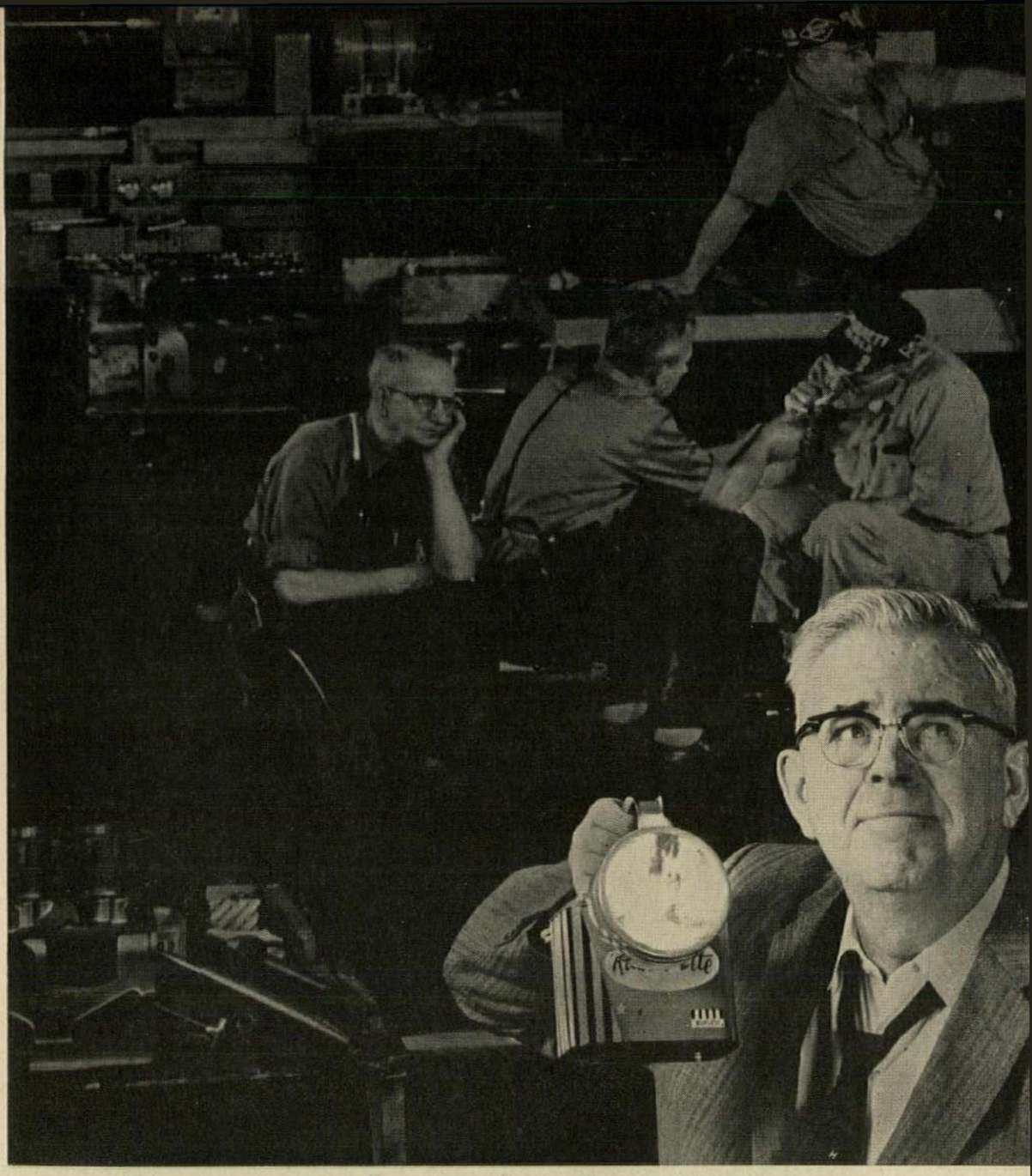

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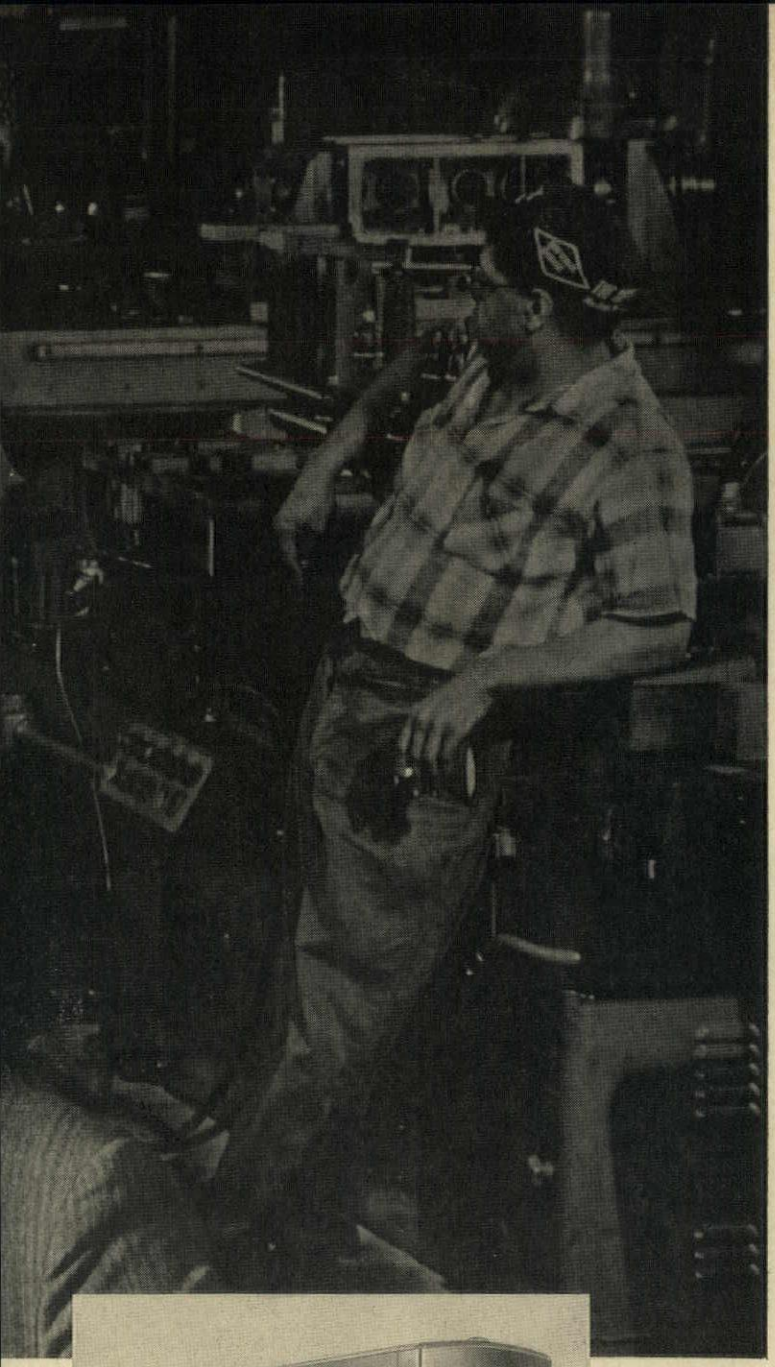

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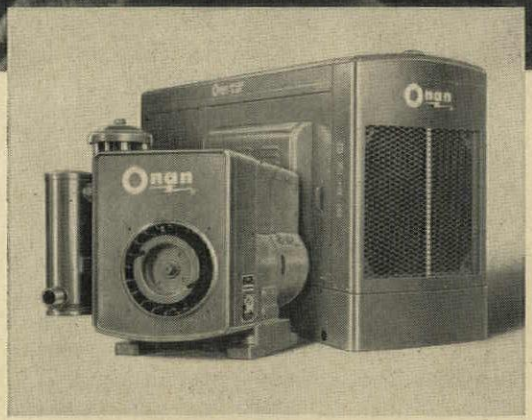

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Continued from page 66
ments range from studio-efficiency units to two-bedroom units. The Zeckendorf organization will soon begin construction on 51 town houses in the adjacent southwest sector, and is also developing the 13-acre Tenth Street Mall-Plaza area, which will include a 1000-room hotel, a communications center, and four office buildings. Future planning indicates 300 houses and two more apartment buildings.

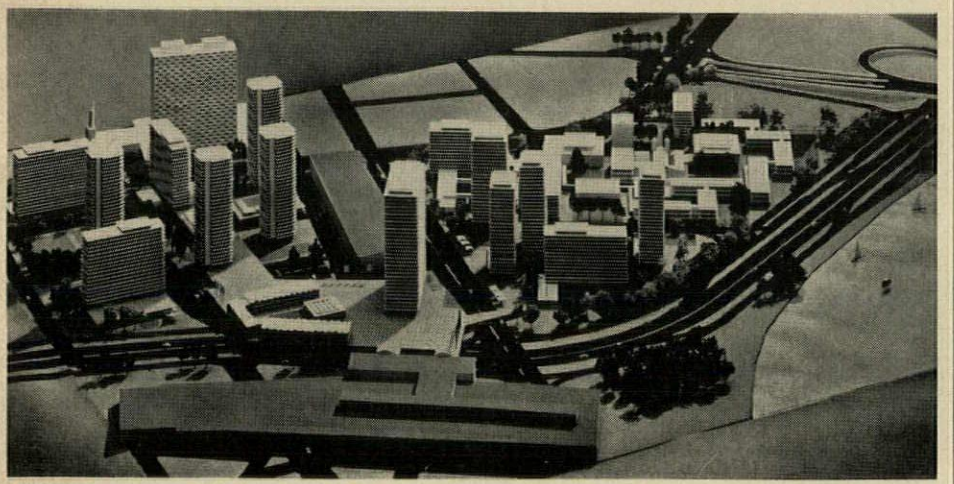
CALENDAR

First educational and technical traveling exhibit of Society of Plastics Engineers, "Plastics—A New Dimension in Buildings," will open in Springfield, Mass., on April 15. It will travel to 16 North American cities for 30-day showings during 1961–63. . . . Seminar for teachers of architecture jointly sponsored by AIA and Association of Collegiate Schools of Architecture will take place at Cranbrook Academy of Art, Bloomfield Hills, Mich., June 6–16.

RIBA Medal to Qantas Headquarters

The head office building for Qantas, Australian airline, in Sydney, has won the triennial Bronze Medal for Architecture in New South Wales from the Royal Institute of British Architects. Designed by Rudder, Littlemore & Rudder of Sydney, the 14-story building has a 225-ft façade, 165 ft of which are curved around a semicircular garden court facing a replanned intersection of two major streets.

The RIBA medal has been awarded only four times previously in New South Wales—in 1933, 1936, 1947, and 1956.



Newark Plaza Planned as Part of City's Renewal

Five blocks south of Mies' Colonnade Park Apartments in Newark, N.J. (p. 65, MARCH 1960 P/A) is a 27-acre site where construction will begin this year on Newark Plaza. Part of the extensive program to rejuvenate the heart of the city, it grew out of a study presented by Oscar Stonorov and Victor Gruen about a year ago. It lies west of the Passaic River, opposite the Pennsylvania Railroad Station (*bottom*), and is roughly bounded by Edison and Mulberry Streets and Saybrook Place. Seton Hall University is at the north end of the site (*right*).

In front of the station, an elevated plaza will be built from which will rise the tallest building of the project, a 33-story, 500-apartment co-op. It is expected to be popular with commuters, since midtown and downtown Manhattan are only about 20 minutes away. Also on the plaza will be a motor inn and restaurant, scheduled to be the first section built. According to the architects, a complex of 16 multistory apartment buildings will be arranged in clusters to avoid the "institutional rigidity of many housing developments." Two-story, centrally located parking garages are planned for the apartment houses, with recreational facilities on the roofs. A 20-story office building (rear left) on Mulberry Street will have a garage and street-level stores. Other stores and service facilities are also planned along Mulberry Street for the 12,000 expected residents and the 10,000 university students.

Architects: Stonorov and Haws; planning: Oskar Stonorov and Victor Gruen, Associated Planners & Architects, in consultation with Dr. Ernest Jurkat, Marketers Research Service, Inc., Robert M. Mitchell and Wilbur Smith & Associates; sponsors and realtors: Major Realty Corp.

Competitions, Awards, Fellowships, Scholarships

The San Francisco Redevelopment Agency is offering $1000 for the ten best designs of 990 apartment units to be erected on 22 acres of Red Rock Hill in the Diamond Heights Redevelopment Area. The competition is open to all registered architects. Write to San Francisco Redevelopment Agency, 525 Golden Gate Avenue, San Francisco 2, Calif. . . . Information on the International Carpet Design Competition, with prizes totaling £1650, is obtainable from Carpet Trades, Ltd., Kidderminster, Worcester, England. The Pan American Health Organization is holding an international competition, open to architects of the Western Hemisphere, to design their new $4.5 million headquarters in Washington, D.C. The winning architect will be awarded the building contract; second prize is $2500, third prize $1000. Write Leon Chatelain, Jr., 1632 K Street N.W., Washington 6, D.C., by May 8. . . . SEATO has provided research fellowships for well-established scholars to encourage research into the social, cultural, and other problems of southeast Asia and the southwest Pacific. Grants provide a monthly allowance of $400, economy-class return air travel to the country, and may be from four to ten months long. Applications should be submitted by March 15 to the Conference Board of Associated Research Councils, Committee on International Exchange of Persons, 2101 Constitution Avenue N.W., Washington 25, D.C. Candidates' academic qualifications (Ph.D. or equivalent), professional experience, and published material will be taken into account, and results will be announced in August, 1961.

LEGISLATION FOR GROWTH

By E.E. Halmos, Jr.

Even if only part of the recommendations made to and for the new Administration are enacted into law, the last half of 1961 (beginning of fiscal 1962) should brighten up for architects.

For example, school construction bills now before Congress (even one submitted by Republicans) call for Federal aid to the tune of as much as $3.4 billion over at least four years; aid for depressed areas—largely through construction work on urban renewal, factories, etc. —would account for another $1 billion or so; projected increases for airport construction, $60 million; Government building construction and the like would add about another $2 billion to the funds available for construction industry components.

And that's to say nothing of projected attempts to spur housing construction, and some added military construction.

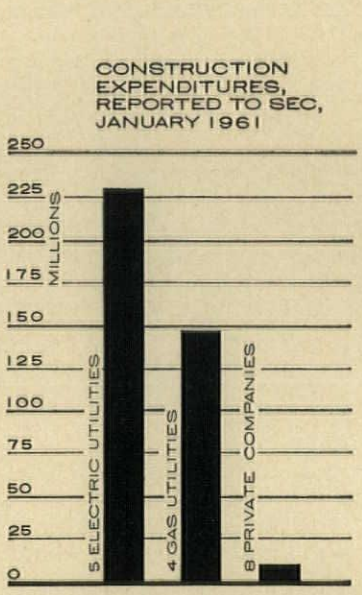
There's a sobering note to all this, however, which was forecast in this column a couple of months ago: If any large part of the suggested programs go through, that will mean that it will cost more to do business, as well. The reason is simple enough: If the Administration accepts and gets any part of the planned new spending, (and President Kennedy is on record as favoring it), it will have to find revenues to support an actual budget that will run well over $85 billion (as against the $81 billion proposed by Eisenhower in his final message).

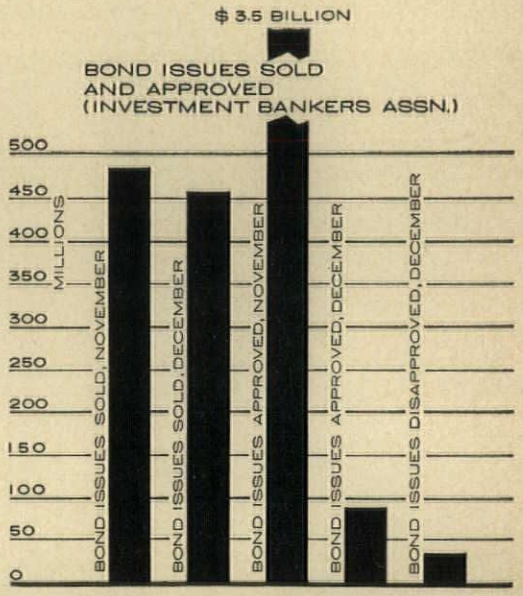
At the same time, Congressional Democrats have introduced about two dozen bills to cut personal income taxes by various means—including deductions for commuting costs and for educating children. Such measures would be good politics, of course, for an Administration that must quickly solidify its hold on a slim voter majority.

But you can't have heavier spending and less personal-income revenues on the one hand, and a balanced budget on the other. And President Kennedy, in his first messages to Congress, has insisted that he intends to find revenues to back up his spending programs. [In his second news conference, the President held out little hope for tax cuts this year—ED.]

So the answer has to be a further burden on the business community, through tightened depreciation allowances, closer attention to expense account and other deductions, more payroll taxes, and even cancellation of some contracts to produce a "saving."

Evidences of the way this wind already is blowing are the moves to: (1) increase payroll tax on employers (by .04 percent) to support longer unemployment payments; (2) statements that Eisenhower's demand for an added half-cent gasoline tax and increased postal rates will be backed by Kennedy; (3) instructions to FHA to





BOND ELECTION RESULTS – DEC 1960 BY USE OF PROCEEDS

USE OF PROCEEDS	APPROVED		DISAPPROVED	
	AMOUNT	NO	AMOUNT	NO
EDUCATION:				
ELEM. & SEC.	64,294,000	70	23,453,000	30
OTHER	175,000	1	3,850,000	1
ROADS & BRIDGES	150,000	1	150,000	1
WATER & SEWER	19,529,000	26	4,235,000	13
OTHER UTILITIES	—	0	—	0
HEALTH & WELFARE	1,025,000	2	—	0
RECREATION	49,000	1	550,000	2
PORTS & AIRPORTS	—	0	—	0
INDUSTRIAL	2,985,000	4	—	0
REFUNDING	—	0	20,000	1
FLOOD CONTROL	—	0	—	0
PUBLIC HOUSING	—	0	—	0
VETERANS AID	—	0	—	0
ADMIN. & OFFICE BLDG.	350,000	1	—	0
UNCLASSIFIED	1,050,000	6	35,000	3
TOTALS	$ 89,607,000	112	$ 32,293,000	51

BOND ELECTIONS SCHEDULED AS OF JAN. 3, 1961

MONTH	AMOUNT
JANUARY	121,312,000
FEBRUARY	98,389,000
MARCH	80,068,000
APRIL	81,799,000
MAY	5,265,000
JUNE	5,007,000
JULY	1,750,000
OCTOBER	1,500,000
NOVEMBER	954,286,000
NO DATE SET	107,167,000
TOTAL	$ 1,456,543,000

USE OF PROCEEDS	AMOUNT
EDUCATION:	
ELEM. & SEC.	121,076,000
OTHER	2,925,000
ROADS & BRIDGES	91,666,000
WATER & SEWER	187,418,000
OTHER UTILITIES	916,161,000
HEALTH & WELFARE	30,465,000
RECREATION	9316,000
PORTS & AIRPORTS	40,786,000
INDUSTRIAL	150,000
REFUNDING	—
FLOOD CONTROL	—
PUBLIC HOUSING	—
VETERANS AID	—
ADMIN. & OFFICE BLDG.	300,000
UNCLASSIFIED	56,280,000
TOTAL	$ 1,456,543,000

cut mortgage interest rates (by one-quarter per cent).

Anything You Can Do, I Can Do Better

The comment above concerning legislation offered by Republicans spots a development in political strategy this session that will be interesting to watch—and will also contribute heavily to the general confusion.

An example is the bill (S 723) introduced by Sen. Cooper (R., Ky.) proposing a four-year, $3.4 billion school construction aid plan, placing heavy emphasis on the need of the states for such aid. It is a direct counter to the measure introduced earlier (S 9) with Administration backing, by Sen. McNamara (D., Mich.) that would give a flat $30 per child.

Similarly, both Sen. Dirksen (R., Ill.) and Sen. Keating (R., N.Y.) have introduced counter-measures to the urban renewal and emergency relief bills introduced by Democratic Senator Douglas of Illinois. And a somewhat similar plan of action is being followed by Republicans in the House.

Politically speaking, this is clever strategy: it isn't opposition, but rather can be called the offering of constructive legislation in its own right (depending on which party you happen to favor). However, when these various measures get to the Congressional hearing rooms, they will cause plenty of confusion.

A Plethora of Bills

On legislation in general, you've already been apprised of the great (and usual) flood of bills dumped into the hoppers within the first few weeks. Well over 4000 bills went in within less than a month, to be more exact—with only a handful of them standing much chance of ever seeing light again.

Among them, however, there were many of some interest to architects even though none *directly* mention the profession.

A thumbnail rundown would read this way (in order of introduction rather than of importance), plus a horseback estimate of their chances for action:

HR 1, calls for establishment of a National Science Academy (under the control of National Science Foundation) somewhat along the lines of the military services academies, and provides authorization for construction of a campus and buildings. Chances of passage: none.

HR 5, to aid areas of substantial unemployment through construction of public works. This is one of several dozen in both House and Senate on this subject. Chances of passage: very good, in some version.

HR 10, a perennial, to encourage establishment of voluntary pension plans by self-employed individuals, through tax deductions for costs. Chances: better than even.

HR 27, to authorize a 10-year program of grants for construction of medical, dental, and other public health educational facilities. Chances: good, though may be combined into a more general education-aid bill.

HR 166, to give the President an "item veto" on appropriations bills—allowing him to cross out a specific project without vetoing the full bill. Although Presidents Truman, Eisenhower, and now Kennedy have sought such power, chances are not considered good.

HR 412, to aid the "freedom of association" of professional employees by providing that the term "labor organization" shall not include organizations of professional personnel. Chances: very slim.

HR 1135, to prohibit employment for two years of former officers or enlisted men, or former civilian employees of the Government, if such former employees handled certain transactions for their new employers (mostly in Government purchasing capacities). Chances: fair.

HR 1755, to provide for determination of whether certain sites, buildings, or other objects are of national historical significance, and prohibit use of Federal funds for highway purposes that damage such sites. Chances: poor.

HR 2255, to require contractors to name their supply, material men, and subcontractors, and their prices. Chances: none. Measure is opposed by specialty contractors, though supported by general contractors.

HR 2955, to legalize "common situs" picketing at construction sites. Chances: better than average, since the desire to "do something" for labor may override objections of construction industry groups.

HR 3511, to authorize Administrator of Housing and Home Finance Agency to assist local governments in planning necessary provisions for mass transit. Chances: good. This is already being tried on an experimental basis, and approval could stave off a fight right now on the proposed Department of Urban Affairs.

S 9 (McNamara's school bill), which includes funds for teacher salaries. Chances: some version of this measure is certain to be passed; fight will center on salary provisions, which are opposed by many.

S 197, same as HR 10.

S 1, same as HR 5 (this is the Douglas bill).

S 345, same as HR 3511.

S 432, same as HR 166.

S 722 (Cooper education bill).

Not mentioned in this listing are the numerous bills calling for establishment of a Department of Urban Affairs and a Department of Transportation.

Both of these proposals have strong backing (both Eisenhower and Kennedy called for the transportation agency), but they have enough drawbacks to make it still seem unlikely that they'll get through:

The two new departments, as proposed, would overlap each other as well as most of the established agencies of the Government; the agencies that would be absorbed or cut down will fight the proposals tooth and nail (and with a lot of Congressional support); the Administration itself indicates it would rather not fight about them this time.

There's one other bill, which is at least of academic interest to professionals, also in the works:

HR 269, calling for a study looking to feasibility of establishing the metric system as the national system of weights and measures.

This is also a perennial, and it might get as far as a study group being named. But it lacks political glamor—and is opposed by many industries that would have to change measuring devices, cash registers, etc.

PLEASING IN ITS TIME, MR. MOORE

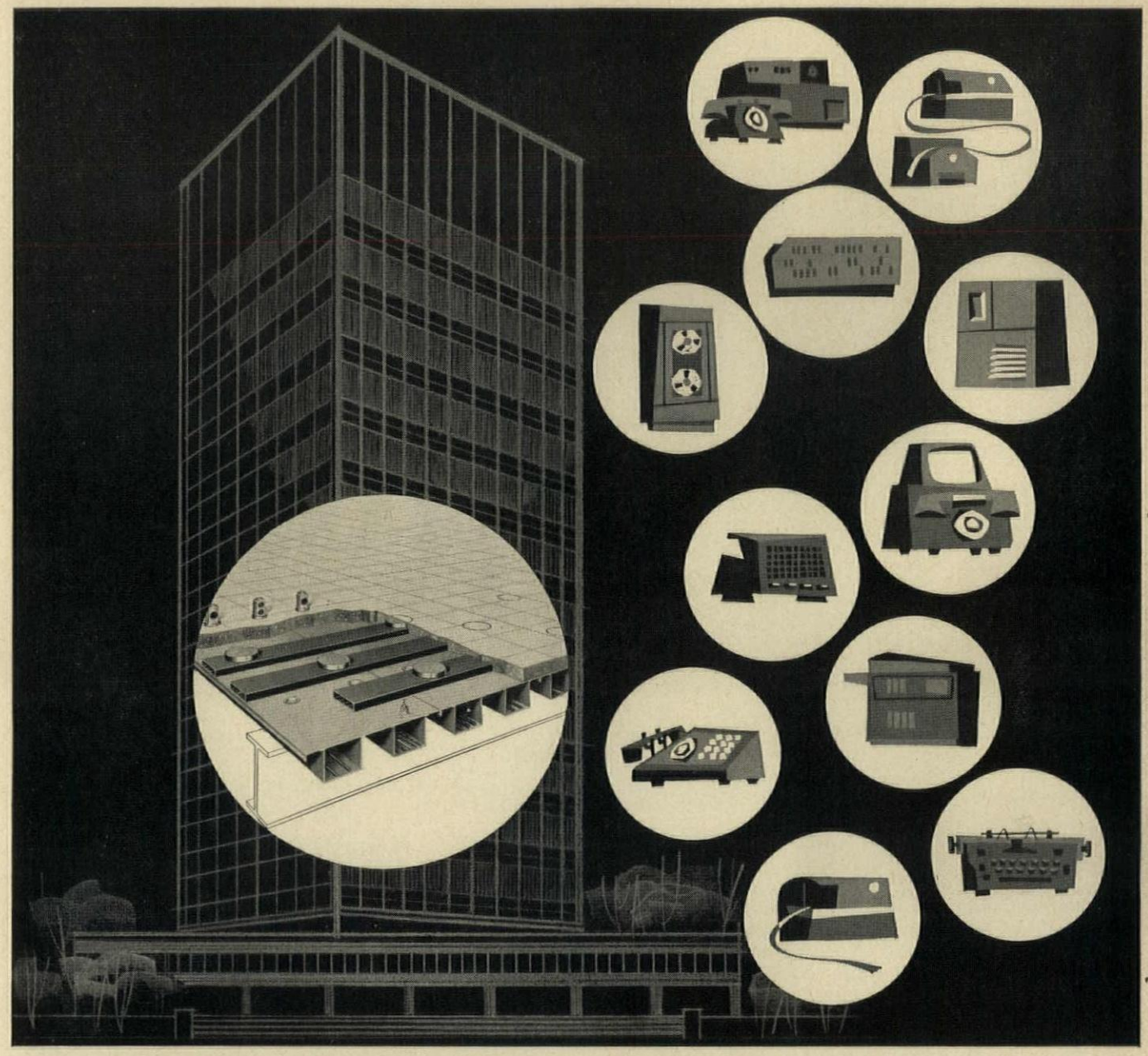
John Moore—no architect but a professional educator—invoked the name of Eero Saarinen to help him get through Senate questioning and final consent to his appointment as Administrator of the General Services Administration.

Moore, who once coached football at Drexel Institute and was later vice-president of the University of Pennsylvania, told Senators (in reply to urging to "break out of the bounds of rectangular structures and colonnades") that he had once selected Saarinen to design a women's dormitory at U of P.

He added, however, that he found much "Federal" architecture "pleasing."

(Meanwhile, another Federal building official—J. George Stewart, Architect of the Capitol and a frequent target of Senatorial howls—was taking plenty of criticism from the owners of a two-block-square piece of property south of the Library of Congress, to be bought by Congress for about $5 million for future expansion.

continued on page 76



Architects and engineers in planning raceway capacity for future electrification needs can be sure of only one thing—the demand will grow. Mahon "big-cell" M-Floors (cellular sections of lightweight, high-strength steel) provide extra-capacity to meet next year's requirements . . . outlet flexibility for tomorrow's modifications . . . and structural advantages for today's specifications. M-Floor installation is fast and easy—electrical wiring and servicing, through over-size duct openings, is quick and sure over every square foot of floor space. Find out what these cost-slashing versatile M-Floors can do for your projects . . . your costs. Contact your local Mahon architectural representative, see Sweet's File or write for informative Catalog M-61.

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Continued from page 74

Property owners were howling that valuations were unfair, that there was no need for dispossessing them.)

The Roads to Hell . . .

Washington's continual battle over monuments has simmered down to an occasional angry bubbling, after the first hasty comments on the proposed memorial to Franklin D. Roosevelt (FEBRUARY 1961 P/A). Only real development in this line concerned another Roosevelt— T.R. —whose 76-year-old daughter thumbed down a suggestion that part of the planned $75 million Cultural Center could be dedicated as a "living memorial" to the late President.

Said Alice Roosevelt Longworth (who wants a bird sanctuary, and has the right by Congressional act to approve any memorial design): "The hell with the Cultural Center as a memorial. . . ."

On other fronts, here were some more local developments:

Citizens at Mockley Point, Md., across the Potomac from Mt. Vernon, succeeded in getting the Washington Suburban Sanitary Commission to abandon its plans for a sewage disposal plant on grounds that the plant would be an "affront" to the Mt. Vernon memorial.

Outgoing Urban Renewal Commissioner David M. Walker said Washington needs, above all else, a firm blueprint of future development before urban renewal plans can make sense.

And in Maryland, the state legislature considered a bill that would force housing developers to set aside land for parks and playgrounds.

Housing Affairs

Housing interests, encouraged by the Kennedy Administration's early action in reducing FHA interest rates, were hopefully looking for further help during this session of Congress.

They thought they saw possibilities of: (1) an over-all, $40 billion urban renewal program over 10 years; (2) raising of limitations on FHA home loans to $30,000; (3) reduction of monthly payments during early years of a mortgage by calculating the first five years on the basis of a 40-year mortgage, the next five on a 30-year basis, and the remaining term on a 20-year basis.

On housing, it is worth noting that statistics still don't support the claims of shortage.

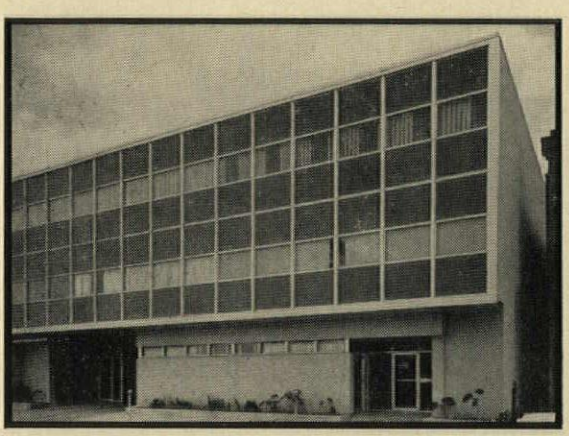
The Census Bureau, for instance, reported that for the fourth quarter of 1960, residential housing vacancy rates were unchanged from the third

Continued on page 80

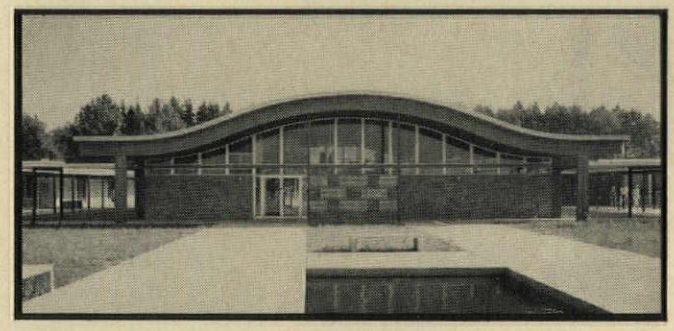
regardless of what kind of building you're planning...

Vampco aluminum products provide structural strength, lifetime durability, better lighting and ventilation and lower original and upkeep costs in buildings of every type of construction. Valley Metal Products Co. is a reliable source for aluminum windows in casement, combination casement, awning, intermediate projected, curtain walls of varying sizes and thicknesses, heavy ribbon, window walls, glass block and custom designed types. In addition, Vampco offers the highest quality aluminum entrance doors, frames, sidelights and transoms.

Baptist Hospital Medical Center Building in Memphis, Tenn., has Vampco fixed ventilators. Architect: Walk C. Jones



Excellent example of light construction with Vampco aluminum products is the Professional Enterprise, Inc. building in New Orleans, La. Architects: Favrot-Reed-Mathis-Bareman



Gordon Cornwell, imaginative architect, designed this high school located in Traverse City, Michigan; used Vampco window walls, doors and windows.

Church of The Immaculate Heart of Mary in Maplewood, New Jersey, incorporates Vampco aluminum windows and window walls. Architect: Arthur P. Rigolo

Entrance to Science Hall, Ferris Institute in Big Rapids, Michigan, has Vampco aluminum walls and doors. Architects: Roger Allen and Associates.

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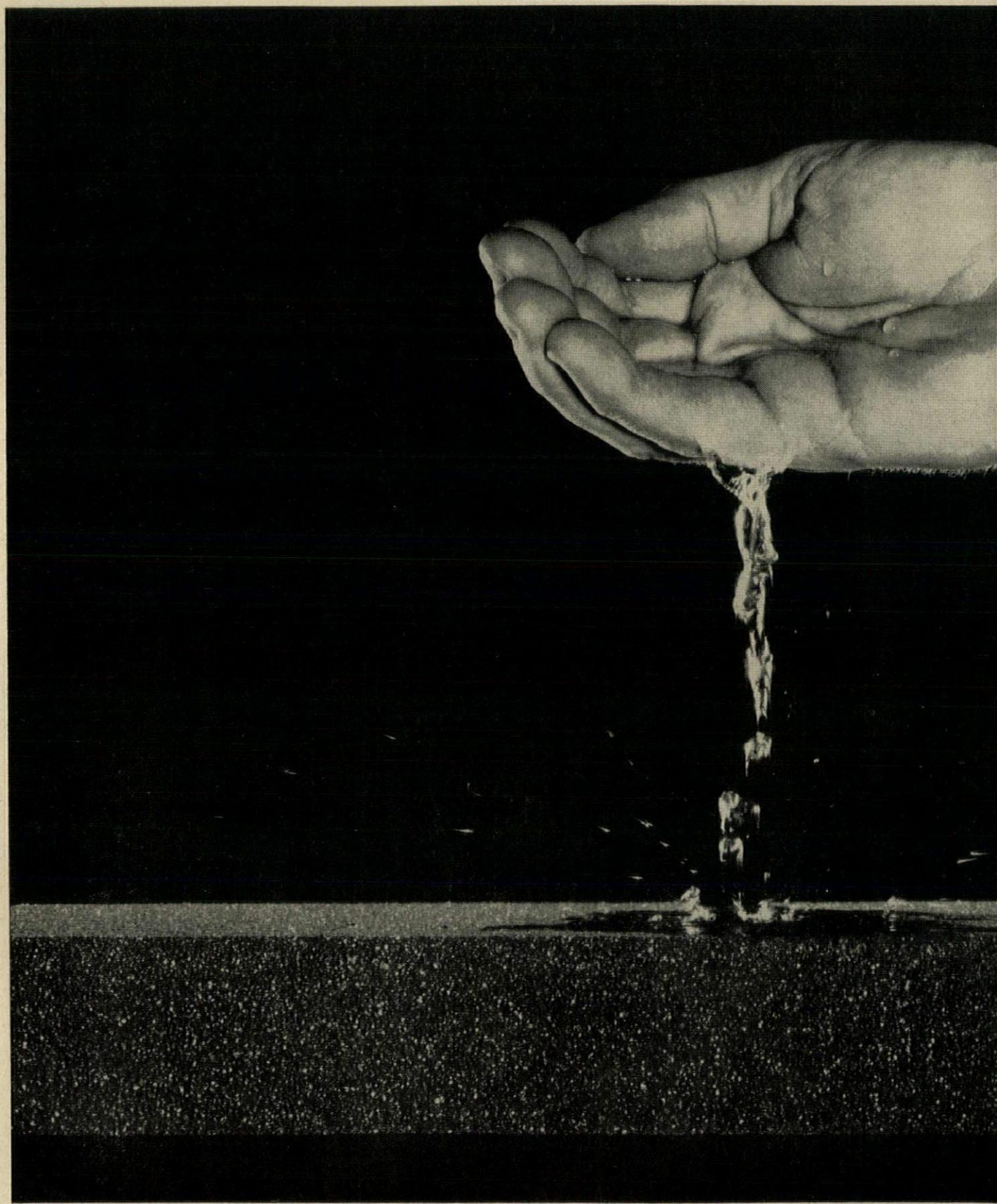
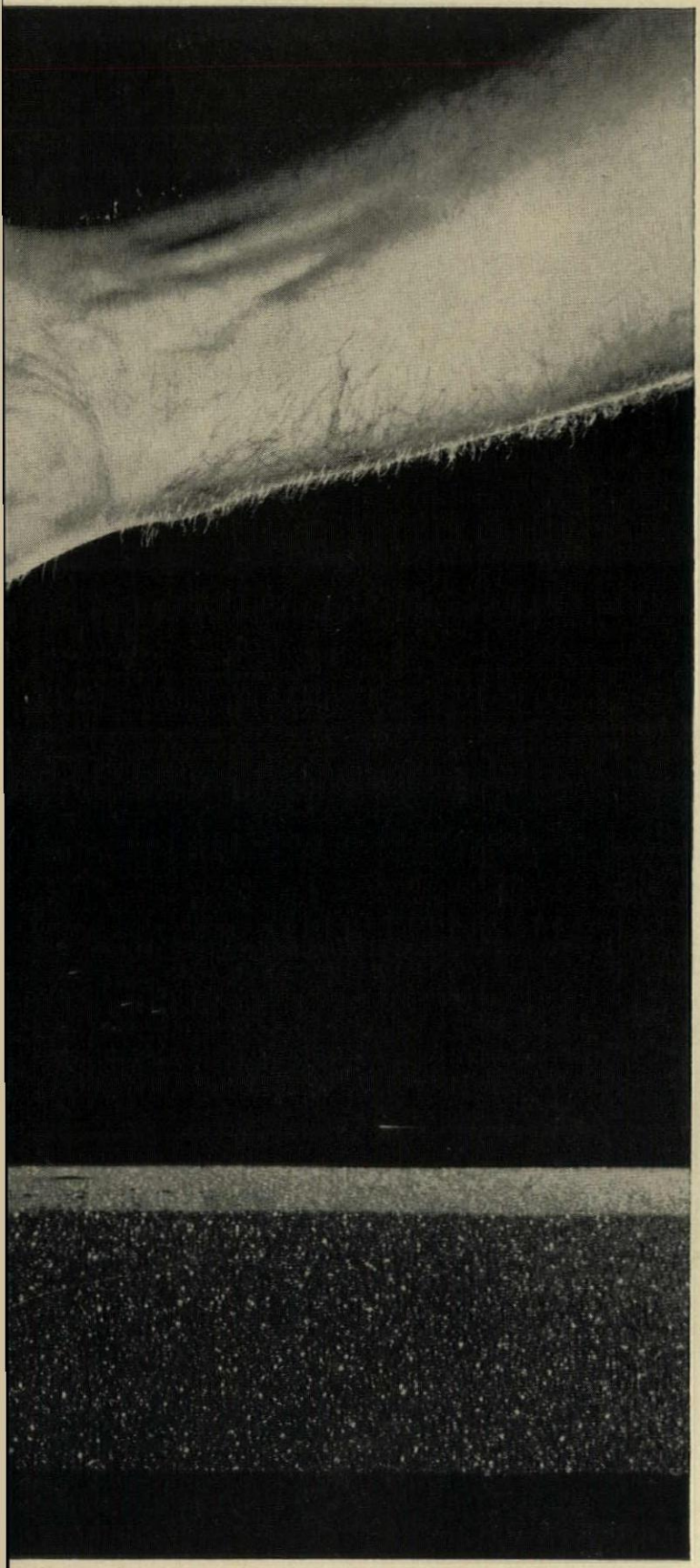
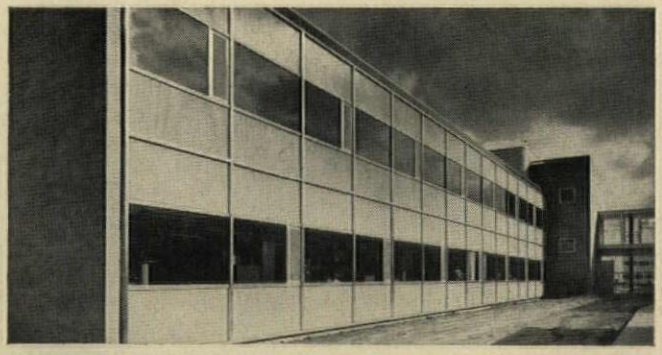


building material because it's **waterproof** it's cellular glass



New FOAMGLAS-BOARD presents the quality of FOAMGLAS in an easy-to-handle new size, 2' x 4', for fast, economical, trouble-free roof installation. 1½" FOAMGLAS is sandwiched between specially laminated sheets of kraft paper, reducing the number of insulation joints.

FOAMGLAS Insulation clears the air beneath this roof. Cold outside temperatures contrasting with a hot, humid interior atmosphere, had caused a fog-like condensation. FOAMGLAS roof insulation eliminated the problem. And the incombustibility of FOAMGLAS was an important extra-benefit here.



RCA selected FOAMGLAS to insulate porcelain enamel panels for vast curtain wall areas at their Cherry Hill Project, Camden, N.J. FOAMGLAS remains moistureproof in all kinds of weather and contributes important rigidity to the panels.

The sealed glass cell composition of FOAMGLAS makes it completely impervious to any form of moisture. On roofs, it remains dry even if the roof leaks.

See how these important FOAMGLAS benefits can work for you. Write for our Building Insulation Catalog. Pittsburgh Corning Corporation, Dept. AB-31, One Gateway Center, Pittsburgh 22, Pa. In Canada: 3333 Cavendish Blvd., Montreal, Quebec.

PITTSBURGH

CORNING

Continued from page 76

quarter: vacant units comprised 7.6 percent of the total rental inventory (for rent), and vacant units for sale comprised 1.2 percent of the total homeowner inventory.

In fact, said Census, "there is an indication of an upward trend in the supply of available vacant housing over the past few years—largely among rental units."

This kind of fact, you should remember, was one of the basic reasons for failure of additional housing legislation last year: Congress couldn't be convinced that the needs were as great as some elements of the housing industry said they were.

FINANCIAL

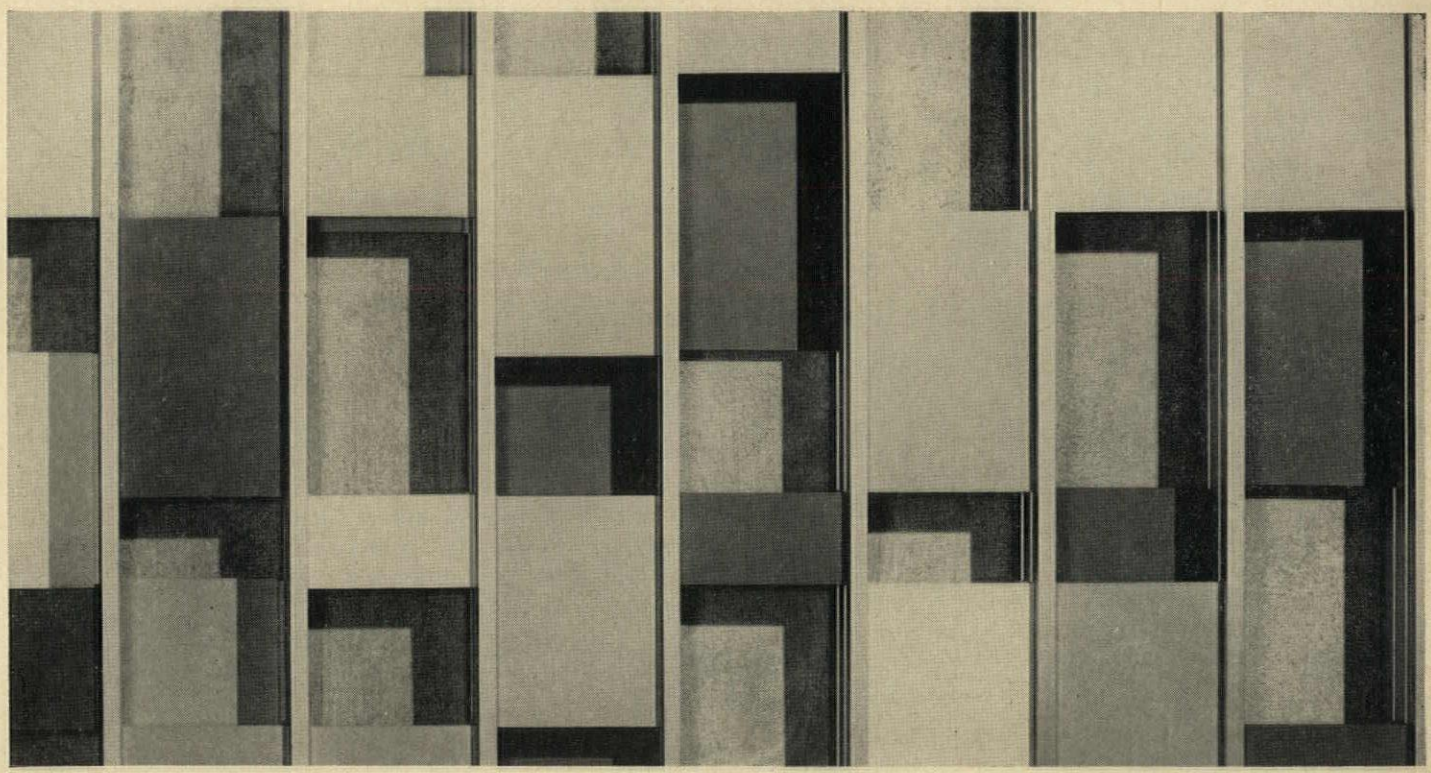
Although January expenditures for construction (according to the Census Bureau) were down a little more than the normal seasonal average decline (15 percent under December 1960, compared to normal decline of 12 percent), observers were inclined to blame the weather rather than any serious break in the industry's market. Several weeks of bitter cold and heavy snow, for instance, had virtually shut down construction activity in Washington early in March.

Otherwise—while the general economy showed signs of "sluggishness"—most construction industry indicators continued to forecast the expected rise in volume for 1961.

P/A's own indicators (p. 73) showed continuing heavy investment by industry in plant and facilities expansion, and voters continued to approve a heavy percentage of all construction bond issues presented to them (although the enormous total of bond issues approved at the general elections in November—more than $3.5 billion—overshadowed the normally slim figure for December).

Perhaps as encouraging as these facts were reports in financial circles that buyers were accepting such bond issues readily, and at good prices. Encouragement in this area also comes from another bill now in Congress—HR 2403—which would permit the Federal Government to guarantee bonds issued by the states or municipalities in carrying out construction of public sanitary facilities, and of course from the prospect of increased Federal spending on construction.

There were, however, some cautionary signs in the wind: Construction contractor failures during 1960 reached a record (2607 firms); secondary market prices for immediate delivery of FHA-insured new-home mortgages went up .1 percent, indicating at least a temporary money market tightening.

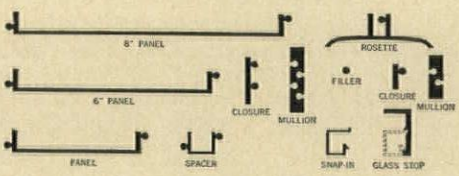


Screen System Affords Beauty, Versatility

CARLSTADT, N. J. The burgeoning demand for screening systems in more variety and different materials has been a notable characteristic of the architectural field in recent years. One has seen screens on everything from embassies to filling stations, in practically every material but chicken fat.

It is therefore heartening to report that a new screen system has appeared that is soberly conceived, meticulously designed, and applicable to many uses, both interior and exterior.

"Curtainscreen" is a system of stock components that can be combined to create screens and railings of many types and sizes, and of varying scale. Because of the unique versatility of its individual elements, the system permits the architect to create an individual design. (He controls the design by adjusting panel width, length, shape, color and arrangement; by regulating over-all dimensions and mullion spacing; and by providing for incorporation of other materials.)

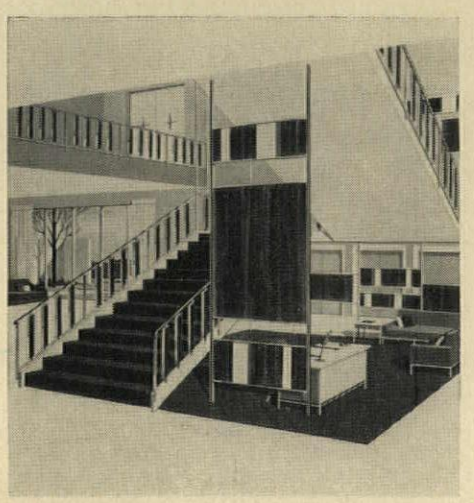


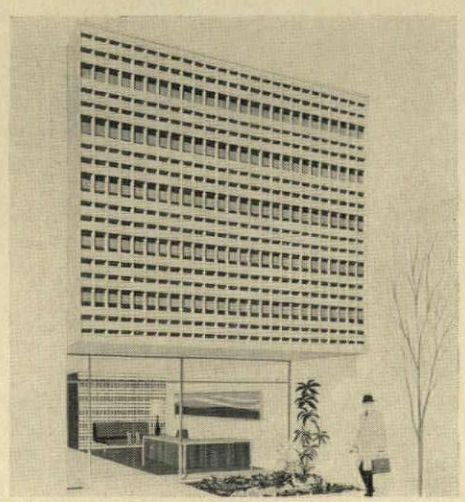
Elements of Curtainscreen are 4", 6", 8" panels, mullions, spacers, and closures, fillers, snap-ins, glass-stops and rosettes. Other materials may be incorporated in framing system.

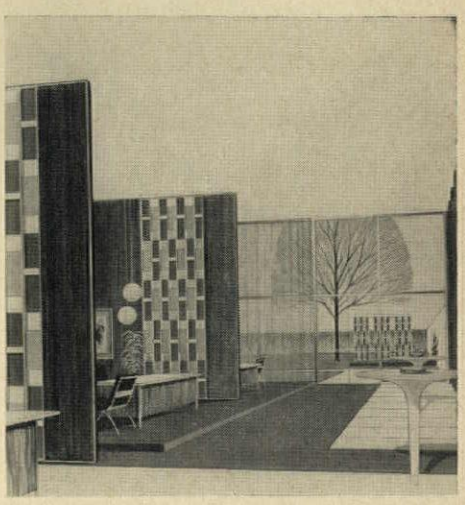
Basic components of system (*left*) are interlocking, slip-fit extrusions: mullions, panels, spacers, closures, glass tops, and rosettes. Finishes are aluminum and plastic, the aluminum being finished plain (for enameling), anodized, etched with decorative designs, or laminated with wood veneers. System can be adapted as framing.

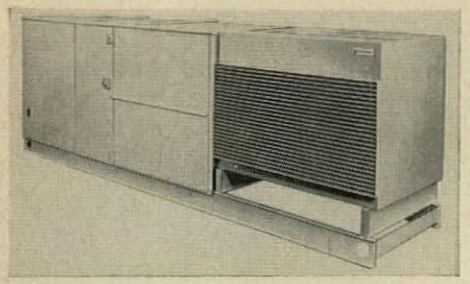
Pictures below show use as space-dividers and railings, exterior screen, and panels and vision barriers. Julius Blum & Co., Inc., Carlstadt, N.J.

On Free Data Card, Circle **100**









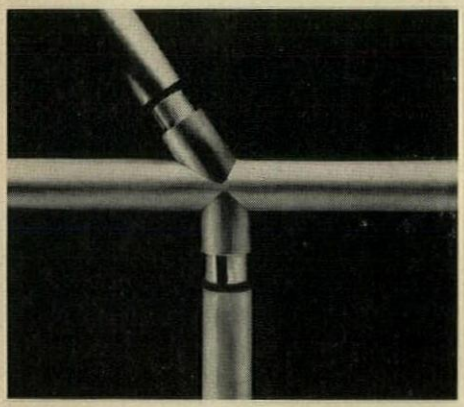
New Roof-Top Unit Saves Interior Space

New heating-cooling units for roof-top installation are especially designed for use in one-story commercial, industrial, and educational structures where space and cost savings are important. The "Skyliner" is a complete, factory-assembled conditioning system, which is shipped to the job ready for installation with a minimum of time and labor. The unit circulates the conditioned air through a ceiling diffuser located directly beneath the unit. No duct system is needed; no vent is required. As a result, the total building height can be reduced. Janitrol Heating and Air Conditioning, Division of Midland-Ross Corporation, Columbus 16, Ohio.

On Free Data Card, Circle **101**

New Pipe-Railing System Eliminates Welding

"Connectorail" is a complete new system of wrought-aluminum fittings, permitting economical construction of

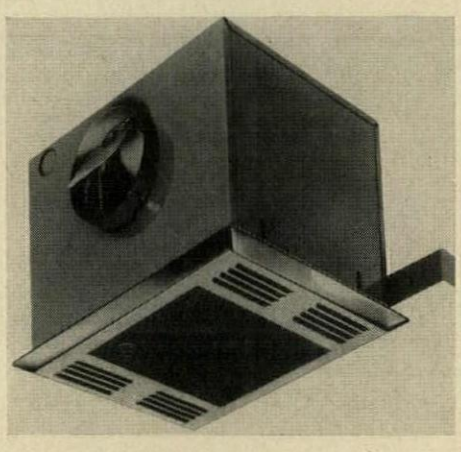


flush-type pipe railings without welds or exposed fasteners. Unlike conventional cast-aluminum fittings, the new connectors allow perfect color matches with pipe, even after alumiliting. Structural soundness and proper alignment are enhanced, since posts and top rails run in continuous lengths, uninterrupted by cross- and tee-fittings. Complete system, with all components carried in stock for 1¼″ and 1½″ pipe, includes tees, elbows, floor and fascia flanges, connector sleeves, brackets, wall returns, and plugs. Julius Blum & Company, Inc., Carlstadt, N. J.

On Free Data Card, Circle **102**

Bathroom Unit Combines Heat and Ventilation

Both instantaneous heat and effective ventilation are supplied by new "Duo" for bathroom ceilings. Unit incorporates an electrically reversible, axial-flow fan that provides forced air for both the heating and ventilating



cycles. Heating elements produce both radiant and convection heat, and reach peak efficiency instantly. Housing is equipped with an adjustable bar for mounting between joists. Trade-Wind Division, Robbins & Myers, Inc., 7755 Paramount Pl., Pico Rivera, Calif.

On Free Data Card, Circle **103**

Accidental Explosions Detected and Prevented

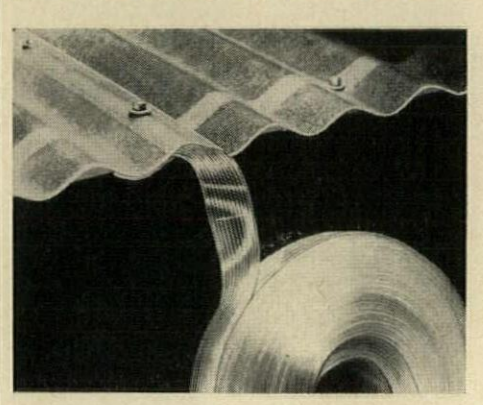
Unique patented system offers active protection against accidental explosions, by detecting an explosion at the instant of its inception and acting within a few thousandths of a second to snuff out the blast before it becomes destructive. The system claims to be capable of dealing effectively with the majority of explosion hazards common in industry. No destructive explosions have occurred in protected equipment or spaces.

Most present systems depend upon human factors; the Fenwal system, completely automatic, is not subject to such limitations. System operation is based on the fact that, although a blast appears instantaneous to the naked eye, there is a finite lapse of time between its ignition and the build-up of destructive pressures. Acting within this period, up to 40 milliseconds, the system renders the blast harmless either by *suppression* (envelopment of the explosion with a suppressant), *venting* (opening a path to the atmosphere for controlled relief of pressure), or *isolation* (blocking the explosion from other areas). System was adapted by Graviner Manufacturing Company, Ltd., of Britain, from a World War II development. Fenwal, in bringing the development to this country, has exclusive manufacturing and sales rights, and will maintain technical collaboration with the British firm while independently modifying equipment to meet specific U. S. needs. Fenwal Inc., Ashland, Mass.

On Free Data Card, Circle **104**

Unique Vinyl Seal For Corrugated Sheeting

A revolutionary side-lap seal for all types and sizes of corrugated sheeting has been developed. Made of durable clear vinyl, "Weather Gard Vinyl Seal" is constructed with 12 individual air channels which permit 12 positive sealing points—six times as many as most other types of side-lap seals. One width, 1¼″, seals all sizes

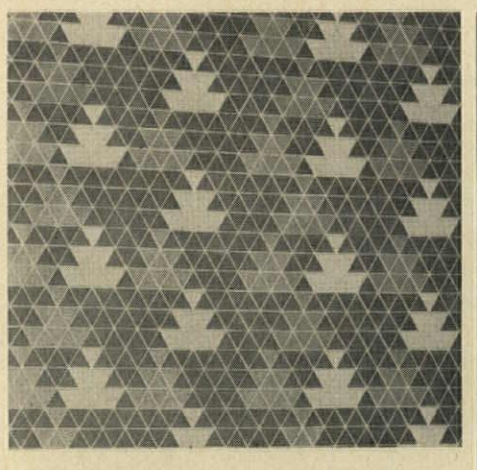


of corrugated sheeting as the sheets are installed. No mastic or calking compound is required. Construction Fasteners, Inc., Spruce & Water Sts., Reading, Pa.

On Free Data Card, Circle **105**

New Triangular Shape For "Byzantile" Designs

"Byzantile," the distinctive ceramic-tile concept introduced in 1958, now includes a new tile shape and two new colors. The new shape is a 2″ equilateral triangle which lends itself to many design possibilities. The new colors are a light blue and a pale green, joining the six original earth



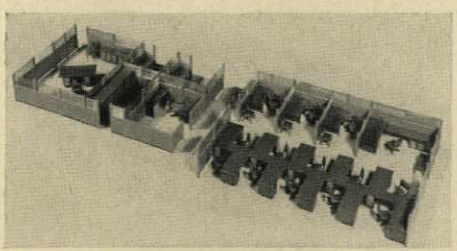
colors. Original shapes, still available, are diamonds, squares, and right triangles. The Mosaic Tile Company, Zanesville, Ohio.

On Free Data Card, Circle **106**

New Pattern for Vinyl Asbestos Tile

Azrock has introduced a new pattern called "Premiere" in their "Vinalux" vinyl asbestos tile. It is described as "a fleecy cloud effect" and is distributed uniformly over the surface and at every level through the tile. It comes in seven colors with tinted-white backgrounds: gray, pink, beige, soft green, turquoise, metallic gold on white, and metallic gold on cream. Available in 9″ x 9″ size, $\frac{1}{16}$″, $\frac{1}{8}$″ and $\frac{3}{32}$″ thick at regular vinyl asbestos tile prices, with the two metallic tones slightly higher. Azrock Floor Products Div., Uvalde Rock Asphalt Co., Box 531, San Antonio, Tex.

On Free Data Card, Circle **107**



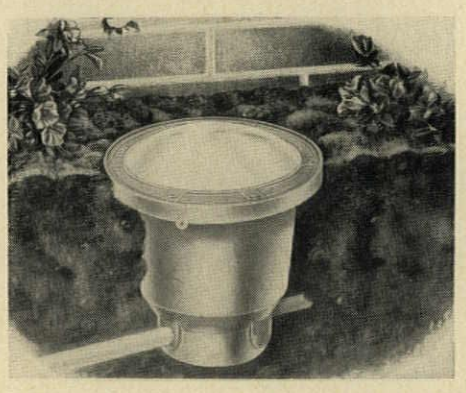
Scale Models of Office Furniture

"Master Planner" scale-model kit includes a multitude of office furniture and partition combinations which, with floor grid furnished, permit an exact visualization of a furnished space. Either existing or new office units can be accurately reproduced from the parts. Scale models are of desks, file cabinets, bookcases, work centers, and chairs; a corner wall section gives three-dimensional realism to the layout. Kit can be a useful communication tool between architects and clients, as well as a planning aid for the designer. Applied Research Corporation, Erie, Pa.

On Free Data Card, Circle **108**

Outdoor Spotlight For Flush Installation

New weatherproof fixture for flush installation in earth, concrete, or plaster has been designed for spotlighting gardens, commercial buildings, outdoor displays, etc. Cast-aluminum construction assures maximum corrosion resistance, and the unit is fully sealed to meet all weather and grade conditions. Fixture is designed for 150 x PAR-38 flood or spot lamp, sealed beneath a clear-crystal tempered lens. Internal adjustment permits aiming of lamp in any direction up to 30 degrees off the vertical. Prescolite Manufacturing Corporation, 2229 Fourth St., Berkeley, Calif.

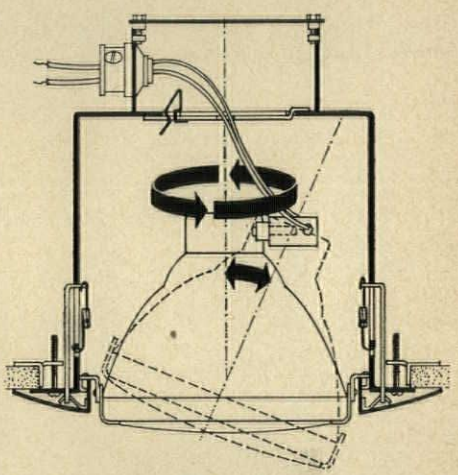


On Free Data Card, Circle **109**

Prefab Steel Canopies For Weather Protection

New line of steel canopies enhances commercial and industrial structures while offering effective weather protection. The canopies are available in a wide choice of styles and sizes, and are delivered to the site ready for erection. They offer a weathertight roof of interlocking "Steelox" panels, flat and smooth underneath, and coated with aluminum or zinc on top to resist corrosion and reflect solar radiation. Four basic models include a double-cantilevered canopy over a row of single V-columns, a double-cantilevered canopy supported by two rows of tapered columns that create a walkway between them, a single-cantilevered structure supported by angled columns and suited to sloping terrain, and a flat-roof canopy supported by box beams resting on pipe columns. Suggested uses include auto service areas, parking areas, loading platforms, equipment sheds, camper and passenger shelters, walkways. Armco Drainage & Metal Products, Inc., Middletown, Ohio.

On Free Data Card, Circle **110**



Spotlight Rotates, Tilts

New "Gimbal Ring" light that rotates a full 360 degrees horizontally, and tilts 30 degrees vertically, accommodates a 150 w PAR-38 spot or flood lamp. Patented "T.N.T." (Twist-N-Turn) mounting requires three simple steps to complete the installation in less than a minute. Unit recesses 8¼″ into ceiling and has spring clip allowing quick removal of cover plate for access to outlet box. Markstone Manufacturing Company, 1531 N. Kingsbury St., Chicago 22, Ill.

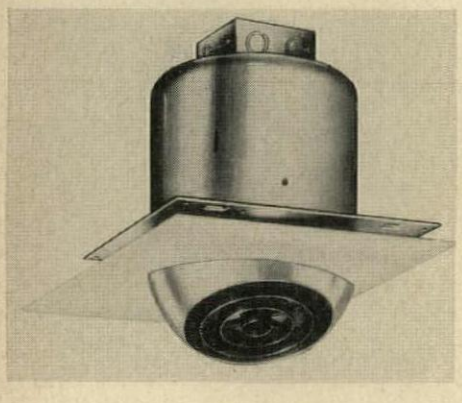
On Free Data Card, Circle **111**

Epoxy Coating Used In Muscle Parlor

The latest addition to Vic Tanny's Health Clubs is not this daughter of Poseidon but "Adheron" epoxy coatings. The coatings have given the

pools a hard, impervious surface that, according to the manufacturer, cleans easily without chemical compounds and will not accumulate hard water mineral deposits. Epoxy coatings can also withstand the intense humidity of steam rooms, as well as frequent scrubbings with strong cleaning chemicals required to remove body oils and soap deposits. Adheron may be rolled, brushed, or sprayed on any clean surface and comes in a selection of colors. Hauger-Beegle Associates, Inc., 900 West 49 Place, Chicago 9, Ill.

On Free Data Card, Circle 112



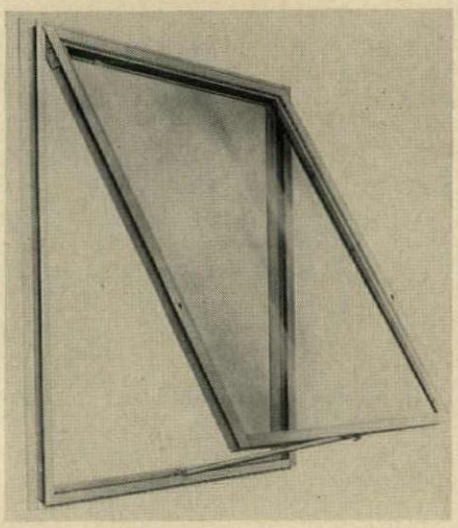
Downlights Have Integral Tile Trim

New work-saving series of acoustical-tile trim rounds, integral with downlights, has been introduced. By replacing one complete 12″ x 12″ tile, the new trim rounds eliminate cutting and piecing of ceiling tile during installation of recessed lighting fixture. Each of the trim rounds has a 13″-square frame which overlaps onto adjacent tiles. Styles in the new "Series H4100" include Baffle Downlight, Open Adjustable, Parallel Louvred Adjustable, Open Ellipsoidal Downlight, and Louvred Eyeball. Halo Lighting Products, Inc., 4201 W. Grand Ave., Chicago 51, Ill.

On Free Data Card, Circle 113

In-Swinging Window For Multistory Use

New aluminum window, top-hung and inswinging, is designed primarily for use in multistoried, air-conditioned buildings where a minimum of air infiltration is required. Ventilators are held in an open position by a removable stay at the center of the vent sill, thus eliminating hold-open arms and assuring free access to both sides of window for cleaning. The new window, designated "Series 900-TH," is

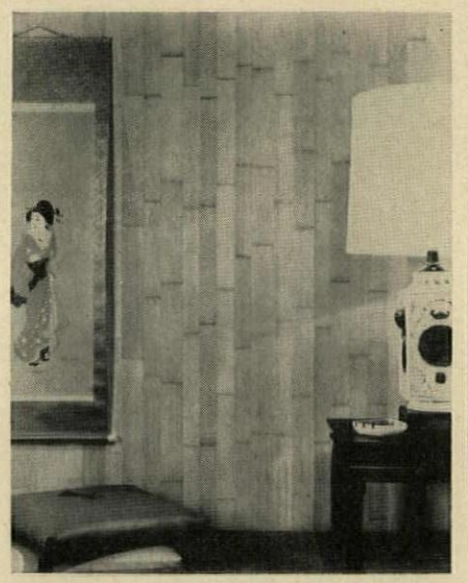


also supplied with a hopper vent at the sill for buildings where emergency ventilation is required. Other features include a special key and removable stay bar that allow the window to be operated by authorized personnel only, and positive lock in a 40-degree open position. Truscon Division, Republic Steel Corporation, 1315 Albert St., Youngstown 1, Ohio.

On Free Data Card, Circle 114

In an Oriental Mood

Oriental bamboo veneer is the newest idea in plywood paneling for walls, furniture, and cabinets. The natural light-toned wood has both a delicate vertical grain and unusual horizontal



patterns of the bamboo joints. Panels are 8′ long, and either 24″ wide (¾″ thickness) or 32″ wide (¼″ thickness). The bamboo is on one side only; core and back are Lauan plywood. Georgia-Pacific Corporation, Equitable Bldg., Portland 4, Ore.

On Free Data Card, Circle 115

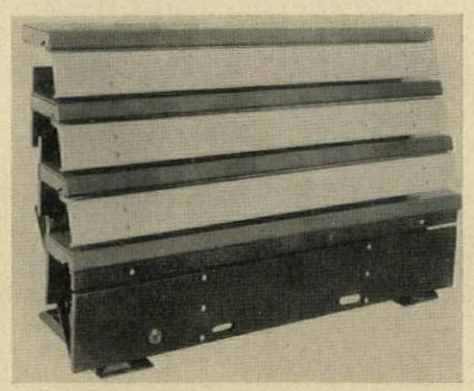
Insulation Facing In Decorator Colors

Three decorator colors in "Vinylfilm" insulating facing are now offered as standard items, in addition to the original silver shade. New colors are white, medium blue, and mint green. Developed for use in facing all types of glass-fiber and mineral-wool insulation, the product is available in standard widths ranging from 38″ to 54″. Vinylfilm provides an economical moisture-vapor barrier and insures flame-retardant characteristics. Goodyear Tire & Rubber Company, Akron 16, Ohio.

On Free Data Card, Circle 116

Folding Gym Seating Is Vinyl-Coated Steel

First folding gymnasium seating to be manufactured from vinyl-coated steel has been introduced. Called "V.O.S.,"



the new seating combines the strength and durability of steel with the comfort, color, and wearing advantages of vinyl covering. An important property of the vinyl is in deadening noise. In addition, it resists scratches, stains, and burns. Exclusive feature is a safety slope front of the folding gym seating that enables athletes to break their falls before contact with the seating. V.O.S. is constructed for single-row operation, permitting any number of rows to be locked together for varying requirements. School Equipment Division, Brunswick Corporation, 2606 E. Kilgore Rd., Kalamazoo, Mich.

On Free Data Card, Circle 117

New Automatic Stair At Low Cost

A new reversible-demand escalator, "priced to sell in the medium-priced car range," has been developed. New "Autostair" eliminates the need for

The secret's in the resin! Here's a new, *invisible* protective shield for wood doors. A shield that resists scuffs, stains, hard wear—and enhances the beauty of the wood itself. It's called Tigaclad.

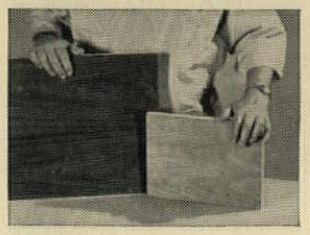
A special thermosetting sheet, impregnated with a unique new resin, is bonded by heat and pressure to the door faces. The process is dry. The resin actually fuses with the wood, becomes part of it.

Tigaclad meets or exceeds N.E.M.A. standards for decorative laminates—wear, scrubbing, boiling water, stains, even cigarette burns!

Best of all, Roddis Tigaclad Doors cost *less* than high pressure laminated doors! And you get genuine wood veneers, not wood grain prints.

Tigaclad Paneling! You can specify beautiful Roddis genuine wood panelings Tigaclad protected, too—in all the most popular woods. Send coupon for details on Roddis Tigaclad products.

What a dramatic difference! Note the richness and beauty of Tigaclad wood sample on left compared to ordinary wood of identical cut and species.



Beauty and protection never before possible with NEW...

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Weyerhaeuser Company
Roddis Division, Marshfield, Wisconsin

Please send complete information on Roddis Tigaclad Doors.

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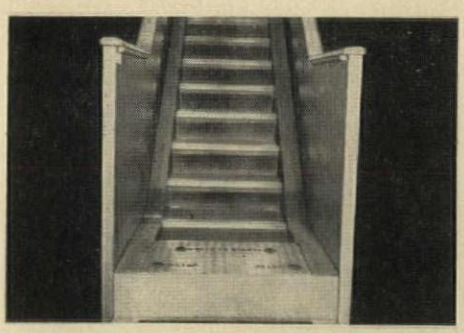
Company_____

Address_____

City_____ State_____



two units in an installation, and materially cuts operating costs, since the stair operates only when needed by a rider. For further economy, the escalator is manufactured in packaged units ready for installation. To start the Autostair ascending or descending, the passenger must step on two buttons. At the end of the ride he steps on a red button to stop movement. Various features insure easy, safe operation. The new escalator is particularly recommended for factories, offices, clubs, rest homes, and private homes. Its low cost permits it to be specified in buildings where an escalator would not normally be considered. Autostair Corporation, 4360 N. Knox St., Chicago 41, Ill.

On Free Data Card, Circle **118**

Prestretched Wood Tiles Hold Their Shape

"Higgins Stretchedwood Tile" (p. 90, FEBRUARY 1959 P/A) is now available nationally. The 9″ x 9″ tiles are cut from hardwood that has been stretched on a machine to prevent further

stretching, shrinking, or buckling when laid as a floor. The millions of expansion joints created in the stretching process allow the wood to expand and contract internally, leaving it dimensionally stable. The ⅛″-thick tiles have a six-coat factory prefinish and can also be used on walls or counter tops. Flexible enough to be applied directly over worn, resilient floors, concrete slab, or wood subfloors. Higgins Industries, Inc., P.O. Box 8169, New Orleans 22, La.

On Free Data Card, Circle **119**

Economy in School Heating

A heating and ventilating system for economical installation in cases where the building code requires a separate heater room with fire-resistant walls, or in a free-standing installation in the corner of a classroom, has been announced. "Counter-Flow Inn-A-Wal" blends and distributes air for heating, cooling, and ventilating as needed for classroom comfort. The distribution system is through "Util-i-Duct" bookshelf sections that are installed around the outside perimeter of the classroom under windows. Adjustable filler sections and corner sections are available. A perimeter air diffuser along the top of each bookshelf has an adjustable damper for balanced air distribution. Ducts where shelving is not required extend only 6¼″ from the wall. System is gas-fired, with forced-air installation approved by AGA as a Counter Flow Forced Air Furnace for use against static pressures up to 50″ W.C., and for use with temperature rises of 70 to 105 F. Models available in 80,000–100,000 Btu. Norman Products Co., 1150 Chesapeake Ave., Columbus 12, Ohio.

On Free Data Card, Circle **120**

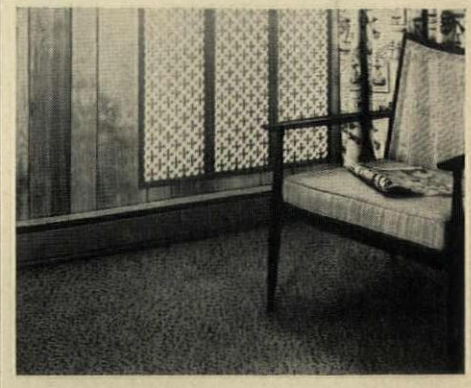
Revolving Shelves Simplify Filing

Diebold's new "open shelf power filing" has much to offer to secretaries in the way of comfort and to architects in the way of design possibilities. Designed to bring file shelves to eye level, within easy reach, the unit has a motor that, at the touch of a button, rotates the shelves so that they appear at a "window." Method makes filing more efficient by eliminating the need to climb ladders to reach high shelves, the need to stoop to see folders in bottom cabinets, and the need to pull out drawers and push them back every time someone has to pass by. File clerk works seated (a work shelf can be built in if desired), making all the material that would fit in six four-drawer file cabinets come to her. Architecturally, the system takes the stigma out of high space, making it just as useable as the space

up to shoulder level, and it can save floor space because space need not be provided for ladders or drawers.

Operation is simple and safe. The subject of each shelf is written in on a chart next to its push button. A safety rope stops the machine turning before a hand can get caught in the works. File comes 36″ or 50″ wide, in letter- or legal-size folder depth, 8′, 9′, or 10′ high, or can be custom made. From $1200; file shown is $2000. Diebold, Inc., Canton 2, Ohio.

On Free Data Card, Circle **121**



New Baseboard Heaters All Have Thermal Cutout

"Square silhouette" styling marks the new GE line of electric baseboard heaters. The new heaters also feature safe, automatic thermal cutout, shutting off heat if the front is blocked at any point. Clean design allows flush-to-wall installation; heaters can also be semirecessed. Dependable GE "Calrod" heating units are metal-enclosed and operate at safe, low temperatures. Electric Comfort Heating Section, General Electric Company, Appliance Park, Louisville 1, Ky.

On Free Data Card, Circle **122**

AIR/TEMPERATURE

School Air Conditioning

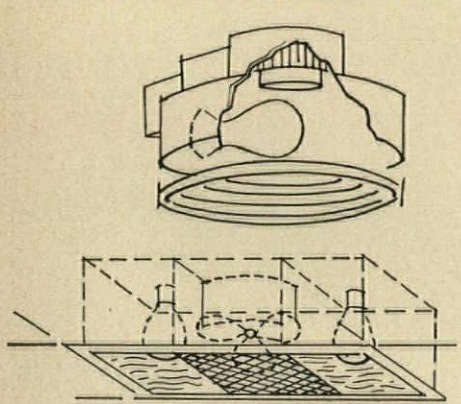
Economic and educational advantages of air-conditioned schools are discussed in a new 20-page booklet, *You Can Air Condition Your New School —and Cut Building Costs.* Four new schools are presented as case studies. In one of these, plans for a conventional school without air conditioning were compared with those for a compact air-conditioned school. Even though both met the same educational requirements, studies showed the air-conditioned school would cost $50,000 less than the conventional school, because of substantially reduced wall areas, windows, and mechanical and electrical work. Plans and photos of models are shown. Commercial Division of Minneapolis-Honeywell, 2753 S. 4th Ave., Minneapolis 8, Minn.

On Free Data Card, Circle 200

Guide to Residential Ventilation

Home Ventilation Guide, 12 pages, helps in correctly selecting the proper

FAN AND LIGHT COMBINATIONS

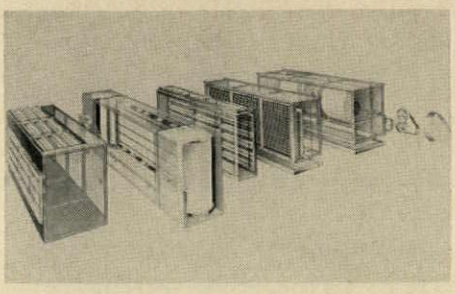


exhaust fans and hood-fans for home ventilation. Types of equipment are outlined, with information on their operation and best location; sketches show installation features. Accessories and duct work are briefly described. The Home Ventilating Institute, 1108 Standard Bldg., Cleveland 13, Ohio.

On Free Data Card, Circle 201

Complete-Package Air-Conditioning Units

An entirely new line of packaged, central-station, air-conditioning units has been introduced, which has all



components—including fans, coils, humidifiers, dampers, filters, frame, and casing—designed, fabricated, and tested by one manufacturer. For the first time, a complete selection of both unit and automatic air filters is available as preselected and matched components of an air-conditioning unit. The new "Kennard/Nelson" units are not only engineered to meet exacting conditions of air quantities, temperatures, and humidities, but also to provide any degree of air cleaning—in a single package. *Bulletin AC-100,* 60 pages, comprehensively describes the new line. Department PD, American Air Filter Company, Inc., 215 Central Ave., Louisville 8, Ky.

On Free Data Card, Circle 202

New Oval Duct For Air Systems

New "Flat-Oval" duct and matched fittings are for use where space limitations prevent the installation of circular duct for high-pressure, high-velocity air systems. Data sheet, 4 pages, gives sizes, shows complete set of matched fittings, and presents pressure-loss data. Reinforcement to minimize amplitude of wall vibration and static-pressure deflection is discussed. United Sheet Metal Company, Inc., 883 N. Cassady Ave., Columbus 19, Ohio.

On Free Data Card, Circle 203

CONSTRUCTION

Revised Specs for Lathing and Plastering

Recently revised edition of *Recommended Specifications for Lathing, Furring, and Plastering,* 42 pages, is now available. Basic specifications for all accepted materials and methods of application have been compiled, following a five-year investigation. General notes on the construction specifications form an introduction to the comprehensive recommendations. An extensive appendix discusses important factors that affect quality in lathing and plastering. Technical Committee, Contracting Plasterers' and Lathers' International Association, 4612 Woodward Ave., Detroit 1, Mich.

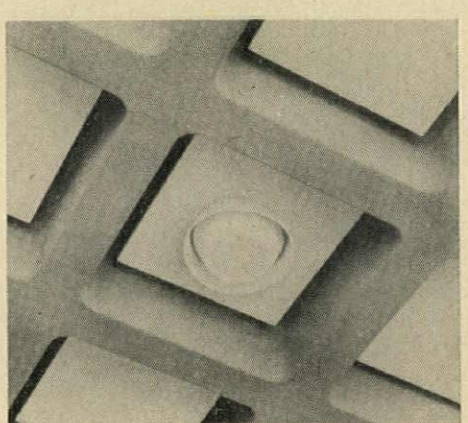
On Free Data Card, Circle 204

Manual on Hardboard

New edition of *Masonite Construction Manual,* 24 pages, has been published. It includes complete information of the company's 57 types and thick-

nesses of hardboard. Descriptions, uses, and application data are presented graphically for each type of material. Contents of this working reference include general data, basic panel types, special types, interior use, exterior application, and engineering assistance. Service Bureau, Masonite Corporation, Suite 2037, 111 W. Washington St., Chicago 2, Ill.

On Free Data Card, Circle 205



Concrete-Joist Details

Advantages and new design techniques of monolithic, lightweight, concrete-joist construction are described in new 68-page manual. The wire-bound manual contains isometric details and cross-section drawings of all Ceco concrete-joist construction, with tabulated data for "Steeldomes," flange forms, adjustable forms, and

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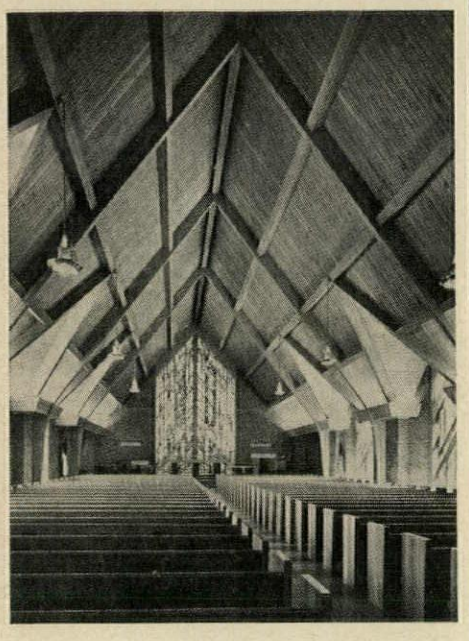
For more information, circle No. 316

long forms. It is profusely illustrated with details and on-the-job photographs. In addition, the manual describes related items such as anchorage devices, underfloor electrification, ceiling construction, reinforcing bars, spirals, welded-wire fabric, and accessories. A section lists more than 350 recent projects in which monolithic concrete joists were used. Ceco Steel Products Corp., 5601 W. 26 St., Chicago 50, Ill.

On Free Data Card, Circle 206

Wood Used Religiously

Invitation to Worship is a 24-page, full-color panorama of church building in modern wood construction. It



is a graphic depiction of the "esthetic and structural qualities of wood which have made it a traditional material in church construction." Various recent projects point out the beauty, integrity, compatibility, versatility, flexibility, and durability of wood as used in religious architecture. Technical Services Division, National Lumber Manufacturers Association, 1319 18th St., N.W., Washington 6, D.C.

On Free Data Card, Circle 207

Aluminum Panels in Canopy Applications

Structural panels for covered walkways, marquees, service areas, and parking areas, are presented in 8-page folder. Isometric drawings and construction details show the panels used in an attached canopy, free-standing canopy, suspended canopy, and in long-span applications of almost unlimited dimensions. Panels are available in white or clear-satin baked enamel, anodized, or mill finishes. Extruded fascia is anodized or mill-finish aluminum. Navaco, Inc., 601 Hall St., Dallas 26, Texas.

On Free Data Card, Circle 208

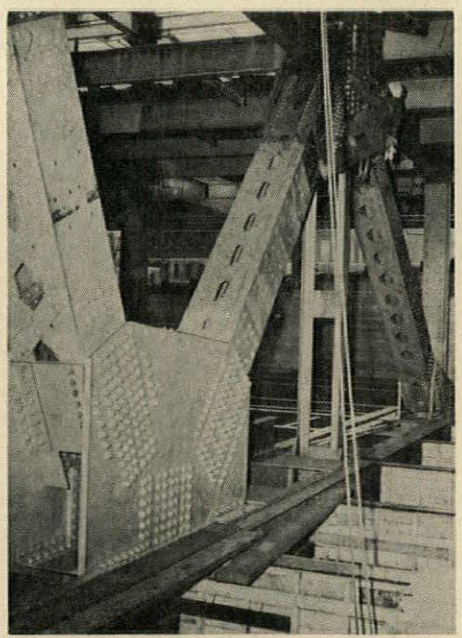
New Edition of Roofing Specs

Complete specifications for construction of built-up, watertight roofs are contained in new 1961 edition of *Built-Up Roofing Specification Manual for Architects and Engineers.* The 28-page booklet includes instructions on materials and methods for installation on both flat decks and steep roofs, and on all types of surfaces. Re-roofing, insulation, flashing, waterproofing, and dampproofing are also covered. Specifications describe conditioning of the surface, step-by-step application of the roofing materials, preparation of materials, and bonding conditions. Koppers Company, 430 7th Ave., Pittsburgh 19, Pa.

On Free Data Card, Circle 209

Review of High-Strength Bolts

Recent issue of *Fasteners Magazine,* 40 pages, is devoted to the first complete review of the many new developments in high-strength bolting. It also includes the complete text of *Specifications for Structural Joints*



Using ASYM-A325 Bolts, as approved and published by the Research Council on Riveted and Bolted Structural Joints. The comprehensive issue presents bolting practice in the field, gives numerous examples of successful application in structural erection, and discusses suitability for shop fabrication. Industrial Fasteners Institute, 1517 Terminal Tower, Cleveland 13, Ohio.

On Free Data Card, Circle 210

Handbook Follows Research in Marble

Limited edition of new *Marble Engineering Handbook,* 122 pages, seeks to present reliable engineering and design information in a single volume, to facilitate the proper use of marble in architectural design. It is the result of a broad research program undertaken by the Armour Research Foundation for the National Association of Marble Producers; but the full scope of the program goes further than its original intention of investigating the suitability of marble for curtain walls, and documenting the physical properties of marble—two areas of interest shown by architects in a recent AIA survey. Among other subjects detailed in the handbook are improvements in the existing methods of erecting and anchoring marble, and progress in the preservation of polished finishes on exterior marble. Write (on letterhead) to: Marble Institute of America, 32 S. Fifth Ave., Mt. Vernon, N.Y.

Specification for Exposed Structural Steel

Specification for Architecturally Exposed Structural Steel, 4 pages, is a completely new standard just released by the AISC. The growing popularity of exposed structural steel as a means of architectural expression has made it advisable to establish standards for closer dimensional tolerances and smoother surfaces than required for ordinary structural framing. The objective of this new specification is to insure satisfactory finished appearance while keeping construction costs in line.

Another new specification, *Loading Tables for Open Web Steel Joists,* has also been issued. It has been adopted by the Steel Joist Institute and supersedes the earlier AISC-SJI joint specification which has appeared in the

AISC *Manual* since 1955. American Institute of Steel Construction, 101 Park Ave., New York 17, N. Y.

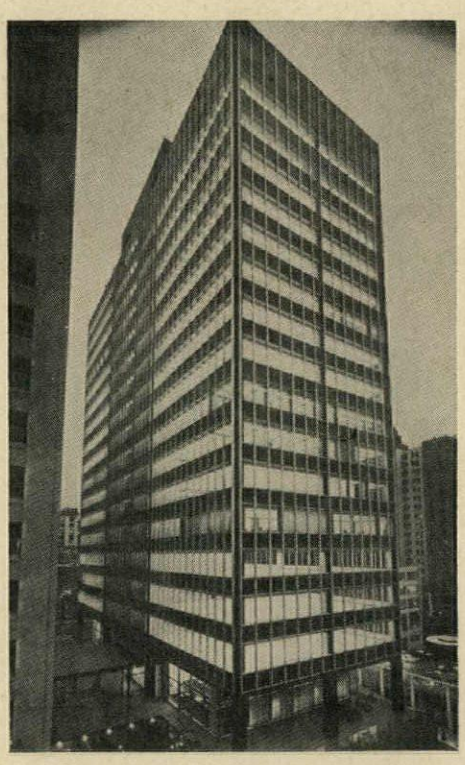
On Free Data Card, Circle 211

Suspended-Ceiling Data

All basic data needed by the architect in designing a suspended ceiling is concisely presented in new 2-page data sheet. Tables, diagrams, and design information on size and spacing for hangers, main runners, cross furring, and type and weight of metal lath, are provided. Illustrations show where and how ventilation should be provided for the areas above suspended ceilings. Further details show clearances of main runner and furring channels from adjacent walls, as well as recommended saddle ties and minimum lap for channel splices. Metal Lath Manufacturers Association, Engineers Bldg., Cleveland 14, Ohio.

On Free Data Card, Circle 212

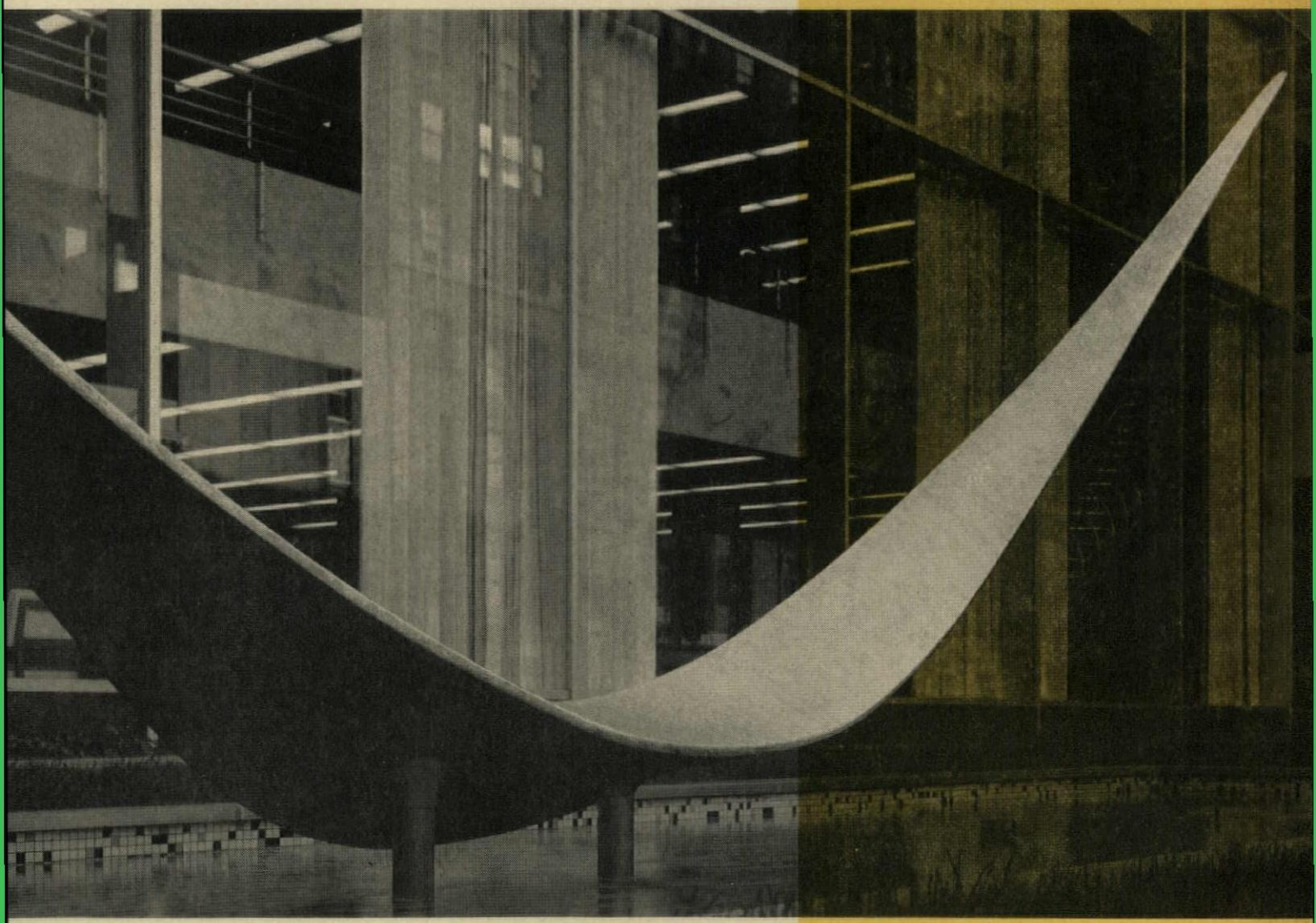
DOORS / WINDOWS



Properties and Uses of Glass

Glass for Construction, 32 pages, gives extensive data on the many types of glass available today. Properties and uses for each type are listed; photographs show recent installations; and suggested specifications are given. Among the types pre-

ATTENTION TO DETAIL



THIS soaring sculptural form graces a small formal garden at Louisville's new Liberty National Bank & Trust Company offices. Inside the handsome glass-fronted building are other exciting design elements: a delicately-balanced, jewel-like mobile, a 600-tile map of Kentucky, a 31-foot oval table for directors' meetings. Attention to detail is evident throughout this modern building, extending to the choice of Dover Elevators to serve its vertical transportation needs. Dover Elevators (formerly Shepard Elevators) are built with meticulous attention to every detail. Motors and motor-generator sets, controls, mechanical components and cabs are all built by Dover to the specific requirements of elevator service, and thus give building owners better performance with less maintenance. Write today for more information.

For more information, turn to Reader Service card, circle No. 319

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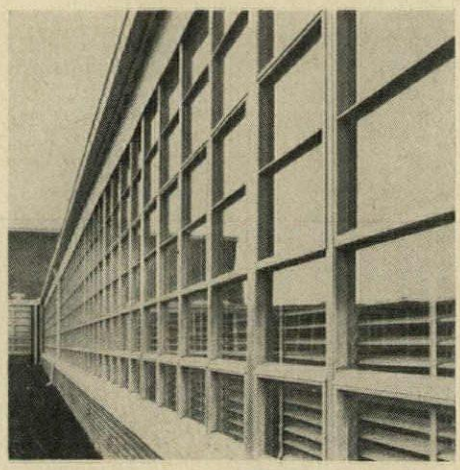
sented are polished plate, tempered plate, "Vitrolux" for curtain walls, transparent mirrors, bullet-resisting glass, laminated safety glass, and "Thermopane" insulating glass. Extensive data is given on Thermopane's reduction of heating and cooling loads, and other properties. Libbey-Owens-Ford Glass Company, 811 Madison Ave., Toledo 1, Ohio.

On Free Data Card, Circle 213



New Catalog of Aluminum Windows

Complete line of "Ualco" aluminum windows and sliding doors is presented in 28-page catalog. More than 22 styles are shown, complete with specifications and assembly details. Color photographs show several recent installations of the windows and curtain-wall systems. Complete file of tracing sheets is available upon further request. Southern Sash Sales & Supply Company, Inc., 818 20th St., Sheffield, Ala.

On Free Data Card, Circle 214

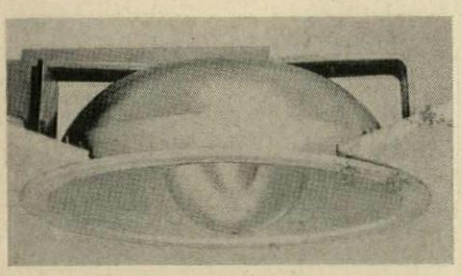
ELECTRICAL EQUIPMENT

Catalog of Items for Low-Voltage Distribution

Latest *Buy Log*, a 92-page catalog covering low-voltage distribution equipment, has been issued. The publication is issued jointly by G.E.'s Distribution Assemblies Department and Circuit Protective Devices Department, and serves as a condensed buying catalog for products of the two departments. It provides complete buying information on heavy-duty safety switches, current-limiting fuses, hinged wireway, circuit breakers, switchboards, motor control cen-

ters, power-distribution centers, and all types of panelboards and busway. Among the many useful features of the catalog are product selector charts, descriptions, pricing tables, ratings, weights, dimensions, ordering directions, and general application information. Distribution Unit, General Electric Company, 41 Woodford Ave., Plainville, Conn.

On Free Data Card, Circle 215



Remote Control Institutional Lighting

"Luxtrol Positioner Controls," for fingertip remote control of lighting, are presented in new 4-page brochure. The characteristics of the system are briefly described, and the types are diagramed. The system provides fully controlled lighting in any commercial, industrial, or institutional application. Preset lighting effects can be timed to coincide with the most complex programing. The Superior Electric Company, Bristol, Conn.

On Free Data Card, Circle 216

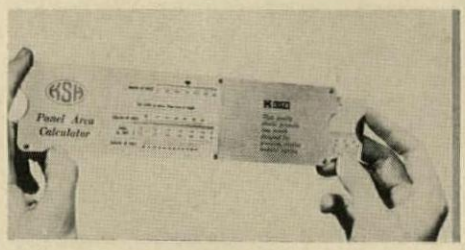
Cellular-Steel Floor Wiring

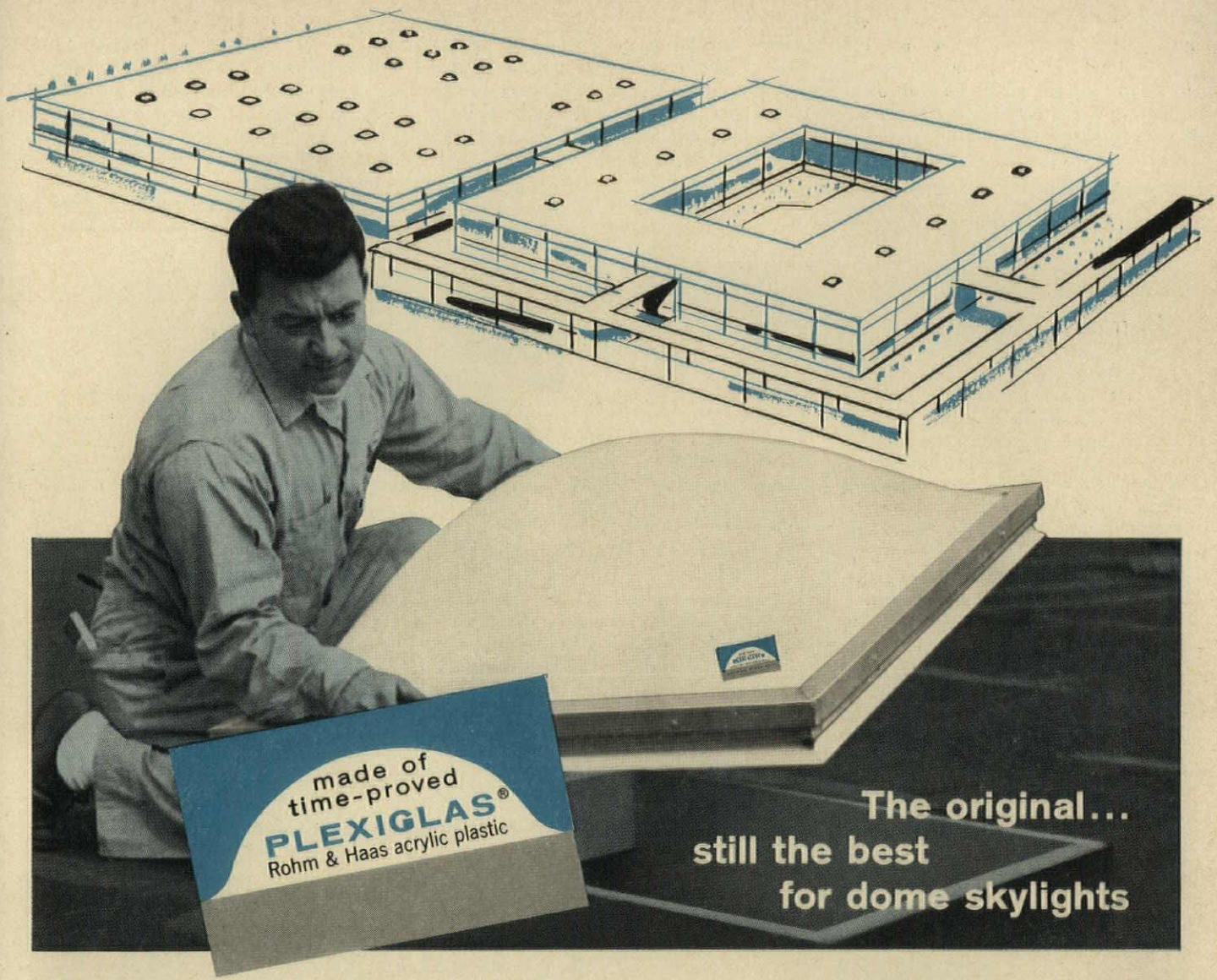
New 56-page reference manual to help prevent electrical obsolescence in new buildings is now available. The illustrated booklet demonstrates how "Robertson Q-Electrical" wiring systems, for cellular-steel flooring and cellular-strip systems, provide unlimited electrical availability for buildings. Specific information on Q-Electrical systems is detailed in 4 sections: roughing-in materials, finish materials, layout design, and installation data. Specifications and dimensional drawings are included. H. H. Robertson Company, Farmers Bank Building, Pittsburgh, Pa.

On Free Data Card, Circle 217

Plastic Lighting Panels

Comprehensive Plastic Lighting Catalog, 10 pages, has been issued for use by architects, engineers, and lighting specialists. Information includes complete descriptions of each panel type in the "K-Lite Prismatic Lens" series. Charts give necessary photometric





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Denver 11, Colorado

FLORIDA
Hill Fan Company
3395 N.W. 67th St.
Miami, Florida

OREGON
The Pam Company
1951 N.W. Wilson St.
Portland, Oregon

PENNSYLVANIA
Bohem Mfg. Co., Inc.
12 Water St.
Bryn Mawr, Pennsylvania

SOUTH CAROLINA
Mid-South Industries, Inc.
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Tulsa 4, Oklahoma

TEXAS
Naturalite, Inc.
5115 E. Grand Ave.
Dallas, Texas

Plasteco, Inc.
8721 Market St. Rd.
Houston 11, Texas

Southwestern Plastics Co.
6515 Rice Ave.
Houston 36, Texas

PLEXIGLAS

data for both polystyrene and acrylic panels. Also included is a durable, handy, panel-area calculator, to be used in the design stage as well as in construction estimating. K-S-H Plastics, Inc., High Ridge, Mo.

On Free Data Card, Circle **218**

FINISHERS/PROTECTORS

New Anodizing Process Widens Color Range

New system of anodizing, called "Kalcolor," is introduced in 16-page brochure. The finish is suitable for almost every type of aluminum application where flat or formed sheet or extrusions are required. According to brochure, new process gives—for the first time—the following essentials for a good architectural color finish for aluminum: color fastness, uniformity of color, good color match and reproduction each time, wide range of colors, and corrosion and abrasion resistance. The close range of 13 colors includes gold, tan, brown, olive, grey, and black; each differs slightly, but importantly, from the others. Explanation of the process and typical specifications are included; also a list of distributors where more information can be obtained. Kaiser Aluminum & Chemical Sales, Inc., 300 Lakeside Dr., Oakland 12, Calif.

On Free Data Card, Circle **219**

New Protective Coatings

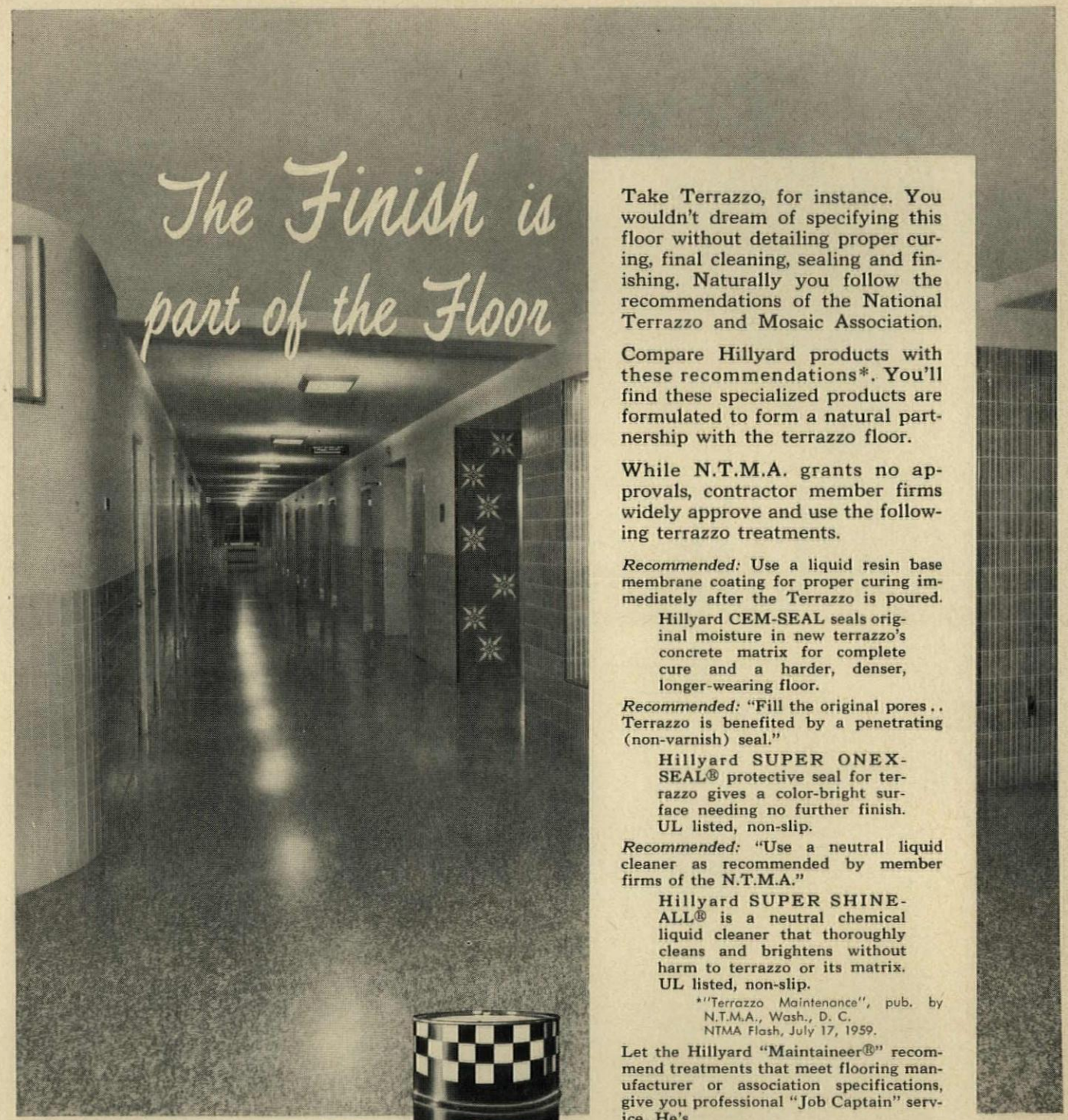
New 4-page brochure on "Metallic Vinyl Series" of protective coatings has been published. Described are "Brush Or Spray," a blend of highly resistant vinyls and atomized aluminum that permanently protects wood, metal, glass fiber, and concrete; "Putty X," a repair compound for restoring rotted or cracked wood trim and sills; and "Putty S," a fast-setting formulation for patching holes, cracks, and rust-outs on tanks, vats, ducts, and similar wood, metal, and concrete structures. Magna-Bond, Inc., 1718 S. 6th St., Camden 4, N.J.

On Free Data Card, Circle **220**

Liquid Sealer for Concrete Floors

The causes of dusting of concrete floors and an efficacious method of dustproofing, hardening, and sealing such floors, is thoroughly discussed in new 2-page "Duocrex C" catalog sheet. This clear, synthetic-resin sealer stops dusting by penetrating and sealing the pores within the concrete. Product is fully described in data sheet; additional information discusses application, coverage, packaging, and time- and labor-saving features. A. C. Horn Companies, Division of Sun Chemical Corp., 2133 85th St., North Bergen, N.J.

On Free Data Card, Circle **221**



Take Terrazzo, for instance. You wouldn't dream of specifying this floor without detailing proper curing, final cleaning, sealing and finishing. Naturally you follow the recommendations of the National Terrazzo and Mosaic Association.

Compare Hillyard products with these recommendations*. You'll find these specialized products are formulated to form a natural partnership with the terrazzo floor.

While N.T.M.A. grants no approvals, contractor member firms widely approve and use the following terrazzo treatments.

Recommended: Use a liquid resin base membrane coating for proper curing immediately after the Terrazzo is poured.

Hillyard CEM-SEAL seals original moisture in new terrazzo's concrete matrix for complete cure and a harder, denser, longer-wearing floor.

Recommended: "Fill the original pores . . Terrazzo is benefited by a penetrating (non-varnish) seal."

Hillyard SUPER ONEX-SEAL® protective seal for terrazzo gives a color-bright surface needing no further finish. UL listed, non-slip.

Recommended: "Use a neutral liquid cleaner as recommended by member firms of the N.T.M.A."

Hillyard SUPER SHINE-ALL® is a neutral chemical liquid cleaner that thoroughly cleans and brightens without harm to terrazzo or its matrix. UL listed, non-slip.

*"Terrazzo Maintenance", pub. by N.T.M.A., Wash., D. C. NTMA Flash, July 17, 1959.

Let the Hillyard "Maintaineer®" recommend treatments that meet flooring manufacturer or association specifications, give you professional "Job Captain" service. He's

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Write for FREE Hillyard A.I.A. Files. Practical treating guides, one for each type of flooring.

IN SWEET'S ARCHITECTURAL FILE

Forty-Second and Going Branch, First National Bank of Oregon, Portland, Oregon. Architects: Balzhiser, Seder & Rhodes, Eugene, Ore. Contractor: A. C. Edmon, Portland.

Space provided: main banking room, safe deposit vault, employees' lounge, men's and women's rest rooms, furnace room, storage area. *Structural framing:* double curved glulam beams spaced at 15'. *Exterior walls:* band sawn siding, brick. *Interior walls:* wood paneling, exposed brick, plaster, metal wall tile. *Heating:* forced warm air duct system. *Ventilation:* refrigerant forced air system. *Lighting:* fluorescent and incandescent. *Floors:* vinyl tile over concrete slab. *Roof:* built-up felt and tar with crushed Haydite over striated Tim-Deck. *Area:* 3,950 square feet. *Cost:* about $15 a square foot.

INSULATION

New Acoustical Plaster Reflects Light and Sound

A completely new type of acoustical plaster combines the best qualities of lime-based acoustics with pore-producing properties of foamed materials. The new product, "Mute," has a surface skin that is tougher and more durable than competitive acoustical plasters that depend on granular characteristics of aggregates for sound absorption. Recent tests made by Riverbank Acoustical Laboratories, Armour Research Foundation, show that the product combines good light reflectance with sound absorption. When applied ½" thick over a standard base coat, Mute produces an average noise-reduction coefficient of .60. Noise reduction increases further with stippling and perforating. Other laboratory tests show a light-reflectance average of 79%. Technical data, directions, and architectural specifications are contained in 4-page folder. Ohio Lime Company, Woodville, Ohio.

On Free Data Card, Circle 222

SANITATION/PLUMBING

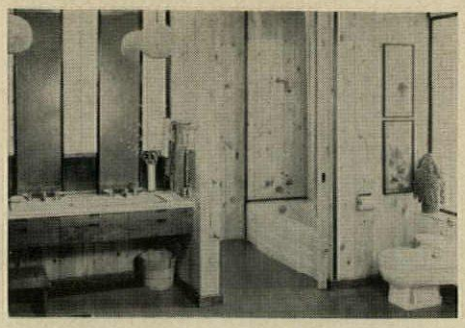
Submersible Pumps

Condensed and compact, new full-line catalog is designed as a quick, complete reference on the uses of submersible pumps. Featuring 29 thumbnail illustrations of typical pump applications, the 4-page catalog lists the physical dimensions, pumping capacities, electrical data, and specific features for each pump. To further assist architect, engineer, and plumbing contractor, specification forms are included for each model. Kenco Pump Division, The American Crucible Products Company, 1305 Oberlin Ave., Lorain, Ohio.

On Free Data Card, Circle 223

New Plumbing Fixtures

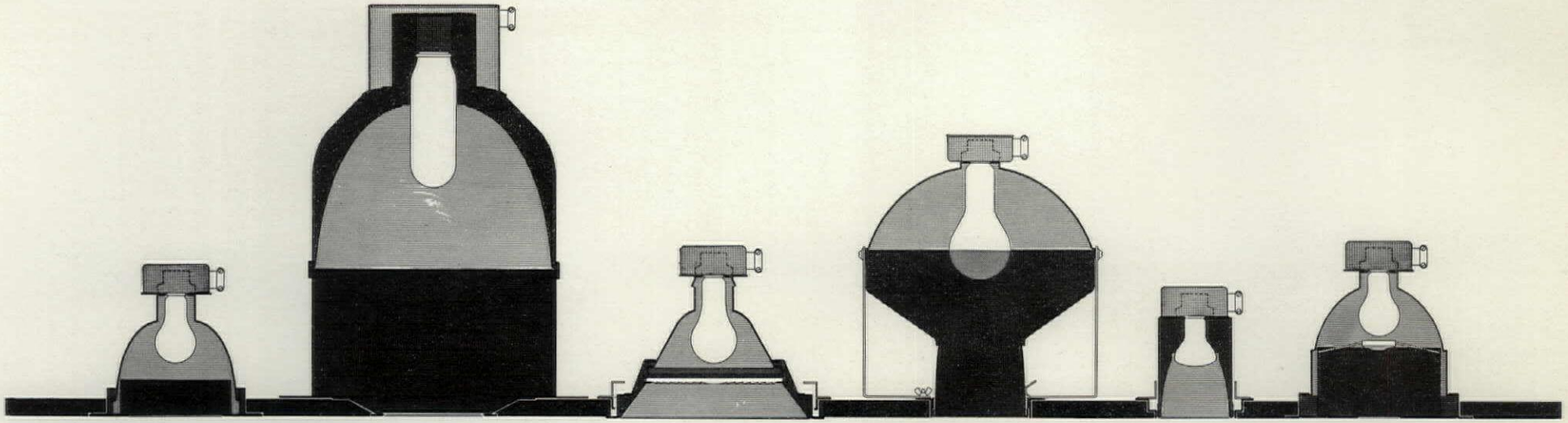
New catalog, 40 pages, illustrates company's complete line of fixtures—including several new models—for commercial, industrial, and residential use. Featured are such exclusives as the "Versa-Tile" lavatory and counter-



top combination, "Ever-Dry" tank for water closets, "Uni-Tilt" flush valve, and "Uni-Lox" lavatory hanger. Bathrooms are shown in full color. Advertising Department, Universal-Rundle Corp., 217 N. Mill St., New Castle, Pa.

On Free Data Card, Circle 224

PROGRESSIVE ARCHITECTURE
NEWS REPORT
REINHOLD PUBLISHING CORPORATION
430 PARK AVENUE NEW YORK 22, N.Y.
Publisher.....D. Bradford Wilkin
Editor.....Thomas H. Creighton
News Editor .....James T. Burns, Jr.



Shown here are cross-section drawings of six downlites designed and manufactured by Gotham Lighting. They are representative of some 680 units comprising the recessed downlite group. They are but one segment of more than 1050 different fluorescent and incandescent luminaires produced by Gotham Lighting. Each unit is the result of optical development and photometric testing. Each unit is engineered to specific requirements of lighting and construction. For comprehensive data on all Gotham Lighting equipment, with candlepower distribution curves, coefficients of utilization and efficiencies, as well as photographs, detailed drawings and specifications, a catalog is available on request. Gotham Lighting Corporation, 37-01 Thirty-first St., Long Island City, N.Y.

"The 14-inch J&L Light Beam was the most economical member we could use for the spans," say Robert and Company Associates of Atlanta, the designers.

New Atlanta Airport Terminal...Designed

Air traffic comes in, all at once, in Atlanta, Georgia. Often there are as many as 60 planes in the terminal, all loading and unloading. Atlanta is one of the most important airlines transfer points in the country. Everyone wants to hold lay-over times to a minimum, so heavy traffic peaks are unavoidable.

The problem was to design a new terminal that would make life easy for passengers and airlines people. And do it as inexpensively as possible.

That's why the compact, 11-story central terminal building (with control tower on top) was conceived—with six long concourses splayed out like fingers to provide plenty of parking space for planes—with easy access everywhere for passengers and airlines personnel—with 8 special second-story "jetways" that telescope out from above the concourses to let jet passengers on and off with no stair climbing, high and dry out of the weather — and with underpasses beneath each concourse for baggage trains to run, safely separated from passenger walks.

Design Economy was gained in concourse construction and in stair stringer fabrication by selecting J&L lightweight structurals —14-inch J&L Light Beams for concourse and main terminal roof purlins—10-inch J&L Junior Channels for stair stringers.

Because they are easy to adapt, you can use J&L lightweight structurals in a wide variety of architectural designs. They reduce the steel tonnage you'll require. And because they're easy to fabricate, raise, and position, they cut labor costs.

To find out more about J&L lightweight structurals, call or write direct to *Jones & Laughlin Steel Corporation, 3 Gateway Center, Pittsburgh 30, Pennsylvania.*

J&L STEEL

Jones & Laughlin Steel Corporation

3 Gateway Center, Pittsburgh 30, Pennsylvania

Steel

for the Jet Age with J&L Light Beams

Key factor in concourse design was use of J&L 14-inch Light Beams as purlins. Span between rigid bents varies from 19′ 7″ to 24′ 0″. Formed metal decking, which supports insulation and built-up roofing material, is welded to the purlins. Purlins and girders also support a maze of concealed piping.

J&L 14-inch Light Beams and J&L 10-inch Junior Channels were used extensively throughout the new "Jet Age" Atlanta Airport Terminal. J&L 10-inch Junior Channels were used as stair stringers. J&L 14-inch Light Beams are purlins, mainly in two-story concourse sections.

Architect: Shepley Bulfinch Richardson & Abbott, Boston, Ma

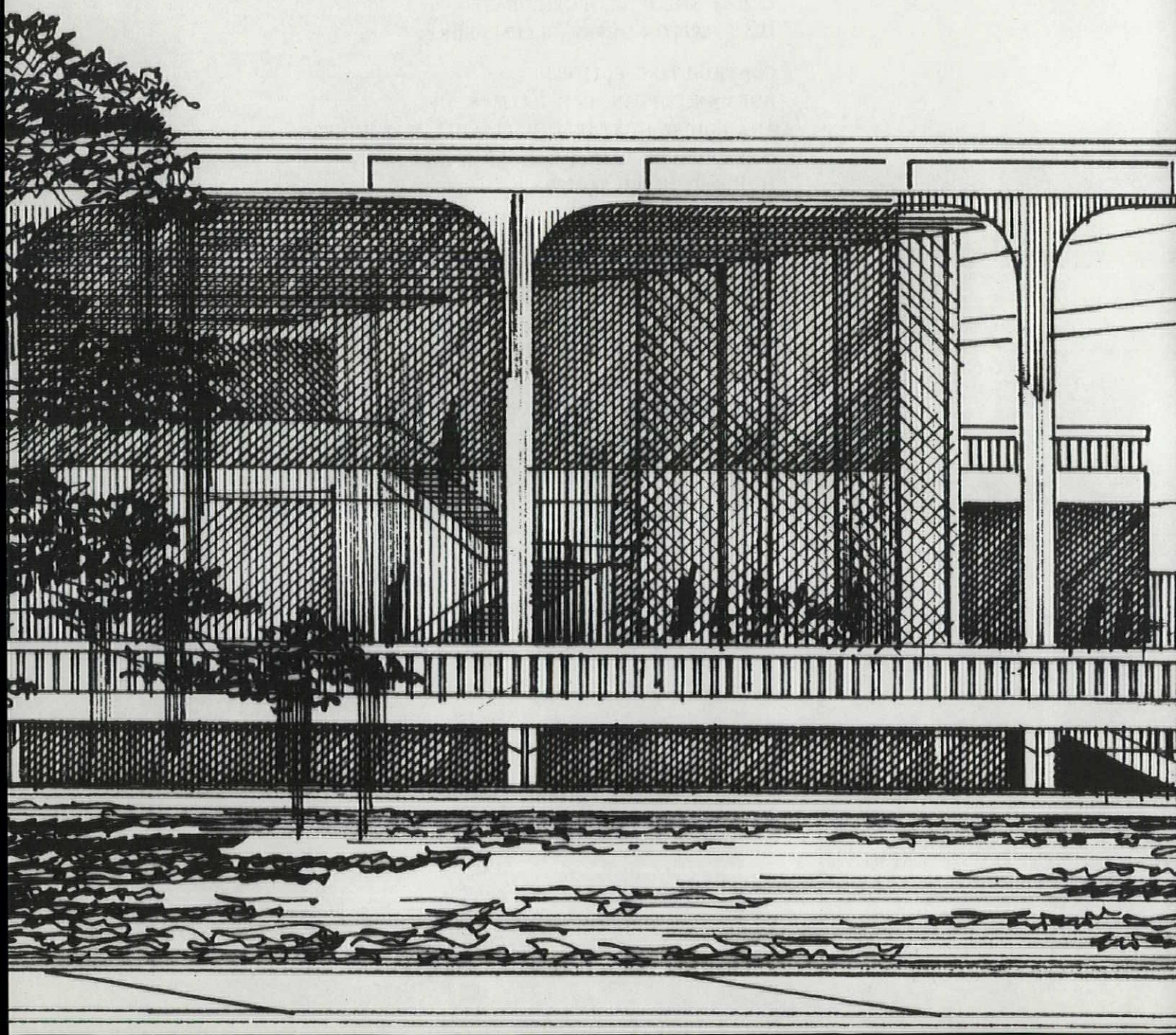
LEVERETT HOUSE LIBRARY, HARVARD UNIVERSITY. Each pillar-supported roof section is surrounded by ribbons of daylight — evenly diffused, glare-free. This achieves airy openness above, naturally illuminated privacy below. Execution of this concept was made possible with Wasco custom-designed continuous triangular Skydomes — molded of acrylic, the shatter-proof, weathering plastic. Wasco welcomes other opportunities to combine daylighting with advanced architectural ideas. Write Custom Engineering Department, Wasco Products, Inc., 5 Bay State Road, Cambridge 38, Mass.

WASCO SKYDOMES

For more information, turn to Reader Service card, circle No. 373

March 1961 **PROGRESSIVE ARCHITECTURE**

REINHOLD PUBLISHING CORPORATION
430 PARK AVENUE, NEW YORK 22, NEW YORK



CONTENTS

THE SIXTIES A P/A SYMPOSIUM ON THE

The Period of Chaoticism

Chaos: A state of things in which . . . nature [is] conceived . . . as not necessarily uniform. WEBSTER. We are immersed in a life in which the world as a whole obeys the second law of thermodynamics: confusion increases and order decreases . . . order is least probable, chaos most probable. NORBERT WEINER: *The Human Use of Human Beings: Cybernetics and Society.*

The profession of architecture, through its most articulate spokesmen, is perfectly willing to agree that a state of diverse design approach, which is readily acknowledged to be confusion and might well be termed chaos, exists today. In the discussion reported on the following pages, chaos is accepted as a state: (a) to be admitted; (b) to be defended; (c) to be expected as a continuing condition; and (d) to be modified or controlled only by ill-defined disciplines. It seems fair to consider this a design philosophy, a comparatively new, self-conscious architectural point of view, a movement which might be called "Chaoticism"—the acceptance and practice of the principles of chaos.

It has seemed to the Editors of P/A for some time that a state of confusion exists in architecture. The assumption that the second half of the 20th Century would see a consolidation of the gains from the early modern movements of the first half, that the benefits of rapid technological development would be realized, and that a maturing profession would fit itself to the moulds of a new type of practice seems to have dissipated in a whirlwind of differing attitudes. That this was not simply a parochial editorial point of view without foundation or concurrence was indicated when the Jury met to consider entries in the recent Design Awards Program. The word "chaos" kept coming into the Jury's comments. Chaos was even described at that time, by Walter Netsch, as a noticeable "direction." It seems that anyone who surveys the current architectural scene carefully and critically arrives at the same feeling.

But, as Netsch says in one of the statements that follow, "chaos alone is not the problem." There remain questions of acceptance of chaos, duration of chaos, the possible reciprocal influence of a chaotic state and contemporary technology, and the effect on one another of chaoticism in design and methods of practice. To try to find answers to these questions, P/A has conducted a sort of Seminar by correspondence, asking some 50 architects to answer certain specific questions, or to comment in a general way on the subject of the questions.

The questions divided themselves into three parts: on theory, on practice, and on technology. This month we present the comments on the contemporary theory of architecture; next month there will be a similar discussion of the practice of architecture under today's conditions. In a later issue devoted entirely to the subject, the technological discussion will be published.

In the statements that follow, there is a very unanimous agreement that confusion amounting to chaos exists in architecture today. There is a common feeling—not quite unanimous—that this is correct and justifiable, though not always, as Lou Kahn puts it, "a happy thing."

The only real disagreements have to do with aspects of the condition which do not deny the conclusion: various reasons are given for the chaotic state; and there is disagreement amounting to a chaos of its own in the attempts to define a set of disciplines which might contain all the varied output. At the end of the discussion, we will attempt to summarize these arguable points.

Since the discussion results from correspondence or conversations with P/A's Editor, the presentation that follows is in the form of personal questions. THOMAS H. CREIGHTON

T.H.C.: ***To begin the discussion, are we agreed that the present situation is a confused one?***

MIES VAN DER ROHE: I agree that confusion exists in architecture today.

MINORU YAMASAKI: There is no question about the existence of confusion.

JOSE LUIS SERT: I believe we all agree that there is a certain amount of confusion in the architectural field right now.

CRAIG ELLWOOD: The term "confusion" is not adequate. There is chaotic and critical disorder.

BUCKMINSTER FULLER: Many feel that confusion exists in architecture today. I myself do not feel confused.

T.H.C.: ***Then is it a confused total picture, rather than a confusion on the part of individuals?***

FRED BASSETTI: Some designers may be confused, but certainly others are not. No one could argue that Mies or Aalto or

STATE OF ARCHITECTURE: PART I

Louis Kahn are confused. What does seem clear is that even in the midst of general mediocrity, there is greater diversity in design today than there has been for many years, perhaps than ever before.

PAUL SCHWEIKHER: Perhaps all of our individual objectives are the same, really, but we may be too close to them in time and in the action of building for them to be seen as the same or similar. We may need only time in which to look back at what has happened, and, of course, time in which to develop, to mature. To this end, the work of the individual is important and good whether it is in the public eye or not. . . . But few of us are going that way. We have chosen, for the time being at least, to work in another way. The architecture that this produces is weak and aimless rather than confusing. We are diverted from significant objectives by efforts to impress one another with our individual ingenuity. Only one or two know which way to go (in this country, Mies and Kahn); the rest are without conviction, waste good talent and energy in unrelated, insignificant bypaths; popular perhaps, and frequently profitable, but architecturally pointless.

LOUIS I. KAHN: We're living in an era of new space demands, new things which are so fresh and unfamiliar that most minds are unable to direct them in a way which gives an imagery of a truer way. And the fact that we have such wonderful resourcefulness to boot—no limits—produces naturally a kind of individual approach rather than a stylistic approach to architecture. I tend to think that it's a true thing that exists now, but I say this: it isn't a happy thing. It produces a great deal of permissiveness, and the result is really chaotic because those who are incapable imagine they have the privilege of also having that permissiveness. The whole thing is a mess of copying and recopying and wrong attitudes and misinterpretations of things very well considered, like the Corbusier and Mies things.

RAPHAEL S. SORIANO: The reason we are in this state of confusion is that we have been accepting and condoning every statement, so long as it has been stamped "art." . . . I write this with apprehensions about the difficulty of finding a common "architectural language" necessary to evaluate objectively architecture as it is understood by every practicing architect, and architecture as it is taught in the schools. To make matters more complex, the monthly architectural press blasts us with glamorous examples of the 20th Century's old and young masters. Emphasis is placed on the young who are playing with a variety of ideas *à la mode* and who try very hard to be different, even if they do not make sense to themselves or to anyone else. The architect must express himself at all costs, they say, like the artist he is. . . . Our vision is befogged until we do not see clearly the tendencies and connections of the subject. Consequently, it is not clear to all of us what we mean when we say "architecture."

T.H.C: ***Do you think that perhaps this "befogged vision" is part of the general social climate, and not simply confusion in architecture alone?***

LADISLAV L. RADO: If there is confusion apparent, I would not designate the field of architecture as its native habitat. It is an expression of the general turmoil caused by an exploding technology, specialization, and the revolution in communication.

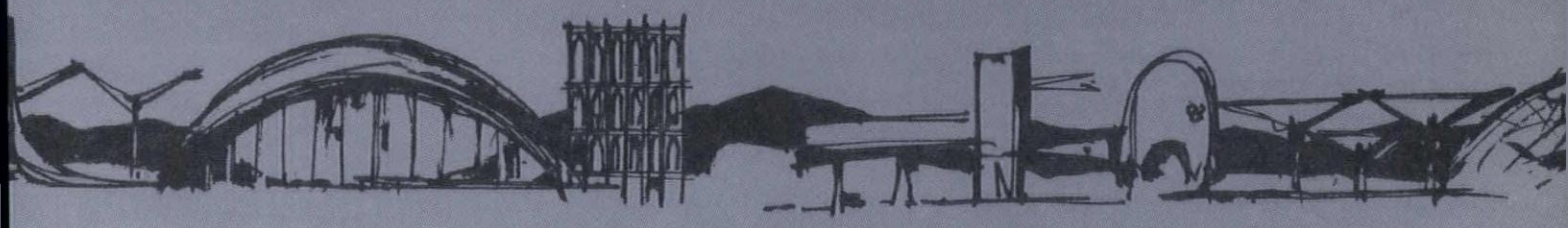
MARIO J. CIAMPI: The confusion and chaos that exists in the environment of our time is of serious concern to everyone, and most particularly, I feel, it is the responsibility of the architectural profession to acquaint society with this situation and make whatever recommendations are necessary to provide a new direction toward a solution.

PIETRO BELLUSCHI: Confusion exists wherever there is life.

ALDEN DOW: Architecture is the most honest interpreter of society. . . . Our society is more concerned with material things than with honest, broad thinking. This contributes to our confusion.

HENRY KAMPHOEFNER: The present state of confusion in American architecture *is* related to the total cultural confusion in our land. With sex and the dollar the principal symbols of our time, it is no wonder that Madison Avenue can control our economy and influence our architecture. This trend toward "styling" is becoming more and more prevalent in architecture, with the two most popular American architects and *Time* magazine cover-men, Eero Saarinen and Edward Stone, being currently preoccupied with problems of styling in architecture. This confusion extends into the schools. . . . The student is subjected to parental influences and Madison Avenue techniques through the newspapers, magazines, and TV. The typical American student is presently more concerned with security and the good life than he is with a true dedication to a purpose. This shows up later in his architecture, and is, in my opinion, the principal cause of the current confusion.

BASSETTI: My concern stems from a belief that the general standard of work being done by practicing architects, not only in this country but apparently in most others as well, is so very low. It would seem that it is low for two reasons . . . first, and most serious (and mostly beyond our control) is the saddening fact that present-day society pays only lip service to the "pursuit of excellence." The second reason is that our formal training, where principles of design are concerned, has often been superficial to an extreme. In what other profession, except perhaps in the fine arts, is it possible for a vast majority of students to be graduated



without thoroughly understanding certain basic design principles? ... The fledgling architect must be imbued with enough curiosity of mind and strength of spirit to discover or formulate such necessary guidelines by himself.

SERT: We should not forget that the world of the architect is only a part of the larger world we all live in, and that confusion is everywhere around us—in politics, in the disorderly growth of our cities, in our lack of faith in the future of humanity, etc., etc.

I have lived long enough to remember the meetings of modern architects in the late 20's and early 30's, where the majority of participants derived their positive attitudes toward architecture from their great hopes for the future. They were dissatisfied with the way of living of their times, and this encouraged them to search for a new architecture that would be an expression of a better and a different world. Today, there seems to be a general contentment about our way of life, and everybody is trying to limit the changes to the technological and esthetic fields.

There are many able and talented young architects, but even they seem to lack a sense of direction and purpose. They are naturally ambitious and want to do outstanding work, yet one has the feeling that once they have experimented for a certain time with technical and esthetic novelties, they feel discouraged and confused. They realize that technology is only a tool and that esthetic experiments are meaningless when they lack purpose. Confusion should not be blamed on the architects, young or old, and I think we are less confused than the people working in the other fields of the arts. We are in closer relation with the changing events in sociology and technology, and consequently architecture has become the least abstract of the arts.

I have great faith in the younger generation and I do believe they are finding new means of architectural expression and are increasingly aware of their position of responsibility. As the world situation changes for the better—I am an optimist and I think it will—this younger generation of architects will, I am sure, discover new aims that will guide their work. The confusion of today may well be a passing crisis from which we will all benefit. The rather naïve attitudes of the functionalist of the 20's could have proved very dangerous had they not been questioned and evaluated.

PERCIVAL GOODMAN: What gives our scene a look of confusion is that: (a) in former times there could be agreement by reason of an acceptable ideology, a knowing patron, a simpler technology, a narrower but deeper context in which to work. It was not one world of rapid communication; (b) we have a split between basic life attitudes—the endless, gaudy variations designed as gimmicks (the main confusion) which clutter the scene but that can be considered only with horror or wry laughter, and the serious works.

The *average* architect is no different from the average anybody else in our society. He has a common standard and a common discipline. The standard is the American standard, which allows—calls for—$11 billions a year to be spent on advertising, $25 billions on disposable packaging, $75 billions on arms. The discipline is a nine to five day, geared to a schedule of commuter trains, television programs, installment payments, and committee meetings.

The exceptional architect, like the exceptional scientist or artist, exempts himself from such standards and disciplines and makes his own . . . but unless a man is a great philosopher, can he establish standards and disciplines out of his own head that are contrary to the social mores and not have them filled with either old-fashioned ideas or individualistic quirks?

So let us deal with an optimistic figure of 1 building in 10,000. Do these architects have a common discipline and standard? They do: it is to find a better way of housing people for their different activities. . . . There are variations in their ways of realizing the intention. This depends on whether they stress biological efficiency, technical efficiency, or psychological efficiency; whether they are by temperament more intellectual than emotional, more rational than romantic.

PAUL THIRY: Assuredly there is confusion. It is probably in the nature of things generally. The terms "social," "spiritual," "technology," "form," "space," "scale," etc., seem to apply to everything in uniform proportion, regardless of whether they relate to architecture or to a new detergent.

JOHN M. JOHANSEN: The situation in architectural design today is explosive for the following reasons, as I can distinguish them: rapid and effective communication within the profession to the point where the new concepts are reported, absorbed, have their influence, and become dated before the building is finished; keen interest in and investigation of architecture of other remote cultures of the world; new interest in historic monuments, following a feeling of guilt for the Bauhaus austerity; continuing development of building methods and techniques; individualistic tendencies of and esthetic invention by certain influential architects; continually new functional requirements.

T.H.C: ***Several of you have mentioned "exploding technology." We will treat this subject separately, but in general is this a basic reason for the apparent confusion?***

HARRIS ARMSTRONG: Though this may appear to be oversimplification, I believe that the present confusion in architectural design, which is greater than ever before in history, is the result of the impact of the undigested and sometimes undigestable flood of new materials and techniques that are placed in our hands by the producers, plus the influence of the widely divergent philosophies of the great architects who made the architectural history of the first half of our century.

FULLER: Mankind is in a condition of highly accelerating transformation. A few decades will see such changes in world man's mode of living that only his increasingly well-cherished examples of the historical artifacts (including today's seemingly most extraordinary accomplishments) will remain to remind us of 1960 and all the years before. To those who believe that nothing fundamental will change despite superficial technical evolution, the inexorable transition terminations appear as confusion or even chaos. To those

who have expected change, little confusion exists. The hard-core Newtonian is dissolving into the Einsteinian relativity. The press confuses the situation with its insistent attempt to recognize the new in terms of the old. It can't be done.

T.H.C: ***Coming back to Armstrong's point about the influence of the early modern masters: has theirs been a unifying influence, or a divisive one?***

WALTER NETSCH: The early periods of the modern movement provide the basic catechism: they should be seen and reviewed more often. For example, Mies' early towers and Corbu's early apartment schemes have much in the basic visual and social goals worth expanding today.

SIDNEY KATZ: About 25 years ago, we began to see the end of the classical system of architectural education introduced by the Beaux Arts. The resulting freedom that our architectural schools enjoyed has led to revolutions in architectural training, and in turn has affected the entire profession in this country. About that time, Gropius came to Harvard, Mies to Illinois, and the new era for student design work began. The masters were able to transfer these disciplines directly to students and future teachers and make them a part of the architectural life of our times. This led to a contemporary style that a vast majority of our architects rushed to adopt scientifically; and this house of cards, without foundation, is collapsing. Thus the past decade has seen the replacement of the French design traditions by German disciplines and controls, with little progress made in trying to develop any indigenous thought or native creativity, and, unfortunately, very little progress in turning out good American architects.

During this period, the major American architectural activity centered around business and industrial growth, and involved clients who were delighted with the newly adopted disciplines that could readily be fitted into existing systems of construction without radically changing methods and technology.

Finally, many architects began to realize that they were being enslaved by a veritable Machine-Age design format that was literally destroying their creative powers. Naturally, the reaction was violent. Everyone started to criticize everyone else. The schools were—and still are—under attack.... They must answer the challenge to produce qualified graduates, equipped to face these more demanding requirements.

HARRY WEESE: Going back to your first question, I believe there *is* at the moment confusion, and even irresponsibility, in design. But after all, post-revolutionary modern is only 15 years old, a precocious adolescent. The movement prior to this was either grafted to the healthy root of the 19th Century romanticism or independently flowering *avant garde. Avant garde* came in two forms: plastic or protomechanistic, with variants between, and its applications were limited by its revolutionary nature. But it did sink its roots enough to take over when the new social order it had implied emerged from depression and war. This order swallowed the modern movement more or less whole, and, along with it, the counterfeits and vulgarizations. Thus the license earned by the pioneers in their long, solitary, and purifying effort was automatically conferred on all architects and artists. It is no wonder that design is confused. The old order passed, with the new not ready to take over. So we stand between two worlds, having the worst of each, it often seems, rather than the best.

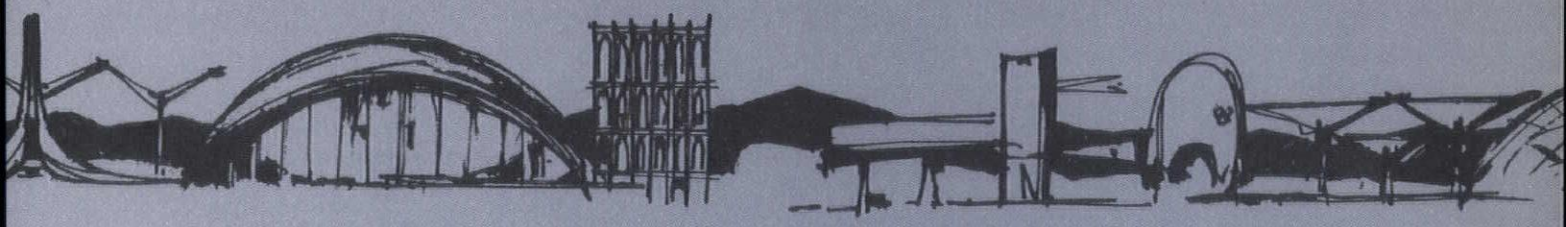
LAWRENCE B. ANDERSON: As I see it, the early period of modern architecture capitalized on our optimism about the future of technology and about the possibility that technological advance could lead to a more appropriate expression of our culture through our buildings. It was, and remains, a valuable lesson, and much has been gained. But now we are becoming pessimistic and disillusioned about technology for a number of reasons. One is the global insecurity we feel as we become increasingly aware of the great inequalities and tensions between cultures in such different states of development in all areas of the world. Another is our inability to reconcile the nature of art (a cultural and therefore permanent and timeless phenomenon) with the nature of mass production, (a materialistic and therefore ephemeral transformation of raw material for quick obsolescence through mass use).

OSCAR NITZCHKE: It would be difficult for me to say that there is confusion in design at the moment, now that modern architecture has gained almost universal recognition, and especially when you have been a young witness and actor in the struggle of that movement. When you have lived as a young expectant in the Academic Eclecticism of the Beaux Arts and worked with great Professional Incompetents, and out of confusion have tried to go along with the Pioneer Masters of the modern movement, sweating out the bitterness of that struggle, it would be sad to find yourself in a state of confusion 30 years later.

If there is any confusion at the moment, to me it comes out of the new structural possibilities in construction and how to clothe them —what sort of skin to stretch over the structure. . . . That's where we have trouble; some of us forget that we are architects. Some take fire from structural wonders and seem to ignore the slow discovery and timeless research and experiments out of which these structural marvels came. Personally, I cannot see that there is confusion of mind among the great, actual architect-builders. We are not in a state of confusion, but transition.

SORIANO: It is unfortunate, but Corbusier's Ronchamp, Sullivan, Wright, and the Bauhaus are outdated because of pictorialism. Nothing can be learned from it. All we have to do is glance at the courses that are being taught at our architectural schools, as well as those that were taught at the Bauhaus by Paul Klee in "line and plane," or Kandinsky's "analytical drawing" translated into "energy and tension," and all the theories and principles expounded by most everyone in the Bauhaus about color, construction, etc., and we see how absurd all this is in the light of what we know now due to our scientifically verified investigations.

SERGE CHERMAYEFF: Everything that gave the spur to what we now find noteworthy, or which is brought to our notice at all, was in fact born of the revolution that was based on the



re-establishment of principles, the call for the re-establishment of responsibility and integrity in architectural action. We might say that *le cercle est bouclé*. We are at the end. We started with a revolution and we end in complacency. We started protesting against eclecticism, then we end in eclecticism. We started by getting rid of the absurdities of the inventive 70's, and we are now producing our own absurdities.

NETSCH: There is confusion for a simple reason: cause and effect. Too seldom are the causes discovered; too often is the effect alone attempted. The true differences in architecture—Le Corbusier, Mies, Wright—are not confusion; these are logical differences in a multiphilosophical society. Basic variations can and should exist, not in one man, out of selfish individualism, but in a search for a visual environment built out of the materials of that environment.

T.H.C: ***The phrase "selfish individualism" has been used several times. Is there, then, blame to be attached to the profession itself, in addition to the role played by the confusion of society, the rapid advance in technology, and other causes? Are individual architects producing confusion?***

PAUL HAYDEN KIRK: In my opinion, the basic problem of architecture today is the confused approach of competing for personal recognition on individual buildings, rather than a healthy and respectable attitude of building for an over-all, integrated community composition. Naturally, the result of such a philosophy is a confusing architectural picture, where each building strives to outdo all others in order to gain personal acclaim for its owner and/or recognition for its creator.

WEESE: Our present condition is basically anarchy. I am referring to what greets the eye. What is lacking most is order—order of purpose and method. What order exists is usually one of details, not one of large relationships. The disorder is fed by lack of respect for what exists or what others do. It is a basic egocentricity, the desire to make each commission a self-important and separate world. It is the denial of the street, of cornice lines, of character of place, ambience of color and materials; it is the forcing of climax, precocity, and shock value. I call it the "id" stage of our architecture. "Id" architecture is fascinating in itself, by itself, or in magazines. But it is essentially barren; like an infant or a hybrid, it cannot multiply, form a family, or develop community—it cannot make environment. "Id" architects and easel painters are in the hothouse of fashion, owing nothing to tradition, making a world in their own image. It is a fragile, passing show. Who does this work? All of us in varying degrees who exploit our commissions for more than well-judged ends; or those of us who are exploited. Together we can take architecture from its central purposes and from environmental harmony. The current cacophony might have value in uncovering new forms and combinations, except that we have already reached the point of diminishing returns. The gains and losses of license must be weighed. What advantage is a gain that is indigestible and incapable of being absorbed into the processes of building? The gains that are inappropriate or uneconomic are freaks; they are different for the sake of being different. These are dead-ends.

SORIANO: If architecture appears incomprehensible, the fault must be on the architect's side. He has often sacrificed validated truths to the self-gratifying temptation of making pictorial answers. The architect has failed to develop a precise instrument by which he can evaluate his tradition in order to keep that which still serves society, or render obsolete that which is erroneous and no longer serviceable. I don't know of any profession that has a greater responsibility to society than ours, and I know of no other profession where charlatanism and misconceptions are equally accepted and fostered alongside the few serious efforts.

YAMASAKI [Quoting a "Voice of America" broadcast]: The evidence of confusion is in the explosion of architectural ideas, which indiscriminately gush forth to fill the streets of our cities. This flood of experiments in architectural design is producing almost every conceivable shape and form, and for the most part without reason. All these shapes, each trying to outdo the other, when placed together, as at Miami Beach, can only result in complete chaos.

MIES: Certainly it is not necessary or possible to invent a new kind of architecture every Monday morning.

CHERMAYEFF: We have the star system of Hollywood transferred to every other walk of life. The fear of anonymity, which is characteristic of this culture, is everywhere. Never has there been such a quick turnover on Olympus!

T.H.C: ***Aside from complete individualism, certain New Isms have come—and some gone. Have they done harm or good?***

CHARLES COLBERT: Without question, the gains from the earlier movement of our so-called modern idiom are being dissipated through thoughtless sensualism and several currently popular mannerisms.

ELLWOOD: "Sensualism," with its lack of discipline . . . with its reverence for novelty and innovation . . . with its aim of publication and publicity, has quite naturally led to stylistic nonsense . . .

RADO: The early period of the modern movement was a strike for freedom. . . . This vocabulary has to be developed and refined from the initial crudeness to a rich, poetic language by a constant process of creative exploration. The danger today is the artful, superficial application of present-day clichés so readily publicized and exploited.

T.H.C: ***We seem to have established the fact that a state of confusion—or at least a great diversity in design—exists at the present time. You have assigned a number of reasons to it. Would any of you contend that this is a good thing?***

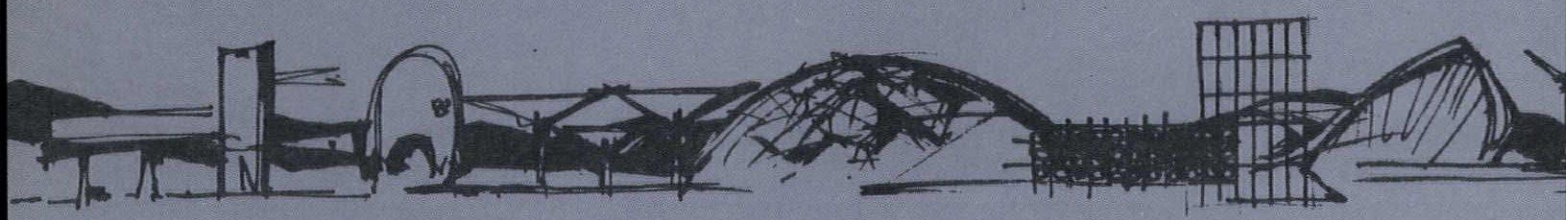
BELLUSCHI: Yes.

COLBERT: Not in my opinion.

KAHN: How are you going to stop it?

JOHN WARNECKE: It is inevitable.

EDWARD DURELL STONE: I believe we lead the world in the 20th Century in the design of individual buildings. Modern architecture is in its adolescence and currently is happily diverse,



with many enthusiasms.

GEORGE NELSON: It is not at all clear to me what kind of confusion you are talking about, and, if this "confusion" is "bad," what would be the word that corresponds to "good"? Do you mean "uniformity"? If this is the case, it seems to me that there is a good bit of it. The new office buildings going up on Park Avenue are pretty uniform in general appearance, and they do not differ greatly from buildings of similar types being put up in other parts of the United States; these, in turn, can be distinguished from the many structures going up in Europe only after an examination of details.

KAHN: Architecture has a certain nature. One may question that it *has* a nature; I believe it does. You can't just pick up and say, "I'm going to do my own little doodles on my own piece of canvas": this is a very important expenditure even for the greatest of corporations; it's an act that has a definite social connotation. It has a responsibility, because its existence is not a temporal one, and my feeling has always been—"always" meaning the last two years—that we must strengthen our institutions in whatever way architecture, as the individual expressions of men, can strengthen our institutions. In what way can we strengthen the institutions we live among—of government, of health, and so on? Does this individualism in architecture, which now seems to be permitted an unprecedented existence—an architecture where men are given freedom to express themselves in a way that, stylistically, is apparently uncontrolled, undirected, and unmotivated—help these institutions? Will it help future generations to understand what we did, and will they believe that we performed an act of a new freedom, the likes of which we still can't define, or will they consider it irresponsibility? That is the crux of the question—not whether it's good or bad.

MORRIS KETCHUM: Irritated architectural analysts are having a bad time of it these days! They are finding it more and more difficult to put away quickly and neatly each varied aspect of current architectural design in a stylistic pigeonhole. One of their favorite cubbyholes—the Bay Region Style—has ceased to function, and the International Style has burst into nationalistic fragments. Even those file drawers named after the great makers of modern architecture are now full of strange and disorderly material. To make things worse, just as the Curtain Wall Style seemed safe and secure from coast to coast, its clichés are being flouted by eager explorers of new structural systems and new uses for old or new materials. All this has forced them to work harder and longer in order to keep up with architectural progress. It is progress! Stylistic labels are like tombstones in a cemetery; today's architecture is not ready for the grave. It is too young and vital for final definition, and its healthy growing pains are not evidence of senile decay but of growing maturity. This is a comfort to all of us who believe that the lifeblood or architecture is eternal exploration rather than a safe and sane acceptance of too rigid disciplines and standards.

WELTON BECKET: Such diversity is a good thing at the present time, because it creates variation and interest in design approach.

JOHANSEN: Such variation in design is natural; it must be followed through. The freedom of the developing esthetic is most important, even in its extremes. It is part of a historic phenomenon and must be encouraged.

WILLIAM L. PEREIRA: We must distinguish between rebellion (change for the sake of being different), and revolution (change in the hope of being better). But since we can't have progress without some kind of change, we must occasionally take our chances with the experimenters: some are already winners.

WILLIAM WILSON WURSTER: I think there should be variation in design; I'd hate to think of it as being standardized. I think that each person could well have a consistent thread of unity which grows and changes and flowers with the projects as they follow each other.

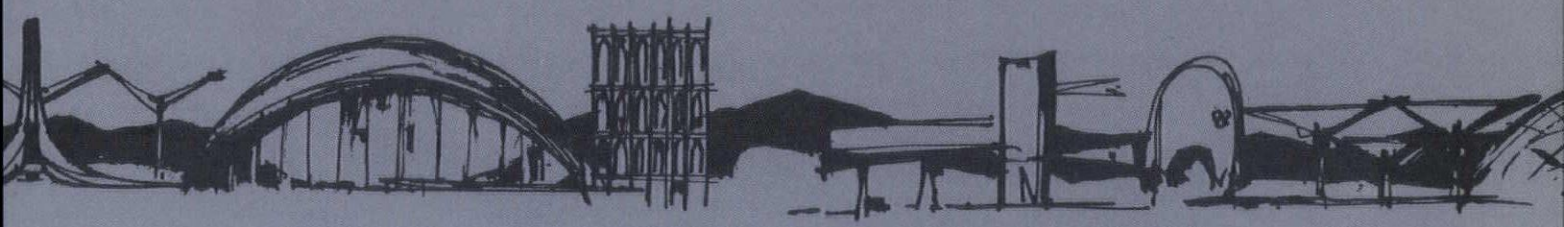
PHILIP JOHNSON: I asked recently in *The Architectural Review:* . . . can't we just wander around aimlessly? "The world is so full of a number of things": and so forth. . . . We are going through a foggy chaos. Let us enjoy the multiplicity of it all. Let the students have a different hero every year. Maybe it is good for them.

WILLIAM CAUDILL: Variation is never bad if the approach is good.

ELLWOOD: Such a variation in design approach is never good at any time. Too many of us are concerned with the extrinsic effect rather than the intrinsic solution. Too few architects understand the meaning of form. Too many of us rationalize clichés which stylize and date our buildings. Form must express rationality. Form must have conviction. The rules are timeless. But society will continue to give us new problems, and technology will continue to give us new materials and new techniques which will ever continue to challenge our imaginations and abilities. In this we shall find the means to new forms and to a continually changing, continually growing, valid architecture.

RALPH RAPSON: Variation in design approach is valid at all times, providing the designer has respect and understanding for the greater unity of the whole. The architect must work within the total framework, even though detail will vary with the individual and the specific situation. This is as it must be, and generally is healthy. However, violence to the total environmental scene will result if one assumes that each building or space is an entity in itself.

KAHN: I would try to defend the chaos in this respect: within the limitations of such a material as stone there was a fundamental rhythm; you had to conclude with columns at certain intervals which, even if you knew nothing about architecture very profoundly, made a kind of architecture. When you looked at it you said, "By God, isn't that pretty nice." In it was built a kind of rhythm that you couldn't help. Today you can span 100 feet; the column is so distant from the other column that rhythm doesn't exist any more. And other qualities have changed: you don't feel the music of it; you don't feel the judgment of it. Is it architecture or is it not? Somehow if it's clean, and looks new, it satisfies everybody. And what may be called an architectural quality, dis-



tinguished from a building quality, is not registered or recognizable. It's due to the fact that our masters, who are conducting our lives in a way, are men who work entirely differently from each other—and therein lies what you may call the chaotic condition. If the four masters—or five, or six—worked like each other, then you would say that in this situation there would be a kind of built-in sense of what personal variations could exist within the premises of form. But since this is not true of the masters, how can you expect it to be true of their pupils? And so, what has been produced in the minds of the most sensitive men (those who have really opened our eyes architecturally) was sought from many points of view. It seems to me, knowing nature a little bit, that various points of view are still there, and many more points of view can be there, and that this is a primitive beginning of what later may turn out to be a more directed point of view.

T.H.C: ***What might that "directed point of view" be? Within the chaos, is there some underlying basic unity or order which we might search for?***

RICHARD STEIN: I feel two basic problems underlie all the current design confusion. First, in today's bewildering world the individual must understand an over-all order to relate himself to it, and in that order it is essential that the differentiation of individualism be not only permissible but actually sought out. Second, we must re-establish a sense of appropriateness in our work, a relation between means and result, which may have an implication of a total national morality. If this approach is investigated and developed, it leads to answers to many of the questions you raise. It is not at all desirable to seek the elimination of variety in design, whether between structures or within them. Great variety results from the recognition of the characteristics that produce differentiation. If these two influences—appropriateness and differentiation (or we may say individualization) within order—are borne in mind, we can approach the various questions concerning the direction of architecture.

ROBERT GEDDES: When we achieve an architecture, it will be a crystallization, a harmony between the demands of freedom and discipline. Discipline should make freedom possible, and it is a responsibility of freedom to search out discipline. We seem overwhelmed by a sense of personal freedom and a distrust of discipline, especially self-discipline. There exists today no architecture, but many diverse personal experiments in approaching it. Like humanism, architecture has two enemies: chaos and regimentation. Both are characteristic of the contemporay environment: the wild chaos of Idlewild Airport, of skyscrapers, of streets; the brutal regimentation of curtain-wall office blocks and of large-scale housing developments.

They are also traps for the contemporary architect: the chaos that results from personal wilfulness and whimsy, the regimentation that results from the uncritical acceptance and imitation of mechanical systems of design. The notion of "systems" is at the heart of the matter. A sense of order is essentially systematic, but the order must be complex enough for the system to be self-closing rather than endless, to be capable of amplification and emphasis, of concentration, of variety and modulation. . . . A new kind of picturesque attitude is needed, based upon a sense of appropriate expression and a sense of "the place." . . . There exists today almost no sense of architectural hierarchy. We have built houses in the forests, chapels in cities, and hotdog-stands along the highways, all under hyperbolic, domed structures which would previously have been reserved for appropriate expression. We need to develop a sense of appropriateness, of fitness, to recognize the symbolic meaning of buildings in cities . . .

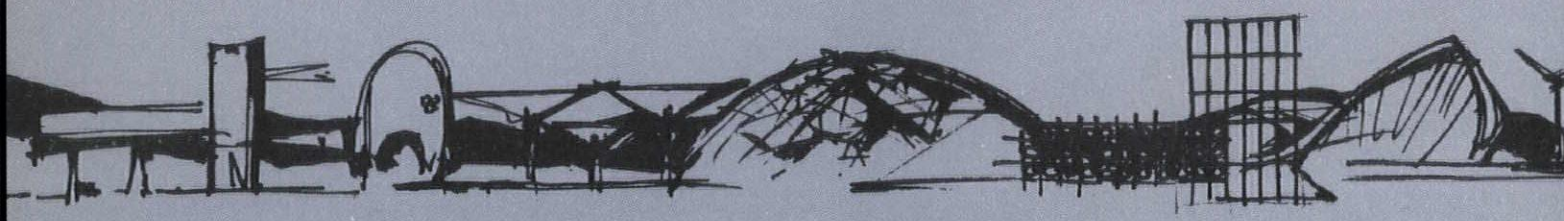
T.H.C: ***Several of you have spoken of appropriateness as a criterion avoiding both regimentation and chaos. Are there other principles, standards, even disciplines, that we might search for? If there are, is it likely that they will be new ones, or restatements of the old, timeless ones?***

CHERMAYEFF: I think we have to reaffirm principles, purposes, and methods again. In other words, I suggest that what we have to do now is to go back once more to a new "commodity" and a new "firmness," and I am quite convinced that as a result we shall find a new "delight" or quality in good time. . . . As far as I am concerned, the only thing which actually counts is a visible sense of order—something which can be seen, understood, felt. This order can be either physical or philosophic, but its presence must be evoked.

JOHNSON: The only principle that I can conceive of believing in is the Principle of Uncertainty. It is a brave architect who can possess convictions and beliefs and keep his tongue out of his cheek. Personally, my desire for order and clarity will have to suffice. I cannot find any shapes to copy and forms to fit in, like the good old Malevitch or Mondrian 1920 ones. Nor do my contemporaries give me a clear lead.

SCHWEIKHER: Architecture may be defined as a logic of space: it makes it, divides it, exists in it, contains it, reasons with it. Architecture is also structure; its function is to resist overturn, collapse, and subsidence, and to act as a "selective filter." Its philosophy is involved in problems of order and proportion. These are its constants. Many are impatient with the definition and impatient or contemptuous of structure. There is a revival of ornament and decoration: one makes structure ornamental, another uses decoration as an appliqué of inconsequential elements. The leaves become the tree. Jets, sprays, hammers, molds, produce endless varieties in surface textures, but these are not an order or form; they are merely a facility. The architectural result is described as lighthearted, gay, playful—and hailed as the new direction: full of promise, limitlessly innovative. Isn't it, instead, only the way back to the beginning of the century? Classic or anti-Classic, the order and form of space and structure are not to be found in the interplay of contrived shapes and surface textures. The search is more painstaking than that. It is full of trial and error; it risks the ungainly for the gained increment.

T.H.C: ***We have added order to appropriateness as a discipline. How can one introduce order—the antithesis of***



chaos—into a chaotic situation?

EDGARDO CONTINI: If the suggestion is made that disciplines and standards would be desirable, either at the present time or in the near future, as a means to secure more orderly and less heterogeneous architectural expressions in our environment, then I don't believe that the suggestion would work. Externally applied disciplines or standards could not be ultimately successful. Although they might enforce conformity, and perhaps even order of a sort, the end product would be stillborn and ultimately meaningless, as witness most of the architecture sponsored by socially conscious dictatorships (as differentiated from the architecture inspired or promoted by strongly individual leadership). I see common disciplines and standards more as a by-product, a common denominator, of the quality of architectural accomplishment, which, being representative of maturity and self-assurance, need not exert itself into all manners of eclectic vagaries. In other words, I believe that discipline and standards can be clearly detected in the architectural forms of a stable and mature culture, but cannot, per se, be instrumental in securing such order and maturity.

RAPSON: Of all the disciplines of good design, truth and the search for truth are of prime importance, and great architecture is directly proportional to their achievement. Architecture must be in accord with the basic laws of nature; it must germinate from the basic esthetic, scientific, and moral laws of the universe, and it must be in harmony with the spirit of the times. The purpose for which a space is designed must be truthfully expressed; any deception from the inherent needs or use can only be imitation. Materials, techniques, and structure must be disciplined according to their basic structure and properties.

Although an elusive and mysterious element, beauty or the spirit of beauty—the esthetic delight in architecture—is fundamental to architecture as a great art. It follows then that this search for esthetic satisfaction is a fundamental discipline in design. Understanding man, with his frailties and strengths, his hopes and aspirations, his physiological and psychological needs; a complete understanding of a changing and evolving society that keeps in mind constantly that man is the yardstick of design—this is a fundamental discipline. The discipline of total environment is universally fundamental. To relate positive and negative form and space sympathetically and sensitively to the broad framework at hand demands both personal and material discipline. There can be little question that the whole fabric is more important than the individual part, even though the one supports the other.... In a sense, the fundamental discipline here—from the design point of view as well as from the personal one—is the discipline of preserving the natural desire for self-expression, while at the same time conforming to the greater demands of collective living.

T.H.C: ***Does a changed society—today's brand of "collective living"—change the application of these disciplines?***

COLBERT: All disciplines which bring order, sobriety, and a reduction of human tensions are essential today. I believe these are timeless rules, and any new standards and criteria we evolve are simply re-evaluations and improvements founded on older rules.

JOHANSEN: Disciplines which might be developed to guide us today might be: a current vernacular, established by the large, corporation-type offices that avoid extremes and seek a middle course allowing them to develop a uniform product that is comprehensible, reasonable, and saleable to many large corporations whose decisions are those of the committee; discipline displayed by the individual architect in seeking, for his particular building, the appropriate selection from among the great range of current architectural expression; more careful understanding of what are "background" and what are "foreground" buildings, and what building groups should make for a more uniform, sustained effect and what few for accent; periodic review of the developing situation in an effort to develop some comprehension of the state of architecture, such as this P/A Symposium.

BELLUSCHI: The important thing is self-discipline, which comes from wisdom. Other criteria are always changing.

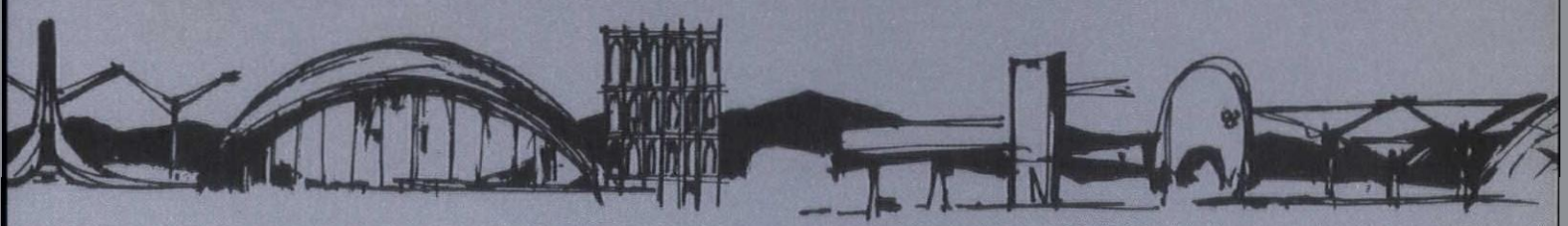
RADO: The important standards are the eternal principles of universal laws, of nature and truth. The application of these principles has always marked the highest level of creative endeavor. It requires self-discipline, yes, and denial of the desire to shine and astonish, the avoidance of exhibitionism—an attitude very difficult and rare in our civilization of salesmanship and showmanship stimulated and exploited by our astounding media of communications.

A. QUINCY JONES, JR.: It seems to me that the new standards and criteria should include a study in the direction of simplicity. What I mean by simplicity is the ability to state the problem before attempting a solution. Unless we can state the complexities of today's problem in simplified terms, I don't think we can hope for a solution.

GEDDES: The idea of "simplicity" itself has to be re-examined. In the early development of modern architecture, simplicity was an important esthetic. It often resulted in the brutal rejection of many real needs of man, materials, structures, and services. Many modern buildings are inhuman, out of scale, mechanical, and *simple*. The understanding of real needs, and the possession of them in the realm of architecture, will result in a kind of "organized complexity."

KETCHUM: Too rigid disciplines and standards are premature! Even though most of us share a common design philosophy based on the last 100 years of architectural response to the demands of the Machine Age, none of us have—or could have—a complete answer to those demands, or to the demands of the strange and complex world we now live in. Someday we may have such an answer; but if we do, it will still be subject to change without notice, unless our civilization, like that of the early Egyptians, freezes into a set pattern for hundreds or thousands of years.

A. G. ODELL, JR.: Certain disciplines and standards are not only desirable but necessary with respect to our total architectural environment, involving regional planning, urban development and redevelopment, the over-all appearance of our communities, the accommodation of the automobile, various public utilities, etc.... These disciplines or standards must come from within the archi-



tectural profession, and not from without.... As a creative art, architecture does not easily lend itself to discipline; but an effective guide to a disciplined total environment might well be a reconsideration of the applicability of the principles of Sitte, Haussmann, the English Garden City, or even Hegemann and Peets.

DOW: All creative thinking must by its very nature be organic in principle. In other words, the idea or ideas that go to make up the whole must develop from an honest recognition of all things involved. There are concepts that apply to any good thing. Perhaps the simplest is that any fine thing must reflect human care. This includes physical care as well as intellectual care. This eliminates purely mathematical expressions. Purposeful lack of regularity, if sensitively handled, can contribute to the intellectual as well as emotional value of the whole. A good thing must be honest—a truly organic expression.

A good thing must have humility. By this I mean it must be able to give or *take* gracefully. A good building contributes to its site and the people who use it; and, in turn, that site and those people contribute to it.

A good building must have enthusiasm. A good building should never be a simple box with a hole in the side that has a label over it marked "Entrance." The form of the building itself should explain this, as well as something about the parts of the interior. In the future, I believe we are going to look for more depth in the beauty of our buildings. This will apply to colors, textures, and finally the idea of the building itself. We are going to look for more significance in our architecture.

T.H.C: ***You are all speaking in very general terms of order, self-discipline, technological values, an organic understanding of nature, appropriateness, even beauty—elements of a "good" architecture in any time, certainly. Are there any specific standards that we can look for that are pertinent to our own time particularly? To put it in another way, can we expect a "style" of our time, as there have been other historic styles?***

BELLUSCHI: I hope not a "style."

COLBERT: This problem does not seriously interest me, since I believe our social evolution is moving too fast at this time to allow any form of classic stability.

WURSTER: I hope a recognizable style will never emerge.

HENRY STEINHARDT: A style may emerge only when, as in medieval times, we happily possess both a common, inspiring goal and the mastery of technique. Certainly neither is in the offing at the moment and is quite unlikely to emerge in our time. Our principal legacy from the early masters of the New Architecture is revolution—what might politely be dubbed iconoclasm. So remote were they from future needs and capabilities that the creation of the next style is going to be up to posterity, and let us not waste our energies by jumping the gun.

RADO: In the last period of great architecture, the Gothic, there was one dominant spiritual idea: religion; and one technique: stone masonry. The masters of that era developed a truly creative structural design concept responsive to and expressive of the spiritual aspirations of their time. We have no such dominant idea, and the structural techniques are as varied as the materials used: steel, reinforced concrete field-poured, concrete precast, wood timber, laminated wood, to mention just some of the basic ones. In addition, our technique is complicated by mechanical requirements and the expanding demands for human comfort. Consequently, the architecture of our time will not be recognizable or characterized by a marked, strictly visual similarity.

JOHANSEN: I think we should not expect the establishment of a recognizable style based on an esthetic and a technique emerging in our time. With the influence from other lands and earlier times in history, we might expect a true "International-Interperiod Style" as we follow the inevitable process in which races and cultures will become indistinguishable; but this is certainly doubtful in our time. However, invention (both technical and esthetic) will continue at an accelerated rate and there can be no rest. An examination of history—current history in particular—shows us nothing more clearly than an acceleration of events.

ARMSTRONG: I rather doubt that a unified expression is apt to appear in our time. Our first free architecture here in America, the post-Civil War exuberance of the lathe and the jigsaw, was a liberation via the machine. This was temporarily checked and molded by the long look to Europe that started at the Chicago Fair of '93 and is still evident in the residential field. However, by this time, even S.O.M., which a few years ago seemed about to crystalize at least its own work in the tall building field, is wandering rather far afield from Lever House with the John Hancock and the Crown Zellerbach buildings in San Francisco and the bank in Brussels. Now, with the Sensualists and the New Brutalism, the whimsy of Brasilia and the down-to-earthism of the shopping-center builders and all the rest, I fear the chance of a unified expression is rather slim indeed, because we still have the creative and inventive technology exploding all around us and have its influence upon us. I fear that unified expression is not for our time.

VICTOR GRUEN: The growth of a style (i.e., the forms of expression peculiar to one or more countries over a long period of time) depends on the existence of restraining forces. These forces can be of many types: there can be either a restraint placed by availability of materials—wood, stone, or brick—or the restraint exercised by technological knowledge or the availability of construction methods. The mastering of such methods as, let us say, the ability to build round arches, or pointed arches, or vaults, has indeed created style. Restraint is also inherent in the knowledge of a specific group of architects and artisans of the working methods and materials used in other parts of the world. Regional styles owe their existence to the fact that only little or no knowledge was available of the methods used in other regions.

Because these restraints (of a regional or technological nature, or as concerns availability of materials) are no longer operative, there is no reason to expect that new styles will develop. In fact, there are no grounds for believing that such development would be desirable. In times like ours, where the communication distance

between continents has shrunk to hours, where a multitude of different construction methods and techniques is available in all parts of the world, where the changes in technology are so dynamic and so fast that architects all over the world have a hard time catching up with the literature, with new inventions and new possibilities, the development of regional or national or world styles can no longer be anticipated and would no longer make sense. The single person or group of persons who today undertakes to develop a style will necessarily end in utter confusion.

YAMASAKI: We know today, only too well, that the dogma of a particular architectural style, however great its master, can only bring deadly monotony to our cities.

DOW: Style is not an objective but a result. Every strong architect should leave his own mark, his own result, his own style. When his mark—his style—becomes copied, it lacks honesty. It ceases to be organic. This means the vigor of life is gone and the results may represent the end of a society.

JOHNSON: It has got so that a critic can hardly say, "This must be a Zilch building; it has the earmarks of his style or manner." The very best known of my own generation do one building in one day and the very opposite the next. We seem, even more so than in that much-maligned 19th Century, to be making a new architecture every day. Where exactly are we?

ELLWOOD: A recognizable style has already emerged. The rectangular cage has been proved the most efficient, the most economical, the easiest-to-build structure; thus the style is predominantly Miesian: a refined version of straight-lined trabeation.

But architects in search of variation have tempered the Miesian ideal with touches of Corbu and Wright. Most of these mixtures have failed, but Lou Kahn has proved it can be done with sensitivity and power.

There are lessons to be learned from each of the masters, and possibly the future offers a valid synthesizing of the three concepts. But I believe that structure—the Miesian principle—must ever remain the dominant element; the other concepts will be minor notes in the major theme.

CAUDILL: A recognizable style *has* emerged. You will be able to date 1960 buildings in 1990, just as easily as we do 1930 buildings in 1960.

CONTINI: The answer seems to be both a "yes" and a "no." Undoubtedly, a recognizable style of our time is emerging, simply because we continue to build and create environment. However, it may prove recognizable, in historical retrospect, simply due to its extraordinary inconsistency, eclecticism, and neurotic reaching—a style of no style; a style influenced far more by techniques than by esthetics, as both its extremes (arbitrary, structural virtuosity on the one hand, and supreme meagerness of creative effort at the opposite extreme) bear witness to. It will remain recognizable, therefore, (much more than as a symptom of an age, of techniques, of esthetics) as a symbol of our time's social uneasiness, undigested wealth, and of our culture's vain effort to catch up with the pace of technological change in terms of understanding and assertion of purpose.

T.H.C: ***We seemed to have started from the premise that there is chaos and have arrived at the conclusion that there will continue to be chaos. Are any of you optimistic about the future, or do you feel depressed about the situation?***

JAMES LAMANTIA: My observation can be summed up as optimistically rugged and unafraid.

BASSETTI: The future should show the finest flowering of building design in history if we can only be serious, use restraint, and do as E. B. White suggests to the young writer in his remarkable last chapter to *The Elements of Style:* "The whole duty of a writer is to please and satisfy himself, and the true writer always plays to an audience of one. Let him start sniffing the air, or glancing at the Trend Machine, and he is as good as dead, although he may make a nice living."

KIRK: What is needed is a greater degree of civic and community integrity on the part of the architects, and a higher degree of moral responsibility of the community, one to another.

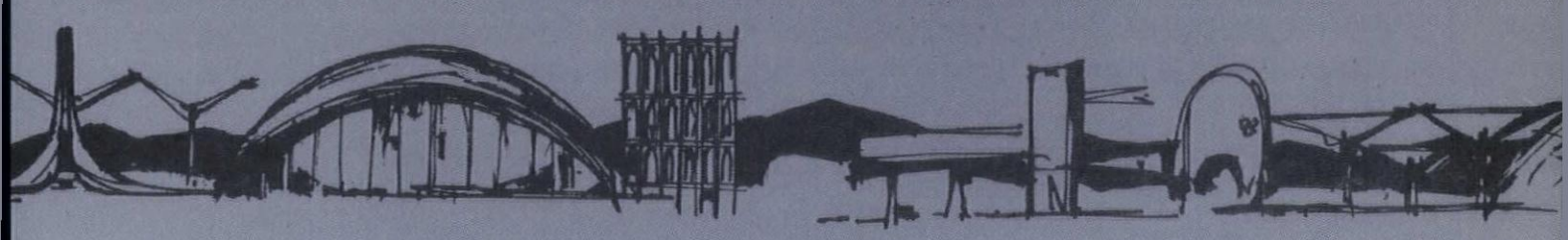
JONES: Too high a percentage of architects are not prepared, or even qualified, to think in terms of community and city planning. This seems to repeat itself in the area of technology. When the architect can forget the current philosophy of being different for the sake of being different and approach each design problem on the basis of solving current problems, then new forms will emerge and be accepted and will undoubtedly relate well to the total architectural community.

NETSCH: The 20's were mostly the wonderful forest and a few trees; today we have wonderful trees and no forest . . . are the goals of the 20's alone good for the year 2000? . . . Should we not try today to look at the years 1960–2000, as was done in the 20's for 1920–1960; should not new manifestos arise; should not we dream today, not only for today but for tomorrow?

WEESE: When are we going to cope with mass architecture? Why is Mykonos so satisfying, an environment to which not a single architect's name is attached? We need to speak of serenity, a lost virtue. There are occasions when buildings should disappear into or blend imperceptibly with their surroundings, within the silhouette, rather than puncturing the skyline: protective coloration rather than self-appointed plumage. Pride must give way to discretion in these instances.

Propriety, nuances in relationships, and emphasis need to be expressed in our building. So with dignity. These things are learned by examining past lessons. When we find the common denominator, something universal for our time; when we form out of the residue of the past a program for the future—then we will build well and out of a conviction that architecture is a by-product of serving human needs or aspirations, and not an end in itself. Then the confusion will lessen, our talents will be harnessed, and we will join in forming a tradition for our time.

ERNEST J. KUMP: There is little question that architecture today lacks direction and a clear understanding of its goals with respect to society. In a discussion of architecture today, I believe that to the areas of theory, technology, and practice should be added that of education. By this I do not mean merely the educa-



tion of practitioners, but more important, the inclusion of architecture as a social study in public education, starting at the elementary school level. I believe this to be of prime importance because it is just as important that society understand the subject as it is that the practitioner does. Communication in architecture between society and its practitioners is vital to achieve our proper goals. Architecture in any society must speak in terms of a vocabulary that man can understand. And basic to this, of course, are universal values that are understood by all. These include the timeless qualities of order, scale, proportion, and harmony, among others. For if architecture is an expression of feeling through environment, it must express the aspirations of man, and this expression must be understood.

HERBERT H. SWINBURNE: To build wisely as well as efficiently, we must learn more of man himself, of life itself. . . . The architect must become a specialist in all branches of learning so that he can apply their principles to his buildings, to all space between buildings. . . . In short, he must now become familiar with all the sciences as well as all the arts.

THIRY: In my opinion, learning through observation and analysis of natural phenomena is mandatory.

T.H.C: ***But with the rapid development of knowledge in the sciences, which is almost impossible for a true specialist to keep up with, as Dr. Oppenheimer has said, isn't it vain to think that architects, confused in their own discipline, can become knowledgeable in others?***

FULLER: Only man's vanity is perishing—not his integrity or the nobility of the life process in universe. Man has been making a business of boasting of his unique responsibility for technical successes and increasing participation in the fundamental wealth of universe. That is where his vanity has deceived him into intellectual and economic vulnerability of confidence in the significance of his functioning. We are now dealing preponderantly in the behavior patterns of nature, beyond the sensorial range of man. He is unable to witness with his own senses any of the events of his transition. Since the news deals presently with that which can be pictured or apprehended by the senses, the chasm between the events that preoccupy men and the events that are in fundamental emergence continually increases.

SORIANO: What we know in the year 1960 is of such a momentary nature that it tends to deny the existence of "the known." Only when our momentary knowledge is pushed beyond this momentary success does it contain the seeds of progress. The day is here when we can understand the structural nature of materials and make almost-perfect materials. Structures of any complexity will be built with precision and speed by pushing buttons. Long dead is the wasteful and sentimental individualism of construction. The faster we realize this, the sooner will architecture have universal significance.

T.H.C: ***You have described, as directions to take, attitudes which range from the emotional and poetic to the scientific. Architecture has traditionally been defined, of course, as a synthesis of art and science. In today's world, described by Bucky Fuller as "highly accelerating transformation," is this still possible?***

GEDDES: I strongly believe that the architect has to move in two directions simultaneously: toward the scientist and engineer on the one hand, and toward the poet and philosopher on the other. The Bauhaus and the early modern movement was concerned with the Industrial Revolution in one way; today, we cannot overlook the facts of a new kind of Industrial Revolution, characterized by control mechanisms, data processing, cybernetics, probability theory, and accelerated technology. For architecture, this implies a greater accumulation of knowledge, more analysis and documentation of experience, a greater precision in our relationships with engineers, economists, and other specialists. At the same time, it demands a greater reliance on intuition as a way of working. Perhaps something akin to Arthur Koestler's description of the progress of science: sleepwalking on higher and higher plateaus. Analysis always demands synthesis, an intuition based upon a firm platform of knowledge, logic, and experience.

T.H.C.: ***One wonders, after this discussion, if the knowledge we have acquired, the logic we profess, and the experience of 40 years of modern architecture has produced a platform from which intuition can spring, or a base for a philosophy which might be called "Chaoticism."***

NETSCH: I dawdled over your questions, because the invitation to answer is so inviting that one should count to ten. It is easy enough to say this is a time of chaos, that this is a time of special urgency, but it is not enough to make this claim, nor is this claim alone valid. To test this emotionally developed premise, I dug out Philip Johnson's *Mies van der Rohe* book to the time circa 1920; and I got out my Corbu book circa 1922; and Frank Lloyd Wright; and Oud and de Styl, and I began to believe that part of the thesis of chaos is right and part is wrong. No one could say that each of these men was taking the same visual, social, or esthetic direction; and no one could say that there was complete approval by each group of the others. And in looking at that moment of time, one can see the firm questions of each group—the reasons for failure, the reasons for success. The battle cries were heard for the new city, for architecture as a three-dimensional painting, the gestaltung, organic form—and they were expressed in projects in little magazines, in credos, in bulletins. This was the beginning of the 20's, and this was a time of chaos; so chaos alone is not the problem. If built today, many of the ideas presented then would seem more contemporary than much that now fills the magazines: these projects were truly seminal—and interestingly, usually combined theory and technology not restricted to architecture alone. I believe those days must have been based upon a violent dislike for their predecessor architecture, a belief in a brave new world of technology, a belief in a new, allinear, visual world, little actual work and a time to dream.

For our time, we must have no general common standard or

discipline, for the materials vary and the visual goals vary. As I see no solidly Platonic or Kierkegaardian or Marxian world in the near future, I see no singly disciplined architectural hierarchy, but I would like to see a true inevitability in each area.

CONCLUSION:

Accepting Chaoticism as a *state of being* in architecture—a period, a movement—implies a certain self-consciousness about it. As Camus developed a philosophy of the absurd, with its own historic justification, rationale, and system, so must an expositor of Chaoticism discover what the reasons are for its existence, what its characteristics are, what are likely to be its ends and its conclusions and its dialectical outcome.

For answers to these questions, it is very difficult to draw helpful syntheses from the practicing profession. There is not even a common assessment of the inheritance from the early modern movements and masters. Nitzchke and others feel that a still useable direction came from "sweating out the bitterness of that struggle," and there is frequent mention of the present influence of Wright, Mies, and Corbusier. Some see a "style" which developed early and is now stultifying new developments and "any indigenous thoughts or native creativity." Soriano condemns the early "pictorialism" as an architecture from which nothing can be learned, and others, such as Weese and Kahn, attribute today's chaos to the "license earned by the pioneers" who even today are "men who are working very differently from one another," and whose work is badly assimilated and thoughtlessly copied. If any conclusion seeps through these meshes of opinion, it is that great pioneering work was done, which is not now directly applicable to our social and technological situation, but from which principles of what Chermayeff calls "responsibility and integrity of architectural action" can still be learned.

Other reasons for the present chaotic state range, in the minds of the architects, from "the total cultural confusion" and lack of a single philosophic, political, or religious goal, which Kamphoeffner, Goodman, and others describe, or the "general contentment about our way of life" that Sert mentions, to the exuberance of individualism and even self-promotion that so many exuberant individualists in the group mention. What is blamed is the fact that this is "one world of rapid communication," with design aberrations seen quickly all over the world. The "exploding technology" that Rado and a number of others point to, and that Fuller calls "the inexorable transition terminations" pointing to a totally new and *different* technology, is also given as a reason. Can one draw any solid conclusions from all this? If a summary is possible, it would seem to be that architecture reflects its age, and that this is an age of chaos; "a life" (to requote Norbert Weiner) "in which . . . confusion increases and order decreases."

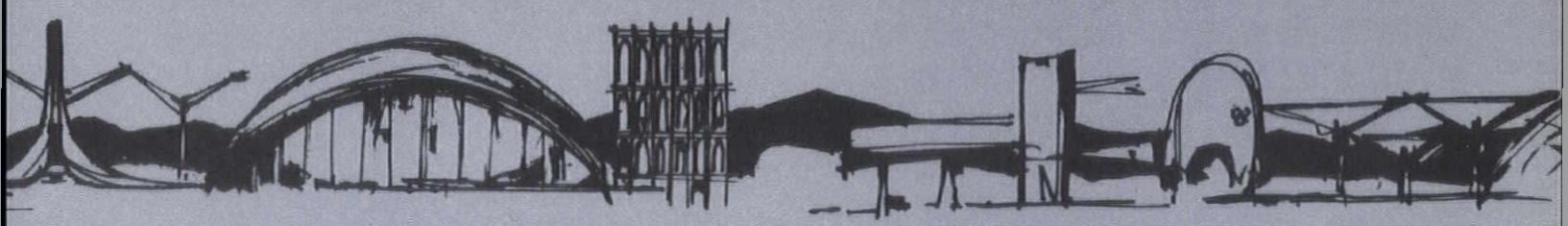
What will the outlook be: truly increasing chaos, or the beginning, somewhere along the chronological line, of a semblance of order? Is today's chaos a "passing crisis out of which we will all benefit," as Sert contends? There is general agreement that no "style" will emerge within a short time; except as one can consider Chaoticism a style, so that "you will be able to date 1960 buildings," and except as one may be able to say (which Johnson doubts) that "this must be a Zilch building." Some architects—notably Mies and Lou Kahn—are mentioned a number of times as "architects who are not confused," but there is no implication that they are style-givers. The closest approach to a belief in ultimate order is typified by Weese's comment that "when we find the common denominator . . . we will join in forming a tradition for our time."

But it is when one begins pressing for that denominator—common aims and basic disciplines—that the total, characteristic confusion of Chaoticism becomes most evident. If one searches, not for a unity of approach, but some sort of framework—a container, so to speak, in which to include the chaotic output—none emerges in this discussion. It is interesting that there is almost no denial that there *should be* some such common denominator; in fact, there is an almost *culpable* agreement that in the chaos there should be what Geddes terms an "*organized* complexity." Only Johnson speaks frankly for the "Principle of Uncertainty." But what means in architecture, what steps in design, will organize the complexity of chaos? From Kahn's insistence that "architecture has a nature . . . it has a responsibility . . ." to Netsch's suggestion of "totality and inevitability" as criteria, the disciplines called for might seem to an objective reader either trite or too general to have specific meaning. All the good old, indisputable, familiar architectural virtues are referred to: the formalistic ones, the moral ones, the romantic ones, the humanistic ones. Beauty, order, harmony, honesty, self-discipline, humility, serenity, delight, timeliness, inevitability, appropriateness—all are mentioned. We have no intention of poking fun at them; as a matter of fact, Geoffrey Scott did that job pretty well 50 years ago in his list of "fallacies." These are high-sounding—and well-meant—justifications that would seem to be of no help to a beginner in architecture in the period of Chaoticism. There are no specific mentions of a mid-20th-Century approach to space conception as a characteristic trend, or of questions of articulation, scale, plasticity. One wonders what would be the subject of the "new manifestos" Netsch suggests.

The unifying approaches that might be truly useful are mentioned as admonitions rather than as principles. There is Kahn's appeal to "make architecture strengthen the institutions we live in" by studying form and design more creatively: and Soriano's to "use our scientifically verified investigations": there are appeals for more attention to the condition of our cities: and there are injunctions that science—the physical and the behavioral sciences—should play more part in architectural design.

After all has been said, there is an astoundingly hopeful "rugged and unafraid" feeling of optimism. If we follow all the principles and obey all the injunctions, once we find the common denominator, we will produce an architecture of "universal significance," and "we will join in forming a tradition for our time." The period of Chaoticism, today's architects believe, will not necessarily lead to unity, but will ultimately produce a great architecture of its own.

Next month we shall continue the discussion, to see how today's theory affects today's practice of architecture. T.H.C.



Generally speaking, the talent of the architect as an artist with a pen and pencil has lain dormant during the past two or three decades. There has been little need for an elaborate, detailed rendering to delineate the typical curtain-wall building. Models or quick sketches have served the purpose, or a professional renderer has been commissioned to prepare the promotional folder.

Emphasis on fine rendering has run in cycles, with high and low points fluctuating according to the state of architecture: an elaborate, ornamental style such as the Baroque, for example, going hand in hand with equally elaborate and ornamental architectural drawing.

Rendering as an art in itself (and too often the rendering took precedence over the actual building) was last in vogue when the École des Beaux Arts was at the height of its popularity, during the early part of the century, when most young architects were being trained in its tradition. It was then that the renderer—the architectural draftsman—attained stature, and Pencil Points, *P/A's predecessor, was founded to represent him. Hugh Ferris, who is credited with the rendering for McKim, Mead & White's building on the cover of the March 1921 issue, reproduced below, first came into prominence as one of the influential architectural renderers of the Beaux Arts period, along with Chester Price, Shell Lewis, Floyd Yewell, and others.*

ARCHITECTS CAN DRAW

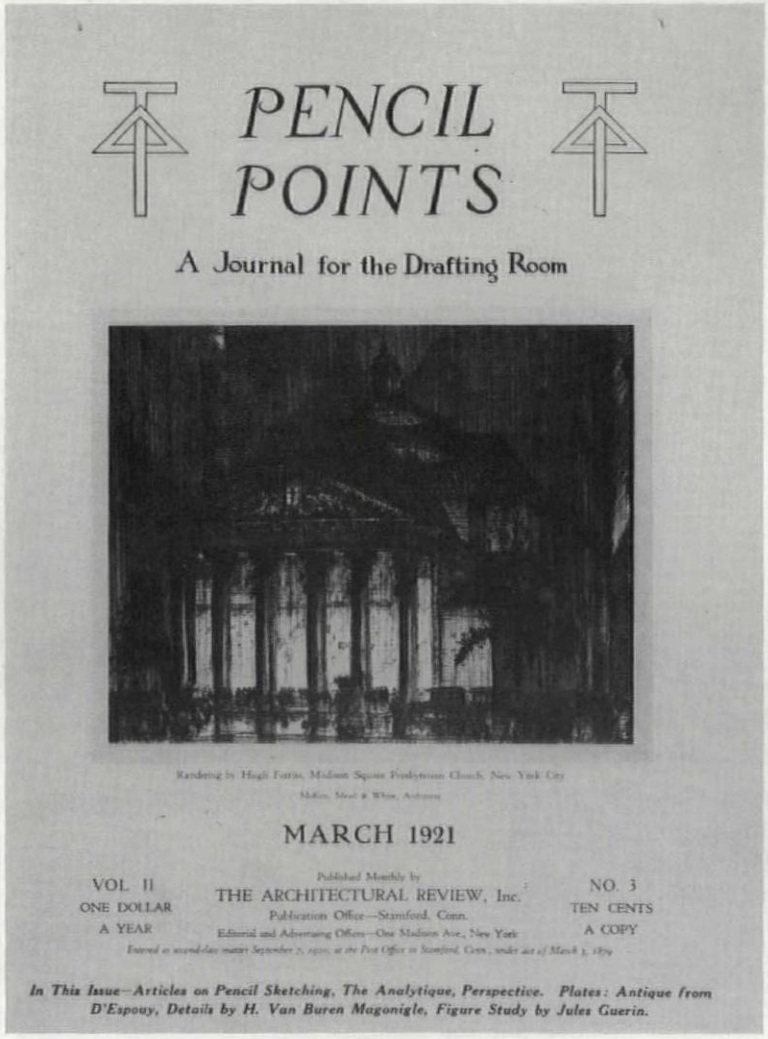
Equally outstanding draftsmen led the rebellion against this period of what has often been called "paper architecture." Le Corbusier's sketches, distributed widely in his early publications, did more to further the cause of modern architecture than did any of his completed buildings. His sketches were the tools of the architectural revolution. They were not representational renderings of the Beaux Arts type, but spontaneous sketches to symbolize and reinforce his architectural theories. In a similarly expressive way, Mies' sparse pencil-sketches were graphic statements of the absolute simplicity to which he wished to reduce his architecture.

What we observe in architecture and rendering today is, in a curious way, a happy marriage between the Beaux Arts school and its successor, the International School of modern architecture. Architects have learned from the teachings of Le Corbusier and Mies van der Rohe; they have been disciplined not to lose sight of simplicity and the over-all building concept. Yet, at the same time, their interest has again been awakened to details—surface texture, ornament, plastic shape—and, like the Beaux Arts architects, today's practitioners take pride in delineating their ideas in a craftsmanlike way.

Judging by the quantity and quality of drawings that have recently come to our attention, a few of which are shown on the following pages, architects are again drawing with enthusiasm.

I.M.R.

AGAIN


PENCIL POINTS

A Journal for the Drafting Room

Rendering by Hugh Ferriss, Madison Square Presbyterian Church, New York City
McKim, Mead & White, Architects

MARCH 1921

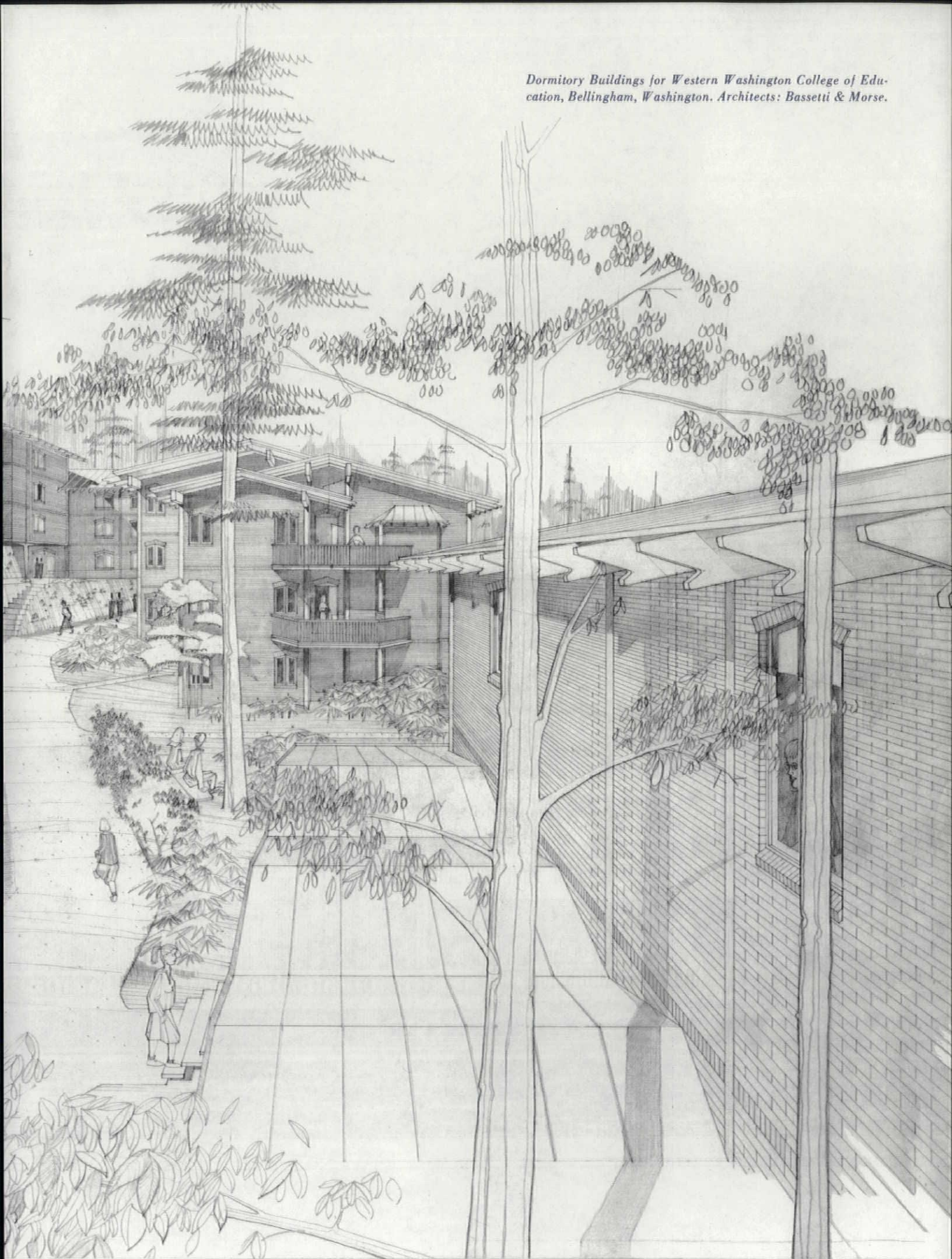
VOL. II — ONE DOLLAR A YEAR

Published Monthly by THE ARCHITECTURAL REVIEW, Inc.
Publication Office—Stamford, Conn.
Editorial and Advertising Offices—One Madison Ave., New York
Entered as second-class matter September 7, 1920, at the Post Office in Stamford, Conn., under act of March 3, 1879

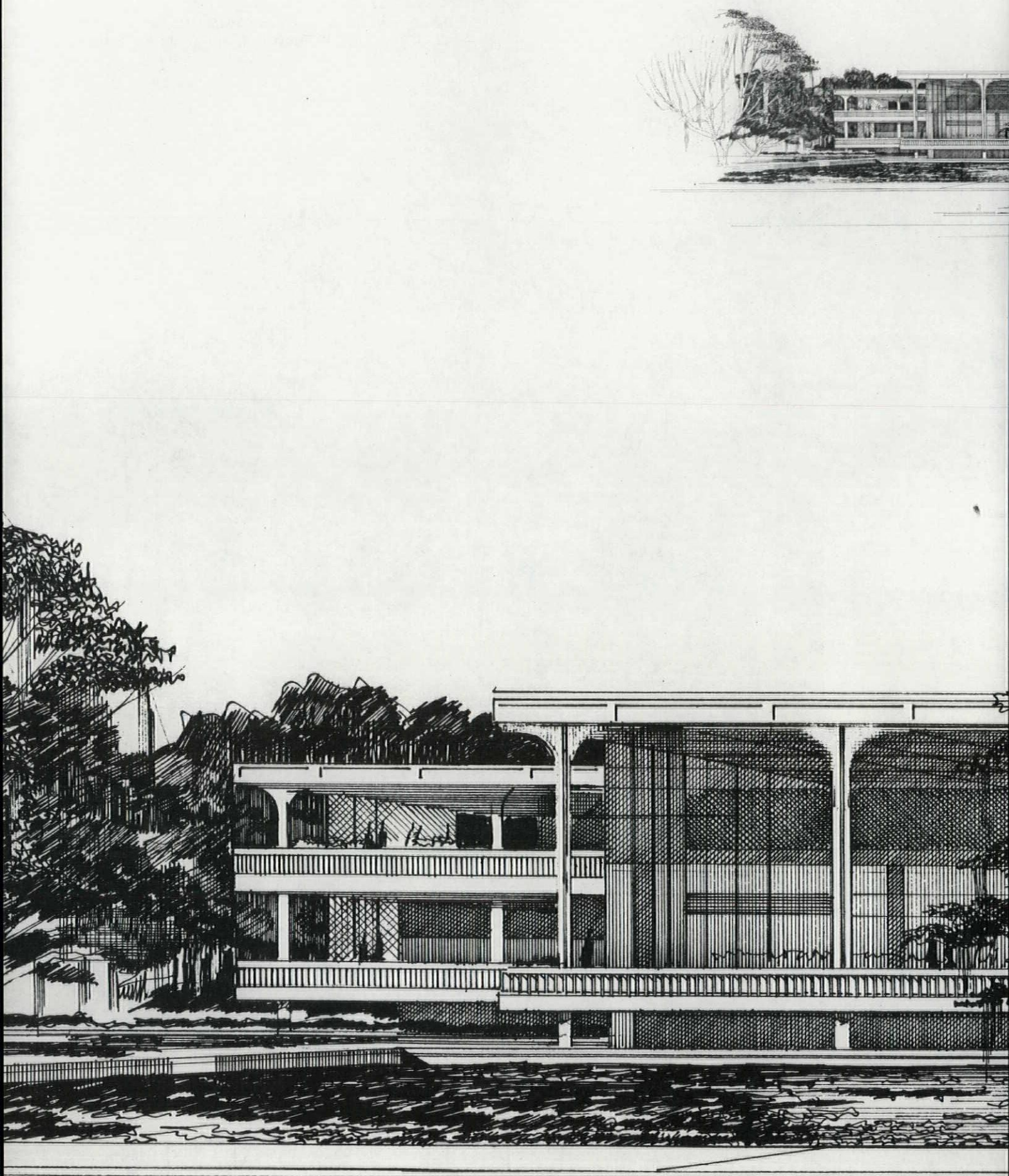
NO. 3 — TEN CENTS A COPY

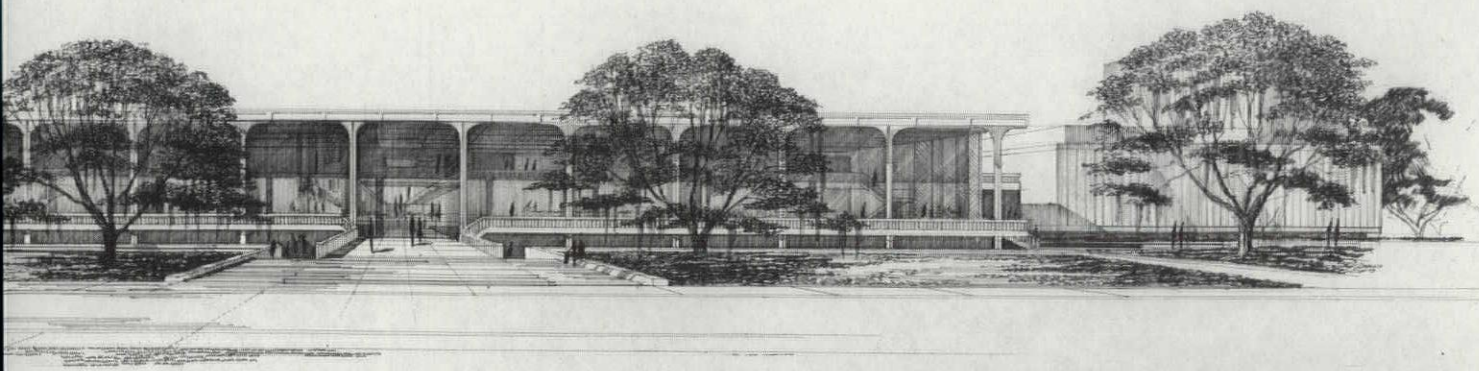
In This Issue—Articles on Pencil Sketching, The Analytique, Perspective. Plates: Antique from D'Espouy, Details by H. Van Buren Magonigle, Figure Study by Jules Guerin.

Full-size detail of pencil drawing by William Dimmich.



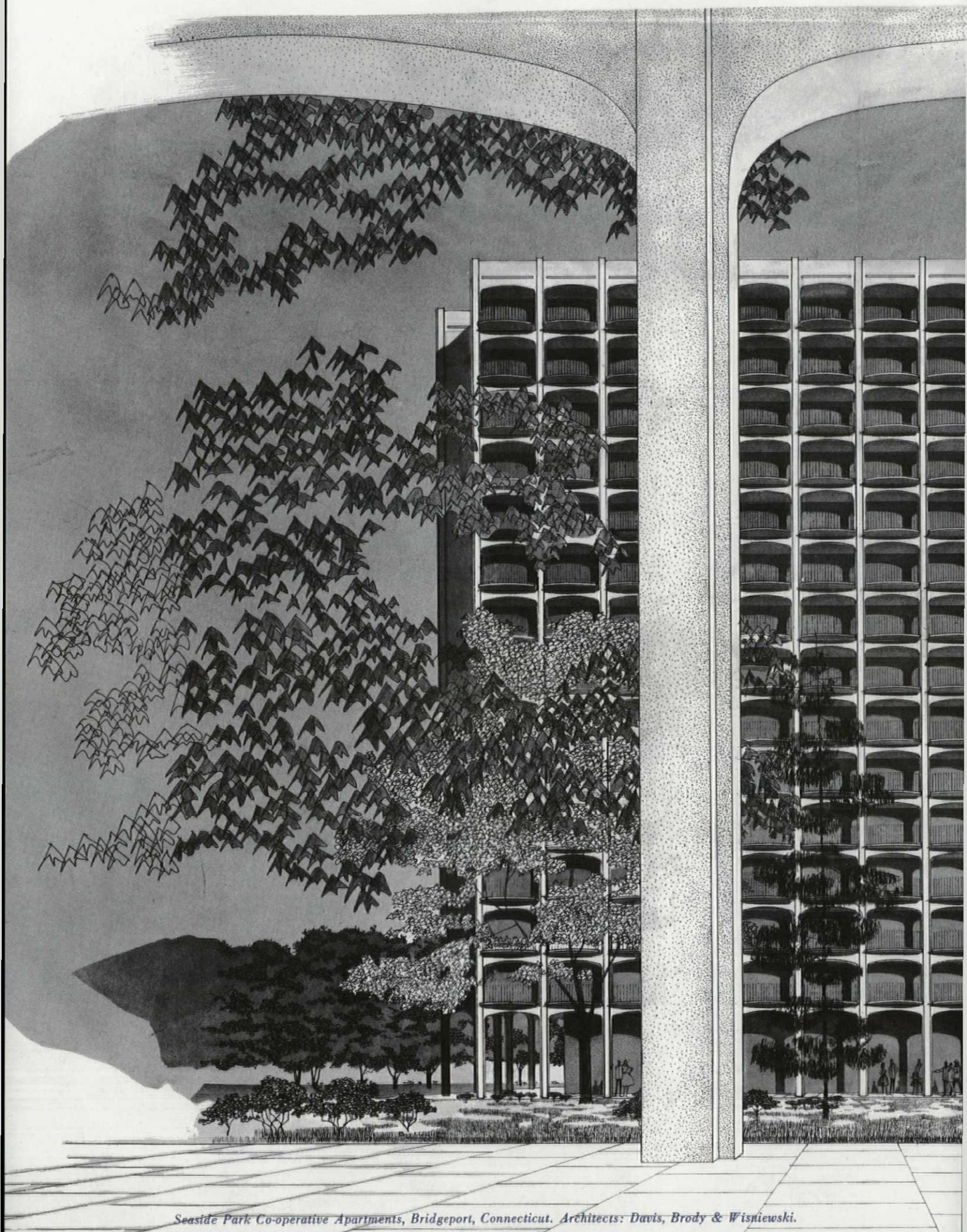
Dormitory Buildings for Western Washington College of Education, Bellingham, Washington. Architects: Bassetti & Morse.



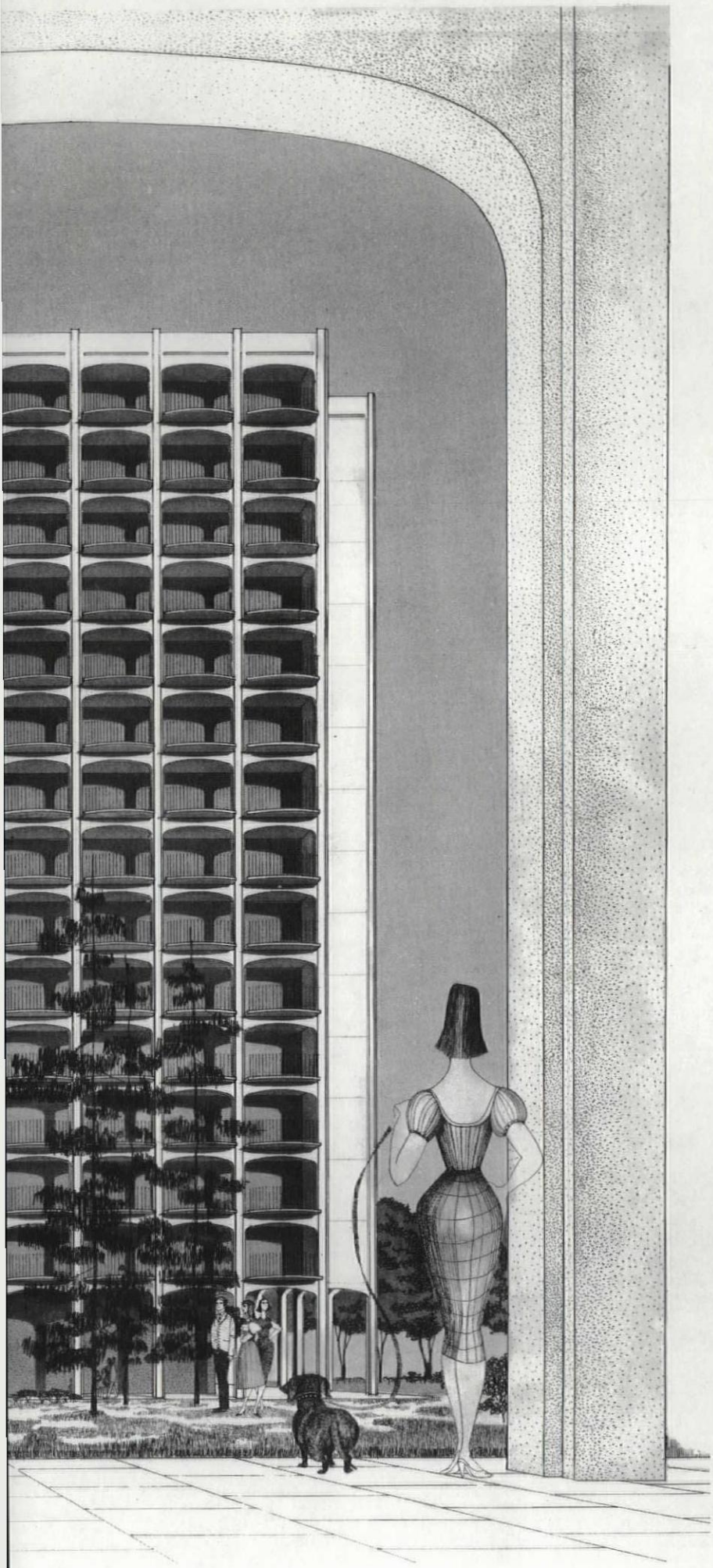


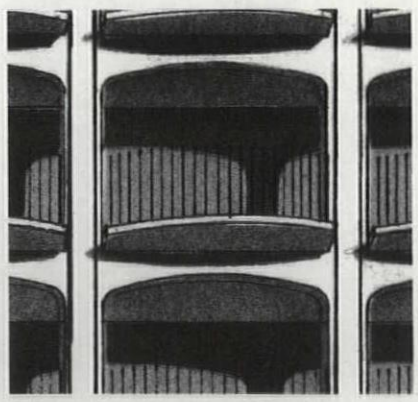
Student Union Building for Louisiana State University, Baton Rouge, Louisiana.
Architects: Mathes, Bergman & Associates and Wilson & Sandifer and John Desmond.

Full-size detail of pen drawing by John Desmond.

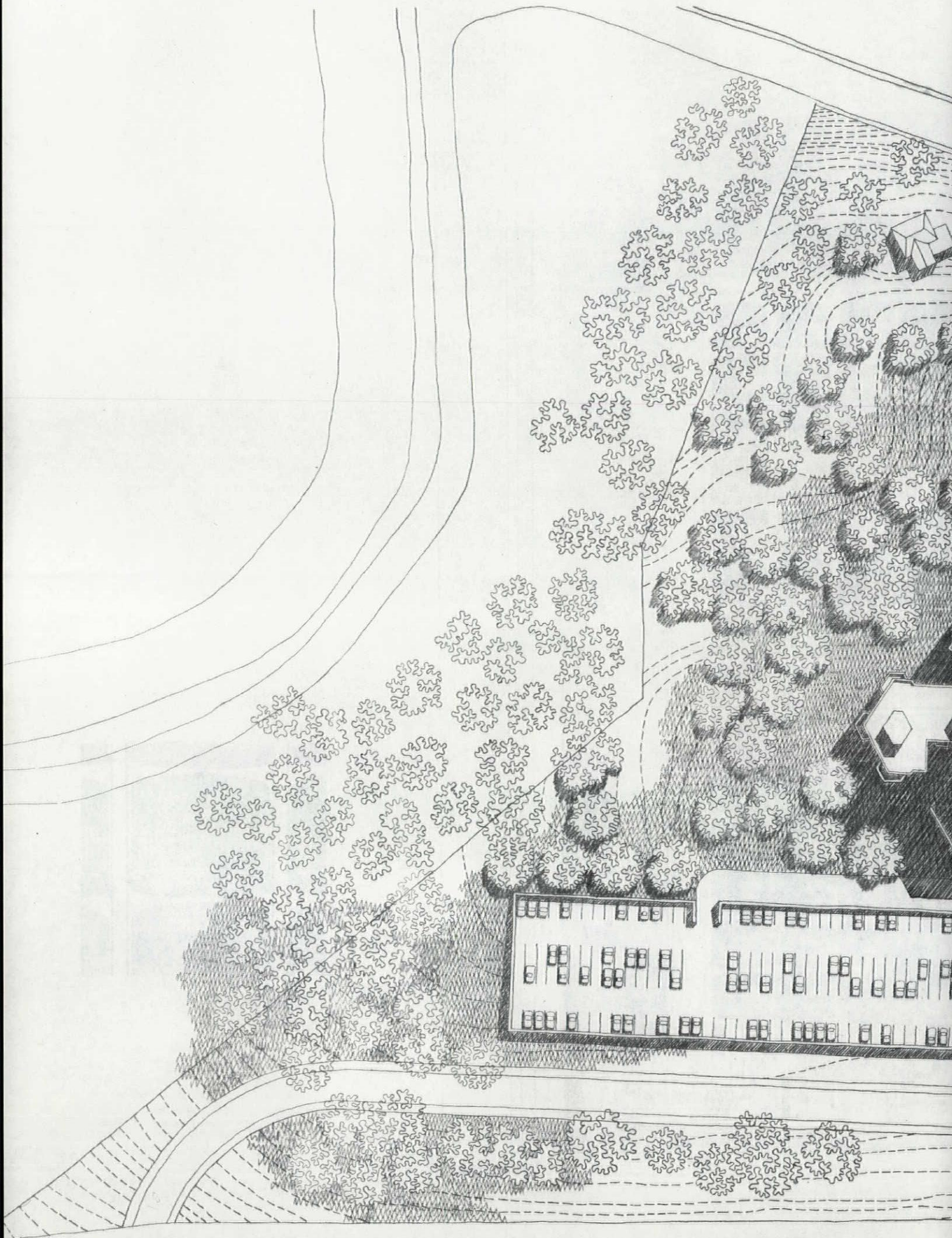


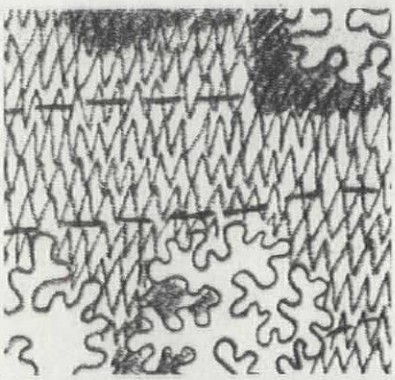
Seaside Park Co-operative Apartments, Bridgeport, Connecticut. Architects: Davis, Brody & Wisniewski.





Full-size detail of pen drawing by Zevi Blum.



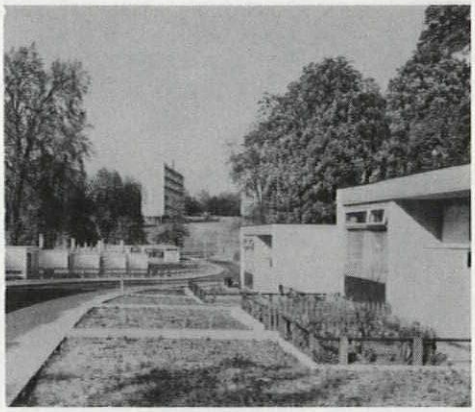


Full-size detail of pencil drawing by J. Eitner Roberts.

Fairmount Towers Apartment House, Philadelphia, Pennsylvania. Architects: Geddes-Brecher-Qualls & Cunningham.

PUBLIC HOUSING FOR THE ELDERLY

Photos above and left courtesy "The Journal of Housing"



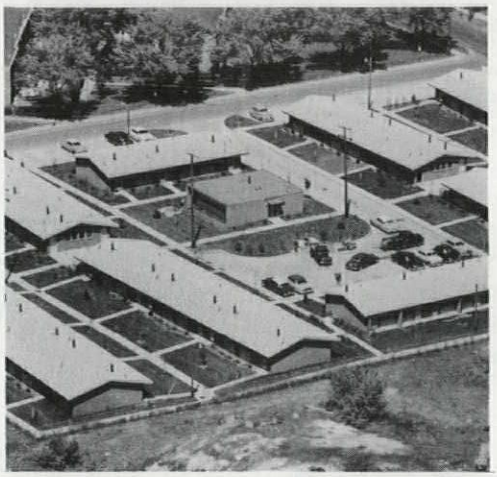


Photo: Bruce Sinner

Housing for the elderly at Somerville, Mass., (top) *was the first project to be completed under the 1956 law. Another pioneering project at Toledo, Ohio,* (above) *shows one-story units around a social center. Cottages for the elderly at Roehampton in England* (left) *are integrated within a community of higher units. The prevalence of elevators in this country would make a reversed height relationship likely.*

The Independent Elderly

Today there are approximately 16 million Americans who are 65 or older. Of this group, only about 49 percent have spouses who are still living. Widows make up about 30 percent of the group, while only 10 percent are widowers.

Most of them face physical, emotional, social, and economic problems peculiar to the aging. Those who now have no severe problems must anticipate them. Next to health itself, the problem that is likely to concern them most during their later years is housing.

In 1950, 69 percent of these people were living in their own households, about 6 percent in institutions, clubs, hotels, etc., and the remainder in other private households. Today there are probably larger percentages living independently and in group accommodations, and fewer with relatives and others.

Many social changes of the past few decades have made independent living more desirable and more feasible for the elderly: technological improvements have made the maintenance of a household much less strenuous; easier working conditions, retirement plans, and social security provide some income for nearly all of the elderly; improved health and welfare programs allow them to maintain their independence longer; changes in the size and cost of living units have made moving in with relatives more difficult.

Many of the independent elderly now occupy quarters that are inadequate for their health and safety, or too difficult to maintain. Usually, however, they are reluctant to leave them for more appropriate housing. Too often the decision to move is made under the pressure of the death of a spouse, acute infirmity, deterioration of the property or neighborhood, or the bulldozers of civic improvement. The greater mobility of oncoming generations of the elderly may lead them to make more rational, planned moves to suitable accommodations for their later years.

Housing Requirements

Proper housing for the elderly must take into account the infirmities that are likely to come with age: deterioration of eyesight and hearing, slowness and unsureness of gait, and dwindling energy. More extreme conditions must be anticipated, such as total blindness or confinement to a wheel chair.

To keep accidents to a minimum, housing should be designed without stairs, thresholds, polished floors, or appliances with an open flame. Safety of windows and adequacy of fire exits must be considered. Color can be used effectively to promote safety, since color vision usually remains strong as visual acuity fails.

The elderly seem particularly sensitive to thermal discomfort, requiring higher temperatures than younger people. They also need high intensity of light for close visual tasks, and minimum contrast between spaces. Their housing should include ample sound insulation, not so much because sounds disturb them more but because many of them listen to radio and television at higher than normal volume.

Two types of building appear to be most appropriate for the elderly: one-story cottage-type developments and high-rise buildings. Units of two or three stories require undesirable stairs or ramps. High-rise units should be so planned that at least two elevators are accessible to each tenant.

Most of the elderly would prefer to live near the neighborhood facilities to which they are accustomed. Remaining in the same neighborhood is often of critical importance to the significant group of elderly persons who work.

Failure to find suitable housing that they can afford forces many who are physically independent to live with relatives or in institutions. The median income of persons over 65 is less than half the national median. The average elderly family has liquid assets and net worth above the national average, but most of these savings are merely temporary support that may run out too soon.

Available Housing

The vast majority of new housing units constructed over the past two decades has not been suitable for older persons. Private effort has been concentrated on suburban houses of steadily increasing size, more and more remote from essential services. The homogeneous suburban neighborhoods of recent years will offer almost no accommodations for their own residents when they can no longer maintain detached houses.

New urban apartments, although they are suitable for the elderly, have generally been available to only a small minority of them. New units created by conversion of existing housing have attracted a large proportion of elderly tenants, but much of this housing is of questionable quality.

Recognition of the shortage of housing available to older persons led first to several state programs of special public housing for the elderly. New York began its program of housing for the elderly in 1942, and at present 10 percent of all low-rent housing built under state regulations must be reserved for them. Massachusetts enacted a program of state aid to municipally sponsored housing for the aging in 1959. Several states grant tax deductions to elderly homeowners, permitting them to maintain their homes longer.

Action on the national level took place in 1956 in the form of several pertinent amendments to the United States Housing Act of 1937. Granting of loans to the elderly under the FHA program was liberalized by permitting the signature of a third party. As a result, the private house market was made more accessible to the elderly. FHA support for housing sponsored by various organizations was also made possible. The major part of housing constructed under this provision has been of the institutional type, but projects of the independent type are increasing.

Special Public Housing

The Public Housing Authority was established under the 1937 law to provide technical and financial assistance to local housing authorities organized under state legislation, which initiate, construct, own, and operate low-rent projects for families that otherwise could not secure adequate housing. The amendments of 1956 permitted the first special public housing for the elderly. Eligibility requirements for tenants and budget limitations that had made the accommodation of one- and two-person households difficult were modified.

For the first time, single and widowed persons were allowed admission to such projects if they were over 65. Further amendments in 1959 adjusted the age requirement to correspond to Social Security retirement ages (65 for men, 62 for women, 50 for disabled persons).

Other amendments increased construction allowances per room for units of one or two rooms. The maximum for these units now stands at $3250 per room, as against $2750 for larger units. This increased allowance is not intended primarily to cover safety features or superior materials, but rather to allow for the necessarily higher cost per room of smaller units.

By the end of March 1960, only 681 units had been constructed under the revised Public Housing regulations, with many of them in the planning stage before the legislation was passed. However, 11,665 units were on the boards and under construction. The next few years will show a very marked increase over the 95,000 elderly people who are at present residents of public housing.

Photos: Roland Chatham

Individual living units for the elderly should be highly flexible to accommodate the furnishings they may want to retain. This apartment at Victoria Plaza can be rearranged by moving the storage unit (left rear).

COMMENTARY

Ollie A. Randall has been working on the problems of the elderly for several decades. She took part in programing and planning for the first publicly supported project for the elderly in this country: the Fort Greene Houses in Brooklyn, New York, constructed in 1942. At present, she is vice-president of the National Committee on the Aging and a consultant to the Ford Foundation. She is one of the very few authorities on the aging who has actually *lived* in special housing for the elderly. In her discussion below and in her critiques of the individual projects that follow it, Miss Randall presents some of the ideas and principles she has developed during her long and intensive experience in the field of housing for the elderly.

Publicly subsidized housing and special housing for the elderly are both relatively new but significant community efforts to satisfy the demand for decent housing of a group of citizens, many of whom could not provide even moderately decent shelter for themselves. Resistance on the part of the general public to Government-subsidized housing has been, and still is, strong; it is, however, beginning to yield to pressures that are even stronger. Community resistance to special housing for the elderly, whether provided by the Government or by nonprofit organizations, has also been great.

The attitude of our youth-oriented society, which has generally rejected the elderly as unworthy of special consideration, has been responsible for the delay in providing subsidized housing for them—a delay that is particularly noticeable in the light of the rapidly increasing size of the group whose needs cannot otherwise be met.

The present situation, however, is encouraging. The past two decades have not only made older people more difficult to overlook; they have also demonstrated some of their social and economic needs, and stimulated new ways of meeting them.

The Elderly and Housing

A large proportion of the elderly must live on very low incomes. For most of them, their present income, besides coming from a different source, is decidedly lower than that of their earlier years. Major personal adjustments of all kinds are required. Many of them, unless they live in projects subsidized by the Government or by nonprofit organizations, must accept substandard housing.

Powerful community interests have kept funds for public housing for all low-income groups at a minimum, so that appropriate sites and attractive structures have only rarely been obtainable. Projects have often been unattractive—even unsightly—and located on sites considered useless from an economic point of view. The character of such housing has done nothing to improve community attitudes toward public housing. Little thought seems to have been given to the fact that the housing would be a part of the community for a long time to come. Much public housing today can therefore be readily identified by its lack of creative design, and even more by its apparent failure to relate to the surounding neighborhood. Fortunately for the communities, for public housing in general, and for the elderly themselves, their special needs have sparked some new thinking and some definite action to improve this situation.

The Site

The elderly, in common with other age groups, require housing that is conveniently located near shopping centers, hospitals and clinics, churches, cultural and recreational facilities, entertainment, and transportation. In contrast to younger people, however, they must have these facilities more readily available. The requirement that sites for such projects be centrally located raises a serious difficulty. Since such sites are expensive, it means they often cannot be obtained for public housing.

Experience demonstrates that the location of a project for the elderly may generate considerable opposition. One non-Government project, for example, required the purchase of three different sites before one was bought that was not successfully opposed by the residents of the neighborhood. Ironically, once the project was built, it was so beautiful and so carefully maintained that it increased the value of surrounding properties.

Public housing for large numbers of people produces, by its very size and organization, a kind of physical isolation. Unless definite measures are taken to prevent it, this type of isolation, when added to the sense of alienation produced in the elderly by physical and financial limitations, can cause serious problems for both the project residents and the rest of the

population—for then an integrated community no longer exists.

Special Housing for the Elderly

Much has been written about the special design features required to house old people well and safely. All of these features, of course, would be desirable in any *good housing. If such features were provided for younger persons as well as for the elderly, housing incorporating them would remain suitable as both the resident and the housing unit grow older together. Even more pertinent is the thought that housing for a special group should be designed to permit easy conversion to use by other types of residents.*

Some architects today are thinking imaginatively along these lines, and at the same time are designing structures that are good to live in *and good to* look at. *This does not happen easily; aside from the long hours of work at the drafting board, it requires careful study of older people and of the community. To meet the criteria of beauty and usefulness within the limitations imposed by regulations that apply to publicly subsidized housing is a very challenging task. Today, however, there is visible evidence that dedicated people can overcome these limitations, achieving remarkable results within the law.*

It must be noted, however, that in the housing programs for the elderly of the FHA and of several states, a great deal of attention has been given to the special needs—the changing *needs—of older people. Consideration has been given to the way older people live: to their daily needs, some of which can be met by ordinary community facilities and services, and some of which can be provided more efficiently within the project itself. Studies have been made of group and individual recreation facilities and social and health consultation services within the project, and of extension to the residents of community services, such as food ("meals on wheels"), library, beauty and barber services. Many residents would have to do without some of these services unless they were actually built both into the structure and the management program. Adequate service and management is essential to any housing for groups of older people, but particularly in public housing for the low-income elderly.*

Older people have many weaknesses—about which we hear a lot. They also have many strengths, about which we hear little. They have an amazingly tenacious hold on life and on their ways of living—even as their physical abilities change. They find great satisfaction in maintaining their own homes. As their capabilities decline, housing that offers maintenance of public areas and utilities, and even to some degree cleaning of private quarters, may mean the difference between continued independent living or moving to an institution where their daily affairs will be managed by someone else.

European Precedents

Housing for the elderly in Europe has been studied by Americans for many years. This is understandable, since both the need for such housing and the response to it antedated the recognition of the problem in this country. Today there is less to be learned abroad that is directly applicable to design here than there is from the growing number of projects in this country to which intensive thought has been given. Considering the geographic and cultural diversity of the United States, there is much to be said for the development of housing that recognizes the living habits of the prospective tenants and the community of which they and their housing are parts.

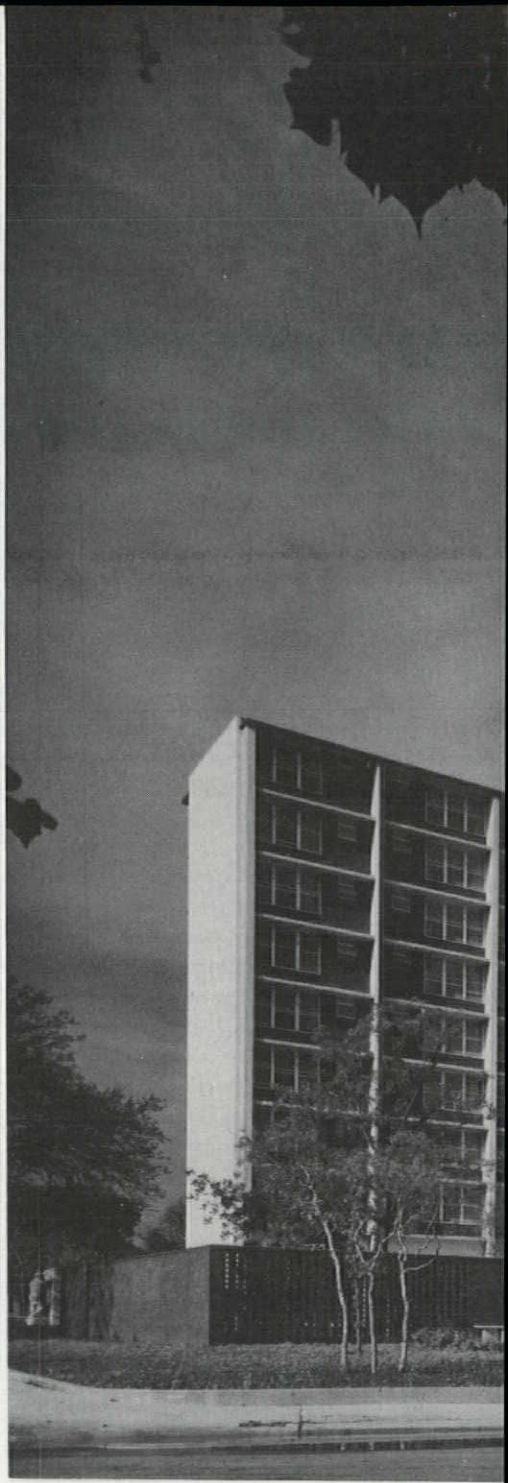
One of the most valuable lessons that visitors have learned from special housing abroad is the philosophy that underlies programs for the elderly in Scandinavia. There one finds a tangible expression of the conviction that older people who have served their countries long and well, and who can no longer serve even themselves without assistance, deserve only the best. *No effort is spared to make housing livable and attractive, with art objects and landscaping contributing to the beauty of the surroundings. These projects are not only the pride of the community, but the older people themselves are proud to live in them.*

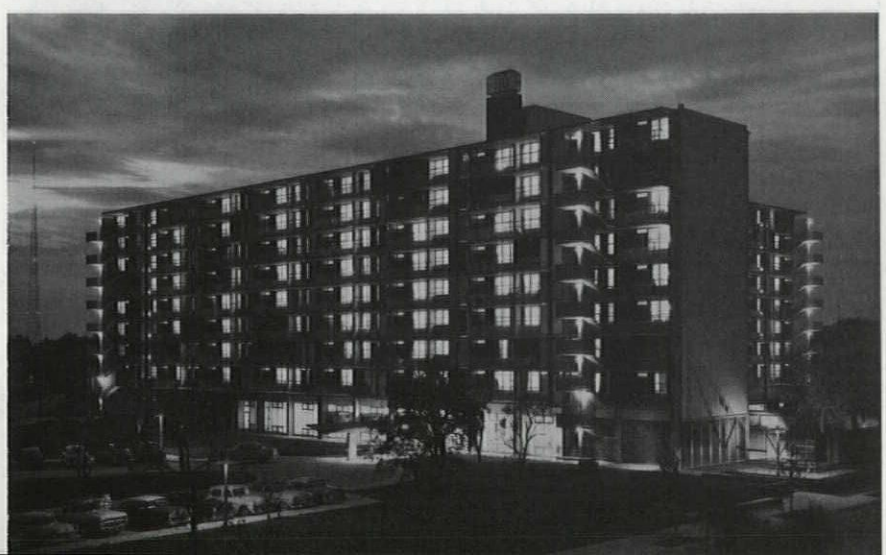
On the Horizon

When housing—even public housing—is allowed to be nothing more than a shelter, its very permanence is a source of discouragement. In the field of public housing for the elderly, there are bright signs on the horizon. Some of the newer projects enhance not only the lives of the residents but also the communities of which they must be kept a vital part. Herein lies the hope for tomorrow's housing and of those for whom it will be built.

The importance of health, welfare, and recreational facilities in housing for the independent elderly is often overlooked. At Victoria Plaza an entire floor is devoted to a community-supported social and service center.

One Solid Achievement





VICTORIA PLAZA • SAN ANTONIO, TEXAS • NOONAN & THOMPSON & KROCKER AND MARMON & MOK, ASSOCIATED ARCHITECTS AND ENGINEERS • STEWART E. KING, LANDSCAPE ARCHITECT

The San Antonio Housing Authority initiated this project immediately after the passage of the 1956 housing law as an effort to produce the best possible environment for the elderly within the limitations of public housing. The resulting building, and the programs being carried on within

Photos: Roland Chatham

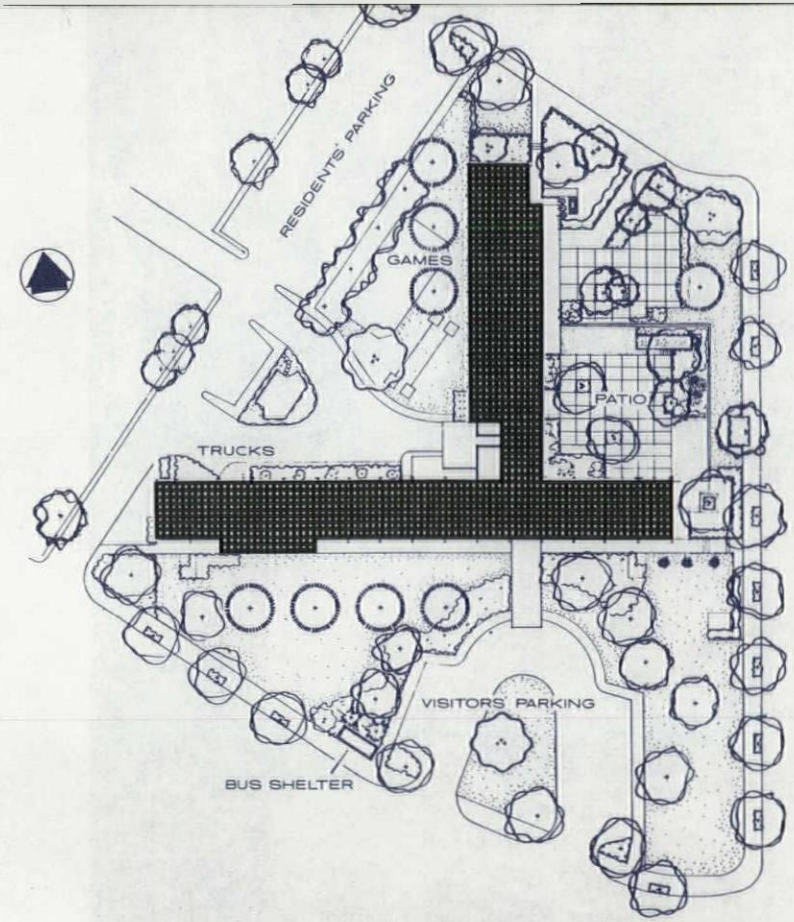
it, constitute a unique combination of living facilities and social services. Aside from its value to the elderly of the city, the project is being used as a research laboratory in the problems of aging by the Hogg Foundation of the University of Texas.

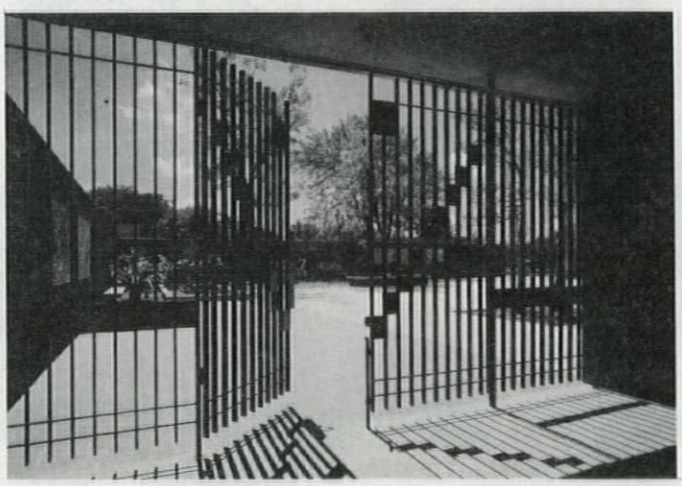
Original research in the needs of potential residents was carried out under the direction of Marie C. McGuire, executive director of the local housing, and Thomas B. Thompson, the co-ordinating architect. Once specific requirements, both physical and social, had been determined, the support of the entire community and of state and Federal officials was enlisted to ensure their realization.

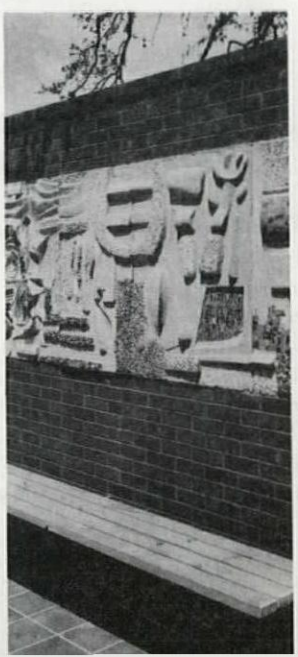
It was established through interviews that the potential residents did not favor cottages on the edge of town; like their wealthier contemporaries who live in residential hotels, most of them wanted to be near the center of the city. They preferred to be near younger families, but wanted distinct separation from romping children and noisy adolescents.

The site selected on the basis of these preferences is located only seven-tenths of a mile from the center of the city and across the street from an existing public project for 800 families. To accommodate the proposed 185 units on the 2.7 acres, allowing sufficient area for parking and outdoor recreation, a nine-story building was projected. Such a high-rise solution offered the advantages of superior natural ventilation and separation from street sounds.

The T-shaped plan, with open galleries serving as corridors, makes the most of







the prevailing southeast breeze. The north wing shades a large area on the ground, which has been developed as a patio. The west face of this wing is protected by a pierced tile screen.

The first floor of the building is planned to accommodate a health, recreation, and counseling center available not only to the residents of the project, but to any of the approximately 37,000 elderly persons in the city. The establishment of such a center required the co-operation of local welfare, health, employment, social security, library, and legal aid officials, all of whom will administer services in it.

The approximately 7000 square feet required for the center was far in excess of Public Housing Authority limitations. The plans were approved only after months of discussion, and the presentation of written confirmation from the agencies and organizations involved that they would furnish, equip, and manage the center. A co-ordinator for all of these services will be provided by the Hogg Foundation.

The lobby includes a billiard table, a television set, and other recreational equipment. The recreation room, which can be used for lectures, movies, and social functions, is equipped with a portable stage and curtain. The library can accommodate meetings and conferences. Public access to all of these areas can be controlled from a central desk.

Storage areas are planned for possible conversion to other uses. Provisions have also been made for commercial services, such as shoe repair and beauty shops, which may be tenant-operated.

The limited space available for outdoor recreation was intensively developed. Plant material was selected for the interest of its seasonal changes, but space-consuming shrubs and bushes were avoided. The walls of the patio provide shelter and control of access.

Works contributed by 30 nationally recognized local artists have been installed in the indoor and outdoor public spaces. Beside the main entrance is an abstract mosaic 45 feet long. In the lobby and library there are murals, tapestries, and panels of colored glass. The patio walls are embellished with reliefs and murals. An unusual sculptural group in the patio pool includes ceramic and enameled metal figures by several different artists. The building is unique among public housing projects for its abundance of art works, many of which would be too fragile to survive in a low-rent project for families.

Two elevators, each large enough for a

stretcher, serve all floors of the building. Such an arrangement is without precedent in a public project of this size.

The open galleries on the upper floors are cantilevered from the column line along apartment walls. The recesses between the columns serve as places to sit outside each unit and separate the apartment windows from the flow of traffic. Four-foot-high balustrades, with lower handrails supported on them, provide a feeling of security.

Porcelain enamel panels in beige and vivid orange act as windbreakers in front of each apartment door. These panels and the downspouts at the outer edge of galleries create a façade pattern of a kind one would expect only in luxury housing.

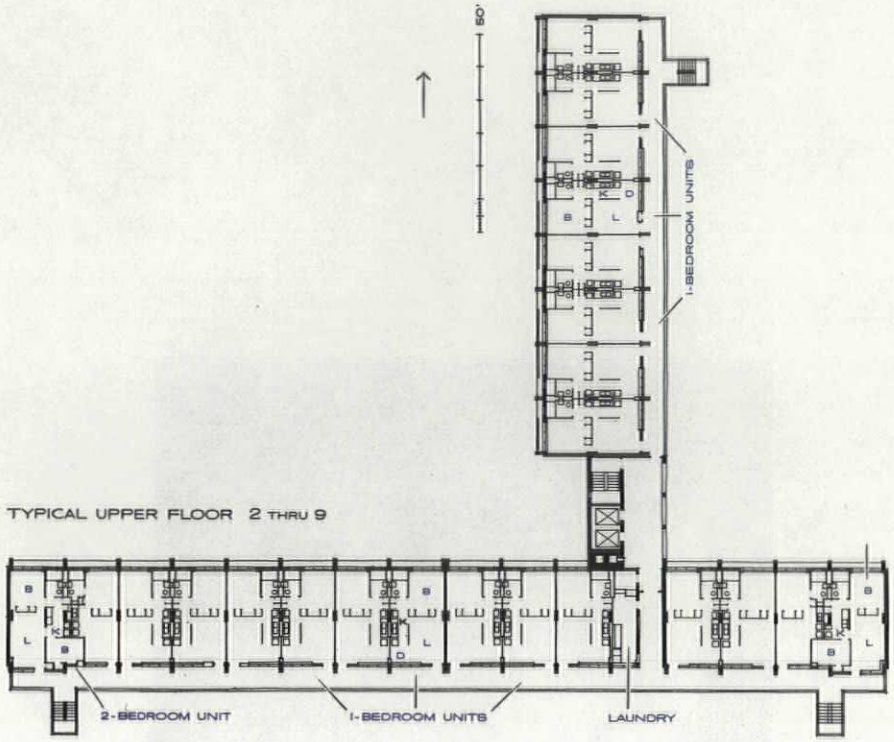
Of the 185 living units, 16 are of three rooms, 16 of one room, and the rest, except for the first-floor custodian's suite, are two-room units. On each floor there is a laundry room large enough to serve as a conversation center, with equipment for washing by hand or by machine and for ironing.

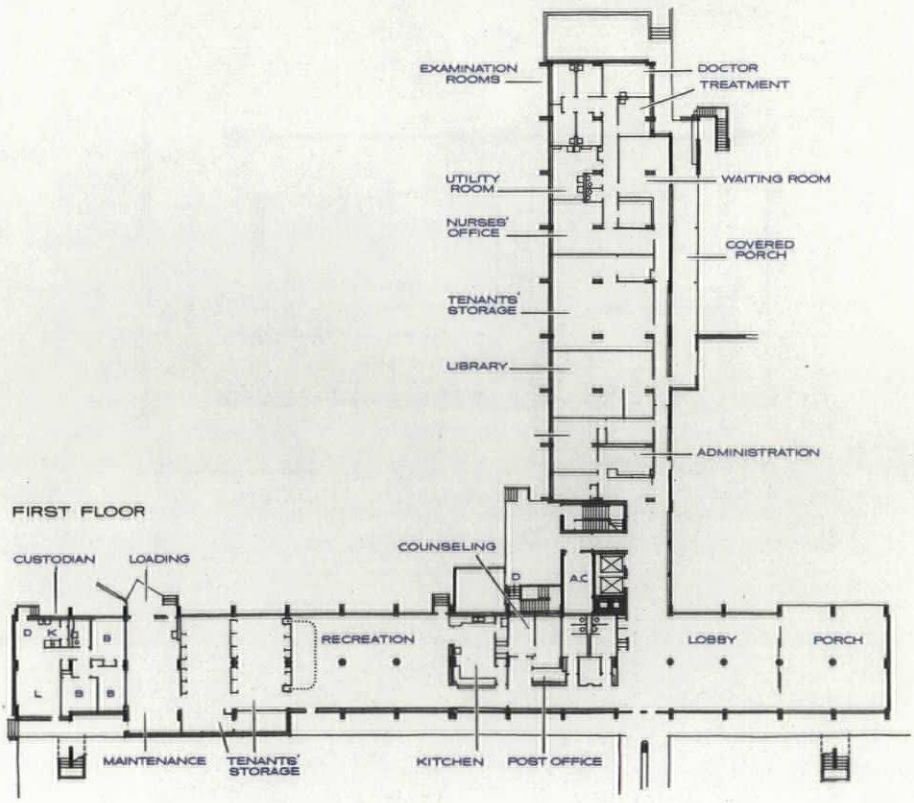
The individual apartments are noteworthy not only for their safety and comfort features, but also for their flexibility in layout. Since all rooms are necessarily small, the use of floor-to-ceiling partitions was avoided wherever possible. The 6′-8″ storage unit that separates the living and sleeping spaces permits through-ventilation and can be moved to create a studio-type apartment.

Satisfactory sound isolation is achieved by constructing partitions between units of solid 2½″ metal lath and plaster and installing ceilings of acoustic tile cemented to the floor slab. Lighting is designed so that bulbs can be changed without the use of ladders or chairs. All convenience outlets are located three feet above the floor.

Although the safety of the bathrooms is considered to be critically important for the elderly, the architect and the local authority found that very little original study of its design had been made. After extensive inquiries among medical authorities and experts on aging, it was decided that a shower with a seat would be safer and healthier than the conventional tub. The shower is designed with no threshold, so that a wheel chair can be rolled into it. Unbreakable glass shower doors provide firm support if needed.

Grab bars in critical locations in the room are anchored securely to the structure. An electric heater, for use when

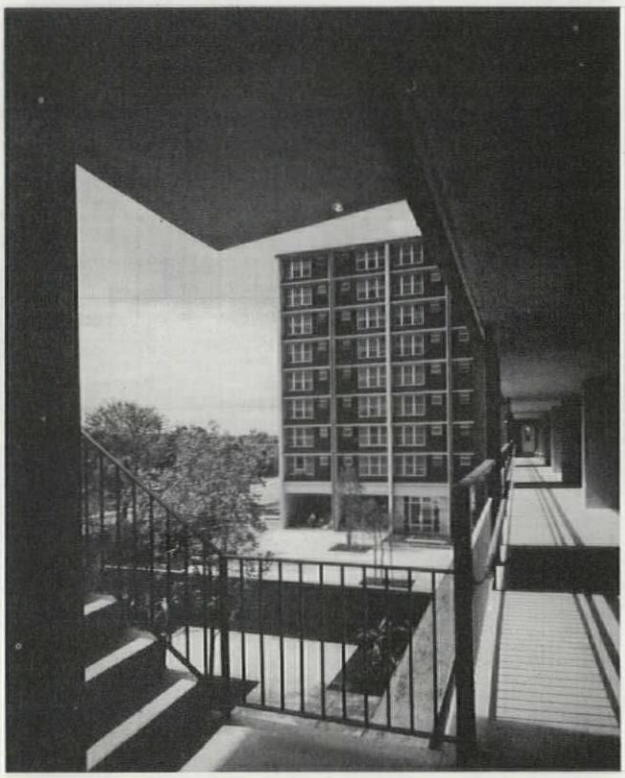


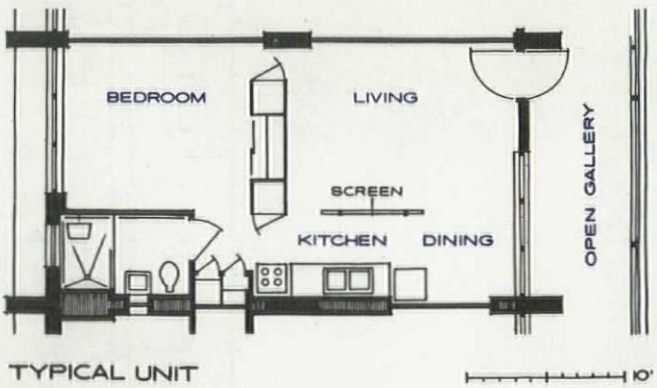


central heating is not functioning, is mounted in the ceiling, where it does not constitute a safety hazard. An emergency button located between the lavoratory and the toilet operates a bell and a light on the outside gallery to summon the aid of neighbors. A full-scale mock-up of the entire room was constructed and tested before the final design was approved (*acrosspage*, SELECTED DETAIL).

Although standards of materials and equipment throughout the project are unusually high for a public housing project, the cost of construction was held to $2659 per room, considerably below the authorized maximum of $3250. The architects attribute this economy largely to the repetitive design of the flat-slab concrete structure and the simplicity of the mechanical layout.

Beretta, Greenslade and Associates were structural engineers for the project and George Rhine and Company, mechanical engineers.



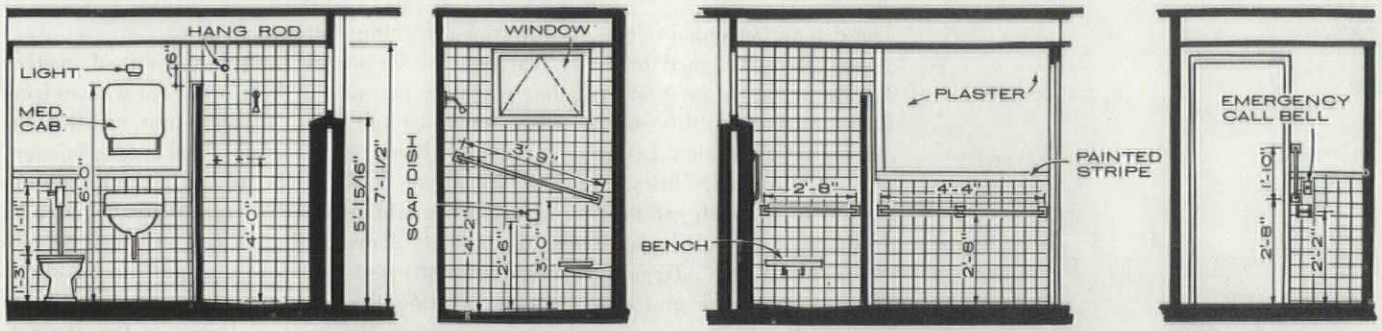


TYPICAL UNIT

Comments by Ollie A. Randall

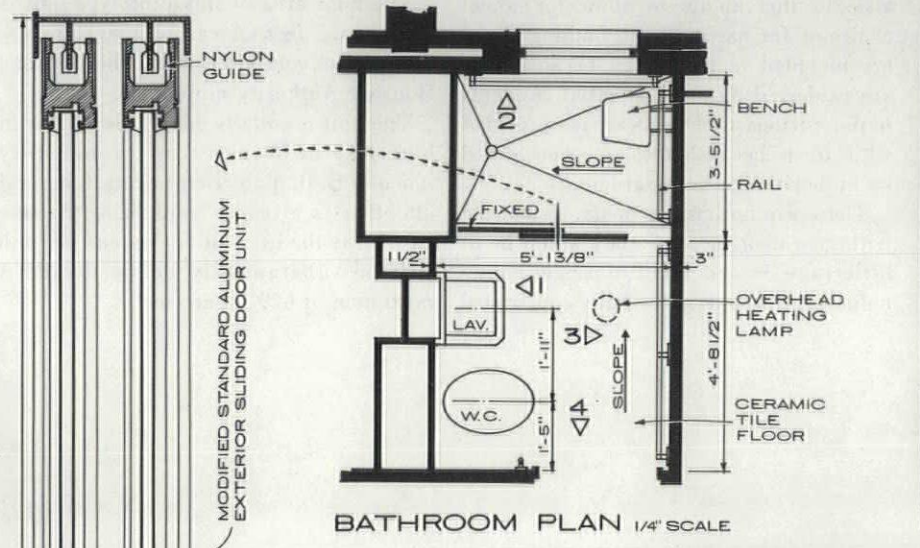
Victoria Plaza is a building of which San Antonio can be justly proud and which commands the respect of everyone concerned with housing the elderly. Thompson has done a superb job of interpreting the needs of older people, hundreds of whom he personally interviewed. Outstanding livability, practicality, and genuine beauty have been incorporated into a project which could, without his efforts, have been the ordinary humdrum, high-rise public housing building seen so often in this country. Here is a place which is exciting to live in, a place to which residents may invite their friends and relatives with pride, despite their "low income" status. The "public housing" stigma has been minimized so much as to have no detrimental effect on those privileged to move in.

Most important, the building is a community enterprise in which local artists, merchants, landscape architects, and service organizations all take a proprietary interest, since all have made significant contributions to the building and have taken part in planning the continuing program of living for which it is intended. The project represents not only creative architectural design, but creative social planning on the part of the local housing authority which will operate the house. It also represents unremitting effort to work through what to many would have been insurmountable barriers to this kind of creation, for bureaucracy has a quiet but effective way of stifling enthusiasm, initiative, and imagination.

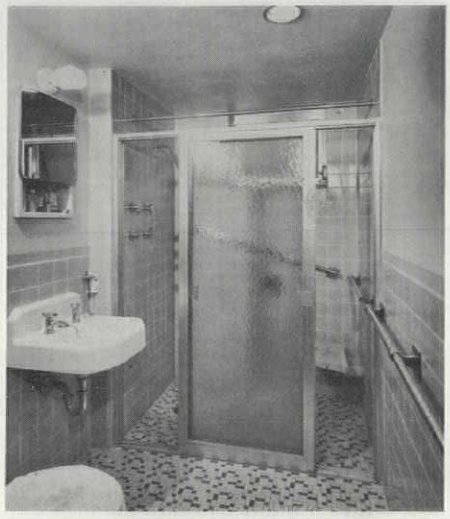


ELEVATIONS 1 2 3 4

3/16" SCALE

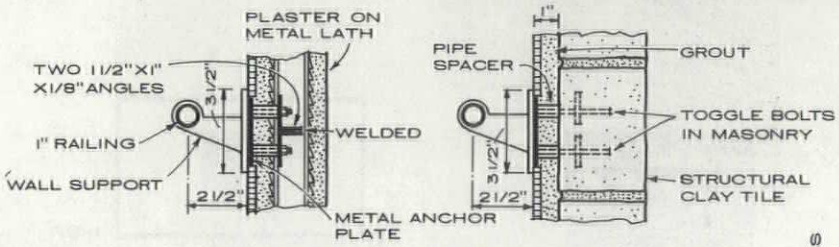


BATHROOM PLAN 1/4" SCALE

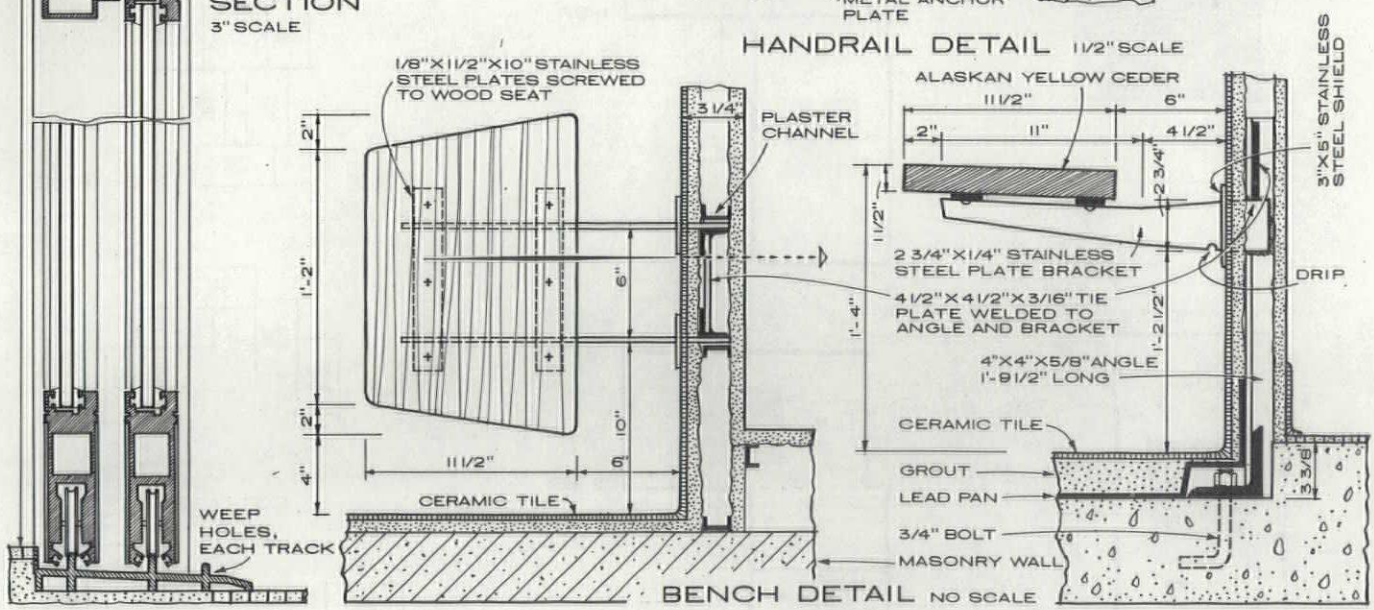


SECTION

3" SCALE



HANDRAIL DETAIL 1 1/2" SCALE



BENCH DETAIL NO SCALE

VICTORIA PLAZA: San Antonio, Texas NOONAN & THOMPSON & KROCKER AND MARMON & MOK, Associated Architects	SELECTED DETAIL BATHROOM DETAIL

Four Imaginative Projects

These four housing projects, all in New Jersey, were designed by E. N. Turano. All are based on one prototype unit plan. Each unit has a utility core 1 at the center, including kitchen fixtures, bathroom, and all storage facilities. The floor area around it 2, which can take on a variety of shapes, is divided almost equally between living and sleeping spaces, with smaller entrance and kitchen spaces between them.

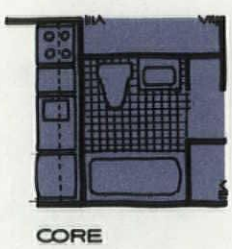
The bathroom is designed with a free aisle in the middle to allow for wheel chairs or for assistance in bathing. Tubs are included in the design because they are preferred by most potential residents in the Northeast. Showers are not provided with them because they are considered by authorities to be hazardous.

There are no interior doors, except the bathroom door, because they would be of little value in one- and two-person households and would necessitate constricted openings between spaces.

These basic units can be joined together to permit the "borrowing" of a room from one unit for an adjacent unit, creating one three-room apartment and one "efficiency" unit 3, 4. The bedrooms in the larger unit would be isolated from the entrance area by doors. Although the units can be constructed to permit changes during operation, the principal value of such flexibility is in the original layout of the space to meet the needs of tenants.

The floor area of this prototype unit is 480 square feet. Areas of the bedroom, living room, and kitchen are above Public Housing Authority minimums.

The unit is equally adaptable for use in high-rise buildings 5 or in one-story schemes 6. In high-rise projects, if careful attention is given to minimizing circulation areas the over-all floor areas per unit will be substantially below the PHA maximum of 620 square feet.



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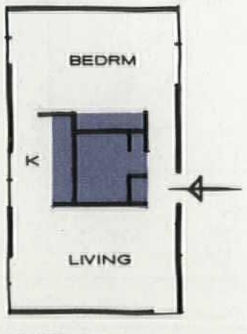

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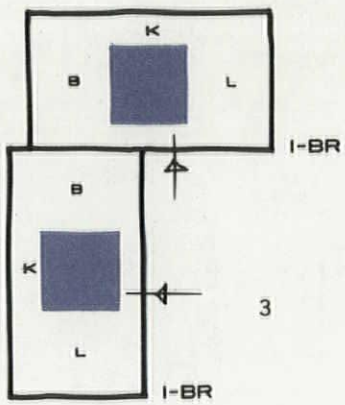

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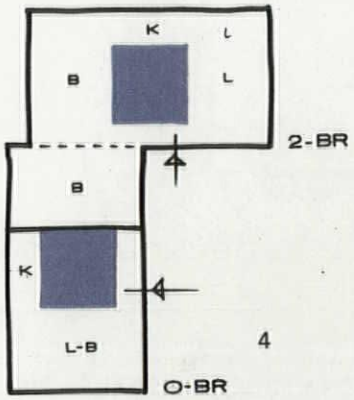

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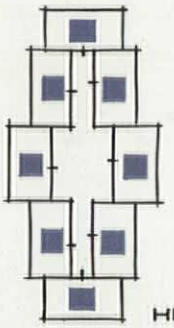

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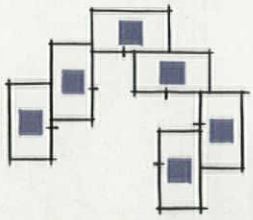
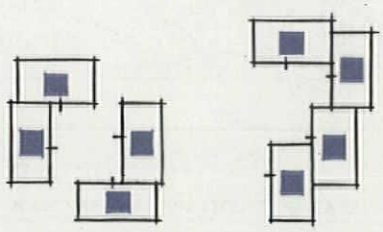




6

The prototype unit in its simplest form is incorporated in this project for the small community of Boonton. The project is composed of seven one-story buildings, housing two units each, and a communal center created by converting an existing house.

The buildings will be of standard frame construction, with roofs of stressed-skin plywood panels joined together in a folded-plate configuration.

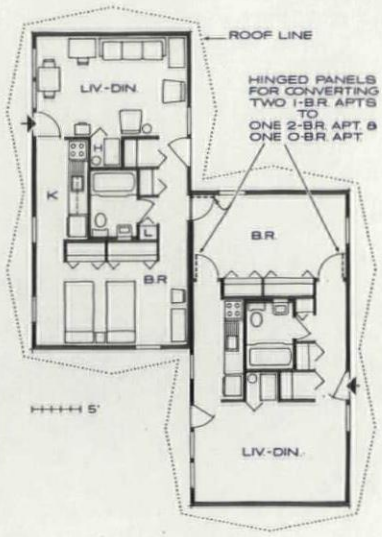
Removable door-size panels will be built into the walls between units to permit changes in unit sizes. Built-in bucks at the entrances to the bedroom are designed to receive these panels.

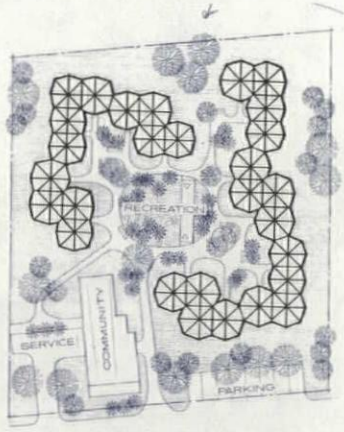
Kitchens are designed to eliminate the need for climbing on stools. Base cabinets are pulled out seven inches from the wall, allowing wall cabinets to be lowered. Door saddles are eliminated throughout the unit to facilitate the passage of wheel chairs.

The site is within a few blocks of the center of the town in a well-maintained residential neighborhood. It was donated for this use by the previous owner, who occupied the private house on it. As much as possible of the fine existing landscaping will be maintained. Private planting areas for the tenants were not provided because their proper maintenance could not be ensured.

The existing house, with some of its furnishings, will be retained to accommodate communal facilities. Preservation of this building will strengthen the relationship of the project to the neighborhood.

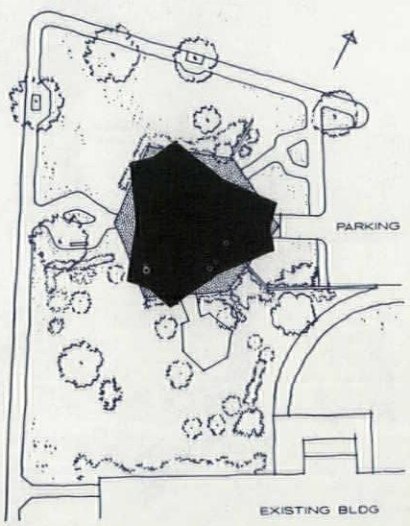
Public Housing Authority regulations would have limited community space to 10 square feet per unit, a totally inadequate area for this project. Interior alterations to the house will provide a large meeting space, smaller meeting and card rooms, offices, and maintenance space. Local welfare agencies will operate the center.





Boonton

New Brunswick



This project, now under construction, was designed by Turano in association with Merchant-Seidel-Hickey. It constitutes the final phase of a two-square-block slum clearance project in the heart of the town. Commercial, religious, and health facilities and a river-front park are within short walking distance. The project will be an integral part of a larger low-rent housing development that includes four nine-story apartment buildings. Prospective tenants will come from the immediate area.

The building includes eight typical floors of one-bedroom units, and one floor of nine "efficiency" units. The first floor houses facilities for social activities, administration, and services. Welfare and social programs will be administered by a local volunteer group.

The covered terrace encircling the first floor offers easy access to the surrounding ground, which will be defined and protected from the adjacent project by pierced screen walls and heavy planting. Particular attention will be given to night lighting of walks and terraces for safety and social atmosphere.

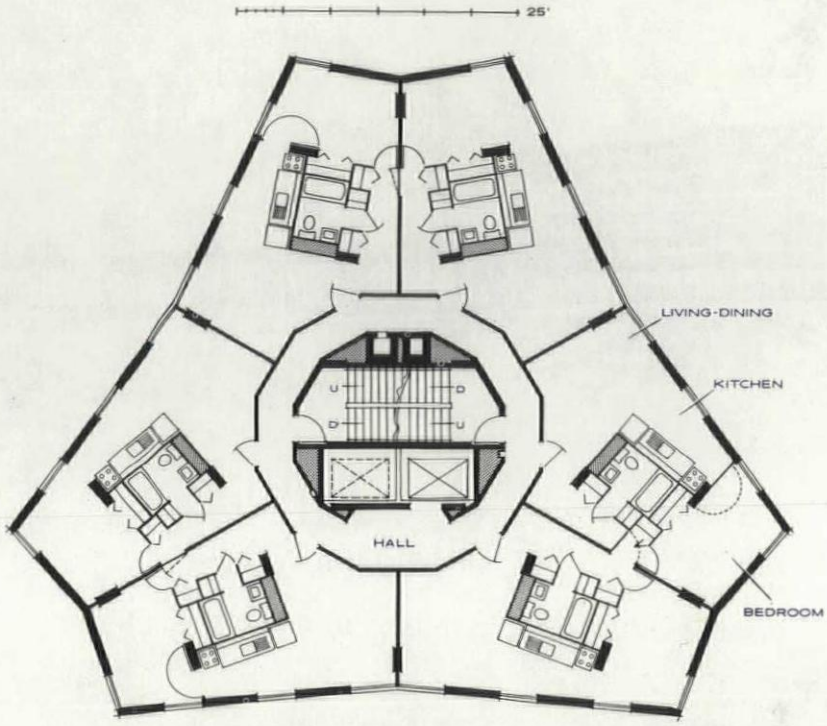
The circular corridor of the typical apartment floor occupies little space and provides the simplest possible circulation. A railing around the outer perimeter will add to its safety.

The one-bedroom apartments are distinctly different in shape from the prototype unit, but they retain its efficiency of layout and potential flexibility in size.

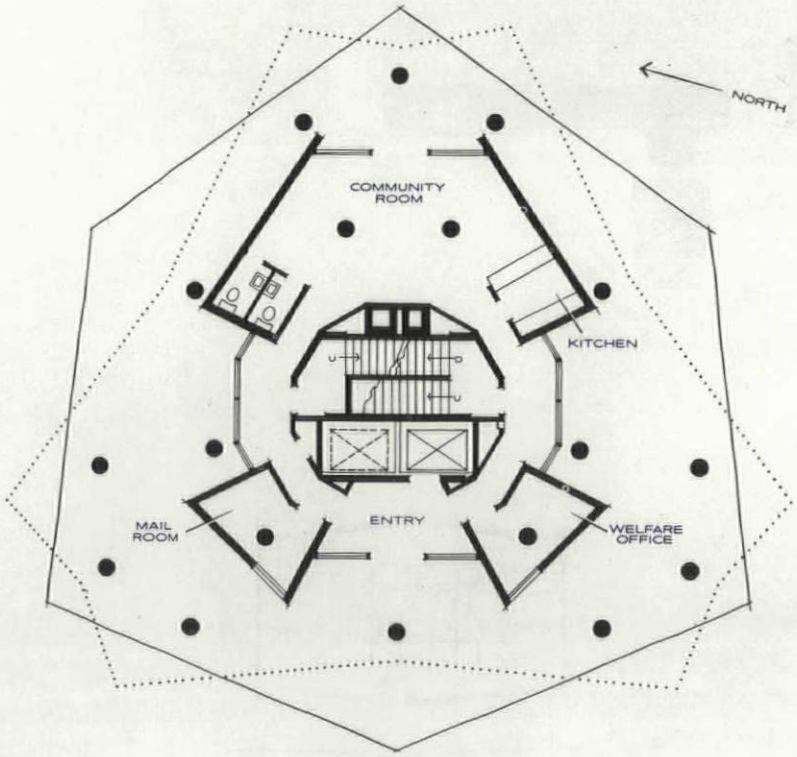
The window units are designed for safety and ease of cleaning. Pivoting sash will permit the occupant to clean the entire window from the inside while standing on the floor. Panels under the window on the interior will house convectors; porcelain-enameled spandrel panels will lend color to the exterior.

Balconies shown in the perspective acrosspage were eliminated through analysis of the needs of the elderly. They would be of limited usefulness and would constitute a safety hazard. Facilities at the ground level will be useful over longer periods and will help to satisfy a need for social contacts.

The structural design, by Fraioli, Blum & Yesselman, employs seven-inch flat-plate concrete slabs in a two-column cantilever system. The exterior wall is supported on the edge of the slab, which is articulated on the exterior. The elimination of beams and the reduction in the number of columns made this system more economical for this project than the conventional cage structure.

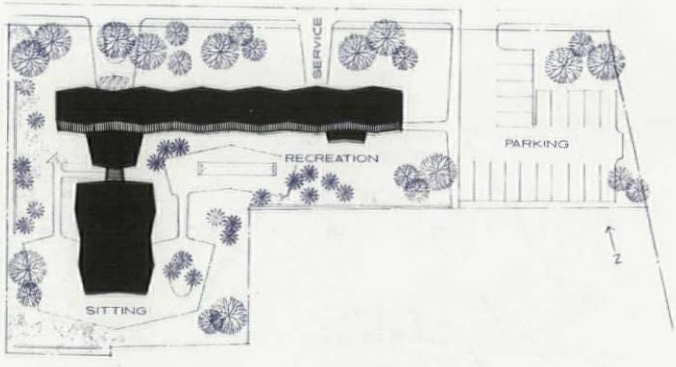


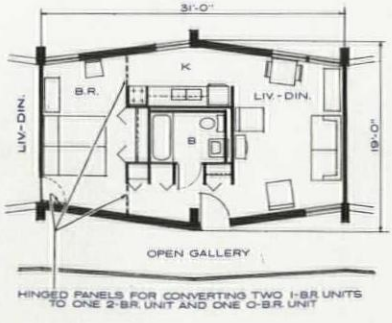
TYPICAL UPPER FLOOR



FIRST FLOOR PLAN

Morristown





Two other projects, at East Orange and Morristown, are similar in size, program, and design approach to the New Brunswick building. In both of them there was an effort to adjust to the scale of a residential neighborhood. As in New Brunswick, the ground floor of each project is devoted to social facilities, maintenance, administration, and covered terraces.

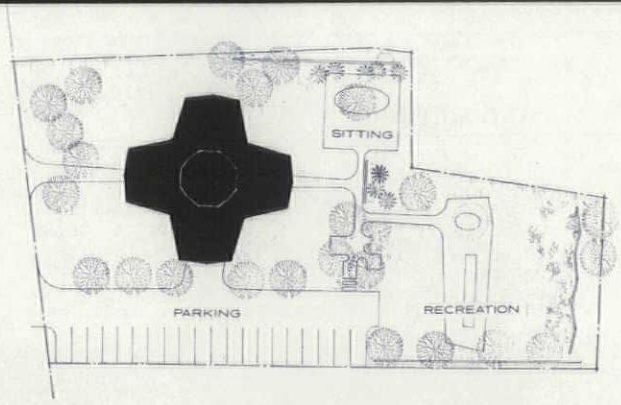
The East Orange design is similar in all essentials to the New Brunswick scheme, except that it is lower, with a larger number of units per floor. The design of the individual apartment is only slightly altered.

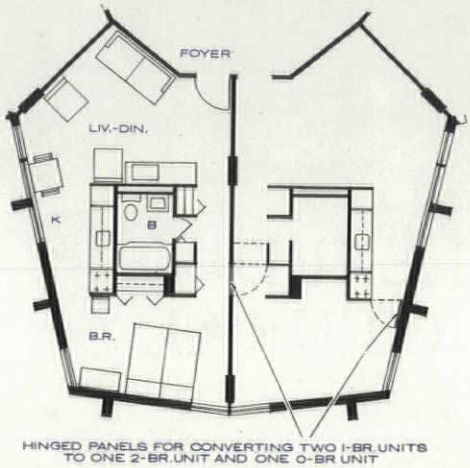
The Morristown site dictated a distinctly different solution. The building is divided into two blocks, connected at every floor by corridors, which provide access to the elevator and stair tower.

The units in the log block are reached by open galleries along the south side. The width of these galleries is varied to provide sitting areas between entrances.

Comments by Ollie A. Randall

These projects are fine examples of flexibility in individual unit design that will go a long way toward making special





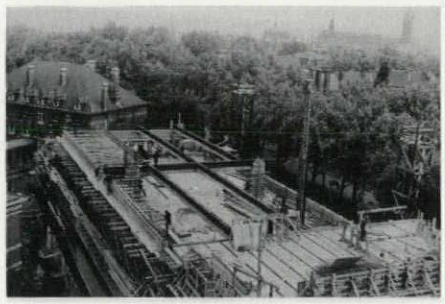
HINGED PANELS FOR CONVERTING TWO 1-BR.UNITS TO ONE 2-BR.UNIT AND ONE 0-BR UNIT

housing for the elderly useful for any type of tenant, and which will also make possible an easy adjustment to the changing health and marital status of elderly residents.

The possibility of letting a widow or widower remain in a one-room apartment, which is familiar because it has been part of a larger apartment that the couple occupied together, is a major contribution to one of the most serious problems of management. Older people do not like to move, except for those rare persons who do not want to remain in places full of painful memories. The adaptability of the accommodations to the use of one room, in the event that a member of the household is ill, is likewise an asset to tenants and management that cannot be overlooked. The fact that the basic unit can be used in both high-rise and cottage-type structures enhances its fundamental contribution to housing.

The project for New Brunswick has the virtue of appearing to belong to the surrounding project of which it is part. That the individual apartments have been made flexible in size without sacrifice of exterior appearance is a tribute to the ability of the architect.

East Orange



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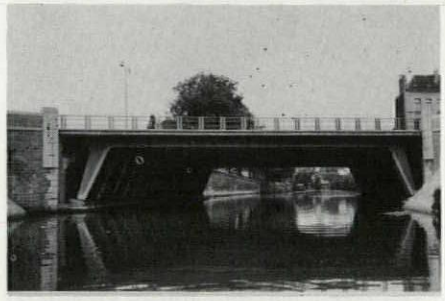

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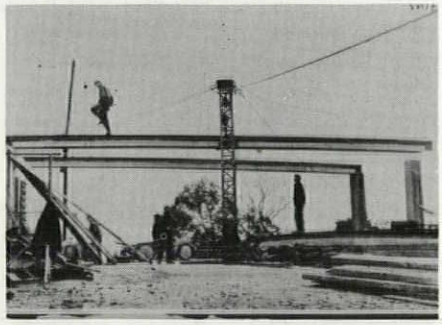

3

PREFLEXED STRUCTURAL STEEL

BY CHARLES C. ZOLLMAN

Encasing the tensile flange of a temporarily loaded steel beam with concrete results in desirable performance characteristics not always found in shallow, heavily loaded standard-steel shapes. A partner of Schupack & Zollman, Consulting Engineers of Stamford, Conn., and Newtown Square, Pa., describes the preflexing technique, structural-design advantages derived from this process, and a preflexing program currently being conducted in this country.

Written prior to the publication of William J. McGuinness' article "High-Strength Steels for Buildings" in the DECEMBER 1960 P/A, *this report answers some of the problems mentioned therein by a number of authoritative engineers in connection with the use of A36 and other high-strength steels.*

The structural depths of the load-carrying members shown *1*, *2*, and *3*, are in the order of one-thirtieth of the span, or less. In buildings and bridges abroad, the use of this type of beam is steadily increasing. Attaining such shallow depths without the introduction of appreciable deflection problems, in spite of heavy superimposed loads and relatively long spans, is possible through a process of manufacture (known as the preflexing technique) that is applied to structural-steel shapes.

Principle of Preflexing Technique

In essence, the preflexing technique consists of encasing the tension flange of a steel beam in high-quality concrete *after* the bare steel beam has been temporarily loaded (preflexed) by means of jacks *4A*. The jacking forces, applied in the same direction in which subsequent design loads will be carried by the beam, produce a pronounced deflection (preflexing) and introduce tensile stresses in the bare beam at least equal to the allowable design stresses. These jacking forces are maintained during the placing of Stage-1 concrete around the tensile flange of the steel beam *4B*, and until such time as the concrete has reached a desired strength. The preflexed beam is then relieved of these externally applied forces and tends to return to its original profile. However, the concrete (which is bonded to the tensile flange of the steel beam with the aid of shear connectors, if necessary) and the steel behave in composite action, thus preventing a full return of the beam to its original profile. This partial return movement places the concrete in compression *4C*.

The steel beam, in its modified condition (bare steel plus the Stage-1 concrete), is then shipped to the job site in the same manner as a bare steel beam would be. After erection of the preflexed beam, the Stage-2 concrete (top slab) is poured in place in the usual way. If desired, the form-work for this pour can rest upon the

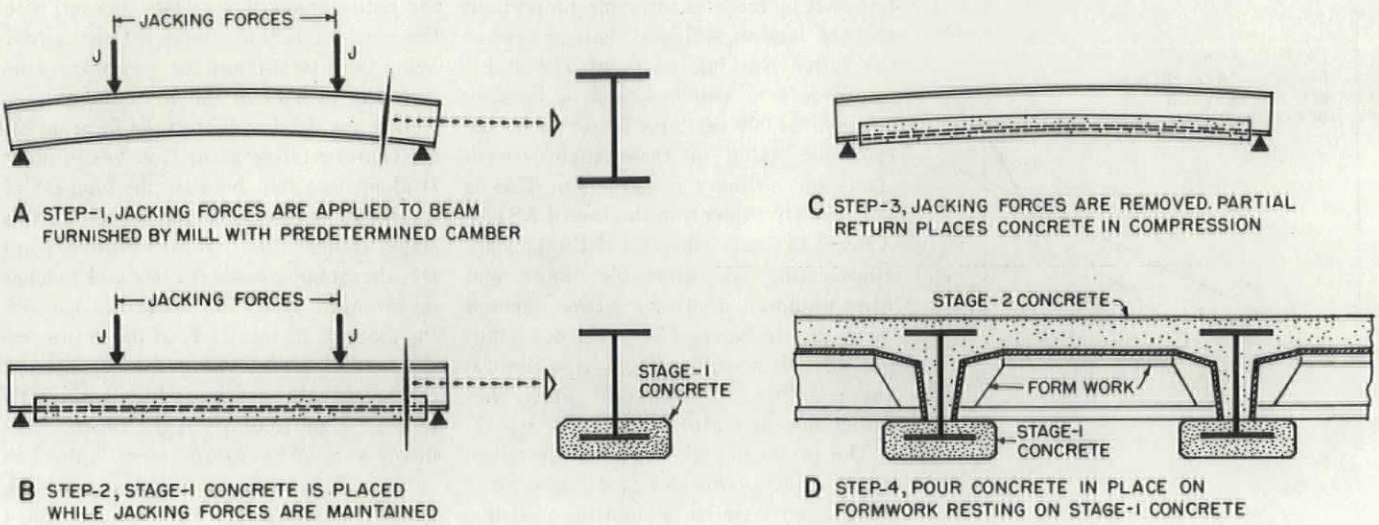

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TABLE I

	ASTM A7	ASTM A36
Yield point f'_{sy}, min. (psi)	33,000	36,000
Tensile strength (psi)	60,000 to 75,000	60,000 to 80,000
Modulus of elasticity (psi)	29,000,000	29,000,000
Allowable design stresses.		
Bridges (psi)	18,000	20,000
Buildings (psi)	20,000	22,000

5

TABLE II: ASTM A441

	Thickness ¾" and under	Thickness over ¾" to 1½" incl.	Thickness 1½" to 4" incl.
Yield point f'_{sy}, min. (psi)	50,000	46,000	42,000
Tensile strength, min. (psi)	70,000	67,000	63,000
Modulus of elasticity (psi)	29,000,000	29,000,000	29,000,000

Stage-1 concrete *4D*. The necessity for falsework, which might normally be required, is eliminated. In lieu of the poured-in-place concrete slab, a deck consisting of precast/prestressed-concrete beams and planks may be used *5*.

Need for Preflexing Technique

Structural steel, as generally used in construction work, meets either the ASTM-A7 or the more recent ASTM-A36 Specification. Physical properties and the allowable design stresses for each of these steels is indicated (Table I). The allowable design stresses for highway bridges are about 55 percent of the minimum yield point for either steel. Such a large factor of safety is necessary as:

1 a safeguard against fatigue failure;

2 a safeguard against large ranges in stress due to live-load variations;

3 a safeguard against internal residual stresses that are inherent in structural steel, having been introduced during the rolling and cooling of the structural shapes.

To provide a required section modulus, the designer—for reasons of economy, as well as stiffness, and based on the currently acceptable allowable stresses—will usually select the section with greatest depth to carry a given load. If, for architectural reasons, he must select a section of minimum depth, his problem no longer is one of stress analysis but becomes one of deformation, since shallow beams for a given span and load may have excessive deflections. In other words, a bare steel beam often lacks the necessary stiffness; it is "limber" and therefore unacceptable. The first attempt to compensate for this lack of stiffness was to completely encase a beam in concrete. This solution, however, was not satisfactory. For example, if a steel working stress of 20,000 psi is used, a strain of 20,000/29,000,000, or 0.00066 inch per inch, is produced. This is about twice the strain that would cause a 3000-psi concrete to crack. It is indicated, therefore, that in a conventional, fully encased steel beam the concrete cracks long before the full design live load is applied to the beam.

Of course, the situation would be even worse if high-strength steels meeting ASTM-A441 Specifications were used (Table II), as can be demonstrated.

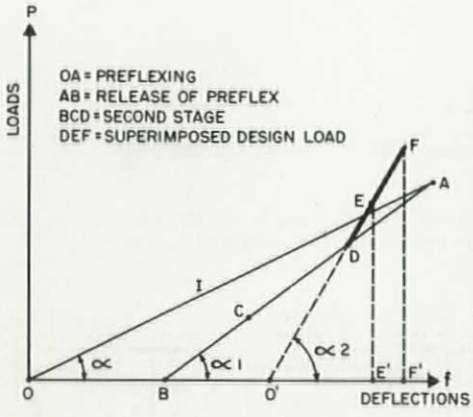
In general, the ratio of working stress to yield is maintained in conventional steel design:

$$\frac{18{,}000}{33{,}000} = \frac{20{,}000}{36{,}000} = \frac{27{,}000}{50{,}000} = .55$$

Therefore, the working stress for A441 steels would be increased by about 35 percent over that of A7 steels

$$\left(\frac{27{,}000}{20{,}000} = 1.35\right).$$

However, the modulus of elasticity of the A441 steels has remained the same as that for ASTM-A7 or A36 steels, even though the yield point has been increased by about 50 percent. As a result, the deflec-



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tion will increase in the same proportion, and the lack of stiffness when present at the lower working stress of 20,000 psi would only be emphasized at a working stress of 27,000 psi. This factor limits the economic value of these high-strength steels for ordinary construction. This is particularly evident, in the use of ASTM-A7 or A36 steels, when the deflections are approaching the allowable limits and when minimum depths have been imposed upon the designer. The problem is thus not one of strength, which is a natural characteristic of structural steel, but rather one of stiffness.

The preflexing technique, as described above, corrects this lack of stiffness. Since the Stage-1 concrete around the steel tensile flange is in compression, the composite action between steel and concrete furnishes the moment of inertia **I** necessary to attain sufficient stiffness. The technique thus indirectly compensates for the lack of increase in the modulus of elasticity of high-strength steels, and makes possible the full and economical use of the strength qualities inherent in the high-strength steels presently on the market.

Mechanics of Preflexing Technique

The mechanics of the preflexing technique are graphically represented *6*. Loads are plotted as ordinates and the corresponding deformation (deflections) are plotted as abscissas.

Slopes of load-deflection lines, such as OA, represent the stiffness of the girder at various stages of loading. These slopes are proportional to the moment of inertia of the girder.

Preflexing is represented by the segment OA with a low slope, corresponding to the moment of inertia **I** of the bare-steel girder.

Segment AB represents the release of the preflexing forces. Its slope is steeper than that represented by OA, as the moment of inertia $\mathbf{I}_1$ of the partially encased girder is greater than the moment of inertia **I** of the bare steel girder.

As a rule,

$$1.3\ \mathbf{I} \leq \mathbf{I}_1 \leq 1.8\ \mathbf{I}$$

As an example, the diagram has been drawn for:

$$\mathbf{I}_1 = 1.5\ \mathbf{I}$$

and $$\mathbf{tg}\alpha_1 = 1.5\ \mathbf{tg}\alpha$$

When the girder is placed on two end supports after the preflexing release, it will deflect under its own dead weight, and its load-deflection characteristics will be somewhere along line AB, say at C.

After the girder has been transported to the job site and has been erected, the Stage-2 concrete (which usually includes the entire compression slab) is cast, with the encased bottom flange of the girder being used to support the formwork. Due to the dead load of the wet concrete (as well as the dead weight of the formwork), the representative point C moves to point D along line AB, because the moment of inertia $\mathbf{I}_1$ has not changed as yet. In this stage of deflection (representative point D), the Stage-2 concrete sets and reaches its strength. After this concrete has set, the moment of inertia $\mathbf{I}_2$ of the entire section (steel girder, Stage-1, and Stage-2 concrete) will once more be substantially increased, particularly if the construction involves a large compression slab. The value of $\mathbf{I}_2$ is often about 2.5 to 3 times **I**.

The deformations of the completed composite girder, due to the superimposed design loads, are presented on line DEF, the slope of which is again steeper than that of DA because of the increased moments of inertia $\mathbf{I}_2$ of the composite girder.

As an example,

$$\mathbf{tg}\alpha_2 = 3\ \mathbf{tg}\alpha$$

The superimposed design loads generally include the following:

1 A permanent dead load, such as a wearing surface, which can be represented by the vertical component of portion DE of the DEF line.

2 The live load, which can be represented by the vertical component of portion EF of the DEF line.

As a result, the composite structure behaves as if the steel girder of low stiffness (segment OA with a small slope) has been replaced by a girder of very high stiffness (segment O'F with a slope 2.5 to 3 times as steep).

Thus, when the actual design loads are applied, the following desirable performance characteristics will be observed:

1 The variations in deflections of the composite beam due to live load are very small (within portion E'F' of the graph), and are well within the acceptable range.

2 The smaller range of steel tensile stresses caused by variations in live load improves the fatigue performance of the preflexed beam.

3 The compression in the concrete surrounding the steel tensile flange is reduced, but there will be no cracking of the concrete, even though some tensile stresses may occur in the bottom concrete due to concrete shrinkage and creep.

A theoretical analysis, which would be confirmed in actual practice, would show, however, that such tensile stresses are well below the modulus of rupture (maximum tensile stress at rupture) of the concrete. The safety against cracking of preflexed beams under design live load is

thus higher than that usually found in reinforced concrete, and is of course substantially higher than in composite beams, where the steel member is fully encased in concrete in the conventional manner. As a result of preflexing, the moment of inertia required to determine the magnitude of deflections is based not on the steel girder alone, but on bare steel girder plus the top and bottom concrete (which are both in compression); the stiffness of the beam has been increased. Therefore, the deflections in a preflexed beam are appreciably lower than those in a nonpreflexed beam of comparable span, depth, and load-carrying capacity, whether the latter is a fully encased beam or a combination of concrete slab and bare steel stringer.

In addition, the process of preflexing the beam to its allowable stresses constitutes an actual test and check of the true physical properties of the steel beam, as delivered. Any deviation from the written specifications would come to light at this time, and can be corrected by repeating the preflexing process, which would produce results similar to those obtained through cold-working. Internal residual stresses would be relieved to a large degree. This important characteristic of the preflexing process itself, plus the reduction in stress variation due to live-load variations that increases the resistance to fatigue, permits a reduction in the large safety factor that would otherwise be required. The margin of safety, however, remains the same.

It can be seen from the foregoing discussion that structural framework consisting of shallow, long-span, high-strength steel beams, now working at higher allowable design stresses, will exhibit the desirable structural-performance characteristics of steels working at low allowable design stresses, since heavy loads can be carried without producing deflection problems.

Creative Construction Concepts

1 The increased load-carrying capacity of preflexed girders makes possible large, unobstructed areas in such structures as parking garages, auditoriums, lower floors of office buildings or hotels that are to serve as shopping areas, or exhibition halls *7*. Ceilings that are architecturally more pleasing can be achieved.

2 The facility with which steel can be connected to steel makes it immediately possible to attain continuity with the use of plant-manufactured components in multistory buildings and bridges *2, 8*.

3 Preflexed main girders and prestressed-concrete secondary beams of equal depths can be advantageously combined *5*.

4 Provision for the passage of utilities through the webs of the preflexed girders can be made without loss of clear height *9*.

5 For given span lengths and superimposed loads, preflexed girders will permit minimum structural depths with minimum deflection problems *10*. These shallow structural depths will frequently:

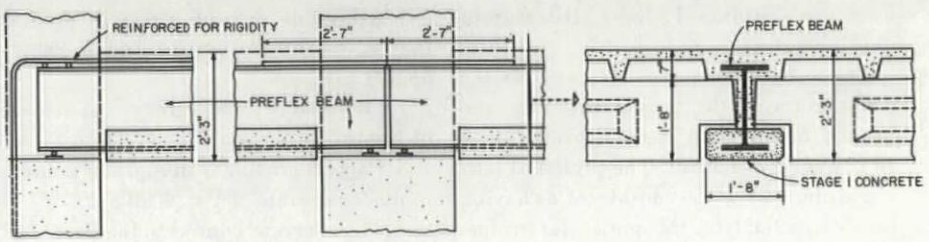
a Reduce the extent and grade of ramps and approaches to bridges, tunnels, and grade separations *11*.

b Reduce the total height of buildings *12*.

An unusual underground auditorium at Brussels has a roof-framing system of preflexed girders—spanning 88′-6″—which, in addition to the auditorium ceiling, carries the traffic of a downtown street, sidewalk, and stairway *13*. Thus, the preflexing technique constitutes an additional tool to be used by the imaginative and creative architect and engineer.

Comparative Tests

A number of thorough and extensive laboratory tests of full-size preflexed beams, carried out abroad, are described in several foreign technical publications ("Selected Bibliography"). These have confirmed the theoretically determined behavior of preflexed beams throughout the entire loading range, up to ultimate load, for static as well as dynamic loadings. In order that architects and engineers



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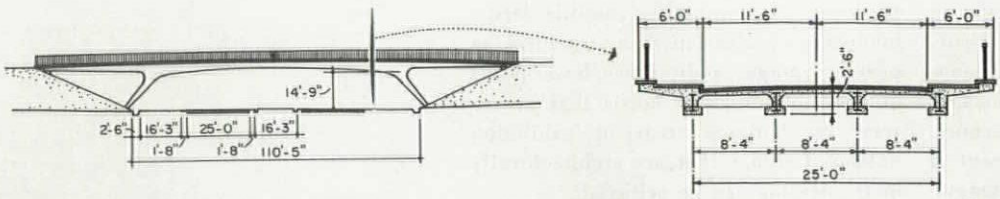

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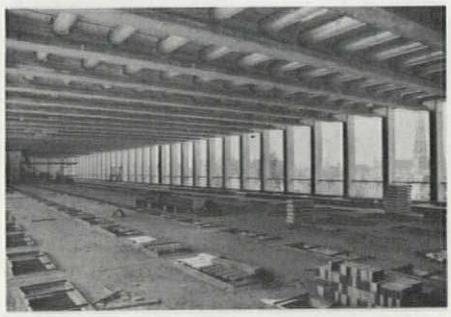

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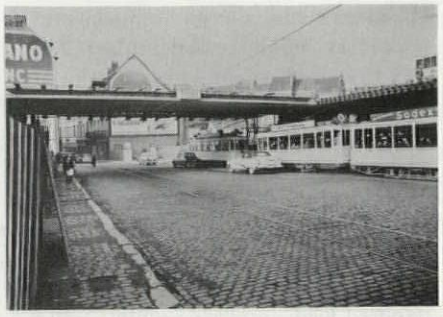

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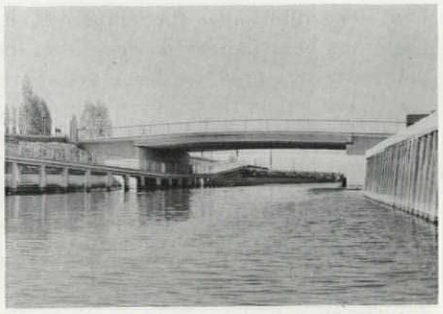

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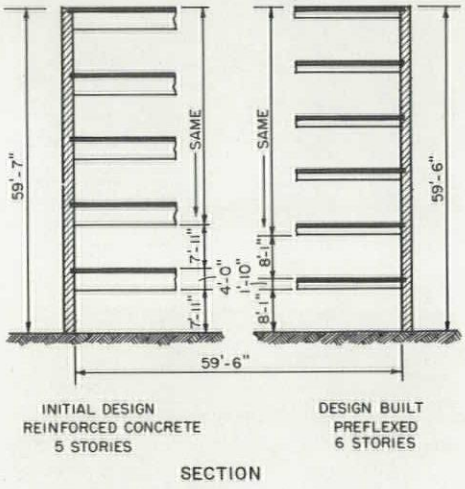
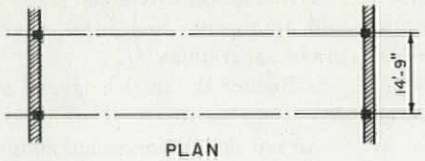




ONE ADDITIONAL FLOOR WITH SAME BUILDING HEIGHT

SHORTENING OF RAMPS RESULTS IN ADDITIONAL RENTAL PARKING SPACE

12

in the United States might observe at first hand a demonstration of the preflexing technique's soundness as applied to American-made steel, as well as of the adequacy of proposed American design criteria, equally thorough and extensive laboratory tests have been undertaken in this country. These tests, still underway at the Fritz Engineering Laboratory of Lehigh University, Bethlehem, Pennsylvania, are under the direct supervision of Professor William J. Eney, Director of the Laboratory.

The author's firm was retained for the preparation of the testing program and for the design of a specific bridge deck *14* to undergo analysis. The preflexed testing girder *15* may be considered as having been extracted from this particular bridge. In order to determine the effects that resulted from the application of the preflexing forces, it was necessary to isolate the latter. To achieve this isolation, the above girder was compared to another girder, identical in physical appearance, dimensions, and materials, which was manufactured without being preflexed in order to serve as a reference beam *16*.

One of the major purposes of the testing program was to substantiate the validity of the following criteria and basic stress-analysis assumptions upon which the design for the preflexed structure was based:

1 Allowable flexural stress at preflexing: $f_s = 0.8\ f'_{sy} = 0.8 \times 46{,}000 = 36{,}800$ psi.

2 Concrete cylinder strength at release of preflexing forces: $f'_{ci} = 5000$ psi.

3 Concrete cylinder strength of poured-in-place concrete: $f'_c = 4000$ psi.

4 The concrete bonded to the bare steel section becomes an integral part of the beam. Only the top poured-in-place concrete, however, contributes to the strength of the beam as a function of the moduli of the combined materials.

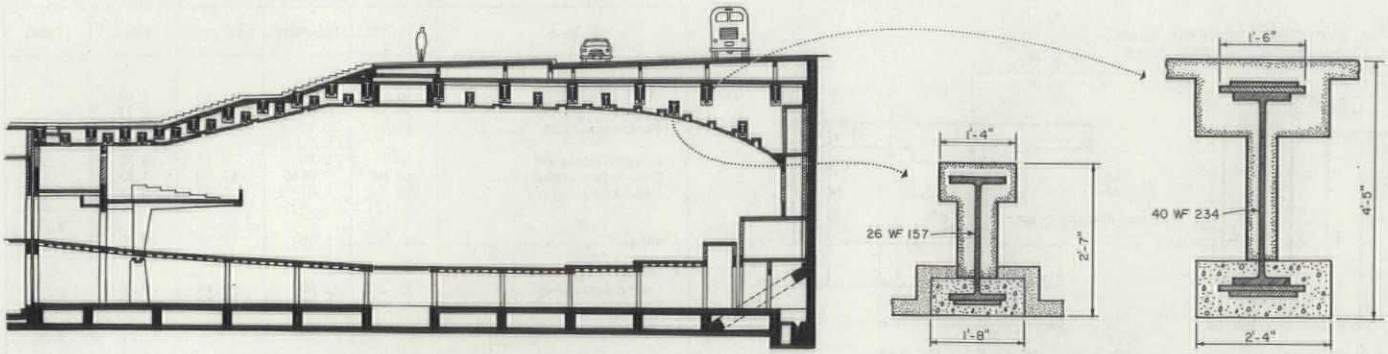
5 The Stage-1 concrete does not contribute to the safe resisting moment, or to the ultimate moment of the preflexed member *17*.

6 The entire cross-section is considered in the deflection analysis.

An additional aim of the testing program was to demonstrate that preflexed girders provide both desirable and satisfactory static as well as dynamic performance, even though the design stresses used might on the surface appear to be high when compared with those recommended in the specifications for presently existing American structural materials.

The original outline of the testing program was set up in an effort to confirm or invalidate:

1 Evidence that the elastic range of a preflexed girder is increased over that of



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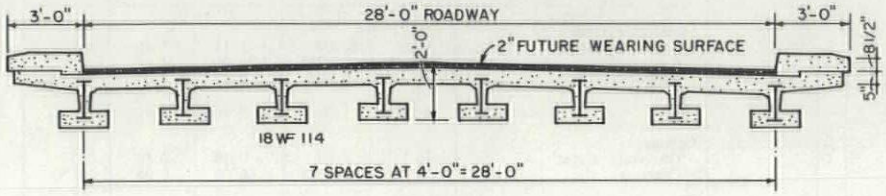
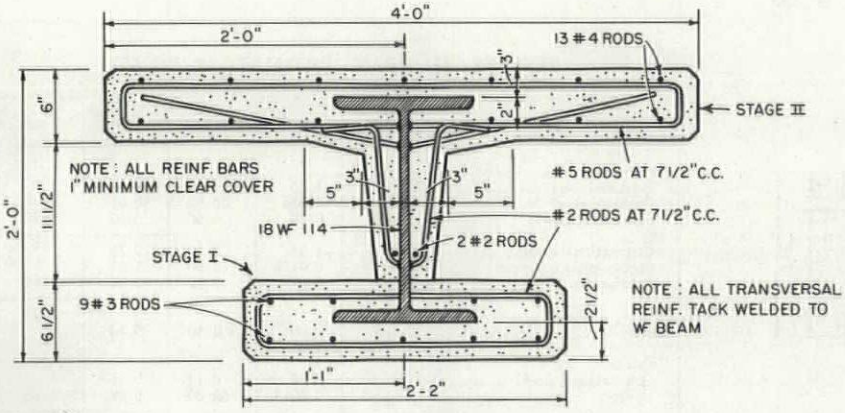
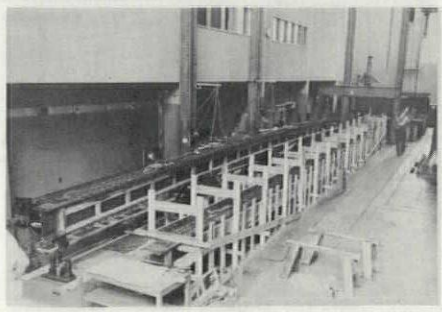


14 TYPICAL CROSS SECTION OF BRIDGE



15 CROSS SECTION OF "PREFLEX" BEAM "PX-1"

In foreground 16 *is reference beam with its formwork; in background, preflexed beam is readied for test. Test beam* 17 *after being subjected to dead load plus 2.5 times live load.*



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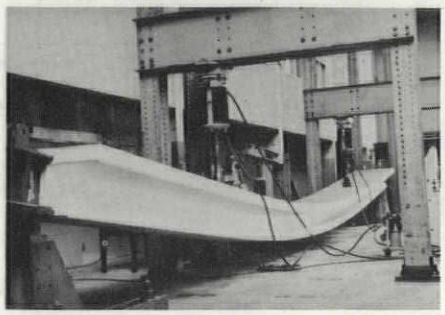

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an identical nonpreflexed girder.

2. Evidence that cracks do not appear in the preflexed girder until a much higher load has been applied than would be the case with a nonpreflexed girder.

3 Evidence that the increase of design stress to about 0.8 of the yield point will not cause a fatigue failure for the currently acceptable number of cycles.

Related aims of the testing program were:

4 To determine the "n" value (modular ratio **Es/Ec**) that was to be used in the top concrete to compute the safe resistant moment of the girder.

5 To obtain additional data for the determination of the "n" values, for both top and bottom concrete, which are to be used for the computation of deflections.

During the investigation, it became apparent that additional aspects of the preflexing technique had to be considered. Among these were the importance of creep in concrete, the observation of behavioral effects in the preflexed girder due to the handling methods used in the laboratory during fabrication, the problem of welding shear connectors on the *tension* flange of *high-strength* steel girders, the proper manner of providing conventional reinforcement, the importance of the quality of the materials used, and the importance of care in fabrication.

It was felt that these expanding objectives would eventually result in data that would supply the American design engineer with the necessary information about, and a thorough enough understanding of, the preflexing technique to enable him to recommend its use appropriately.

The tests and the test report being prepared by the staff of the Fritz Engineering Laboratory are not yet complete but evidence already indicates that the preflexing technique, as applied in this country to American-made materials, is as sound, from the technical viewpoint, as that being used abroad. It is proposed to discuss the Fritz Laboratory Tests in greater detail in an article to be published at a later date.

Cost comparisons—per sq ft of floor—for several framing methods are shown on the following spread.

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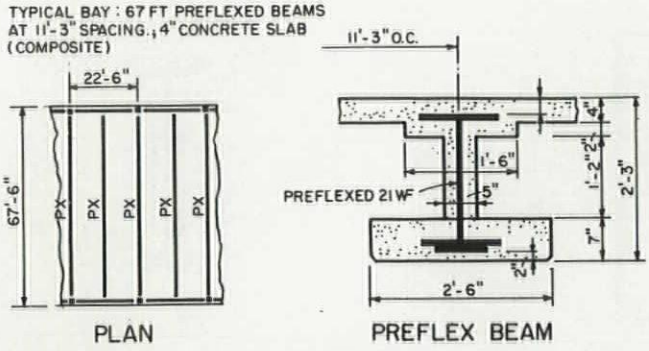
TYPICAL BAY: 67 FT PREFLEXED BEAMS AT 11'-3" SPACING.; 4" CONCRETE SLAB (COMPOSITE)

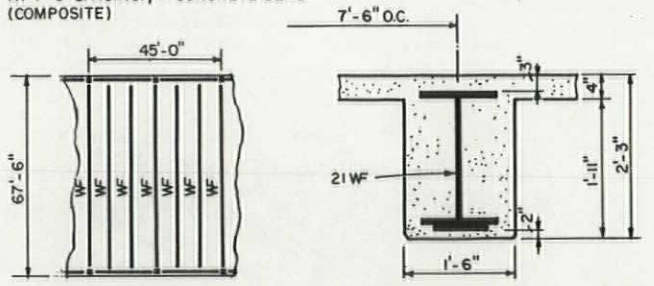


PLAN PREFLEX BEAM

PREFLEX, 67′ SPAN: ESTIMATE, $/SQ FT

Item	Units	Quantity	Unit price	Cost	Total
Structural system					
Preflexed steel	lb	13.90	0.19	2.64	
Preflexed concrete	cu yd	0.0042	50.00	0.21	
Shear connectors	each	0.40	0.50	0.20	3.05
Conventional steel	lb	2.80	0.14	0.39	
Cast-in-place concrete	cu yd	0.0166	65.00	1.08	
Reinforcing	lb	1.07	0.12	0.13	1.60
					4.65
Ceiling	sq ft	1.00	0.40	0.40	
Columns					
Conventional steel	lb	2.50	0.14	0.35	
Concrete	cu yd	0.0013	65.00	0.08	0.83
					5.48

TYPICAL BAY: 67 FT. STEEL BEAMS AT 7'-6" SPACING.; 4" CONCRETE SLAB (COMPOSITE)

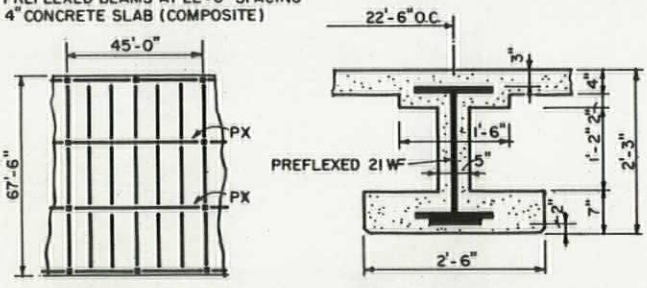


PLAN CONVENTIONAL STEEL BEAM

CONVENTIONAL STEEL, 67′ SPAN: ESTIMATE, $/SQ FT

Item	Units	Quantity	Unit price	Cost	Total
Structural system					
Conventional steel	lb	23.00	0.14	3.22	
Concrete	cu yd	0.0248	70.00	1.74	
Reinforcing	lb	0.792	0.12	0.09	5.05
Ceiling	sq ft	1.00	0.40	0.40	
Columns					
Conventional steel	lb	2.80	0.14	0.39	
Concrete	cu yd	0.0013	65.00	0.08	0.87
					5.92

TYPICAL BAY: JOISTS AT 7'-6" SPACING PREFLEXED BEAMS AT 22'-6" SPACING 4" CONCRETE SLAB (COMPOSITE)

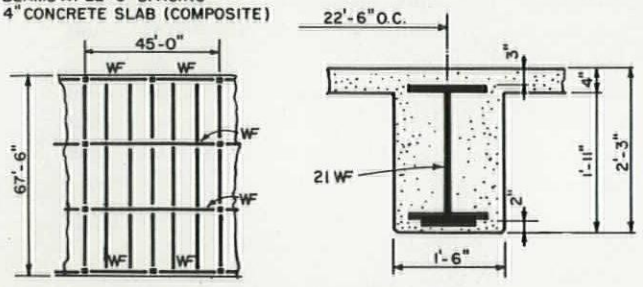


PLAN PREFLEX BEAM

PREFLEX, 45′ SPAN: ESTIMATE, $/SQ FT

Item	Units	Quantity	Unit price	Cost	Total
Structural system					
Preflexed steel	lb	4.35	0.19	0.82	
Preflexed concrete	cu yd	0.014	50.00	0.07	
Shear connectors	each	0.20	0.50	0.10	0.99
Conventional steel	lb	4.95	0.14	0.70	
Cast-in-place concrete	cu yd	0.0176	65.00	1.14	
Reinforcing	lb	0.67	0.12	0.08	1.92
					2.91
Ceiling	sq ft	1.00	0.40	0.40	
Columns					
Conventional steel	lb	2.45	0.14	0.34	
Concrete	cu yd	0.0015	65.00	0.09	0.83
					3.74

TYPICAL BAY: JOISTS AT 7'-6" SPACING BEAMS AT 22'-6" SPACING 4" CONCRETE SLAB (COMPOSITE)

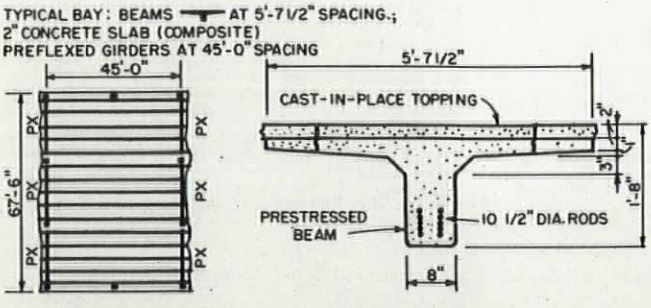


PLAN CONVENTIONAL STEEL BEAM

CONVENTIONAL STEEL, 45′ SPAN: ESTIMATE, $/SQ FT

Item	Units	Quantity	Unit price	Cost	Total
Structural system					
Conventional steel	lb	9.50	0.14	1.33	
Concrete	cu yd	0.0192	70.00	1.35	
Reinforcing	lb	0.71	0.12	0.08	2.76
Ceiling	sq ft	1.00	0.40	0.40	
Columns					
Conventional steel	lb	2.45	0.14	0.34	
Concrete	cu yd	0.0015	65.00	0.09	0.83
					3.59

TYPICAL BAY: BEAMS ⊤ AT 5'-7 1/2" SPACING.; 2" CONCRETE SLAB (COMPOSITE) PREFLEXED GIRDERS AT 45'-0" SPACING



PLAN PRESTRESSED BEAM

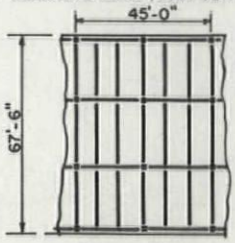
PRESTRESSED CONCRETE, 45′ SPAN: ESTIMATE, $/SQ FT

Item	Units	Quantity	Unit price	Cost	Total
Structural system					
Prestressed concrete	cu yd	0.0174	100.00	1.74	
Prestressing steel	lb	1.11	0.16	0.18	
Cast-in-place concrete	cu yd	0.0084	40.00	0.33	
Reinforcing	lb	1.00	0.12	0.12	
Preflexed steel	lb	2.15	0.21	0.45	
Preflexed concrete	cu yd	0.0006	50.00	0.03	
Shear connectors	each	0.10	0.50	0.05	
Conventional steel	lb	0.51	0.14	0.07	2.97
Ceiling	sq ft	1.00	0.40	0.40	
Columns					
Conventional steel	lb	2.60	0.14	0.36	
Concrete	cu yd	0.0015	65.00	0.09	0.85
					3.82

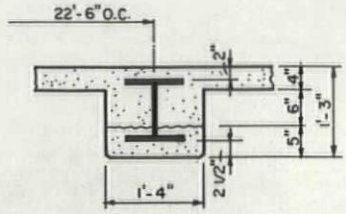
PREFLEX, 22′ SPAN: ESTIMATE, $/SQ FT

Item	Units	Quantity	Unit price	Cost	Total
Structural system					
Preflexed steel	lb	2.15	0.22	0.47	
Preflexed concrete	cu yd	0.005	50.00	0.25	
Shear connectors	each	0.20	0.50	0.10	
Conventional steel	lb	6.20	0.14	0.87	
Cast-in-place concrete	cu yd	0.0175	65.00	1.14	
Reinforcing	lb	0.61	0.12	0.07	2.90
Ceiling	sq ft	1.00	0.40	0.40	
Columns					
Conventional steel	lb	2.15	0.14	0.30	
Concrete	cu yd	0.0016	65.00	0.10	0.80
					3.70

TYPICAL BAY: JOISTS AT 7′-6″ SPACING.; PREFLEXED BEAMS AT 22′-6″ SPACING.; 4″ CONCRETE SLAB (COMPOSITE)



PLAN

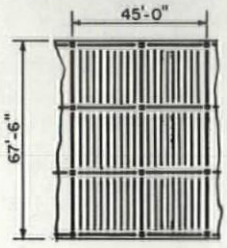


PREFLEX BEAM

CONVENTIONAL STEEL, 22′ SPAN: ESTIMATE, $/SQ FT

Item	Units	Quantity	Unit price	Cost	Total
Structural system					
Conventional steel	lb	9.4	0.14	1.32	
Cast-in-place concrete	cu yd	0.0077	70.00	0.54	
Reinforcing	lb	0.20	0.12	0.03	1.89
Ceiling	sq ft	1.00	0.65	0.65	
Columns					
Conventional steel	lb	1.80	0.14	0.25	
Concrete	cu yd	0.0015	65.00	0.09	0.99
					2.88

TYPICAL BAY: JOISTS AT 2′-3 1/2″ SPACING BEAMS AT 22′-6″ SPACING TIE BEAMS AT 22′-6″ SPACING



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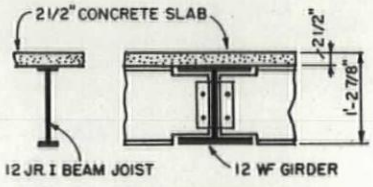
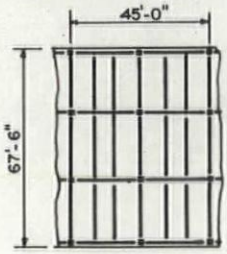


CONVENTIONAL STEEL JOIST & BEAM

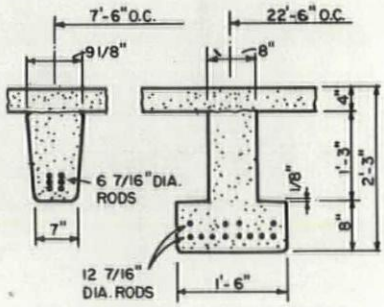
PRESTRESSED CONCRETE, 22′ SPAN: ESTIMATE, $/SQ FT

Item	Units	Quantity	Unit price	Cost	Total
Structural system					
Prestressed concrete	cu yd	0.0077	100.00	0.77	
Prestressing steel	lb	0.42	0.16	0.07	
Cast-in-place concrete	cu yd	0.0107	65.00	0.70	
Reinforcing	lb	0.90	0.12	0.11	1.65
Ceiling	sq ft	1.00	0.40	0.40	
Columns					
Concrete	cu yd	0.0019	65.00	0.11	
Reinforcing	lb	2.55	0.12	0.31	0.82
					2.47

TYPICAL BAY: JOISTS AT 7′-6″ SPACING GIRDERS AT 22′-6″ SPACING.; 4″ CONCRETE SLAB (COMPOSITE)



PLAN

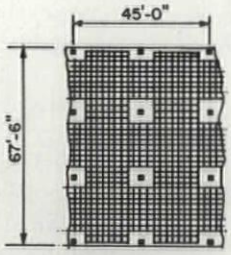


PRESTR. CONC. JOIST & BEAM

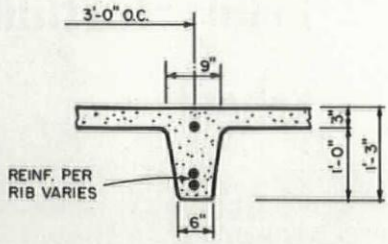
REINFORCED CONCRETE, 22′ SPAN: ESTIMATE, $/SQ FT

Item	Units	Quantity	Unit price	Cost	Total
Structural system					
Concrete	cu yd	0.0242	65.00	1.57	
Reinforcing	lb	3.00	0.12	0.36	1.93
Ceiling	sq ft	1.00	0.40	0.40	
Columns					
Concrete	cu yd	0.0021	65.00	0.13	
Reinforcing	lb	2.85	0.12	0.35	0.88
					2.81

TYPICAL BAY: WAFFLED PLATE 12″ DOME, 3″ SLAB



PLAN



REINFORCED CONCRETE RIB

COST COMPARISONS FOR 22′ x 22′, 45′ x 22′, AND 67′ x 22′ BAYS

BASIC DESIGN CRITERIA

1 Design load: 100 psf

2 Maximum acceptable total construction depth: 2′-3″

GENERAL NOTES

1 The estimate is based on **square feet** for interior areas.

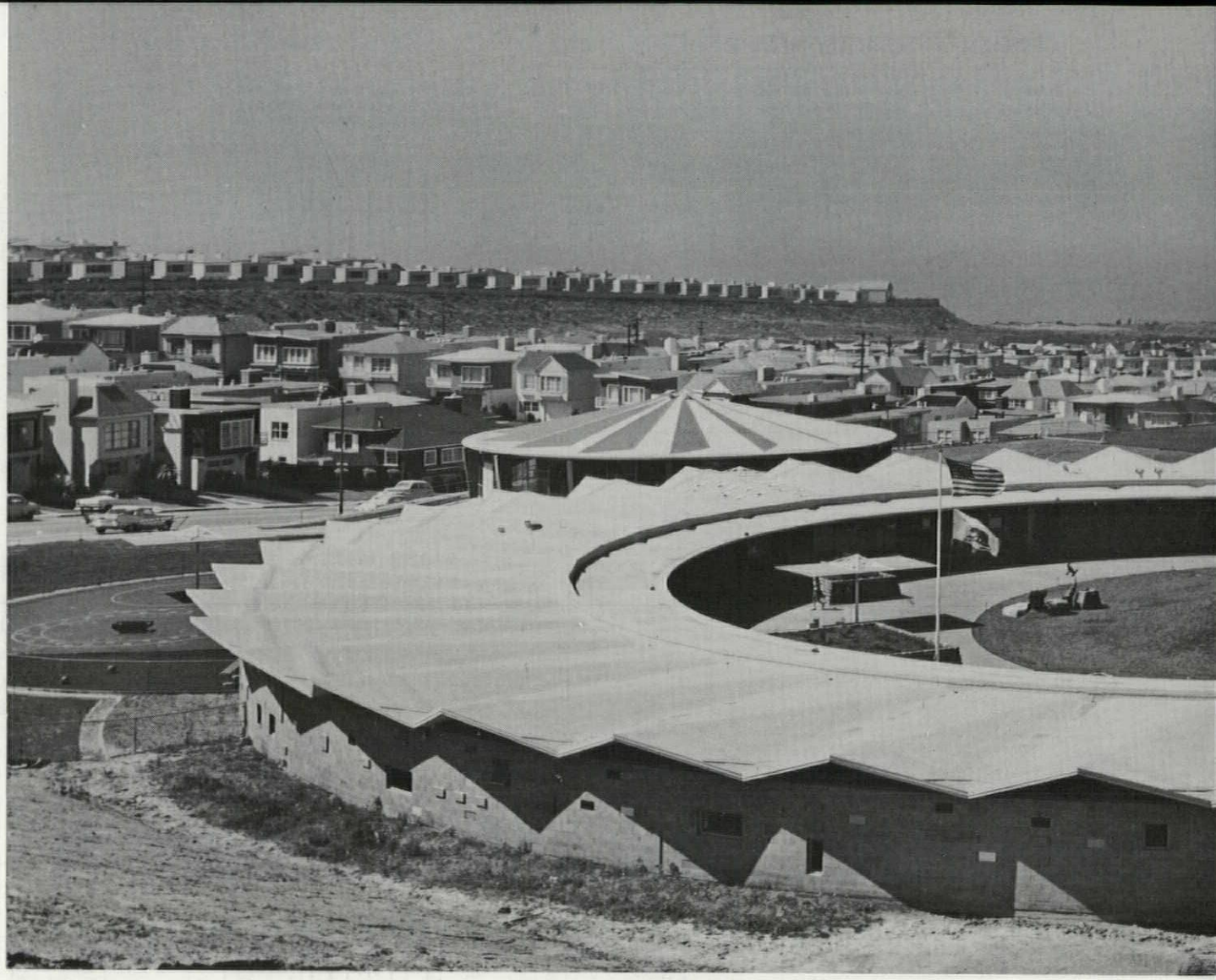
2 The unit prices are based on the following considerations:

a Preflexed steel
The costs of A441 steel, preflexing, and all plant labor are estimated at $0.05 per pound over and above the cost of fabricated A7 structural steel.

b Concrete
The cost of cast-in-place concrete for conventional construction is estimated at $70.00 per cu yd. Since forms are placed on the bottom concrete of preflexed girders, the cost of cast-in-place concrete for preflexed alternates is estimated at $65.00 per cu yd. Since all plant labor costs are included in the steel unit price, the cost of plant manufactured concrete is estimated at $50.00 per cu yd. Since no forms are required for cast-in-place concrete for the prestressed concrete alternate, the cost of the concrete, in place, is estimated at $40.00 per cu yd.

SUMMARY OF COSTS / SQ FT OF FLOOR

Construction method	Bays 22′x67′	22′x45′	22′x22′
Preflexed struct. steel	$5.48	$3.74	$3.70
Conventional struct. steel	$5.92	$3.59	$2.88
Prestressed concrete	—	$3.82	$2.47
Reinforced concrete	—	—	$2.81



Penny-Farthing School

VISTA MAR ELEMENTARY SCHOOL • DALY CITY, CALIF. • MARIO J. CIAMPI, ARCHITECT • ISADORE THOMPSON, STRUCTURAL ENGINEER • LAWRENCE HALPRIN, LANDSCAPE ARCHITECT

What kind of an elementary school does one build on a cramped, steeply sloping site amid acres of mediocre suburban housing? Ciampi has built a school that is compact, colorful, and clearly recognizable, one the kids and the community will never forget.

The circular ring of classrooms was fitted into a small terrace at the bottom of a bowl-shaped slope. The addition of a smaller circle, housing the multipurpose room, produced the shape of an old-fashioned bicycle, the kind the English call a *penny-farthing*.

The plan provides more than mere visual impact. The central garden is an excellent place for the pupils to play: it is easily supervised and sheltered from the cold, damp Pacific breezes. The separation of the multipurpose room facilitates its use as an adult education and recreation center for a neighborhood otherwise devoid of community facilities.

A structural system of precast concrete vaults supported on precast concrete bents gives the buildings a suitably playful three-dimensional form that is economical and adaptable to variations in the functions within. The school was awarded the Gold Medal of Honor in Engineering by the Architectural League of New York in its 1960 National Exhibition.

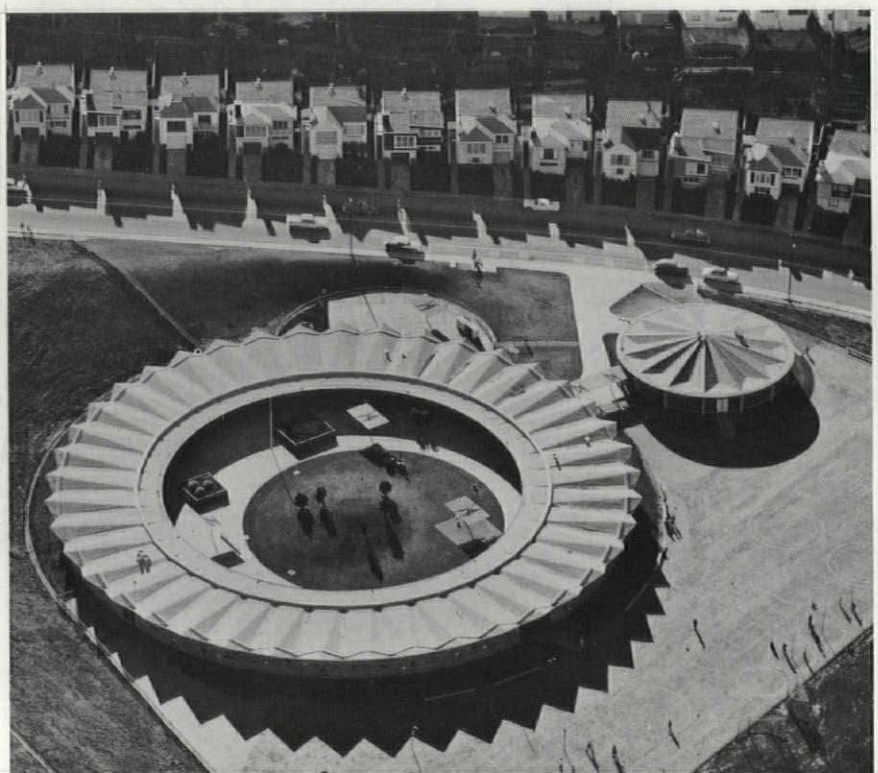
The classroom walls facing in toward the court (and sheltered from potential

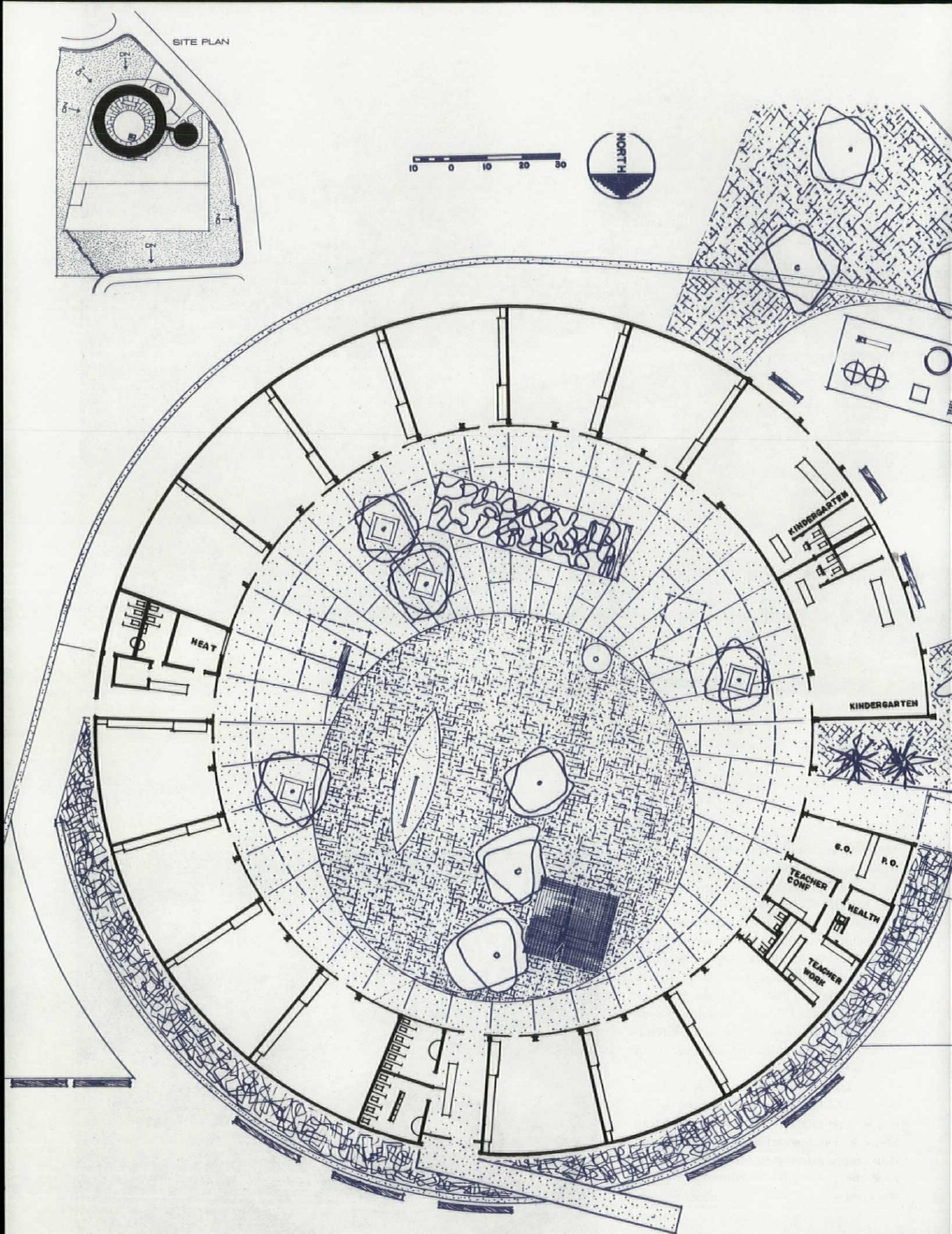
Photos: Karl H. Riek

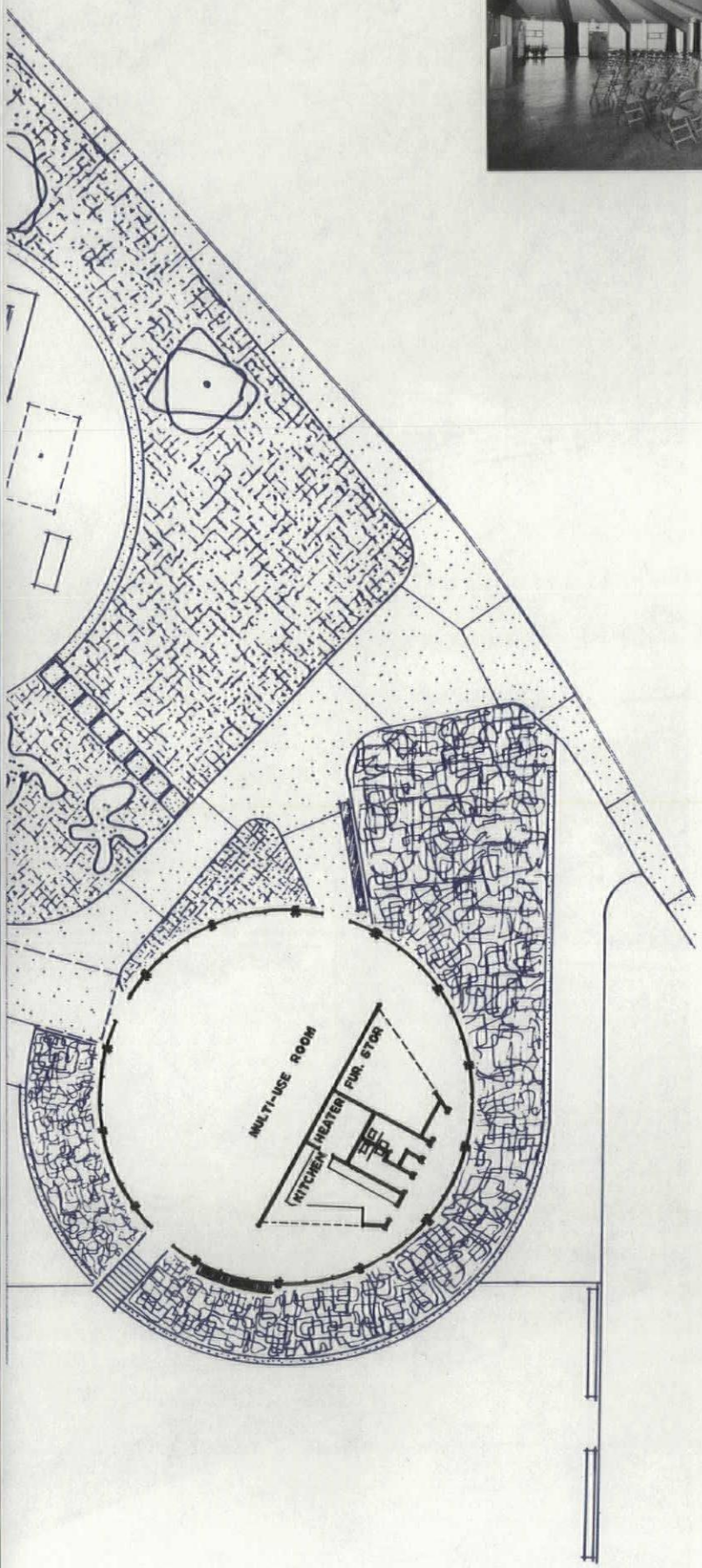
vandals) are almost entirely of glass, both fixed and in jalousies. Doors and curtains in brilliant primary colors add interest and identify the classrooms.

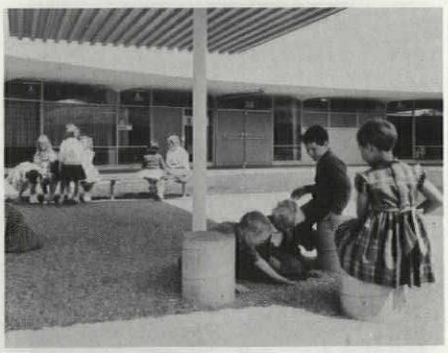
Outward facing walls are largely of concrete block, relieved by casually arranged portholes of varying rectangular shapes and sprinkled with glazed blocks in circus colors. Where glazed walls face outward, as they do only around the entrance, they are of wired glass; the kindergarten walls are enlivened with panels of vivid-colored glass.

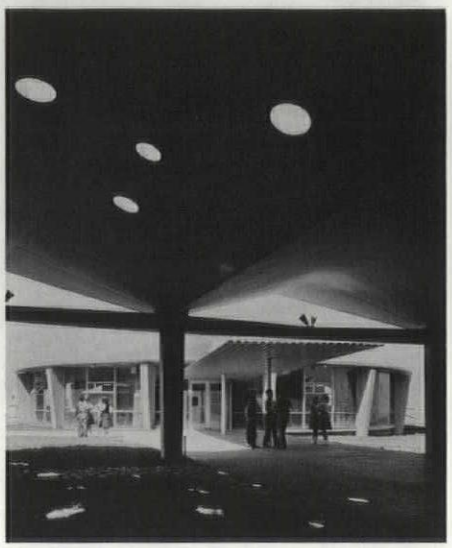
The landscaping of the court includes three tree-like sun shelters supported on single pipe columns; two raised planting areas and a low artificial hill make the court more interesting for play and interrupt the potentially monotonous view of the circle.




SITE PLAN
DN
DN
10 0 10 20 30
NORTH
KINDERGARTEN
KINDERGARTEN
HEAT
G.O.
P.O.
TEACHER CONF
HEALTH
TEACHER WORK


MULTI-USE ROOM
KITCHEN
HEATER
PUR. STOR





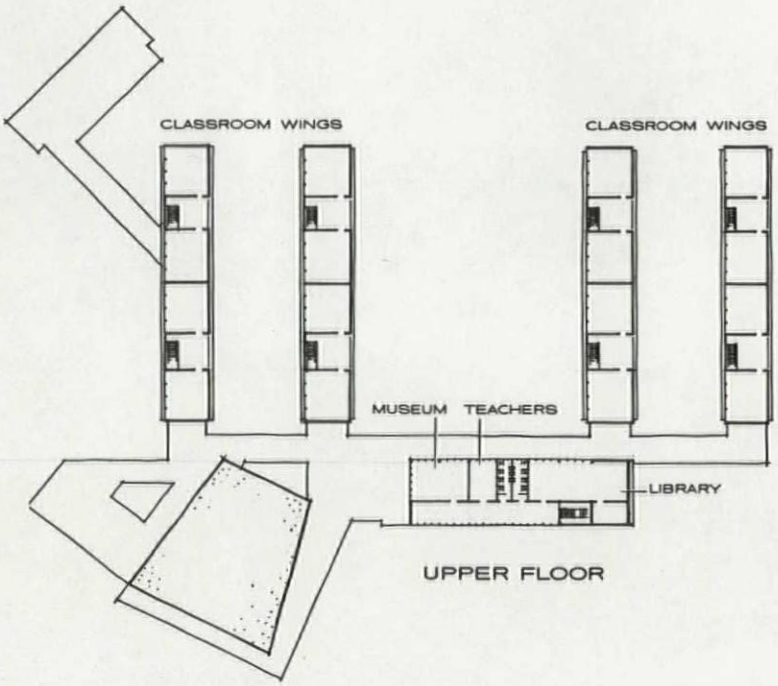
Bantam Campus

LAS DELICIAS SCHOOL • MARACAY, VENEZUELA • ERASMO CALVANI, ARCHITECT

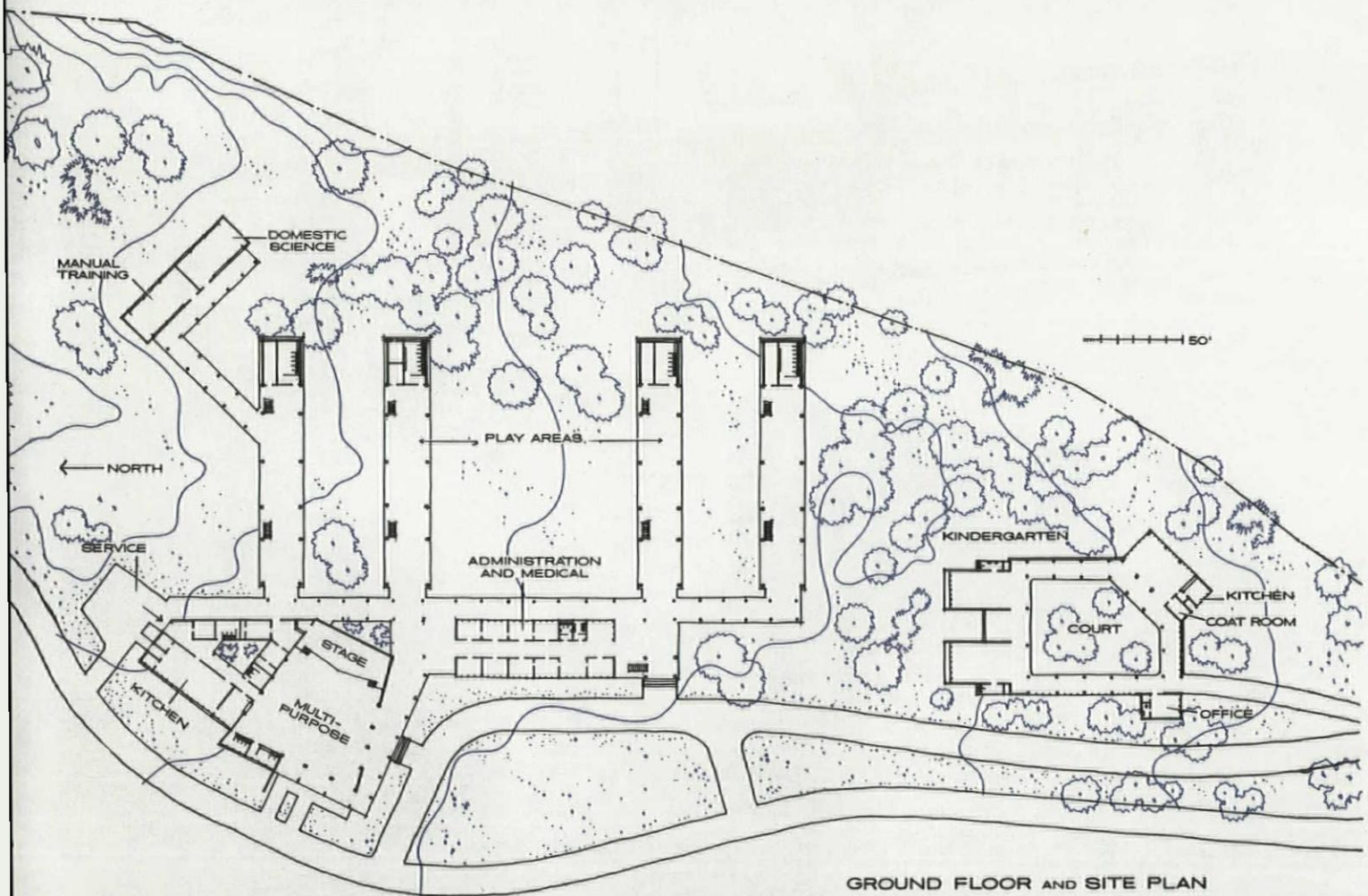
A parklike setting at the foot of the Andes called for a special kind of elementary school. Calvani's design objectives were a minimum of interference with the handsome trees and a maximum of ventilation to mitigate the tropical conditions. His solution is a complex of pavilions in the form of a miniature campus.

The classroom blocks are raised one floor above the ground, hardly obstructing the view across the site. Each pair of class-

Photos: Palacios



UPPER FLOOR

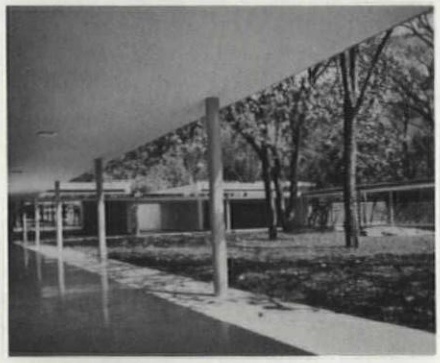


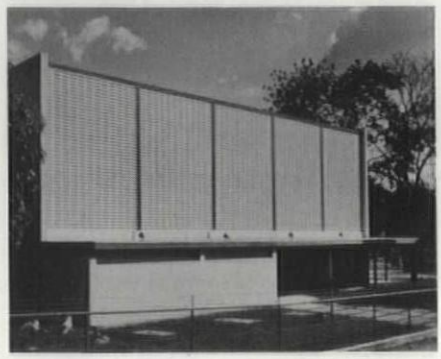
GROUND FLOOR AND SITE PLAN

rooms is served by a stair from the play-court below. The through-ventilation so necessary in this climate is provided by window walls to the north and grilles of precast concrete elements high on the south walls.

The kindergarten group is laid out around an enclosed patio. The two class-rooms and refectory are without walls on the patio side and glazed on the exterior. Covered walks and pierced screen walls complete the enclosure. The auditorium block is located near the street, where it obstructs the flow of the landscape as little as possible. It is constructed of steel, with a saw-tooth roof. Upper walls are made up largely of precast concrete grilles set between the columns. The room is partially open at ground level.

The potential severity of the simple cubic forms is relieved by panels of locally manufactured glass tiles in red, white, orange, and mauve. These panels are placed on shaded walls at the ground floor, where they add interest without shattering the serenity of the landscape.





1 2

Wire-Fabric Heating

An unusual dual use of wire fabric, both as reinforcement and heating element in a concrete floor slab, is reported.

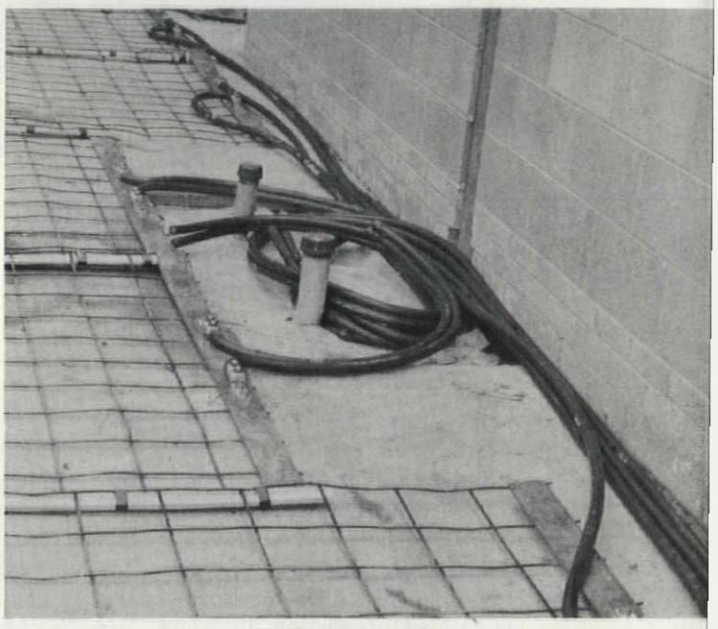
A recent variation in electric radiant heating, with reinforcing mesh of the concrete floor slab also serving as an electric-heating element, has been completed in Northern States Power Company's service center and warehouse, Minot, N. D.

The installation is not claimed to be the first experiment in electrically heated slabs with material other than high-quality cable, since expanded metal has been used for the resistance material since 1945. The use of wire fabric, however, does offer both ease of placement and economy in the double use of a slab's reinforcement.

Three types of welded-wire fabric are used in this project: 66–44, 66–66, and 66–88. (The first pair of figures in each case refers to the 6″ spacing of wires; the second refers to their gage, from about ¼″ to ⅛″ in diameter.) Since 66–66, 66–88, or 66–1010 are usually sufficient for reinforcement, only a slight increase in gage was needed for electrical purposes.

In order to apply electric potential to the strips of wire fabric, ¼″ x 3″ copper bars were welded across the 5′ width of each strip 1. At the transformer end, these bars are 5′ long; at the far side they are 9′-10″ long, bridging two strips of fabric and conducting the current from one strip to the next. Cable-connecting lugs were then installed on the copper bars 2.

To maintain a proper flow of current,



3 4

Photos: Wire Reinforcement Institute

the overlapping lengths of fabric (necessary for crack control) needed to be electrically separate. This problem was solved by placing 2″-wide, ½″-thick, asbestos-cement strips between the lengths, tied 12″ o.c. by tape 3.

The floor slab was constructed in two stages—first a 2″ layer, over vapor barrier and gravel fill, then a final 4″ layer over the wire fabric. Each half of the building was divided into five slabs, each about 17′ x 40′. Odd-numbered sections were poured first, then even-numbered sections butted against them. Later, 1½″-deep expansion joints were sawed between the slabs.

Six dry-type transformers, at the central-partition wall locations 4, power the radiant networks. Current flow in the fabric is 500 to 600 amp, with 45 to 55 amp in each of the 11 longitudinal wires of each strip of fabric. These longitudinal wires take 95 percent of the current, since electricity seeks the shortest path to complete a circuit.

Despite the low 20-v potential applied to the wire, engineers have insured that the current is confined to the fabric network by insulating any obstructions in the slab, or by detouring the wire around drains, conduits, and plumbing.

System is controlled by four embedded thermostats, plus other inside-outside/air-temperature thermostats. Preset schedules are arranged to use off-peak storage rates.

Architect was James V. Deloi, of Minot; electrical engineer was Kenneth O. Tompt, of Fargo, N. D.

Dew Point Temperature Location:

BY MICHAEL BEST

Often it may be necessary for an architect or engineer to investigate a wall or roof construction to determine its dew-point location. During an examination of several types of wall construction, the author's firm—Kralovec & Best, Consulting Engineers, Chicago—developed the simple and quick method presented here.

Recently, the author's firm was given the problem of calculating the dew-point temperature location in each of six types of wall construction, as an aid in determining the type best suited for enclosing a room of high relative humidity. It was during these calculations that the method presented here was developed. We found this graphical determination of dew-point temperature location both simple and quick, as well as accurate.

The determination of the dew-point temperature location within building construction is a problem with which the architect is often confronted. Where there exists a difference in water-vapor pressures or, more plainly stated, a difference in absolute moisture content on either side of a wall or roof, there will be a passage of moisture through the porous construction from the side of high absolute water content to the side of low absolute water content. Where there is a temperature difference between both sides of the wall, it is very probable that at some interior point within the wall the dew-point temperature will be reached. Where this occurs, condensation takes place, and in winter, freezing may result.

Where conditions of high humidity exist, it is often necessary for the architect to investigate various types of construction to determine if the dew-point temperature will occur within the wall or roof. Investigations for dew-point location are essential in these cases. In some instances, condensation can take place within air spaces in a wall, making it necessary to provide weep holes. In roofs, condensation can occur within the insulation, causing it to become soggy and lose its insulating value. Where temperatures are low enough to cause freezing, cracks can develop. Knowing where the dew point will occur permits the architect to guard against possible damage by properly locating a vapor barrier.

In the past, the determination of the dew-point location within building construction had been a "cut-and-try" process. It was necessary to determine, mathematically, the inside surface temperatures of the various components of the construction until those two surface temperatures on either side of the dew point had been calculated. It was then known that the dew point occurred between these surfaces. This calculation, outlined in the ASHRAE Guide, is time-consuming and tedious. It is our belief that this graphical method will permit the dew-point determination to be made quickly and with ease. The method is as follows:

Assume a wall constructed as shown *1*. Locate the point at which the dew-point temperature would occur when the outdoor temperature is 0 F, the inside temperature is 70 F, and the inside relative humidity 15 percent (typical wintertime office-area conditions, D.P. = 20 F). If the office area is humidified to maintain the relative humidity of 35 percent (D.P. = 42 F) and 50 percent (D.P. = 51 F), where will the dew point occur? What is the inside wall-surface temperature?

Begin by constructing a chart with thermal resistance **R** plotted along the horizontal axis, and temperature plotted along the vertical axis *2*. Determine the thermal resistance **R** of the various components of wall construction. (Refer to the 1961 ASHRAE Guide, Chapter 9, Table 4, for the following factors.)

Outside air-surface film	$\mathbf{R}_1$	.17
4″ face brick	$\mathbf{R}_2$	.11
2″ air space	$\mathbf{R}_3$	.97
4″ concrete block	$\mathbf{R}_4$	1.11
½″ gypsum plaster	$\mathbf{R}_5$	.32
Inside air-surface film	$\mathbf{R}_6$	.68
	$\mathbf{R}_T$	3.36

Note that $\frac{1}{\mathbf{R}_T} = \mathbf{U}$

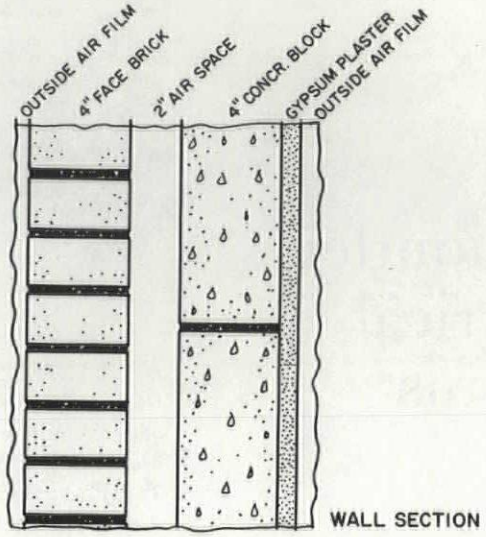
$\mathbf{U} = .30$

Selecting a convenient scale, plot the resistances on the chart in the order in which they occur in the construction. Observe that the wall has been plotted, but instead of at a scale of feet and inches, a scale of thermal resistance has been used. At the exterior-surface film boun-

Graphical Determination

dary, locate the outside temperature (0 F), and at the inside film boundary locate the inside room temperature (70 F). Connect these two points forming the temperature gradient line through the wall construction. To determine the dew-point locations, draw horizontal lines through the several dew-point temperature conditions under investigation. The point of intersection of the temperature gradient line with the horizontal lines, drawn through the several dew-point temperature lines, indicates the location at which the dew point would occur. Note that a room with a relative humidity of 15 percent will produce condensation within the 2″ air space at an outdoor temperature of 0 F. To prevent condensation under these conditions, locate the vapor barrier on the inside face of the air space on the surface of the concrete block to prevent the moisture from reaching the air space. Refer to the chart for dew-point locations at 35 percent and 50 percent. The inside-surface temperature is 56 F. If it were desired to investigate the effect of substituting 2″ of insulation for the 2″ air space, it would only be necessary to construct a new graph substituting the **R** factor for insulation for the **R** factor for a 2″ air space.

This simple method provides a graphical, time-saving way to investigate the temperatures within building construction, and to analyze the effects of moisture condensation both on the surface and within the wall.



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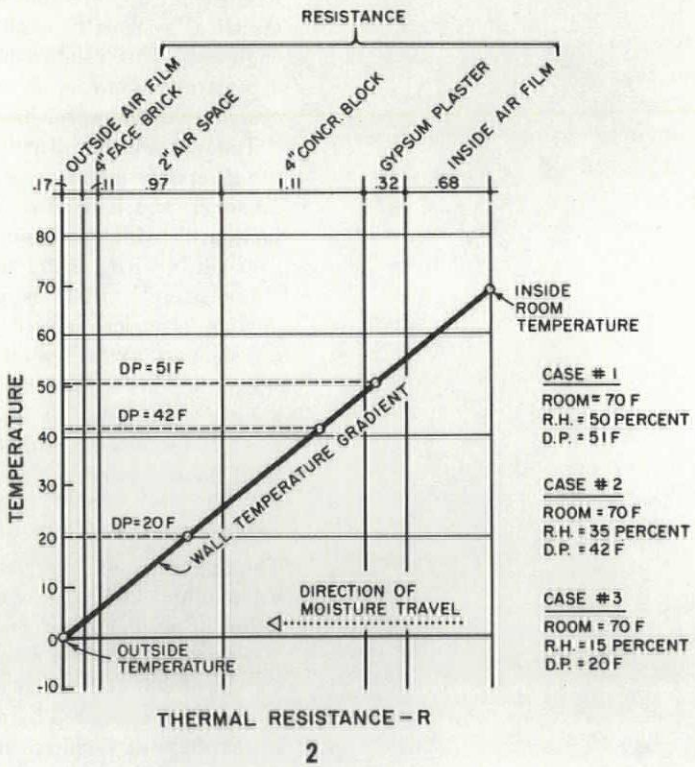

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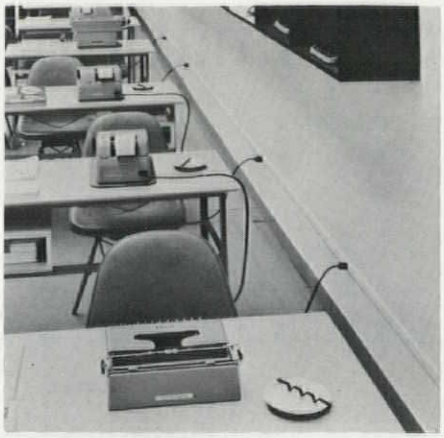
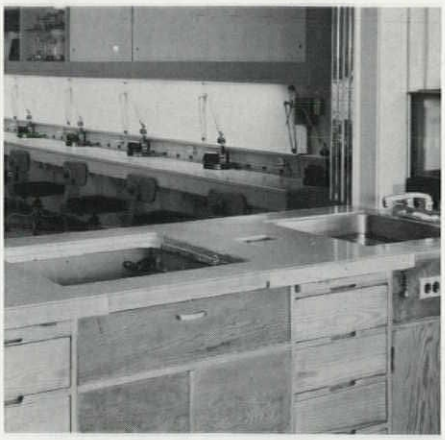




Multioutlet Electrical Systems

BY WALTER J. DOUGLAS, P.E.

Despite increased electrical service, an owner may often find that he cannot conveniently use the power at his command. This discussion, by the senior partner of Walter J. Douglas Associates, West Hartford, Conn., reviews how multioutlet electrical systems help satisfy the demand for power flexibility.

With the increasing complexity of electrical-wiring systems, architects have found it advisable to refer the detail work on electrical systems to qualified consulting engineers. This relationship is certainly a constructive one, with each participant contributing his specialized thinking.

Today, however, the multiplicity of electrical services makes it essential that the architect and engineer gain increased familiarity with the basic approaches to consider in wiring a structure.

Increasingly, there is a demand for *flexible* electrical power. No longer is sufficient electrical power enough. One reason for this situation, of course, is the greater familiarity on the part of the average homeowner with the concept of "full housepower."

Increased Electrical Service

The upgrading of electrical codes in many communities makes mandatory the installation of residential electrical service of 100 amp or more. For nonresidential use, service of 400–600 amp is not uncommon. It has been estimated by one utility that in the state of Connecticut alone, nearly 50 percent of home meters are for 100-amp service—and more will undoubtedly be added. Certainly much the same phenomenon is occurring in other areas. As expected, the majority of these areas is in the smaller, suburban locations, where most new construction is being erected. It can be confidently predicted, however, that metropolitan areas soon will adopt similar requirements.

The full-housepower requirement is logical in view of the increasing load used by the average home. In theory, the 100-amp service provides sufficient power to enable the householder to use practically all the appliances desired. Against this belief, however, must be measured the fact that more appliances than ever—both portable and major—are now in use, and it is apparent that the code standard may become minimal. Furthermore, many architect-designed homes, particularly those where electrical heating and cooling are used, already call for 200-amp service.

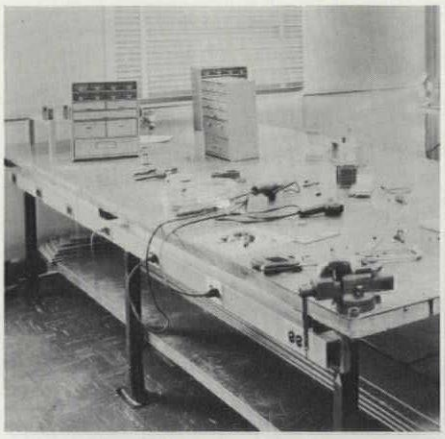
Despite these precautions, the homeowner too often finds that he cannot conveniently use the power placed at his command.

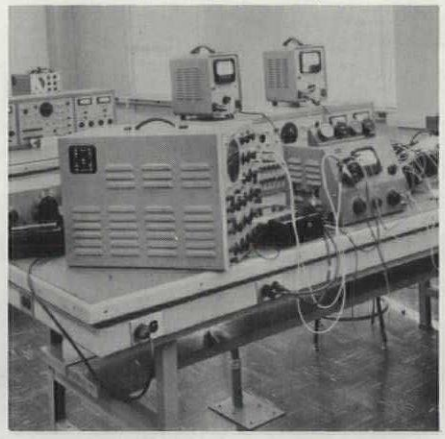
Power Must Be Available

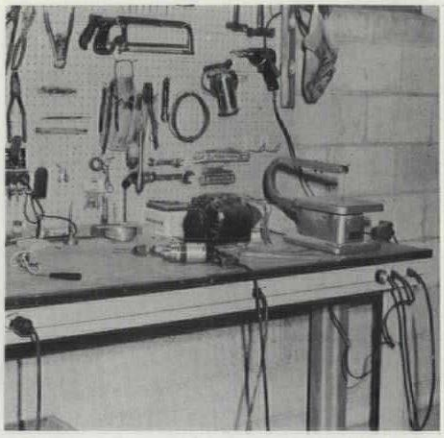
Practically speaking, electric power is useless unless it is available power. Discussions with owners and plant managers indicate that, even today, a surprising number of structures lack sufficient electrical outlets—and where there are enough outlets, numerically, these are not always conveniently located.

That additional outlets are required is evidenced in the requests for extra outlets by buyers of new buildings, in the continuing installation of more outlets by electrical contractors, and in the staggering amount of jerry-rigged extension cords used—an amount estimated by one source at $70,000,000 annually.[1]

In nonresidential structures, the growing use of portable or desk-top equipment makes the convenient location of an adequate number of receptacles increasingly important. Again, because of the need to be able to "shift" allocated space,







Photos: courtesy of The Wiremold Company

to use various types of services and outlets, and to make expansion of an existing system a simple and practical affair, an adequate power supply and plenty of outlets for present and future use have become basic in planning building design and services.

Multioutlet Features

One practical approach has been to take advantage of the features offered by multioutlet systems for both residential and nonresidential buildings.

Multioutlet systems are recognized and defined by the National Electrical Code as ". . . a type of surface or flush raceway designed to hold conductors and attachment plug receptacles . . ."[2] Although made in both metallic and nonmetallic types, it is the metallic type that primarily concerns the architect and engineer, because nonmetallic types presently available are basically "do-it-yourself" items, and because only metal assemblies may be used with voltages greater than 300.[3]

Multioutlet systems are available throughout the United States and Canada through electrical distributors. In general, they are marketed in three forms for on-the-job flexibility: as prewired sections of various lengths with outlets in a range of predetermined spacings; as standard-length sections with coils or prewired receptacles designed to match hole-cut covers; and as base and cover to permit on-the-job wiring and spacing. Manufacturers produce a complete line of fittings to go with the assemblies.

Code Requirements

The uses and prohibitions of multioutlet systems are well spelled out in the Code.[4] In general, they must meet the same requirements as conventional interior wiring.[5] As a rule of thumb, they may be used if the installation is in a dry place and the raceway will not be completely hidden.

Multioutlet systems were first used in industrial applications and next for modernization projects. With the advent of solid-wall techniques and prefabricated components, the use of these systems was greatly broadened because surface raceways were ideally suited to these types of construction. Multioutlet systems are now widely recognized as a quality approach to wiring for both residential and nonresidential units, for new structures as well as modernization projects.

The industrial success of multioutlet systems may have started a new trend in residential wiring. A 200-amp home recently completed in Connecticut (Irving M. Palmquist, Architect, with Richard B. Pollman, Designer) features an adaptation of the subfeeder system commonly found in industrial wiring.[6] It is believed that this concept will bring to homes the advantages and flexibility associated with industrial wiring. At least one other house using this approach is now under construction.

System Advantages

In new structures, or in modernization, the advantages of multioutlet systems are readily discernible. Because they are surface-mounted, they do not require that other trades interrupt their work to permit installation. Multioutlet systems are frequently successfully installed after the other jobs, including finish plastering, have been completed. For this same reason, this system is particularly advantageous in modernization work, where it permits rewiring with a minimum of wall breaking.

The assemblies are supplied prime-coated and may be used "as is," particularly with certain woods, or painted with a standard interior finish. A multioutlet installation is certain to provide a sufficient number of conveniently located outlets, for both present and future—a flexibility in power availability not possible with other types of wiring.

Because they are a quality feature, material costs will run slightly higher with multioutlet systems than with conventional wiring. However, these systems give a higher per-dollar value when evaluated in terms of convenience and livability. Actually, if the same number of outlets were to be installed in the usual way, multioutlet systems provide a lower per-outlet cost than conventional wiring.

In terms of pure economics, actual field experience indicates that the *installed* cost of a multioutlet system is so near the cost of conventional wiring as to make the difference negligible. In fact, in several cases, multioutlet systems proved lower in cost, since they permitted a lower overall charge than conventional means.

Acceptance

In terms of client acceptance, surveys show that homeowners whose houses have been wired with multioutlet systems specifically state that they would be willing to pay extra for this feature in any future home they build. In nonresidential construction, many institutions and multiplant companies have standardized on multioutlet systems for both rewiring and new construction.

Multioutlet systems in themselves do not guarantee client satisfaction. There seems sufficient evidence, however, to warrant consideration of these systems when a quality installation is designed.

[1] *Contractors Electrical Equipment*, February 1959.
[2] *National Electrical Code*, 1959, Art. 100.
[3] *Ibid.*, Art. 353-2, Sec. 3.
[4] *Ibid.*, Art. 353.
[5] *Ibid.*, Art. 220-2.
[6] *Electrical Construction and Maintenance*, June 1960.

Lead Sound Barriers

BY WILLIAM J. McGUINNESS

Thirty years ago lead was first used as a sound barrier in a special application. Today, there are many opportunities for the use of lead as a means of sound isolation in contemporary structures. The Chairman, Department of Structural Design, School of Architecture, Pratt Institute, reports on this development.

Sheet lead has some interesting qualities, among which are its resistance to the passage of both X-rays and sound. These characteristics were not discovered recently; they were used, more than 30 years ago, in prominent buildings. Many hospitals then, including the New York-Cornell Medical Center, were enveloping X-ray rooms in sheet lead. The second quality, that of sound resistance, was used at about the same time for the sound isolation of studios in New York's Radio City.

A specialized professional application of a material frequently becomes adapted at some later date to broader use. This is true of the use of lead as a material for partitions and other building surfaces that must effect a transmission loss of sound intensity in spaces that need to be kept relatively quiet. The two principal properties of a good sound barrier, weight and limpness, are intrinsic in lead.

Recent demands for lead as a sound barrier motivated the Lead Industries Association to retain Bolt, Beranek & Newman, Acoustical Consultants, to study the subject. Their findings and report, recently published, describe many tests and conclusions relating to sheet thickness and behavior under varying conditions of frequency and transmission loss.

One would hardly expect that lead could compete on the basis of weight savings, yet this is shown to be true (*Table I*). It is always lighter in the order of ⅔ to 1/7 that of comparable sound barriers. Lighter structures and easier handling are indicated. Its thickness is consistently but a fraction of that of walls affording the same transmission loss.

TABLE I

Type of partition	Weight per sq ft (Pounds)		Material cost per sq ft (Dollars)		Thickness (Inches)	
	Listed material	Lead	Listed material	Lead	Listed material	Lead
Plywood	2	.5	.31	.14	¾	1/128
Sheet metal	3	1.8	1.75	.57	1/16	1/32
Solid plaster	18	3.8	.33	1.12	2	1/16
Cinder block	22	5.5	.35	1.69	6	3/32
Plaster on studs	12	7.5	.43	2.25	6	⅛
Plaster, double studs	16	11.0	.55	3.37	8	3/16
Brick	104	15.0	1.00	4.50	8	¼

Efficiency comparison table for equal effectiveness in transmission loss through standard partitions or a thickness of lead affording equivalent sound reduction. Abstracted from a report of the Lead Industries Association.

TABLE II

Desirable transmission loss		Achievable transmission loss by		
Occupancy	Decibels	A selected wall **or**	a sheet of lead	Decibels
Moderately noisy offices	25	2" solid plaster	1/16" thick	33
Quiet offices	37	½" plas. on gyp. lath, both side of metal studs	⅛" thick	38
Very quiet offices	47	½" plas. on gyp. lath, both sides, staggered metal studs	¼" thick	44

Goals for optimal transmission loss and selected typical construction or sheet lead of indicated thickness to achieve these results. Values are for a selected average frequency of 500 cycles per second.

Cost comparisons suggest some discussion. Lead is distinctly cheaper when competing with the stiff, resounding qualities of plywood or steel. As against the bulkier and much heavier plaster, block, and brick, it is always more costly, although always lighter and thinner. Cost studies credit thin walls with the savings in floor area that they make possible. These savings effected by 4" to 6" reduction of wall thickness will often offset the higher cost of lead.

The investigations of Bolt, Beranek & Newman were comprehensive, and only the most significant results can be given here. Obviously, screening out 40 to 50 db will reduce incoming noise to a most acceptable level. It is evident that ¼" of lead will do this as well as staggered metal studs with plaster on both surfaces (*Table II*).

The need for auxiliary material, however, is immediately evident. Bruce Fader of the Lead Industries Association cites several material combinations that are now—or will soon be—in use. Thin lead foil above acoustical ceiling tile can lick the problem of interoffice sound transmission through ceiling plenums above ceiling-high partitions. Lead-lined folding doors now isolate school areas. A sandwich of ¼" lead between two ¾" plywood layers is a promising barrier. An attractive fabric with vertical lead fibers will afford a 34 db loss; two layers will raise this loss to 43 db.

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Proper Specs Reduce Building Costs

BY HAROLD J. ROSEN

This month the Chief Specifications Writer of Kelly & Gruzen, Architects-Engineers, reviews several aspects of specifications writing that, if re-examined with respect to a particular project, may reduce the total amount of the general contractor's bid.

Specifications writers are in a position to control and reduce construction costs through the specifications that they prepare. Let us examine the manner in which construction bids are taken. General contractors, for the most part, receive the specifications issued by architects, separate the specifications in accordance with the sections and divisions established by the specifications writers, and request bids from subcontractors based upon the specifications sections. In many instances, items are written into one trade section when they properly belong in another. The general contractor does not have the time to ferret out such errors, and the subcontractor must solicit a bid from another source to cover the item. The subcontractor adds his overhead and profit to this item and passes it on to the general contractor, thereby increasing the construction cost. If the item had been specified in its proper section, the overhead and profit added by a middleman would have been omitted and the cost reduced by this amount. In spite of the fact that most specifications writers include a provision in their general requirements that the specifications sections are written for the convenience of contractors only, and that they do not preclude the contractor from assigning parts of sections to other subcontractors, it is difficult for general contractors to make this separation.

The press of meeting scheduled bidding dates and the fear of omitting parts of sections, causes general contractors to play it safe by getting bids from subcontractors as per plans and specifications—in effect maintaining the section and division setup of the spec writer.

It becomes apparent that for convenience in writing, for speed in estimating, for ease in reference, and for reduction in cost, the most suitable arrangement of the specifications is in a series of sections so subdivided that a contractor can reserve for himself whatever parts of the work he may be equipped to do, with his own forces, and sublet the other sections. It is easier for a contractor to subcontract two or more sections of a specification to a single subcontractor, than to divide one section between two subcontractors. The saying, "It is easier to scramble eggs than to unscramble them," applies with special significance to specifications sections.

The specifications writer can reduce costs by re-examining certain trade sections of the specifications. With modern latex paints, two coats might suffice where three coats were previously specified. Most white ceilings can be successfully painted with only two coats. Plaster, wallboard, and masonry can also be painted satisfactorily with two coats. Glazing specifications can likewise stand re-evaluation. Can ¼-in. window glass do where ¼-in. plate glass is always specified? Can B-quality glass be used where A-quality glass is specified? Waxing of resilient flooring can be omitted. Asphalt tile is furnished with a factory applied coat of wax that needs only to be polished upon completion of the work. When a building is turned over to an owner and he moves in, these floors take quite a beating and generally need waxing and polishing again. Why pay for an item that serves no useful purpose? Is it necessary to specify covering of completed floors with paper to protect them until the project is completed? It makes more sense to specify that the floors be turned over to the owner, upon completion, in satisfactory condition. The contractor then provides whatever protection is needed, and the cost of complete protection is saved.

The submission of samples and shop drawings, and the requirements for tests, should be analyzed carefully. Elaborate submissions and tests cost money. If a project has only 100 cu yd of concrete, for example, the specifications for testing should be less elaborate than for a project with several thousand cubic yards of concrete. Manufacturers' literature may suffice in lieu of physical samples for some materials, and the data contained therein can be evaluated far better than a physical sample. How many copies of shop drawings are actually needed? Review the project with the construction department and you will be amazed at the number that may be eliminated. These items have a way of growing out of proportion to the project at hand, simply because it is so easy to copy from a previous specification.

Better bidding, and consequently more accurate and lower costs, can be obtained by making drawings and specifications available to subcontractors and material men. Subcontractors and material men, if they do not receive plans and specifications, are hard put to take off quantities and to bid on a project intelligently. They do not, as a rule, see all the addenda, they have not the time to analyze a project completely, and must guess at the contract requirements. It would serve the owner's interest to invest a few dollars more, by making plans and specifications readily available to everyone, so that bids can be prepared accurately and with less guesswork. Subcontractors and material men would even pay half the cost of these documents, since they, too, would be protected by taking off bids properly and not be penalized later for having missed something.

The specifications writer should never be content with his last specification. In preparing a new specification, he should strive for ways and means to reduce costs by re-examining all those factors that increase costs without adding to the value of the project.

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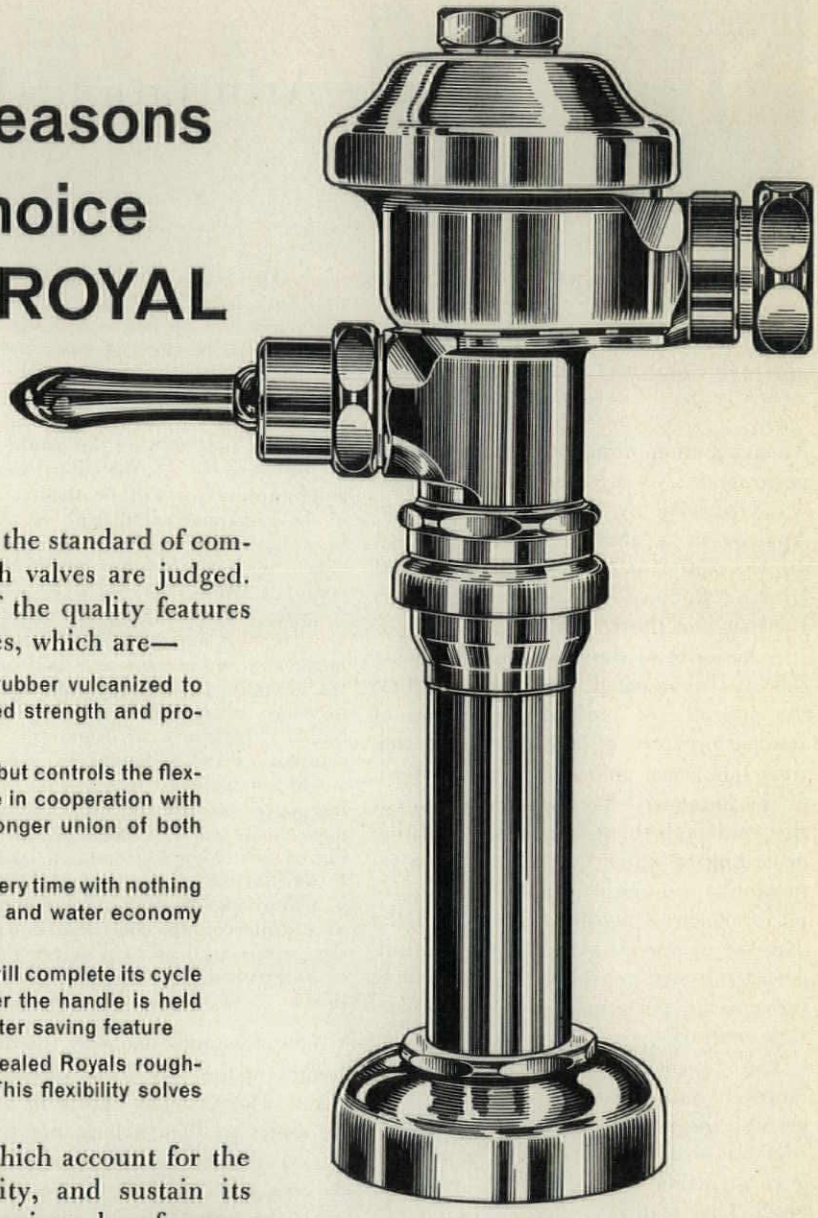

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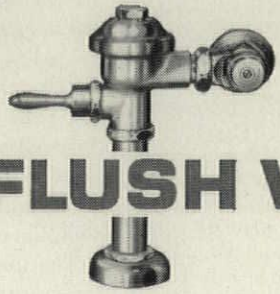

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Arbitration: Part 4

BY JUDGE BERNARD TOMSON & NORMAN COPLAN

This month's column is the concluding article in a four-part series on arbitration.

An arbitration award directing specific performance of a construction contract was confirmed by New York's Court of Appeals in a sharply divided opinion (*in the matter of the arbitration between Grayson Robinson Stores, Inc., and Iris Construction Corp.*, 8 N. Y. 2d. 133).

A majority of the Court, in approving this award, rejected the contention that the difficulty of judicial supervision of the performance of a construction contract should bar an order requiring specific performance. The Court pointed out that, although there was an old tradition according to which courts have been reluctant to enforce contracts that require performance of continuous acts and the exercise of special skill, there is no universal rule that courts will never enforce the specific performance of a construction contract.

The dissenting justices in this case, however, raised serious questions concerning the problem of how a contractor who was ordered specifically to perform a construction contract could be supervised. They stated:

"The decision in the present case lends the enforcement machinery of the courts, to implement specific performance directed by arbitration that extends beyond any equitable relief which the courts have heretofore granted either on arbitrations or after trial.

"The mechanism for enforcement of this award of specific performance of a complicated construction contract for the erection of a building estimated to cost $5,000,000 is a judgment to be entered following confirmation of the award. . . . This signifies not that the arbitrators but that the court is the agency which will be called upon to supervise the construction of this elaborate and expensive building, and which will be required to do so by the very inappropriate remedy of punishment as for contempt of court. The plans and specifications, whether they have been finally approved by the parties or not, are not before the court and have been materially changed since the contract was made. They have been the subject of long and acrimonious disputes between the parties which are not likely to end with the entry of a judgment on this award for specific performance . . . the enforcement of this building contract will be the responsibility of the court and not that of the arbitrators. In a case of this kind, that circumstance closes the gap between what courts and board of arbitration can do in specific performance where the objection to that form of court relief is impossible of adequate enforcement. That is the basis on which courts have traditionally declined to grant specific performance of elaborate and time-consuming building construction contracts . . . the enormous detail indicated by this contract would put the court in a position of a building superintendent and an architect, passing upon an incredible number of problems arising on a building construction large enough to warrant the mortgage of $140,000. This is so plainly outside of the power and function of a justice of this court that supervision of the performance of such agreements cannot be entertained; they are outside of the practicable limits of equity jurisdiction."

The objections made by the dissenting judges in the New York case seem well taken. The Court is hardly in a position to supervise the performance of a construction contract, and an arbitrator who decrees specific performance, even if he were competent for this purpose, is usually not available after his award to insure appropriate performance of the construction contract. Arbitrators of disputes arising under construction contracts who are designated through the standard procedure of the American Institute of Architects, or who are furnished under the rules of the American Arbitration Association, function only for the purpose of determining the dispute, and not to insure that thereafter there will be compliance with their order.

The question is then presented of how the construction industry can avail itself of the stabilizing effect that arbitration of disputes should furnish, and at the same time provide effective means of enforcing an arbitration award that calls for the specific performance of a construction contract.

One obvious answer to this question, which should be considered, is to make the architect the conclusive arbiter of any dispute between the owner and contractor. The architect's present status (as reflected in the "General Conditions" of the AIA) in respect to determining questions in dispute under the construction contract, although limited, is recognized and accepted. If the architect's status were amended to provide that his determinations were final and conclusive, this would not be a revolutionary change from his existing status.

The advantages of this procedure would be to provide a quick and inexpensive system for resolving disputes, with determinations made by a knowledgeable and competent arbitrator. The architect who was charged in the first instance with supervising the performance of the construction contract, would, of course, be available to insure that his arbitration order was properly carried out. The problems attendant upon a specific performance decree by a court, or an outside arbitrator, would not exist.

Another possibility worthy of consideration is the designation of a permanent, industry-wide, impartial arbitrator or chairman who would be available to determine disputes. This is a system utilized in many other industries. The construction contract would then make the impartial chairman's determination final and conclusive.

The courts have given the "go ahead" to the broadest type of arbitration procedure and enforcement. The profession should consider whether the advantages of arbitration, as a substitute for litigation, can better be utilized by a change in the present arbitration procedures.

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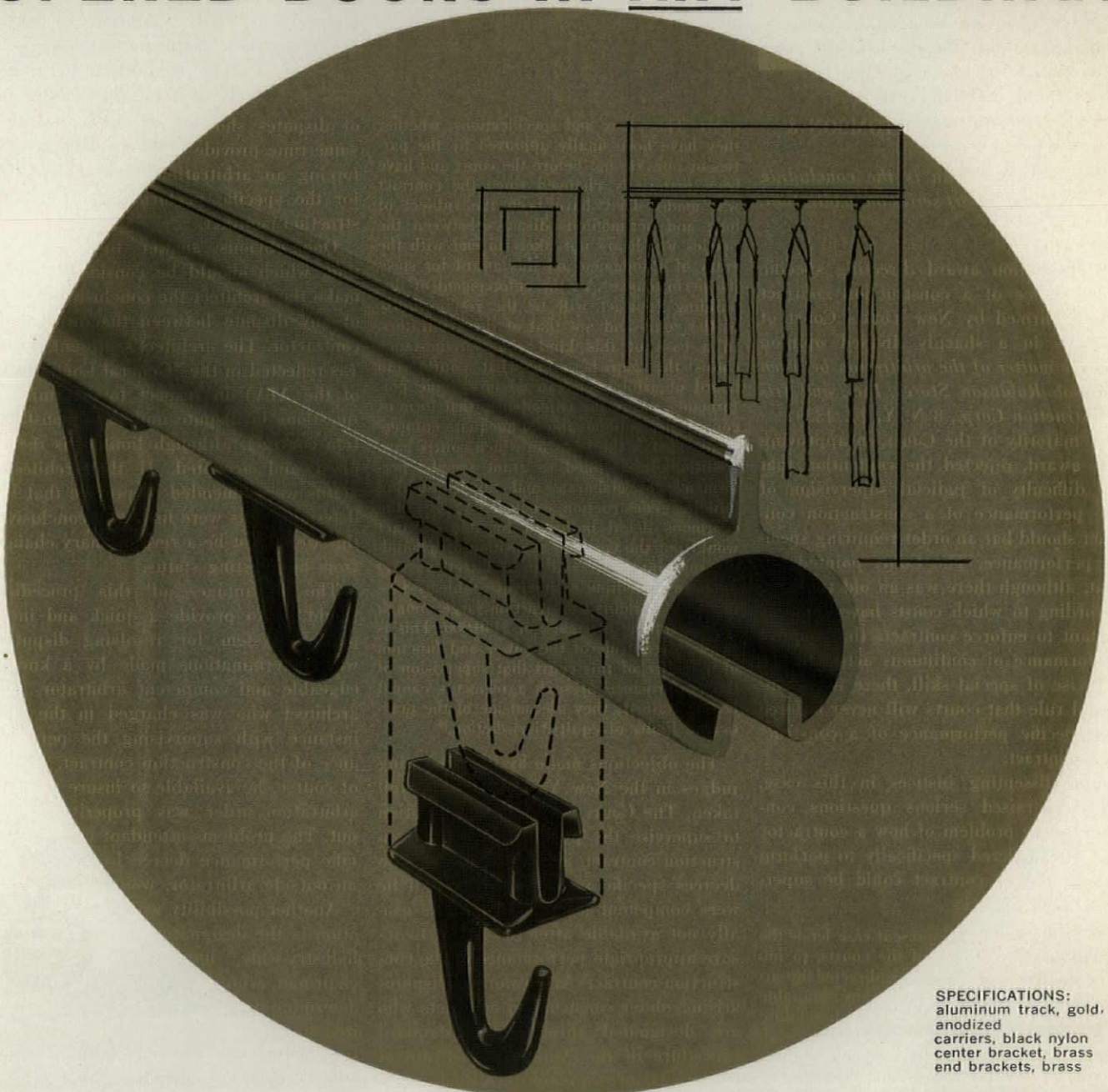

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The Vertical Hospital in Europe

The following is a copy of a letter, forwarded to the Editor by a New York Hospital Consultant, which he sent to a colleague of his in Switzerland, and that he felt would interest P/A readers. We reproduce it below:

Dear Colleague: When I returned from Europe recently, I observed that the American vertical hospital is being copied with the same lack of understanding that we have when we keep on building it. Almost invariably the result is not good to look at, to say the least. But even if a tall hospital building were designed to make a good appearance, why should it be permitted to be arrogantly out of scale with the urban and natural environment?

We could understand it if tall and unattractive buildings were necessary to the well-being of the patient, economical to operate and economical to build; but it is not so. The vertical hospital developed as an answer to the scattered pavilion type of hospital, but it fails to solve many important problems in the relation between the departments of the hospital and between the patients and the departments.

In terms of building techniques, cost, and number of elevators, etc., every story added to a building costs more to build than the story below it. The vertical hospital costs more to administer because movement of goods and patients to many individual floor units consumes much time, and people are paid by time (the hour)—not by the kilometer.

The vertical hospital fails to bring service departments into close horizontal relationship with each other, which is necessary to their easy and economical administration. It fails to relate the clinical departments horizontally to each other so that the clinicians could have ease of consultation with each other concerning the clinical condition of a patient. Such absence of easy relationship makes for bad patient care and for bad teaching.

To achieve easy interdepartmental consultation, laboratories, X-ray, operating, and similar clinical facilities should be placed side by side. The patients should be placed in as close a horizontal relationship to the clinical facilities as possible, so that patients could be moved to the departments with ease and so that clinicians could come to see the patient with ease. In a recent research study, it was found that in a three-story hospital, the patients in the lower story, who were horizontally contiguous to the X-ray department, received much more X-ray treatment than the patients who were three-stories above the X-ray department.

Your architects cannot plead that they lack ground space, because the photographic prints you sent me show that there is ample ground space.

If the architects would make a study of their problem on the strictly horizontal basis, they could see how much they could save in first cost—operating cost—and, above all, in clinical advantage. The first thing they should do, therefore, is plan the base or "pancake" of services and surround it by nursing units. If there are reasons of terrain, etc., why they cannot do that, they should stack the nursing units and place them besides the base of services (pancake). The last thing they should do is to place the stack of nursing units on top of the base. (The English call this a "match box on a muffin.") In this way, if the base is two stories, one of nonmedical services and the upper one of medical services, then at least two floors of nursing units would be horizontally contiguous to services.

Apparently each nursing floor in the proposed scheme has only one nursing unit and at that only of about 22 beds. This is most uneconomical in terms of first cost and in administrative cost. Worcester City Hospital is a "match box on a muffin" type by necessity, but we have about 62 beds per floor in double nursing units. We, the richest country in the world, cannot afford a full set of services, nor can we find enough nursing supervisors to employ at any price at one per 22 beds.

And why are not your buildings connected by tunnels and corridors? Does it never rain or get cold in Switzerland?

Another thing that puzzles us and seems most impractical is that all the newborn infants are gathered on one floor. This implies costly carting of infants from nursery floor to mothers, which is also fraught with danger of exposure to infection. The gathering of many infants on one floor is in itself a serious hazard to the infants.

However, I give my apologies to my colleagues in advance, as the pictures you sent me may have been superseded by more sensible solutions, or perhaps they have discovered new truths about hospital planning which I have yet to learn about.

ISADORE ROSENFIELD
Architects Hospital Consultant
New York, N.Y.

Phenomenological Explanation

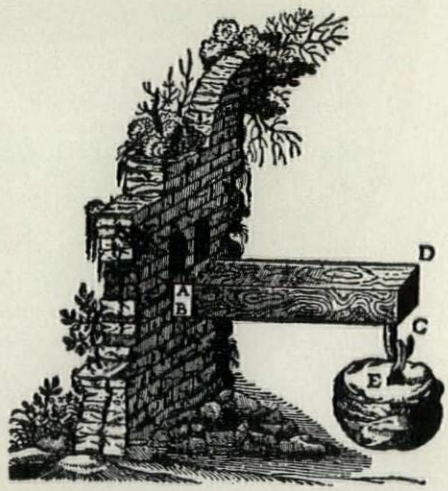
Dear Editor: For many years, this writer, like Paul Chelazzi (p. 165, FEBRUARY 1961 P/A), had the opportunity to lecture before architecture students in the hope of communicating to them the essentials of engineering principles. There is no doubt that the phenomenological or intuitive method, as contrasted with the method of abstract symbolism of mathematics, enables architecture students to penetrate the enigmatic fog of structural mechanics much more directly. Paul Chelazzi's explanation of flexural behavior is such a method—a phenomenological explanation in longhand form that engineers generally synthesize in intuitive or symbolic mathematical form.

It may also be comforting to architecture students, and for that matter to engineering students as well, that the statement and "obvious" explanation of the commonly used equation of flexure

$$f = \frac{My}{I}$$

(Chelazzi's equation 8), which is found in all texts on the subject, required a span of time of 200 years in which that problem was pursued by some of the most brilliant minds the world has produced.

Toward the end of the 16th Century, the "philosopher and mathematician extraordinary to the grand duke of Tuscanny"—Galileo—was the first to grapple with the problem of flexure on a scientific basis. His work involved building a cantilevered wood beam into a heavy wall (as shown in Galileo's own drawing),



and loading the free end with a large stone. It must be remembered that at this early date his only measuring instruments were his own two eyes. Thus, at the instant of failure, he observed the beam fibers rupturing at A and quickly propagating down to B. This led him to the following conclusion: "It is clear that fracture will occur at the point B, where the edge of the mortise acts as a fulcrum

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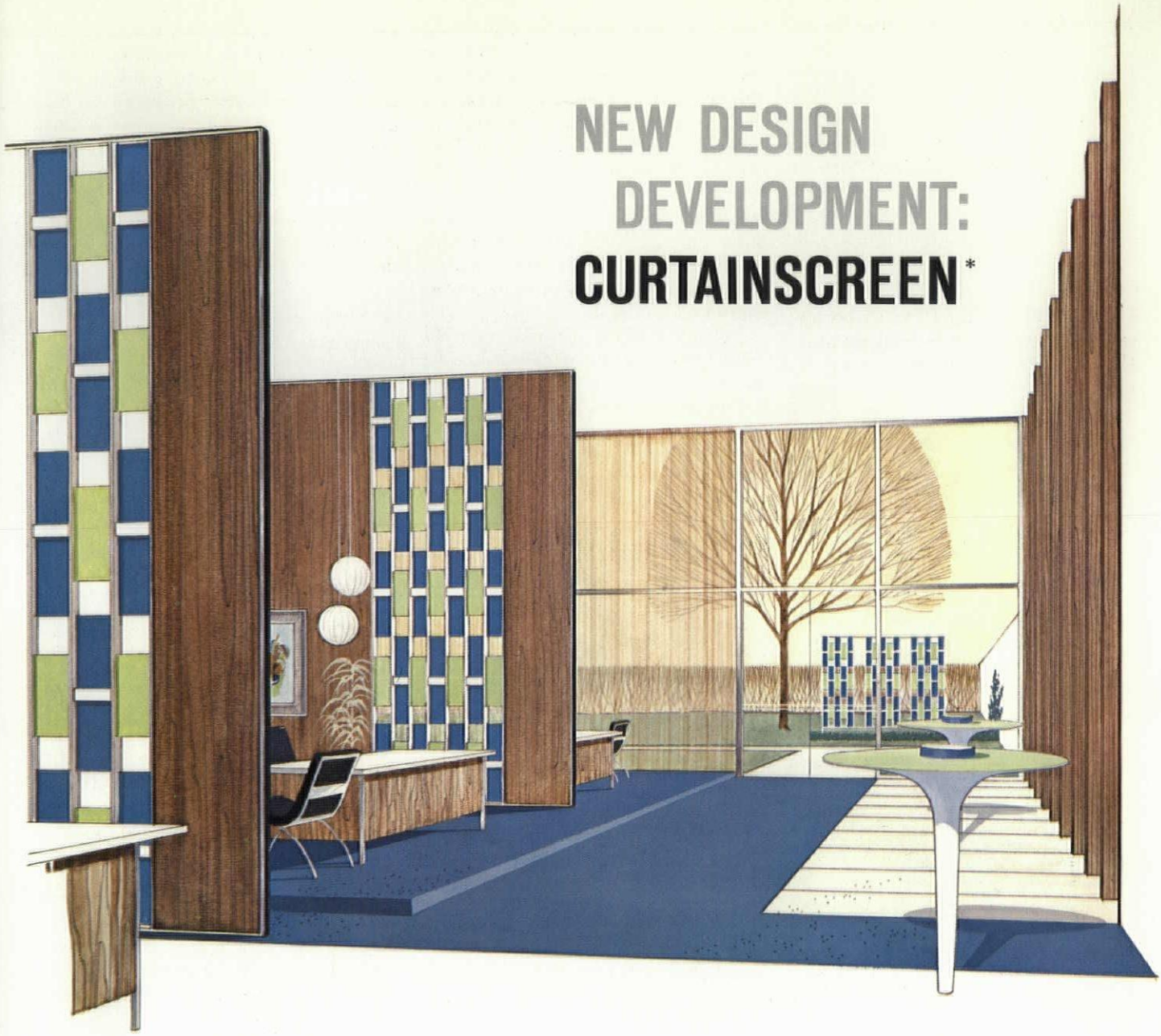

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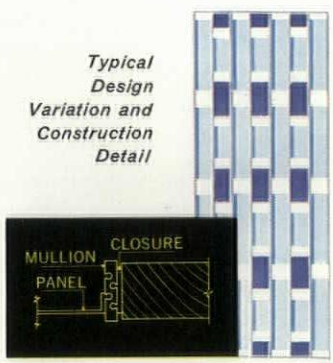

Typical Design Variation and Construction Detail

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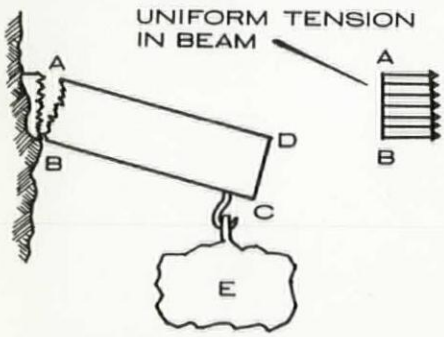
for the lever BC, to which the force is applied; the thickness of the solid BA is the other arm of the lever along which is located the resistance." (The illustration and quote are taken from his famous book, *Discorsi e Dimostrazioni Matematiche*, published in Leiden in 1638.) His inference was that the force distribution through a cross-section of the beam AB is in a state of uniform tension, as shown below. We must honestly admit that, with the facts as he saw them, his conclusions do look good.



This problem, since it was the cornerstone of structural analysis, has come to be known as Galileo's problem, and has provoked much subsequent study.

Some years later, in the latter half of the 17th Century, the French scientist Mariotte, finding that Galileo's theories gave exaggerated results for the breaking load, developed his own theory, simultaneously clarifying and confusing the problem. Mariotte still assumed point B to be a hinge or fulcrum, but he considered that the internal forces through AB to be in tension in the top half, and in compression in the bottom half. Thus Mariotte's distribution of force is consistent with horizontal equilibrium, which is not true of Galileo's.

During this same period of early scientific inquiry, many other outstanding figures, such as the family of Jacob, John, and Daniel Bernouilli, the blind mathematician Euler, the jealous Hooke, the molecular-theory proponent Poisson, and the French gentlewoman Sophie Germain, contributed some new light to the problem, though at the same time each beclouded it with other errors. The final credit for correctly fitting all the facts into the package of

$$f = \frac{My}{I}$$

goes to another French physicist, Navier, who presented his paper before the French Academy (which was occasionally attended by Napoleon) in 1820. Although he solved correctly the problem of flexural stresses, Navier did not consider the shearing stresses; and so others in turn followed him.

Because of understandable communication delays during the early part of last century, Navier's conclusions were not known or used until some time after that. An early text on the strength of materials, which was published in 1838, not long before the Civil War, by William Rogers (who later founded MIT, but at the time was professor of natural history at the University of Virginia), still used empirical shape factors in place of the moment of inertia I in the flexure equation.

Thus the simple flexural equation, which everybody these days takes for granted, had a long and agonizing history of development, and really did not become clear until fairly recently.

It may be said, with a fateful sort of iconoclasm, that modern theorists are again returning to Galileo's problems in trying to fathom the ultimate strength behavior in flexure. The equation

$$f = \frac{My}{I}$$

is true only for materials behaving elastically, and is generally far removed from actual fracture behavior. Thus Galileo and Mariotte started with ultimate strength analysis. Hooke, in turn, directed attention toward the more easily comprehensible elastic behavior. With elastic analysis now understood, there is again a return to ultimate analysis, the original point of departure of the 16th Century.

DR. WILLIAM ZUK
Professor of Civil Engineering
University of Virginia
Charlottesville, Va.

Dear Editor: I have read the article on Structural Mechanics by Paul Chelazzi (FEBRUARY 1961 P/A).

There is a great need for architects and students of architecture to improve their understanding of structures. It is to the credit of PROGRESSIVE ARCHITECTURE that they have published so many articles by Paul Chelazzi and others on this important subject.

Paul Chelazzi has contributed valuable ideas to this field. This latest article is a commendable effort to simplify the concepts of structural mechanics, which are very difficult for the student of architecture to understand.

MYRON GOLDSMITH
Chicago, Ill.

Jensen Remembered

Dear Editor: Leonard K. Eaton's article on Jens Jensen (DECEMBER 1960 P/A) was enjoyable and informative. I suggest that this type of historical article become a regular feature in P/A. Too often, on leaving school, one has no contact with the history of architecture, and since certain states require an examination in history for registration, these articles could provide the "refresher" needed to stay informed. Let's have more on people, buildings, "styles," etc.

KEITH M. SIPPERLEY
Detroit, Mich.

Dear Editor: Just a note to tell you how pleased I was with the fine eulogy of Jens Jensen by Leonard Eaton.

CHARLES E. WOOD
Minneapolis, Minn.

Correction, Please

Dear Editor: Let me take this opportunity of complimenting you on the very timely article entitled "High Strength Steels for Building" by W. J. McGuinness in the DECEMBER 1960 P/A.

It is a privilege to be a part of any effort to promote new materials and methods in the field of construction. Our office feels that this is but one way this great nation of ours can attempt to maintain the price level with an ever-increasing labor burden.

There are several statements made in this article (under the subheading "High Strength Steels in Buildings," page 162) that should be corrected. We are using ASTM A440 steel for columns only. All welded beams originally were to be fabricated from ASTM A242 modified for less corrosion resistance. Subsequent to the original selection of this alloy, a new ASTM Spec. A441 covering this particular adaptation of A242 has been released. Therefore, alloy steel now specified for the new Standard Insurance Building is as follows: Structural Steel Columns—ASTM A440; Structural Steel Beams and Girders—ASTM A441; Structural Steel Details and Miscellaneous Secondary Beams—ASTM A7, 0.28 Min. C Content.

We feel you should know about the above changes, particularly if this article is used by other engineers as a guide on use of various alloy steels.

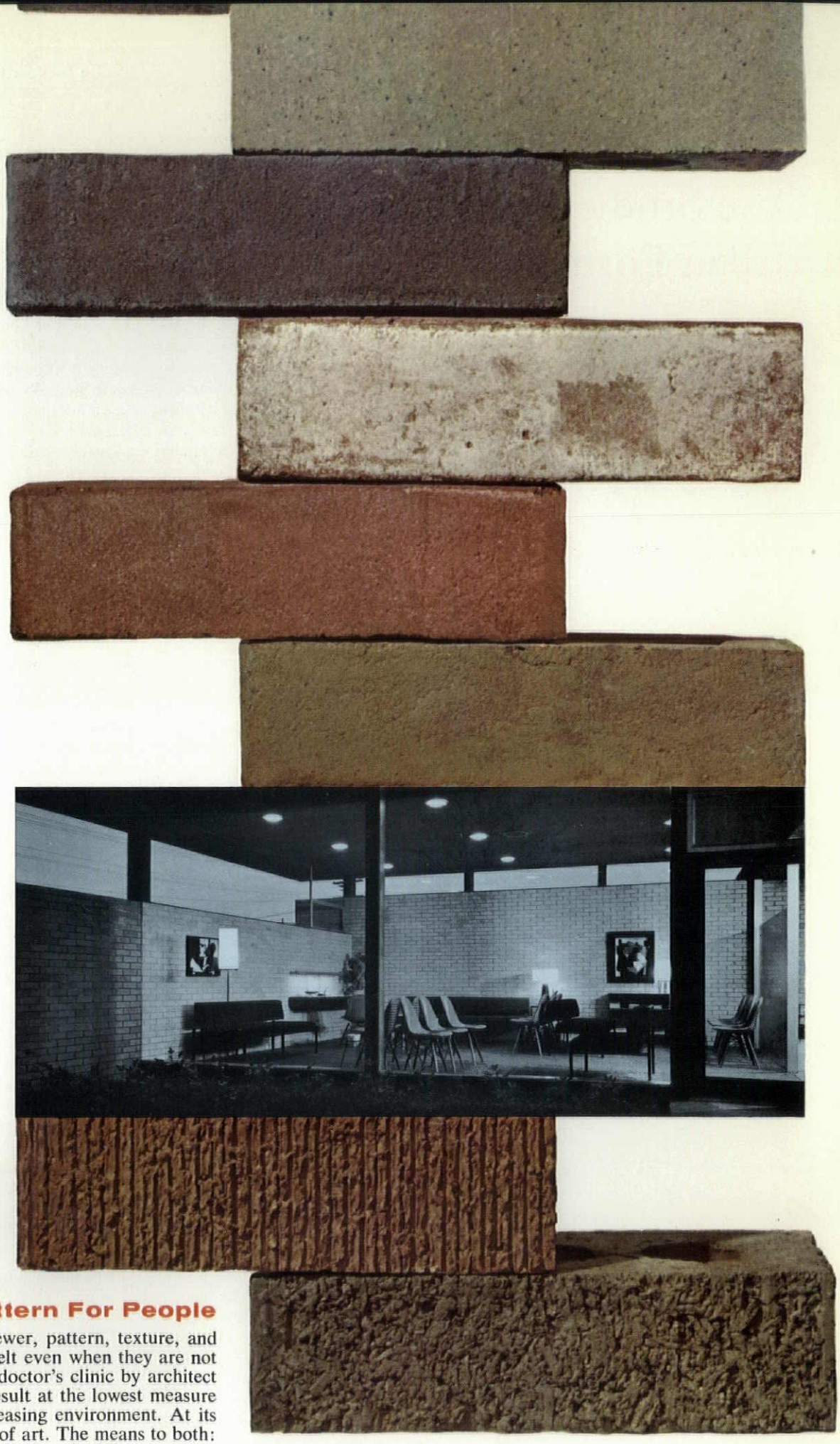
ROWLAND S. ROSÉ
Cooper & Rosé
Structural Engineers
Portland, Ore.

"Sick" Architecture: A Diagnosis

Dear Editor: Your "P.S." in the DECEMBER 1960 P/A was a gem.

I, for one, however, am disappointed that you did not come right out and state that, due to the fluctuating mores of the economy, cutthroat competition, and an increasing loss of professional identity, the profession of architecture is currently "sick."

CREIGHTON AQUIN
New York, N.Y.



Pattern For People

To the static viewer, pattern, texture, and intimacy of scale are felt even when they are not recognized. In the doctor's clinic by architect Paul Hayden Kirk, the result at the lowest measure of recognition is a pleasing environment. At its highest, it is an awareness of art. The means to both: a skilled architect, a timeless building material.

A Case Study In Urban Form

BY LEONARD K. EATON
Associate Professor of Architecture, College of Architecture and Design, University of Michigan, discusses questions raised by Boston: A Topographical History. *Walter Muir Whitehill. Harvard University Press, 79 Garden St., Cambridge 38, Mass., 1959. 244 pp., illus., $4.95*

Copley Square: before . . .

. . . and after

This volume is an interesting study of the historical variations in urban form exhibited by the city of Boston. Walter Muir Whitehill, Director of the famous Boston Athenaeum, is surely one of America's most distinguished librarians. Author of a pioneering study of Spanish Romanesque architecture, he has also written extensively about the institutions of his native city. Now, with great erudition and considerable literary skill, he has produced a survey of the topographical history of the "Hub of the Universe."

Beginning in the 17th Century with the earliest settlers of the Shawmut Peninsula, he traces the urban expansion of Boston up to the close of the 19th Century, concluding with a glance at certain contemporary developments, particularly the Prudential Insurance Company's plans for a large complex of buildings on the site of the former Boston & Albany R. R. yards. Whitehill's chapter on 17th-Century Boston is necessarily somewhat skimpy because of a lack of material, but his story comes entirely alive with the 18th Century. His recreation of the city on the eve of the Revolution is excellent. Even more striking is his treatment of Boston in the era of Charles Bulfinch. This chapter makes it clear that Bulfinch was one of the truly great urban designers in American history. Not only did he do a number of the most important buildings in the city —Whitehill mentions five banks, four insurance offices, two hospitals, and three schools, plus the State House and numerous significant residences—but he also planned large sections of the expanding town, and trained a whole school of men who designed in his style. Not until Daniel Burnham did the United States produce another architect who so strongly affected the form of his city. Whitehill's pages make one realize the crying need for a new book on Bulfinch, one that will give him his rightful place in the history of urbanism. Somewhat the same thought comes to mind from the author's remarks on Frederick Law Olmsted's rehabilitation of the Fenway area, surely one of the most imaginative works of city planning that the 19th Century produced. The time is long overdue for a comprehensive book on Olmsted.

The sections on the Back Bay revolve around the theme of land reclamation and make one realize the remarkable extent to which Boston is an "artificial city." Americans are continually astonished at the ability of Italians and the Dutch to create beautiful urban areas in swamps and other unlikely sites, but our own achievements are no less startling. It is noteworthy that in Boston the whole venture of filling and building was under the control of public authorities, and that several worthy institutions benefited from the sale of lands (notably Tufts, Williams, and Amherst Colleges, and Harvard's Museum of Comparative Zoology). The climax of the entire process was the construction of religious and educational buildings around Copley Square in the 1870's and '80's. Whitehill writes: "With these institutions, a new heart of the city had been created in what a few short decades before had been a stinking eyesore."

The sad epilogue to the Copley Square story is the recent demolition of the old S.S. Pierce store, designed in 1887 in the Richardsonian vein, to make way for a parking lot (*see photos*). This must surely be one of the most atrocious pieces of civic vandalism perpetrated in the United States in recent years. Whitehill points out—rightly, I believe—that although the building itself was not particularly distinguished, it performed an important function in anchoring the façade of McKim's public library. As a result of its destruction, an important corner of Copley Square has been completely ruined. No better illustration could be found for the argument that cities are at present being operated for the benefit of automobiles rather than people.

Similar remarks can be made about the spoliation of the Esplanade along the Charles River to accommodate an expressway. "For a few years," says Whitehill mournfully, "this improvement lent singular charm to the Basin, which has been lost since the necessities of traffic have brought motor cars into an area that was designed for the sauntering pedestrian." This reviewer, who recalls the area well from his student days, is compelled to use stronger language. The destruction of this kind of genuinely civilized, urban open space is nothing less than a crime.

There are several difficulties with this generally admirable book. The architecturally minded reader will frequently wish for illustrations at larger scale than

Continued on page 199

Notre Dame High School, Trenton, N.J. Architect: Wm. W. Slack & Son, Trenton. Floor of MFMA Northern Hard Maple

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The Modern Style a

Continued from page 192

those provided. Whitehill's book was originally prepared as a course of lectures, and what may have been visible as a slide projection is occasionally difficult to pick out on the printed page. For the non-Bostonian, unfamiliar with street and place names, a simplified illustrative scheme would have been highly desirable.

A second criticism is that the author's quite understandable bias in behalf of his native city sometimes leads him to questionable evaluations of its important buildings. To call H.H. Richardson's Trinity Church ". . . the masterpiece of his short career" is certainly an overstatement. Most architectural historians would consider his Marshall Field Wholesale Store a far more significant achievement. In general, however, Whitehill's taste is first-rate. Unlike many lovers of the old, he is evidently alive to the promise of the new. Although he justifiably excoriates the brutal destruction of the S.S. Pierce store on Copley Square, he is aware of the promise of the Prudential Development for his beloved Back Bay.

Whitehill's scholarship is both profound and far-reaching. His notes show familiarity with all the pertinent sources from the 18th and 19th Centuries, and with the work of younger scholars such as Bainbridge Bunting, Bernard Bailyn, and Arthur Mann. In short, this is an admirable contribution to the growing literature of American urbanism. We must hope that it will inspire a number of similar and much-needed studies.

Responsibilities Unmet

Arts of the United States: A Pictorial Survey. *Edited by William H. Pierson, Jr., and Martha Davidson. Based on a collection of color slides assembled by the University of Georgia under a grant by the Carnegie Corporation of New York. McGraw-Hill Book Co., Inc., 330 W. 42 St., New York 36, N.Y., 1960. 452 pp., illus. $9.95*

With this collection, the irresponsibility and incompetence of book illustration in the United States has reached an all-time low. There are pages and pages where nothing can be recognized on the 1¼" x 1¼" postage stamps but a gray blur in a gray border. The infuriating part about this particular piece of commercial deception is that behind it stands one of the richest foundations of the country.

If the publisher feels that his profit margin would be endangered by a decent reproduction, then let him decline the manuscript. But why compel libraries throughout the country to fill their precious shelf space with a sloppy compendium indicating nothing. Anyone who wants to look up the historical data of American artists can do so in half a dozen encyclopedias and art histories; and he can read the extremely generalized, brief survey articles on architecture, painting, sculpture, decorative arts, and stage design in any magazine. The publication of a book, of *any* book, entails certain responsibilities toward the artist or author, toward the libraries, and toward the reader. This book meets none of them, and it remains tragic and indicative that this failure is backed by a foundation grant that heightens rather than lessens public responsibility.

SIBYL MOHOLY-NAGY
Professor, School of Architecture
Pratt Institute
Brooklyn, N. Y.

Pertinence to Other Urban Centers

New York Metropolitan Region Study. Volume 6: Freight and the Metropolis. *Benjamin Chivitz. Harvard University Press, Cambridge, Mass., 1960. 211 pp., $4.50.* Volume 7: One-Tenth of a Nation. *Robert M. Lichtenberg, with supplements by Edgar M. Hoover and Louise P. Lerdau. 326 pp. $6.75*

With these two handsomely printed books, the ten-volume New York Metropolitan Region Study nears completion. Only three books remain to be published: one by Professor Robert C. Wood of MIT entitled *1400 Governments*; a second volume by the study's director, Raymond Vernon, called *Metropolis 1985*; and a technical supplement. This reviewer has already called attention to three of the first five volumes; we can now note that the two new additions maintain the high standards of their predecessors. By this time one suspects that the fine hand of the Editorial Director, Max Hall, is responsible for the colorful, readable, yet technically sound manner of the presentation.

If the New York Metropolitan Region Study were to be presented in the classic form of a soap opera, the story's theme might be announced along the following lines: "The study that asks the question: can the nation's greatest urban area, grown powerful and plump with success, withstand competition from the rest of a growing, changing country, most of which is located somewhat to the west of Weehawken?" With varying degrees of enthusiasm, most of the study's contribu-

Continued on page 202

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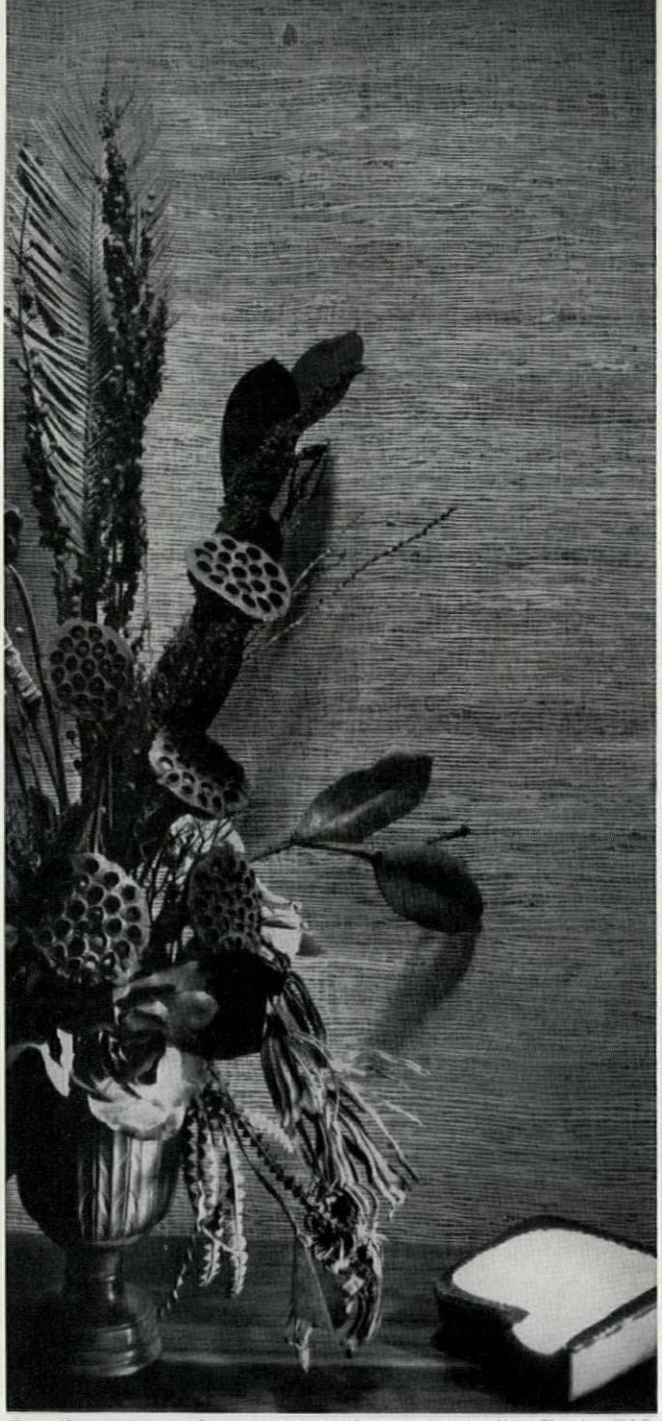

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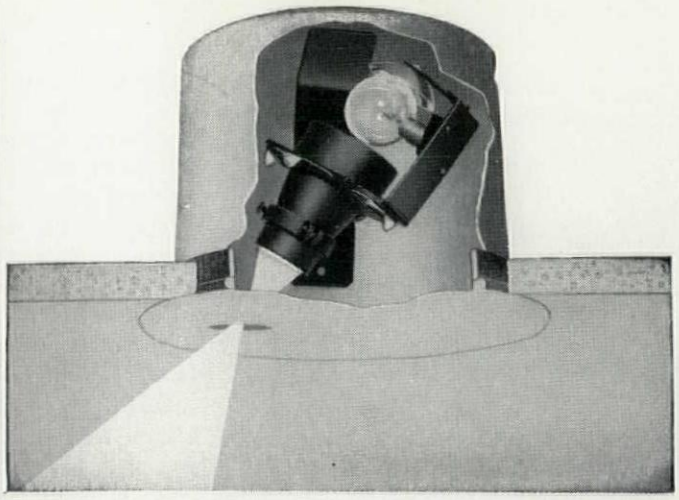

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Continued from page 199

tors answer with a qualified "yes."

Benjamin Chivitz, in discussing the role of freight transport in the region's economy, traces the Port of New York's increasing rise to a dominant position in post-Revolutionary America aided by a magnificent network of tributary canals and rivers stretching to the north and west. After reaching a peak in 1870, when it handled 57 percent of the nation's total foreign trade, the port entered a long period of relative decline, reversed only during major wars. The decline was due, in large part, to increasing disadvantages faced by the port, as the nation's population shifted westward and as the importance of inland waterways fell in comparison with rail and vehicular transport. Chivitz anticipates that the port's decline relative to the rest of the U.S. will continue, but with slowed pace. In actual volume of goods imported and exported, the port should make some significant gains.

The companion volume, *One-Tenth of a Nation* (the region's share of the nation's jobs), is a study of the locational patterns of the nation's industries, with special reference to the implications these patterns have for the New York region. However, as with the preceding volumes in the series, Lichtenberg's analysis is of considerable value to metropolitan areas *other than New York*. To this reviewer, the fact that the New York Metropolitan Region Study has pertinence to other major urban centers is its greatest asset.

The series, thus far, presents no panaceas for the region's ills; if anything, it leans to the view that little can be done to alter them. Nevertheless, it serves an extremely useful function in providing a searching, realistic analysis of the potentials and problems of America's greatest city.

DAVID A. GROSSMAN
Advance Planning Associates
Cambridge, Mass.

Spirit of Antiquity Comes Alive

The Early Churches of Rome. *Emile Mâle. Translated by David Buxton. Quadrangle Books, Inc., 119 W. Lake St., Chicago 1, Ill., 1960. 254 pp., illus. $12.50*

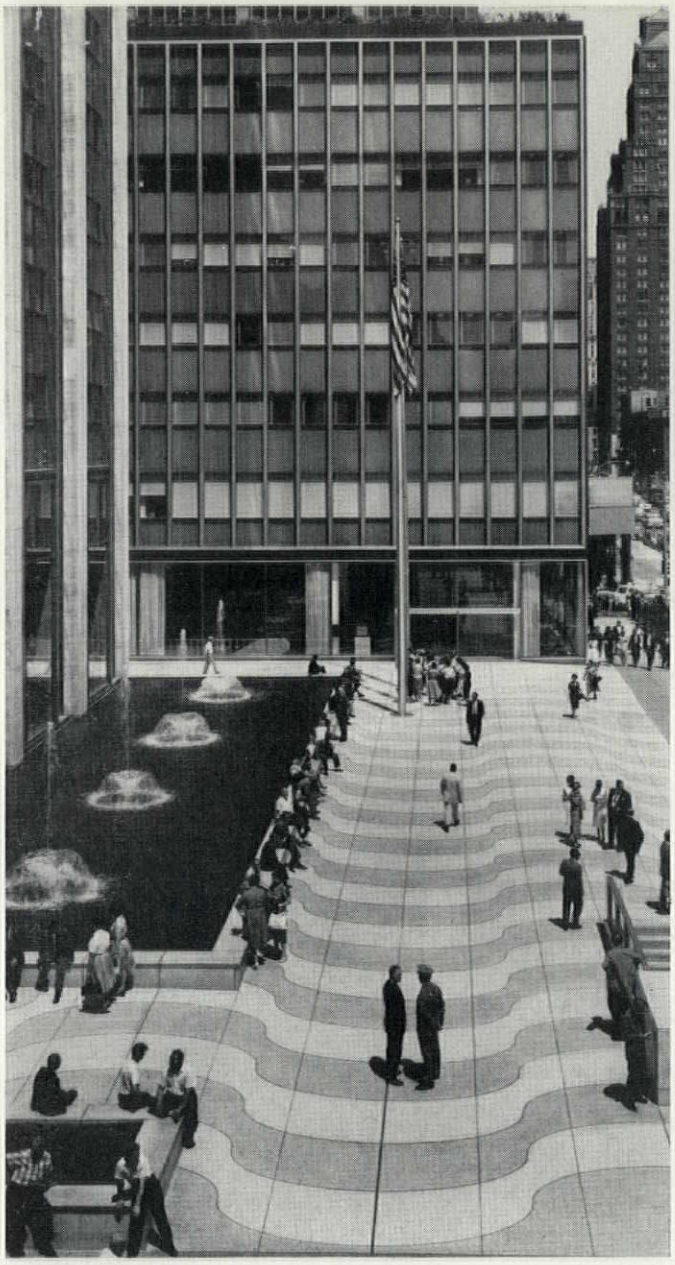
Surprisingly few books for the general reader have been written on early Christian and medieval Rome. David Buxton's masterful translation from the original French text by the late Emile Mâle, a celebrated scholar of medieval culture, will certainly answer this need. Here is an extremely readable book for architect, artist, art historian, and layman alike. For, as Mâle points out, "The spirit of antiquity was always alive in Rome and renewed itself from century to century." Through his imaginative eyes, it is this spirit which is recaptured and brought to life.

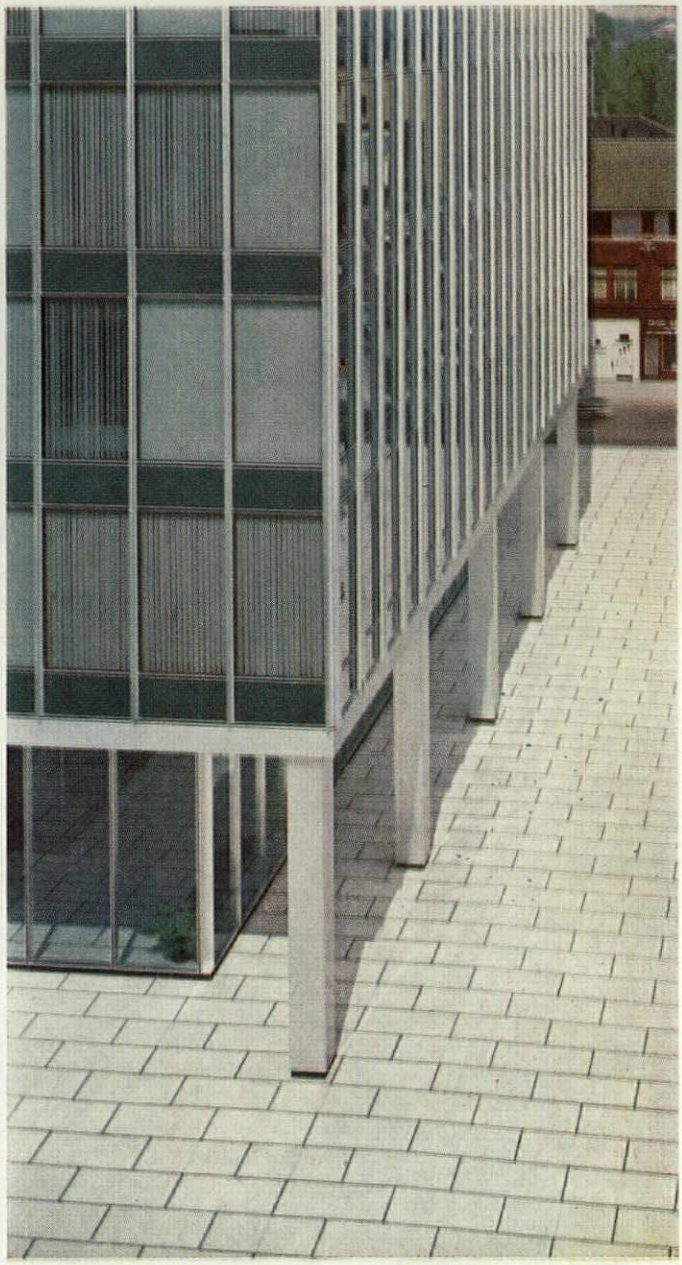
As a visitor stands alone in the atmosphere of magnificence and mystery which still pervades these early Roman churches, he cannot help but feel the pull of past ages, and perhaps wish for fuller knowledge of the history that had been enacted within their walls. We can understand, then, that such a feeling of curiosity would overcome as inquisitive and dedicated a historian as Mâle.

Always alive to intellectual and emotional stimuli, and afforded the opportunity to explore the Rome he loved while he served for 14 years as Director of the French Archeological Institute (l'Ecole Française de Rome) at the Palazzo Farnese, Mâle pursued his inquiry into early Roman times with the verve of a "Hercule Poirot."

An indication of the book's comprehen-

Continued on page 204





Left: Gray and white serpentine terrazzo plaza at Time & Life Building, New York. **Architects:** Harrison & Abramovitz & Harris, New York. **Terrazzo Contractor:** Port Morris Tile & Terrazzo, Inc., New York. Right: 47,328 square feet of terrazzo surrounds Libbey-Owens-Ford Glass Company Building, Toledo. **Architects:** Skidmore, Owings & Merrill, New York. **Terrazzo Contractors:** American Mosaic & Tile Co., Louisville; Port Morris Tile & Terrazzo, Inc., New York.

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WT-93

Continued from page 202

sive coverage is the meticulous discussion, in a series of 13 essays that are chronologically arranged, of 38 churches that were built over the period ranging from the 1st to the 13th Century. Since it required a span of several centuries to complete each church, there are vestiges of early Greek, Roman, Byzantine, and, in one instance, Gothic building styles to be examined, as well as paintings, murals, frescoes, and sculptures installed in different periods. None of these is neglected in Mâle's scrutiny.

With few exceptions, one of the recurrent themes in the book is the basilican church, which in Rome—and Rome alone—maintained its ascendancy throughout the Middle Ages. Surprisingly, there is only one Gothic church in Rome today — Santa Maria sopra Minerva, started in the late 13th Century —to attest to the popularity of this style in the rest of Europe. The popes of Rome, as commissioners of ecclesiastic architecture, looked back into the past, no matter what the influence around them, and for them the old basilicas of Constantine's era were perfect models for the Christian Church.

From the First-Century Catacombs of Domitilla, it is apparent that members of patrician Roman families had already rejected Jupiter for the Word from Jerusalem. The largest room of ordinary homes was used as a church. One of these venerable sanctuaries still exists below the Church of San Martino ai Monti, and the underground basilica of Petronella in the Catacombs was the precursor of the splendid basilicas to arise after the Peace of the Church. The new religion emphasized a gentleness of spirit, as well as a promise of immortality. The Roman basilica—with the beauty of its columns, restful lines, and perfect proportions, and the added spell of pure light falling from high windows—was admirably suited to bring tranquility to the spirit. Two of these early churches described by Mâle are Santa Maria Maggiore and Santa Sabina, which have survived to express the calm assurance of faith that inspired their erection.

From the masterly study of "100 Years of Iconoclasm," we learn how Eastern art and architecture were integrated into five of Rome's most famous early churches: Santa Maria Antiqua, Santa Maria in Domonia, Santa Prassede, Santa Cecilia, and San Marco. The delineation of this story is carefully traced through a minute study of the Eighth-Century frescoes, many of which appear to be the workmanship of Greek artists who had fled from the persecution of the iconoclasts in the Eastern Empire. The Ninth-Century mosaics attest to the Greek exodus of monks who valiantly tried to save the art of Constantinople and the East, even though the destinies of Christianity were not bound up with those of art. In the 8th and 9th Centuries, as well as in the 16th, the popes of Rome came to the defense of civilization. Hence many of the frescoes, mosaics, and architectural styles of the churches mentioned previously are living testimony to the stubborn defense of religious art, glorifying as they do the Eastern saints and martyrs whose images were being destroyed.

Mâle considers this championship of art one of the great events of human history. As he points out, we would never have had the myriad statues of the Gothic cathedrals, or the frescoes of Giotto and Fra Angelico, if this struggle had not taken place.

Many vivid portraits of great medieval figures are included, the most important being those of the Emperor Otto III and Pope Gregory VII. The story of Otto III is a strange and sorrowful saga, reflecting the first gleams of humanism in the

Continued on page 210

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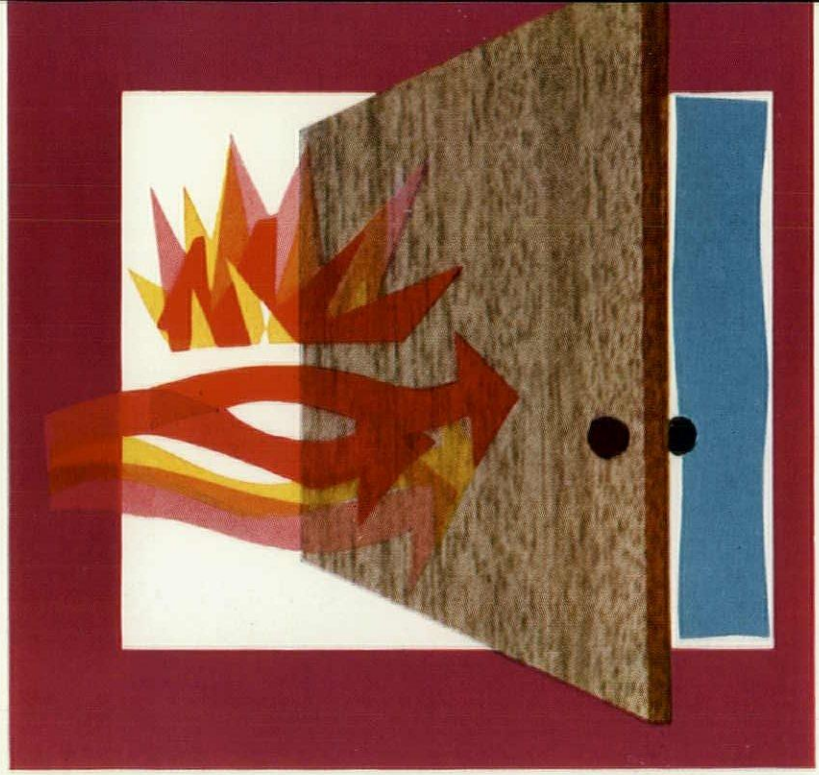

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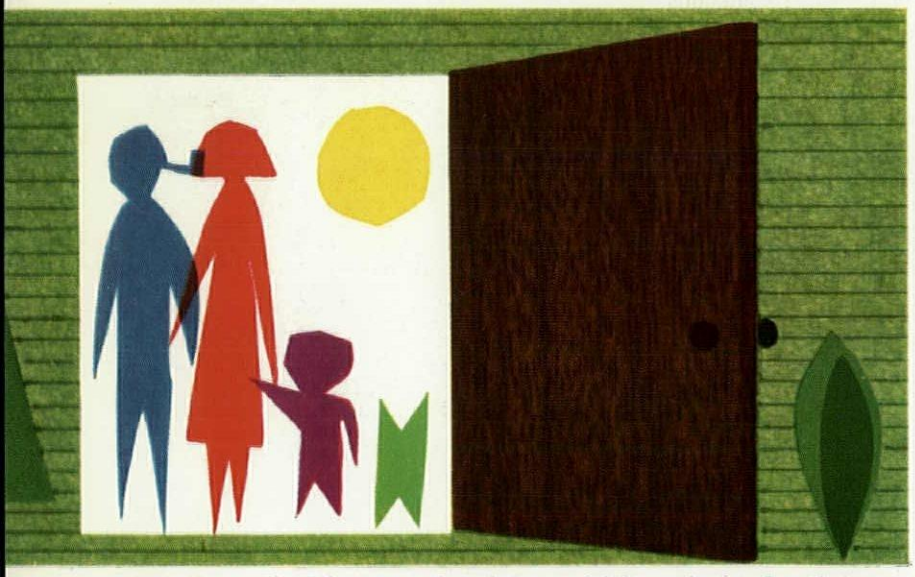

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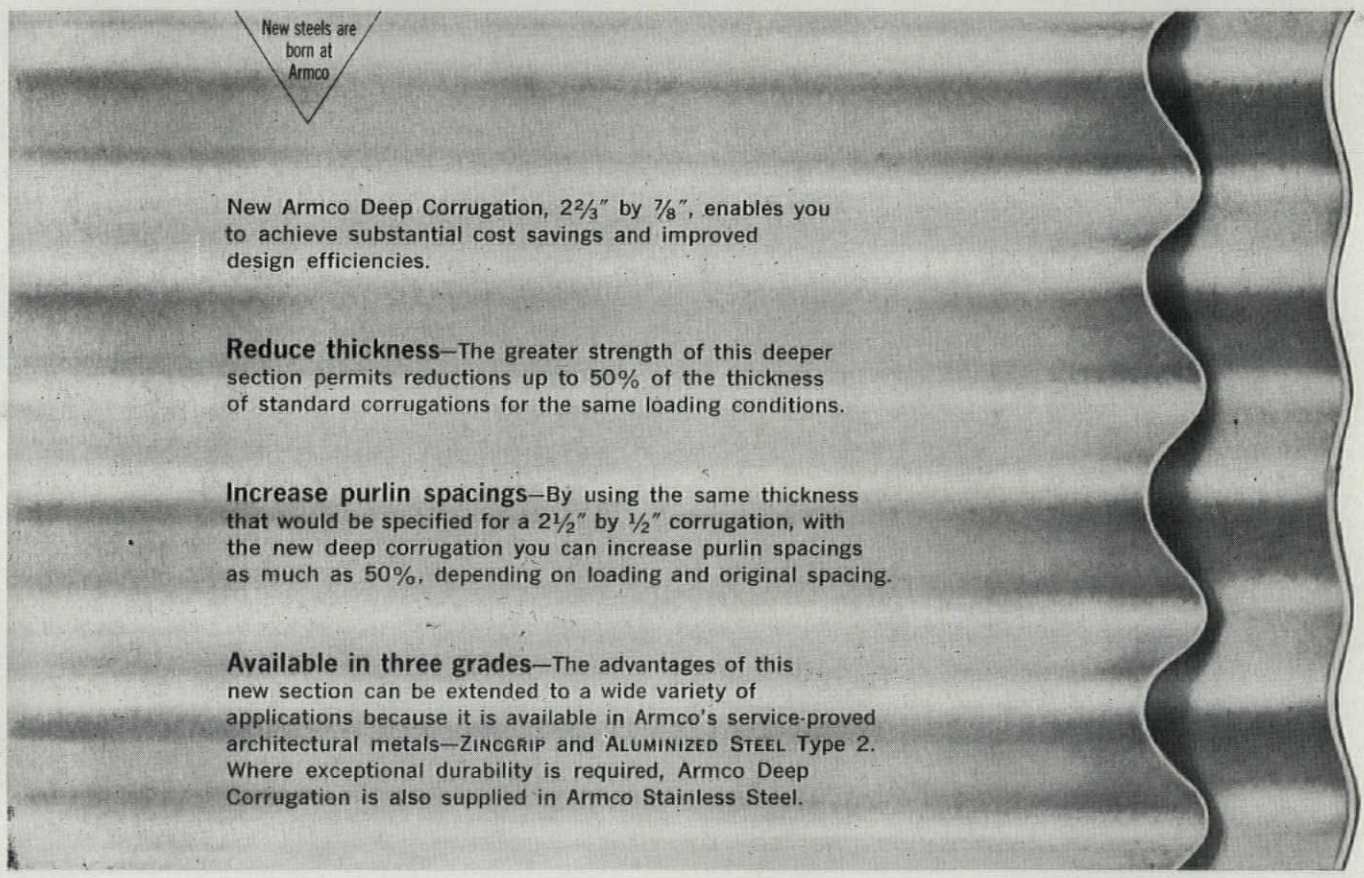

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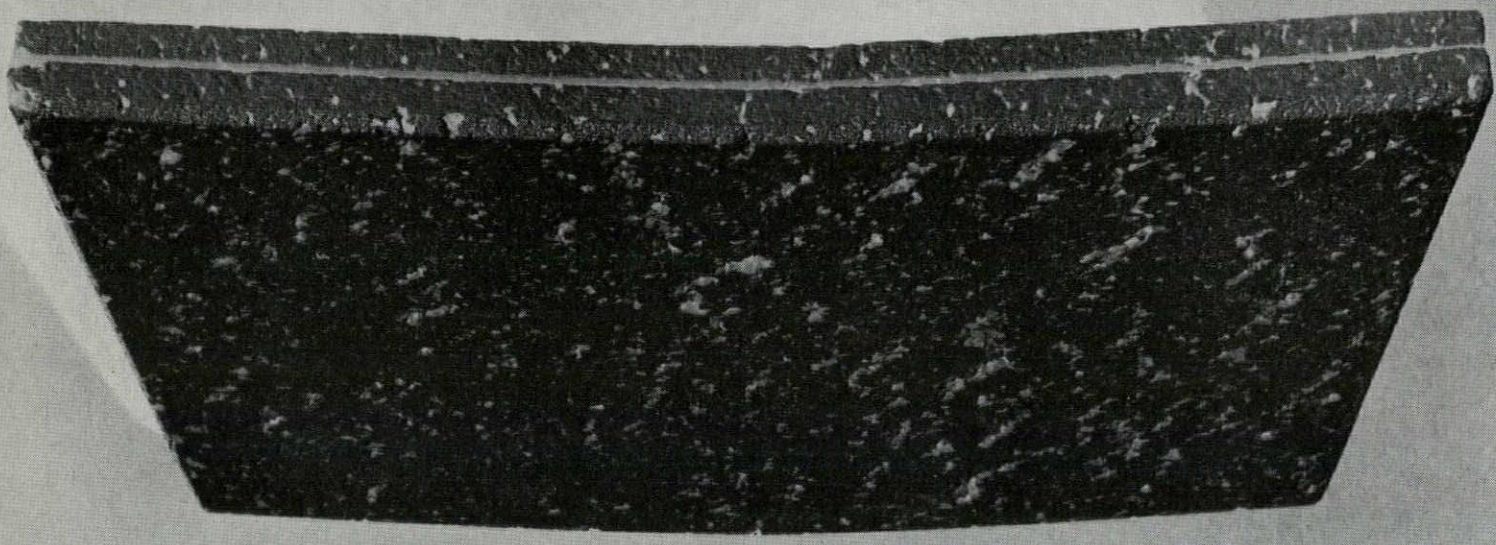

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Continued from page 204

night of the Dark Ages. Today, in the church called San Bartolomeo dell'Isola, there is a little marble well-head. Four figures are carved around it, one of them the effigy of Otto III, carved more than a century and a half after his death. The features are not his, but his name was still remembered by a Rome which turned against him during his brief lifetime of 26 years. One of the fine photographs illustrating the glowing prose of Mâle is of this well-head.

Three-quarters of the more than 100 photographs were taken expressly for this edition by the translator, David Buxton, who is to be doubly congratulated. Clearly and thoughtfully executed are illustrations of the churches, paintings, mosaics, and frescoes discussed. They are so expressive that it is a pity they were relegated to a rear section of the book. Notes to the illustrations follow in still another section, which makes for an unsatisfactory and continual interruption as the reader seeks to document the text.

Another deficiency is the lack of any map; one of medieval Rome and another of modern Rome would have been extremely helpful. Mâle was not one to write down to his audience; his assumption that each reader would be as familiar as he with the history of art and architecture in the first 13 centuries of the Christian era leaves many a question to those less dedicated to this period of history.

It is amusing to note that modern architecture does not come off so well in Mâle's opinion. He deeply regretted the architectural changes in Rome in the years immediately preceding World War II. His regret is clearly stated in several passages. For instance: "True Roman architecture is an engineer's technique; it would have resembled what our architects attempt to produce today, had not the Greeks clothed it in beauty." Or: "It must be added, however, that our contemporary architecture has appeared in all its starkness in the last few years and is beginning to rob the town of that unity to which it owed such beauty and such dignity."

If modern architecture inspired regret, Mâle's enthusiasm for the art and architecture of the past is contagious. Those reading this book cannot help but share his thrill of discovery and become lost in the legends of the past as they were enacted in that unique metropolis, Rome —The Eternal City.

J. H. D.

Architectural Baedeker

Baroque Churches of Central Europe. *John Bourke. Photographs by Thomas Finkenstaedt. Faber & Faber, 24 Russell Sq., London W.C. 1, 1958. 289 pp., illus. $5.04*

The Baroque churches and monasteries of Central Europe were erected during the last decades of the 17th Century and throughout the 18th Century, in Southern Germany, Austria, and Switzerland. In architecture and decoration they comprise a style of their own.

Those Englishmen and Americans who had a chance to see them were unsympathetic from the beginning, feeling that the exuberant splendor and wordly abundance of the decor should have been permitted only in princely residences and only in France. In addition, there was a neglect of the function of individual architectural elements and a play with the surfaces of materials that made these appear different from their true substance. Finally, there was a reliance

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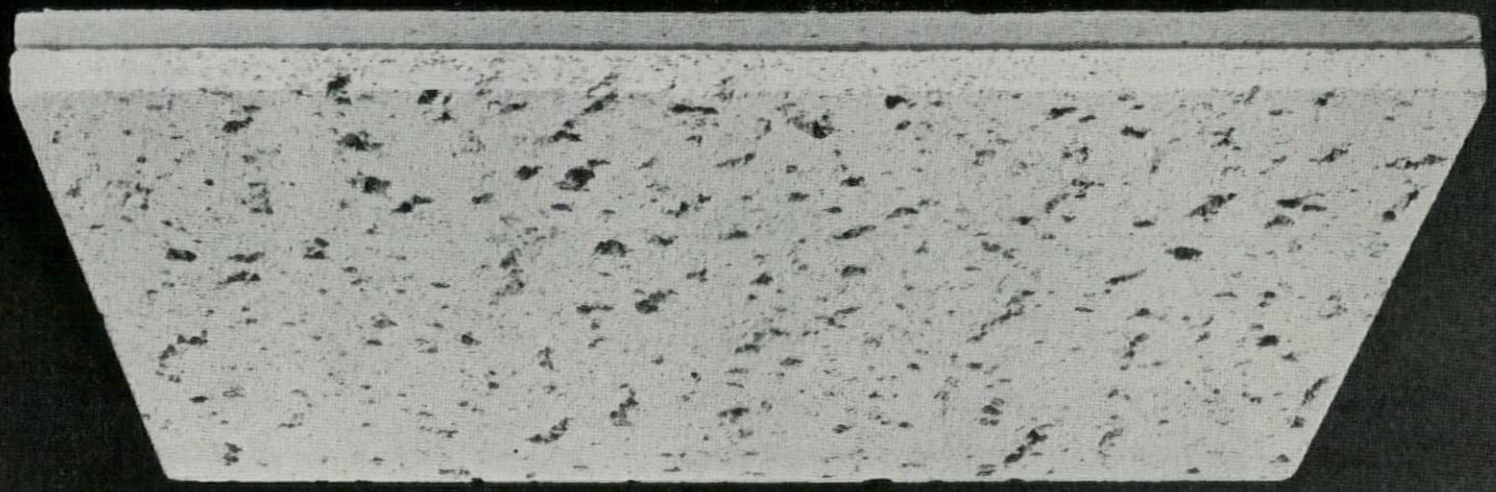

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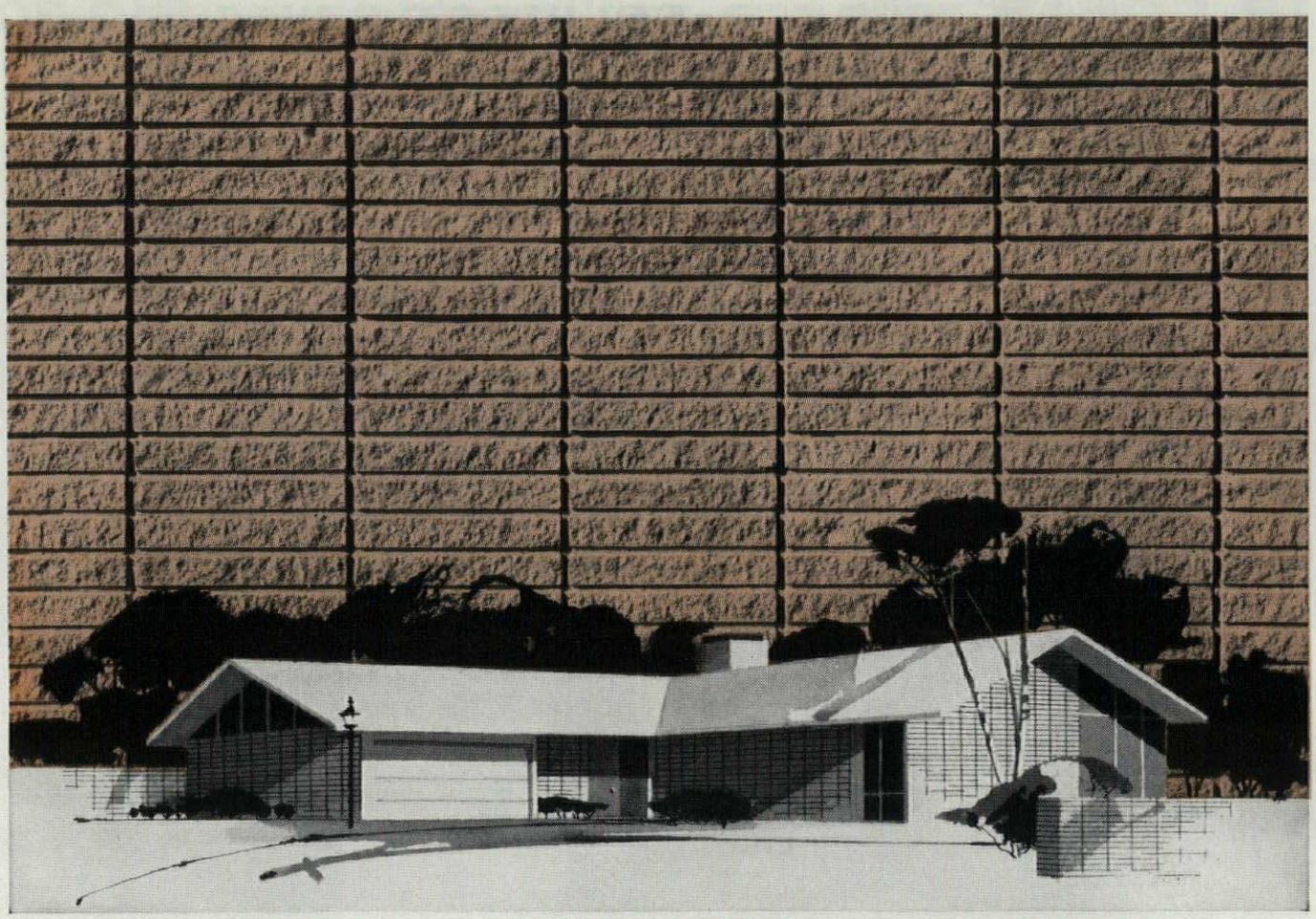

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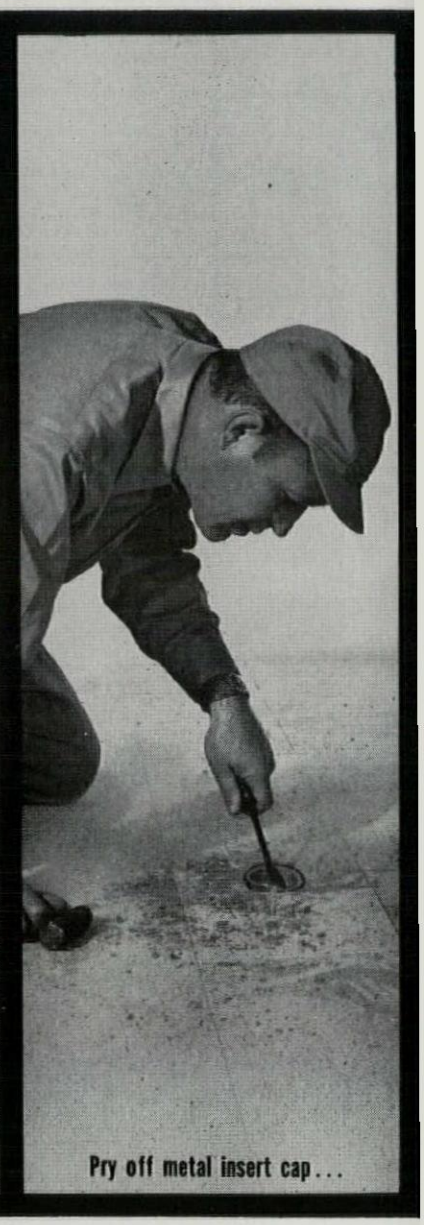

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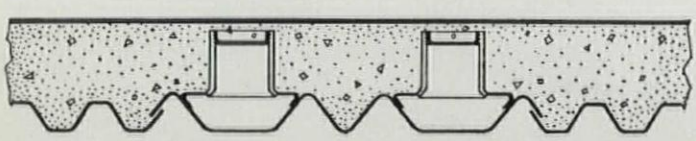

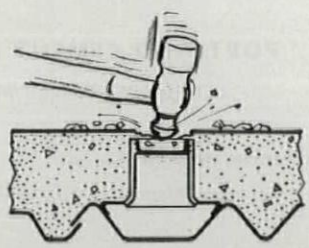

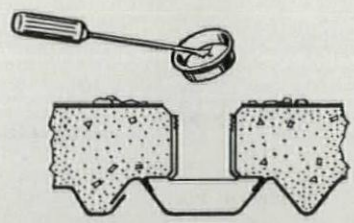

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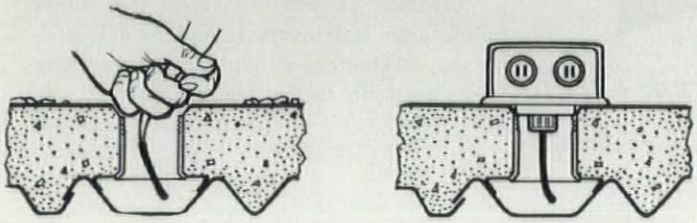

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Continued from page 210

on the most subtle nuances of lighting and illumination as the main means of spatial effect that was completely alien to the admirers of Christopher Wren and Gibbs. The whole mode of expression was felt to be untrue, insincere, impious, and thoroughly anti-religious.

It required a stay of American occupational forces and the personal contact of American scholars and artists to generate a true interest in the style. Even in Germany and Austria, the first scholarly and popular publications on the individual artists of this epoch appeared only after World War I.

Thus John Bourke's book, with its excellent illustrations, opens a relatively new sector of Baroque art to the English-speaking reader. Until now, in reference to the Central European regions, there were only M. S. Brigg's *Baroque Architecture* and Nikolaus Pevsner's *European Architecture* (plus occasional writings by Sacheverell Sitwell). In both publications, quite naturally, not many pages were devoted to this special field.

With its maps, detail photographs, and poignant descriptions of each individual work, Bourke's volume presents a comprehensive survey that is also useful as a traveler's guide. Architects may enjoy—and art historians may deplore—the fact that relatively little space is given to a thorough esthetic analysis, but this is certainly secondary for a field so little known until now. Some general words about the spirit of the Baroque do not help much in this respect, and whereas the reference to Ignace of Loyola is unavoidable, the recall of Gottfried Wilhelm Leibniz's "pre-established harmony" seems far-fetched. For the many who know the more popular periods and regions of European history of architecture, this new publication is more than welcome.

PAUL ZUCKER
New York, N. Y.

Humanism Caught in Clichés

Economic Planning for Better Schools. *Benjamin Handler. A Department of Architecture Research Publication. College of Architecture and Design, University of Michigan, Ann Arbor, Mich., 1960. 107 pp., tables. $5*

Whenever one comes across such words as "dichotomy," "parameter," or "integrative" in the first few paragraphs of a book, one can be fairly certain that the author is a college professor. It is no surprise, then, to discover that Benjamin Handler is Professor of Planning at the University of Michigan. He has written a book which contains a certain amount of useful information, but which probably will be limited in its readership because of the pedantic nature of the presentation.

Furthermore, *Economic Planning for Better Schools* is based on studies made in Michigan, and some of the findings appear to run counter to information gathered in other parts of the country, and consequently must be used with caution.

One cannot quarrel with such statements as: "The approach to school design today is humanistic. That is to say, it regards the child as a developing human being and focuses on its needs at this stage, rather than being preoccupied solely with the future adult." But there is a perpetuation of much of the folklore which has grown up around this "humanistic" approach: "A one-story schoolhouse is best suited to the child." "From the planning of the school site to the designing of the last piece of classroom furniture, every effort must be made to suit his size, interest, and understanding." I seriously doubt that either of these statements should be taken as gospel. One reason children take so long to grow up in the United States is un-

Continued on page 220

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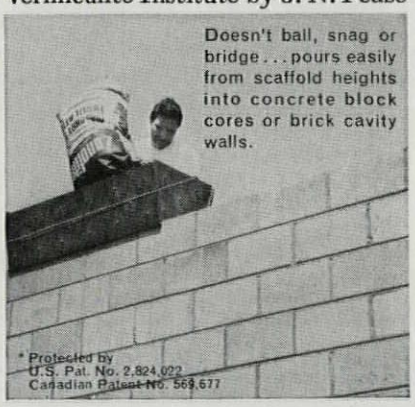
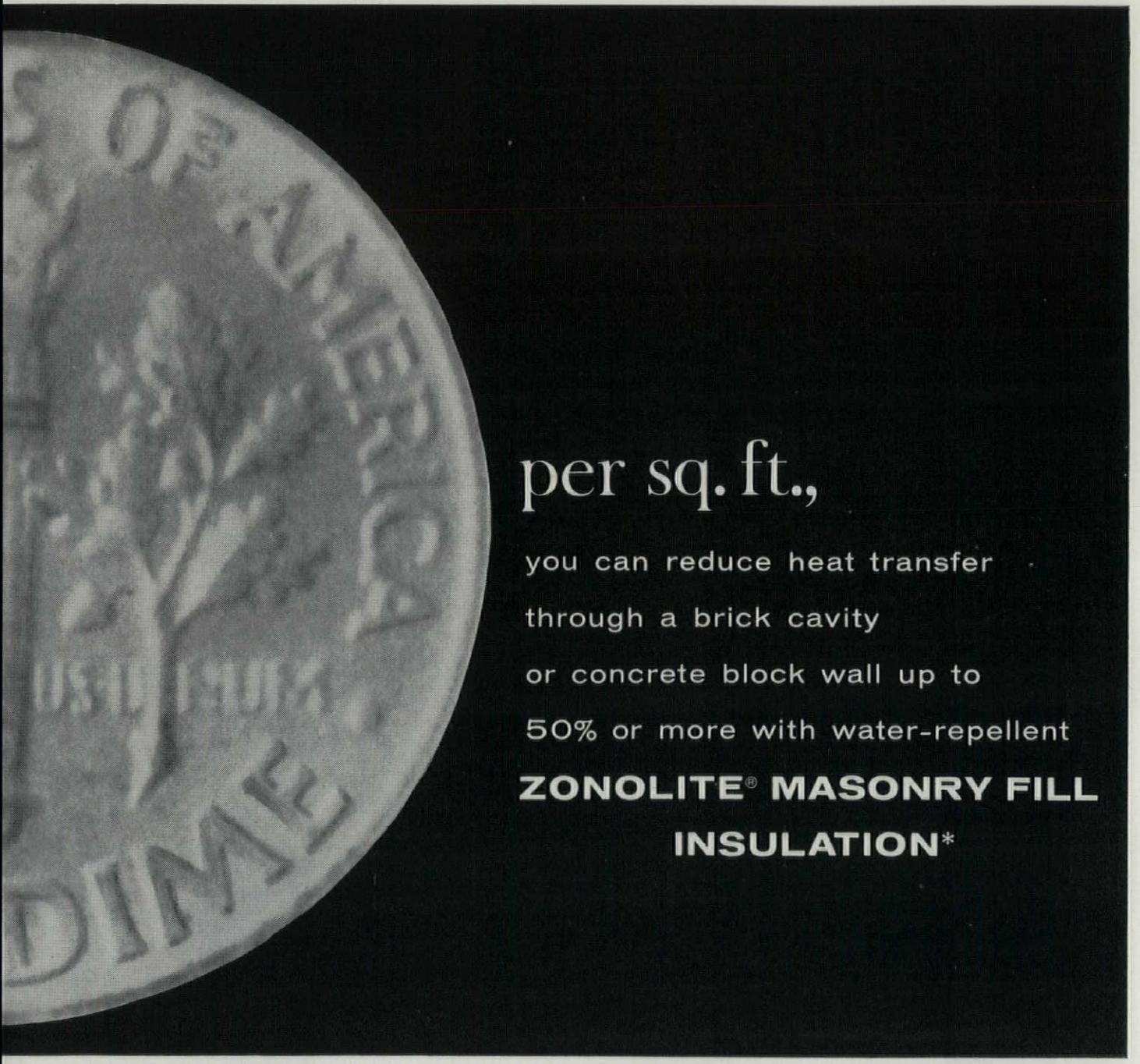


It showed that by insulating the walls of a two-story concrete block barracks, an $800 saving could be realized in the cost of the heating plant, thus paying more than half of the cost of the Zonolite Masonry Fill Insulation.

If the building were air-conditioned, the total cost of the insulation would be recovered before the building was occupied.

This unique insulation offers other benefits as important as its economy:

COMFORT: Interior wall temperatures are brought closer to skin temperatures. Radiant heat exchange is reduced about 30%,..



providing greater comfort, winter and summer.

WATER PERMEABILITY: Field experience and laboratory tests prove that even if rain penetrates the exterior wythe (and it probably will) water will not be transmitted across the cavity, due to the patented water-repellency feature of the insulation.

SETTLING: It doesn't.

All these characteristics are confirmed in tests conducted by Penn State University and the Structural Clay Products Research Foundation.

You'll want complete data and specifications on this remarkable new way to insulate masonry walls. Mail the coupon today.

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- ☐ Send complete information on Zonolite Masonry Fill Insulation.
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For more information, turn to Reader Service card, circle No. 316

Overly

Fire Barriers

Continued from page 214

doubtedly that we continue to treat them as people of another race, rather than merely of a different age. It can be pointed out that children live in two-story and even three-story houses (not to mention apartments) and that, by and large, the furniture in a home is not scaled for children. This appears to disturb them not a whit. Obviously, certain basic furniture should be scaled for children in schools, but the insistence that every last detail should be scaled to a child's size more likely has the effect of making the child unfit to live in an adult society, rather than helping him to learn.

Other clichés are quoted, such as: "The building should not be primarily a monument to the architect and school authorities. It should be a learning laboratory for all members of the community." If Professor Handler were to study a representative group of schools throughout the United States, he would find very few that can be considered monuments to anything—unless it be poor educational planning and bankrupt architectural design. Actually, a school building should be a symbol of man's aspirations for greater knowledge. It definitely should be "foreground architecture," yet many of today's schools symbolize only that assembly line education is taking place inside factory-like buildings.

Handler has some useful things to say about capital budgeting and school finance, but his infatuation with statistics, and his ability to make the unimportant sound important, will not commend him to the very people who could profit from what he has to say. The average reader will not be persuaded to wade through this book, although there are rewards to be had for the effort.

PHILIP H. HISS
Designer and Author
Chairman, Board of Public Instruction
Sarasota County, Fla.

OTHER BOOKS TO BE NOTED

Antoni Gaudí. James Johnson Sweeney and Jose Luis Sert. Frederick A. Praeger, Inc., 64 University Pl., New York 3, N.Y., 1961. 191 pp., illus. $15

The Squeeze: Cities Without Space. Edward Higbee. William Morrow & Co., Inc., 425 Park Ave. South, New York 16, N.Y., 1960. 348 pp. $5.95

New Japanese Architecture. Udo Kultermann. Frederick A. Praeger, Inc., 64 University Pl., New York 3, N.Y., 1960. 180 pp., illus. $13.75

The Measure of Man: Human Factors in Design. Henry Dreyfuss. Whitney Library of Design, 18 E. 50 St., New York 22, N.Y., 1960. 32 pp. plus two life-size diagrams., illus. $4.95

Planen und Bauen im Neuen Deutschland (Planning and Building in the New Germany). Edited by Bund Deutscher Architekten BDA, Deutscher Architekten und Ingenieurverband DAI, Bund Deutscher Garten und Landschaftsarchitekten BDGA. Westdeutscher Verlag, Koeln/Rhein, 1960. 654 pp., illus. $24

Human Engineering Guide for Equipment Designers. Wesley Woodson. University of California Press, Berkeley 4, Calif., 1960. 270 pp., illus. $4.50

Detailed presentation and analysis of data essential to designers—the dimensions, capabilities, and limitations of the human body.

Modern School Shop Planning. Prakken Publications, Ann Arbor, Mich., 1960. 184 pp., illus. $3.85 (plastic)

Information from authoritative sources on recommended equipment and storage, suggested arrangements, and safety factors for all types of specialized shops.

Concrete Engineering Handbook. William S. La Londe, Jr., Editor; Milo F. Janes, Assistant Editor. McGraw-Hill Book Co., Inc., 330 W. 42 St., New York 36, N.Y., 1960. 1216 pp., illus. $25

Comprehensive and up-to-date reference.

Continued on page 226

Modern Door Control by *LCN*

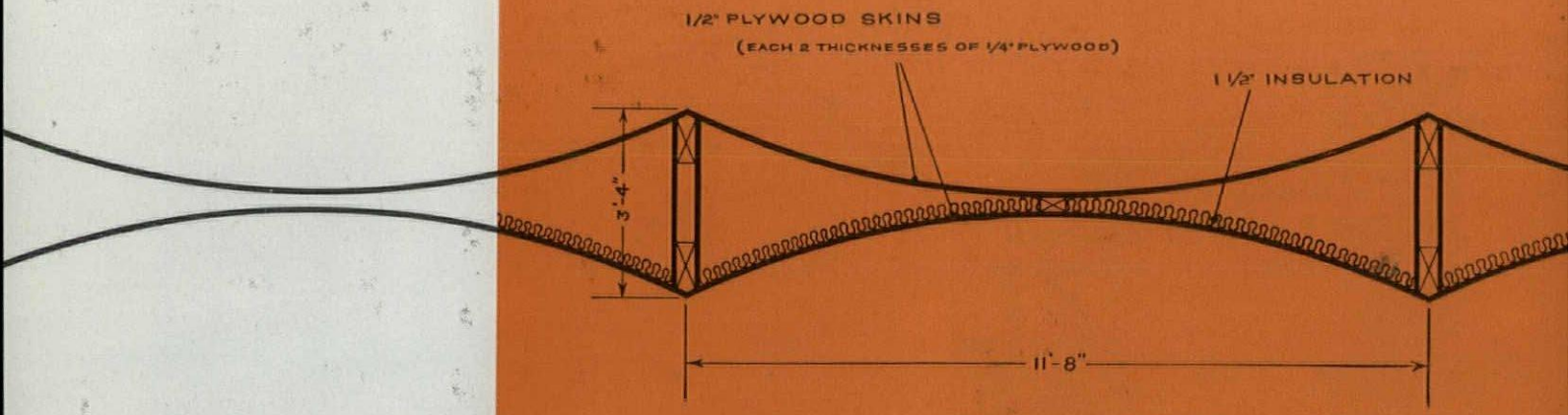
Closer Concealed in Head Frame

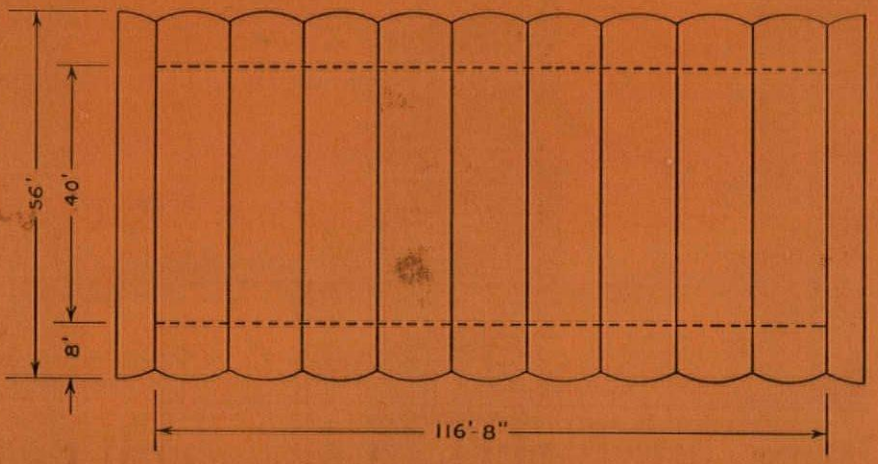
GREAT LAKES REGIONAL SALES HEADQUARTERS BUILDING, REYNOLDS METALS COMPANY DETROIT, MICHIGAN

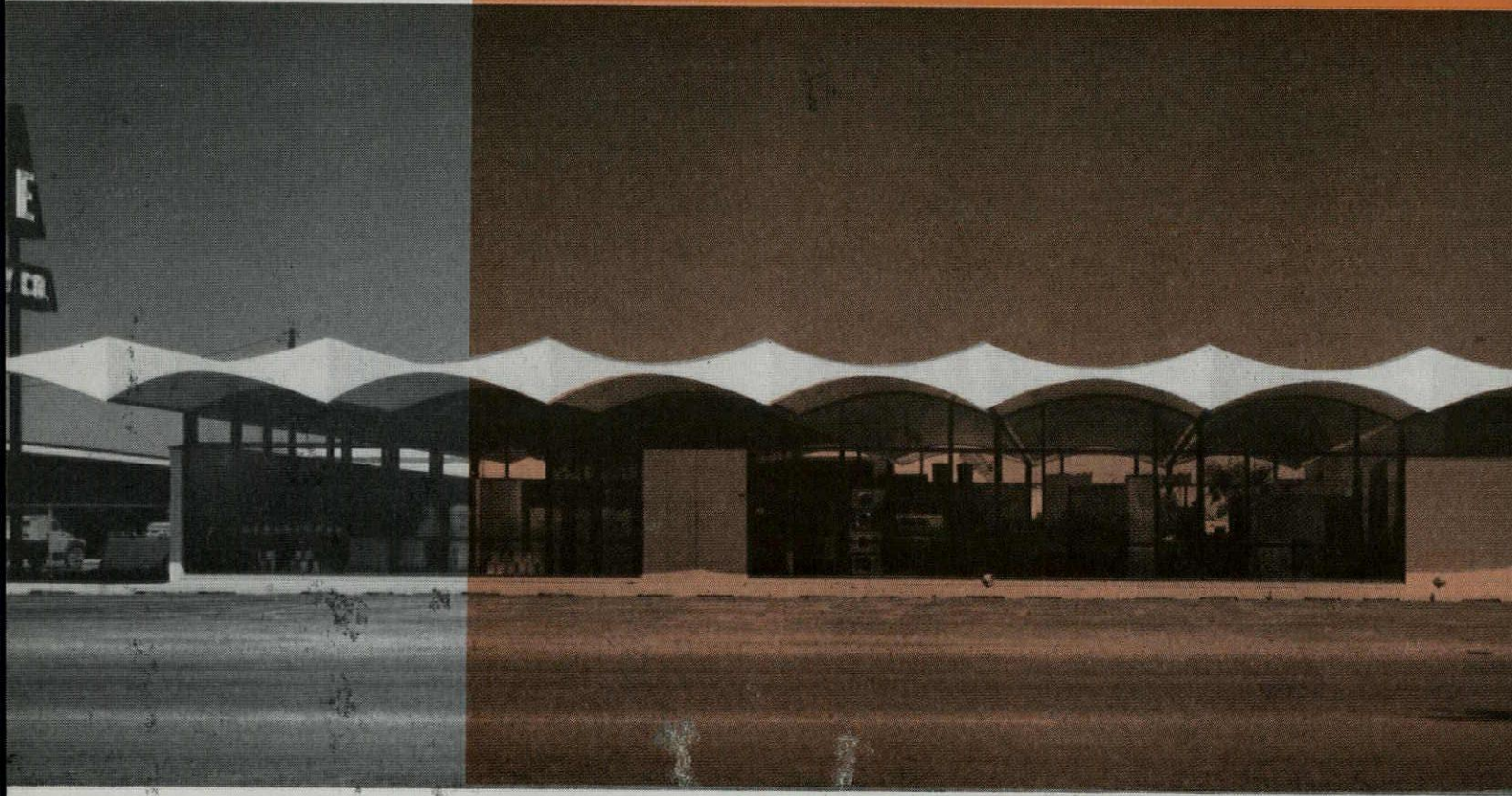
Minoru Yamasaki & Associates, *Architects*

LCN CLOSERS, INC., PRINCETON, ILLINOIS

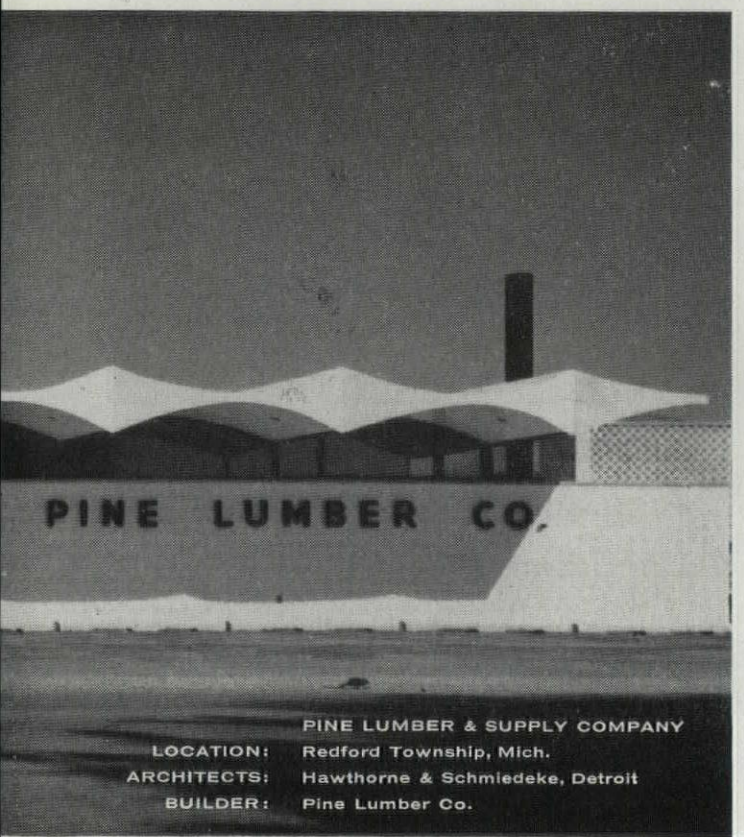
Construction Details on Opposite Page


1/2" PLYWOOD SKINS
(EACH 2 THICKNESSES OF 1/4" PLYWOOD)
1 1/2" INSULATION
3'-4"
11'-8"


56'
40'
8'
116'-8"



new approaches to structural design with fir plywood



PINE LUMBER & SUPPLY COMPANY
LOCATION: Redford Township, Mich.
ARCHITECTS: Hawthorne & Schmiedeke, Detroit
BUILDER: Pine Lumber Co.

THE AWARD-WINNING DESIGN of this retail lumber showroom is another example of the striking new architectural forms possible with fir plywood, at no sacrifice—in fact, with a gain—in structural strength and integrity.

The rippling roofline was created by a series of doubly concave plywood barrel vaults. It demonstrates the major advantages of the plywood vault for non-residential as well as home construction: design flexibility, a strong rigid roof, and economy in time and materials, due to plywood's high strength-weight ratio and extreme workability.

These vaults are of modified stressed skin construction, with plywood glue-stapled at edges to plywood box beams and, at mid-arc, to a continuous 2 x 4. The system provides large clear floor areas which, together with extensive use of glass for exterior walls, contribute to the remarkably light, open look.

The delicately scalloped silhouette is given a third dimension by a sheet metal fascia that caps the vault ends and bows out in plan to repeat the curve of the arches. For basic fir plywood design data, write (USA only), Douglas Fir Plywood Assn., Tacoma 2, Wash.

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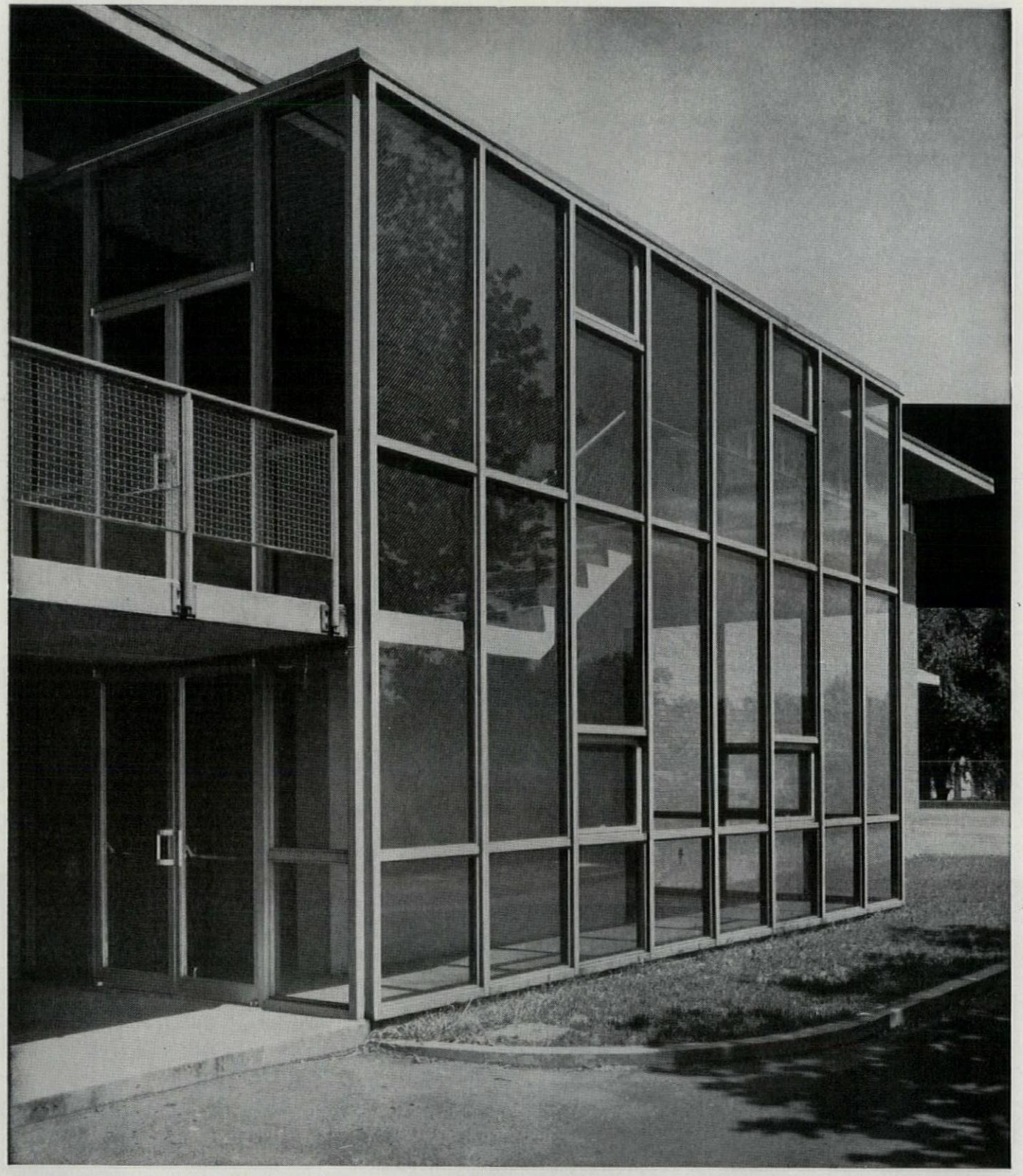

Stairwell of Polished Misco Wire Glass contributes to overall appearance as well as safety in the Fort Saunders Elementary School, Knoxville, Tenn.
Architect—Painter, Weeks & McCarty, Knoxville, Tenn.

For details, see your nearby distributor of quality glass or write for latest catalog. Address Department 8.

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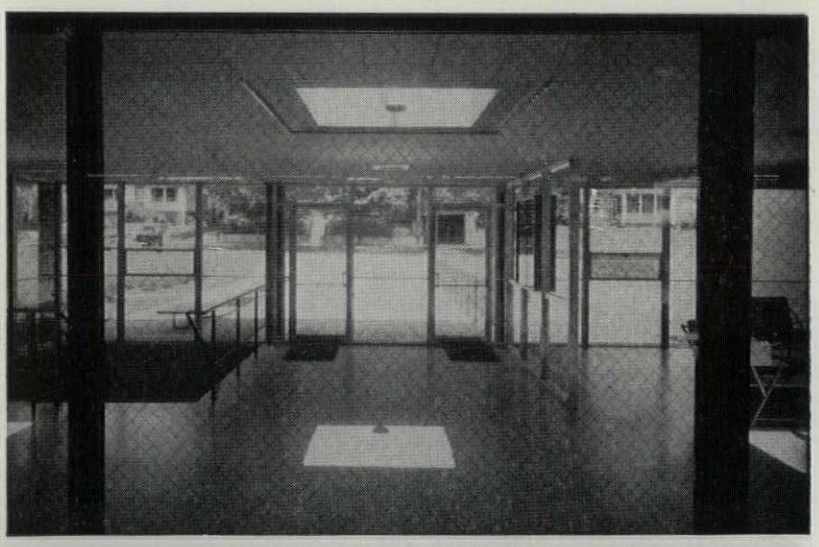
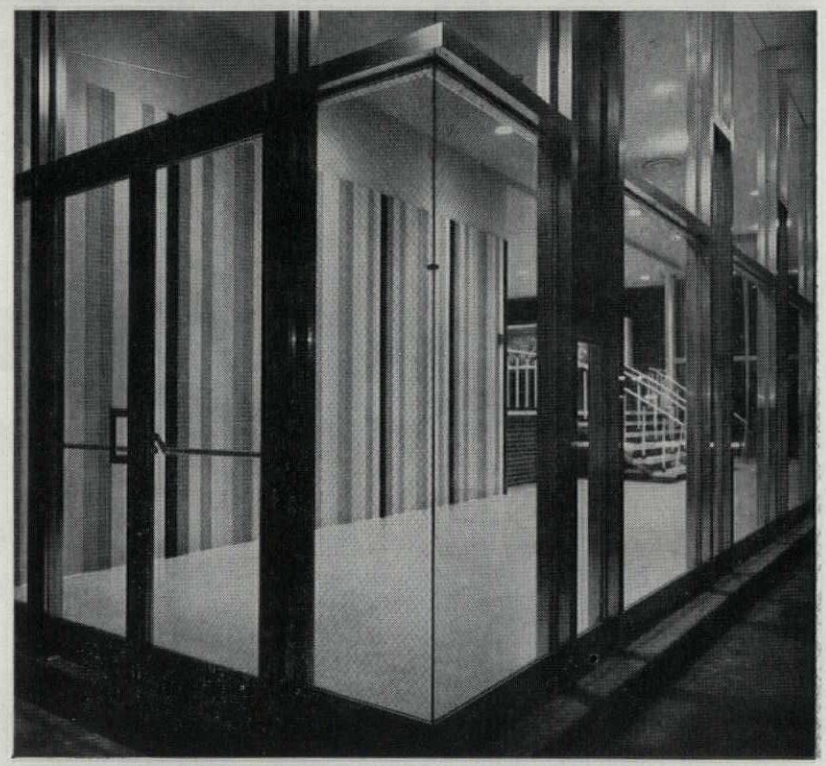


Impact and fire resistance are twin features of this Polished Misco Wire Glass installation in Tennessee School for the Deaf, Knoxville, Tenn. *Architect*—Painter, Weeks & McCarty, Knoxville, Tenn.

MISSISSIPPI GLASS...

LEADS THE WAY IN *Daylighting* WITH SAFETY

Combining beauty, utility, and economy, Mississippi leads the way by making available an extensive selection of translucent glass patterns that do wonderful things with daylight. In addition, rugged Mississippi Wire Glass, whether for obscurity or clear vision, affords effective but inconspicuous fire protection while enhancing the appearance of any structure . . . when installed in partitions, skylights, stairwells, windows, doors, or wherever else fire and breakage protection is required. The versatility of Mississippi glass provides architects and engineers with a practical solution to virtually every daylighting problem, including safety with decoration, with heat absorption and with light diffusion and direction.



Polished Misco Wire Glass glazed in main entrance of Hellertown High School, Hellertown, Pa. *Architect*—Heyl, Bond & Miller, Allentown, Pa. *Contractor*—Gottlieb-Schneider, Bethlehem, Pa. *Glazing Contractor*—Penn Allen Glass Company, Allentown, Pa.

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Continued from page 220

prepared by a staff of 20 specialists, on design methods and data for all types of concrete structures. In addition to design of buildings and their elements, special sections are devoted to concrete chimneys, bins for bulk storage, pavements, bridges, and skin structures. Special résumés discuss structural theory, torsion, materials, construction methods, effects of earthquakes, and applications of prestressed concrete.

Byzantine Frescoes and Icons in Yugoslavia. Oto Biholji-Merin. Harry N. Abrams, Inc., 6 W. 57 St., New York 19, N.Y., 1960. 111 pp., illus. $8.50

A rediscovery of Byzantine art as seen in an area richly influenced by Constantinople. Splendid full-color illustrations are among the 81 reproductions.

Crete and Mycenae: The Glorious Art Heritage of Early Grecian Cultures. S. Marinatos. Harry N. Abrams, Inc., 6 W. 57 St., New York 19, N.Y., 1960. 176 pp., illus. $25

The sculpture, architecture, and art objects of Early Grecian civilization, strikingly presented in over 400 photographs by M. Hirmer.

The Vatican. Jerome Carcopino. Harry N. Abrams, Inc., 6 W. 57 St., New York 19, N.Y., 1960. 242 pp., illus. $100

A majestic publication, monumental in size (12⅝" x 17¼"), with color plates often spaning two pages.

Modern Painting: Contemporary Trends. Nello Ponente. Skira Art Books. Distributed by World Publishing Co., 2231 W. 110 St., Cleveland 2, Ohio, 1960. 215 pp., illus. $27.50

A prodigious compilation of the most significant works of the 1945–60 period. The 100 full-color reproductions are supplemented by a text that treats the relationship between modern painting and contemporary thought, and makes a strong argument for the seriousness and vitality of the new painting.

Looking at Pictures. Kenneth Clark. Holt, Rinehart & Winston, 383 Madison Ave., New York 17, N.Y., 1960. 199 pp., illus. $10

A provocative analysis of one man's method of viewing paintings, in which the distinguished art historian uses 16 great paintings as examples, and discusses the sequence of "impact, scrutiny, recollection, and renewal."

NOTICES

New Firms

BRYAN AND HALDEMAN, Architects, 525 E. Ohio Ave., Denver 9, Colo.

JAMES J. JENNEWEIN, Architect, 1312 First National Bank Building, Tampa, Fla.

RICHARD LEITCH, Architect, 1730 W. Coast Highway, Newport Beach, Calif.

RICHARD G. STEIN, Architect, 441 Madison Ave., New York 22, N.Y.

New Addresses

ROBERT E. ALEXANDER & ASSOCIATES, Architects and Planning Consultants, 612

Continued on page 230

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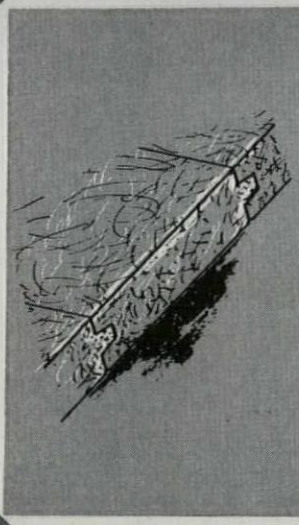
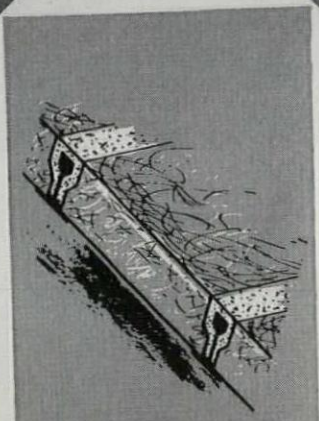
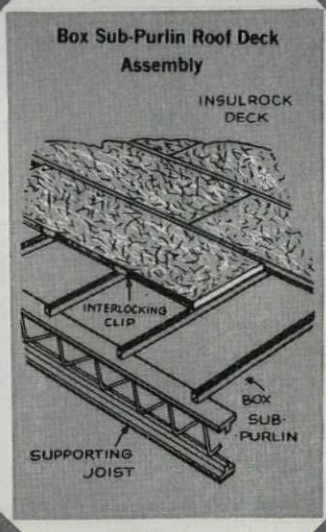


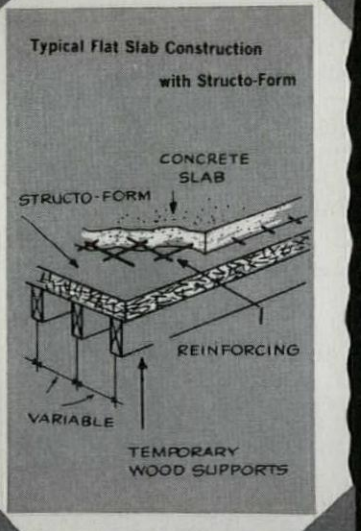
Interlocking Joint, including Painted Bevel, for joist and beam construction aligns roof deck better, installs easier, improves insulation, distributes loads better.



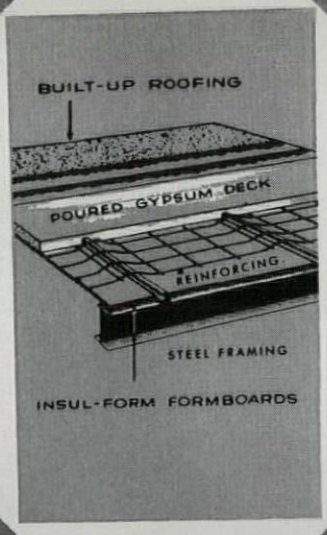
Chamfered Edges of improved Flo-Easy design for sub-purlin construction increase resistance to uplift, make for continuous stronger joints.



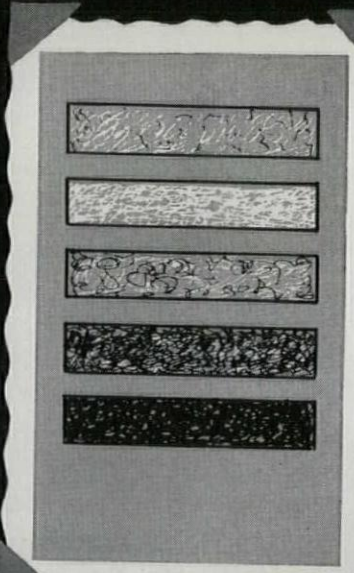
Box Sub-Purlin assembly gives new flexibility to open construction design, reduces costs.



Structo-Form* provides uniform, lightweight, strong building planks for flat slab or reinforced concrete construction, producing a handsome finished ceiling.



Insul-Form* offers great advantages as formboards in poured gypsum or lightweight concrete decks.



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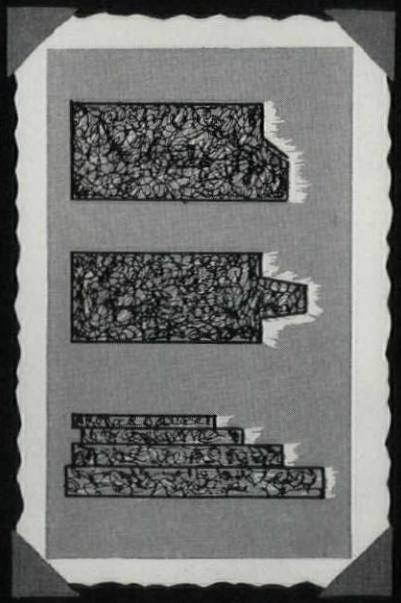

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Continued from page 226

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CAUDILL, ROWLETT & SCOTT, Architects, 3636 Richmond Ave., Houston 27, Tex.

FOOKS, MILNE, PROCTOR & ASSOCIATES, Architects and Engineers, Land Surveyors, 10016A–115th Ave., Grande Prairie, Alberta, Canada.

MORRIS LAPIDUS, HARLE & LIEBMAN, Architects-Interior Designers, 139 E. 56 St., New York 22, N.Y.

FRANCIS E. TELESCA, Architect, 3170 Commodore Plaza, Coconut Grove, Miami, Fla.

LUTES & AMUNDSON, Architects and Community Planners, 200 South Mill St., Springfield, Ore.

Name Changes

CLARENCE ROY, made Partner in firm of JOHNSON-ROY, Landscape Architects and Site Planners, 106 E. Liberty, Ann Arbor, Mich. Formerly WILLIAM J. JOHNSON ASSOCIATES.

GINOCCHIO, CROMWELL, CARTER, DEES & NEYLAND, Architects-Engineers, 416 Center St., Little Rock, Ark. Formerly GINOCCHIO, CROMWELL & ASSOCIATES.

Merger

THE WAKEFIELD COMPANY, Vermilion, Ohio, and ABRASIVE & METAL PRODUCTS COMPANY, Detroit, are to be merged into the WAKEFIELD CORPORATION, also to include the ART METAL COMPANY of Cleveland, recently purchased by ABRASIVE & METAL PRODUCTS COMPANY. Officers of the corporation will be A.F. WAKEFIELD, Chairman; S.J. MENZEL, President; T.D. WAKEFIELD, Vice-President, Electrical Group; PAUL J. BROWN, Vice-President, Abrasive Group; J.M. SURBOOK, Vice-President, Finance, Treasurer and Comptroller; and ERWIN H. HAAS, Secretary.

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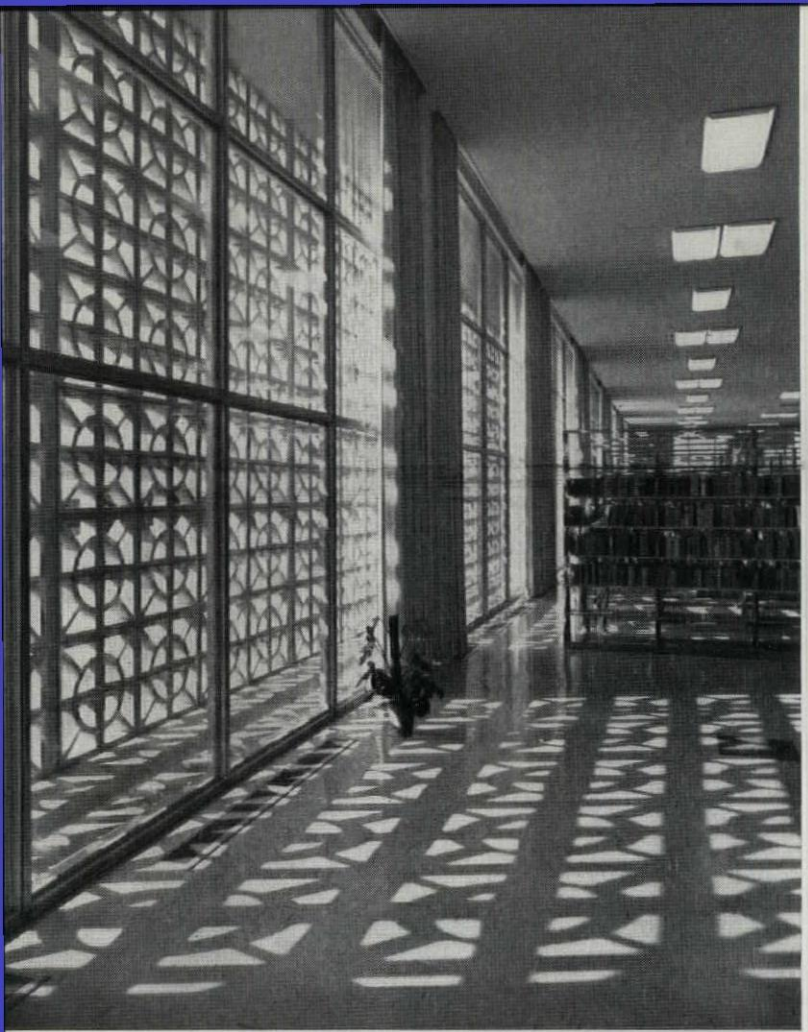
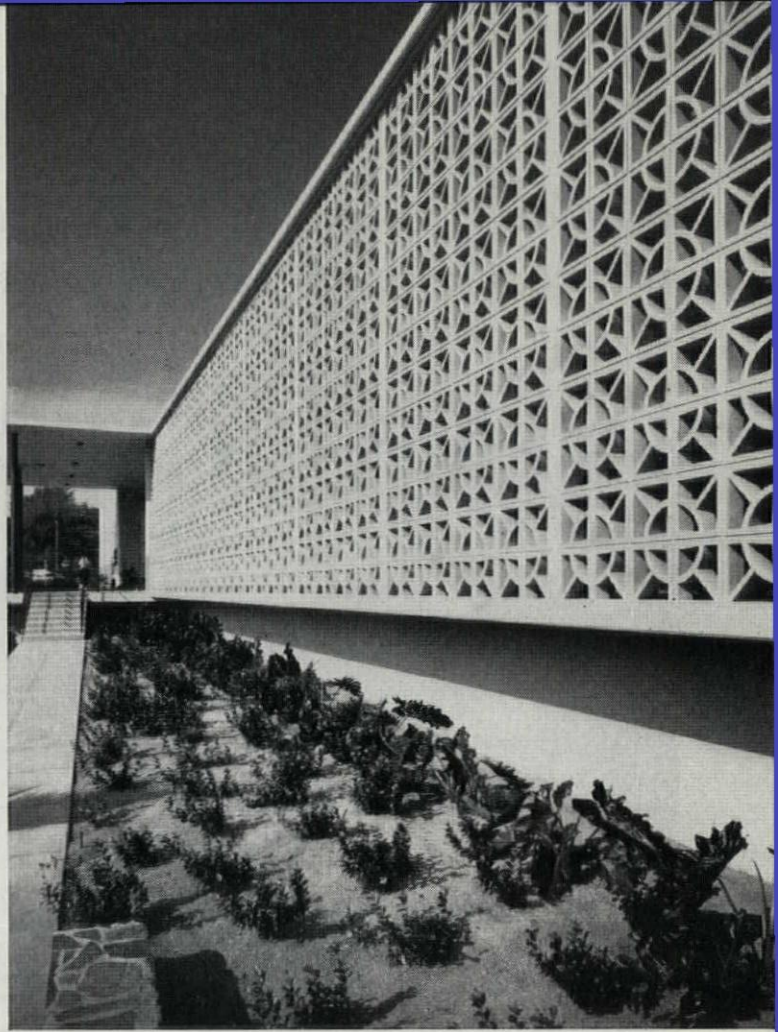


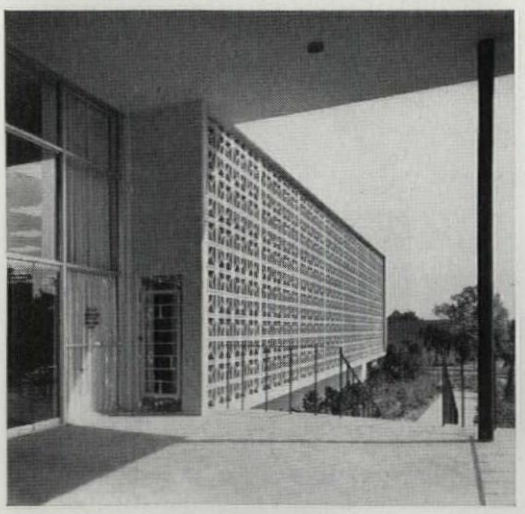
The solar screen softens bright sunlight to subdued serenity, just right for reading.



Exterior eloquence with practical purpose keynotes the horizontal sweep of the libra

Shadow and Substance

from the wonderful new world of BLOCK



THE new face of concrete masonry can add mood and dimension to any structure. In this library, the solar screen of concrete block adds an accent of beauty to the handsome lines of the building, and diffuses the sunlight into soft patterns of interest in the interior. Your local NCMA member can bring you up to date on solar screens of concrete block. See him soon.

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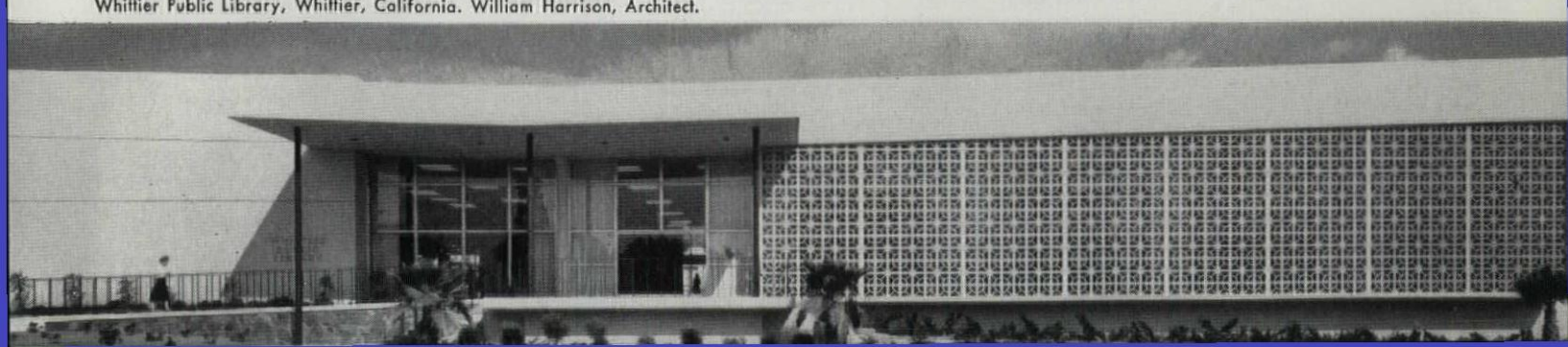
Whittier Public Library, Whittier, California. William Harrison, Architect.



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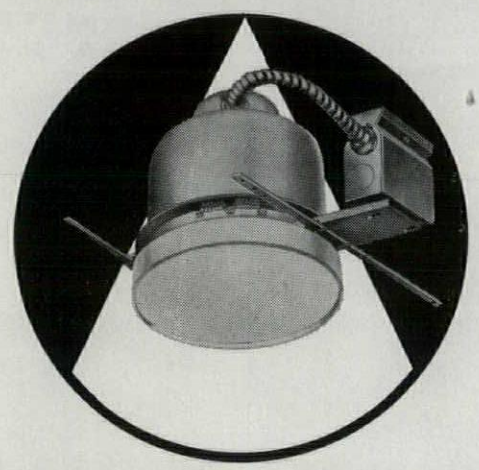
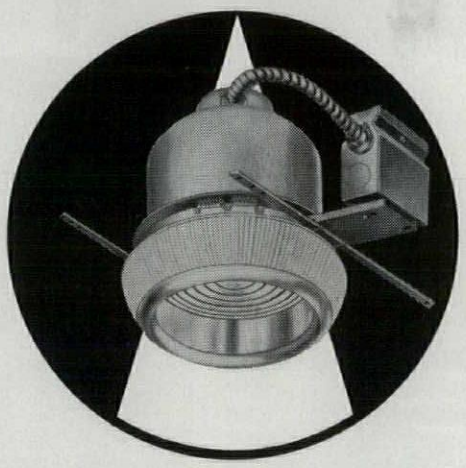
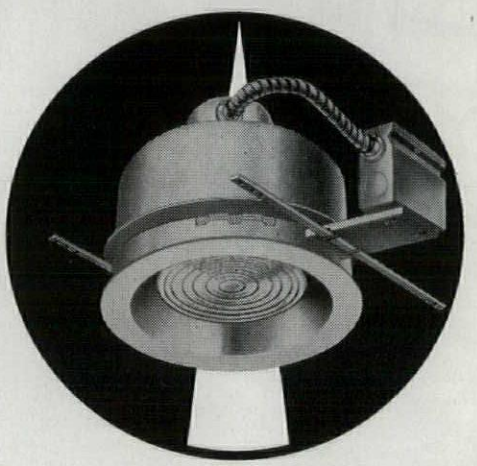


METAL SKIRT/ALBALITE



CLAREMONT



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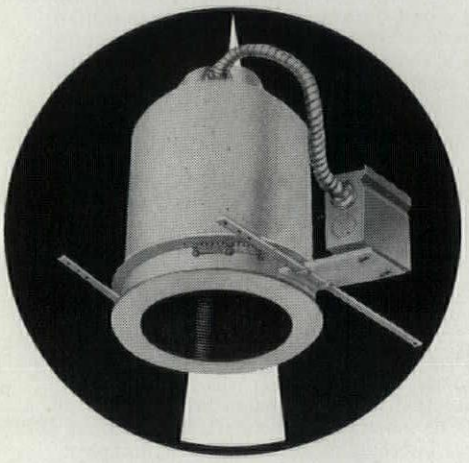

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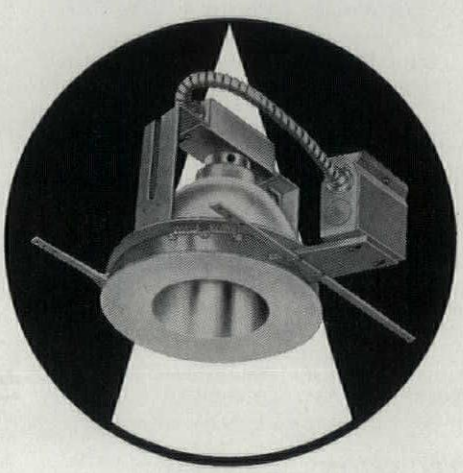

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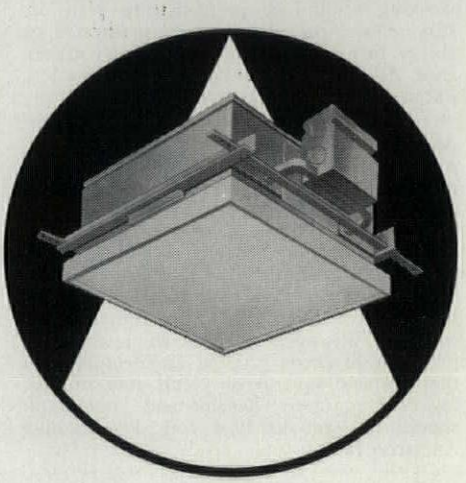

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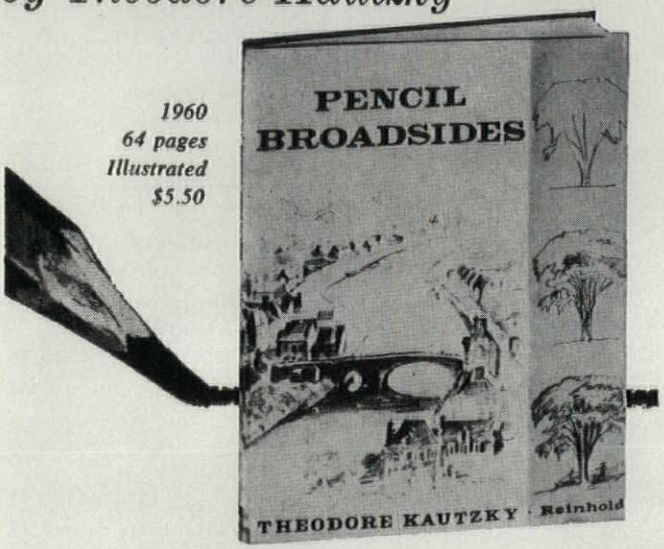

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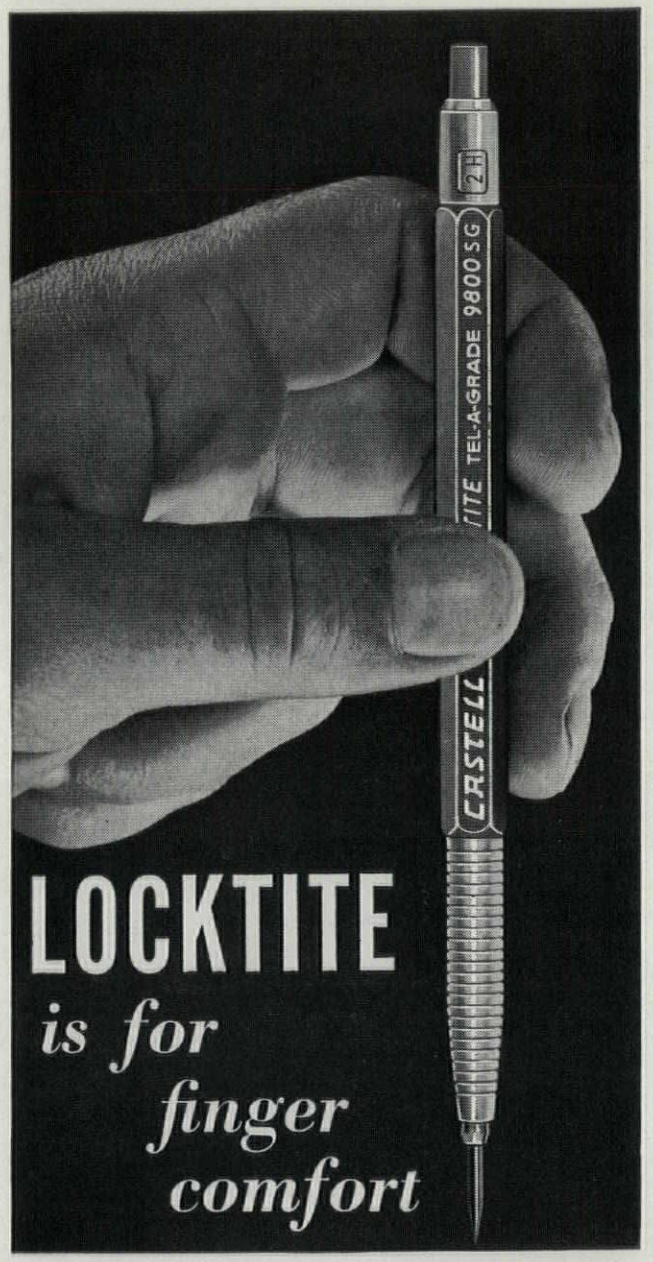

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P.S.

The Architect and His Community is a theme that this magazine pursued for a number of years, and to which we have not paid too much attention recently. It's a theme, however, that we don't want to drop; we will find new ways to redocument it in a short time. For it is an important theme, one that never loses its validity. The devoted architect, whose principal aim in his professional life is to improve the physical character of the community in which he lives and practices, is a hero of architecture who is different from—and in some ways more important than—the world-roving design hero.

Sometimes there is a lack of affection, and even respect, between the two types, and I see no reason why this should be so. When I was in Sarasota recently, I sensed a sort of resentment among the hard-working and devotedly capable architects who limit their work to that part of the Florida west coast, about the international prominence and widely scattered commissions that have come to two of their alumni—Paul Rudolph and Victor Lundy. It seems to me that if a man prefers to spend his creative energies on producing individually fine buildings, wherever their locale may be, that is a valid choice. And if another man is content to limit himself to the often less exciting, sometimes less design-challenging life of the general practitioner who handles all local problems, that also is a completely good decision to make.

The lines aren't sharply drawn, of course. Many an architect or an architectural firm that remains rooted in one community begins spreading branches elsewhere: we have Victor Lundy, Victor Gruen, Welton Becket, Arthur Davis and others as part-time New Yorkers these days—sometimes to the annoyance of the local Elsewhere architects. I understand the Houston architects who arrived there on the Texas Mayflower are up in arms about the amount of local work going to branch offices of people who, according to the Houston boys, should go back where they came from.

And sometimes the securing of more and more work outside the original community makes that home town seem a dull place (or perhaps an inaccessible one). We hear every few months of another rumored or contemplated total move: Saarinen to Connecticut, Yamasaki to New Jersey, and so on. (This leaves the field of the Architect in the Communities of outlying Detroit sections wide open to the younger alumni of those offices who, for the time being, are content to live on local patronage.) Of course, this tendency has its reverse aspect too. I have had talks recently with two New York architects who are anxious to find a more relaxed, more in-depth place to practice than the metropolis.

The satisfactions and rewards of community-conscious local practice are many. First of all, of course, there is a greater likelihood of continuity of work. One does not have to sit worrying where the next world-shaking commission is going to come from; there are always (or almost always) people in the town who need houses, even if the school-board program slows down because of a defeated bond issue, or the local hospital's new-building-fund-drive is lagging. There is likely to be a greater variety of work, and to most architects that is appealing. There is the sense of being part of something that is growing, and helping it grow well. And there is often, for the less-than-great-master architect, the possibility of being a large frog in the local puddle: the local great architect, with all the respect that can go with that position.

There are also disadvantages. There are local prejudices as well as local opportunities. The general practitioner cannot turn down too many patients because he isn't interested in their symptoms; the architect has to do some commissions he isn't too wild about, because not to do them might be either unfair or prejudicial to future relations. And, as in the Houston case, there is always the possibility that the ultimate plum—the job you have been waiting for many years—will go to an out-of-town firm with tentacles reaching into your community.

There is no right and no wrong about any method of practice so long as it is pursued to the best of one's ability. Thank goodness there are architects who prefer to roam and architects who prefer to stay at home. Although I think they must respect one another, I hope they continue to stimulate one another.