MAGAZINE OF BUILDING

architectural **forum**

March 1954

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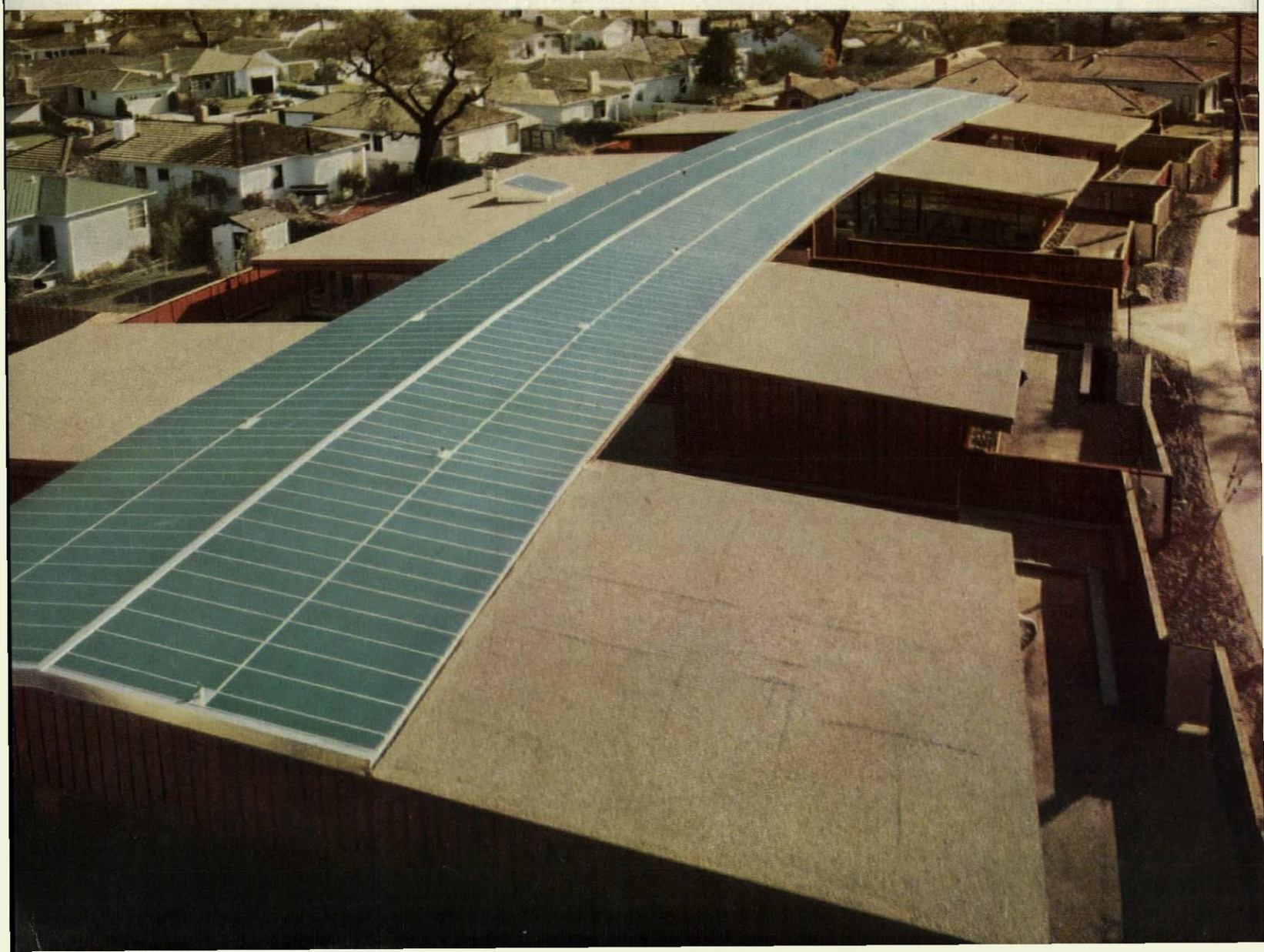

Each room decorates the other...

through this lovely door

Designed for Cappel, MacDonald Co., Detroit, by John B. Wisner, A. I. D., New York.

See how this door of translucent glass picks up the colors and light in the room beyond. Notice how it blends them and brings them through for a charming, decorative effect. Yet each room has privacy.

The Blue Ridge *Securit** Interior Glass Door is a single piece of glass patterned on both sides. And it's tough—tempered to take hard usage.

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See your L·O·F Glass Distributor or Dealer about this new door. He's listed in phone book yellow pages in many principal cities. Or write Libbey·Owens·Ford Glass Company, Patterned & Wire Glass Sales, B-2034 Nicholas Building, Toledo 3, Ohio. *®

BRIEF DATA

Glass—⅜″ thick. Muralex pattern on both surfaces.

Tempered—Three to five times stronger than untempered glass of same thickness.

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Standard Sizes—2′6″ x 6′8″ 3′0″ x 6′8″
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—also 4 sizes for openings of these dimensions with proper allowance for clearances.

For more complete information, see the Securit Door insert in the Sweet's Architectural File.

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FOR PHARMACEUTICAL LABORATORY

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This 96-page comprehensive guide for architects contains complete technical details as well as stock sizes, general instructions and specifications on *all* types of Hauserman *Movable* Interiors. Write to The E. F. Hauserman Company, 7142 Grant Avenue, Cleveland 5, Ohio.

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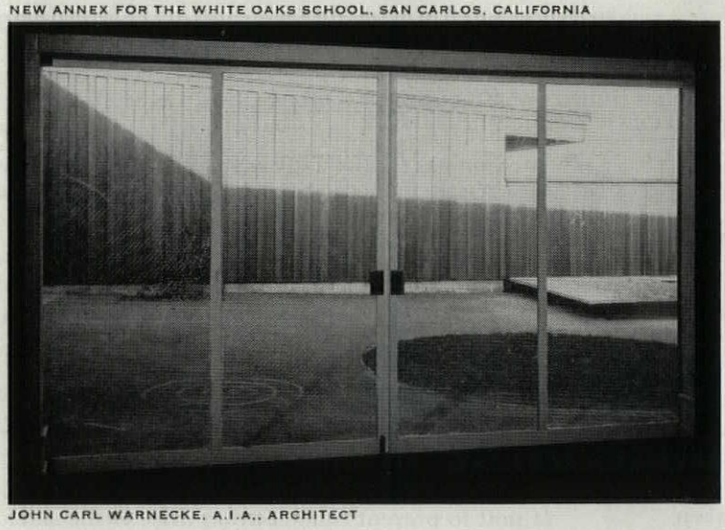
Arislide

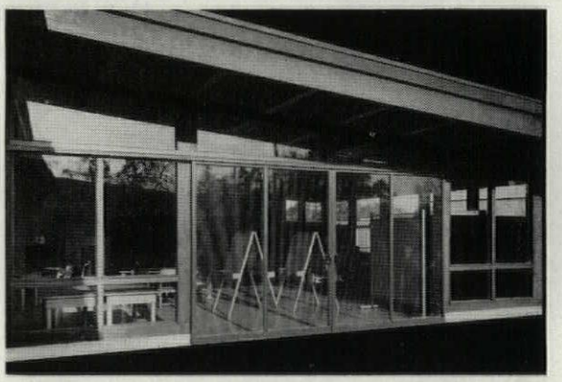
Steel Sliding Doors

for modern schools

NEW ANNEX FOR THE WHITE OAKS SCHOOL, SAN CARLOS, CALIFORNIA



JOHN CARL WARNECKE, A.I.A., ARCHITECT



When you're designing a school around the modern principle of indoor-outdoor education, keep in mind Arislide doors.

Arislide's many quality features include roller bearing rollers, stainless steel-capped track, bronze hardware and spring bronze weather-stripping.

Note: Michael & Pfeffer supplied all Ariston solid-section steel windows used in this school.

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City and State _____

There's an Arislide door to fit your job!
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Since 1912

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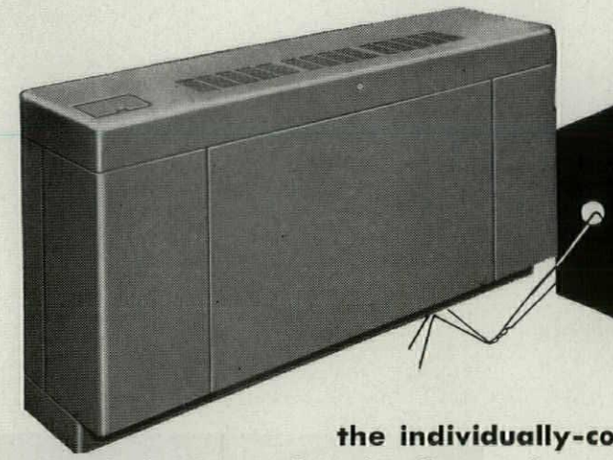
Check the reasons why the popular choice for summer cooling and winter heating is



The REMOTAIRE by AMERICAN-Standard

the individually-controlled unit that filters and circulates the air all year 'round in central-plant, multi-room installations

. . . . . .

Architects, builders and heating contractors like the Remotaire because it's versatile, easy and economical to install, space saving.

Building owners like the Remotaire because it provides healthful, draft-free comfort conditioning all year 'round with minimum attention.

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- Easy to service. Every part of the assembly can be reached easily, quickly.
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- Special electrical junction box is easy to get to.
- Sturdily built . . . doesn't have to be pampered in installation. (Reinforced grille will support weight of 200 lb. man!)
- Each unit is individually controlled . . . temperature in each room can be changed without affecting adjoining space.
- The Remotaire is quiet. No whistling-jet noises.
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- Large filters . . . keep air fresh and clean.
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For further information on the Remotaire see Sweet's Architectural File or contact your nearest American-Standard sales office for descriptive literature.

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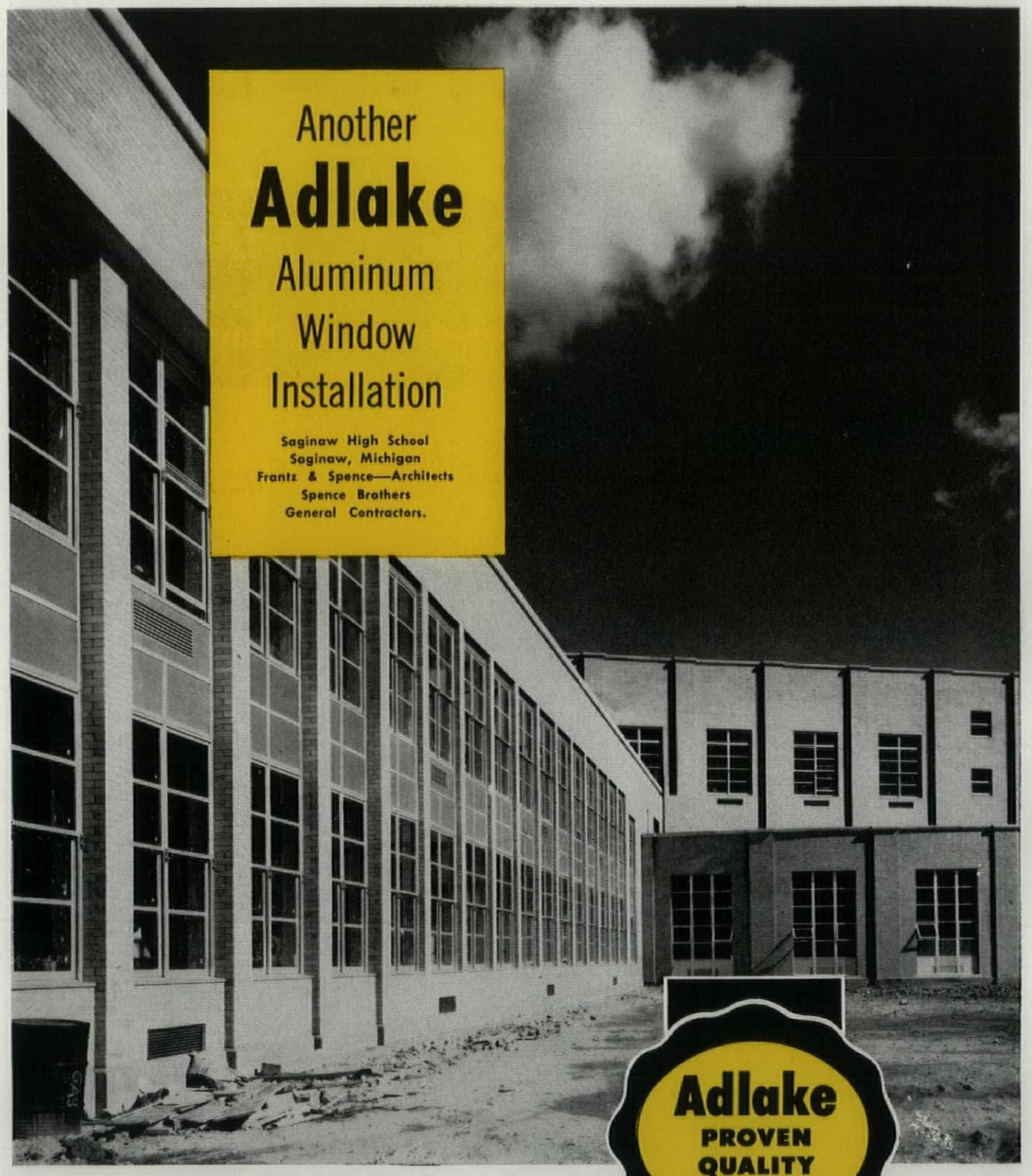

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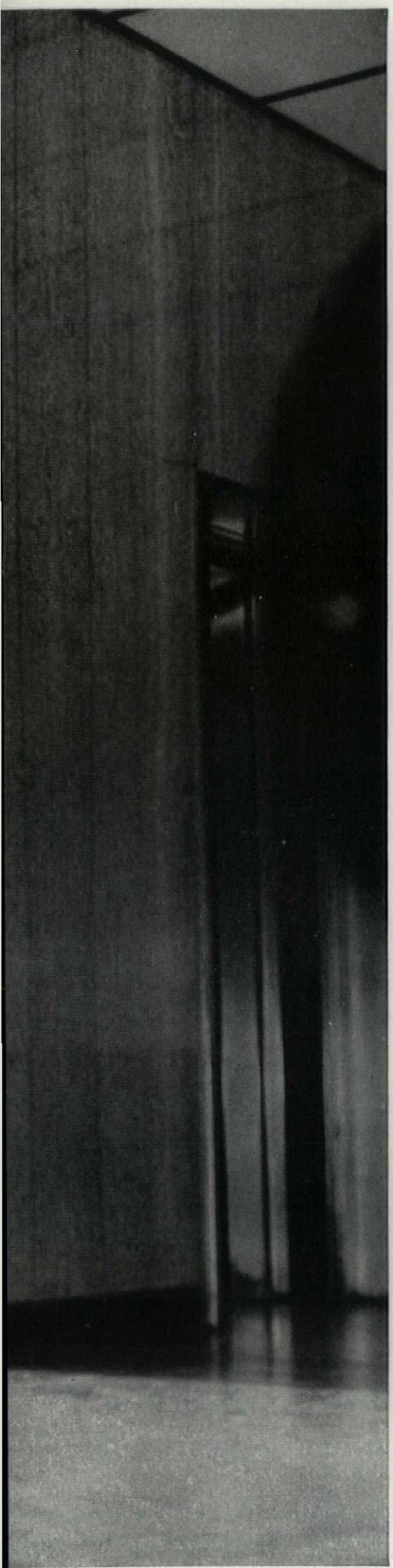

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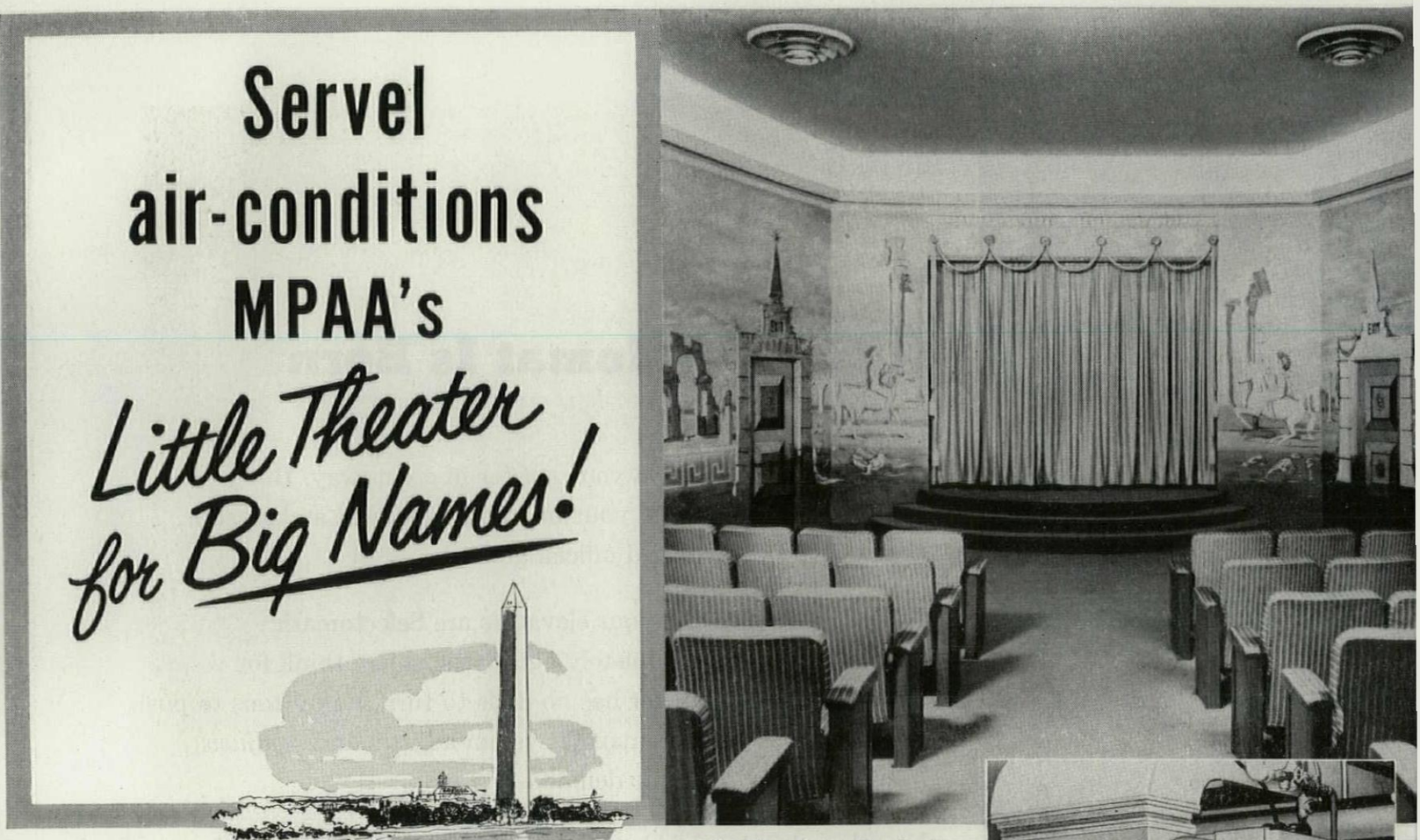
Servel air-conditions MPAA's *Little Theater for Big Names!*



Interior of the Servel air-conditioned screening room of MPAA's unique Academia Theater in Washington.

It was built by the Motion Picture Association of America especially for entertaining VIPs—and looks it!

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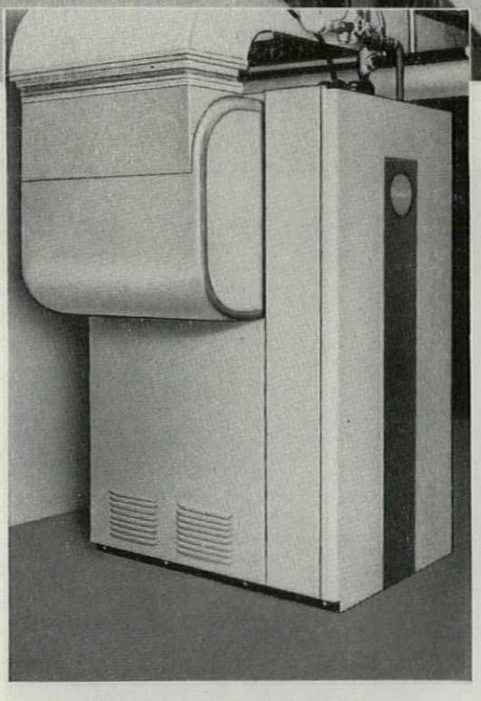

Servel ***Wonderair*** *All-Year air conditioners in Academia Theater. Ideal for commercial and residential installations. Five-year warranty.*

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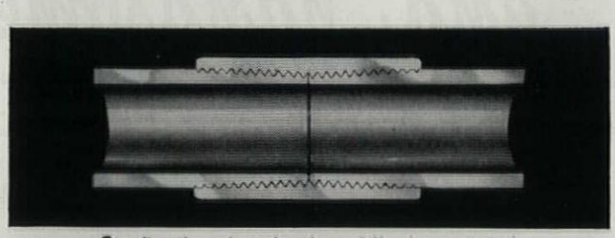
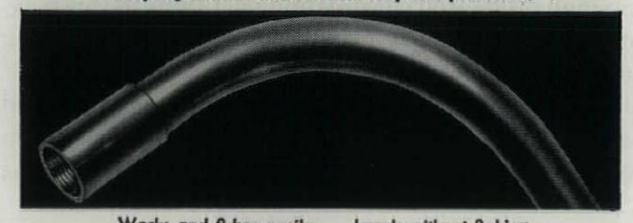


Coupling threads and surfaces fully zinc protected.



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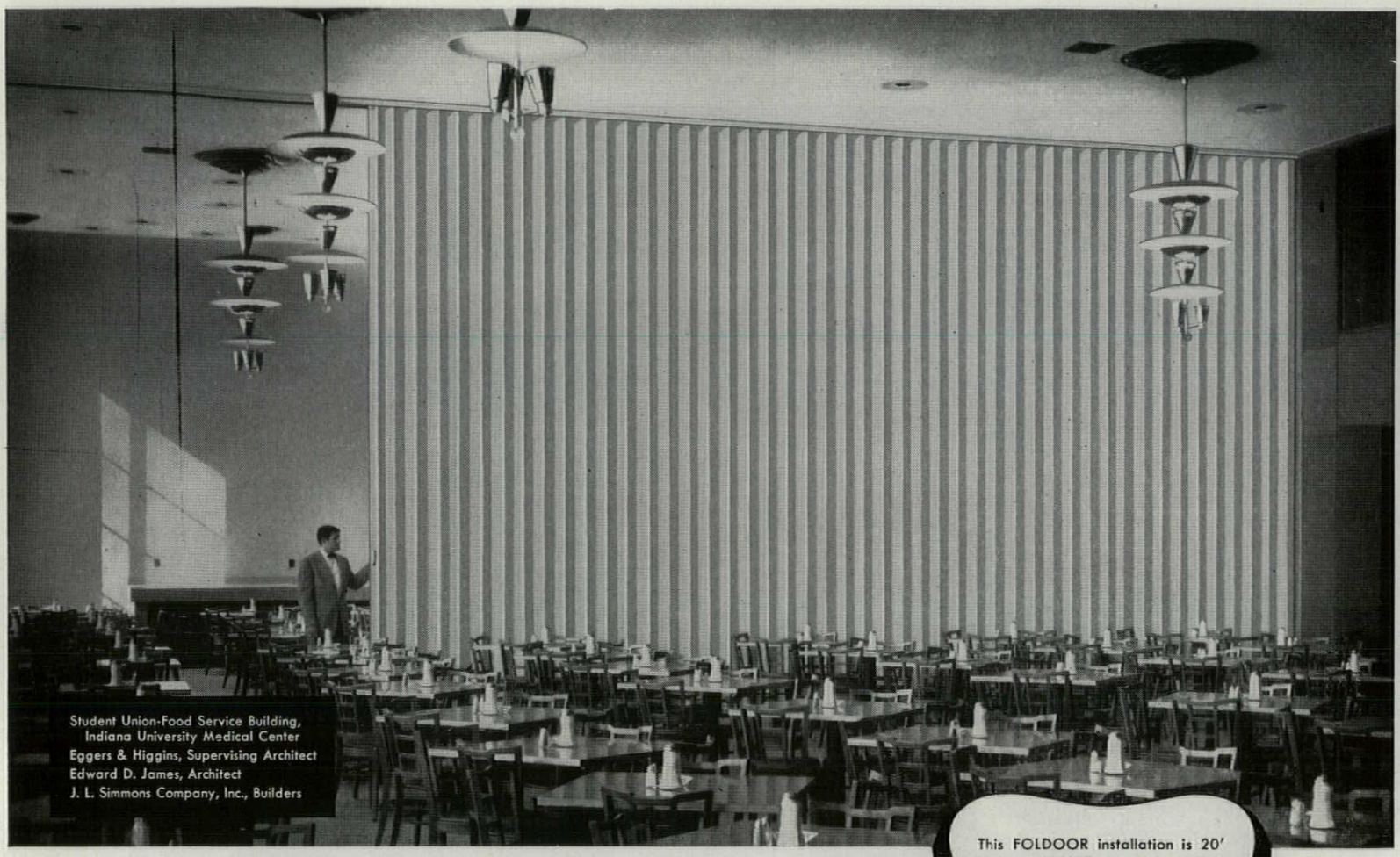

Student Union-Food Service Building,
Indiana University Medical Center
Eggers & Higgins, Supervising Architect
Edward D. James, Architect
J. L. Simmons Company, Inc., Builders

This FOLDOOR installation is 20′ high and 48′ 10″ wide. Motor driven, it opens and closes at a rate of 35 feet per minute and is stored in a pocket. Motor panel is easily available for repair.
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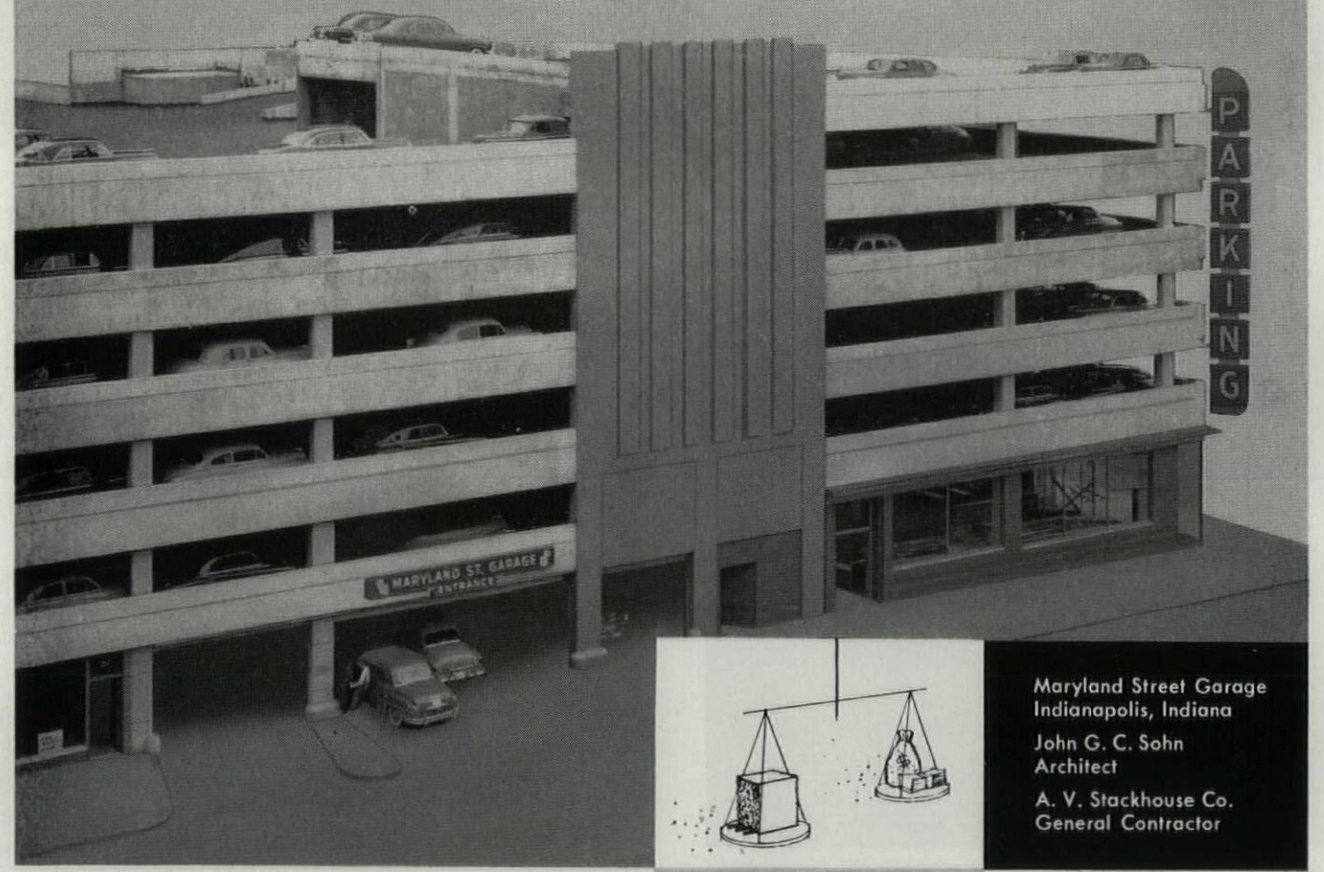
The architect says...

"ONLY REINFORCED CONCRETE could be used economically"



Maryland Street Garage
Indianapolis, Indiana

John G. C. Sohn
Architect

A. V. Stackhouse Co.
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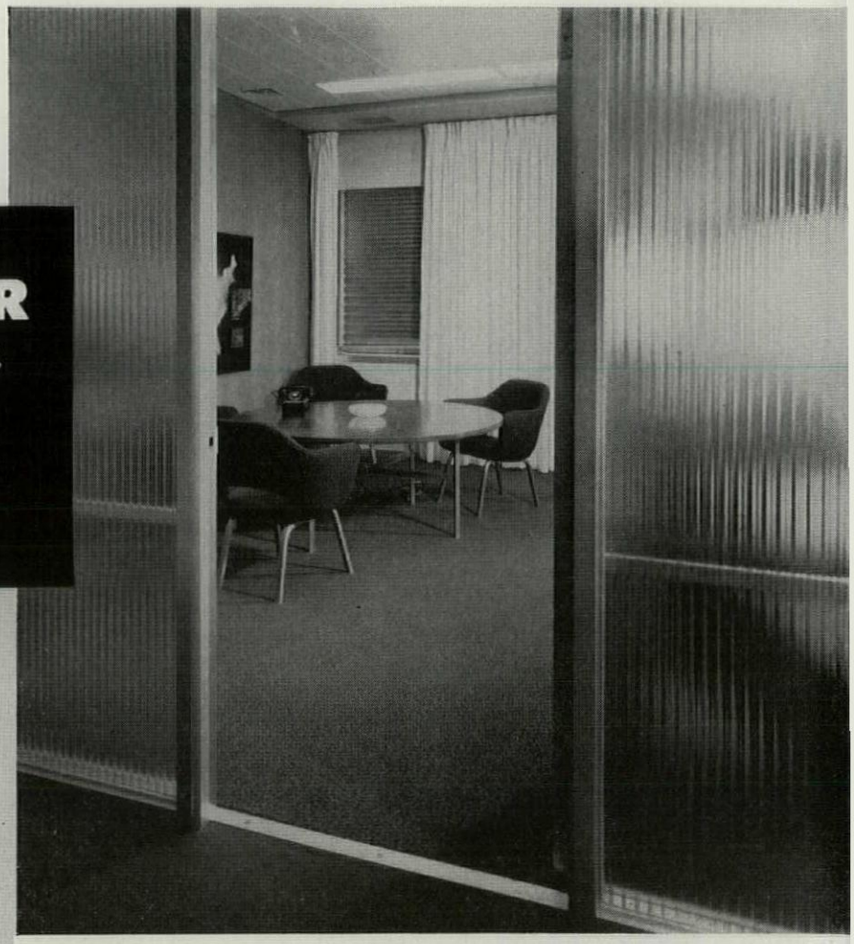

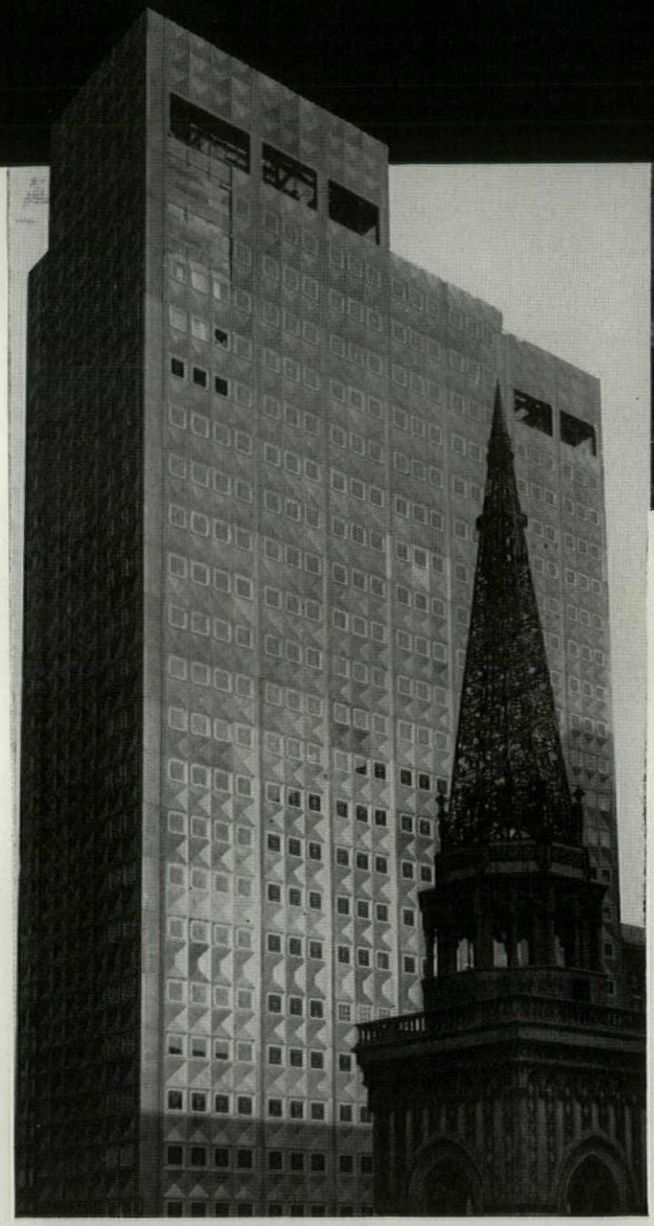

This faceted aluminum wall of the Alcoa Building sets a new pattern in tall structures. Architects: Harrison & Abramovitz, N. Y. C., Assoc. Architects, Mitchell & Ritchey & Altenhof & Bown, Pittsburgh, Pa.; General Contractor, Geo. A. Fuller Co., N. Y. C. & Pittsburgh; Glazing Contr., Pittsburgh Plate Glass Co., Pittsburgh, Pa. In charge for Aluminum Co. of America. Thomas D. Jolly, L. B. Kuhns and E. C. Collins.

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The glistening aluminum exterior of the new office building o Aluminum Company of America in Pittsburgh is matched in modern practicality and beauty by the extensive use of Mississippi Broadlite partitions. High levels of lighting for efficiency and effect are attained by this translucent, light diffusing glass which floods adjoining areas with softened, "borrowed light." And this helps create a pleasant atmosphere of spacious, friendly working quarters.

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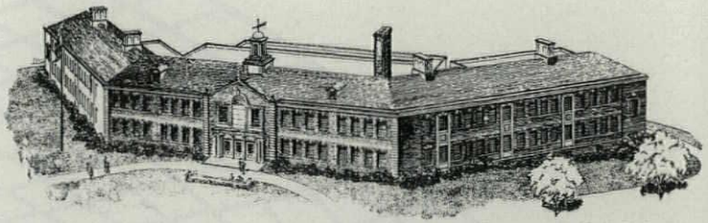
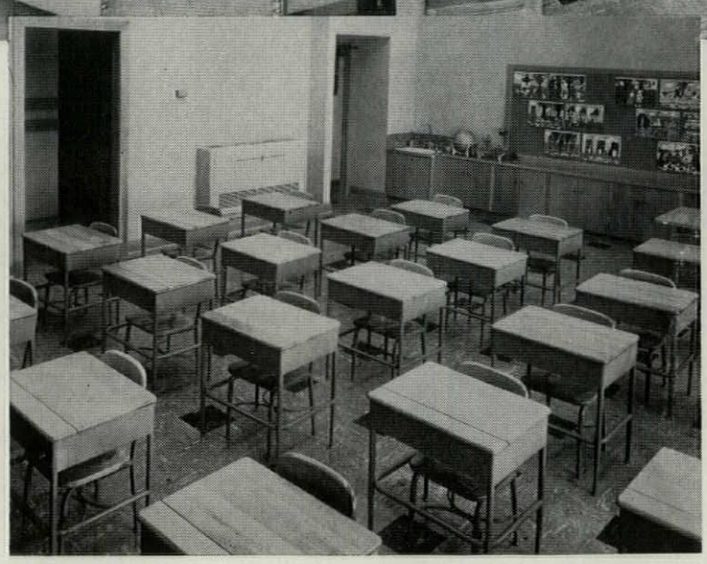


Mercer Road School—Shaker Heights, Ohio

KenRubber floors used throughout new Shaker Heights school



Outstanding quiet and comfort underfoot will not diminish with years of constant traffic . . . because resilient KenRubber has all the cushioning firmness and durable strength of coiled steel springs.

KenRubber is used in all classrooms. Attractive colors lift student morale, resilience deadens unnecessary sounds. Maintenance is extra economical with damp moppings and occasional no-rub waxings.

The vulcanizing process used in making KenRubber is the same that gives quality automotive tires their lasting strength and resistance to repeated shock. That's why KenRubber muffles floor clatter . . . eases every footfall. And that's why KenRubber is a restful floor . . . one that reduces fatigue for student and teacher alike . . . encourages concentration during study and lecture hours.

KenRubber colors are lighter, brighter...ideal for use in today's auditoriums, school rooms and offices. The wide modern selection available ranges from deep, clear dark colors to crisp, clean light tones . . . makes any flooring design desired simple to plan . . . quick and economical to execute.

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Architect CHARLES BACON ROWLEY says:

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Charles Bacon Rowley has been responsible for many of the most noteworthy educational installations in the Cleveland area...where he has been practicing since 1921. To his credit are the designs for outstanding schools of every kind . . . including college buildings as well as secondary units. Because of this wide experience, Mr. Rowley knows intimately what school-aged children—and their teachers—need . . . has chosen KenRubber many times for its colorful beauty, resilient strength and durable economy.

Specifications and Technical Data

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THICKNESSES: KenRubber is available in .080" and 1/8" gauges for normal flooring demands . . . 3/16" gauge for extra-heavy duty applications.

SIZES: Standard tile size is 9" x 9" . . . with a wide range of special sizes available on order.

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(per sq. ft.)

	Standard (.080") Gauge	1/8" Gauge	3/16" Gauge
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If you haven't worked with a Kentile, Inc. Flooring Representative, you can't know how valuable his technical training and years of practical experience can be to you. Call on him for every flooring problem . . . whether remodeling a small area or constructing a major project. For his name write the nearest of the Kentile, Inc. offices listed below.

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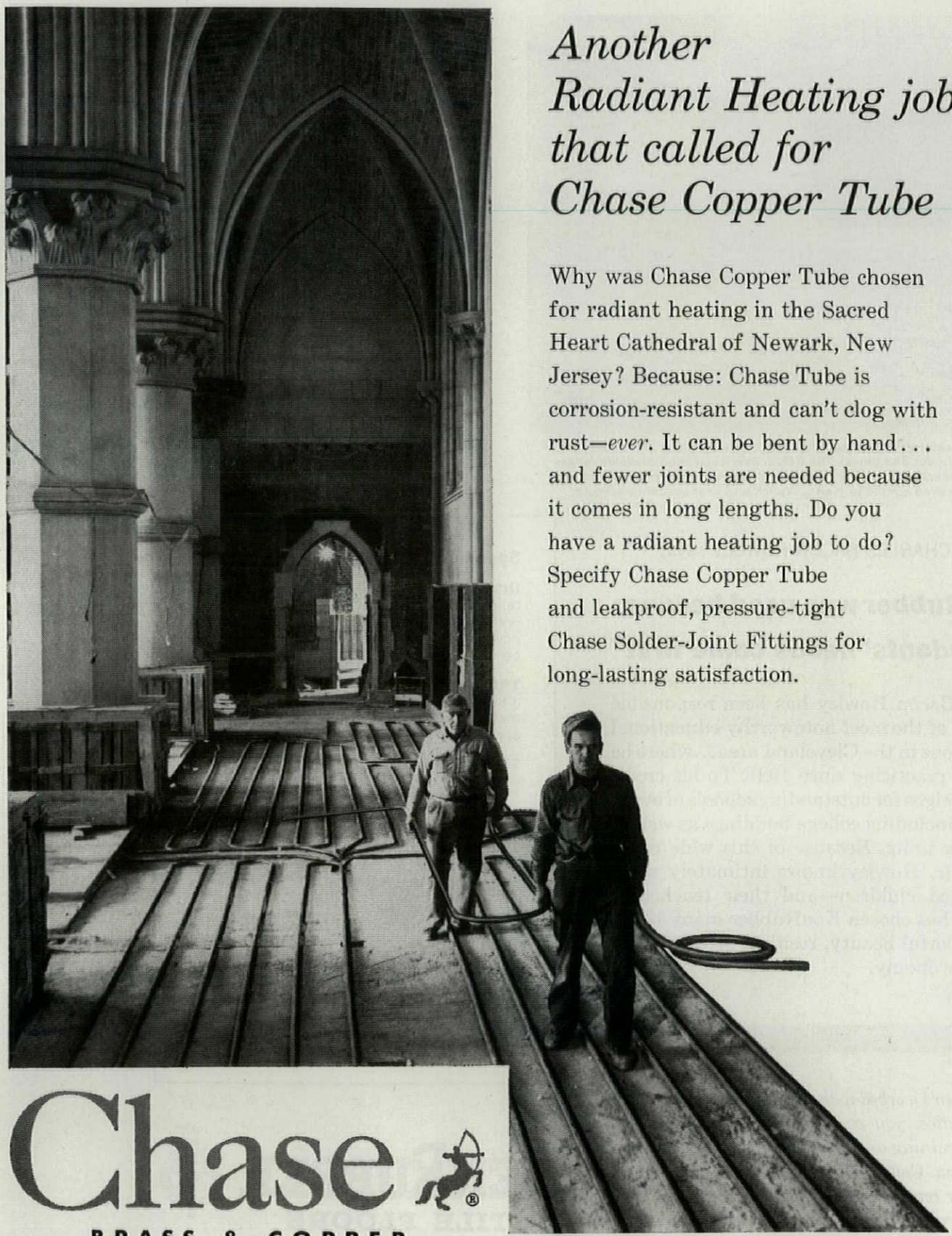

Another Radiant Heating job that called for Chase Copper Tube

Why was Chase Copper Tube chosen for radiant heating in the Sacred Heart Cathedral of Newark, New Jersey? Because: Chase Tube is corrosion-resistant and can't clog with rust—*ever*. It can be bent by hand... and fewer joints are needed because it comes in long lengths. Do you have a radiant heating job to do? Specify Chase Copper Tube and leakproof, pressure-tight Chase Solder-Joint Fittings for long-lasting satisfaction.

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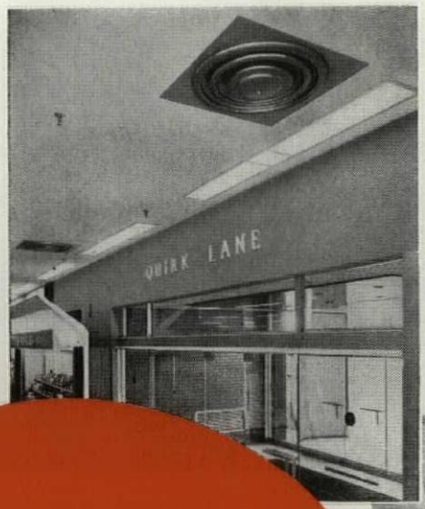
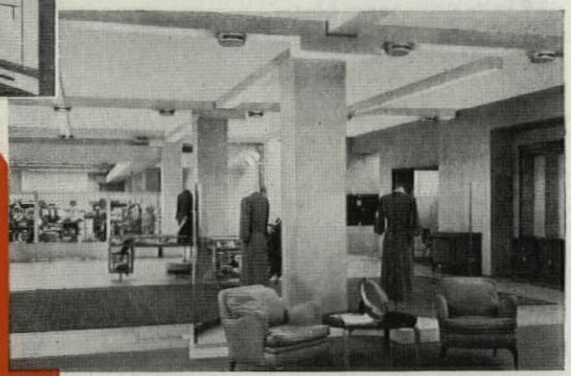
Boston	Dallas	Indianapolis	Minneapolis	Philadelphia	St. Louis	(†sales office only)



THE HECHT CO., Arlington, Va. (left), relies on Kno-Draft to bring conditioned air into its Parkington-Arlington store. Kno-Draft's post-installation adjustability of air volume and direction reduces preliminary "engineering," maintains exact comfort level.

KAUFMANN'S, Pittsburgh, Pa. (below), gets draftless distribution of air to large open areas through Kno-Draft High Pressure Air Diffusers, Type HPC—using small space-saving exposed ducts, easy to install. Units adjustable from 90 to 180 c.f.m. or may be shut off.

ASSURING COMFORT FOR DEPARTMENT STORE CUSTOMERS



FAMOUS-BARR, St. Louis, Mo. (below), keeps its Southtown store comfortable for customers with regular Kno-Draft Adjustable Air Diffusers. Air circulates without drafts, and changes in store layouts present no problem as Kno-Draft Diffusers are adjustable *after* installation.

HUTZLER'S, Towson, Md. (above), uses special Kno-Draft High Pressure Air Diffusers that permit the air supply in a given area to be changed without unbalancing the air delivery of the other outlets, or creating objectionable noise. Installed cost comparable to conventional system.

STORES, restaurants, office buildings, factories—wherever there is an air distribution problem—will do better with Kno-Draft. For the full story, send for the latest edition of the Kno-Draft Data Book. Use the handy coupon or write Connor Engineering Corporation, Danbury, Conn.

CONNOR ENGINEERING CORPORATION

kno·draft®

adjustable air diffusers

see our catalog in ARCHITECTURAL FILE or write for copy

CONNOR ENGINEERING CORP.
Dept. D-34, Danbury, Connecticut

Please send me the *new edition* of the Kno-Draft Data Book—without obligation, of course.

Name.....

Position.....

Company.....

Street.....

City..... **Zone**..... **State**.....

watch these walls...

go into hiding!

By using "Modernfold" doors this student lounge can easily handle up to three separate activities at a time. Yet when the time comes to turn it back into an all-purpose area, room divisions literally disappear! Recessed pockets behind the wall panels hold the "Modernfold" doors completely hidden—but instantly available. Just another example of how architects are using "Modernfold" doors to achieve efficient—and attractive—use of space.

Your ideas come to life... for life with "MODERNFOLD" doors

For every room division or door closure problem, there's a simple, economical, space-saving solution. That's "Modernfold," the original folding door.

Specifying "Modernfold" doors keeps clients happy. For these steel framed, vinyl-covered doors can't be equaled *anywhere* for quality of design...for quality and strength of materials.

And because this line is *complete,* you're sure to save time and get exactly what you want when you specify better looking, easier operating, longer lasting "Modernfold" doors.

Sold and Serviced Nationally

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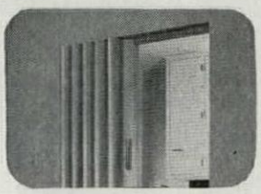
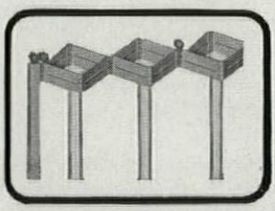
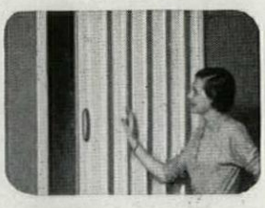
In Canada:
New Castle Products, Ltd., Montreal 6.



Better Looking
Fabric covering conceals all operating mechanism. No cornice needed. Adjustable trolleys keep doors hanging flush to jamb.

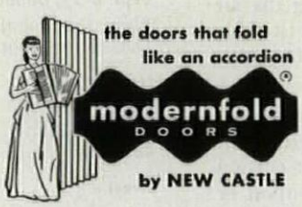


Longer Lasting
Balanced hinge construction both top and bottom. Trolleys attached at hinge intersections. No sidewise twist or pull possible.



Better Background
Over 100,000 "Modernfold" doors now in operation—a backlog of space engineering experience that's your guarantee of satisfaction.

YOU CAN'T GET MORE IN A FOLDING DOOR



New Castle Products, Inc.
P. O. Box 901
New Castle, Indiana

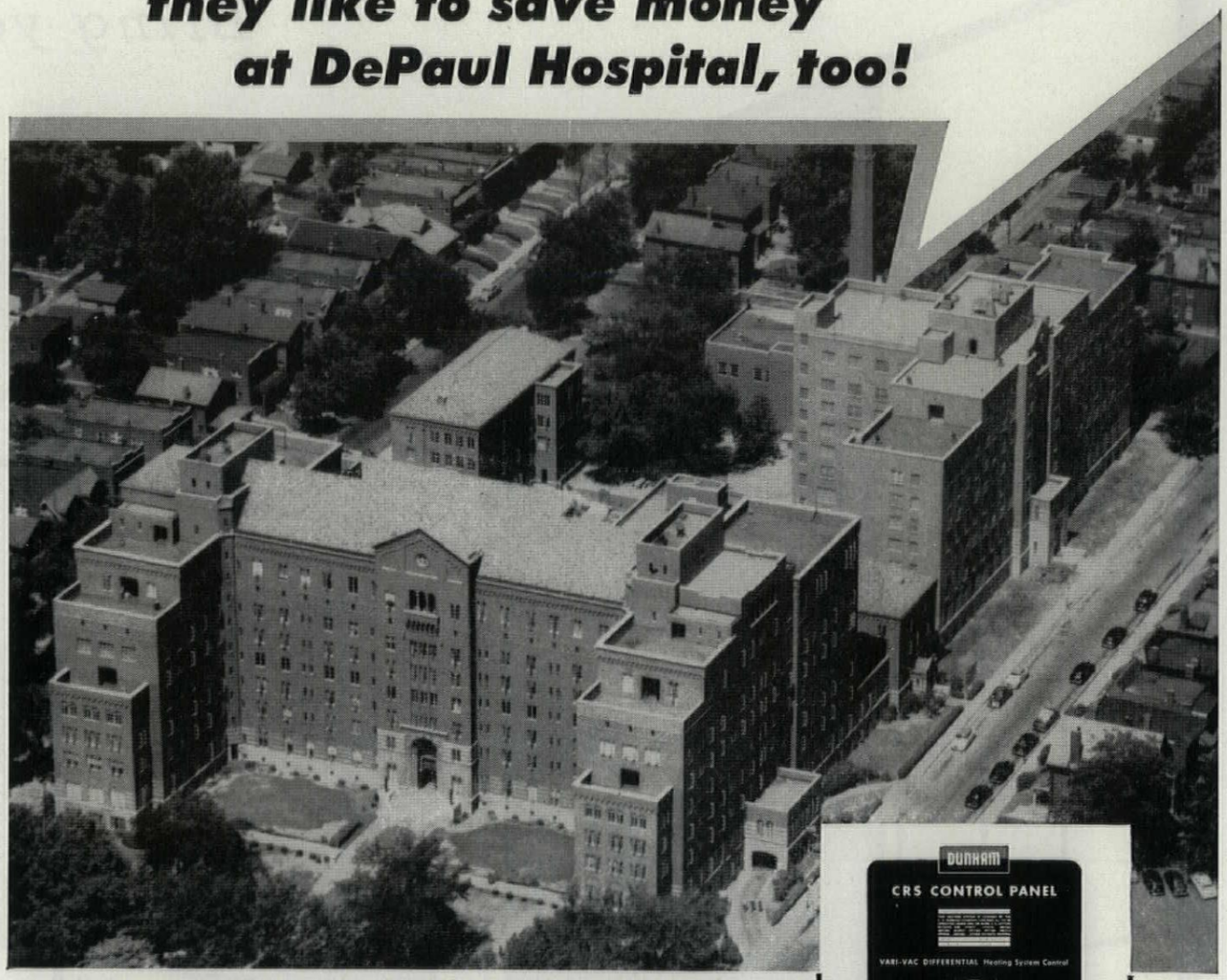
☐ Please send full details on "Modernfold" doors.

Name.....

Address.....

City.....*County*.....*State*.....

they like to save money at DePaul Hospital, too!



DePaul Hospital, St. Louis, Mo. Architect: Maguola and Quick, St. Louis
Mech. Engr.: Harry F. Wilson, St. Louis • *Htg. Contr.:* Elliott and Barry Eng. Co., St. Louis

47,000 gallons of oil saved with DUNHAM VARI-VAC HEATING

DePaul Hospital, St. Louis, Mo., *saved over 47,000 gallons of fuel oil in a single heating season* . . . after changing over to Dunham Vari-Vac® Heating.

Hospital authorities state, "Even if we'd saved little or nothing on fuel, we'd still call Vari-Vac a good investment because of the greater comfort we enjoy."

Dunham patented temperature controls on high-vacuum steam mains can lower *your* fuel bills, too. That's because outside weather and inside heat losses *promptly* and *automatically* control steam consumption so that *you use less steam.* What's more, you can "zone heat" with Vari-Vac to meet varying conditions of building exposure and occupancy.

Full cost-cutting facts and figures on Dunham Vari-Vac Heating are yours if you just clip and mail the coupon.

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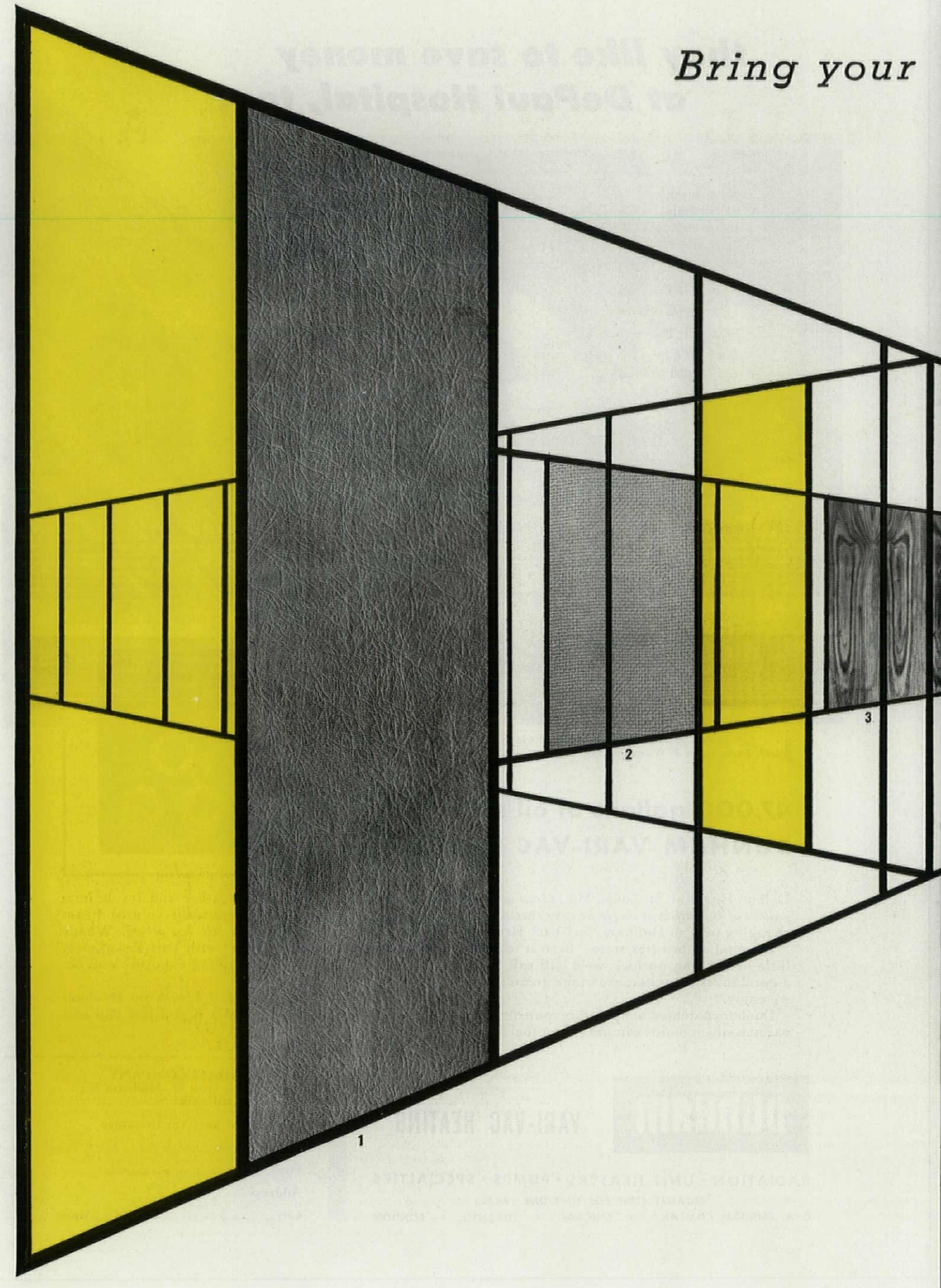

wall problems to

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We're specialists . . . in wall coverings. That's why the wall covering division of United States Plywood Corporation has come to be called "Wall Center, U. S. A." That's why you will always find, among the job-proven products described and illustrated on these pages, the one "right" application. Like these, for example:

On walls in hotels, schools, hospitals, etc., that must be kept fresh-looking.

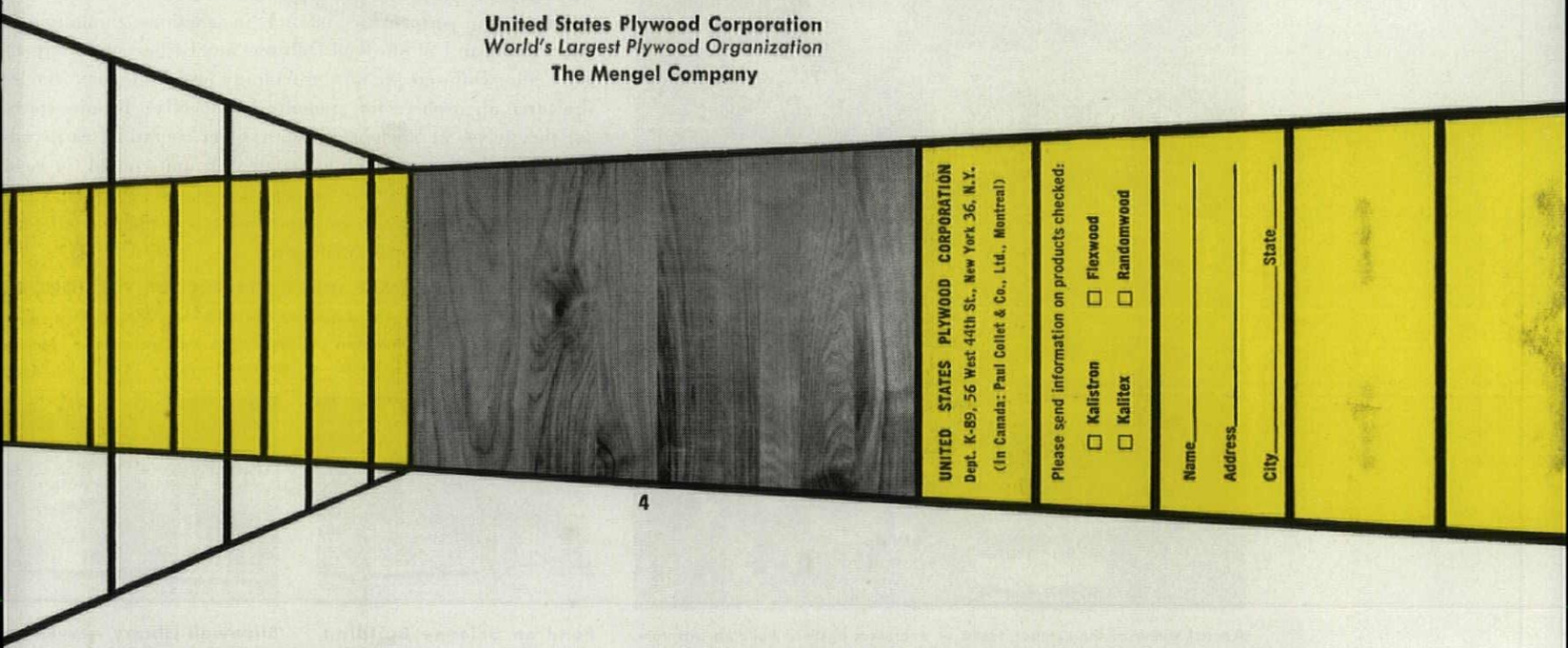
On walls that "take a beating" from traffic, equipment, tradesmen, children.

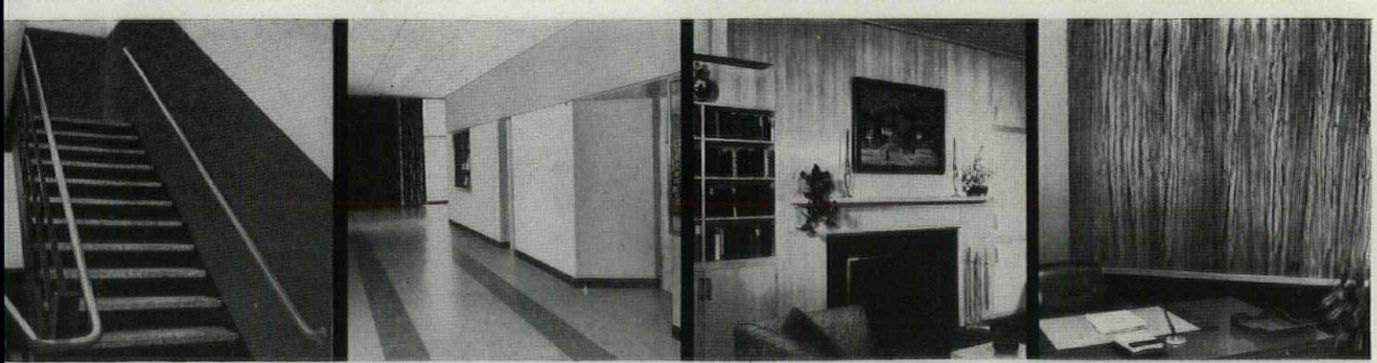
On curved, rounded or straight walls that call for the beauty of wood panelling.

On walls that demand the distinction of wood panelling—on a limited budget.

Want more information about these wear-defying yet decorative wall coverings? The coupon below at right is for your convenience.

United States Plywood Corporation
World's Largest Plywood Organization
The Mengel Company





1. Kalistron A transparent vinyl "coat of armor" shields this rich wall covering . . . . its color is fused to the underside. Virtually impervious to scratches, scuffs, stains, roughhouse. A damp cloth cleans it. 33 colors. Marvelous Kalistron adhesive prevents open seams. Ideal wherever traffic is heavy. Also made in matching upholstery grades.

2. Kalitex Gives more protection than any other wall covering at anything like the price. Made much like Kalistron, with the same vinyl-protected beauty. Low in cost, yet its luxurious rough textured pattern is distinctively different. Combines relatively low cost with great beauty and durability. Superb in hospitals, hotels, public buildings, etc.

3. Flexwood Genuine wood panelling in flexible form. Hence, you can curve it, wrap it around posts, get stunning matched grain effects over wide areas. Meets fire code requirements. Over 1.7 million feet installed in 1953. Every installation guaranteed. Widely used in banks, offices, public rooms, etc., for new construction and alteration jobs.

4. Randomwood Similar to Flexwood except the shading of the wood varies, giving an interesting "random" effect. Use it where imagination is high but budget is low. May be hung by any good mechanic. Effective for a whole room or a dramatic single wall, in homes, small offices, anywhere. First cost is last cost for years.

BARBER COLMAN

"UNI-FLO" ENGINEERED

Air Distribution

. . . specified for major air conditioning project at

SOUTHERN METHODIST UNIVERSITY

Aerial view of the campus, scene of enormous postwar building program. Architect: Mark Lemmon. Engineers: Zumwalt & Vinther, J. W. Lacy. Gen'l Contractors: Henger Construction Co., Robert E. McKee, O'Rourke Construction Co. Air Conditioning Contractors: C. Wallace Plumbing Co., Farwell Co., Martyn Brothers, Inc.

First great university to initiate a comprehensive program for air conditioning classrooms, Southern Methodist University now has comfort cooling in eleven buildings. Another air conditioned building is under construction, two are proposed, and the application of air conditioning to four existing buildings is under consideration for the Dallas institution.

Based upon performance in early installations, thousands of Barber-Colman Uni-Flo Wall Diffusers and Grilles, plus Venturi-Flo Ceiling Diffusers are now providing a healthful, comfortable, draft-free atmosphere for students and faculty. Results speak for themselves in efficient diffusion, quiet operation, easily adjustable deflection and volume control in units noted for rigid construction and attractive, modern design. The complete story on finest air distribution equipment made is available from your nearby Field Office or by writing us.

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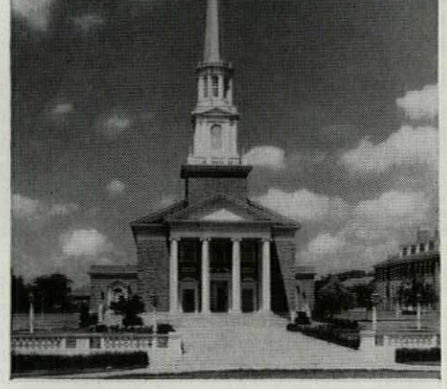
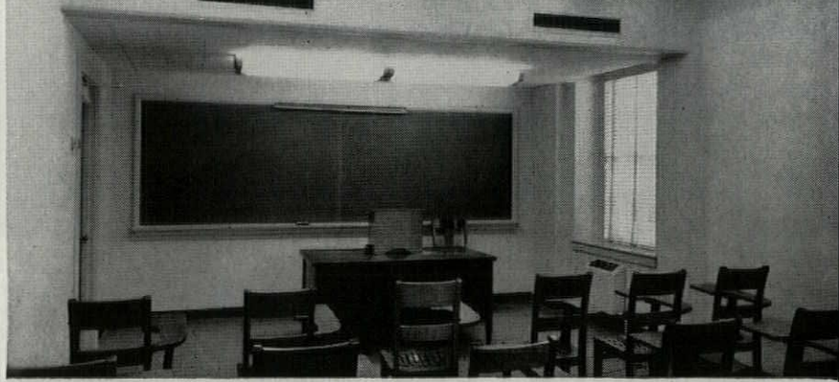
Fondren Science Building, where 224 Uni-Flo Sidewall Diffusers and Venturi-Flo Ceiling Diffusers distribute air evenly, quietly.

Bridewell Library required 141 Uni-Flo Sidewall Diffusers and 63 Venturi-Flo Ceiling Diffusers for quiet, draft-free air flow.



Perkins Chapel—34 Uni-Flo and Venturi-Flo units assure quiet comfort. Similarly equipped is Highland Park Methodist Church located on the campus.



Classroom in Kirby Hall, Perkins Quadrangle. In this new Quadrangle, seven new buildings have been equipped with Barber-Colman Air Distribution products since 1950. Note double deflection "MA" Sidewall Diffusers which have integral volume control, easily removed cores.

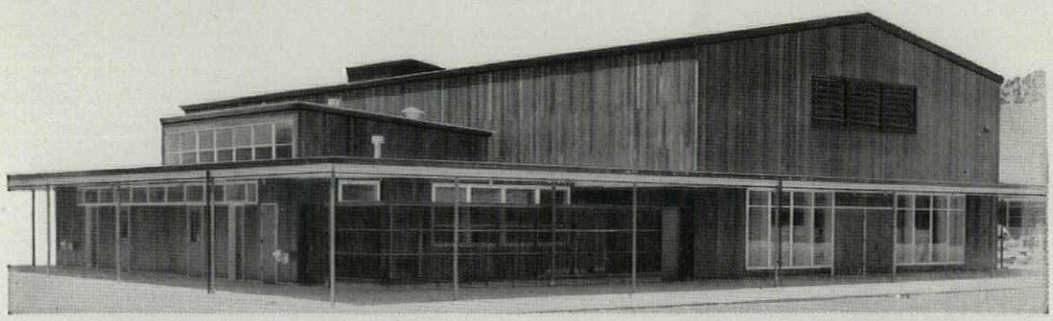
BARBER COLMAN

ELECTRIC

Control Center

Modern electric control system provides low-cost solutions to heating and ventilating problems at TIERRA LINDA SCHOOL

ocation: San Carlos, California. *Architect:* John Lyon Reid. *Consulting Engineer:* Dwight Coddington. *Heating Contractor:* Schlegel Plumbing Contractors, Inc.



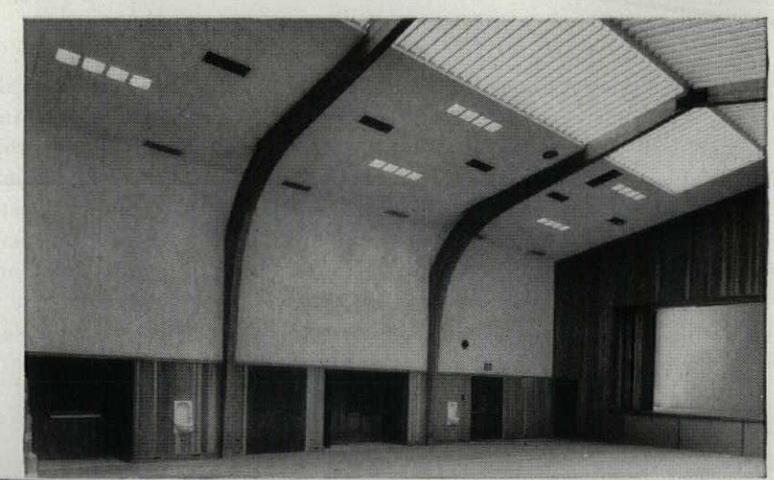
As modern as the building design itself are the electric temperature control and air distribution systems installed in Tierra Linda Grade School. Atmospheric conditions are provided which contribute to the alertness of students and faculty, yet require minimum attention and expense. Each area having specialized requirements is individually engineered.

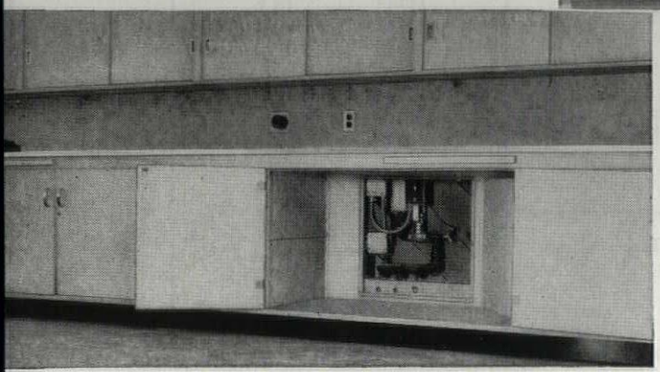
Four major benefits resulted from Barber-Colman's "Control Center" technique in this excellent example of contemporary grade school housing: (1) automatic electrical operation, requiring minimum attention, yet permitting optional manual control; (2) lowered fuel and electric costs; (3) low-cost installation in widely separated buildings; (4) satisfactory operation with low maintenance.

Unitary control systems handle radiant panel heating, unit heaters, convectors, and ventilation in the eighteen classrooms, locker and shower rooms, music room, library, materials center, toilets, closets, general-purpose room, and administrative offices. Systems can be checked or revised at the "Control Center."

Get the complete story on modern control methods, including the B-C "Control Center" technique by phoning nearby Field Office (consult telephone directory), or writing us.

Big cost-saving factor is B-C "Control Center" in boiler room. Here, at one central junction point, are prewired accessories and numbered terminal strips for connecting all electrical components of each unitary control system.





In multi-purpose auditorium (above), Barber-Colman Uni-Flo Diffusers and Return Grilles provide healthful, draft-free air distribution. Space is saved (left) by installing electrical components in partitions behind cabinets. Controls require no floor space, yet are readily accessible. Temperature of each room is controlled independently within close limits for comfort of occupants. Installation in boiler room included proportioning-type, adjustable-ratio, outdoor reset controls actuating motor-operated valves for supplying hot water to radiant heating system.

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Dept. C, 1335 Rock St. Field offices in principal cities.

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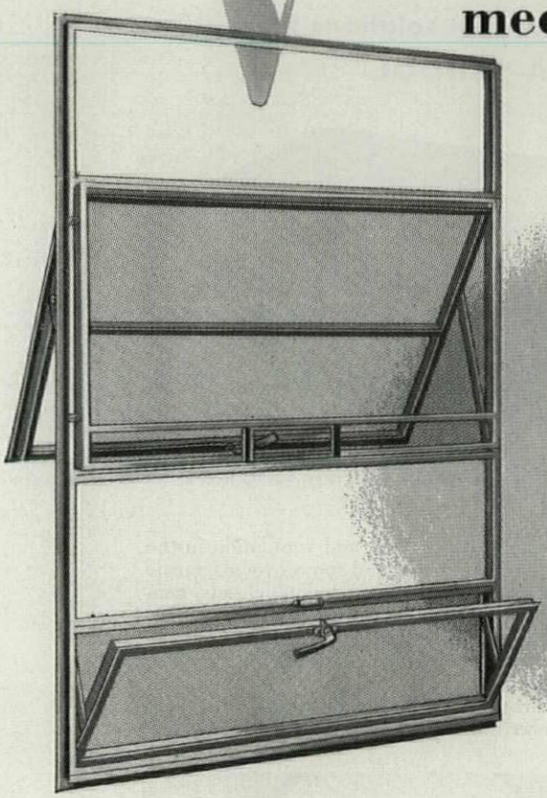
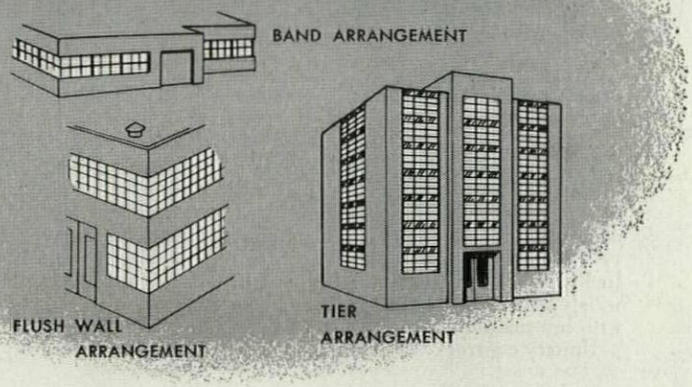
Visioneering*

meets the demands of modern building trends



BAYLEY

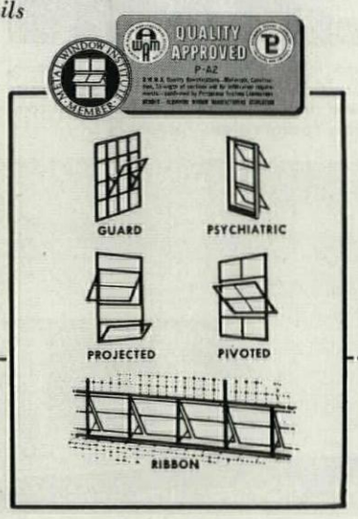
aluminum projected windows in panel wall arrangements



As a result of Bayley Visioneering you can now execute many of your choice design treatments in modern panel-wall construction, without the costliness of special window designing. With Bayley subframe design, which accommodates separate window units, standard Bayley Aluminum Projected Windows (with channel frames) of any standard size can be used—offering wide flexibility in the use of newer panel decorating materials, plus the desired window area for providing maximum air, light and vision.

Window units are available in a variety of ventilator arrangements. And in addition to the many other advantages of the projected type window, the maintenance-free aluminum construction complements all types of building materials. If you're not fully acquainted with this newest Bayley development look up Bayley's Aluminum Window Catalog in Sweet's —or better yet, *write for a Bayley Catalog and full size drafting room details*

Visioneering—The science of coordinating vision, air and light in modern building walls with windows of advanced design.



Bayley Visioneering Reflects 75 Years of Reliability

THE WILLIAM BAYLEY COMPANY

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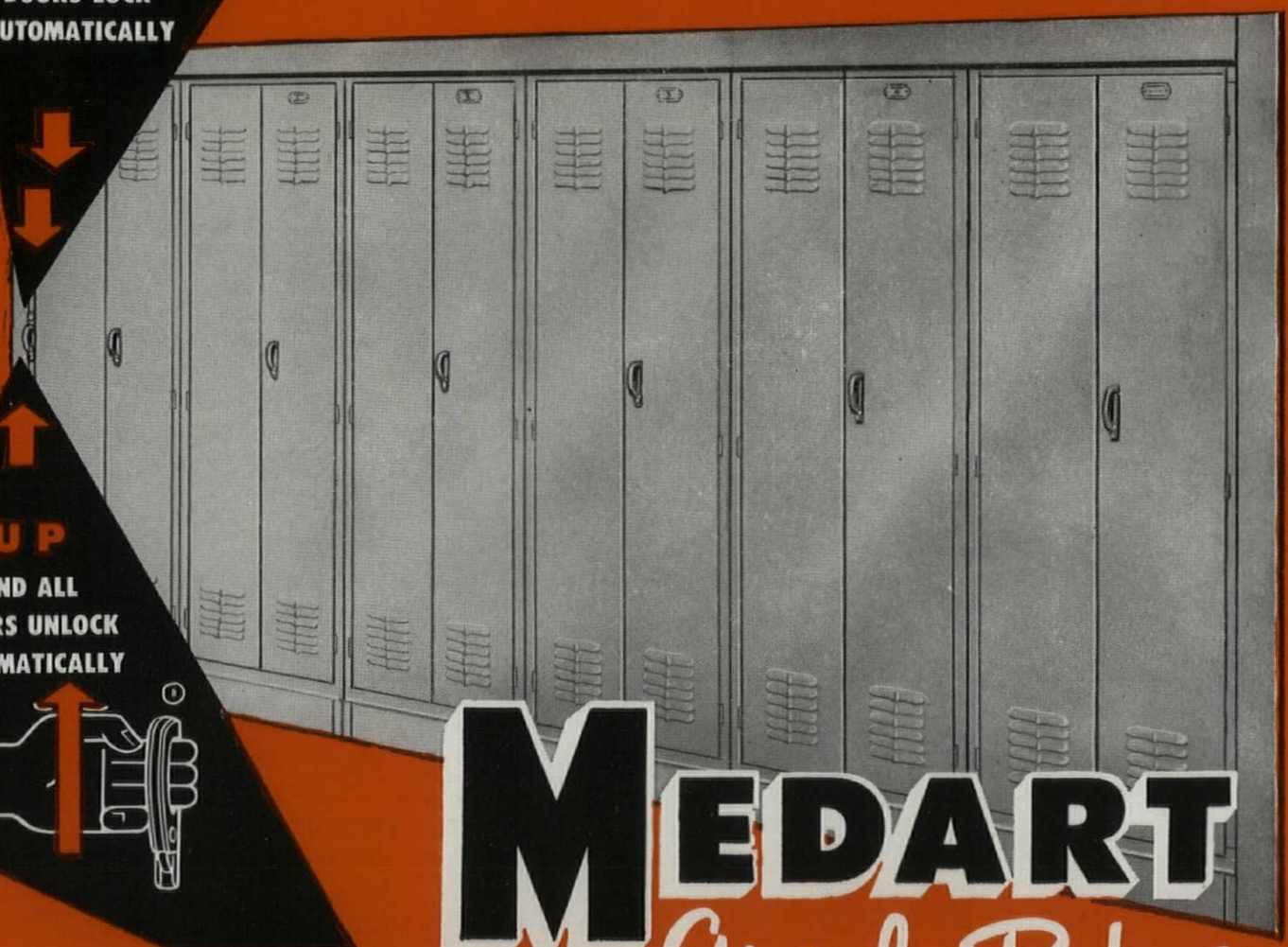
Announcing

MEDART ELEMENTARY SCHOOL WARDROBES WITH

AUTOMATIC GROUP LOCKING CONTROL

AND POSITIVE PRE-LATCHING

DOWN
AND ALL DOORS LOCK AUTOMATICALLY



UP
AND ALL DOORS UNLOCK AUTOMATICALLY

MEDART Grade Robes*

▼ When master control is unlocked, individual doors can be opened and closed at will — when locked, individual doors can be closed and will lock automatically because of positive *3-point* pre-latching.

▼ 22″ wide units, 60″ high, without legs. Flush installation requires only 16″ deep unfinished recess.†

▼ Rugged die-formed steel construction. Baked enamel finish in gray, desert sand or olive green.

▼ Three interior arrangements for 4 to 6 pupils, plus teachers' wardrobe or bookcases, are standard.

Write For Literature

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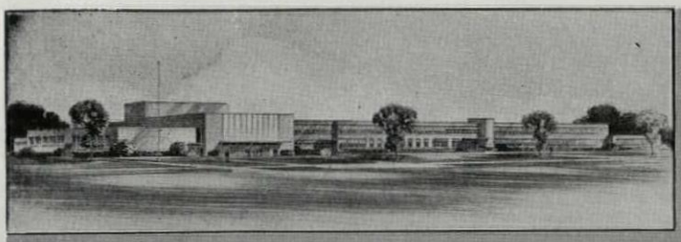
†Grade-Robes for free-standing installation are available for pre-built bases or with legs.

*Patents Pending

Medart ST. LOUIS MISSOURI

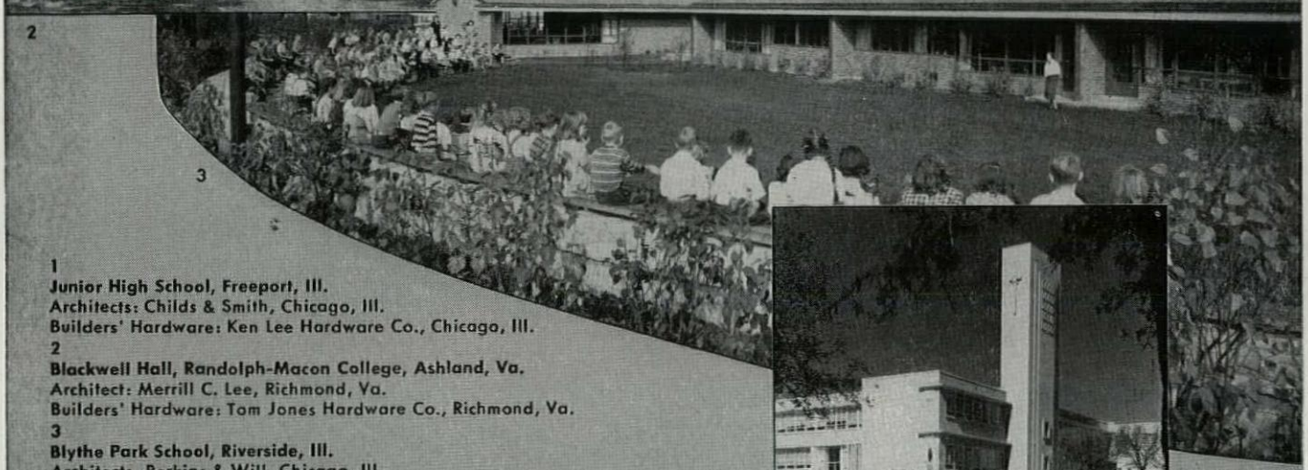
FRED MEDART PRODUCTS, INC. • 3584 DEKALB ST. • ST. LOUIS 18, MO.



1

modern schools and universities everywhere choose G-J Door Devices

2



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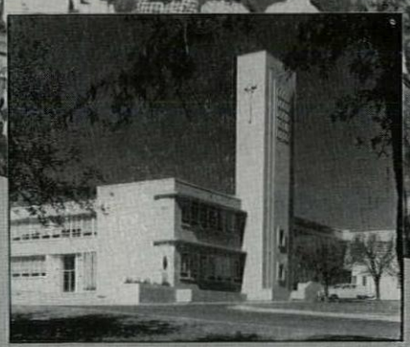

4

1
Junior High School, Freeport, Ill.
Architects: Childs & Smith, Chicago, Ill.
Builders' Hardware: Ken Lee Hardware Co., Chicago, Ill.

2
Blackwell Hall, Randolph-Macon College, Ashland, Va.
Architect: Merrill C. Lee, Richmond, Va.
Builders' Hardware: Tom Jones Hardware Co., Richmond, Va.

3
Blythe Park School, Riverside, Ill.
Architects: Perkins & Will, Chicago, Ill.
Builders' Hardware: Clark-Barlow Hardware Co., Chicago, Ill.

4
Incarnate Word High School, San Antonio, Texas
Architects: Julian & White, San Antonio, Texas
Builders' Hardware: Dumas Hardware Co., San Antonio, Texas

For over a quarter century Glynn-Johnson has manufactured door devices and specialties of original distinctive design. The quality built into each G-J product renders long, hard service for the protection and control of all types of doors in educational buildings.

Refer to G-J Catalog for complete line of door holders, bumpers, and specialties.

Floor Type

Push and Pull Action

DOOR HOLDERS AND BUMPERS

OVERHEAD DOOR HOLDER Surface Type

Floor Type

HERCULES DOOR HOLDER

DOOR BUMPER Dome Type

Glynn-Johnson Corporation

Builders' Hardware Specialties for Over 25 Years

4422 N. Ravenswood Ave. Chicago 40, Illinois

G-J devices for all types of doors in modern school buildings:

Overhead Door Holders • Wall Type Stops and Bumpers
Transom Adjusters • Floor Type Holders and Bumpers

Washington Winner ...air conditioned by Carrier

A jury of noted architects has bestowed the "Washington Board of Trade Award for Office Building Architecture" on the beautiful new Wyatt Building. In this ultra-modern, 13-story structure Carrier air conditioning serves offices, stores and a Longchamps Restaurant. ▪ No matter how the rest of the District of Columbia suffers from the heat and humidity of a Washington summer, people work and shop here in a cool, comfortable climate. Summer and winter the exclusive Carrier Conduit Weathermaster* System supplies conditioned air to all exterior offices from one central apparatus. Tenants select the temperature they prefer merely by turning a dial on a Weathermaster unit. ▪ The Weathermaster System is a Carrier development—perfected through 15 years of experience in over 300 installations—designed to meet the special

problems of air conditioning office buildings, hotels, hospitals. It uses small-diameter air conduits that save valuable rentable space. ▪ Carrier Conduit Weathermaster Air Conditioning Systems are going into the new Prudential Building in Chicago and the Republic National Bank Building in Dallas, and are serving New York's modern Lever House, Philadelphia's modernized Public Ledger Building, and scores of other prominent buildings. ▪ If you are planning a new building of any kind, or remodeling an old one, it will pay to learn the Carrier story. Please call your nearest Carrier office. Or write direct to Carrier Corporation, Syracuse, New York.

Carrier

air conditioning
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Architect: A. R. Clas, Washington, D. C.
Mechanical Engineers: Karsunky, Weller and Gooch, Washington, D. C.
Mechanical Contractor: Wm. H. Singleton Co., Inc., Arlington, Virginia.
Builder: Chas. H. Tompkins Company, Washington, D. C. * Reg. U. S. Pat. Off.

Certified

A Significant Development in Lathing and Plastering... of Vital Interest to the Building Industry!

This Emblem

of Certified Craftsmanship symbolizes higher standards of job performance and responsibility in lathing and plastering.

It is the emblem developed by the National Bureau for Lathing and Plastering, an organization of lathing and plastering contractors and lathing and plastering craftsmen.

Certified craftsmanship is a working reality. It means that job performance and responsibility will comply with the Code of Standard Practices for Lathing and Plastering, prepared by the National Bureau and subscribed to by local chapters throughout the country. Scores of such chapters are already established. New ones are being formed every month.

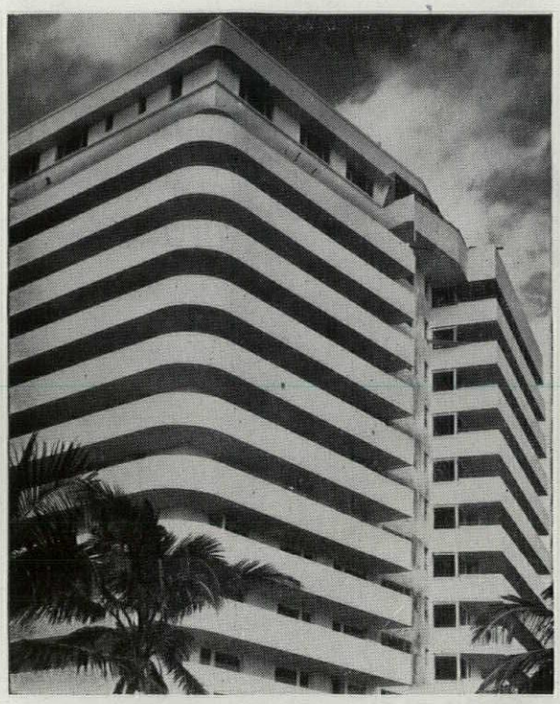
Associated Manufacturers of Lathing and Plastering Materials

Craftsmanship...

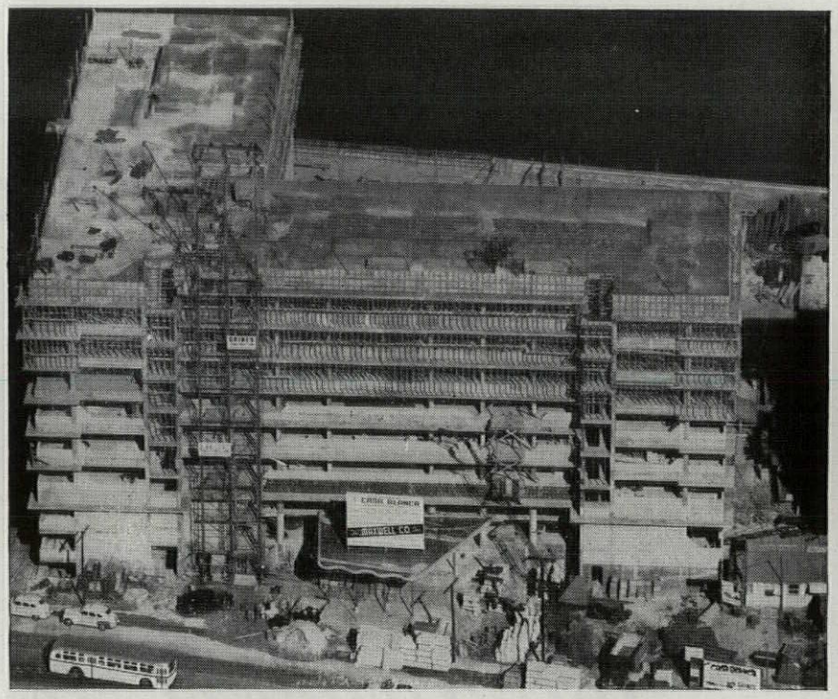
This Pledge of Performance

is your *written* and *signed* assurance that the lathing and plastering on your job will be in compliance with this newly adopted Code. It is a *written* commitment to work schedules, job cooperation, work of craftsmanship calibre and nationally recognized standards of quality. It is yours for the asking, on specific jobs, from lathing and plastering contractors adhering to the Code of Standard Practices for Lathing and Plastering.

For full appreciation of this Pledge of Certified Craftsmanship we suggest a thorough reading of the Code of Standard Practices which appears on the back of every pledge. Ask your contractor for a copy and for the complete story of this significant program.



The 300-room ocean front Sherry-Frontenac Hotel, Miami Beach, towers 13 stories, cost $4 million. Steeltex throughout in floors and roof. Henry Hohauser & Associates, Architects. Cashay Corp., Contractors.



The 9-story Casa Blanca Hotel, Miami Beach, shown here while under construction, is now in operation, cost $2.2 million, has 250 rooms. Steeltex used in all floors and roof. Roy F. France & Son, Architects. Gaines Construction Co., Contractors.

Biscayne Terrace Hotel in downtown Miami has 200 rooms, 10 stories, cost $2 million. 250,000 square feet of Steeltex in floors and roof. Albert Anis and Melvin Grossman, Architects. Edward M. Fleming Construction Co., Contractors.

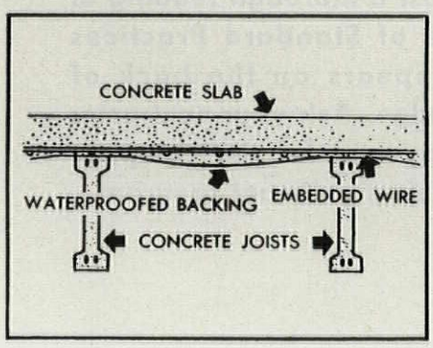
Why STEELTEX® has been the overwhelming concrete floors in Miami's

Southeast Florida is one of the fastest growing regions in the country and Miami Beach has the largest concentration of hotels, motels and apartments of any city in the world—more than 375 hotels containing more than 25,000 rooms and some 1,400 apartment buildings containing 36,000 rooms! Here unusual designs are commonplace, the architect is free to use ideas to his heart's content. People who come to Miami Beach are on vacation, they are free to pick and choose the most modern, most beautiful, most comfortable surroundings for their visit to this vacation paradise!

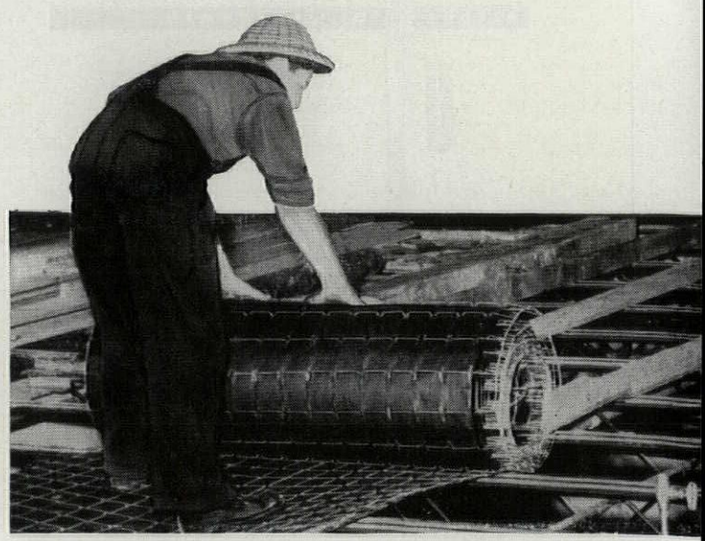
The men who invest their savings in these new buildings want modern design with economy, speed in construction and low maintenance costs in the finished building in order to get a maximum return on their investments.

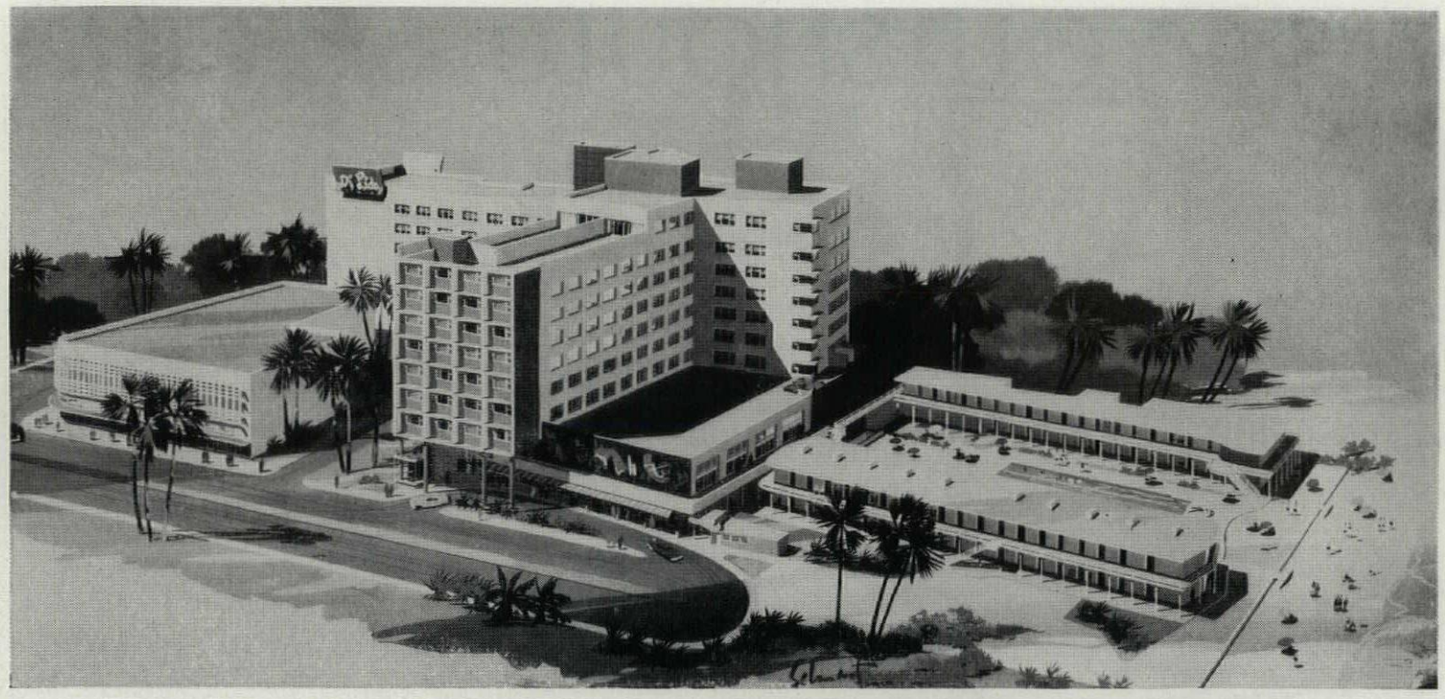
Concrete, therefore, is the answer and when you use concrete it is only natural to use Steeltex floor lath, the modern, time-and-money-saving, galvanized steel wire reinforcing for concrete which *carries its form on its back* (see cross section below).

Why Steeltex? Steeltex requires no additional forms or reinforc-



NOTE: In the cross section that the weight of the wet concrete forces the backing away, which permits the galvanized steel mesh to assume its proper position in the slab. Steeltex floor lath also performs two other functions: It permits work on the floor below while pouring is in progress and retains moisture to assist proper curing.





A complete vacation resort under one roof, the $3.5 million DiLido Hotel, Miami Beach's newest, opened last Christmas Eve, has 329 rooms, 9 stories, 2 swimming pools, 300 feet of ocean beach, 120 cabañas. Steeltex used in floors and roof. Melvin Grossman and Morris Lapidus, Architects. Robert L. Turchin, Inc., Contractors.

favorite for reinforcing newest hotels and apartments!

ing. It costs less to install than other types of forms and reinforcement for concrete because Steeltex can be rolled out like a carpet by one man (see photo below). Steeltex also saves concrete by minimizing leakage in the freshly poured slab—craftsmen on the floor below can continue working without getting drenched. Steeltex insures a strong floor because embedment of steel reinforcing takes place automatically (see note below). Steeltex allows concrete to cure slowly and properly—guards against excessive cracking—can be installed over any type of joist—will support ample safe loads from 109 lbs. to 886 lbs. per square foot depending on spacing of joists and thickness of slab. No wonder Steeltex is the overwhelming favorite with building designers in America's favorite winter resort.

Regardless of your locale, be it north, east, south or west, if your building plans call for poured concrete floors, roofs, plaster walls or ceilings or Portland cement (Stucco) exteriors, there's a type and kind of Steeltex reinforcing that will do the job better, faster, with less effort at lower overall cost.

See the Steeltex catalog in Sweet's or write for your free copy of a new 24-page, illustrated booklet "Pittsburgh Steeltex, Backbone of Concrete, Plaster, Mortar."

Algiers Hotel, Miami Beach, cost $1 million, has 8 stories, 200 rooms. Steeltex used in all floors and roof. Henry Hohauser & Associates, Architects. Taylor Construction Co., Contractors.

Prize winning Lanai Apartments, Miami, contains 24 units, took top honors in apartment house class in judging at A.I.A. South Atlantic Regional Conference in Miami last spring. Steeltex used only in second and third floors. Wahl Snyder, Architect. Alonzo Riley, Contractor.

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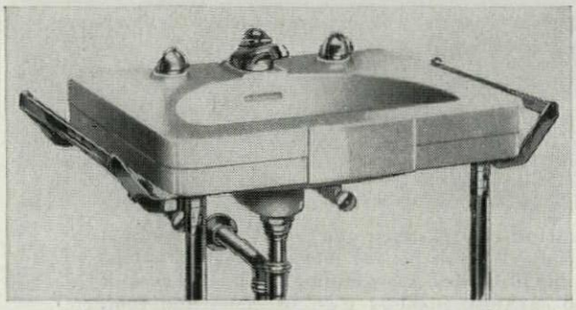
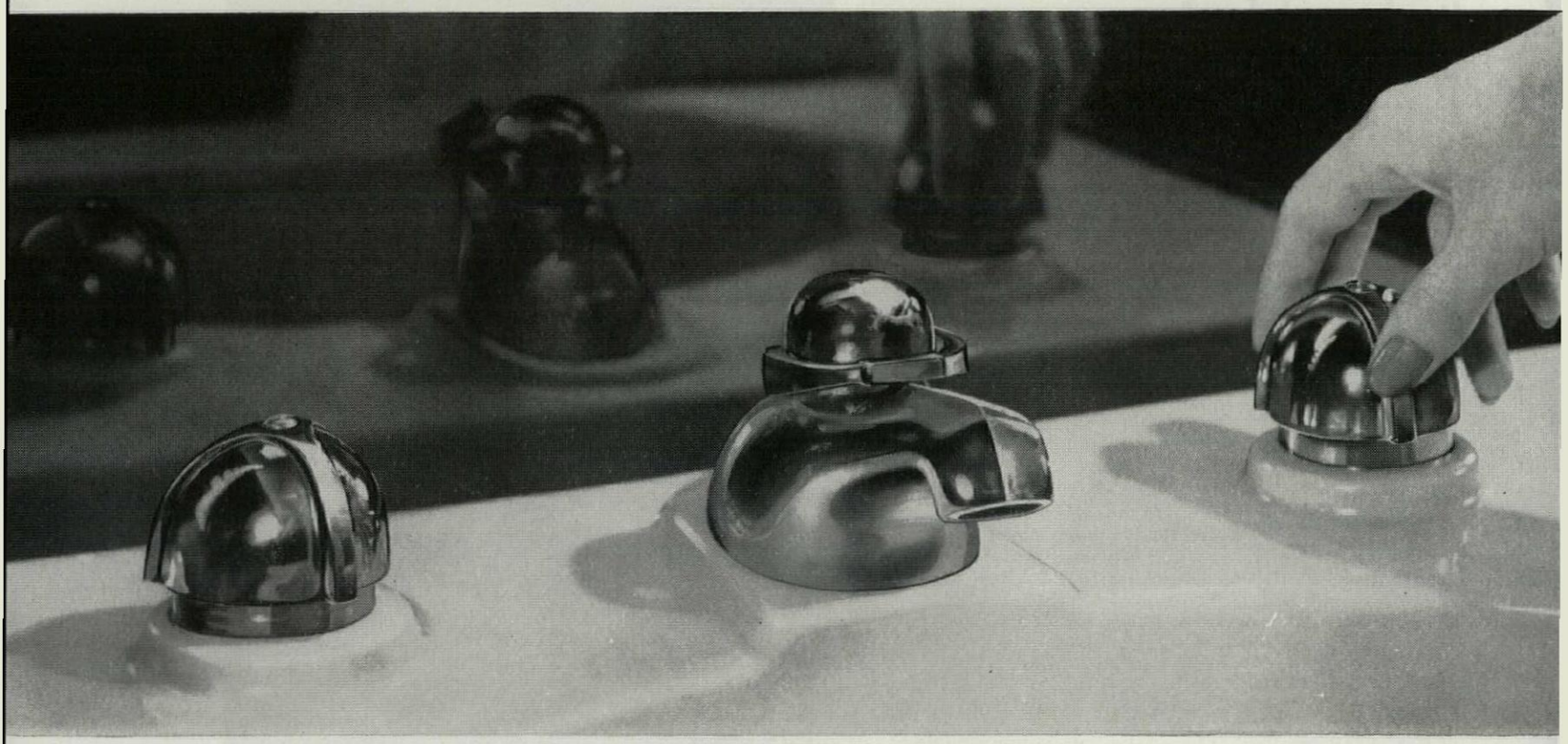


The Crane Diana lavatory is of lustrous vitreous china with semi-oval basin and paneled front. Supported by chrome-plated metal legs. Available with or without chrome-plated towel bars. Three sizes: 24 x 20", 27 x 21" and 33 x 22".



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Woven Corrulux, offered exclusively by Libbey•Owens•Ford Glass Company, captures a new translucent texture and uniformity never before obtained with any other building material. It combines shatterproof translucence with the textured pattern of woven fiber glass fabric, creating a brand new, decorative building panel.

Woven Corrulux is perfect for room dividers, tub and shower enclosures, ceilings, decorative interior facings, movable screens, and countless other uses.

• Bath enclosures and shower stalls of *Woven* Corrulux add colorful translucent beauty.

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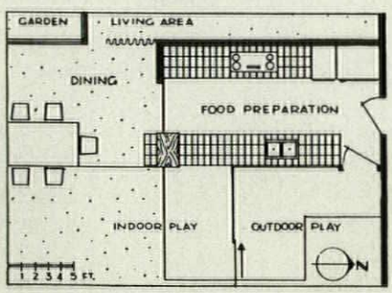
Design for kitchen-dining-play area by Richard Neutra, F. A. I. A.

"CLAY TILE CONTRIBUTED BEAUTY, UTILITY ...AND A TRUE TOUCH OF THE UNUSUAL!"

plan for kitchen and adjacent areas



This diagram shows you graphically how Richard Neutra floor-planned his ingenious design for comfortable living in his kitchen-dining-play area.

World famous architect Neutra used all of the virtues of clay tile in his design for a kitchen-dining-play area. The playroom and patio floors flow naturally from the ingenious "stepsaver" kitchen. Cheerful tile work surfaces invite food preparation. The rear wall wainscoting presents a glistening, easily-cleaned surface that cuts down on cleaning chores. Clay tile can add much to *your* next residential, industrial or institutional project: top color and design potential, durability, ease of maintenance and real long range economy. Be sure to check comparative costs before specifying a substitute material—your clients will appreciate clay tile!

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Public housers revise plans to include rehabilitation

- **A pilot project in Chicago—admired by PHA and FHA officials alike—would save parts of project areas for repairs**
- **Private builders would get nod to do the fix-up work. Backers of plan prepare slides to convince Congress**

Chicago public housers gave public housing a new look last month.

Instead of blasting slum neighborhoods off the map as New York and most other cities do, Chicago's new "Rockwell neighborhood" plan took an idea from rehabilitation: it would demolish only the worst blight, letting private operators repair the rest.

It was a scheme with political sex appeal. Builders and realtors who oppose public housing would find it harder to discredit than most projects. For one thing, it dovetailed with the Eisenhower administration's major emphasis on a broad approach to urban renewal (see p. 39) including housing code enforcement and rehabilitation. That program has its solidest backing from builders and realtors. For another, it would (said proponents) reduce the cost of slum surgery. And it would cast public housing in a pump-priming role in fighting slums.

Staffers of the Chicago Housing Authority were preparing a slide projection series showing the merits of the plan. One aim: to dazzle Congressional committees pondering how many units to allow public housing in fiscal 1954-'55.

Quarter private units. The Rockwell plan —18 months in preparation—mingled high-rise, public-owned apartment buildings with remodeled two- and three-story buildings. The small buildings would remain under private ownership provided the owners agreed to remodel them to desired standards. Through streets in the neighborhood would be turned back to provide quiet traffic-free loops. Parks and playgrounds would dot the area, which would be newly landscaped.

FHA and PHA officials alike gave enthusiastic endorsement to the plan. John Nystul, technical assistant to FHA Commissioner Guy Hollyday, flew out from Washington to see it and called it "a national pattern for urban renewal." He predicted such combination public and private renewal would so bolster the value of property in the neighborhood that owners of the remaining old buildings would have no trouble getting FHA loans for their remodeling—presumably under the proposed Sec. 220. Said Nystul: "This looks to me the best example of how the various government agencies can work for a common goal. And if it works, . . . it may well provide the example for similar developments."

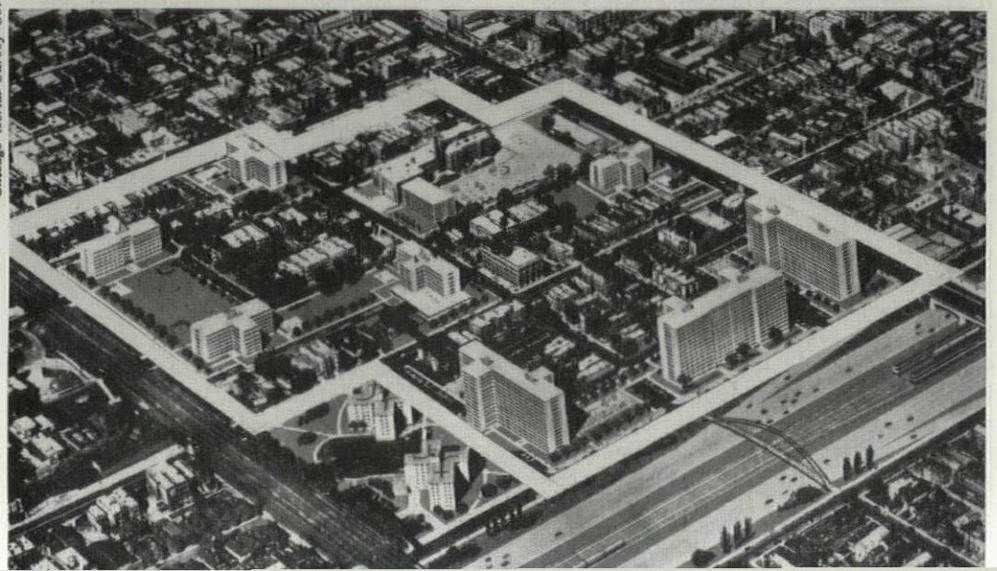
Once tagged for razing. The Rockwell neighborhood contains some 26 acres and was one of the "blighted" sites approved by the Chicago city council in 1950 for total razing and redevelopment. It is bounded by Monroe St., Western Ave., Van Buren St. and Rockwell Ave. But like most slum areas, the Rockwell neighborhood contains many salvageable buildings.

So final plans of PHA engineers provide for public housing apartments with 1,000 units on eight cleared sites. From these, PHA would remove 70 run-down buildings and another 10 or 12 which must be sacrificed to create big enough sites for new construction. But buildings containing 300 dwelling units would be left standing. About half of them would need only redecorating, said Chicago housers. The others need major repairs or remodeling. CHA planned to demand guarantees from the owners of the 300 that they will fall in line with the over-all plan; if they refuse, CHA would condemn their property, remodel itself and either operate the units directly as public housing or re-sell to private operators.

Miss Elizabeth Wood, CHA secretary, doubted whether the new plan would save much tax money. But she said the eight new apartment buildings would renovate a 26-acre area, whereas, if clustered together, their modernizing effect would be felt over a smaller zone. She also liked the idea of mixing public and private housing because it would reduce the "institutional" character of public housing.

Reducing the institutional feeling of public housing is a target dear to PHA Commissioner Charles E. Slusser's heart. And it was Slusser who recommended the Rockwell plan to HHFAdministrator Albert M. Cole. So far, the Rockwell plan has not won official federal endorsement. But it began to look like the GOP substitute for former concepts of public housing.

ROCKWELL PROJECT WOULD COST $15 MILLION, END SLUMS NOW HOUSING 700 FAMILIES



Chicago Aerial Survey Co.

Building becomes a main prop against recession

Will the business downturn be over before it has much effect on construction? There were some encouraging signs last month that it might be.

What the economy needed was a strong sustaining force until inventories are worked down enough to start a new flow of orders to manufacturers. So far, building and consumer spending were doing pretty well at providing it. The business decline that started last summer had lasted about two thirds as long as the 1949 recession. The drop in industrial activity was about as much and unemployment (4.9% of the labor force at the latest revised census count) reached three-quarters of its '49 recession peak.

But retail buying in January was almost the same as in January 1953. Wholesale prices were higher, mostly because farm products were up—which suggested a turning point in farm troubles may be in the offing. The December-January let-down in construction activity looked no more than seasonal (see p. 43). Except in heavy and industrial construction, contract awards were holding up. Private housing starts in January (64,700) reached a seasonally adjusted rate of nearly 1.1 million despite generally worse weather than a year ago. In a survey of 427 leading architects and engineers, Engineering *News-Record* found 27% more work on the boards than a year earlier.

The money market continued to ease, and declining bond yields were stirring new interest in mortgage investment both in housing and big building. Among other things, many a state and local public works project was

coming off the shelf where it had lain last year while borrowed money seemed too costly.

Spring of decision. Some economists had reservations about whether March was, as President Eisenhower told a news conference, the month that will tell whether the economy is snapping back. It might be the end of April before the experts can be really sure. By then, 1954's pattern of construction will be pretty well set. So the big recession question for building is not this year, but next. The big boom in office building and shopping centers (see p. 50) was almost certain to buoy 1954 construction up close to 1953 levels.

Antislump plans. With antirecession measures by the federal government due to be turned on, say, in April or May if needed, the building industry could hope that recovery would be underway soon enough to prevent a big drop in construction in 1955. Tax cuts will come first, may provide the economy with a billion shot in the arm. Even if the hoped-for business upturn materializes, Ikemen will ask Congress to give them better standby tools to fight a slump. Foremost is revival of financial aid to localities for advance public works planning, an HHFA program which ended Oct. 13, 1951. In the new housing bill, the administration asked for $10 million over the current and next two fiscal years for interest-free planning loans that need not be repaid until construction begins. Observers figured $10 million in planning might generate $1½ billion in construction.

A second antislump weapon was the lease-purchase bill, passed by the House and pending in the Senate public works committee. It would let the post office and General Services Administration buy public buildings on a 15- to 25-year installment plan by giving private developers long term leases. GSA's public buildings service had a backlog of 50 projects involving some $50 million of building that could start in 60 days if Congress passes the bill. It had $2.2 billion more work on tap that could start in a longer time.

Las Vegas plumbers guilty in antitrust case, face jail

Two Las Vegas plumbers and a plumbers' business agent found guilty of violating the Sherman Antitrust Act by restraining interstate trade lost an appeal in a San Francisco federal court. The three were the only ones to appeal among 10 defendants found guilty in a Carson City court in 1951. The group was charged with fixing the sale price and cost of installation of plumbing and heating supplies and dividing the market among themselves.

The three who appealed: Ralph H. Alsup (former president of the Clark County AFL central labor council and business agent of plumbers' local 525); A. R. Ruppert, president of a plumbing and heating company; Bernard V. Provenzano of the O.K. Plumbing and Heating Co. The three all facing stiff fines and six month jail terms, announced they would take the case to the US Supreme Court.

SIDELIGHTS

School needs

Public schools need $10.6 billion worth of new building and it cannot be financed under the present tax structure, reported the US Office of Education. The office estimated that school districts would be able legally to raise only $5.9 billion toward construction of some 312,000 needed classrooms. A likely alternative to federal subsidies seemed to be more effort by educators to re-examine their oftentimes elaborate ideas of school plants and recommend changes that would lower building costs. At the 80th convention of the American Association of School Administrators, Architect Alonzo J. Harriman of Auburn, Me., called upon school committees to get away from "monument construction" and put up frame buildings. The latter can be attractive (see cover and p. 121). And they should last 50 years, said Harriman, in a termite-free region.

Toward better statistics

Plans were afoot in Washington for the Bureau of Labor Statistics and Commerce Dept. to submit a $900,000 supplemental budget request to the Budget Bureau to let them repair weak spots in the nation's construction statistics. BLS would get $300,000 of the money to improve its reports on industrial and commercial building starts. Commerce would use $600,000 to better its reporting of state and local public works and hire the Census Bureau to check on the home fix-up market—a notable gap in building figures.

More military building

Authority to spend another $1 billion or more for new construction will be asked this month by the armed forces. Hearings on the request are expected to begin at once, at least in the Senate. Construction involved is not likely to get started before next year. Senate Democrats are disturbed by reports that the Air Force's $7.3 billion construction program is falling so far behind schedule that the Air Force may not have enough places to put its 137 wings when it gets them. Look for some sharp questioning of Ass't. Defense Sec'y. Franklin Floete, whose job is to prevent such snafus by improving the timing of military construction.

Another construction must on the military agenda: more overseas family housing built by foreign contractors with the US guaranteeing rents. So far, 2,000 units are under construction in France on this basis. The armed services have indicated they will ask for 4,000 more in France; eventually, they want to expand the deal to Morocco, Spain and Newfoundland. In France, the Defense Dept. guarantees rents for five years with an option for renewal. Rents are set so much higher than 1914 vintage frozen rents for the average French dwelling that French investors finance construction. The French government puts up one third of the cost. The plan was hatched by Thomas Coogan, the New York and Miami mortgage broker-builder, while he headed the armed forces family housing agency.

Favorite convention cities

What is your favorite convention city? NAREB took a poll on the question. Results: Miami Beach, Chicago, New York, Atlantic City, St. Louis, San Francisco, Detroit, Cleveland and Los Angeles—in that order.

What is a slum? (cont'd.)

When New York City started to condemn a 5.3-acre site for a middle-income cooperative housing project under state slum clearance laws, Beebe Improvement Corp., a property owner, went to court claiming the area was almost wholly vacant land and not "substandard or insanitary." The city moved to have his suit dismissed, but last month a state court ruled that there should be a trial on the issue. Observed the court: "The area is at best an eyesore . . . a blight on the community and a detriment to the growing residential quality of the neighborhood. But this does not necessarily mean it is a slum. . . . No persons live in the area. . . . The sheds and shacks in no sense constitute improvements; the only improvements are the [two] gasoline stations and welding plants, and these do not themselves appear to be either substandard or insanitary. . . . It may be demonstrated on a trial that the city is attempting here to . . . seize private property for a purpose . . . not within the statutes . . . [and] the government agencies involved acted in a capricious and arbitrary manner and applied a statute to a situation to which it was never intended to [apply]."

The money market

Times grew better and better for financing construction. The money market was growing easier; prospects were that the trend would continue and grow stronger. Thirty-year Treasury 3¼% bonds were yielding about 2.75% and yields on corporates and municipal bonds were back to year-ago levels. Some financial experts thought the Federal Reserve may soon lower its discount rate or reduce bank reserve requirements, or both. About the only move that would firm up interest rates would be a Treasury flotation of an issue of more than ten years maturity. Amid a business slump, it looked improbable.

Land boom in Manhattan

Prospects for higher FHA mortgage ceilings on high-rise apartments (the '54 Housing Bill would let them go up to $2,400 a room) were helping set off a land boom in the tonier parts of Manhattan's East Side. Realtors said some 15 parcels have changed hands or were about to. Building costs are so high nobody expects rents under $50 a room.

Traffic troubles

▸ Cities struggling with ever growing masses of autos tend to treat the symptoms of congestion instead of the causes

▸ A lot of experts agree better mass transit is the only solution in sight, but the price keeps going up

When in the course of human events it becomes impossible to park within 400 yards of where one is going; when the jellybean in the car behind is resting his elbow on the horn, the car ahead has stopped to discharge three passengers and the light is turning red—it is time, in the words of the old municipal song, for a reappraisal of the urban traffic situation.

There are few things city officials enjoy more than to appoint committees to make reappraisals. In recent weeks new, all-purpose plans to alleviate the auto squeeze have blossomed in every major city in the nation. Designs for curlicued expressways, tunnels, double-decker bridges, vie with a projected monorail transportation scheme, better public transit systems and exasperated bans on downtown parking.

Break-even point. Municipal authorities' basic aim is to keep their traffic-handling facilities abreast of the influx of vehicles. Since the influx of vehicles has been on the wax for the last 50 years—and in the last seven years has waxed by 60% to a grand total of 55 million—the planning and traffic authorities are scampering along on an increasingly rapid treadmill. "Those of us who have been working on this problem for years," New York's Robert Moses observed recently, "do not look for any complete solution as long as cars are being turned out at a more rapid rate than roads and parking facilities."

Most cities were fighting a holding action, with meager results. Samples:

▸ A 45-man committee was appointed in Los Angeles to make the time-honored "comprehensive study" of the traffic problem Members admitted the city was strangling, recommended maximum use of highways and freeways and encouragement of public transportation. As wreckers went to work on the aged Rosslyn and Lexington Hotels in downtown Los Angeles—both to be replaced by asphalt parking lots—Vice President James H. Alberts of the Rosslyn sighed: ". . . Parking becomes more important than bedrooms."

▸ Milwaukee, seeking a way to cut truck traffic downtown, asked the state for power to force through trucks to use a bypass highway. The mayor called for a mass transportation study commission.

▸ The Iowa state highway commission reported to Des Moines officials what the officials had long suspected: the capacity of major streets in the city was being strained by increasing traffic—up 33% in the last seven years.

▸ New York City, the granddaddy of them all in parking problems, announced the start of a joint effort to amass the greatest traffic study in its history. New York's traffic situation is so fabulously complicated and so expensive that it hardly serves as a microcosm of what is afoot in other cities. Yet the facts become extraordinarily powerful. Traffic congestion, for example, costs the city and its businesses $1 billion a year, according to a study made by the Citizens Traffic Safety Board, Inc. More than $1 million of the city's milk bill goes to pay for delivery delays. New Yorkers pay an estimated $57 million extra in meter charges and tips for their taxi rides because of traffic snarls. An estimated 80 million gallons of gasoline are burned up in unnecessary cruising in a year, for lack of parking space.

Police duty. An intracity method for cutting congestion which gained voice recently was to step up police enforcement of traffic and parking regulations. Stoplight regulation, designation of metered and restricted space and proper use of one-way streets can be a help. (St. Louis has gained a notable success in speeding up the flow of traffic through these means.) Dr. Walter A. Cutter, assistant director of New York University's center for safety education, said last month: "We will learn some day that we can set stiff standards and educate the public to meet them, and we will have the majority of the citizens behind us." Said The New York *Times:* "No other single remedy promises the benefits that would flow from drastic, impartial, unrelenting police enforcement of the laws and regulations on the books now." Note: New York police tagged 54,465 cars parked at hydrants last year, 319,396 for parking in verboten areas and 43,558 for blocking crosswalks.

Said HHFA's slum clearance chief, James Follin: "The typical city, instead of making the changes required by the revolution in transportation and transit, and of renewing its public facilities to encourage rehabilitation of blighted areas, has resorted to makeshifts, such as a few street widenings and other piddling measures that have fallen disastrously short of what was needed . . ."

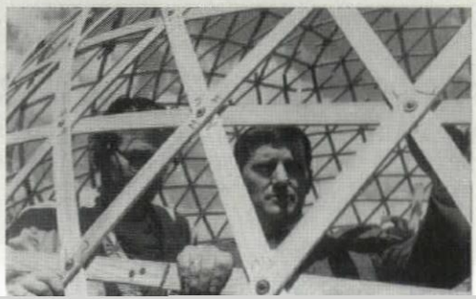
What was needed, a growing body of expert opinion held, was to get more people back onto public transportation by making driving into town even more expensive than it is now, or by making transit cheaper (which amounts to the same thing).

▸ In Washington, Traffic Expert Leslie Wil-

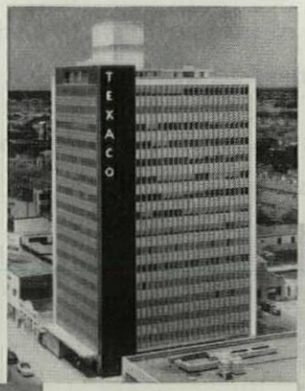
Marines test a flying Bucky Fuller barracks

Buckminster Fuller and his men, who have already given the world the Dymaxion House, discontinuous compression, and portable aluminum igloos, have contributed a new kind of barracks to the Marines. It is a 1,190 lb. semisphere 30′ in diameter and 15′ high with a basic structural form — true to Fuller principles — of hexagons composed of six triangles of pine. Over the framework (below) is laid chickenwire. The wire is sprayed with the same plastic that is used to mothball aircraft. The resulting shelter will accommodate 30.

The design is radical, but the really extraordinary feature of the dome was demonstrated Jan. 28 at Raleigh, N.C. where the Fuller Research Foundation and students at North Carolina State College school of design built it. Despite a 25 mile wind, a Marine helicopter picked up the hut, flew it half a mile and set it gently down. Marine officers hoped it was the answer to their need for an easy-to-build, durable shelter that can be whisked from place to place.

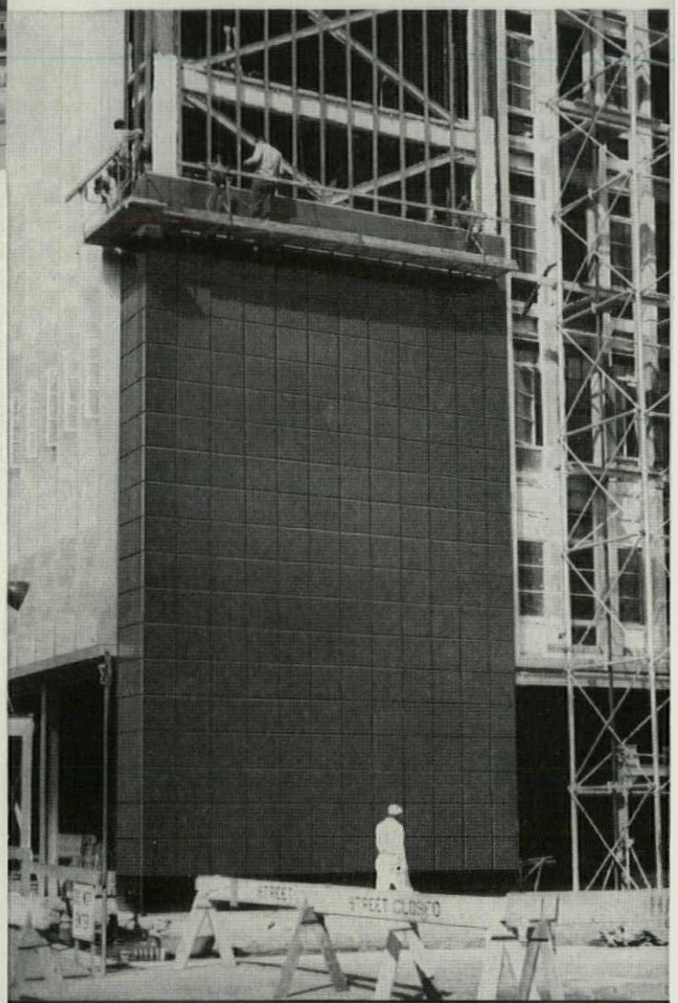


Porcelain Enameled Panels on "Award of Merit" Building



Architect | Claude E. Hooton
New Orleans, Houston
and New York

No complex scaffolding is required to install these porcelain enameled panels. A swinging scaffold is all that is needed.



This building won an annual award by OFFICE MANAGEMENT, a magazine for management executives. The color impact of the exterior, emphasized by its 17-story, 22-foot wide green porcelain enameled "runway," might well have influenced the judges' decision.

A total of 16,000 square feet of panels were used on this job—all porcelain enameled on Armco Enameling Iron. The self-flashing panels were quickly and easily installed from swinging scaffolds. They eliminated the high material and labor cost of heavy stone and masonry construction, and reduced the load on the one-piece welded building frame.

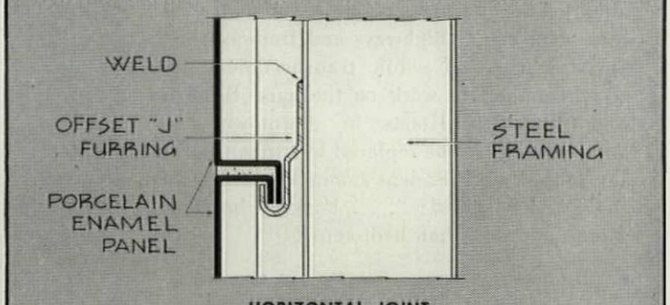
In addition to cleanliness of design, the builders achieved attention-getting, lasting color. The distinctive green shade of the "runway" is part of the company's trade emblem. It won't fade because the color in porcelain enamel is a mineral pigment.

Besides the exterior panels, more than 3000 porcelain enameled panels on the interior are used as covers over individual air-conditioning chambers.

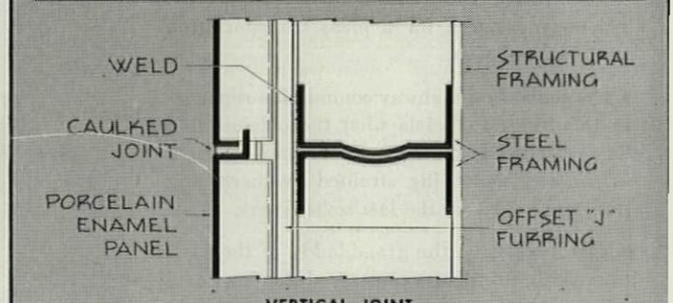
Armco Enameling Iron is widely used as a base for porcelain enameled panels, both on new buildings and renovating jobs. It is used alone or in combination with Armco Stainless Steel.

For further information on Armco Special-Purpose Steels for building construction, write us at the address below.

DETAILS OF PANEL ATTACHMENT



HORIZONTAL JOINT



VERTICAL JOINT

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liams handed in a plan urging that buses and streetcars be given priority on city streets, concluding, as the Washington *Post* editorialized, that "more intensive use of mass transit is the only real solution." Among many other things, Williams suggested flat 10¢ fares for shuttle buses in the downtown shopping area, creation of a coordinated transit authority with wide powers, and private rights of way for rapid transit so it would not mingle with traffic.

▸ In Cleveland, both new highways and faster public transportation were being readied. The city will get a new rapid transit system (voters approved a $35 million bond issue last fall) to run surface cars in from all major suburbs to two main terminals, then dip underground in a loop encircling the downtown business area.

▸ A survey was underway in San Francisco to determine the feasibility of a giant rapid transit system linking the entire Bay area. A shoppers' shuttle bus, circulating ladies around downtown San Francisco for a nickel a ride, was hailed as a success. More garages were being built, too, not so much to provide more space—there were vacancies in San Francisco garages—but to provide space at an hourly rate that motorists would pay.

▸ In Manhattan, Traffic Commissioner T. T. Wiley expressed himself in favor of subsidizing mass transit to stem the trend of more and more commuters driving to work. (New York subway fares rose from 10¢ to 15¢ last year—and the department store sales dipped 2%.)

▸ Los Angeles, desparing of coping with its traffic load, asked the state legislature to waive taxes and state supervision on a proposed 46-mile, $165 million monorail system from the San Fernando Valley to Long Beach.

What price commuting? Ironically, it was mass transportation that was catching the public's attention as growing more and more expensive, while few realized the high cost of operating private autos. Items:

▸ The bankrupt Long Island Railroad had on file an application to raise commuter fares another 12½%.

▸ In Washington, fares went up from 17¢ to 20¢ a ride—a rate double the 1947 fare.

▸ Portland, Ore.'s main west side suburban bus line reversed a decision to go out of business—victim of car pools and two-car families—when officials granted a 5¢ a ride fare boost. But patronage was still tiny: autoists reach town in 15 minutes but it takes the bus 45.

▸ The Birmingham Transit Co. asked permission to discontinue several routes operating in the red. Plunging patronage so alarmed the trolley labor union that it warned: "A solution must be found or Birmingham will shortly be without public transportation."

If not mass transit, what? Helicopters, a traffic panelist in Cleveland suggested last month, might be cheaper.

But where will they all park?

It began to look as if the auto and the big city were mortal enemies. So far, the auto was winning the struggle.

Housing bill sets tougher rehabilitation and code rules for redevelopment grants

Cities will have to take strong rehabilitation medicine to qualify for US urban redevelopment handouts if the administration's Housing Bill of 1954 becomes law.

The bill, introduced Feb. 12 by the chairmen of the banking committees—Sen. Homer E. Capehart (R, Ind.) and Rep. Jesse P. Wolcott (R, Mich.) would broaden redevelopment to embrace the entire concept of urban renewal. Noteworthy changes proposed:

▸ The bill would repeal the rule that a blighted *commercial* or *industrial* area could qualify for US funds only with primarily *residential* redevelopment.

▸ It would authorize grants for street improvements, utilities, parks, playgrounds and other rehabilitation amenities within an "urban renewal area" *exceeding* the limited boundaries of a slum clearance "project area."

▸ It would offer cities technical assistance for planning and developing comprehensive urban renewal plans.

▸ It would authorize FHA insurance under a new Sec. 220 for housing improvement loans to individual property owners in officially designated urban renewal areas.

No aid for lax cities. Cities that did not use their own powers to battle slums would be denied US aid. The new bill would require HHFA to review the extent to which cities have undertaken positive programs to check decay "through adoption, modernization, administration and enforcement" of housing, zoning, building, health and safety codes. It would require presentation by each city of "a workable program . . . for effectively dealing with the problem of urban slums . . . and preservation of a well-planned community with well-organized residential neighborhoods of decent houses and suitable living environment for adequate family life."

No piecemeal plans. Last month in St. Louis, HHFAdministrator Albert M. Cole warned that the administration meant business about helping only those who also help themselves. He quoted the report of the President's advisory committee on housing policy: "Slums do not just happen. They are the product of neglect by landlords, by tenants, and by all who make up the communities in which slums exist. But above all else, they are the product of neglect by our city governments. . . . [There is an] absolute necessity for lifting our sights from piecemeal thrusts at occasional slum projects to a broad scale, integrated campaign that stretches across the whole spread of urban blight from the earliest symptoms to the last stages of decay."

The solution to slums, said Cole, "must be worked out primarily by the community itself." But he added: "Until a community is prepared to set forth on an aggressive program of code improvement—and enforcement, it does not have in my judgment a 'workable plan' and is therefore not entitled to federal help." A Cole associate added that HHFA will require proof cities have competent staffs and enough money to make code enforcement and rehabilitation accomplish what it sets out to do. "We want to see the color of their budgets," he said. "So far, not a single city in the country has a workable program."

Open-end contract. Based on the rehabilitation and enforcement directives that Congress wrote into last year's appropriations act (which would be superseded by the stronger amendments in the '54 housing bill), HHFA's division of slum clearance and urban redevelopment headed by James W. Follin was already tightening up Title I rules. In recent contracts, HHFA included a clause letting the government hold up payments unless the local community submits "satisfactory" evidence showing that it is "continuing its positive program for enforcement of . . . health, sanitation and safety codes."

Reni

FOLLIN

Without quarreling with HHFA's aim, the Nat'l. Assn. of Housing and Redevelopment Officials last month criticized this action. Reason: "This clause leaves the locality with no assurance that HHFA will continue to make payments. It is an open-end contract . . . that gears its payments, in those cases where the redevelopment agency is not the city government, to the performance of a third party [the city], a party that is not a party to the contract. . . . [It] gives the local agency no standard against which local progress can be measured. It is solely a matter of the judgment of the [HHFA slum clearance division] director. . . . If the local agency is unable to count on such payments . . . because of actions over which it has no control . . . it is in no position to make local contracts, for it is unable to count upon funds to make payments on such contracts."

NY showdown due. The biggest test of how far HHFA will go to enforce its demand for rehabilitation was impending. This involved applications totaling $12 million for two projects in New York City. These were the first New York projects sent to HHFA since grants for its fifth, sixth and seventh projects were approved in January and February '52. One was a highly controversial project Mayor Robert Wagner said he would vote against while he was campaigning for office last fall, but which he voted for when City Construction Coordinator Robert Moses pushed it through the Board of Estimate in January. Subsidy sought for this 18-acre site,

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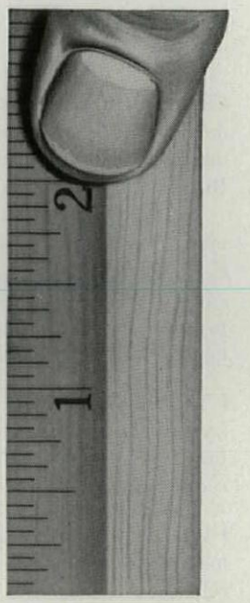

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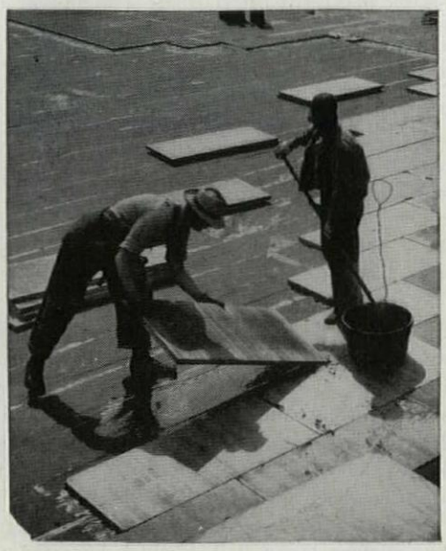

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***first* for thermal value**

a light-manufacturing area in which only 132 families live, would total $14 million (from the US $9.3 million, from the city $4.7 million). The best three acres, facing Washington Square, would be sold to New York University for $5 a sq. ft. The rest would be sold for $10.50 a sq. ft. for construction of high-rise buildings to contain 2,184 two- to three-and-one-half-room apartments renting from $96 to $168 a month. The subsidy divided by new dwelling units would be $6,400 each (or divided by the slum dwelling units to be eliminated, $106,000 each).

What to believe? The $64 decision HHFA would have to make: could the city's February code enforcement claims be reconciled with what Moses wrote a year and one-half earlier after a Brooklyn tenement fire that cost seven lives (AF, July '52, News):

"The basic conclusion that the inspection staff of the [NY] department of buildings and its appropriations are wholly inadequate is indisputable. A vicious dilemma has been forced on this department . . . the commissioner must decide which laws to enforce and which to honor in the breach. . . . Enforcement of building laws in the lower courts has too often been delayed by adjournments and continuances. . . . The suggestion that inspections can more effectively be made by mobile district crews, concentrating on one district after another, is not in keeping with the spirit or letter of the present law, and seems to be unworkable."

HHFA could also consider the opinion of George L. Bliss, president of a Manhattan savings and loan association and a member of the President's housing committee. Last month, Bliss ridiculed the idea that New York had any worthwhile enforcement of construction standards, sanitary codes and occupancy laws—"the first step in effective slum prevention." Charged Bliss: "the failure to enforce these laws in New York City is open, flagrant and notorious."

Inspections begin. As the month began, Mayor Wagner, who once headed the little-respected buildings department himself, dispatched four inspection teams on block-by-block violation surveys in four rundown areas of the city. Magistrates announced a special panel would be set up to hear housing violations.

But so far no big new appropriations or staff increases for the department of housing and buildings were announced or in sight. It remained to be seen whether the New York anti-slum campaign would scratch any farther beneath the surface than the short-lived effort of State Housing Commissioner Herman T. Stichman to launch a Baltimore Plan rehabilitation program in the city last year. At the time, this was sarcastically opposed by Moses as impractical.

Conservative year for wage hikes in building indicated

A look at some of the first labor contracts negotiated in 1954 pointed to a conservative year for wage hikes. Labor seemed aware of the drop in business, with attendant layoffs, and would curtail its demands. One in ten agreements filed thus far with the Bureau of Labor Statistics provided for no raise at all; the average raise obtained was under 8¢ an hour. Strike figures for January were a third less than what they were a year ago.

There were exceptions. CIO steelworkers picked up a 15¢ increase in a strike against Continental Can and American Can and the AFL machinists won an 11¢ rise, without a strike, at Pratt & Whitney. Would the building trades be exceptions too? Their initial demands were a good bit over the average 8¢ an hour on completed contracts. AFL plumbers in Chicago were on strike for a 25¢ raise demanded Jan. 4. CIO woodworkers bid for 12½¢ in the northwest. Building trades in Cleveland and steamfitters in St. Louis were asking 25¢ an hour more and boosts in health and welfare funds. On the other hand, construction workers were playing their part in the no-raise trend. Local 90-A of technical engineers in Chicago followed the lead of lathers there and signed a no-raise agreement for three years.

Zeckendorf offers new plan to redevelop southwest Washington

Washington got its newest plan to redevelop its moldering Southwest area last month. New Yorker William Zeckendorf described his 330-acre, $500 million proposal as the most ambitious city rebuilding project ever attempted in America. Designed by I. M. Pei, with Architect Harry Weese and MIT Planner Fred Adams associated, it included:

▸ A South Mall 1,800′ long and 400′ wide to extend at a right angle from the Capitol-Lincoln Memorial Mall to an expressway bridge across Washington Channel (see cut). This would be flanked by office buildings.

▸ A core of national opera, symphony, theater and convention buildings next to the South Mall. These would enclose a 800′ x 400′ traffic-free pedestrian concourse to be known as L'Enfant Plaza and intended—said Zeckendorf—to rival the Champs Elysees and the Piazza San Marco with specialty shops and sightseeing attractions. Zeckendorf proposed that Congress appropriate $50 million for these buildings with private funds financing the rest after Title I aid cuts the land costs.

▸ An eight-acre "town center" at 4th and K Sts. with schools, libraries, community buildings, about 200,000 sq. ft. of shopping facilities and equal parking space.

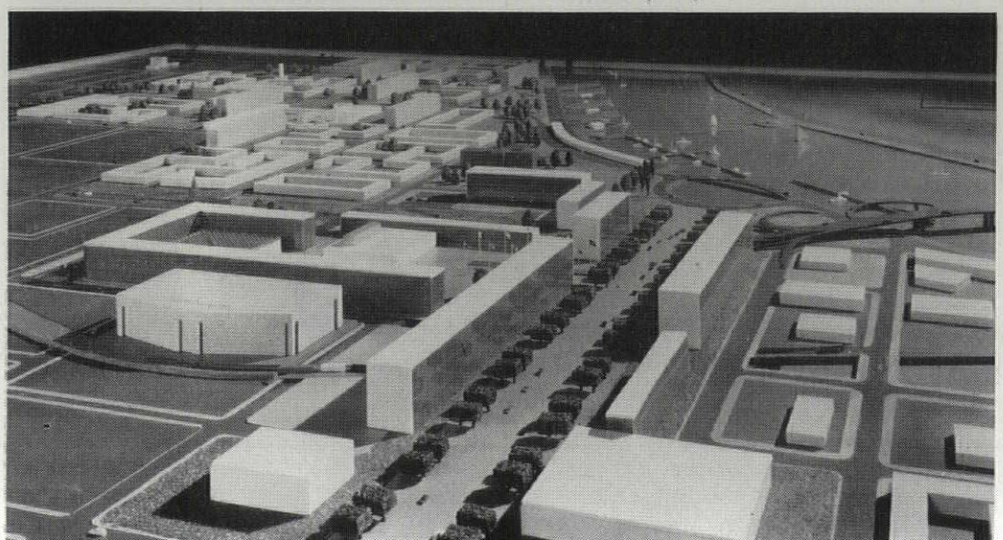
▸ A six-acre waterfront shopping district beside Washington Channel, including seafood restaurants and boating facilities.

▸ Eighty-three acres of new residential buildings, including five or six high-rise apartments spotted among garden apartments.

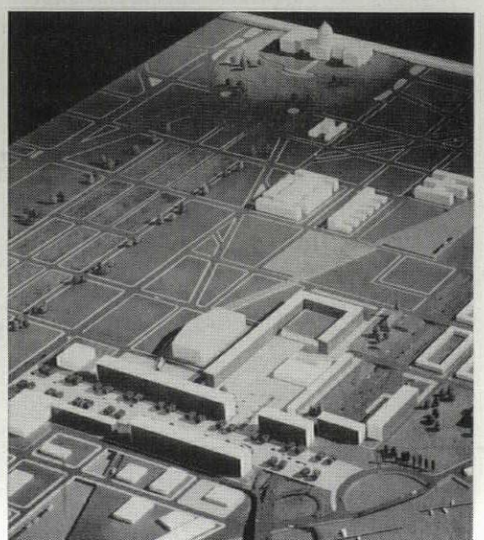
Zeckendorf proposals were only "a schematic plan." He declined to undertake detailed engineering and economic studies unless Washington's Revelopment Land Agency assured him it would be willing to give specific plans serious and sympathetic consideration. Initial RLA reaction was favorable.

Zeckendorf's plans were similar in some respects, but more elaborate than the pigeonholed Justament-Smith plan to redevelop the Southwest area (AF, Aug. '52). He listed the Justament-Smith plan in a series of acknowledgments "to organizations and individuals who helped in the evolution" of his scheme.

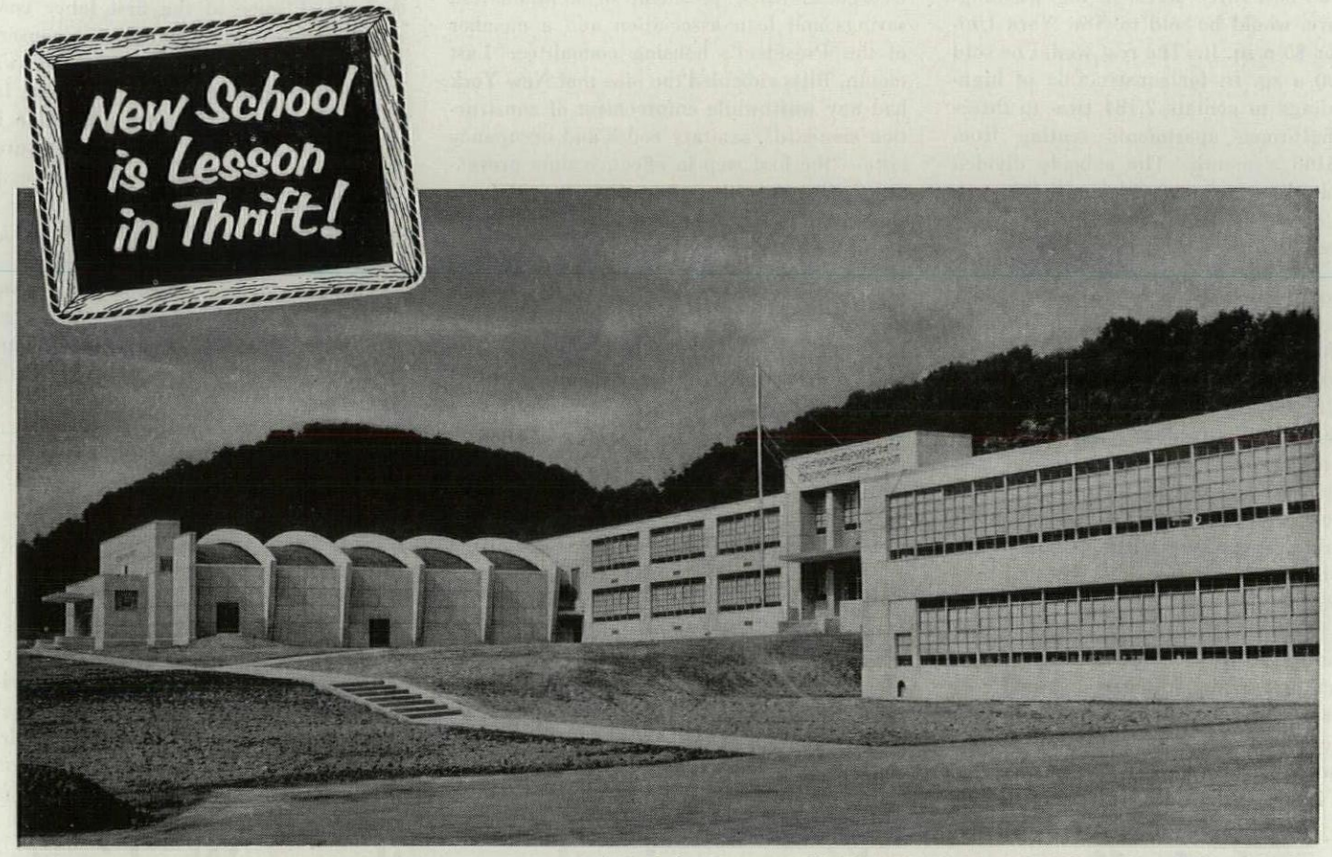
BROAD SOUTH MALL FLANKED BY L'ENFANT PLAZA COMPLEX (LEFT)



PROJECT SHOWN IN RELATION TO CAPITOL



Lionel Freedman photos



Contractor: Lundy Construction Company, Williamsport, Pa. Engineers: A. W. Lookup Company, Philadelphia, Pa. Architect: D. H. Grootenboer, Williamsport, Pa.

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The air-entraining feature, originated and developed by Universal Atlas, minimizes bleeding or water gain and segregation. Thus the finished concrete is fortified against the effects of freezing-thawing weather.

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BUILDING STATISTICS:

Materials prices 0.8% over Jan. '53, profits climbed for supply companies

After rising to a peak last July, then declining until November, the BLS wholesale price index for building materials at the start of 1954 stood at 119.5, or only 0.8% above the level when 1953 began (see chart). Lumber and wood products were the only group that showed a net price drop over the twelve month period. Flat glass increased most: 9%. Full year changes in important categories:

	Jan., 1953	Jan., 1954	% Change
Lumber and wood products	120.5	117.0	—2.9
Lumber	120.1	116.0	—3.4
Millwork	129.3	131.1	+1.4
Plywood	108.5	103.5	—4.6
Metal products			
Plumbing equipment	113.6	118.2	+4.0
Heating equipment	113.8	115.3	+4.0
Metal doors, sash and trim	117.7	127.3	+8.2
Nonmetallic minerals	114.6	121.0	+5.6
Concrete ingredients	113.1	119.9	+6.0
Structural clay products	124.0	132.0	+6.5
Gypsum products	117.7	122.1	+3.7
Prepared paint	110.5	112.8	+2.1

While most materials prices were edging up during the greatest construction spending year in history, sales and net profits of supply companies also were advancing. Huge jumps in Celotex and US Steel profits reflected the fact both were hit by strikes a year earlier. The only drop, at Johns-Manville, reflected high initial depreciation costs on two Canadian mines and reduced demand for some asbestos fibers. Company statements:

	Profits		
Company	1952	1953	% Change
U.S. Steel Corp.	$143,687,746	$222,735,656	+55.0
General Electric Co.	151,720,000	165,728,000	+ 9.2
Owens-Illinois Glass Corp.	16,200,820	16,267,386	+ 0.4
Johns-Manville Corp.	22,619,951	19,661,412	—13.1
Libbey-Owens-Ford Glass Co.	14,907,893	19,233,667	+29.1
Armstrong Cork Co.	8,685,259	9,264,978	+ 6.6
U.S. Gypsum Corp.	19,031,216	19,558,708	+ 2.8
Carrier Corp.*	4,522,512	6,107,134	+35.0
National Gypsum**	7,249,480	7,700,000	+ 6.2
Flintkote Co.	4,896,737	5,032,116	+ 2.8
Celotex Corp.*	1,612,043	3,124,844	+93.2
Devoe & Raynolds Co.†	1,414,128	1,687,453	+19.3

* *Year ending Oct. 31.* † *Year ending Nov. 30.* ** *Estimated.*

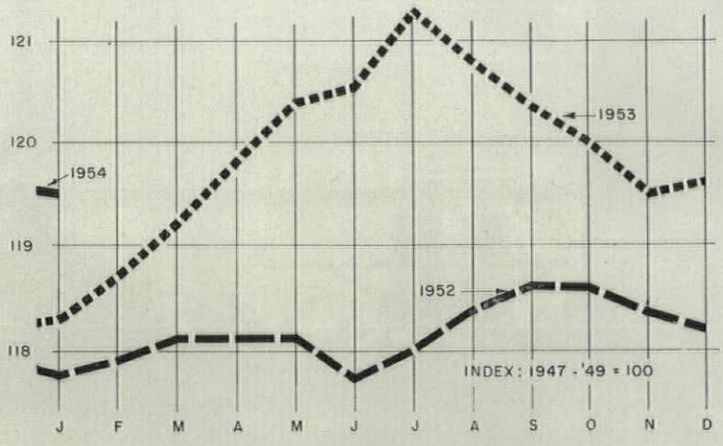
NEW CONSTRUCTION ACTIVITY

(expenditures in millions of dollars)

	February			1st two months		
Type	'53	'54	% change	'53	'54	% change
PRIVATE						
Residential (nonfarm)	758	771	+1.7	1,574	1,601	+1.7
New dwelling units	675	680	+ .7	1,410	1,420	+ .7
Additions & alterations	64	69	+7.8	127	136	+7.1
Industrial	204	177	—13.2	405	356	—12.1
Commercial	111	158	+42.3	219	322	+47.0
Other nonresidential	118	141	+19.5	240	284	+18.3
Religious	34	41	+20.6	69	84	+21.7
Educational	31	38	+22.6	63	77	+22.2
Hospital	26	26	0	53	52	—1.9
Public utilities	275	300	+9.1	550	607	+10.4
*TOTAL	1,574	1,643	+4.4	3,201	3,360	+5.0
PUBLIC						
Industrial	131	126	—3.8	265	256	—3.4
Educational	131	156	+19.1	263	311	+18.3
Hospital	33	23	—30.3	67	44	—34.3
Military	106	62	—41.5	212	138	—34.9
*TOTAL	713	674	—5.5	1,447	1,385	—4.3
GRAND TOTAL	2,287	2,347	+1.3	4,648	4,745	+2.1

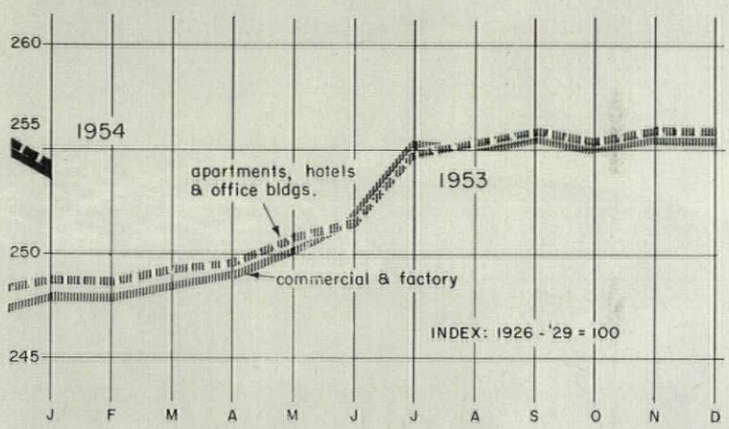
* Minor components not shown, so total exceeds sum of parts. Data from Depts. of Commerce and Labor.

MATERIALS PRICES



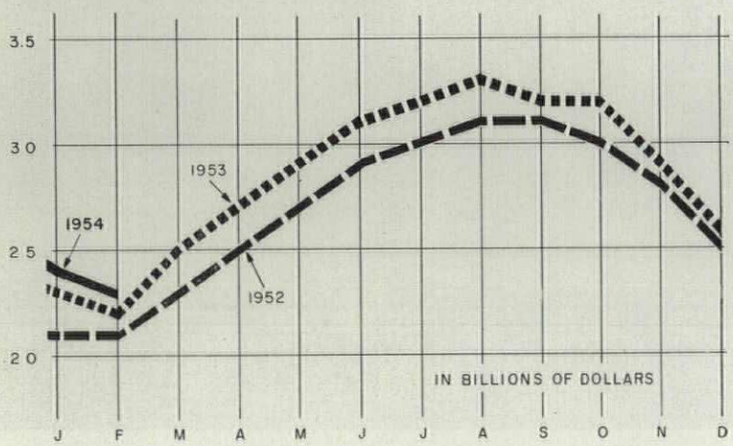
Average wholesale building materials prices as calculated by BLS were holding steady. Mid-January's index figure was 119.5, the same as last November and the preliminary figure for December. (In a minor readjustment, BLS revised December to 119.6.) Slight increases for lumber and clay products were offset by a drop in metal products. Last month, increasing seasonal demands lifted lumber prices about 10% above their winter lows. Douglas fir 2 x 4s rose $2 per MBF, and other items even more.

BUILDING COSTS



Construction costs fell in January from their July to December plateau. E. H. Boeckh & Associates' apartment, hotel and office buildings index dropped from 255.7 in December to 254.0, or 0.6%. This canceled most of the increase from 252.7 to 255.1 between last June and July. Boeckh's commercial-factory index fell from 255.4 in December to 253.9 in January, only 1.0 point above last June's 252.9.

CONSTRUCTION EXPENDITURES



February's new construction expenditures estimated by BLS and the Commerce Department totaled $2.31 billion, or 1.3% above the $2.28 billion in February, 1953. For the first two months of this year, total outlays reached $4.74 billion, up 2.1% over January-February '53. Private construction outlays were running 5% ahead of spending during 1953, but public construction expenditures were lagging 4.3%.

The moderate cost of Armstrong's Linoleum, along with its ability to withstand concentrated traffic, makes it a favorite floor for showrooms and lobbies. Decorative insets are easily worked into this flooring. Since this material comes in rolls 6′ wide and up to 90′ long, it provides a smooth surface with few dirt-catching seams.

Lobby, Northern Natural Gas Company Building
Omaha, Nebraska
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ARMSTRONG'S LINOLEUM

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Realtors fear boomerang in income tax changes

Realtors for a long time have been urging Congress to amend the income tax laws to assure them the same privilege with real estate that stockbrokers have with stocks: taxation at 26% capital gains rates instead of higher ordinary income rates for properties held as an investment.

Last month, the House appropriations committee included a capital gains rule in the 1954 tax bill. But committeemen added unforeseen provisos that not only virtually nullified the boon but promised to put some broker-investors in a worse plight than ever.

The background: most Internal Revenue districts have held that realty brokers were subject to ordinary income tax on profits from sale of properties held for their own account. Because their main business was real estate, their properties were held to be merchandise, not investments. But some districts —among them New York—were not so tough. They would let a real estate man pay at capital gains rates if he could satisfy federal agents that a genuine investment was involved. Across the nation, there was no uniformity in administration.

Improvements banned. Under the proposed rules, a dealer would have to inform Internal Revenue that the purchase was made for investment within 30 days of taking title (within 90 days after the bill becomes law on property already held). He would have to hold the property at least five years and could make no substantial improvements to it. On re-sale he could then pay capital gains on 95% of the profit, and regular income taxes on the other 5% (which would allow for the fact the dealer would probably be his own broker and save the normal 5% broker's commission).

These rules might prove some slight improvement in Internal Revenue districts where more stringent criteria had been enforced. But in liberal districts like New York they would raise havoc. Henry Waltemade of the Bronx, chairman of the Realtors' Washington committee—NAREB's lobbying arm—said he had no idea why the House committee added the "discriminatory" five-year holding provision (compared with six months under ordinary conditions). Another New York realtor said it was incomprehensible why the committee wanted to "put a premium on preventing construction, improvements, or rehabilitation," especially when so many city properties were already run down because rent control had led to deferred maintenance. Waltemade hastily asked Congress for a chance to testify against the new restrictions.

Boomerang. Realty men cried that instead of giving them equal rights to capital gains privileges, the amendment would require, in effect, that anyone assocated with the real estate business wait nine times longer than anyone else for the privilege. Moreover, it would impose a special penalty for improving properties. Big investor-realtors like New York's William Zeckendorf and Charles F. Noyes, who often buy investment properties for the capital appreciation that lies in renovating and upgrading them, would be especially hard hit: they would have to drop their other real estate activity if they wanted to continue their investment and improvement operations without paying full income tax rates on profits that would be taxed to other citizens at capital gain rate.

Subdivision rules. Also approved by the ways and means committee: a rule to allow capital gains privileges to a tract owner, except a dealer in real estate, if he subdivides a tract by selling no more than five lots a year. Unless acquired by inheritance, the tract would have to be held at least five years with no substantial improvements.

At month's end, the tax changes looked far from certain of enactment. Background: in January the same House committee voted to remove income tax exemption from public housing bonds and state and local industrial bonds, then reversed itself when protests arose.

Congressional architecture critics object to the contemporary design of US embassies

The State Dept.'s Foreign Buildings Office, which recently underwent a shake-up that included the ouster of its chief, Leland W. King (AF, Oct. '53 *et. seq.*, News), became a Congressional target last month. Among other things, members of a House appropriations subcommittee objected to the "international style" flavor of the architecture of the handsome postwar crop of embassies, consulates and staff housing built under FBO's (and King's) supervision. On the other hand, the Congressional design critics (Reps. Frank T. Bow (R, Ohio), Sam Coon (R, Ore.) and Prince H. Preston Jr. (D, Ga.) seemed well satisfied with many an overseas edifice that modern architects would call stodgy.

MADRID: SPANIARDS OBJECTED

BANGKOK: "A GOOD NEW BUILDING"

Of the Madrid office building and embassy, the subcommittee complained that "considerable resentment was found among the people of Spain regarding the type of building being constructed." Of Raymond and Rado's graceful apartments in Tokyo for State Department personnel, the Congressmen insisted: "The apartments could and should have been built for considerably less money by using more conventional designs." The celebrated embassy residence and office building at Brussels also was damned as "of the so-called international type or architecture and . . . not in keeping with the surroundings." The same barb was flung at the Antwerp embassy office. There were unkind words, too, for a lease deal that forces the US to house 13 Britons in the chancery of its London embassy, for an inaccessible site in Marseilles, and over the fact that Baron Maurice de Rothschild, one of France's richest men, removed gilded fixtures after selling the US his Paris mansion for $1.9 million. (FBO said it had no use for them, bought chiefly for the land.)

Of the blunt Bangkok embassy office (left) the subcommittee reported: ". . . a good new building. . . . adequate in most every detail."

What would the FBO do about design under its new management? Testified Consultant Nelson Kenworthy: "We are neither committed to glass fishbowls nor to Georgian."

Even as the Congressmen aired their plaints on Capitol Hill, a few blocks away at The Octagon, the AIA was holding an exhibit of the same embassies and apartments and praising them as an "impressive program of contemporary American architecture abroad."

For architects, the hearings pointed up what a primary job of education still confronts them. The "international style" to which the Congressmen objected is virtually universal inside the US for new offices of the most respected banks, insurance companies, corporations.

TOKYO APARTMENTS: TOO COSTLY?

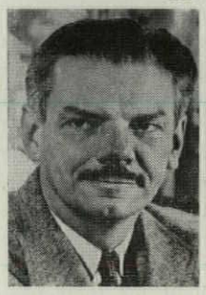
PEOPLE: John Williamson named secretary-counsel of realtor lobbying unit; Carnegie Tech picks fine arts dean

Washington Lawyer **John C. Williamson,** counsel for NAREB's Realtors' Washington Committee for the past three years, was appointed RWC secretary counsel. The main lobbyist post for NAREB's 50,000 members has been vacant since **Calvin Snyder** quit six months ago to become secretary of the Denver Chamber of Commerce. Tall, Gable-mustached Williamson (a Marine Corps captain in World War II) had been taking on more and more of the lobbyist duties during his time as counsel, **Henry G. Waltemade** of New York was reappointed RWC chairman. **W. L. Cooper** of Port Huron, Mich., was named vice chairman.

After a month's consultation with medical and hospital groups, Mayor Wagner of New York named outspoken Dr. **Basil C. MacLean** as commissioner of hospitals. Born and educated in Canada (he is a naturalized US citizen) Dr. MacLean, 58, is director of the Strong Memorial Hospital in Rochester, N.Y., and a former president of the American Hospital Assn.

Prof. **Norman L. Rice,** art director at Syracuse University's college of fine arts, was appointed dean of the college of fine arts at Carnegie Institute of Technology in Pittsburgh. He succeeds **B. Kenneth Johnstone,** who resigned in 1952 to devote full time to the architectural firm of Marlier and Johnstone in Pittsburgh. Prof. Rice, who is chairman of a consultant committee evaluating the Pittsburgh college's effectiveness as a "center of learning" will administer architecture, drama, music, sculpture, painting and design for close to 700 students.

A.P.



RICE

Architect **Richard J. Neutra** deeded his drawings, architectural studies, travel sketches, manuscripts and photographs to the University of California in Los Angeles, along with funds for proper utilization of the material. A board of three will be commissioned to study the accumulation and take care of its division into texts and dissertations. Said Neutra: "Such editing should be commenced as soon as possible and I shall be available for consultation in all its phases."

Architect **Eero Saarinen** was named, with four others, to membership in the National Institute of Arts and Letters. Membership in the society (it is affiliated with the American Academy of Arts and Letters) is for life, is limited to 250 and is based on a candidate's "notable achievements in art, music or literature." There are now 15 architect members. Architect **James Kellum Smith** of McKim, Mead & White, New York, was one of two new vice-presidents elected.

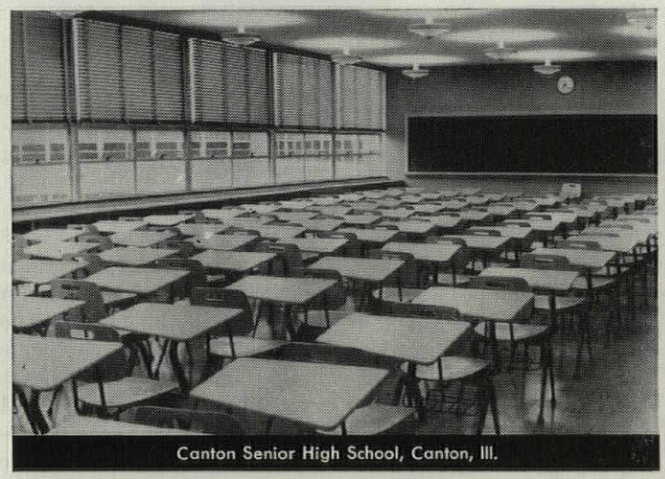
St. Louis Times-Star

SMITH

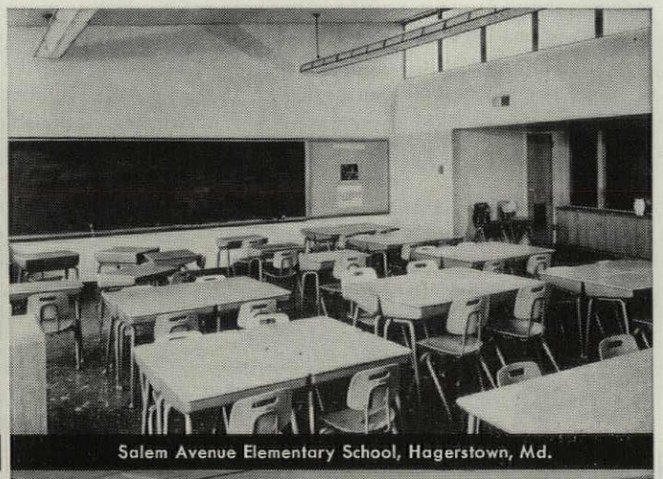
SAARINEN

Los Angeles showed itself determined to get to the bottom of smog, named a New York chemical engineer, Dr. **Lauren B. Hitchcock,** 53, to head up the Southern California Air Pollution Foundation. His salary: $50,000.

The last vestige of public housing's strong hand at the controls of the Portland (Ore.) Housing Authority disappeared, leaving public housers only a minority and no key offices. The PHA elected **R. Anthony DuBay** as chair-



Canton Senior High School, Canton, Ill.



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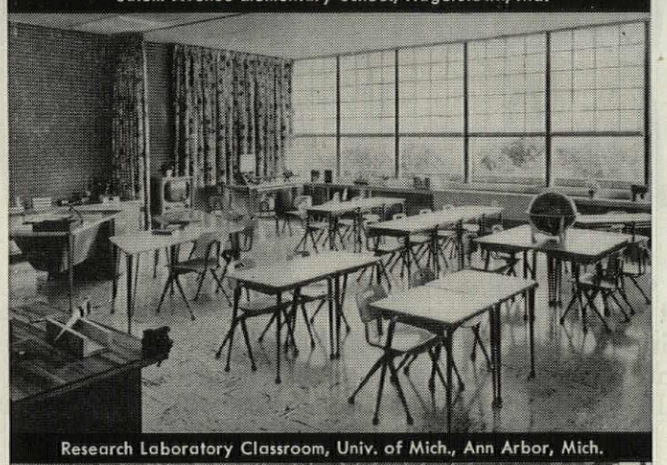
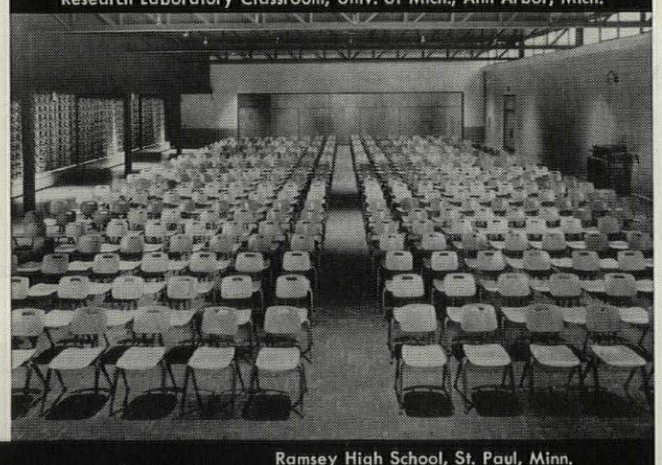


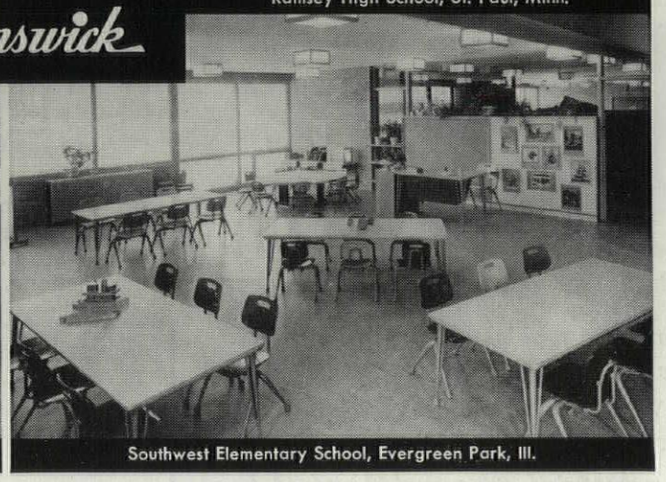
Research Laboratory Classroom, Univ. of Mich., Ann Arbor, Mich.



Ramsey High School, St. Paul, Minn.

Brunswick

Keokuk High School, Keokuk, Ia.



Southwest Elementary School, Evergreen Park, Ill.

man succeeding **Mrs. Ralph Rasmussen.** DuBay, secretary of Securities, Inc., big Portland mortgage firm with realty and homebuilding affiliates, was appointed to the PHA six months ago when Mayor **Fred Peterson** began replacing public housers with antipublic housers as terms expired. **Robert Hurd,** vice president of Portland Trust Bank, is new vice chairman of the authority.

NAMED: **Charles H. Scholer,** head of the department of applied mechanics at Kansas State College, as president of the American Concrete Institute, succeeding **Henry L. Kennedy; Harry C. Ballman,** smoke regulation engineer for Columbus, Ohio, who was appointed executive secretary of the Air Pollution Control Assn. in Pittsburgh; **Charles A. Neumann,** vice-president in charge of sales of Kentile, Inc., as president of the Asphalt Tile Institute in New York; Architect **Welton D. Becket,** of Los Angeles, as most distinguished alumnus of this year, by the University of Washington.

For the last five years, as staff director of the Senate banking committee, **Joseph P. McMurray** has been one of the key men behind writing the nation's housing laws. Courted by every organization interested in housing, 41-year-old McMurray is 1) a dynamo with a keen and politically perceptive mind, and 2) a genius at writing legislation for hasty introduction following a committee wrangle.

A. Lieberman

McMURRAY

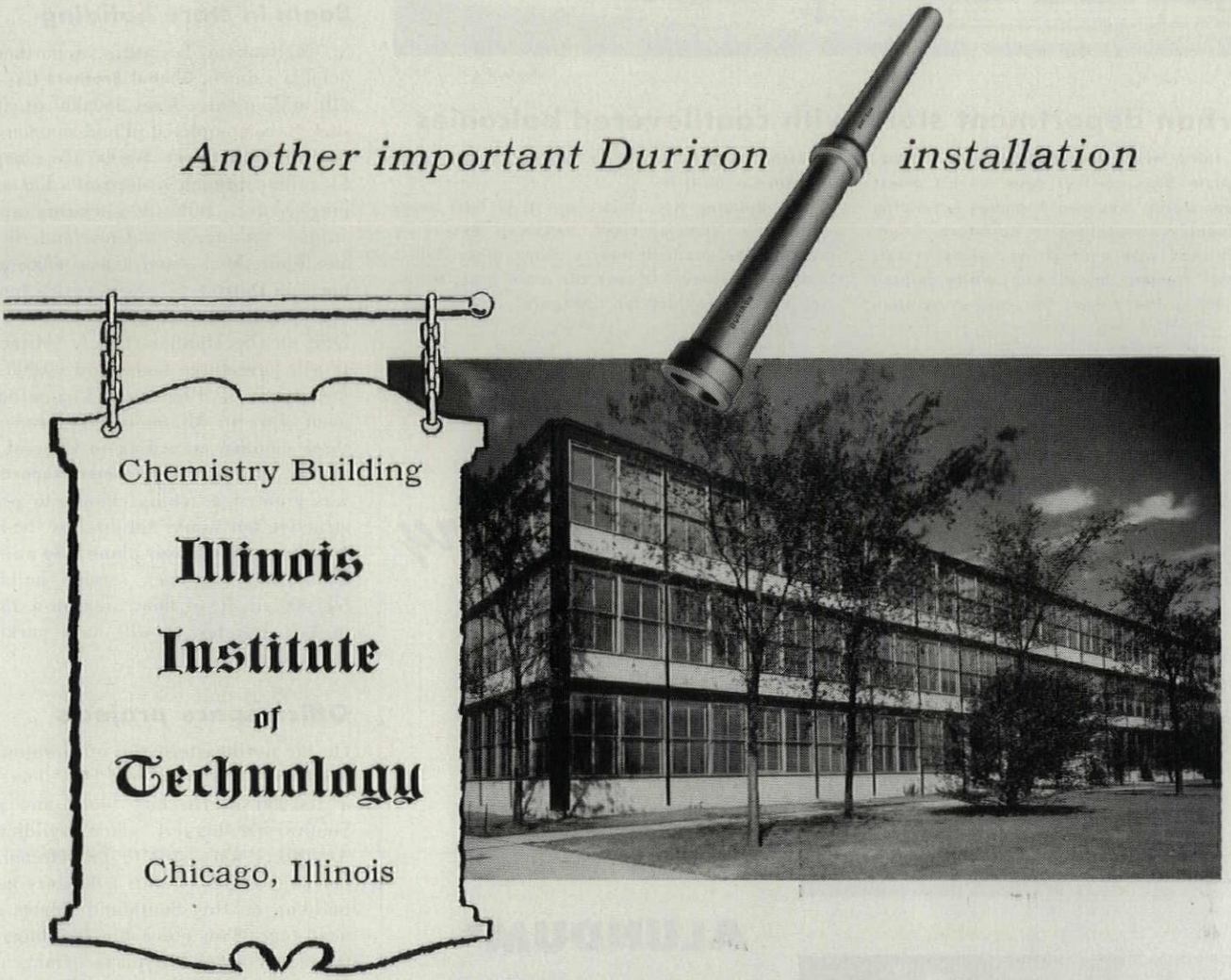
Both Democratic Committee Chairman **Burnet Maybank** in the 81st and 82d Congress and the present chairman, **Homer Capehart,** have relied heavily on his judgment, his facts and his speech-writing talent. Twice recently, Republican Capehart has sent Democrat McMurray to speak for him at building industry meetings. Last month, Mayor **Robert F. Wagner** of New York wooed McMurray away from his $11,700 Washington job for a $17,500-a-year post with the New York City Housing Authority.

DIED: Wisconsin's "No. 1 realtor," quiet, humorous **Otto N. Ludwig** of Wauwatosa, in real estate and the mortgage business 62 years, Feb. 2 in Wauwatosa. He was 79. He was known as the father of the Wisconsin real estate brokers' license law and was active in introducing uniform conveyance blanks and fees in 1929; **Carl Franklin Braun,** 69, of San Marino, Calif., head of C. F. Braun Co., one of the nation's largest builders of oil refineries and chemical plants, Feb. 4, in Pasadena; **Emile G. Perrot,** 81, Philadelphia architect and pioneer in the field of reinforced concrete, Feb. 7 in Philadelphia. He was credited with developing the unit girder frame system of reinforced concrete, officially adopted by the US Government, designed many industrial and college buildings; **Bror Gustav Dahlberg,** 73, Swedish-born Chicago industrialist, founder in 1921 of the Celotex Corp. and one of the first to see the possibilities of using sugar cane waste to make structural insulating board, Feb. 20 in Miami Beach. He retired as Celotex president in 1948 and as chairman in 1951. He was a member of the Chicago Housing Council and on the Producers' Council advisory board.

M. Elkins

NEW PRESIDENT was elected last month by New York's Building Trades Employers' Assn. He is William B. F. Drew (l) secretary-treasurer of J. L. Murphy, Inc., shown with outgoing president Fred J. Driscoll. The 50-year-old, 1,000-member organization is the biggest of its kind in the industry.

Another important Duriron installation



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Richard Averill Smith

Suburban department store with cantilevered balconies

For its third and largest suburban branch, Bloomingdale Bros., one of New York's oldest department stores, last month opened a building with a country atmosphere in Stamford, Conn. It was finished with contrasting panels of salmon-tinted Roman brick and white-painted common brick. Plans were the work of William Snaith of the Raymond Loewy Corp. The Austin Co. built it.

The building has 160,000 sq. ft. of floor area, with two glass-enclosed balconies extending outside the main frame, a third glass-walled balcony cantilevered over the main floor. Parking area is provided for 1,000 cars.

NEW BUILDINGS

Boom in store building

In Cheltenham Township, a northern Philadelphia suburb, **Gimbel Brothers** has started a $10 million three-level 250,000 sq. ft. branch store to be completed in mid-summer 1955. . . . **Federal Department Stores** are completing a $4 million branch in Detroit's Eastgate shopping center, and are spending another $8 million for stores in Cleveland, in Lansing and Flint, Mich., and a new office and warehouse in Detroit. . . . New York's **Bonwit Teller** has announced that its seventh store will be built on the Manhasset, L.I. "Miracle Mile." It will have three floors and 60,000 sq. ft. of floor space. . . . Plans for a $3.5 million department store in Miami will be ready in about three months, according to General Manager Roy H. Hawkins of **Bessemer Properties,** which was granted a zoning change to permit construction but would not disclose the lessee. . . . **Broadway-Hale Stores** plans a $4 million warehouse and customer service building with 600,000 sq. ft. of floor area on a 15-acre site in Los Angeles. It will have parking space for 400 cars.

Office space projects

On the northeastern rim of downtown Dallas, **Southland Life Insurance Co.** has acquired a 100,000 sq. ft. city block and plans the Southwest's biggest office building center. Architects were still to be selected, but the company hopes to start a 40-story home office building on this Southland Center site early next year. Two other big buildings are contemplated around a plaza arrangement, and an underground parking garage for 2,000 cars. . . . Owner-builder **Erwin S. Wolfson** has announced plans for a $5 million, 11-story, 119,000 sq. ft. building in the downtown insurance section of Manhattan designed by Emery Roth & Sons, architects. . . . **Richfield Oil Corp.** has started construction of a $1 million, four-story, 36,000 sq. ft. addition to its headquarters building in Los Angeles. Albert C. Martin & Associates are the designers and Guy F. Atkinson Co., general contractor. . . . The **New York Stock Exchange** is studying plans to lease its annexes at 20 and 24 Broad St. to **General Realty & Utilities Corp.,** which would replace the present 58-year-old structures with a new air-conditioned office building designed to include space that would allow an expansion of the trading floor from the adjoining main stock exchange building.

Six-story addition

Six floors providing another 170,000 sq. ft. of office space will be added to the ten-story Plaza Building in New York City by **Moses Ginsberg & Sons,** owners. The $7.5 million reconstruction and renovation will include complete air conditioning, new lobby, new elevators, and a new all-aluminum front. Architect: Sylvan Bien. General Contractor: Diesel Construction Co. . . . **CBS** has bought

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AF 3-54

the Chicago Arena and plans a $1.5 million remodeling to convert it into four television studios with a total area of 50,000 sq. ft. . . . New York's **Tishman Realty & Construction Co.** plans a $1 million rehabilitation and modernization program at the French Lick Springs Hotel, French Lick, Ind., owned by a Tishman subsidiary.

Ford assembly plant

Site preparation was underway in Mahwah, N. J. for **Ford Motor Co.'s** largest assembly plant: a building 2,117'x792' containing 1.5 million sq. ft. of manufacturing space, plus separate administration and employee facilities buildings and a powerhouse. The 39-acre unit will be 100% sprinklered and will have a system of fire curtains through the truss areas to divide the building into 30 separate sections. Architects: Giffels & Vallet.

Texas vs. Miami Beach

Dallas Oilman **Mike Abraham** will build a $3.5 million resort hotel "that will rival the finest in Miami Beach" on Padre Island, a 110-mile long barrier beach island off the Texas coast from Corpus Christi to Port Isabel, at the Texas border. Abraham's hotel will be at the southern end, where a $2.5 million causeway from Port Isabel opened last month. A causeway from Corpus Christie was opened last year, and plans are afoot for a highway the length of the island. Result: a real estate developers rush, with scores of promotors advocating resort and subdivision projects to lure winter holiday trade and retired all-year residents now attracted to Florida.

$35 million Philadelphia project

An 85-acre estate in fashionable Chestnut Hill, a northwestern Philadelphia suburb, was sold by Temple University last month to a syndicate headed by **Mayer I. Blum,** in cooperation with **Peoples Bond & Mortgage Co.** The buyers planned a $35 million residential and shopping center development including six high-rise apartments. The first three 12-story units costing $15 million are tentatively slated to start this year.

Civic-center high school

Plans are being completed by Kelly & Gruzen, architects-engineers, for a $2.5 million combination academic-vocational **Passaic, N.J.** senior high school on a four-acre civic center site on which a new Kelly & Gruzen city hall would also be built. . . . In Wauwatosa, Wis., the **Missouri Synod** will start a $2 million high school in June from plans by Grassold-Johnson & Associates of nearby Milwaukee, and by fall the city of **Wauwatosa** expects to start a $2.9 million junior high designed by Ebling, Plunkett & Keymar, architects.

Show city by Disney

Walt Disney is assembling a 152-acre site in Los Angeles for a $5 to $10 million exhibition and amusement city to be called Disneyland. Fifty-two acres would be used for three separate Disney-style Worlds of the Past, Future and Fantasy. There would be rides for children in a 40' rocket to give the sensation of space travel, a Cinderella palace, a Pinocchio village, an African jungle area, and buildings for exhibits by industrial firms. One hundred acres would be set aside for parking.

From highways: factories

How much building construction can a big highway development produce along its borders? Gov. Thomas E. Dewey of New York touched on the point last month in proposing four more state thruways. The state's first 427-mile New York-Buffalo expressway, said Dewey, had led among other things to construction of 12 major factories that otherwise would have gone to other states and "some $25 million in housing already proposed."

Bertram D. Tallamy, chairman of the state's Thruway Authority, filled in more details. He predicted buildings costing $25 million would rise within a few years in the industrial park being developed alongside the expressway at Syracuse with plants for **Carrier Corp., General Electric, General Motors** and others. At Buffalo, he said, it was creating three new truck terminals and a $10 million **Thruway**

Super Plaza shopping center, and it caused **Ford Motor Co.** to plan a large assembly plant near Suffern, **IBM** a large factory north of Kingston. Expressway restaurants and service stations will cost $20 million; utility and toll buildings $2 million; an administration building near Albany $1.5 million; and two **state police** division headquarters $450,000 each.

Will Miami pass New Orleans?

Prediction by Philip Moore, president of First Research Corp. of Florida: in 1958, metropolitan Miami will pass Atlanta and New Orleans to become the South's largest city. Moore said present populations are: New Orleans 736,000, Atlanta 724,000, and Miami 660,000 (not counting transients). But in four years the order will be reversed, he predicted: Miami 920,000, Atlanta 840,000 and New Orleans 820,000. Since 1940, metropolitan Miami population has increased almost 150%, Atlanta's about 60%. Last year building permits in Dade County (Miami and vicinity)

continued on p. 58

$4,500-a-unit subsidy helps NY middle-income co-ops

After six years of spadework, nine educational and religious institutions in the Columbia University area were getting New York's most elaborate residential redevelopment project under way. Demolition of buildings occupying a two-block site along Broadway (background) just north of Barnard College, Columbia, Juilliard School of Music and the Union and Jewish Theological Seminaries (all among the sponsors) began in January. Construction of six 20-story cooperative buildings containing a total of 1,000 apartments designed by Harrison & Abramovitz will follow.

The co-op corporation bought the site from the city last summer for $1.3 million, or about $4.5 million less than its condemnation cost. US Title I funds made up $3 million of the write down, city funds $1.5 million. Aided by this $4,500 a unit land subsidy, 2½- to 5½-room apartments for middle-income purchasers will require down payments of $600 to $700 a room. Monthly payments will be about $16 to $23 a room.

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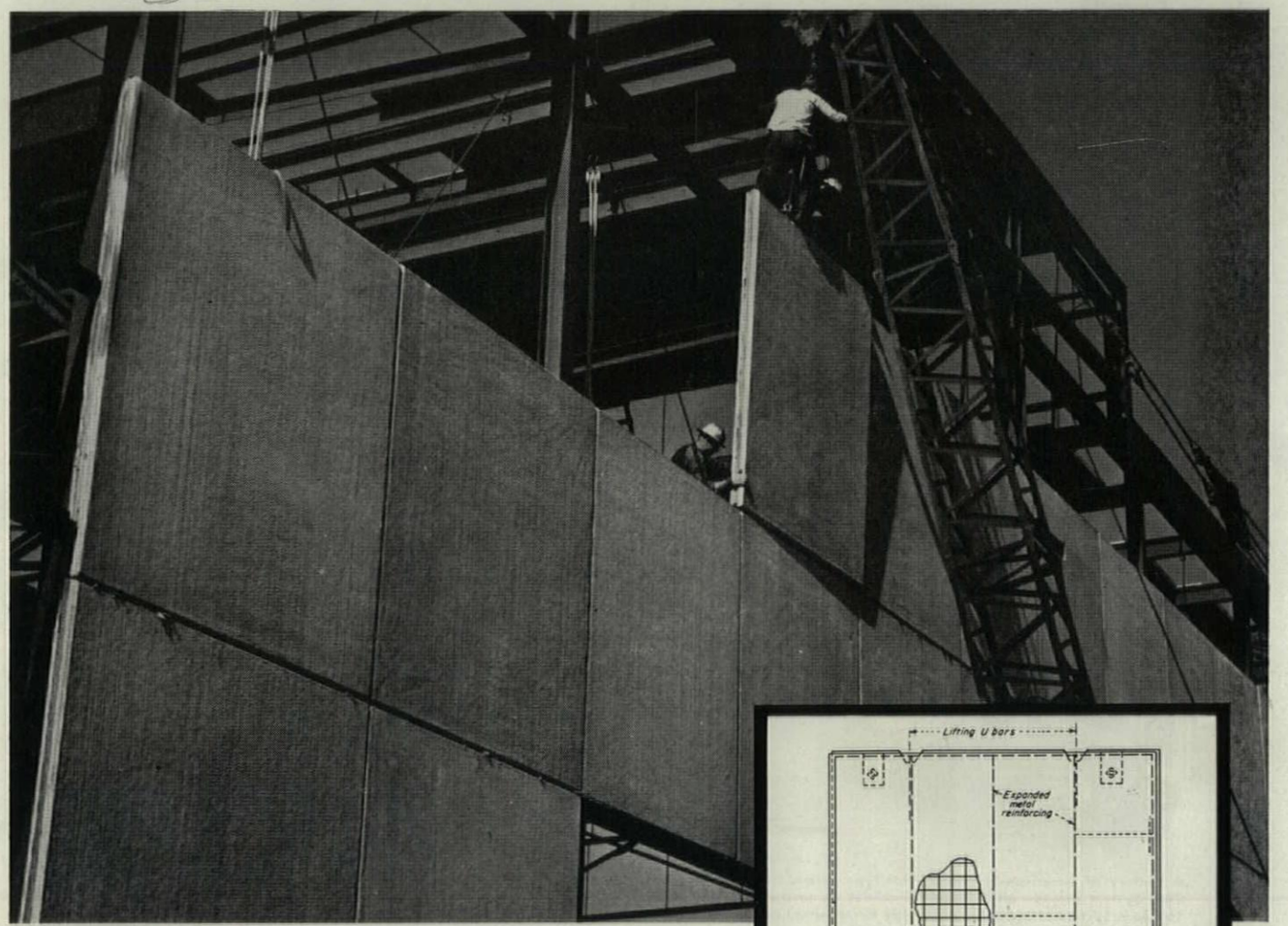

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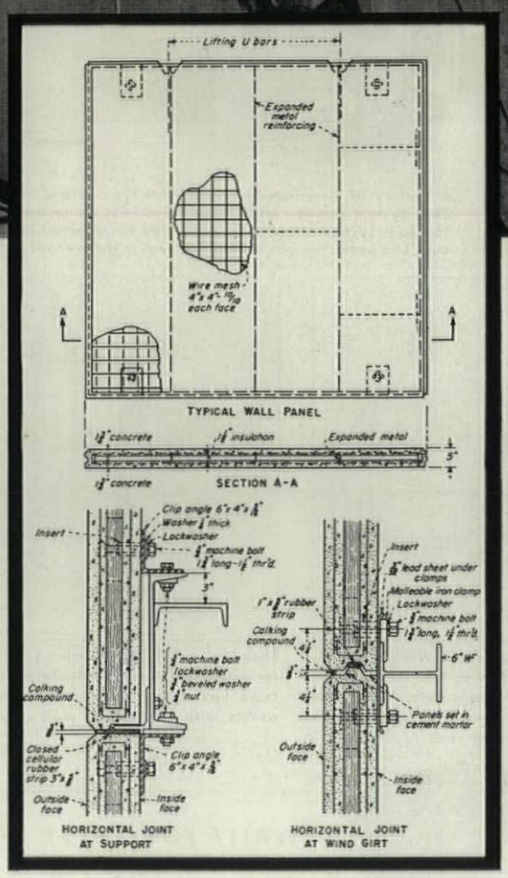

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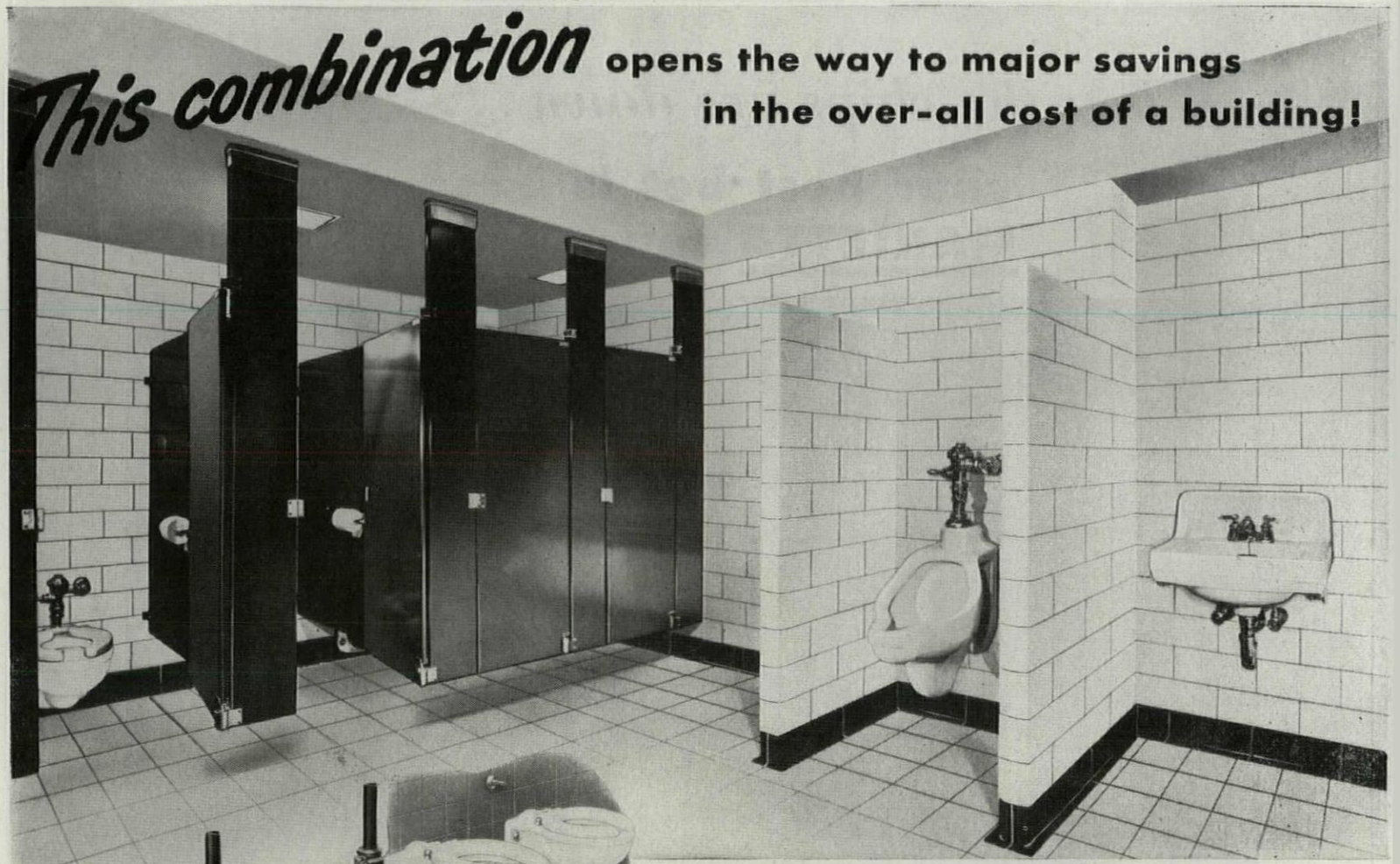

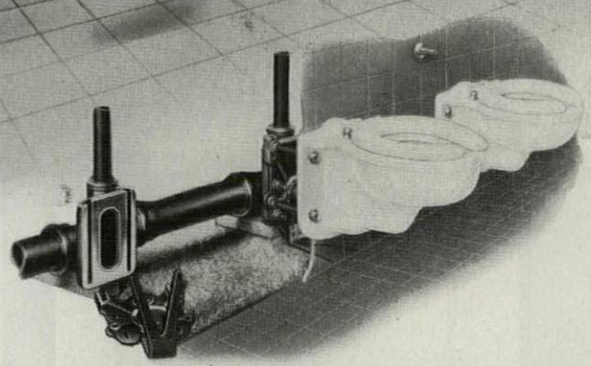

A battery of American-Standard Wall-Type Toilets installed with the Zurn System provide all necessary facilities up to the drainage stack. The Zurn System of installing wall-type toilets simplifies rest room layouts, and opens the way to major savings in the over-all cost of a building.

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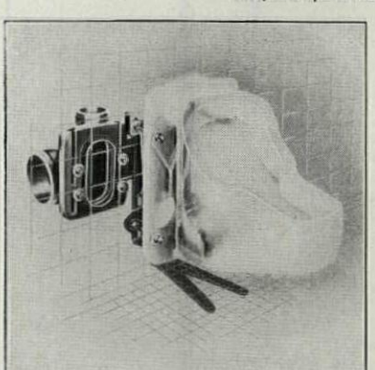
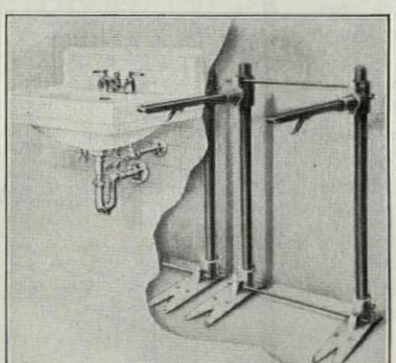


American-Standard Sanistand Women's Wall-Type Urinal installed with the Zurn System especially designed for this fixture lifts sanitation in public rest rooms to an all time high and reduces maintenance cost.



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J. A. ZURN MFG. CO., PLUMBING DIVISION, ERIE, PA., U.S.A.

Please send me the new booklets on Modern Rest Rooms, "You Can Build It and Maintain It for Less a New Way," and "The American-Standard Better Rest Room Guide."

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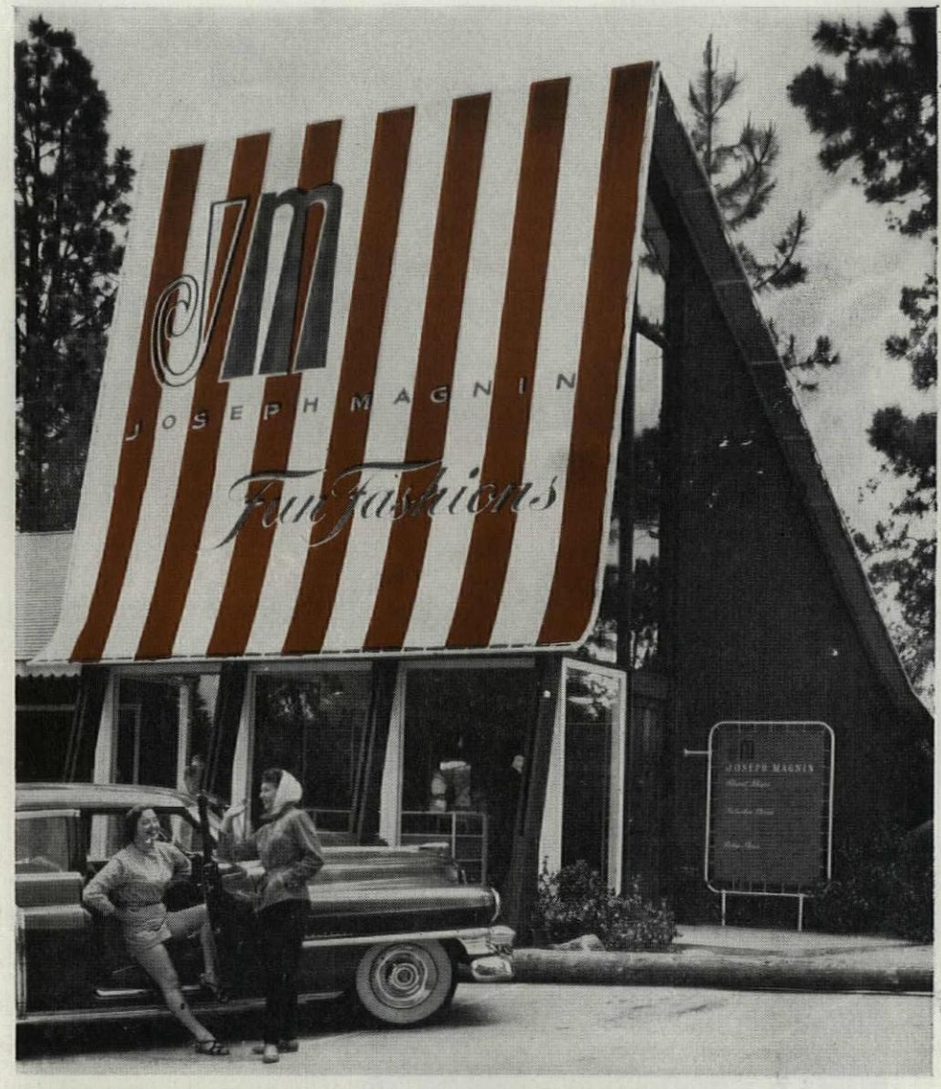
modern design and Canvas

Color, texture, grace, dramatic effect . . . these inherent values of modern design are economically achieved through the use of canvas. Light in weight, yet durable, canvas is adaptable to both permanent and demountable design and permits greater freedom in the use of glass by solving problems of solar heat control.

Walter Landor & Associates used canvas to outstanding advantage in the design of Joseph Magnin's Resort Fashion Store at Cal-Neva, Lake Tahoe.

FREE: Write today for our brochure on canvas applications. It contains original and practical ideas, plus helpful instructions for specifying canvas.



JOSEPH MAGNIN'S, Cal-Neva, Lake Tahoe

Designers: Walter Landor & Associates, Industrial Design, San Francisco

"We had a real construction problem in designing Joseph Magnin's Cal-Neva Store. The problem? Winter snows sometimes averaging 12 feet in depth,—summer season only two months long.

"Our solution? We conceived the Cal-Neva Store as a "Big Top" demountable canvas tent. Festive looking and cool in the heat of summer, the canvas roof and facade can be stored away in the wintertime. Thus, impressive savings resulted from the elimination of the need for heavy duty construction.

"This concept of the use of canvas afforded other spectacular advantages. Lighted from the inside at night the tent acts as an illuminated signboard visible from far away, creating a gala atmosphere tempting to shoppers in a holiday mood."

Walter Landor

Walter Landor & Associates

Industrial Design

CANVAS AWNING INSTITUTE
and NATIONAL COTTON COUNCIL
P. O. Box 1851 Memphis, Tennessee

THE CANVAS AWNING INSTITUTE INC.

continued from p. 54

totaled a record $203 million; those in adjacent Broward County a record $54 million. They included 6,353 apartments units, 3,336 hotel and motel rooms.

Oil- and gasworks

C. F. Braun & Co. won a contract to construct a $12 million refining plant at Baton Rouge for **Esso Standard Oil Co.** to convert low octane petroleum fractions into high octane gasoline. . . . **Standard Oil Co. of California** announced it will spend $275 million for expansion and exploration this year, $50 million more than last year. . . . **Gulf Oil Corp.** said it will build the world's largest ethylene and platforming plants in Port Arthur, Tex. starting this spring, but would not disclose costs. . . . In Calumet City, Ill., **Prime Oil Refining Co.** started a $10 million refinery, its first in the Chicago area. . . . **Columbia Gas System** planned a $110 construction program, including six new compressor stations, citing a backlog of almost 100,000 applications for gas for household heating.

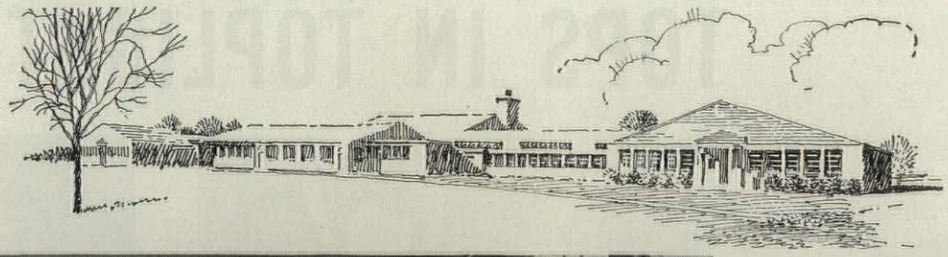
Building materials plants

California's State Lands Commission received an application from **California Portland Cement Co.** to buy 2,000 acres near Mojave to round out an 8,000-acre site for a $12 million cement plant. The firm has already spent $750,000 for land and engineering services. . . . President Dwight P. Joyce announced the **Glidden Co.** would expand its paint division this year with a new manufacturing plant in Montreal and a new laboratory and technical service building in Toronto. . . . In Harmar Township, near Pittsburgh, **Pittsburgh Plate Glass Co.** bought a 45-acre tract for a glass research laboratory. . . . A two-story laboratory for

continued on p. 62

Temple University starts $10 million medical units

Philadelphia's Temple University was clearing the site last month to start building two ten-story inpatient and eight-story outpatient buildings (above) adjoining the present Temple University hospital. Architects: James A. Nolen Jr. of Philadelphia in association with Skidmore, Owings & Merrill. Contractor: John McShain Inc. of Philadelphia. The air-conditioned buildings will cost $10 million, have gray brick and glass facades with horizontal sun shades to prevent glare through windows that face south.



Coleytown District School, Westport, Conn. Architect: Lyons & Mather, Bridgeport, Conn. Contractor: William J. Lyons Co., Inc., Norwalk, Conn. Windows: Lupton Master Aluminum Projected Windows.

Standardized for savings . . .

There are no dark corners in this efficient, new school. Continuous bands of Lupton Master Aluminum Projected Windows flood every room with natural daylight. The windows were standard in design and construction, but with ventilating sash at the sill only. In effect, custom windows, without the premium of custom prices.

This saving, through adaptability of standard designs, is one of many gained when you specify Lupton Windows. Long window life means additional savings. The extra deep members of Lupton Master Aluminum Projected Windows assure the strength needed in the over-size windows popular today. Maintenance savings are considerable too. These aluminum windows will never need paint. They'll never get paint clogged, will always work with precision and ease. There are savings in construction time too. Light in weight and accurately made, Lupton Master Aluminum Projected Windows can be installed quickly, with minimum labor . . . when you add all these client savings, you'll rate Lupton Windows a "best buy".

You'll find the windows you need, for almost any commission, described in Sweet's . . . or write direct for the '54 General Catalog.

MICHAEL FLYNN MANUFACTURING CO.
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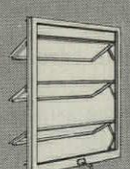
LUPTON METAL WINDOWS

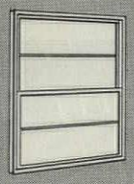
Member of the Steel Window Institute and Aluminum Window Manufacturers' Association

LUPTON MASTER ALUMINUM PROJECTED WINDOW

LUPTON CASEMENT ALUMINUM OR STEEL

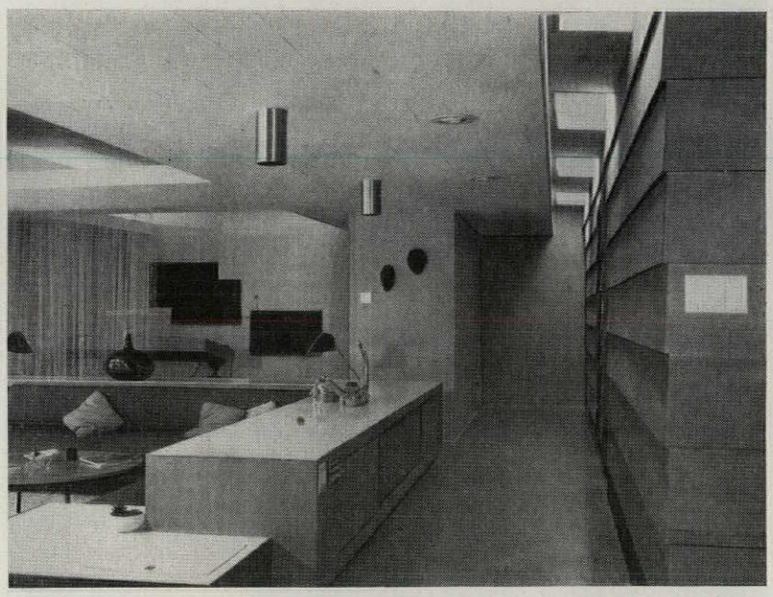


LUPTON ALUMINUM AWNING WINDOW



LUPTON ALUMINUM DOUBLE HUNG WINDOW

TOPS IN TOPLIGHTING

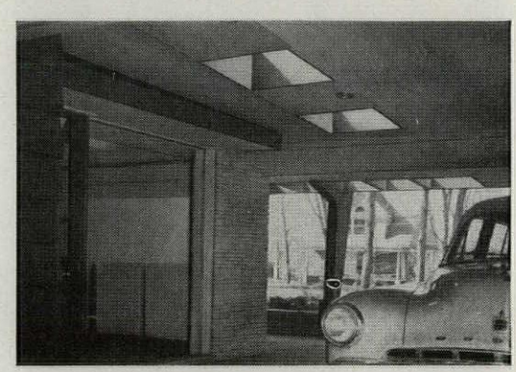


CHEERFUL DAYLIGHTING, evenly distributed, brightens the home of Architect Ken Fryar. In designing his new home, Mr. Fryar specified Wascolite Skydomes because they admit maximum daylight . . . eliminate dark corners . . . permit functional use of space. Skydomes also enabled Mr. Fryar to improve his creative design . . . add a distinctive, modern appearance to his home.

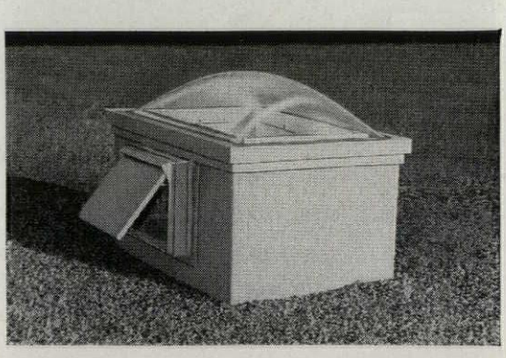
WASCOLITE SKYDOMES are lightweight, prefabricated units that do not require special roof construction. Their extruded aluminum frames have a built-in weepage arrangement that assures leakproof installation. Skydomes are weatherproof, shatter-resistant and virtually self-cleaning. They can be installed in minutes — using only a screwdriver.

CREDITS: Architect (and owner): Ken Fryar, Michigan City, Indiana.
Contractor: Tonn and Blank, Inc., Michigan City, Indiana.

IDEAL FOR ANY ROOM. Domes are available in White Translucent acrylic plastic for glarefree daylighting, or in Clear Colorless acrylic plastic for efficient daylighting of task areas.



WASCOLITE SKYDOMES can also be used to daylight carports and attics. When added insulation is required, specify Wascolite Ceiling Domes.



NEW WASCOLITE VENTDOME, with motor-driven air exhaust, provides toplighting and ventilation through one roof opening. FHA has now approved interior bathrooms and utility rooms. Use Ventdomes to daylight and ventilate these areas.

wascolite skydomes

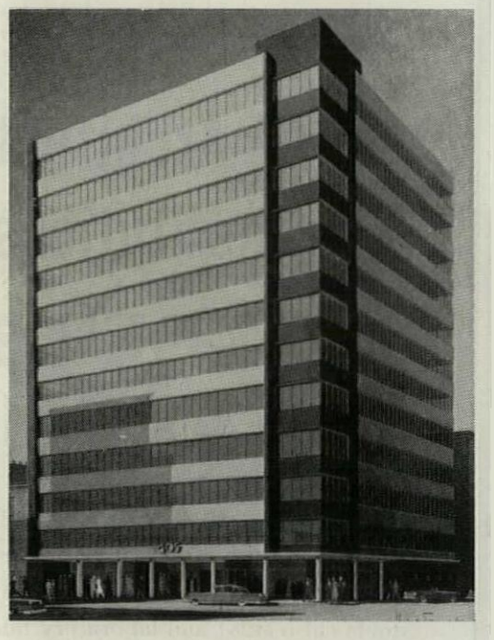
See Sweet's Catalog or write . . . . . **WASCO FLASHING COMPANY,** 88 Fawcett Street, Cambridge 38, Mass.

continued from p. 58

pigment research for paints, lacquers, plastics and other materials will be started next month by **E. I. du Pont de Nemours & Co.** in Newark, N. J. . . . Ohio's **Marietta Concrete Corp.**, producing precast beams, columns and concrete silos, was establishing its fifth branch at Bowling Green, Ky. . . . **LeTourneau-Westinghouse Co.** of Pittsburgh was purchasing a 25-acre site near Campinas, Brazil, for a factory to produce parts for its earth-moving equipment, and later to produce machines.

Union headquarters

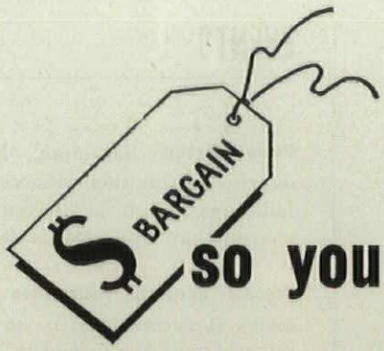
To design a new national headquarters building on Washington's 16th St. (just a block from the White House), the **AFL** engaged big-business architects: New York's Voorhees, Walker, Foley & Smith. The 7-story structure costing $3 million will have 92,000 sq. ft. of air-conditioned floor area. Consulting architects: Wilson & Denton of Washington, who also are drawing plans for an 11-story, $3 million building for the **International Assn. of Machinists** to be erected this summer on the site of the former British Embassy, for which the union paid another $1 million.



2nd apartment on Park Ave. to be rebuilt into office

Made-over buildings grew more and more popular on New York's upper Park Ave. Last summer, a syndicate stripped to its frame and floors a 40-year-old luxury apartment one block from Lever House and then converted it into a modern air-conditioned office building (AF, Sept. '53).

Last month, another syndicate announced it would remake an apartment across the avenue into another modern office building (above) starting this summer. The syndicate: William Kaufman of New York and J. D. Weiler and Ben Swig, New York-San Francisco real estate and hotel partners. Renovation architect: Herbert Tannenbaum. Features: continuous strip windows separated by stainless steel bands; charcoal-colored brick trim; a 4′ recessed promenade building: zoning laws allow more floor area in a converted building than in a new one.



so you think you're saving money?

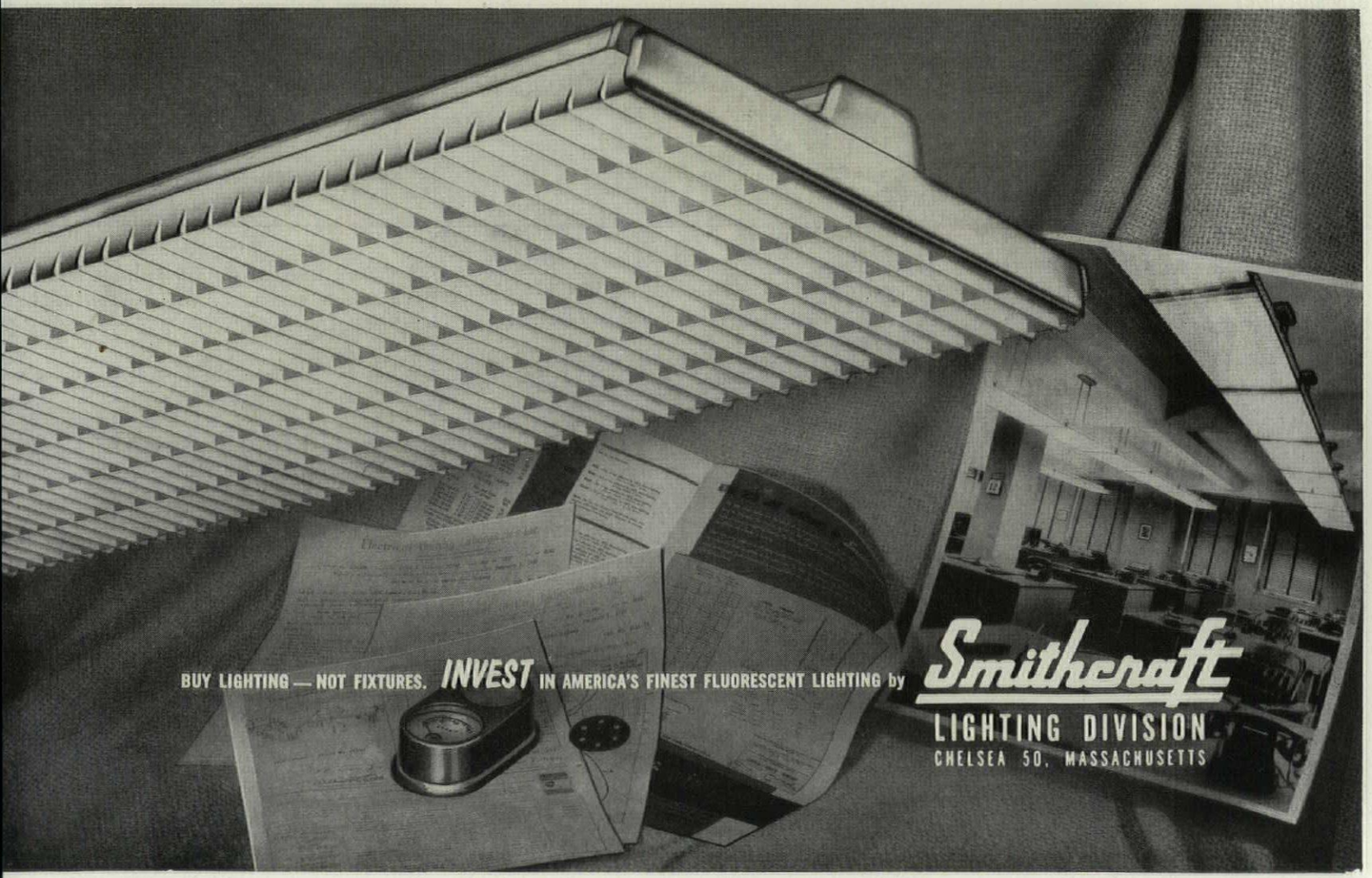
Far too often people figure lighting fixtures are all alike and buy by price tag alone. You may save a dollar or two on the price of each unit, but are you really saving money?

Today's carefully engineered lighting installations are planned with units that are designed to deliver more light at less cost. *Fewer units are required to secure the same results.* So, installation costs are less. And most important, power and maintenance costs are less during the whole life of the installation.

Take the Smithcraft DIRECTOR, for example. A recent comparison test by one of the nation's leading electric utilities clearly demonstrates that the Director produces more light and better light than ordinary fixtures.

Installed in literally thousands of banks, stores, schools and similar locations across the United States, the Smithcraft Director is in a class by itself for appearance, for quality of lighting and for soundness of investment. Be sure to get the complete story on the Smithcraft Director before relighting or when planning new installations. Ask us to send you our Smithcraft Director folder.

Photograph shows Director installation in the offices of the Credit Representative of the First National Bank of Boston, Empire State Building, New York.



EVENTS

Peale Museum, Baltimore, "Blueprint for To morrow" exhibition of accepted designs fo buildings soon to be erected in the Baltimor metropolitan area, **Mar. 1–May 2.**

Precast Concrete Foundation is sponsoring series of special courses on precast concret construction; the first of the six-session serie will be held **Mar. 5-10,** Congress Hotel, Ch cago. Will also be given in Detroit, Phila delphia, New York, Boston, Cleveland, Hous ton and Seattle. Lecturer is F. Thoma Collins, from whom details can be obtaine at 921 W. Las Tunas Dr., San Gabriel, Cali

Boston Museum of Contemporary Art, an archi tecture and design exhibition of the works o Gio Ponti and Gyorgy Kepes, **Mar. 6–Apr.** in Boston; will be available also for genera circulation.

National Electrical Manufacturers Assn., annua meeting, **Mar. 8-11,** Edgewater Beach Hote Chicago.

Michigan Society of Architects, 40th annual con vention, **Mar. 10-12,** Hotel Statler, Detroit.

American Institute of Planners, annual meetin **Mar. 11-14,** Biltmore Hotel, Dayton.

Midwest Conference of Building Officials and In spectors, eighth annual school for buildin inspectors, **Apr. 12-16,** Washington Univer sity, St. Louis; annual conference and bus ness meeting, **Sept. 20-22,** Hotel Commodor Perry, Toledo.

American Institute of Steel Construction, annua national engineering conference, **Apr. 13-1** Hotel Schroeder, Milwaukee.

Western Mountain District, American Institute o Architects, annual conference, **Apr. 22-24,** L Fonda Hotel, Santa Fe, N.M.

American Planning and Civic Assn., conferenc **May 18-21,** Columbus.

Royal Architectural Institute of Canada, 47th an nual assembly, **May 11-14,** Mount Roya Hotel, Montreal.

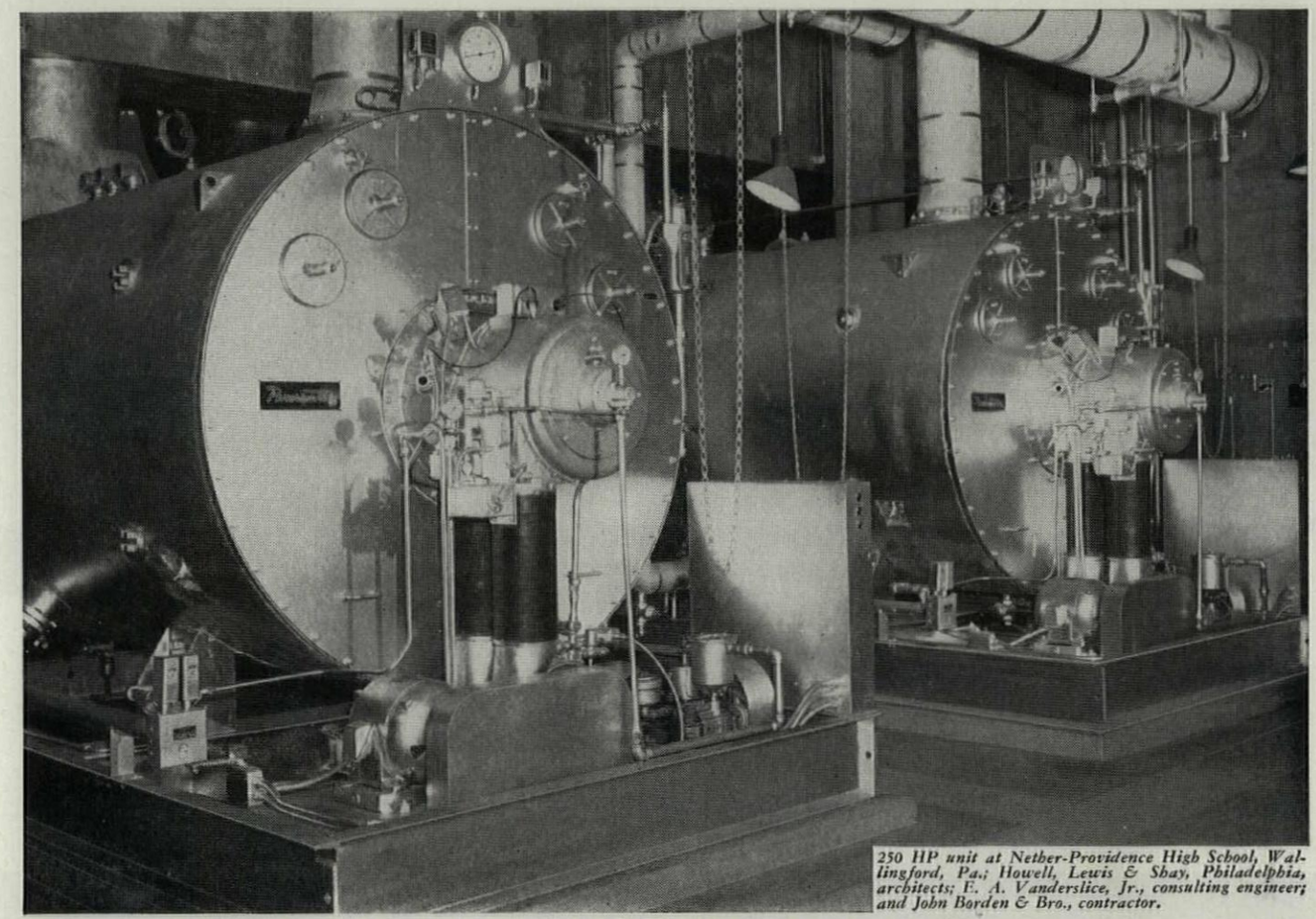
New Jersey Chapter, American Institute of Arch tects, convention, **June 10-12,** Berkeley Ca teret Hotel, Asbury Park, N.J.

American Institute of Architects, 86th annua convention, **June 15-19,** Statler Hotel, Boston

Porcelain Enamel Institute, annual meetin **Sept. 28–Oct. 1,** The Greenbrier, White Su phur Springs, W. Va.

California Council of Architects, annual conve tion, **Sept. 30–Oct. 2,** Hoberg's, Lake Count Calif.

at SCHOOLS and COLLEGES



250 HP unit at Nether-Providence High School, Wallingford, Pa.; Howell, Lewis & Shay, Philadelphia, architects; E. A. Vanderslice, Jr., consulting engineer; and John Borden & Bro., contractor.

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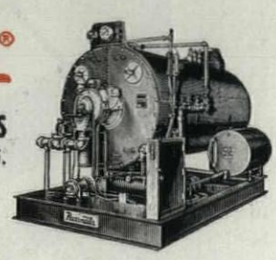

ORR & SEMBOWER, INC. • Established 1885 • **Morgantown Road, Reading, Penna.**

The story
of a building
with . . .

"FIRM FEET" IN CLAY

Case history
of CECO on-the-job
performance

HOW CECO JOIST CONSTRUCTION HELPED SAVE $4.00 PER SQUARE FOOT

Erecting a building with firm footings in downtown Chicago clay is no simple task. Accomplishing that, plus cutting costs, is truly a stand-out feat.

Such is the story of the Remington Rand Chicago Office Building and the problem solved by Architects Bartlett, Watts and Rosene.

Analysis indicated that usual column spacings would impose excessive pressures on the subsoil, causing piles to drift. The solution: increase the distance between pile groups and spud every third pile.

But that created a problem . . . how to span the wider bays economically and keep the dead load on each pile group to a minimum. The architects knew Open-Web Steel Joists offered the lightest floor system, so called for their use.

Conduit and air-conditioning ducts were run through the open webs, resulting in further economies.

"Being self-centering and requiring no shores, Steel Joists were fast to erect," said Architect Harry Owen Bartlett. "Thus the contractor, J. L. Simmons Co., Inc., was able to pour slabs early, allowing masonry units to be stored on the floors and then laid up from inside, saving scaffolding."

Total cost of the building was $13.75 a square foot, compared to some comparable buildings costing $17.75—a saving of $4.00. Here is another example of Ceco performing on the architect-owner-contractor-supplier team.

Ceco Product Specialists will help you save through product engineering. So before you plan your next project, call your nearest Ceco office. Consult Sweet's file for address. CECO

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LETTERS

Lionel Freedm

OBERLIN'S AUDITORIUM

Forum:

January FORUM says the *Cleveland Pl Dealer* called Oberlin's Hall Auditorium t most controversial building in Ohio, "not tirely without malice." Who on the *Clevela Plain Dealer* is qualified to judge archit ture?

Oberlin has always been a great school cept for its architecture. Having seen the H Auditorium last spring, I think Oberlin is coming a great school in every respect. C gratulations to officials and architect.

RICHARD VROOMAN *(Oberlin '41), archit*
Assistant professor of architecture
Texas A. & M.
Bryant, Tex.

Forum:

Your story about the new auditorium Oberlin College was presented in an e catching manner. All readers should find interesting and provocative of some inner s surface thinking of the kind we should seek out more often. . . .

Had space permitted, it would have b informative to tell some of the reasons w the *Cleveland Plain Dealer* called this " most controversial building in Ohio," if o to provide further opinions for your forum ideas.

GEORGE B. ALLISON
Allison & Rible, archite
Los Angeles, Calif.

Forum:

Thank you for the editorial treatment gi our auditorium. You handled this very w although I am slightly disappointed that quote me as you do—the building "will t some getting used to."

Presumably you got the quote from a Cl land paper which put into my mouth exact opposite of my own personal feeli about the building. I have always liked building and have never had any dou about it.

WILLIAM E. STEVENSON, *presi*
Oberlin College
Oberlin, Ohio

continued on p

Hotel Saves 17% *with Anemostat High Velocity Air Conditioning System*

The Kentucky Hotel, Louisville, Ky., lost no room rentals during installation of its High Velocity air conditioning system.

There were three bids for the High Velocity air conditioning system for the Kentucky Hotel in Louisville. The Anemostat High Velocity System was selected at an overall saving of 17% over bidder number two, and 20% over bidder number three.

Anemostat's High Velocity System has the widest range of application for both alteration jobs and new construction. Write for HV Manual 48.

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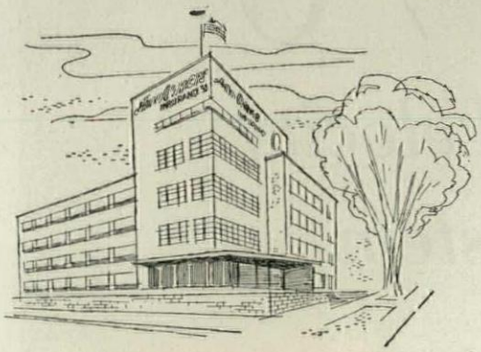
ACOUSTICAL MATERIALS AT WORK

AUTO-OWNERS INSURANCE COMPANY, Lansing, Michigan



Architects:
Lee and Kenneth Black

General Contractor:
Christman Company

Acoustical Contractors:
Grand Rapids Acoustical Co.
Detroit Acoustical Contracting Co.

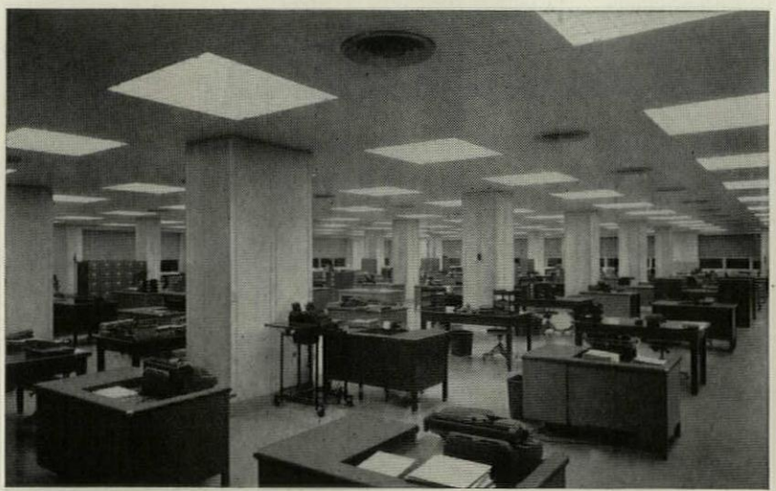
The latest developments in contemporary design and decoration are incorporated in this new Auto-Owners Insurance Company building. Planned as the company's new home office, every feature contributes to efficiency, economy, and employee comfort.

Even the ceilings were chosen with this purpose in mind. Sound-absorbing ceilings of Armstrong's Arrestone soak up distracting noise and help to promote comfortably quiet working conditions.

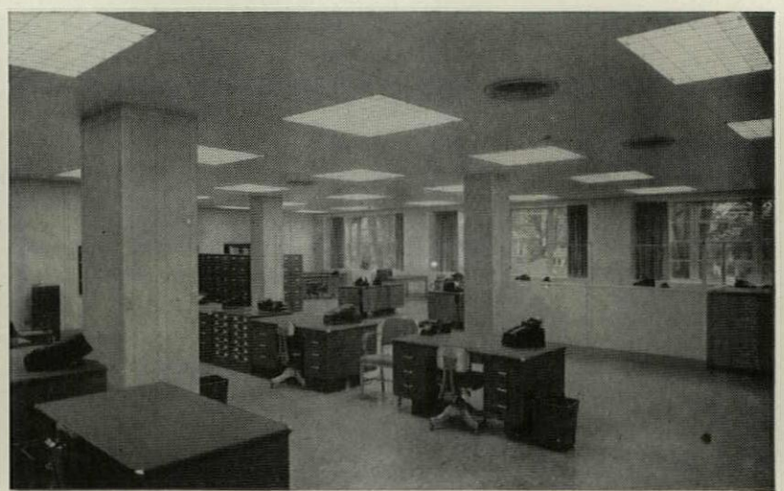
Arrestone is a perforated metal-pan type acoustical material, backed up with a mineral wool pad. Unusually high in acoustical efficiency, it absorbs up to 85% of the noise that strikes its surface. Arrestone's smooth, white enamel finish is an excellent light reflection and can be readily washed or repainted.

Installed by mechanical suspension, Arrestone units can be easily removed when necessary to repair concealed piping, wiring, or ducts.

See your Armstrong Acoustical Contractor for complete details on Arrestone and Armstrong's other sound-conditioning materials. For a copy of the free booklet, "How to Select an Acoustical Material," write Armstrong Cork Company, 4203 Rooney Street, Lancaster, Pennsylvania.

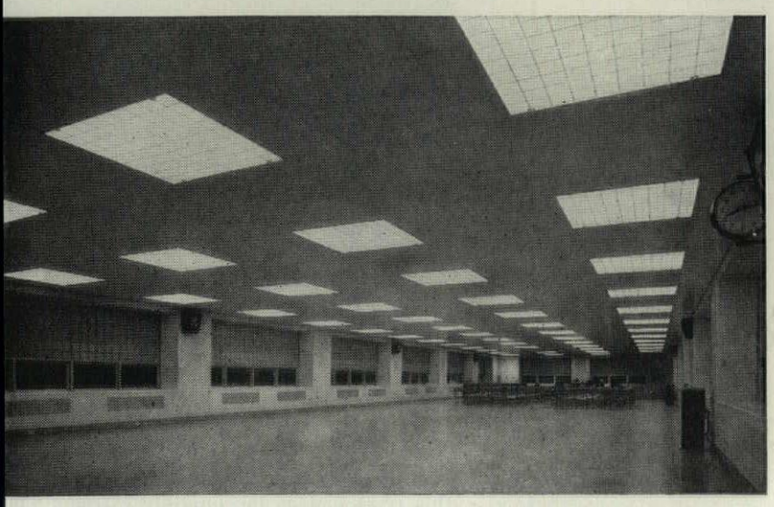


Mistakes are held to a minimum in the company's Underwriting Department. Here, the distracting clatter of typewriters, business machines, and voices is effectively muffled by the Arrestone ceiling. This material offers a maximum of sound absorption.

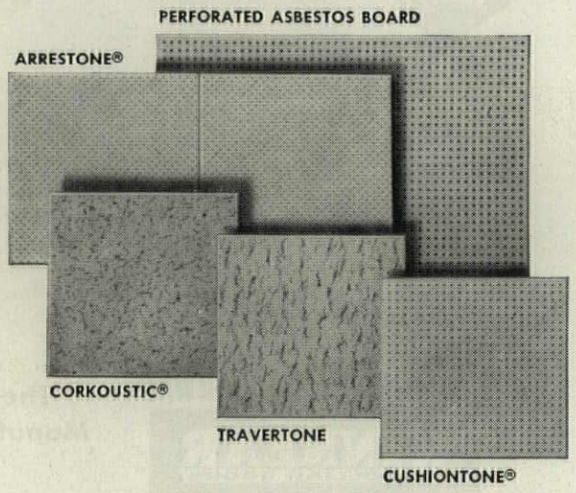


Modern recessed lighting in the Accounting Department and throughout the building helps prevent tiring eyestrain. The white, baked-on enamel finish of the Arrestone ceiling helps diffuse the light evenly all over the room, without annoying glare.

This spacious recreation room gives employees an ideal spot for reading, chatting, or just relaxing. Noise-absorbing ceilings of Armstrong's Arrestone help promote a quiet atmosphere, even when the room is crowded.



Ample space for the largest gatherings is provided by this modern assembly room. For the comfort of both audience and speakers, proper acoustics are maintained by the ceiling of Arrestone.



ARMSTRONG'S ACOUSTICAL MATERIALS

LETTERS *continued*

TWISTED REINFORCING BARS

Forum:

In the December issue under "New Concrete Techniques" you say the Aberdeen Proving Ground, Md. is using a homogeneous ribbed reinforcing bar in a dumbbell section.

This homogeneous ribbed bar in dumbbell section is not new and has been used in Europe, Central and South America since 1936. It is a copy of the famous Isteg bar which was patented and produced in Germany prior to World War II. It has been used with great and enthusiastic popularity in those countries by leading architects, engineers and builders. Some of the US Army structures in the Panama Canal Zone contain Isteg bars.

J. C. WRIGHT, *designer and builder*
Fresno, Calif.

• The Isteg bar was patented in the US by Webrib Steel Co. in 1938. It consists of two smooth (nonribbed) bars simply twisted together, not bonded in any way. In 1946 Webrib found a way to roll a homogeneous bar of dumbbell section which is ribbed and twisted while length is maintained by clamps (in effect, a cold-rolling process which increases the yield strength of the twisted bar).

The dumbbell bar has been accepted by the US Army and has already been used in dozens of jobs. As yet, however, it has not been approved in the New York Building Code, thus its use in civilian building is still restricted.—ED.

Lionel Freedman

GATEWAY AND DESIGN CRITICISM

Forum:

The five pages on Gateway in your December issue show an uninspired commercial development. There should probably have been several more pages to explain why it is so commonplace.

Your editorial absolves the architects from blame. It is, as usual, well-written; and searching criticism is badly needed today. I question the wisdom of giving the architects a scapegoat. I prefer that you aim your critical remarks at the architects. The project question shows too great subservience to actual or imagined demands of the public and this is as bad as the opposite extreme which also deserves editorial comment.

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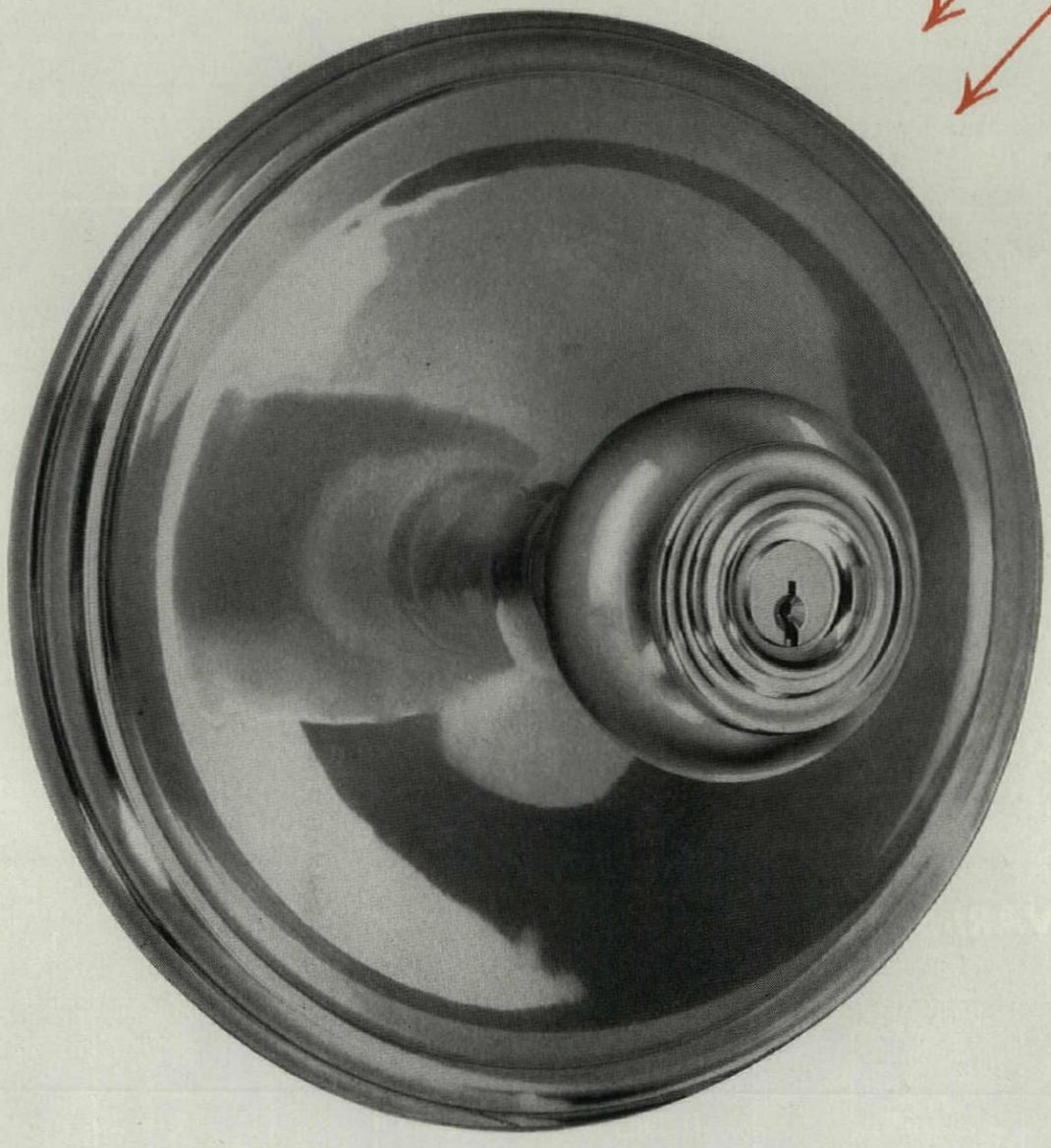

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The World's most widely used BUILDERS' HARDWARE

Announcing Corbin Windsor design

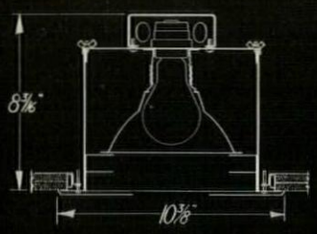
for Corbin heavy duty cylindrical locks and Corbin "Defender" standard duty cylindrical locks.

Windsor design escutcheons are available in three sizes: 3″, 5″, and 8″. P. & F. Corbin Division, The American Hardware Corp., New Britain, Connecticut.

Exciting things are happening at Corbin . . . new designs and new product features that will interest you and your clients. Ask your nearest Corbin representative for complete details!

SPOT LIGHTING WITH CURTIS

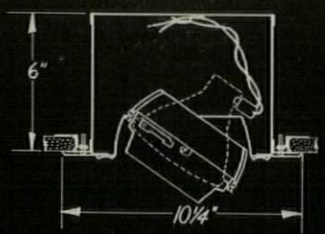
"VARI-SPOT"



CATALOG No. 2246

Curtis "Vari-Spot" is a shallow recessed downlight, utilizing one 100-watt inside frosted incandescent lamp. It is designed for use in residential and commercial interiors. An adjustable Alzak aluminum reflector permits the diameter of the circle of light to be controlled and changed as desired. Decorative holes in the finishing ring provide an attractive light pattern at the ceiling.

"PUNCHY"

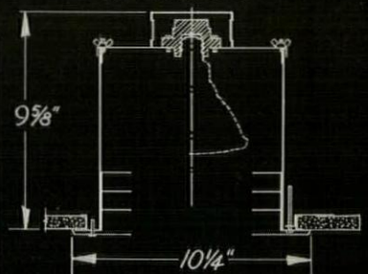


CATALOG No. 2240

Curtis "Punchy", is a shallow recessed adjustable downlight utilizing one PAR-38, Side Prong 150-watt projector spot or flood lamp. It is designed to provide punch lighting for counters, displays, show windows and other areas in store interiors.

"Punchy" features an exclusive aluminum gimbal ring which permits adjustment of the lamp to any angle 0° to 35° from the vertical, and 0° to 360° horizontal.

"SPOTTY"



CATALOG No. 2244

Curtis "Spotty" is a shallow recessed fixed downlight utilizing either one PAR-38 or R-40 screw base 150-watt spot or flood lamp. It has wide application for accent, supplementary and general lighting.

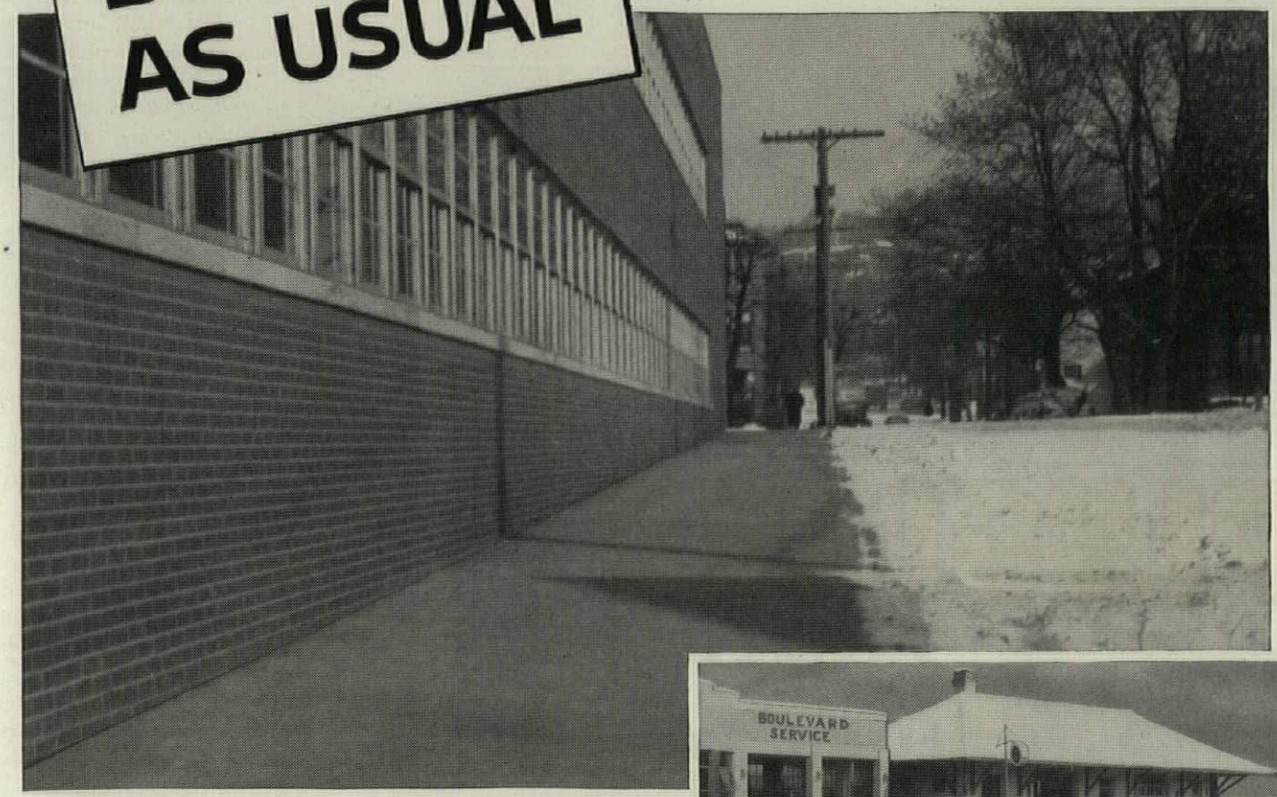
Three horizontal steel baffles, an integral part of each unit, are designed and positioned to provide an exceptionally low-brightness incandescent unit at normal viewing angles.

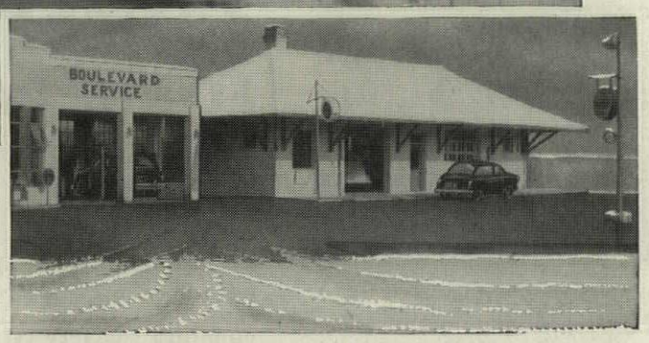
WRITE FOR FREE DESCRIPTIVE LITERATURE

Curtis Lighting, Inc., 6135 W. 65th Street, Chicago 38, Illinois

BUSINESS AS USUAL

with snow melting!





Snow Melting keeps business "on the go"

Many progressive businesses *make their own weather* as far as controlling the all-winter accessibility of their properties is concerned. For thousands of snow and ice removal systems now assure "business as usual," to the foresighted, by preventing interruptions in the flow of commerce once caused by sudden and heavy snows and surface icing conditions.

Yes, steel pipe snow and ice melting systems do eliminate winter weather transportation delays on driveways and sidewalks, ramps, shipping docks and approaches, parking areas, garage and service aprons, and even private spurs and tracks. So in every business where snow and ice are unfavorable factors . . . from service stations and supermarkets to warehouses and factories . . . snow melting keeps business "on the go."

Steel Pipe of course, is the preferred heat transmission medium for commercial, industrial and domestic snow melting systems. The combination of advantages that has made it the stand-by of industry for heating, plumbing, fire sprinkler systems, power, steam and air transmission, for more than 60 years, also makes it ideal for the panels, coils and runs of snow melting systems.

As ever, for snow melting as for other uses, *steel pipe is first choice* . . . the most widely used pipe in the world.

Send for new, free 32 page color booklet "Steel Pipe Snow Melting and Ice Removal Systems."

Steel Pipe is First Choice

COMMITTEE ON STEEL PIPE RESEARCH
AMERICAN IRON AND STEEL INSTITUTE
350 Fifth Avenue, New York 1, N.Y.

LETTERS *continued*

We are slipping back into an "art for art' sake" attitude which is proper in painting sculpture or music, but not in architecture Architects are inflicting on the public detail which are grudgingly accepted but which wil generate resentment toward the profession a the years go on. Architecture can't be picke out of a crystal ball any more successfull than out of a book of plates.

J. WOOLSON BROOKS
Brooks-Borg, architects and engineer
Des Moines, Iowa

Forum:

The practice of civic design is almost ex tinct. To avoid the gross mistakes discusse so ably in your editorial, this art-science mus be restored. Its practice does not lie withi the purview of the architect alone but wil result from collaboration between landscap architect, city planner, architect and profes sionals in related fields.

The education of the public toward ap preciation of good urban and civic design is responsibility of the professions as well as o schools. Dean José Luis Sert and our facult have accepted this responsibility; we look t producing both teams and individuals com petent in civic design and to finding new, an developing old, media for the education of th public.

We are delighted to know you are with us

REGINALD R. ISAACS, *chairman*
Dept. of City and Landscape Planning
Harvard University
Cambridge, Mass.

Forum:

. . . A good piece.

HENRY CHURCHILL, *architec*
New York, N.Y.

Forum:

Your commentary on "Architecture: ste child or fashioner of cities?" is an inspire foray into a forbidden area of criticism. W must be free to talk about these things and will join any movement to help keep you right of free speech unimpaired.

The architect, however, must accept th concomitants of getting in at the beginning the economic equation-making if he wishes t shape the result. It is arduous, sometime fruitless, but necessary. He must help writ these programs, combining his values with th investor's. Poetry can be written with dolla signs. San Marco proves it.

HARRY WEESE, *architect and enginee*
Chicago, Ill.

Forum:

. . . An excellent, not-too-timid editorial.

ROLAND B. CREELEY
Associate professor of regional plannin
Mass. Institute of Technology
Cambridge, Mass.

continued on p. 7

From an ancient art comes a new idea . . .

CERAMO-STEEL CHALKBOARDS

The ***DURABILITY*** *of Porcelain Enamel*

The ***STRENGTH*** *of Steel*

The ***ECONOMY*** *of Modern Design*

Proven durability, restful color and ease of installation make Ceramo-Steel Chalkboards ideal for schoolrooms. With the strength of steel and the ceramic hardness of porcelain enamel, Ceramo-Steel Chalkboards meet your most rigid requirements for smart, modern construction, color harmony and over-all economy. The long life of porcelain enamel is attested by the still-perfect condition of porcelain enameled art objects made thousands of years ago.

Ceramo-Steel Chalkboards are made by Ingram-Richardson Manufacturing Company—one of the country's oldest and most progressive makers of porcelain enameled products. For over half a century, the name ING-RICH has stood for the highest quality porcelain enamel. Today, it represents the most modern developments of the enameling process.

Ceramo-Steel Chalkboards are sold and installed exclusively by the Gotham Chalkboard and Trim Company of New Rochelle, New York, through a nation-wide chain of experienced distributors. Your nearest Gotham representative will gladly furnish complete construction and installation details. Write for full information and the address of the nearest Gotham distributor. A coupon is provided below for your convenience.

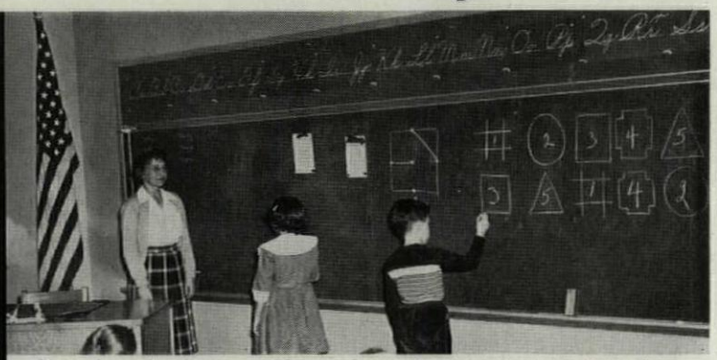
SEE OUR CATALOG IN SWEET'S

Ceramo-Steel Chalkboards are made by

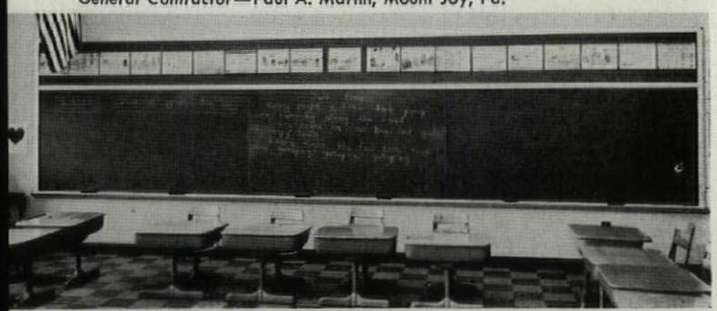
INGRAM-RICHARDSON MANUFACTURING COMPANY

BEAVER FALLS, PENNA.

Member, Architectural Division, Porcelain Enamel Institute, Inc.



Part of an installation of Ceramo-Steel Chalkboards at the Grandview Elementary School, Middletown, Pa.
Architect—J. W. Minick Associates, A.I.A., Harrisburg, Pa.
General Contractor—Paul A. Martin, Mount Joy, Pa.



Ceramo-Steel Chalkboards are used throughout the Consolidated Elementary School of Evans City, Pa.
Architect—Byron J. McCandless, A.I.A.
General Contractor—Martin and Nettrour, Inc., Pittsburgh, Pa.

GOTHAM CHALKBOARD AND TRIM CO.
91 Weyman Avenue
New Rochelle, New York

SEE OUR CATALOG IN SWEET'S

Please see that I receive complete information on CERAMO-STEEL Chalkboards.

Name_____

Company_____

Address_____

LETTERS *continued*

Forum:

Applause for the plain talk in your December editorial "Architecture: stepchild or fashioner of cities?"

America has an impressive list of excuses—even valid ones—for past defaults.

But in this new go 'round, offering priceless chances in redevelopment, I'd duck an assignment to write a brief for the defense.

DOUGLAS DOUBLEDAY
Real estate editor
St. Petersburg Times
St. Petersburg, Fla.

Forum:

Your inauguration of architectural criticisms can be met with nothing but great enthusiasm by the architects who must stand by in silence and watch opportunities pass them by, as well as see their cities spoiled by investors whose vision is farsighted in the dollar eye and shortsighted in the planning eye. This results in a dollar hysteria myosis on the part of the investor which should, as a result of editorials like yours, some day settle into a more rational approach. The architects can do a better job of straightening out the mess that we find ourselves in than the optometrist, but when will the money crowd learn? Your editorial should help get us on the road to proving the fact.

A. L. AYDELOTT
A. L. Aydelott & Assoc., architects
Memphis, Tenn.

Forum:

There is an error in your Gateway story which I am sure you will want to correct. You say "six different, standard panels of precast concrete faced with 11% chromium steel (nickel stainless was unavailable because of Korea)."

Eleven per cent is incorrect, as the material used was 17% chrome. Stainless steel with 11% chrome would be completely unsatisfactory.

MICHAEL STUMM, *advertising manager*
Crucible Steel Co. of America
Pittsburgh, Pa.

• FORUM knew better, regrets the appearance of this typographical error.—ED.

GLENN MARTIN'S PRECAST BUILDING

Forum:

I read with great interest the article on multistory precast framing (AF, Jan. '54) and I have nothing but praise for the presentation of the material. The text is clear, thorough and complete. The photographs are excellent.

MARIO G. SALVADORI
Professor of civil engineering
Columbia University
New York, N.Y.

Forum:

The "innovations," if they may be so termed, adopted by the Glenn L. Martin Co. in the construction of their new building in Baltimore (AF, Jan. '54) are long overdue. The advantages afforded by the old mill-type factory and later by the bolted, exposed steel structure were lost to a large extent when we introduced continuous structures of reinforced concrete and concrete-encased structural steel. Our rigid frames of concrete and steel are suffering from a severe attack of "arthritis." Structures must yield and this can be done only when they are truly elastic. This has never been true of concrete until prestressing made this material truly elastic.

One of the prime characteristics of cast concrete is its tendency to shrink on hardening. When the frame is cast of this material and restricted by forms, structural members and shape integration, it cracks and sets up strains which must be eliminated. Thus the precasting of the members which may freely accommodate themselves to these strains before being subjected to loads is mandatory. Flexural members for horizontal support, when precast and prestressed, can gain shrinkage equilibrium in addition to withstanding very much larger tensile stresses. When such members are combined with ingenious joint details, such as used on the Martin building, the integrated structure is much more stable and lends itself more effectively to precision installations of corollary envelope materials, finishes and of services.

It is certain when this approach is further amplified by standard members and design, especially for buildings which lend themselves to such standardization, that the tremendous cost of wasted forms, patching and strengths which are evaluated with difficulty under present methods will be eliminated and further reduce costs.

WALTER C. VOSS, *consultant*
Cambridge, Mass.

Forum:

. . . an excellent article.

JOSEPH K. GANNETT
Cleveland, Ohio

Forum:

You are to be commended for such an excellent article.

There is no phase of construction work that is getting as much attention as precast and prestressed concrete construction. Therefore, your article is most timely and the photographs most informative.

ROGER H. CORBETTA
Corbetta Construction Co.
New York, N.Y.

Forum:

. . . A good job of research and writing. There's little doubt but what prestressing,

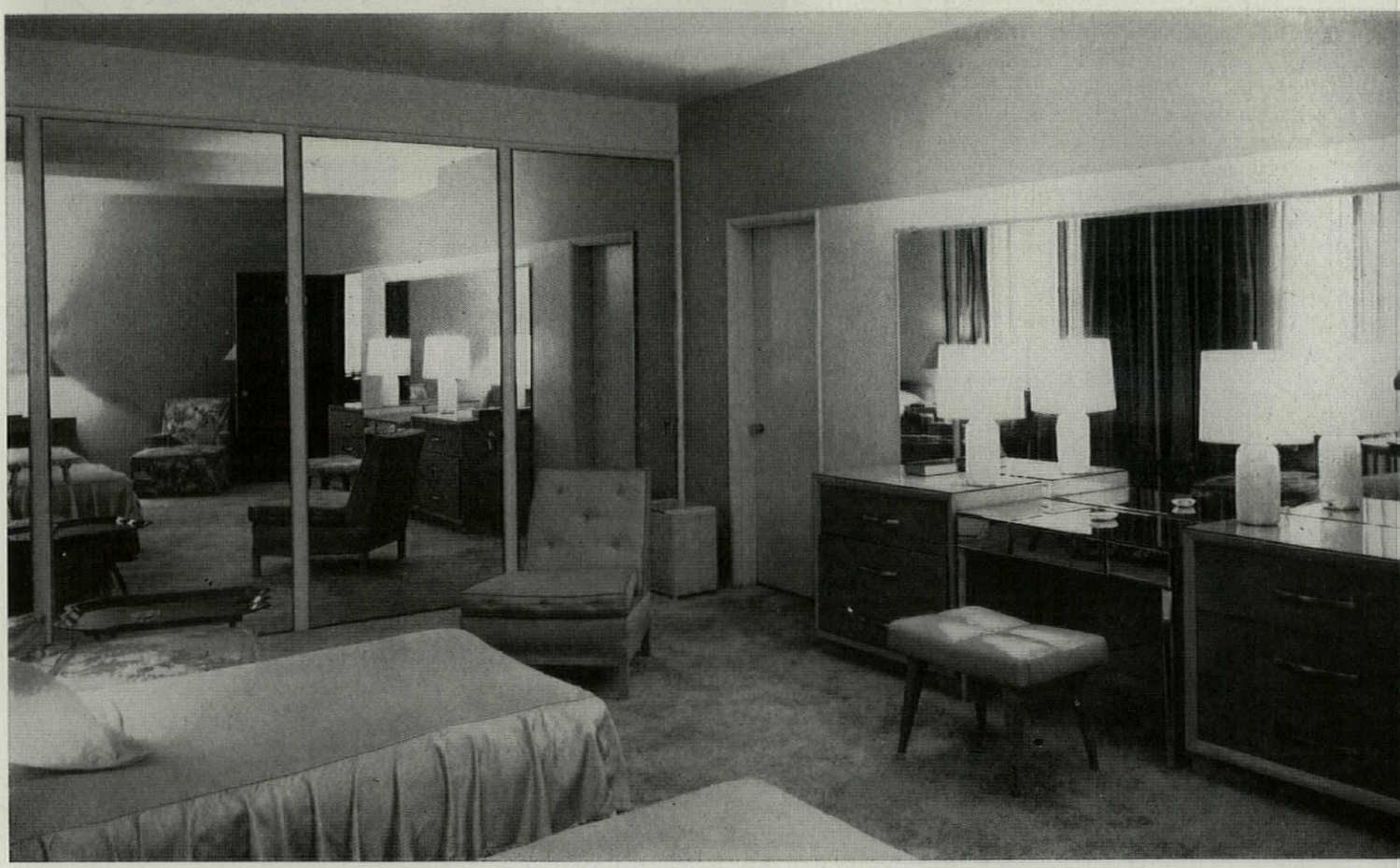
continued on p. 86

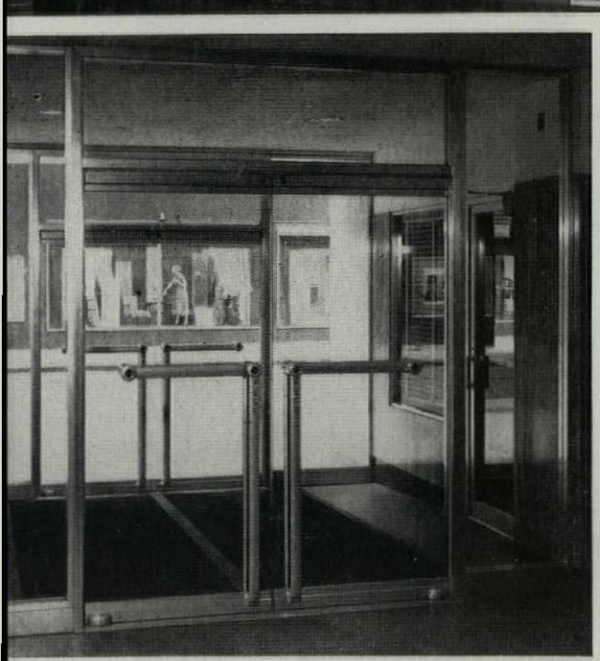
How Pittsburgh Glass helped to moderniz

The Sheraton-Cadillac Hotel

PITTSBURGH'S BENT, ENAMELED TAPESTRY HERCULITE GLASS l
make these escalators a highlight of the dramatic entrance to
novated Sheraton-Cadillac. Herculite tempered glass has the
resistant properties necessary to cope with hard hotel traffic.
from within, this glass also provides an excellent means for ill
ing these moving stairways.

POLISHED PLATE GLASS MIRRORS on the closet doors and ab
dressers give the Presidential Suite bedroom a sparkling, more
look. The bath (not shown in the photograph) in this suite w
rated in beautiful forest green Carrara Glass, with the shower
Polished Plate Glass. All of the other remodeled rooms make e
use of Carrara Glass, Pittsburgh Mirrors and Paints.





DETROIT'S SHERATON-CADILLAC HOTEL is an outstanding example of the effective use of Pittsburgh products in modernization programs involving large structures. A feature of this remodeling is the lobby which includes forest green Carrara Structural Glass, Pittco Store Front Metal construction and a translucent "glass wall" glazed with Mississippi Softone Bondlite. This results in an interior that is tremendously appealing and distinctive. Architect: Mary Morrison Kennedy, Boston, Mass.

HERCULITE DOORS and frames, with the Pittcomatic Hinge—"the nation's finest automatic door opener"—were installed at this entrance. Here a light touch on the handle opens doors smoothly and silently as if by magic. In the arcade beyond, Pittsburgh's Tubelite Doors and Pittco Metal were widely used.

Design it better with **Pittsburgh Glass**

Your Sweet's Catalog File contains detailed information on all Pittsburgh Plate Glass Company products...Sections 7a, 13e, 15b, 16b, 21.

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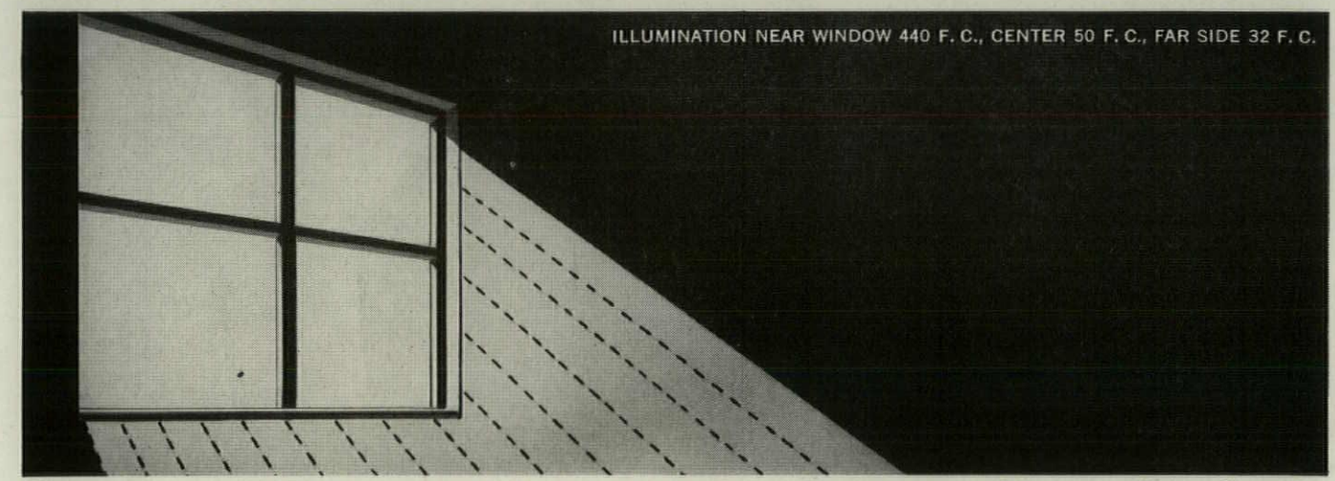
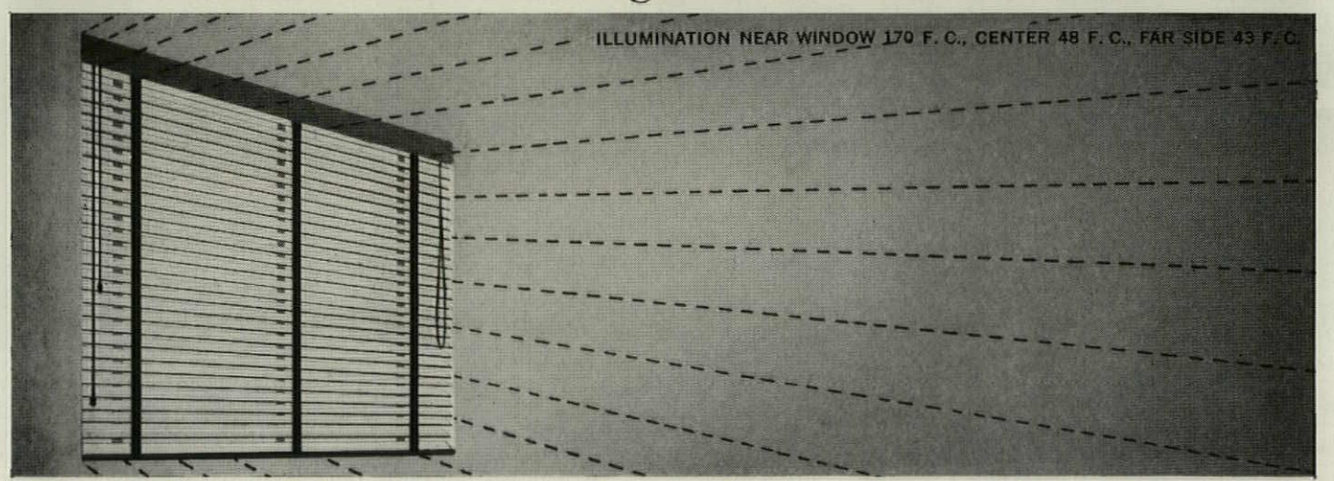
PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

you get **34.4%** more light with all-*Flexalum*® venetian blinds



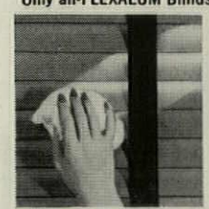
bare window wastes light... leaves far side dark



Flexalum blind spreads light to far side of room

An exhaustive study by the Faber Birren Company* shows: A bare window gives extreme glare on one side of the room, insufficient light on the other. The FLEXALUM Blind, by reflection, *spreads* the high-intensity sunlight at the window throughout the room—giving more illumination with less glare. The brightness ratio, which was 14 to 1 with the bare window, is now reduced to a comfortable 4 to 1. **Copies of this study available on request. Write for local sources and free file of venetian blinds information—AIA File #35-P-3.*

Only all-FLEXALUM Blinds give these maintenance and durability advantages:

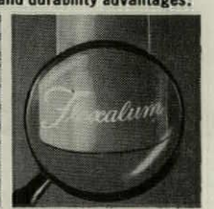


Wipe-Clean Plastic Tapes and Cords

Cut cleaning time from hours to minutes. A damp cloth wipes away the stubbornest stains. Won't fade, shrink, or mildew.

Snap-Back Aluminum Slats

Spring-tempered to snap back ruler-straight even when bent to a 90° angle. Baked-on finish won't rust, chip, crack, or change color



Insist on this Mark!

The FLEXALUM "visible-invisible" trade-mark guarantees a top quality blind. For satisfied clients specify all-FLEXALUM blinds.

Hunter Douglas Corp., 150 Broadway, New York 38.

NEW cushion-wall cuts gym injuries!

costs little more than hard surface walls

The installation of new Spongex Safety-Cushion Wainscot sharply reduces the frequency and severity of injuries from crashes against gym walls.

Spongex Safety-Cushion Wainscot comes in resilient, shock absorbing panels . . . attractively covered with plastic sheeting . . . ready for easy installation. In new construction, its cost compares favorably with most hard surface walls.

This specialized cushion-wall was made possible through the knowledge gained by The Sponge Rubber Products Company in years of experience, designing and producing crash pads for the automotive and aircraft industries.

We would be happy to work with you in keeping injuries to a minimum in the schools and gymnasiums you design. Write us today for complete information.

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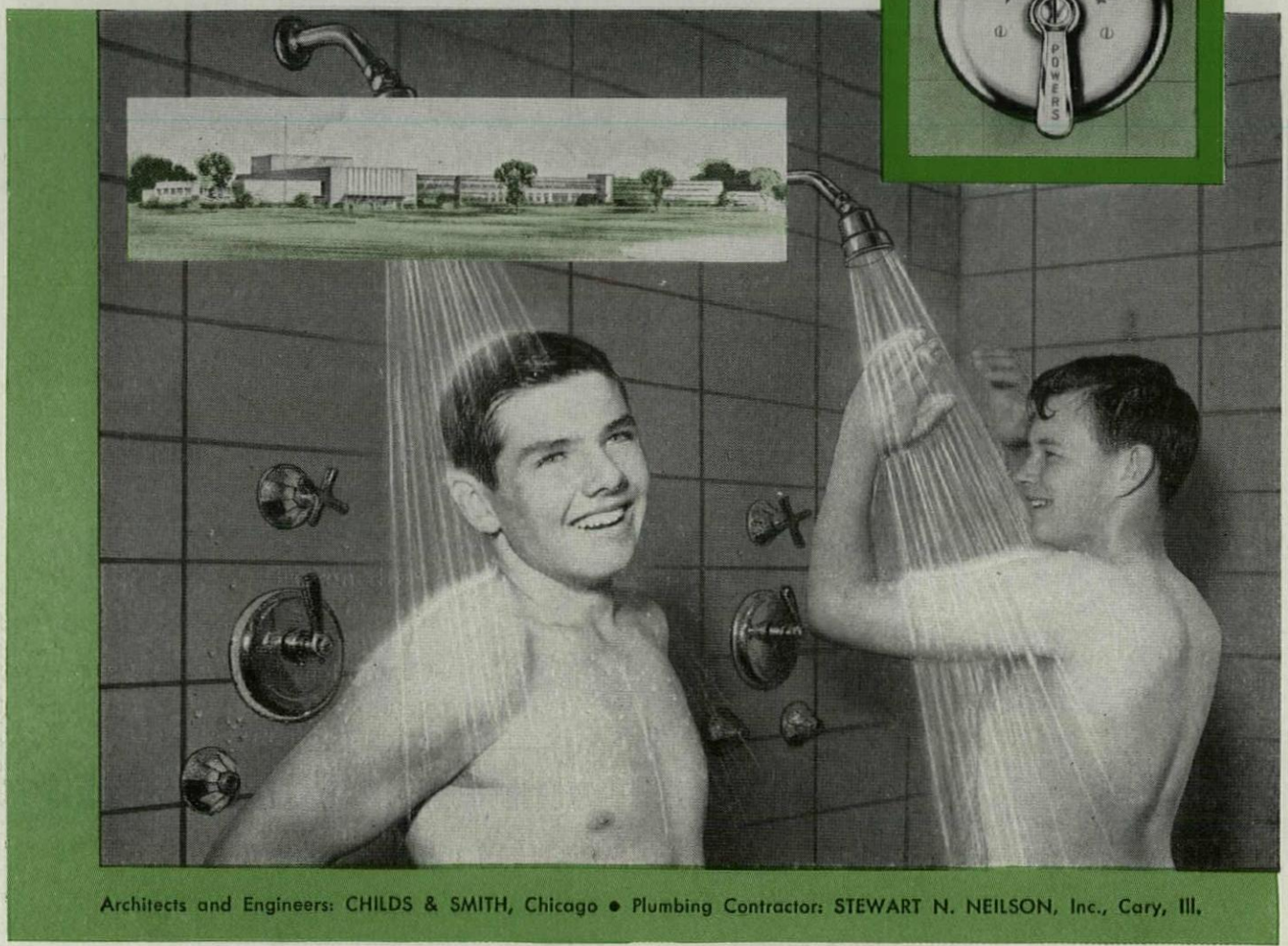
Spring Glen School . . . . . Hamden, Connecticut
Lawrence High School . . . . . Lawrence, Long Island, N. Y.
Poughkeepsie High School . . . . . Poughkeepsie, New York
California State Polytechnic College . . San Luis Obiso, California
Jewish Community Center . . . . . Los Angeles, California
Redding School . . . . . Redding, Connecticut
*Jewish Community Center . . . . . Springfield, Massachusetts
Woodland Avenue School . . . . . Hicksville, Long Island, N. Y.
*Catholic High School . . . . . Escanaba, Michigan
*Greenville High School . . . . . Greenville, Mississippi
*Shelton High School . . . . . Shelton, Connecticut
*Clarence Barbour School . . . . . Hartford, Connecticut
*Trenton School . . . . . Trenton, New Jersey
*Goodwin School . . . . . Hartford, Connecticut
*Rocky Hill School . . . . . Rocky Hill, Connecticut
*To Be Installed

SPONGEX® *Cellular Materials*

THE SPONGE RUBBER PRODUCTS COMPANY, 60 Derby Place, Shelton, Connecticut
In Canada: Canadian Sponge Rubber Products, Ltd., Waterville, Quebec

Showers Can Be Trusted

at FREEPORT, ILL., JUNIOR HIGH SCHOOL



Architects and Engineers: CHILDS & SMITH, Chicago • Plumbing Contractor: STEWART N. NEILSON, Inc., Cary, Ill.

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Thermostatic WATER MIXERS

makes them SAFE against scalding and sudden shots of cold or hot water caused by

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No Shower is Safe Without this Double Protection— Powers thermostatic water mixers *always* hold the shower temperature constant wherever the bather wants it. They are completely automatic. Failure of cold water instantly shuts off shower. Delivery temperature is *thermostatically* limited to 115° F.

More than 50 Showers Here Are Individually Controlled by Powers Thermostatic Water Mixers

•

Just ONE Shower ACCIDENT may cost many times more than POWERS mixers.

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10 to 20% Water Saving. No need to get out of shower and readjust it because of fluctuating water temperatures.

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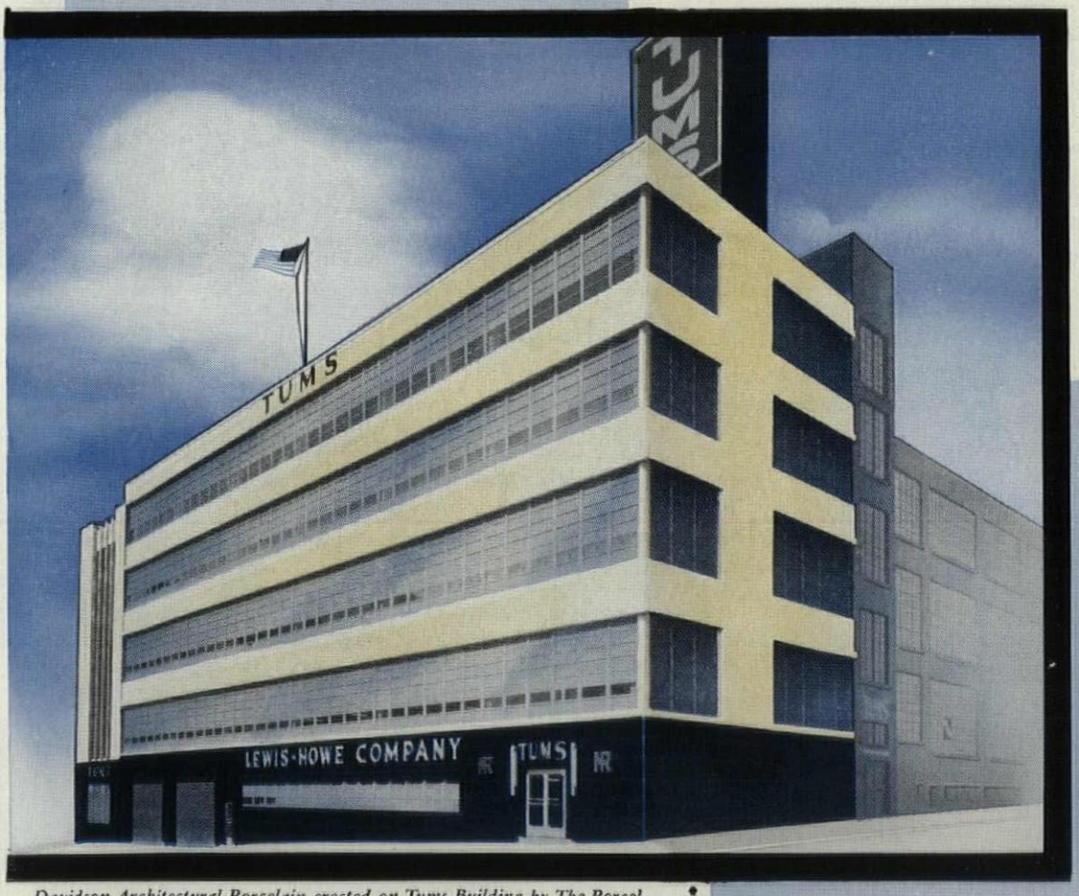
Established in 1891 • **THE POWERS REGULATOR COMPANY** • SKOKIE, ILL. • Offices in Over 50 Cities

A building's character comes alive with colorful *Architectural Porcelain*

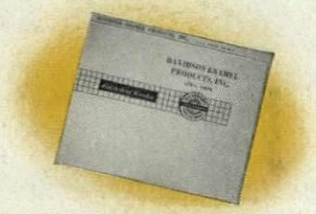
DAVIDSON ARCHITECTURAL PORCELAIN
is a life-time building material—not just a finish!

Colorful Architectural Porcelain! . . . a material that opens up an entirely new range of treatments in designing buildings of character—colorful treatments that are otherwise unavailable. Davidson Architectural Porcelain provides greater flexibility in designing than any other material—new freedom of expression for your imagination, skill and ingenuity that will win both owner and public approval. Its color and brilliance are fadeless! Its structural characteristics, combining the natural beauty of glass with the strength of steel, are ageless!

Davidson Architectural Porcelain is custom-designed, processed and enameled at the same time to insure trouble-free application and color uniformity for each building project. There are no standardized, prefabricated or stock panels. Davidson Architectural Porcelain comes in whatever shapes are needed for each exterior or interior application. Davidson Architectural Porcelain is being used on schools, hospitals, theatres, stores, and several types of public buildings. Special features of Davidson Architectural Porcelain include two types of panels and a Koroseal* joint section that forms a water-tight seal. A complete file on Davidson Architectural Porcelain Enamel for architects contains details of all types of panels, and illustrations of basic and special shapes, and details showing application of each type of panel. This complete file is available on request.

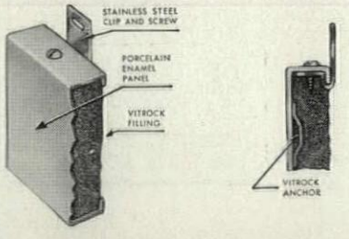


Davidson Architectural Porcelain erected on Tums Building by The Porcel Company of St. Louis, one of Davidson's many Franchised Distributors.
Architect: Widmer Engineering Company, St. Louis, Missouri

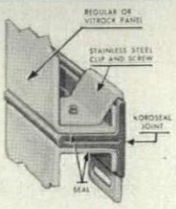


The Davidson Organization includes Franchised Distributors at strategic locations, Engineers, Technicians, Fabricators and Erectors. A specification for Davidson Architectural Porcelain insures a complete job with *Undivided Responsibility.*

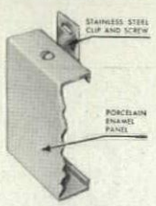
SPECIAL FEATURES OF DAVIDSON ARCHITECTURAL PORCELAIN



DAVIDSON VITROCK PANEL
Specify Davidson Vitrock where a *filled* panel is required. It has no equal! It has the soundness of a masonry unit and possesses insulating and sound-deadening qualities. Filled with a quick-setting, shrink-proof, gypsum base material. An excellent panel where unusually "flat" surfaces are desired. Applied in same manner as the regular panel; weighs 8 pounds per square foot. Supplied in any practical size and shape.

DAVIDSON KOROSEAL* JOINT


Developed solely for the application of Davidson Architectural Porcelain panels. This gasket material comes in continuous rolls and is installed as the panels are erected. The horizontal joints are continuous; the vertical joints are scribed to the horizontal at the intersections of panels to form a water-tight seal. Goodrich Koroseal* is a polyvinyl chloride plastic. It will not deteriorate or lose its resilience due to weathering.

REGULAR DAVIDSON PANEL


One of two panels available. Fabricated of 16 gauge porcelain enameling steel, double-return flanges, and stainless steel clips for attachment; supplied in any practical size and shape, weighs 3 pounds per square foot.

Davidson
ENAMEL PRODUCTS, INC.

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Hackensack, N. J.
Architect: Lawrence C. Licht
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Whether the new building you plan is a modern trade school, like the one shown here, a hospital, an apartment, a modern commercial building or a monumental type building, General Bronze offers you a wealth of practical experience in solving your problems as they pertain to windows, spandrels, curtain walls and architectural metalwork.

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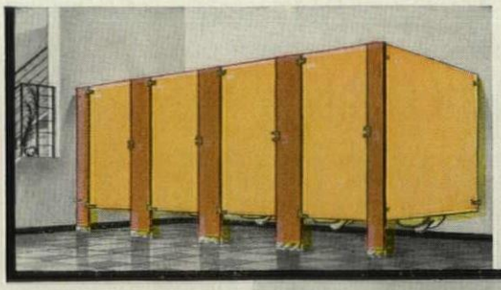
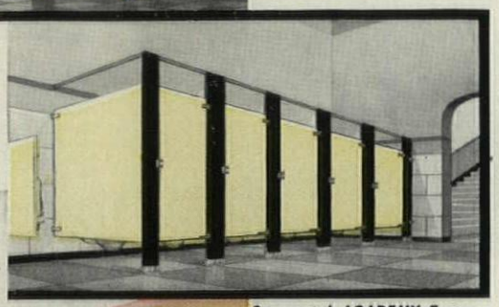
BRACH MFG. CO. DIVISION—Multel, T. V., Radio and Electronic Equipment. **STEEL WELDMENTS, INC. DIVISION**—Custom fabrication in steel and iron.

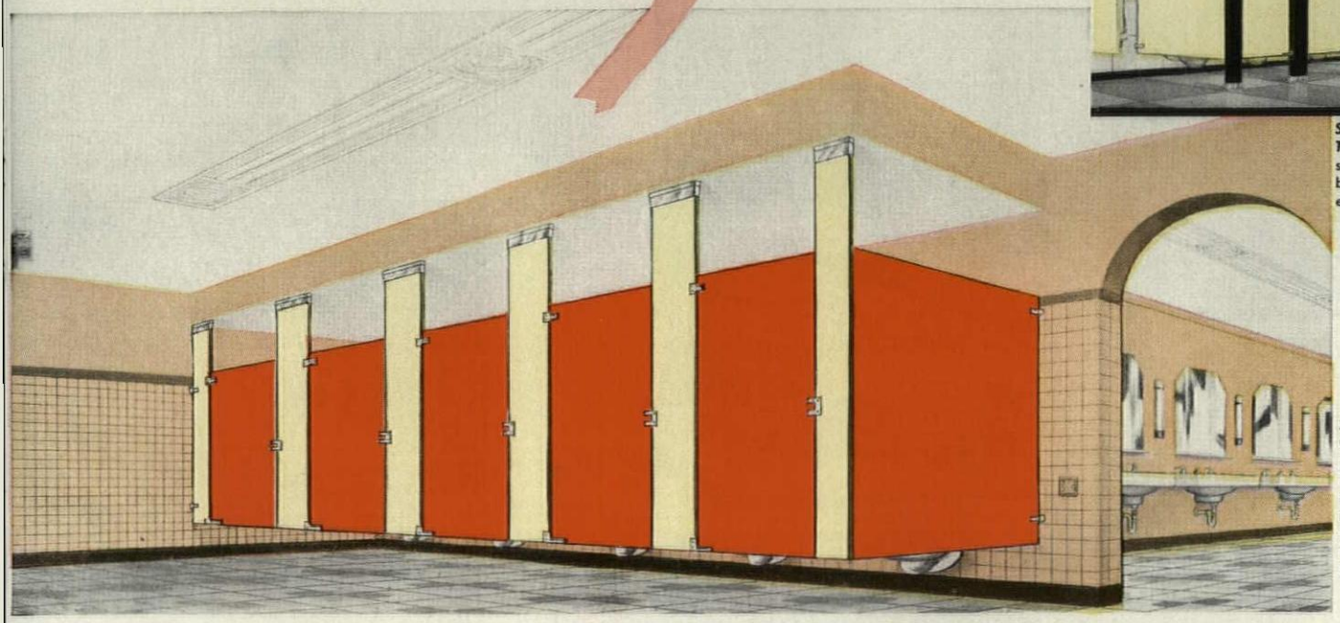
the mere functional type of rest room is **INCOMPLETE!**



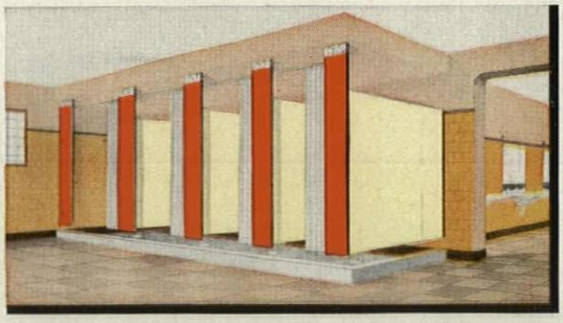
Sanymetal NORMANDIE Type Toilet Compartments endow a rest room environment with dignity and good taste.



Sanymetal ACADEMY Type Toilet Compartments are suitable for conservative but modern rest room environments.



Sanymetal CENTURY Type Ceiling Hung Toilet Compartments offer the utmost in sanitation and provide modern, distinctive rest room environments for schools, institutions, terminals and other public buildings.



Sanymetal CENTURY Type (Ceiling Hung) Shower Stalls of Sanymetal "Porcena" (Vitreous Porcelain on Steel) Partitions and Pilasters, as arranged for a typical club installation. Also available in Sanymetal "Tenac" (synthetic enamel baked-on over Galvanized, Bonderized* Steel).

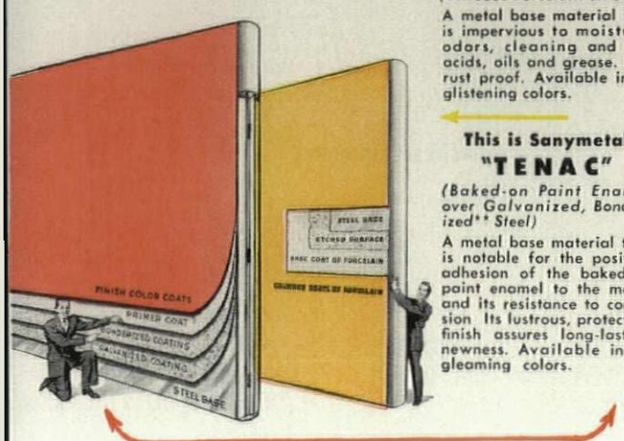
It is obsolete before it is completed according to today's standards. To insure against *untimely obsolescence* consider wall-type plumbing fixtures installed with Sanymetal ceiling-hung toilet compartments.

Sanymetal offers several different types of toilet compartments. Sanymetal also offers and recommends Two Full Purpose Metal Base Materials which combine colorful attractiveness with long years of service life and effect important day-after-day savings in cleaning and maintenance costs. These Two Full Purpose Metal Base Materials—Sanymetal "Tenac" (Galvanized, Bonderized** Steel), and Sanymetal "Porcena" (Vitreous Porcelain on Steel), the ageless and fadeless, rustproof material—are described herein. Sanymetal Toilet Compartments are also available in cold rolled steel.

Sanymetal Toilet Compartments and Shower Stalls embody the results of over 39 years of specialized skill and experience in making over 500,000 toilet compartment and shower stall installations. Ask the Sanymetal representative in your vicinity to demonstrate the worthiness of Sanymetal Toilet Compartments as protection against *untimely obsolescence.*

This is Sanymetal
"PORCENA"
(Vitreous Porcelain on Steel)
A metal base material that is impervious to moisture, odors, cleaning and uric acids, oils and grease. It is rust proof. Available in 21 glistening colors.

This is Sanymetal
"TENAC"
*(Baked-on Paint Enamel over Galvanized, Bonderized** Steel)*
A metal base material that is notable for the positive adhesion of the baked-on paint enamel to the metal and its resistance to corrosion. Its lustrous, protective finish assures long-lasting newness. Available in 21 gleaming colors.



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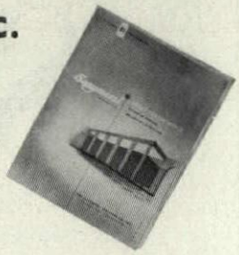
Sanymetal Toilet Compartments embody the results of specialized skill and experience in fabricating over 500,000 toilet compartments in all types of buildings. Ask the Sanymetal representative in your vicinity for information about planning suitable rest room environments that will always stay new. Refer to Sanymetal Catalog $\frac{21b}{Sa}$ *in Sweet's Architectural File for 1953. and Catalog* $\frac{13a}{Sa}$ *in Sweet's Industrial File for 1953.*



Sanymetal*

TOILET COMPARTMENTS
SHOWER STALLS AND
DRESSING ROOMS

*Trade Mark Reg. U. S. Pat. Off.

**Treated with "Bonderite", a product of Parker Rust Proof Company

precasting techniques such as this hold a lot of promise for the future.

RICHARD G. KNOX
Portland Cement Assn.
Chicago, Ill.

Forum:

Your article is of great interest not only for all architects and engineers following the new structural principles of precast concrete, but also for contractors because substantial savings can be attained and construction time considerably shortened.

Glenn Martin's office and factory buildings have the framing (columns with interconnected girders) in precast concrete, whereas the floor structure is in steel. The accompanying picture shows a welded steel frame

structure, 145′ span, with precast concrete roof slabs, designed for the Rotterdam's Grain Exchange building by the writer in 1937. The concrete slabs have incorporated circular skylights specially designed for diffused light which is necessary for examination of grain quality. J. F. Staal was the architect.

To my knowledge the first multistory structure in precast concrete (100%) in the US was built in 1946 in San Jose, Calif., for Kaufmann Meat Co. designed by the engineering firm Myron C. Gould Associates in San Francisco, Calif., with which the writer was associated for many years. One of the precast concrete buildings has four floors. The same engineering firm designed many other structures of this type, e.g., military barracks for the Department of the Army and bridges.

J. J. POLIVKA, *consulting engineer*
Berkeley, Calif.

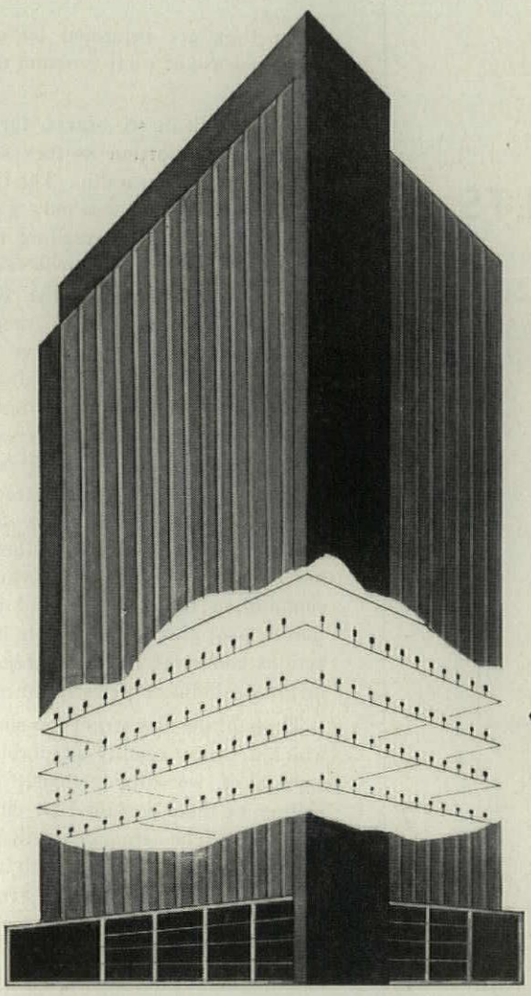
MODERN CHURCHES

Forum:

Your interesting articles on new European and American churches (AF, Dec. '53) leave two or three definite impressions on a churchman without architectural competence.

The first is that the European churches are, on the whole, considerably better, chiefly be-

continued on p. 90



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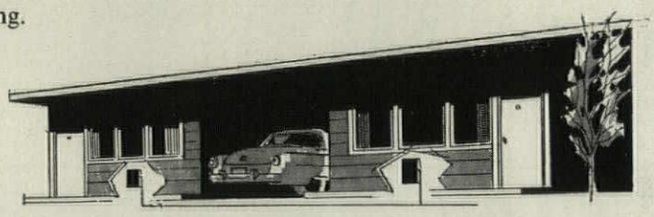
Every room in a building is an individual zone, with its own thermostat. Every room is heated with filtered warm air, continuously circulated by a compact, recessed wall unit. Sets a new standard of comfort and heating economy for every type and size of residential, institutional and commercial building.



SelecTemp Highlights

THERMOSTAT IN EACH ROOM. Temperatures can be varied in every room to fit the "activity plan" and personal preference of the occupants.

MODULATED HEAT. Air circulation is continuous. Both temperature and volume of air is automatically modulated, as required to offset heat loss from room.

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LOW POWER COST. No electricity required to operate circulating fans. Nonelectric thermostats.

LOW INITIAL COST. No other system can be so easily installed in either new or old construction. Small soft copper tubing (¼ inch I.D.) carries steam to individual room heater units. Return lines are ⅛ inch. Tremendous savings in installation costs.

LOW FUEL COST. Temperature easily reduced in unused rooms. Eliminates overheating.

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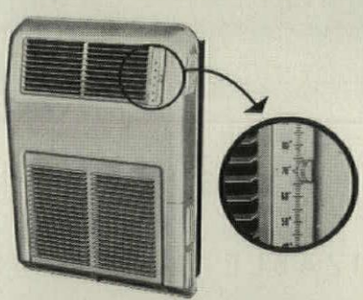
FOR LARGE OR SMALL BUILDINGS



Individual room control with continuous modulated heat

With SelecTemp heating, every room in the building is an *individual zone*, with its own thermostat. Low pressure steam, supplied to recessed wall units through small flexible copper tubing, provides heat and power for the circulating fan. Thermostats are nonelectric and require no wiring.

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Low installation and operating cost

The various parts of the selecTemp system are engineered for rapid economical installation without time wasting special provisions. SelecTemp units are delivered assembled in steel enclosures for mounting in wall stud spaces or wall openings. No electric power required for operation of circulating fans or thermostats—an important saving. Fuel savings result from elimination of wasteful overheating and from lower temperatures in unoccupied rooms. Small steam lines greatly reduce heat transmission losses.

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LETTERS *continued*

cause they are informed by a much more definite sense of what function the building is to serve.

The American structures, further, are successful in proportion as they serve two specialized forms of worship. The Unitarians and Christian Scientists ask only a dignified and serene lecture hall or reading room and this they receive. Where the medieval Catholic conception of worship (or the Baroque) still rules, a church can also be arranged as a hall where laity passively observe the symbolic actions of priests around an altar in a chancel or in procession. But the main stream of American Protestantism adheres to neither of these conceptions of Christian worship. A large part of worship in this tradition consists of corporate praise in song, for which the elongated hall is suited neither acoustically nor psychologically. And in various ways the communion table, pulpit and the baptismal font or pool play a central role in sacramental actions conceived more congregationally than in the Catholic or priestly conception.

Those of the new structures shown in FORUM which are most readily adaptable for this conception of worship, curiously enough, were neither of them designed for churches of this tradition. The Roman Catholic octagonal church in Holyoke, Mass., with its central communion table, is excellently arranged for the sense of corporate worship central to the "main-stream" American Protestant denominations. Similarly, the Church of the Advent in Copenhagen, with a different arrangement of the seating and with the altar replaced by a communion table among the people, would fit American Protestantism well. (Some of these considerations are set forth in the text in relation to the Neo-Apostolic Church of Geneva.) But the Presbyterian, Congregational and Episcopal churches shown in the article embody no such conceptions, illustrating rather an uneasy compromise of Unitarian and Jesuit requisites.

The weakness of the American churches, one suspects, is due, not to the architects, whose freshness of design and effective use of color and various materials are striking, but to the American Protestant churchmen, who have not adequately articulated their conception of Christian worship.

JAMES H. NICHOLS, *editor*
Church History
Chicago, Ill.

Forum:

Your American and European churches (Dec. '53) were provocative occasionally, sadly disappointing in general. If the churches pictured are indicative of the best coming from today's drawing boards, it augurs ill for the church of the future.

The architectural professional appears interested in little other than the superficial

visual. While this facet has importance, it no more represents the real basis for church thought and design than does style, the unfortunate starting point of all too much thinking.

The church designs portrayed in your December issue indicate architects have insufficient concept of religion today, its aims and purposes, the requirements for practical conduct of and function in service forms.

It is especially evident that architects either have little knowledge of or perhaps interest in those requirements essential to the efficient presentation of church music. If the organ is permitted a place at all (and electronic instruments are rightly not organs), it more often than not is relegated to some hole in the wall from which proper, acceptable egress of sound is not possible.

From your presentation of these churches, one can but guess how and where most organs, consoles or choirs will actually be housed. The few instances which give placement of the various musical elements show clearly the profession may not be aware of even the basic requirements for 1) effective organ installation; 2) relation of organ to organist, to choir, to congregation; 3) efficient function of the choir conducted by the organist from the console.

Your design standards and data for churches seem archaic, to say the least. Permission for synthesis of organ pipes and acoustic framework which is the building (a requisite for the only valid total auditory result) is missing.

Stress placed upon latitude in design-choice for sanctuaries, chancel, bemata is well-taken; also stress laid upon the trend toward organ-choir placement in rear gallery — without question the finest location for these musical components. It is usually easy to group together efficiently these three components of organ, organist and choir, both for their intimate functional interrelationships, and permission for the ideal in freestanding, open, within-the-building-walls organ space. No organ can be efficient tonally unless so placed, and in direct "sight line" with all who hear it.

One wonders why architects, individually and by group, do not secure assistance from persons and organizations in related fields to form a bloc of unquestioned integrity and sufficient power with which to combat those who would not permit creativeness.

A few feeble attempts have been noticed but until an effort of sufficient scope and vision becomes apparent, progress will at best be negligible. In the meantime, countless clergymen and musicians continue to suffer in ill-conceived, poorly thought-out worship buildings which are inefficient and unimaginative architecturally, hopeless acoustically.

RAY BERRY
Committee on Architecture and Acoustics
American Guild of Organists
Detroit, Mich.

continued on p. 92

LETTERS *continued*

Forum:

For a long time it has seemed to me that Protestantism has been shirking its architectural duty. The imitation Gothic and Colonial churches that dot our landscape are reflections upon the creativity of contemporary Christianity and its willingnes to speak to the man of today. It gives one pause to realize that the Christian communion which is most articulate and certain of its theological task—I mean Roman Catholicism—has also been more adventurous than any other in architecture and the other arts.

I hope that your article will come to the attention not only of ecclesiastical authorities in Protestantism but also of laymen who are involved in the leadership of building committees. The rapid increase in church building today affords a magnificent opportunity to architects who are working in a contemporary vein. The modern theological revival in Protestantism ought to find a large part of its artistic expression in the construction of church buildings. I congratulate you for publishing such a fine exposition of the new trends.

CHALMERS COE, *minister*
First Congregational Church
Amherst, Mass.

Forum:

Thank you very heartily for this present evidence of the informed concern of the FORUM within an area of creative art very dear to many of us.

You will be heartened to know that at the very theological center of the contemporary church, some of us are pounding away with other hammers, but aiming at the same nail.

But it seems to me essential that there should very soon come about a meeting of minds between contemporary architects and theologians. Your article speaks of a "Faith for Our Times." It is exactly at this point that I feel that much of the commendable and excellent experimentation in architectural forms may just fail of its optimum effectiveness. Because it is required of us not only that we invest with new forms, appropriate to our present existence of an ancient faith, but that these new forms be sensitive to radical changes and, in my judgment, radical deepenings which are taking place in the faith itself. A nineteenth-century understanding of Christianity is not a relevant address to the contemporary man, even if this address be ensconced in contemporary forms, textures and materials. This achievement, indeed, may but underline a wan irrelevancy.

Ever since many years ago when I read old Henry Adams, I have been a little nuts on this subject, and the length of this letter you may charge off to the enduring influence of "Mont St. Michel and Chartres!"

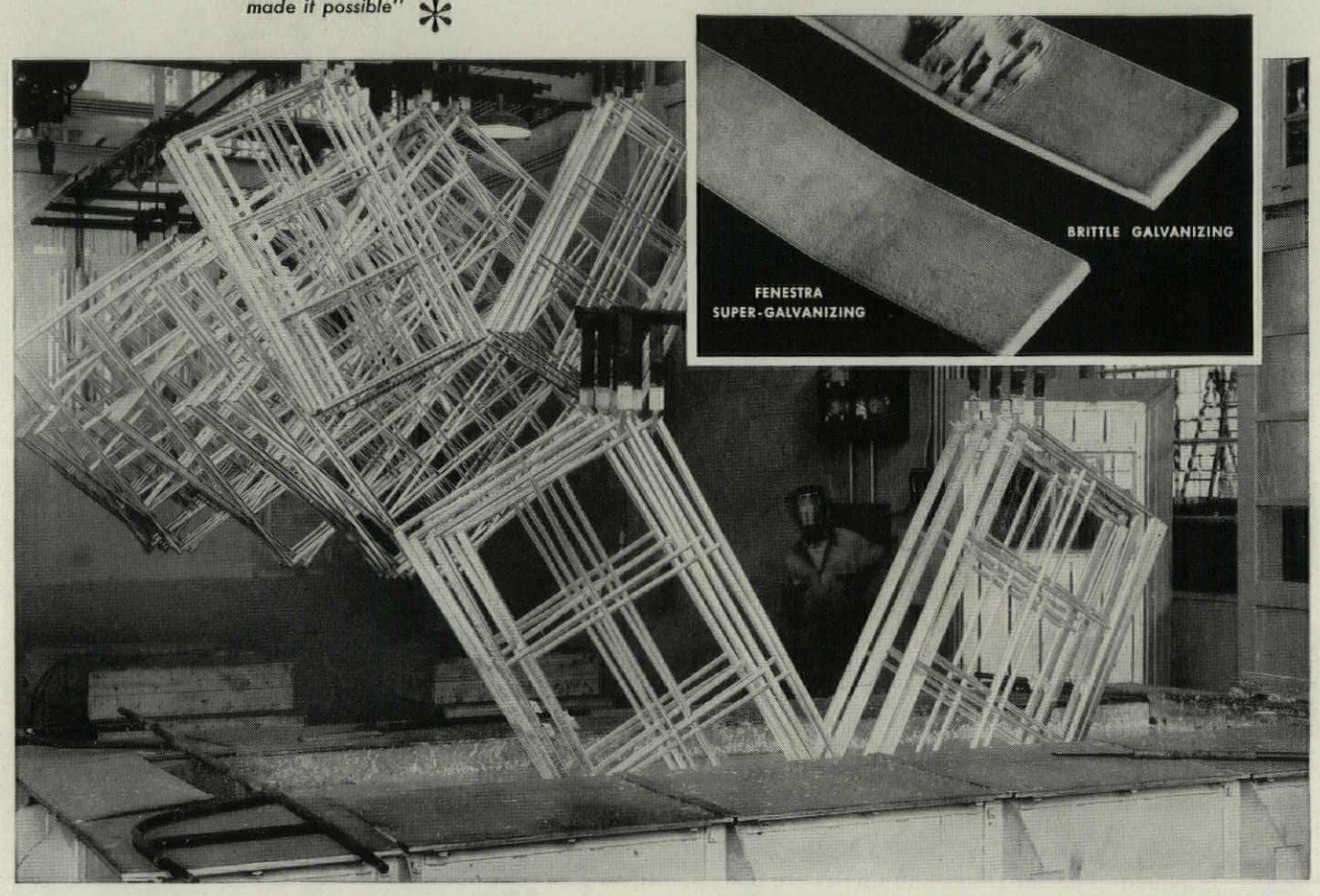
JOE SITTLER
Systematic Theology
Chicago Lutheran Theological Seminary
Maywood, Ill.

continued on p. 96

Fenestra 50 YEARS OF BUILDING PRODUCT LEADERSHIP

"A salute to those who made it possible" *

BEND TEST shows why Fenestra Steel Windows are called Super Hot-Dip Galvanized. When two pieces of galvanized steel are bent, then straightened, some types of galvanizing crack open, leaving the steel vulnerable. The Fenestra piece *stays* protected.



Fenestra Steel Windows at one stage of Fenestra Super Hot-Dip Galvanizing.

"Bewaren is Besparen"...especially today!

That's the way the Dutch galvanizers say it. And "Keeping is Saving" *could* be the slogan for Fenestra* Super Hot-Dip Galvanized Windows.

These strong steel windows will not only "keep"—they will save you thousands of dollars.

They cost no more than ordinary steel windows with two field coats of paint inside and out, and these windows *never need painting.* That's a saving of over $3,600 in paint and painters every few years, if yours is an average-sized plant.

Fenestra has the only plant and equipment in America especially designed for the tricky job of window galvanizing. Check on Fenestra Super Hot-Dip Galvanized Steel Windows for that new building you're planning. Call your Fenestra representative—he's listed in the yellow pages—or write Detroit Steel Products Co., Dept. AF-3, 2296 East Grand Blvd., Detroit 11, Michigan. *®

* Your need for windows of strong material that would resist rust encouraged us to develop Fenestra Super Hot-Dip Galvanized Steel Windows—a great advancement in building products.

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The NORCOR Series 500 Chair Desk is designed to encourage correct school posture—to keep pupils comfortably alert and attentive. It is strongly built for hard service and features like the adjustable desk top, non-tipping design and edge protected plywood seat add long life and classroom utility.

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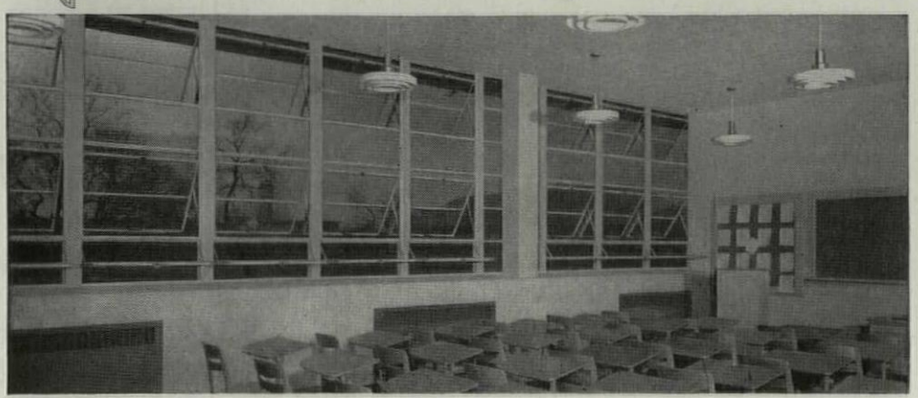
Factories: Green Bay and Gillett, Wis., Portsmouth, N. H.

Fenestra 50 YEARS OF BUILDING PRODUCT LEADERSHIP

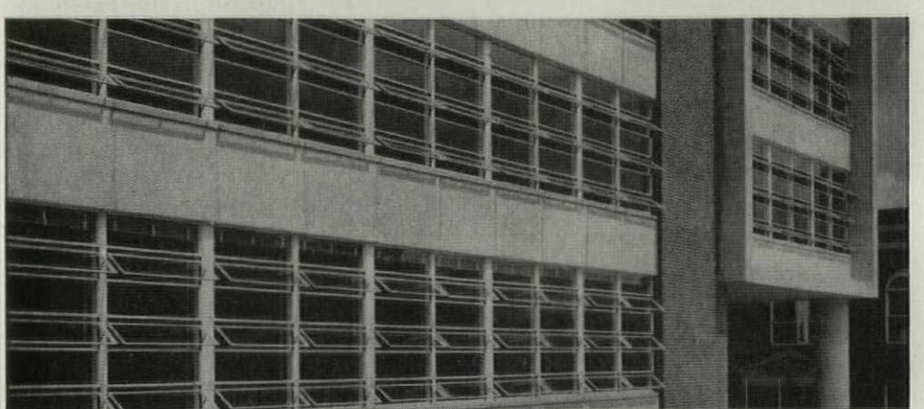
"A salute to those who made it possible" *

■ Speaking of School Daylighting...



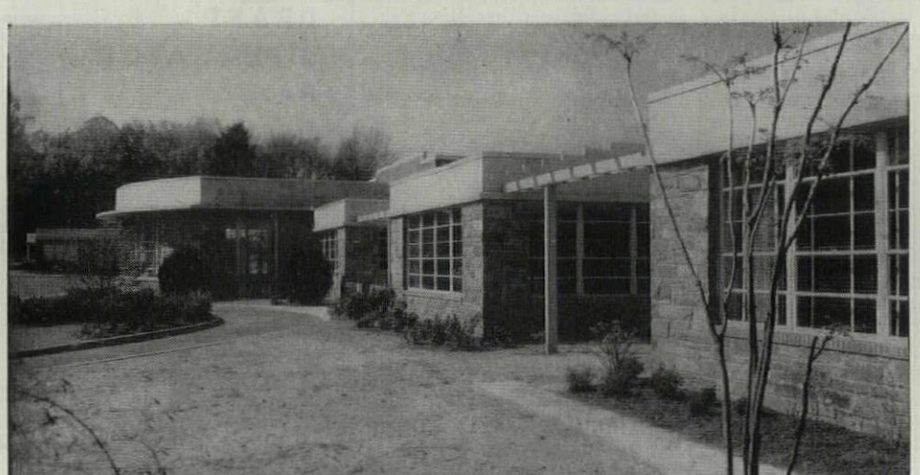
This Alamo Heights schoolroom, designed by Architect Bartlett Cocke of San Antonio, and built by G. W. Mitchell of San Antonio, is filled with free eye-easy daylight by this wall of Fenestra* Intermediate Steel Windows. They give you extra view and light because the frames are designed to be strong and rigid without being bulky.

■ Fresh Air Ventilation...



Notice how the vents of these Fenestra Intermediate Steel Windows protect the interior of the Clemson College chemistry building in Clemson, S. C. Here is fresh air ventilation even when it's raining outside. And these vents operate so that you can wash them from *inside.* Screens also go on from inside. Architects Hopkins, Baker & Gill designed the building and Industrial Builders Inc. built it. Both are in South Carolina.

■ And Architectural Beauty...



Architects Karcher & Smith and Contractor Charles F. Rohleder of Philadelphia have used graceful Fenestra Windows to add to the warm, friendly, charming beauty of the Penn Valley Elementary School in Lower Merion Township, Pa.

Special note: All Fenestra Windows are available Super Hot-Dip Galvanized. For further information, call your Fenestra Representative, listed in the yellow pages. And write for *Better Classroom Daylighting.* Detroit Steel Products Company, Dept. AF-3, 2296 East Grand Blvd., Detroit 11, Mich. *■

* Your need for windows that would give better school daylighting, protected ventilation and lower maintenance costs encouraged us to develop today's Fenestra Intermediate Steel Windows . . . a great advancement.

Fenestra | INTERMEDIATE STEEL WINDOWS

LETTERS *continued*

Forum:

I was very much interested in your excellent presentation of modern church architecture.

KENNETH CLINTON, *minister*
First Congregational Church
Wakefield, Mass.

Forum:

It is certainly a promising sign to see so much thought and time spent on this subject by the leading professional periodical in the country. . . .

It is understandable that the architect of today desires to test his new materials and structural principles that place him in a different world from that of his predecessor. To find the significance of these materials and principles and their interpretation of the present must be a fascinating thing. What bothers me, however, is that the practical possibilities of our new form have not been fully explored. The comparatively narrow and long nave, although less obstructed, is still your favorite. What about the work of such men as Barry Byrne, who have seen in the new architecture an opportunity for a better floor plan? Are we so sensitive about our cultural backwardness that we are unwilling to make the new forms speak for themselves and lose ourselves in abstractionism?

ANTHONY J. JACOBS, *pastor*
Santa Clara Church
Oxnard, Calif.

SCHOOL HEATING

Forum:

The article "Low-Cost School Heating" (which is really more than the title indicates) in the October issue is a sweetheart. It is the first nearly perfect analysis I have seen on the subject. . . .

I congratulate you roundly for making available to your readers the very excellent story on the factors which must be considered in school heating and on the simplest and most proper methods for providing heating and cooling in classrooms.

J. DONALD KROEKER, *engineer*
J. Donald Kroeker & Associates
Portland, Ore.

FORUM ON THE AIR

Forum:

The International Broadcasting Service of the US Information Agency would like permission to use the article, "The Six Broad Currents of Modern Architecture," by Eero Saarinen (AF, July '53).

This would be used in connection with our noncommercial broadcasts to and within worldwide areas exclusive of the US.

EVELYN EISENSTADT
Copyright clearance specialist
Broadcasting Service
US Information Agency
New York, N.Y.

continued on p. 98

Fenestra 50 YEARS OF BUILDING PRODUCT LEADERSHIP

"A salute to those who made it possible" *

Fenestra Door-Frame-Hardware Units in the Robert N. Mandeville High School, Flint, Mich. Architect: Bennett & Straight, Dearborn. Contractor: Karl B. Foster, Flint.

HOW TO SAVE $100 PER DOOR

in your new building or remodeling

Here are four good reasons why building owners are saving this kind of money with Fenestra* Hollow Metal Door-Frame-Hardware Units:

1. *They cost less to buy* because they are mass produced on special jigs that eliminate a lot of expensive time and labor. You get production-line economy—*not* custom job costs.

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3. *You save on installation cost* with these complete units. Again time and labor are saved. There's no cutting or fitting or mortising or tapping—the door is *in* and *in use* in minutes.

4. *And you continue to save on maintenance* because Fenestra Hollow Metal Doors can't warp, swell, stick or splinter. They always open easily . . . smoothly. And they close quietly, because inside surfaces are covered with sound-deadening material.

For strong, solid quality at unusually low cost, check on Fenestra Doors—there's a door for every purpose in the Fenestra line: Entrance Doors, Flush or Regular Interior Doors with glass or metal panels, Doors with the Underwriters' B Label. For pictures and details, write to Detroit Steel Products Company, Dept. AF-3, 2296 E. Grand Blvd., Detroit 11, Michigan. *®

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LETTERS *continued*

SCHOOLS

Forum:

Last October I renewed a subscription to your magazine for many reasons, but particularly because I was most anxious to receive your October issue on schools. In fact I held up the building of a new school so as to first check over your latest suggestions in this matter. So far I have received no magazine.

Please forward me, as soon as possible, your special issue on schools.

REV. DAVID SULLIVAN
St. Thomas Church
Chickasaw, Ala.

• FORUM apologizes to Reader Sullivan for delaying his school. He has by now received a special copy of the special October issue on schools, and with this issue, receives a dividend—25 more pages on schools.—ED.

KUDOS

Forum:

We very much enjoyed your article on the Hunterdon Medical Center (AF, Dec. '53). It was justly complimentary to our community and factually honest.

May we reprint the article? Even though most of the material is not new to most of our readers, we feel they will thoroughly enjoy this evaluation by such an authoritative publication.

J. H. PRESCOTT
Managing editor
Hunterdon County Democrat
Flemington, N. J.

Forum:

Your article "New Thinking on Shops" (AF, Nov. '53) covering the trend toward self-selection was especially interesting to us as we design and manufacture merchandising equipment for that purpose.

IRVING C. FOLGER, *vice president*
The E. O. Bulman Mfg. Co., Inc.
Grand Rapids, Mich.

ERRATA

Forum:

Thank you for printing a review (and a favorable one, too!) of my new book, *Climate and Architecture* (AF, Jan. '54).

However, the cost is $12.50, not $14.50, as you indicated.

JEFFREY ELLIS ARONIN
Woodmere, N.Y.

ERRATA

• Manhattan's controversial Coliseum redevelopment will be designed by Architects Leon and Lionel Levy of New York, rather than Skidmore, Owings & Merrill (AF, Jan. '54, News). As consulting architects to the city's Slum Clearance Commission, SOM will advise on design for the housing part of the project, but will not be *the* designer.—ED.

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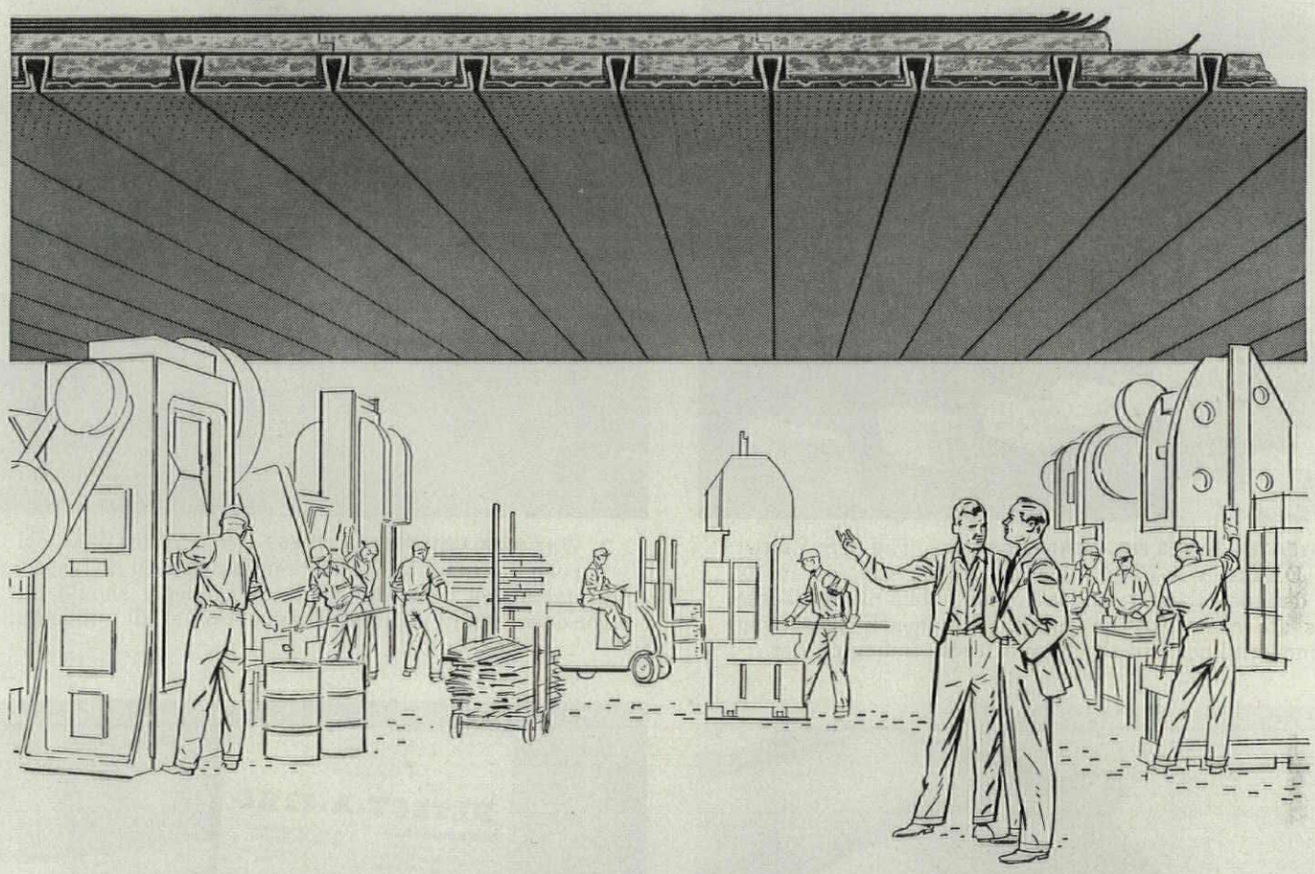
*"A salute to those who made it possible"**



SILENCE IS REALLY GOLDEN . . . HERE!

Noise, NOISE, NOISE. Nagging, hammering, screeching, deafening. In plant after plant, workers complain, work lags, men stay home until their heads stop ringing. Industrial noise causes a reported *$4,000,000*-a-day loss in worker efficiency.

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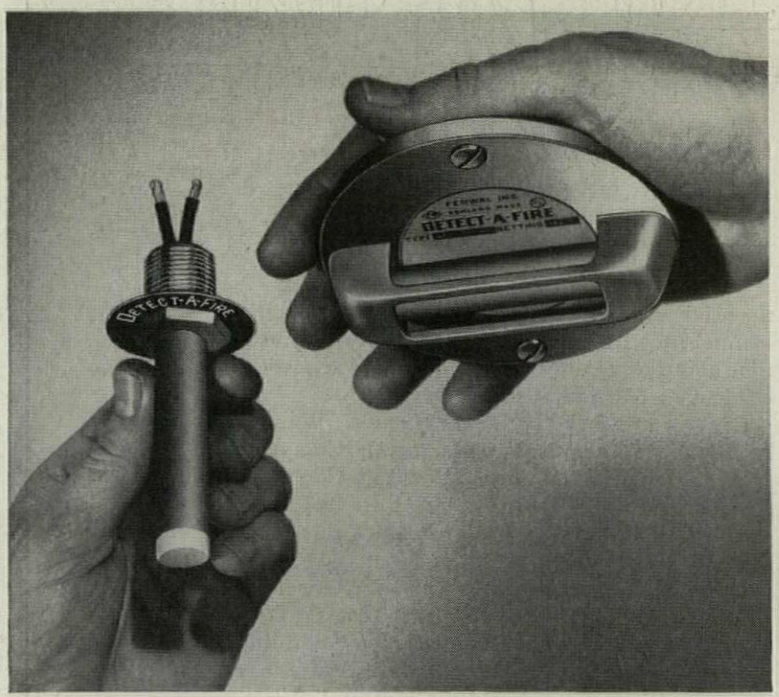
2. WHY RISK CHILDREN'S LIVES? The menace of school fires, like the one shown in the illustration above, need no longer exist. The protection of lives and valuable property should be of prime consideration in planning construction of all public buildings.



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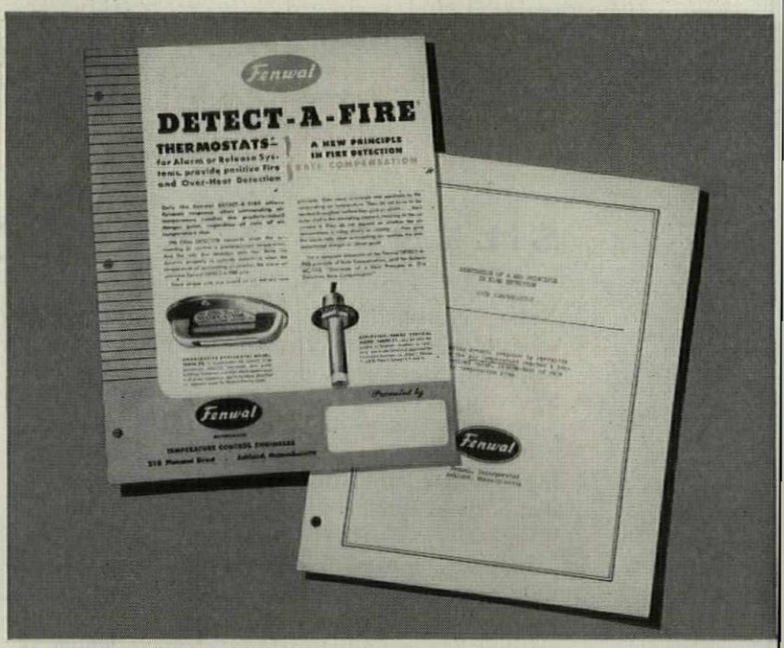

4. FREE BULLETINS (above) contain complete details on Fenwal DETECT-A-FIRE thermostats, the only unit bringing you the benefits of Rate-Compensation Actuation, a unique principle of fire detection. Fenwal engineers will gladly work with your system installer so that you will enjoy the advantages of *full* fire protection and *long term* economy. Write Fenwal Incorporated, 253 Pleasant Street, Ashland, Mass.

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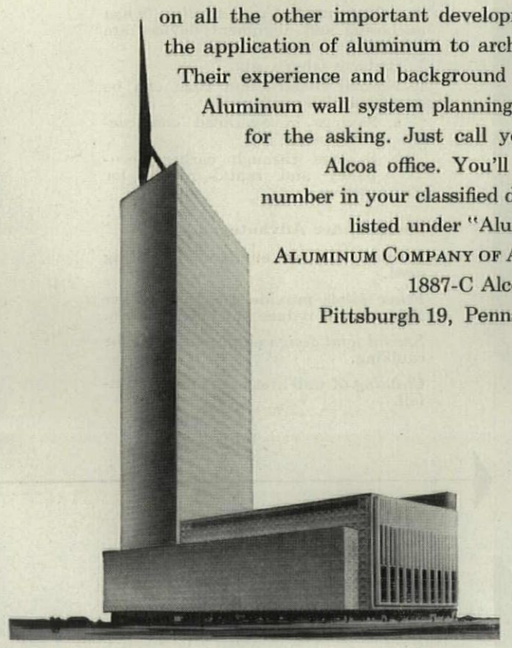
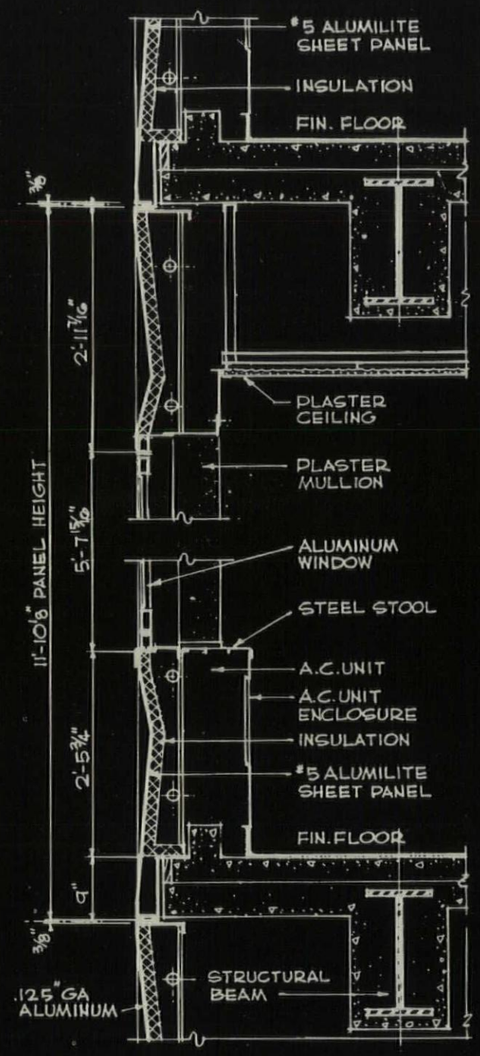
The window design departs from the small, separate windows of the Alcoa Building in favor of a continuous design which permits flexible partitioning. Retained are the double-glazed, vertically pivoted, aluminum frames.

Alcoa's architectural departments worked closely with the architects and the sub-contractor for the aluminum facing just as they have on all the other important developments in the application of aluminum to architecture. Their experience and background in Alcoa Aluminum wall system planning is yours for the asking. Just call your local Alcoa office. You'll find the number in your classified directory, listed under "Aluminum".

ALUMINUM COMPANY OF AMERICA,
1887-C Alcoa Bldg.,
Pittsburgh 19, Pennsylvania.

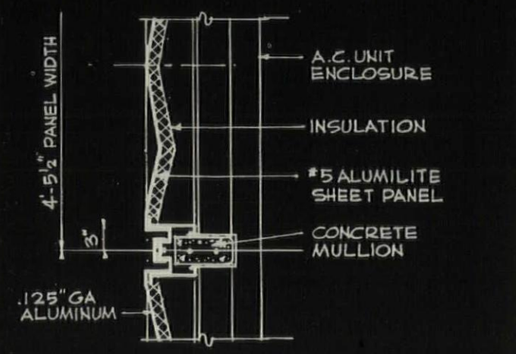




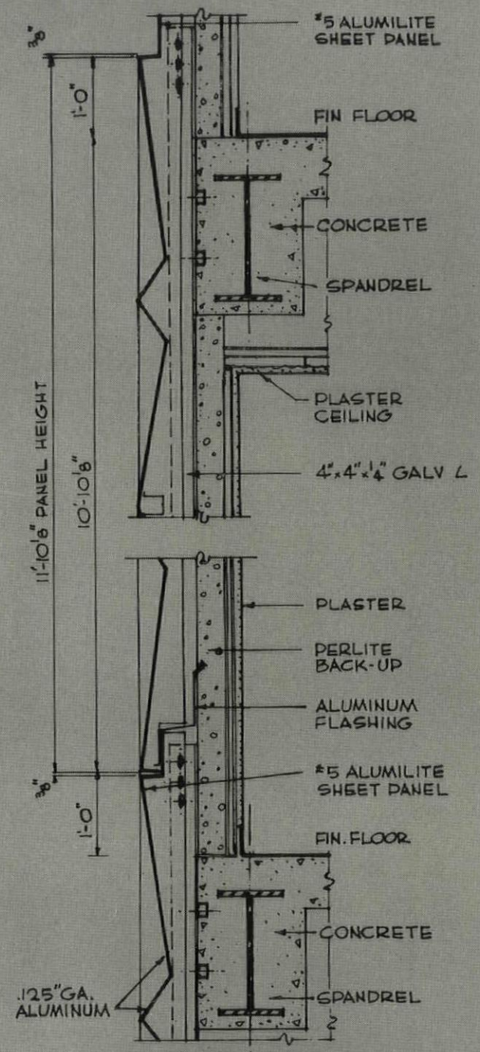
PANEL A
TYPICAL OF THREE WALLS

WALL SECTIONS

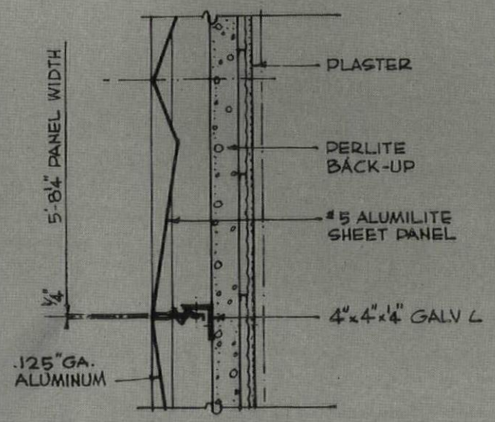
SCALE 0 2 3 FEET



PLAN AT JOINT OF PANEL A



PANEL B
TYPICAL OF ONE WALL



PLAN AT JOINT OF PANEL B

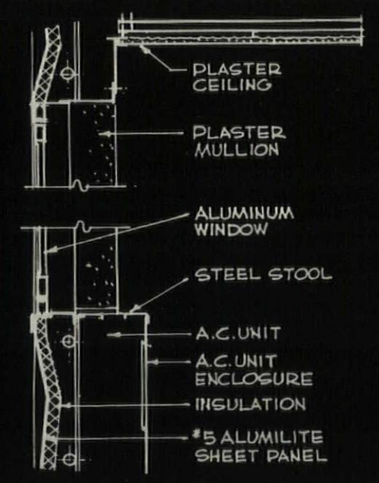
CREDITS

Harrison & Abramovitz, Gill & Harrell, *architec*
Jaros, Baum & Bolles, Zumwalt & Vinther, *mechanical and electrical en*
Edwards & Hjorth, *structural engineers.*
J. W. Bateson, *general contractor.*
Flour City Ornamental Iron Company, *subcontractor, aluminum.*

PANEL A—typical of three walls, incorpora windows pivoted on vertical axis. ⅛" anod treated aluminum sheet is backed only by 1 aluminum foil vapor seal insulation.

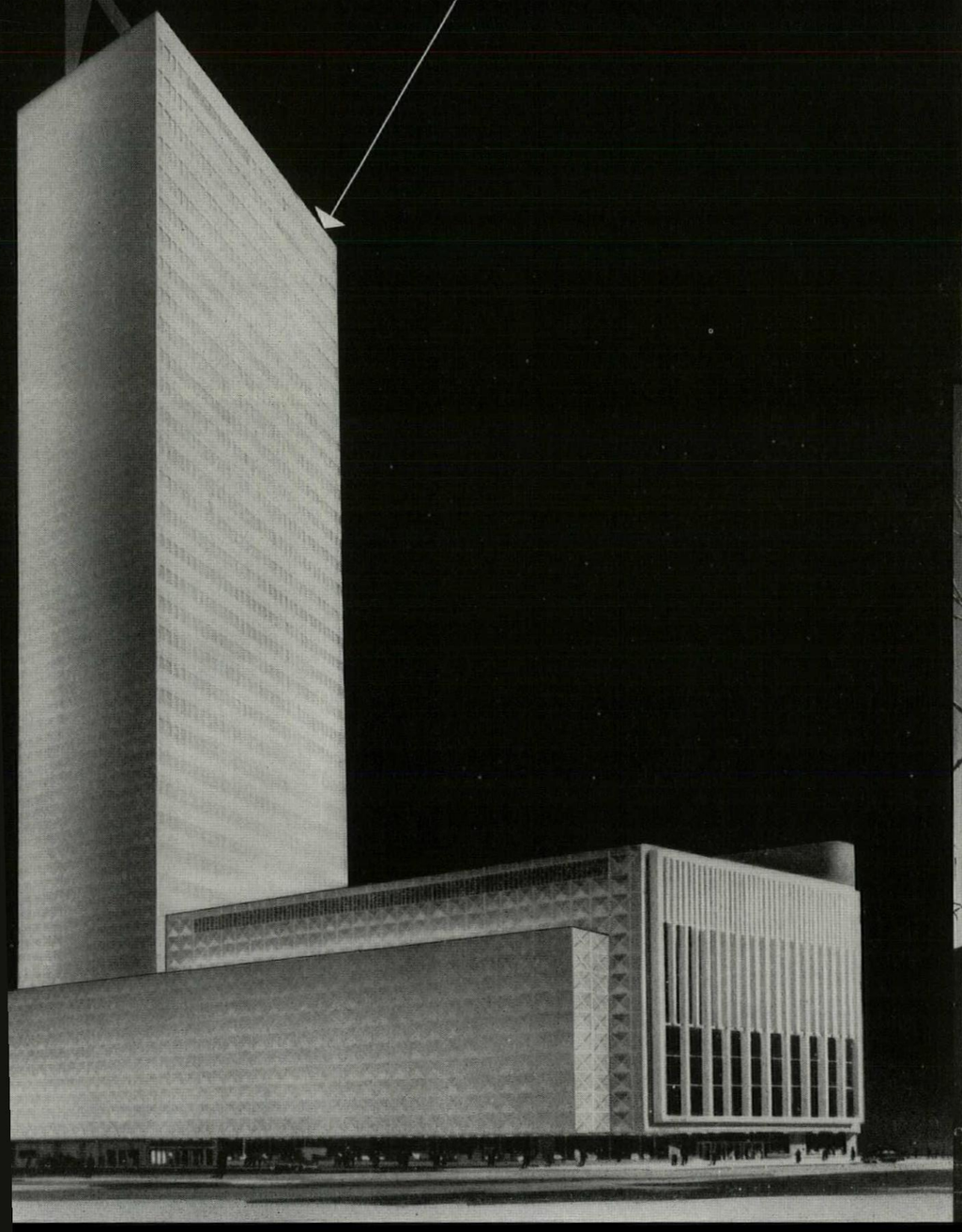
PANEL B—west wall is sheathed completel light aluminum panels that contrast with tl continuous windows on other three sides. ⅛" aluminum panel has perlite back-up.

WINDOW—detail shows 5' 7⅛₁₆" double-glazed, vertically pivoted windows, set in 1 by 4' 5¾" aluminum panel. Panel weighs four pounds per square foot.



ALCOA
ALUMINU
ALUMINUM COMPANY OF A

k inside for details on the thinnest curtain wall!

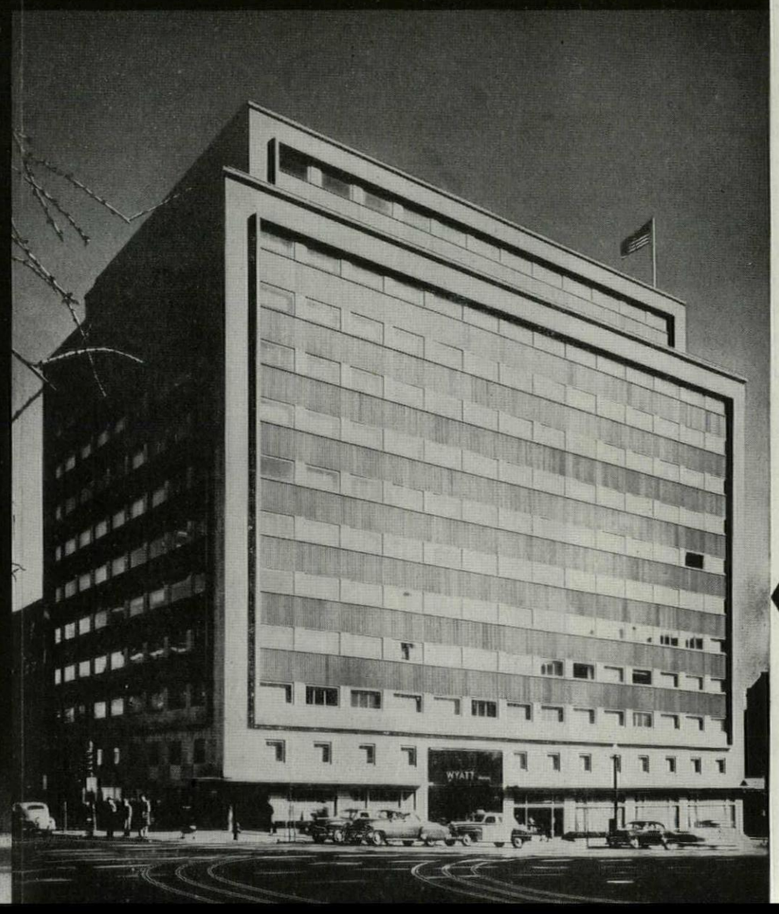


Award winning building details now available!

When the Wyatt Building with its wall system of Alcoa Aluminum appeared amid the traditionally stone architecture of our nation's capital, it not only harmonized with its surroundings, but was promptly judged a prize-winning design by the Washington, D. C., Board of Trade in 1953.

Full details of the exterior aluminum wall designed by architect A. R. Clas are now being distributed by Alcoa. An interesting adaptation of the aluminum wall system, worked out by the architect and Alcoa's architectural advisers, the wall and its details point the way to numerous applications in construction.

If you have not already received your set of details of the Alcoa Aluminum wall system in the Wyatt Building, call your local Alcoa office or write: ALUMINUM COMPANY OF AMERICA, 1887-C Alcoa Building, Pittsburgh 19, Pennsylvania.



Advantages of Alcoa Aluminum Wall System

- **Design and Construction Advantages**

Light weight permits:
1. Smaller foundations, lighter structural steel framework.
2. Larger and fewer wall facing units.
3. Pre-assembly methods in shop.
4. Low transportation load to construction site with less freight charge.

High radiant heat reflectivity of natural color aluminum means:
1. Greater interior heat retention in winter.
2. Better exterior heat resistance in summer.

Design versatility offers an almost unlimited variety of architectural effects through cast, extruded, sheet shapes with wide range of colored and textural finishes.

Workability permits speedy fabrication with less equipment and lower fabrication investment.

Thin wall construction can increase rental income by providing more usable square feet of floor area.

- **Erection Advantages**

Larger and fewer wall facing units permit:
1. Efficient handling.
2. Fewer joints.

Inside installation of wall system eliminates scaffolding.

Panel storage on floors or roof reduces need of ground storage space.

Ease and speed of wall erection (when anchoring and alignment devices are properly engineered.)
1. Reduces labor costs.
2. Normal construction time can be substantially reduced.
   a. Savings in overhead construction costs.
   b. Savings through earlier occupancy and rental return for owners.

- **Maintenance Advantages**

Permanent finish eliminates painting need.

Fewer joints provide greater weather tightness and reduce wall deterioration.

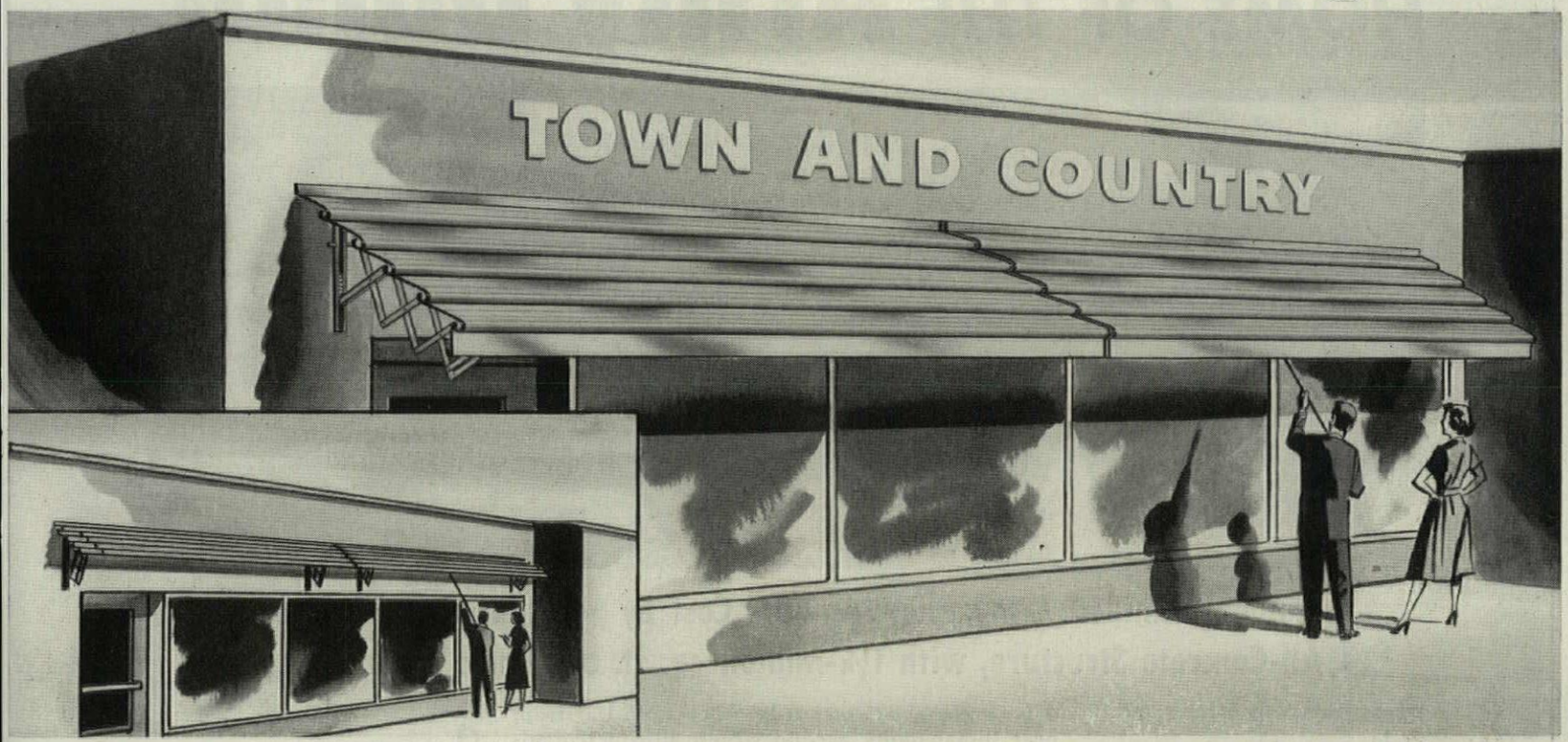
Special joint design eliminates need for caulking.

Cleaning of wall areas is done by rainfall.

ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

First Time in America: New Retractable Aluminum Awning!



NOW YOU CAN SPECIFY a practical, trouble-free, aluminum awning that will help make your commercial jobs the most distinctive in America. The new CHILDERS AJAX RETRACTABLE AWNING is made of Alumilited aluminum for maximum durability. It operates at touch of a finger, virtually eliminates awning maintenance costs.

Revolutionary New Awning Designed by Brazilian Inventor

An outstanding South American engineer, Dr. Salvador Mathias Zveibil of Sao Paulo, has combined interlocking aluminum panels with long-proven pantographic principle to develop a revolutionary commercial awning for architects and builders.

This remarkable new awning has been so successful that in a few short years it has made obsolete other types of awnings in design-conscious Brazil. Now, Childers Manufacturing Company has obtained exclusive manufacturing rights and is producing this patented awning for the first time in America.

The unique principle of the Childers Ajax Retractable Awning gives you an awning that will operate for years under the toughest conditions. It has no gears or complicated winding mechanisms; it eliminates costly maintenance. This awning improvement gives you the durability and beauty of an aluminum awning with an operating mechanism even simpler than that of a canvas awning.

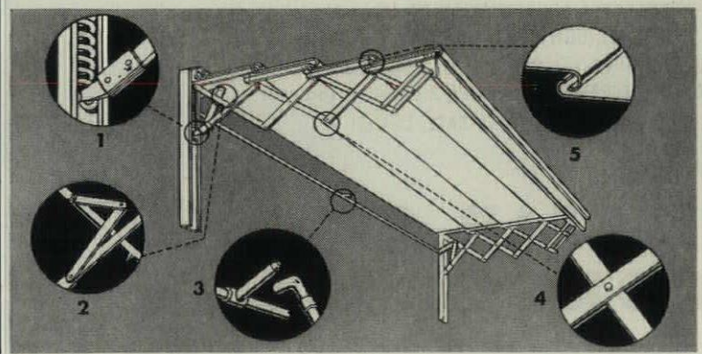
How you can solve your weather control problems with this new awning:

1. Eliminate expensive recessing. Childers Ajax Retractable Awning requires no costly recessing or boxed in construction.

2. Reduces air conditioning loads. The attractive Alumilited aluminum panels of this new awning are functional too. They reflect the radiant heat of the sun, and reduce air conditioning loads.

3. Quick, low cost installation. The Childers nationwide dealer organization insures good service in every important city in the United States. Childers-Ajax dealers give you quick estimates, prompt service, and skilled installation.

Designing or remodeling any commercial building? Don't consider any awning until you have full information on Childers Ajax Retractable Awnings.



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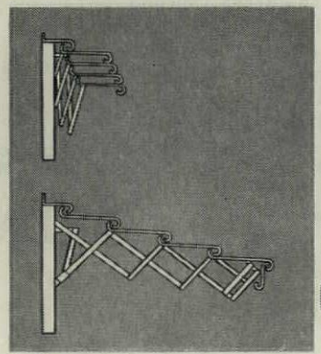

1. **Retracted:** Childers-Ajax forms attractive cornice, permits maximum light.
2. **Projected:** Fingertip control projects awning to provide necessary protection.

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Retractable AWNINGS

CHILDERS MANUFACTURING COMPANY,
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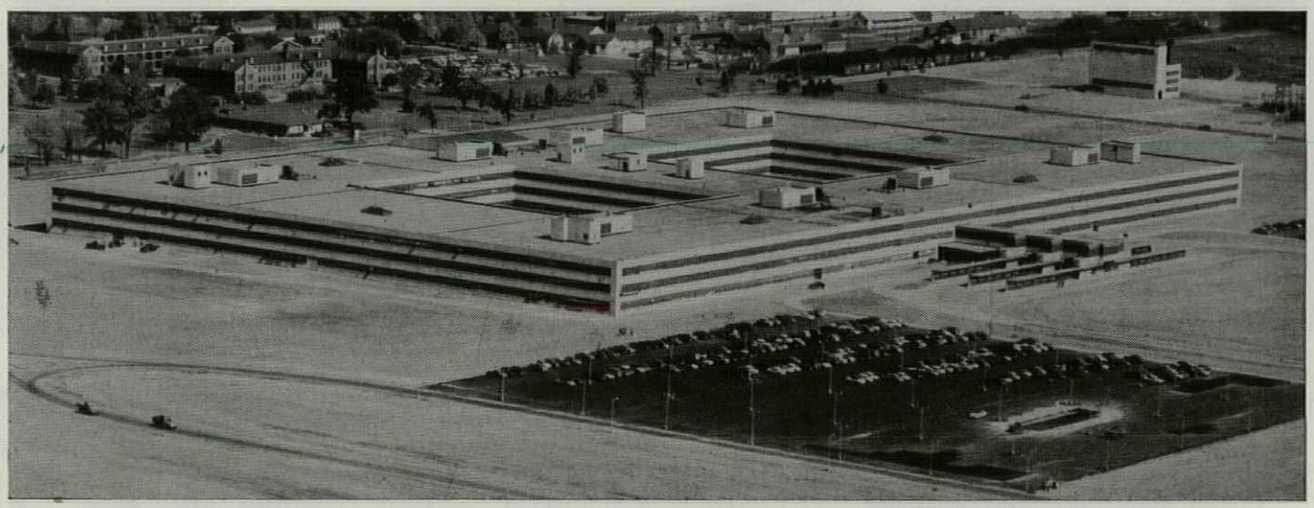
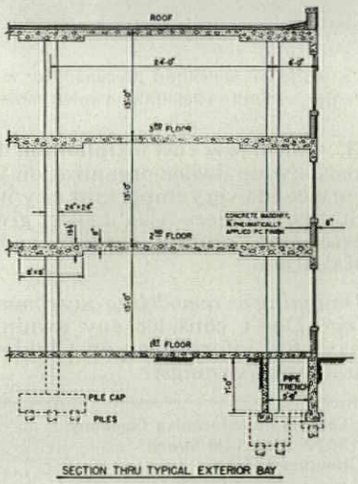


Economy-Minded Army Planning Cuts Cost by $4-Million on 14-Acre, All-Concrete Structure, with 1¼-Million sq. ft. of Usable Floor Space

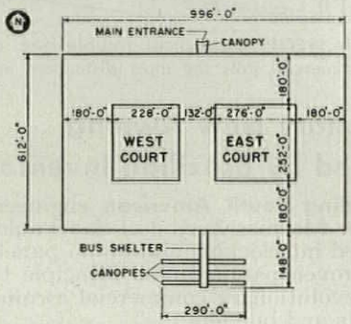


SECTION THRU TYPICAL EXTERIOR BAY

● New Finance Center at Fort Benjamin Harrison, near Indianapolis, second largest all-concrete administrative structure in the world, dwarfed only by the Pentagon, now houses Army Finance Operations, formerly scattered throughout the U. S.

Utilizing streamlined concreting methods, the 3-story, flat-slab, reinforced-concrete structure, with 1¼-million sq. ft. of usable floor space, was completed ahead of schedule, in spite of strikes, cyclone and blizzard. A total of 83,000 cu. yds. of concrete, pumped to all points within the 14-acre building area, was placed at a yard-a-minute pace.

Here is functional design, enduringly expressed in concrete, for utmost stability, durability, fire-safety and lowest annual cost — completed for $4-million less than original $23-million estimate —quality concrete, every yard of it, produced with over 100,000 barrels of Lone Star Cement.



PLAN VIEW

FINANCE CENTER, U. S. ARMY:
Fort Benjamin Harrison, Indianapolis
E. J. BEAN, Brig. Gen., U.S.A., Commanding
Supervision: **U. S. ARMY CORPS OF ENGINEERS,** Chicago
Architects-Engineers: **HARLEY, ELLINGTON & DAY,** Inc., Detroit
Ready-Mix Lone Star Concrete—Joint Venture:
READY MIXED CONCRETE CORP. • HESTON CONCRETE CO.
CARLSEN CONCRETE SUPPLY, all of Indianapolis
Masonry Units: **SPICKELMIER COMPANY,** Indianapolis

General Contractors—Joint Venture:
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CORBETTA CONSTRUCTION CO., New York
JAMES McHUGH CONSTRUCTION CO.; Chicago
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THE MAGAZINE OF BUILDING

architectural **forum**

MARCH 1954

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Cover: White Oaks Elementary School Annex, San Carlos, Calif. Architect: John Carl Warnecke. Photo: Rondal Partridge

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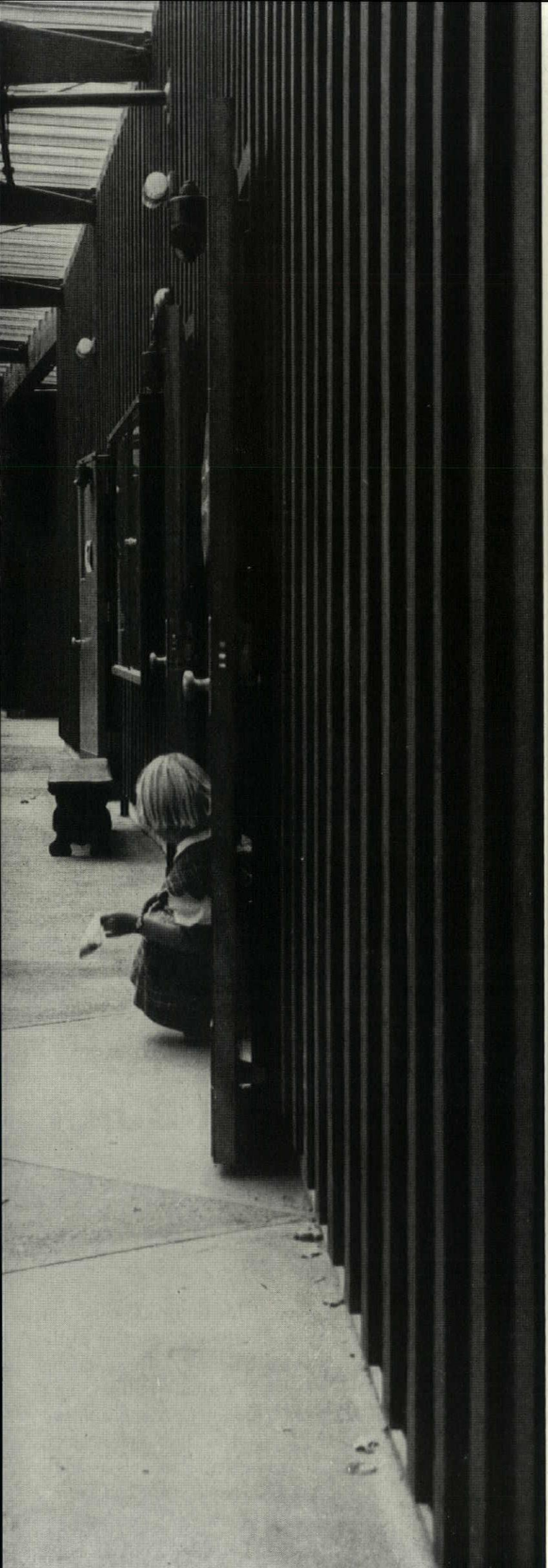
VOLUME 100, NUMBER 3



A NEW WORLD FOR CHILDREN

—because architects have learned how to build schools with blocks

The happy children in this photograph are enjoying a new kind of school.

This building is the product of thinking about classrooms as simple units of space created by large, simple units of structure. Such "unit" thinking opens the door to new combinations of space, abetted by new combinations of structure. Examples of the schoolhouses that result are shown on the following 20 pages.

A big reason school architects have turned to this kind of "block building" is that they have had to do a lot of thinking about adding to existing schools, which means they have had to analyze the fundamental *pieces* of a school, instead of thinking of whole schools. It is also a logical outgrowth of the cluster-plan school (AF, Oct. '53).

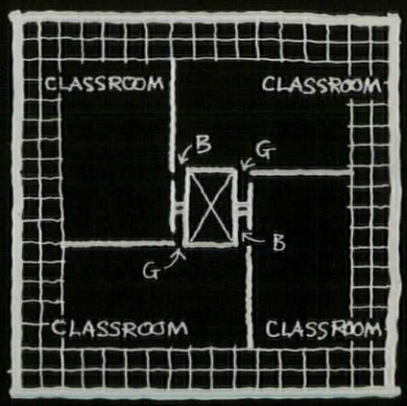
Economically, "block building" yields the advantage of planned, rational growth, whether for an old or new plant (for instance, Caudill's LIFE school, p. 110 and Blatner's addition, p. 126). It also invites a maximum of prefabrication.

Architecturally, "block building" seems to stimulate ideas for interesting new *kinds* of school units (for instance, Perkins & Will's academic-vocational unit, p. 118).

Educationally, the results of "block building" dovetail with schoolmen's aims. Breaking down the big physical mass of the building, getting smaller scale and more chances for variety, are all aids to preserving the individual in the mass. The examples that follow prove that when a good architect plays with new combinations of blocks, he also devises ways to give them internal coherence, a focus—which is precisely what educators mean when they talk about getting a group of classes to feel and act like a school community.

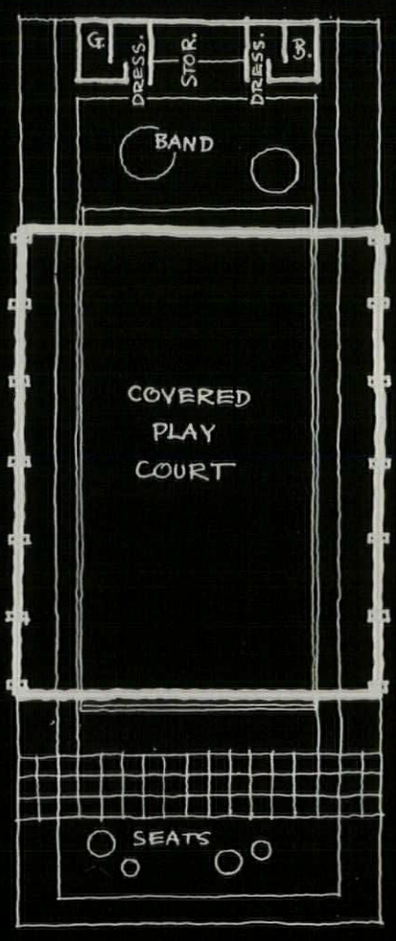
Corridor in Architect John Carl Warnecke's prize-winning elementary school annex (see also cover and p. 121).

Rudy Kahn

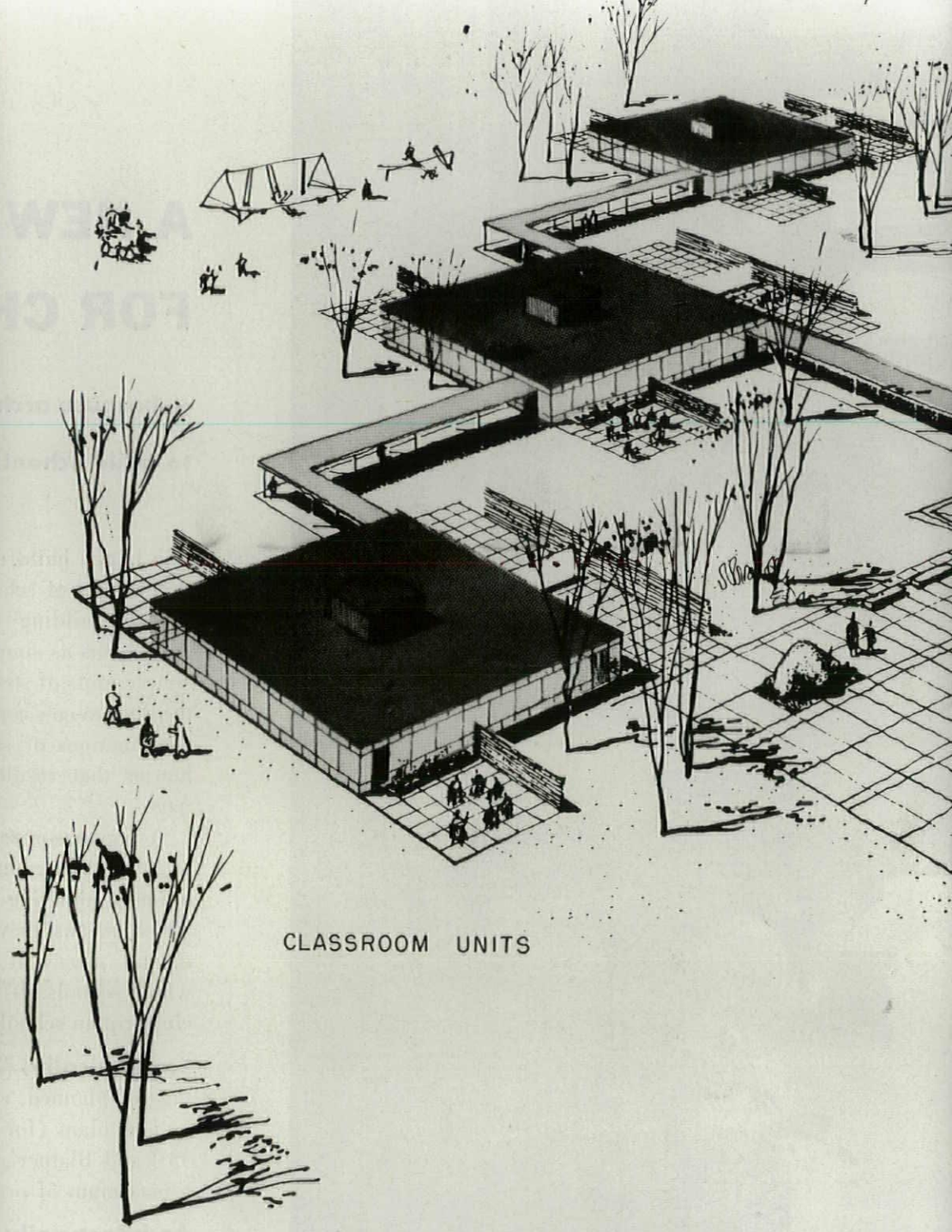


QUADRUPLEX

SERVICE UNIT



PLAY SHED



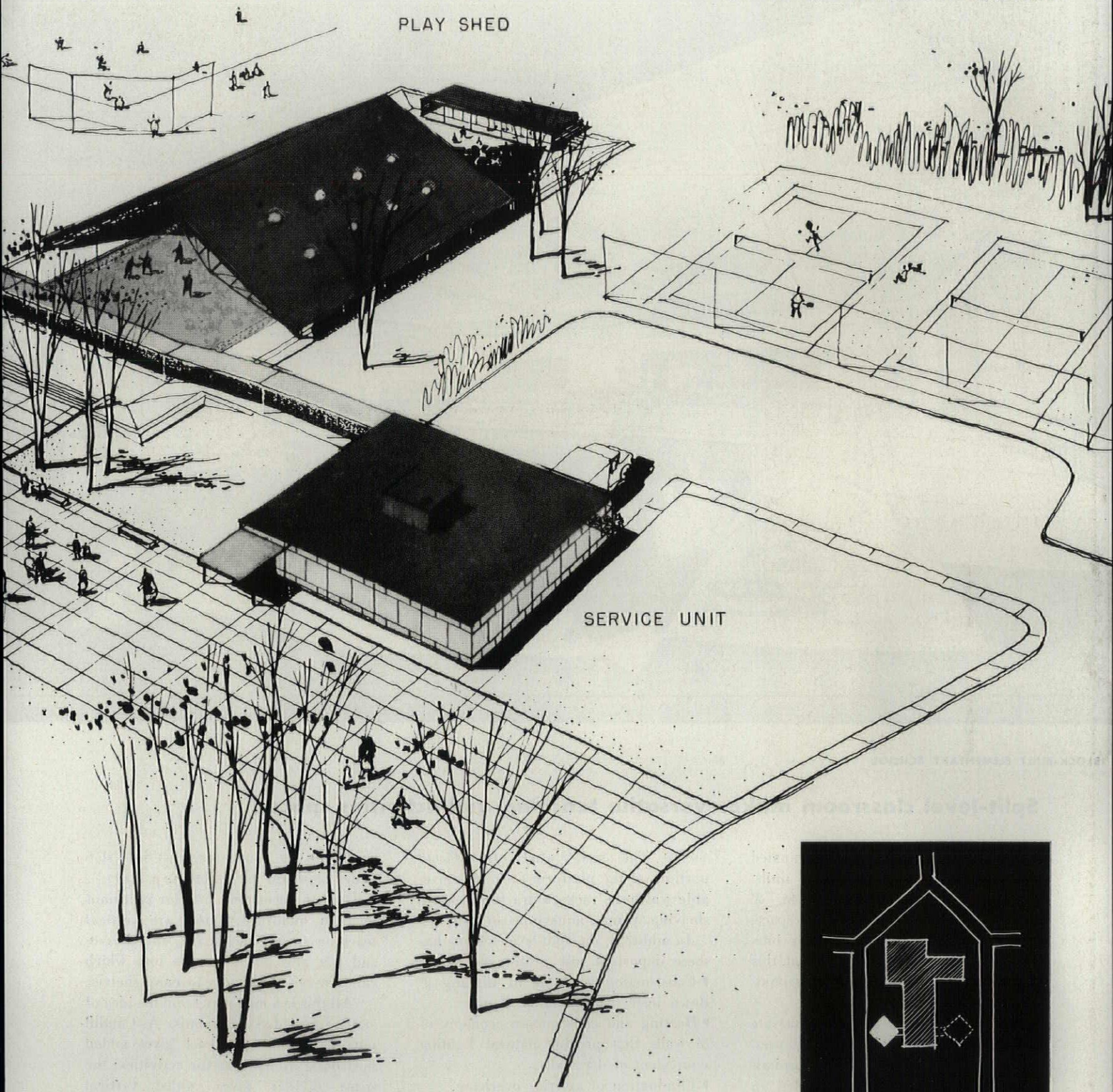
CLASSROOM UNITS

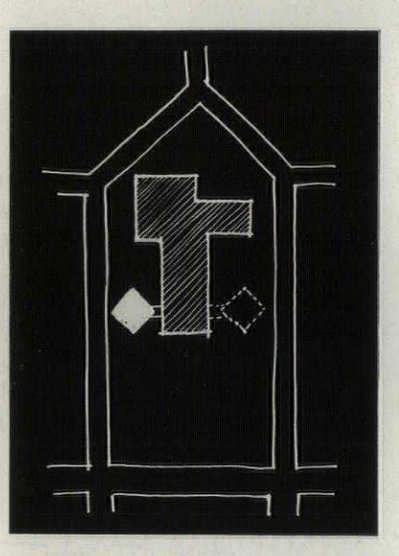
BLOCK-BUILT ELEMENTARY SCHOOL

Unit-by-unit planning promotes flexibility and economy

This elementary school was commissioned by LIFE magazine (in consultation with FORUM) to show the public how to get less costly schools both new and as additions. The basic unit is really an oblong classroom but the actual "building block" is a square building unit containing *four* of them in "quadruplex" (top left). Along with two other "building blocks," a service and a play-shed unit, these can be built of prefab parts, dropped down next to existing schools as additions, or on fresh ground for new schools which again can be ex-

CAUDILL, ROWLETT, SCOTT & ASSOCIATES, architects





First use of the 4-classroom prototype unit (site plan above) is at Bartlesville, Okla., where previously considered schemes deprived old or new rooms of light and breeze or ate up rear playground space. Solid block unit is under way; dotted block will be built later.

panded. For extra savings, a school district could lump additions to several schools in one contract.

This scheme, like that of the junior high which follows, has all the economic advantages of the cluster plan—lower site costs, light structure, no necessity for gearing one type of facility to the dimensions of another—with the further advantage of permitting old buildings to be used to their maximum. (For its amenities, adaptability and detailed economies, see the following six pages.)

BLOCK-BUILT ELEMENTARY SCHOOL

Split-level classroom makes versatile teaching and activities space

Corridors — as such — are eliminated from the quadruplex classroom units. Instead, a ground-level platform, 2′ higher than the central teaching space, borders the unit and is used for interior circulation. But most important, this platform is incorporated into classrooms as an educational asset.

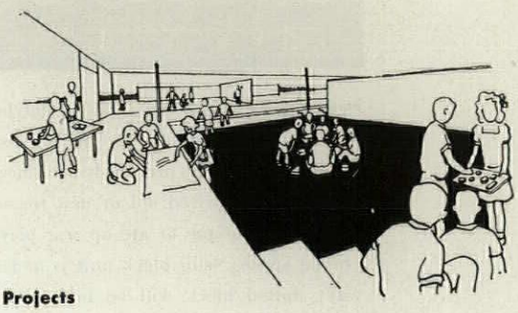
The three sketches (below) illustrate some of the platform's everyday uses. The dining sketch shows how a hospital-type food cart would be wheeled in from a central kitchen for cafeteria service. The teacher would also allocate portions of the platform area for moveable wardrobe racks, extra freestanding shelving, plants, aquariums or exhibits.

In addition, the split-level scheme has these important cost advantages:

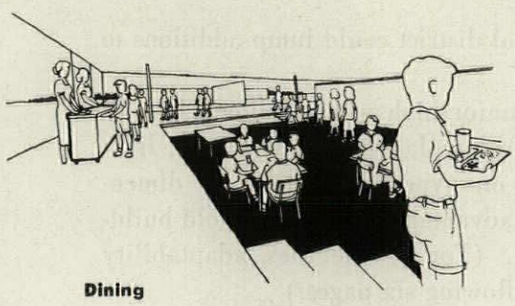
- Construction economy of digging 2′ down instead of building 2′ up.
- Heating and construction economy of 8′ walls that provide natural lighting equivalent of 10′ walls.
- Elimination of exterior overhang.
- Cheap and convenient cabinet space, occupying no floor area, cast into slab under platform (see section, p. 114).

The two permanent interior partitions in each quadruplex unit are vertical teaching space—tackboard, chalkboard, and peg and dowel boards into which children can push pegs to hang shelves.

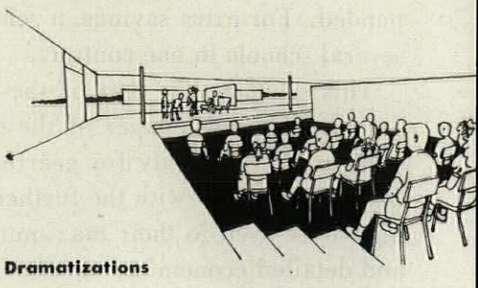
All this is a long way from the idea of static, four-sided classrooms. As Caudill puts it: "The split-level gives added horizontal dimensions for activities; the space divider gives added vertical dimensions."



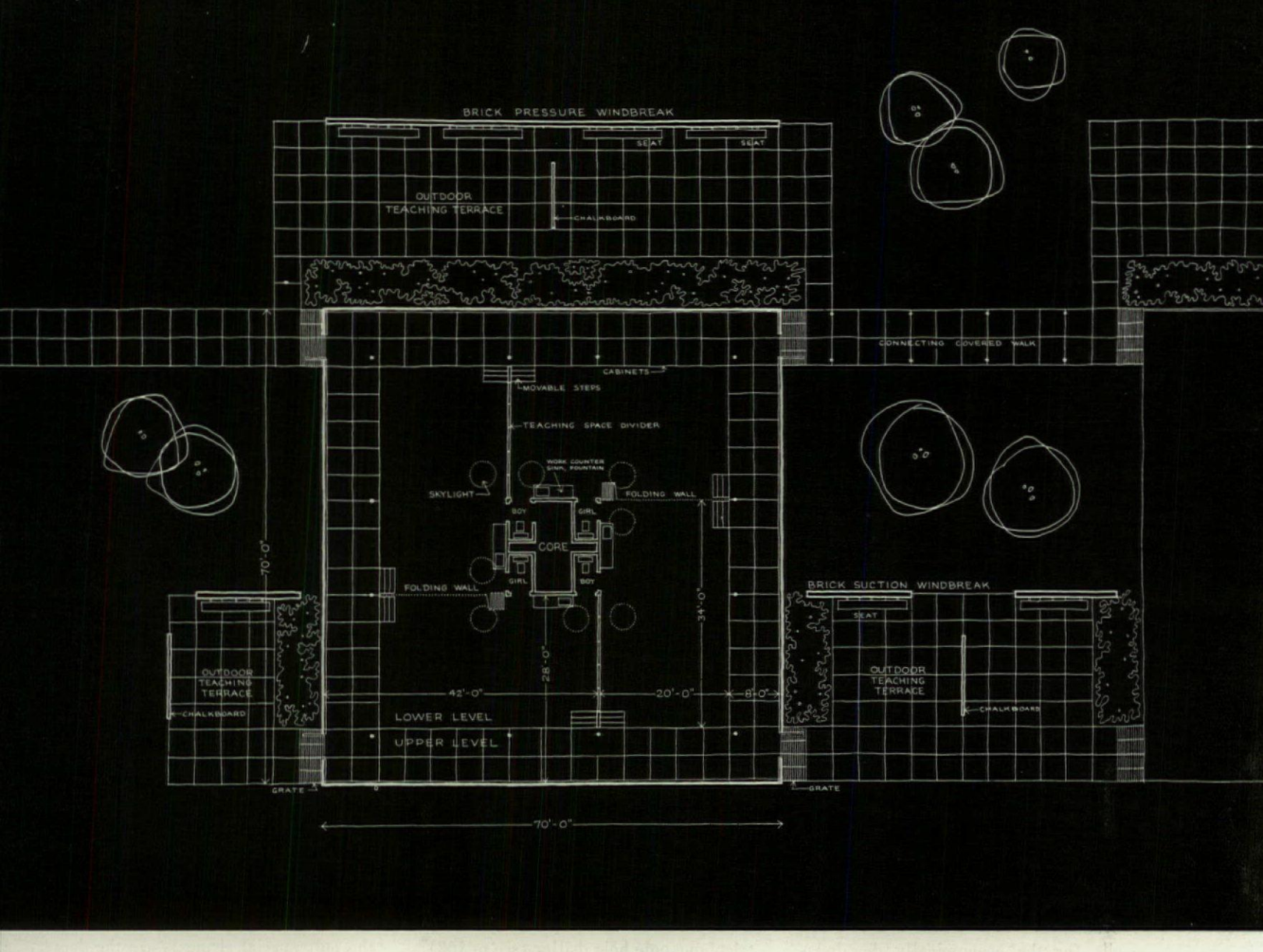
Projects

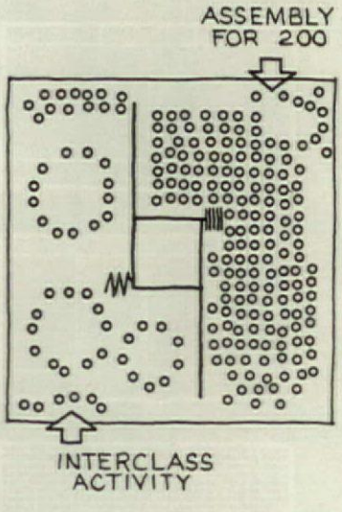


Dining



Dramatizations



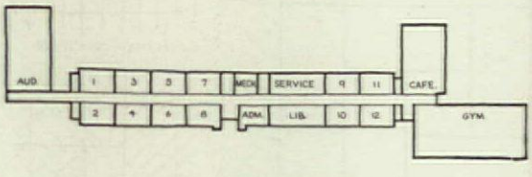


Folding walls throw two classrooms into one, give sufficient space for entire age-group assemblies or for interclass games and folk dancing.

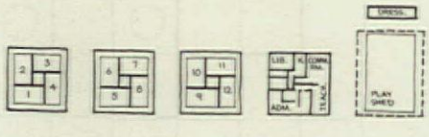
Comparative areas and volumes of unit school and equivalent traditional school are shown in sketches (below). Estimated cost of classroom quadruplex in Texas (where building costs are relatively low) is $48,265, or $9.85 per sq. ft. Estimate for administration unit is $49,490, or $10.10 per sq. ft.

Core plan provides economical central utilities for four classrooms. It includes back-to-back toilets (with an unusual two-door arrangement that will take a little practice for children to master), heating unit for the four rooms and—in hot climates—evaporative cooling unit. Plumbing for sinks comes off core.

TRADITIONAL SCHOOL

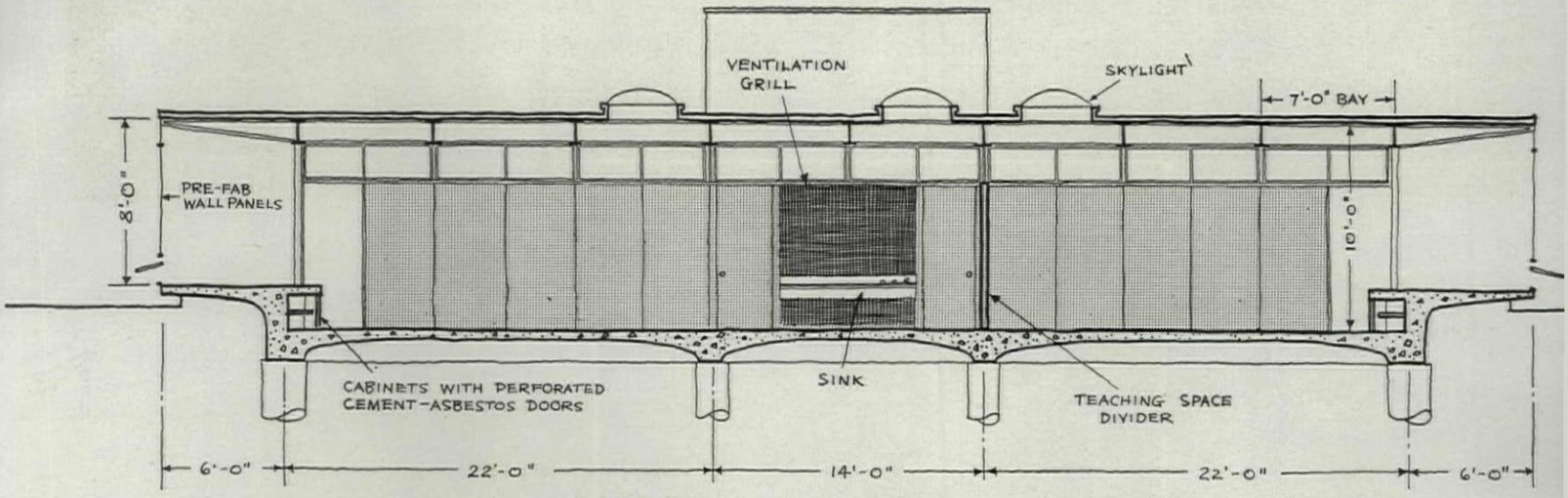


NEW SCHOOL



	typical classroom: 24′ x 40′	typical classroom: 28′ x 42′	Savings
• Floor area (minus gym, cafe. & aud.)	23,364 sq. ft.	19,600 sq. ft. (minus playshed)	16.1%
• Outside wall area	11,544 sq. ft.	8,960 sq. ft.	22.4%
• Partition wall area	14,352 sq. ft.	4,800 sq. ft.	66.6%
• Heated corridor	4,202 sq. ft.	450 sq. ft.	89.3%
• Volume (cubage)	303,732 cu. ft.	162,632 cu. ft.	46.5%

Here are the reasons for the classroom unit's low construction cost



Like many seeming simplicities, this classroom quadruplex unit is actually based on great ingenuity. To keep costs down to an absolute minimum, the Caudill project planning team used a whole bag of tricks. The nice thing of course is the way these economies dovetail into the educational amenities.

Note especially these points:

▸ Both the roof and upper level of the floor (which is really at ground level) are cantilevered.

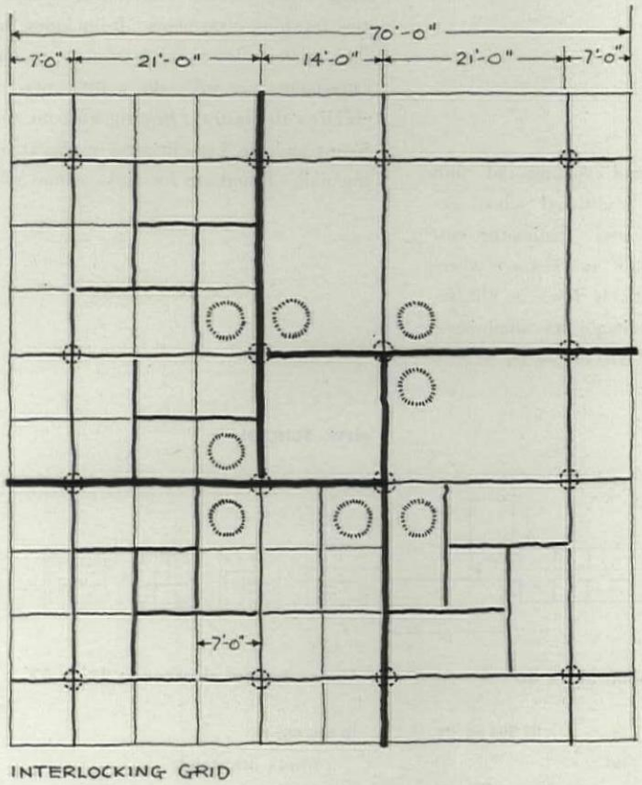
▸ Grade beams between footings serve as walls for the economically dug-down lower level and also as housing for the economical cabinets, three sides of which are concrete.

▸ Where swelling and shrinking soil exists and a structural floor slab is necessary, the scheme calls for plowing the earth to form the bottom of the concrete slab, an economical technique that provides the necessary cushion for the ground to rise and fall.

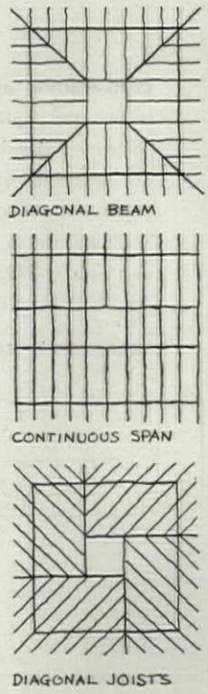
▸ Where soil conditions require deep footings, an economical drilled footing is proposed, using equipment similar to telephone-pole hole driller (see p. 168).

Four appropriate framing methods are diagrammed (below); the Caudill firm favors the interlocking grid. In addition to the systems diagrammed, lift-slab construction could be used but it has the disadvantages of requiring a fill-in form to create a level pairing surface and of restricting location of plastic bubble skylights to the centers of bays.

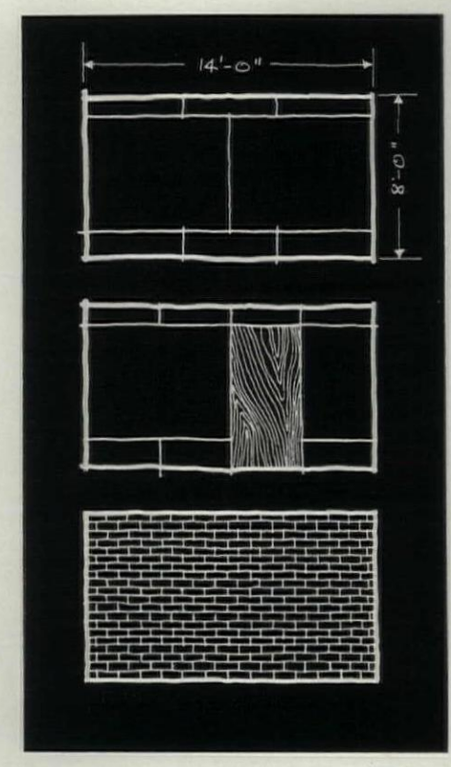
The wall module is 14′ long by 8′ high, permitting use of big prefabricated wall sections. In mild areas only two different wall units woud be needed because the only special elements are the doors.



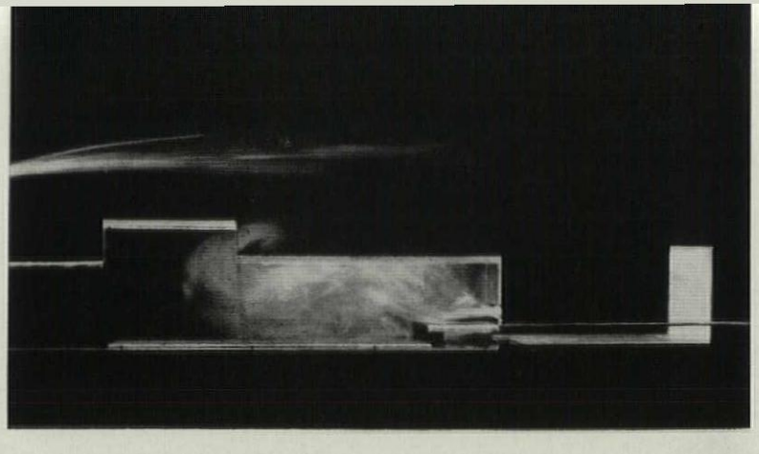
INTERLOCKING GRID

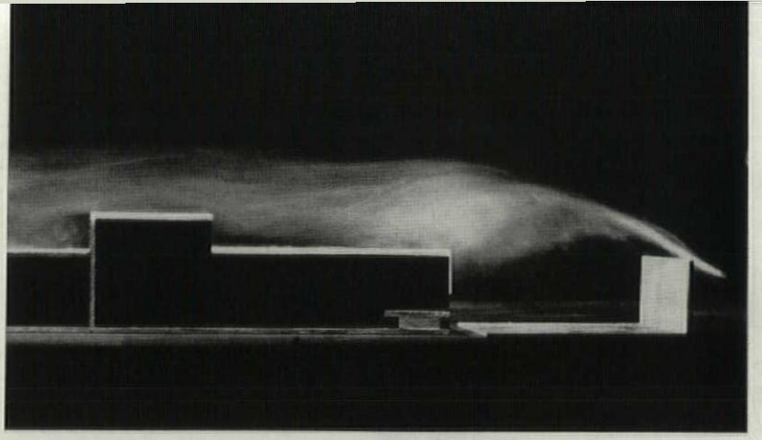


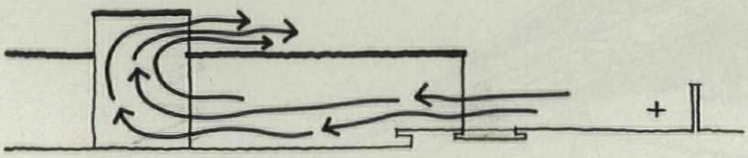
Framing system favored by project engineer is interlocking grid because maximum use of cantilever and interlocking principles permits lighter steel than other appropriate methods, thus is lower cost. But other systems diagrammed could be used.

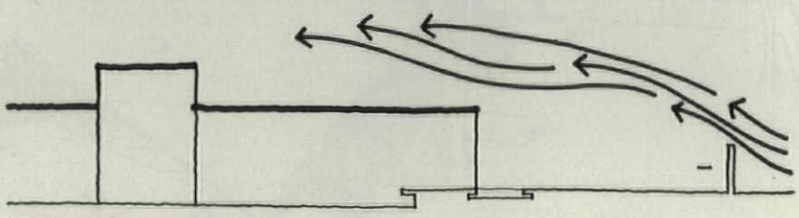


Prefab units—all glass wall or glass with door—would ordinarily be used throughout. Cold, windy locale would demand solid corners.



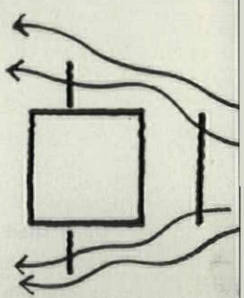




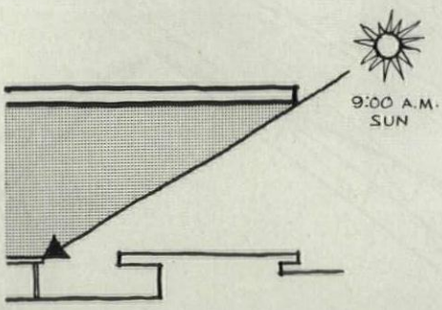


Ventilation is natural (another economy). Diagram (at right) shows in plan how prevailing warm weather breezes in southeast and south central US can be turned about and sent into leeward classrooms by freestanding "suction wall." Section (above) depicts condition at leeward; corresponding photo shows confirming results of smoke test. In hot southwest, wall should block breeze at windward because air is too drying; there, breeze would be sucked instead into evaporative cooler in core.

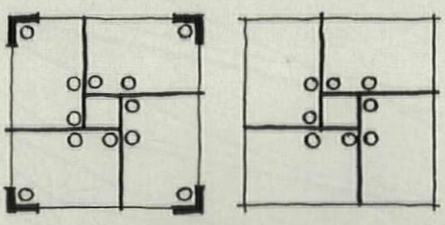
Cold winter winds in southeast and south central US (opposite direction from warm winds) are blocked by same wall that directs summer breezes into rooms. Diagrams show wind diversion in plan and section; photo (above) shows smoke test with model at Texas Engineering Experiment Station. Locales where summer and winter winds come from same direction (as at Columbus) require adjustable louvered windbreak. Northern areas, such as Duluth, require only windbreaks for winter weather.



Here are ways the classroom unit adapts to differing climates

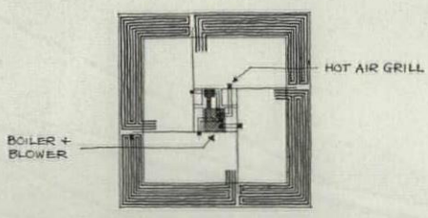


Sun control at desk working level is managed by roof over upper floor level. 9 A.M. is worst condition considered (afternoon sun is not so serious in schools as in other buildings because of shorter school day). Sun is blocked out (as shown in diagram) in latitude of New Orleans except between Dec. 5 and Jan. 5, which includes Christmas vacation. In latitude of Columbus sun enters teaching area part of day from Oct. 21 to Feb. 21. In latitude of Duluth it enters part of day from Oct. 1 to Mar. 10.

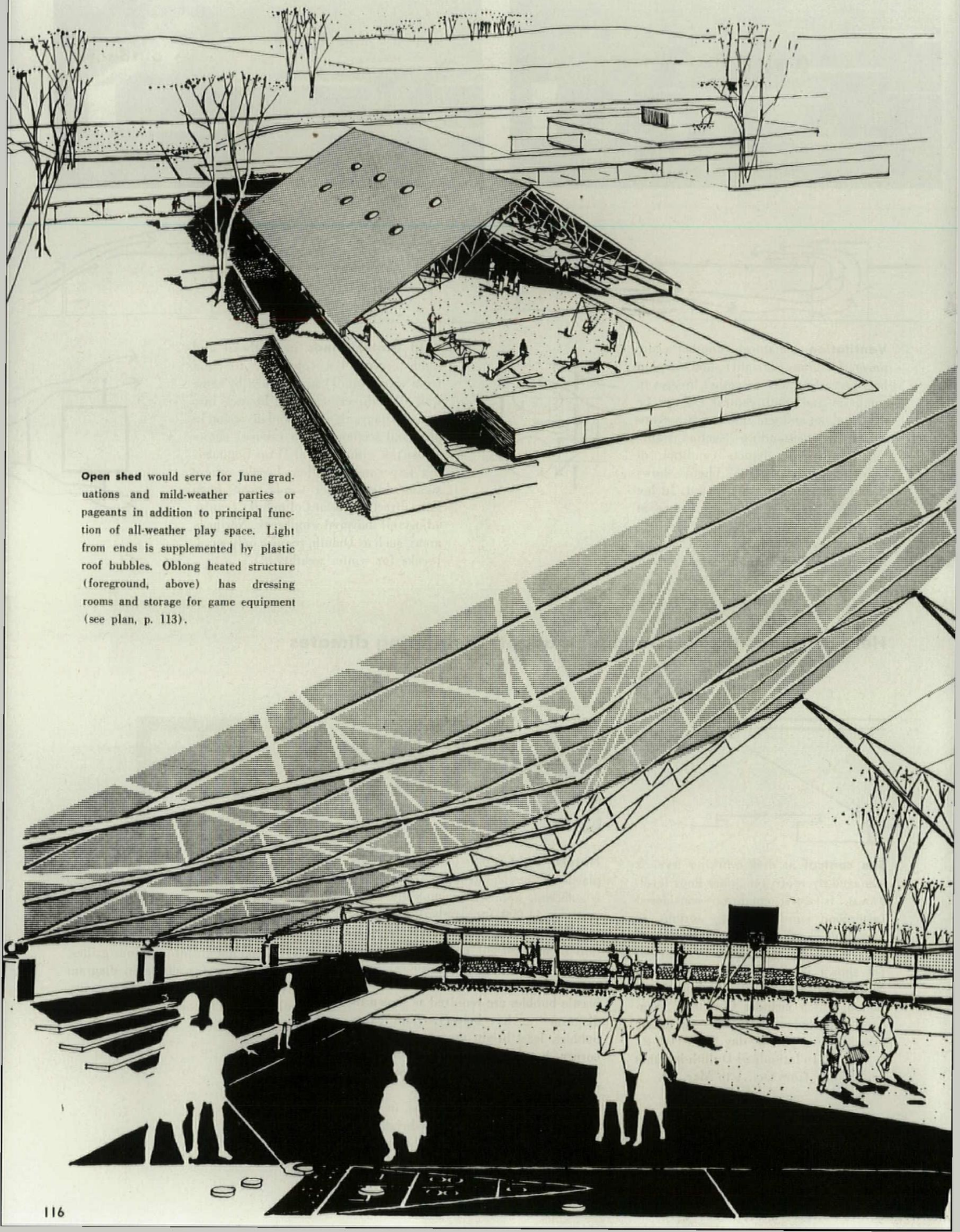


Natural light from windows and eight plastic sky bubbles grouped around core is sufficient, even with completely overcast sky (1,000 foot-lamberts) to give minimum of 56 foot-candles illumination in least bright part of classroom. For northerly climates, where solid corners are called for, four additional plastic bubbles are required as shown in diagram (at left below). With extra bubbles, least bright area is still in the corner, but it tests at a good 46 foot-candles (compared with 22 without extra bubbles).

Artificial light for night use or very dark days is system of low-brightness fluorescent lamps secured to bottoms of exposed steel beams.

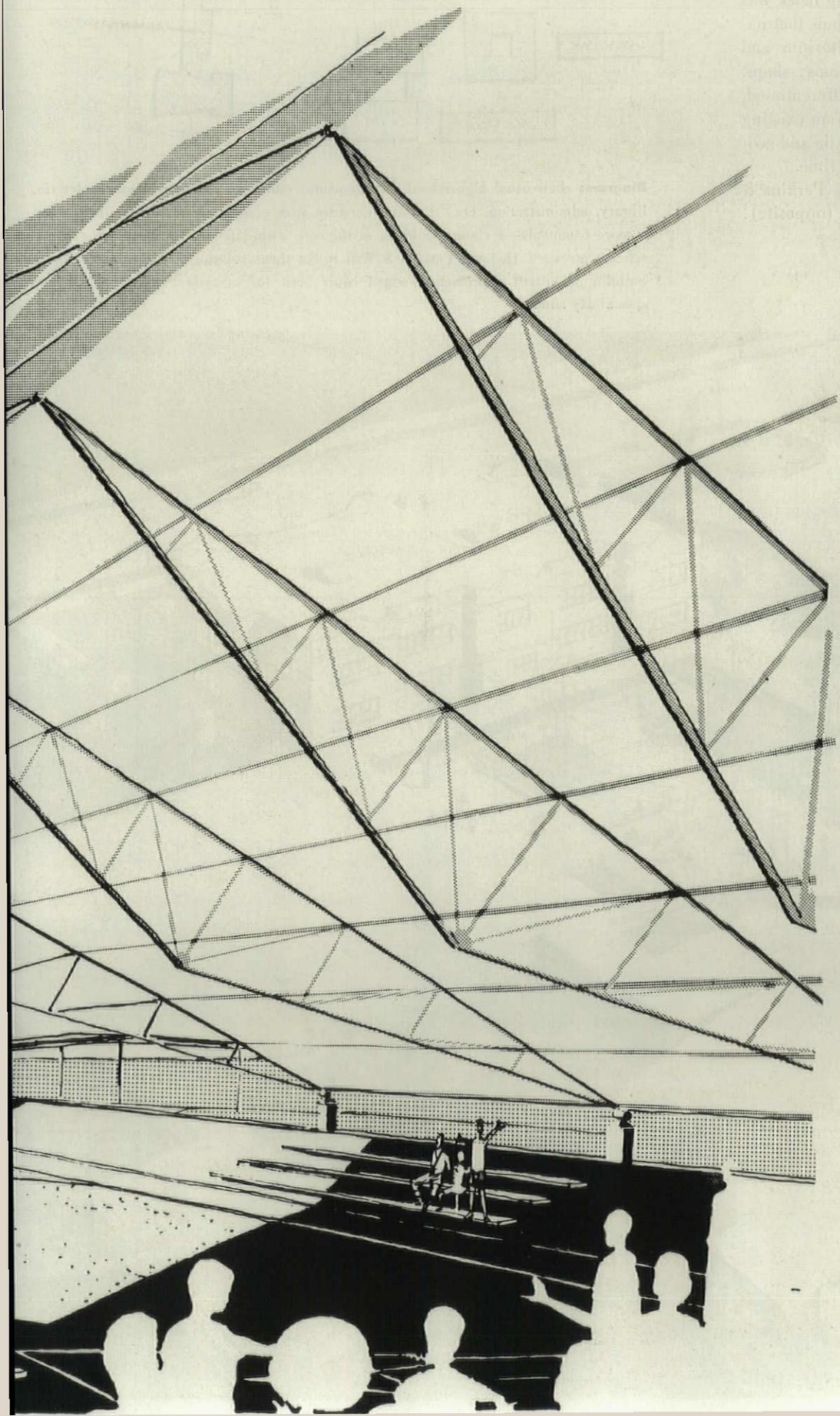


Heating in mild climates would include only radiant panels in floor of the upper level, with small hot-water boiler in core. In cold climates, same radiant panel heat would be supplemented by blower in core, to send hot air through four grilles, into four rooms (as shown in diagram above). For radiant heating coils, Caudill prefers low-cost, easy-to-install plastic tubing.



Open shed would serve for June graduations and mild-weather parties or pageants in addition to principal function of all-weather play space. Light from ends is supplemented by plastic roof bubbles. Oblong heated structure (foreground, above) has dressing rooms and storage for game equipment (see plan, p. 113).

A play shed designed to give children more, not less, of the outdoors



Architect Caudill thinks that healthy children should play outdoors—in cold climates as well as in warm. This is a radical notion, but Caudill holds firm and here he proposes a play shed—a sort of elementary school version of the gym—designed not to keep children inside, but to give them their outdoor play in spite of rain, slush or hot sun. (He reluctantly admits the shed *could* be enclosed and heated at an extra cost of $25,000 over the basic cost of $57,740 estimated by a Texas contractor, but "why, when active play gives every child a built-in heating system?")

The shed gets some of its roof height by digging down, an economy trick the Caudill firm has already used in schools (AF, Oct. '53). The sides of the pit form bleachers; the floor is easy to flood for an ice-skating rink in cold climates.

The shed would be oriented to take prevailing winds at the sides and the small gap between roof and bleachers could be windscreened when necessary. To guard against erratic windstorm damage, roof is engineered for greatest resistance against upward pressure.

Credits:

William W. Caudill, John M. Rowlett, Wallie E. Scott Jr., William M. Pena, planning team; Cleon C. Bellomy, Charles E. Lawrence, Frank D. Lawyer, designers; A. M. Martin, structural engineering; J. W. Hall Jr., mechanical engineering; Robert F. White, landscape architect; Bob H. Reed, research architect, Texas Engineering Experiment Station; Doil S. Hammons, constructor and estimator, R. B. Butler, Inc.; Roland Chatham, scientific and presentation photography; Dr. Walter D. Cocking, educational consultant; Dr. Hollis A. Moore, associate.

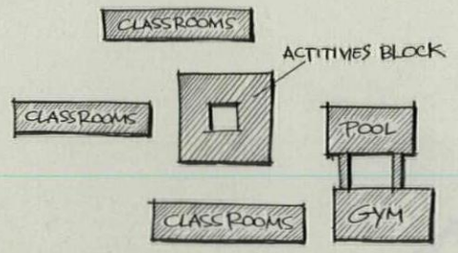
Reshuffled junior high

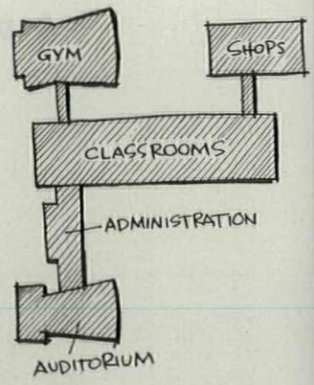
PERKINS & WILL, architects

—breaking it down into "blocks" permits rearrangement

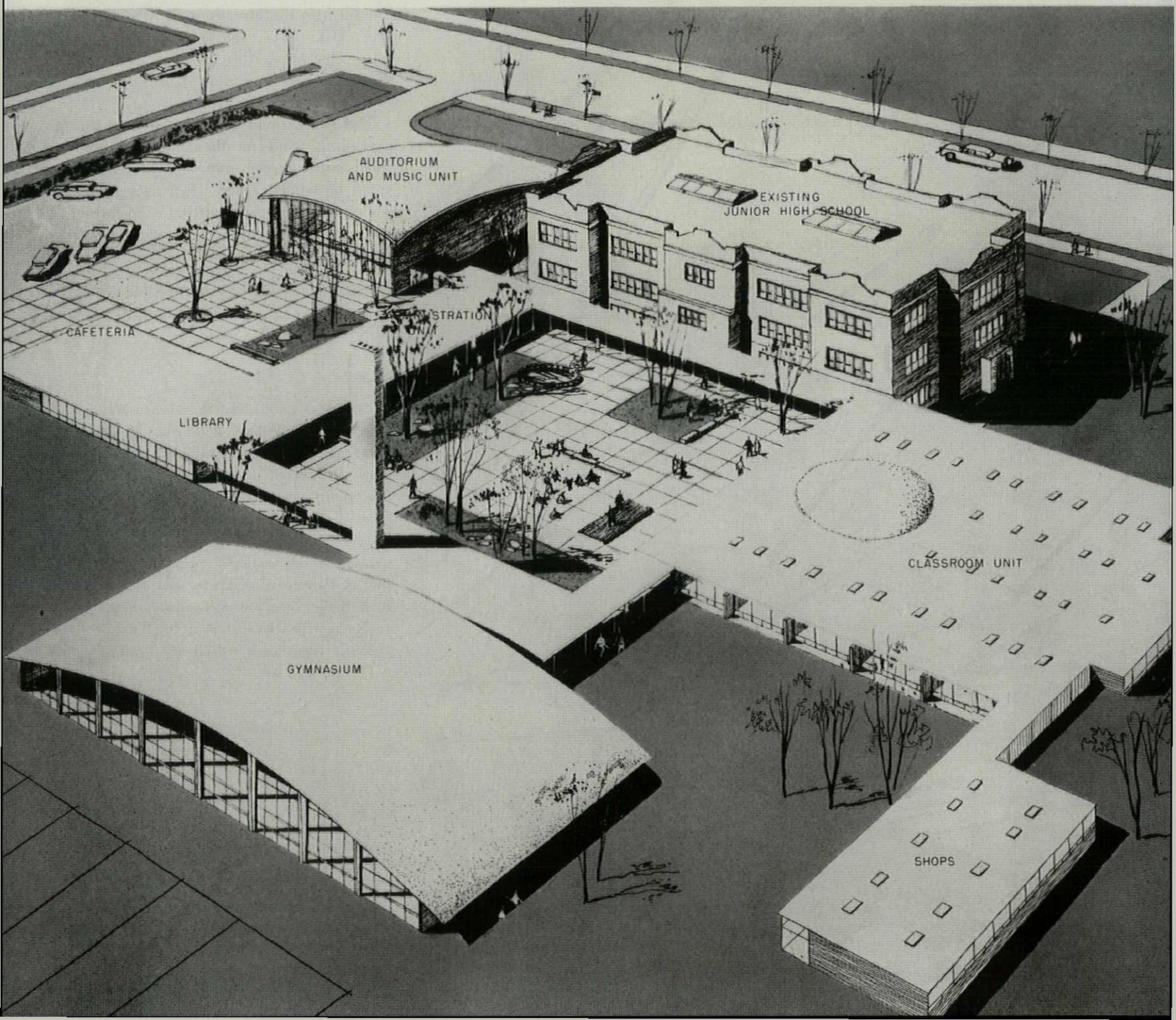
In analyzing this prototype junior high school (again done for LIFE with FORUM consulting) architects Perkins & Will found their basic building block was no single room but certain *groups* of rooms that naturally belong together, such as auditorium and music; gym and locker rooms; classrooms; shops. Once these groups have been clearly differentiated, it is possible to build a school or add to an existing school step by step in a rational, systematic and economical manner, adding a "block" at a time.

In rethinking their groups as blocks, Perkins & Will came up with a fascinating new unit (opposite).





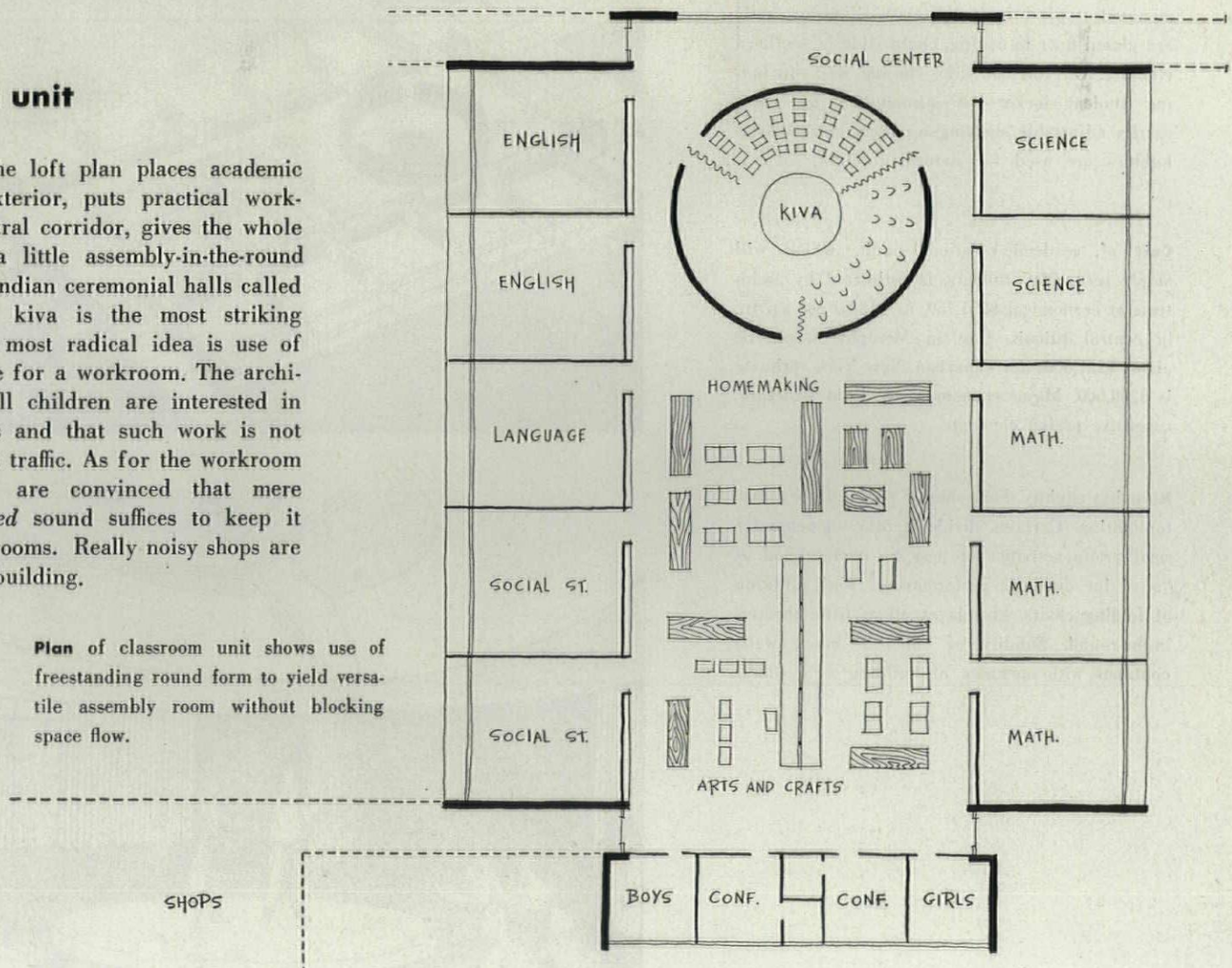
Diagrams show usual high school arrangements: either an activities block (cafeteria, library, administration, etc.) forming the core with classrooms dispersed about it or —more commonly—a classroom block at the core with activities on periphery. In the scheme proposed (below) Perkins & Will reject these solutions. The heart of their building is space: a promenade-edged court both for everyday milling about and special-day rituals.



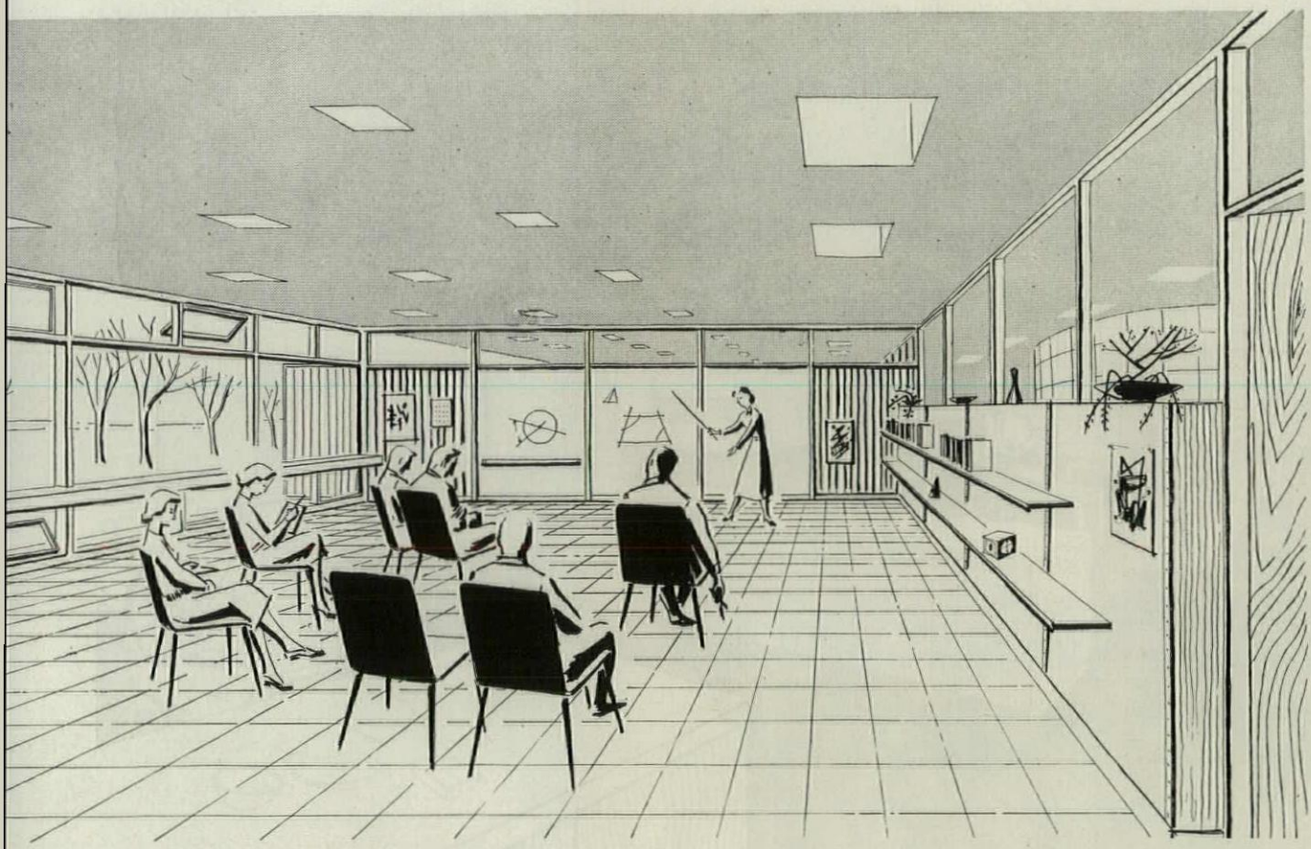
Central loft space of wide classroom-vocational unit has natural toplighting. In background is circular assembly room, in foreground work space, at sides are traffic lanes.

The classroom unit

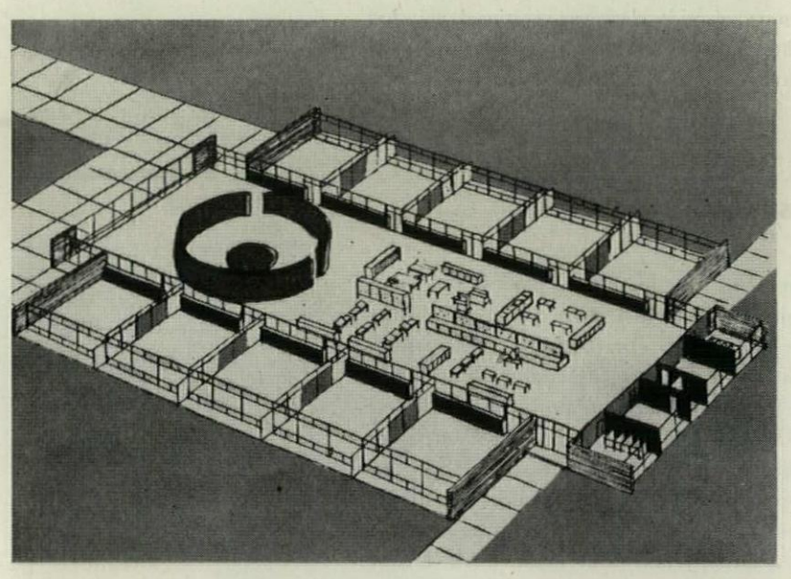
This refinement of the loft plan places academic classrooms on the exterior, puts practical workrooms in the big central corridor, gives the whole a focal point with a little assembly-in-the-round (inspired by Pueblo Indian ceremonial halls called "kivas"). While the kiva is the most striking element, actually the most radical idea is use of the central open space for a workroom. The architects reasoned that all children are interested in seeing these activities and that such work is not disturbed by adjacent traffic. As for the workroom buzz, the architects are convinced that mere muffling of *generalized* sound suffices to keep it from disturbing classrooms. Really noisy shops are off to left in separate building.



Plan of classroom unit shows use of freestanding round form to yield versatile assembly room without blocking space flow.

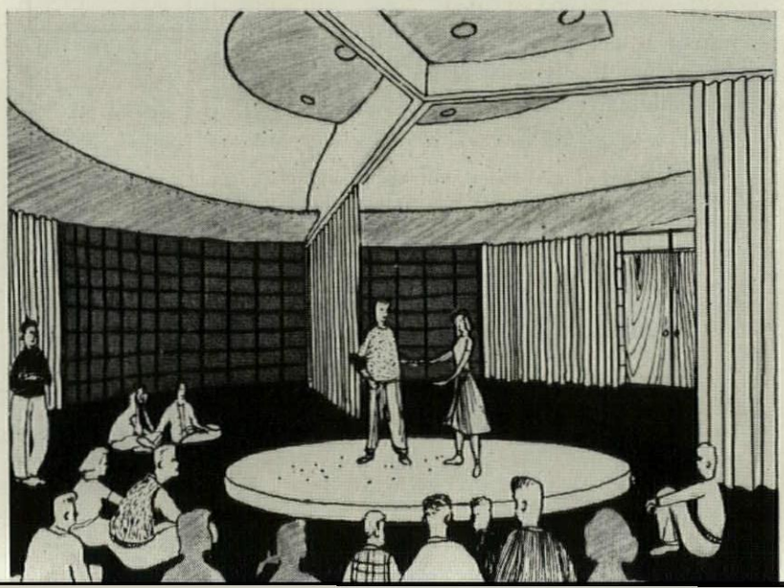


Classrooms have unusually airy, unconfined character. Partitions between rooms (rear of sketch) are wood tackboard, on which chalkboard is mounted, topped by fixed glass. Exterior walls are glazed floor to ceiling, could slide in southern climates. On corridor side, storage wall—including student lockers—is surmounted by glass, carries adjustable shelving on room side. Plastic bubbles are used for natural toplight.



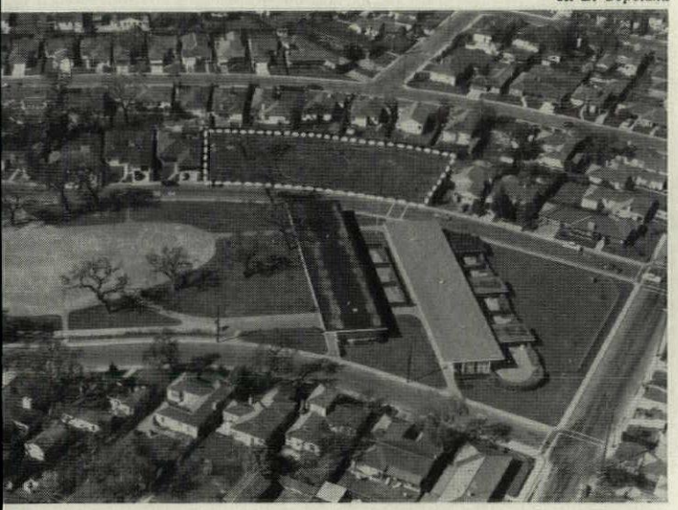
Cost of academic-vocational unit, which will amply serve 300 students, is estimated by architects at economical $255,750, or $12.50 per sq. ft., in central Illinois. Cost in Memphis would be about $227,600; for suburban New York estimate is $268,500. Major economies are light structure, repetitive prefab elements.

Kiva has slightly dome-shaped roof with artificial toplighting. Curtains divide it into segments for small-group activities or may be manipulated as "sets" for dramatic performances. With addition of folding chairs, kiva is excellent little theater-in-the-round. Solidity of concrete block walls contrasts with openness of building as a whole.



House-and-yard school with glass "Main Street"

R. L. Copeland



Site for annex, across street from existing school, was fan-shaped plot (center background in preconstruction photo) made up of five house lots in middle of residential block—the only land available in the neighborhood.

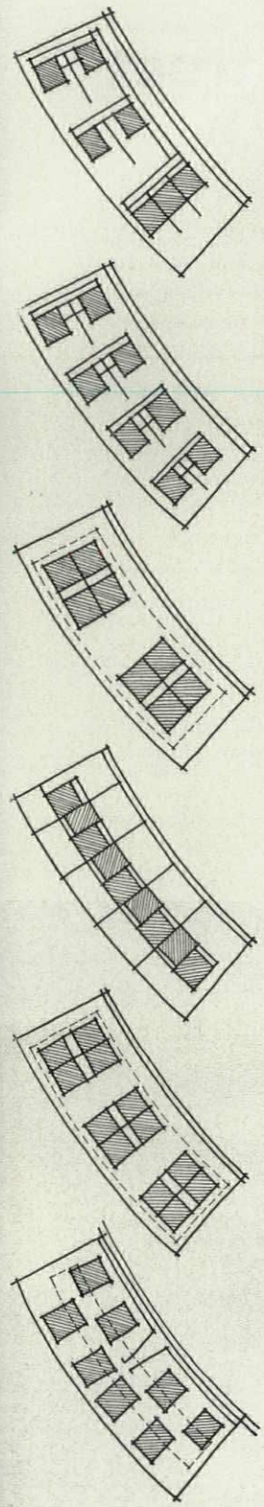
This kindergarten-primary annex beautifully proves how a fresh approach to an old problem can yield all kinds of rich results.

Architect John Carl Warnecke's separate little house and yard for each classroom make great good sense: they satisfy the educational requirement for "an extension of home environment" to beginners' grades; they respect and preserve the character of a residential neighborhood and they make maximum use of a minimum site—better than 90% educational use, plotline to plotline.

The central skylight, tying together the little houses, gives toplighting to each room's interior end, provides a cheerful, roofed outdoor play space and creates a lighthearted "Main Street" corridor that keynotes the lighthearted charm of the whole job.

These school house amenities helped Architect Warnecke win both the AASA-AIA merit award and a *School Executive* plaque at the American Association of School Administrators' February convention at Atlantic City (see page 180). This school was the only dual winner. It is the second *School Executive* award winner for Warnecke. His first: Mira Vista elementary school (AF, June '51), honored in the 1952 competition.

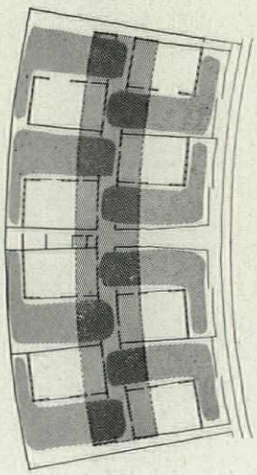
Rondal Partridge

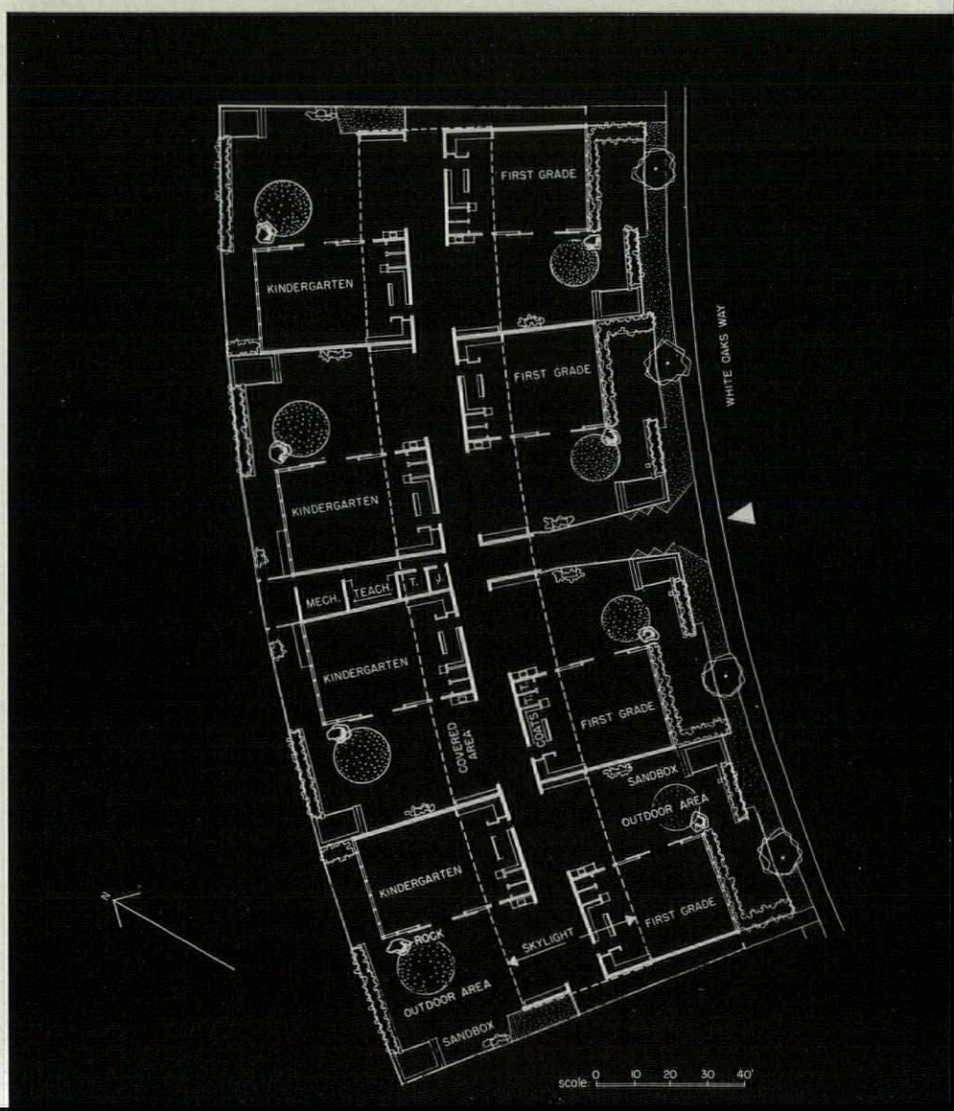


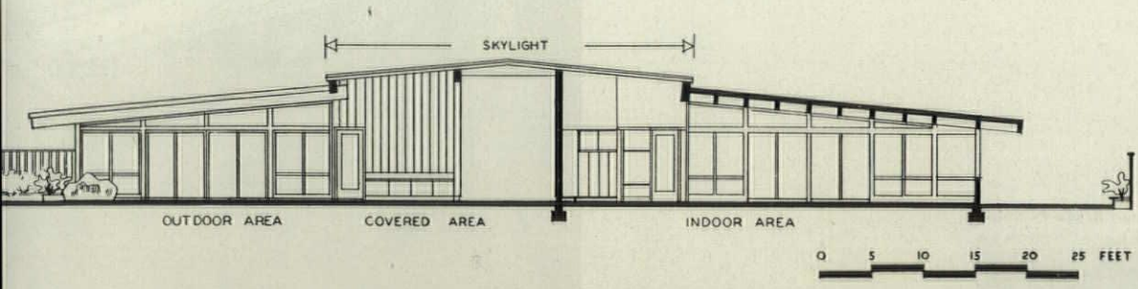
Diagrams (at left) show five discarded layouts and accepted solution. School authorities and architect analyzed and scored each possibility according to homelike rather than institutional appearance, degree class areas were self-contained, use of outdoor area, educational flexibility, lighting, ventilation and circulation. First scheme eliminated was No. 5, which crowded in too many classrooms; then No. 1, which had too few; and institutional-looking No. 4. Among remaining eight-classroom possibilities, the last scored highest, coming out especially well in its use of outdoor area. Whole site is only 111′ deep with 225′ frontage; longer rear arc is 269′.

Rondal Partridge

Plan gives each classroom its own fenced, separate yard linked with its own covered outdoor space (see diagram below and photo, opposite page). Kindergartens get bigger yards than first grade. Skylight is 35′ x 235′, covers approximately one third of each classroom and gives average of 594 sq. ft. of covered outdoor space to each class. Skylight panes are ¼″ heat-absorbing, glare-reducing (frosted) wireglass.







WHITE OAKS ELEMENTARY SCHOOL ANNEX

▲ San Carlos, Calif. ▲ 8 classrooms. ▲ 250 to 300 pupils.

Features: almost total use of space for education. ▲ Harmony with residential area. ▲ Natural lighting for classrooms on two walls and skylighting at third wall; natural toplight for classroom toilets and storage closets. ▲ 12′ sliding doors between classrooms and yards. ▲ Bright color accents indoors and out, each class having its own color. ▲ On street, natural redwood and driftwood gray accented by brilliant yellow gates.

Construction: concrete slab on grade. ▲ Wood studs with redwood board and batten outside, fir plywood inside. ▲ Roof framing exposed wood beams; T&G deck, 1″ insulation, built-up roof. ▲ Skylight frames 18′ extruded aluminum bars; glass ¼″ blue-green frosted wire glass. ▲ Asphalt-tile flooring. ▲ Hot-water radiant heating in slab.

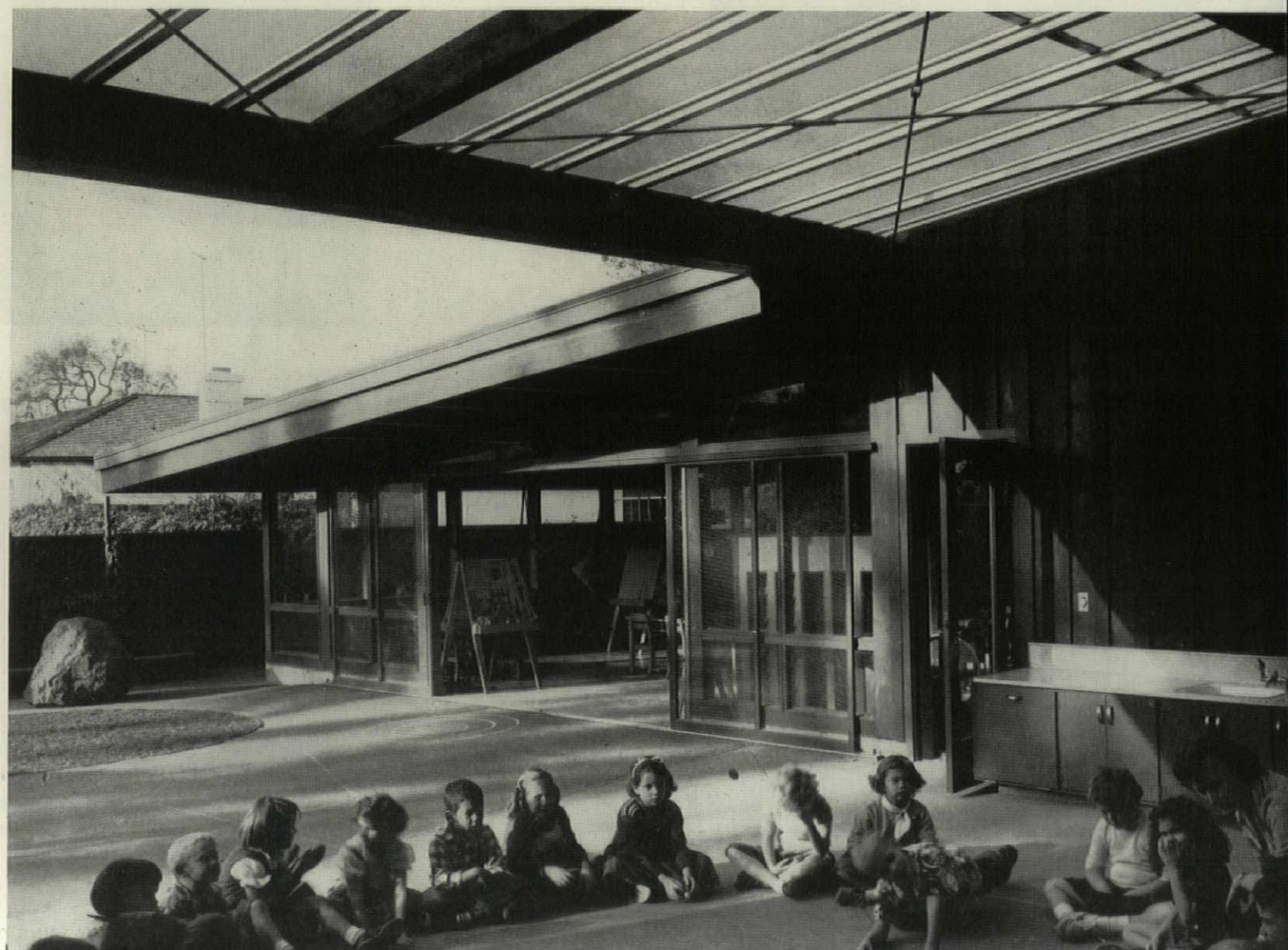
Cost (excluding fee): $156,759; $13.45 per sq. ft.

Credits: John Carl Warnecke, architect. ▲ Hall, Pregnoff & Matheu, structural engineers. ▲ G. M. Simonson, mechanical engineer. ▲ Eckbo, Royston & Williams, landscape architects. ▲ Elvin C. Stendell, general contractor.

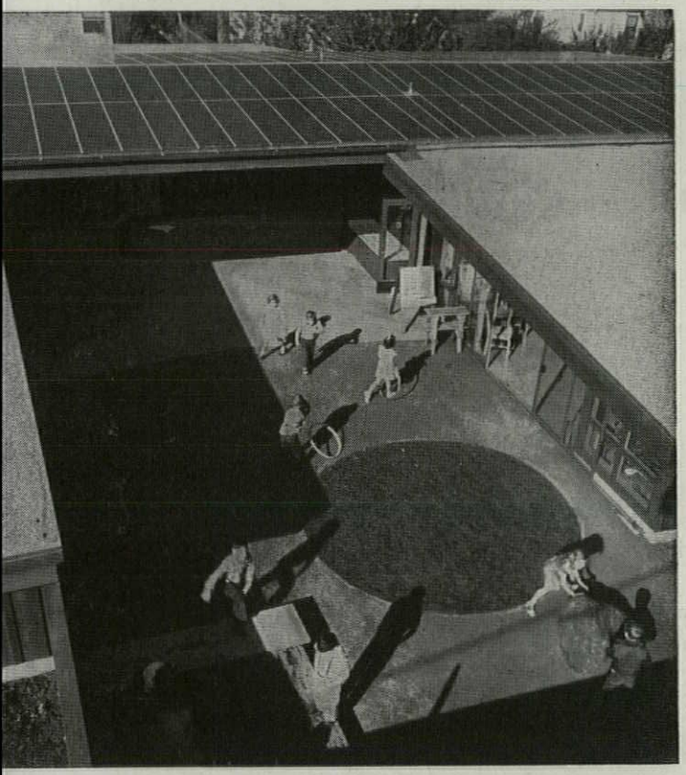
Under a glass roof, a checkerboard of indoor and outdoor space

Construction economy demanded regular rectangular forms, even though school as a whole had to be molded to fan shape for maximum use of ground. So rectangular classrooms were set at slightly different angles, a variation hardly noticeable in the finished school. The design of the skylight was a more delicate problem. The necessary curve was obtained by tapering the 2′ x 9′ panes of glass where skylight intersects classroom partition lines; thus irregularity of lines is virtually unnnoticeable. Cost of skylight was a reasonable $2.10 per sq. ft. installed.

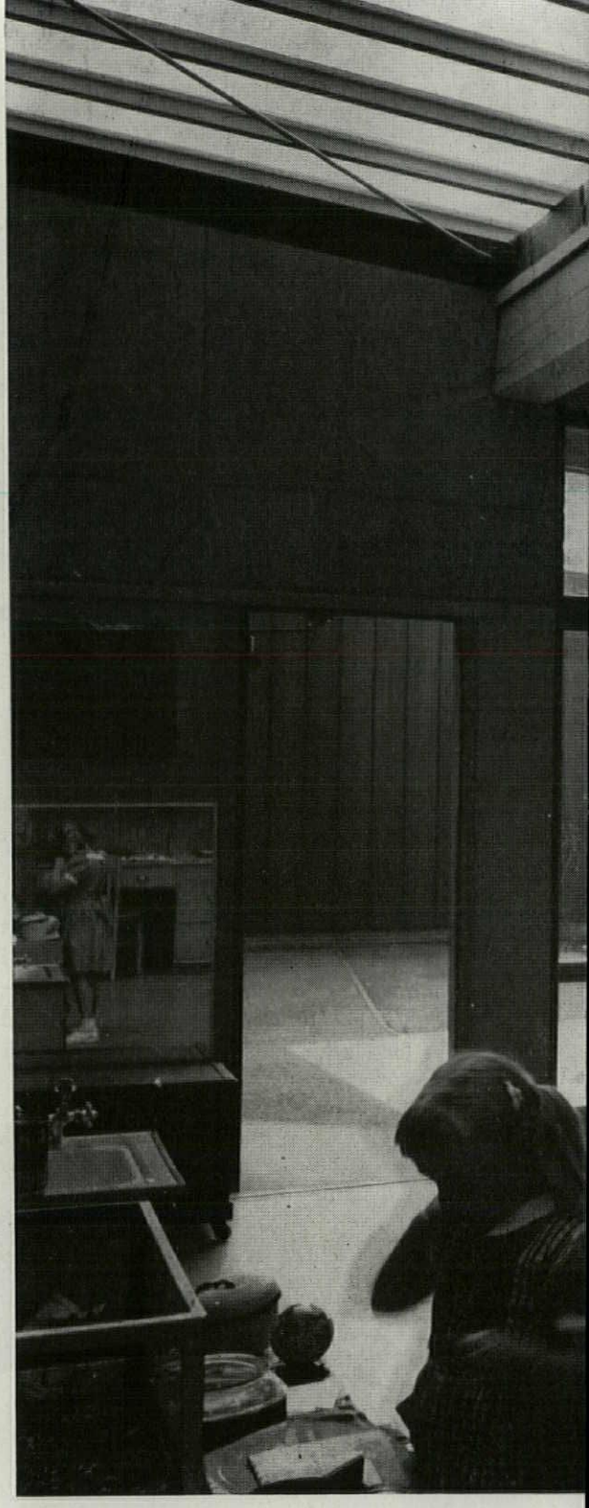
These careful niceties permitted Architect Warnecke to have his cake and eat it too—achieve easy harmony of building and site without sacrificing economy.



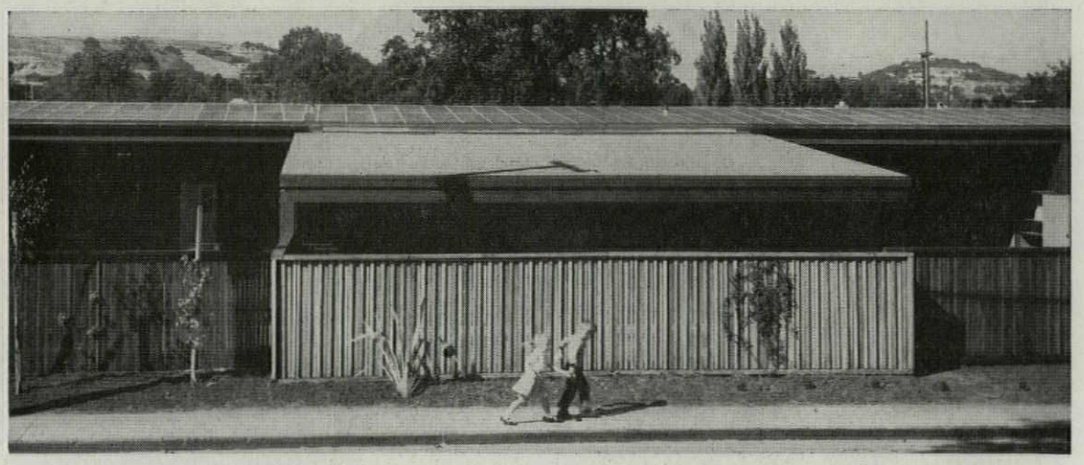
Photos: Rondal Partridge



Yards are as carefully thought out as classrooms, with result that they effectively double teaching space—a great luxury at very little extra cost. Fences give privacy from street, are staggered for informality. Note how nicely scale is handled for residential quality. Overhang is 7′ high; classroom celings slope from 8′-6″ to 10′-6″ where skylight begins; highest ceiling point is 12′-3″ at center of skylight. Inside and out, horizontal lines dominate.

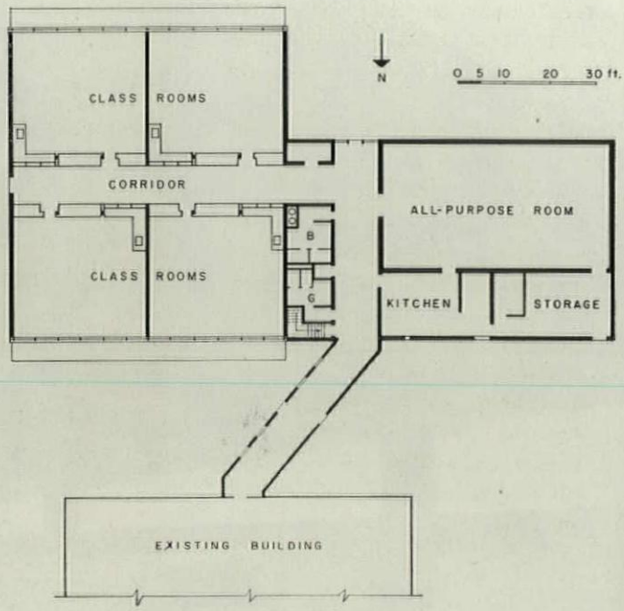


Teaching activities flow easily between classroom and classyard



Street view shows how well indoor-outdoor teaching units fit into residential character of neighborhood. Dominance of low horizontals, staggered fences, bright yellow gates at right angles to street all emphasize uninstitutional quality of building.

Classroom unit is self-contained, even includes separate storage for outdoor play equipment in covered outdoor area. But covered play space is deliberately merged in corridor to give each group of pupils sense of contact with neighboring groups and feeling that the whole school is a community. Each outdoor area has sink and bubbler, sand and planting boxes, paving for wheeled toys and games, space for animal hut and run.



New start for old school

"Block" addition is nucleus for eventual new school

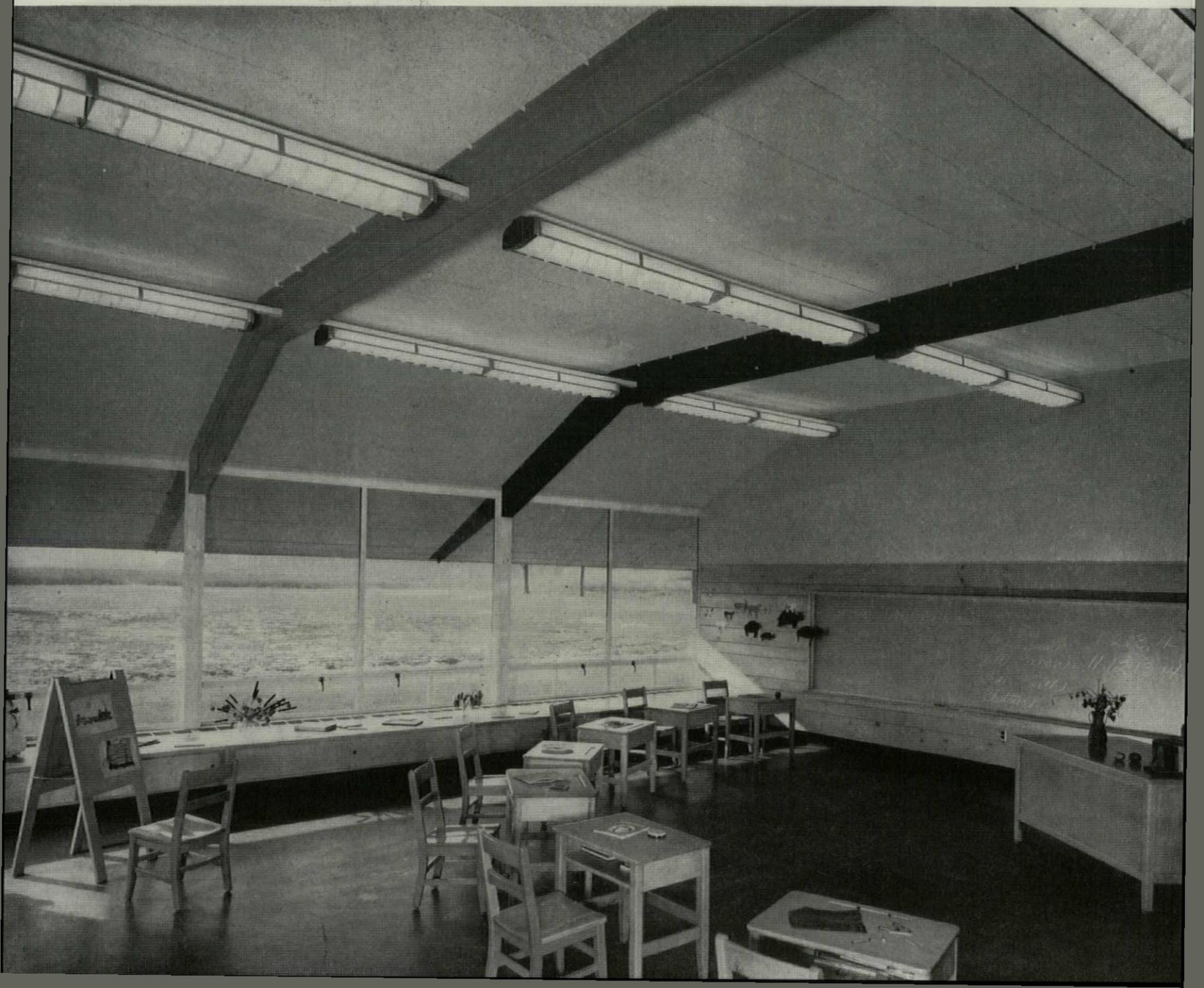
Grandview Elementary School addition, Catskill, N.Y. ▲ 4 classrooms and all-purpose room. ▲ 120 pupils.

Features: addition connected to original nonfireproof building by corridor only. ▲ Bilateral lighting. ▲ Square classrooms. ▲ Horizontal pine boarding for all tackboard.

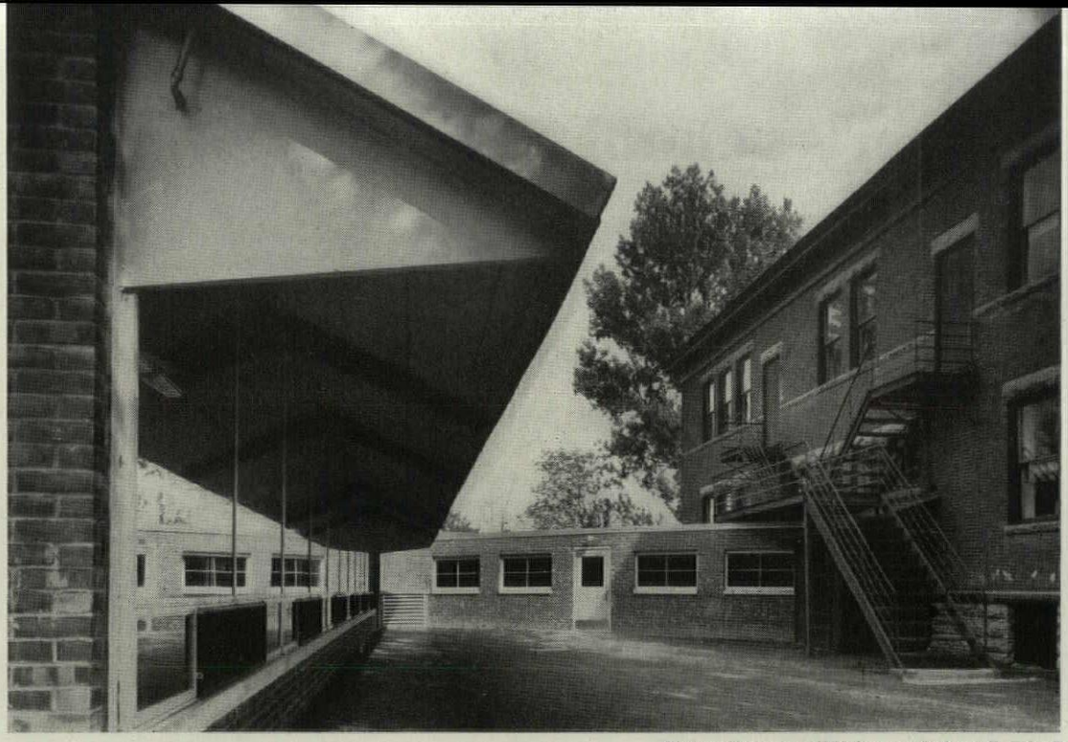
Construction: concrete-block frost foundations; slab on grade. ▲ Exterior walls brick, 2" insulation and painted block backup. ▲ Partitions, painted block; classroom - corridor partitions cabinets and glass. ▲ Roof, exposed steel beams, all-purpose (acoustic-insulation - structural) plank, built-up roofing. ▲ Insulating glass windows; directional glass block.

Cost (excluding fee but including new heating plant for old building): $127,718. ▲ $15.20 per sq. ft. ▲ Note: Architect Blatner standardized construction and equipment, with addition for another school, to lump under one contract. But he was ahead of his time. State law (now changed) forbade single contract. This would have saved 10%.

Classroom's exposed beams are painted bright red and blue, add greatly to gaiety of interiors. Green chalkboard is mounted in warm pine paneling.

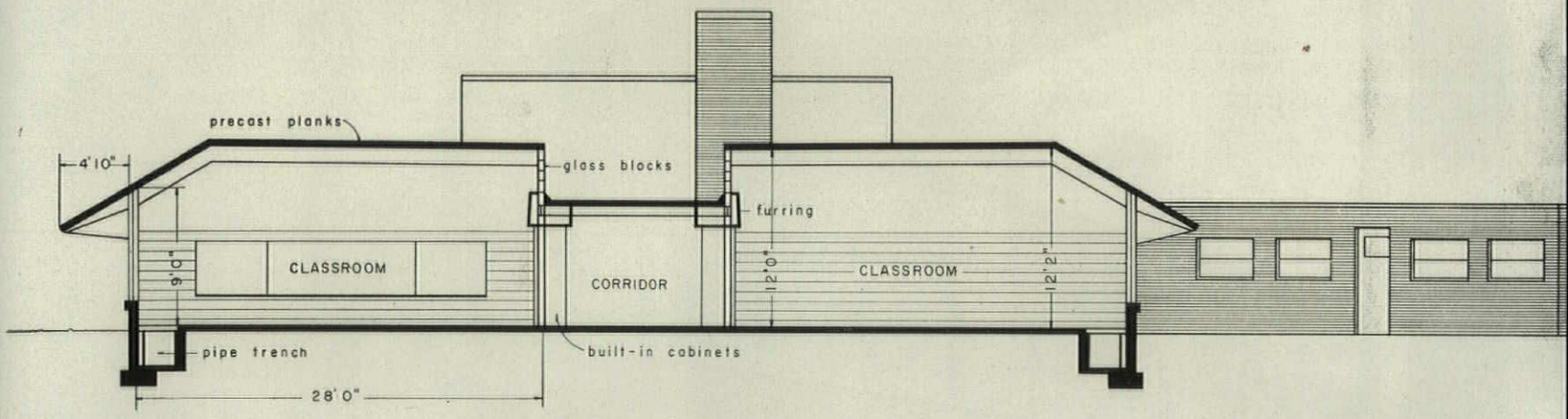


Corridor link between old school and addition—rather than close integration of two structures—made possible 30-year financing of addition because useful life does not depend on old structure. Close connection would have forced 15-year financing. Arrangement also reduces fire insurance on addition to 5¢ per $100 annually for 80% coverage, compared with rate of 26¢ on old building. Contents rate for addition is 9¢ compared with 40¢ on old. Biggest advantage of "separate block" scheme of expansion will be reaped in future when old building is no longer usable. Then present addition, just as it stands, will be splendid nucleus for completely new plant.

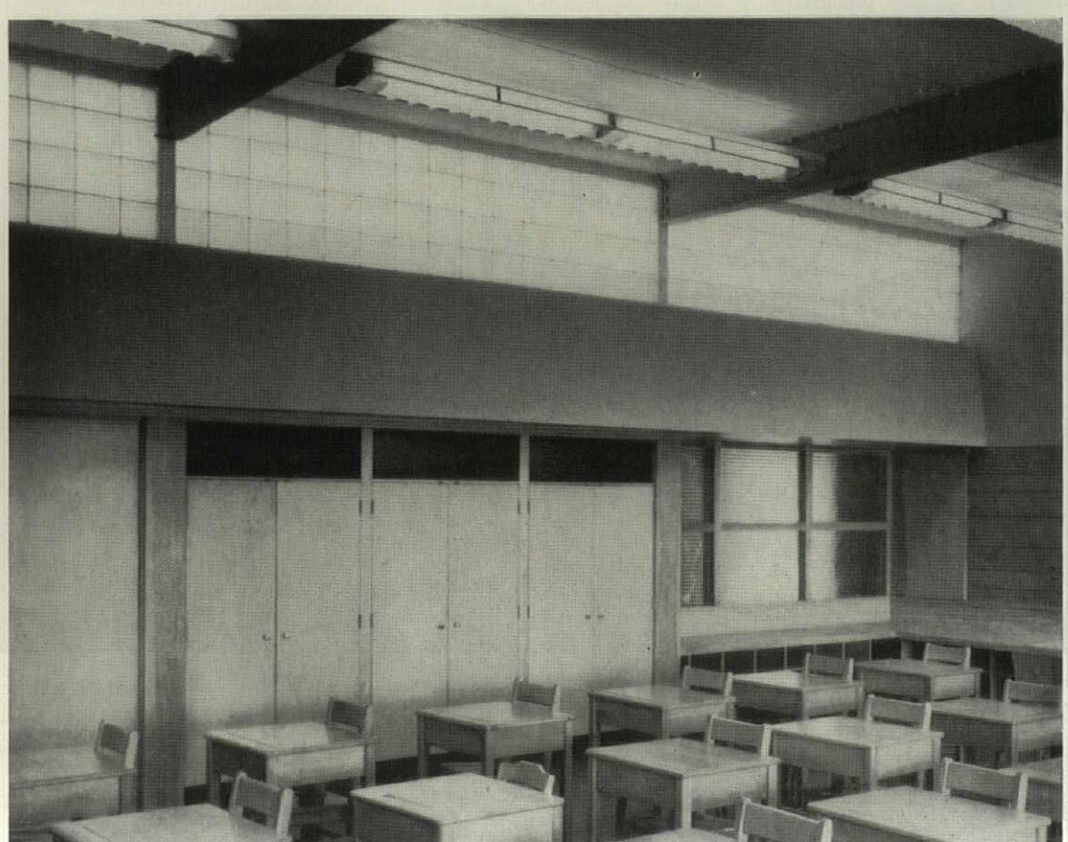


Photos: (bottom p. 126) Damora; (others) B. Schnall

HENRY L. BLATNER, architect
GEORGE A. TEELING, consulting heating engineer
WALTER S. STEWMAN, consulting electrical engineer
McMANUS, LONGE, BROCKWEHL, INC., general contractor



Bilaterally lighted scheme adopted was compared with flat-roofed scheme having same floor plan and with single-loaded corridor scheme. Solution adopted was most economical; biggest single saving was in steel. For cost guidance on classroom proportions, architect analyzed 14 structural systems for square classrooms, translated most efficient into oblong classrooms; difference was minute. Multipurpose roof planks, combining structural, acoustic and insulating properties, represent construction saving but add to electrical installation cost due to loss of blind space. They do not retain heat so well as hung plaster ceiling with insulation. Architect is now using them on swimming-pool job—they absorb no moisture.



Nursery school addition

Cloverleaf arrangement of classroom blocks has play yards tucked in corners

PAUL ROBINSON HUNTER, architect
R. HOWARD ANNIN, structural engineer
HINKSTON & NORCROSS, electrical and mechanical engineers
GWEN CARDE, interiors
PALLISGAARD-WILSON, general contractor

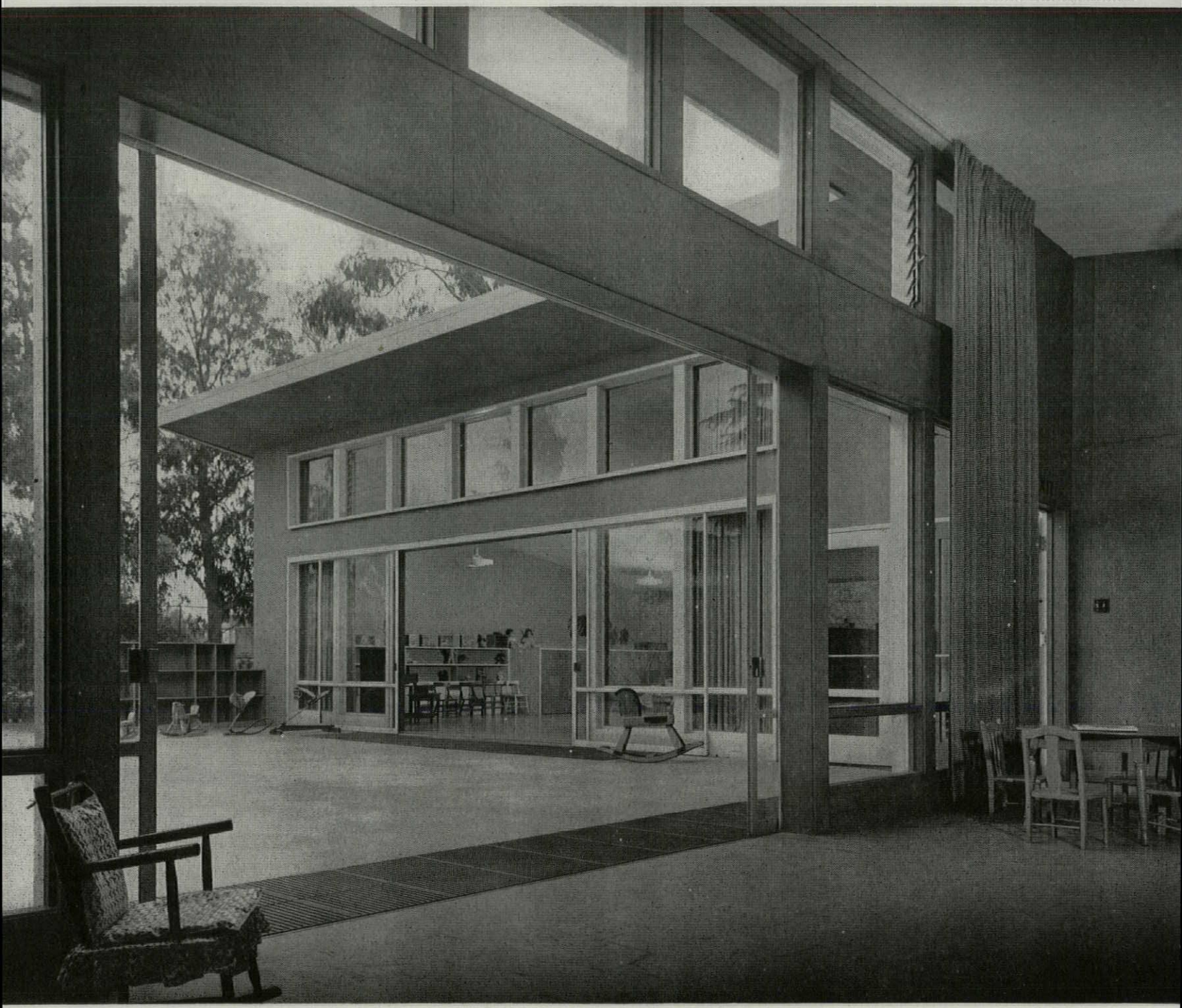
Beverly Hills, Calif. ▲ 3 classrooms. ▲ 75-90 pupils.

Features: utility core including serving kitchen for food brought from central kitchen. ▲ Dining room seating 40 children. ▲ Sheltered play yards linked to classrooms; 12′ sliding doors uniting outdoors and indoors. ▲ Doorless toilet rooms for tots, shielded from classroom by wardrobe cabinets. ▲ Generous desk and shelf closet for teacher in each classroom. ▲ Minimum corridor space.

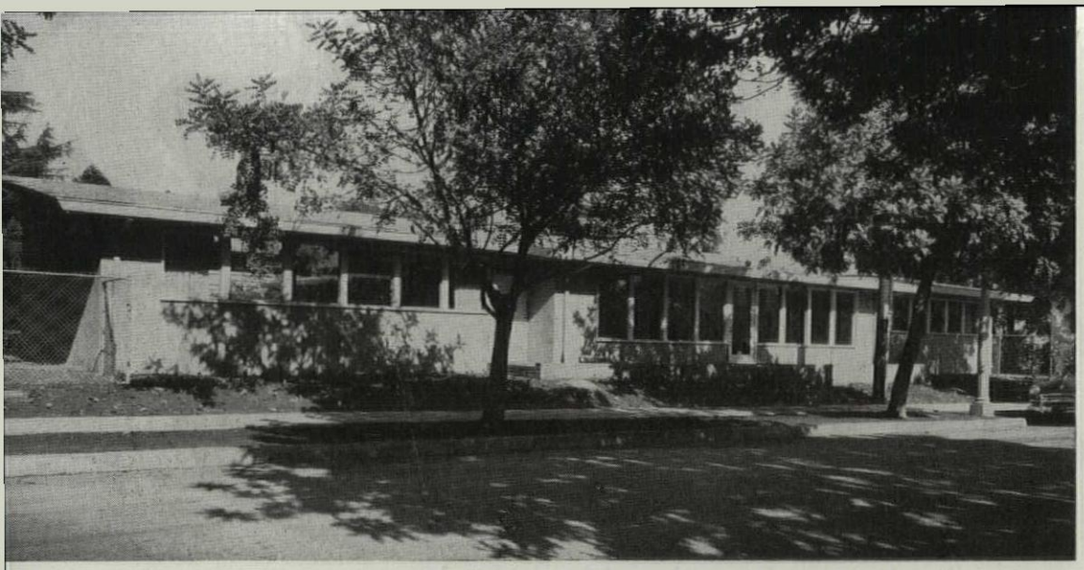
Construction: concrete slab. ▲ Interior bearing partitions continuous with exterior walls; 2″ x 4″ studs diagonally sheathed, plastered both sides. ▲ 2″ x 16″ roof rafters, acoustic ceiling, foil insulation, built-up roofing. ▲ Asphalt-tile flooring; unglazed ceramic mosaic toilet floors. ▲ Mechanical exhaust at toilets. ▲ Radiant hot-water heating in slab, steel coils, gas boiler.

Cost (excluding fees): $49,000. ▲ $12.17 per sq. ft.

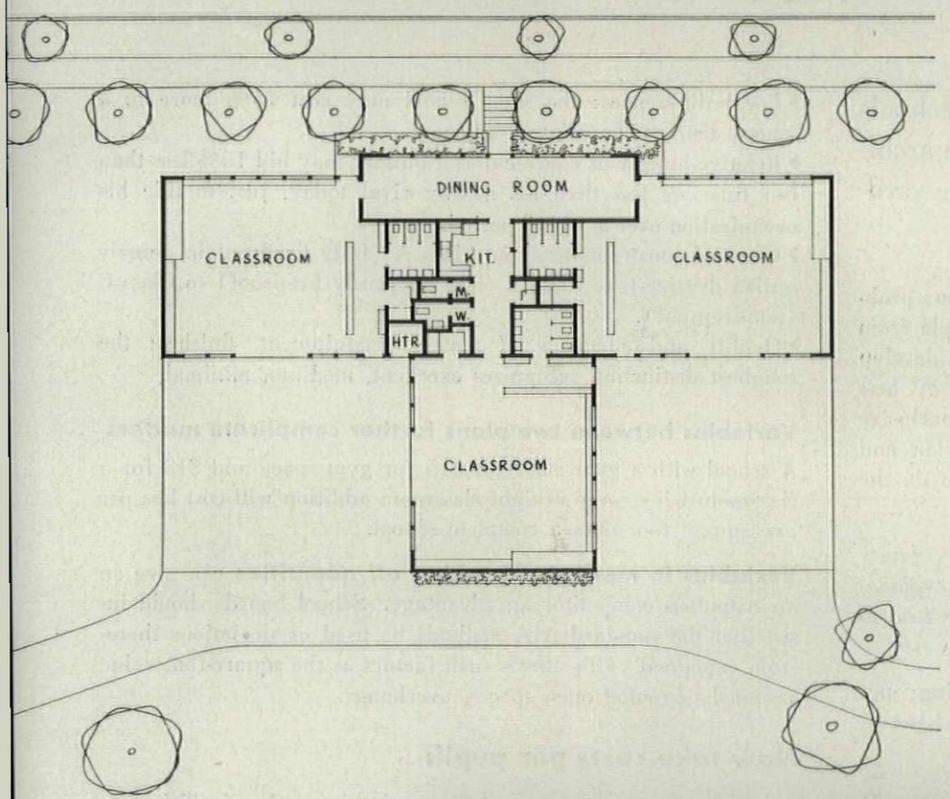
Photos: Robert C. Cleveland



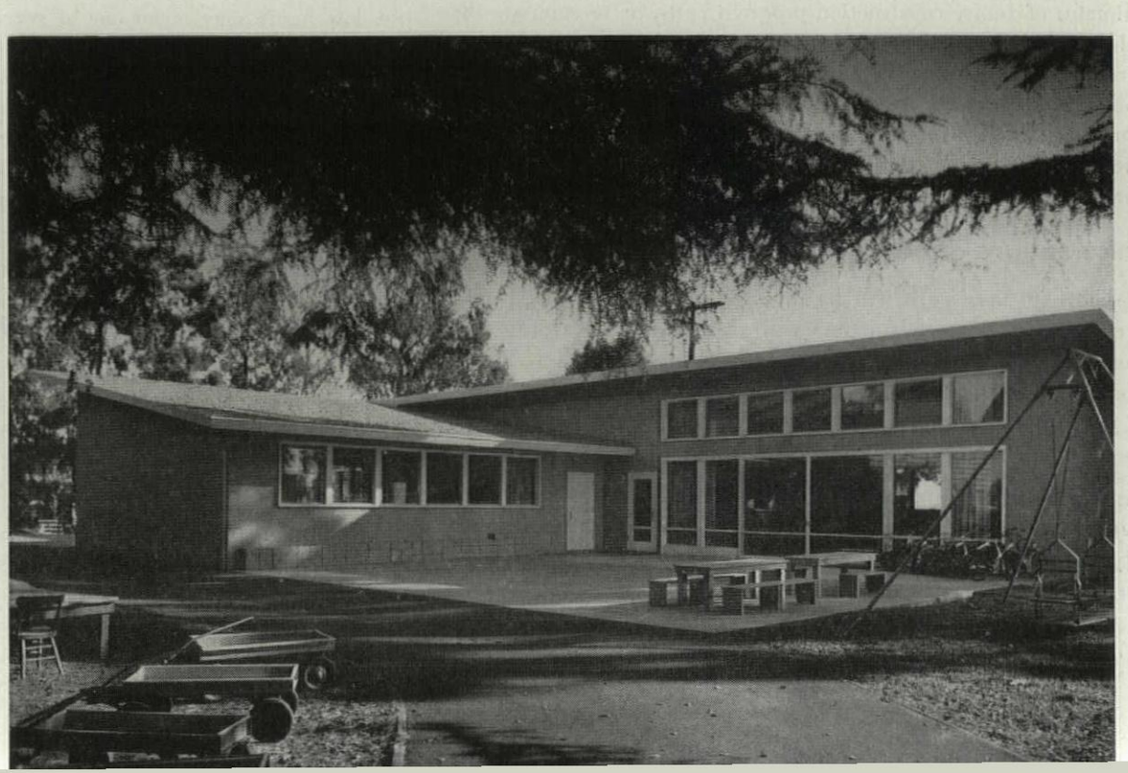
Angle between classrooms creates sheltered terrace for outdoor extension of teaching space. View here is from high side of rear classroom.



Street side has dining room at center. Front door is mainly fire exit because children are driven to school, arrive at rear driveway. Building is an addition to a private school for children through ninth grade; it is located at end of campus, separate from older children's areas. Older buildings are traditional "English public school" architecture.



Built-in storage cabinets include space for aluminum cots stacked on dollies. Cork-tile wainscoting runs around two sides of room, is used as tackboard.



Sheltered play terraces also serve as inviting entrance courts. Three-wing arrangement of almost identical shed-roofed rooms not only capitalizes efficiency of core plan; it also gives building its pleasant, unpretentious quality. Each classroom has 12'-wide sliding door to terrace; operating windows are glass jalousies. All glass areas are equipped with draperies. Driveway was deliberately made only one car wide to discourage parking.

A BETTER WAY TO MEASURE SCHOOL COSTS

Today's unfair, inaccurate yardsticks must be replaced by a simple, accurate comparison of unit costs—a progress report

Is there a good, quick way to compare two schools by *unit costs*? Can a school board learn, or an architect explain, comparative value by some simple yardstick?

The answer of qualified architects and schoolmen is no; probably never; certainly not yet. But you cannot stop people from trying. With a great deal of work it may be possible to develop unit cost measures a good deal better than we have now. At best they will serve as pointers, not as conclusive tests. For conclusive comparison between one school and another, or one plan and another, you have to be thorough and detailed, have to do the work that a unit measure *pretends* to save you from.

Because FORUM *is concerned over the mischief done by faulty unit comparison, it offers herewith a rather elementary explanation, together with suggested next steps that will perhaps lead to just a little better unit cost measures.*

What are unit costs? They are costs "per" something: per square foot, per cubic foot, per classroom, per pupil, or whatever.

Who uses them for what? School boards use them for rough estimates of future construction program costs, or to compare the value obtained in one school against another, or to compare performance of architects. Architects use low unit costs to prove their ability in getting economy, or—more scientifically—to check, as work progresses in the drafting room, the economic efficiency of one plan type or construction system or mechanical system against another.

Take square-foot costs:

A school in New York will be reported as "economical" at $14 per sq. ft. and promptly letters will arrive from Texas (or Alabama) saying: "What's the matter with that fellow in New York? We just got ours for $7." Alas, this proves only that school costs *in general* run lower in Texas, not necessarily that the school in question was more efficiently economical.

Variables that upset raw square-foot comparisons between two schools of almost identical floor plan are these:

- Date: the general price index rises and falls, sometimes fast.
- Regional differences: these may go beyond 100%, due to wage scales, greater or less need for heating and forced ventilation, and many other factors.
- Local differences: the same school may cost 25% more in a school district immediately adjacent.
- Relative hunger of contractors: a builder may bid 15% less than last time, or less than his nearby rival today, just to tide his organization over a "thin" period.
- Class of construction: from Class A (fully fireproof in densely settled districts), to Class B (less rigorously fireproof) to Class C (nonfireproof).
- Quality and adequacy of material, equipment, finishes: the roughest distinction recognizes excellent, medium, minimal.

Variables between two plans further complicate matters

A school with a gym may cost $15 for gym space and $13 for a classroom wing, so a straight classroom addition will cost less per raw square foot than a complete school.

Variables in methods of taking off quantities can give an unscrupulous competitor an advantage. School boards should insist that the standard AIA methods be used or deviations therefrom explained. This affects such factors as the square-foot value assigned to roofed open spaces, overhangs.

Now take costs per pupil:

A low figure may mean one of several things: that facilities are minimal, embracing only classrooms (no auditorium, gym, cafeteria, etc.); or that there is overcrowding (too many pupils per classroom accepted as the design standard); or again, in the best cases, that adequate facilities have been arranged with exceptional economy and little waste. So a low cost per pupil may indicate opposites: a skimped school or a remarkably efficient one.

Also there must be agreement on what is a "design capacity" in the number of pupils provided for.

And finally, "total building cost per classroom":

A high figure may indicate generous auxiliary spaces such as auditorium, bandroom, teacher conference rooms, library, all leading to better education; or it may indicate a huge gym putting basketball above teaching; or clumsy planning which wastes space on passages and corridors. You have to know which.

FORUM has been reporting all three of the above unit costs in the thought that the false cues given by one could be offset by using another; but we find that relatively little cross-checking gets done, so we are dropping all but square-foot costs (with all their faults) and seeking a fresh start.

Productivity may be a better measure of school efficiency

A different chain of reasoning has been started by Architect Stanley Sharp of Ketchum, Gina & Sharp, based on *productive efficiency*. It borrows a leaf from apartment-house practice, where conditions are so relatively simple that architects and lenders have long been able to evaluate plans by separating out the "net usable areas" from gross areas.

Sharp begins his computations with over-all square-foot costs, but he points out that any school district can set up a rough-and-ready "par" by appeal to its state division of schoolhouse construction. Most of these divisions have records on a state-wide basis of schools recently completed, and classified as to a) construction class—degree of fireproofing, and b) excellent, medium or minimal equipment and finish.

From there on, Sharp seeks to isolate, in any plan under study, what he calls the *net teaching area per student*, so as to obtain the cost per *productive square foot*. Says he: "In our book, productive space (any space in which learning is systematically advanced) includes all spaces in a school *except* the following:

"Administrative offices, including teachers' suites and health suites.

"Corridors, lobbies, vestibules, passages.

"Custodial, storage and service spaces including kitchens, locker rooms.

"Duct spaces and wall thicknesses."

The result may show that a more expensive building is the more economical, providing the community can afford the total cost:

COMPARISONS	SCHOOL A	SCHOOL B
TOTAL COST	HIGH	LOW
COST PER SQUARE FOOT GROSS	LOW	HIGH
NET TEACHING AREA PER STUDENT	HIGH	LOW
NET TEACHING AREA AS A PERCENTAGE OF GROSS	HIGH	LOW
COST PER PRODUCTIVE SQUARE FOOT	LOW	HIGH

In this example, School A, though its total cost is higher, shows up as an efficiently planned building, with adequate teaching facilities and a structure economical to build: in short, the better buy. Two other factors need checking: 1) is the structure inexpensive to *maintain?* and 2) is the equipment as adequate as the space efficiency?

To compare schools in different regions is more difficult

It often happens that architects or school administrators wish *to evaluate for their own area a striking plan from a totally different area.* They would have to start by adjusting the *net square foot per student* figures to comply with standards in their own state—i.e., California may regularly ask 30 sq. ft. per student in classrooms against New York's 25 sq. ft., and regional practices may vary also in common-use educational areas considered adequate.

Here, then, is how the problem may be set up:

$$\frac{\text{av. cost per sq. ft. in our state} \times \text{their state's av. net sq. ft. per student} \times \text{number of students in plan under study}}{\text{productive percentage obtained in the plan which they are considering}} = \text{relative cost of building in their state}$$

Again, the *relative efficiency of two different kinds of plan* may be measured by transferring the productivity percentage of the one school into the statistical picture of the other school. Example:

SCHOOL	Net square foot per pupil	Net square footage as a percentage of gross	Cost per gross square foot	Number of pupils
"A" "Zone plan" $1,500,000	55	.50	$15.50	900
"B" "Core plan" $630,000	48	.60	10.00	800

Now to see what effect a "B" plan would have had on School A, we multiply A's *net square-foot figure per pupil* (55) by cost per sq. ft. ($15.50) and by number of pupils (900)—then divide by B's efficiency percentage—"net square footage as a percentage of gross"—(.60).

$$\frac{55 \times 15.50 \times 900}{0.60} = \$1{,}278{,}750 \text{ (vs. } \$1{,}500{,}000\text{)}$$

Conclusion: area "A" would be better off using the "B" plan, to the tune of $221,250.

The reverse calculation:

$$\frac{48 \times 10 \times 800}{.50} = \$768{,}000 \text{ (vs. } \$630{,}000\text{)}$$

Conclusion: area "B" is better off with its own plan, by $138,000.

Several imperfections still remain in the Sharp method

The Sharp method has the advantage of any good quick computation, of *narrowing down the field of further inquiry;* but it still falls short of establishing a complete comparison.

Here are difficulties which Sharp agrees still remain, difficulties which still leave subjective factors:

1. Space may be "nonproductive" for teaching but may still be highly necessary to the full functioning of the school. For example, an unscrupulous operator could gain a high rating by simply leaving out adequate storage, adequate provisions for health, and other things rated "nonproductive."

2. The question "what is productive space?" gets more complicated in a school than an apartment house, more complicated in a good contemporary school than a dull school devoted simply to "rote" teaching. For example, in the prize-winning school by Architect Warnecke (on p. 121), how is one to rate the "corridor" space which is very ample? It is of definite teaching value but is it on a par with classrooms? It has been suggested that "productive" spaces be graded from 100% to, say, 25%; but this could get complicated.

3. Many factors of quality are left untouched, as in *all* of the unit cost systems. For example, raw structural cost means little by itself, needs to be translated into something like "rental equivalents," which would take in the factors of operation, maintenance and depreciation. The most expensive construction can be cheapest in the end, and vice versa.

In conclusion: a service has been done by this inquiry into school unit costs if it has achieved two things: 1) given honest men a somewhat better insight into cost factors; 2) discouraged today's unthinking and wholesale comparison of schools on the basis of quick, raw "square-foot" or "per-student" figures which really mean next to nothing. (Architects may indeed wish to use this document as an instrument of persuasion.)

There is no substitute for close study. There is no substitute for an honest man.

BEHIND THREE GOOD SCHOOLS

—good architects, good clients, and above all, good procedures

How do the best school boards find good architects? And how do good architects find the best school boards and superintendents? What does each party do to get the best help from the other?

FORUM, long aware that a good building requires two good creators, a good architect *and* a good client, has sought no theoretical answers. "Here," said the editors to themselves looking at the three finished schools in this issue, "are three good buildings—let's simply ask the architects and the school people about one another."

Out of the discussions and correspondence there emerged some safe-looking general principles:

- One way to success is to start the planning of new buildings far ahead of need. The head of a private school reports that the long money-raising period was a blessing because it gave a chance to study the problem *and* the intended architect.
- Real power given to the superintendent in recommending architects can pay off. In the case above it was the school head, and he only, who was in a position to watch the approaching building problem long enough to let his thinking grow with it and mentally pick out the right architect long enough ahead to talk out his ideas informally with him.
- In every instance strong, diligent board members helped to count for good schools.
- The most unusual school of the three was built in a community described as "youthful and ready for new ideas."
- One board went to the trouble of agreeing in advance on the three basic elements in its unusual problem, then sent a succinct printed statement to all architect candidates *before* interviews.

This gave architects the chance to display their quality of mind by addressing themselves directly to the problem in hand.

- The architects who got the job were those who brought with them their ideas of how to approach a school problem, not only their sketches or photographs of finished jobs.
- Interviews of boards and architects were unrushed, so neither participant was put under excessive tension.
- Visits by board members to schools already completed by various architect candidates were unhurried so opinions of teachers, too, could be collected.
- Says one architect: "They asked enough to determine whether they would choose me as architect, and I also asked enough to determine whether I would choose them as clients."
- These architects kept working *with* their boards and superintendents at every step, benefitting from suggestions. Said one satisfied superintendent: "We benefitted from group thinking."
- The follow-through of the architects was praiseworthy. It was appreciated that they saw their schools off to a good start in their new buildings.
- School people appreciated also the rigid adherence of architects to the budget. The return to the general fund of a sum as small as $72.44 was thankfully noted. It was small, but a surplus.

THE WHITE OAKS TEAM:

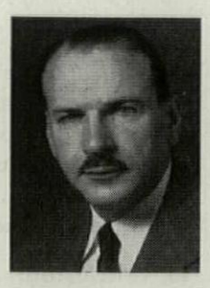
Superintendent Ruth Melendy; President Paul G. Sturges and two trustees; Architect John C. Warnecke (right).

The board early decided three things: 1) that their town was young and receptive to bold ideas; 2) that superintendent and board were imaginative people too; 3) that their tough site—surrounded tightly by houses on three sides—demanded a solution out of the common. A printed list of carefully considered requirements was mailed to a short list of architects, all known as creative, before interviews. The choice of young architect Warnecke was based largely on what smart schoolman Arch Shaw calls the primary need: "a man you can communicate with." Miss Melendy says he was appointed when "certain imaginative approaches caught fire."

THE CATSKILL TEAM: *Superintendent Paul Sellers; Chairman Mahlon H. Atkinson, MD.; Architect Henry L. Blatner* (left).

Dr. Atkinson says his board wanted modern schools but practical too, no gingerbread. Of seven or eight architects interviewed, Mr. Blatner appealed as the "most serious, eager." A fellow doctor on the board was Dr. Gerald R. Hallenbeck, an optometrist, who appreciated Blatner as the one man "with fresh ideas" and who also eagerly joined in the search for eye-saving architecture.

Both were impressed by the architect's readiness to admit faults, seek correction, go carefully over buildings for defects before turning them over.

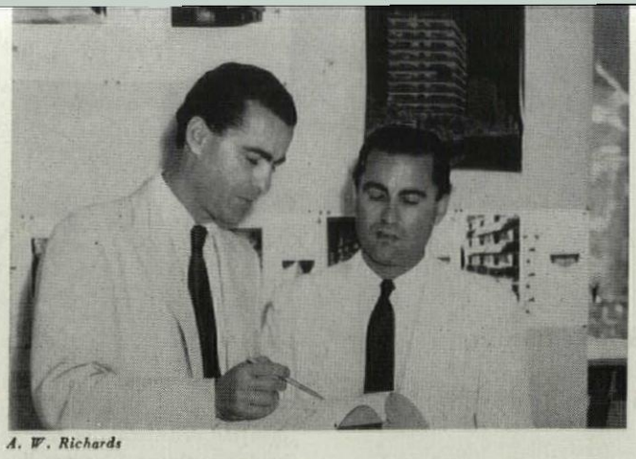


Photos: Ames Studios; Hartsook; L. Stewart; Gladzer Studio

THE BERKELEY HALL TEAM:

Chauncy Nelson, administrative supervisor; Architect Paul R. Hunter.

The way Architect Hunter got thoroughly acquainted was that his children went to the school. The way school head Nelson got to know his mind was that the two discussed Nelson's school plans far in advance. The client not only gave the architect AA rating but also noted proudly that Hunter's management returned $365.70 to the general fund unspent. There followed a swimming pool and shower building, and again savings figured to the penny: $72.44.



A. W. Richards

Victor and Aladar Olgyay *are identical twins, even including profession: architects. For the past several years they have been engaged in an important study of regionalism in architecture as defined by climate, working at Massachusetts Institute of Technology under a grant from the Housing and Home Finance Authority, and more recently at Princeton University under a grant from the Guggenheim Foundation. This article is the first in a series covering their work to be published at intervals in the* FORUM. *Others in the series will concern the effect of climate on form, protective climatic devices and use of materials.*

the theory of SOL-AIR ORIENTATION

—a new method of orienting buildings which includes time, air temperature and total effect, as well as the old maximum sun-heat gain calculations

"If you would possess the chariot of the sun what would you do with it?" Thus Apollo questions Phaëthon in Ovid's writing on mythology.

Somewhat the same question occurred this side of mythology when Alexander the Great came and stood over Diogenes while the great Greek was sunning himself. Said Alexander: "Ask of me any boon you like."

Diogenes answered: "Stand a little out of my sun."

Today a variation of the question is—or ought to be—asked every time a building is designed and put on a site. The sun is ours; how should we steer our buildings to best take advantage of its uses for heating, germicidal effect and psychological benefit, yet avoid its torrid rage and glaring stare when the air temperature is already saturated with heat?

Man and lower forms have been consciously and unconsciously preoccupied with this problem since before the very first building was built, and in recent years numerous theories have accumulated among architects. Yet it is only recently that even engineering circles have considered the problem of sun and comfort in a realistic perspective which includes not only radiant temperature but air temperature as well.

What this means in simplest terms is: how to get sun heat in cold seasons *during the time of day you most need it* (the morning, before the air has warmed up) and, with the same orientation, how to avoid the sun in hot seasons, particularly *when the air is warmest.*

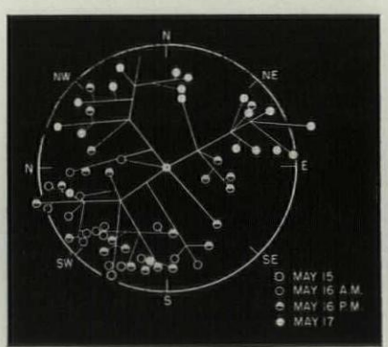
This goal may seem obvious in verbal terms. In actuality it is something new on the climatology horizon; as interpreted and calculated by the Olgyays, it means in simplest effect that solar walls from now on should be angled more to the east of south than favored by current practice. In bigger terms it means that a method has been devised to define further geographic differences in orientation. Like all the other architectural impulses generated by the last few years' renewed interest in climatology, these new developments point the way toward a real regionalism. Unlike most climatology discoveries, this one also charts an exact path in that direction.

The word orientation *derives from Orient, meaning the East, as opposed to Occident, West, and has its origin in Jerusalem. The significance is old, and like most other things in antiquity, has religious overtones, not in just one but in several religions:*

As described in the Old Testament, the Jews turned toward Jerusalem in prayer; one of them was Daniel, in Persia.

The Moslems at first also prayed in the direction of Jerusalem, before they changed their focus to Mecca, where the Kaaba is kept inside the courtyard of the Great Mosque. (Today Moslems continue to turn five times each day toward Mecca, and to face their mosques in that direction.)

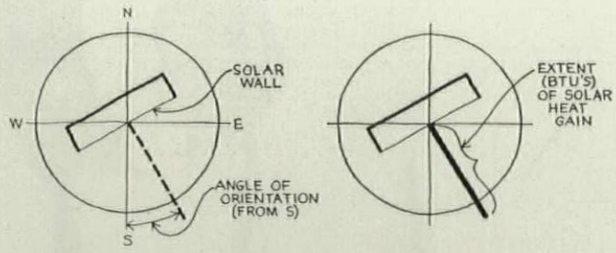
The Christian religion grew westward predominately, principally toward Europe. Jerusalem lies East in the Orient, and therefore churches were the first buildings of the Christian culture to be oriented.



The sol-air axis *as diagrammed in nature. This is a plan view of a 15-year-old pine tree standing in the open in Eberswald, Germany in May '37, with sequence of blooming carefully noted, bud by bud. The blossoming is a result not only of sunshine, but also of air temperature.*

The greatest land structures *in history, as compared in size with their builders, are basic demonstrations of the importance of orientation: compass termite cities in Australia, viewed in both elevations. The termite cities are oriented on a north-south axis.*

How sol-air orientation considers the season



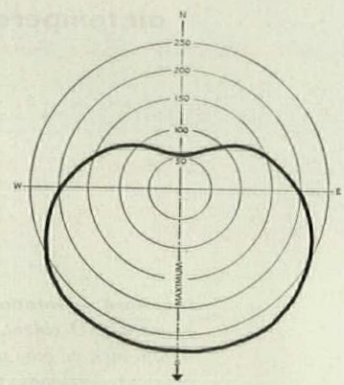
Essential to a grasp of this theory of orientation is an understanding of this graphic device:

Imagine a building, in plan, in the center of a compass circle, with one solar wall. In plan the orientation of this solar wall can be read directly as a degree line or azimuth on the compass. Also, the length of this line is used graphically to denote the amount of radiant heat in thousands of Btu's per sq. ft. received by a vertical wall oriented thus.

A basic assumption in orienting a room is that it wants sun. How much sun it wants will vary with the location and with the season, also with the use of the room, but a good standard is this: some sun should enter 200 days a year, or there should be sun in each room one hour per day.

Other standards: the American Public Health Assn. recommends at the winter solstice that at least one half of the habitable rooms should have a penetration of direct sunlight of one-half hour's duration during the noon hours when the sun is at its maximum intensity. The new building code for Berlin prescribes that all living areas should receive at least two hours of insolation in 250 days of the year.

The sol-air theory considers, in addition to what you want from the sun, what you do not want. This refinement considers both the off-season and on-season, describing them as *overheated periods* and *underheated periods*, not winter and summer (because of the imprecision of these calendar designations with regard to weather). In the US there are hundreds of different climates, which can roughly be categorized into four: 1) the temperate region, such as the New York area; 2) the cool region, such as Minneapolis; 3) the hot-arid region, such as Phoenix, Ariz.; and 4) the humid region, such as Miami.



1. The total maximum insolation would come from an orientation facing the solar wall directly south. (Total yearly radiation for all solar orientations — average radiation received on a vertical surface toward all orientations in the whole year.)

The sol-air orientation in the New York–New Jersey area is 17.5° to the east of south. This is why:

. . . but in Phoenix the compromise is more complicated

▸ Phoenix has a much larger amount of total radiation, not only because of the difference in latitude (N.Y.–N.J., 40° N. Lat.; Phoenix, about 32° N. Lat.), but also because of the larger proportion of clear weather. In the N.Y.–N.J. area, only 60% of the possible sunlight gets through the clouds in Phoenix, 84%.

▸ In the warmer climate of Phoenix, the underheated period is much shorter and less intense, while the overheated period is longer and hotter.

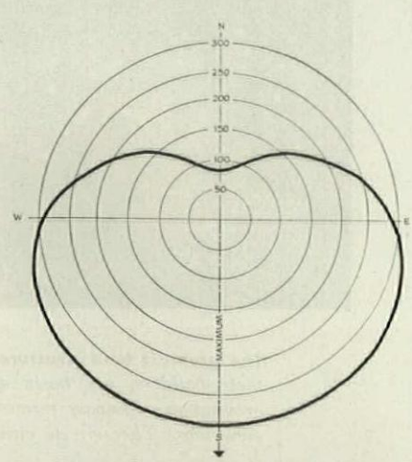
These factors make the graphic solution for Phoenix much less obvious than the N.Y.–N.J. area because the avoidable heat-maximum in the overheated period and the desirable heat-minimum in the underheated period will not fall coincidentally perpendicular to one another.

Considerations in the compromise for Phoenix:

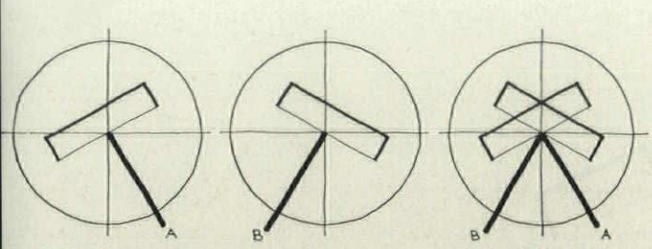
▸ Which is more important: getting the heat gain in the short, cold periods, or avoiding it in the long, hot times?

▸ Do humans bear relative warmth or relative cold better?

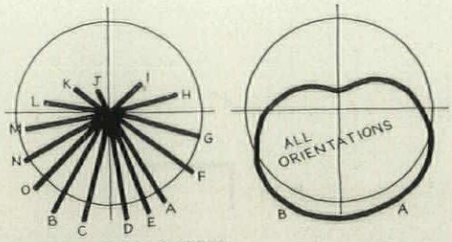
Answer: for Phoenix the compromise is weighted two to one in favor of cooling because the comparative duration of overheated periods is so much longer than underheated periods, and because the Olgyays' data indicates the human body is more comfortable under mild thermal stress down the Fahrenheit scale than up.



1. The total yearly insolation in Phoenix, Ariz.
(Figures on this chart correspond in scale to those on the chart above. Note considerably higher total of radiant sun heat received in this area, compared with N. Y.)



TWO DIFFERENT ORIENTATIONS . . . ON SAME CHART



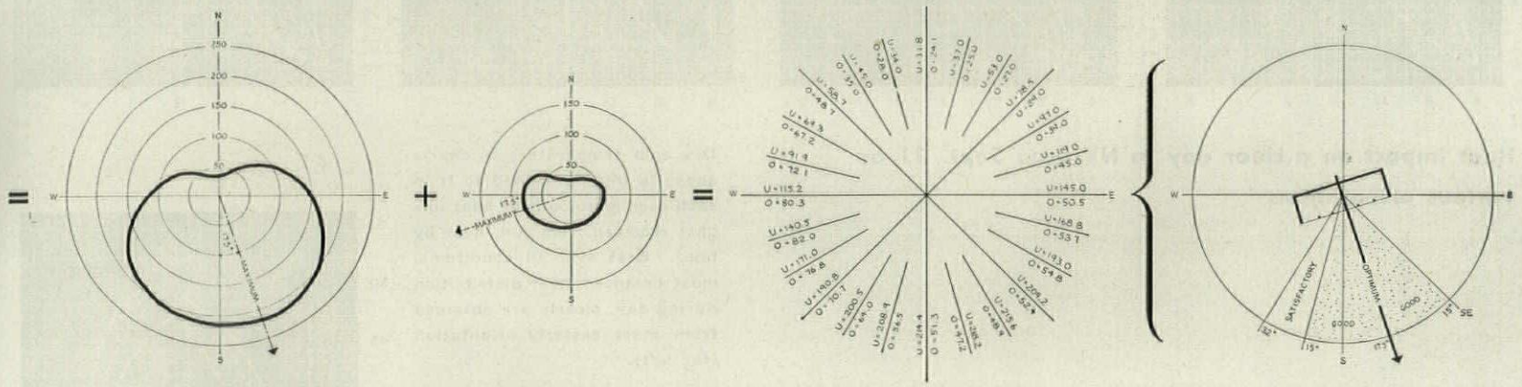
MORE ORIENTATIONS ADDED

This graphic device can be expanded in use to describe the effects of more than one orientation at a time, and when it is used in this way, none of the buildings need be drawn, nor the azimuth lines. Frequently these lines of measurement are left out, and instead dots are made to indicate the azimuth line, the measure of radiation and the wall.

The solar gain of different orientations can be compared by registering all the different orientations on the same diagram (for a single location, of course). They connect to form a continuous, closed line around the compass.

To read one of these charts take a point on this line for the degree of orientation perpendicular in plan to your solar wall. The distance out from the center of the compass will tell you how many thousands of Btu's per square foot of vertical wall that orientation will receive from the sun.

The diagrams can be used to describe a full year or only a part, just the overheated period or the underheated period, or both.

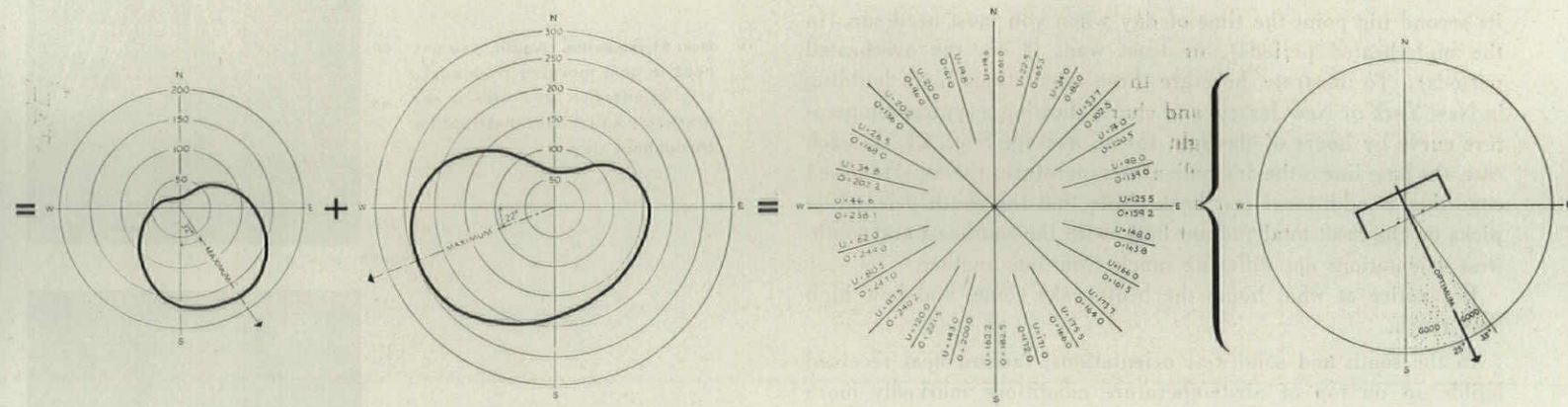


2. But in the cold months maximum radiant gain is from the east of south.
(Total solar radiation in underheated period—average radiation received on vertical surface toward all orientations, underheated period.)

3. And in the hot months when you do not want sun heat the biggest sun gain is far to the west of south.
(Total solar radiation in overheated period — average radiation received on a vertical surface toward all orientations, underheated period.)

4. This is the compass evaluation for total radiation during both overheated and underheated periods. (U denotes underheated; O denotes overheated).

5. The evaluation in this case is easy, since the worst summer condition and the best winter condition are at right angles to each other, an ideal situation.

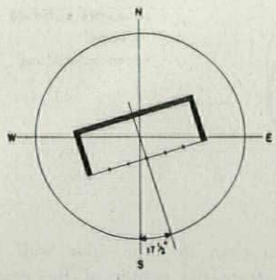


2. Insolation, underheated period.
The maximum amount of radiation in the cold period lies 32° from the south to the east. This is the direction the solar wall should face for winter comfort.

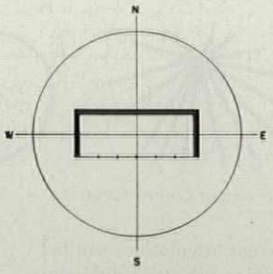
3. Insolation, overheated period.
The highest heat gain (and therefore worst summer orientation) lies 22° south of west. For summer comfort, the solar wall, in plan, should parallel this orientation.

4. Total insolation in underheated and overheated periods.
The compromise approaching in the next diagram obviously cannot neatly oppose overheating disadvantages with underheating advantages.

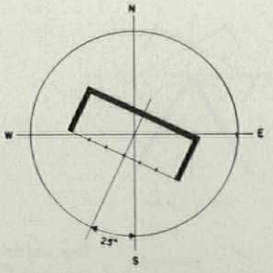
5. The compromise places the optimum sol-air orientation 25° east of south.



17½ degrees east of south

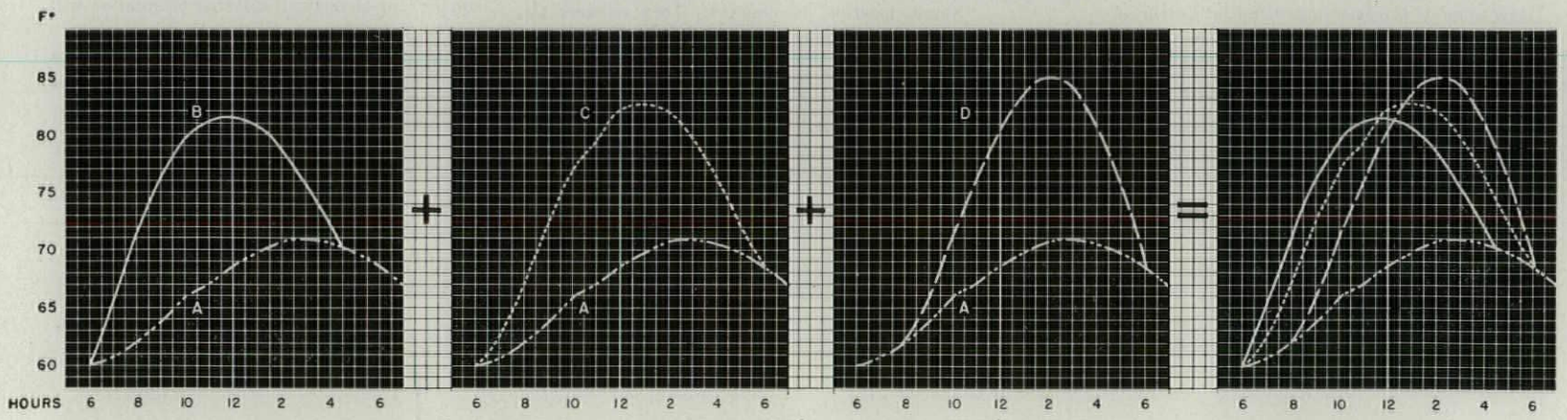


south orientation



25° west from south

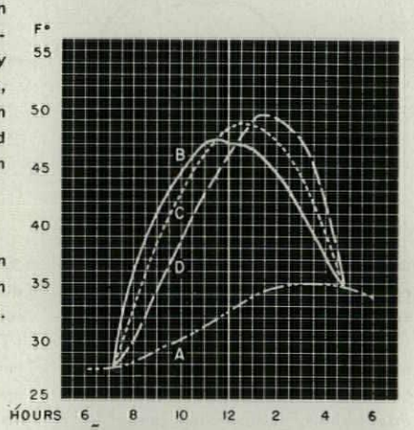
composite



Heat impact on a clear day in NY area Sept. 21 on various orientations

Dry-bulb temperature in charts above is line A. Added to it in each case is amount of heat impact received from sun, hour by hour. Best over-all conditions, most balanced heat distribution during day, clearly are obtained from most easterly orientation (far left).

Jan. 21 composite. Orientation toward east adds more heat in morning when you need it most.



How the sol-air orientation theory considers the time of day

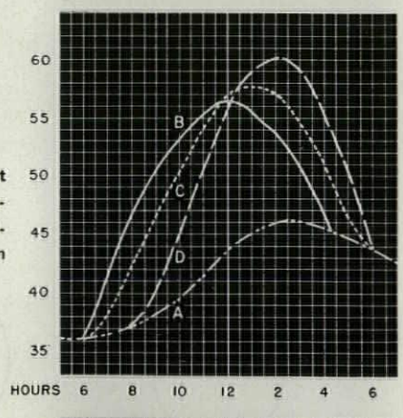
The sol-air refinement in orientation takes into consideration as its second big point the time of day when you most need sun (in the underheated periods), or least want it (in the overheated periods). To illustrate, here are three orientations for a building in New York or New Jersey, and charts showing a typical temperature curve by hours of daylight for an average Sept. 21. In each case, the base line is the dry-bulb air temperature; the superimposed condition is additional sun heat. Note that the south orientation picks up the most total radiant heat, with the southeast and southwest orientations not differing much from one another.

But notice at what hours the heat peaks come, and how high they reach.

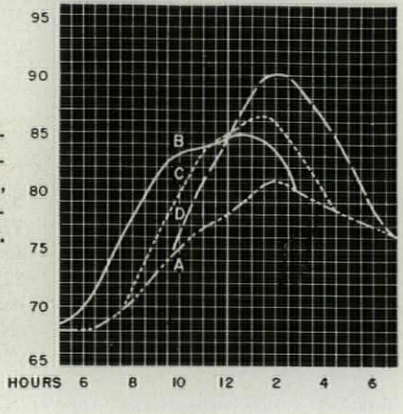
In the south and southwest orientations, radiant heat received builds up on top of air-temperature conditions markedly more than in the southeast orientation, creating excessive conditions.

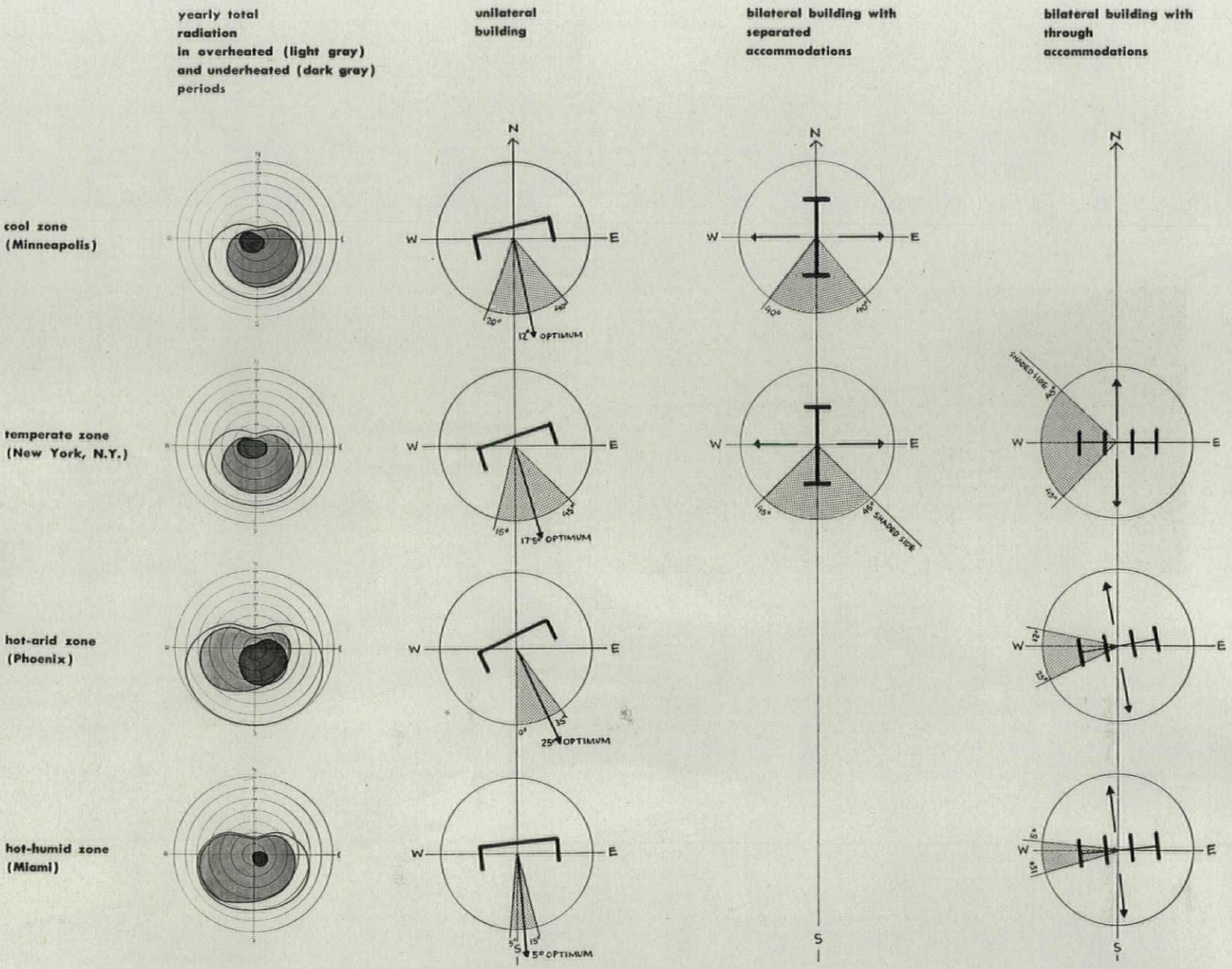
And the advantage of easterly orientation is not solely in the overheated period. Note in the other three charts how in winter the radiant heat received when the solar wall is more to the southeast is more valuable because it comes in the forenoon when the air is colder. Temperature peaks and radiation peaks should be used to counterbalance each other, tempering the extremes. The easterly orientation accomplishes this best.

Mar. 21 composite. Again, you get heat in cold morning from easterly orientation and also a remarkably equal heat distribution throughout day.



July 21 composite. Easterly orientation gives more equal distribution of (unwanted) sun heat, avoids peak in afternoon, lessening impact of hottest weather.





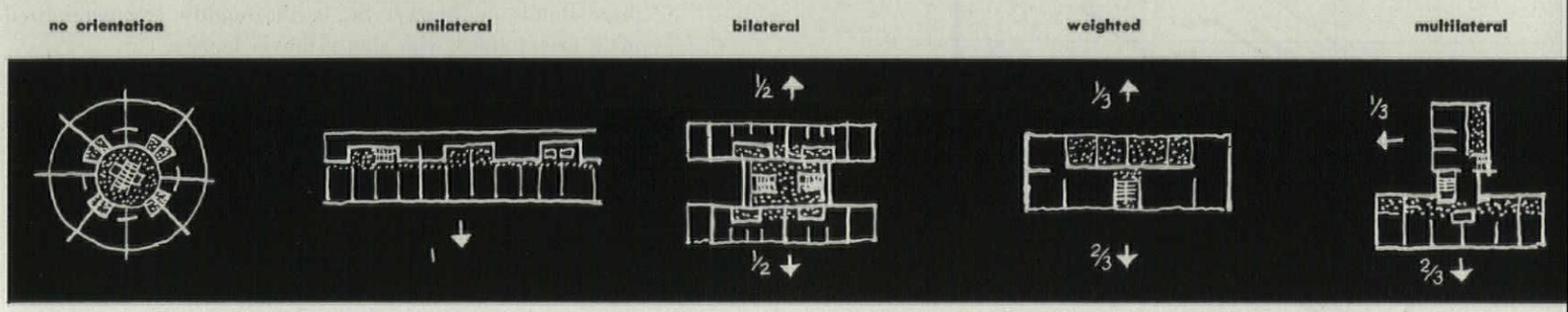
Sol-air orientations and evaluations for four typical climates of the US

In many situations the living area of a building must face other orientations than the optimum one. This occurs if a building is not a "unilateral" type, but has living areas facing different directions. The most common type is the "bilateral," where the living areas face in opposite directions. This can be a "back-to-back" type in which the two sides are separated, or a "through" type in which the two sides belong to the same apartment.

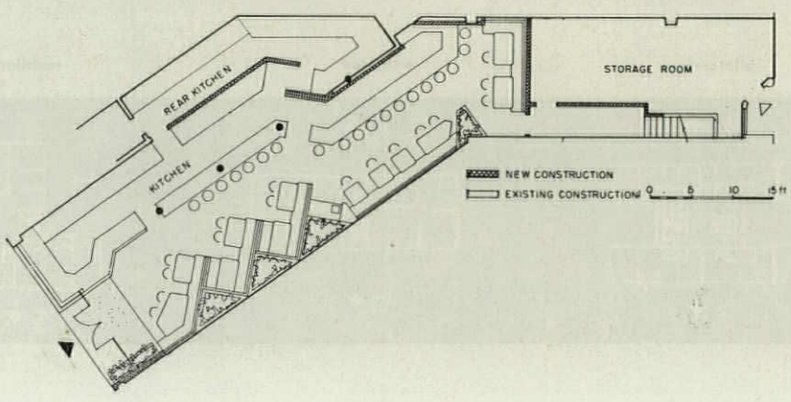
In the case of buildings whose most important wall is not readily apparent, the walls must be assigned proportionate importance (see examples). Once the proportion has been set up, the optimum orientation can be decided by drawing a parallelogram of forces. The result is the compromise orientation.

Another factor is the use of the building, perhaps as determined by a schedule of hours such as in schools. Most office buildings should simply be oriented as bilateral "through" types (as shown on the chart). Although few office buildings actually are bilateral, this kind of orientation will result in the smallest total radiant heat gain in the overheated seasons.

Fortunately, orientation is not the only way to control the weather. Other methods will be treated in forthcoming presentations of the Olgyays' research results.

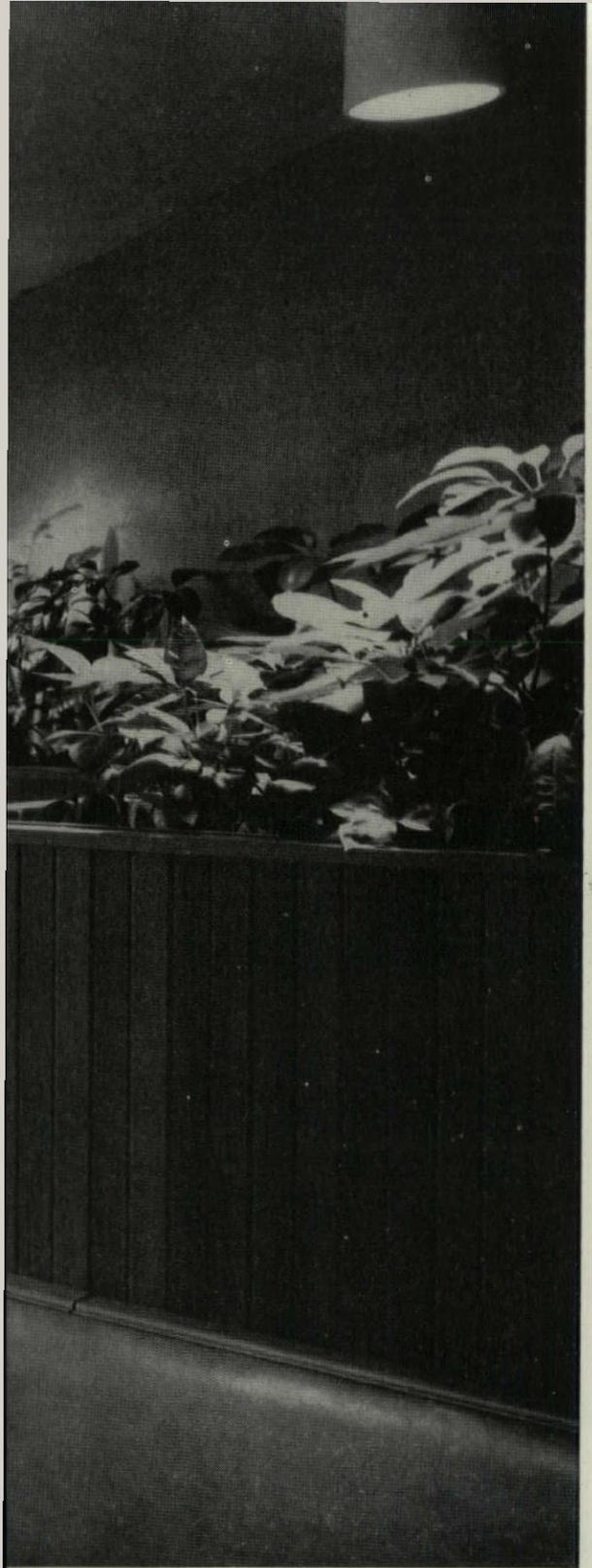


1. Fewer seats but more profit for waffle shop



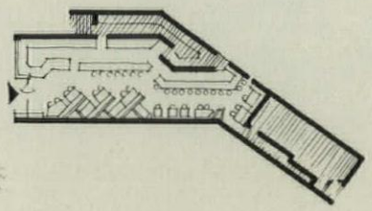
A renovation of one link in a San Francisco chain, this eating place stands on Market St., a thoroughly commercialized main artery lined with shops, movie houses, etc.

The first thing the designer did was cut the seating capacity of the old Bunny's from 100 seats to 65. The idea was to make a more colorful and attractive place which would lure in customers all day and evening, not just at the usual peak restaurant hours. The front was opened wide with glass; a minimum of partitions built; and in 1½ years Bunny's business increased 30%. Cost: $16,450, or $12 per sq. ft. Contractor: Elvin C. Stendell.



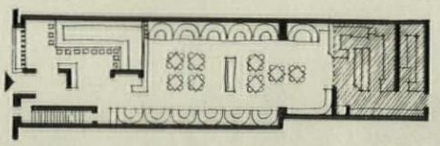
THREE RESTAURANTS

with a stimulating architectural flavor

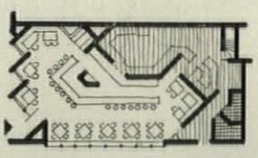


1. **For a ham-and-eggs clientele**

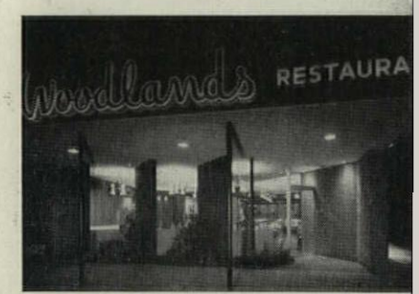
Photos: Ernest Braun



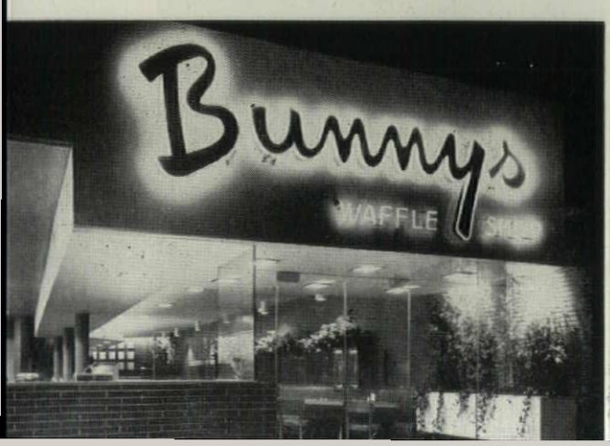
2. **For a beef-and-bourbon clientele**



3. **For a fried-chicken and apple-pie clientele**



MARIO L. GAIDANO, architect
CHARLES VON BERGEN, electrical engineer
ALBERT C. CHARLES, mechanical engineer



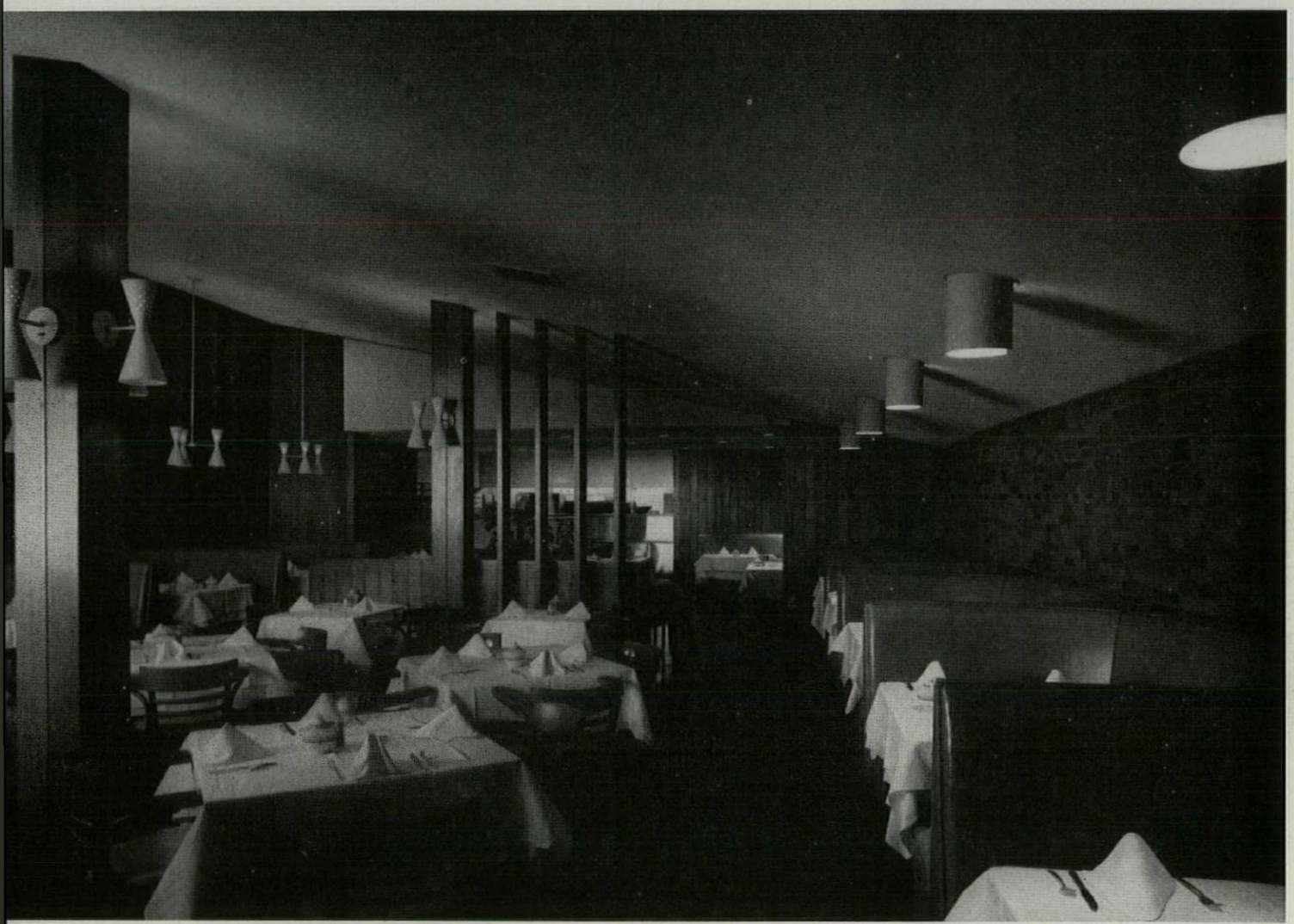
In the last five years Mario Gaidano has designed or redesigned 25 restaurants, with one client leading to another, and not one of his clients has failed financially. For a category of business ventures whose mortality rate is supposedly greater than any other business except floating dice games, this is an amazing record. But the way he has done it is also little short of amazing. In a field dominated by restaurant supply house staples of flash and ostentation he serves good design, with sprightly inventive sauces. His working premise:

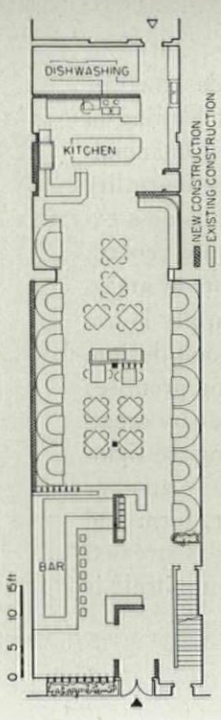
"Elements are played against one another by creating small areas within larger ones, by muting the lighting in one place, having accent lighting in another where the eye can find relief through color, form and texture; naturalness rather than gaudiness is stressed in the use of materials and the color scheme itself is derived most often from the materials."

2. Businessmen's dining room in former warehouse space

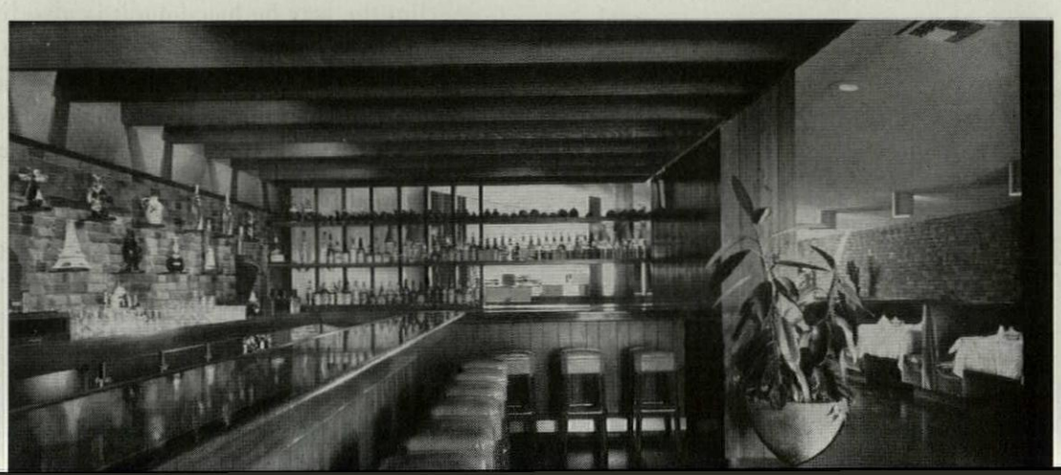
No special effort is made in this design to attract the casual passer-by. This eating place in San Francisco, Piro's, is pitched to the steady trade of local businessmen of the adjacent financial areas of Montgomery St. to the south and the produce district to the east.

In the long, narrow confines of an old pre-earthquake structure, Architect Gaidano seats about 100 diners. The long hall-like space is broken into sectors by the bar and open kitchen, as well as the variable ceiling height. Hung ceilings come down as close to the floor as 7′.





Sandblasting removed plaster from old brick walls, whose texture was then brought out by applications of linseed oil; sections of walls are covered with Philippine mahogany in random-width ⅜″ boards—a cheaper material than native California redwood. Only division between bar and dining room is mahogany shelving of bar, which, with lights filtering through, creates a working display. Downlights over booths have perforations and slots to kick light onto the brick walls. Success measure of restaurant: all building costs were paid off within a year. Cost: $49,920, or $18 per sq. ft. Contractor: Royal Show Case Co.

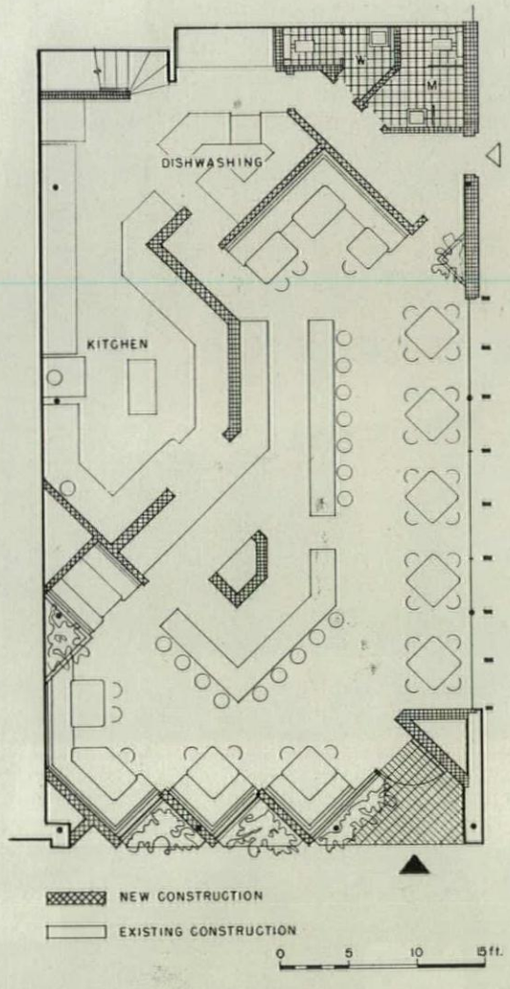


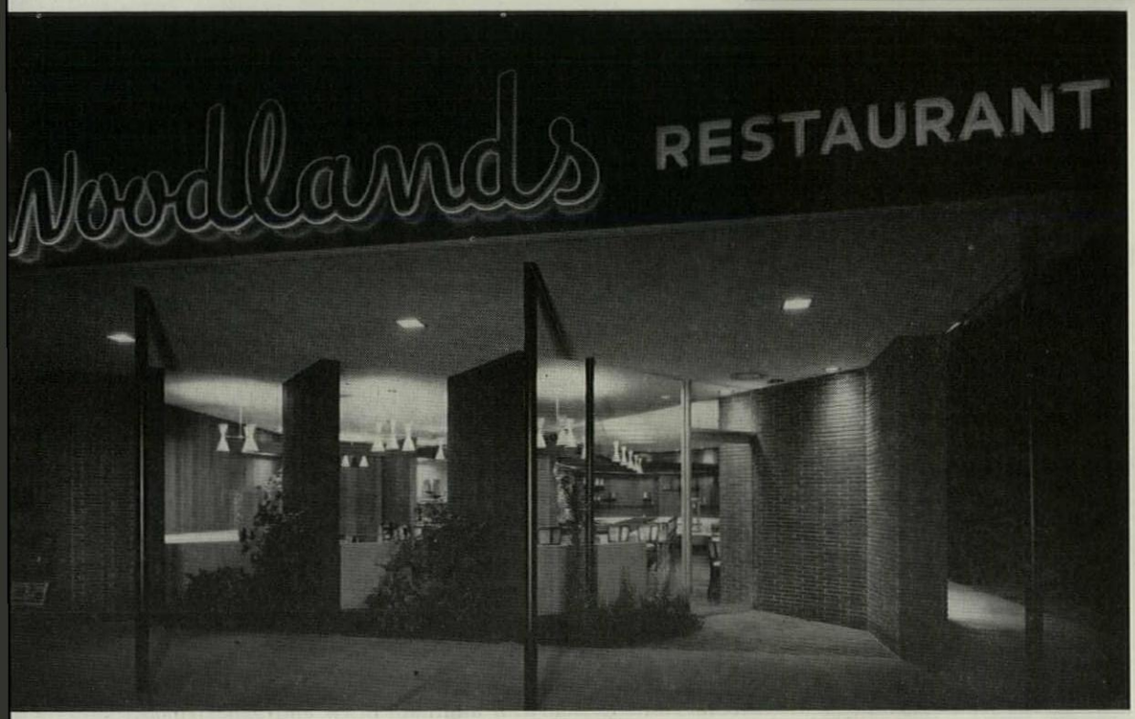
Planting boxes *in geometrical arrangement ride the steel columns of the glazed side wall*

3. Deceptive design exaggerates restaurant size

The design problem: creating an illusion of space to lure the trade of the surrounding residential and college area into a restaurant seating only 60.

The method chosen to expand space was opposite to the usual scheme: Architect Gaidano decided to load the facade and interior with "various things around and through which one would have to look," to take people's minds off the limitations of the space and keep them interested in the "various things." On the exterior these things include the planting boxes on the side wall, a saw-tooth front facade with alternate brick and glass panels.





Design concentrates

Brick baffle defines entrance, shunts customers into the restaurant on the oblique, increasing space illusion. Measure of the restaurant's success: plans are being considered to enlarge general seating capacity, also provide a banquet room.

Columnlike stack of brick standing in center of fountain space hides entrance to kitchen on way in, is also fulcrum for entire design. Two ceilings, one white-troweled plaster, one yellow-gold acoustical plaster, intersect on its line. Counter and open redwood beams radiate from it. Cost of restaurant: $48,136, or $20 per sq. ft. Contractor: De Martini Bros.

ttention on details, not space

Side wall, with geometrical pattern of planting boxes, permits interesting view of interior, but does not give away secret of its limited size. Boxes are painted dark brown, mustard, white, with dark brown verticals.

HOW TO PLAN SUCCESSFUL SHOPPING CENTERS

A year's research by a top economist and a leading architect produces ten timely guides for sound investment and sound design

One of the phenomena of the postwar building activity has been the mushrooming of mammoth shopping centers in and around all major trading areas. Shoppers' World, near Framingham, Mass., was among the first and heralded by many as a prototype. Two months ago Shoppers' World went bankrupt, and two or three centers were reported in trouble (AF, Feb. '54, p. 37) Today shopping center owners, investors, promotors and designers are taking stock of the financial status of existing centers and are spending more time on the planning of future centers.

This kind of thinking has long been the stock-in-trade of Real Estate Consultant Larry Smith and Architect Victor Gruen, both of whom have been engaged in many of the country's important shopping center projects. A year ago they decided to do a thorough job of research on the financial problems of big regional centers. Smith was particularly concerned with the increasing difficulty of financing regional centers on reasonable terms and with the fact that some of the big centers were not living up to the expectations of their owners. Gruen was particularly concerned about rising construction costs and the problem of designing centers consistent with good commercial and community planning, but still within the limits of supporting revenue.

The material presented here summarizes important points of their year's research. It represents literally thousands of man-hours of study by the two offices. Results so far—with research still continuing—fall into two categories: 1) factual material on the factors leading to success or failure, drawn from actual experience, and 2) determination of subjects in which investigation is apt to be most productive for owners of centers not yet built.

This material was presented in January to a group of major store owners who are assisting Smith and Gruen in developing it further for forthcoming discussions with major investors. Both men wish to emphasize that, in permitting publication of their results thus far, they are not attempting to give final answers but are throwing open their findings and ideas for discussion.

1. Costs and income for six existing regional centers and a "yardstick" center

To present a quick but rounded financial picture of shopping center economics, a hypothetical "yardstick" center was devised. It is partly typical in the sense that each component of the "yardstick" is derived from some existing center, but partly model in the sense that each separate component is favorable in relation to the others. Theoretically, it should be possible to duplicate the *financial balance* of this hypothetical center, if owner decisions are aimed at that goal. (The "yardstick's" absolute figures would be duplicated only by extreme coincidence.) Actually the *financial balance* of Center A (right) with its very different absolute figures, compares favorably with that of the "yardstick."

Five other existing centers are compared with the hypothetical "yardstick" center in the table at the right.

Center	Capital cost	Operating expense	Guaranteed rent	Additional percentage rent
"Yardstick"	100	100	100	100
Existing centers				
A	152	67	160	124
B	113	131	90	91
C	71*	38†	50	49
D	105	124	71	75
E	98	98	74	65
F	99	220	51	55

All figures are based on actual dollars, not constant dollars
* 102 including tenant aid to construction cost
† Tenants absorb cost of maintaining buildings

NOTE: all facts and figures here apply primarily to centers of 350,000 sq. ft. or more, in which department store branches are principal tenants. They should not be assumed to apply to smaller centers nor to those without department store branches.

All square-foot figures, whether of cost, operation, size or income, refer to square feet of rentable area. Square-foot cost figures, for instance, are derived by dividing gross construction cost of the center, including parking and site improvements, by the actual square-foot area for which rent is paid. Reason: square foot of rentable area is the only basis on which an owner can figure his rental income because tenants do not pay directly for public areas, parking, common service facilities, etc. Thus, this is the only basis on which the owner can look at his costs and see how they stack up against income.

Study of this compaison revealed these major points:

- High capital costs are not necessarily an extravagance. They can be a sound investment *if* they result in lower operating costs and higher rents (based on higher volume and quality of trade pulled).
- Low capital costs can be an extravagance *if* they result in exorbitant maintenance costs and too low rental income.
- But reasonable capital costs are still vital to economic balance.
- Center F is the only regional center studied whose guaranteed rents are less than operating cost per square foot, leaving an operating deficit to be made up by percentage rents.
- But guaranteed rents should do more than pay operating costs. They should also cover, or almost cover, amortization of capital costs. It is risky to count on income above guarantee for this.
- Tenants can unbalance the whole picture by talking the landlord into providing extra partitioning, etc.—the case in Center B where *original* planned capital costs were in line with rents.

2. The big stores bring the customers but the small stores produce bigger gross rents

For instance, one existing center which has particularly developed the small tenant as a source of high income gets 37% of guaranteed rent from its small stores, which occupy only 15% of the area. Another gets 40% of its guaranteed rent from 26% of its area. At the other extreme, two existing centers which are almost exclusively large stores have virtually no high areas.

The presence of well-merchandised small stores apparently contributes, too, to the well-being of the center as a whole. The highest volumes of sales by large stores seem to be produced in centers containing a good representation of small stores.

These advantages must be balanced against the fact that small stores generally have lower credit ratings. Also a high gross rent from small stores does not necessarily mean a high net rent, because the small stores always have higher development costs—sometimes as much as $7 per sq. ft. higher than large stores.

The whole gross income picture is complex and requires careful planning for specific locations and situations. The basic necessity of the regional center, of course, is a location with sufficient potential sales volume to produce adequate rents; good planning for pulling power does not guarantee that business will be drawn to a poor location. And certain store types—such as department stores and food stores—can do a good volume of business in certain locations without other store types doing equally well.

3. Prime factors affecting the sales volume of individual tenants

- Relationship of tenants to parking.
- Store layout.
- Flow of pedestrian traffic past all stores.
- Flexibility in master plan to permit expansion of strong stores.

4. Tenant store improvements are the crux of shopping center finances

They are a big construction cost factor, a vital point in achieving high guaranteed rentals, a major ingredient in sales productivity.

Typically such work—store fronts and interiors—makes up at least 25% of the owner's capital cost. Moreover, it is an additional hidden expense because tenant specifications are unknown at the time the center's construction begins, making lump-sum bidding impossible and thereby adding a possible 12% to construction costs.

If the owner is to pay for all or part of this work, absorbing the cost in the rent, he often has little idea how high it will run at the time he quotes a rent. (The innocent term "partitioning" can mean anything from one space-divider to a labyrinth.) On the other hand, if the owner does not absorb some of these costs it will be reflected in a lower guaranteed rent forevermore (see tabulation for Center C opposite page) and, equally important, tenants may try to save their own money to the serious detriment of the center's quality and business potential. If tenants are offered standard treatment, varied only if they pay extra charges, the owner risks monotony and complete lack of "downtown" personality, again to the detriment of the pulling power.*

One thing is clear: whatever procedure an owner uses, he should make it crystal clear to the tenant *before he quotes a rent.* Otherwise the tenant is almost sure to assume the rent quoted includes finish, and ensuing bargaining (so much off the guaranteed rent because the tenant agrees to do his own painting, so much off for his floor covering, etc.) can easily reduce rents below the safety level. (It has happened.)

* Gruen and Smith, with the cooperation of contracting firms and other architectural offices, are at present exploring the entire problem of tenant specification work, from the point of view of sound financing. Some of the points they are investigating: 1) the possibility of separate lump-sum contracts, with the general contractor for the center shell disqualified from accepting tenant work; 2) a system of fixed allowances that is realistic from both the owner's and tenant's viewpoints and also avoids the pitfall of standardized treatment; 3) a construction pattern that permits adequate supervision at the time the shell is being completed and 60 or 70 separate tenant jobs are in various stages of work.

5. Local real estate taxes should not represent more than 15% of fixed charges

But in many cases they now approach 25%. The tendency of assessors is to base assessments on physical property during the first years and economic productivity during later years, thus getting it best both ways. The peculiar attributes of shopping centers demand a new definition of property and hence new assessment bases. For instance, a regional center provides items which the taxpayers usually pay for in suburban commercial districts: water mains, sewage lines, sidewalks, roads, parking and street lighting, etc. These items of physical property should be subtracted not added to the cost of building construction for tax base.

6. It takes about five years for a regional center to mature

The larger the project the more steady the rate of growth, but the longer the period during which it occurs. A major project starting off at 70% of stabilized volume in the first year, then increasing 5% a year to reach 90% of stabilized estimate at the beginning of the fifth year, represents good growth, consistent with experience of successful existing centers.

For items 7, 8 and 9, see p. 192;

for item 10, turn the page

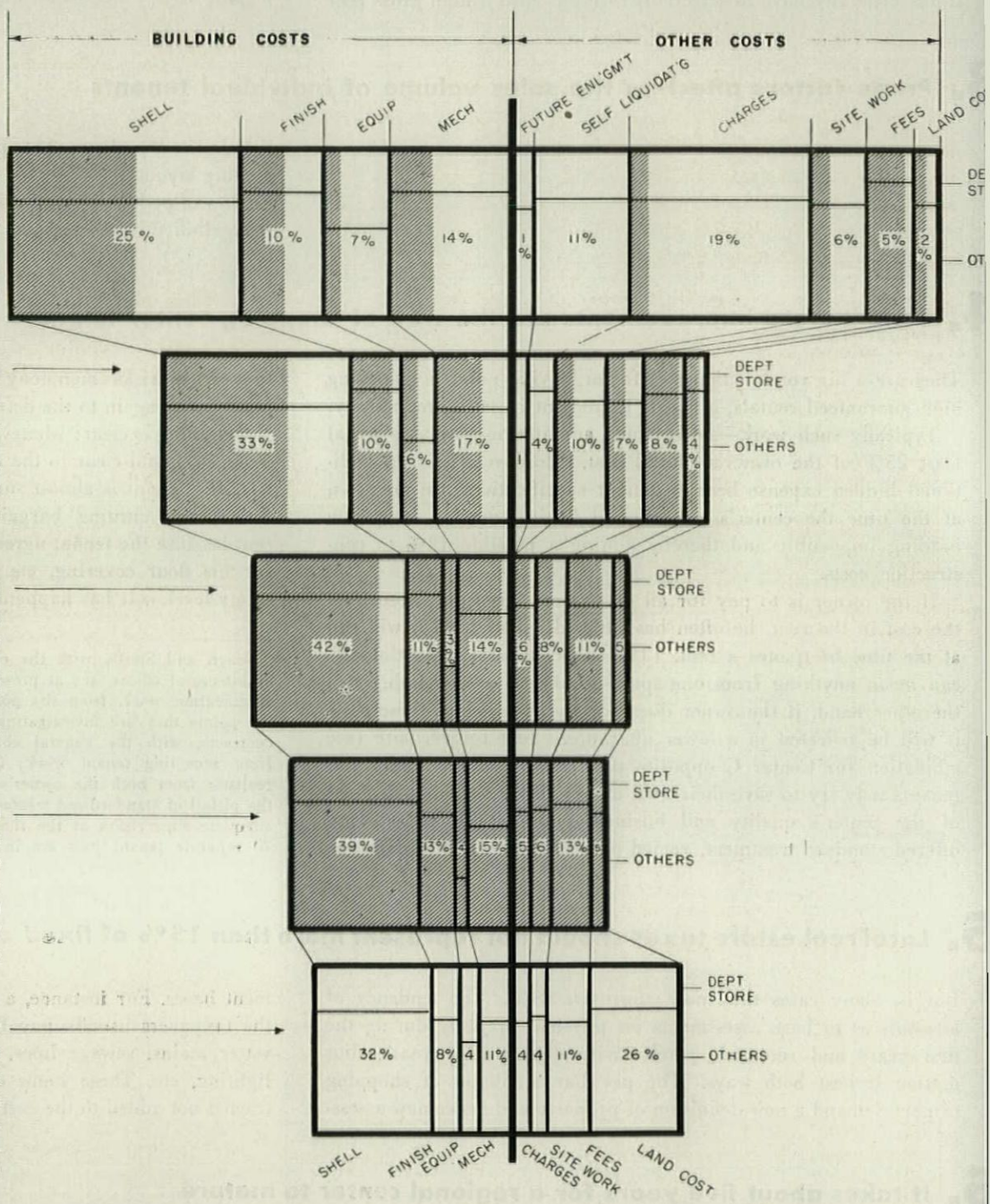
10. "Cost menu" for shopping centers—à la carte

The remarkable chart below and the accompanying tabulation on sitework—a sample of the calculations that went into the chart—show how shopping center costs add up.

Although the calculations are based on a vast amount of actual construction experience, their author, Architect Victor Gruen, emphasizes that this is not a tool for making construction-cost estimates. It is a guide to the *relative cost influence* of various planning factors on the total cost of a project.

Theoretically, the more advantages and conveniences a shopping center can offer in relation to competition the better its business (given the seven prerequisites for success listed on p. 141). But there is a catch. At some point the cost of the conveniences and amenities exceeds the income which the owner can expect to derive from them.

Deciding which to include, which to omit, takes judgment, courage and imagination, and it always will. What Gruen's "menu" does is to show the relative weight of various possible additions. It is thus a tool for weighing advantages (like the 11



SUPERIOR

The "superior" center is on the East Coast with half of exterior walls face brick, half mosaic, steel columns, metal acoustic ceilings, terrazzo floors in certain portions, better finishes and equipment than all centres below, heat for all tenants, parking for seven cars per 1,000 sq. ft.

STANDARD

The "standard" center is in the Midwest with half of its exterior walls face brick, half porcelain enamel steel, provisions for future mezzanines and additional stories in the department store, good finish and equipment, heat for all tenants, parking for six cars per 1,000 sq. ft.

FAIR

The "fair" center (which Gruen regards as minimum for practical purposes) is identical with the minimum center except that it is fireproof with exterior walls of painted architectural concrete and concrete roof and has parking for five cars per 1,000 sq. ft. of net rental area.

MINIMUM

The "minimum" center is on the West Coast, is nonfireproof, has exterior walls of painted concrete block and wood-trussed roof, has strictly minimum finish and construction, heat by landlord only for department store; parking for three cars per 1,000 sq. ft. of net rental area.

STRIP

The strip development is on suburban land of higher cost than raw land of the other four centers. It lacks a truck terminal and common service facilities. Otherwise, construction contracts, heating, parking are identical to the "minimum center."

Gray areas in chart indicate basic minimum costs and are identical for all four shopping centers.

Big "charges" box in "superior center" represents higher construction cost index of East Coast, plus the extra cost of winterwork. These would not apply to "superior center" built on West Coast. Conversely, a large block of charges would have to be added even to "fair center" or "minimum center" built in east.

"Self-liquidating" box includes utilities for which center will receive additional income.

listed at right, below) against relative capital outlay.

In charting the five centers, a "typical center" is assumed: 500,000 sq. ft. of net rental area, 30% of which is a department store with basement (used 30% for merchandising) and two floors above grade; 70% consists of other tenant buildings with basement and first floor. Except in the strip development, the basement has a truck road with loading docks accessible to all tenants and the site is assumed as approximately square with adequate existing roadways on all four sides; no off-site work.

Sitework costs vary from 54¢ per sq. ft. to $1.61

The following calculations represent the category, "sitework," in the chart (opposite). All the other chart blocks were derived by similar careful analysis. Throughout, normal conditions only are assumed; for instance, this site tabulation does not consider *extraordinary* expenditures arising out of rough grading, water supply, boundary roads, sewers, etc.

	Superior center	Standard center	Fair center	Minimum center	Strip development
Parking ratio per 1,000 sq. ft. of rental area	7 cars	6 cars	5 cars	3 cars	3 cars
Basic items (cost per sq. ft. or rental area, in cents)					
Grading, rough	7¢	6¢	5.5¢	4¢	1¢
Grading, finish	7	6.5	6	4	2.5
Paving, parking, West Coast spec.	66	57	47	28	28
Paving, perim. road, West Coast spec.	7	7	6.5	5	..
Striping, parking	1.5	1	1	0.5	0.5
Walkways	4	4	3	..	..
Trees (1-per-110 cars)	1.5	1.5	1	0.5	0.5
Ground cover	4	4	4	3	0.5
Traffic signs	0.5	0.5	0.5	0.5	0.5
Water distribution	1	1	1	0.5	..
Sanitary sewer	1	0.5	0.5	0.5	..
Parking lighting (.85 ft-c)	17	14.5	12	7.5	7.5
Total minimum requirements	**$1.18**	**$1.035**	**$0.88**	**$0.54**	**$0.41**

Extra items	Superior center	Standard center	Fair center	Minimum center	Strip development
Paving, parking, eastern spec.	7¢	5¢	..	..	..
Paving, perim., road, eastern spec.	1	..	..	..	..
Conc. curb traffic islands	7	..	..	..	..
Parking bumpers	7.5	..	..	..	..
Topsoil, landscaped area	2	..	..	..	..
Trees, 1-per-55 cars	1.5	..	..	..	..
Landmark sign(s)	4	2	..	..	..
Storm sewer	1	..	..	..	..
Gas distrib. not by gas co.	1	..	..	..	..
Elec. distrib. underground (duct)	1.5	1.5	..	..	..
Phone distrib. underground (trench only)	0.25	0.25	..	..	..
Parking lighting, 1.5 ft-c	9.5	8.5	..	..	..
Total sitework	**$1.613**	**$1.212**	**$0.88**	**$0.54**	**$0.41**

The bread and butter

Seven prerequisites that must exist for potential success:

1. Ownership organization of high executive ability, vision, energy, perseverance and responsibility.
2. Qualified financial planning—a sound approach to matters such as those dealt with on pp. 138-39.
3. Sufficient shopping potential in area chosen.
4. Site big enough, suitable for economical construction.
5. Easy accessibility over highways with sufficient unused traffic potential.
6. Key tenant (department store) lease or leases.
7. Proper financing.

The fixin's

Eleven planning principles that influence to what extent the potential will be realized. (Their desirability must be balanced against the "cost menu.")

1. Sufficient parking quantity *of highest quality* for quick, easy parking.
2. Planning for dense foot traffic by completeness and depth of shopping facilities, a tenant pattern of strength and variety, grouping of tenants by careful premerchandising plan.
3. Complete separation of customer and service traffic and elimination of service facilities from public consciousness.
4. Reasonable walking distances from parking to stores.
5. Attractive areas for pedestrians only.
6. Weather protection by colonnades or canopies.
7. Architectural unity and sign control.
8. Community activity areas—auditoriums, eating places, etc.
9. Provisions for expansion which will not destroy successful basic concept.
10. Center-wide conveniences as air conditioning, pickup stations.
11. Protection of surrounding residential areas and roads to prevent blight with subsequent deterioration of center's business.

EXCERPTS

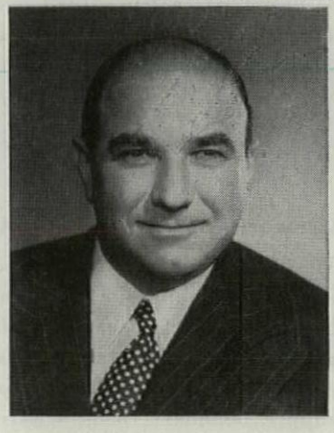
How other people and other publications see the building industry —a digest of interesting remarks by public speakers and of pertinent articles in the nation's press

THE INDUSTRY'S ECONOMIC FUTURE

The outlook is bright for real estate investments, building money rates and construction costs

Excerpts from an address by William Zeckendorf, president, Webb & Knapp, Inc., before a clinic on "Today's Problems in Real Estate" at Town Hall in New York City

Photos: Fabian Bachrach



Although, broadly speaking, we are in for an even year in 1954, there will be some changes in values, particularly in the fixed-yield properties, where the speculative factor is less important and where the credit factor is more important. High-level credits under long-term lease obligations where the tenants have impeccable credit should rise in price in keeping with what has already taken place in the market on fixed-yield securities.

The fixed-yield market is most familiarly exemplified by the 3¼% so-called "Humphrey" bonds that the new administration brought out at 100, that sold very shortly thereafter at 98½, and that in the past six months have gone in an almost precipitously straight line up to 107. That is a very significant thing; it holds a tremendous lesson for us; it is almost like a free tip on a horse race.

The policy of the federal government is dedicated to easy money, and we in the real estate business can draw conclusions from that and profit by it. Real estate is one of the few businesses where a man, if he is absolutely unemotional and looks upon his real estate as an object to buy or sell, should not ever have to lose any money. Real estate follows other securities. There is almost no other business that gets the tip-off so far in advance as real estate.

Never before in the history of American finance have bond prices swung up so far so fast. The short-term rate, which has even been more volatile than the long-term rate, has moved from 2.49 on bankers' acceptances and government bills down to 1.09 in six months. The same $1,000 that used to produce $24.90 per annum now goes begging at $10.90. That means that sooner or later money will find its way into real property

I believe that the high-grade equity yields that are almost akin to the bond yields in their security, safety and outlook are going to rise materially and I predict a tremendous improvement in the equity market for high-grade common stocks. The move from high-grade common stocks is next into high-yield real estate mortgages, and from them into high-grade underlying ground leases and net leases.

I will stake my reputation on the prediction that high-grade real estate underlying ground leases will move in a capitalization rate valuation from wherever it is now—I am not qualified to say where it is because that is opinion —one full percentage point or a capital increment of about 18% in gross value. For those who have equities of a third, their equities might well rise by as much as 40%. It is just as inevitable as day following night. From that will flow other trends. After the investment pressure is satisfied, or has reached the point where second-grade yields start rising to the point of being unattractive, where there is a capital risk in deflation, then it becomes attractive to take the more speculative junior securities and the less safe but more speculative profits in real property. I call your attention to the inevitability of a rise in the value of the fixed yield securities, a greater abundance of money, a considerably lower rate of interest, long and short term.

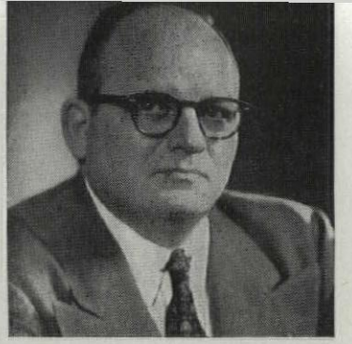
Lower cost construction

We will have a coincidental decline in prices of construction, in my opinion. And an availability of money at low rates. These two trends should make for a very interesting revival of land values and a builders' market, providing a substantial demand for space remains present.

I believe that we will continue to experience a substantial demand for space. There is a tremendous unrealized and unappreciated market for space which will become available at somewhat lower prices. People just don't want to expand any more than they have to at the present rent level. I believe that rents need not be so high. I foresee lower rents.

Perhaps you won't get so big a return at these lower rents but through the availability of easier money and lower costs you don't need quite so high a return. Lower rates and higher ratios of loans in relationship to costs and income will still make it attractive for the equity speculator (that is the word that I apply to all entrepreneurs; we are all speculators).

I have painted a picture of optimism, but I have to add one very important note of caution: these predictions are based on the opinion that a free and easy money market will remain a matter of federal policy.



MODERN CONSTRUCTION TRENDS

Developed for new buildings, the prefab metal skin will permit remodeling of old buildings without disturbing the tenants

Excerpts from an address before the Real Estate Board of New York by Architect Richard Roth of Emery Roth & Sons, designers of a host of postwar Manhattan office buildings

Trends in modern construction can be broken down into three main subdivisions. First, the development of technologies; second, the prefabrication of major units, which dovetails with technology and with our economy; and third, the trend toward economy based upon more careful studies of flexibility and use of space. The combination of these three trends gives the dramatic expression of functionalism that we see developing by leaps and bounds today—the trend for tomorrow.

Most important: technology

Today, with a dearth of skilled labor and with rising production costs, which necessitate increased rent as compared to that enjoyed by the older buildings, technological advance becomes more and more important. In trying to keep within economic bounds, every building material producer is striving to cut labor and production costs. We architects are also attempting to create with the finest materials the best design at the lowest possible installation cost. This Tishman did at 99 Park Ave. with an aluminum facade.

When technology has had a little longer to study the problem, it will be possible to construct economically buildings such as the UN and Lever House.

Second: prefabrication

In 1946 our office designed a metal facade for a project with the help of engineers from the steel and aluminum companies. We had developed our prefab facade to the point where we knew exactly what the cost of the material delivered to the site would be. We knew the skin would be tight. We knew it would expand and contract without warping. However, when we attempted to set up a budget for the completed exterior of the building we could not establish a firm cost of erection. We found that there were no mechanics or trades in New York that were trained to do this sort of work and therefore all estimates of erection costs were open end. The estimated cost of erection was in itself prohibitive because of the lack of these trained mechanics.

Since 1947, however, small buildings, using a prefabricated facade, have been built in and around New York and in outlying points in the US. This in turn created a technique and enabled teams to be trained for the enclosure of metal and glass buildings, to the point where firm and reasonable contracts could be awarded. Today, a number of firms in New York will bid in this type of work.

I therefore predict that this one trend—prefabricated, multistory facades, whether of aluminum, stainless steel or combinations of both, with glass or another similar complementary material—will continue in office-building design and from office-building design into multistoried residential planning.

Next: modular design

I do not refer to the small units of 4″ and 8″ illustrated by brick, or the 2′ or 4′ grid advocated by small home planners; but rather to any module of economical use. In an office building it might be 4′-6″, 4′-8″, or 4′-9″. In an apartment house it may be a 3′ window module. It is a variable, but will be uniform throughout a specific job.

This module is the unit that the architect, the real estate broker and the owner work out for a specific site and a specific use. If correctly used, it creates a successful building.

We in our office feel that the 4′-4″ to 4′-8″ unit is more flexible and adaptable to commercial layout. We have found that small offices are seldom narrower than 9′ and that larger offices tend to run from 13′ to 14′ up to the 18′ width befitting the chairman of the board.

By having our module coincide with the structural layout, we have found that where a column occurs we can vary this dimension 1′ either way and therefore can obtain within inches the required width for any private office and at the proper location in the plan. The plot size influences the window module size and the window module then sets the structural column bay size. Four windows of 4′-6″ equal 18′—a good bay width. Five windows equal 22′-6″—also an economical bay unit. Inches one way or the other do not materially affect the structural costs.

continued on p. 188

SAFEWAY PLANS ANOTHER STORE

How the third largest chain locates, builds, sells and rents its stores

A digest (with special permission) of an article in "Business Week" (Dec. 26, '53)

Because location is one of the most important aspects of any store, Safeway's President Lingan Warren sits down each day with his two real estate experts to discuss and decide on the location of new Safeway stores. One of these experts is G. T. Burroughs, manager of Continental Properties Co., a Safeway service division, generally considered its real estate department. The other expert is Safeway's Secretary-Treasurer, Milton L. Selby.

Continental's staff of technicians directs the research on which these men base their decisions. Commenting on the size of this job, *Business Week* noted that "Safeway has built 1,150 stores since the late thirties, and its current program runs to about 100 new ones a year plus about 100 modernizations."

Although the business of site selection involves use of large-scale maps (showing population trends, industrial trends, traffic flow, density of shopping facilities, etc.) much of the raw data is gathered firsthand. According to *Business Week:* "Primary responsibility for digging up new sites rests jointly with Continental Properties and the 28 zone managers who handle Safeway's distribution divisions."

Once a likely store site is ready for close scrutiny, Oxford Business Surveys, another Safeway affiliate, moves into the area for detailed, on-the-spot research on customer buying habits, travel methods, family income, etc. Data collected by these men are compared with control surveys; a weekly sales potential is estimated for the site and a detailed report is submitted to Continental and, in turn, to Safeway's three real estate experts for a decision as to whether or not the site meets Safeway's standards.

Once a Safeway store is built, Continental sells it, for Safeway believes in owning no real estate. Instead, it builds or buys its stores, sells them and leases them back. Most of its landlords are institutions and such real estate investors as Webb & Knapp. Continental sells its stores at cost and leases them back for 25- to 30-year periods. The rent is based on amortization during that time, plus a 5% return. Thus, says *Business Week:* "A $300,000 property leased for 30 years, say, would fetch an annual rental of 7.02%, or $21,060."

Thanks to this kind of a store building-selling-leasing program, Safeway puts into real estate little more of its money than is needed for construction.

INDUSTRIALISM

comes to the POST OFFICE

as long-distance mail moves out of trains into trailer trucks

and mail terminals move out of cities into suburbs

Sears Roebuck, the merchandising colossus, has 684 stores in the US, and a $3.1 billion yearly volume, but judged against the US Post Office, Sears is a minnow compared with a whale. The post office is a quietly enormous business with 41,000 "branch stores" which last year did a $20 billion cash business (covering everything from pay to postage).

Because the post office is also a gigantic patron of private building investors and architects (it owns only 3,300 of its buildings, leases 25,000 complete and parts of 12,700 more), changing postal patterns are big building news:

Mail haulage is rapidly going over to trailer trucks, away from railroads. The reason: mail carried by rail cannot depend on freight trains, must be carried by regularly scheduled passenger trains; but railroads are every month canceling and curtailing their profitless passenger schedules.

Bulk-mail distribution centers have to be moved out of the traffic-knotted city centers because they are impenetrable by massive trailer trucks. Formerly railroads could demand that bulk-mail distribution terminals adjoin train terminals, so the crack passenger trains would not have to pause on the city outskirts to uncouple the mail cars, but this is true no longer. An investing result: the number of possible sites along the outlying RR right of way for any one distribution center is multiplied, and so is the number of potential private investors who can take a crack at building post offices to lease to Uncle Sam.

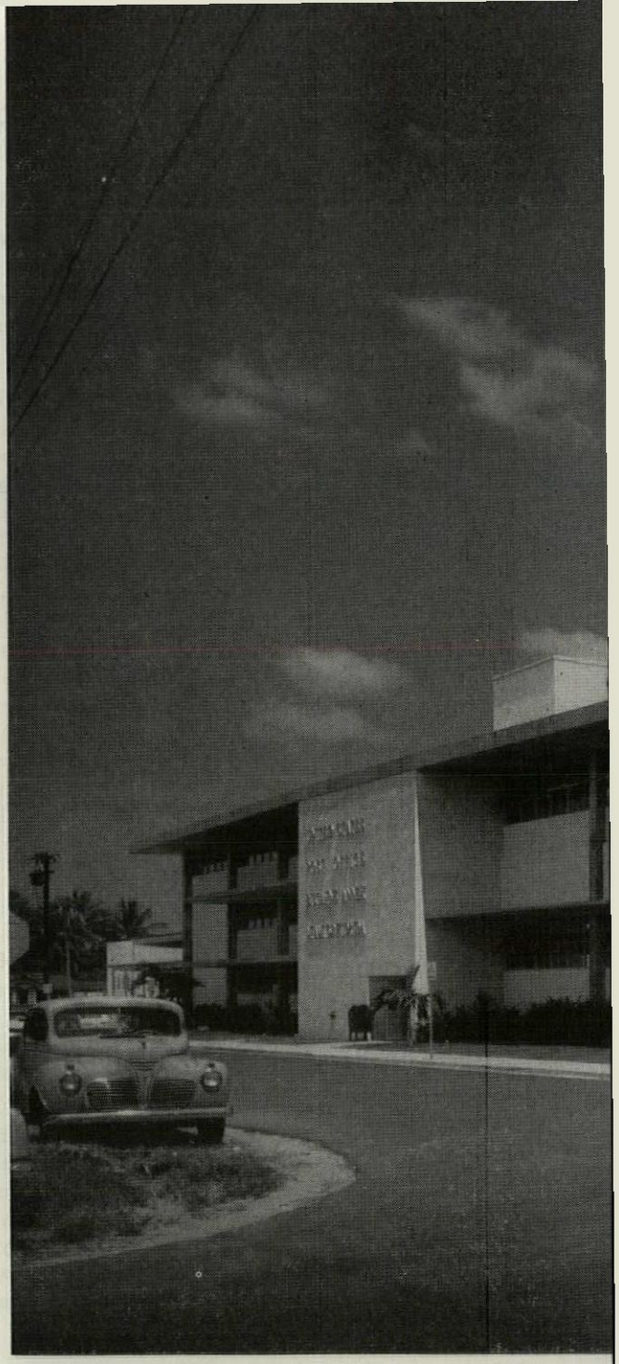
The post office department has turned against monumental architecture. Says Rollin D. Barnard, director of real estate for the post office: "Forwarding of mail is an industrial operation. We need wide-open industrial space." He adds: "And this is not single-purpose space. A monumental post office building has no death expectancy and no other use. . . . It is so expensive it has to last us forever. Some of our new industrial facilities may be outmoded for our use after 20 years because of our growth, but they'll still be useful for other light industries."

Typical of the new kind of building needed by the post office department is the Biscayne Annex (right) which private investors recently completed in Miami.

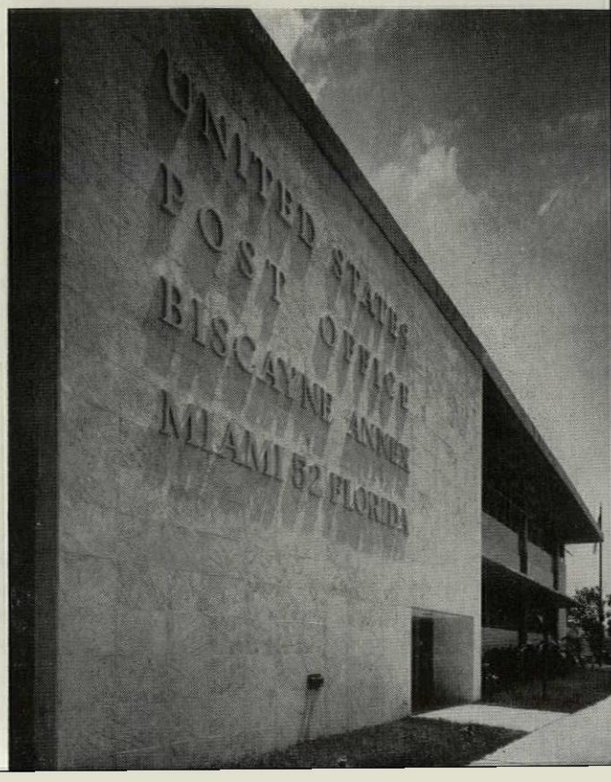
A note for the future of post office building. Legislation already passed by the House of Representatives and now before the Senate will slightly refocus the investing and design pictures.

The post office department wants authorization to:

- Buy options themselves on sites, and use condemnation if necessary to get them, rather than depend in most situations on investors to offer them along with their bids.
- Lease buildings for more than 20 years.
- Design some permanent facilities completely themselves, but only permanent facilities. These will be few.



Pedestrian entrance *in coral rock panel is dwarfed by large le*



Photos: © Ezra Stoller

Long vehicular platforms *are needed for bulk mail handling. building's main function*

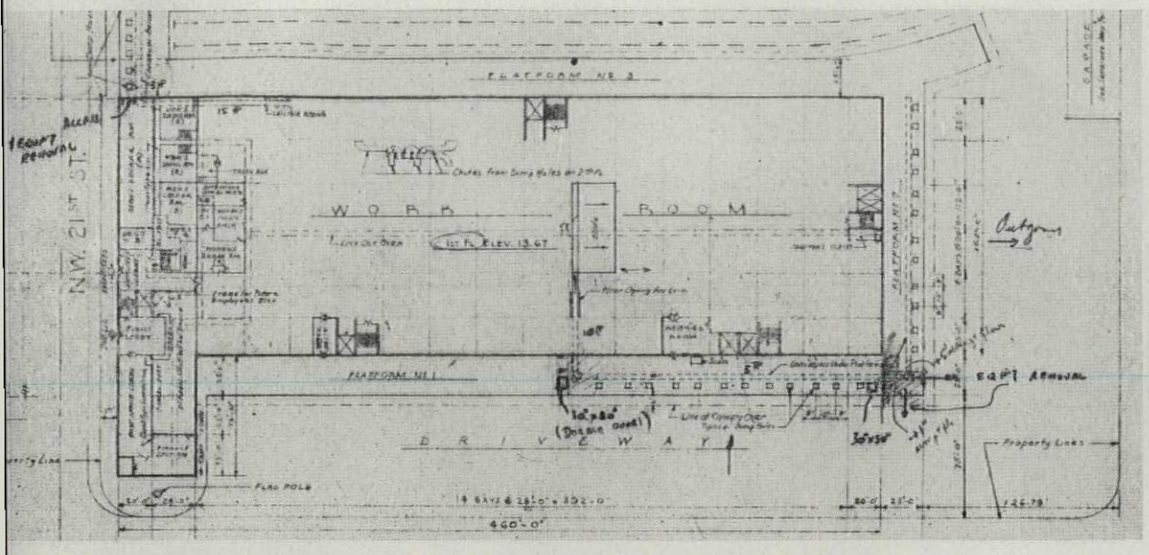
Miami's handsome postal building resulted from an unusual architect-client relationship

Architects Watson & Deutschman won the commission for this post office building by betting on most of the horses running in the investing race. Even before they were approached by any of the investors interested in putting the building up for lease to the post office department, the architects had secured schematic plans from the office of the architect in Washington, and gone to work on them. They evolved a set of preliminaries which they then sold not to just one but to several competing investors who wanted to get structural estimates so they could submit bids.

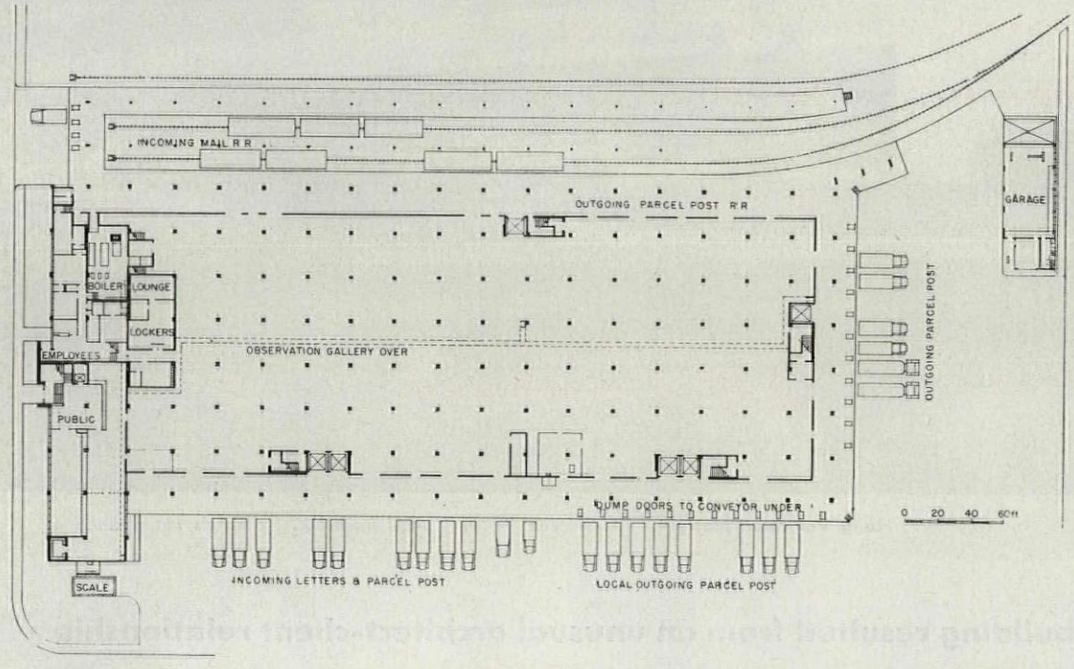
There was nothing secretive in this operation. The design for Biscayne Annex, like many other post office jobs, was begun in the Washington office of James M. Lowe, post office department architect. When Lowe had evolved the space requirements and the best way of solving them, his schematic plans were available to anyone who wanted to put up the building.

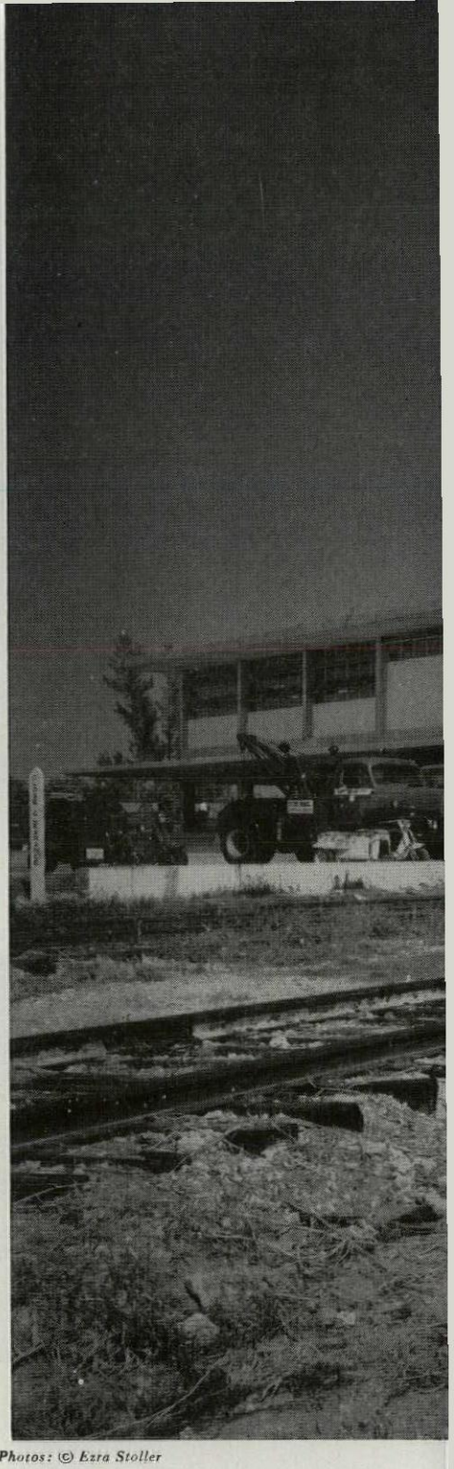
Say Watson & Deutschman: "We had been interested in this proposed building for some time; and having no definite client when the post office release arrived, we decided to prepare a set of preliminary plans which an investor could submit with his bid. We offered them to all prospective bidders at a flat fee. . . . They were sufficient for the proponent to arrive at a fairly realistic cost estimate. Fortunately for us, the successful bidder was one of those who used our plans. Of course we sweated it out in the interim."

Thanks to this package solution, the contest among the competing investors was largely in terms of who could get the cheapest financing, since a great deal of the competition in structure was on an equal footing. The successful bidder based his lease price to Uncle Sam on a construction cost of $1.8 million. Watson & Deutschman report they saved him $200,000 on this first cost without lowering post office department standards and specifications. The details are shown on the next page.



***Preliminary drawing** of space allocation and layout was prepared by post office department for guidance of local architects. From it evolved first-floor plan (shown below). Upper floor has similar wide-open industrial plan. Preliminary plans such as that above are made available by post office department to any prospective post office investor, builder or architect once the post office department decides to rent such a building.*





Photos: © Ezra Stoller

Private architects crystallize government plans, save $200,000 in Miami post office

Here are some of the ways in which Architects Watson & Deutschman saved $200,000 without altering the standards and specifications of this post office.

▸ On the loading docks to east, west and north the architects were able to get the columns back from the edge of the platform some 10′ (giving unobstructed access to conveyor dump holes and easy maneuverability on the platform) and still provide the projected canopy required by the post office department. This was done by shifting the second floor in relation to the first floor and using a tapered pan construction for the canopy to decrease the dead load in a 17′ cantilever.

▸ They used a steel wainscot in lieu of wood, and, by eliminating projections, kept expensive mitering and cutting to a minimum, and reduced maintenance.

▸ They used a uniform bay of 26′-6″ in both directions instead of bay spacings of 25′, 28′ 20′, etc. (see plans). This made it possible to get the most economy of steel and formwork in the flat-plate construction.

▸ They created a standard integration of stairs and elevators and used it throughout the work area to permit reuse of forms.

▸ They replaced exterior roof insulation by spraying thermal insulation on the underside of the second floor. By-products:

1. An acoustical ceiling on the second floor where most of the noisy equipment is located.

2. No waste of roof insulation outside when a third floor is added (a possibility specified in post office requirements).

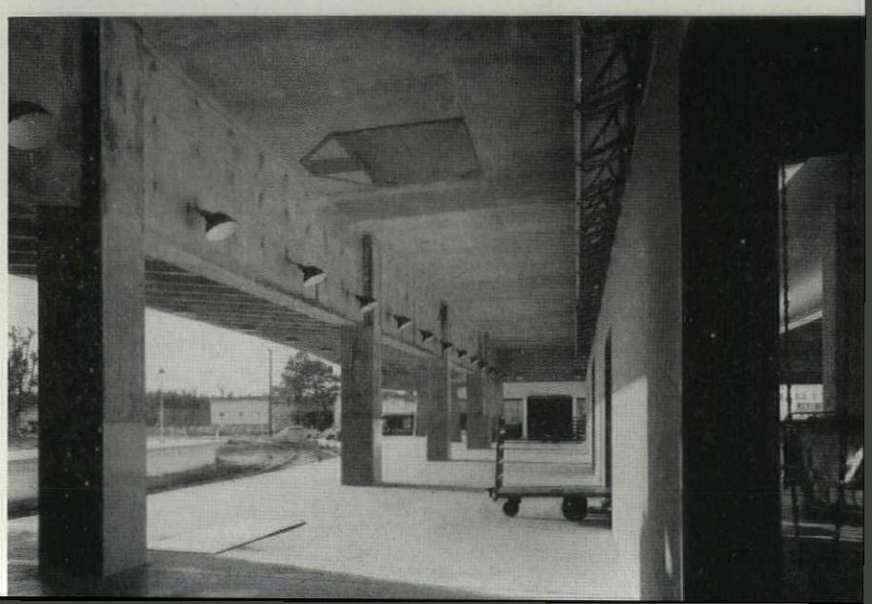
3. Elimination of the possibility that hurricane winds might rip up the roof, which has happened in this area when insulation had been placed under roofing on concrete.

▸ Their hung lookout system (photo p. 154) is not only cheaper

Wide overhangs *along rail loading docks and at windows reduce Florida sun glare and offer protection against sudden southern downpours. (Glare is further reduced on east and west elevations by use of tinted glass.) Railroad still is big factor in Biscayne Annex, but trucking dock space is daily usurping RR importance in nearly all such terminals for handling mail in bulk.*

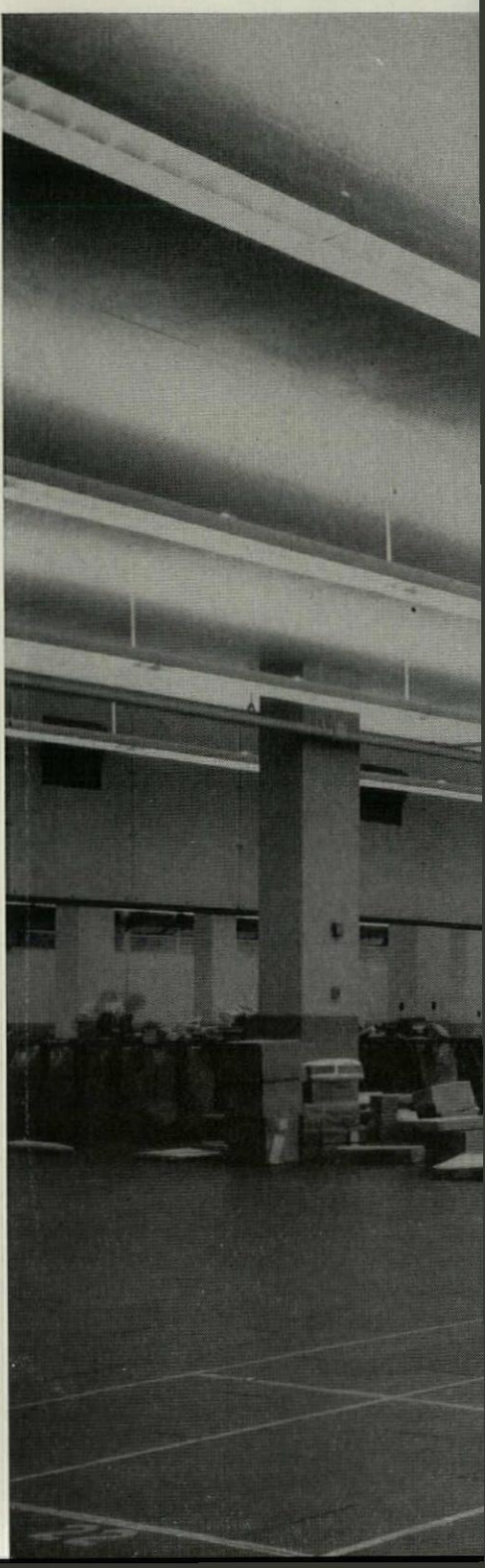
and more quickly installed, demountable and movable, but is also more fireproof than the post office standards.

▸ Initially the post office department required a minimum illumination of 35 foot-candles in all workroom and office areas. A type fixture was selected for 50 foot-candles on the basis of continuous rows of four-tube 96″ open-louvered fluorescent fixtures, mounted on 13′-3″ centers at a mounting height of 13′. Fixture manufacturers submitted samples which were analyzed by the architects as to components, workmanship, finish, ease in hanging, maintenance and cost. A fixture was selected, and modifications made to suit architects' detailed specifications. Further economies were effected by using the fixtures' bodies as raceways. After installation the measured illumination at 42″ above the floor varied from 60 to 70 foot-candles. During nine months of operation there have been less than ten failures among the 4,600 lamps.



Main work floor *is dominated by observation gallery with its masked peepholes. Continuous fixtures give 70 foot-candle light level. Ventilation in workrooms is forced with supply fans at east end and exhaust fans at the west.*

Photos: © Ezra Stoller



Inside, the Miami post office is designed for efficiency, security and easy maintenance

Conveyor systems float most of the bulk mail through the large open industrial spaces, but this flow must be interrupted for sorting and classification. Always watching from above are the peep plates in the observation galleries which the postal inspection system requires—a covered catwalk which is a murderous complication in figuring lighting and ventilating patterns. Watson & Deutschman's observation galleries are suspended on light metal frames covered with concrete composition board.

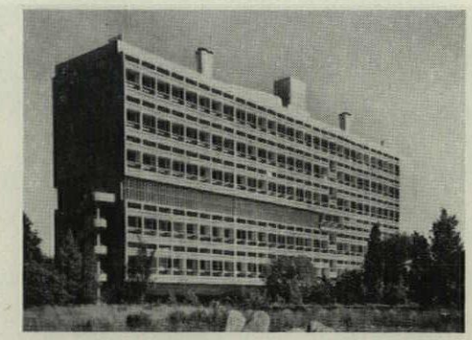
Flat-plate reinforced concrete ceilings are left exposed in natural color, as is all other concrete inside.

Total cost of building: $1,628,305, or $8.05 per sq. ft.

Public lobby features durable finishes (terrazzo floor, concrete block walls, accents of redwood) and three kinds of lighting: combination of direct and cove lighting in lobby itself, plus strip of suspended fluorescent troffers beyond counter.

A colorful honeycomb, the 337 apartments and private balconies rest on 38 massive piles, each of which carries more than 2,000 tons. These piles, four men high, create a sheltered play area on the ground floor and are intended to make the big building seem lighter. The central vertical strips of small windows mark the stair well; the horizontal strip of louvers marks the commercial area.

Main entry (right) is at rear of building and is sheltered by a cantilevered canopy projecting out toward a parking lot. Texture of concrete, as rough as stone or brickwork, reveals pattern of forming.



From a distance this building of 17 interlocking floors is revealed as a giant rectangle with a free-standing fire stair spiraling down from the communal floor.

Le Corbusier completes his concrete honeycomb

These pictures round out FORUM's three-part presentation of Europe's most controversial building.* Le Corbusier's "box of homes" in Marseilles now stands complete, landscaped and occupied. Looking back on the building's adventurous history (it involved ten successive governments and seven different ministers of reconstruction), Le Corbusier recalls the bitter criticism of his opponents. "By kicking up a shindy, they wanted to stifle the Marseilles plan. . . . Now the battle has been won. By us. Already in other parts of the country the foundations of similar buildings are being laid" (AF, Jan. '54). Looking at the colorful facade of his "vertical garden city" he observes happily: "We never forgot the landscape. And nature responded; she has laid her hands upon our work."

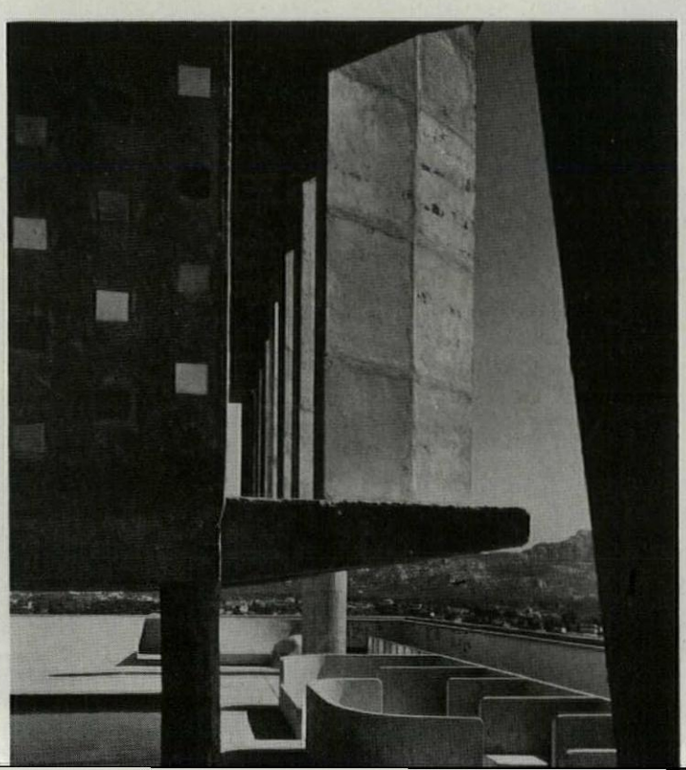
* For the other parts see AF, Jan. '50 and Mar. '52.

Photos: G. E. Kidder Smith

Photos: G. E. Kidder Smith

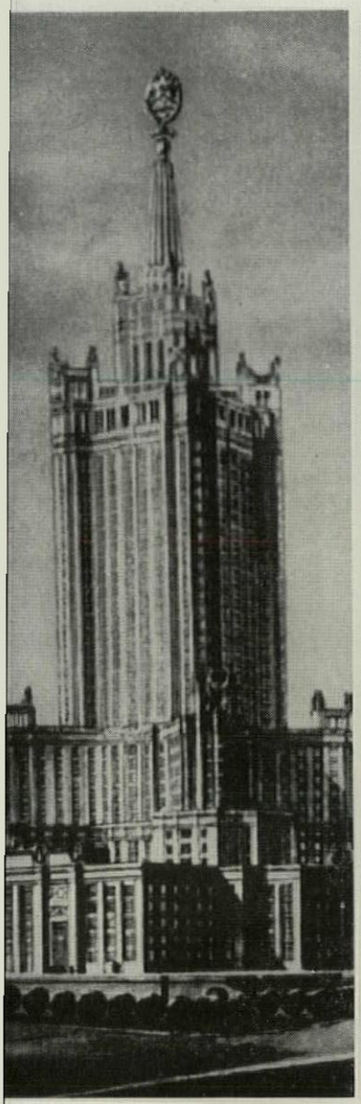
Sun and shadows romp with children on their rooftop terrace. Dominated by a huge ventilator, the sculptural pattern plays a cylindrical chimney against a long parapet (right) and a cubical elevator penthouse against the zigzag of concrete steps (left).

On the roof: a playground of sculptural forms in rough concrete



Playful architecture is joined by distant mountains in a game of contrasts and similarities. Like all the other parts of the building the roof structures feature a bold and unashamed use of unsurfaced concrete. Comments Le Corbusier: "It weathers with time till it resembles the rock masses of the neighboring mountains which, in fact, have supplied the greater part of its content."

Above the wading pool (opposite page) is the theater whose windows are shuttered by a row of huge concrete louvers similar to those which shade the building's seventh- and eighth-floor "shopping center" (photo, p. 157). The labyrinthlike walls separate sitting areas for mothers and small children.



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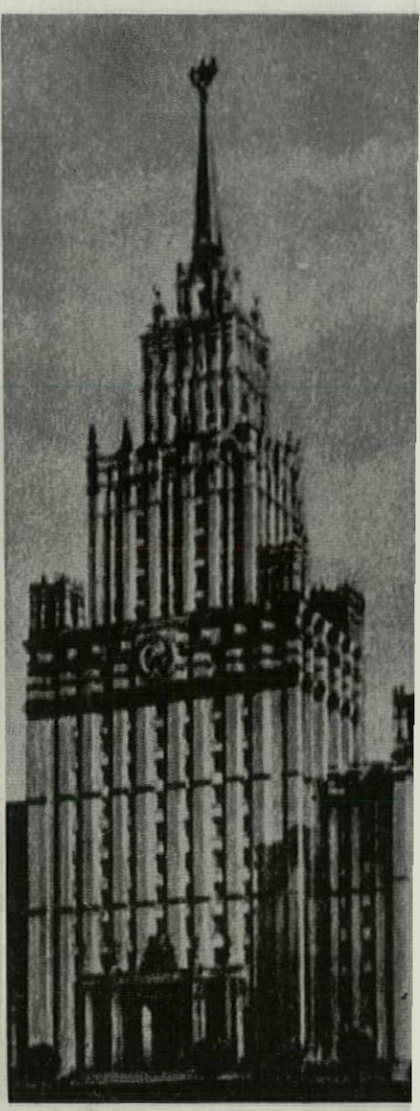

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Moscow's eight new Woolworth Buildings

It was inevitable that the Russians would some day invent the Woolworth Building! And they have done it, not once, but eight times. And all in one place—Moscow!

These eight Woolworth towers now nearing completion are the results of the tall building spree begun by the Soviets shortly after World War II. Their similarity and their 500-year-old Gothic verticality suggest that the shape and appearance of Russia's modern buildings are affected more by the official dictates of the Kremlin than the imagination and good sense of her architects. History proves it.

Prior to the Communist regime, Russia's only tall buildings were the towers of its fortresses, monasteries, churches and municipal buildings. But in 1932 the Council of Builders for the Palace of the Soviets resolved that "it is necessary to overcome squat construction by development of daring tall architecture." The proposed palace (it is still only a proposal) was therefore to be the tallest building in the world, crowned with a huge statue of Lenin. It was to be the outstanding structure in the program for modernizing Moscow's architecture and skyline.

Next stage in Russia's program of architectural loftiness came in 1947, when the Council of Ministers with Stalin's approval decided to erect the eight tall buildings shown above. The Council's decree specified that "the proportion and outlines of the structures must be original. In their architectural composition they must harmonize with the historically developed architecture of Moscow as well as with the future Palace of the Soviets. To this end, the buildings must not copy the design of foreign multistoried buildings. . . ."

In discussing their tall-building architecture, the Russians continually emphasize that it differs radically from American skyscraper design. For example, the new edition of the *Great Soviet Encyclopedia* says:

"American skyscrapers are the result of the ugly system of capitalistic building methods in cities, of conditions of private land ownership, speculation with land and a passion for publicity by competing firms. They are huge, shapeless buildings looking like towers and are foreign to the surrounding smaller structures. They are chaotically crowded

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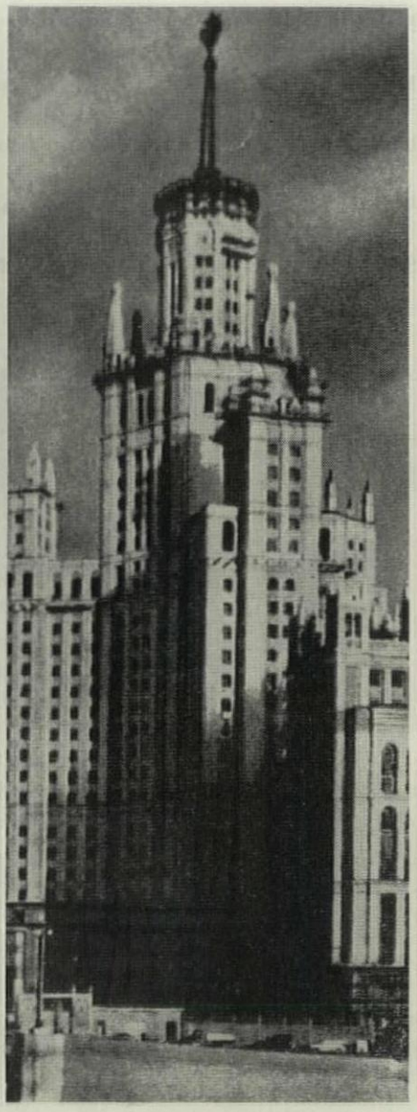

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The line-up: 1) Office tower, 32 stories high, is on hank of Moscow River near Kremlin. Low first tier, only five stories high, covers entire city block. 2) Apartment-hotel, 30 stories high, also faces Moscow River. Central tower contains 1,000 hotel rooms; lower tiers, 250 apartments. 3) Hotel, one of smaller units in Moscow's tall building program, contains 358 rooms. 4) Office-apartment building stands at Red Gates. 5) Apartment building (420 units) on Square of the Revolt consists of one big tower flanked by smaller ones. 6) Apartment tower, 34 stories high, contains 364 units, is 582′ above ground at tip of spire. 7) Central tower of state university is 38 stories high, dominates Moscow's Lenin Hills (see also p. 196). 8) Office building on Smolensk Square is 27 stories high, air conditioned and has 28 elevators.

in the business center of the city, making the city's outline ugly and turning streets into canyons deprived of light and air.

"In contrast to the skyscrapers, which are built by their owners to get maximum profits, Soviet high buildings are designed to serve the interests of the workers. High Moscow buildings include the university, government establishments, hotels and apartment houses. Rising as high as 275 meters, they are freely situated on spacious squares at a crossing of radial thoroughfares and surrounded by parks.

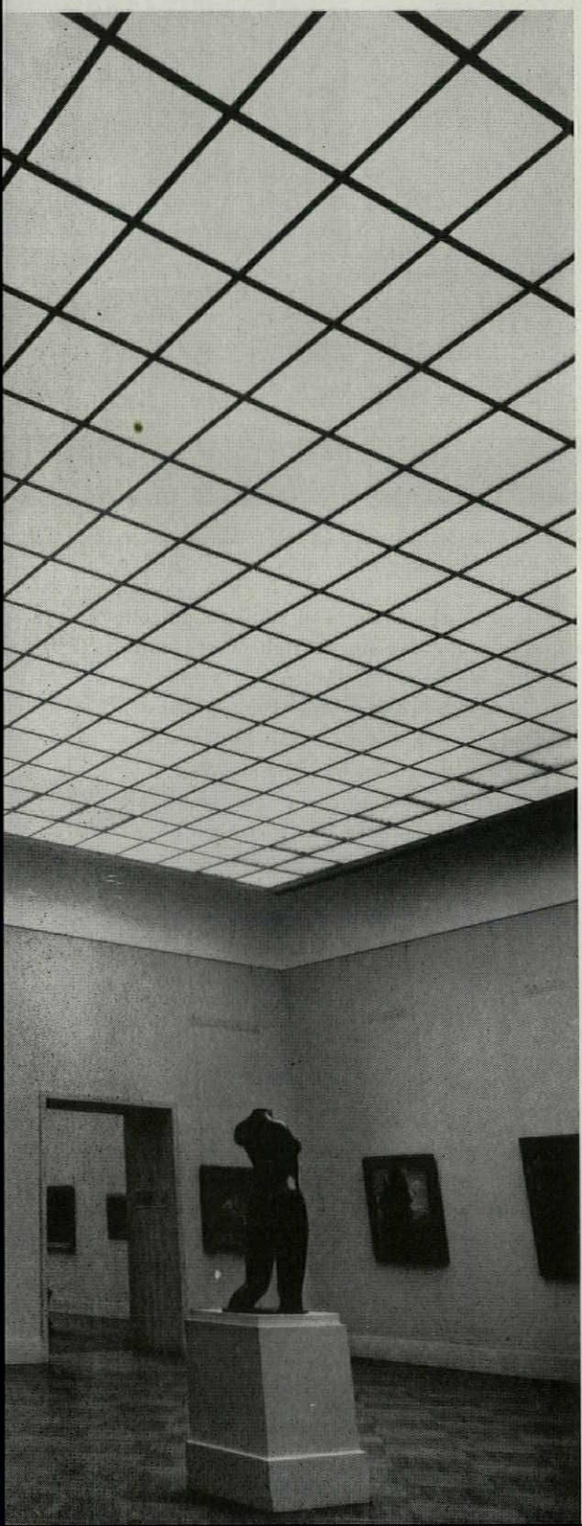
"Six- and eight-story smaller towers (surrounding the main section of the Soviet high buildings) provide a transition from the general line of lower houses and buildings in the area to the dynamic uprush of the main tower and organically unite it with the surrounding architecture. The city's architecture thus becomes a harmonious whole, enriching its outline and adding to its new magnificence.

"Locating new tall buildings in different districts of the city helps realize one of the basic principles of socialist-

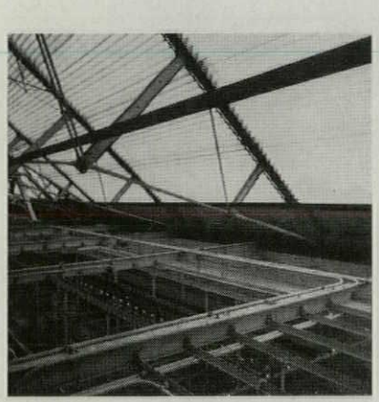
continued on p. 196

BUILDING ENGINEERING

1. **Balanced lighting for art museums**
2. **Economical mechanical plants for hospitals**
3. **Light, intersecting-arch framing for wide-span auditorium**
4. **Vibration technique for packing foundations into loose sand**
5. **Speedy drilling for low-cost clay foundations**



Flood of daylight bathes typical gallery through its luminous ceiling. How this and comparable night lighting are obtained is shown (at right).



By day natural light is filtered to glass diffusing ceiling through adjustable plastic louvers to give maximum daylight without glare.

By night fluorescent tubes supply over-all lighting to gallery while alternate spots and floods direct incandescent light at pictures.

Photos: R. Meek

1. MUSEUM LIGHTING BY DAY AND NIGHT

Art gallery combines louvered daylight, incandescent spots and supplementary fluorescent to give new sparkle to old masters

▸ *Modern lighting techniques can be used to dramatize art objects without distorting their appearance.*

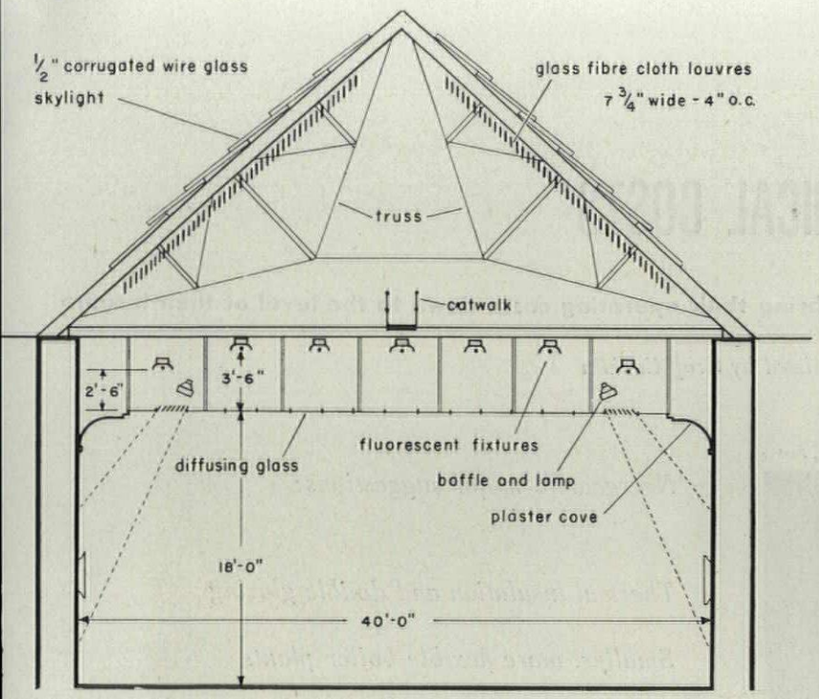
▸ *Rigid uniformity of lighting values in a gallery would be oppressive and monotonous.*

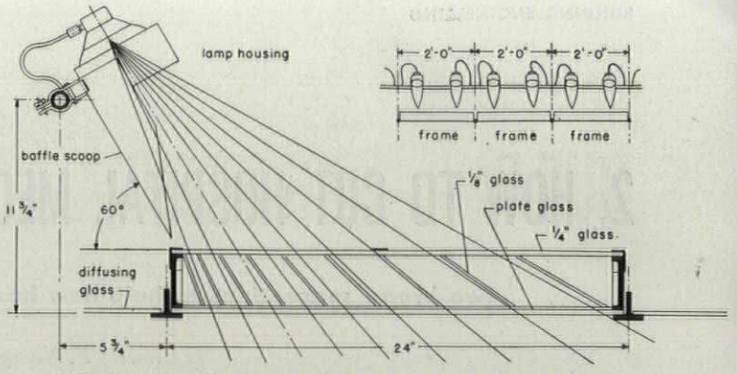
▸ *Variations in both color and intensity of daylight suggest use of controlled daylight for ideal visual enjoyment.*

▸ *For paintings the ideal for good seeing requires that the level of illumination on the horizontal working plane equal that on the vertical working plane.*

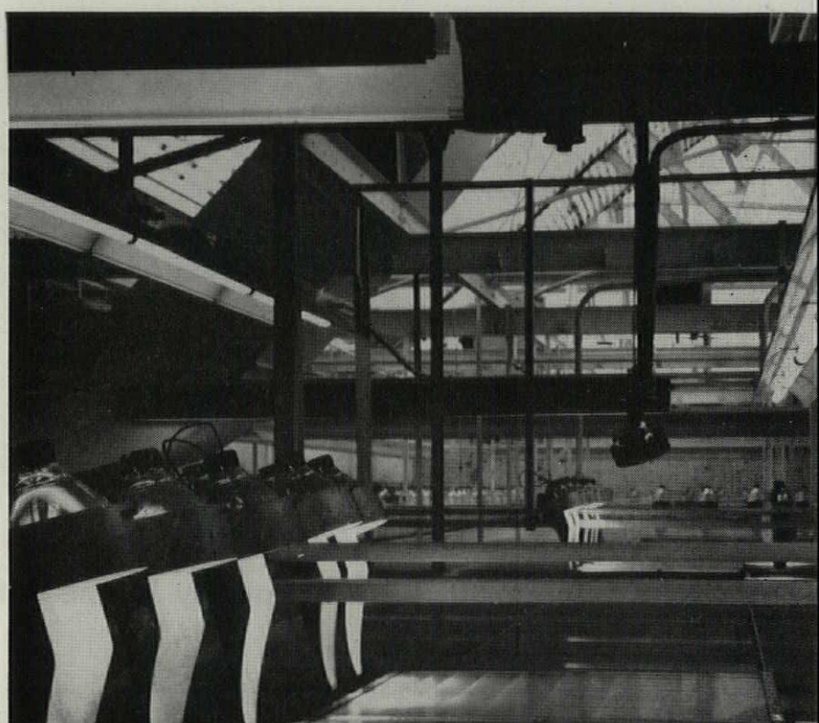
These statements by Lighting Engineer Laurence S. Harrison sum up the thinking behind his new lighting for 30 upper galleries at Manhattan's Metropolitan Museum of Art. The result of six years of intensive research and several trial runs in demonstration galleries, this lighting system uses three-way illumination for all exhibits—daylight, primary incandescent and supplementary fluorescent lighting.

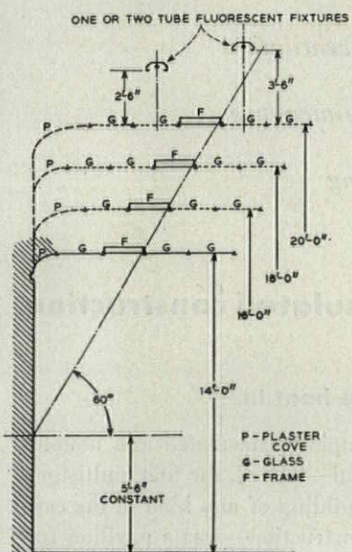
Daylight is preferred when available. From vast skylight attics it is diffused down to each gallery through 2′ squares of water-white tempered glass. To avoid glare exces-





Diffusing glass louvers and scoops protect viewers from glare of incandescent lamps.





Directional incandescent lamps, marked "F" in diagram, are aimed so light hits wall at 60° to horizontal to minimize reflections. Light intensity on walls is slightly higher than intensity away from walls. All glass is tempered to break into fine granules if accidentally damaged. Photo-electric cell controls are being studied for skylight louvers (above).

sive sunlight is controlled by oversize Venetian blinds placed against the sloping skylights.

Rows of incandescent projectors supply the primary lighting for wall exhibits. Aimed to strike the walls at a point 5½′ high and at an angle of 30° to the vertical, these 150-w. lamps, alternating spots and floods 12″ o.c., provide good illumination for paintings with minimum surface reflections to harass the viewer. Further, these lamps are hidden from view by sloping louvers of water-white tempered glass (see diagram) which are enclosed in panes of glass to save cleaning.

Supplementary fluorescent lighting for nighttime use is supplied by rows of 40-w., 48″ single-lamp fixtures spaced 4′ to 7′ apart and 3′-6″ above the diffusing glass. For optimum color rendition these are "de luxe" lamps containing deep red phosphors to modify the strong green-yellows of the mercury lines in fluorescent light.

On a sunny day the incandescent lamps are rarely needed; on a cloudy day they give valuable emphasis to the paintings while there is still enough daylight for the gallery proper. At night fluorescent light substitutes for daylight to avoid dark areas in the ceiling. The paintings then receive two thirds of their illumination from incandescent lamps and one third from fluorescent. This mixture produces a color temperature of between 3,600° and 4,000° K. in which the incandescent at 2,800° K. is more than enough to overcome the remaining green-yellows in the fluorescent light.

Little emphasis is placed on actual foot-candles, but to relieve eye strain for students using notebooks the intensity of illumination on the horizontal working plane is kept roughly equal to that on the vertical exhibition plane. Brightness contrast between each painting and its surrounding is kept as low as possible with any variation accentuated in favor of the painting.

Gallery fixtures and costs. The photos (left) show a typical gallery both by day and night. The ceiling height of this 40′ x 40′ gallery is 18′. It contains 112, 150-w. incandescent lamps and 52, 40-w. fluorescent fixtures, which together use some 11.8 w. per sq. ft. to give about 30 foot-candles on the walls and 10 to 12 foot-candles on a horizontal plane 5′ from the floor. Including diffusing glass and supports, the total cost of the installation for this gallery came to about $6.50 per sq. ft. including steel purlins, ceiling glass, glass louvers, lighting fixtures, supports and wiring, but excluding the fibrous glass louvers for the skylight.

This new lighting system is only part of the Metropolitan's $9.6 million remodeling and building program, which includes provision for future air conditioning, 14 new galleries, new parquet flooring, a new hanging system and considerable redecorating with light-colored wall finishes and figured damask hangings. The lighting system was developed by Laurence S. Harrison, consulting engineer, in cooperation with the architects, Robert B. O'Connor and Aymar Embury II.

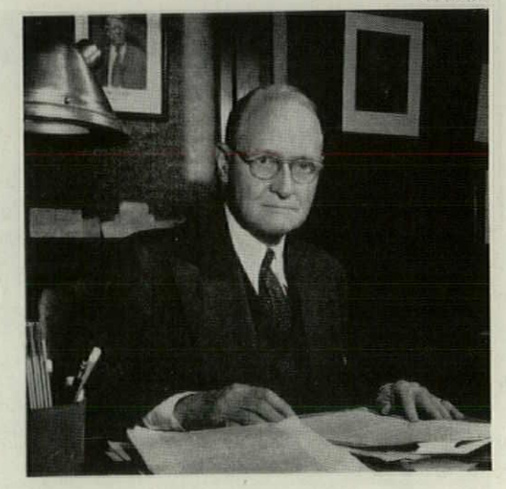
2. HOW TO CUT HOSPITAL MECHANICAL COSTS

Two broad suggestions to help new hospitals bring their operating costs down to the level of their income

—by Charles F. Neergaard, assisted by Groff Conklin

The author, senior partner of Neergaard, Agnew, Craig & Westermann, hospital consultants, has helped plan more than 300 new hospitals in the US and 21 foreign countries, beginning in 1919—a record that gives him the unofficial title of "dean of hospital consultants." He has also advised scores of existing hospitals on ways to cut operating costs. His comments here are drawn from both these fields of consultation.

P. Parker



Neergaard's major suggestions:

Thermal insulation and double glazing

Smaller, more flexible boiler plants

Limited air conditioning

Reasonable mechanical ventilation

Outside contracts for maintenance

Panel heating and cooling

1. Keep heating-plant capacity in line with realistic standards for insulated construction

Here are some astonishing figures to digest:

▸ In northeastern US, 18 large hospitals had a combined operating deficit in 1952 of $4,687,020—*excluding owning costs and depreciation.*

▸ These 18 hospitals, ranging from 281 to 635 beds, spent from $172 to $463 per bed for power, light and heat in 1952: an average of $289 per bed.

▸ Four hospitals (in northeastern US and Canada) with insulated walls and roofs, double-glazed windows and efficiently designed heating plants spent from $74 to $163 per bed on heat, power and light in 1947, a colder winter than 1952. At that, three of the four had only about one half of their buildings insulated and double glazed!

This offers a big clue to where a large part of the deficit in typical hospital-plant operation originates. If all new hospitals had complete insulation and double glazing, and flexible, correctly sized mechanical plants, operating costs for power, light and heat could probably be cut by two thirds. Actually, hospitals with these features should never spend more than $100 per bed per year for fuel and power.

Insulation and double glazing add to construction cost, of course. But much smaller boiler and radiation requirements substantially offset this cost and, even more important, fuel consumption is cut for the life of the building.

What are the major reasons for existing waste?

▸ Too many architects still fail to recognize the value of complete insulation and double glazing as a way to reduce mechanical plant installation and operating costs.

▸ Too many engineers still design heating plants without due weight to over-all economy—and even specify almost the same equipment for insulated buildings as for noninsulated structures.

▸ Too many boards of trustees fail to investigate the ability and accomplishments of the consulting engineer. Usually he seems to be chosen—whether by the trustees or the architect—on the basis of how many hospitals he has worked on, not on how well his hospitals have worked.

To insure a genuinely economical mechanical plant, trustees, architect, engineer and consultant must work in a combined task force to explore all possibilities for reducing costs without reducing safety or amenity.

Keeping the heat in

The first completely insulated and double-glazed hospital—indeed, the first multistory steel frame building of any kind in the east with such construction—was a pavilion for Washington County Hospital, Hagerstown, Md., built in 1936. For insulation, 3″ fireproofed fiber-and-cement blocks were used with plastering directly on the blocks. Prototypes of today's double-insulating glass were used for fenestration. The resulting saving in boiler, piping and radiator sizes paid for almost all the extra construction costs; the small overage was liquidated by fuel savings early in the first heating season. Thereafter heating fuel requirements were less than half what they would have been otherwise.

A Toronto hospital with 547 beds and only half the buildings insulated spent $40,600 for power, light and heat in 1947. An uninsulated hospital with 520 beds in the New York City area spent $163,000, four times as much.

Note that summer temperatures in insulated buildings average 8° lower than in uninsulated buildings and insulation cuts the size of the heating plant in half.

One manufacturer of double glazing has supplied more than 100 hospitals, from Anchorage, Alas., to Tallahassee, Fla., with

some or all windows. Whether these hospitals have adequate wall and roof insulation and whether their mechanical plants have been suitably scaled down in size is not easily determined.

From our experience, I wager that in most cases their boiler and radiation installations have been designed either as if there were no insulation or double glazing at all or, at best, without full consideration of their value.

Unfortunately there has not been general recognition of the rational standards for radiation, heat and power requirements recommended by C. E. Daniel, consultant to the Division of Hospital facilities of USPHS. Most installations in uninsulated hospitals, and a great many in any list of insulated hospitals, bear no relation at all to these standards, and are enormously wasteful.

Daniel's standard for adequate radiation in hospitals provides 1 sq. ft. of radiation to 80 cu. ft. of space in an uninsulated structure; and to 160 cu. ft. in a thoroughly insulated and double-glazed building.

It is plain that hospitals with mechanical plants designed by traditional formulae are 50 to 100% overdesigned in boiler capacity and radiation area.

For instance, an uninsulated Yonkers hospital on a windswept hill has 48 sq. ft. of radiation in a typical room with ¾" connections. A few miles away, another hospital in a sheltered valley has 62 sq. ft. of radiation with 1¼" connections in rooms of identical size and fenestration! The insulated wing of the Hagerstown hospital (mentioned above) has only 28 sq. ft. of radiation in the same size rooms with windows exactly the same dimensions as those in the other two hospitals. Insulation can cut radiation requirements drastically but so—to a lesser degree—can rational design in an uninsulated building!

Steam requirements 100-bed hospital

Use	*Maximum horse power*	*steam pressure*	*Per day at varying loads*
General heating system	68	2	24
Special heating, operating and delivery rooms	2	2	6
Domestic hot water supply	10	2	16
Laundry: hot water	15	2	7
steam	11	100	7
Kitchen and dishwashing	6	2-20	6
Sterilizing	10	40	5
Total	122		

As derived from the figures in the table (above) the Daniel standard for boiler plants indicates an average heat and power requirement for uninsulated hospitals at 0° design temperature of 1.2 hp per bed for all purposes where steam is used, and 0.7 hp per bed for heat alone. Fully insulated hospitals require about half that capacity.

Perhaps the simplest way of reducing boiler plant in hospitals is to rationalize the type of boilers according to actual need. Using this technique, a 100-bed uninsulated hospital would have one 70-hp steel hot-water heating boiler and two 40-hp 125-lb. boilers for a total *including standby* of 150 hp. Much less would be needed in insulated structures.

The almost universal custom has long been to install at least two high-pressure boilers, *each* sufficient to carry the *total* winter load. For a 100-bed uninsulated hospital, the *minimum* usual installation is two 100-hp high-pressure boilers.

The rationalized installation saves the cost of 50 hp. USPHS points out that "As the hot-water heating boiler can be reconditioned in summer, a breakdown should not be anticipated; but this contingency

continued on p. 202

2. Hold air conditioning within the bounds of realistic need

The spectacular growth in popularity of summer air conditioning makes it essential for hospital people to consider whether general air conditioning should be included in any new hospital—or at least whether the structural requirements for it should be provided so it can be added later.

There can be no doubt that air conditioning is a good investment for restaurants, hotels and stores.

It would follow that air conditioning must be a logical addition to hospital facilities if the economics of hospital operation are in any way similar to those of commercial enterprises.

But they are not.

To see why not, following are some comparisons between hospitals and hotels—the closest commercial parallel.

▶ It is not considered profitable today to build a hotel at a construction cost of more than $1.50 per cu. ft. including air conditioning. *But general hospitals now cost more than $2 per cu. ft. without air conditioning.*

▶ In the average hotel nearly 68% of floor area is directly income producing from bedroom and other space rental. *In the average hospital only 30% can be called directly income producing from bed and room rentals and few patients pay the full cost of their care.*

▶ The typical hotel manager employs an average of one employee for every 3⅓ rooms, about half of which are double. *Payrolls of 18 large eastern hospitals show an average of 1.77 employees per bed; a ratio more than eight times as high. And the national average wage for hospital employees is considerably higher than that of hotel employees.*

These figures give some idea of why hotels are able to make money and provide air conditioning without charging more than their patrons can pay, while hospitals minus air conditioning are already operating above the patients' ability to pay.

So much for economic analogies or arguments based on parallel use.

No one in his right mind, however, would suggest that hospitals forego anything that will increase their usefulness to the ill. The real question is whether air conditioning qualifies from this standpoint.

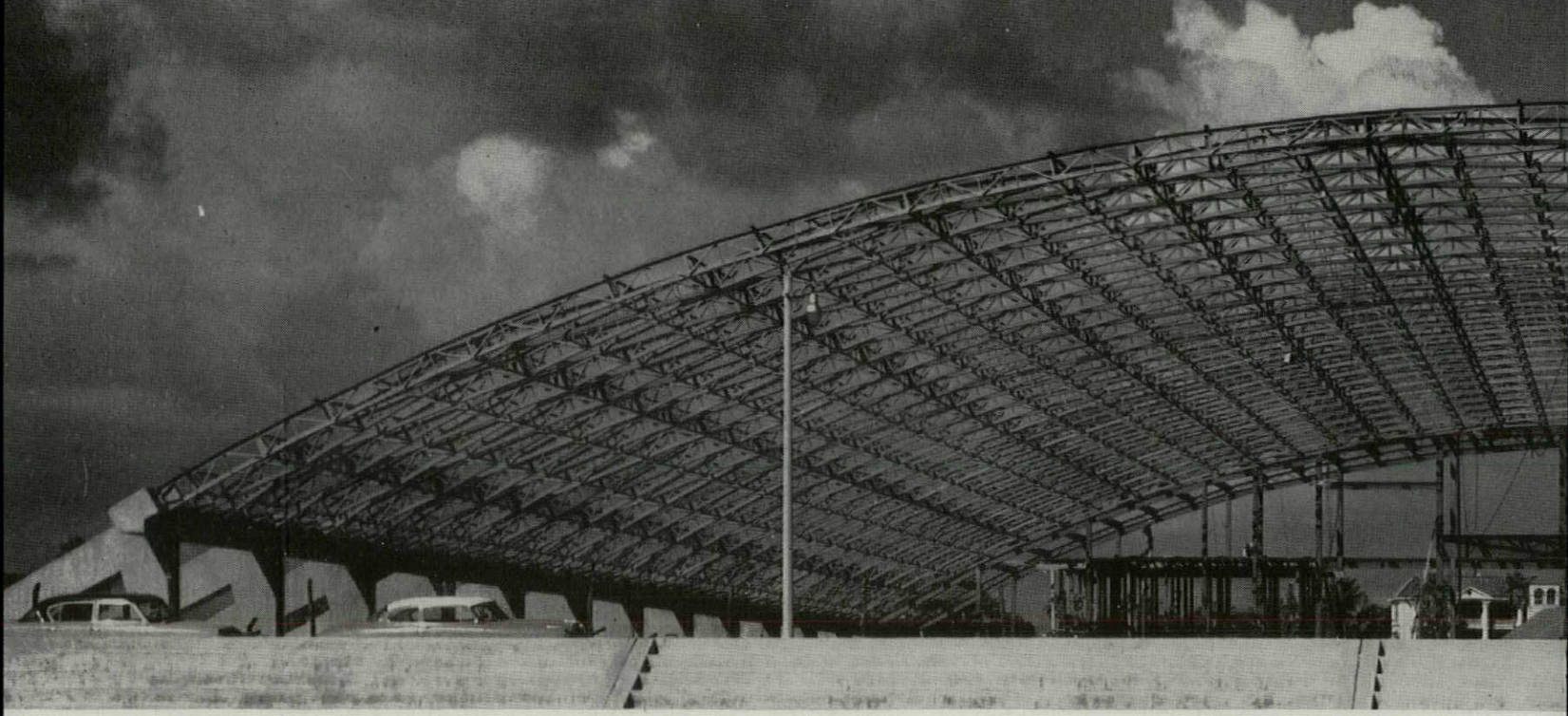
Some years ago I explored the medical evidence accumulated on this subject during a five-year period. The survey then showed (and no factual information since has turned up to alter the conclusions) that cooling, humidifying and dehumidifying is of measurable value in surgeries, delivery rooms and recovery wards. It contributes to the efficiency of the surgical staff, to the immediate postoperative welfare of the patient, to the temporary relief of asthmatics and certain other allergy sufferers.

But elsewhere the only value of air conditioning in hospitals is increased comfort for patients and possibly improved comfort and morale of staff.*

So in hard terms it comes down to this: can hospitals afford *complete* air conditioning for comfort only? And can they take on a high year-round expense to combat a discomfort felt only a small part of the year in most of the US? During the hotter-than-average summer of 1953, for example,

continued on p. 202

* Those who would explore the physical and physiological aspects of air conditioning will find a wealth of valuable data in the publications of L. P. Herrington, director of the John B. Pierce Foundation Laboratory of Hygiene, Yale University; and C. P. Yaglou of the Harvard School of Public Health. Their studies deal with such matters as air-borne pollution, odors, volatile organic matter, drafts, infections carried by air, etc., which are of special importance to hospitals.



3. LAMELLA STEEL VAULT SPANS 224′, YET IS ONLY 2′ THICK

Continuous frame of prefab members weighs 8¼ lb. per sq. ft., costs $1.85 per sq. ft.

The widest continuous steel roof on record spans the new 224′-wide, 290′-long Municipal Auditorium at Corpus Christi, Tex. The frame was erected in 25 days at a cost of $448 per ton. Low weight of the frame, 8¼ psf compared with 11 psf for conventional steel arches, held the unit cost to $1.85 per sq. ft. Another reason for this low unit cost: extensive jig fabrication is possible in lamella framing, and minimum falsework is required—none at all once the first span is joined.

Lamella framing is composed of a series of comparatively short, identically curved sections woven into a diamond pattern to form a continuous arch in which all members are mutually supporting. Here the arch consists of 350 lamella joists, 39′ long and identical in construction except for right and left hand connections, and 900 purlins of only two types, both 12′ long. The lines of joists are erected 12′ apart and on a skew (in plan, angled 19° each side of a center line across the arch) to form the diamond pattern in which successive arches brace one another. Rows of purlins are placed between the joists at 6′ intervals to provide lateral bracing and to carry a welded metal deck, insulation and built-up roofing.

All members are shop-welded, including the bolts which are shop-welded in place to save time in the field. High-strength friction bolts are used for primary connections between joists and ordinary bolts for the purlin connections; afterward, the primary connections are reinforced with cover plates welded top and bottom.

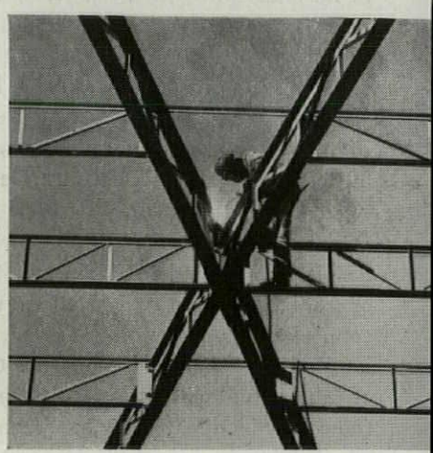
A scaffold is required to support the structure until the first two lamella arches are joined at midspan; succeeding arches are erected by crane with the structure carrying its own weight as the "weaving" progresses. To reduce excessive deflections of the cantilevered free end of each frame during erection four temporary columns are used and are moved as the structure develops. The 224′ arch is carried on a reinforced concrete sill beam with the thrust taken by concrete buttresses spaced 24′ o.c. Rise of the arch is 30′ at midspan to a height of 42′ above floor level.

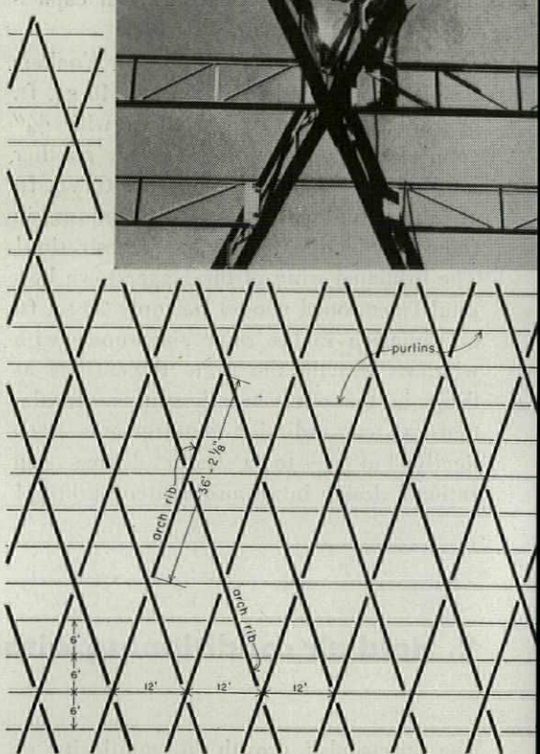
Design analysis

This lamella roof is designed as a two-hinged arch using conventional arch analysis. For calculation, its 224′ span is adjusted 1) for the 19° skew of the arches (design span: 224′ divided by cos 19°), and 2) for the mutual bracing of the arches plus the additional bracing from the latticed purlins (which reduces the 1/r factor to permit the use of higher working stresses). Design loadings: dead load 22 psf; live load 15 psf and wind load as per ASCE Subcommittee No. 31 recommendations.

The designers are making further progress in the analysis of lamella roof construction as a continuous space structure with pinpointed supports along the sides. Preliminary conclusions indicate that the heavy sill beam can be eliminated and the dead load of the roof can be considerably reduced.

The Corpus Christi auditorium forms part of a municipal civic center designed by Architect Richard S. Colley. The lamella roof structure is designed by Structural Engineer G. R. Kiewitt of Roof Structures Inc. in association with Hale & Harvie, consulting engineers. Columbia Iron Works Inc. fabricated the steelwork and J. A. Walsh Construction Co. are the general contractors.

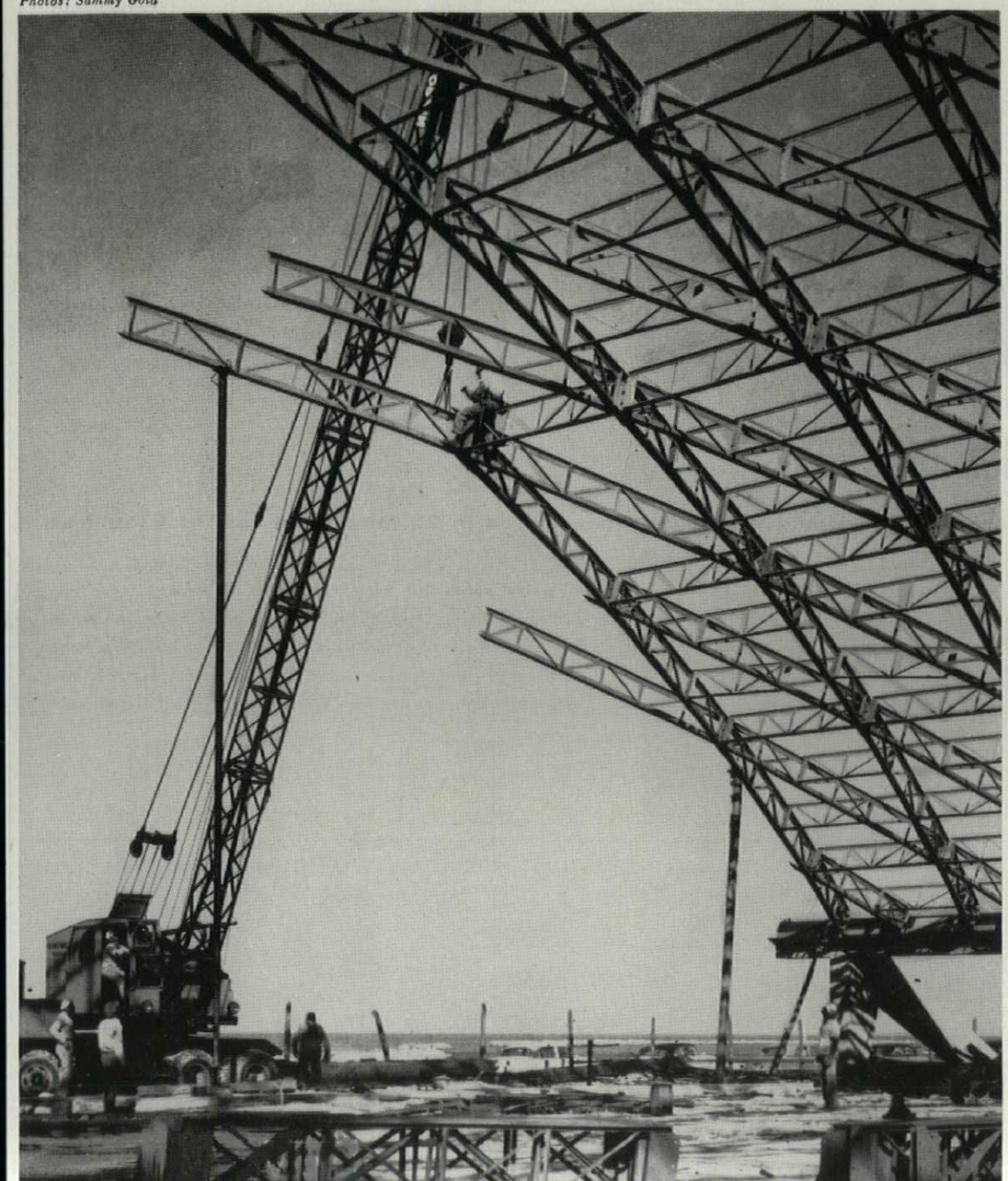


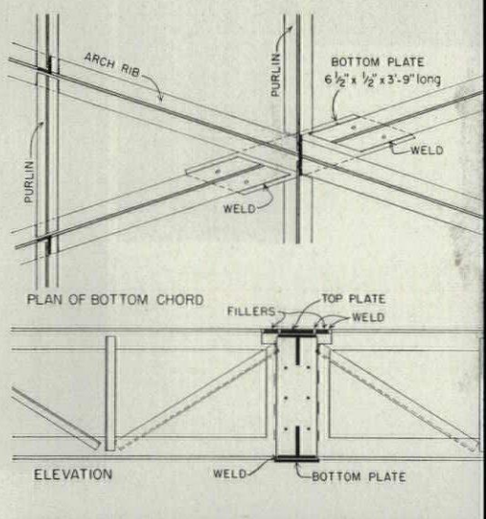


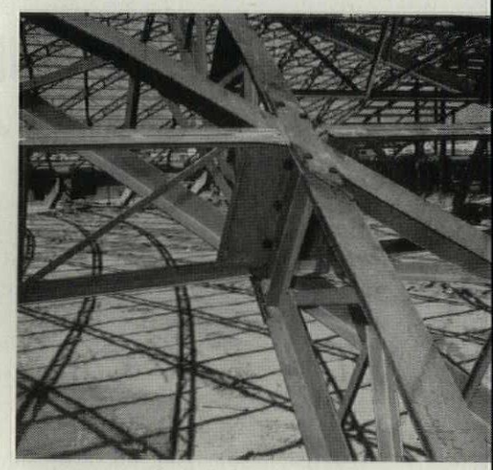
Open-web joists intersect at 38° angle. Each 24″ deep joist is shop-welded and field-bolted with high-tensile steel bolts, then reinforced with cover plates welded above and below connections.

Weaving progresses without scaffolding once the first two arch joists are joined. Temporary posts seen in photo are to avoid excessive deflections during erection.

Photos: Sammy Gold



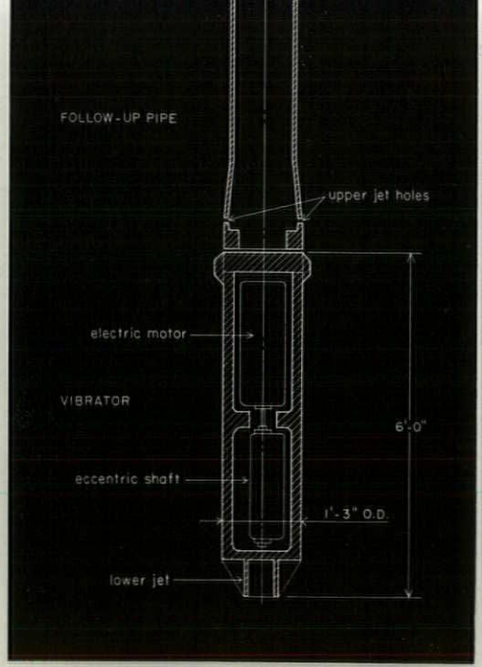




Identical connections throughout arch simplify erection. The 260 ton, 65,000 sq. ft. frame was completed in 25 days.

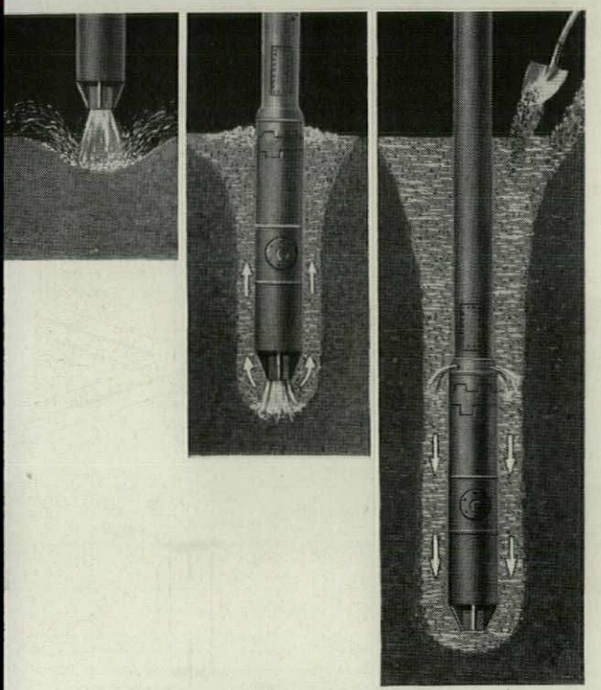
4. CONSOLIDATED SAND FOUNDATIONS

Vibration-compaction saves $250,000, permits building on shifting sands



Nobody recommends building upon sand, but to cut transportation costs, International Minerals & Chemical Corp. had to locate its $12 million phosphate plant near the phosphate deposits at sandy Bone Valley, Fla. There was no solid ground within miles. However, thanks to an imported compaction technique, this treacherous sand was successfully consolidated until its unreliable 2,000-psf bearing capacity became a reliable 6,000 to 8,000 psf. This saved an estimated $250,000 over steel piling, and the plant structures, completed several months ago, show no signs of settlement.

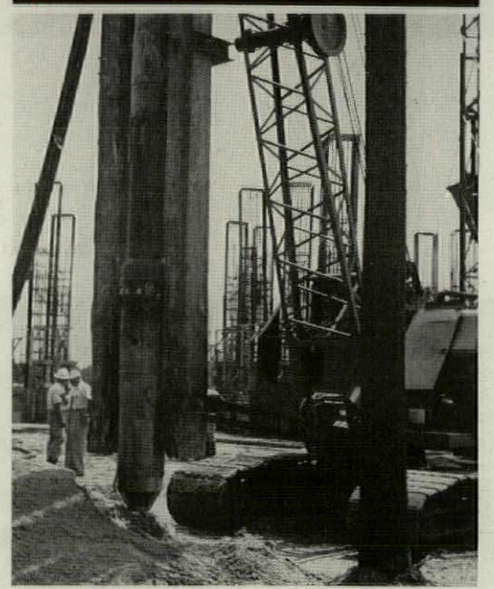
Consolidation sequence: 1) lower water jets churn up sand as the machine vibrates; 2) this causes the 12-ton machine to sink by its own weight; 3) when desired depth is attained bottom jets are closed and top jets opened to pack sand downward while additional sand is shoveled in.



The sand was consolidated by sinking a 12-ton vibrating pipe (25′ high and 15″ diameter) and withdrawing it slowly as the sand was compacted under the continuous hammer blows of the machine. More sand was added as necessary. A 1,800 rpm electrically driven eccentric in the pipe delivers a 10-ton centrifugal "blow" 30 times a second. Water pumped through the bottom of the pipe churns up the sand to aid sinking and through holes in the body of the pipe to aid consolidation during withdrawal. Degree of compaction is indicated by an ammeter which records the power consumed by the vibrator.

Since the machine is effective only for a radius up to 5′, the 13′-deep compactions were made 8′ o.c. throughout the 160,000 sq. ft. area of the plant. Time required: 20 minutes each.

The compaction process was invented in Germany by Sergey Steuerman and used here by Rust Engineering Co.



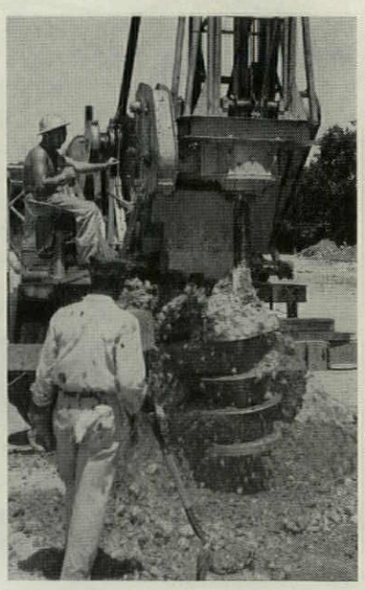
Twelve-ton vibration machine is suspended from crane, ready to start a fresh compaction, one of 3,350 made 8′ o.c. throughout phosphate plant.

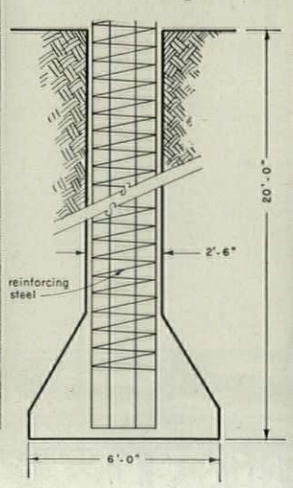
5. HIGH-SPEED FOUNDATION DRILLING

Footings 30″ wide and 20′ deep are drilled, reamed and foundations poured in 20 minutes at cost of $350 each

Heavy drilling equipment enabled 30″ column footings to be drilled 29′ deep in 9½ minutes at the Eugene Talmadge Memorial Hospital in Augusta, Ga. Four men drilled, reamed and poured 367 concrete footings at a rate of 20 per day for $350 each, claimed to be half the cost of piling and one third the cost of excavated footings.

The procedure: 1) the water table is lowered by pumping out drill holes around the perimeter of the site to avoid premature collapse of the sides of holes; 2) a 30″ hole 20′ deep is drilled with an oversize spiral bit driven at 100 rpm and raised frequently to clean out the cuttings; 3) a special tool reams a 6′-wide cone at the bottom of the hole; and 4) the footings are reinforced and capped and the foundations poured after each day's drilling.

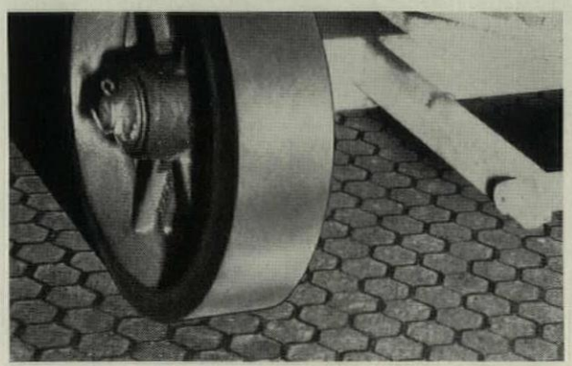




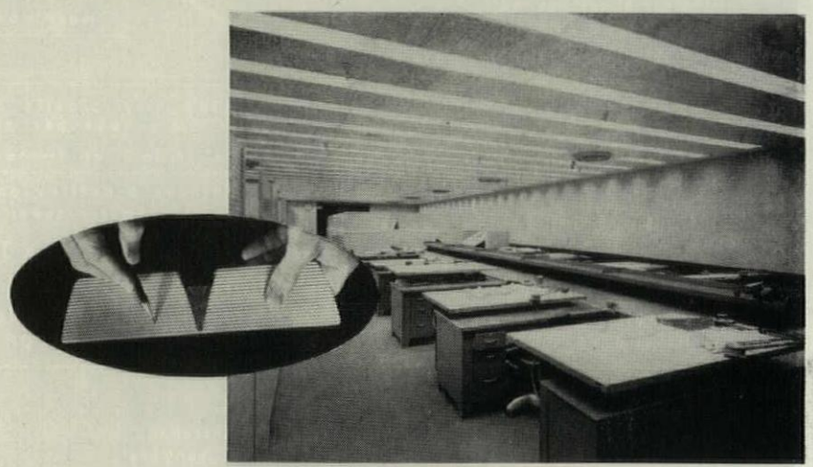
Oversize spiral bit (left) drills a 20′ hole in 9½ min. Bottom of hole is reamed out by special tool (below); reinforcing steel is then placed and footings poured. Footings: McKinney Drilling Co. Gregson & Ellis, architects; Harry Hunter structural engineer; George A. Fuller Co., general contractor.

NEW PRODUCTS

Blow-out panes of plastic for safety's sake in hazardous areas (see p. 232)

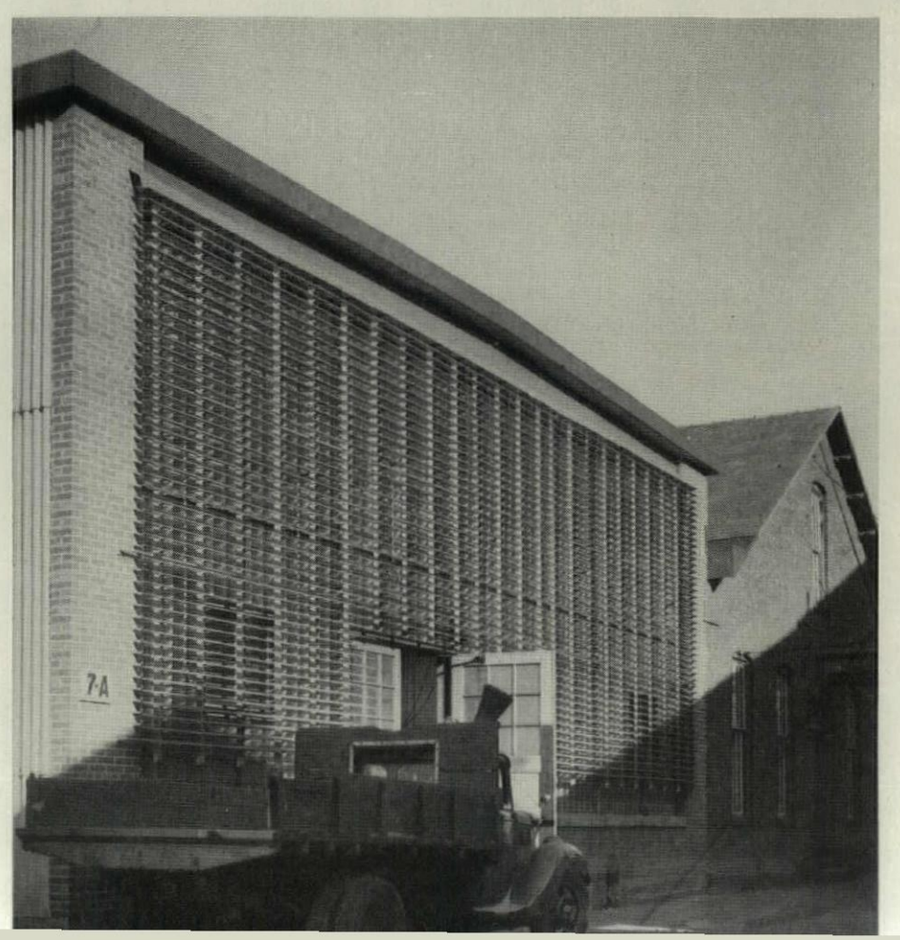


Heavy-duty floor will outlast factory (see p. 262)



Segmented fins take glare out of lighting troffers (see p. 238)

Outside aluminum blinds throw off solar heat, let daylight indoors



Outside blinds that can be adjusted to any angle from inside, *Riemco* awnings are a permanent part of the structure that can serve an industrial, hospital or school building every day of the year. In summer these heavy-gauge aluminum units can be counted on to deflect radiant heat. In fact, tests conducted by the manufacturer reveal a 15° to 20° temperature drop inside windows shielded by the louvers. Building owners have reported savings of 35% in operating cost of air-conditioned plants during hot spells, and such sun control devices can mean the difference between comfort and discomfort for occupants of older, un-air-conditioned structures. On overcast days, the fins can be tilted to reflect and diffuse daylight deep indoors. By turning a simple crank — usually mounted inside the windows—the louvers may be adjusted to admit any amount of light or none at all (a tiny flange on each fin assures complete closure when necessary).

Riemco units can be mounted to serve as awnings at a permanent pitch—13° is sug-

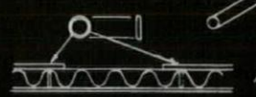
continued on p. 220

architectural forum

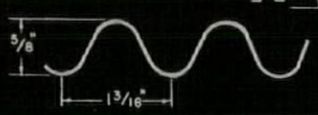
DESIGN STANDARDS AND DATA

SUSPENDED CEILINGS—CORRUGATED PLASTIC

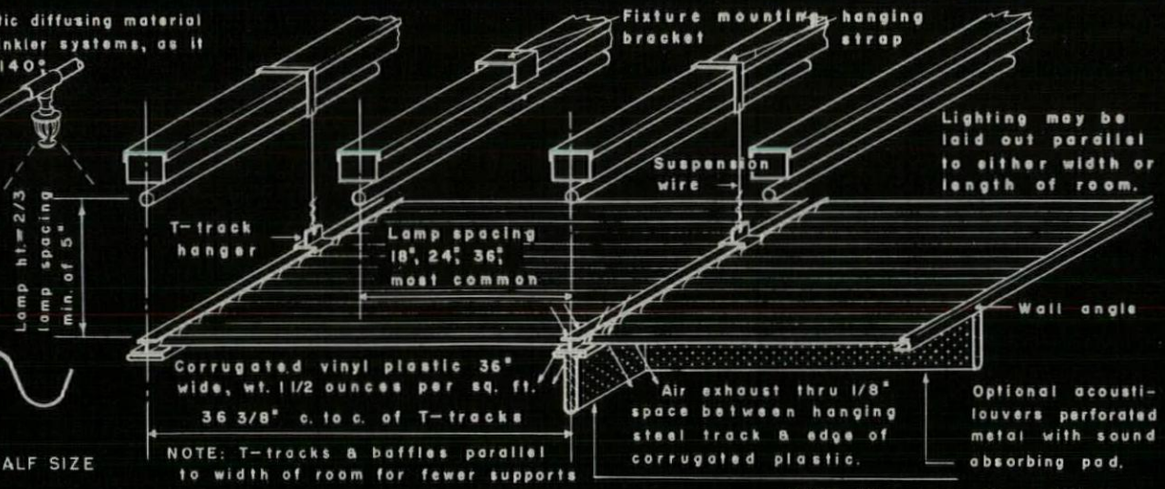
NOTE: This type of plastic diffusing material may be used under sprinkler systems, as it loses corrugations at 140° softens & falls out



Retaining rings hold corrugated plastic firmly in place at openings and at the beginning and end of each plastic run.



CORRUGATIONS AT HALF SIZE
Thickness = .007"

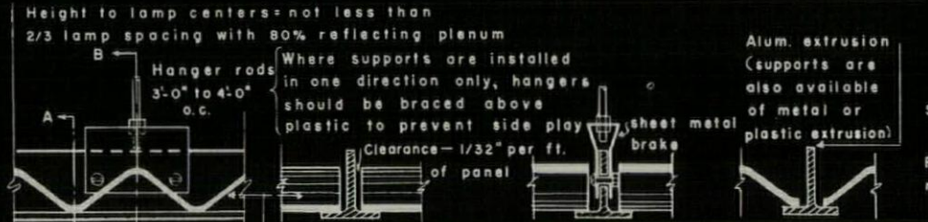


NOTE: T-tracks & baffles parallel to width of room for fewer supports

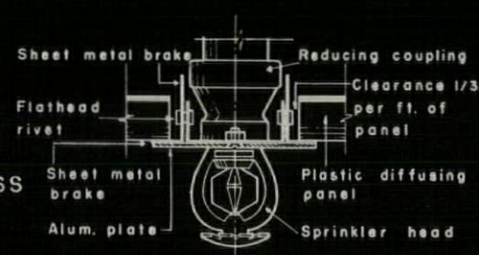
A LUMINOUS CEILING OF SELF EXTINGUISHING CORRUGATED PLASTIC WITH ACOUSTIC CORRECTION

THE PLENUM CAN BE USED FOR BOTH HEATING AND COOLING; DISTRIBUTION OF AIR CAN BE EFFECTED WITHOUT THE USE OF GRILLES OR DIFFUSERS.

NOTE: When both air conditioning and heating are supplied thru plenum, best results are obtained by use of sufficient returns placed properly high for cooling, low for heating.



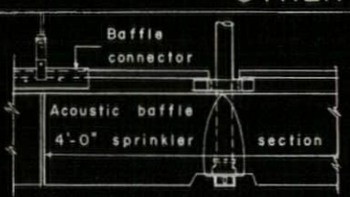
SCALE: 3" = 1'-0"



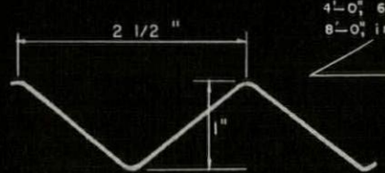
DETAIL OF SPRINKLER INSTALLATION

Corrugated 1" frequency, 3/16" amplitude	Maximum span 2'-6"	Supported 2 sides only — across corrugations
Corrugated 2 1/2" freq., 1" amp.	Maximum span 4'-0"	
Flat 1/4" thickness	Maximum span 2'-0"	Supported 4 sides
Formed coffer pans	Maximum span 5'-0"	Supported 4 sides

OTHER STANDARD SUPPORT DETAILS FOR PLASTIC CEILINGS

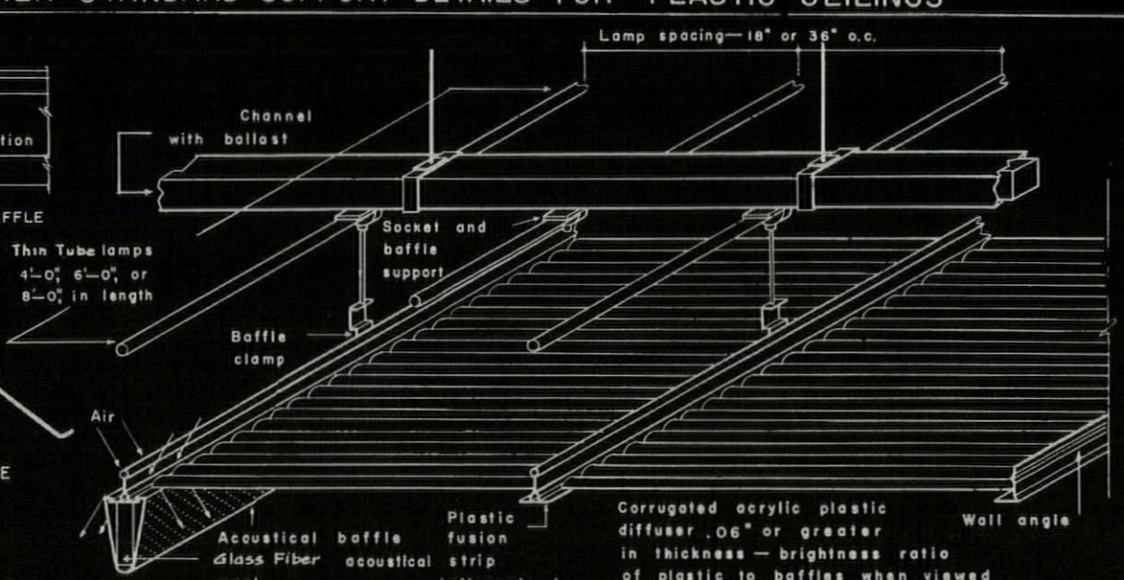


SPRINLER INSTALLATION IN BAFFLE



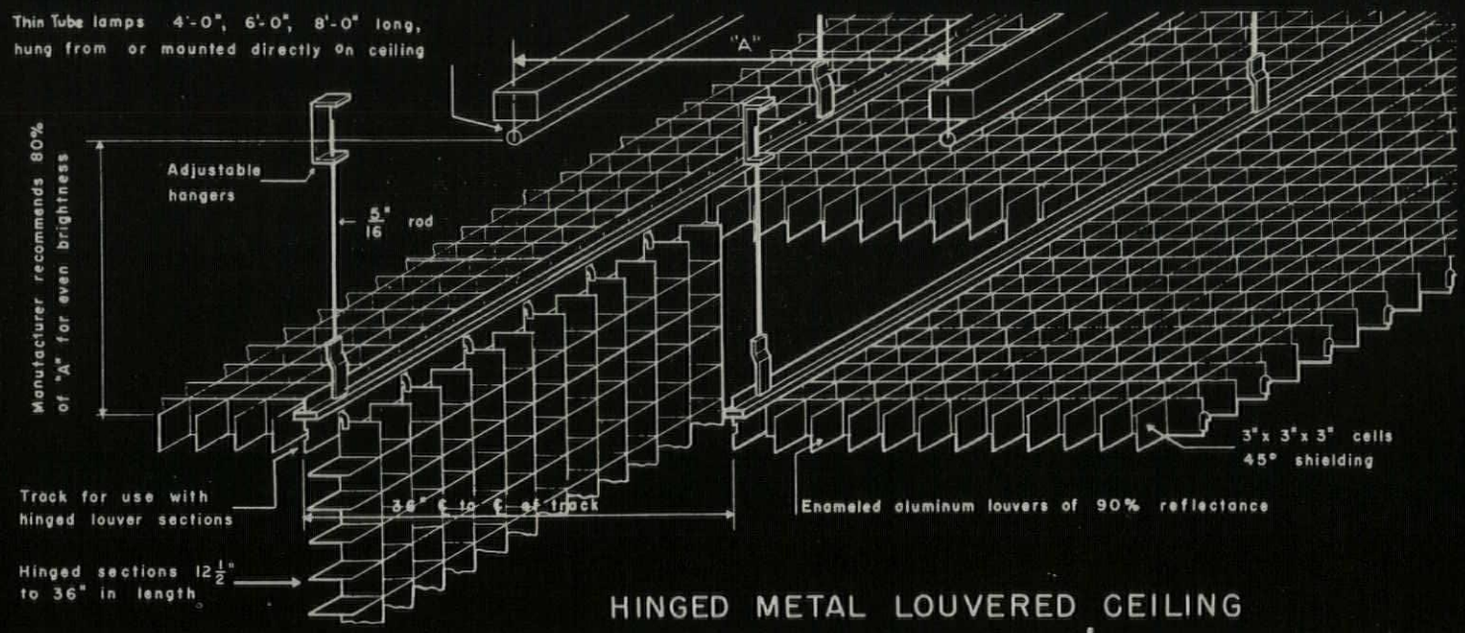
CORRUGATIONS AT HALF SIZE
Thickness = .06" or greater

Air passage — 3.2 sq. in. per sq. ft. of ceiling

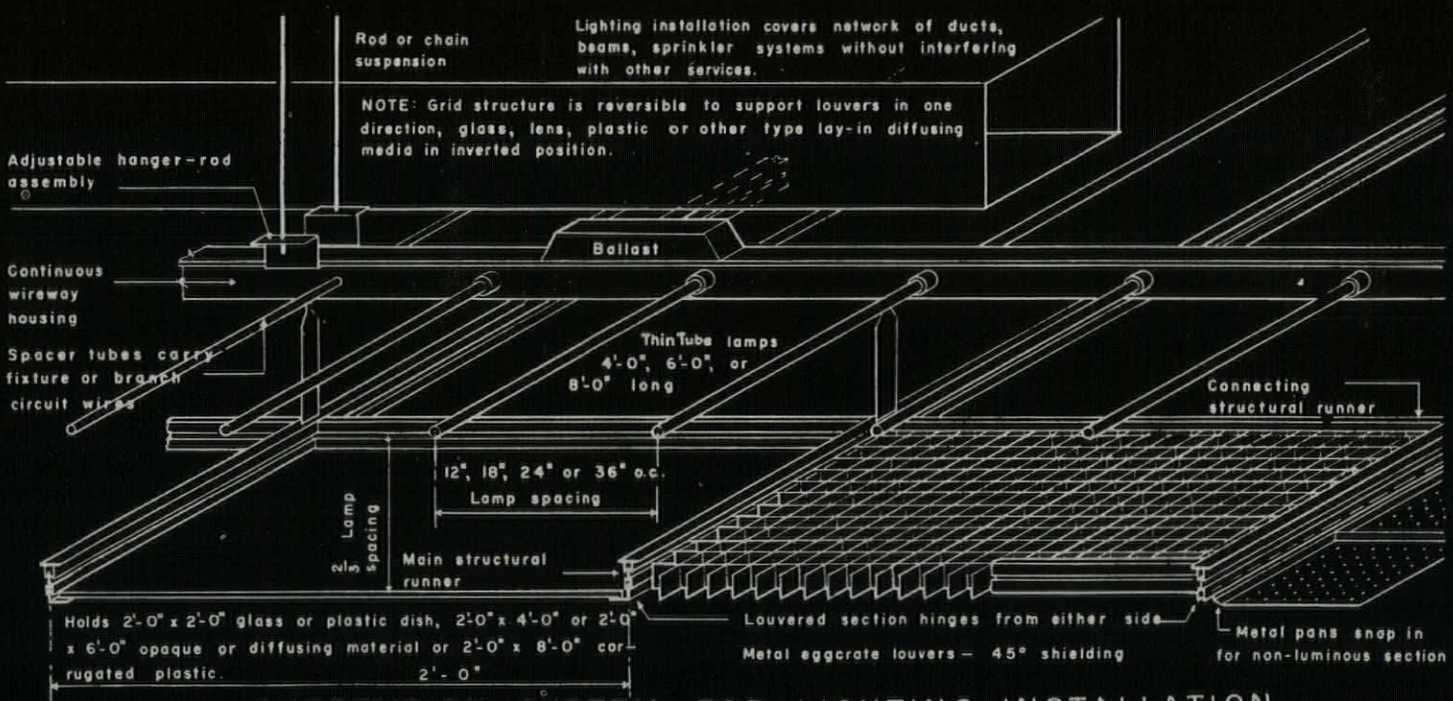


LUMINOUS CEILING SYSTEM OF CORRUGATED PLASTIC

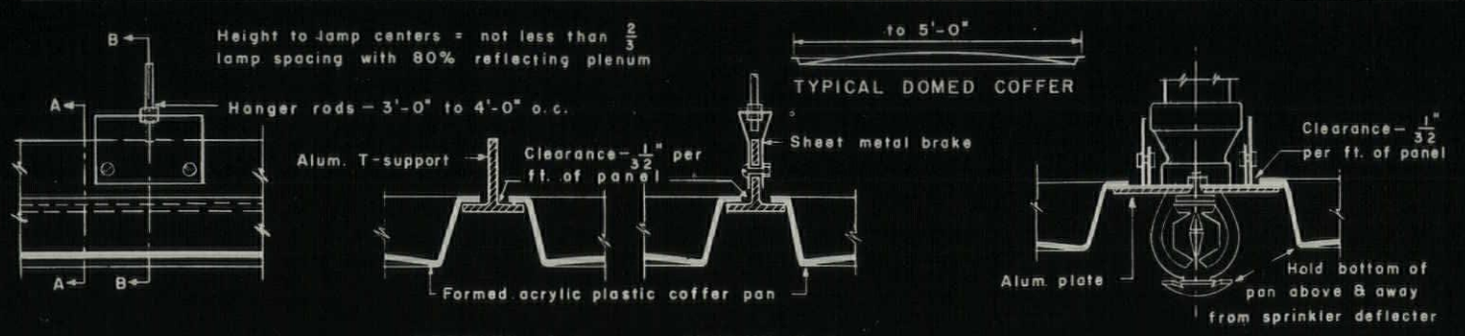
SUSPENDED CEILINGS—LOUVERED AND COFFERED



HINGED METAL LOUVERED CEILING

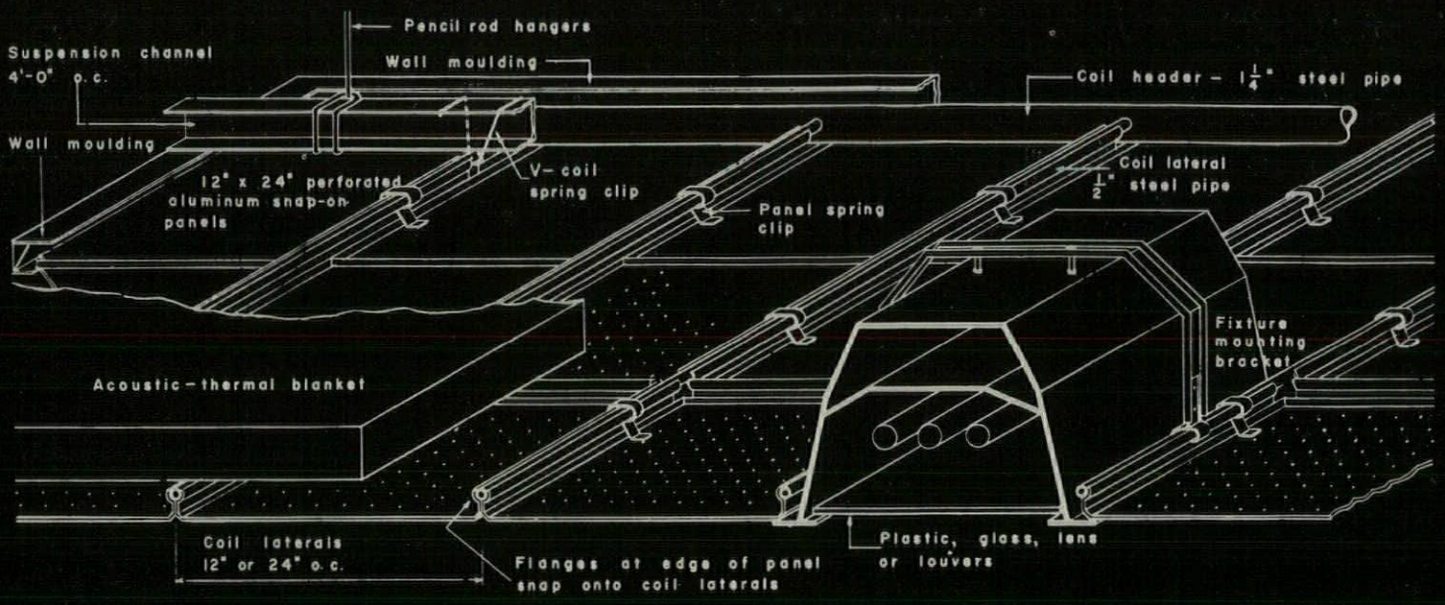


SUSPENSION SYSTEM FOR LIGHTING INSTALLATION WITH GRID STRUCTURE TO HOLD LIGHT-DIFFUSING PANELS

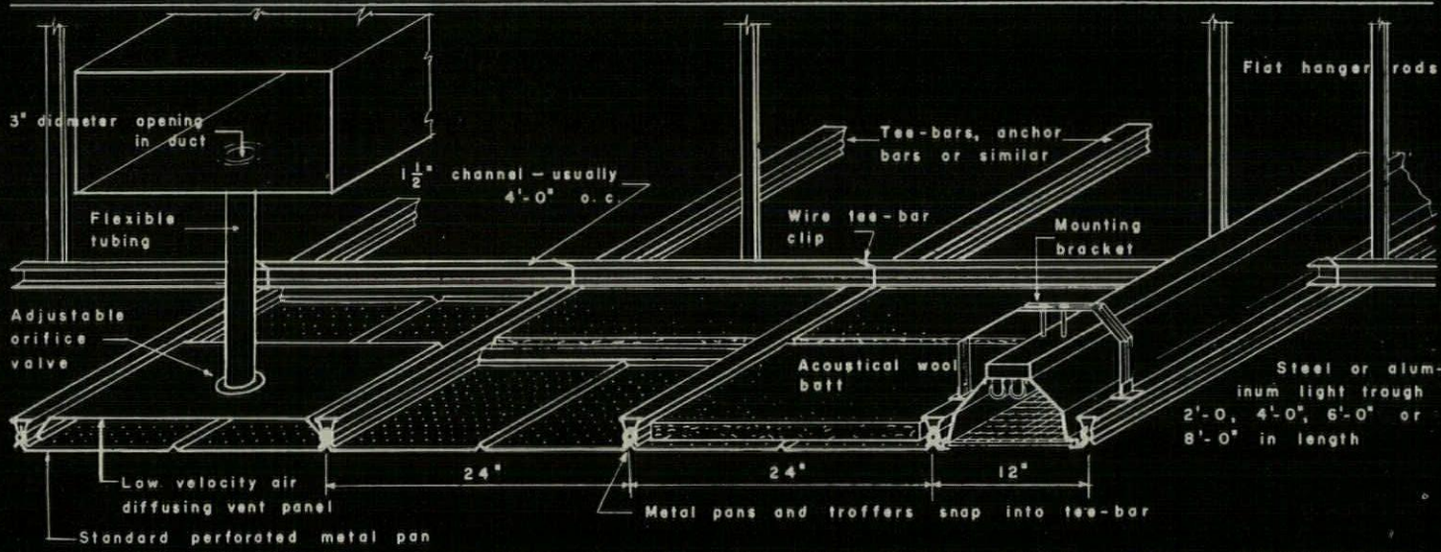


STANDARD SUPPORT DETAILS FOR FORMED PLASTIC CEILINGS

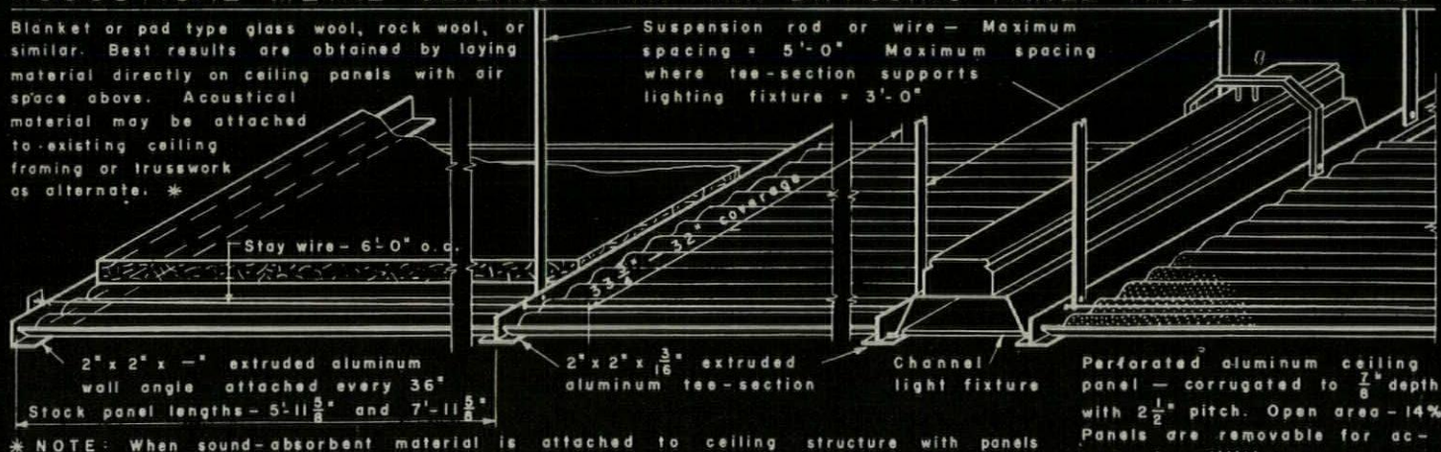
SUSPENDED CEILINGS—METAL



CEILING SYSTEM WITH RADIANT COOLING, RADIANT HEATING & ACOUSTIC CONTROL



ACOUSTICAL METAL CEILING WITH AIR-DIFFUSING PANEL AND TROFFERS



* NOTE: When sound-absorbent material is attached to ceiling structure with panels suspended below, conditioned air may be distributed thru ducts installed above panels.

PERFORATED METAL ACOUSTICAL CEILING SYSTEM

for architects only

We were talking last month about how you teach the blind to see architecture. This subject came up at Princeton too some weeks back, when Dean Bob McLaughlin invited some seasoned spirits to discuss architectural education. Gordon Bunshaft of Skidmore, Owings & Merrill remarked that the one thing a building can get from an architect and no one else is loveliness, so teaching should concentrate on design. But not even the loveliest design can run the gauntlet to final acceptance undiminished unless client and public have learned to love loveliness too. So we believe the young architect has a second skill to learn beyond his design skill, and that is how to open his client's and the public's eyes.

Well, the one educational institution which is most explicitly dedicated to "visual re-education" for the lay public is a magazine, *The Architectural Review*, of London. And by good luck FORUM has in hand an unpublished TIME dispatch (of all things) on the *Review* and its editors. You might like to hear it.

Painter of townscapes

"*Architectural Review* Editor Hubert de Cronin Hastings is one of God's angry men," writes correspondent Alfred Baker. "Twice he has turned the *Review* into new crusades stirring up good old England. In 1927 when he took it over he switched *Review* from spreads on handsome country houses and sketchbook visits to Italy into all-out support for modernism, which was then unpopular. But the minute modern architecture was established postwar he turned on it and berated it for not being more comprehensive and dealing with total environment. 'We're trying to hang on to what remains of civilization,' he cries. 'It won't be for long, anyway.'

"He is a stocky man of 51 with thick black hair streaked with gray, bristling mustache, and an abrupt manner covering a pathological shyness with outsiders. He views his magazine and his world with quixotic exasperation: 'We see the world very imperfectly. The world is full of a great number of things but nobody looks at them. Architects don't either. . . .'

"The study of environment has become the study of 'townscape,' in Hastings' phrase. In a fiftieth anniversary manifesto, *The Review* declared 'it has a call, a call of quite a low-class evangelical kind. . . . Underneath its more obvious aims, running through them and linking them together, is another less tangible one of *visual re-education.*'

"So Hastings' idea of town planning has short use for maps and green ink patterns. 'A city is hundreds of different kinds of contacts. You can't work it out in diagram. You have to work it up like a painting.'

"To work it up he will drive off to the Midlands in his gleaming white Jaguar with trailer attached, and take shots with his Rolleflex for more townscape pieces—street surfaces, store fronts, placement of villas in landscape, pub signs, street signs, outdoor advertising signs, 'floorscapes.'"

Too bad we haven't room for Baker's sketch portraits of Hastings' brilliant associates, among whom Ian McCallum seems to have made a special impression as a fair-haired Scot, aged 33, who affects a brown suede waistcot and brass buttons. Hastings is pictured embattled behind a curvaceous Victorian table upstairs in a superb Queen Anne house through which he ducks by back passages avoiding visitors. His *office-scape* consists of a litter of objects, from old chemists' demijohns for pepsin and colchicum to porcelain figurines, but no push buttons—he summons his secretary with a hunting horn.

"Vans," says Baker, "are always drawing up to the door, unloading a couple of plaster busts (he loves busts which stare from pedestals all over office and building), a vase or an antelope skull with antlers. Once his staff saw a shrouded object carried up to his office. An hour or so later, one of the staff on an urgent errand pounded on his door until H de C opened it a crack and peered out. He was in shirtsleeves, paintbrush in hand. 'What is it, my boy?' he asked genially. 'Have a can. I am painting a rather lovely polar bear.' And he was—a plaster bear climbing a tree which now stands by the door of his office."

There follows a description of encounters in which the visitor is pinned helpless in a deep-eared old porter's chair while H de C scatters his mss. all over the floor —exclaiming about "cretins, dolts and idiots." But if the victim remonstrates, H de C suddenly mellows: "Come on down and have a drink. You got out of bed on the wrong side this morning."

Bride of Denmark

The pub is in the basement, is called "The Bride of Denmark." If it sold drinks it would make a fortune, Baker reports, and it shows Hastings' idea of visual excitement. There's a stuffed lion peering through grass in a glass case. Other cases are full of large, lifelike fish. Row upon row of bottles, an ancient curved bar, a huge wooden bottle, a big turtle shell hung on wall, old mirrors with lovely, florid Victorian handwriting advertising various beers,

a hatrack made of sprouting antlers, a bosky niche where oversized Cupid perches among greenery, traditional coal fire and dartboard in the "public room," innumerable horned animal heads (11 in gents' room alone), a figure of fisherman under glass bell, ship prints, playbills, signs ("All beers drawn from the wood," "Please do not ask for credit as a denial often offends"). Every week staffers appear triumphantly lugging some new find.

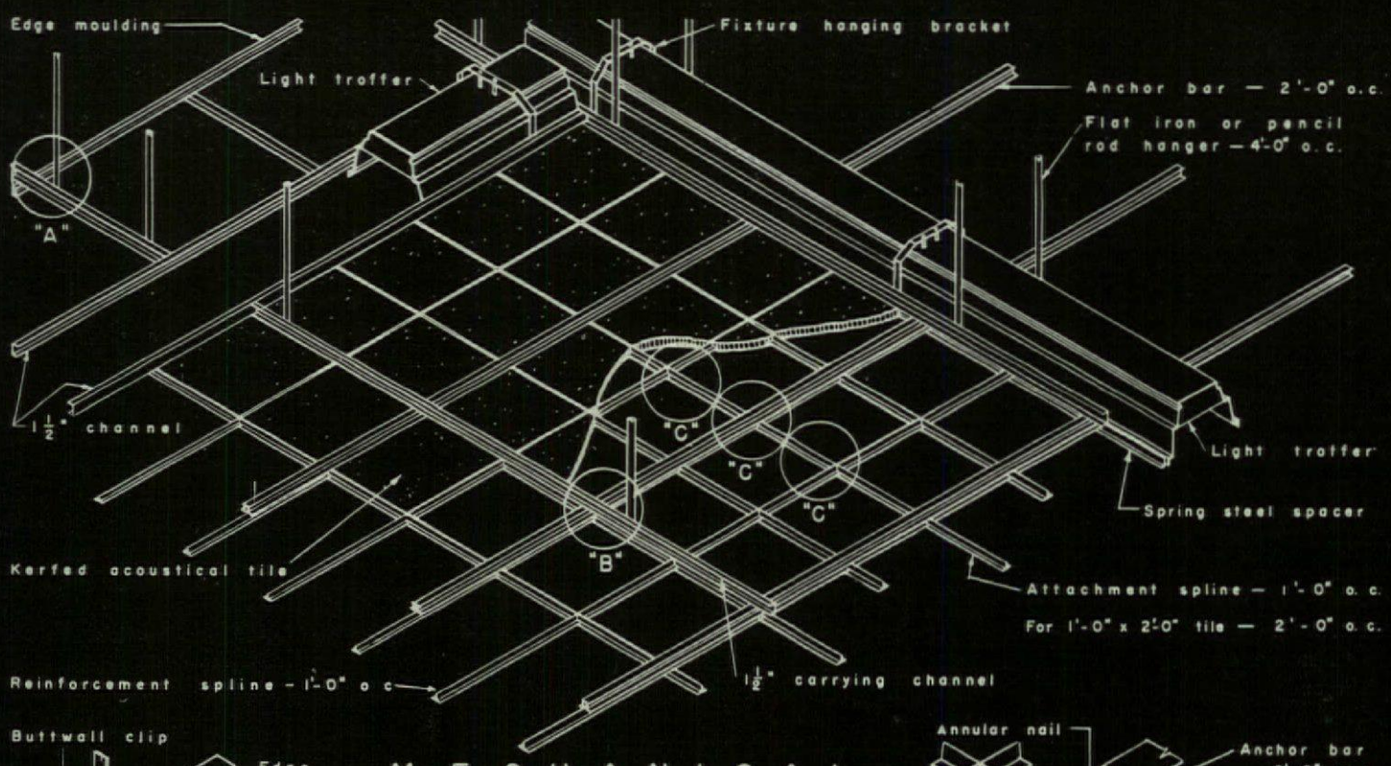
Persuader of clients

Well, this gives you some idea of *Review's* visual environment compared with which FORUM's one nice view out to the skating rink of Rockefeller Center seems rather unexciting — no plaster polar bears. Still, FORUM's task is not so entirely different, after all. If its editors don't always appear as regularly as they might at AIA lunches it's sometimes because they are talking with members of that other great fraternity, the practical US businessmen who act as clients for US architects.

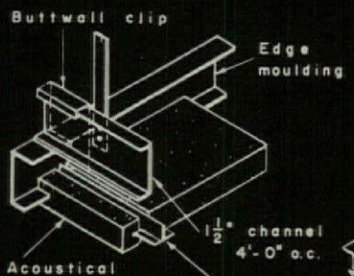
This comes about because FORUM is the only architectural magazine in the US that deliberately cultivates client readers as well as architects. They tell us some strange things. The builder of a score of office buildings 20 stories or higher tells us "he would pay no more attention to the outside of a building than to the color of a machine." We then rack our brains how to convey the ABC's of visual environment to such as he — good citizens all. They don't even see their buildings. It leaves us scant time for "wirescape."

Yet the world does move. Next month FORUM is privileged to publish a story about some very minor buildings of very major importance. They are a string of little roadside sheds which store that plainest of all utilities, just pipe. They are the kind of building that is commonly considered so utterly unimportant that it is allowed to convert the sides of our highway indiscriminately into roadside slums. But *this* time they are built by a fine and sensitive client who was ready to understand his architect when the architect said design is important anywhere and everywhere, not just in special places. *E pur se muove.* —DH.

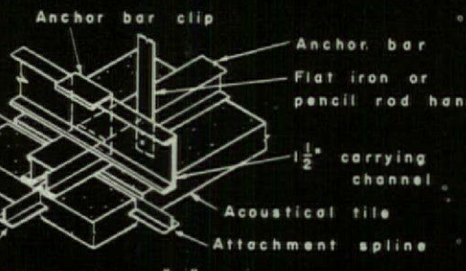
SUSPENDED CEILINGS—ACOUSTICAL TILE



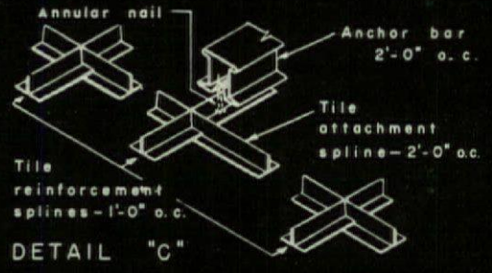
MECHANICAL INSTALLATION OF ACOUSTICAL TILE



DETAIL "A"

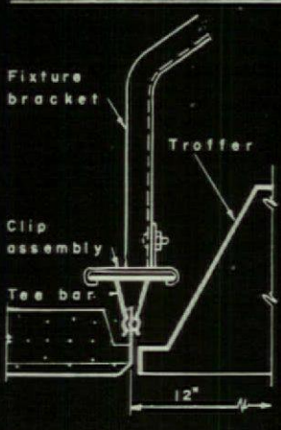


DETAIL "B"

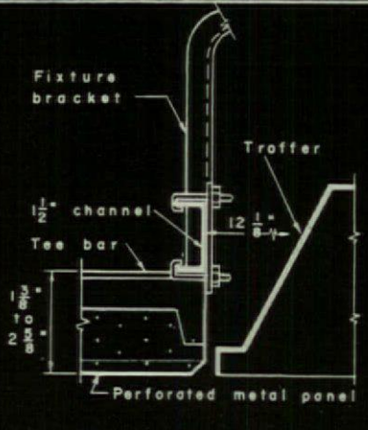


DETAIL "C"

ANCHOR BAR TYPES FOR KERFED ACOUSTICAL TILE & METAL PANS

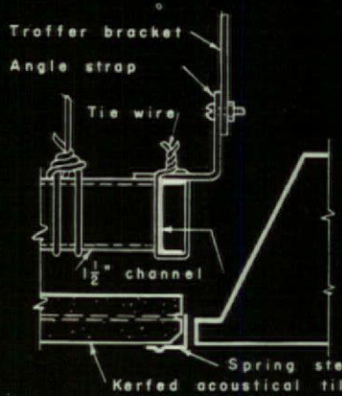


TROFFER SUPPORTED BY TEE BAR

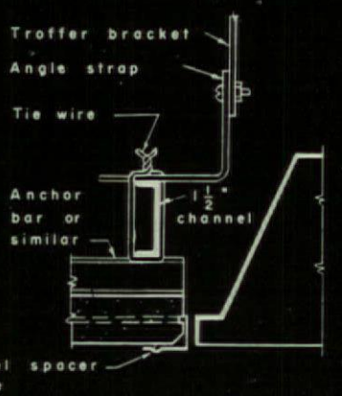


WHERE TROFFER CROSSES TEE BAR

TROFFER WITH METAL PANELS



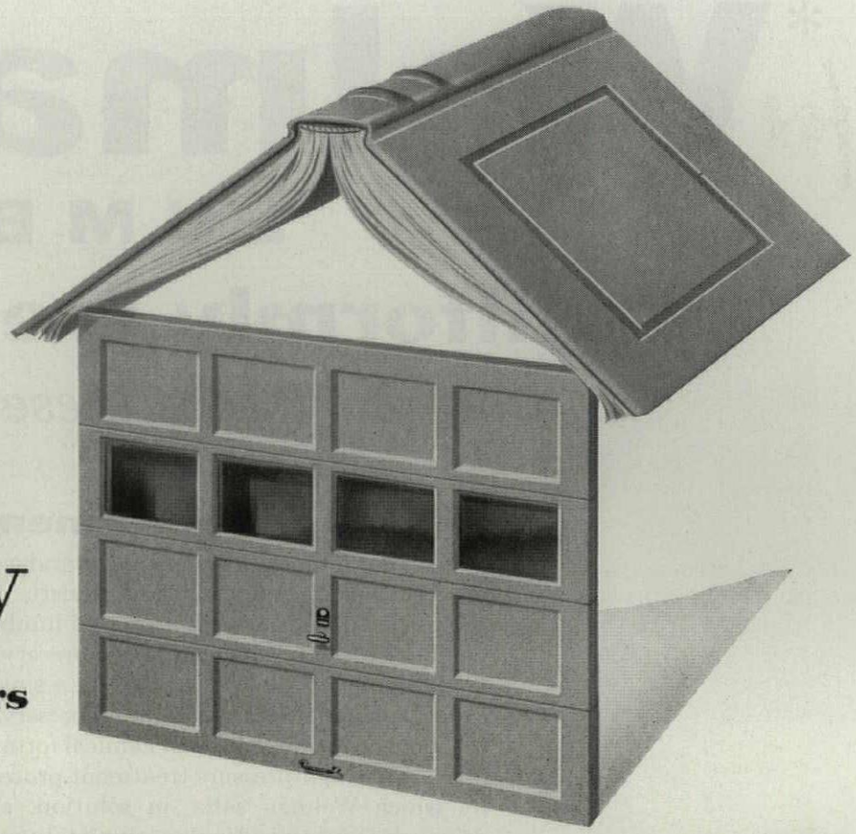
CHANNEL PERPENDICULAR TO LIGHT TROFFER



CHANNEL PARALLEL TO LIGHT TROFFER

TROFFER WITH KERFED TILE

DETAILS — INSTALLATION OF TROFFER IN SUSPENDED PANEL CEILINGS



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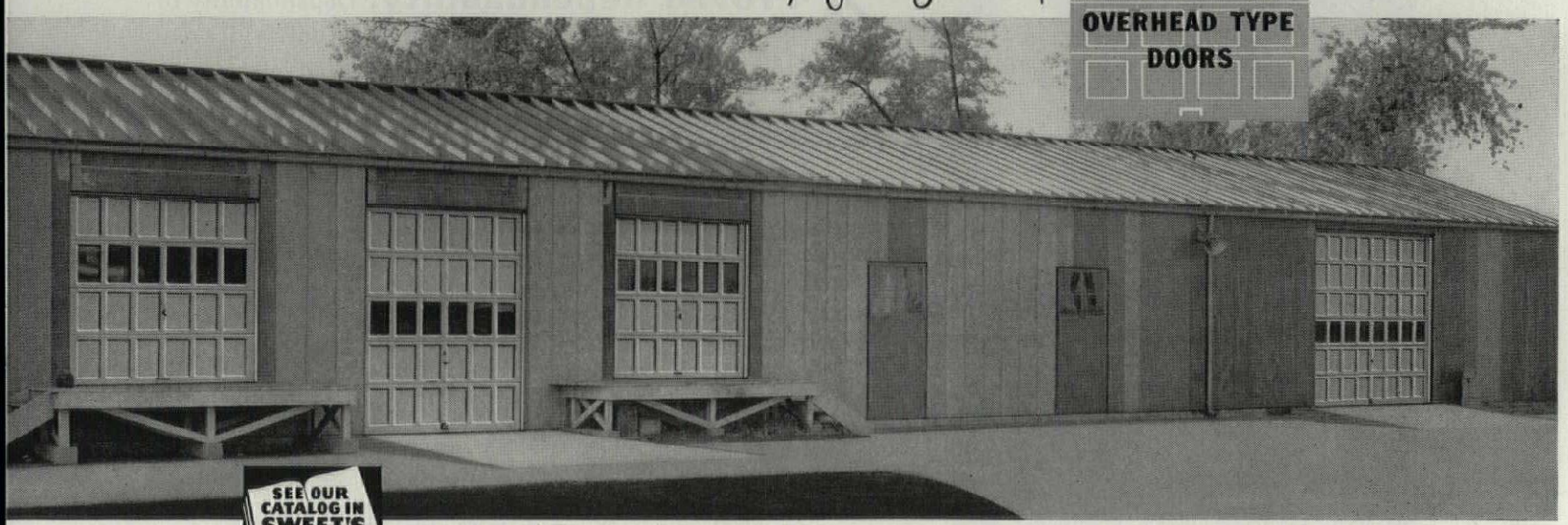

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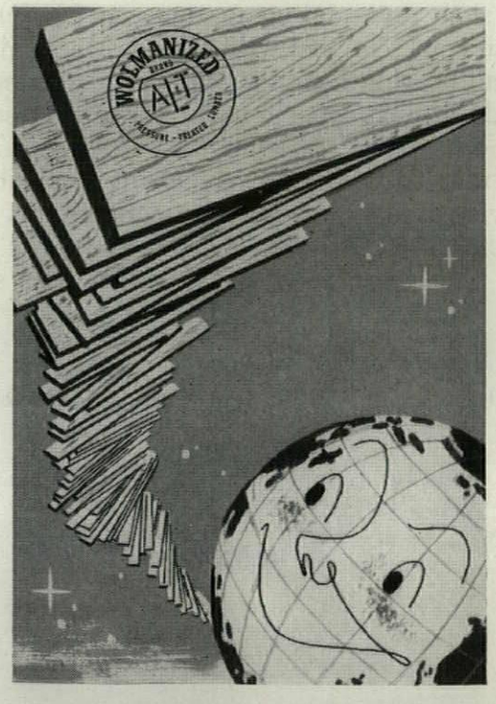

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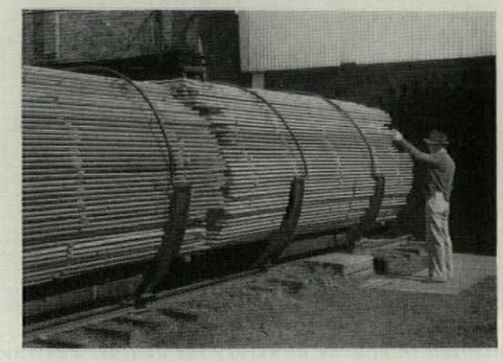

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Thermopane windows make this library comfortable, light and cheerful. Birmingham (Michigan) High School. Architect: Swanson Associates, Birmingham.

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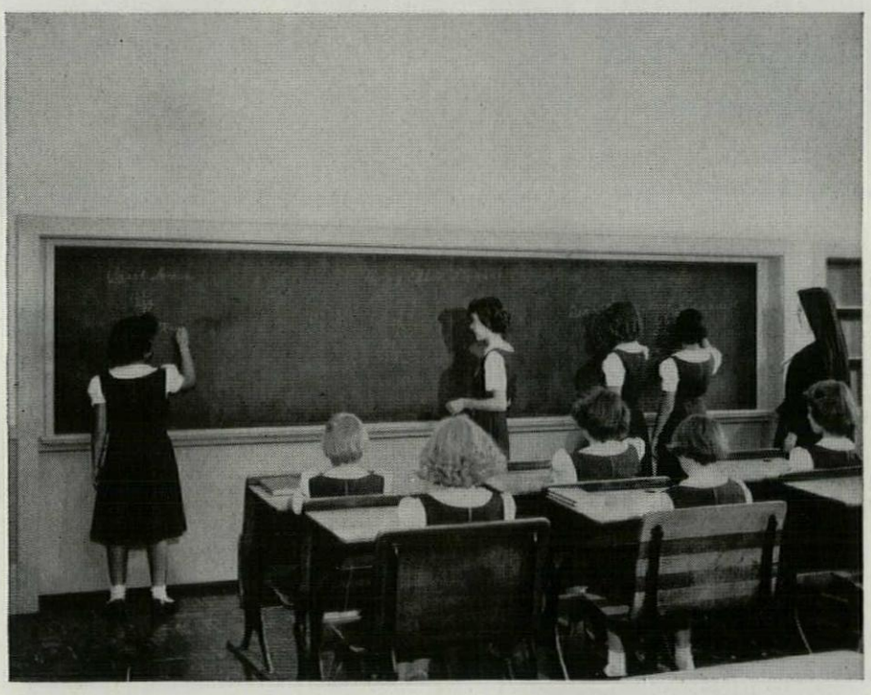
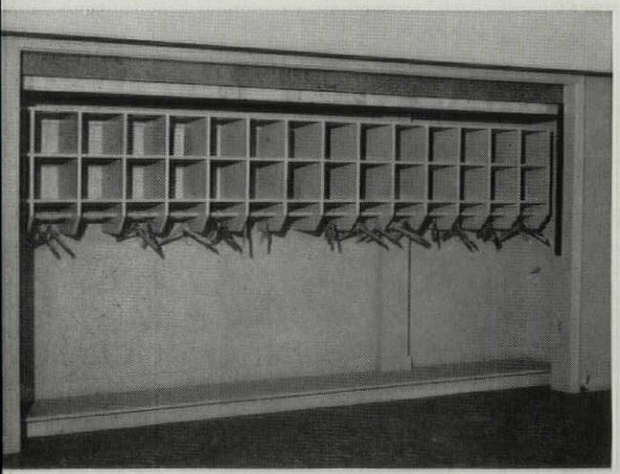


MORE FLOOR AND WAL SPACE is usable in this class room through installation of Barcol WARDROBEdoor Shown here equipped with chalkboard, its wide, unbroken flat surface can also be furnishe with a tackboard or combinatio of the two, or with any desire veneer finish. Note example on opposite page. Conserve classroom area too—space-sav ing, vertical-action WARD ROBEdoor requires no extr floor space for clearance.

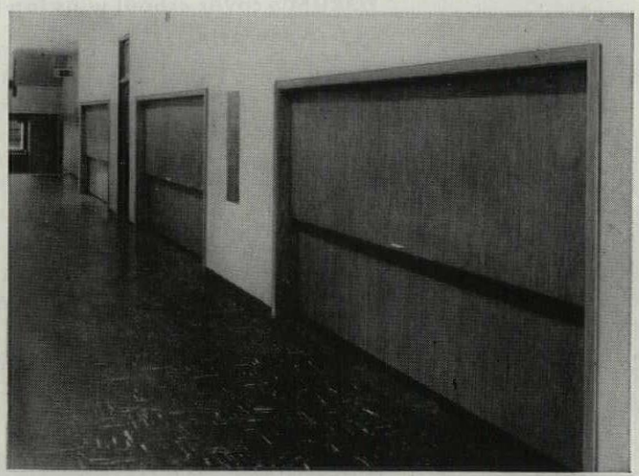
Left: St. Augustine School, Rochester, N.

UNOBSTRUCTED CLOAKROOM ACCESS is afforded by the Barcol WARDROBEdoor, which opens vertically into the wall. Annoying door interference with clothing and rubber footwear is eliminated. Absence of pivots, hinges, and other hardware makes cleaning easier. Full-view opening gives the teacher complete control of the "cloakroom rush." Standard coat hooks or any desired custom-built storage arrangement can be provided.

Right: Heuvelton Central School, Heuvelton, N. Y.

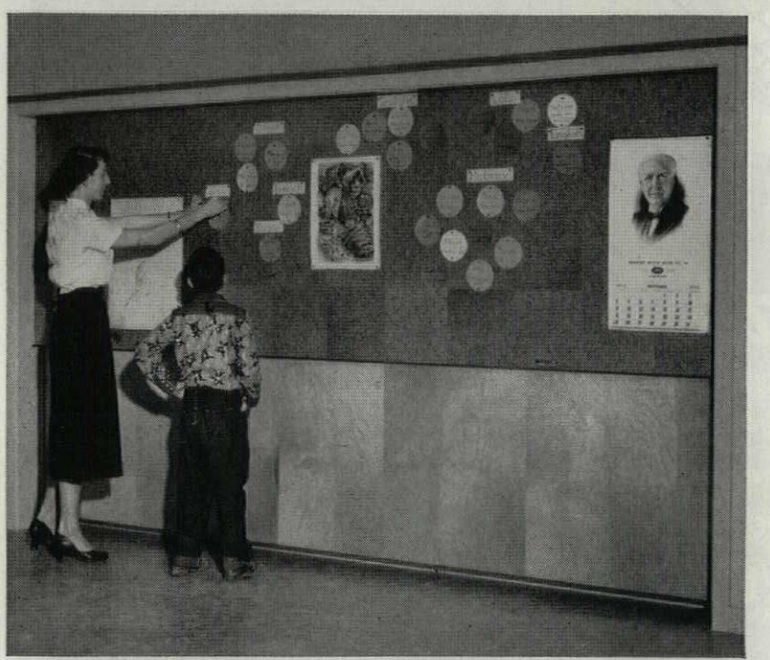


ote footwear ledge in custom interior at Craig School, Schenectady, N. Y.

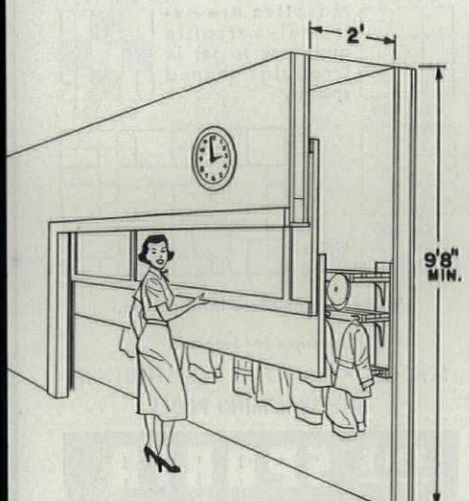


Hallway installation of WARDROBEdoors at Amherst School, Snyder, N. Y.

ASY, FINGERTIP OPENING of Barcol /ARDROBEdoor is made possible by accurate ounterbalancing of its weight plus high-pre- sion manufacture of the operating unit. uiet operation is assured by nylon rollers unning in continuous steel tracks. A chain nd sprocket arrangement links the door sec- ons and counterbalancing weights. The bot- m section rises at twice the speed and clears e opening at the same time as the top section. variety of decorative effects is obtainable by e use of beautiful veneers on the bottom ction or both sections of the WARDROBE- oor to match interior trim. Two standard zes are available—12′ x 6′, for 48 students nd 10′ x 6′, for 40 students.



Cork tile on tackboard area at Craig School, Schnectady, N. Y.



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ARCHITECTS WHO SPECIFIED Barcol WARDROBEdoors for installations shown here are:

Frank Quinlan, Rochester, N. Y.—St. Augustine School

John C. Ehrlich, Geneva, N. Y.—Heuvelton Central School

Sargent, Webster, Crenshaw and Folley, Syracuse, N. Y.—Craig School

C. Lurkey, Buffalo, N. Y.—Amherst School

Exhibited at the A.A.S.A. Convention
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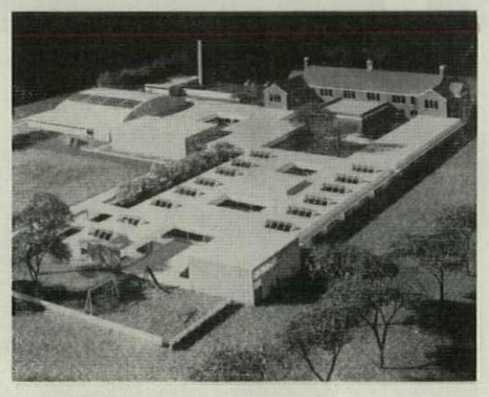
PRIZE SCHOOLS

FORUM's cover school wins top honors in two contests

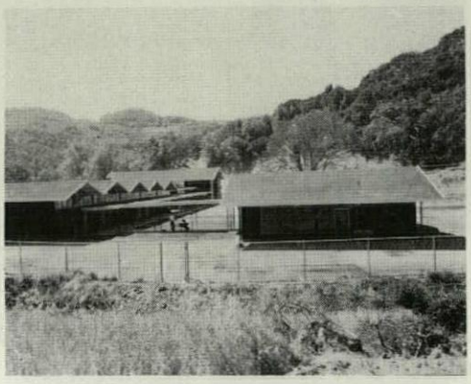
At last month's convention of the American Association of School Administrators, two groups of school experts announced their choices of the year's best schools: *School Executive* magazine and AASA-AIA. The only school to appear on both lists was Architect John Carl Warnecke's White Oaks Elementary School Annex, San Carlos, Calif.: the school featured on FORUM's cover and presented in detail on p. 121.

The other six *School Executive* choices are pictured below; the full list of AASA-AIA selections are listed on p. 184.



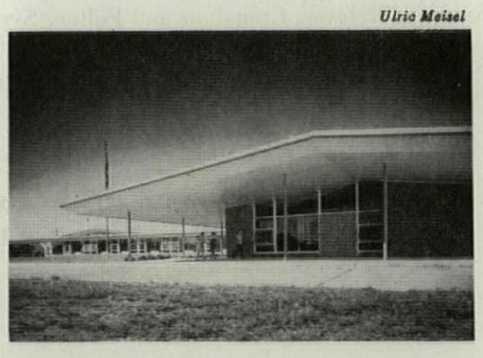
Detroit University School and Grosse Pointe Country Day School, Grosse Pointe Woods, Mich. Leinweber, Yamasaki & Hellmuth, architects (AF, Jan. '54).

Roger Sturtevant



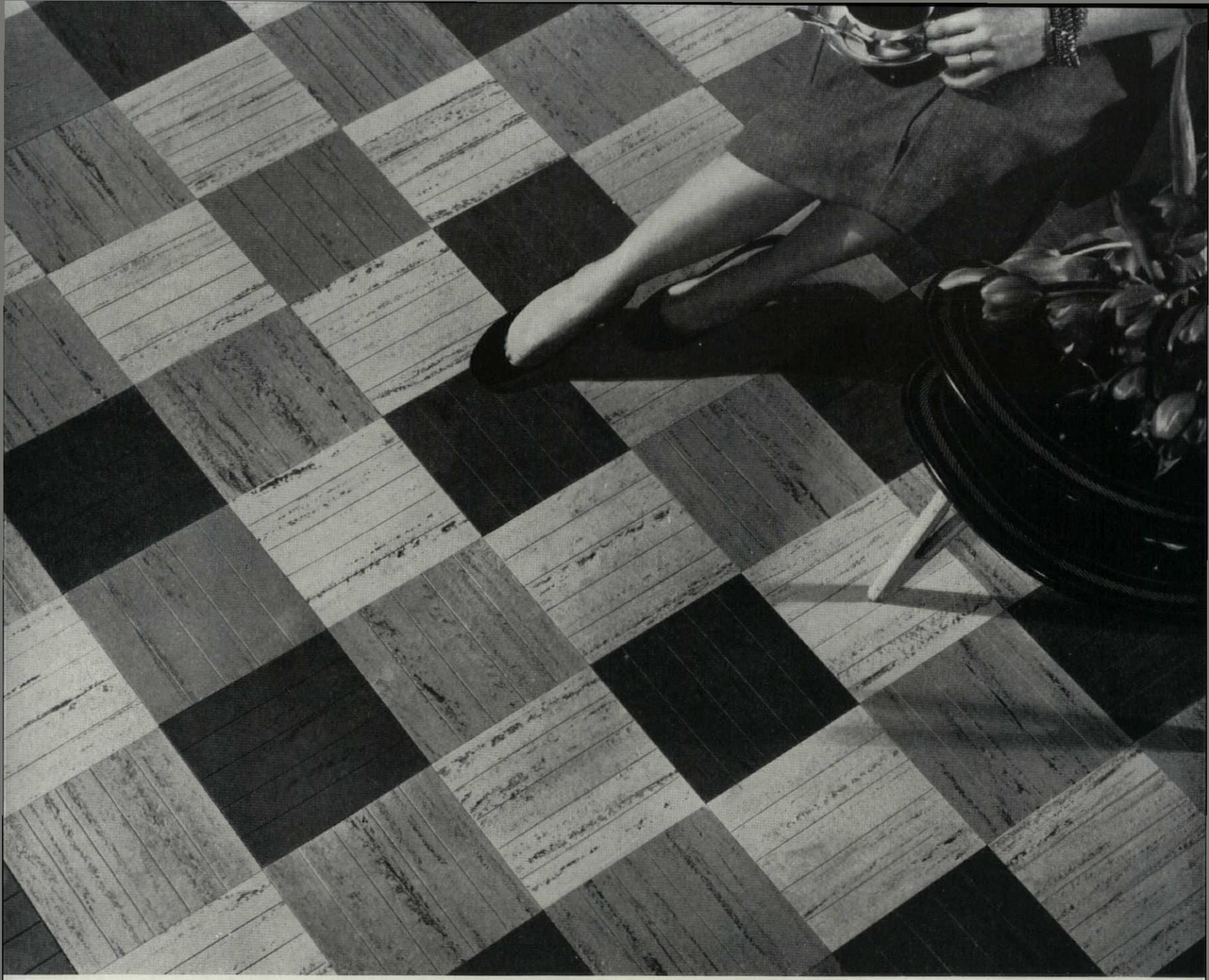
Oak Manor Elementary School, Fairfax, Calif. John Lyon Reid, architect (AF, Oct. '53).

Ulrich Meisel



Sam Houston Elementary School, Port Arthur, Tex. Caudill, Rowlett, Scott, Neff & Assoc., architects. (Scheduled for AF publication.)

continued on p. 185



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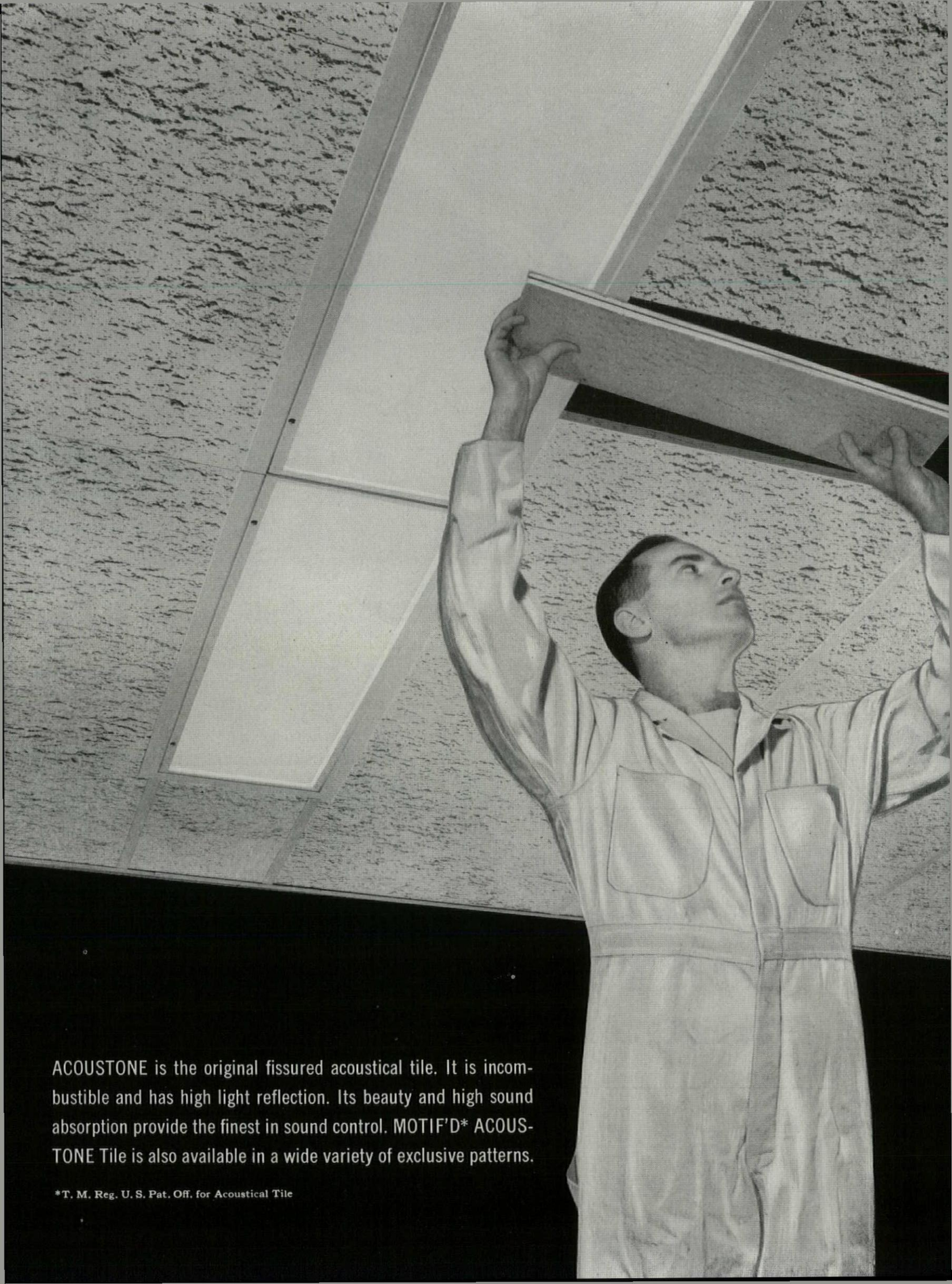

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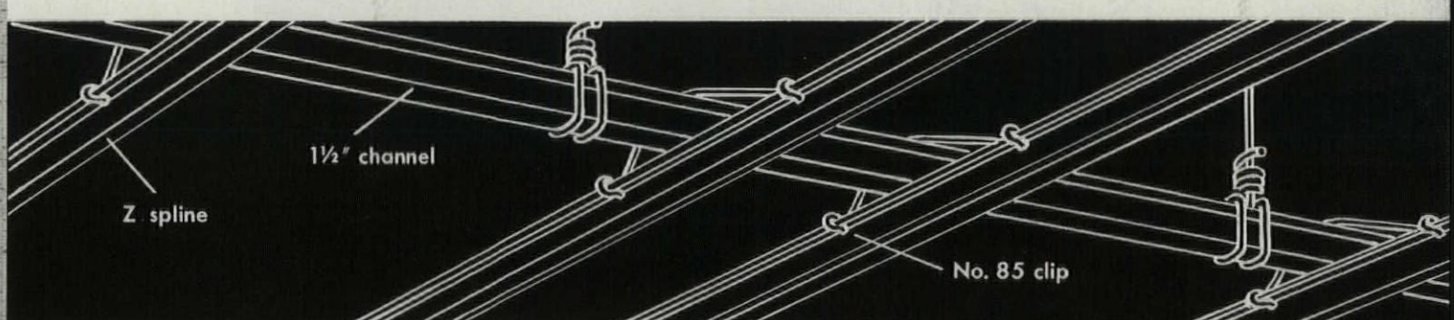

UNITED STATES GYPSUM

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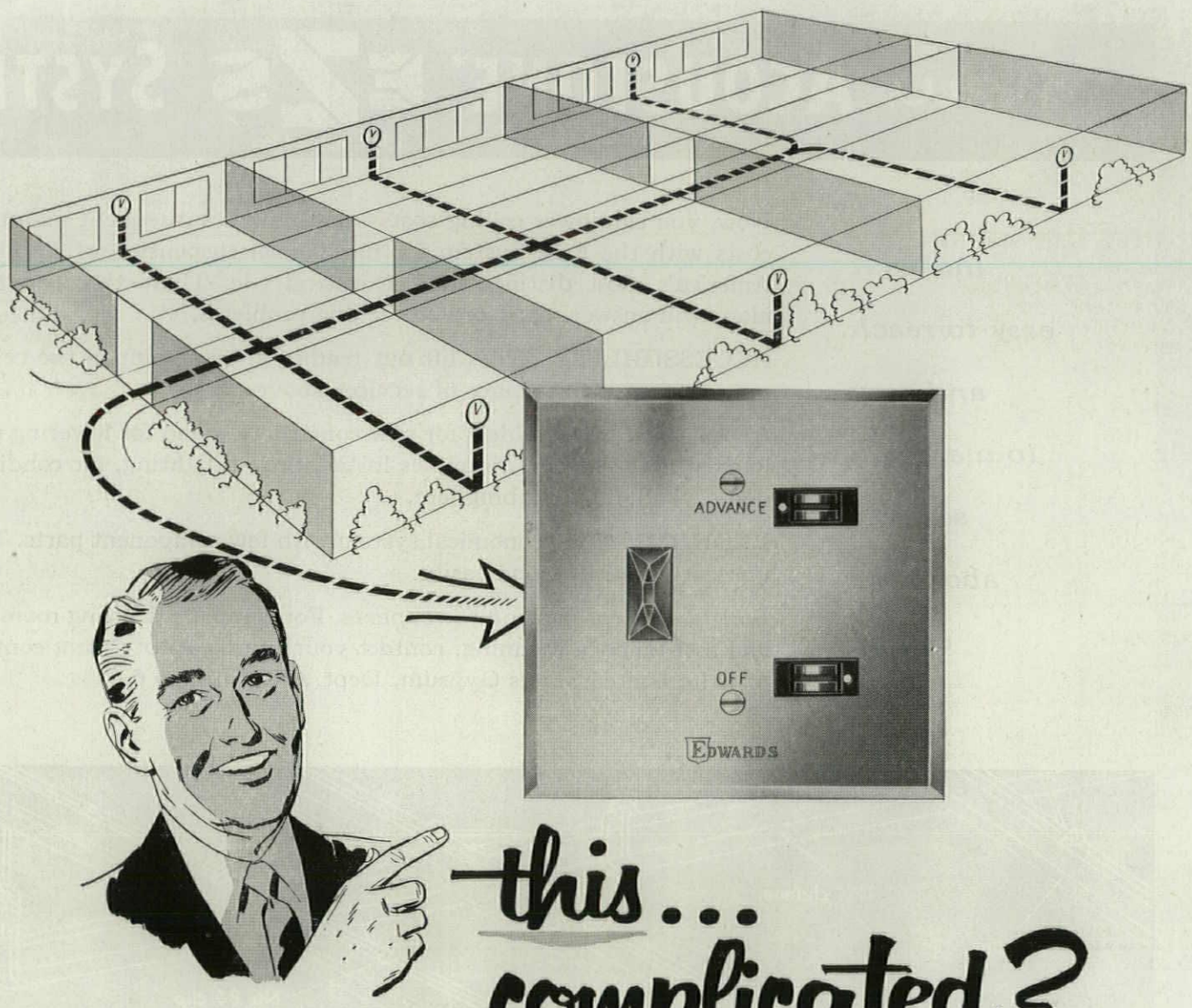

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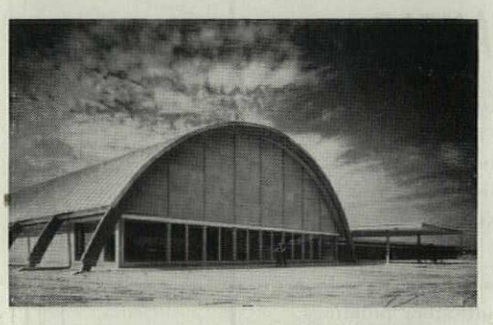
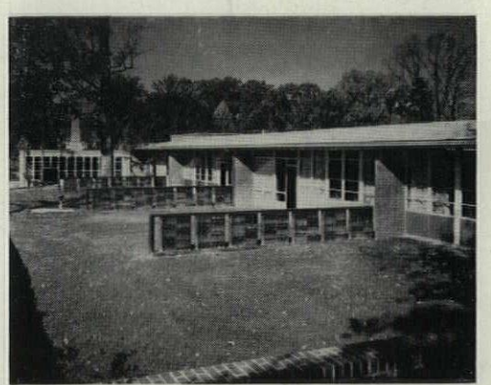
PRIZE SCHOOLS *continued*

Photos: R. Sturtevant; U. Meisel; J. Molitor

Deer Park Elmentary School, Fairfax, Calif. John Lyon Reid, architect.



Mirabeau B. Lamar Jr. High School, Laredo, Tex. Caudill, Rowlett, Scott & Assoc., architects (AF, Oct. '53).



Double Oaks School, Charlotte, N.C. A. G. Odell Jr. & Assoc., architects.

AASA-AIA Merit Award winners

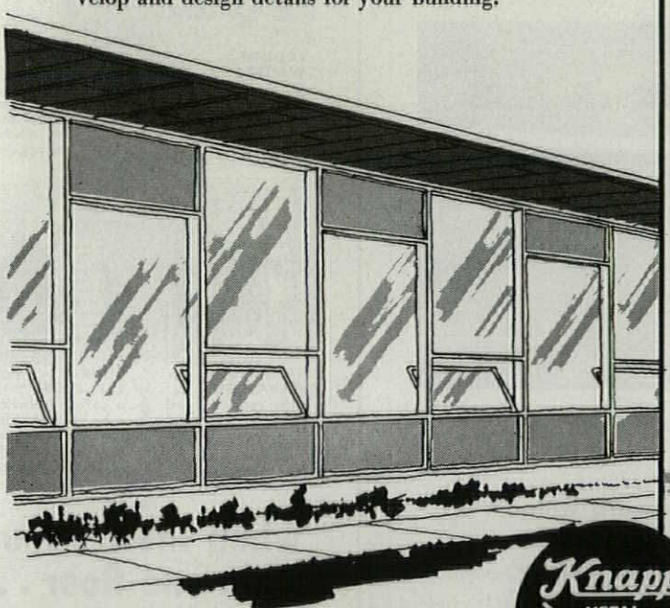
El Rancho High School, Whittier, Calif. William H. Harrison, architect. ▸ *Waltham Elementary School, Waltham, Mass. The Architects Collaborative, architects (scheduled for AF publication).* ▸ *Glenbrook High School, Glenview-Northbrook, Ill. Perkins & Will, architects.* ▸ *Groton Senior High School, Groton, Conn. Warren Ashley, architect (AF, Oct. '53).* ▸ *Public School 198, New York, N.Y. Harrison & Abramowitz, architects (scheduled for AF publication);* ▸ *Manchester Memorial Elementary School, Manchester, Mass. Shepley, Bulfinch, Richardson & Abbott, architects.* ▸ *Highlands Elementary School, Millbrae, Calif. John Lyon Reid, architect.* ▸ *White Oaks Elementary School Annex, San Carlos, Calif., John Carl Warnecke, architect.*

A NEW ECONOMY IN SCHOOL CONSTRUCTION

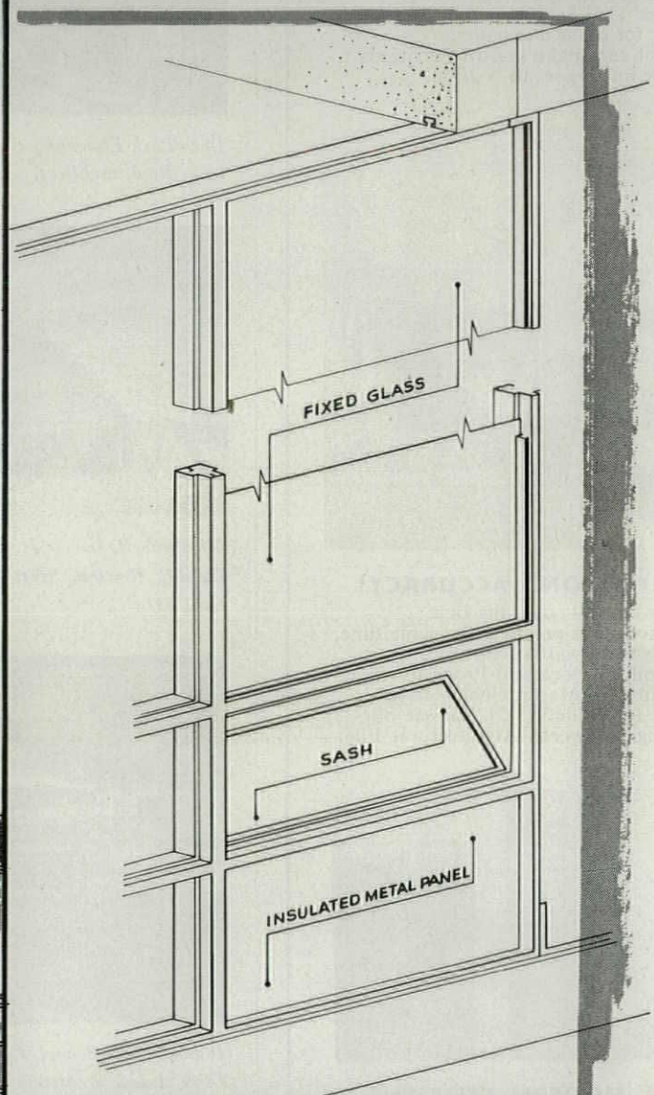
GRID WALL SYSTEM
with
KNAPP METAL MODULAR UNIT WALL PANELS

Knapp unit wall panels are furnished complete with factory installed insulated panels and sash, ready for field glazing. Insulated metal panels are available in various finishes including porcelain enamel in a wide range of colors. The nominal thickness of these panels provides extra usable floor area.

Developed for use with today's modern one-floor expandable classroom units or multi-story buildings, these unit wall panels are light weight with maximum strength. They are easily and quickly erected. Send us your requirements and Knapp engineers will develop and design details for your building.



Pictured above are but a few of the many combinations of insulated panels, sash and fixed glass. This grid wall system can be varied to meet functional and appearance requirements.



TYPICAL UNIT WALL PANEL

Knapp METAL TRIM Trade Mark
REG. U.S. PAT. OFF.

KNAPP BROTHERS MANUFACTURING CO.
Cincinnati 16, Ohio

ARCHITECTURAL METAL TRIM SINCE 1905

MAIL THIS COUPON TODAY!

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16 E. 72nd St., Cincinnati 16, Ohio

Please send me complete information on Knapp Modular Unit Wall Panels.

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COMPANY_____

ADDRESS_____

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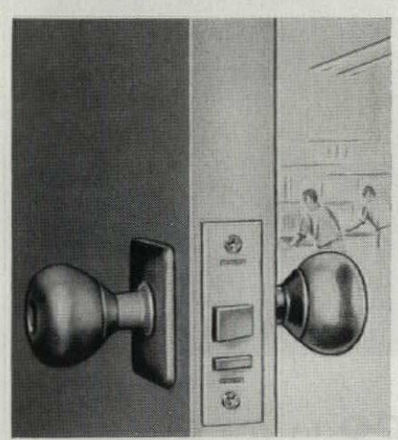
The A. B. Dick Company, Chicago, Illinois
The Austin Company, Engineers and Builders
Walter Dorwin Teague Associates,
Designers of Front Lobby,
Executive Offices and Cafeteria

Famous building after famous building selects Sargent Integralocks

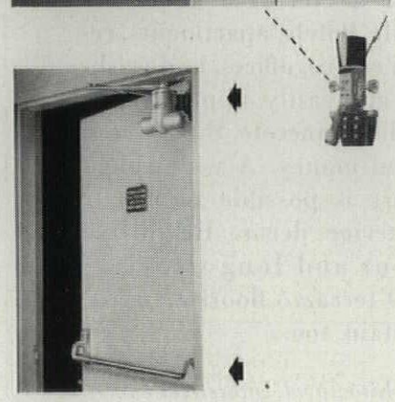


Specify Sargent Integralocks and you can meet every design, style, protection and convenience requirement.

For just consider: Integralock is available in 13 different functions . . . 4 different designs . . . a wide selection of knobs and escutcheon plates . . . any required keying arrangement . . . a number of handsome brass, bronze, aluminum and chromium finishes.

Also the Integralock is the *only* key-in-knob lock with the extra protection of the *Sentry Bolt*. And stop buttons are provided to automatically deadlock the outside knob.

Specify Sargent Integralocks, Door Closers and Exit Bolts with complete confidence for hotels, hospitals, schools, commercial buildings. Write us, Dept. 8-C, or see your supplier.



SARGENT of New Haven

Sargent & Company, New York **New Haven, Conn.** Chicago

Hardware of Character

EXCERPTS

Prefabricated modernization

With the proper use of prefabricated faces, it is not necessary that we demolish all our so-called obsolete structures. Many of them have regular steel layouts, and on spacings that are normal and feasible to an office building. If properly studied, these buildings by the proper design of prefabricated skin, produced away from the site, could readily be renovated with a minimum of inconvenience and certainly without relocating tenants. We could design a modern glass or metal front, for which all parts could be made in shops around New York, and then floor by floor remove the present masonry and windows and gradually, either from the top or the bottom, within a few months redress the entire structure and revive its longevity. Not only could we give it a new skin, but we could also replace its guts. These fronts require no waiting period. Therefore, with the proper use of temporary partitions close to the perimeter of the building, the complete erection could be accomplished quickly and with very little inconvenience to the office working forces.

The building, now being altered at 55th and 56th St. and Park, might easily have been denuded and reskinned without disrupting the tenancy, had the tenancy been previously commercial, rather than apartment dwellers. On that particular project, had it been an office building, we could have created a new core in the yard prior to removing the elevators and stairs in the structure itself. We could then have stripped the facade and had ready for immediate erection a new metal and glass skin and then at a later date removed the antiquated elevators and poorly located stairs. The office tenants would be inconvenienced, but business need not have come to a standstill.

What is good design?

Architecture is more and more influenced by an enlightened public. It is important that the public be educated in what makes good building design. The public knows its needs. Architecture is not an abstract art viewed in a museum; it is a living vital part of everyday life. It is for the architects to acknowledge those needs and interpret them—to incorporate them artistically, economically, functionally, into today's design and plan.

And real estate groups must cooperate—and to a great extent must help in this education of our laymen neighbors, because in the last analysis it is the real estate investor who controls the job, the size of the building, the type of facade.

No building, no matter how attractively designed, can be attractive to me unless it is fully occupied. A beautiful, but unsuccessful building, is a tombstone, not a monumental piece of architecture.

Simpson®

melts rocks for quiet beauty

Simpson Fissured Mineral Tile is made from stone . . . melted, spun into fibers, and naturally fissured through a process perfected by Simpson's research engineers.

Because it is basically stone, this acoustical tile is incombustible . . . and, because the fissuring is natural, no two tiles are alike in surface texture. This creates a travertine-like pattern which adds beauty to any ceiling acoustically treated with this material. Simpson Fissured Mineral Tile is available beveled or square-edged in two thicknesses.

Rely on Simpson and these Simpson Acoustical Contractors

An efficient and architecturally-compatible acoustical treatment depends upon two factors . . . good materials, which Simpson produces, and scientific installation. Simpson assures the proper handling of its materials by careful selection of its contractors. These leading acoustical engineering firms, listed at the left, are *certified* by Simpson . . . your guarantee of superior craftsmanship with superior materials.

SALES DIVISION

SIMPSON LOGGING COMPANY

at SHELTON, WASHINGTON

ACOUSTICAL MATERIALS . . . INSULATING BOARD PRODUCTS . . . ALLWOOD HARDBOARD . . . PLYWOOD . . . DOORS . . . CALIFORNIA REDWOOD . . . DOUGLAS FIR AND WEST COAST HEMLOCK LUMBER.

OTHER ACOUSTICAL MATERIALS

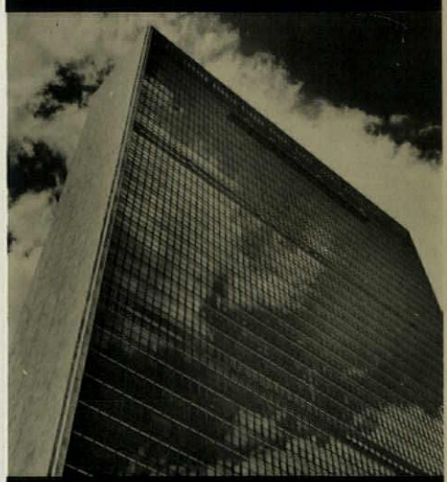
HOLLOKORE-DRILLED FIBER ACOUSTICAL TILE, REGULAR AND SCATTER-PATTERN . . . METAL ACOUSTICAL UNITS . . . PERFORATED HARDBOARD . . . PERFORATED CEMENT ASBESTOS BOARD.

ACA-C-41

Continental National Bank

General Petroleum Building

Magnolia Petroleum Building



United Nations

Time After Time . . .

THOSE WHO KNOW

. . . Because only Mohawk has all the answers

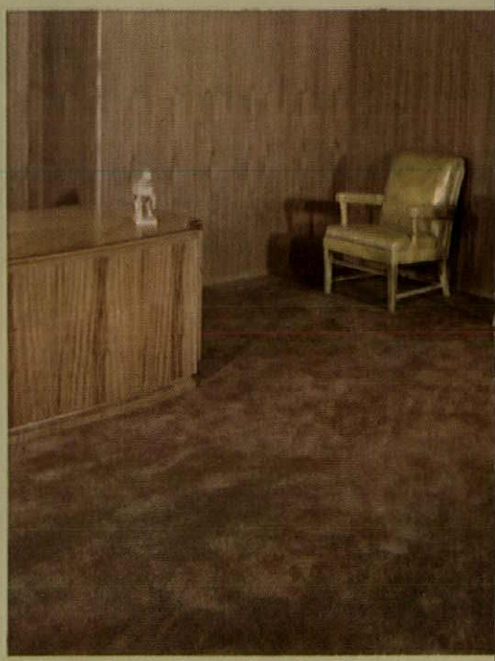
Illustrated here are interior scenes from a few of the many outstanding office buildings that have solved their carpeting problems, increased employee efficiency and achieved decorating distinction with Mohawk's Engineered Carpet Installations.

These pictures clearly show that custom-designed, expertly woven and fitted carpeting adds more to the decor, dignity and prestige of an office than any other item of furnishing.

Note that for every type of room, Mohawk has provided a carpet that—aside from giving the best possible impression to important visitors—creates an atmosphere of relaxation conducive to higher employee efficiency. Each carpet color, design, weave and texture is based on the style of architecture, motif of accessory furnishings, sound absorption needs, maintenance and durability requirements and budget limitations.

Be sure to make *your* next carpet installation a Mohawk *Engineered Installation*. You'll be dollars ahead in wear, beauty and satisfaction —now and for years to come!

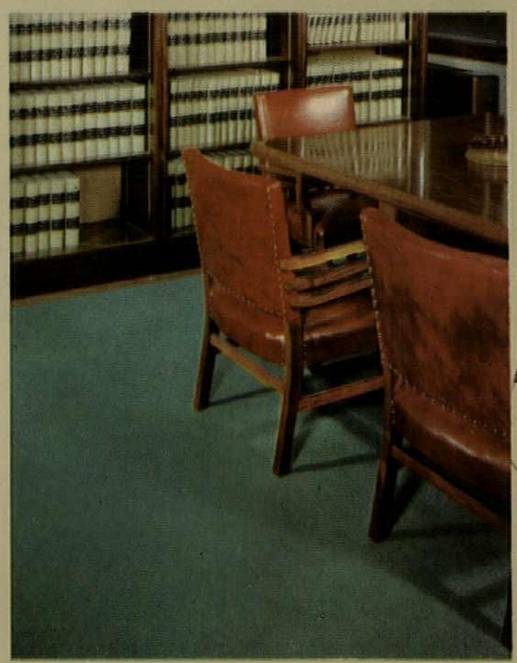
For your nearest franchised Mohawk contract carpet dealer, call your local Mohawk distributor, or write Contract Sales Dept., Mohawk Carpet Mills, Inc., 295 Fifth Avenue, New York 16, N. Y. There is no obligation, of course.



The Place: Continental National Bank, Fort Worth, Texas

The Problem: To carpet the Board Room in keeping with its architectural motif.

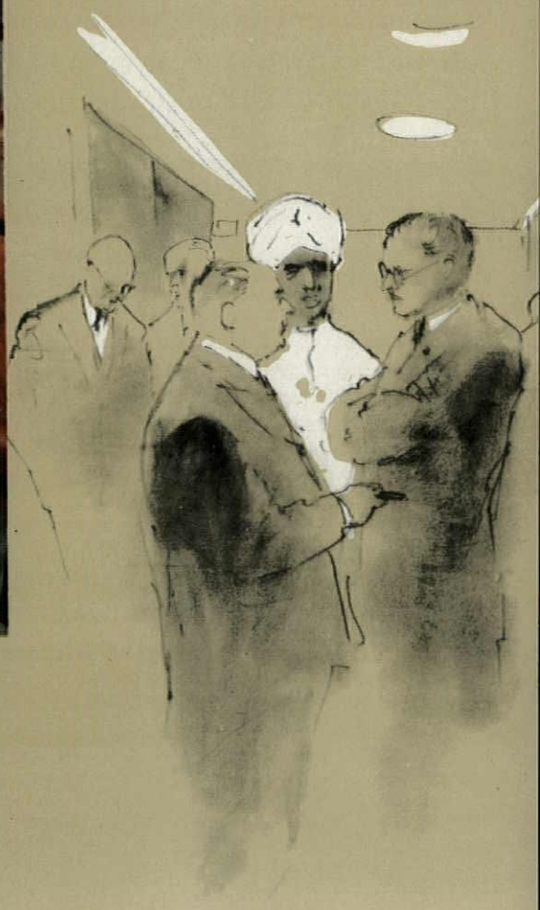
The Solution: A superb, subtly beautiful Mohawk Installation that reflects the integrity and progress for which this bank is famous.



The Place: Magnolia Petroleum Building, Dallas, Texas

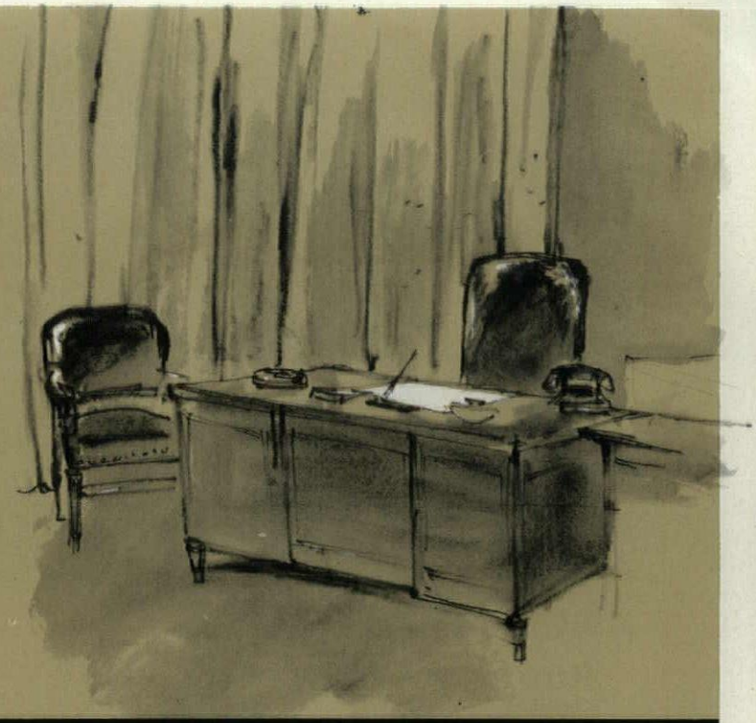
The Problem: To carpet the heavily used library.

The Solution: A wonderfully sound-absorbent carpet that cushions and quiets footsteps and greatly reduces all other noise.



SELECT MOHAWK!

o all commercial carpeting needs!



The Place: United Nations Headquarters, New York, N. Y.

The Problem: To furnish the Secretary General's office with a proper background of dignity.

The Solution: A deep, wall-to-wall carpet custom-loomed to the office's exact size, durability and color requirements.

CARPET CRAFTSMANSHIP FROM THE LOOMS OF Mohawk

Mohawk

CARPET MILLS, INC.

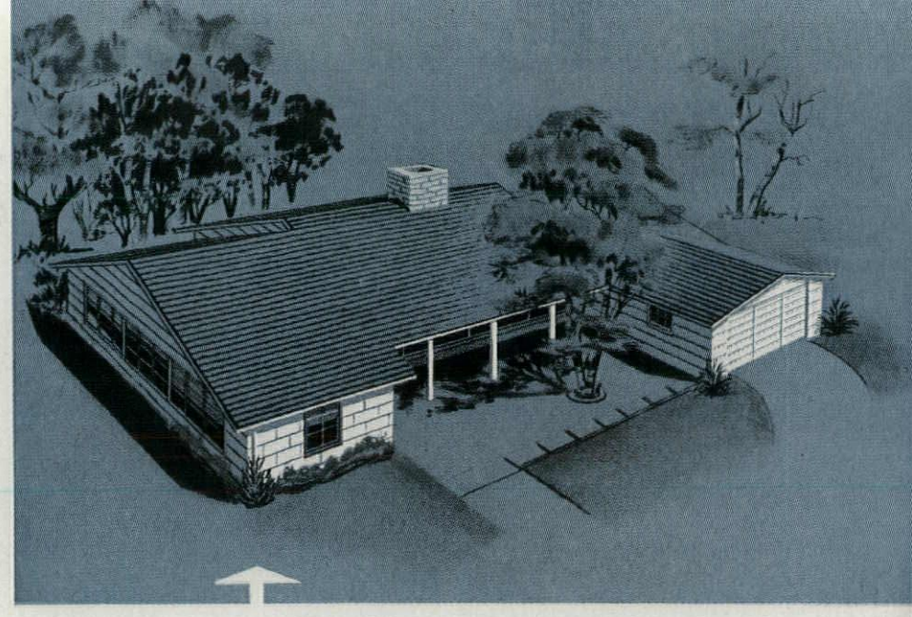
295 Fifth Avenue, New York 16, N.Y.

The Place: General Petroleum Building Los Angeles, California.

The Problem: To provide the president's office with a carpet of luxurious dignity.

The Solution: A custom-woven Mohawk carpet of modern design that becomes the key to the room's color scheme and gives cushiony comfort underfoot.

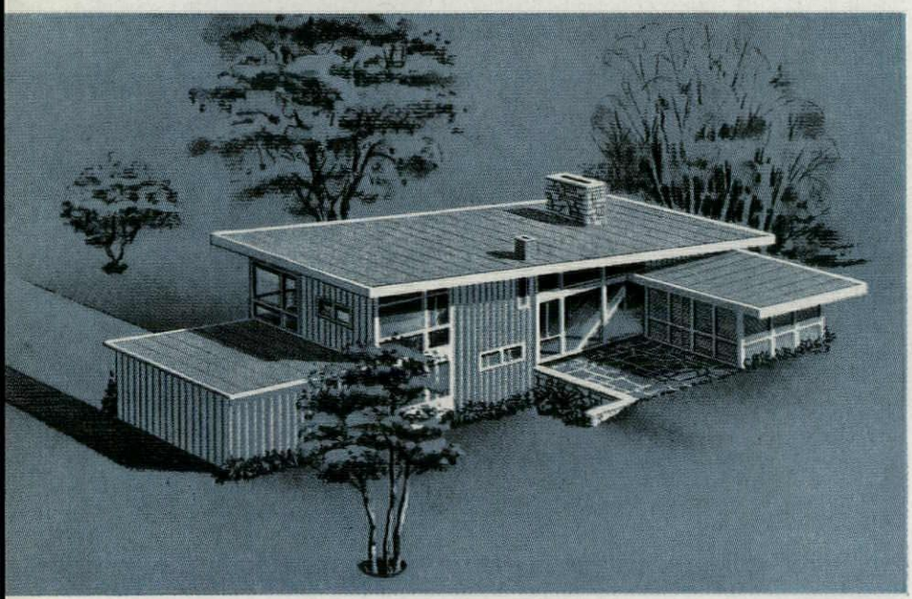
Another Flintkote First!



...The New Flintkote

SKYLINE

Roofing System engineered *especially* for Low-Pitched Roofs



SKYTAB

permits use of *strip shingles* on low sloped roofs, with either Standard or Custom application. It is ideal for ranch houses and other types of contemporary structures where roof slopes are within the range of 2″ to 4″ per foot.

SKYTEX

is perfectly suited for *decorative*, low sloped *built-up* roofing . . . either residential or commercial . . . where incline is from ¾″ to 2″ per foot. Decorative beauty is accomplished by the use of protective Mineral Surfaced roofing felt . . . and it can be further enhanced with Skykote color.

SKYKOTE

is designed to recoat or color *existing* roofs or to *decorate* built-up roofs. Applied by either brush or spray—this beautiful coating really dresses up a roof—makes it stand out. Comes in white, green, gray, coral and buff.

The famous Flintkote laboratories are continually at work developing new roofing methods and materials—and improving on existing techniques and products.

Now, they announce a new 3-in-1 roofing system—SKYLINE—for low sloped roof construction. In *one* file, you have the answers to most of your modern-day roofing problems.

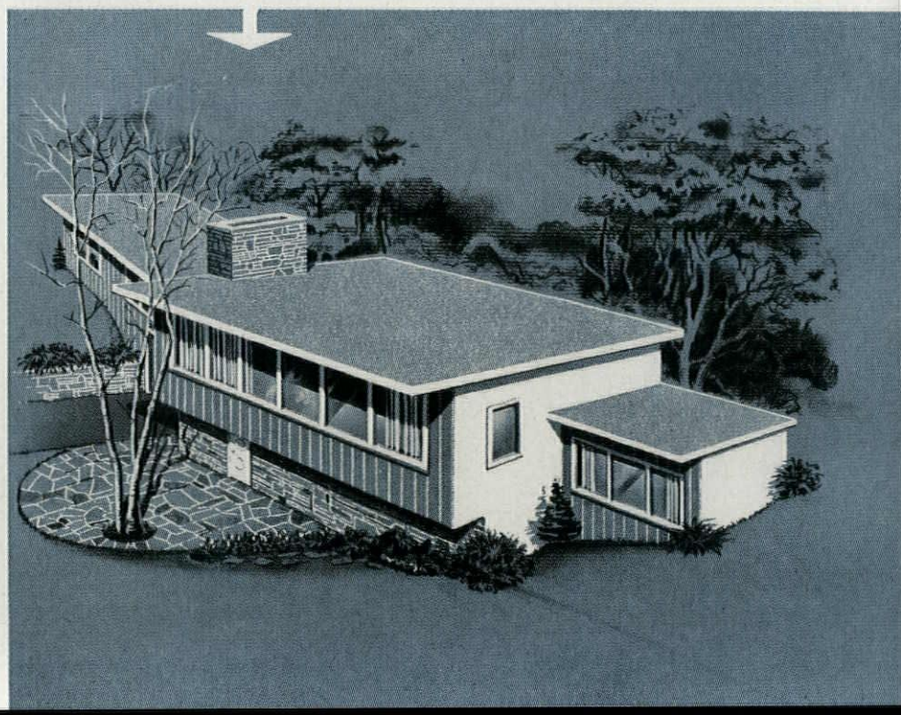
SKYLINE consists of three separate specifications: Skytab . . . Skytex . . . and Skykote.

Wire, phone or write for complete detailed information . . . and see for yourself.

THE FLINTKOTE COMPANY, Building Materials Division, 30 Rockefeller Plaza, New York 20, N. Y.

FLINTKOTE

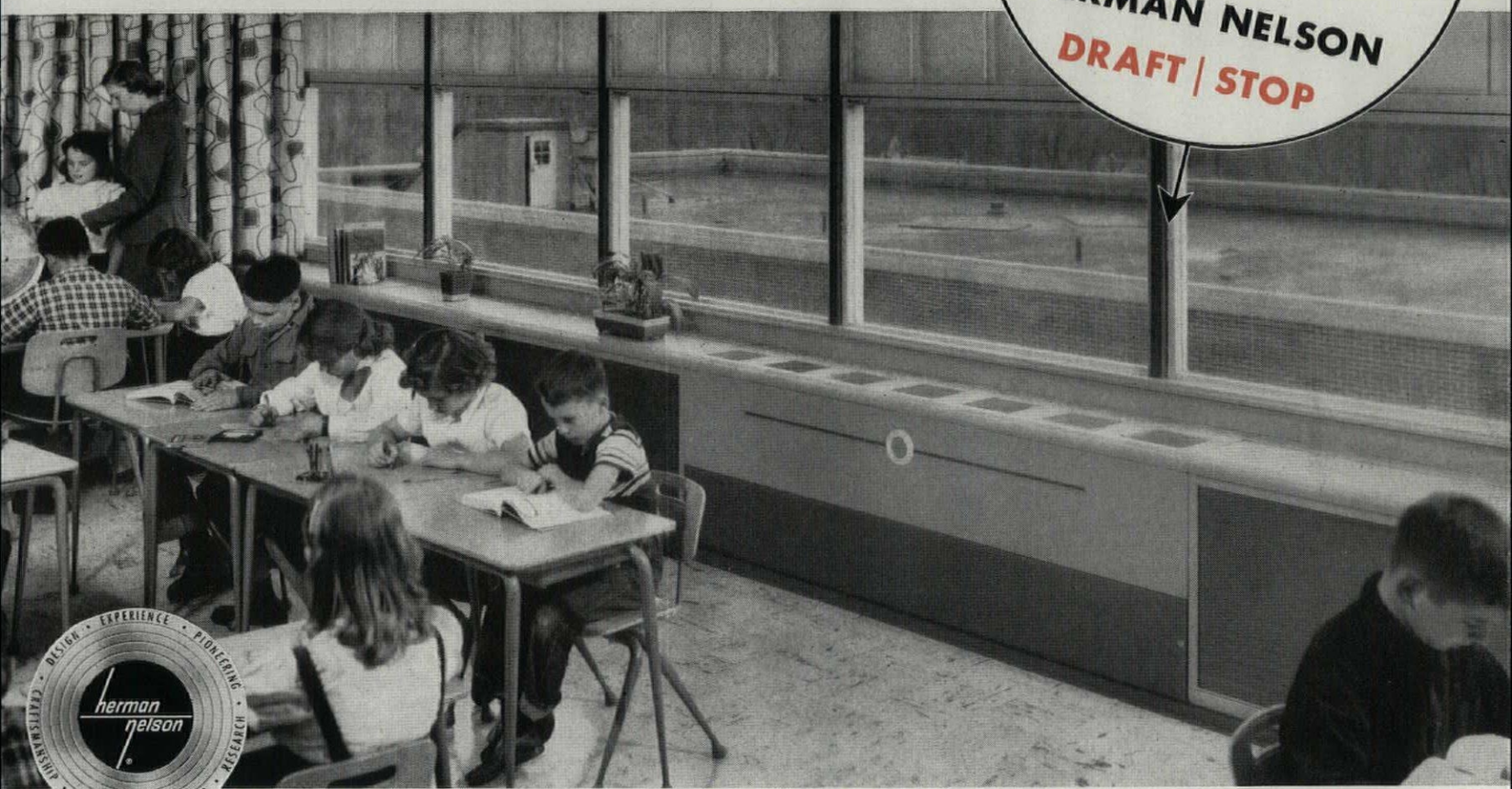
Style and Color Leader since 1901



IN THE "CLASSROOM OF TOMORROW"

Cooling, Heating and Ventilating are Essentials

UNIVERSITY OF MICHIGAN RESEARCH LABORATORY CLASSROOM PROVIDES *all 3* WITH HERMAN NELSON DRAFT | STOP



New "classroom of tomorrow" at the University of Michigan Daylighting Laboratory creates the ideal environment for learning with modern daylighting; a complete heating, ventilating and cooling system and homelike furnishings.

DESIGN · EXPERIENCE · PIONEERING · CRAFTSMANSHIP · RESEARCH · SERVICE · ENGINEERING

herman nelson

DRAFT | STOP

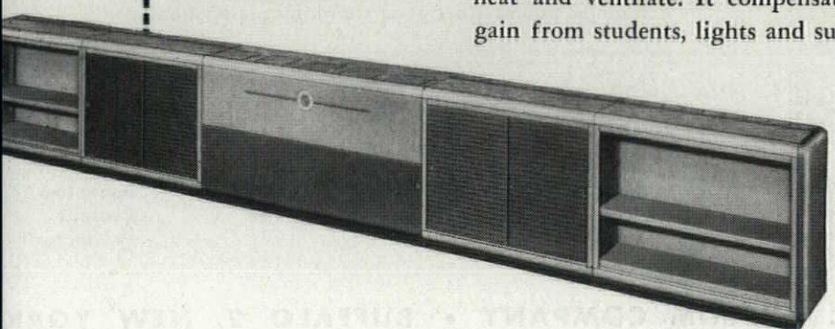
Provides

COOLING
HEATING
VENTILATION
ODOR CONTROL
DRAFT ELIMINATION

The "classroom of tomorrow" was not designed by dreamers. It is the carefully conceived product of practical scientists and educators. Here, in a single room, they have incorporated all the elements needed to create the ideal environment for learning.

One of the major contributors to this ideal environment is the Herman Nelson Draft|Stop System of Unit Ventilation. This system does more than heat and ventilate. It compensates for the heat gain from students, lights and sun—provides for *classroom cooling* by introducing quantities of outdoor air in such a way as to avoid drafts and maintain comfort conditions.

Heating, ventilating and *cooling*, with positive draft control at all times—Herman Nelson offers you *all* of these advantages today for your classrooms of tomorrow. For further information, see our catalog in Sweet's Architectural File, or write Herman Nelson Unit Ventilator Products, American Air Filter Company, Inc., Louisville 8, Ky.



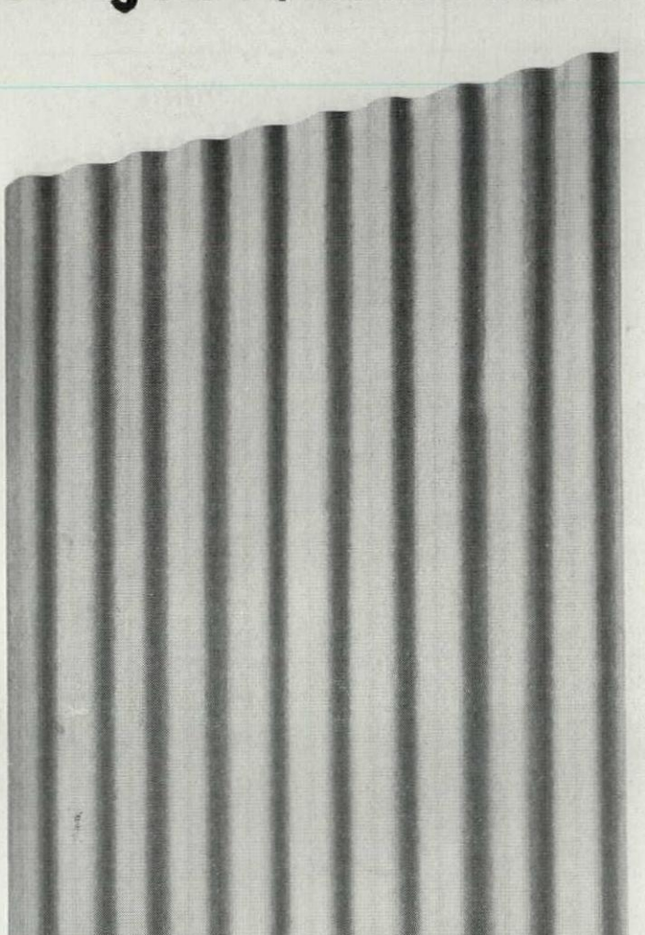
herman nelson

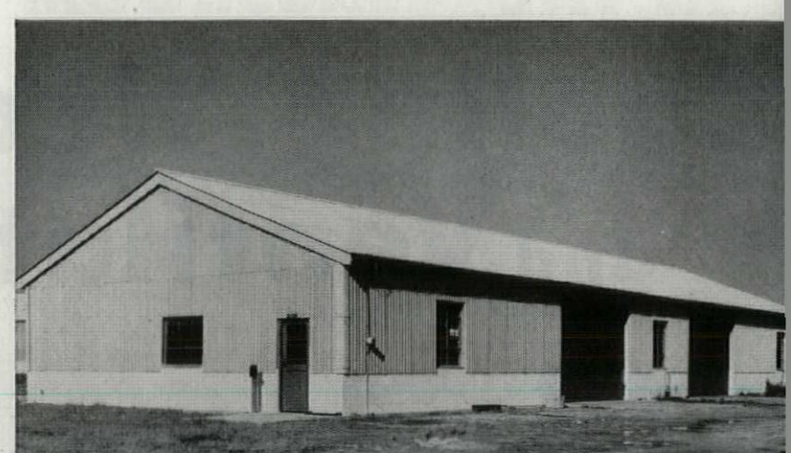
UNIT VENTILATOR PRODUCTS

American Air Filter Company, Inc.

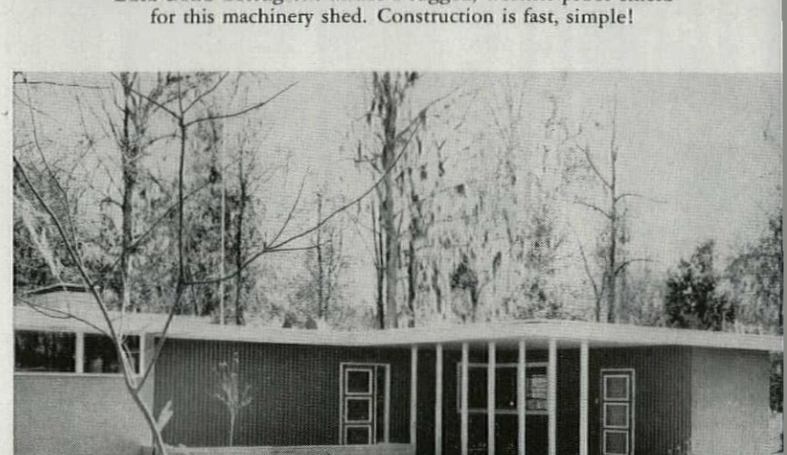
SYSTEM OF CLASSROOM HEATING, VENTILATING AND COOLING

Is there anything you can't use Gold Bond Corrugated Asbestone for?





Gold Bond Corrugated makes a rugged, weather-proof shield for this machinery shed. Construction is fast, simple!



Clean simplicity... distinctive modern design... both achieved with panels of Gold Bond Corrugated!

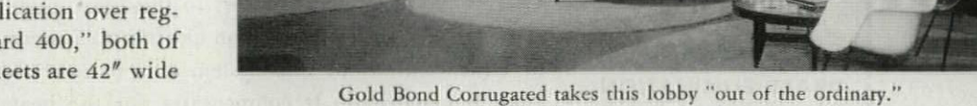
Gold Bond Corrugated takes this lobby "out of the ordinary." It can be painted... but never *needs* it for preservation!

GOLD BOND Corrugated does so many jobs so well, you can use it just about everyplace! It's made of asbestos and cement ... ideal for industrial sidewalls and roofs. It is naturally strong, fireproof and resistant to corrosive alkalis and acids.

And because Asbestone is *corrugated,* you can achieve an almost endless variety of striking designs in industrial, commercial and residential buildings! Specify "Economy 250" for application over regular wood frame construction or heavy-duty "Standard 400," both of the same high quality as all Gold Bond Products. Sheets are 42″ wide and 3′ up to 10′ in length.

Get the undivided responsibility of National Gypsum

Specify Gold Bond® inside and out



Gypsum Board Products | Plaster and Lime | Insulation Plank and Tile | Rock Wool | Paint Products | Acoustical Tile | Asbestos-Cement Products

NATIONAL GYPSUM COMPANY • BUFFALO 2, NEW YORK

The New Kawneer W-Marquee—

changes sun and sky-glare to soft light, protects against rain and snow. Installs easily on building face by attaching to cantilevered supports or tension rods.

new aluminum marquee
does so much...costs so little

Now, with the new Kawneer W-Marquee, your client's buildings and his customers can have protection against sun, sky-glare and inclement weather—at very low cost. With this protection, you get the long-lasting beauty of Kawneer's striking new design in durable, light weight alumilited aluminum. Existing buildings and future structures can and should have all the advantages of Kawneer's W-Marquee. ***Remember Kawneer when you want sun-control products.*** Kawneer helps you control both sun and weather with the Kawneer K-Louver, Kawneer Aluminum Roll-Type Awning, and the Kawneer W-Marquee. For complete information, including full-size architectural details and the name of a nearby Kawneer Installing Dealer, write, wire or phone Kawneer, Niles, Michigan.

Advantages of new Kawneer W-Marquee:

PROTECTS CUSTOMERS
against sun • against rain • against snow

IMPROVES STORE FRONT APPEARANCE
all alumilited aluminum eye-catching design
stops street, sun and sky-glare, filters light

LOW MAINTENANCE COSTS
nothing to rot, burn, fade or wear
no raising or lowering • no parts to wear out

CONFORMS TO MOST BUILDING CODE REQUIREMENTS
Strong, rugged construction • designed to carry a live load of 40 lbs. per sq. ft.

SHOPPING CENTERS

7. Nonrental sources of income

These are now developed individually in one shopping center or another, usually with reasonable profit to center owner. Many apply only to a center operated on the full-management-by-owner principle. *In some projects, revenue from nonrental sources reaches a net of 25¢ per sq. ft.*

- Utilities—electricity, chilled water, steam
- Garbage collection
- Watchmen's services
- Window cleaning
- Porter and sanitation service
- Maintenance in tenant premises
- Advertising space on mall
- Leasing of gasoline stations
- Public accommodations—pay toilets, lockers, telephones, etc.
- Sales promotion activities
- Rental of assembly areas
- Children's concessions
- Taxi stands

8. Central vs. individual utilities

This is not so simple a problem as determining relative cost and other advantages of unit or central systems to owner and tenant, nor even so simple as determining whether advantages of a central system justify the capital outlay. Indeed, as a practical matter, the decision on utilities must often be resolved entirely apart from questions of cost or advantage. The core of the question is the financing and possible operating problems involved where mortgage financing for individual parcels of a center is proposed.*

9. Underground service—does its importance really rest on convenience?

Truck tunnels have a basic effect on the design of a center—they are accompanied by full basements with convenient and desirable rental space. Gruen and Smith think it may be more than coincidence that the highest total revenue per square foot seems to be produced by projects with the largest amount of basement area (coupled with underground delivery). Thus it is possible that truck tunnels may be more important as rent producers for basement space than they are as service conveniences. Gruen's and Smith's previous studies of surface and underground service are now being integrated with financial data to investigate what kind and how big a role delivery systems actually play.

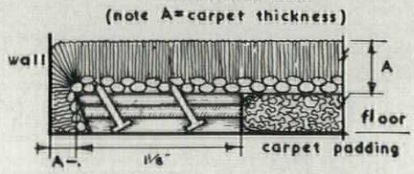
* All available engineering reports on utilities in regional projects built to date are being analyzed by Abbott Merkt & Co., whose president, Colonel R. H. Tatlow III, is cooperating with Gruen and Smith; results are expected to throw more light on this whole complex problem.

1845

Alexander Smith
INC
White Plains, N. Y.

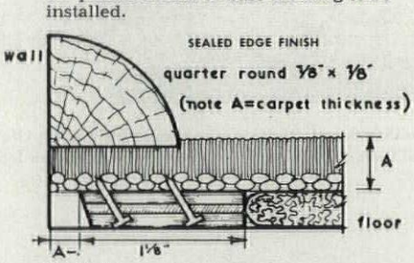
THERE'S MORE TO LAYING CARPET THAN MEETS THE EYE

FLUSH-TO-WALL FINISH
(note A=carpet thickness)



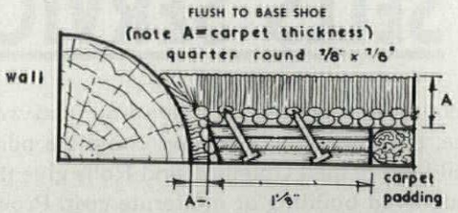
Flush to wall finish used at raised hearths, door jambs, abrupt thresholds and around the entire room if there is no quarter-round or base molding to be installed.

SEALED EDGE FINISH
quarter round ⅛" x ⅛"
(note A=carpet thickness)



Sealed edge finish used where base shoe or quarter-round is installed. Carpet is held by Gripper and sealed between Gripper and base shoe.

FLUSH TO BASE SHOE
(note A=carpet thickness)
quarter round ⅞" x ⅞"



Carpet installed flush to base shoe when removal of base shoe is likely to cause breakage or chipping of paint.

See Sweets AIA File 19J

The wall-to-wall carpet in the executive offices of ALEXANDER SMITH is installed with NO TACK MARKS using

Smoothedge®

TACKLESS CARPET GRIPPER

When a world famous carpet mill has wall-to-wall carpet installed in its own executive headquarters, the installation has to be perfect in every respect. Alexander Smith, Inc., for its White Plains Executive Office Building, selected SMOOTHEDGE tackless installation.

This job was laid over a concrete floor. The concrete was first sanded to give a smooth surface *and thoroughly dusted.* Adhesive was applied to both the concrete and to the back of the SMOOTHEDGE before placing the gripper in position.

Send for informative installation manual

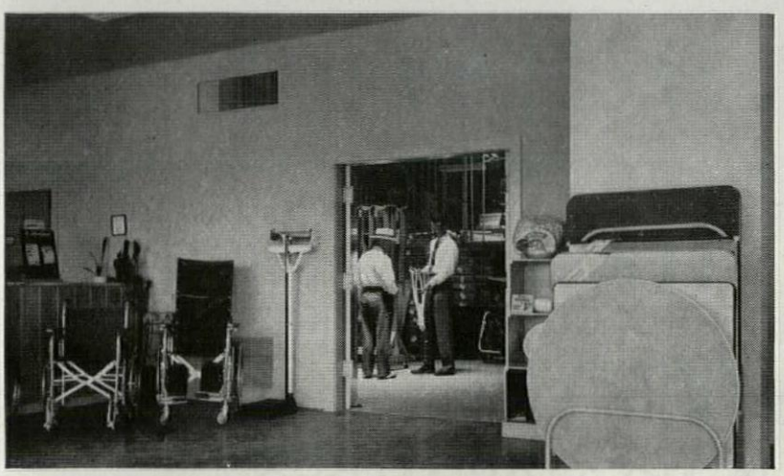
THE ROBERTS CO.

Guaranteed by Good Housekeeping

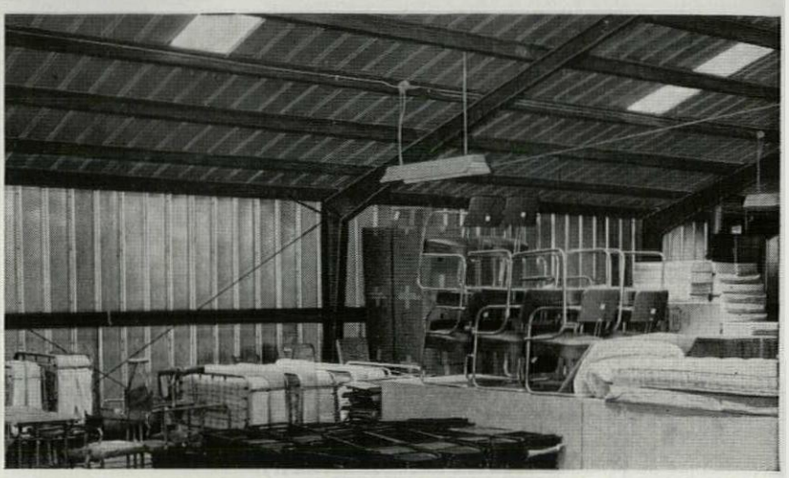
1536 No. Indiana Street • Los Angeles 54, California • Dept. AF43

In Canada Write Box 129, Weston, Ontario

Traffic stopper! Butler buildings combine easily, economically with other materials for functional beauty.



Sales builder! Attractive display space in this Butler building upped sales 20% in three weeks. Modern offices help keep employee morale high, encourage efficiency.



Utility! Butler clear-span furnishes floor-to-roof storage space. Translucent Lite*Panls flood the building with natural light. Aluminum sheets, bolted firmly, assure long life.

Architect-designed

This BUTLER building SELLS SERVICE

Planned by Golemon and Rolfe—well-known architects in Houston, Texas—for Best Rentals, Inc. in Houston, this Butler building began to produce more business the day the supply rental firm moved in!

New customers are attracted by the building's modern, attention-getting front. Larger, more effective equipment displays are at work in the roomy, well-lighted showroom. Deliveries are faster and customer service is improved with the convenience of the clear-span interiors. Employee efficiency stays high in the comfort and cheerfulness of the new Butler building, too! Big doors and inside docks save time and work.

At the same time, the low-initial cost and complete adaptability of Butler buildings helped Golemon and Rolfe give their client a modern, long-lived building at moderate cost. Proving the sound economy of creative architecture teamed with Butler steel buildings with steel or aluminum sheeting.

See your local Butler dealer! Ask him for a copy of the new Butler Architect's Brochure—A.I.A. file number 14i. It will tell you more about the architectural adaptability of Butler buildings. Write for name of your dealer and more facts by mail.

BUTLER® STEEL PRODUCTS

BUTLER MANUFACTURING COMPANY

For prompt reply, address office nearest you:

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KNOW THIS TOP QUALITY LINE

Get acquainted with this new line of all steel flush doors and frames that have already been proved in some of the finest new commercial projects erected in the past few years. All USF Doors are triple box constructed and internal welded for rigidity—mass produced for economy.

USF 1¾" Doors are made in every type you require and follow a flush surface design that permits all doors in your project to match exactly. One-piece matching frames are easiest of all to install. All types of USF Doors and Frames can also be furnished in stainless steel if desired as illustrated in roof entry above.

Let us send you fully descriptive literature or see our catalog in Sweet's.

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Representatives • Minneapolis, Minn. • Seattle, Washington • West Somerville, Mass. • Akron, Ohio • Cincinnati, Ohio • San Juan, Puerto Rico • St. Louis, Mo. • Toledo, Ohio • St. Petersburg, Fla. Mobile, Alabama • Kansas City, Mo. • Madison, Wisconsin Buffalo, N. Y.

MOSCOW *continued from p. 161*

planned city building. Contrasts between the center and edges of the city are elimi nated. Situated as they are on the highes places and at the most important point of the capital, Moscow's high building may be seen from the great distances. They emphasize the hilly relief and radial plan ning of the city of Moscow. They will be the most important orientation points in the city's built-up area.

"When construction started on the firs of the eight high buildings in 1949, the plan for socialist transforming of the USSR's capital got under way. It signifies a new stage in the development of Sovie architecture and building technique."

The encyclopedia also says the eigh new structures embody "socialist realism in the architecture of high buildings." It em phasizes that there is a real connection between the many tiered tall buildings on the one hand, and Moscow's old architec tural monuments and its planned new Pal ace of the Soviets on the other. The Palace of the Soviets and the new tall building "combine the majestic calmness and balance of mass with the uprushing dynamics of vertical development of the buildings.

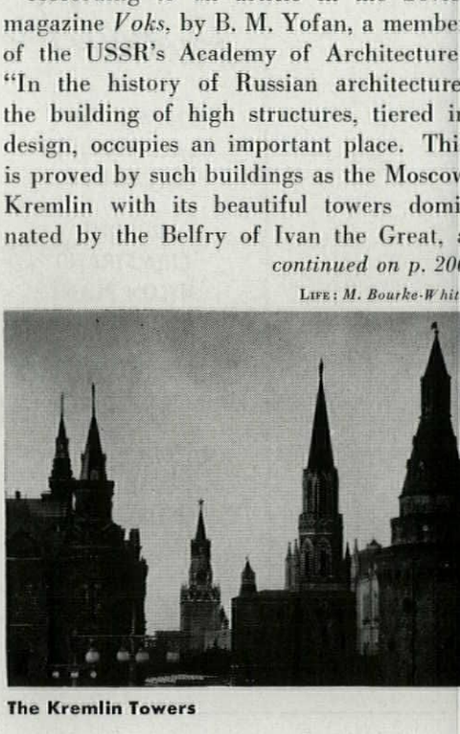
"In the new high buildings, in conform ity with the government directives, Mos cow's traditional architecture is united with the daring aspiration to new images.

"The sculptural perfection of the many tiered, clifflike buildings, the picturesque ness of the silhouette, the rich plastic work ing of the facades, link the high building with the historic architectural monuments."

According to an article in the Sovie magazine *Voks*, by B. M. Yofan, a membe of the USSR's Academy of Architecture "In the history of Russian architecture the building of high structures, tiered in design, occupies an important place. This is proved by such buildings as the Moscow Kremlin with its beautiful towers domi nated by the Belfry of Ivan the Great,

continued on p. 20

LIFE: *M. Bourke-Whit*



The Kremlin Towers

Architects and Engineers agree it's tops in its class.

NORMAN SCHOOLROOM HEATER

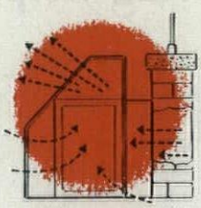
Before you decide . . . here's a new low-cost way of heating you should know about.

There's just nothing to match it! Yes, the Norman Schoolroom Heater provides you with a far superior heating system at a cost . . . lower than ever before.

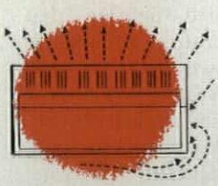
Here's the answer to real heating comfort in any schoolroom . . . not stale dry heat, but clean comfortable gas heat that introduces refreshing warm air into your schoolroom.

But that's not all! The Norman Schoolroom Heater brings you all the advantages of a central heating and ventilating system . . . with Norman's exclusive, compact, space-saving design that really cuts installation costs.

And what a pleasure to work with . . . so healthy and relaxing for students and children that you'll agree . . . it all adds up to better attendance . . . less absenteeism on cold winter days.



Preheated outside air mixes with room air as it passes through the Norman Schoolroom Heater. Flow of air can be adjusted with a damper, so that no expensive ventilation system is needed . . . and piping is completely eliminated.



Circulation of Warm Air eliminates "cold spots" in front of windows and prevents excessive drafts along floors. Room air is later drawn back through heater to mix with fresh outside air for continuous circulation of refreshing warm breezes.

Take a lesson . . . from the Norman School Heater. Send for illustrated literature and get the complete facts on low-cost gas heating with the Norman Schoolroom Heater. Or write direct to your Norman Dealer for your copy.

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Architects and Engineers: We invite your inquiries. Please send folder, "Norman Schoolroom Heater"

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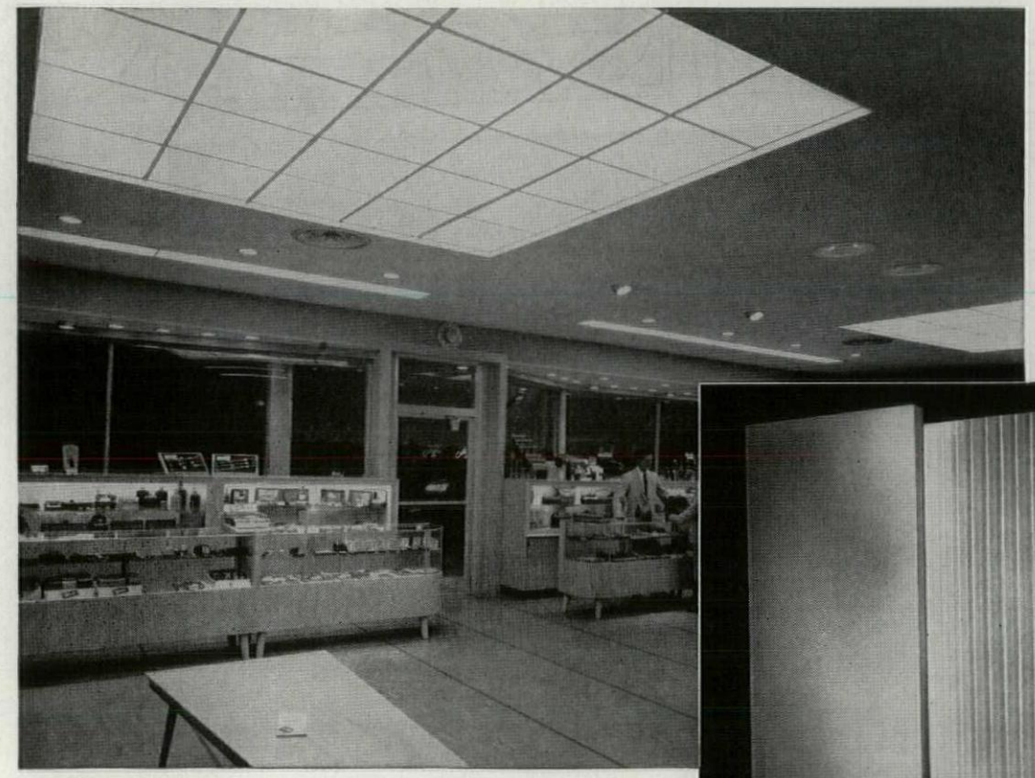
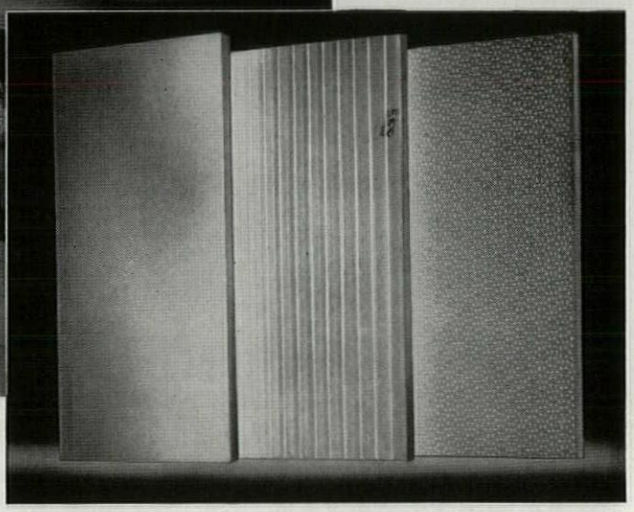


Carey's Luggage Store, Elmira, N. Y. Alba-Lite panels assure evenly diffused, shadow-free and glare-free illumination throughout. PYREX brand Lenslites focus light on merchandise to enhance buyer interest.

Alba-Lite is available in 3 flat patterns (as shown) in sizes up to 24" x 100", in standard bent shapes or bent to order. Ask for Bulletin LS-43.



How lighting helps lure travelers to this luggage store

Every retailer has the problem of attracting more customers in order to sell more merchandise.

Here's an example of how Corning engineered lighting helped solve that problem for Carey's Luggage Store, Elmira, N. Y.

Carey's needed lighting that would be decorative as well as efficient. That's why Alba-Lite was selected. And you can see how well Alba-Lite fills the assignment.

Smithcraft Area Illumination, utilizing large panels of Alba-Lite, provides 100 f.c. of evenly diffused, glare-free and shadow-free light. Merchandise is presented to customers in its rich, sales appealing best. That's because Alba-Lite transmits the true color of the light source. Fixture efficiency is high—yet panel brightness is low.

And the lighting and decorative advantages Carey's is enjoying today will never diminish. Alba-Lite won't fade or discolor or warp with age or atmosphere. Its smooth surface is easy to clean. It keeps its new look.

Use Lenslites for Emphasis

PYREX brand Lenslites with 150-watt lamps and mounted in Litecraft fixtures focus attention on gift and decorative items. The illumination level on counters beneath the downlights is 200 f.c. and on the display shelves it is 100 f.c. Two center Rambush ceiling downlights draw buyers to items in the showcase below . . . boost profitable impulse sales.

You can achieve equally effective results with Corning engineered lighting for schools, hospitals, offices . . . in just about every lighting project that comes your way. For additional information, write for the new Architects and Engineers Handbook. It's filled with helpful and useful information. Send the coupon today.

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Excellence of color work in concrete materials begins with the whiteness of the cement used. This is true regardless of whether the color is to be achieved by exposed colored aggregates; or by the addition of pigments to the mix.

Use Trinity white for architectural concrete units; terrazzo; stucco, etc. It is the whitest white—gives better color effects. It is a true portland cement.

Meets all Federal & ASTM specifications

Trinity White

As white as snow ... plain or waterproofed

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Moscow University's main building *dominates complex of 20 buildings covering 790 acres on Lenin Hills. Flanking wings contain rooms for 6,750 students and faculty apartments.*

MOSCOW *continued*

masterpiece of architecture. We might also mention St. Basil's Church and the belfry of the Novodevichy Monastery in Moscow, Smolny and the central tower of the Admiralty in Leningrad and many others. It might perhaps be better to call them 'lofty,' rather than 'high' structures, the word lofty having not only a quantitative connotation of size but a qualitative connotation of purpose and of artistic expressiveness. . . .

"The individuality of Russian high buildings in the past lay in their tiered design, and this has been incorporated into the architecture of contemporary, many storied buildings. In many cases, this tiering was achieved by grouping together several vertical masses similar or varying in form as the case might be. An example of this type of tiered architecture is St. Basil's Cathedral. But it was also achieved, and more commonly, by using a single architectural mass, as in the case of the Kremlin towers.

"Russian high buildings are always effectively situated. By dominating the surrounding territory, they give architectural emphasis to vast spaces. Usually they stand on a hill open on all sides, so that the blue sky forms an ideal background for the free and easy ascent of their tiered masses. The idea of tiering tall buildings was dictated by the desire to show that these buildings grew out of the town itself, and the effort to give architectural expression to this idea. The effect is achieved by having the lower tiers of a height with the surrounding buildings. Besides beautifying the skyline of the town, these high buildings merge with others to form large ensembles, creating the impression of grandeur. . . ."

Wide World

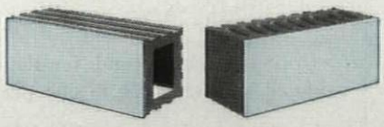
St. Basil's Cathedral

you can *rely* on FACING TILE ... it's proved by years of varied use!

After 16 years of service, the glazed structural Facing Tile in corridors, stairwells, showers and gymnasium in Pittsburgh's Concord School shows no signs of wear and tear.

"We haven't had to spend a penny on Facing Tile maintenance," says H. L. Heilman, Director of Plant Operation and Maintenance, Pittsburgh Public Schools. "This material defies pencil marks and other natural hazards of school operation. It cleans easily—and it's just as good looking today as when the school was built."

Corridor, Concord School
Pittsburgh, Pennsylvania



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Charleston 24, West Virginia

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Used only by the members of the Facing Tile Institute, it is your assurance of highest quality. In the interest of better Facing Tile construction the companies listed above have contributed to the preparation of this advertisement.

MINIMUM MAINTENANCE—Facing Tile's smooth impervious surface offers no foothold for dirt or grime, washes clean as a beach pebble with plain soap and water.

NO REFINISHING COSTS—Glazed or unglazed, Facing Tile saves your clients the expense and inconvenience of redecorating—its tough ceramic finish takes all sorts of heavy punishment without harm—year after year.

PERMANENT "COLOR-ENGINEERING"—Facing Tile colors are scientifically designed by color authority Faber Birren to help you fit the surroundings to the task—and you can rest assured that the color you specify will *last*.

STRUCTURAL STRENGTH—No need to worry about material failures—Facing Tile provides the time-tested structural stability of burned clay products.

CONSTRUCTION ECONOMY—Made in large modular sizes, Facing Tile lays up fast, with a minimum of cutting and fitting, builds a load-bearing wall and finish in one.

For complete data, contact any Institute Member, or write us direct. Address: Dept. AF-3.

FACING TILE INSTITUTE

1520 18th St., N. W., Washington 6, D. C. • 1949 Grand Central Terminal, New York 17, N.Y.

HOW TO CUT HOSPITAL MECHANICAL COSTS *continued from p. 164*

can be taken care of by operating the two steam boilers at 125% of rated capacity and using a hot-water converter for the heating system."

Hot-water heating, in our experience, is much the best type for a hospital. With a closed system, the temperature at the radiators can be run up to 200° in extremely cold weather, but most of the time radiators will be at 100° or less, which means a maximum of comfort with a minimum of dehumidification. It costs no more to install than other types of heating, is less expensive to maintain, simple to regulate and sensitive to temperature control.

Economy in operation

Whatever the kind or size of heating plant, if it is to operate efficiently all the controlling instruments and ventilating fans must be kept in careful and constant adjustment. (In air-conditioning systems, precise adjustments are even more vital.)

In most hospitals, this work has to be done by an engineering staff which has to pay as much attention to broken shades and peeling paint as to leaking steam valves or defective refrigeration controls. The frequent result is unbelievable waste.

In a group of 12 uninsulated hospitals, all in northeastern US, power, light and heat costs ranged from 66¢ to $1.97 per patient per day. These disparities are in part an indication of the degree to which inefficiently run plants can affect costs.

New hospitals should retain the engineers that designed the mechanical plant to check the system at least twice a year. Such supervisory arrangements might also well be worked out with consulting engineers, who would find a big field for their services in older hospitals with conventional heating and ventilating plants. The cost of such arrangements would in most cases be only a fraction of the money now wasted in inefficient operation by harried and often inadequately trained engineers on the hospital payroll.

AIR CONDITIONING

continued from p. 164

New York City had only 526 hours with a temperature above 85°.

The cost

Cost comparisons between general year-round air conditioning and ordinary heating and ventilating in hospitals are difficult to arrive at. There is so little available information on air conditioning costs in hospitals that we must use estimates derived from other types of buildings. (The derivation of the figures following is explained on p. 206.)

Capital expenditure

- Complete air conditioning: $2 to $3 per sq. ft.
- Ordinary heating and ventilating in an insulated hospital: 47¢ to 60¢ per sq. ft.

(In addition, the conventional duct system for air conditioning adds to ceiling heights and cube, increasing the size of the building by some 19%.)

Operating costs

- Complete air conditioning: 22.3¢ per sq. ft. annually.
- Ordinary heating and ventilating in an insulated hospital: 7¢ to 10¢ per sq. ft. annually.

(Incidentally, heating and ventilating operating costs in older, uninsulated hospitals are running about 29¢ per sq. ft. annually—more than the cost of complete air conditioning in an insulated hospital.)

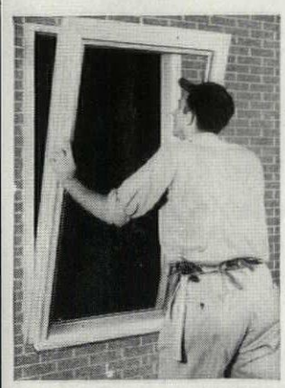
continued on p. 206

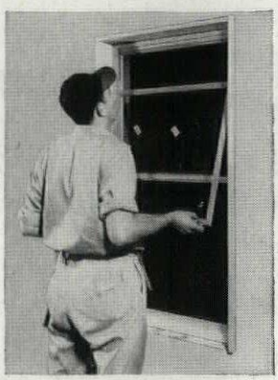
Shaker Towers, Cleveland, Ohio. DeLuxe apartment equipped with Rusco Prime Windows with insulating sash. Architect: Joseph Ceruti.

Wherry Housing Development, Selfridge Air Force Base, Mt. Clemens, Michigan. Equipped with more than 5,000 Rusco Prime Windows.

Town House Apartments, Detroit, Michigan. Rusco 3-panel "Fulvue" Prime Windows used throughout. Builders: Byrne Organization, Inc.

Specification: RUSCO PRIME WINDOWS





because...

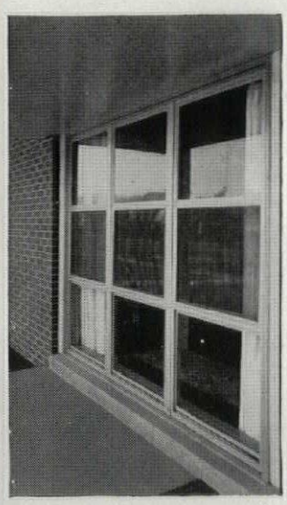
1. FAST, EASY INSTALLATION

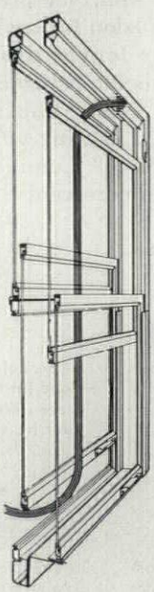
Rusco Prime Windows are fully pre-assembled, ready-to-install units. Glazed, finish-painted with baked-on enamel, *felt-weatherstripped* and complete with metal or wood casing or steel fins. Can be fully installed in a fraction of the time required for conventional windows.

because...

2. MINIMUM MAINTENANCE

Hot-dipped galvanizing, bonderizing and baked-enamel finish make Rusco Windows extremely resistant to the ravages of corrosion and weather. No sash cords, weights, balances or chains to get out of order. Glass inserts are removable and interchangeable. Consequently, "spares" may be stocked to permit handling of broken glass replacement, etc. in maintenance shop.





because...

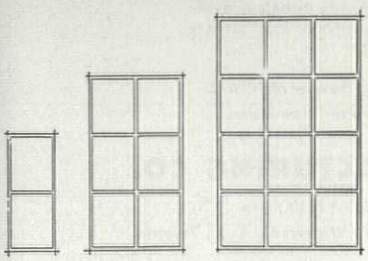
3. SUPERIOR FEATURES

Insulating sash (optional) permits Magicpanel® year 'round, rainproof, draft-free ventilation, as shown in diagram at left, reduces fuel consumption, makes air-conditioning far more efficient. Removable glass inserts simplify cleaning. Fiberglas screen cannot rust, rot, corrode, burn or stain. Inserts slide smoothly, quietly in felt-lined slides.

because...

4. REMARKABLY LOW INSTALLED COST

Because of the speed and ease of installation, and the elimination of field glazing and painting, the installed cost of Rusco Prime Windows is usually less than that of the *cheapest windows obtainable!*



Rusco Prime Windows are available in a wide range of sizes, in 2-panel-high, 3-panel-high and 4-panel-high units. Easily joined in series with Rusco's streamlined non-load-bearing mullions.

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ultra-shallow fluorescent luminaires from MITCHELL

minimum maintenance

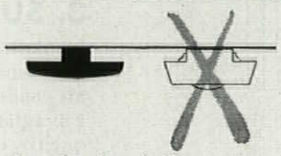
maximum lighting efficiency

ultra-modern styling

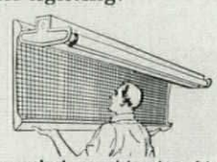
MITCHELL **THINLINE**

Choice of 4 and 8 foot lengths in 2 and 4 lamp models — All lamp types available

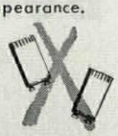
New "Thinline" answers the need for high-efficiency illumination, coupled with attractive styling. Outstanding advantages include: ultra-shallow contour provides pleasing, streamlined installation; special translucent "Evenglo" plastic sides and louver give higher light transmission, yet provide tremendous hiding power and diffusion for desirable low surface brightness; superior louver design with proper 45°/45° cutoff conceals lamps from all normal viewing angles. Advance styling, unusually low maintenance factor and high lighting efficiency make the new MITCHELL "Thinline" Luminaires outstanding values in commercial fluorescent lighting.



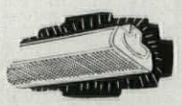
Note the ultra-shallow contour. When flush-mounted, the luminaire presents a beautiful streamlined appearance.



Concealed combination hinge and latch on each side of luminaire permit easy removal of louver from either side.



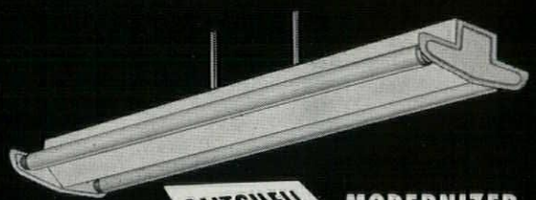
New Rapid-Start units are available; they slash maintenance cost by eliminating expense of replacing starters.



"Evenglo" translucent extruded Polystyrene side panels provide desirable uniform low surface brightness.

MITCHELL **POLARIS**

The new ultra-shallow "Polaris" luminaire incorporates all the fine features described at right, with Penticore prismatic glass shielding delivering a light transmission factor of 85%, with excellent diffusing quality. The combination of high light output and the low surface brightness of the "Evenglo" sides and Penticore Glass shield creates ideal, harmonious lighting for the finest commercial interiors.



MITCHELL **MODERNIZER**

This is the new ultra-shallow luminaire designed to meet the requirements of large commercial installations where high-efficiency lighting and *exceptional low cost* are primary considerations. The luminaire features a V-spine design which provides a highly reflective surface to increase down-light intensity. The 8-foot units feature special "tandem" design (two 4-foot units with one 8-foot body channel) to save installation time and assure perfect alignment in continuous rows.

Write for complete descriptive brochures describing the new MITCHELL Ultra-Shallow "Thinline," "Polaris" and "Modernizer" Luminaires

where quality counts—SPECIFY MITCHELL

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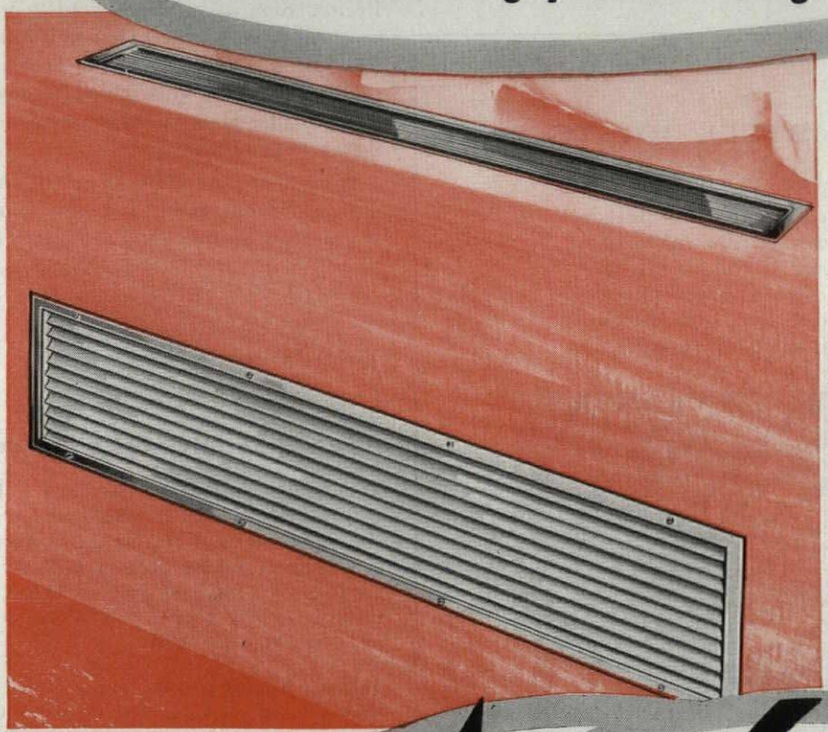
INSTALL *Custom Designed* CONVECTOR GRILLES

without increasing your building costs



- **EXTRA RUGGED**
  Made to *withstand heaviest use and abuse* which lower wall grilles must take.
- **TAMPER PROOF**
  No "see-thru". Extra-close spacing of louvers prevents gum wrappers—waste paper from being dropped between louvers.
- **EXTRA-HEAVY SUPPORT BARS**
  Heavy-duty steel bars on 6" centers give added strength where it is most needed.
- **MADE TO ANY SIZE**
- **OVER 70% FREE AREA**
- **EASILY INSTALLED**
  Precision built to fit snugly. Can be installed in marble, tile or other special surfaces.
- **EXTRA-WIDE BLADES FOR MOST EFFICIENT DEFLECTION OF AIR**
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Above
Photo shows AIRFOIL convector grilles installed in John Hancock Building

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Crame & Ferguson, Boston, Mass.

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Air Foil

AIR CONDITIONING OUTLETS

AIRFOIL CUSTOMED CONVECTOR GRILLES are *built above and beyond average demand. Give air distribution performance that's above and beyond average—YET COST IS KEPT AT STANDARD PRICES.*

Superior construction and performance usually reserved for the highest-priced grilles are incorporated as standardized features of this great new line of convector grilles. *They meet the most exacting specifications of architects and engineers.*

AIRFOIL CONVECTOR GRILLES are better designed—more durable. Feature for feature, dollar for dollar—they cannot be duplicated. Made with a "decorator's touch," *they add new beauty to any installation.*

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CHECK TYPE OF GRILLE ON WHICH INFORMATION IS DESIRED

- ☐ Air conditioning outlets
- ☐ Return air grilles and registers
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- ☐ Perforated metal and ornamental grilles
- ☐ Door ventilators
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- ☐ RUSH information on Convector Grilles.
- ☐ Send complete catalog.
- ☐ Send literature on above checked items.

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These air-conditioning cost figures are probably low. A leading air-conditioning engineer has reported that a 1,000-ton plant in an office with 300,000 sq. ft. of rental space would increase construction costs by $5.35 per sq. ft.; estimated operating cost would be about 45¢ a sq. ft. (not including fixed charges of 58¢). The gap between his figures and those above would undoubtedly be narrowed were differences in specifications taken into account. [US average operating cost for air-conditioned office space is 27.3¢ per sq. ft. (excluding fixed charges) of which 16.9¢ is for cooling.—ED.]

But even using the low cost figures, air-conditioning capital expenditure is 3½ to 5 times that for ordinary heating and ventilating; operating costs are 2 to 3 times as high. And hospitals, unlike commercial enterprises, have nothing to gain financially from this.

In spite of formidable costs, many hospital trustees may feel that the popularity and comfort of air conditioning weigh in its favor —or at least in favor of structural provisions for adding cooling in future. They and their engineers and architects would be wise to study the lesson taught by many hospitals built around the turn of the century.

In those days most big hospitals were built with elaborate plenum systems for ventilating. Except for actual cooling, these systems functioned much as does modern air conditioning. Recirculation of air from ward to ward was considered dangerous so huge volumes of fresh air were brought in, washed, heated in cold weather and distributed through large ducts. Boiler plants were enormous to handle the air heating load.

When many of these hospitals discovered the cost of operation, and also found their systems caused drafts and noise, they removed

continued on p. 210

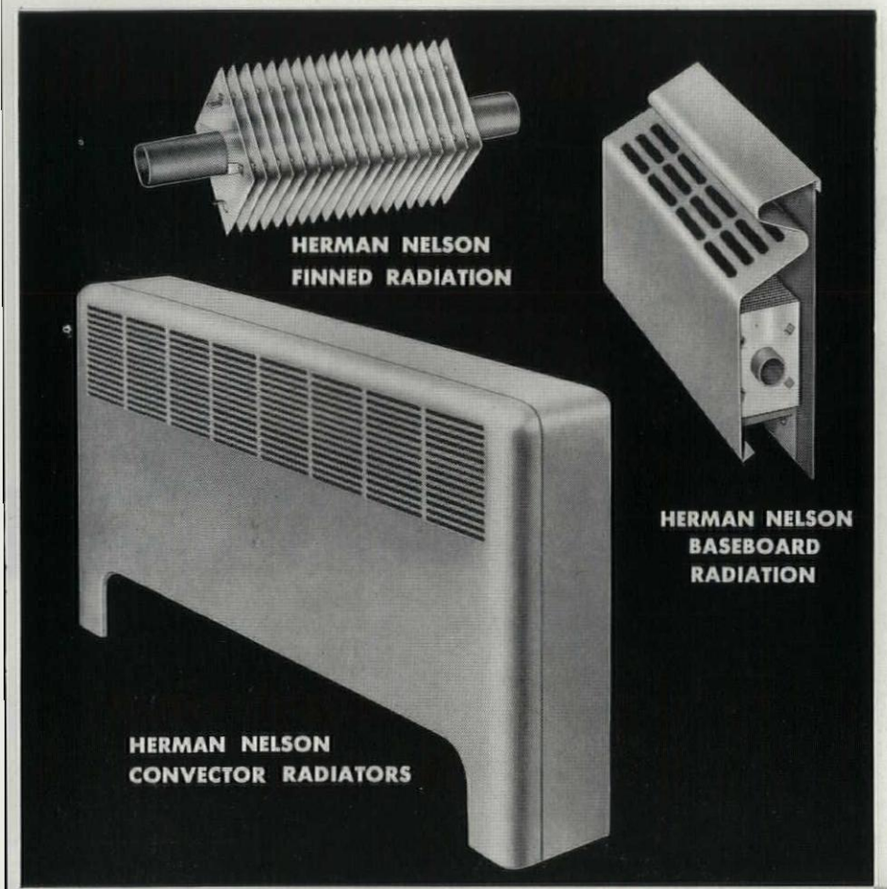
How comparative costs are derived:

Air-conditioning capital expenditure is based on unit cost figures of $700 to $900 per ton of refrigeration equipment, including distribution systems and controls, adding $120 to $150 per ton for heating, for a total of $820 to $1,050 per ton. Cooling capacity needed is estimated at one ton for every 300 to 400 sq. ft.

Ordinary heating and ventilating capital expenditure is based on C. E. Daniel's estimate for 0° design temperature, of 1 sq. ft. of radiation for 160 cu. ft. in a completely insulated hospital. The 160 cu. ft. represent about 15 sq. ft. of floor space in an average hospital. Four contractors' estimates on heating plant range from $6 to $8 per sq. ft. of radiation including cost of hot-water heating plant. This gives square-foot cost of 40 to 53¢; adding a generous 7¢ for mechanical ventilation gives maximum total of 60¢.

Air-conditioning operating costs are based on breakdown by a leading air-conditioning equipment manufacturer for a New York City office building completed in 1951 and carefully designed for air conditioning. The total figure for owning and operating costs comes to 70.3¢ per sq. ft. annually of which 48¢ is for amortization, interest, etc., a figure few hospitals include in their annual cost calculations. Remaining 22.3¢ operating cost is estimated at 10.5¢ for summer months, 11.8¢ for winter. (Same source estimates cost of conventional radiation in same building at 6¢ per sq. ft. plus 1¢ for ventilation. Note close agreement of this figure with calculation below.)

Ordinary heating and ventilating operating costs are based on Daniel's figure of $70 to $100 per bed per year for costs of power, light and heat, derived from experience in a group of insulated and double-glazed hospitals. Roughly 50% of this is for heating and ventilating. Allowing 500 sq. ft. per bed yields 7¢ to 10¢.



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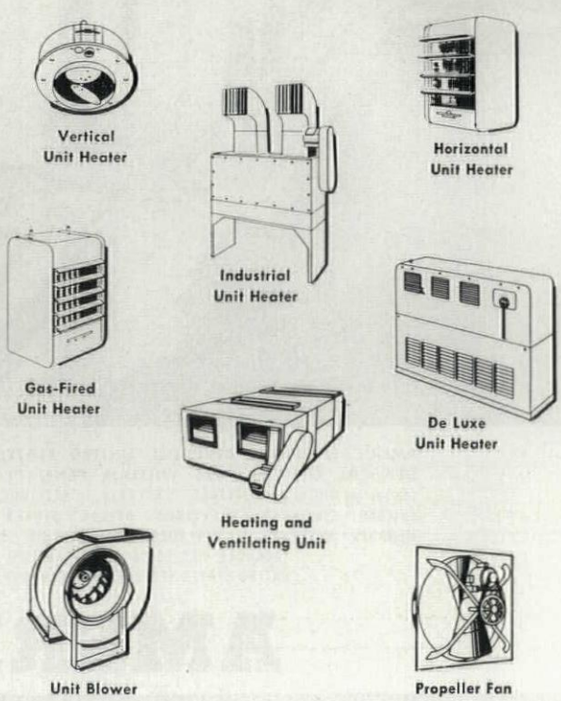

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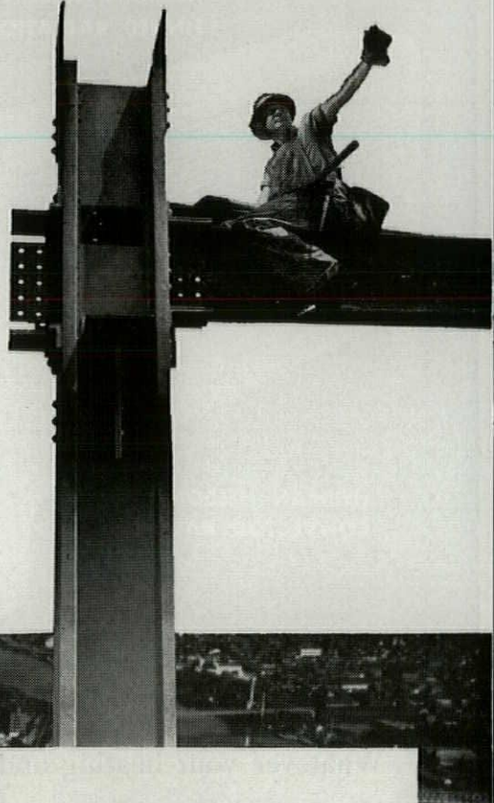
PITTSBURGH'S new buildings have been the talk of the business world. Few cities anywhere have experienced as much commercial construction in so short a time.

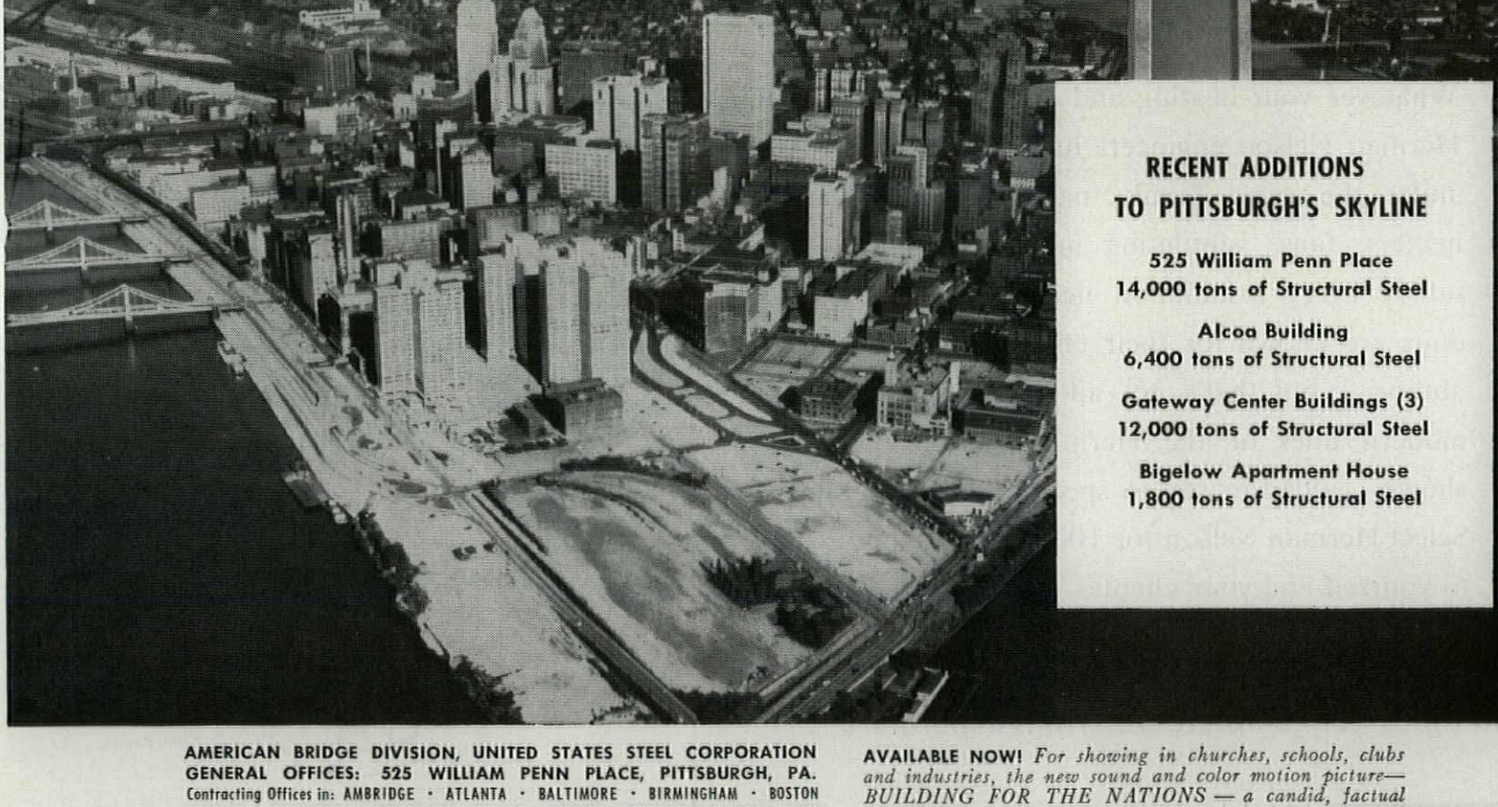
For example, in the famous Golden Triangle, busy hub of this hustling metropolis, American Bridge alone erected 34,200 tons of steel framework for six towering new buildings in the two year period between April 3, 1950 and March 31, 1952.

American Bridge fabricated and erected all structural steel for the 41-story building known as 525 William Penn Place; the 31-story Alcoa building; the three Gateway Center buildings (one of which is 24-stories, and two 20-stories); and the 20-story Bigelow Apartment House.

Such an accomplishment is unusual only in the fact that all buildings are located in the downtown area of a single city . . . and that all were under construction at practically the same time. The interesting point is that one company had the facilities, the skilled manpower, and the engineering know-how to handle six sizable jobs like these with such speed and efficiency without disrupting the time schedule of the numerous other construction projects which it was handling in other parts of the country.

It only goes to prove that no job is too large for American Bridge. If you would like to know more about the advantages of American Bridge fabricated and erected construction, call our nearest office.





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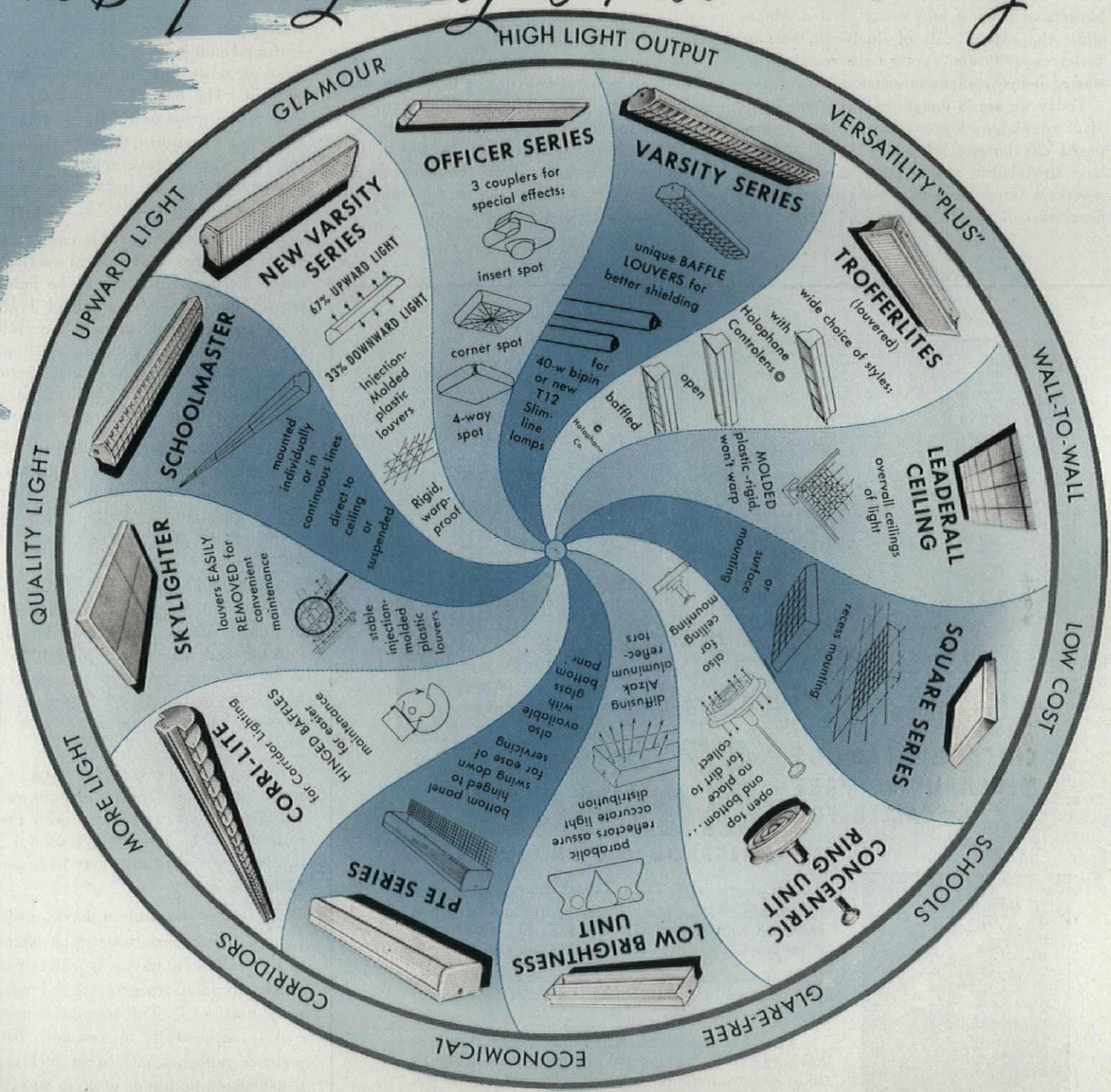
the Benjamin Leader Line...First in Versatility



Nothing is left to chance or compromise when you choose from the Benjamin Leader Line "Wheel of Versatility." One look at the wide range of fixtures and features tells why the Benjamin Leader Line is FIRST in Versatility, no matter what your basis for selecting lighting equipment. Be it first cost or economical upkeep... lighting for effect or high footcandle levels... whether you're trying to match existing architectural treatment or striving to achieve a new, modern decor... Benjamin Leader Line VERSATILITY enables you to find exactly the lighting unit you need. FREE Catalog Data Sheets contain complete details.

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Benjamin Electric Mfg. Co., Leader Division, Dept. YY, Des Plaines, Illinois, also makers of famous Benjamin lighting equipment and sound signals for Industry, Institutions and Commerce.

the central fans and installed small local blowers or exhaust fans where needed. Meanwhile the capital cost of ductwork, surplus boiler capacity and excess cube remained as wasted items in plant investment.

Today we are in danger of a similar expensive overelaboration. One example: a proposed city hospital of 2,500,000 cu. ft. is to have an elaborate ventilating system to accommodate a future air-conditioning plant. Specifications call for 14 supply and 23 exhaust fans with a total of 140 hp. Until funds for cooling are available, it will function as a straight ventilating system.

In comparison, a conservatively engineered suburban hospital built in the late 1940s with 2,400,000 cu. ft., panel heat and the necessary exhaust ventilation, has a total of 14 hp for its six exhaust fans. The hospital has proved completely satisfactory from the point of view of its function, which is to care efficiently for the sick, not to be a luxury hotel.

What is the answer?

If hospitals are ever to be able to afford general air conditioning, some simpler type than most of those now in use will have to be adopted. The one that appears must promising is the panel or radiant system, still in a somewhat experimental stage, although it is reported working satisfactorily in many European and Canadian installations and in the new Alcoa office building in Pittsburgh.

The first hospital in this country to adopt combined panel heating and cooling is now under construction and will be finished this year. This is the Long Island Jewish Hospital, designed with the double corridor plan. It will use 55° well water for cooling instead of mechanical refrigeration. Condensation (the main problem) is to be controlled by exhaust ventilation.

While panel cooling is little tested in hospital use, hospital panel heating has had 40 years of trial, mainly in Britain, Continental Europe and Canada. Its success is one of the reasons panel cooling seems so promising an addition.

Installation costs are high (20 to 30% more than for radiation) when coils are installed in hung ceilings. But when they are built into the underside of a thin slab floor, doing away with hung ceilings and plaster, as we have done in two of our hospitals, they run no more than radiators—in one case 10% less than a firm bid.

Among the advantages: radiators are eliminated, permitting free use of walls even under windows; rooms can be aired with a minimum of heat loss, an important point for a hospital; water temperatures may be lower, saving fuel costs.

The Civic Hospital in Basle, Switzerland, for instance, reports water-inlet temperatures of 158° to 194° in its wards with radiator heat. Maximum inlet temperature for wards with panel heat is 93°. This hospital is using panel cooling successfully in summer. British experience indicates consistent fuel savings in panel-heated buildings of 30 to 40%.

Skeptics generally bring up the possibility of leaks. A report on 42 British hospitals which had panel systems in use for 15 to 20 years, for a total of 232 heating seasons, showed no leaks had developed and no repairs to embedded panels had been necessary.

It may be that perfected panel cooling has not yet arrived. More study needs to be given control of condensation. However, its potential merits are known to be so great that hospital people should pay much more attention to its development than is now the case. It seems to be the best hope for getting a new era in hospital comfort at a moderate and defensible cost.

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Arnot PARTITION-ettes*

designed for Change and Changing!

Remember . . . A Screw Driver Is All You Need!

ADMINISTRATIVE BUILDING FOR
BAYWAY REFINERY, ESSO STANDARD OIL COMPANY
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Since accelerated change is our way of life, architects know from experience that the office floor plan is NOT there to stay in its present state. Changing conditions, changing personnel mean the floor plan will have to change as surely as the pony express gave way to the telegraph, or the quill pen gave way to the typewriter.

Because office space division is not static, the new administrative building for the Bayway Refinery of Esso Standard Oil Company uses Arnot Partition-ettes and Office-ettes† throughout. This is the first structure ever to be specifically planned to accommodate modular, functional office furniture . . . and the world's largest installation of it is now being completed in this fully air-conditioned, elevator building, containing 100,000 square feet of space.

For you, too, Arnot Partition-ettes in STEEL or WOOD are the best answer to the office space division problem. They can work in a variety of combinations, can be extended in any direction, can be moved with ease. A screw driver is the only tool needed for installation and they do not bolt to floors, walls or ceilings.

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The ARNOT PARTITION-ette is a product of

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TRIMLINE radiation costs less. New TRIMLINE features save time and money. Fewer joints necessary, less fittings. All parts mount on one piece top and back. Front cover snaps on after installation.

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TRIMLINE provides the two most used types of heat. Radiant for floor level comfort. Convection for warm air throughout "comfort zone." Continuous inlet and outlet slots assure more heat output.

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Vulcan's NEW, TRIMLINE COVER is designed for enduring beauty . . . built to harmonize with any residential decor. The STREAMLINED top of cover reduces apparent depth. Front easily removed for cleaning.

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Over 28 years a leader in Fin-Tube radiation
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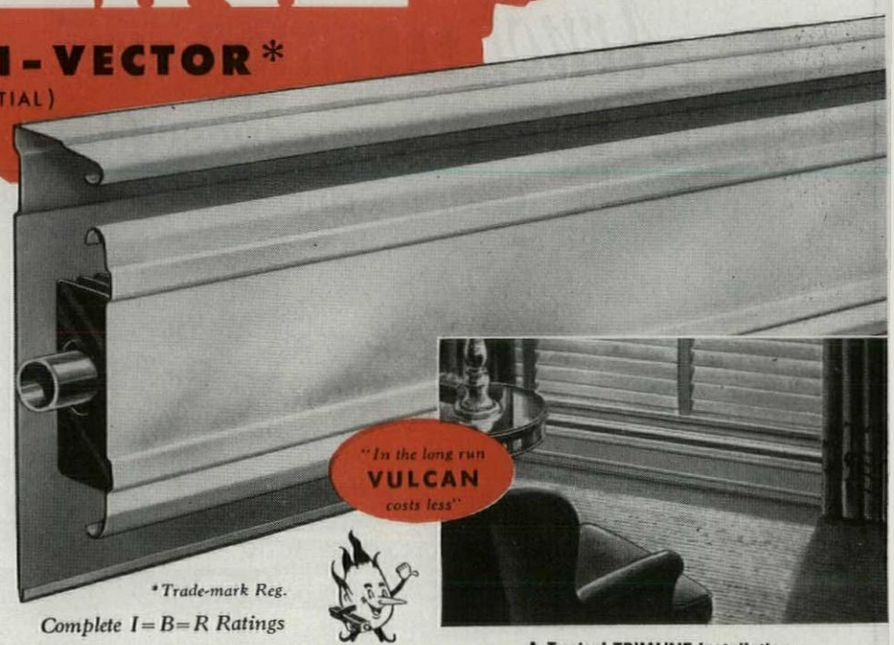

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When you want value, compare before you buy. Feature for feature you will find that ACME Kitchenettes give you more for your money. There's quality construction in ACME Kitchenettes that means years of satisfactory performance.

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All Acme Kitchenettes are guaranteed to give 5 years trouble-free service.

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to assist in building, designing or remodeling plans to show you how you can save space and money.
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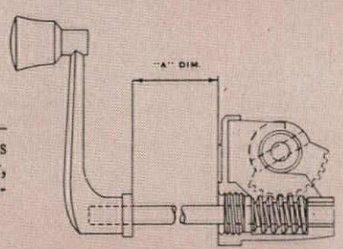

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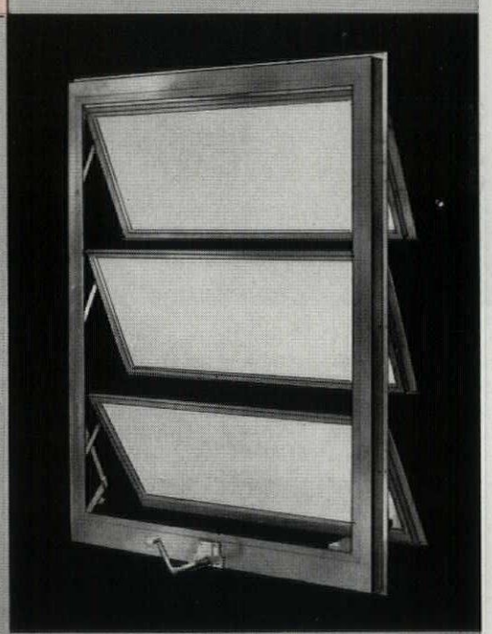
Completely surrounds windows. Takes brick fin and fin trim.

JIFFY-QUICK SILL CLIPS
Slide in channel from each side. Locate as many as wanted where wanted.



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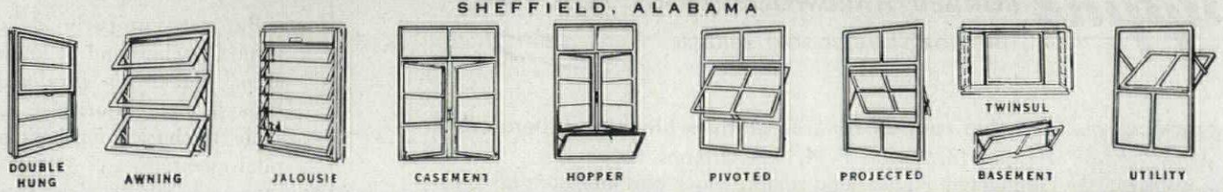

WORLD'S LARGEST MANUFACTURER OF ALUMINUM WINDOWS

BOOK REVIEWS

COMMERCIAL BUILDINGS. Published by "Architectural Record," 119 W. 40th St., New York 18, N.Y. 406 pp. 9" x 11¾". Illus. $9.75

This book consists of offset reproductions of pages originally published in the *Architectural Record* during the years 1947-1952, inclusive. Half of these pages are devoted to office buildings of various kinds; the others show banks, transportation buildings, radio and TV buildings and theaters.

Although the book's many photographs have lost some of their original sparkle in the second reproduction, they are of better quality than those in some of the earlier companion volumes.

DESIGN AND CONSTRUCTION OF GENERAL HOSPITALS. US Dept. of Health, Education and Welfare, Public Health Service. F. W. Dodge Corp., 119 W. 40th St., New York 18, N.Y. 214 pp. 9" x 12". Illus. $12

This book collects into one package the source material on general hospitals worked up by the Technical Services Branch, USPHS, during the past 11 years. All the material has been revised and updated.

The book divides into four sections. The first consists of ten schematic floor plans for institutions ranging in size from 8 to 200 beds. The second, "Design and Construction," is a primer of factors affecting hospital design; it makes salient points on everything from circulation flow to instrument cabinets. "Elements," the third section, is a set of 97 large-scale floor and equipment plans for specific suites and departments within the hospital. The book winds up with a discussion of equipment planning and a check list of equipment and supplies for each department in a 50-, 100- and 200-bed general hospital.

This arrangement of materials is very well-conceived: specific subject matter is easy to find, logically set forth, and the separate sections excellently complement one another.

The only pitfall—warned against in the introductory material—is the obvious possibility that the examples, which are of necessity generalized, may be accepted by some readers as cut-and-dried standards. This is a procedure that neither produces the best specific hospitals nor aids general progress in hospital design.

But used properly as basic research "to form a background of knowledge and experience," this is an invaluable textbook (perhaps in the majority of cases an indispensable textbook) for both architect and hospital client.

ART AND ARCHITECTURE IN FRANCE 1500-1700. By Anthony Blunt. Published by Penguin Books Inc., 3300 Clipper Mill Rd., Baltimore 11, Md. 312 pp. 7½" x 10½". Illus. $8.50

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Key-Control is Berger's new handle-free school locker. The key is the only handle required. The door *pre-locks* when opened, and locks *automatically* when shut. Where the student might forget, his Key-Control Locker always "remembers" that personal possessions deserve full-time locked protection.

A Key-Control Locker system is rapidly becoming the mark of a modern school. It encourages everyday use of locker keys, since students actually carry their locker handles on their key-rings. It completely eliminates handle maintenance, does away with handle noise in busy school corridors.

Investigate Key-Control before you specify any locker system for new schools or for school additions. Your local Berger representative will be happy to arrange for a short demonstration. Remember, only Berger – world's leader in lockers – offers handle-free Key-Control as well as the largest selection of standard steel lockers.

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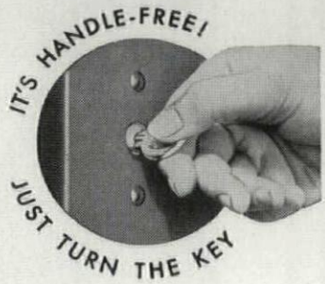

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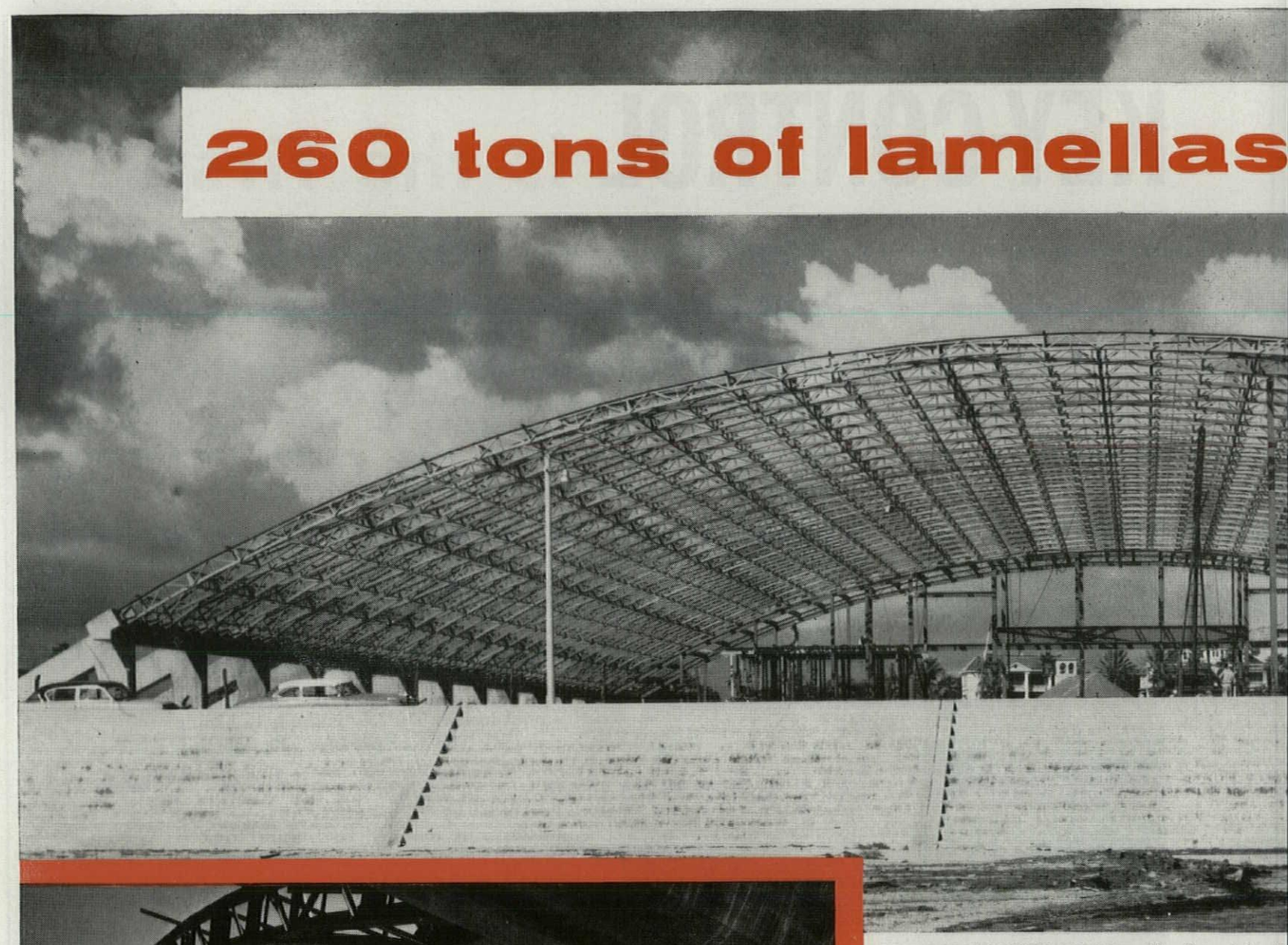
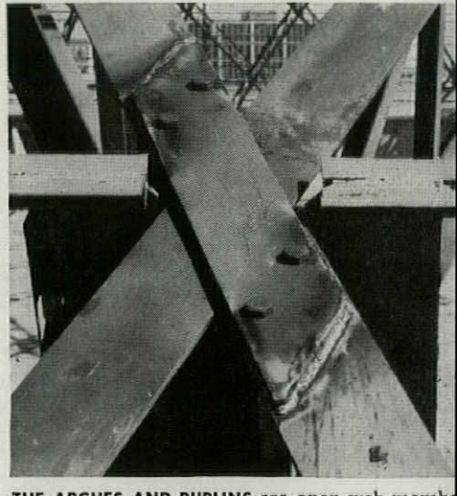
260 tons of lamellas



LAMELLA CONSTRUCTION—unusual in that the main members span supports on a skew, forming diamond-shaped areas between the intersecting members.

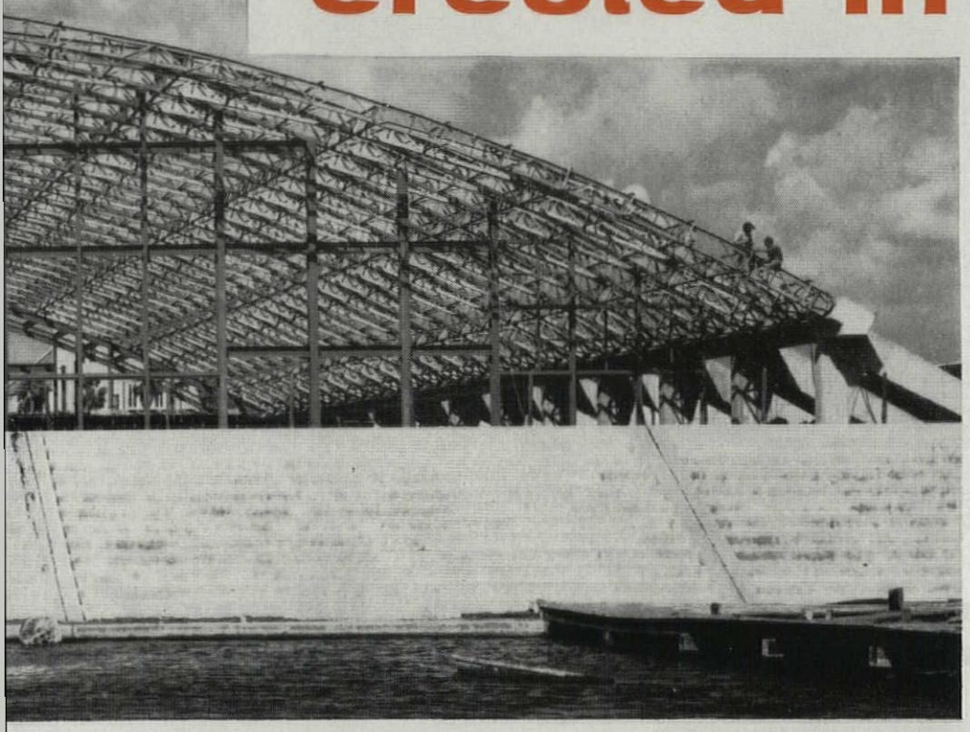
ROOF STRUCTURES OF TEXAS, with offices at Austi and Houston, holds the contract for the auditoriu roof. Lamella roof design and details prepared b G. R. Kiewitt and Hale & Harvie, Consulting Er gineers, St. Louis. Designers of the foundation an general building work, exclusive of the roof struc ture, were Blucher and Naismith, Structural Er gineers of Corpus Christi. Lamella units fabr cated by Columbia Iron Works, St. Louis, an the purlins by Tips Engine Works, Austin. Rich ard S. Colley is the architect, and Walsh Construc tion Co., the general contractor—both of Corpu Christi.



THE ARCHES AND PURLINS are open web membe of Structural Steel, 24 in. deep. Except for t high tensile bolts which were used to erect t arches, the framing is all-welded.

# of U·S·S Structural Steel

erected in 25 days



THE MAIN MEMBERS—circular steel arches—spring from concrete buttresses along the sides of the building. They span 224 ft. with a rise of 30 ft., providing a 42 ft. clear height at midspan. Main and intermediate purlins are spaced about 6 ft. apart.

It took just 25 working days for the Gulf Erection Co., of Houston, Texas, to erect 260 tons of structural steel, covering 65,000 sq. ft., for the arched roof of the Municipal Civic Auditorium in Corpus Christi, Texas.

A somewhat unusual type of construction, known as lamella, was used. The main members span the arch on a skew, forming diamond-shaped areas between the intersections. The lamella units were identically fabricated, except for being right and left hand. This, plus the fact that only two types of purlins were required, simplified fabrication and erection considerably. Falsework was necessary only to erect the first few members. The succeeding members were erected with a crane.

This is the type of application in which versatile U·S·S Structural Steel excels. It is extremely tough, yet is the most economical of load-carrying materials. It will withstand more abuse than other structural materials, effectively resisting tension, compression, torsion, and shear. Enclosed in buildings, Structural Steel will last indefinitely—requiring no maintenance. Equally adaptable to riveting, welding or bolting, it can be erected in any weather in which men can work. And because steel members are fabricated indoors, weather can have no effect on the quality of workmanship.

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UNITED STATES STEEL EXPORT COMPANY, NEW YORK

U·S·S STRUCTURAL STEEL

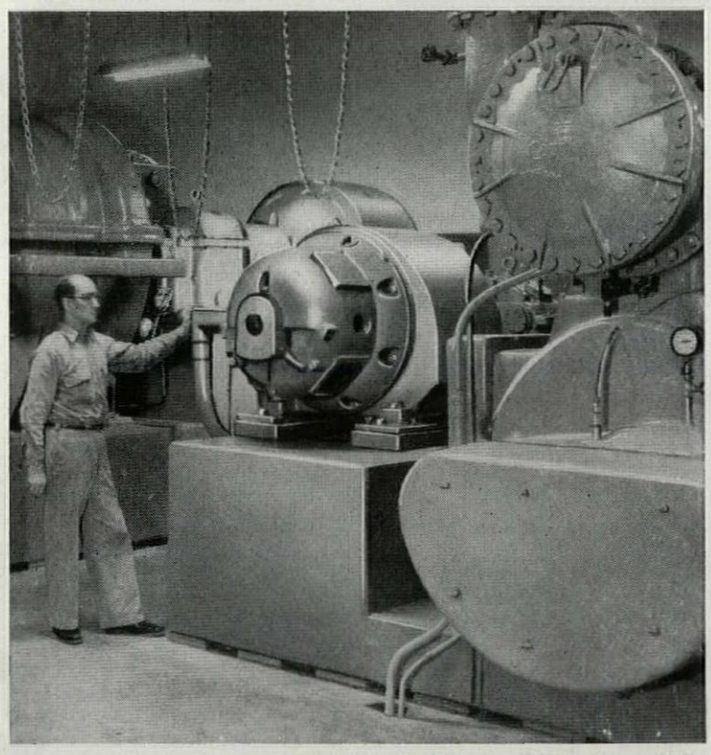
USS

4-474

UNITED STATES STEEL

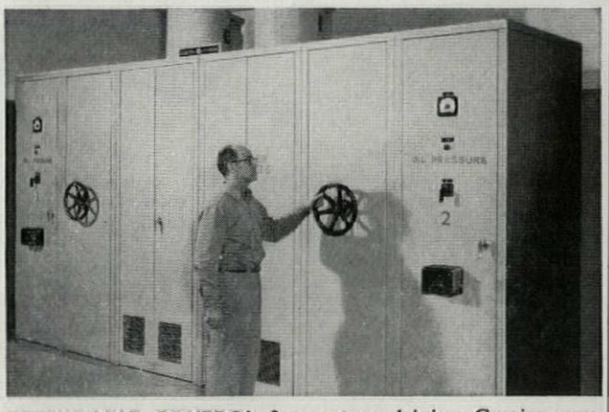
COMPACT POWER DISTRIBUTION for the entire new May Co. store in Lakewood is provided from these "packaged" units. G-E dry-type transformers, foreground, step down incoming voltage, while G-E switchgear, rear, controls it. Metal-clad enclosures help protect both men and equipment, make installation easier and provide a convenient basement layout.

Electrical system at May Co.



EASILY-INSTALLED G-E MOTORS drive building's refrigeration and air-conditioning equipment. Compressors, shown above, are powered by General Electric 700- and 300-hp motors.

NEW MAY CO. STORE in Lakewood, Calif., called upon G-E application engineers to help plan and design its power system. Packaged G-E equipment made installation easier.



DEPENDABLE CONTROL for motors driving Carrier compressors is provided by this 5000-volt G-E unit, which was ready for operation upon installation.

ELECTRICAL SYSTEM PLANNING for the building was based on engineering teamwork like this. Left to right are G-E Apparatus Sales Engineer Carl Degering and Kenneth C. Moulten of G.E. Supply Co., who worked with May Co. chief engineer, Norman Sneddon, and C. P. Haist of Albert C. Martin and Assoc., architects and engineers for May Co. and Lakewood shopping center.

helps assure shoppers' comfort

Engineering teamwork of consultants and General Electric specialists solves electrical design problems at Lakewood, California store

At the new May Co. store in Lakewood, Calif., a primary consideration in preliminary planning was the design of a complete electrical system which would be highly efficient, simple to install, and easy to maintain.

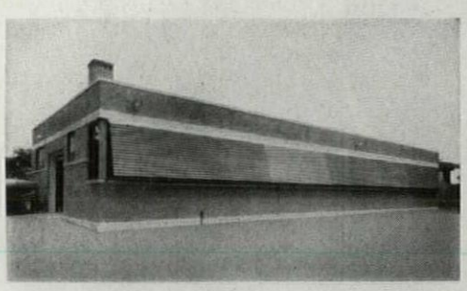
While their plans were still on the drawing board, Albert C. Martin and Assoc., architects and engineers, and May Co.'s chief engineer, Norman Sneddon, teamed up with General Electric application engineers to design a co-ordinated electrical system.

As a result of this engineering co-operation, time, work and money have been saved. Dependable G-E power distribution system keeps economical high-voltage power supplied to refrigeration, moving stairways and elevators. G-E motors and control on air-conditioning equipment help keep service continuity high, maintenance low.

You, too, can take advantage of the same kind of specialized engineering assistance by letting a G-E engineering team help you and your consultants plan your commercial building project. Call in your local G-E Apparatus Sales Representative *early in the planning stage* when he can be of the most help to you in designing an electrical system just right for your project. Or, write on your letterhead to General Electric Co., Apparatus Sales Division, Section 665-121, Schenectady 5, New York.

Engineered Electrical Systems for Commercial Building

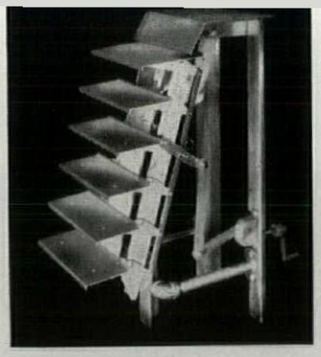
GENERAL ELECTRIC



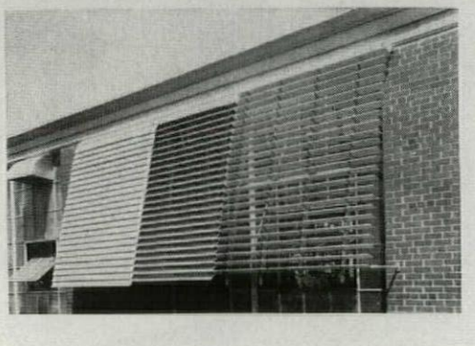
Hung in tandem louvers form continuous awning

geted — as exterior jalousies flush to a building. For special installations, mechanical equipment is provided to regulate the angle of the entire unit as well as the slant of the fin. Installed cost runs about $5.50 per sq. ft. Hoods and louvers are anodized to minimize maintenance.

Manufacturer: Rhode Island Engineering Manufacturing Corp., 570 S. Water St., Providence, R. I.

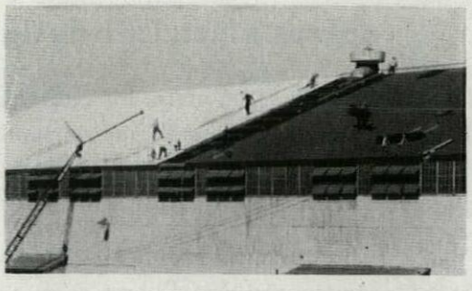


Mock-up of all-aluminum awning reveals simple hand crank—usually mounted on inside of the window frame—which permits control of fins from indoors.

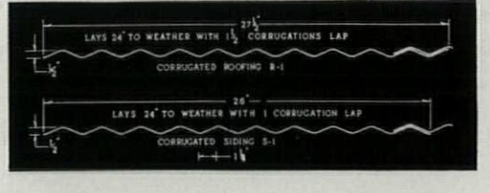


SHEET METAL has baked-on glass coating

V-Corr corrugated steel siding and roofing has a vitrified coating of silicates and metal oxides on both sides and all edges, therefore requires very little maintenance. Fused to the steel base at 1,550° F., this porcelain surfacing protects the metal against corrosion even under the most severe industrial and climatic conditions. Actually coated with glass, *V-Corr* resists ravages of fire, chemical fumes, sea air, smoke and steam, and so has advantages for many kinds of buildings: steel mills, oil refineries, ware-



houses, airplane hangars, freight sheds, conveyor galleries, etc. Prices run $31.30 per square for the 24 ga., $33.45 for 22 ga., $35.41 for 20 ga., and $40.56 for the heavy 18 ga. Standard sheeting is supplied with either black



or gray porcelain coating, but any color will be made to order for a small additional charge. Matching flashings are also available. Explicit instructions for fastening the roofing

continued on p. 226

with WALSEAL®

. . . and you can *see* that it's made right. When you make a WALSEAL joint the fillet of silver brazing alloy that appears at the face of the fitting is your assurance of full penetration and a permanently leak-proof joint that's vibration proof and corrosion-resistant . . . won't creep or pull apart under any conditions that the pipe itself can withstand.

Walseal is a registered trade-mark which identifies valves, flanges and fittings manufactured by the Walworth Company. Walseal products have *factory-inserted* rings of silver brazing alloy in threadless ports. Joints made with Walseal products are silver brazed and actually make the system a "one-piece pipeline."

Your copy of Circular 115 giving details on Walseal valves and fittings will be sent on request . . . send for it or see your nearby Walworth distributor.

SEE OUR CATALOG IN SWEET'S

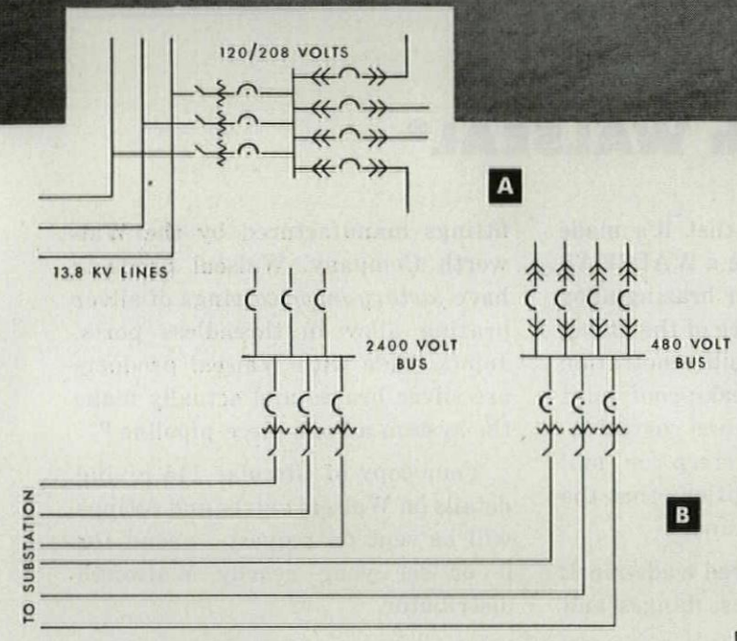
Make it a "one-piece pipeline" with Walseal

WALWORTH

valves and fittings

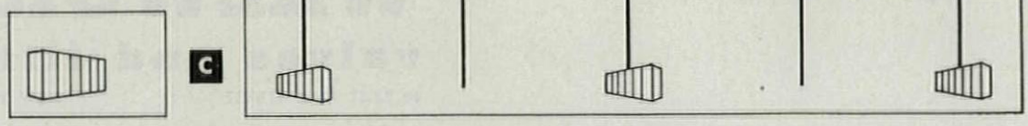
60 EAST 42nd STREET NEW YORK 17, N. Y.

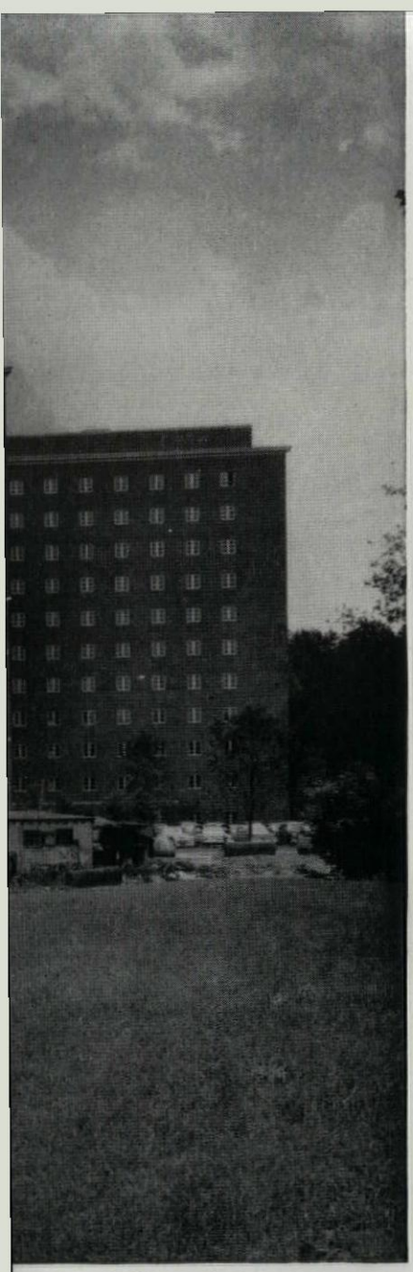
DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD



Power is supplied at 13.8 kv to:

(A) ALL SPOT NETWORKS throughout the project. Three feeders serve each power center. Should one fail, the other lines still serve all loads. If two fail, all nonessential load is dropped. If the third fails, all loads are dropped and only designated ones are supplied by a 5000-kva emergency turbogenerator set, located (B) IN THE POWERHOUSE. There, both 2400-volt and 480-volt service is available for power loads. (C) IN THE MAIN HOSPITAL, five spot networks feed all loads through bus duct risers.





Architects & Designers:
General Services Administration
Public Building Service

Electrical Contractors:
Harry Alexander, Inc., H. P. Foley Co.,
E. C. Ernst, Joint Adventurers
Electrical Construction

WORLD'S NEWEST RESEARCH HOSPITAL

U. S. Public Health Service's new National Institutes of Health at Bethesda, Maryland, is an excellent example of advanced hospital design—based on a sound functional program that covers both present and future requirements.

The entire architectural plan, in fact, reflects the Institutes' critical mission: to conduct research on virtually every known disease. All buildings have been designed specifically for that function. Result: ultimate in research and treatment facilities.

The key in this plan is the 500-bed, air-conditioned main hospital building, upper left. Here, treatment efficiency dictated floor layout. Practically every patient's room has been located adjacent to laboratory facilities.

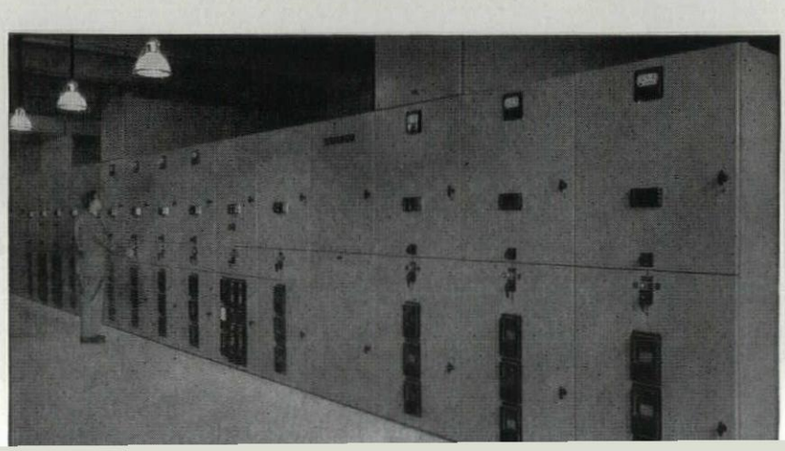
Future hospital requirements have also been adequately covered in the original plan. Without any additions to the building, present facilities can be expanded to 2500 beds in an emergency.

What makes a Functional Electrical System

Function again became the guide when a method for distributing electrical power was selected. After a complete analysis of the Institutes' vital assignment, the project's engineers adopted a spot network system, described at left. And, by matching it with the unitized distribution equipment covered on the next pages, the National Institutes of Health is assured uninterrupted electrical service . . . in all areas . . . with adequate provision for future expansion.

The construction application engineer in your nearest Westinghouse Office offers this same kind of planning help to you and your engineers. Call him for complete details. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa. J-94006

YOU CAN BE SURE...IF IT'S Westinghouse



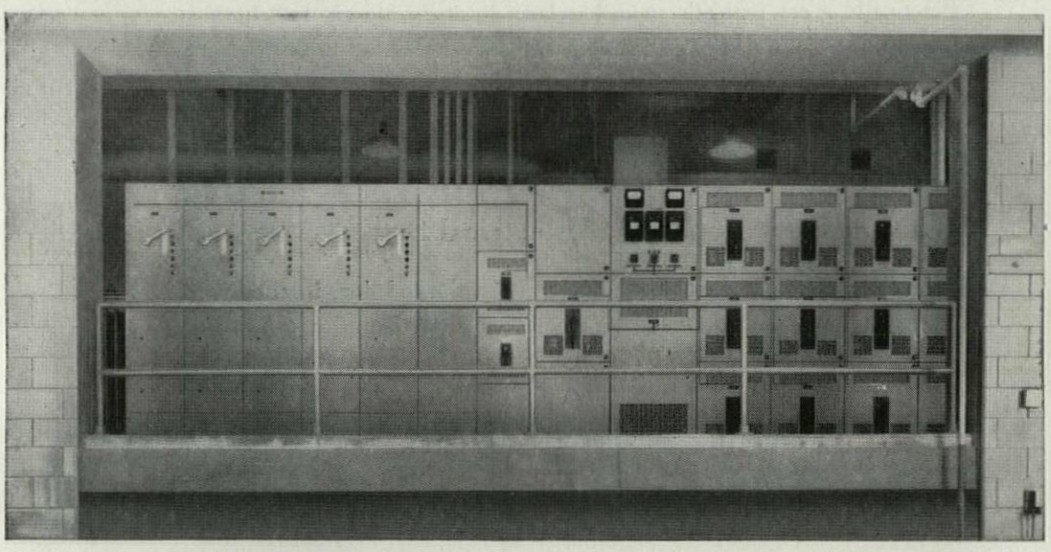
MAIN HIGH-VOLTAGE SWITCHGEAR feeds and protects 19 spot networks throughout the 15-building research center.

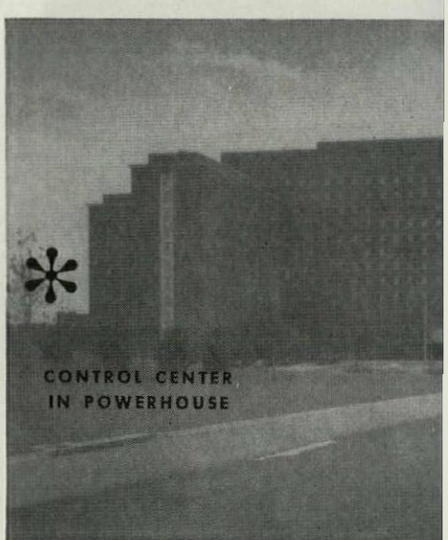
CONTROL CENTERS...FOR FLEXIBILITY...*a vital factor*

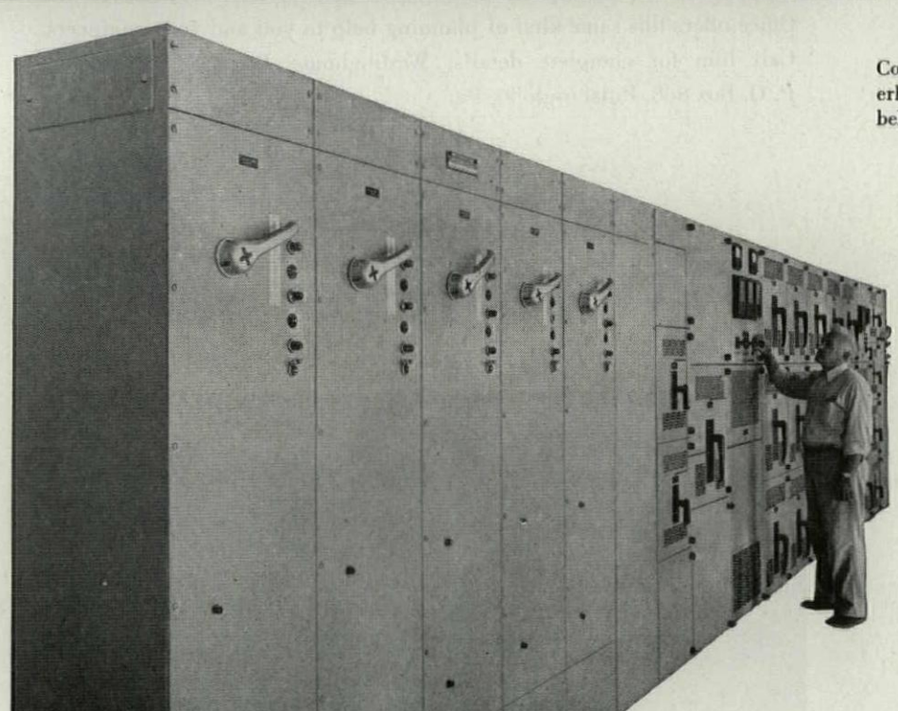
In the powerhouse, grouped motor control—in Westinghouse centralized control centers—contributes substantially to smoother operation of the hospital. All motor starting and circuit protective devices are housed in a neat bank of unitized, easy-to-service structures. In just a few steps, then, one man covers the extent of motor control for all air conditioning and other important service facilities. As a result, trouble-free and more efficient operation of these services is assured.

Complete flexibility of electrical components, as well as modular-constructed units, gives the Westinghouse Control Center ability to expand to any future needs of the research center. This type of structure may hold as many as five motor starter units and can be added to, moved anywhere, or repositioned as needed. Arriving at the National Institutes of Health completely assembled, wired and tested, the control center was ready to operate after a minimum of installation effort.

J-27040

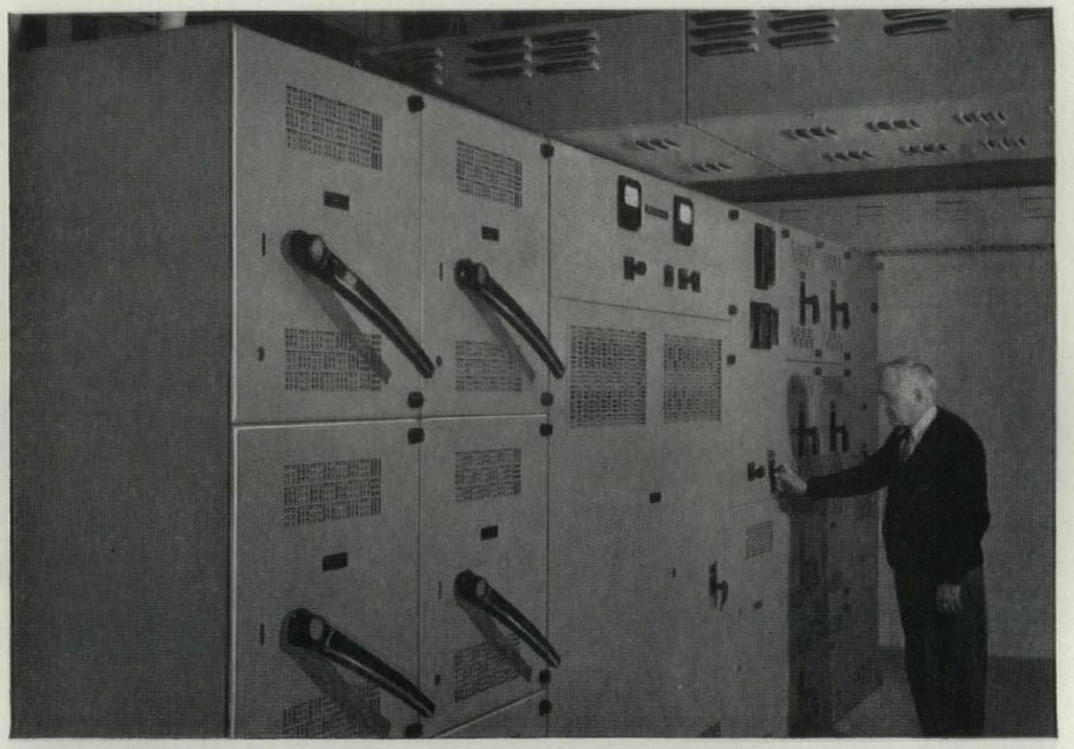






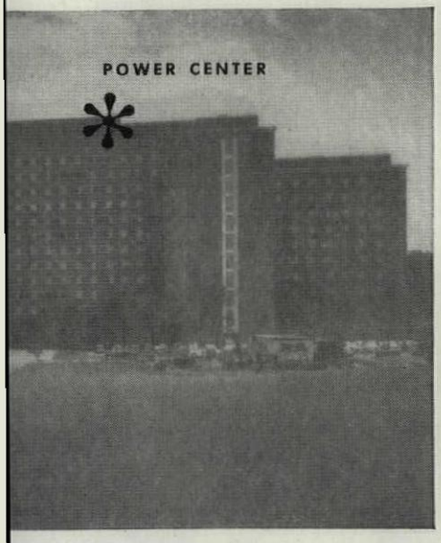
Control Center Balcony Location in the powerhouse allows the operator to see the motor, below, while inspecting its control unit.

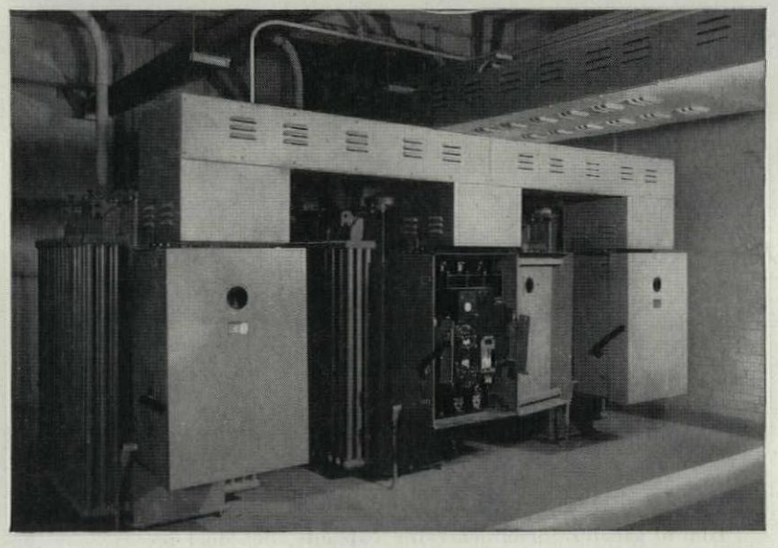
Installation Flexibility permits control center to be close-coupled to the power center, further centralizing the control equipment serving this area.



Modern power centers can be located at the center of load for most efficient and economical power distribution. At right is switching portion of power center.

Lower right. Here is transforming section of power center, showing the low-voltage network protectors.





HIGH SERVICE CONTINUITY AND ECONOMY... *designed in*

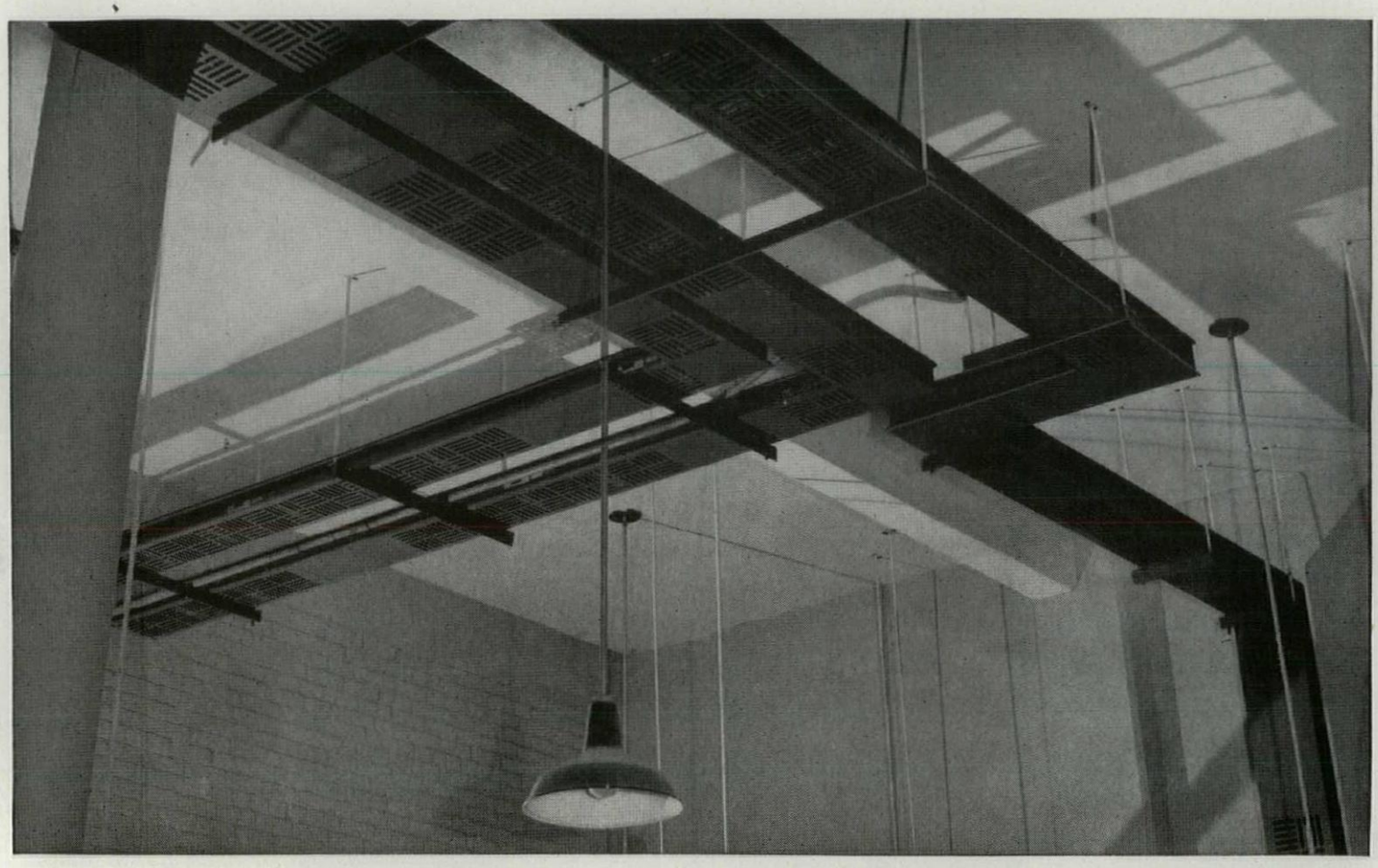
Electrical distribution facilities at the National Institutes of Health are matched to functional needs. The project's engineers designed a system that provides all research areas with exceptionally reliable service—and it does this economically.

Primary 13.8 kv feeders are carried throughout all buildings to spot network power centers. This reduces wiring costs and minimizes power losses.

One to five "spot-network" units have been located in every building to transform the high voltage down to utilization level. Each network contains three transformers. Should trouble develop on one, the other two carry the load. This not only assures excellent service continuity, but also spells out further savings. Since the transformers in the individual networks share one another's peak loads, smaller size units are permitted.

J-60848

YOU CAN BE SURE...IF IT'S **Westinghouse**

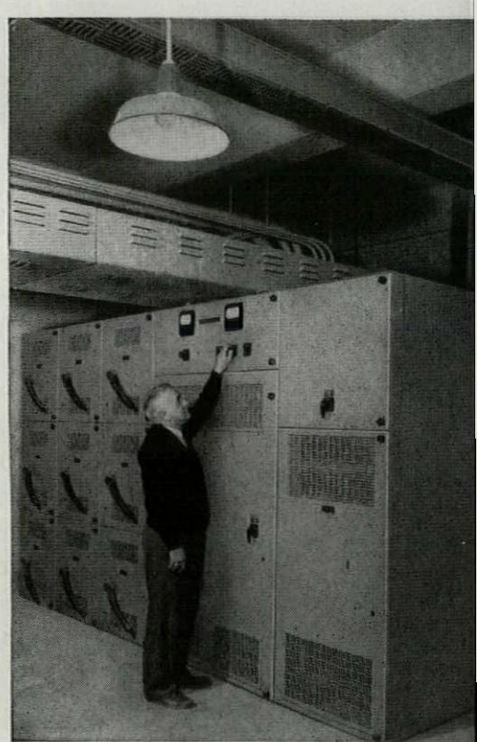


Sound, modern, compact

BUS DUCT IS FLEXIBLE

The power arteries of this hospital are Westinghouse Low-Impedance Bus Duct. It was a sound choice. For bus duct is the ultimate in modern, flexible power distribution.

Due to greater current-carrying capacity, bus duct required considerably less space than cable and conduit . . . carries power more efficiently. Standard, prefabricated sections coordinated perfectly with building plans . . . were quickly and easily installed. Bus duct is smart, modern in appearance . . . runs and risers blend smoothly into the interior design of the hospital. Best of all, bus duct is flexible—meets changing load demands; provides sufficient reserve capacity to handle future loads without expensive rewiring. J-30167



Low-impedance bus duct riser carries power from low-voltage switchgear to panelboards, located in wire closets on each floor.

Space, safety, added load with

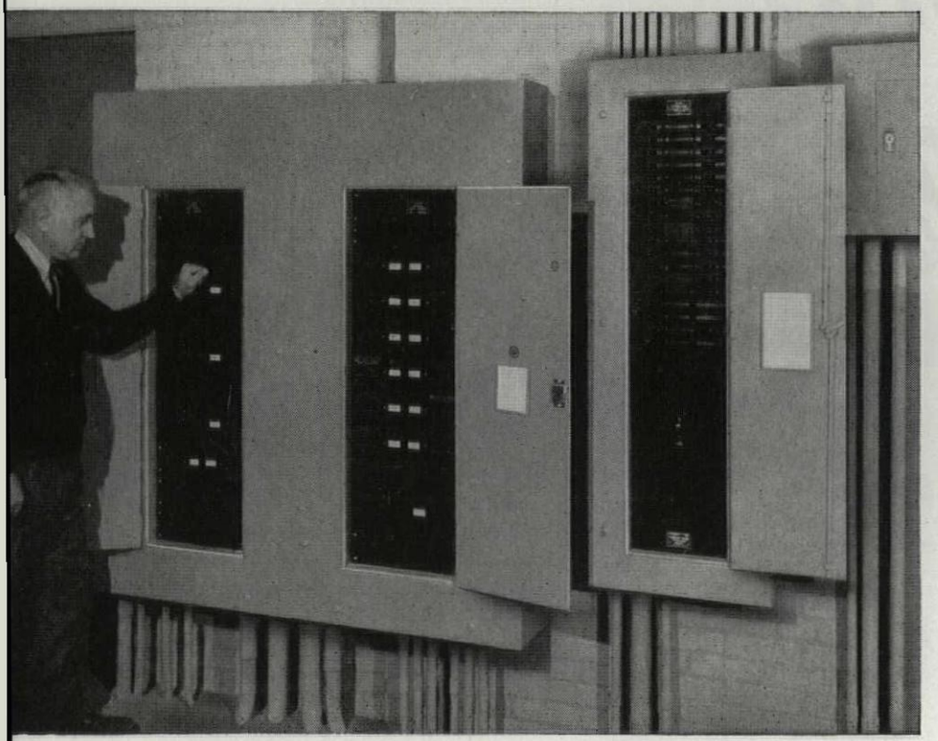
PLANNED-IN PANELBOARDS

The final, functional link in this hospital's unique electrical distribution system is provided by Westinghouse De-ion® Circuit Breaker Panelboards. Built to one unvarying standard of quality and performance, each Westinghouse Panelboard was, nevertheless, individually engineered to match the requirements of specific, local electrical services.

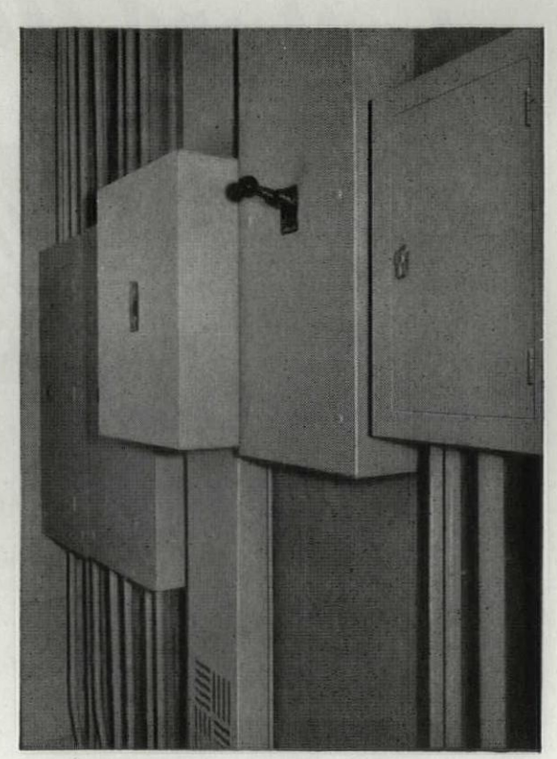
Critical space was saved—because Westinghouse Panelboards are compact. Safety was gained because Westinghouse De-ion Circuit Breakers in these panels can be operated without danger . . . will not interrupt vital hospital services needlessly. Future additions or changes in load will be easily accomplished—because extra circuit capacity has already been provided.

J-93520

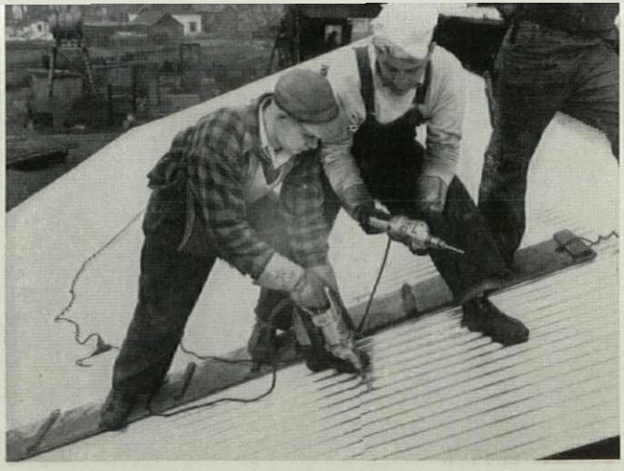
YOU CAN BE SURE...IF IT'S Westinghouse



Tripped circuits can be seen at a glance—because all Westinghouse De-ion Circuit Breaker handles assume central position on automatic tripping.



Panelboards are mounted in wire closets on each floor. They provide for centralized control of electrical services.



Light-gauge industrial sheeting of aluminum affords saving in roof material as well as supporting structure.

NEW PRODUCTS *continued*

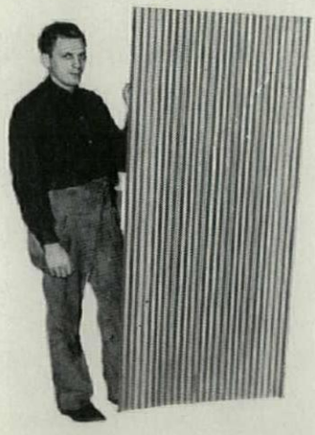
and siding to steel and wood frames and engineering data are provided by the manufacturer.

Manufacturer: Toledo Porcelain Enamel Products Co., Div. of Bettinger Corp., 2275 Meade Ave., Toledo.

ALUMINUM ROOFING; lighter weights, wider sheets save material and labor

Two manufacturers of aluminum industrial sheeting are showing awareness of the trend to time and material savings building products. The Aluminum Company of America has added a thinner-gauge corrugated aluminum sheet to its line of industrial materials. Made of the same high-strength alloy as Alcoa's standard .032" material, the new roofing and siding is only .024" thick. Engineered for use where narrow spans in the roof structure do not require the greater strength of the .032" sheet, the lighter-gauge aluminum has the advantage of lower cost. One square of the .024" material sells for $20, compared to $24 for the .032." The new sheet is supplied with 7/8" corrugations and 2.67" pitch —the same as the .032". Recommended design loads range from 78.7 psf (uniform) for purlin spacing of 3'-6" to 17.1 psf for 7'-6" spacing. The .024" product can be used economically in reroofing as well as in new construction. It is also adaptable as facing for insulated curtain wall construction, surrounding cores of such material as glass fiber.

In its effort to cut application time and waste of material, Nichols Wire & Aluminum Co. has announced a 33"-wide aluminum roofing—7" wider than standard. The amount of



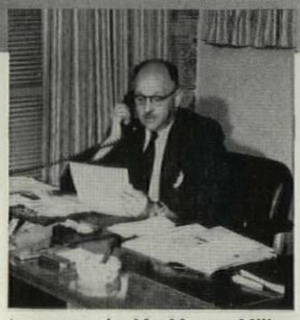
material needed for side lap is cut by one-quarter and, since there are fewer seams, installation prices are considerably lower. Chances of leakage are less, too. Width of the new sheet is scaled to the comfortable arm length of the average man. The roofing is available in thickness of .019" at $15 per square and .024" at $19.

Manufacturers: Aluminum Co. of America, 1501 Alcoa Bldg., Pittsburgh 19, Pa. and Nichols Wire & Aluminum Co., 1725 Rockingham Rd., Davenport, Iowa.

continued on p. 232

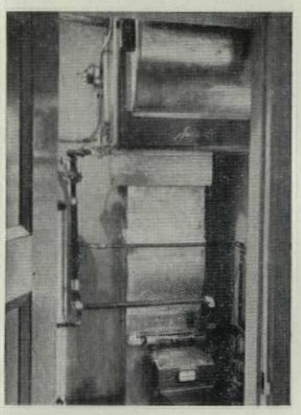
Cedarhurst Medical Center, 650 Central Ave., Cedarhurst, N.Y.

"Our new medical center with its new ideas in comfort required the best in modern heating"



A statement by Mr. Monroe Miller, President, Central at Grove Realties, Inc., Cedarhurst, N. Y.

This functionally modern, U-shaped medical center contains 17 doctors' suites located a few steps from the 50-car, center parking court. Each suite is independent, with its own reception, laboratory, bath and utility rooms. Every tenant controls and supplies his own heat through his individual Janitrol Unit Heater.



The compact Janitrol unit, mounted overhead in the utility room leaves ample space for adding Janitrol summer cooling.

Mr. Monroe Miller, the realtor-builder, specified Janitrol Gas-Fired Unit Heaters to "meet the medical requirements for cleanliness, dependability and quiet operation." The heated air is supplied to each room through concealed ducts, with underground returns. The same ducts will carry cooled air for summer conditioning, which will be added at a future date.

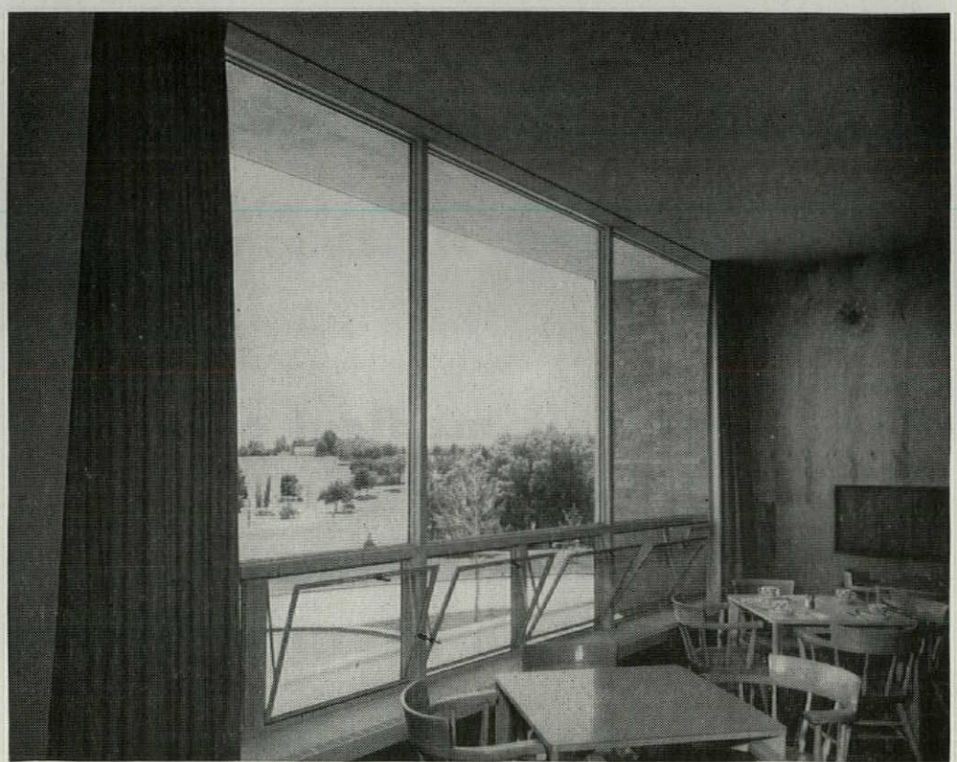
Dura-tube *the armored heart that's practically indestructible!* These vital heating tubes, exclusive with Janitrol, mean longer life. Over 1/4 million have been installed without replacement for any reason!

For your current work and future planning obtain the latest data on unit heater performance and installation practices. Write for your complimentary copy of A.I.A. File 30-C-43.

®Janitrol *Gas-Fired* UNIT HEATERS

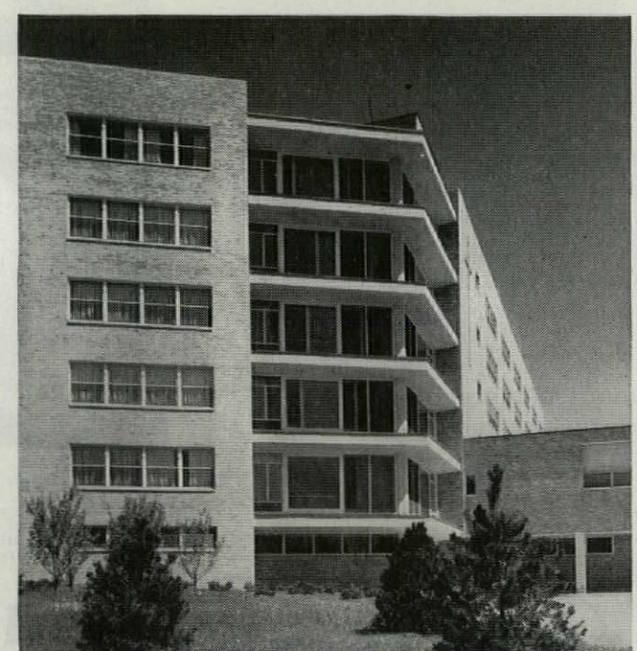
DIVISION OF SURFACE COMBUSTION CORPORATION • 400 Dublin Ave., Columbus 16, Ohio

Makers of Surface Industrial Furnaces and Kathabar Humidity Conditioning.

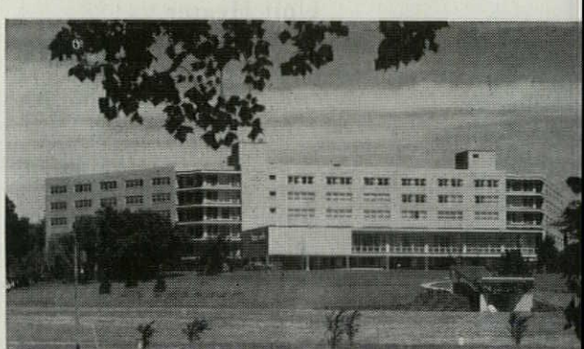


Second floor cafeteria interior; attractive combination of Truscon Intermediate Projected Steel Windows with Truscon Picture Windows.

FIVE DIFFERENT TYPES OF TRUSCON STE

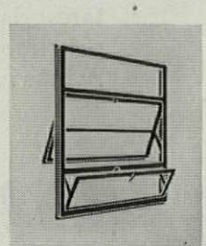


Interesting corner detail shows Truscon Steel Picture Windows combined with Truscon Intermediate Combination Steel Windows. Adjacent wall sections fitted with Truscon Steel Double-Hung Windows.

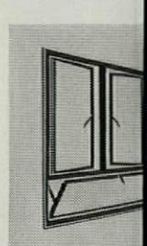


St. Vincent's Home, Omaha, Nebr. Steele, Sandham and Steele, architects. P. Construction Co., contractors.

Double-Hung Steel Window: wide range of styles, sizes. Stainless steel weatherstripped.



Intermediate Projected Window: wide variety of sizes, designs; projected and hinged ventilators.



Intermediate Co tion Window: I rates side-hinge ment and project tilator in one des

Main entrance elevation of St. Vincent's Home. Truscon Intermediate Projected Windows combine with Truscon Picture Windows in second floor facade; Truscon Intermediate Steel Casements on ground floor.

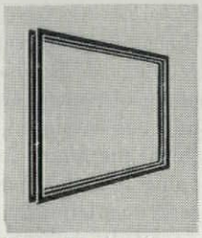
VINDOWS SERVE NEW ST. VINCENT'S HOME

They've used a *variety* of Truscon Steel Windows to capture sun and sky for new St. Vincent's Home in Omaha.

These striking applications demonstrate how effectively you can achieve beautiful and functional architectural effects with your choice of Truscon units. How you can design for the daylighting you want. How Truscon windows can be adapted to your original ideas. How you can provide effective weather protection in all climates.

No one makes a greater variety of metal windows than Truscon. It's a good idea to keep current details of the big Truscon line handy to your desk or board. Your personal copy of the complete Truscon Window Catalog will do it. And, it may help spark an interesting idea. Simply ask any Truscon office, or write "window headquarters" in Youngstown. Details are handy in Sweet's File, too.

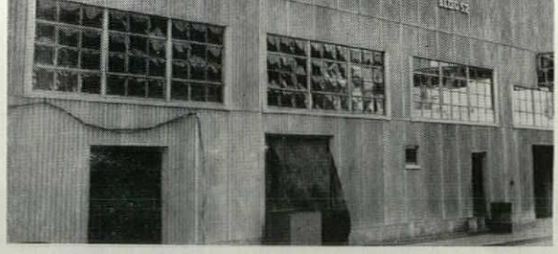
rmediate Casement: ally designed one- sections. Solid bronze ware.



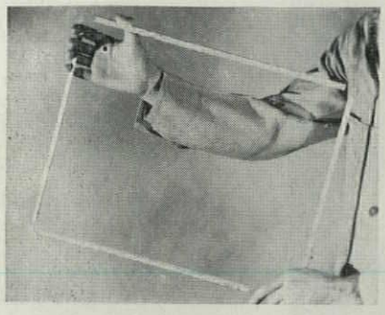
Picture Window: for use singly or in combination with other windows. 6' 0" maximum width.

TRUSCON® —a name you can **build** on

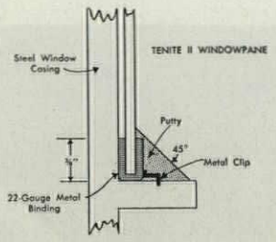
TRUSCON STEEL DIVISION
REPUBLIC STEEL
1102 ALBERT STREET • YOUNGSTOWN 1, OHIO
Export Department: Chrysler Building, New York, 17 N. Y.



Explosion-vent windows that are lightweight and easily installed are used on Emery Industries which houses process using hydrogen.



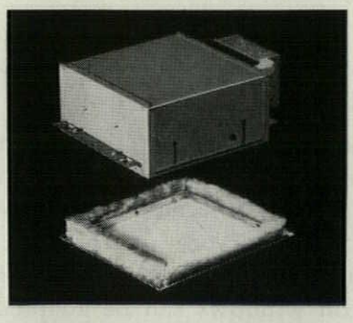
Tough plastic sheeting bound with a ⅜" metal edging makes up the safety panes. For a watertight seal, putty is extended over metal binding.



FLEXIBLE WINDOWS save structures from explosion damage by giving vent to pressure

In factories or laboratories where there is danger of a sudden ignition of gas or air-borne dust these flexible glazing units of extruded *Tenite* butyrate plastic can save the building from costly structural damage—and personnel from serious injury. In case of a blast the shatterproof panes bow and pull away from their metal casing for a quick release of pressure. Thus, by taking the brunt of the force immediately, they prevent a pressure build-up great enough to blow out walls or window frames. They also eliminate the hazard of sharp, flying fragments of glass.

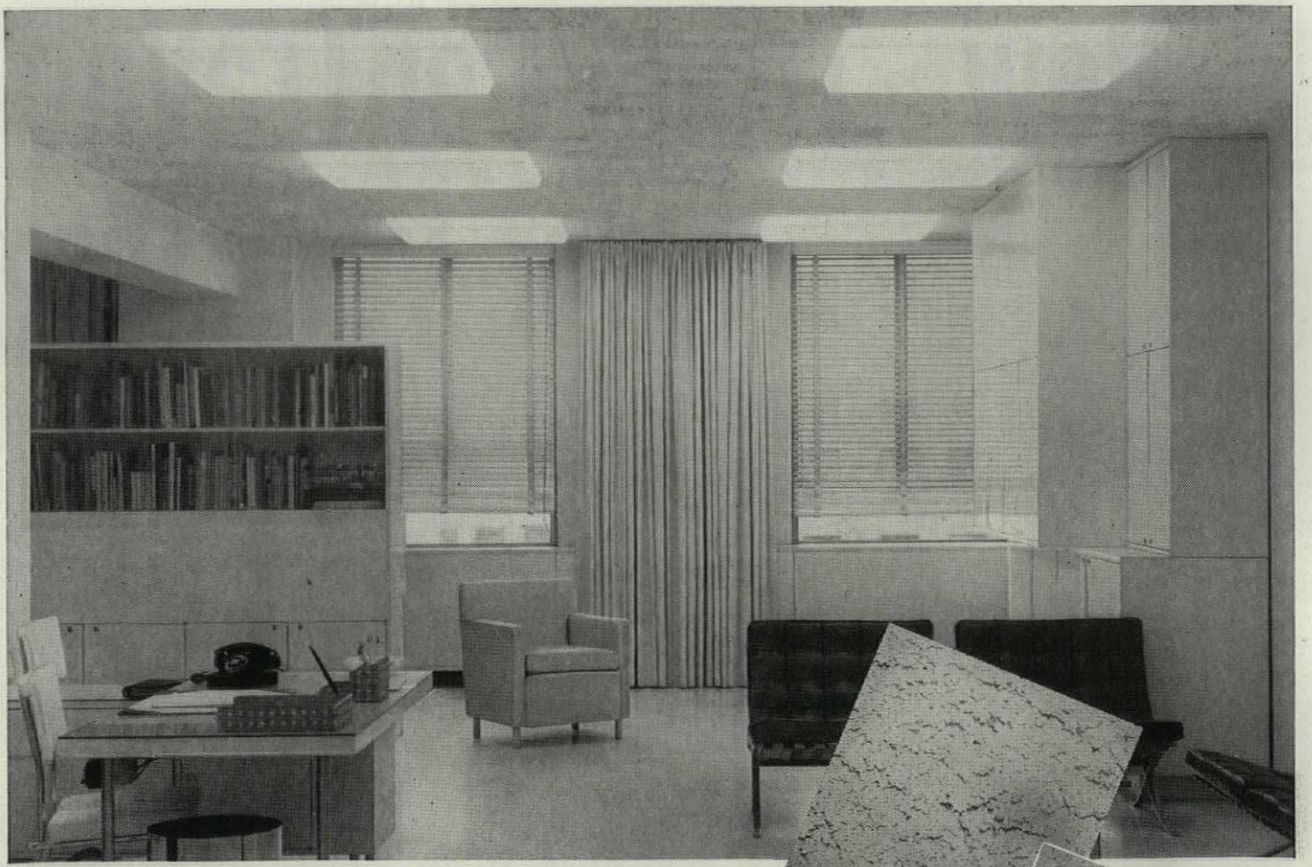
Eastern Chemical Products, Inc., makers of the tough *Tenite* plastic sheeting, was the first to use the material as glazing for its own plant. Panes are now made commercially in a standard industrial size, 12" x 18". The plastic glazing units are .030" thick and available in any color, clear or translucent. The panes cost about $1 to $1.10 a piece, depending on quantity purchased. Metal strips crimped over all four edges form a ⅜" wide binding which provides the rigidity necessary for puttying. The panes also will be available soon with extruded aluminum beading.
Manufacturer: General Plastics Co., Marion, Ind.



GLASS-FIBER GASKET stops light leak around recessed fixtures

As long as recessed fixtures have been on the market bright lines of light breaking around the frame have plagued manufacturers, designers and maintenance men. Marvin Manufacturing Co. now has developed a glass-fiber gasket die-cut to fit the *Marco* fixture frame, effectively stopping light leakage. Fireproof and resilient, gasket conforms to irregularities in the ceiling, not only preventing cracks of light but also keeping dust and insects from accumulating inside the fixture.
Manufacturer: Marvin Manufacturing Co., 1150 S. Beverly Dr., Los Angeles 35.

continued on p. 238

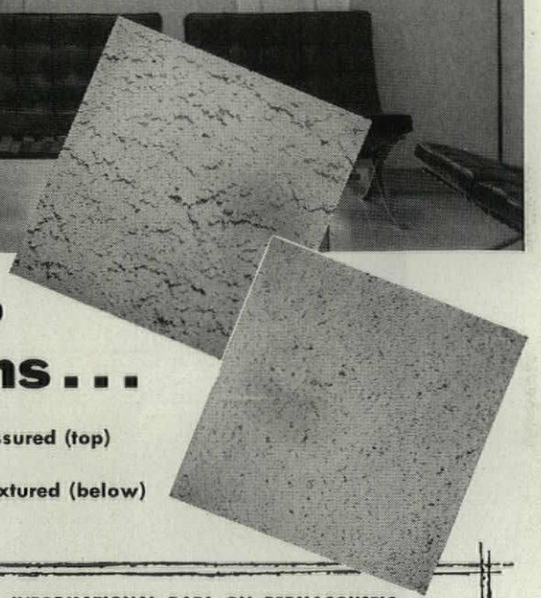


a Beautiful Solution to Noise-Control Problems . . .

Johns-Manville *Permacoustic*

Fissured (top)

Textured (below)



Specify J-M Permacoustic® tile for ceilings that provide unusual architectural beauty with maximum acoustical efficiency and fire safety.

Johns-Manville Permacoustic is exceptionally sound-absorbent, attractive and noncombustible. Its two random-textured surface finishes—textured and fissured—increase its noise-reduction qualities . . . provide design and decorative interest.

Made of baked rock wool fibres, Permacoustic is fireproof—*meets all building code fire-safety requirements.* Johns-Manville Permacoustic is easy to install on existing ceilings or slabs, or by suspension using a spline system of erection.

Send for your free copy of the new brochure about Permacoustic tile. Write Johns-Manville, Box 158, New York 16, New York. In Canada, write 199 Bay St., Toronto 1, Ontario.

INFORMATIONAL DATA ON PERMACOUSTIC

Sizes 12" x 12" 12" x 24"	Thickness ¾"*	Color: white
	ACOUSTICAL EFFICIENCY	
	Test No. A51-98	Test No. A51-99
cycles per second	cemented to plaster board (mounting No. 1)	mechanically mounted on special metal supports (mounting No. 7)
125	.04	.56
250	.21	.53
500	.75	.60
1000	.88	.73
2000	.85	.88
4000	.78	.88
noise reduction coefficient	.65	.70
weight per sq. ft.	1.3	1.3

*Also available in ⅞" thickness

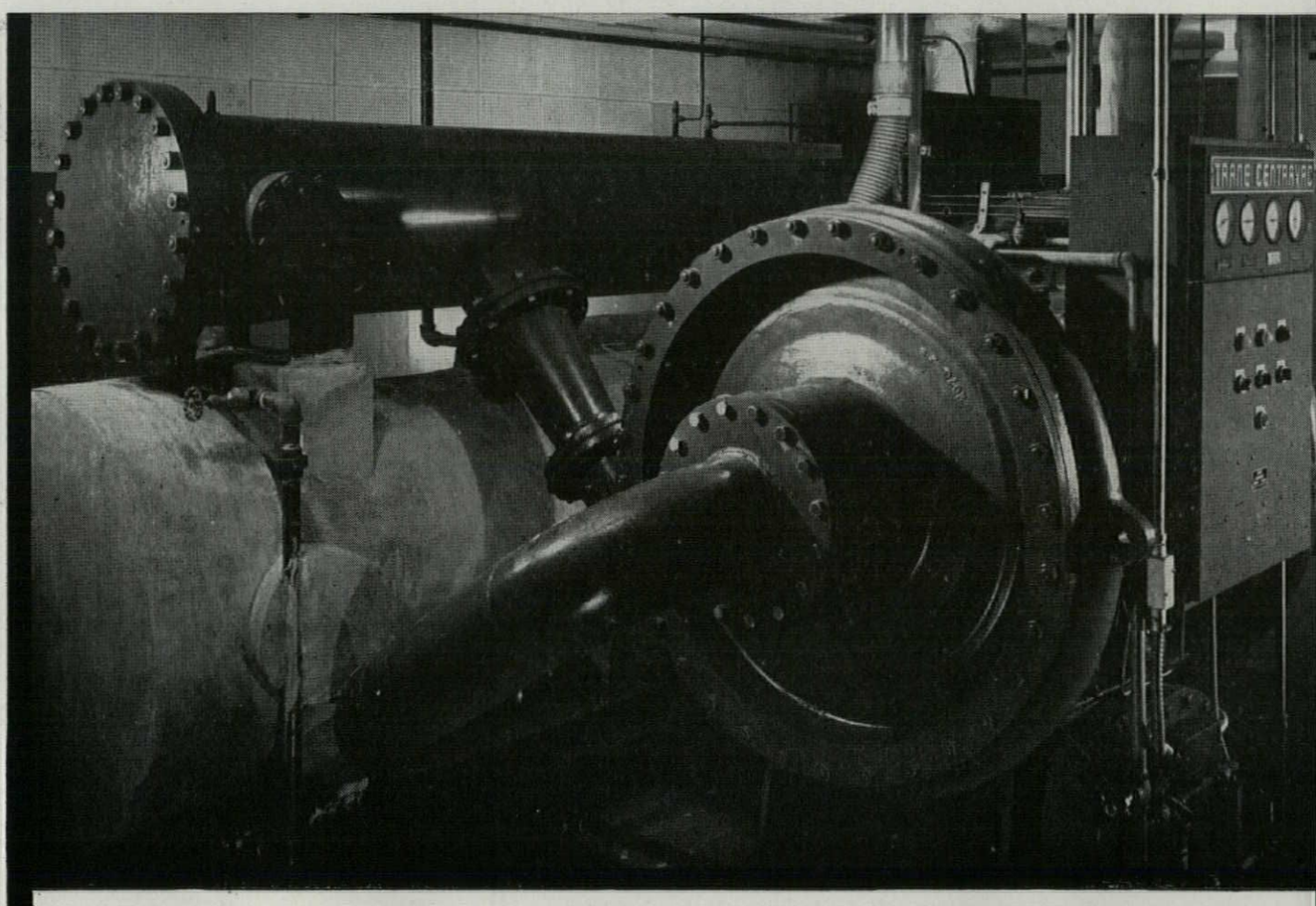
JOHNS-MANVILLE JM PRODUCTS

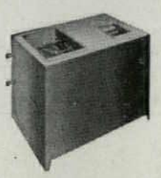
Johns-Manville

40 years of leadership in acoustical materials

Now...Trane CenTraVac in for your larger

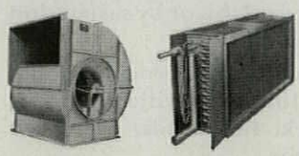
New hermetic centrifugal compressors boost water chilling equipment in new sizes and types provides



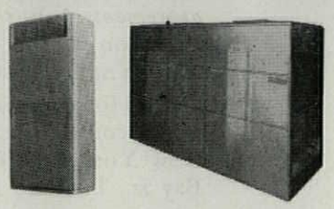


Trane Evaporative Condenser. Use where water is scarce or expensive. Cuts water consumption as much as 90%.

Trane Multi-Zone Climate Changer. Air conditions up to 6 zones at once — each zone can have different conditions. 450 to 23,400 cfm.



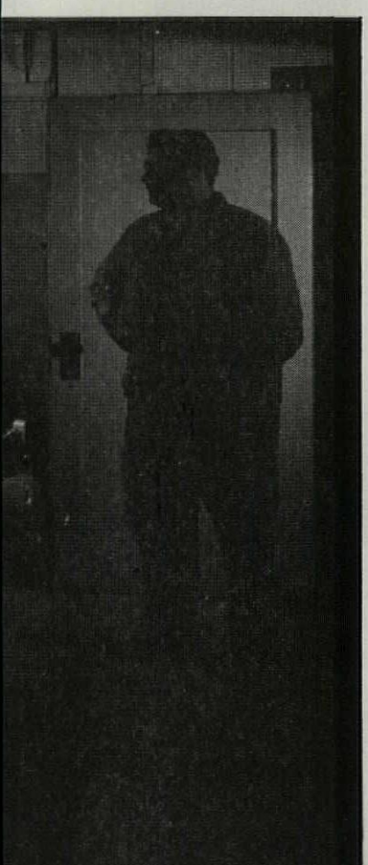
Trane Fans and Coils. Fans, Class I and II, backwardly inclined or forward curved. Coils for steam, hot water, cold water or direct expansion refrigerants.



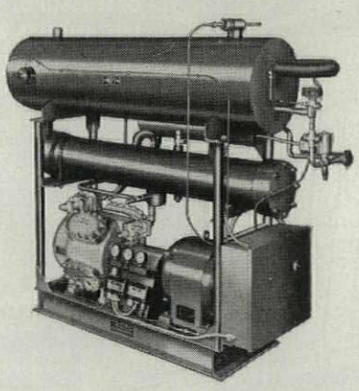
Trane Self-Contained Units. 3 to 20 tons. Heating coil optional. Built-in evaporative condenser optional with 10, 15, 20-ton units.

3 new sizes air conditioning jobs!

capacity up to 400 tons . . . Other Trane air conditioning increased design flexibility

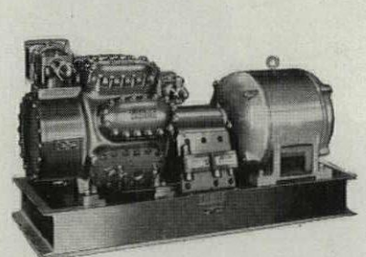


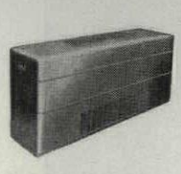
CenTraVac Water Chiller in 3 new sizes tops the list of TRANE air conditioning equipment that has been widened again to enable you to design more efficiently, more economically than ever! CenTraVac single-unit capacities now range from 45 to a maximum of 400 tons. Hermetic centrifugal refrigeration unit completely self-contained. Starts, stops, modulates automatically. Lets you design systems that adjust automatically to varying cooling needs with power savings almost directly proportional to load variations. Requires no special bases.



4 New Cold Generator sizes—30, 60, 75 and 100 tons—expanded line now provides water chilling capacities from 10 to 100 tons. Complete refrigeration cycle . . . factory engineered, assembled, tested, guaranteed. A single unit, wired, piped and refrigerant-charged. Includes condenser, refrigerant piping, liquid cooler, control valves, motor and accessories. Only simple plumbing and electrical hook-up required.

3 New Reciprocating Compressor units—60, 75 and 100 tons—extend the line from 10 to 100 tons. TRANE compressors are smoother, quieter, longer-lasting. Maximum performance in minimum space. Direct drive. Factory-assembled. Easy to install. Automatically modulate capacity to match variations in cooling demand, slash power consumption. Available with shell-and-tube condenser.





Trane UniTrane room units use chilled or hot water. Individual control. Free-standing, recessed or ceiling models.

What kind of system are you planning? Large . . . small? Simple, complex? Cooling only or a complete air conditioning installation? Enjoy advantages of undivided responsibility and a single source of supply by specifying TRANE equipment. Before you plan your next job, get all the facts on complete TRANE line. Contact your TRANE Sales Engineer or write TRANE, La Crosse, Wis.

one source
one responsibility...

TRANE

The Trane Company, La Crosse, Wis. • East. Mfg. Div., Scranton, Penn. • Trane Co. of Canada, Ltd., Toronto
87 U.S. and 14 Canadian Offices.

MANUFACTURING ENGINEERS OF AIR CONDITIONING, HEATING, VENTILATING AND HEAT TRANSFER EQUIPMENT

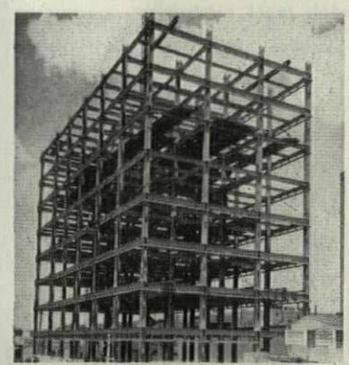
"17 floors in 13 days and here's how we did it!"

says H. A. Padgett, Jr., partner in BMFP Construction Co., Lubbock, Texas

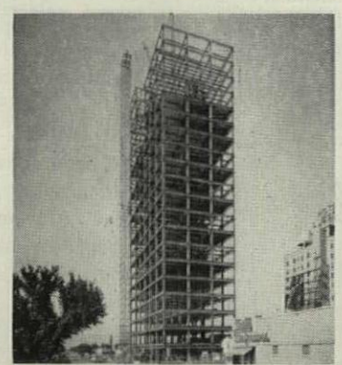
Describing the important function of Cofar—combined form and reinforcement—in constructing the Great Plains Life Insurance Company building, Mr. Padgett says, "We started concrete floor work on Monday, September 7. After seven working days we had completed 7 floors and in the next 6 days, 9 more floors and the roof. The schedule shows 17 floors completed in 13 working days. We couldn't possibly have done the job that fast without Cofar!"

Cofar deep-corrugated steel units (with transverse temperature wires welded across the corrugations) perform the dual job of reinforcing and forming concrete slabs. Cofar eliminates the need for wood forms, saves weeks in building time, speeds occupancy. For information, estimates or costs on *your* building project, contact home or district offices, attention Dept. AF-A.

Great Plains Life Insurance Company Building
Architect-Engineer: David S. Castle Company, Abilene, Texas



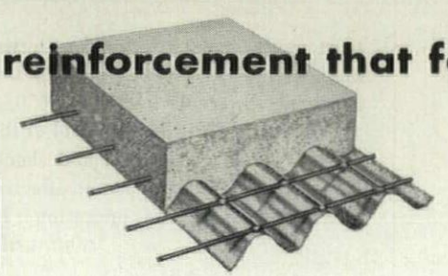
June 29 photo of Great Plains Life Ins. Co. Bldg. shows partial erection of structural steel. Cofar placing followed *immediately*. Cofar units weigh only 2 lbs. per sq. ft., are bundled for individual bays, arrive at job site cut to fit building frame.



August 24. Steel framework is completed! Note that Cofar has already been placed on 13 floors providing a safe, unobstructed working platform for construction activities. Trades can move in, complete their work without delaying concrete operations.

December 7. Outside work virtually completed! Concrete floors in place more than two months! By using Cofar units which serve as tight, incombustible forms for wet concrete, BMFP Construction Company avoided the use of wood forms, eliminated the placing, detailing and tieing of long, straight and bent rebars. Adds Contractor Padgett, "The typical Cofar span was about 10′ . . . a very simple, economical operation!" Result: a safe, high-strength floor. And Cofar is equally suited to steel or concrete frame construction, requires no special procedure.

the reinforcement that forms



COFAR

GRANCO STEEL PRODUCTS COMPANY

Also manufacturers of Corruform, Tufcor, and Roof Deck

Subsidiary of GRANITE CITY STEEL COMPANY

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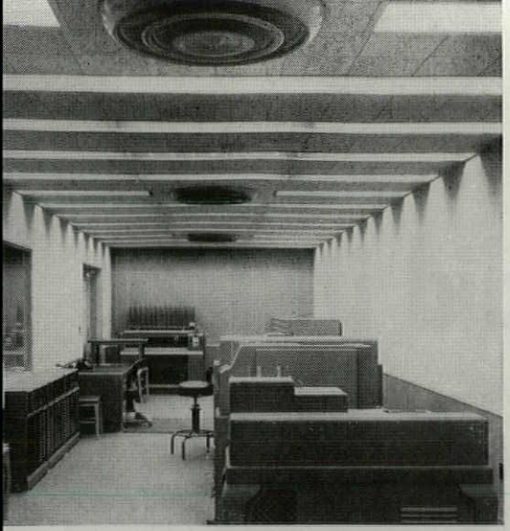
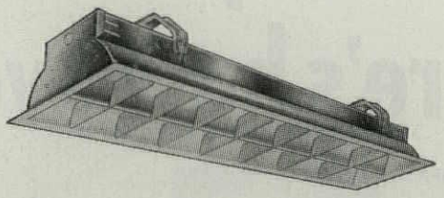




Louvers and parabolic side panels make light troffer comfortable to look at from all angles—even at 140 foot-candle intensity illumination.

FINNED TROFFERS provide glare-free light viewed crosswise, lengthwise or on the bias

"It's easy enough to design fixtures that produce light," says Day-Brite's Products Manager John Gronet, "but the difficulty is to design fixtures that control objectionable brightness without sacrificing efficiency." To beat brightness reflection from all viewing angles—crosswise and slantwise as well as lengthwise—in its Alzak aluminum parabolic troffers, Day-Brite engineers devised a corresponding parabolic louver. Of course, if the fin were a complete arc, the light source would be obscured, so they broke the parabola into segments and projected these on a flat aluminum sheet. (To keep these engineered segments scientifically accurate on a mass-production basis, the louvers are die-struck under terrific pressure, like coins.) Light striking the louvers is thus directed down and up with a minimum thrown back at the viewer. Lengthwise brightness of the troffer—formerly 1.2 foot-candles psi—is cut to 0.6 without impairing the efficiency of the unit. Even on installations where demanding tasks require a light bath of 140 foot-candles the surface brightness of the troffers is comfortable from all angles. Fixtures equipped with the new *Para-Louvers* are available in two-lamp, 40-w. flange or snap-in type at $34 to the trade. The complete assembly snaps to a wire-way cover; service chains simplify maintenance.

Manufacturer: Day-Brite Lighting Inc., 5411 Bulwer Ave., St. Louis 7, Mo.

INFRARED HEAT LAMP: super lamp can bake enamel, solder metal, toast sandwiches

Undeniably the hottest thing at the Plant Maintenance Show in Chicago last month was Sylvania's 1,550-w. infrared lamp. Delivering three times as much radiation per square inch as conventional 375-w. lamps, the new heat bulb has many potential uses in industrial drying, baking and heating applications. It can do such diverse jobs as dry printer's ink, perform specialized soldering operations, even

toast sandwiches. Equipped with two separate filaments, the 1,550-w. unit can be operated at three different wattage — 650, 900, and 1,550—permitting close control of the infrared output. Made of thermal and shock-resistant *Vycor* glass, the lamp is not affected by spattering liquids during operation. Its built-in

continued on p. 244

This proved daylighting method opens new horizons for educators, architects and builders seeking to create the ideal environment for learning.

America's most advanced schoolroom

Twelve years of research at the Daylighting Laboratory, University of Michigan, made this "classroom of tomorrow" possible, today.

THE COMBINATION of Toplite Panels and Light-Directing Glass Block makes every previous concept of schoolroom planning, decoration and arrangement outdated. No longer is it necessary to confine close detail work to the area nearest the windows.

For example, in this experimental classroom the combination of Toplite Panels in the roof and Light-Directing Glass Block in side walls provides adequate natural illumination even on an overcast day.

The ideas perfected in this "classroom of tomorrow" are available to you, *today*. Write for the details. Address: Classroom Research, Owens-Illinois, Dept. MB-3, Box 1035, Toledo 1, Ohio.

GLASS BLOCK AND TOPLITE PANELS
TWO (O) PRODUCTS

OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO

How Honeywell Customized Temperature Control can help you

New home of the Daytona Beach Federal Savings and Loan Association, Daytona Beach, Florida. Architects and engineers: Bank Building and Equipment Corporation of America, St. Louis. Heating contractor: D. W. Browning Plumbing and Heating Daytona Beach, Florida.

Give your clients control of their own "indoor weather"

Why Honeywell Customized Temperature Control is becoming a building "must."

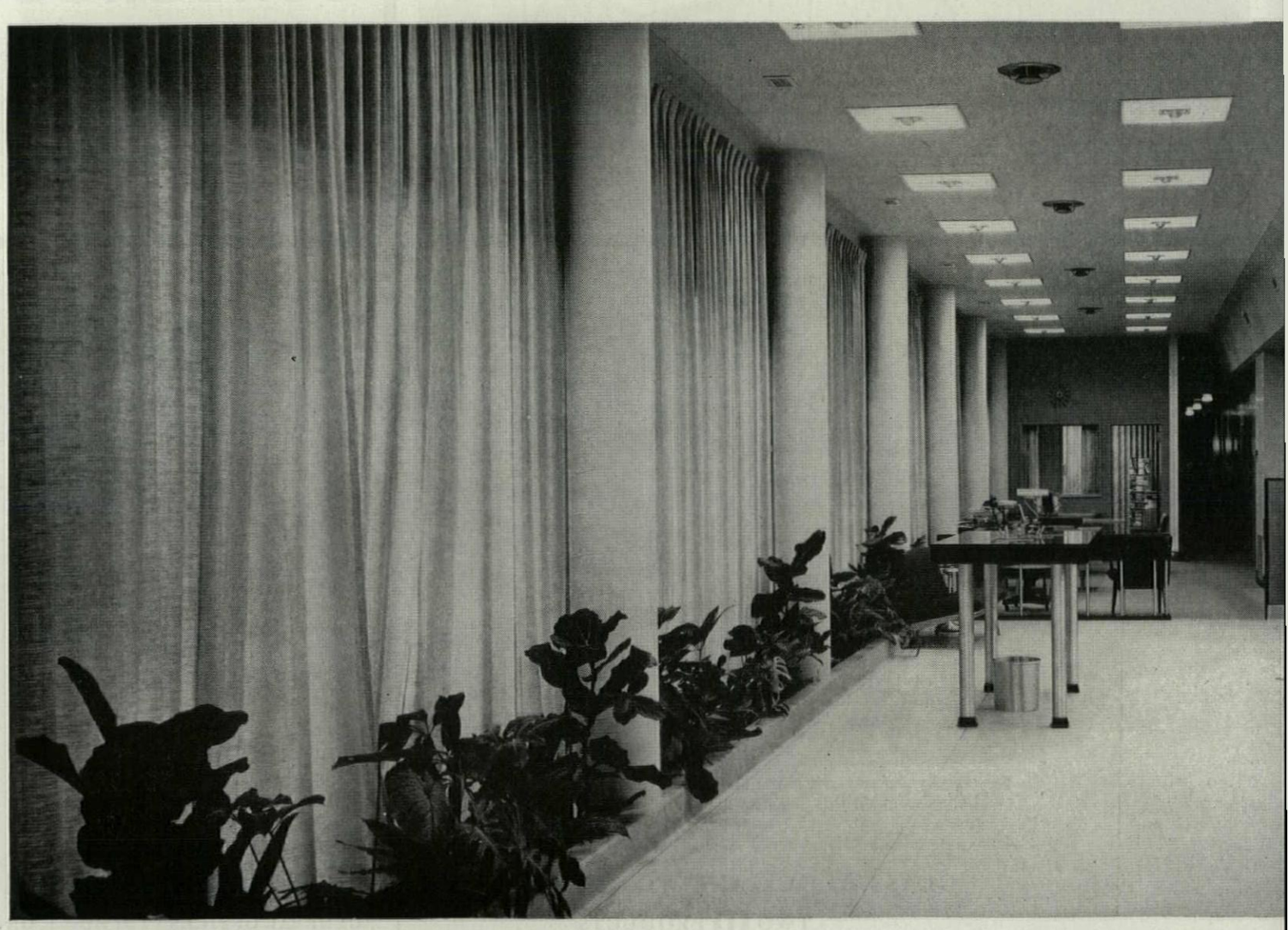
MORE and more, clients are becoming increasingly aware of how comfortable buildings help attract better personnel, help keep customers happy.

Today the best way to provide year around comfort is through the use of *Honeywell Customized Temperature Control.*

The key word here is "customized." It means that whatever your clients' control requirements, a Honeywell Customized Temperature Control installation *designed to fit the needs of the building and its occupants is your answer.*

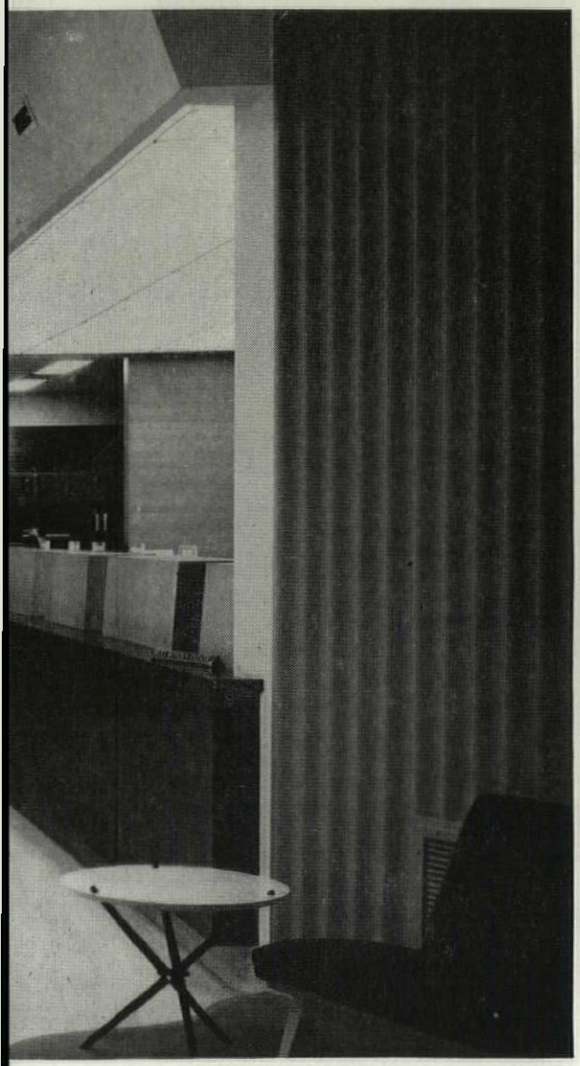
Only Honeywell can provide "customized" control. Because only Honeywell makes all three types of controls—pneumatic, electric and electronic, for heating and cooling, ventilating and humidity.

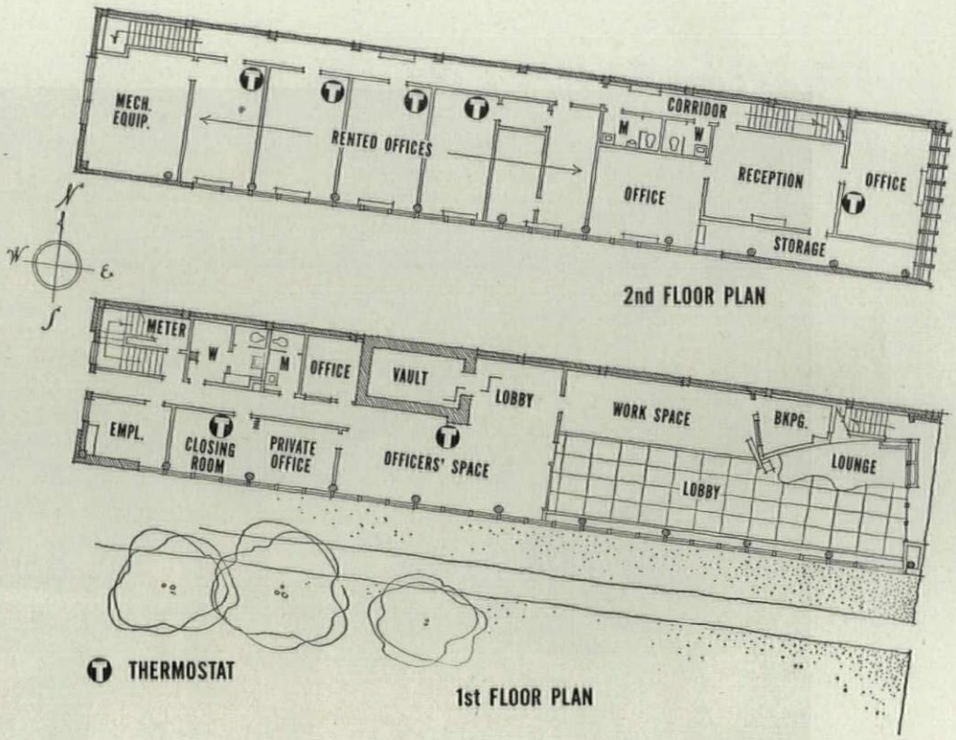
The story, in brief form, of the Honeywell Customized Temperature Control installation in the Daytona Beach Federal Savings and Loan Association Building in Daytona Beach, Florida, is told here. The *techniques* used, applied to your particular problems, can help you give your clients the "indoor weather" they've always wanted.



This reception room is typical of the modern design of the entire building. Modern design includes "indoor weather" control provided by Honeywell Customized Temperature Control. On the second floor, individual thermostats in each of the office spaces make it possible for tenants to maintain the "indoor weather" at the level *they* prefer.

Thermostats on the main floor guard against overheating by solar radiation through the large exposure of glass which faces south. Main floor thermostats of the Honeywell Customized Temperature Control installation do another job, too: they give the proper degree of heating or cooling in more enclosed spaces at the rear.





For comfortable, even temperature in new or existing buildings—of any size—use Honeywell Customized Temperature Control

WHETHER it's a bank, office, motel, airport, hospital, apartment, church, school, factory, store, garage—or any size building—new or existing, Honeywell Customized Temperature Control can help meet your clients' heating, ventilating, air conditioning and industrial control problems.

Your clients will not only enjoy more comfort and efficiency than they've ever known, they'll save fuel, too.

For full facts on Honeywell Customized Temperature Control, call your local Honeywell office. Or mail the coupon below.

L. E. Northrup, executive vice-president of the Daytona Beach Federal Savings and Loan Association, says:

"It is our belief that our new building offers the finest service and facilities for miles around. Important in helping us provide just that is our Honeywell Customized Temperature Control installation."

MINNEAPOLIS
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104 OFFICES
ACROSS THE NATION

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First in Controls

MINNEAPOLIS-HONEYWELL REGULATOR CO.
Dept. MB-3-31, Minneapolis 8, Minnesota
Gentlemen:
I'm interested in learning more about Honeywell Customized Temperature Control.

Name.....

Firm Name.....

Address.....

City..... *Zone*..... *State*.....

Mayo Clinic Diagnostic Building, Rochester, Minn.
Architects: Ellerbe & Company, Minneapolis, Minn.
General Contractor: O. A. Stocke & Company, Inc., Rochester, Minn.

QUIET: Good for what "ails" a Clinic

When Mayo Clinic, Rochester, Minn., chose Acousti-Celotex tile to sound-condition its beautiful new Diagnostic Building—it hit upon the most economical, attractive, lowest-cost way possible.

For here was an example-in-use of efficient materials with high sound-absorption value . . . *plus* quick and easy installation, and minimum maintenance . . . *plus* magnetic eye-appeal that blended harmoniously with the established decor.

Varied Materials Used

In the total 187,175 square feet of acoustical treatment given the Diagnostic Building, a variety of Acousti-Celotex tile types were utilized to meet specific needs. Where frequent cleaning was an important factor, Acousteel was installed. To answer the essential purpose of *washability* and *paintability* . . . Acousti-Celotex Perforated Mineral Fiber Tile. And Celotone®, an incombustible fiber tile with rich, deep, sculptured effect, proved the ideal solution in every instance requiring smart decoration. All tile is white, except for areas such as the beautiful elevator lobby pictured above. This was spray-painted green.

Remarkable Results

In the Acousti-treated areas . . . elevator lobbies, corridors; seminar, secretaries', and audiometer rooms; and in desk sections . . . the acoustical results are extremely gratifying. Where the routine noise of daily clinic activity might be a source of high irritation to all occupants of the building . . . Acousti-Celotex Sound Conditioning brings *quiet comfort* that helps patients rest and relax, improves morale and efficiency of the clinic staff.

No matter what the project . . . whatever the requirements of acoustics, building code, or design itself . . . your local Acousti-Celotex distributor is ready to assist you. His training, backed by the world's most experienced acoustical organization, can help you solve your specifications problem. For details, write The Celotex Corporation, Dept. A-34, 120 S. LaSalle St., Chicago 3, Illinois. In Canada: Dominion Sound Equipments, Ltd., Montreal, Quebec.

Products for Every Sound Conditioning Problem

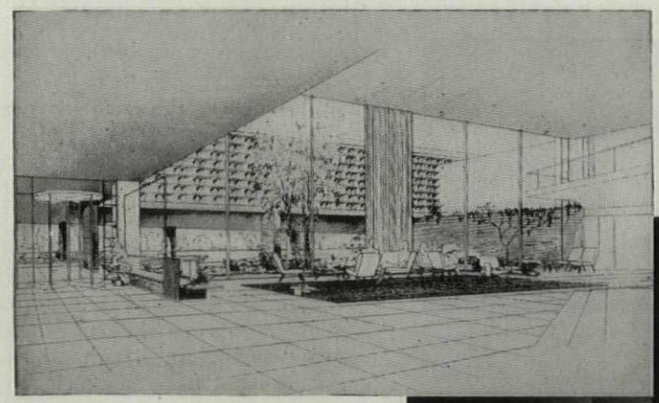
TRADE MARK

ACOUSTI-CELOTEX

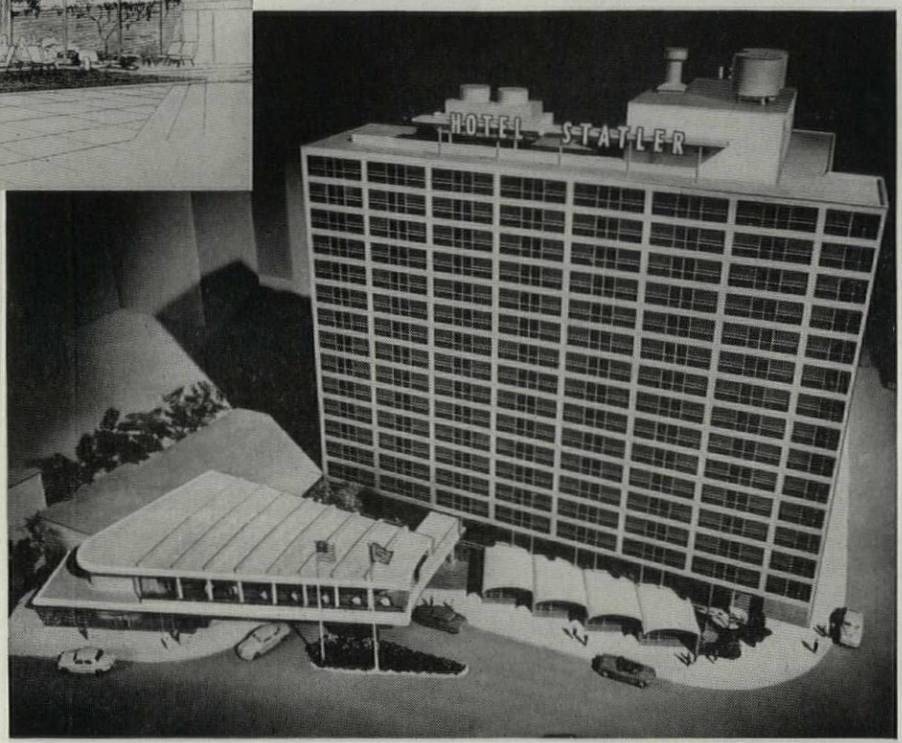
REGISTERED U. S. PAT. OFF.

Sound Conditioning

THE CELOTEX CORPORATION, 120 S. LA SALLE ST., CHICAGO 3, ILLINOIS • IN CANADA: DOMINION SOUND EQUIPMENTS, LTD., MONTREAL, QUEBEC



In the exciting new Hartford Statler the Garden Court between lobby and building exterior is open to a sky view



WILLIAM B. TABLER
architect

JAROS, BAUM & BOLLES
mechanical engineers

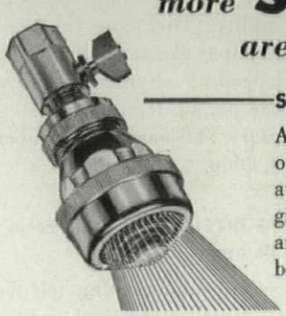
GEORGE A. FULLER CO.
general contractors

C. H. CRONIN, INC.
plumbing contractor

WARNER SUPPLY CO.
plumbing wholesaler

OUTSTANDING EXAMPLE OF TEAMWORK

THE HOTEL STATLER, Hartford, Conn., newest of the nationally famous hotel chain, is the result of years of architect-owner study and research applied to the creation of a structure that would be an integral part of its operation and not merely a means of housing essential services. It is, in total, a better building at lower costs, and by squeezing out many forms of waste it skillfully provides more than the usual measure of features guests want and appreciate. As in the LOS ANGELES STATLER (and the majority of all other Statler hotels) all of the flush valves in the HARTFORD STATLER bear the famous name SLOAN. Thus Hotels Statler Company followed its policy of using SLOAN *Flush* VALVES for new construction, rehabilitation and replacement—repeated evidence of preference that explains why . . .

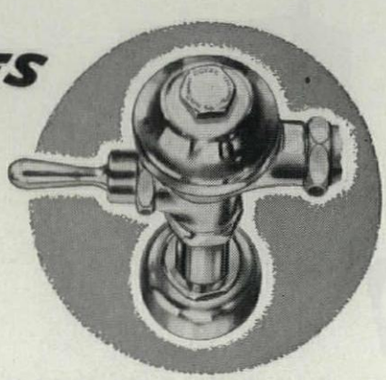


***more* SLOAN *Flush* VALVES**
are sold than all other makes combined

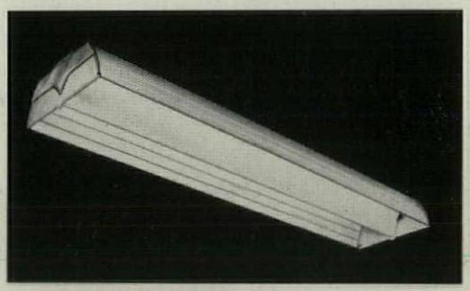
SLOAN VALVE COMPANY • CHICAGO • ILLINOIS

Another achievement in efficiency, endurance and economy is the SLOAN *Act-O-Matic* SHOWER HEAD, which is automatically self-cleaning each time it is used! No clogging. No dripping. Architects specify, and Wholesalers and Master Plumbers recommend the *Act-O-Matic*—the better shower head for better bathing.

Write for completely descriptive folder



"Best designed" industrial fluorescent fixture provides high level of quality illumination.



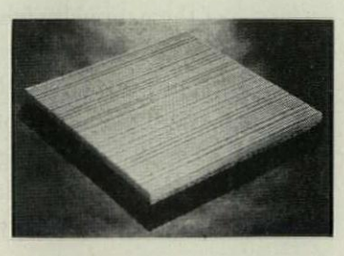
reflector projects useful heat over a 120° angle, and maintains 90% to 95% of its reflectivity throughout the lamp life despite high temperature. Price: $25 a lamp. It measures 6″ in diameter, 7″ long, and its maximum voltage is 236.

* * *

Picked recently by a committee of the AIA New York Chapter as "best-designed industrial fixture," Sylvania's IC fluorescent lighting unit was also on display at the show. Engineered for industrial and commercial application where high illumination levels are necessary, the fixture has 42° side shields. Easy relamping and maintenance of the louverless fixture make it particularly practical for high bay installation. The 5′-long IC-2905 pictured (left) lists at $46.90 with metal side panels and $49.50 with plastic.
Manufacturer: Sylvania Electric Products, Inc., 1740 Broadway, New York 19.

FIRESAFE ACOUSTIC TILE has softly textured surface

Low cost and having high sound-control value, the random-grooved *Stria* tile is adaptable to many decorative ceiling patterns and works well with other modern architectural materials. The new striated tile is made in 1′ squares and a 1′ x 2′ size. Having a highly porous surface of fine compressed glass fibers which traps sound waves, *Stria*'s noise-reduction coefficient is .80; its light-reflective value is .75. The tile may be spray-painted as often as eight times with nonbridging water-base paint without affecting its sound-control properties. Dimensionally stable, noncombustible, rot- and verminproof, *Stria* is suggested for use in offices, schools, hospitals and other institutions. It

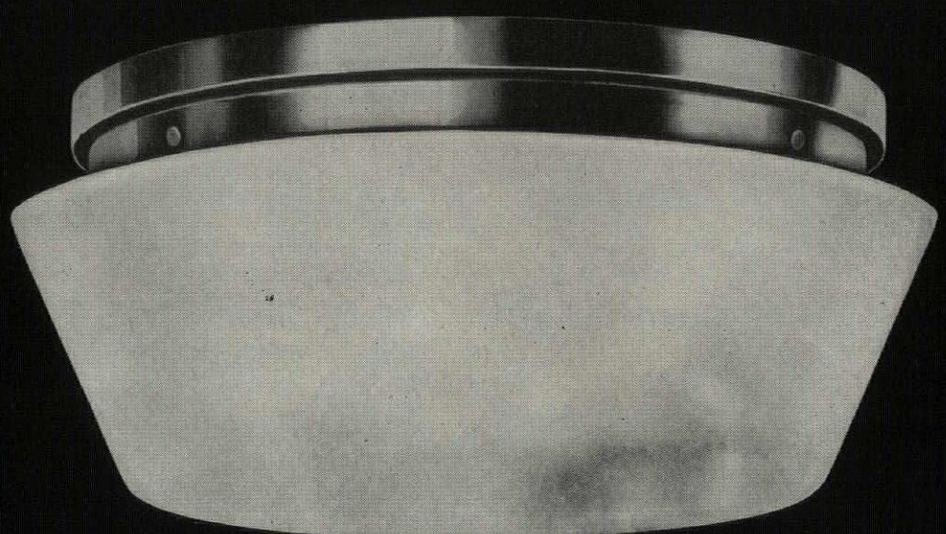


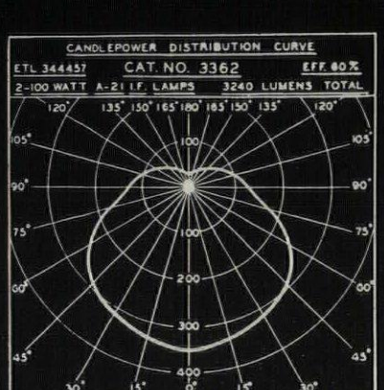
will not warp, buckle, expand or contract—even under varying conditions of temperature and humidity. Dirt may be removed easily with wall-paper cleaner or a vacuum. Installed costs, depending on local labor, range from 50¢ to 65¢ per sq. ft.
Manufacturer: Owens-Corning Fiberglas Corp., Toledo 1, Ohio.

DIAL-TYPE INTERCOM SYSTEM keeps trying busy lines on its own

A new intercommunicating telephone system with a memory circuit and a device that allows key executives to cut in on busy lines is now being produced by the Sound Equip-

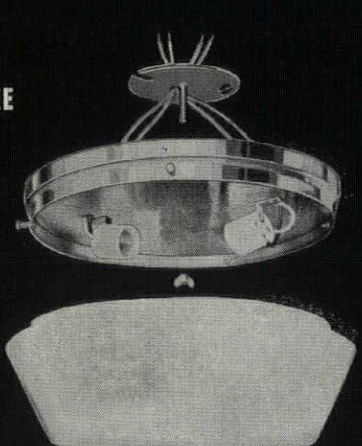
continued on p. 250





INTEGRATED DESIGN, CONSTRUCTION and PERFORMANCE

ART METAL has achieved, in this unit, a rare and original combination of incandescent lighting properties. It was designed for wide application, constructed for ease of installation, and provides exceptional efficiency coupled with visual comfort. Complete data on four sizes, 120, 150, 200 and 300 watts, is on page 47 of ART METAL catalog. We suggest you write for a copy.



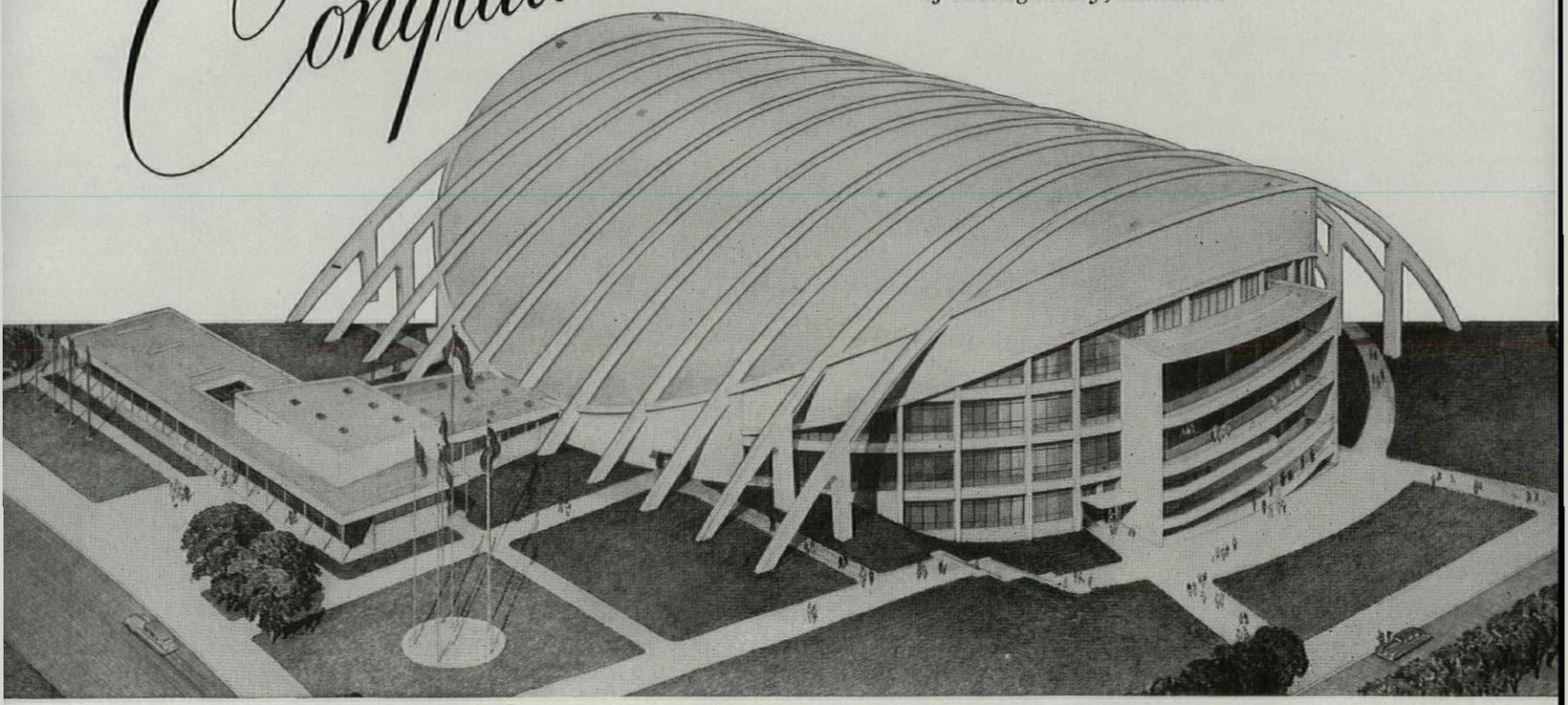
THE **ART METAL** COMPANY

CLEVELAND 3, OHIO

Manufacturers of Engineered Incandescent Lighting

Congratulations

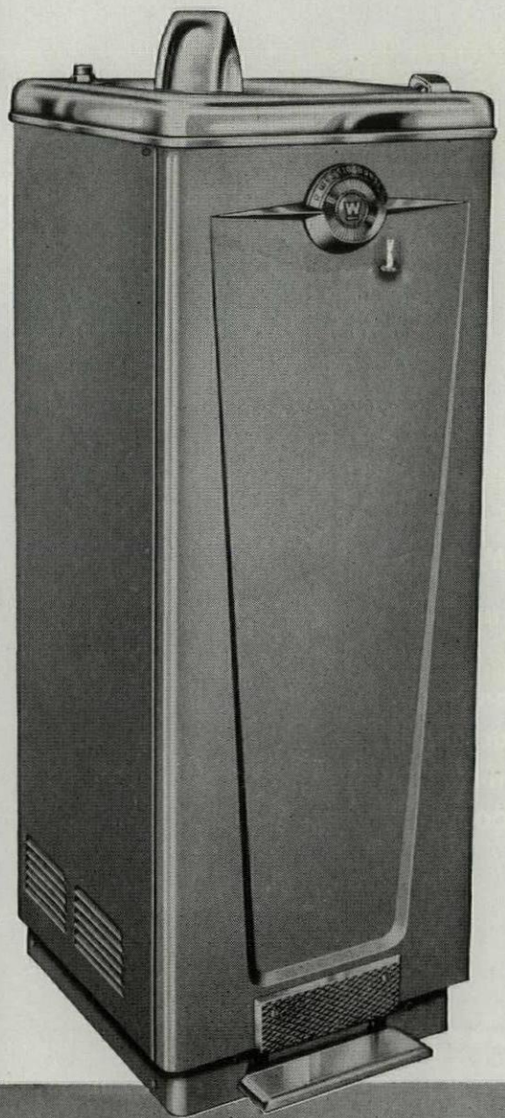
TO ARCHITECTS AND ENGINEERS:
Sherlock, Smith & Adams
of Montgomery, Alabama



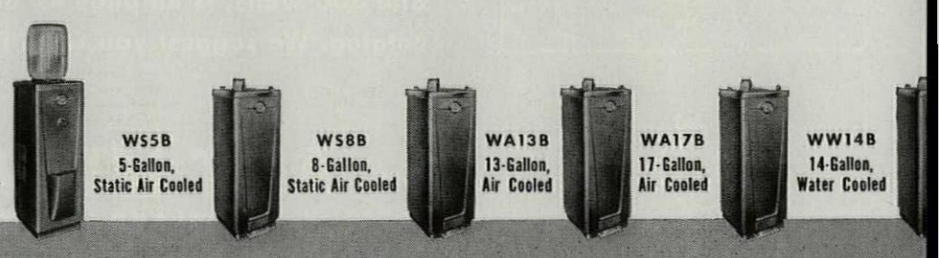
The huge Alabama State Livestock Coliseum at Montgomery is 340 ft. in diameter and 100 ft. high. The arena itself is 260 ft. by 130 ft. in dimension.

This Coliseum is truly an amazing engineering feat. Not the least of its remarkable aspects is the absence of interior structural columns which interfere with spectators' vision. The elimination of inside pillars was achieved by a unique cylindrical roof over a circular structure. This shape permits about 85% of the seats to be concentrated in a free vision area along "the 50-yard line zones". The barrel arch roof was constructed by pouring a monolithic 3-inch concrete shell with supporting concrete arches.

The builders of this unusual but practical structure were not merely content in solving staggering architectural and engineering problems. They were equally research-minded in seeking appointments most suitable for the comfort of visitors and spectators. Westinghouse is pleased that its Water Coolers were selected, because in beauty of design, in efficiency and economical operation, they fitted the requirements of the specifications.



Model WA17B . . . an air cooled, 17-gallon cooler. Has dual electric control for finger-tip plus toe-tip operation at no extra cost.



WSB3B
3-Gallon,
Bottle Cooler

WS5B
5-Gallon,
Static Air Cooled

WS8B
8-Gallon,
Static Air Cooled

WA13B
13-Gallon,
Air Cooled

WA17B
17-Gallon,
Air Cooled

WW14B
14-Gallon,
Water Cooled

Years of engineering experience with all types of electrical equipment now bring you a completely redesigned line for '54. These Water Coolers are the finest yet . . . for ease of operation, reserve capacity for peak loads and negligible maintenance requirements.

experience over the years offers you all this . . . plus such additional and exclusive features as the patented *Pre-Cooler* and the *Super Sub-Cooler*. Both use the cold waste water to pre-cool the incoming drinking water and to sub-cool the hot liquid refrigerant. This arrangement gives more cold water for less money.

stand up and enjoy a cool drink from a Westinghouse Water Cooler. Note the ease with which the controls can be operated. Your clients can now have BOTH foot pedal and push button operation as an integral part on the same cooler at *no extra cost.*

behind each and every Water Cooler is the Westinghouse 5-year Guarantee Plan that backs up the complete unit for one year and the entire Hermetically-Sealed Refrigeration System for 5 years.

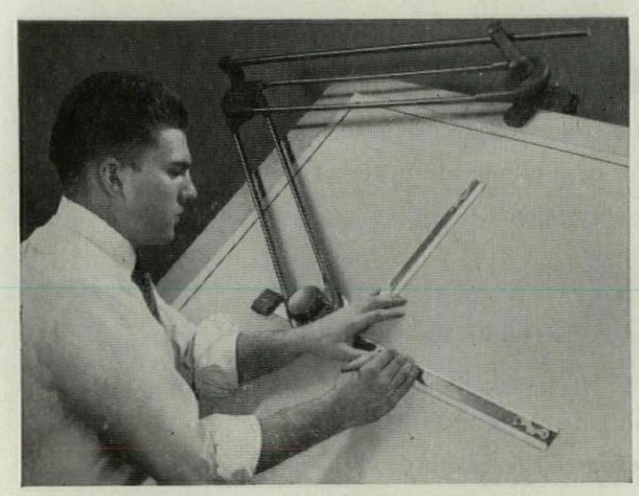
Westinghouse, now features a unique Pay-Way Plan. This is an ingenious formula that proves how sufficient water coolers in relation to work areas will more than pay for themselves through payroll savings. It can be a valuable guide when specifying and locating water coolers on your client's blueprints.

FREE PAY-WAY COMPUTER

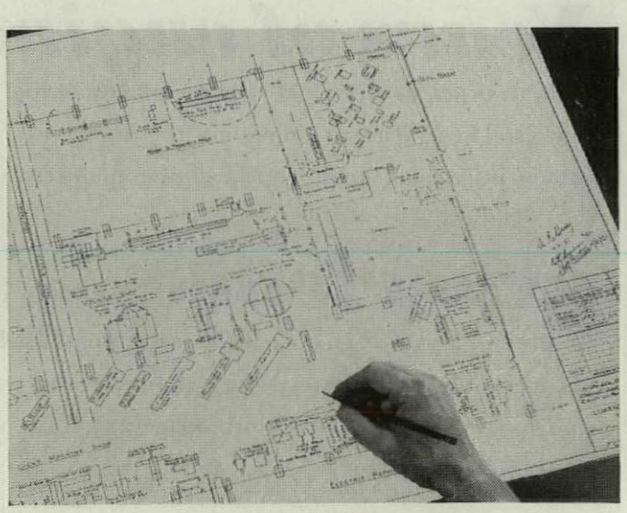
To save you time in making calculations and to aid you in specifying the number, type and location of water coolers for your clients, be sure to send today for our handy Computer-Selector as well as more data on the Pay-Way Plan.

YOU CAN BE SURE...IF IT'S Westinghouse

WESTINGHOUSE ELECTRIC CORPORATION
Electric Appliance Division • Springfield 2, Mass.



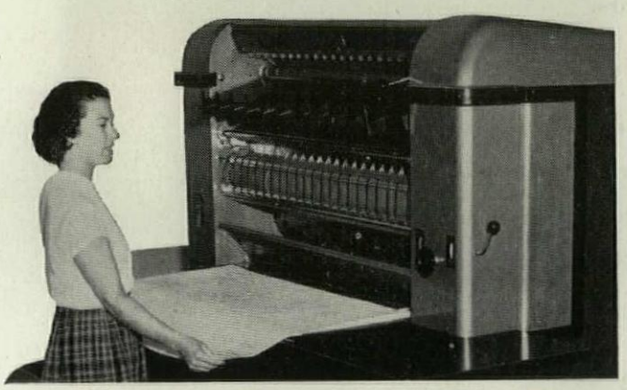
Instead of starting all over again



...he begins here

Here's how the Lukens Steel Company, Coatesville, Pa., uses Kodagraph Autopositive Paper to eliminate retracing in preparing flow diagrams and piping layouts.

THESE diagrams and layouts must also show the floor plans and fixed equipment installations of the departments involved. But instead of retracing this information from the basic plant layout drawings, Lukens Steel simply reproduces the drawings on Kodagraph Autopositive Paper—gets *positive, photographic* duplicate tracings directly. This gives the draftsman a tremendous head start . . . for he only has to add the new detail to the Autopositive print . . . *and another job is done instead of being barely begun.*



Low-cost Autopositive reproductions are made this easily at Lukens Steel:

Kodagraph Autopositive Paper is exposed with the drawings in a direct-process machine . . . and processed in standard photographic solutions. A fast, convenient room-light operation that produces positive photographic intermediates *without a negative step . . . without a darkroom.* These intermediates, in turn, assure highly legible prints.

Lukens Steel Company also uses Autopositive Paper *to produce print-making masters* from vendor blueprints; *to simplify filing,* by combining small vendor drawings on Autopositive intermediates in the standard Lukens drawing size; *to get low-cost protection* for original drawings which must be sent out of the plant.

Kodagraph Autopositive Paper

"THE BIG NEW PLUS" in architectural drawing reproduction.

MAIL COUPON FOR FREE BOOKLET

206

EASTMAN KODAK COMPANY
Industrial Photographic Division, Rochester 4, New York

Gentlemen: Please send me a free copy of your illustrated booklet, "Modern Drawing and Document Reproduction."

Get the full story on the sensational line of Kodagraph Materials which you, or your local blueprinter, can process easily, at low cost. Write today for free booklet.

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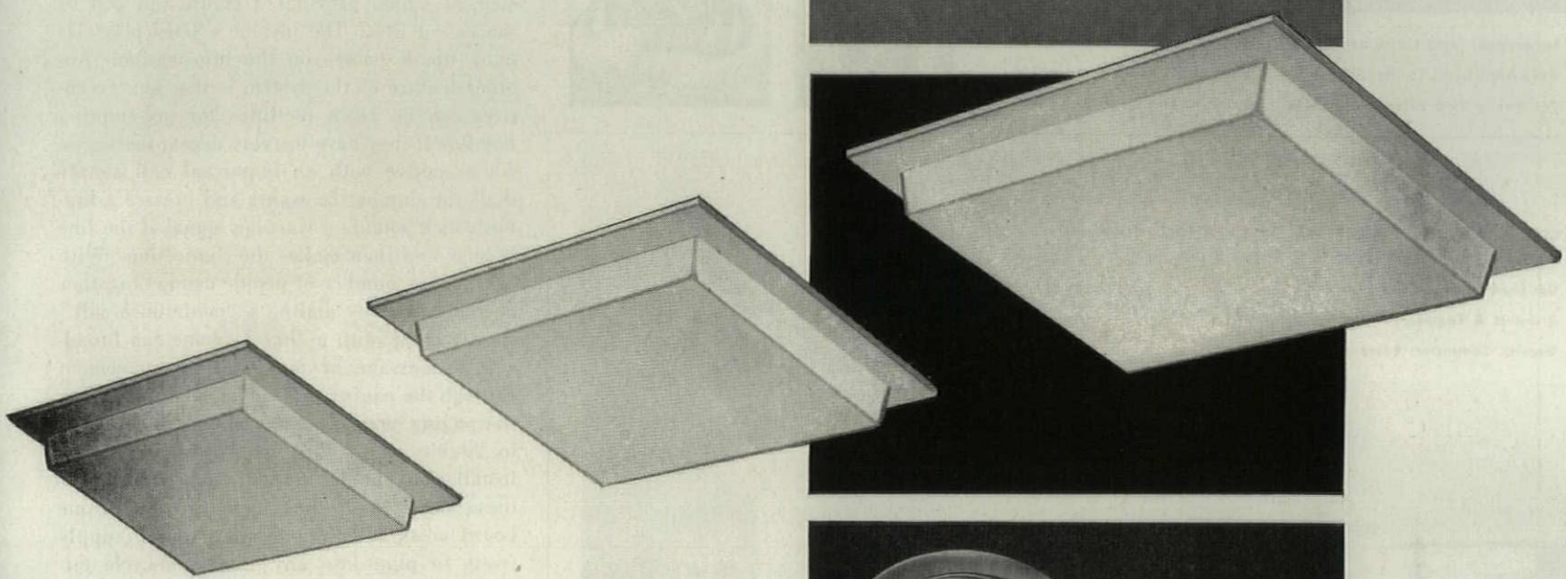
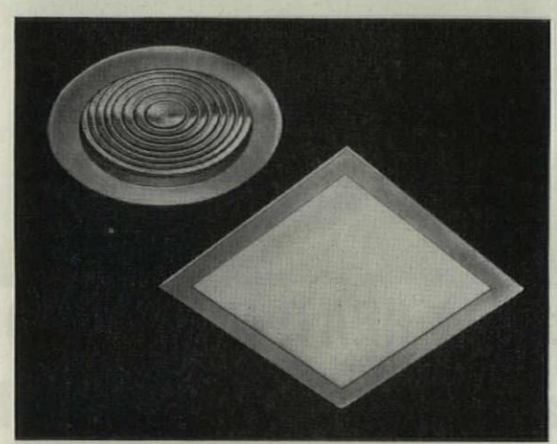
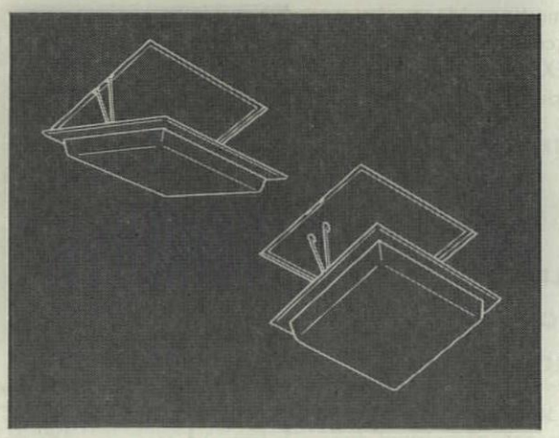
calculite







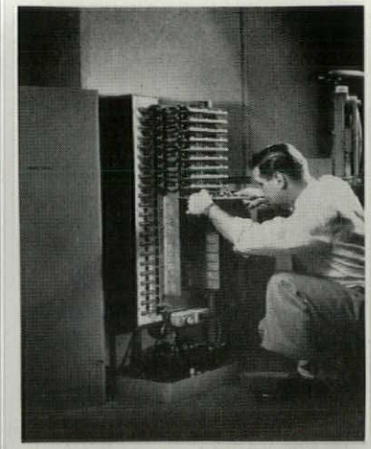
crisp design
engineered construction

Lightolier's Calculite recessed fixtures are designed to conform to the architectural concept of the areas in which they are installed. They present a clean, thoroughly unobtrusive ceiling line. Fiberglas gaskets eliminate light leakage and dust-carrying convection currents. Alzak or Alumilite finish reflectors redirect all light within box, assure high permanent reflectivity and uniform surface brightness. Torsiontite® spring fasteners (illustrated) snap frames down from any side for easy relamping.

Lighting by **LIGHTOLIER**

JERSEY CITY 5, NEW JERSEY

Lightolier Calculites are available in lens, louvre, flat and formed glass and pin-hole types. For complete catalog and data, write LIGHTOLIER, Jersey City 5, New Jersey.



Intercom additions are easily made; a screw driver is the only tool used to install telephones on Dial-X. One selector for every two telephone units is slid into the control board.

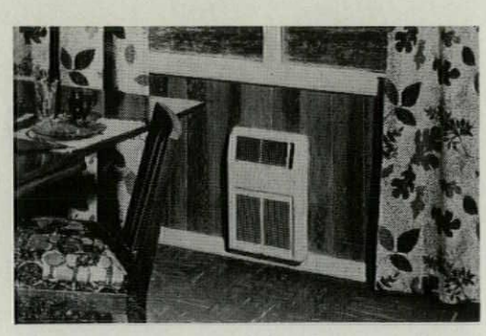
ment Division of Stromberg-Carlson. Called *Dial-X*, this private phone system makes it unnecessary for anyone using it to repeat the dialing of a number that is busy. Unlike conventional intercom setups which use sensing relays to determine if lines are busy and therefore cannot inform the circuit of subsequent release of the line, *Dial-X* employs a sensing element which provides a continuous test of the called line. The instant a busy phone is hung up, it passes on the information. Another feature of the system is that key executives can be given facilities for pre-empting any line if they have to relay urgent messages. An executive with an important call simply dials the number he wants and presses a button which sounds a warning signal if the line is busy and then makes the connection. With *Dial-X*, any number of people can get together on the system by dialing a "conference call." Also, anyone with a *Dial-X* phone can broadcast a message or make an announcement through the paging or sound system by dialing the paging line. The new system is available in 20-line and 40-line capacities, but initial installation can be made in any fraction of these sizes. A 40-line model with a 20-line board costs $1,200, including power supply ready to plug into any 116-v., 60-cycle circuit. Each two lines on the board require a selector switch priced at $120. Thus a 40-line model equipped to handle 20 lines at the beginning would cost a total of $2,400. Each telephone—either desk or side mounting type—costs another $60. These prices do not include installation. Each line in *Dial-X* will accommodate up to six extensions. Additional lines up to the capacity of the board can be added to any time by sliding additional selector plates into the switchboard cabinet and plugging them into the sockets. The switchboard itself is designed for either floor or wall mounting. It is completely self-contained in a gray steel cabinet standing 50″ high x 22″ wide x 17″ deep.

Manufacturer: Stromberg-Carlson, 100 Carlson Rd., Rochester 3, N. Y.

STEAM HEAT SYSTEM features room-controls rapid response

A thermostat in each room at a price within reason is the promise of *SelecTemp* steam heating system. Ideal for motels and hotels

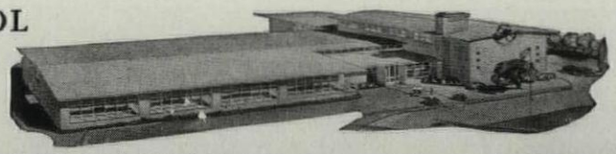
continued on p. 256

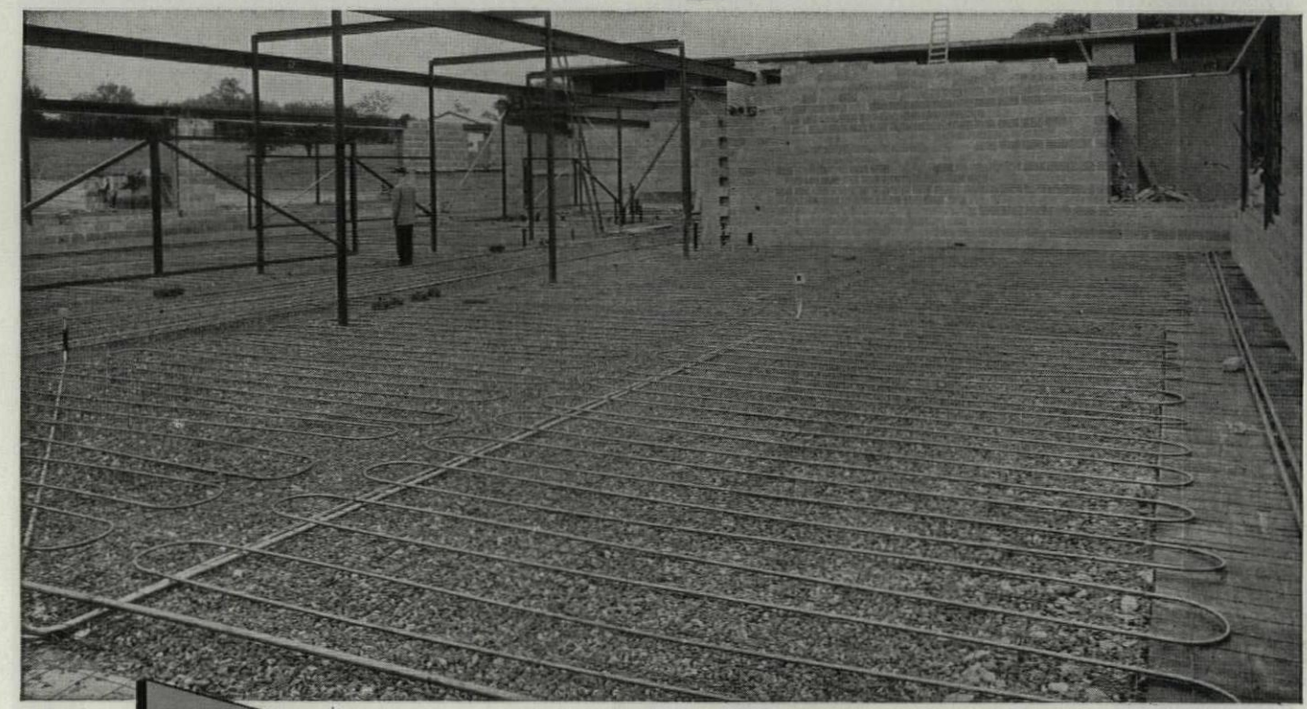


MANCHESTER ELEMENTARY SCHOOL

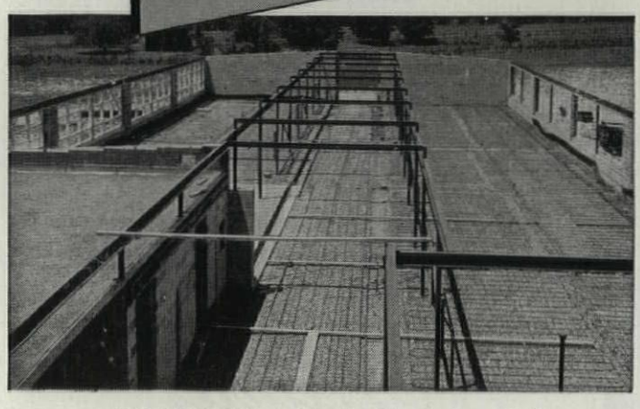
Manchester, Missouri

Architect: CHARLES W. LORENZ, Kirkwood, Mo.
Contractor: JUENGEL CONST. CO., St. Louis, Mo.
Radiant Heating: BAGLEY & COMPANY, Inc., Robertson, Mo.
Revere Distributor: GRINNELL COMPANY, Inc., St. Louis, Mo.





Another case of COPPER where it counts!



TWO VIEWS of the radiant Panel heating layout before concrete slab was poured. Floor area over 17,000 sq. ft. System was imbedded in slab 4". Gravel fill is 6" deep. Coils are 12" OC. System is divided into 4 zones, with all supply and return lines also of copper. Note edge insulation at right in large photo.

Radiant Panel Heating fits perfectly into the growing trend to 1-story school construction. It means warm floors, no drafts, and a healthier atmosphere for scholars. To the architect radiant panel heating means greater latitude in design, more usable space for the money. And for the user it means greater heating efficiency, lower redecorating costs and less cleaning and maintenance than when old-fashioned heating methods are used. The ideal material for panel heating is copper. For no other metal or alloy has all the desirable construction characteristics of this "ageless" metal.

Revere Copper Water Tube is easy to bend and handle . . . its long 60' lengths require fewer fittings, the solder fittings used eliminate the need for welding, wrench work and thread cutting, while its lasting, non-rusting qualities have been proven through the centuries. Even being buried in a concrete slab doesn't bother enduring copper. Copper is the metal you can trust. That's why, in structures built to last, copper invariably gets the call.

Next time be sure to specify Revere Copper Water Tube for radiant panel heating, hot and cold water lines, underground service lines, air conditioning and processing lines, waste stack and vent lines. There is a Revere Distributor near you who carries a full supply of Revere Copper Water Tube in various sizes and tempers. And if you have technical problems, he will put you in touch with Revere's Technical Advisory Service.

REVERE

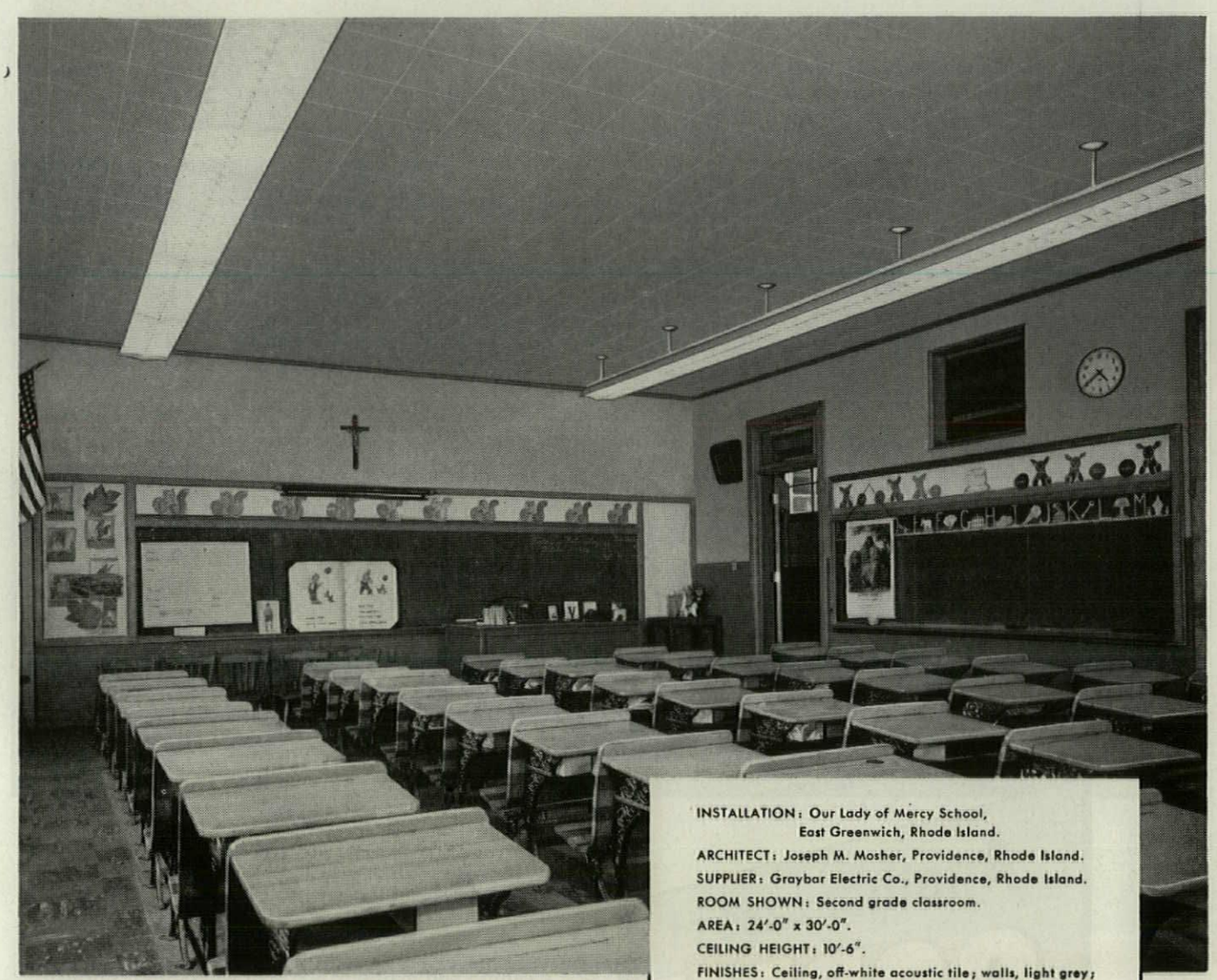
COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, New York

Mills: Baltimore, Md.; Chicago and Clinton, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Rome, N. Y.—Sales Offices in Principal Cities, Distributors Everywhere.

SEE "MEET THE PRESS" ON NBC TELEVISION, SUNDAYS



INSTALLATION: Our Lady of Mercy School, East Greenwich, Rhode Island.
ARCHITECT: Joseph M. Mosher, Providence, Rhode Island.
SUPPLIER: Graybar Electric Co., Providence, Rhode Island.
ROOM SHOWN: Second grade classroom.
AREA: 24'-0" x 30'-0".
CEILING HEIGHT: 10'-6".
FINISHES: Ceiling, off-white acoustic tile; walls, light grey; floor, brown tile; chalkboards, black; woodwork and desktops, light natural wood.
FIXTURES: Litecontrol No. 4624 mounted on 8" stems. Cutoff 38° crosswise, 26° lengthwise. Standard cool white 40-watt lamps.
WATTS PER SQUARE FOOT: 1.7.
INTENSITY: At desktop level, 30 footcandles in service.

LOW BUDGET SCHOOL WITH

HIGH LEVEL LIGHTING

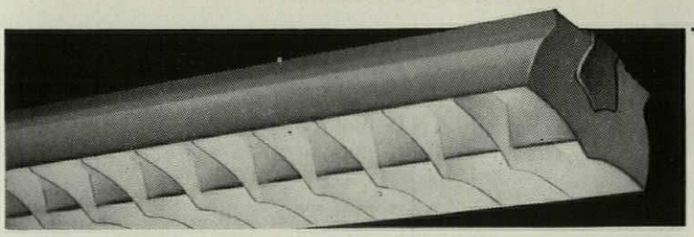
. . . by LITECONTROL

Built with little more than a shoestring through the efforts of Father Brady, the curate, this Parochial School contains many interesting cost-cutting features. One of the best is LITECONTROL's attractive lighting fixture No. 4624.

Extremely efficient (86%), it combines low initial cost with unusually easy maintenance.

Curved metal side panels are illuminated by reflected light from ceiling and walls, thus showing a luminous appearance and practically eliminating contrast between fixtures and ceiling. Smooth curved sides and lamps are cleaned from above with just one pass of a tank type vacuum cleaner. Baffles are hinged from either side and may be installed or removed without use of tools.

Another example of the "More Light and Looks for Your Money" you get with *every* LITECONTROL Fixture. It will pay you to know the *complete* line. See your local LITECONTROL man.

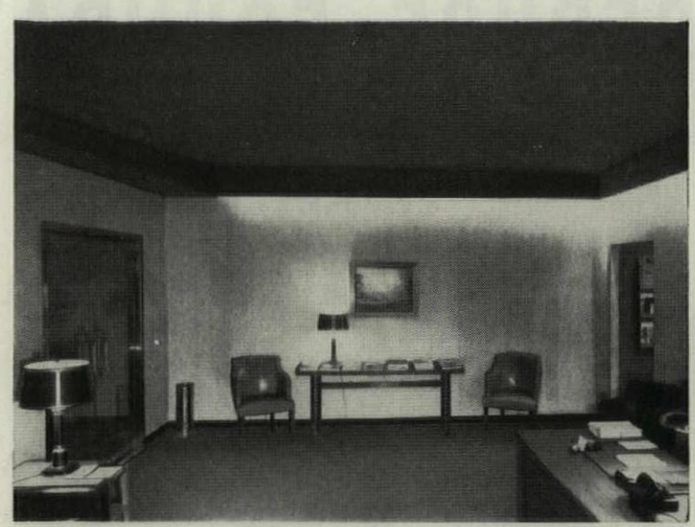


LITECONTROL
Fixtures

LITECONTROL CORPORATION
36 PLEASANT STREET, WATERTOWN 72, MASSACHUSETTS

DESIGNERS, ENGINEERS AND MANUFACTURERS OF FLUORESCENT LIGHTING EQUIPMENT DISTRIBUTED ONLY THROUGH ACCREDITED WHOLESALERS

Your interiors can be both **BEAUTIFUL** and **FIRE SAFE**



A Grinnell Automatic Sprinkler System can become a harmoniously blended part of the interiors you design.

Extending just a scant inch below the line of the ceiling, Grinnell *Flush-Type* Ceiling Sprinklers are hardly noticeable. Yet they mount unremitting guard against fire—stand ready 24 hours a day to provide dependable protection from the very first flame.

However, for the sake of retaining the attractiveness of your interiors, the time to figure on fire protection is at the start—while your plans are still developing.

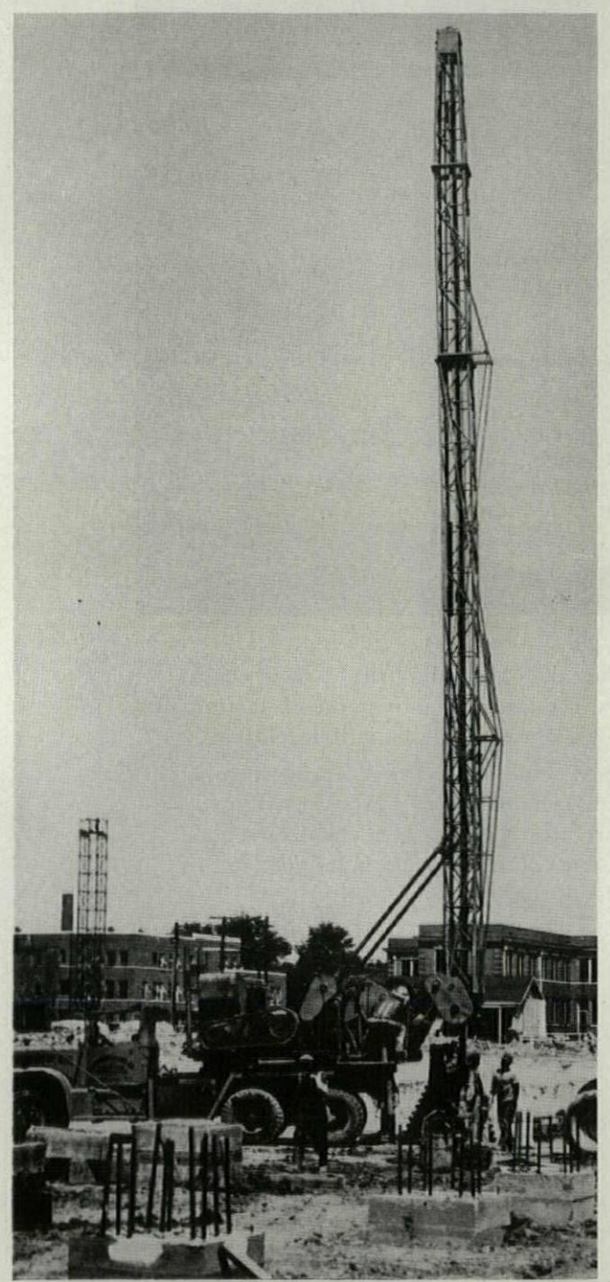
So when your next project is in the blueprint stage, call in the Grinnell engineer. Long experienced in working with architects, he can give you details about the Grinnell Systems of fire protection designed for various commercial, industrial and institutional buildings. There is no obligation. Grinnell Company, Inc., 292 West Exchange Street, Providence, Rhode Island. Branch Offices in Principal Cities.

GRINNELL PROTECTION AGAINST EVERY FIRE HAZARD

Manufacturing, Engineering and Installation of Automatic Sprinklers Since 1878

REDUCE FOUNDATION COSTS WIT

UNDER REAMED PIERS
DRILLED SHAFTS AND CAISSONS
SPECIAL DRILLING PROBLEMS

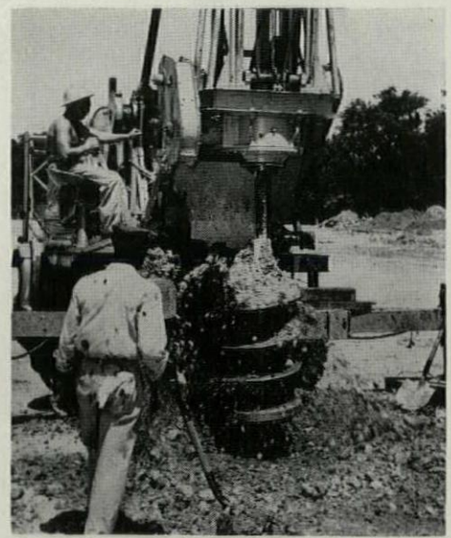


MOBILE, TRUCK-MOUNTED DRILLING EQUIPMENT

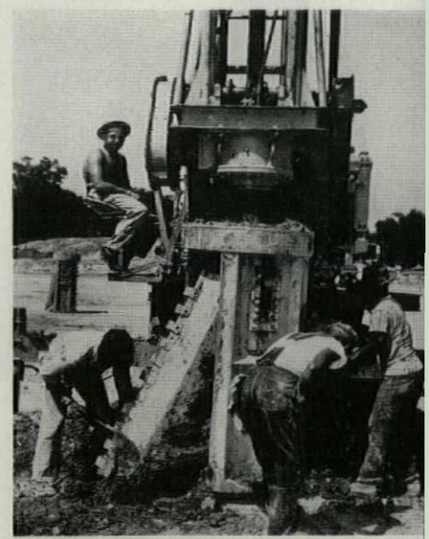
Use of McKinney drilling equipment to install piers and caissons has reduced the cost of this type of work to the extent that it is usually much more economical than conventional spread footings or bearing piles.

ADVANTAGES of McKinney High Speed Drilling:

- **No Mass Excavation or Subsequent Back Fill**
- **Speedier Operation**
- **Shafts and Bells Cut to Neat Line**
- **Concrete Poured Without Any Forming**

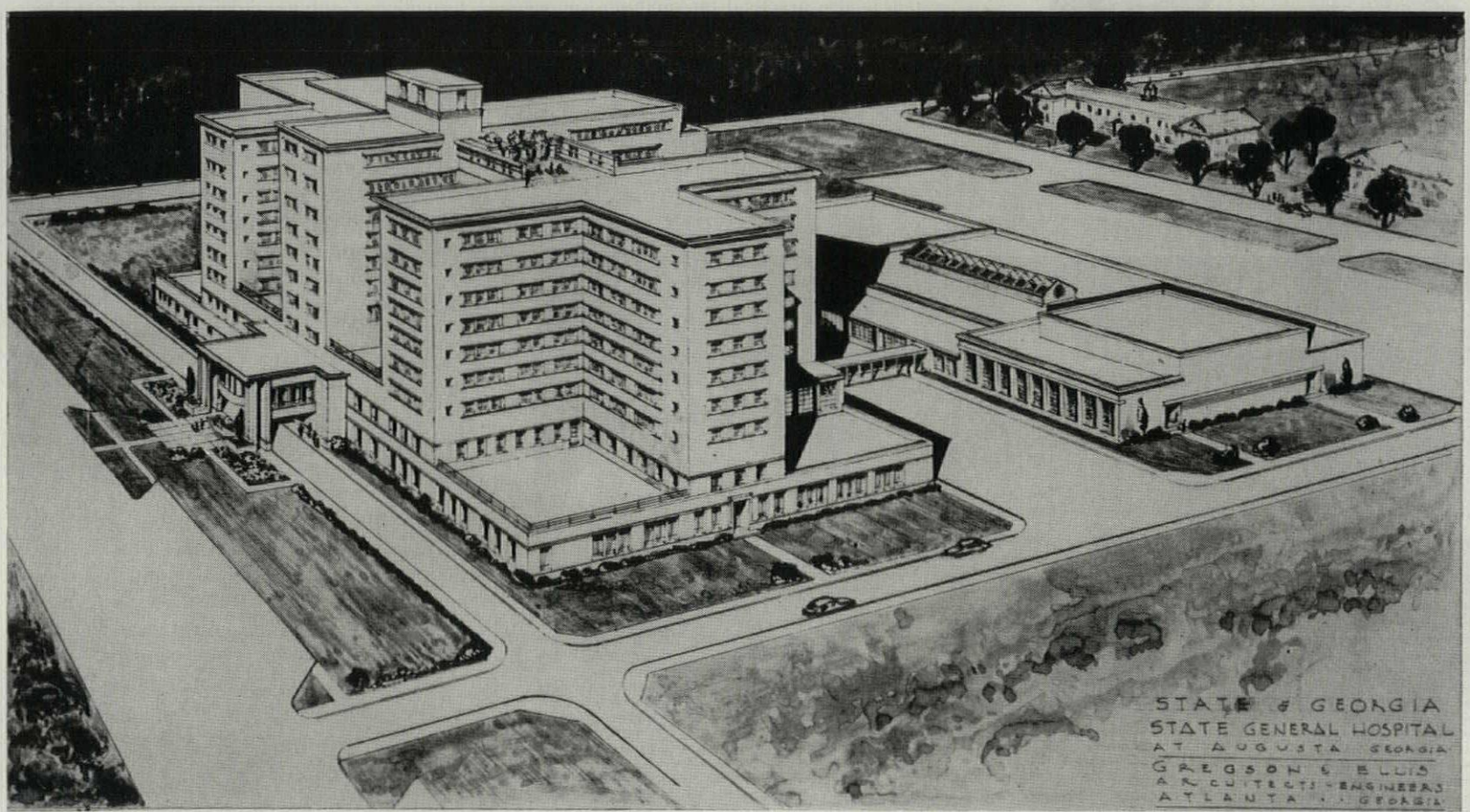


EARTH AUGUR



BELL & CONE TOOL

McKINNEY HIGH SPEED DRILLING



EUGENE TALMADGE MEMORIAL HOSPITAL—AUGUSTA, GEORGIA

GREGSON & ELLIS, ATLANTA, GEORGIA—Architects
HERMAN SMITH, CHICAGO, ILLINOIS—Consultant
HARRY G. HUNTER, ATLANTA, GEORGIA—Structural Engineer
GEORGE A. FULLER COMPANY, WASHINGTON, D.C.—General Contractor

At the Eugene Talmadge Memorial Hospital in Augusta, Georgia 367 McKinney drillings were made for 367 columns with average loading of 350,000 lbs., a highest loading of 500,000 lbs. (A design load of 15,000 lbs. psf at the bottom of the bell.)

On this job Architects Gregson & Ellis found the average cost per footing was $350 which included drilling 20 feet to hard shale, belling out the bottom of the hole, placing reinforcing steel and pouring caisson concrete as well as rectangular cap on top of caisson.

A FEW OTHER McKINNEY DRILLINGS

INDIANA PUBLIC SERVICE—84 Caissons
West Terre Haute, Indiana
Sargent & Lundy, Engineers
Gust K. Newburg, General Contractor

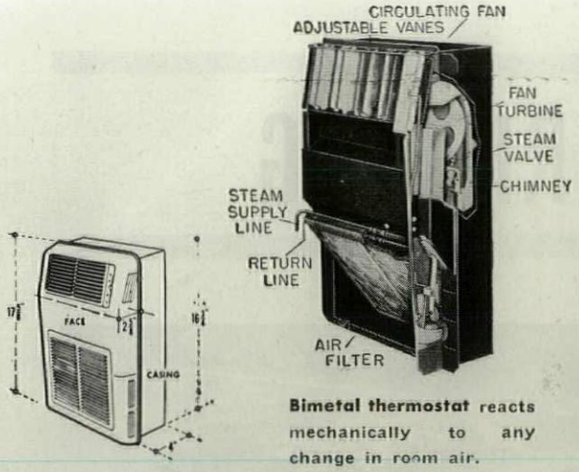
U. S. CORPS OF ENGINEERS—384 Caissons
Office Building for USAF
W. S. Bellows Construction Company

OSCAR MAYER PACKING COMPANY—79 Caissons
Davenport, Iowa
Henschien, Everds & Crombie, Architects & Engineers
Priester Construction Company

REYNOLDS METALS COMPANY—2038 Caissons
Arkadelphia, Arkansas
J. Gordon Turnbull, Engineers
Bellows Construction Company and
Ditmars-Dickman, Pickens Construction Company

McKINNEY DRILLING COMPANY

P.O. BOX 190—NACOGDOCHES, TEXAS—PHONE: 4-8373 • 2747 BANKHEAD HIGHWAY, ATLANTA, GEORGIA—PHONE: BE 3866



Bimetal thermostat reacts mechanically to any change in room air.

NEW PRODUCTS *continued*

where fuel bills for unused rooms often haunt building owners, *SelecTemp* can keep rooms cool until occupied—and then makes them comfortably warm almost immediately. The system is also practical for rambling commercial structures as well as schools and other installations where zoned heating is costly and central boilers are inefficient. The effectiveness of *SelecTemp* lies in its simplicity. Each room actually becomes a "zone," as every wall-mounted unit has its own mechanical thermostat. The boiler—located anywhere inside or outside the building—feeds steam to each room unit via ¼" flexible copper tubing. Condensate is returned by gravity through ⅛" tubing. (This small piping and the unrestricted placement of the boiler makes it easy to install the system on modernization jobs as well as in new construction.) Each of the automatic heaters (6,000, 12,000 or 18,000 Btu capacity) consists of a copper heat exchanger, steam-turbine driven fan, glass-fiber air filter plus the nonelectric thermostat. The units are never shut off completely while the system is in operation; those in unused areas run at 1/20 capacity. Each has a ready steam supply in the exchanger and when the thermostat is turned up, it puts the fan to work delivering warmed and filtered air into the room immediately. Where the units are mounted on outside walls (in wood frame construction they will set between studs) thermostats can respond rapidly to outside weather by picking up the changes in wall temperature.

As for cost, *SelecTemp* is said to be competitive with other hot water and steam systems but slightly higher than conventional warm air heating. However, the system costs less than others where controls must be provided to regulate zone temperature. Because of the simple installation, the *SelecTemp* system recently installed for a new Milwaukee motel was $8,000. This covered 53 units—40 for the 20 motel suites, 13 for the owner's home, garage and office. The boiler on this installation has a capacity of 1 million Btu's and is equipped with submersion coils for domestic hot water.

Manufacturer: Iron Fireman Manufacturing Co., Cleveland 11, Ohio.

PERFORATED ACOUSTIC TILE creates all-over pattern

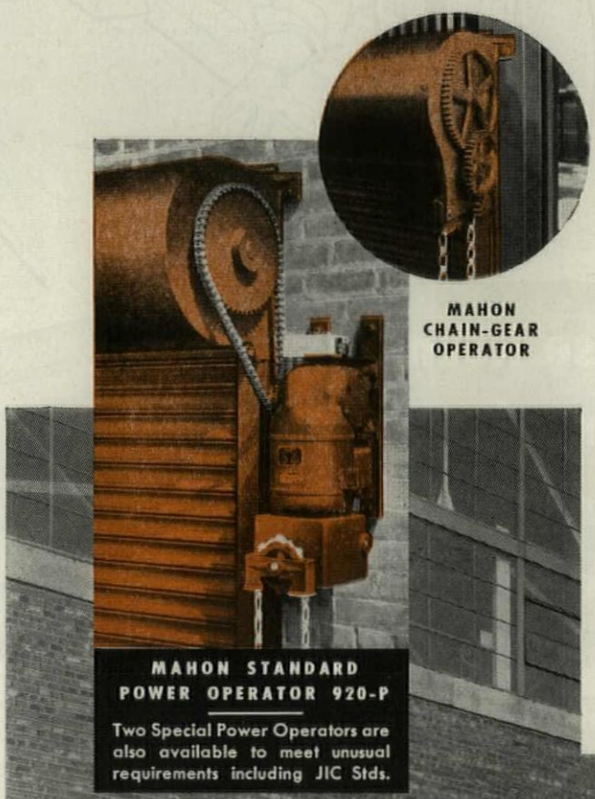
Scattered perforations camouflage harsh boxy lines on *Minatone* walls or ceiling. Combining excellent sound absorption with complete incombustibility, the new glass-fiber tile can be used in any commercial, institutional, or industrial building where codes stipulate a completely firesafe material. *Minatone* is available in 1′ x 1′ and 1′ x 2′ sizes, finished with two coats of white paint on face and beveled edges. A good light reflector, the tile can be installed with cement, nails or screws or by mechanical suspension.

Manufacturer: Armstrong Cork Co., Lancaster, Pa.

continued on p. 262

Rolling Steel Doors

Manually, Mechanically, or Electrically Operated



MAHON CHAIN-GEAR OPERATOR

MAHON STANDARD POWER OPERATOR 920-P

Two Special Power Operators are also available to meet unusual requirements including JIC Stds.

No other type of door can equal the outstanding advantages of a good electrically operated rolling steel door . . . no other type of door so fully meets present-day requirements in modern industrial or commercial buildings. The quick-opening, quick-closing, vertical roll-up action of a rolling steel door requires no usable space either inside or outside the door opening . . . there are no overhead tracks or other obstructions to interfere with crane operations—materials can be stacked within a few inches of the door curtain on either side. No other type of door offers these inherent advantages of space economy and compactness in operation . . . in addition, rolling steel doors are permanent—their all-metal construction assures a lifetime of trouble-free service and maximum protection against intrusion and fire. When you select a rolling steel door, check specifications carefully . . . you will find many extra-value features in Mahon doors—for instance, the galvanized steel material, from which the interlocking curtain slats are rolled, is chemically cleaned, phosphated, and treated with a chromic acid solution to provide paint bond, and, the protective coating of synthetic enamel is baked on at 350° F. prior to roll-forming. You will find other quality materials and design features in Mahon doors that add up to a greater over-all dollar value. See Sweet's Files for complete information including Specifications, or write for Catalog G-54.

THE R. C. MAHON COMPANY

Detroit 34, Michigan • Chicago 4, Illinois • Representatives in all Principal Cities

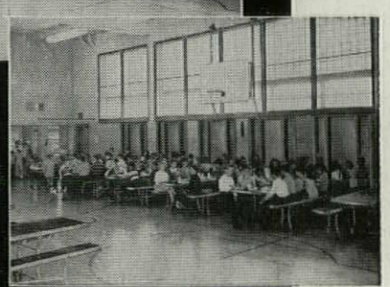
Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Doors and Fire Shutters; Insulated Metal Walls and Wall Panels; Steel Deck for Roofs, Partitions, and Permanent Concrete Floor Forms.

ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

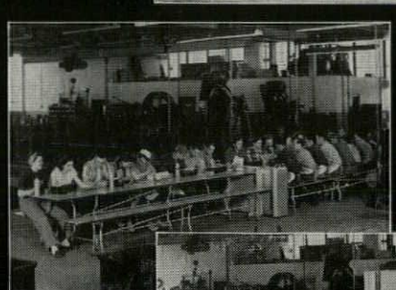
MAHON

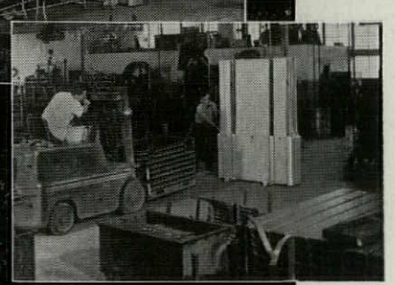
FOR SCHOOLS • INDUSTRIAL PLANTS • INSTITUTIONS • COMMUNITY CENTERS

YOU CAN OFFER MORE FACILITIES AT LESS COST BY MAKING SPACE SERVE DOUBLE DUTY WITH SCHIEBER FOLDING TABLES AND BENCHES



Combine activities area and lunchroom





Eliminate the single-purpose lunchroom

Schieber now builds 3 sturdy models—two that fold and roll into the wall and a mobile unit. Thousands of installations attest to the practicability of this equipment. Let us advise where you can observe it in use. Representatives in all areas.

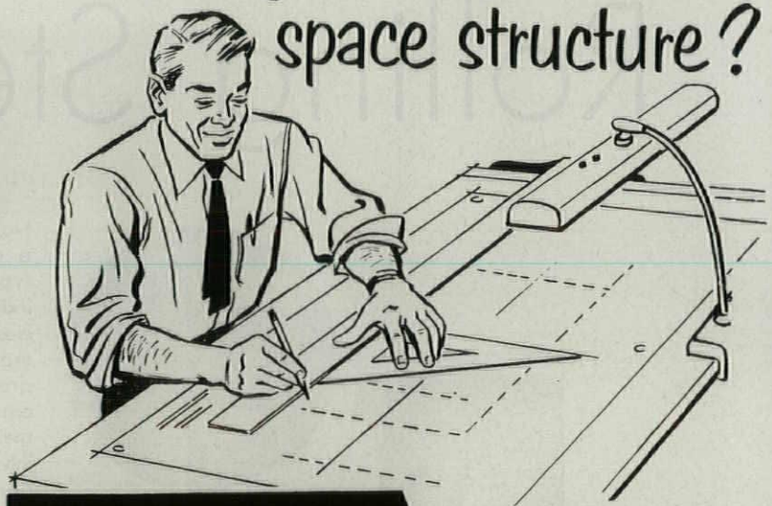
Consult Sweet's or write for catalogs.

SCHIEBER

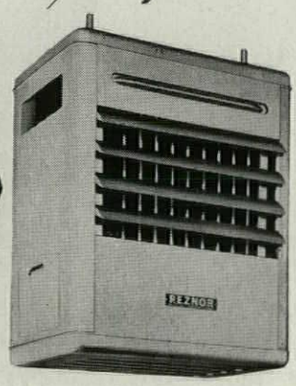
Brightmoor Station

DETROIT 23, MICHIGAN

Designing an **expandable** space structure?



use Reznor unit heaters for an expandable heating system



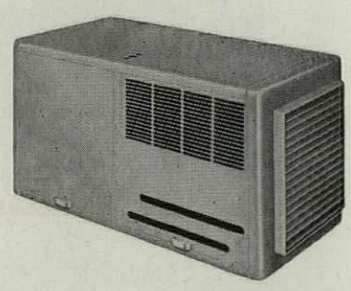
Structural expansion creates no heating problems where Reznor gas-fired unit heaters are used. Reznor heating is on-the-spot heating. Additional heaters can easily be installed when and where heat is needed. And installation costs are negligible.

In designing commercial and industrial buildings you don't have to choose between a heating plant which is too big for the present and one which may be too small for the future.

Plan for the present *and* the future by specifying Reznor unit heaters. They'll give your building maximum heating flexibility and your client maximum heating economy, present and future.

and here's a deluxe unit heater for an expanded range of applications

Reznor's new PAC is a deluxe unit heater which will meet the exacting demands of the most exclusive establishments. Built-in filter unit keeps the air clean. Completely enclosed blower keeps noise down. And the compact, appliance-styled cabinet is so attractive you can use it anywhere.



For complete details on the PAC and the Reznor line of suspended unit heaters, see the Reznor catalog in Sweet's Architectural File or write to the **Reznor Manufacturing Company, 40 Union St., Mercer, Pa.**

THE WORLD'S LARGEST-SELLING GAS UNIT HEATER

REZNOR HEATERS

Specify this seamless sound-conditioning for any ceiling design...

Gold Bond THERMACOUSTIC

OUR LADY OF VICTORY CHURCH, PURCELL, OKLA.

Architects: Reynolds & Morrison, A. I. A., Oklahoma City, Okla. *General Contractor:* Barbour & Short Construction Co., Norman, Okla. *Gold Bond Acoustical Contractor:* Scovil & Sublett, Oklahoma City, Okla.

YOU don't have to sacrifice your architectural design to get effective sound conditioning and fire protection. Gold Bond Thermacoustic gives a smooth, monolithic, sound-absorbing ceiling...whether it's curved like the new church above, vaulted, domed or irregular. This flexible quality is especially valuable where intricate curves and corners pose application problems for acoustical tiles.

Gold Bond Thermacoustic's mineral wool fibres are sprayed in place and then tamped or floated to create the pleasing finish. The wide variety of textures blend in with many types of interiors. And because it's incombustible, it is used for fireproofing as well as sound conditioning. Gold Bond Thermacoustic assures up to four hours fire resistance with steel floor-ceiling construction.

Discover for yourself how the unusual application flexibility of Gold Bond Thermacoustic can help your designs stay the way you planned them from original sketch to finished structure. Write for Technical Bulletin No. 303, giving you the full story.

Get the undivided responsibility of National Gypsum

Specify Gold Bond® inside and out

Gypsum Board Products

Plaster and Lime

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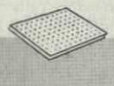
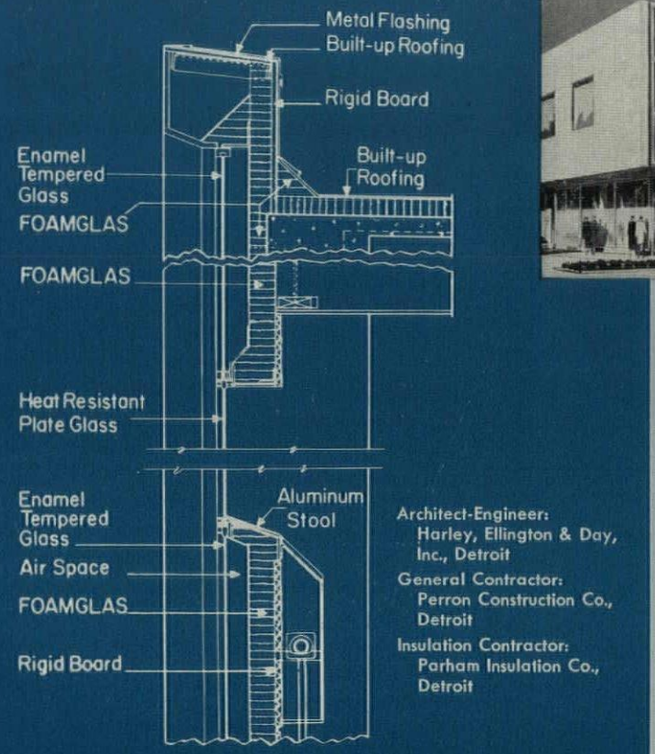
Paint Products



Acoustical Tile

Asbestos-Cement Products

NATIONAL GYPSUM COMPANY • BUFFALO 2, NEW YORK



Architect-Engineer: Harley, Ellington & Day, Inc., Detroit

General Contractor: Perron Construction Co., Detroit

Insulation Contractor: Parham Insulation Co., Detroit

Above: New main office and bottling plant for Vernor's Ginger Ale.

Below: Detroit's old Convention Hall

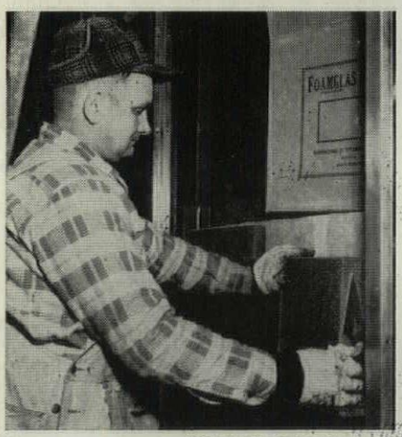
Construction above and below vision strip on Woodward Avenue side of building consists of enameled glass outer face, air space vented for condensation drainage, FOAMGLAS adhered to transit and backed up with composition wall board. End wall construction is similar except that enameled porcelain is used in place of enameled glass for the outer face.

On new *Vernor's* Ginger Ale home... FOAMGLAS provides long-life insulating performance plus unique design advantages

Cellular, stay-dry FOAMGLAS was picked by Harley, Ellington and Day, Inc. to insulate the new home of Vernor's Ginger Ale, soon to be completed in Detroit. Created by remodeling Detroit's old Convention Hall, the new James Vernor Company Building will be comfort conditioned throughout. FOAMGLAS will help to insure efficient, inexpensive operation of both heating *and* cooling systems . . . and since the sealed glass cells of FOAMGLAS *stay dry* for lasting insulating efficiency, this saving in operating costs will continue to benefit Vernor—*year after year.*

Equally important are these bonus benefits which FOAMGLAS is providing on the Vernor job: First—because FOAMGLAS is easily shaped and fitted on the job site, it is ideally suited to the advanced type of wall construction being used (see detail above). Second—strong, rigid FOAMGLAS is used without direct structural support in some locations above and below the vision strip on the front facade. There it supports not only itself, but a rigid board backing as well.

Like Vernor, *your clients* will benefit from the outstanding insulating performance of FOAMGLAS while *you* will profit from its unique design advantages. For more information, see our catalogs in Sweet's . . . or send for our new booklets detailing the use of FOAMGLAS for walls, roofs, floors, ceilings, cold storage applications, piping or equipment. Use the coupon now!



Workman easily cuts FOAMGLAS blocks to fit between steel frame members of sub-structure.

PITTSBURGH CORNING CORPORATION

One Gateway Center • Pittsburgh 22, Pa.

FOAMGLAS®

the cellular, stay-dry insulation

PITTSBURGH® PC CORNING

Pittsburgh Corning also makes PC Glass Blocks

Pittsburgh Corning Corporation, Dept. 34
One Gateway Center, Pittsburgh 22, Pa.

Please send me a free sample and the following brand new FOAMGLAS literature:

- ☐ New booklet on FOAMGLAS building insulation.
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- ☐ New folder on FOAMGLAS insulation for tanks and other equipment.
- ☐ Send engineer to discuss specific problem.

Name_____

Company_____ Title_____

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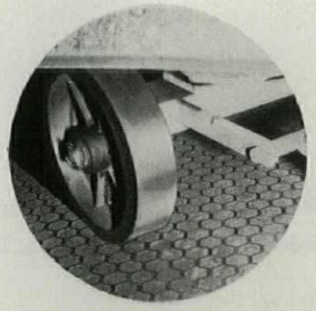
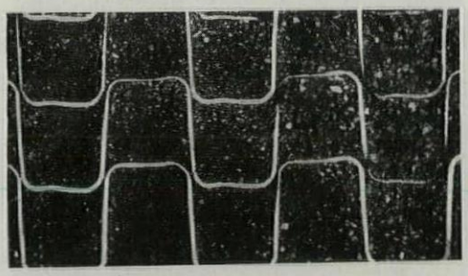
City_____ Zone____ State_____



Resilient filler muffles noise of heavy truck wheels riding over metal grate. Two gauges of the steel mesh are available.



PACKAGED INDUSTRIAL FLOORING combines steel honeycomb with cushioning filler

Engineered to withstand impact and heavy loads for years of service, *Steel-Rock* flooring combines two proved materials: heavy steel mesh and resilient topping. The steel literally armor-plates the floor, and the cushioning filler, which compacts to meet the level of the steel grid, permits truck wheels to ride on the steel-plate surface without noise or slipping. *Steel-Rock* can be applied over new or old surfaces of wood or concrete, inside or outside, at depths varying from 3/8" to 1". Materials for the floor cost from 80¢ to $1 per sq. ft. depending on the type and grade selected. The extra heavy gauge reinforcing brings this up to about $1.20. Application costs range from 30¢ to 50¢ a sq. ft. Useful for trucking aisles, runways, loading platforms, warehouse floors, *Steel-Rock* is said to outlive the rest of the structure.

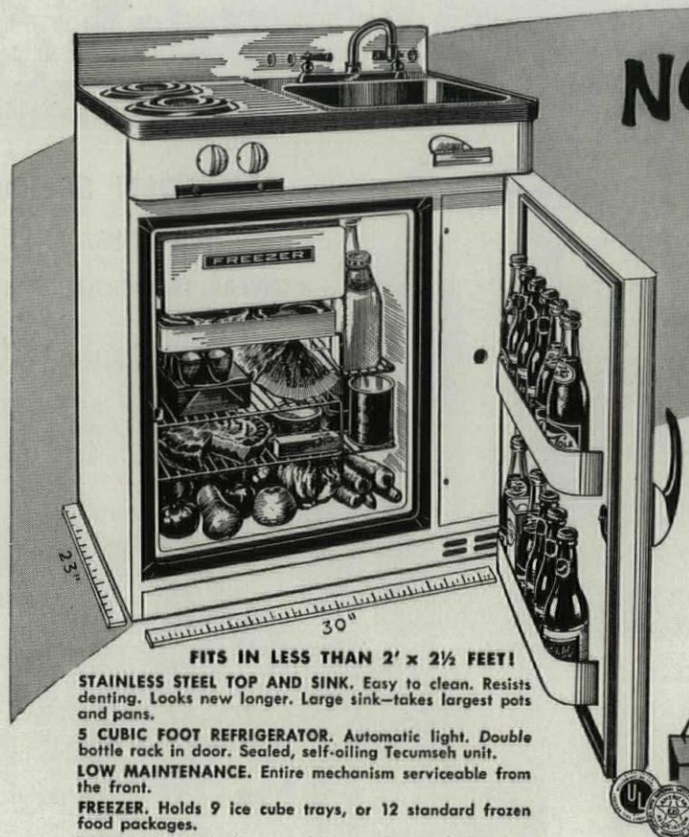
Manufacturer: United Laboratories, Inc., 16801 Euclid Ave., Cleveland 12.

POWER BROOM sweeps clean, keeps air clean, too

While its heavy duty fiber brushes whisk debris from floor to hopper, the *Turbo-Sweep* sucks dust from 300 cu. ft. of air per minute. The new turbine-principle maintenance machine introduced at the Plant Maintenance Show is suitable for institutional buildings as well as industrial plants where some power sweepers have been known to leave a wake of dust-poluted air. Throttle, hopper, brush height and clutch controls are all located on a console within easy reach of the operator; there are no foot pedals or kick levers. Removal and emptying the hopper takes about

ten seconds and the big dust-collecting bag requires infrequent emptying. Powered by a 2 hp gasoline engine the *Turbo-Sweep* is self-propelled and has a silencer. Its 40" sweeping width permits cleaning of 40,000 sq. ft. of floor area an hour. Price, F.O.B., Springfield, Ohio, is $648; a riding "sulky" (optional) costs $45. *Manufacturer:* Parker Sweeper Co., Springfield, Ohio.

Technical Publications p. 266



NOW! The SMALLEST *Complete* KITCHEN in the WORLD with the Largest Capacity

FITS IN LESS THAN 2' x 2½ FEET!

STAINLESS STEEL TOP AND SINK. Easy to clean. Resists denting. Looks new longer. Large sink—takes largest pots and pans.

5 CUBIC FOOT REFRIGERATOR. Automatic light. Double bottle rack in door. Sealed, self-oiling Tecumseh unit.

LOW MAINTENANCE. Entire mechanism serviceable from the front.

FREEZER. Holds 9 ice cube trays, or 12 standard frozen food packages.

RANGE. Available for use with natural, manufactured or bottled (LP) gases, or with electric burners for 220V. or 110V. "plug-in" use.

COMPARE BEFORE YOU BUY!

When you want value, compare before you buy. Feature for feature you will find that ACME Kitchenettes give you more for your money. There's quality construction in ACME Kitchenettes that means years of satisfactory performance.

GUARANTEED FOR 5 YEARS!

All Acme Kitchenettes are guaranteed to give 5 years trouble-free service.

COMPLETE INFORMATION AND SPECIFICATIONS
to assist in building, designing or remodeling plans to show you how you can save space and money.

Address Dept. F3

ACME Space-Master

"THREE-IN-ONE" PACKAGED KITCHEN

ACME-NATIONAL REFRIGERATION CO., INC., 29-24 40th Ave., Long Island City 1, N.Y.

All eyes are on the *How-ell-dor*

(. . . It sells on sight!)

Both the El Dorado and the Picture Door, illustrated, come equipped with the new, extra-durable How-ell-tite track . . . another How-ell-dor engineering first.

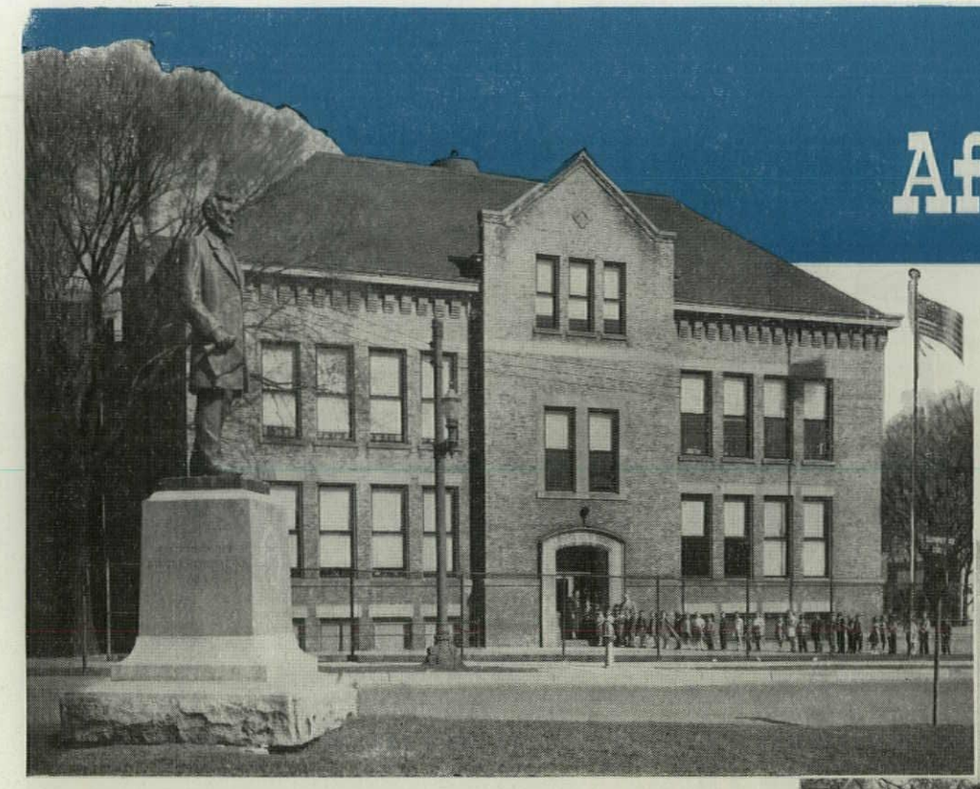
Architects look upon the How-ell-dor in terms of a quality standard of performance. To builders and suppliers it means ease of installation, fast turnover. To the homeowner it is an attractively priced door, built for lasting beauty.

When specifying How-ell-dor, look for fast, dependable service. There are now 44 stock sizes and styles of residential and commercial doors to satisfy every requirement.

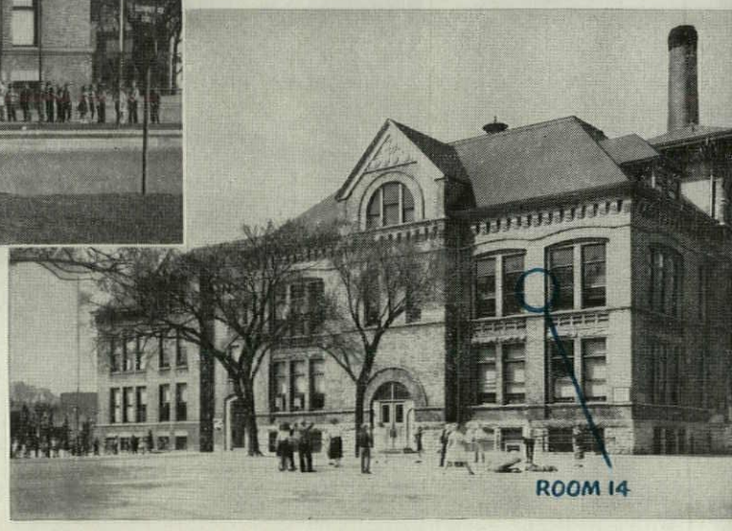
• Write for FREE '54 literature •

THE HOWELL MANUFACTURING CO. 7205 Hasbrook Ave., Philadelphia 11, Pennsylvania

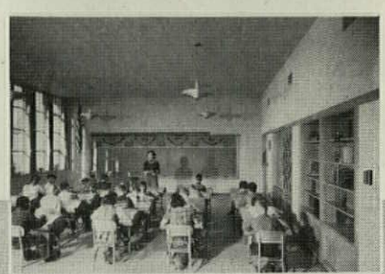
After 50 Years



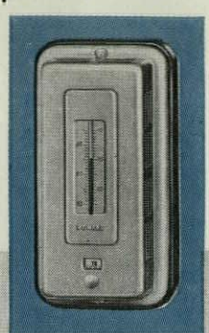
LINCOLN SCHOOL
RACINE, WIS.
POWERS TEMPERATURE CONTROL
Installed here in 1903

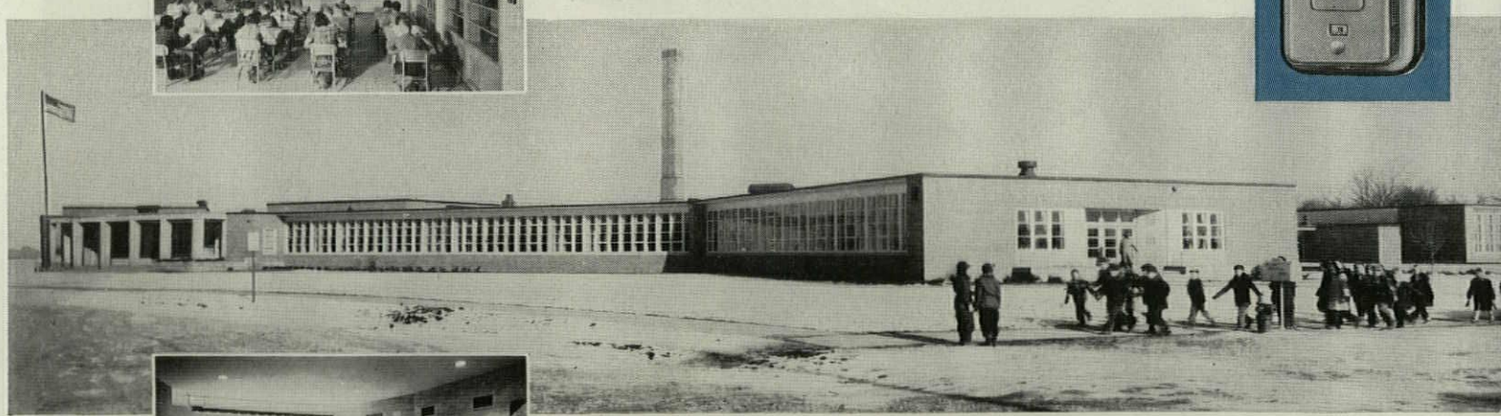


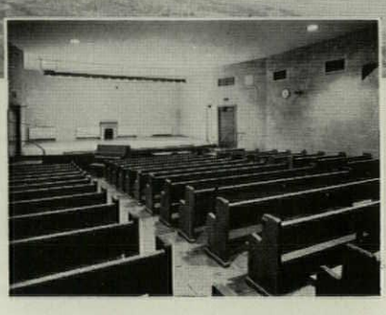
Above: One of a number of old and modern schools in RACINE equipped with Powers Control.



Below: RACINE'S New JERSTAD-AGERHOLM SCHOOL Completed in 1952 is also Powers controlled. Only a portion of the building appears in the photo. It has 14 classrooms, an administration and community center, playroom and kitchen, and audio-visual room. It is attractive inside and out—heating and ventilation are maintained with utmost economy.



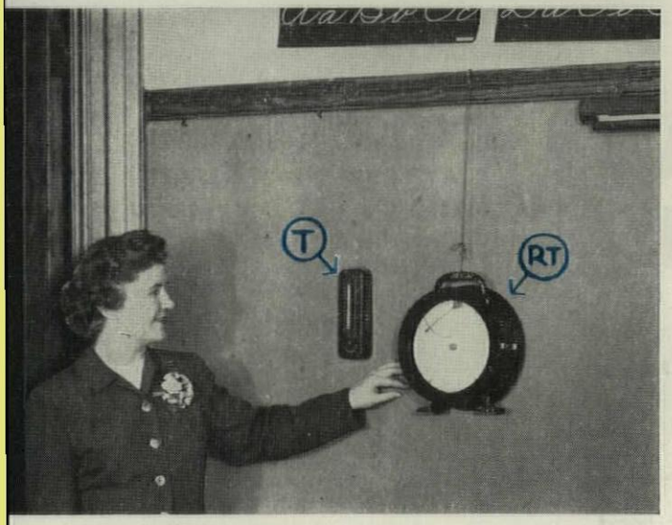


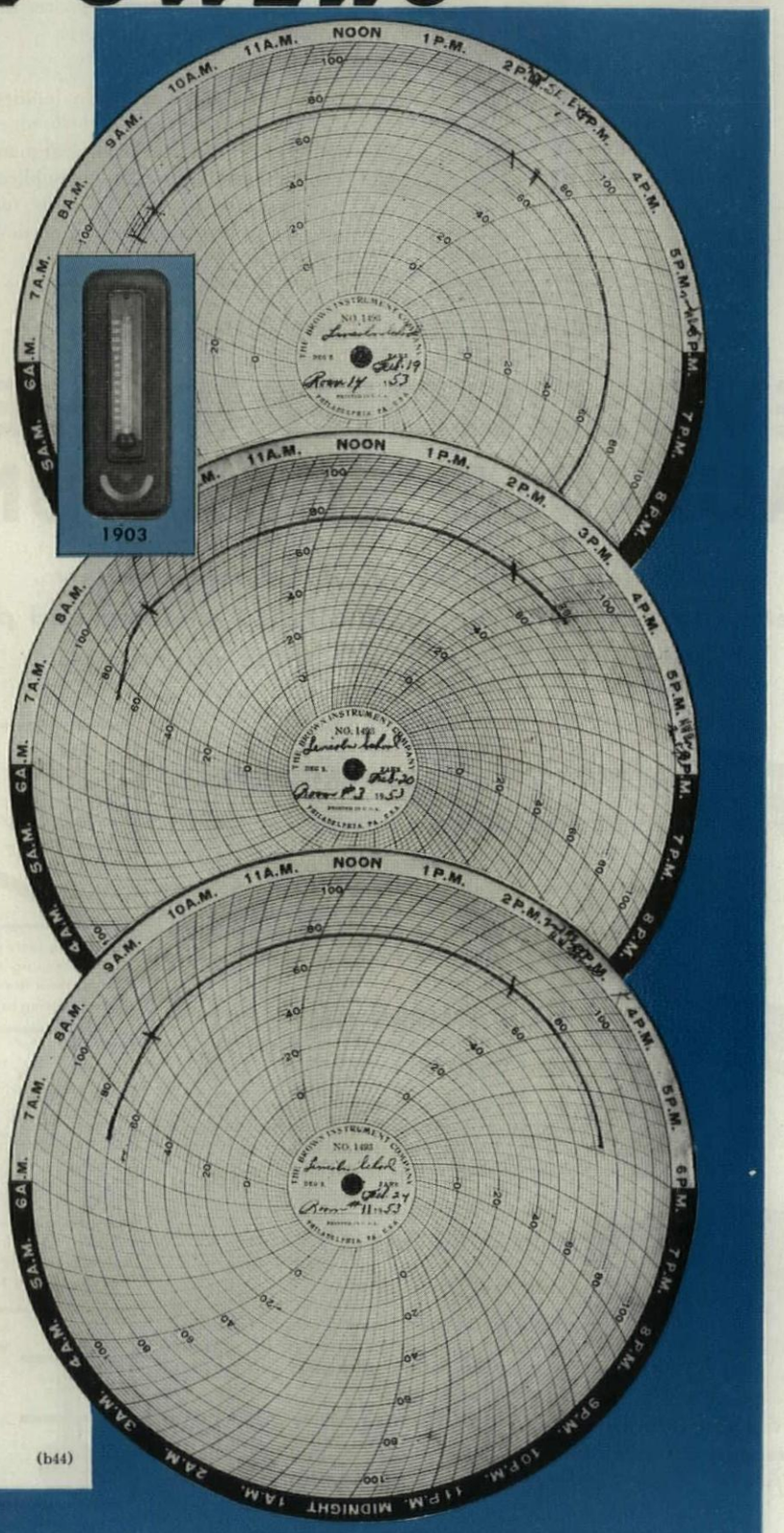


Architects and Engineers: WARREN S. HOLMES CO., Lansing, Mich.
Heating Contractor: N. A. THOMAS CO., Racine, Wis.

this test shows POWERS

Pneumatic System of TEMPERATURE CONTROL IS STILL GIVING ACCURATE REGULATION





Miss K. Mart, Teacher in Room 14 Lincoln School, Racine, Wis. "T" is POWERS *Type A* Thermostat installed in 1903. It controls mixing dampers. Thermostat was set for 75° F. Note even control during schools hours. "RT" is Recording Thermometer which made charts at right in February 1953.

How is it possible for Powers systems to often give 25 to 50 years of dependable service?

Since 1891 outstanding features of a Powers thermostat have been: its powerful VAPOR-DISC with GRADUAL-ACTION and its famous non-bleed double valve. Proof of its superiority is revealed in the performance record shown here—as well as in many other old schools.

To get more years of better performance, greater comfort and fuel economy — install a POWERS pneumatic system of temperature control.

(b44)

THE POWERS REGULATOR COMPANY

SKOKIE, ILLINOIS

OFFICES IN OVER 50 CITIES IN U.S.A., CANADA, AND MEXICO • SEE YOUR PHONE BOOK

OVER 60 YEARS OF AUTOMATIC TEMPERATURE CONTROL

REINFORCED CONCRETE. Design Manual 4, Webrib High Bond-High Yield Concrete Reinforcing Bars. Webrib Steel Corp., 120 Broadway, New York, N.Y. 64 pp. 8½" x 11"

Compiled to familiarize builders, architects and engineers with *Webrib* concrete reinforcing steel bars, this technical manual is a thorough and craftsmanlike publication. It first summarizes the developments, typical applications, advantages and properties of the *Webrib's* twisted double bar. Next follows comprehensive design data both for substituting *Webrib* bars into structures originally designed for conventional reinforcing, and for structures designed for *Webrib*. Authoritative—it was prepared for the manufacturer by Consulting Engineers Ramseyer and Miller—the book maintains that *Webrib* provides both high bond and high yield, a unique combination which permits savings of 25% to 30% in the weight of reinforcing steel for an average structure (AF, Dec. '53).

PORCELAIN ENAMEL. Seaporcel Architectural Porcelain Metals. Seaporcel Metals, Inc., 28-20 Borden Ave., Long Island City 1, N.Y. 12 pp. 8½" x 11"

STAINLESS STEEL. AL Smooth Hammered Forgings. Composite Die Sections and Cast-to-Shape Tool Steels. Forging and Casting Div., Allegheny Ludlum Steel Corp., 2020 Oliver Bldg., Pittsburgh 22, Pa. 28 pp. 8½" x 11"

WELDING. Advanced Automatic Flame Cutting for Machinery Weldments. Air Reduction Sales Co., 60 E. 42nd St., New York 17, N.Y. 12 pp. 8½" x 11"

ELECTRICAL CONTROL SYSTEMS. Control Centers by Clark. The Clark Controller Co., 1146 E. 152nd St., Cleveland 10, Ohio. 24 pp. 8½" x 11"

MACHINERY MOUNTINGS. LM-3 and LM-5 series Leveling Barrymounts. Dept. L&L, Barry Corp., 1100 Pleasant St., Watertown, Mass. 4 pp. 8½" x 11"

FLOORING. Maintenance of Asphalt Tile Floors in Institutional, Commercial and Industrial Buildings. Asphalt Tile Institute, 101 Park Ave., New York 17, N.Y. 4 pp. 8½" x 11"

AIR CONDITIONING EQUIPMENT. Cooling Tower Wood Maintenance, Bul. TSC-302. Cooling Tower Institute, 444 Emerson St., Palo Alto, Calif. 13 pp. 8½" x 11"

PIPE INSULATION. Gilsulate Insulation for Insulation and Protection of Hot Underground Pipes, Technical Data Manual. American Gilsenite Co., Salt Lake City, Utah. 20 pp. 8½" x 11"

HOSPITAL EQUIPMENT. The Modern Milk Formula Laboratory, Publication C-120R3. American Sterilizer Co., Erie, Pa. 24 pp. 8½" x 11"

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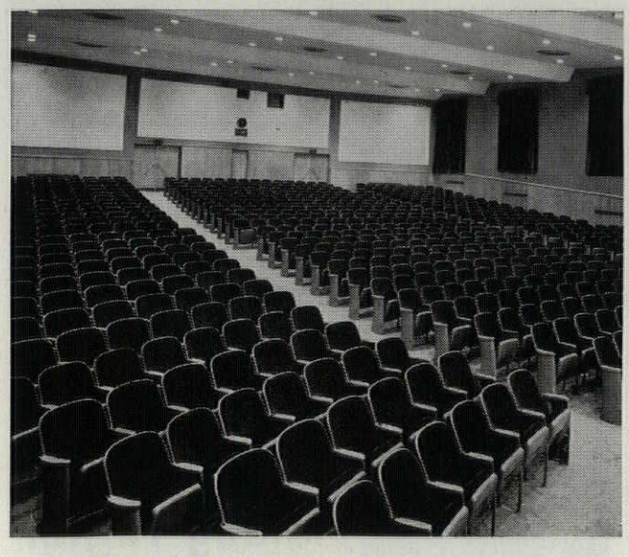
continued on p. 272

Glen Ridge High School, Glen Ridge, N. J., equipped with 768 full-upholstered Bodiform chairs. Superintendent: Carl M. Bair, Jr. Architects: Micklewright & Mountford, Trenton, New Jersey



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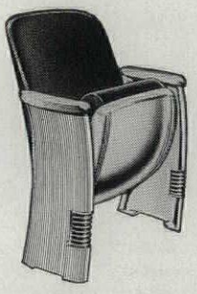

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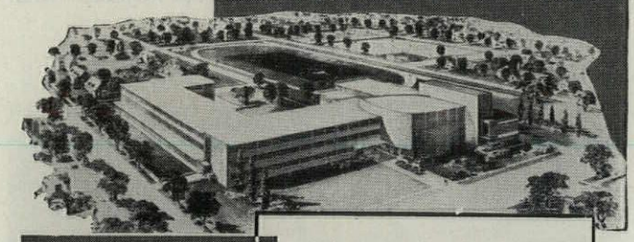

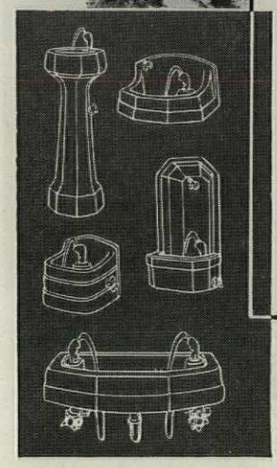

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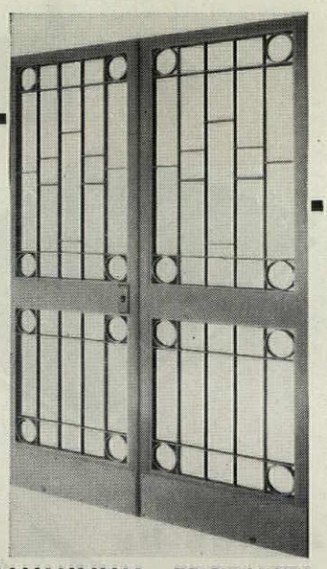

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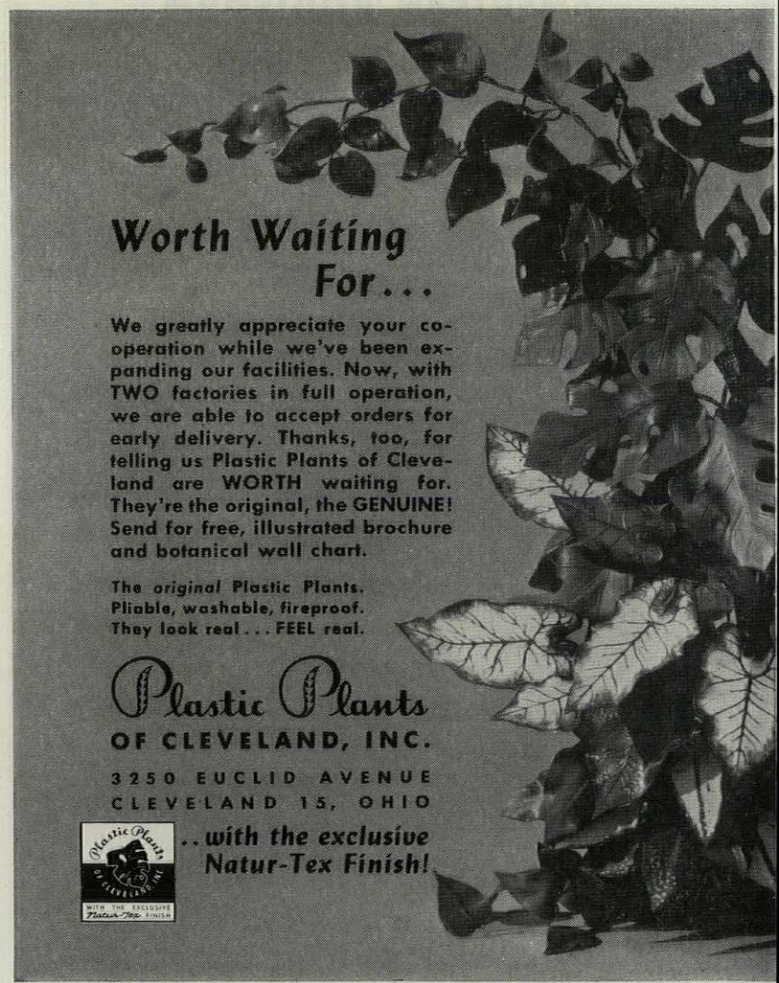

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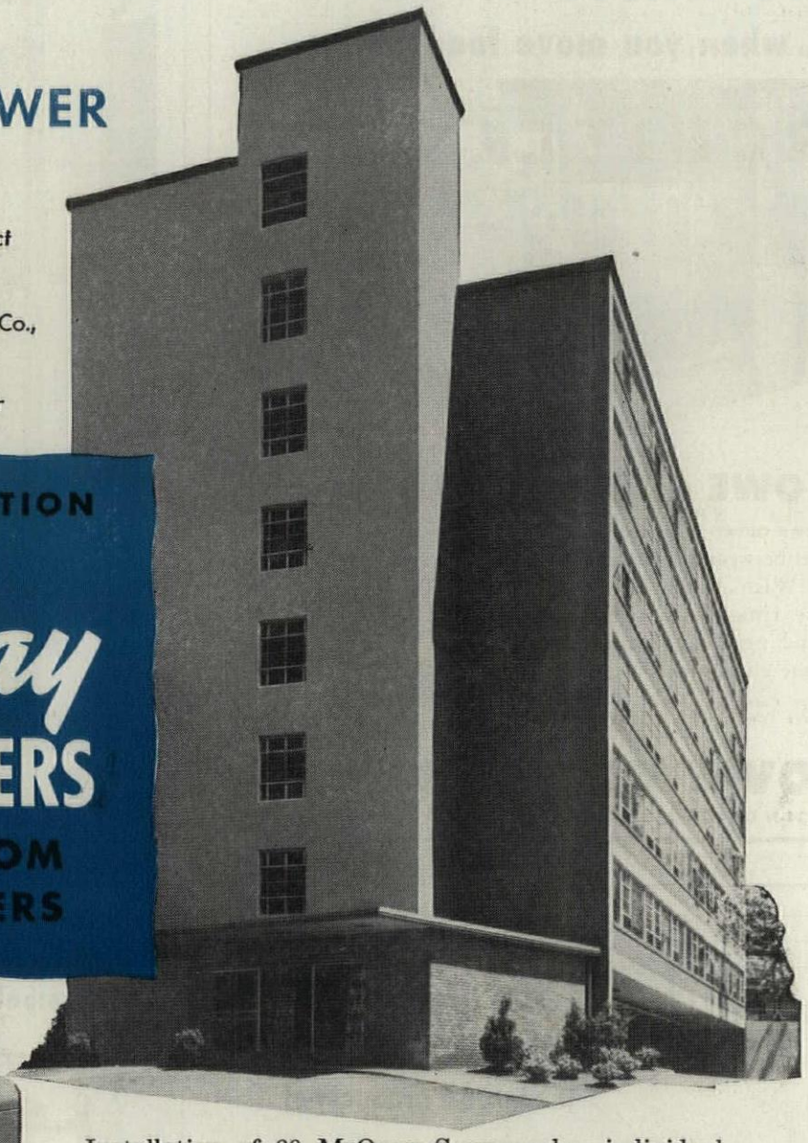

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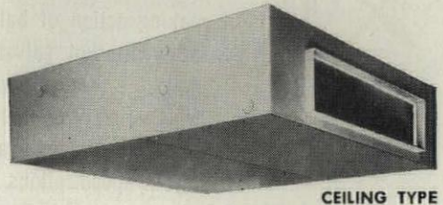

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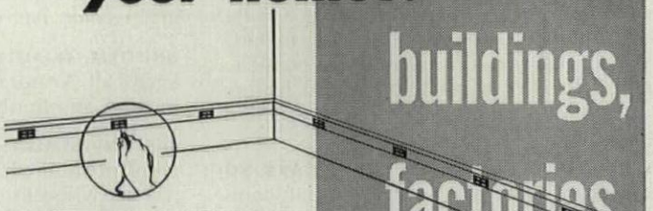

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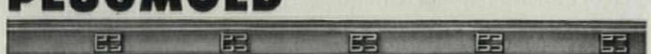

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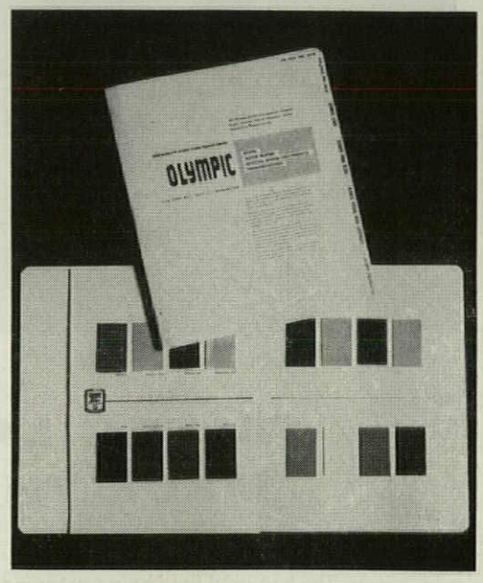
WOOD STAINS AND PRESERVATIVES. Olympic AIA File No. 25-B. Olympic Stained Products Co., 1118 Leary Way, Seattle 7, Wash. 12 pp. 9" x 11"

Actual wood chips for 16 Olympic stain colors are mounted in this good-looking file folder so that architects can evaluate properly the hiding power and intensity of each tone. Besides these Olympic products which are made specifically for California Redwood and



Western Red Cedar, information is included on the manufacturer's *Wood Blend*, a lightly pigmented semitransparent stain developed to accept the grain of all smooth-surface wood for both interior and exterior use. Wood chips finished with a single coat of each of the six colors and clear shades are mounted in the section describing application of the product. According to the publication, Olympic will mix special colors to specifications on request.

LIGHTING. Plexlite Lighting Units with Designed-in Plexiglas Diffusers for Use in All Types of Mountings and Applications. Folio No. P-54. Gruber Lighting, 125 S. First St., Brooklyn 11, N.Y. 16 pp. 8½" x 11"

WATER CONDITIONING. Barnstead Water Demineralizers for Pure Water at Low Cost, Catalogue 127. Barnstead Still & Sterilizer Co., 255 Lanesville Terrace, Forest Hills, Boston 31, Mass. 18 pp. 8½" x 11"

HEATING EQUIPMENT. Kilbury Electric Blower-type Heating Units. Kilbury Manufacturing Co., 14529 Hawthorne Blvd., Lawndale, Calif. 4 pp. 8½" x 11"

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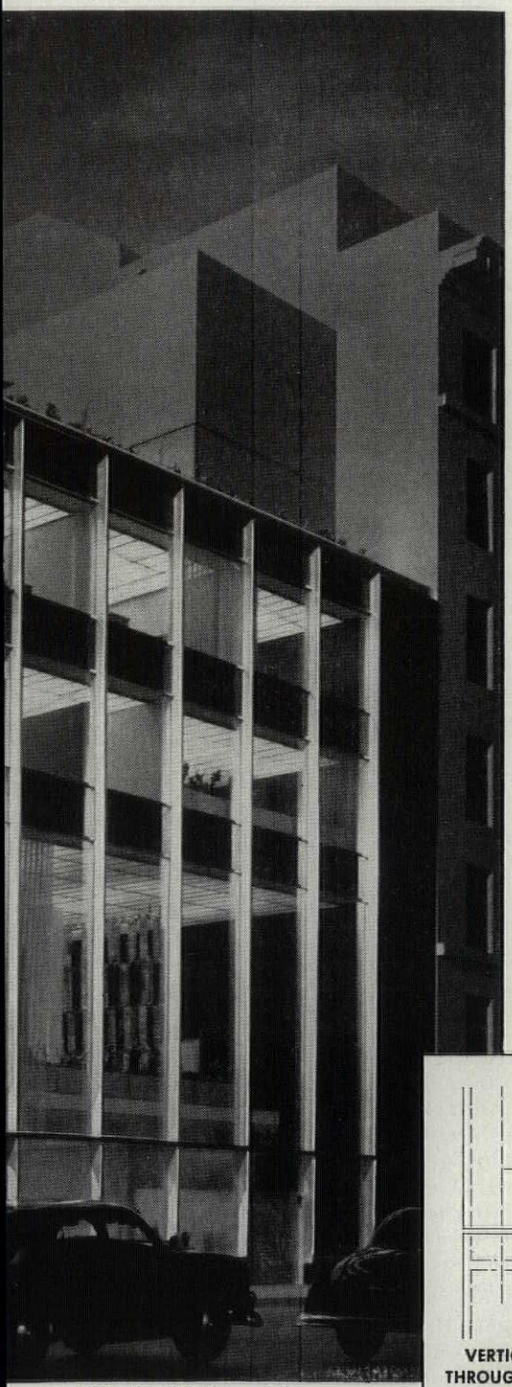

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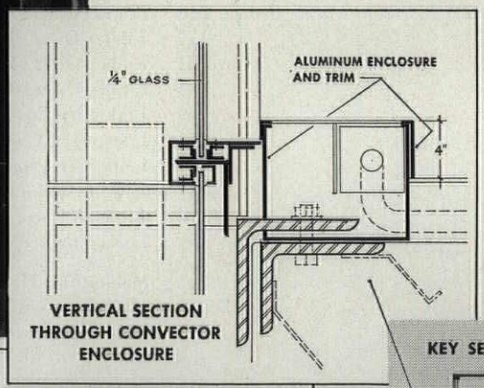

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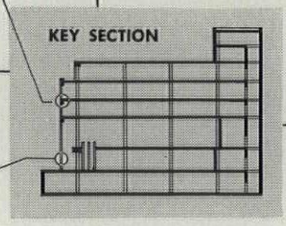

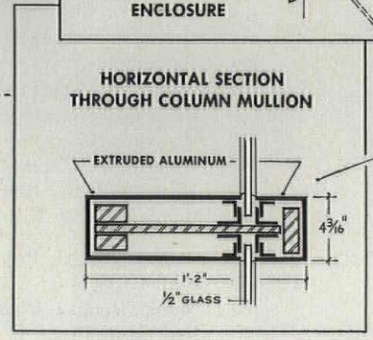

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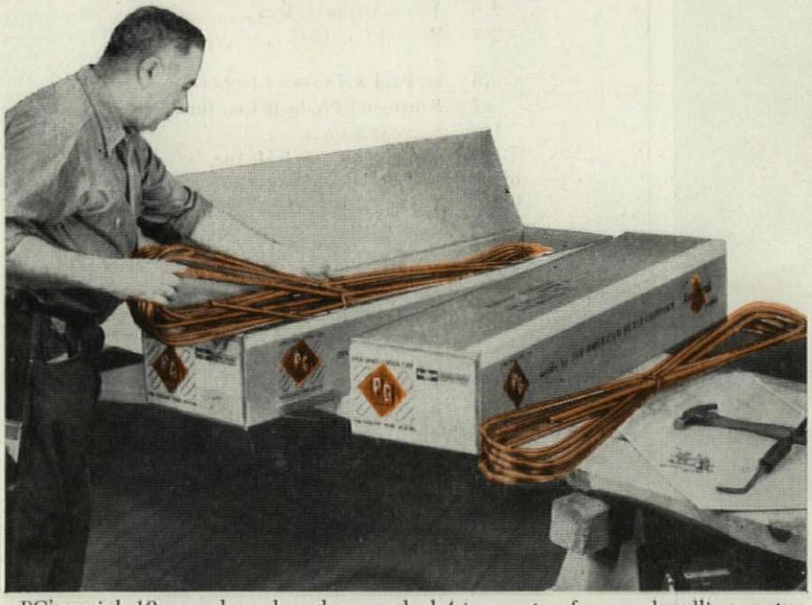

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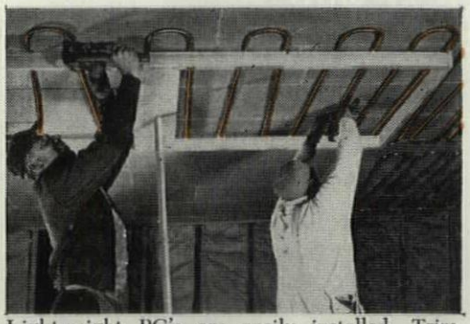

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PG's — NEWEST DEVELOPMENT IN RADIANT HEATING BY ANACONDA

PG's (Panel Grids) are accurately *PRE-FORMED*, compactly packaged radiant heating coils made of ANACONDA Copper Tubes

Radiant panel heating installations made easier, faster—and better. A large claim, but actual installations support it. Follow the photos on this page and see how a typical job can be done using PG's*.

PG's are supplied in one standard size. They are made of ⅜ in. Type L copper tube. Each panel grid contains 50 linear feet of tube. At normal 6 in. spacing PG's are rated at 1800 Btu/hr and measure about 56 in. wide by 60 in. long . . . serving a ceiling area of 30 square feet. But you can readily contract or extend a PG *by hand* so that the tube spacing meets *all* design requirements—from 4½ in. up to 12 in. centers. This flexibility means that one PG can be installed so that it will serve an area within the range of 22½ to 60 square feet.

Nationwide distribution isn't complete as yet. We are increasing production and getting PG's to Anaconda Distributors just as fast as possible. You will want to know more about this new product; so send for Publication C-6, which shows why it is easier to design and faster to install a panel system with PG's. Write today to: *The American Brass Company, Waterbury 20, Conn.*

*Patent Applied For 5372

ANACONDA® PG's

Copper Tube *PRE-FORMED* Panel Grids for Radiant Panel Heating.

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LUDMAN Auto-lok AUTOMATIC LOCKING

WINDOWS
ALUMINUM OR WOOD

Law School Building University of Arkansas, Fayetteville, Arkansas, Architect, Paul Young, Jr.

For pleasant classroom *Environment*

In modern school construction, windows that make maximum use of natural light and natural ventilation, are an important factor in achieving pleasant classroom environment.
Ludman - - world leader in the field of window engineering - - has developed special Auto-Lok windows to help you create this kind of classroom environment.
Ludman Auto-Lok windows make it possible for you to enjoy all the advantages of natural light and natural ventilation yet close with a degree of weather tightness unobtainable in any other window.
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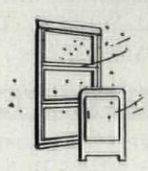
With Auto-Lok windows you can create classroom environment that will be pleasant and an inspiration to students and teachers alike.

For illustrated literature, write - -

LUDMAN *Corporation* DEPT. AF-3
NORTH MIAMI, FLORIDA



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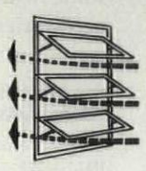
The tightest closing window ever made. Patented Auto-Lok design compresses weatherstripping around each sash - - seals it like a refrigerator. "Cold Zones" are eliminated.



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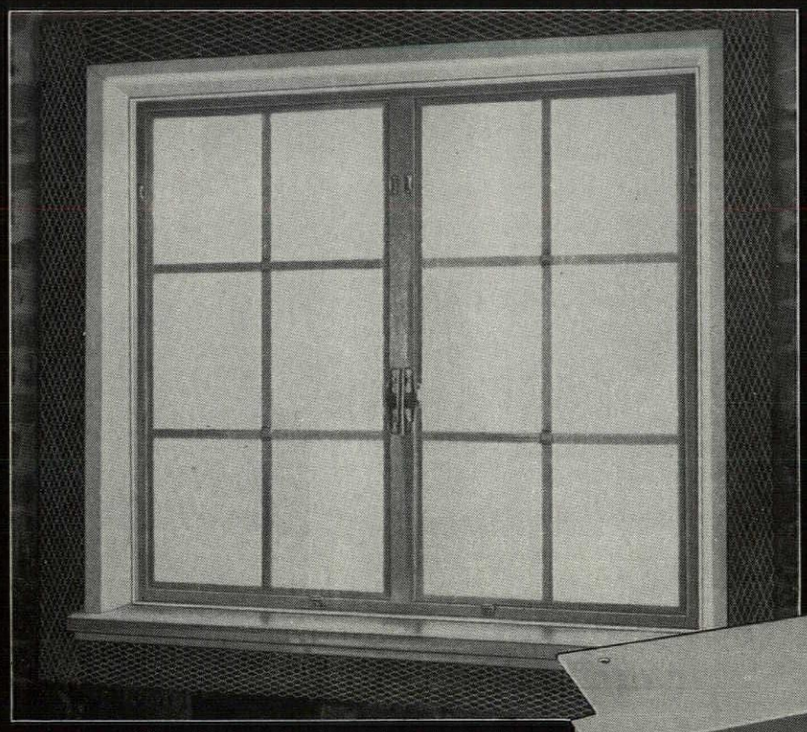
Plenty of fresh air - - even when it rains! Auto-Lok design lets you regulate ventilation for classroom comfort . . . enjoy draft-free air circulation.

EASY TO OPERATE
Auto-Lok's patented principle of operation makes these the easiest of all windows to operate. No effort is required to open or close even the largest window.

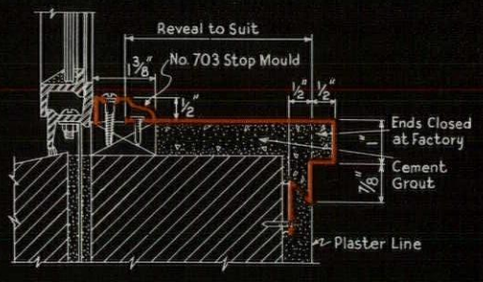
LUDMAN LEADS THE WORLD IN WINDOW ENGINEERING

MILCOR* Window Trim

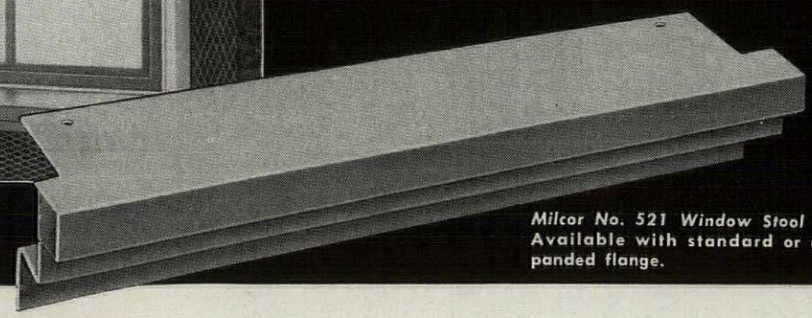
provides the permanence of steel for sanitation, fire-safety, lasting beauty



Milcor Window Stool No. 521 used with Window Trim No. 501, mitred and welded to form jambs and head, together with No. 703 stop mould for complete window trim.



Cross-section shows No. 521 installed where flat window stool is desired. Cement grouting is recommended for good construction.



Milcor No. 521 Window Stool — Available with standard or expanded flange.

No. 521 Window Stool with grill top for radiator opening.

No. 501 Window Stool with end fitting

No. 511 Splay Window Stool

A full range of styles, types, and sizes to suit your specific interior design

Milcor has everything you need in steel window stools and metal window trim for schools, institutions or monumental construction.

Because Milcor Window Trim is made of steel, it is wear-resistant—can't warp, rot, shrink, or crack. It is economical to install, easy to clean and maintain, and has a simplicity that lends itself to attractive treatments in modern interior design.

Milcor Window Trim is available either in complete, 4-sided window units or in any combination of component sections. You can choose from many practical designs, sizes and weights, in either plastered-in or removable types.

Look in Sweet's for further information on these handsome window stools — and on corner fittings and other accessories in the Milcor Metal Window Trim line. Or, write for a copy of the Milcor Manual. T-100

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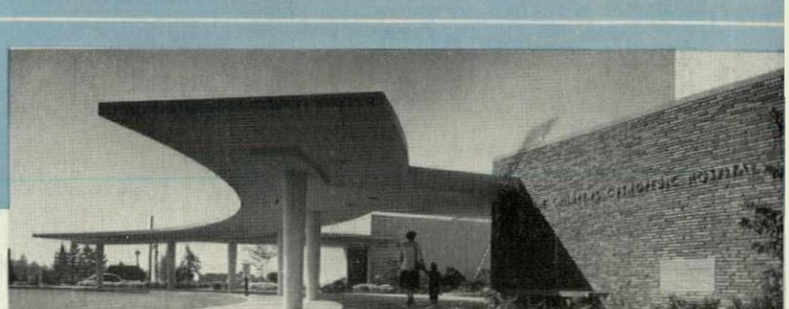
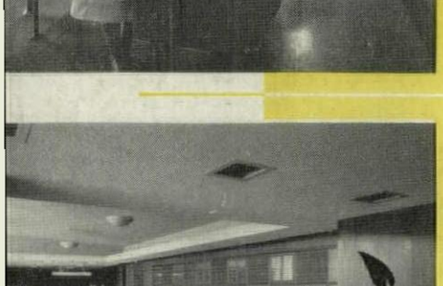
Eljer, the only name you need to know in plumbing fixtures

another outstanding children's hospital *equipped with* JOHNSON CONTROL





Children's Orthopedic Hospital, Seattle, Washington. Young, Richardson, Carleton and Detlie, architects; DeWitt C. Griffin and associates, mechanical engineers; both of Seattle.

The exact temperatures and humidities required in operating rooms, hydrotherapy rooms and other vital areas are maintained by Johnson Room Thermostats and Humidostats operating Johnson Valves and Damper Operators. With Johnson Automatic Control in command, patient recovery is speeded and hospital personnel have more time to devote to professional duties.

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Designed exclusively for the care of children, the new Children's Orthopedic Hospital in Seattle is truly one of the nation's most modern hospitals. Here, a complete Johnson System of Automatic Temperature Control is constantly on duty guarding the health and comfort of its patients.

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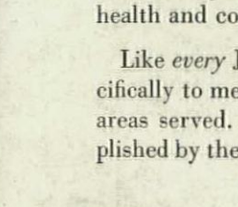

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