AGAZINE OF BUILDING

architectural forum

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Winneapolis School of Au



the newest look in kitchens is...



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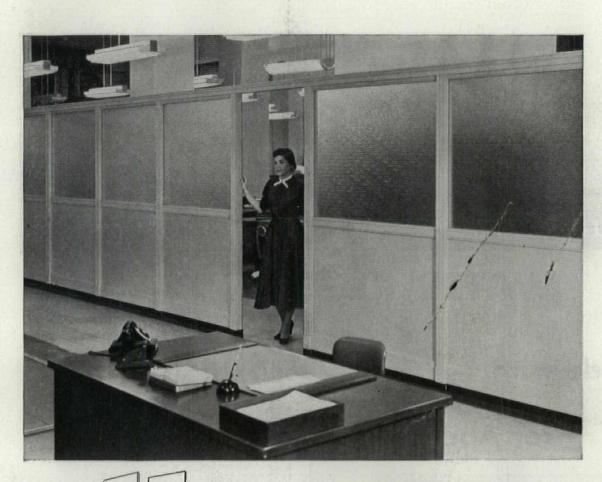
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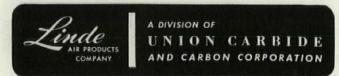
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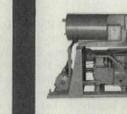
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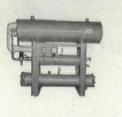
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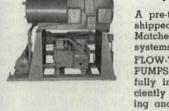
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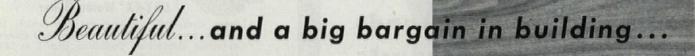


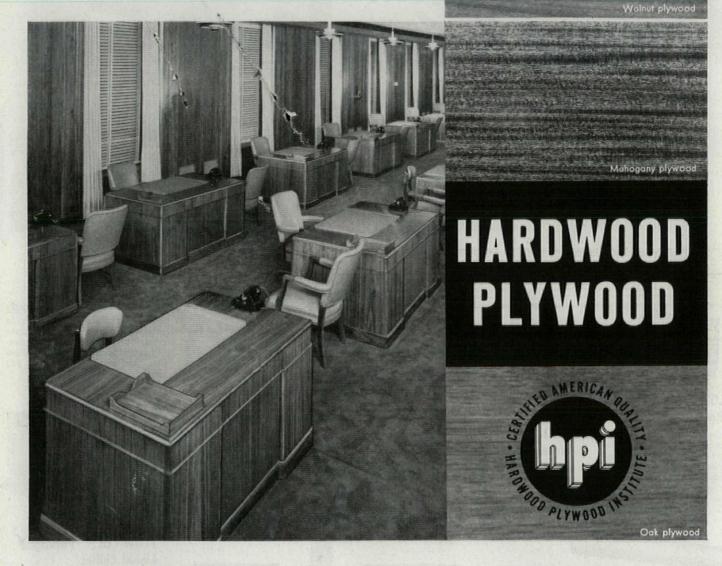
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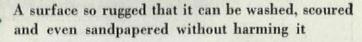
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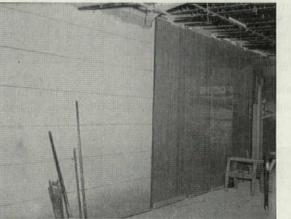
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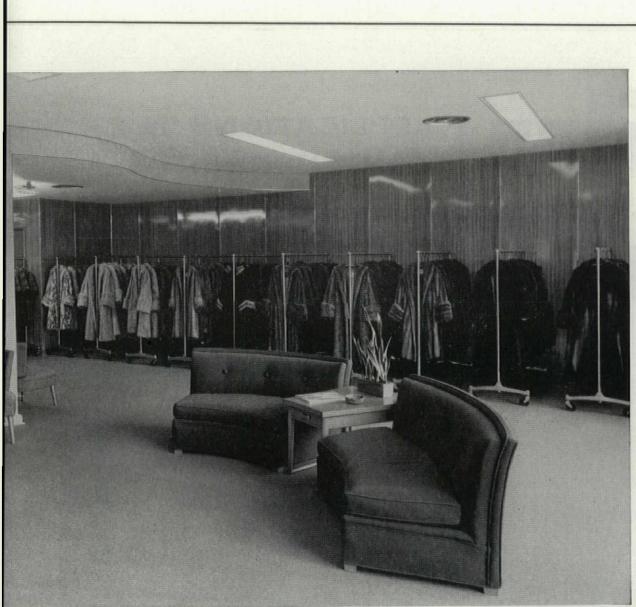
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Nigbor Furs, Stevens Point, Wis. Architect, Donn Hougen.

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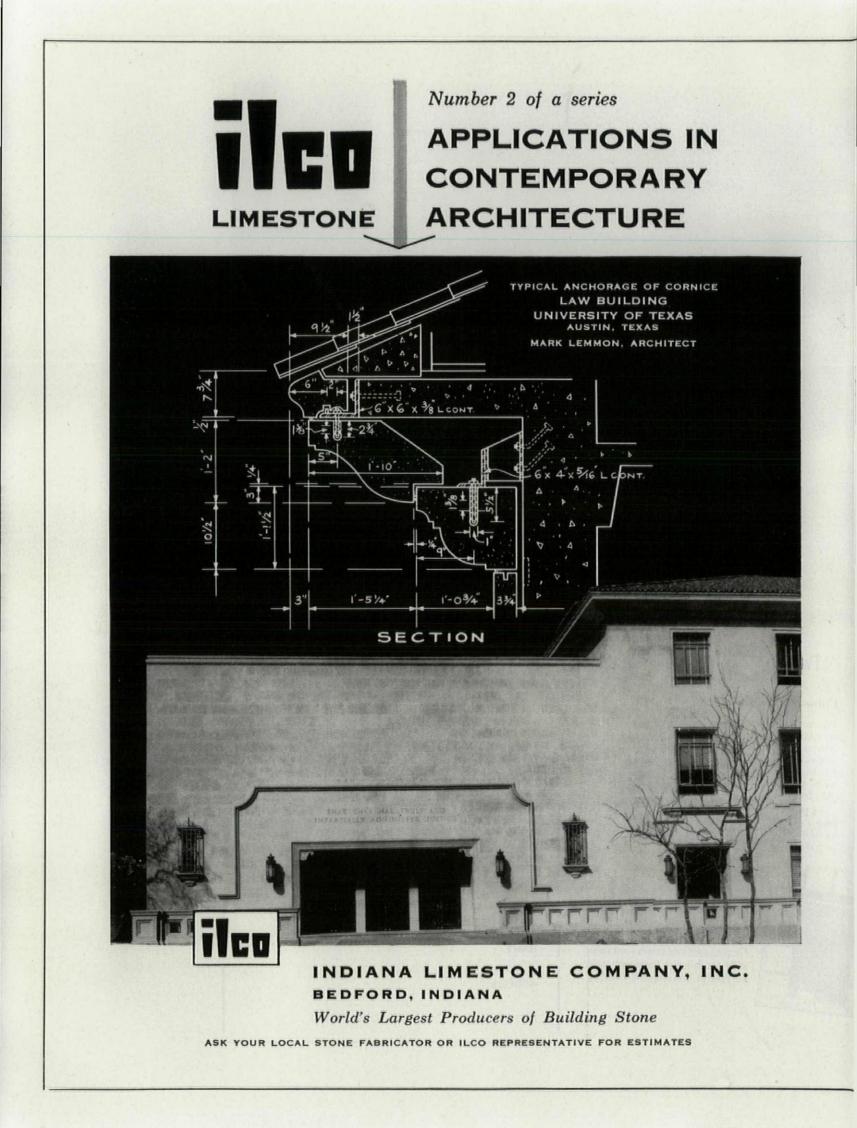
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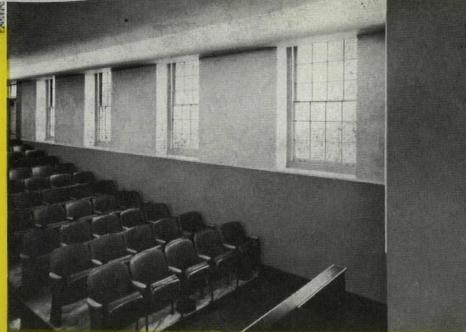


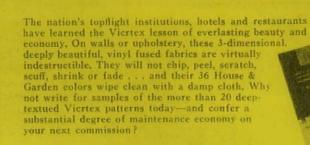
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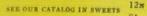




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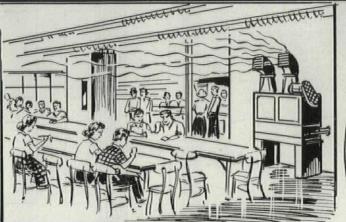
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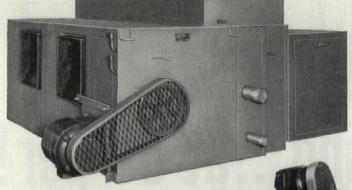
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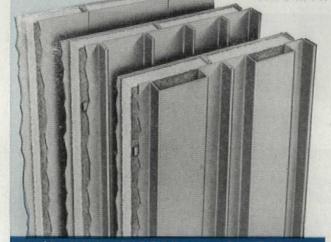
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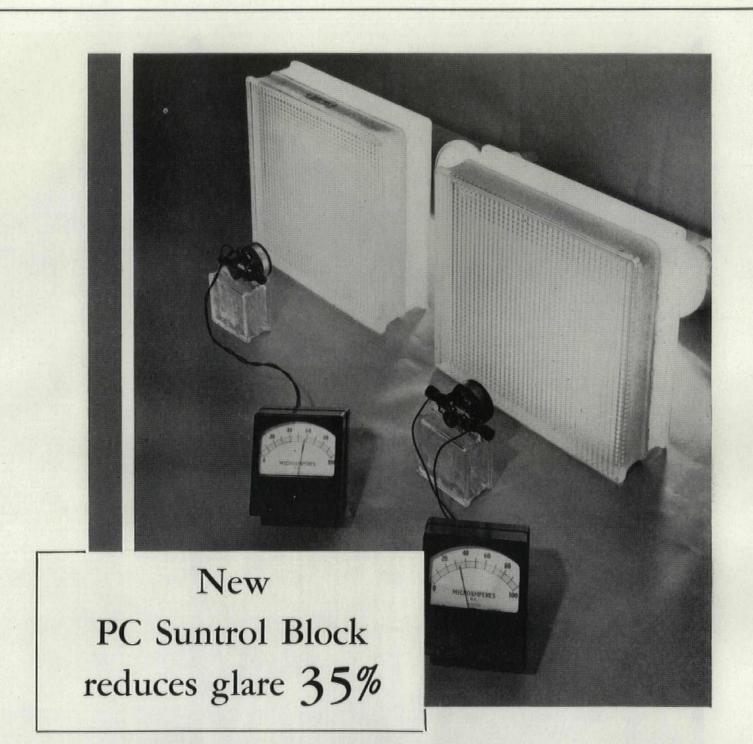


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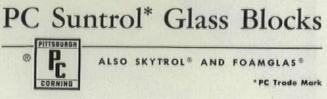


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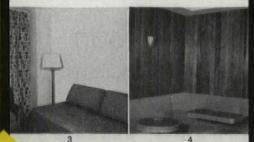
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U.S.G.'s TRUSSTEEL STUD—ROCKLATH hollow partition assembly goes up faster than any comparable system presently in use. Ease and speed of erection (no special tools are required) cut time and labor costs. The TRUSSTEEL STUDS simplify concealment of ducts, pipes and wiring; stud width may vary as required from $2\frac{1}{2}$ " to $3\frac{1}{4}$ ", 4" or 6". The assembly is:

sound-resistant-44.0 or 48.0 decibel sound transmission loss rating depending on plaster aggregate used.

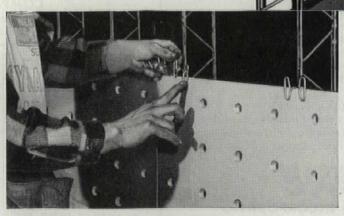
fireproof—1-hour fire rating obtained using perforated ROCKLATH* plaster base with STRUCTO-LITE* plaster or certain sanded plaster proportionings.

lightweight—9.5 to 16.5 lbs. per sq. ft. depending on plaster aggregate used. Permits savings of structural steel in many cases.

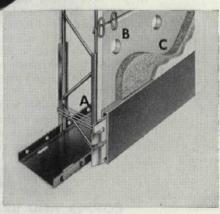
New TRUS-LOK clips attach either plain or perforated ROCKLATH plaster base to the TRUSSTEEL STUDS. Ask your U.S. G. Architects' Service Representative for complete details; or write Dept. AF-4, 300 W. Adams St., Chicago 6, Ill.

*Exclusively Owned Trade Mark

Lather ties steel shoes which hold a the TRUSSTEEL stud rigidly in place.



TRUS-LOK clip attaches easily, holds perforated ROCKLATH plaster base firmly in position.



Cutaway view of the assembly, showing stud (A), TRUS-LOK clip (B) and plaster base (C).



UNITED STATES GYPSUM the greatest name in building



28,000 lbs. of Revere Copper Water Tube used for air and oxygen systems, hot and cold water lines

Here is an interesting example of the versatility of Revere Copper Water Tube. Because of the characteristics of copper tube it can be used to carry various fluids and gases encountered in hospitals without frequent replacement which would be necessary should rustable pipe be used. Also, the solder or compression fittings used with copper tube assure the tightest kind of joint possible, preventing dangerous leaks. Just check the many outstanding features of Revere Copper Water Tube in panel at right and you'll see that there is not another metal, alloy or other material that has all the outstanding construction characteristics of copper. Yet its initial cost, though slightly more in some cases, is much less per year of service.

Keep out of trouble with copper. Write Revere Copper Tube into your "specs" for air conditioning lines, radiant panel heating, hot and cold water lines, underground service lines, waste stack and vent lines, processing lines.



COPPER AND BRASS INCORPORATED Founded by Paul Revere in 1801 230 Park Avenue, New York 17, N. Y. 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

WHY REVERE COPPER WATER TUBE IS PREFERRED FOR AIR CONDITIONING

Another case of

where it counts!



HANDY LENGTHS

Save Fittings... Labor Revere Copper Water Tube comes in straight lengths of 20' in hard and soft tempers. 60' coils of soft temper reduce the number of fittings needed.



NON-RUSTING Rustable pipe eventually clogs

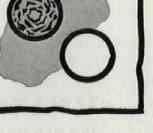
as shown in drawing at top right. Non-rustable Revere Copper Water Tube suffers no loss of flow or pressure as shown at bottom right. No allowance in pipe size need be made for rust accumulation with Revere Copper Water Tube.





SOLDER OR COMPRESSION FITTINGS Need Less Work Room ... Save Metal

No worry about wrench room when you use Revere Copper Water Tube with solder fittings. Compression fittings can also be used. No threading is necessary with either type fitting. Wall thickness of tube used can thus be less than for threaded pipe.



COOLITE GLASS IS RIGHT VARIETY FOR HEINZ

Mississippi Product is "Pick of Pack" at New Plant

The striking exterior of the new, Heinz vinegar plant, Pittsburgh, Pa., executed in a shimmering sweep of Coolite, Heat Absorbing and Glare Reducing glass, has already been acclaimed "a brilliantly incisive piece of architecture." The beauty and drama of this modern concept is immediately apparent... fit perfectly the Heinz tradition of highest quality materials and workmanship. The advantages of Coolite to the plant interior are as important as exterior beauty . . . employes work comfortably in areas completely daylighted with Coolite-conditioned light . . . light without harmful glare or excessive solar heat.

For Coolite filters out unwanted factors in "raw sunlight" . . . helps keep plant interiors cooler, brighter, more comfortable . . . reduces necessity for makeshift screens or painting. Employees see better, feel better, work better in interiors daylighted by Coolite, Heat Absorbing and Glare Reducing glass.

> Coolite can make the plants of your clients better places to work in . . . boost efficiency . . . reduce rejects. In your plans for new construction or modernization, specify Coolite. Available from distributors of quality glass everywhere.



WORLD'S



MANUFACTURER OF ROLLED, FIGURED

YORK . CHICAGO . FULLERTON, CALIF

Coolite, Heat Absorbing and Glare Reducing Glass com-bines beauty and utility in an exciting new variety of architecture for H. J. Heinz Co. Ezra Stoller Photos.

Skidmore, Owings & Merrill, Architects and Engineers; Gordon Bunshaft, Partner In Charge. Jaros, Baum & Bolles, Mech. Engineers. George A. Fuller, Gen. Contrac-tor, Lloyd B. Knutsen, Project Manager for H. J. Heinz Co.



AND

WIRED GLASS

LARGEST



Solve your clients' hot water problems with this *Two-Temperature* water heater!

Let us show you how ONE TANK will simultaneously provide water at 180° for automatic washing machines, 140° for faucets!

Any building housing automatic clothes- and dishwashing machines has a definite need for hot water at two different temperatures: sanitizing hot water for the washing machines; regular hot water for faucets.

The new Ruud-Monel two° temp Sanimaster automatic GAS water heater supplies both these needed temperatures from the same tank at the same time!

Specify Ruud-Monel Sanimaster in every building you design where hot water is needed!

Sanimaster provides an expandable hot water service. Install what is needed now, connect additional units if hot water needs increase. And Sanimaster is a compact, self-contained, space-saving unit—no external or auxiliary storage tank!

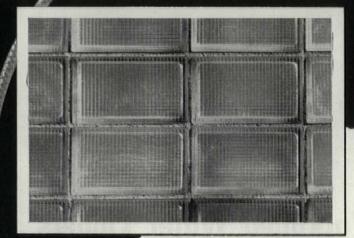
RUST-PROOF MONEL—the high-nickel, lifetime metal—safely holds water at 180°!

Will not rust, ever. Ruud-Monel Sanimaster, with its solid Monel tank, provides sparkling clear hot water for years and years. Ruud-Monel is made in single-temperature models, too!

operations needing it. Meets all sanitation codes. 140° GENERAL-USE HOT WATER is always on tap at the hot water faucets. Both temperatures from the same tank at the same time!	RUUD-MONEL two [®] temp SANIMASTER
FREE CONSULTANT SERVICE! A Ruud specialist will gladly analyze specific hot water problems in any structures you are designing. Or, if you prefer, we will send you Ruud-Monel literature. Mail this Coupon Today!	RUUD MANUFACTURING COMPANY Dept, D-3, 2934 Smallman Street, Pittsburgh 1, Pa.
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Medusa StoneseT Mortar Joints 16 YEARS OLD. The Texas Memorial Museum, Austin, Texas



Medusa StoneseT Mortar Joints 17 YEARS OLD. Owens Illinois Glass Company Research Building, Newark, Ohio



Medusa StoneseT Mortar Joints 20 YEARS OLD. Saratoga Spa, Saratoga Springs, New York

Chicago, Illinois

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ACTUAL PHOTOGRAPHS "

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of MEDUSA STONESET Mortar Joints 16, 17 and 20 years old!

• We want everyone to see how mortar joints in face brick, glass block and stone made with Medusa StoneseT Mortar Cement hold up over the years. That's why recently we sent a photographer back to jobs built 16 to 20 years ago when Medusa StoneseT was new . . . and here are his photographic close-ups of those mortar joints as they look today ... strong, tight and dense ... the most beautiful of all mortar joints. Can you blame us for being proud?

- This is additional proof that mortar cements made by Medusa Portland Cement Company, with over 60 years of cement making experience, are dependable unsurpassed for finer masonry work.
- We want you to see further proof of StoneseT's beauty and dependability. We have available for your inspection an album of photographs showing these early Medusa StoneseT jobs "then" and "now". Send a letter to your nearest Medusa sales office and a salesman will gladly show you the Medusa Stonese'T Photograph Album and give you additional details.

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PORTLAND CEMENTS FOR OVER

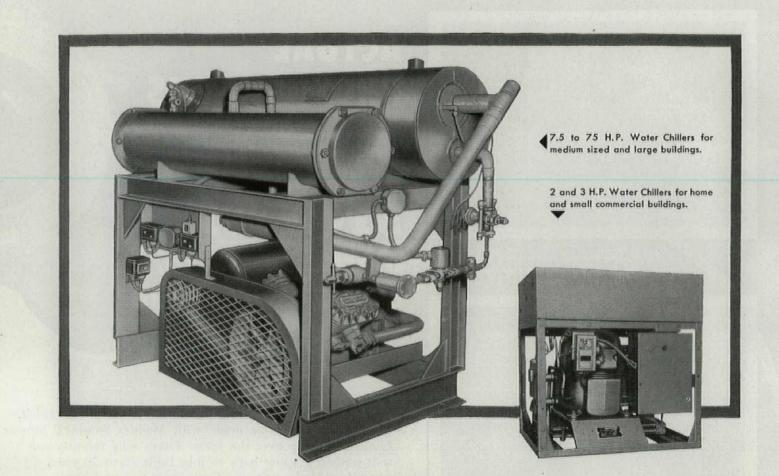
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YEARS OF CONCRETE P

SIXTY YEARS



New American-Standard Packaged Water Chillers have matched components for top performance

New American - Standard Water Chillers come factory assembled with circuits completely piped, wired and tested. Chiller components like the condenser, evaporator and compressor are carefully integrated by design engineers to meet your specific cooling requirements, efficiently and economically.

There are two basic American-Standard chiller packages ranging from 2 to 75 H.P. One, for use in homes or small commercial buildings, is available in 2 and 3 H.P. sizes. Large chillers, for medium and large buildings, range in size from 7.5 to 75 H.P. All American-Standard Water Chillers come mounted in a rigid steel frame for easy handling.

The 2 and 3 H.P. water chillers have a hermeticallysealed motor and compressor assembly. You can get a



20-gauge steel jacket for the chiller, too. It has a Forge Red finish, and has a removable front cover.

Large American-Standard Chillers have low-speed compressors for extra quiet operation.

These new chillers are just the thing for a cold water source for all air conditioning systems. For more information about the new packaged water chillers or the complete Remotaire System, fill out and return the attached coupon to American Radiator & Standard Sanitary Corporation, Pittsburgh 30, Pa.

American-Standard Dept. AF-104, Pittsburg	
Please send me literatur	e on:
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Serving home and industry: AMERICAN STANDARD . AMERICAN BLOWER . CHURCH SEATS & WALL TILE . DETROIT CONTROLS . KEWANEE BOILERS . ROSS EXCHANGERS . SUNBEAM AIR CONDITIONERS

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Entirely new concept in illumination puts at your fingertips any level of light from complete darkness

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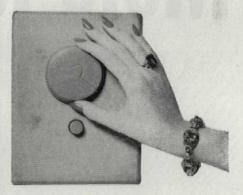
to full brightness!



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LIGHT CONTROL



For full technical data on LUXTROL Light Control, write your name and address on a corner of this page, tear off and mail to The Superior Electric Company, 12104 Demers Avenue, Bristol, Conn.

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Take a good look at these pictures. They show Robertson Products in use on a variety of modern school buildings . . . materials chosen for each particular installation because they were economical and maintenance-free.

Building dollars must go far in tightly budgeted school construction, and materials and methods that do double duty and cut costs are welcomed by designers and school boards alike.

Use the coupon on the opposite page to get complete information on the Robertson building materials that can help you design a better school for less money.

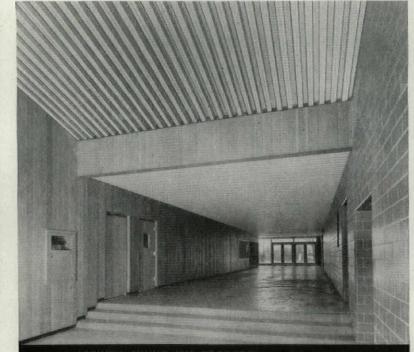
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World Wide Building Service





• ACOUSTIC CEILING AND ROOF DECK . . . Robertson Q-Deck is as functional as it is altractive. Varying Noise Reduction Coefficients are easily and inexpensively obtained. Write for Acoustic Data on Robertson Q-Deck. Shown is the Cedarville (Ohio) School; John L. Kline, architect.



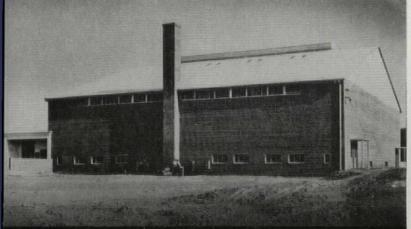
your dollar

• LONG SPAN . . . In addition to its acoustic qualities, Robertson Q-Deck permits longer spans. This means fewer supports, faster installations, lower cost. This is the gymnasium at St. Edward's High School, Lakewood, Ohio. George S. Rider Company, engineers.

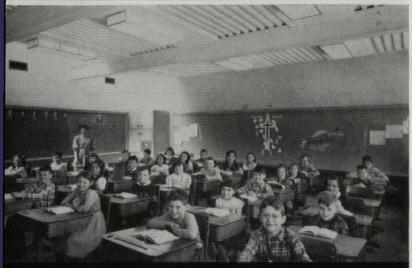


 BRIGHT CORRIDORS Daylight is free, so why not use it. Robertson Corrugated Wire Glass Sash is maintenance-free, economical and efficient. George Washington School, E. Moline, Ill.; M. R. Beckstrom, architect.

ROBERTSON products



• ROOFING AND VENTILATION ... Pitched roofs offer an opportunity to use Robertson Galbestos (zinc bonded asbestos protected steel) and Robertson Ventilators. This modern gymnasium designed by Gregson & Ellis, Atlanta, Ga., shows both of these cost-cutting Robertson products.



• BI-LATERAL LIGHTING ... At the St. Thomas More School near Niagara Falls, Ontario (Arthur B. Scott & Associates, architects) Robertson Skylights give an assist to sash in classrooms. Robertson Q-Deck can be recognized as the roof construction.



• GLARELESS OVERHEAD LIGHTING . . . There is no glare either to contestants or spectators when daylighting is handled like this. These are Robertson Corrugated Wire Glass Skylights at Herbert Hoover High School, San Diego, California.



• CANTILEVERED CANOPIES . . . Long span Robertson Q-Deck permits the long overhang desired for covered walkways. This fine example is by Gordon Stafford at his Lincoln (California) High School.



• INSULATED WALLS — QUICK . . . Robertson Q-Panels are dry, clean fast construction with unlimited architectural possibilities. Above, they are shown combined with masonry at the Booker T. Washington School at Shreveport, La. (Van Os & Flaxman, architects). Below, Q-Panels at the Carmichael School at Richland, Wash. (J. Gordon Turnbull, Inc., designer).



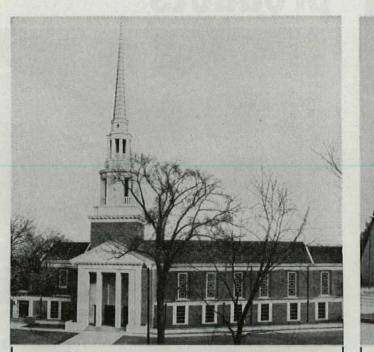
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Good color of Atlas Mortar contributes to the appearance of the First Presbyterian Church of South Bend, Indiana. Architect, Harold Wagoner, A.I.A. Philadelphia, Pa. "My brick-mason superintendent is enthusiastic about the strength and workability of Atlas Mortar," reports Ralph B. Sollitt, Sollitt Construction Co., South Bend, Indiana.



Clean lines and rugged strength combine in the Lake Harriet Methodist Church, Minneapolis, Minn. Architect, Loren B. Abbett, A.I.A.; Contractor, Kraus-Anderson, Inc.; both of Minneapolis, Minn. "Summer or winter, Atlas Mortar is my choice. It proved very satisfactory for winter construction," says Hjalmar Brostrom, General Superintendent.

Traditional Grace Contemporary Form BOTH BUILT BETTER WITH ATLAS MORTAR

Whether you're building with concrete block, brick, or stone – along traditional or contemporary lines – *all* types of masonry units lay up better with Atlas Mortar. For Atlas Mortar gives excellent workability, strength, and good appearance. It's smooth under the trowel . . . helps make true, tight joints. No wonder so many architects and contractors specify Atlas Mortar for their building jobs.

Uniformly good color is another reason why builders like to use Atlas Mortar. Consistently good appearance, plus buttery plasticity and lasting strength, make Atlas Mortar the choice for all masonry work.

ATLAS MORTAR has proved itself on large jobs and small and in the laboratory as well. It complies with ASTM and Federal Specifications for masonry cement. For further information write Universal Atlas Cement Company (United States Steel Corporation Subsidiary), 100 Park Ave., N. Y. 17, N. Y.

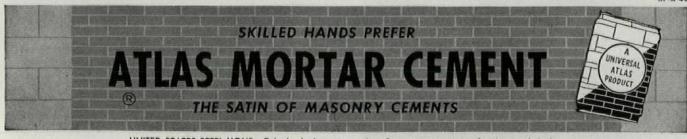
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SMOOTH AS BUTTER – Masons praise the outstanding workability of Atlas Mortar . . . the way it responds easily to the trowel.



TRUE, TIGHT JOINTS — Atlas Mortar helps assure a strong bond for masonry units . . . satisfactory hardening that produces tight joints.



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Refreshing,

POWERS



One shower accident may cost much more than Powers Mixers

Thermostatic WATER MIXERS

Their **Double Safety** protects bathers from scalding or shots of cold or hot water caused by **pressure** or **temperature** changes in water supply lines. Only a thermostatic water mixer gives this double protection.

POWERS Mixers Save Water. No time or water is wasted by bather having to get out from under shower because of fluctuating shower temperature. Water conservation feature alone makes Powers mixers a profitable investment.

"Minimum of Maintenance" says Mr. Charles E. Marnock, Chief Engineer of the BAKER HOTEL. "Since 1949, when POWERS Type H Thermostatic Water Mixers were first installed on some of our showers they have required only a minimum amount of maintenance."

For Utmost **Comfort, Safety** and **Economy** Specify and Install POWERS Mixers. See our catalog in SWEET'S or Write for Bulletin 365.

(b63)

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

THRESHOLDS of Alcoa Aluminum, designed to meet the various problems which arise in the floor areas at entryways, are in the warehouse stocks of Alcoa distributors. Types applicable to outside entries are available together with those designed for interior use. The former have provision for accommodating weather stripping as well as compensation for the changes of level occurring with the use of interior floor coverings such as linoleum, resilient tile or carpet. Tread patterns are designed to minimize slip hazards. The length of sections stocked gives the designer great freedom in setting the width of accessways.

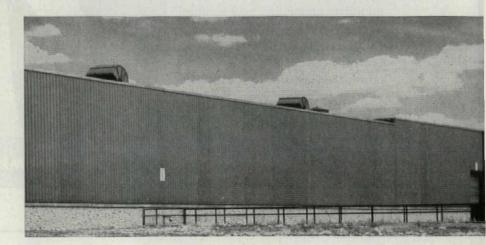
RAILINGS of Alcoa Aluminum are among the earliest applications of aluminum to architectural use. The selection of railing sections in stock at your nearby Alcoa distributor permits their adaptation to any architectural treatment. The soft, lustrous surface of the metal is pleasing to the eye and to the sense of touch.

Where the major consideration of safety is combined with the ability to stand up under severe use, Alcoa offers a pipe-railing system in two sizes of pipe and flush fittings. Designed to meet the most rugged railing requirements at a reasonable cost, the system provides speed of erection and a crisp, clean, projection-free railing—easy to maintain.

FOR DESIGN FLEXIBILITY STOCK AVAILABILITY FABRICATION ECONOMY

SHEET METAL PRODUCTS of Alcoa Aluminum can be used to channel and direct warm and cold air, to reflect light and heat, to cover, to protect and to embellish. The range of sheet sizes, thicknesses, alloys and tempers in Alcoa Aluminum distributor stocks gives the designer a selection for any use. Specially processed forms of sheet include Alumilite* sheet for attractive appearance, lighting sheet for illumination problems, tread plate for special flooring requirements and patterned sheet for surface decoration. Corrugated sheet is available for complete roofing and wall system with all necessary accessories.

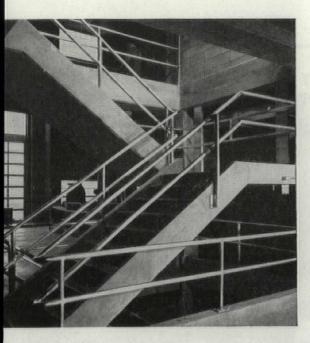
*Trade-Name of Aluminum Company of America





TRIM AND DECORATIVE SHAPES sections available in the stocks of Alcoa Aluminum distributors have many architectural uses. Glazing members, door edgings and jamb sections, interior moldings and pilasters have the crispness of edge and cleanliness of surface which will stay that way under long use.

A new fascia system is available which has specially designed terminal members and in which all fasteners are concealed. The soft highlights of its radii and the delicate shading of the slightly concave contours of its raised elements produce a wall surface of great interest and dignity. It is especially suited to large walls and framing trim where its distinctive texture can get full play under varying light.



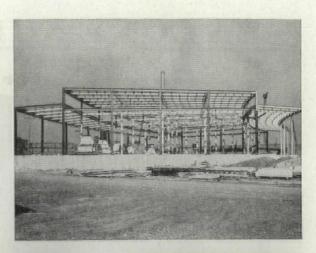
TUBE AND PIPE of Alcoa Aluminum are readily available in a wide range of sizes, cross sections and wall thicknesses from your local Alcoa distributor. Tubing of square, rectangular or circular cross sections has a wide variety of applications in special architectural details such as decorative partition screens, railings and lighting fixtures; for light structural systems such as flexible exhibition and shelving units and for light load bearing columns and posts. Alcoa's tube and pipe give the architect a medium for flexibility of design.

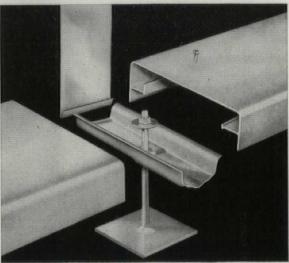
STRUCTURAL SHAPES of Alcoa Aluminum are increasing in usage in commercial, industrial and residential buildings. There is mounting appreciation among designers that aluminum members can do both a structural and a decorative job. Good surface integral with structural strength leads to economy through simplified design and erection since structural members may stand exposed without need for concealment by facing materials.

Exposed or concealed, structural aluminum requires little maintenance. The dimensional accuracy, workability and ease of handling have a strong appeal to the fabricator.

COPINGS AND GRAVEL

STOPS, engineered by Alcoa, including all necessary accessories, are available and ready for assembly from our warehouse stocks. Weather protection, positive joint drainage, more adequate anchorage and greater strength features have been designed into these outstanding new assemblies.





ALCOA® ALUMINUM ARCHITECTURAL STOCKS

WINDOW SILLS of Alcoa Aluminum are a popular choice by architects for weather protection of masonry joints, maintenance-free service, attractive appearance and adaptability to various opening conditions.

A wall opening requires one of two sill applications:

A unit sill or a continuous sill. Alcoa's Type C sill is designed as a unit sill for openings of not more than six feet in width. It is best secured by using the lug method of installation. Alcoa's Type AA sill is suitable as either a unit sill for openings up to 20 feet wide or as a continuous sill for openings over 20 feet. It is set by means of anchor clips which are attached to the supporting wall at maximum intervals of three feet. The Type AA sill suggests a new concept of fenestration. It opens up fresh possibilities for wall treatment by permitting use of fixed glass and opaque wall facing on the same plane with movable sash elements.

ALCOA ARCHITECTURAL STOCKS, a complete 94-page catalog of the standard architectural products of Alcoa Aluminum, is now available from your local distributor. It gives the complete details on the complete range of Alcoa Aluminum products suited for a wide variety of architectural applications which he carries in his stocks for immediate delivery. Call your local Alcoa distributor for your copy today. You'll find his number listed under "Aluminum" in your classified directory. ALUMINUM COMPANY OF AMERICA, 1887-K Alcoa Building, Pittsburgh 19, Pennsylvania.







ALUMINUM COMPANY OF AMERICA

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Salutes America's Young Architects



Peninsular Life Insurance Company Home Office Building, Jacksonville, Florida

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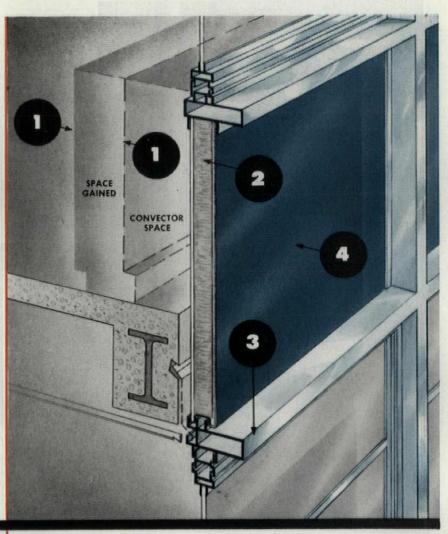


The Independent Life and Accident Insurance Company Home Office Building, Jacksonville, Florida

IMPORTANT: Send Universal Engineers your preliminary drawings for study in Climatology, Orientation and Proper Esthetic, and Scale in Metal-Glass Facading. You will find we are helpful and obliging. You will find good designing will produce a good job at low cost.



when you think of **ΤΗΙΝ ΨΔΙΙ** think of "TEXWALL by Texlite"



T-5: Thin, flat, architectural panel in color, designed for standard glazing. The exterior face of Lifetime Porcelain Enamel is laminated to an inert rigid stiffening core. Interior face is of porcelain enamel or zinc-coated steel. Thickness: 1/4 inch to 3/6 inch. U-values. 1.18 to 1.08 Btu.

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ARCHITECTURAL

TEXLITE"

BY

'TEXWALL

T-10 (shown above): Complete insulating wall panel faced with lifetime, colorful porcelain enamel. Fiber glass core provides permanent thermal efficiency. Lami-nated construction maintains surface flatness. panel rigidity. Interior face a surface for finishing as desired. Thickness: 1 and ¾ inches to 2 inches. U-values: 0.20 to 0.14 Btu.

T-20: Insulated wall panel faced with porcelain enamel. Treated core provides structural and insulating qualities. Interior face of porcelain enamel or znc-coated steel. Thickness. 1 inch to 2 inches. U-values. 0.28 to 0.15 Btu.



"TEXWALL BY TEXLITE" . a trademark designating an I.W.S. (Integrated Wall System) including insulated architectural panels (T-5, T-10, T-20) complete with supporting framework and windows as specified. Panel construction and special framing members permit wall breathing and moisture elimination . . special features protected by patent application.

ADVANTAGES



FLOOR SPACE SAVINGS: Increased revenue from added rental space . as compared with conventional masonry construction.



BETTER THERMAL INSULATION: Low heat transmission decreases cost of year 'round air conditioning.

CONSTRUCTION SPEED AND ECONOMY: Lightweight Structural System speeds erection, decreases construction costs, provides earlier rental revenue.



LIFETIME TEXLITE COLOR: Architectural porcelain enamel panels with 700 permanent colors ranging from architectural mattes to high gloss finishes..with minimum surface maintenance.

WRITE TODAY - for bulletins containing complete factual data.

Texlite's staff of registered architects and structural engineers are available for technical consultation. Texlite's skilled craftsmen and tech-nical know-how assure maximum quality. Many of today's monumental buildings are being designed with "Texwall by Texlite."



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CHASE[®] copper drainage tube fits within standard partitions!

For a neater, more compact drainage installation, insist on *Chase* Copper Tube for soil, waste and vent lines.

Chase 3" Copper Drainage Tube fits within standard partitions, eliminates the need for costly and unsightly furring-out construction that's required with ordinary drainage materials.

The smooth inside surfaces of Chase Copper Drainage Tube and Solder-Joint Fittings permit fast, even drainage...there are no in-



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ternal projections to form waste-trapping pockets. And, of course, *copper* can *never* clog with rust!

What's more, because *installation* costs are lower, the *total* cost of a quality Chase Copper Drainage System is little or no more than the cost of an ordinary system.

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	<u>extra</u>	
to	any ho	me!

Albany† Atlanta Baltimore	Chicago Cincinnati Cleveland	Denver† Detroit Houston	Los Angeles Milwaukee	Newark New Orleans New York	Pittsburg Providen Rocheste
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Frulux...LOF's <u>new</u> decorative panel

that combines rich texture with uniformity of color

• Use Woven Corrulux for indoor planters (right) or for office partitions (below). It's shatterproof, strong, resistant to sharp blows, moderate in cost. Woven Corrulux comes in two weaves: bold weave for accent on texture, fine weave for lighting effects.

Hoven



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.



CORRULUX DIVISION LIBBEY . OWENS . FORD GLASS COMPANY

See your Corrulux distributor, or send for FREE COLOR FOLDER giving full information, suggested uses and showing seven Woven Corrulux decorator colors. Just write to Dept. 10.

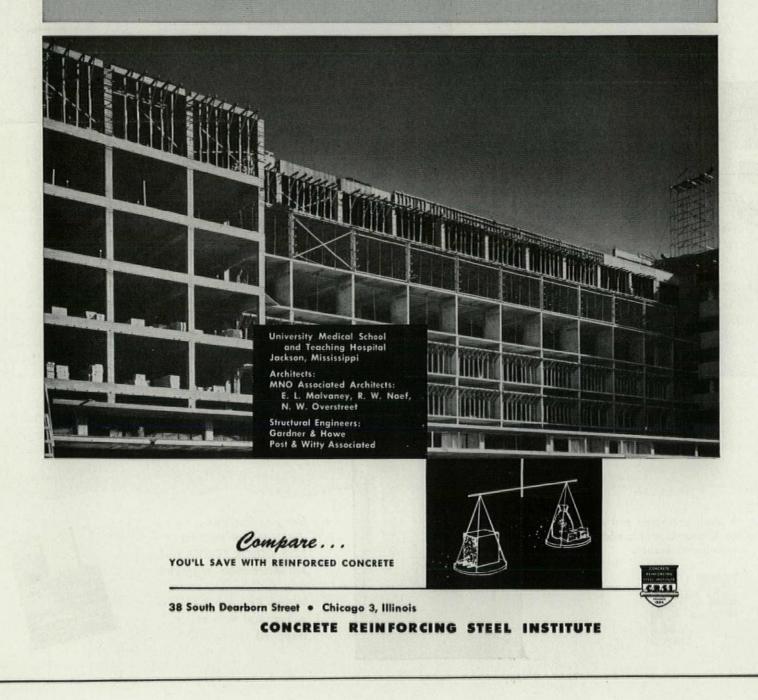
No. of Concession, Name



For this \$8,000,000 medical school and hospital, Mr. N. W. Overstreet, one of the architects, writes, "No other systems were considered, because we know that reinforced concrete is less expensive and better." Mr. H. N. Howe, the structural engineer, adds, "Numerous studies over a period of years have invariably shown that a reinforced concrete frame is more economical for fireproof buildings of light occupancy."

On this job, as on jobs over the entire country, reinforced concrete gives a better structure for less money—and materials are always readily available for quick starts. It's a flexible medium, too, inherently firesafe, and highly resistant to shock. On your next job, design for reinforced concrete.

"we know that **REINFORCED CONCRETE** is less expensive and better"





Bathroom design by Pietro Belluschi, F.A.I.A.

"CLAY TILE...AN IDEAL MEDIUM FOR MODERN DESIGN... OFFERS LASTING BEAUTY, EASY CARE"

Here, in clay tiles of contrasting grays and black, is architect Pietro Belluschi's conception of a modern bath . . . a combination of standard clay tiles and stimulating modern design.

The spacious clay tiled countertop, which doubles as a vanity, can be easily adapted for dual sinks to ease "traffic congestion". And through years of wear and tear, clay tile will remain bright and beautiful with minimum effort.

Clay tile beautifies and protects other key spots like the plunge area, the roomy towel storage niche, the shower walls, floor and ceiling and, of course, the entire floor surface. The style and design possibilities of clay tile enable you

The style and design possibilities of clay tile enable you to give your clients a custom effect with standard clay tiles. When you start your next commercial, institutional or residential project, remember this: clay tile's range of colors, shapes and types give you the widest scope of any modern building material.

You can tell your clients, too, that clay tile never fades, burns, stains or needs refinishing. Specify clay tile and you specify beauty and long range economy. You spread the cost of a clay tile installation over a lifetime!

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The Modern Style is

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THE VAST MAJORITY OF THE NATION'S FINE BUILDINGS ARE SLOAN EQUIPPED

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NAESS & MURPHY architects and engineers GEORGE A. FULLER CO. general contractors M. J. CORBOY CORPORATION plumbing contractor AMSTAN SUPPLY DIVISION, AMERICAN RADIATOR & STANDARD SANITARY CORP. plumbing wholesaler



View from Chicago's lake shore, across the park, toward the new Prudential Building and its impressive background

UNIQUE BUILDING, UNIQUE SITE

• The new, praiseworthy Mid-America Home Office of THE PRUDENTIAL INSURANCE COMPANY OF AMERICA, now under construction, will occupy an enviable site facing Chicago's downtown skyline, several miles of landscaped park, and boulevard-bordered Lake Michigan. Every window will provide dramatic views and its observation deck, highest in Chicago and reached by escalators from the 40th floor, will present one of the nation's most spectacular panoramas. At an anticipated cost of nearly 40 million dollars, approximately 1 million square feet of year-round air conditioned office space will be available. Prudential will

occupy eight full floors, four of which will be joined by escalators. Others will connect lower level suburban train platforms with the building concourse. There will be direct access to the building from its own 400-car parking facility, also a pedestrian connection with the new 2400-car garage under Michigan Avenue and Grant Park. This new building will be distinguished by excelling design and construction techniques, and use of time-tested equipment. As are thousands of other fine buildings it will be completely equipped with SLOAN Flush VALVES—additional evidence that explains why...

This long familiar Prudential emblem will soon become a permanent part of the Chicago scene

more SLOAN Hush VALVES

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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

for you, Mr. Architect!



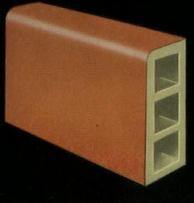
Architects and builders have found Arketex Ceramic Glazed Structural Tile most practical for all types of buildings because Arketex is most economical. Look at the facts!

Arketex is a permanent wall and finish all in one, thus completely eliminating any need for periodic ^o painting or refinishing. Grease, oils, acids or alkalis won't harm it ... dirt and grime won't wear in ... it won't crack, craze, scar or mar. Its glossy, satin-smooth finish stays beautiful forever.

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ARKETEX CERAMIC CORPORATION BRAZIL, INDIANA

THE WORLD'S LARGEST EXCLUSIVE MANUFACTURER OF CERAMIC GLAZED STRUCTURAL TILE

NORTHLAND REGIONAL SHOPPING CENTER. **Detroit**, Michigan

Architect:

General Contractor: Bryant & Detwiler Co.





Over the stairway in the Robinson Furniture store, a noise-muffling ceiling of Full Random Cushiontone helps keep disturbing noise from traveling through the open stair well. With perforations spaced at random over the face of each Cushiontone tile, the finished ceiling effect is truly non-directional.

Modern shopping center solves noise problem



The dignified décor of the Wright-Kay Jewelry Co., is further carried out by the naturally textured surface of the Travertone ceiling. Travertone's white paint finish and irregular fissures give it the distinctive appearance of travertine marble.



Perishable merchandise in the Fintex Clothing Company store needs the extra fire protection afforded by this Travertone ceiling. Completely incombustible, noiseabsorbing Travertone fully meets all fire-safety codes.

Completely geared to modern suburban living needs and trends, Detroit's Northland Regional Shopping Center solves many of the troublesome problems shoppers face today.

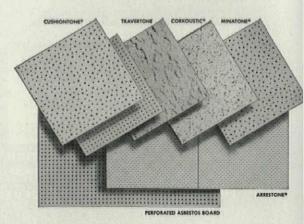
Space for 7500 cars eliminates the usual parking difficulties, while Northland's compact layout puts all of the 80-100 stores within easy walking distance. Artfully decorated malls and gardens provide relaxing surroundings for weary shoppers. Nor is there any of the annoying hubbub so often found in busy stores. In a large portion of the Center, sound-absorbing ceilings of Armstrong's acoustical materials have been installed to help keep noise levels down at all times.

Wherever economy was the deciding factor, Armstrong's Cushiontone, in the smart, new Full Random pattern, was used. A perforated wood fiber material, Cushiontone is surprisingly low in cost. To provide the quiet, beauty, and extra fire safety required in other areas, Armstrong's Travertone, a handsomely fissured noise-absorbing mineral wool tile, was installed.

Get full details on Travertone, Cushiontone, and Armstrong's entire line of soundconditioning products from your Armstrong acoustical contractor. For the free booklet," "How to Install an Acoustical Material," write Armstrong Cork

Company, 4210 Rooney Street, Lancaster, Pennsylvania.





ARMSTRONG'S ACOUSTICAL MATERIALS

HHFA sets Dec. '55 deadline for cities to qualify for urban renewal funds

The 1954 Housing Act replaced urban redevelopment with urban renewal and a broader but stiffer set of requirements for cities to get federal money for it. Last month, HHFA had about made up its mind how to interpret the No. 1 new rule: that cities must have a broadly conceived "workable program" for attacking all phases of blight in order to qualify for a financial handout. Items:

▶ Cities will get until Dec. 31 next year to have an effective housing code which includes a set of occupancy standards, a definition of safe, decent and sanitary housing, prohibits continued use of unfit housing and provides for its removal by the owner or demolition by the city.

• Cities which do not have housing codes which meet HHFA approval by that date, or which fail at any time to meet other HHFAimposed standards under the new law, will be cut off from further federal slum clearance aid until they mend their ways. Projects already approved under the old (1949) redevelopment law, of course, can continue to completion under it—provided cities tell HHFA they wish to do so.

Even HHFA certification that a city has a "workable program" will not automatically bring FHA into the picture under its new Sec. 220, designed to make loans up to 95% on

both new and old housing in areas undergoing rehabilitation or more drastic forms of rebuilding. The agency will not move before 1) specific urban renewal areas have been mapped out and approved by HHFA, 2) FHA is sure the city will carry out its part of the job, and 3) HHFA has approved plans identifying the public improvements to be contributed by the city, how much code enforcement will be done, what areas will be cleared, what areas rehabilitated, and what use will be made of all land in the area. Washington housing pundits were sure it would be at least another year before Sec. 220 comes into much use. Some federal officials predict glumly that it will take two years for most cities to prepare plans for specific urban renewal areas; civic machinery moves slowly.

One way to cut into the developing red tape, just being put forward by experts, may be through formation of local nonprofit corporations to take over from officialdom the job of planning and carrying out urban renewal. Richmond, Va. homebuilders recently set up a rehabilitation corporation which expects to move in this direction (HOUSE & HOME, Oct. '54, News).

The fact that the new housing law also tied public housing up with urban renewal was causing federal attorneys some headaches. The law provides no locality may enter into

NEWS

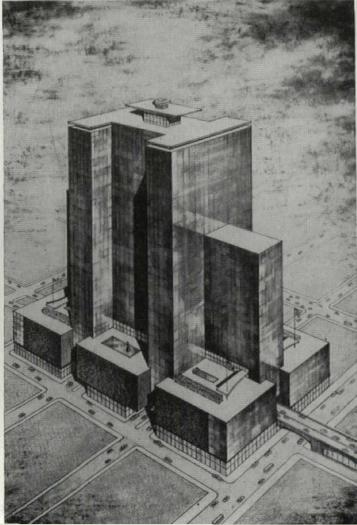
an annual contributions contract for public housing this fiscal year unless it has a redevelopment or urban renewal project "being carried out."

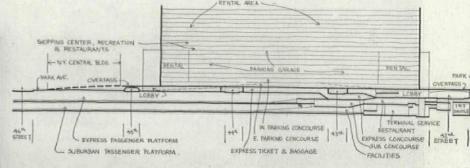
What does that phrase mean? On the House floor, Chairman Jesse Wolcott (R, Mich.) of the banking committee said it meant after "final plans have been approved" by HHFA. In the Senate, however, Sen. John Sparkman (D, Ala.) insisted it meant only a "first contract for a federal advance."

AGC predicts continued construction prosperity

Construction expenditures passed their midyear record and racked up an eight months total of \$23.7 billion, a 4% gain over the first eight months of 1953. More important, indications were that the pace would continue. The construction industry was pushed and pulled by a number of forces—and cutthroat scrabbling for contracts was on the increase—but predictions of prosperity were still widespread.

A survey conducted last month by the Associated General Contractors showed general expectation of another six months of construction activity at present levels. More than 40% of the 124 chapters polled (their 6,500 member firms do about 80% of the nation's total contract construction) saw an increase ahead in building and heavy construction. Between 20 and 24% saw a decrease in these categories. The predominance





Plan to update Grand Central Station

Grand Central Terminal has been a colossal traffic knot for New York almost since its building in 1903. Two streets, E. 43rd and 44th, were severed by the station and an adjoining post office, and Park Avenue was distorted into a ramped detour whose right-angle bends are black with the rubber of a million shrieking tires. Last month, Robert R. Young, new chairman of New York Central Railroad, which owns Grand Central and about a dozen nearby blocks, started talking about a plan for a 5-million sq. ft., taller-than-Empire-State skyscraper which Webb & Knapp, New York developer, would like to put over the terminal. Two weeks later, Patrick B. McGinnis, president of the New Haven Railroad, which pays more than 30% of the operating cost of the teeming terminal, put his support behind a different plan (see cuts) worked up by Fellheimer & Wagner, New York architects. They suggest replacement of the station without disturbing its tracks, restoration of the streets (which Architect Fellheimer, as an original designer of the station, warned against blocking half a century ago), and straightening of Park Ave. A 50-plus-story building would have 4 to 6 million sg. ft. of floor space, a 2,400-car parking area, a rooftop heliport and restaurants and shops to keep as many of its 30,000 office workers out of the East Side midday pedestrian clot as possible. Cost would be over \$100 million. New York Central had not settled on either plan, was still receiving suggestions.

of optimistic replies was fairly uniform by geographical sections.

One in seven. Pointing out that construction accounted for nearly \$1 in every \$7 of the gross national product last year, the AGC report went on to predict a higher figure for 1954. The GNP will be smaller this year, but volume of construction larger. Indications are that the increase this year will be some 3.5% over last year's all-time high of \$50 billion (counting repair and maintenance).

Higher private expenditures and big accumulated backlogs of construction needs are a couple of reasons for optimism. And most AGC members saw no change ahead in material prices and wage rates. Where they did see a change was in method of operation. Nine out of ten saw increased competition ahead. Describing present conditions as "extremely intense" and "rough," members gave such reasons for the new trend as increased capacity of contractors and the fact that there were more of them: efforts by newer firms to seek work with "dangerously low" bids; favorable weather, which enabled contractors to finish jobs ahead of time and entry of out-of-state contractors into local markets. The law of the "survival of the fittest," said many, was just around the corner.

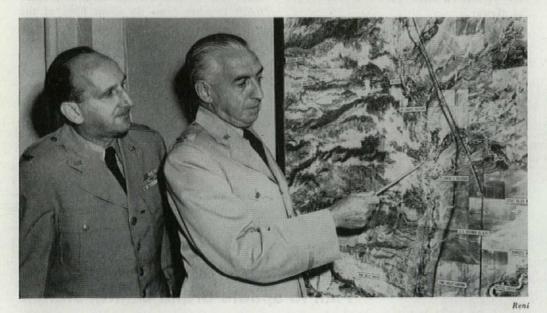
SIDELIGHTS

Redevelopment wins in court

Missouri became the 15th state to unhold the constitutionality of urban redevelopment. A unanimous decision by the state supreme court approved the authority of Kansas City's redevelopment agency to condemn blighted areas for demolition even though some of the buildings in them are sound (the Kay Hotel, in this case). The decision cleared the way for Kansas City plans to clear a slum on the northern fringe of its downtown business district for a parking area for 1,900 autos. A short time afterward, the Illinois Supreme Court, in two decisions, upheld the constitutionality of the 1953 urban community conservation act and the 1953 amendments to the neighborhood redevelopment corporation law.

Electricians warned on costs

High labor costs for electrical work are driving work away from electrical contractors, Donald B. Clayton Sr., president of the National Electrical Contractors Assn., warned 3,500 delegates of the AFL International Brotherhood of Electrical Workers at their



Air Force names aides to help plan Air Academy

The Air Force has set up a task force known as the Air Force Academy Construction Agency— AFACA—to set design requirements and criteria for its new academy in Colorado and, later, supervise construction. Now quartered in Tempo E on Washington's Mall—one of the World War I tempos still in use—AFACA will move to Lowry Air Force Base in Colorado around the first of the year. Part of its Job will be to fix Lowry as an interim academy while Skidmore, Owings & Merrill is designing and contractors are building the new \$126 million West Point of the air.

The AFACA staff now consists of 40 officers, technicians and clerks, but is expected to grow much larger. Heading it are Cols. Leo J. Erler (right), director, and Frank J. Drittler, his deputy. A graying, weatherbeaten man of 61 with a quick smile, Chicago-born Erler graduated from West Point in 1917. Between world wars, his Erler Construction Co. specialized in buildings and utility work in Florida and Indiana. Among his larger jobs: the Seville apartments in Tampa, a power plant at Sarasota, Fla. In World War II he supervised building and ground installations for the Far East Air Force, later held a top assignment in reconstruction.

Col. Drittler, 51, is an architect who describes himself as "very much imbued with the contemporary school of design." Michigan-born, he graduated from the University of Michigan in 1926 in engineering and architecture. Until he was called to active duty with the Air Force in 1940, he practiced architecture in Michigan. Among his jobs: a \$2 million flour mill at Hillsdale, Mich., some of Hillsdale college, including the president's house. In World War II, he commanded an engineer aviation battalion in the southwest Pacific. One of his latest assignments: building air facilities in Korea. convention in Chicago last month. Fringe benefits, extra pay for travel and hazardous work, restrictions on training and on use of labor-saving tools and other employment conditions increase per-unit work costs as much as 50%, making IBEW labor too expensive for home owners and small businesses, Clayton insisted. "[They] cannot afford to pay for one hour's work more than they earn in two or three hours," said Clayton. "They resent it, especially the fringes, and as a result will go out of their way to find someone else to do their work." He also blamed high construction labor costs for growth of the widespread do-it-yourself cult.

Public housing loafers?

In public housing projects, where the taxpayer is footing part of the rent bill, occupants pay on a graduated scale depending on their income and size of their family. As income earned by all members of the family working goes up, so do rents. Recently, the Louisville (Ky.) Municipal Housing Commission began a survey to see how many youths between 17 and 20 in eight public housing projects (4,409 families) were neither attending school nor working. The commission was considering setting up a system of "anticipated income" which might be applied whether youngsters were working or not, thereby providing a device for raising rents if a public housing family does not require its able teenagers to work or if youngsters remain jobless through their own laziness. C. F. Alfred Jr., chief housing manager, said the number of loafers was believed to be "considerable."

Slow sale of tax-exempts

An issue of \$136 million worth of tax-exempt bonds by 14 local housing authorities—the 11th issue guaranteed by PHA since 1951 was selling slowly. Four days after the issue some 40% of the original offering was unsold. The Chase National Bank had taken a little over \$107 million, a Wall St. group another \$19.5 million and the Bank of America the balance. At least one observer saw the slow sale as a reflection of general market conditions rather than as a cause of the declining municipal market.

Clay-stone trade group

Producers and quarriers with a stake in masonry construction have formed a master promotion group, the Allied Masonry Council. Stated purpose: to push use of clay and stone products in building. Cause of the producers' anxiety: inroads of metal curtain wall construction. The new group probably will be financed by the producers, with possible help from the hard-hit Bricklayers, Mason & Plasterers International Union and the Mason Contractors Assn., who are members of the new council.

NEWS

AFL carpenters and machinists end long jurisdictional fight under eye of NLRB

There was considerably more than a simple brotherly wish for peace behind last month's jurisdictional agreement between the United Brotherhood of Carpenters and Joiners and the International Association of Machinists. Both huge (800,000 members apiece) AFL unions could have continued their decades-old feud for years more. But they looked up from their scrapping and saw they were being watched with growing interest by the National Labor Relations Board.

Of ten orders issued by the NLRB to unions to halt illegal closed-shop hiring activities during the first nine months of 1954, six were directed against the carpenters. Of these, four were the result of efforts by the machinists to get jurisdiction over disputed machinery-installation work. It was easy for union leaders to imagine what might happen if the board decided to look into the whole complex of craft breakdowns and the hiring practices which perpetuate them. Up to now, nearly everyone had been winking at the apparent illegality under the Taft-Hartley Act of the continuance of hiring-hall procedures in construction. Moreover, with unemployed workers from other industries drifting into construction in some areas, building tradesmen were growing anxious lest contractors look to NLRB for rulings to let them hire nonunion labor. The carpenters had another good reason to call off the battle: Two of the NLRB orders extended prohibition of illegal hiring practices beyond the project in question to the entire jurisdiction of the carpenter group supplying men to the project. Carpenters' bargaining areas are large, usually consisting of district councils. The possibility of many such NLRB decisions gave carpenter chieftains shudders.

The peace terms were revealed at the meeting of the AFL Building Trades Dept. preceding the AFL convention last month in Los Angeles. The machinists won rights to erect printing presses, some brewery machinery and bottling equipment and machine shop work. Carpenter-millwrights got rights to install conveyors and packaging machines. Joint crews of both trades will have jurisdiction over other work involving steam and gas turbines and generator units. At the same time, the carpenters also settled long-standing jurisdictional disputes involving highway building with laborers, operating engineers and teamsters. Terms of the latter deal were not announced.

If top AFL management can make the peace stick—and there was growing evidence that it may be able to—it should mean much to the construction industry's economic health —and profits. Another key jurisdictional row involving the carpenters remains unsettled, however: the battle with iron workers and sheet metal men over installation of metal cabinets.

Air Force wins increased construction independence

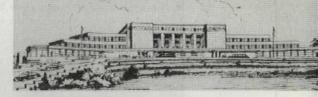
The Air Force, which had been edging away from dependence on the Army Corps of Engineers for the past year, made its biggest jump yet toward handling its own construction when it was given a Defense Dept. directive last month letting it by-pass the Army engineers on some jobs. For the time being, the Air Force must get Defense approval for projects it wants to build on its own. This function probably will be delegated to Asst. Secy. Franklin G. Floete, Defense construction coordinator, who has been more sympathetic toward Air Force building independence than the engineers would like him to be.

Control of air installation construction adds luster to any military empire. With a bigger and bigger share of defense money going to air bases, training and test centers—in the US and abroad—and with little expansion in federal domestic construction, the Army engineers are growing concerned over how to retain their big organization.

Air Force spokesmen deny they will take over all—or even most—of their own construction. They say projects they propose to handle from start to finish—to be determined by a study of approved work—will be let and supervised by Air Force installation officers in the field. The installation officers, who traditionally have been responsible for building maintenance and small construction at air bases, were known to have been slated for broadened power last spring when their chief, Maj. Gen. Lee B. Washbourne, was changed in title from director of installations to asst. chief of staff for installations and moved at least one step closer to Floete.

Army engineers have had a pretty good idea what was coming since last May when 27,000 to 30,000 of their troops who had been attached to the Air Force in Europe were suddenly transferred completely to the Air Force. Speculation then was that the move was the beginning of the formation of a big force of Air engineers. The Air Force, most experts agreed, would probably go slow at first in using its new freedom.





San Francisco opens new \$14 million airport terminal

San Francisco proudly opened a new \$14 million passenger terminal building last month. Designed by Architect W. P. Day, the terminal boasts 317,097 sq. ft. of floor space, three covered concourses leading to 27 loading positions, a ticket lobby with a ceiling four storles high and a traffic flow setup under which incoming passengers use the ground floor while outbound passengers use the second floor.

Although the airport was a hit with the public, many local architects considered the building too monumental—one that did not (like most other recent US airport terminals) measure up to the opportunity. Original plans (see sketch) were much amended after the SF Art Commission, which must approve design of public structures, criticized them as looking "backward...."

*Lighting that makes the nation's most important buildings come alive



NEWS

BUILDING STATISTICS:

Lagging steel market propped by building boom; lumber strike ends, pending report

The arrival of autumn found the steel industry still trying to emerge from its summer doldrums. Production continued to run at about two thirds of capacity and the expected upturn in orders was disappointingly small, although construction (which consumes about 11% of finished steel) won accolades as the strongest force sustaining the steel market. Steel men could only attribute the lack of buying to a sustained period of inventory adjustment, a period which has run on longer than usual and one which is reducing consumers' stocks to a point much lower than producers had counted on. But with consumption ahead of production, some industry pundits warned that unless output is boosted, a tight supply situation could well develop before Christmas. Consumers are sure to be in the market for heavy tonnages by the fourth quarter, it is pointed out; buying by the auto industry particularly is expected to increase; highway and bridge steel requirements mount daily as toll road construction accelerates.

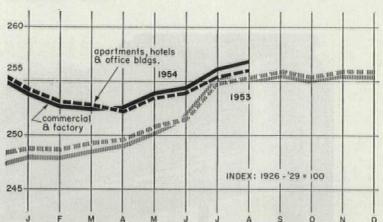
A temporary truce halted the Pacific Northwest lumber strike last month. AFL sawmill workers and many CIO loggers agreed to return to work pending a report-due in January-by a fact-finding board named by the governors of Washington and Oregon which will attempt to offer a satisfactory strike settlement. After three months of idleness, the strike was growing too expensive for both employers and strikers. Since they were hopelessly deadlocked on wages, the board provided a face-saver to permit work to resume. Neither side is bound to accept its findings. The strike had a comparatively slight effect on prices, which soon after the strike started went from \$75 to \$90 MBF for 1/4" AD plywood, a level it maintained for the better part of the summer and about where it stood at mid-September. Said a lumber economist: "If prices were as weak as they were during the strike, what will happen now that we're back in production?" Experts poohpooh fears of a spring log shortage. But some smaller mills may be hard hit, as they go into winter without the usual inventory of logs.

NEW CONSTRUCTION EXPENDITURES

(millions of dollars)

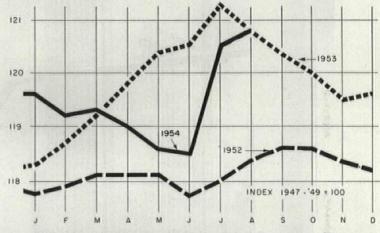
(minimum of domara)		-Augu	st	-Fi	rst 8 mo	onths-
			Per			Per cent
Type of construction	1953	1954	change	1953	1954	
PRIVATE						
Residential building (nonfarm)	1,114	1,278	15	7,776	8,222	6
New dwelling units	980	1,140	16	6,875	7,280	6
Additions and alterations	110	110	0	732	739	1
Nonresidential building	493	552	12	3,634	4,012	10
Industrial	174	160	-8	1,521	1,347	-11
Commercial	169	207	22	1,063	1,392	31
Other nonresidential building	150	185	23	1,050	1,273	21
Religious	43	55	28	291	357	23
Educational	. 38	53	39	264	348	32
Social and recreational	15	20	33	99	141	42
Hospital and institutional.	27	29	7	212	220	4
Miscellaneous	27	28	4	184	207	13
Farm construction	185	167	-10	1,200	1.082	-10
Public utilities	420	427	2	2,837	2,911	3
All other private	. 11	12	9	82	73	-11
*PRIVATE TOTAL	2,223	2,436	10	15,529	16,300	5
PUBLIC						
Residential building	. 44	26	-41	382	249	-35
Nonresidential building	. 376	421	12	2,895	3.061	6
Industrial	. 150	128	-15	1,217	1.093	-10
Educational	. 148	187	26	1,111	1,336	20
Hospital and institutional	. 28	35	25	256	235	-8
Military facilities	. 120	80	-33	914	561	
Highways	395	440	11	1,898	2,205	16
Sewer and water	. 80	96	20	557	646	2020
Conservation and development	t 74	69	-7	560	477	-15
*PUBLIC TOTAL	1,122	1,169	4	7,393	7,439	
*GRAND TOTAL	\$3,345	\$3,605	8	\$22,922	\$23,739	4

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



Building costs continued their slow rise in August. As in July, indexes rose less than a full point. Boeckh (above) was up 0.5 points to 255.9 for apartments, hotels and office buildings; up 0.6 points to 256.8 for commercial and factory buildings. Indexes of the AGC and the American Appraisal Co. also were up fractionally.

MATERIALS PRICES



BLS' index of wholesale materials prices, after a sharp increase in July, leveled off in August with a 0.3 gain. This lifted it to 120.8, the same level as in Aug. '53. Although plywood Jumped 2.3% over July and metal doors, sash and trim were 3.2% higher, these gains were offset by a slight drop in millwork.

BUILDING PERMIT VALUATIONS

Geographical	Eight Months		%
Division:	1953	1954	Change
New England	\$172,555,108	\$159,416,768	-7.6
Middle Atlantic	652,953,530	693,837,483	+6.3
South Atlantic	377,143,531	363,894,189	-3.5
East Central	782,779,115	732,559,136	-6.4
South Central	533,160,421	570,268,241	+7.0
West Central	216,175,672	250,976,847	+16.1
Mountain	137,792,837	148,321,366	+7.6
Pacific	668,507,305	640,703,013	-4.2
Total US	\$3,541,067,519	\$3,559,977,043	+0.5
NY City	352,646,504	382,891,479	+8.6
Outside NYC	\$3,188,421,015	\$3,177,085,564	-0.4
Source: Dun & Bradstreet			



Building permit valuations in 217 cities ran 8½2% ahead of the 1953 level in the first eight months of this year. Regional breakdown shows plains' states with biggest gains, New England with largest drop. New York bettered lead over Los Angeles.

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NEWS

NEW BUILDINGS

Glass-walled bank

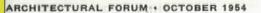
The new glass-showcase bank of the Manufacturers Trust Co., opened last month in New York City, is probably the ultimate in the banking world's rejection of surroundings suggesting gloom and secrecy. The five aboveground floors are walled in 13,000 sg. ft. of clear glass, hanging in thin (4") aluminum mullions. Twenty-two of the panes, facing the second floor where the bank handles its commercial customers, are not just ordinary panes; they are some of the biggest (22' x 10') in the country.

The bank's urge to get everything it has and does out in the open has brought the vault up out of its traditional basement and thrust it just a door's swing away from a street-level window on Fifth Ave. The added security of 1/2" of glass, through which passers-by could supervise any safecracker who did not mind operating in the glare of floodlights, has not, however, tempted the bank to skimp on the building of a solid vault.

Architects Skidmore, Owings & Merrill, given a free hand to design their first bank. questioned every tradition of bank architecture. Some of the results: There are no fixed teller's cages. On both the second floor, where commercial customers bank, and on the first floor, where small depositors are handled, tellers can spread out along counters, according to business loads, pushing aluminum cash buggies to any position. Modern sculpturea 70' screen of 800 metal panels and a "cloud" of wire hanging from the ceilingdecorate the second floor. On the fifth floor are a president's office, unusual for a branch bank, officers' dining room and a kitchen. Some big window panes are curtained in nearly transparent glass fiber. No louvers or sunshades are needed: mid-Manhattan's towering buildings keep the bank nearly always in shade. As the Herald Tribune editorialized: "... The whole building may be said to shine. . . . Banking under such conditions should be more than commonly pleasant, whichever side of the glass one belongs on."

New hotel in Connecticut

The new \$5 million Statler Hotel in Hartford, Conn., opened last month, shares dominance of the spacious but oddly shaped common with two structures: a medieval portal of twin granite towers (a Civil War monument), and the gingerbread dome of the statehouse. Directly in front of the hotel is an isolated fountain with Indian figures raising alternately tomahawk and peace pipe. The slick new hotel gets warning from these older pals about the fickleness of human taste. The architectural world should agree that the Statler, designed by Architect William B. Tobler and built by George A. Fuller Co., is a good hotel. The curtain wall, thin because Hartford building officials agreed to classify





GOLD IN A GOLDFISH BOWL resulted when Manufacturers Trust gave its architect a free hand to design a new branch. Big windows hang between thin aluminum mullions. The vault is separated from the sidewalk only by 1/2" of glass, 10' of air (and a 30-ton door). It has snooperproof numbers on the rim of the combination knob. George A. Fuller Co. was general contractor.

HARTFORD STATLER, curtain-walled in green porcelain-enameled steel panels and glass, gives two thirds of its guests a park view. Rooms are increased in apparent size by horizontal stool, valance lines, short drapes and scaled-down furniture.



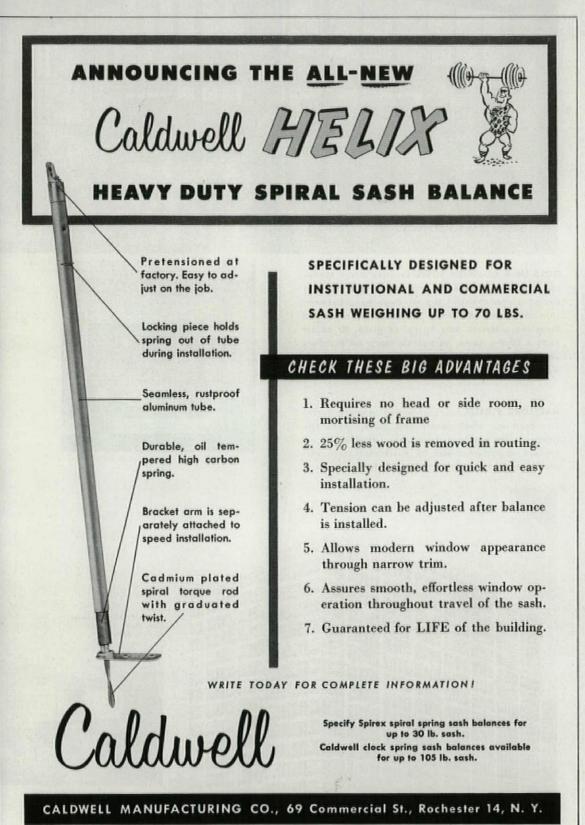




NEW BUILDINGS (continued)

glass and porcelain-enameled panels as windows, came out well. Aluminum parts, such as cover plates over floor beams, are smooth, nicely finished, with no oil-canning effect. Three little huts next to the entrance are at least guileless from the outside, although inside the lobby their angled projection emphasizes the busy kind of lobby design that always threatens to reach out at passersthrough with something sharp.

Inside, the desk and elevators work nicely. The color scheme of the lobby is unhappily dominated by an aggressive green carpet, probably meant to look pleasantly grassy. The lobby also shows how hard it is in this crowded day to be both dynamic and suave with forms. The free stair leading to the mezzanine restaurant strikes some critics as not quite free enough. The stair to the ballroom and upper bars has a three-sided pedestal, composed of the first three steps, that seems likely to bark the shins of countless innocents walking absent-mindedly through that part of the lobby. The restaurant, because of its high mezzanine position and because it is glass-walled the long way and part of both short ways, is a sunny and pleasant place to start a morning. Moreover, there is enough view to make the glass rewarding. One kitchen serves all the eating rooms (a



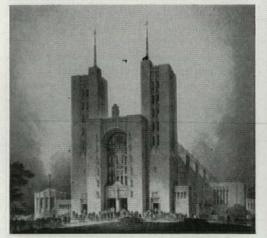
NEWS

pace-making economy), so food must be carried by waitresses over a long bridge to the supper room. In the rooms, a woman's delight is the vitreous china shelf extending from behind an off-angled toilet whose lid makes a vanity seat.

Undoubtedly, the Statler management will be able to get the off-street loading and unloading setup working better. One visitor to the hotel last month found he had to wait 47 minutes for his auto to be delivered from the garage—which Statler does not own. Guests ready for less swanky service, of course, got out faster from the side-parking lot where cars stand in the open all night. One moral for the hotel industry seems to be: to compete with motels like those east of Hartford, hotels should have their garages under full control.

Cathedral in 'modern gothic'

Ground was broken in Baltimore last month for an \$8.5 million Catholic cathedral, described by Archbishop Francis P. Keough as an "adaptation of Gothic principles to modern expression." Architects Maginnis, Walsh & Kennedy ran into the traditional bugaboo of symmetrical design: functions of the building often dictate a switch to asymmetry around



MODERN GOTHIC CHURCH IN BALTIMORE

the edges. Result: balance of the two 130' towers is ruffled at their base by dissimilar baptistry and sacristy. The church, Cathedral of the Assumption of the Blessed Virgin Mary, will be finished in 1959. Walls are selfsupporting limestone masonry, like those of centuries-old European cathedrals. Limestone trim and ashlar limestone will be used inside and out, and limestone arches will support the main roof. Windows will be double-glazed to protect the stained glass.

World's biggest appliance plant

When refrigerators start coming off the line later this month at General Electric Co's. Appliance Park, 10 mi. from downtown Louisville, Ky., construction of the \$200-million, 1,000-acre production and distribution center, the world's largest, will be about 80% completed. The manufacturing work force will

THE MAGAZINE OF BUILDIN

48



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LOUISVILLE'S APPLIANCE PARK: ALMOST AS MUCH AREA FOR PARKING AS FOR MANUFACTURING



NEAA2

NEW BUILDINGS (continued)

reach about 5,000 employees, half its projected strength.

With increased plant necessary for making appliances to meet a growing market, GE in the midst of decentralizing its operations decided to centralize manufacture of many appliances at Louisville. Moves are: dishwashers from Scranton, Pa.; ranges from Chicago; water heaters from Milwaukee; refrigerators and freezers from Erie, Pa.; garbage disposers from White Plains, N.Y.; washers and driers from Bridgeport, Conn.; and room air conditioners from Bloomfield, N.J. Most of the plants vacated in those cities are being reoccupied in the vast GE shuffle.

The Appliance Park plant cluster, biggest industrial complex in Kentucky (with the probable exception of the AEC works at Paducah), is having a momentous impact on Louisville: total direct employment of 10,000 workers (more semiskilled, fewer unskilled, result of partial automation), 8,000 additional service people (barbers, bus drivers, doctors) for the area, a \$40-million yearly GE payroll, expected to attract \$120 million in new business.

Louisville has been abuzz for three years, at first awed and excited by the size of the industrial center and the expansion it would bring, and more recently spurred to hack away at some of the problems of physical growth that have arisen in housing, feeding and transporting new residents. The Louisville Courier-Journal estimated two years ago that Appliance Park would mean this much new construction: 9,300 houses, 100 schools (22roomers), 3,300 retail stores. The local planning and zoning commission predicted that the area around the new plant will jump from its present 5,000 population to 25,000 by 1970. The fact that there is almost 75% as much area at the GE plant prepared for parking 8,000 to 9,000 cars points up one of the knottiest problems: new roads, expanded and redesigned old roads, new bridges and altered traffic patterns in the city. Louisville is in the middle of a \$100-million program of street and highway modernization.

The five big (smallest: 264,000 sq. ft.; biggest: 1 million sq. ft.) manufacturing buildings are rectangular. They have one story, a high one to accommodate overhead conveyor equipment, and are sheathed in aluminum and brick. Windows are blue tinted glass, except for the bottom row which is clear to overcome, says GE, "any tendency toward claustrophobia." Contractors: Turner Construction Co., New York, and Struck Construction Co., Louisville. Architect: Albert Kahn Assoc., Detroit.



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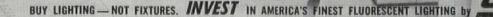
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PHOTOGRAPH SHOWS AN INTERESTING PATTERN ARRANGEMENT OF THE SMITHCRAFT LOUVERLITE SLIMLINE IN THE PENNA. DEPT. STORE DESCRIBED ABOVE.



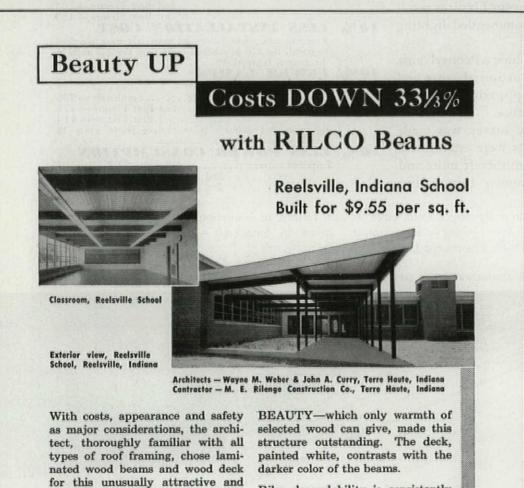
PEOPLE: California architect law is held unconstitutional

in John Lloyd Wright case; W. R. Glidden to head ASCE

A municipal judge at Oceanside, Calif., has for the second time decided in favor of John Lloyd Wright in his fight with California's board of architectural examiners. Last month, Judge L. W. Cottingham dismissed amended charges that Wright, in designing a clothing store for Salvador Villasenor, Oceanside merchant, violated the state's architectural licensing laws. The board charged, as it had in a fruitless complaint two months earlier (AF, Aug. '54, News), that Wright advertised

himself as an architect (by using the letters AIA after his name on a sign) and that he failed to notify client Villasenor that he was not licensed as an architect in California. Wright is an accredited architect in Indiana, Texas and Nevada.

In throwing out the board's complaint, Cottingham again declared the licensing law unconstitutional, holding that it did not provide citizens with the equal protection of the law guaranteed by the 14th Amendment. His



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reasoning (from his original decision):

"The statute requires, on one hand, years of study and experience, followed by an examination by a competent board before one can obtain a certificate which entitles him to practice architecture, and on the other hand permits one with ne more education than is necessary to write the simple sentence "I am not an architect" to practice architecture and enjoy the benefits from so doing to the same extent as if he were duly certified. It appears . . . that one who has obtained the education, experience and certificate demanded by the statute to become an architect is entitled to be protected by the law in the practice of his profession as against those who have not had adequate education, experience. . . .

The judge also dismissed a complaint by the state board of registration for civil and professional engineers, charging that Wright, who is licensed as a structural engineer in Indiana, but not in California, had practiced civil engineering in Villasenor's structure. The judge held this complaint did not state facts sufficient to constitute a public offense.

The district attorney's office in San Diego promptly appealed. Officials of the board of architectural examiners insist they are not picking on Wright, 61-year-old son of Architect Frank Lloyd Wright, that they have been cracking down for a long time on "30 to 60 cases a month" of violations of the statute as they interpret it.

A mail ballot of its 37,000 members elected William Roy Glidden of Richmond, Va., president of the American Society of Civil Engineers, succeeding Dean Daniel V. Terrell of the University of Kentucky. In his 38



years with the Virginia State Dept. of Highways, where he is assistant chief engineer, Glidden has earned a reputation as a specialist in bridges. Away from the office, he is a "dillettante in economics," likes to read ancient history and devotes an hour and a half daily to the piano,

GLIDDEN

which he learned to play at the age of 40. New ASCE vice presidents: Frank L. Weaver, Washington D.C. and Louis R. Howson, Chicago.

A team of four young New York architects who had never been to Chicago and a faculty adviser at Brooklyn's Pratt Institute took top honors in Carson, Pirie Scott & Co.'s centennial competition for replanning Chicago's downtown Loop. The team (see cut, next page) won a prize of \$20,000 from the big department store for a design that paid special attention to pedestrians (with elevated sidewalks and passenger conveyors) and provided for a permanent fairground and convention hall and for zoning of retail, commercial and entertainment sections. The five: Herbert A. Tessler, Leon Moed, Joseph A. D'Amelio, William H. Liskamm and William N. Breger. The

SAVINGS-resulted as planned. The architect reports the 25,300 sq. ft. school cost \$241,714.00 or \$9.55 per sq. ft.-low for the area. Accurately fabricated beams, delivered when needed, helped to keep erection costs one third less than structures using other materials.

practical structure.

ENGINEERING-in accordance with the best industry practice, was made available to the architect. Structurally dependable beams were designed and complete shop drawings were furnished by Rilco. Beams were delivered, cut and drilled to exact specifications, ready for erection.

You can't beat light from the sky!

 This is the Azalea Road Elementary School in Mobile, Alabama.

 Architects: Ellis & Winter, Mobile.

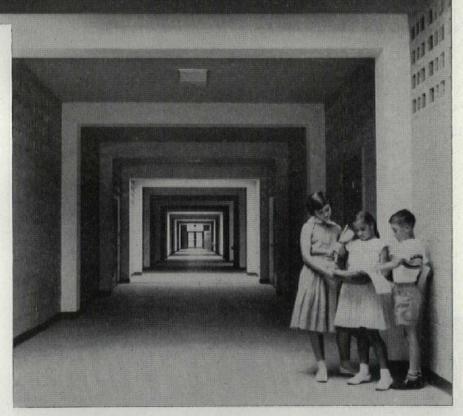
The picture shows a recent installation of PC Skytrol Blocks. Notice how *much* light there is – without harshness. Skytrol Blocks contain a fibrous glass diffusing screen that softens the light and makes it easy on the eyes.

That screen does something else, too. It divides the block into two cavities resulting in an impressive insulation value of U=0.44. This eliminates many of the age-old problems of skylights: there is little or no condensation, no cold zone under the panel, no increase in heating costs.

PC Skytrol Blocks are cast into a rigid, steel-reinforced concrete grid that won't warp or rust. There is nothing to putty or calk. It's a thoroughly proved method of toplighting --used in Europe for many years.

Best of all is the cost. The *installed* cost of Skytrol panels is running about \$4.50 to \$6.50 a square foot, depending on the job. For more information consult Sweet's or write to Pittsburgh Corning Corporation, Dept. E-104, One Gateway Center, Pittsburgh 22, Pennsylvania.

New. Skytrol Blocks are now available with the new Suntrol pale green diffusing screen to reduce heat and glare in difficult locations.







First prize winners in Carson, Pirle Scott competition are congratulated by store president John T. Pirle Jr, (left) after awards were announced.

Chicago Photographers



NEAA2

latter is an associate professor of design at Pratt Institute. Second- and third-place winners: a Philadelphia team including Wilhelm von Maltke, Hans G. Egli, Irving Wasserman, David H. Karp, Robert F. Kitchen and Clifford B. Slavin and a Chicago group including nine members of Pace Associates, plus Graham Aldis and Robert S. Cushman. Judges of the contest, which drew 106 entries, were Henry T. Heald of New York, Robert E. Alexander of Los Angeles, Ladislas Segoe of Cincinnati, Miles L. Colean of Washington and George Barton of Chicago. The winning plans will be presented to the city of Chicago.

An 111/2' statue, "The Builder," by Architect-Sculptor Oskar G. Stonorov, was unveiled last month at Solidarity House, headquarters in Detroit of the CIO United Auto Workers (which Stonorov helped design). Stonorov spent last summer working up the plaster of his idea of a young UAW member. Then he shipped it to Italy, where it was cast in bronze -free-by Italian workers as a gesture of anticommunist cooperation of labor. Stonorov donated his work, keeping the cost to UAW "not much more than \$10,000." Stonorov studied architecture and sculpture in Italy, Switzerland and France. He has practiced architecture in the US since 1932, was a PWA consultant in 1933. He has delved into city planning and prefabs and has been a prolific designer of modern houses.

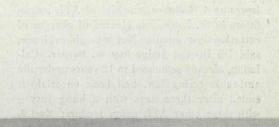
UAW-CIO

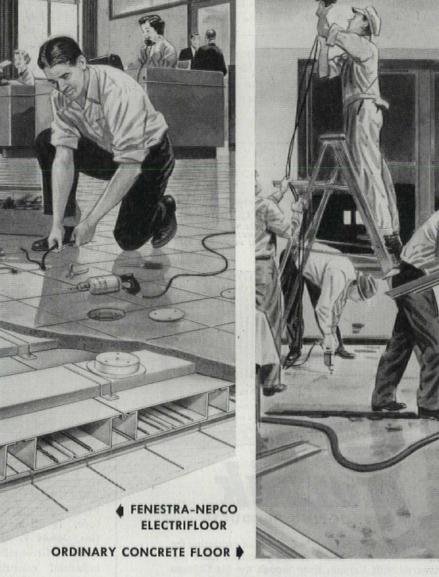


"Not naturalistic and not condescending to the tastes of a great many people," is the way Architect Oskar Stonorov explains his statue for the UAW. It represents Stonorov's idea of a UAW member: "A clean-cut young man going ahead with full confidence." Left to right at unveiling: Stonorov, President Louis Miriani of the Detroit common council, UAW President Walter P. Reuther, Antonio Carloni, Italian consul in Detroit.



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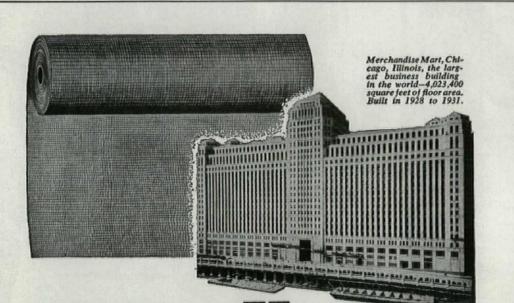
Fenestra Nepco

ARCHITECTURAL FORUM . OCTOBER 1954

Lawrence L. Callanan, ex-chief of AFL steamfitters in St. Louis, was cleared of charges of extortion last month. Not enough evidence, said US District Judge Roy W. Harper. Callanan, already sentenced to 12 years under the anti-racketeering law, had been on trial—it ended after three days with a hung jury with three other AFL union leaders: Carl J. Bianchi, hoisting engineers; L. A. Thompson, teamsters, and George E. Secton, one of Callanan's lieutenants.

Edward J. Kerrigan resigned last month after two and a half years as deputy director of the State Dept.'s Office of Foreign Building Operations. His departure, he told FORUM, had nothing directly to do with the furor a year ago over design of the office's overseas buildings, which resulted in the ouster of FBO chief **Leland W. King.** King's leaving, Kerrigan dismissed as a "Republican patronage thing." He insisted that there would be no big change from the handsome contemporary architecture FBO was using. Kerrigan will take a position as assistant to the president of Kerrigan Lewis Mfg. Co., Chicago wire makers.

Carl Feiss, widely known chief of the planning and engineering branch of HHFA's redevelopment division, left the government Oct. 1 for private consulting practice.



CHICAGO'S FAMOUS MERCHANDISE MART CALLED FOR



Karnak fabric is packed

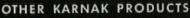
in sturdy, corrugated cartons for protected shipping and storage. They keep the fabric in perfect condition until used ... cut fabric loss. Twenty-five years ago, the problem of protecting the foundation of the "Mart" from hydrostatic head was answered with *Karnak*. Even though the big Chicago River flows beside it, *this Karnak job holds secure*.

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The Karnak Membrane System is best for roof patching, skylight flashing, window and door flashing, through-wall and cornice flashing, as well as waterproofing against a hydrostatic head in dams, swimming pools, viaducts and tunnels. Send coupon for complete information. Manufactured by Lewis Asphalt Engineering Corp., 30 Church Street, New York 7, N. Y. © L.A.E. Corp.



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NEWS

Ernest Henderson and Robert Moore, executives of the Sheraton Corporation of America, took an option to purchase the 750-room Hotel Astor in New York for \$8.5 million. The move came only a few weeks after William Zeckendorf of Webb & Knapp had exercised his option and purchased the property. Colonel Henry Crown of Chicago, who owns a 65% stock interest in the Empire State building, agreed to buy almost all the remaining stock if Roger L. Stevens and colleagues could deliver it by Oct. 4.

DIED: Sen. Burnet R. Maybank, 55, (D, S.C.), long an important friend of public housing as chairman of the Senate's banking and currency committee under the Roosevelt and Truman administrations, of an unexpected heart attack Sept. 1 at his summer home in Flat Rock, N. C. In the last Congress, Sen. Maybank turned against the public housing program because the Supreme Court had ruled Negroes cannot be kept out of government-subsidized housing. One of Maybank's last acts was to win consent of Sen. Homer Capehart (R, Ind.), present banking commit-





MAYBANK

DANIEL

tee boss, to wind up this fall's investigation into FHA by Oct. 15. For this, Maybank can be remembered by homebuilders with gratitude. To fill his term which expires Jan. 2, Gov. James F. Byrnes appointed Charles E. Daniel of Greenville, head of one of the largest industrial construction companies in the South. Should the Democrats win control of the Senate next year, chairmanship of the banking committee, which handles housing legislation, would fall by seniority to Sen. J. W. Fulbright (D, Ark.), a lukewarm public houser.

OTHER DEATHS: Dr. Bryn J. Hovde, 58. director of the Pittsburgh Housing Authority. for three years president of the National Housing Conference, Aug. 10, in Pittsburgh; Reuben N. Trane, 67, founder and former president and board chairman of the Trane Company, Sept. 6 in La Crosse, Wis.; Walter K. Show, 64, former vice president and treasurer of New York's Turner Construction Co., Sept. 10 in Scarsdale, N.Y.; Sidney Weinberg, 55, builder of several large Washington-area housing developments, Sept. 12 in Washington, D.C.; Clarence C. Zantzinger, 82, AIA Fellow whose work included the Justice Dept. building in Washington, the Philadelphia Art Museum, other civic buildings and university dormitories, Sept. 26 in Philadelphia.

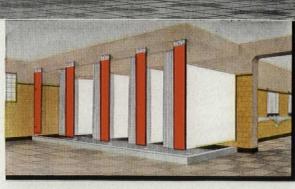
Untimely obsolescence of washrooms usually occurs when and where it is invited....



Sanymetal NORM-ANDIE Type Toilet Compartments endow a rest room environment with dignity and good trate

Sanymetal ACADEMY Type Toilet Compartments are suitable for conservative but modern washroom 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.



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Sanymetal "PORCENA" (VITREOUS PORCELAIN ON STEEL)

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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. 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 40 years of specialized skill and experience in making over 1,000,000 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*.

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I687 Urbana Road • **Cleveland 12, Ohio** Sanymetal Toilet Compartments embody the results of specialized skill and experience in fabricating over I million 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 21b in Sweet's Architectural file for 1954 and Catalog 13a in Sweet's Industrial File for 1954,



TOILET COMPARTMENTS SHOWER STALLS AND DRESSING ROOMS

KENRUBBER tile floors meet every modern requirement

for economy...durability...quiet and comfort underfoot

One of the most important advantages of KenRubber is its complete versatility...its exclusive decorative and functional features that adapt it to virtually every interior. It is one of the most durable floors known...with "coiled-steel" strength and wear resistance that insures more years of trouble-free service...more quiet and comfort underfoot. Maintenance is extremely easy...a damp mopping cleans the mirror-smooth surface quickly... a no-rub waxing brings out its full modern beauty.

Specifications and Technical Data

INSTALLATION: Over any smooth, firm interior surface removed from greases and oils. New KenSet Adhesive* makes possible fast, easy and economical installation over concrete in contact with the earth.

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

SIZES: Standard tile size is 9"x9"... with a wide range of special sizes available on order.

Description

KenRubber rubber tile is made by vulcanizing synthetic rubber and pigments. Available in a wide range of prepolished marbleized light, dark, intermediate colors and solid black.

Recommended For:

RESIDENTIAL USE: Kitchens, bathrooms, nurseries, bedrooms, halls, closets, foyers, living and dining rooms.

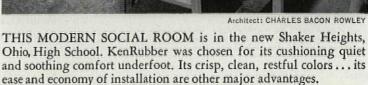
COMMERCIAL USE: Business and professional offices; hospital rooms, wards, corridors; rooms and corridors of schools, churches, libraries; public buildings; stores, restaurants and dining rooms.

Approximate Installed Prices (per sq. ft.)

Standard (.080") Gauge		1/8" Gauge	3/16" Gauge	
KENRUBBER	50¢	65¢	80¢	

These costs are based on a minimum area of 1,000 sq. ft. over concrete underfloor. Cost of KenRubber's exclusive die-cut ThemeTile decorative inserts available on request.

Samples and technical literature available to accredited architects, builders and designers. Contact your Kentile Flooring Contractor or write the nearest Kentile, Inc. office listed below...ask for samples of exclusive ThemeTile, Feature Strip and KenCove, all-purpose, flexible cove base.



B

TILE FLOORS



KenRubber is the floor your clients know and want . . .

BACKED BY MORE FULL-COLOR CONSUMER ADVERTISING THAN ANY OTHER RUBBER TILE FLOOR

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MICARTA's beauty is locked beneath a mirror-smooth, marble-hard layer of clear melamine plastic. It offers remarkable resistance to scuffs, scars, stains, burns, chipping and cracking. It never needs polishing or refinishing. That's why it's ideal for counter tops, wall paneling, wainscoting—any application that suggests an attractive, hard working material. And there's real planning freedom in its exciting array of colors, patterns and wood grains.

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Steam

cools Mennen's new face What kind of air conditioning system do you use in a combination office-factory building? The answer at this new Mennen Company headquarters building in Morristown, New Jersey, is *two different* systems—both of them by Carrier. Beyond this main entrance are the general offices and research laboratories. All are air conditioned by the Carrier Conduit Weathermaster* System. A Carrier development, perfected through years of experience, the Conduit Weathermaster System is designed to answer the special problems of air conditioning office buildings, hospitals, hotels. Small-diameter air conduits save valuable





air conditioning refrigeration industrial heating space. And in each room or office, occupants can adjust the temperature merely by turning a dial. • Another Carrier system serves the manufacturing area. • Both systems get their chilled water from Carrier Absorption Refrigerating Machines that use *steam* to produce *refrigeration*. The same boilers that generate steam for winter heating are used in summer to supply steam for the absorption machines. Important operating economies result. • May we give you more of this kind of information to help you with your current projects? Call your nearest Carrier office. Or write to Carrier Corporation, Syracuse, New York.

Architects and Engineers: A. M. Kinney, Incorporated General Contractor: George A. Fuller Company Mechanical Contractor: Richardson Engineering Company

*Reg. U.S. Pat. Off.





Vinylized Azphlex is the new and better flooring for multi-purpose school areas — such as this combination cafeteria-auditorium. Here's a tougher floor that withstands heavy wear and grease abuse, yet is easier to clean and keep clean.

Vinylizing gives Azphlex its superior qualities. Its tightly textured smooth surface is easy to mop clean — its closely interlaced structure adds years of wear in the face of constant use and abuse.

Vinylizing also gives Azphlex its cleaner, brighter colors — colors that add sparkle and beauty to school interiors. Its better light reflectance is easy on the eyes of both pupil and teacher, too. And, Azphlex costs no more than ordinary greaseproof asphalt tile.

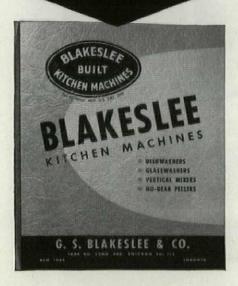
Why not get all the facts on Vinylized Azphlex before you specify school floors. Its cost per square foot per year is unusually low. Color chart, product data and name of nearest Azrock dealer will be sent on request.



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EVENTS

Architectural Woodwork Institute, annual convention, Oct. 15-16, La Salle Hotel, Chicago.

American Society of Civil Engineers, annual convention, Oct. 18-22, Hotel Statler, New York City.

Central States District, American Institute of Architects, regional conference, Oct. 21-23, Witchita, Kans.

New York State Association of Architects, convention, Oct. 21-23, Lake Placid Club, Lake Placid, N. Y.

American Institute of Steel Construction, annual convention, Oct. 25-28, The Greenbrier, White Sulphur Springs, W. V.

Plastics in Building, conference conducted by the Building Research Institute, examining the structural, utility and decorative uses of plastic products, **Oct. 27-28**, National Academy of Sciences, Washington, D.C.

North Central States District, American Institute of Architects, regional conference, Oct. 28-30, Kahler Hotel, Rochester, Minn.

National Motel Show, exhibition of items used in the construction, maintenance, etc. of motels, Nov. 1-3, Morrison Hotel, Chicago.

Texas Society of Architects, annual convention, Nov. 3-5, The Texas Hotel, Fort Worth.

National Association of Real Estate Boards, 47th annual convention, Nov. 6-11, Cleveland.

Structural Clay Products Institute, annual convention, Nov. 6-10, Hotel del Coronado, San Diego.

Third Annual Architects' Short Course, centering on church planning, Nov. 10-12, University of Illinois. For details address Prof. Robert J. Smith, Department of Architecture, University of Illinois, Urbana, Ill.

Great Lakes District, American Institute of Architects, regional conference, Nov. 13-14, Gibson Hotel, Cincinnati.

Florida Association of Architects, annual convention, Nov. 18-20, La Coquille Hotel, Palm Beach.

American Municipal Assn., annual convention, Nov. 28-Dec. 1, Bellevue Stratford Hotel, Philadelphia.

Market Research and Design, two-day conference sponsored by the University of Michigan and the Boston Institute of Contemporary Art, Dec. 9-10 at Ann Arbor. For details address Dean Wells Bennett, College of Architecture and Design, University of Michigan, Ann Arbor.



Consult your Architect



Owens-Illinois advises Post readers

Nearly five million readers of The Saturday Evening Post saw this advertisement in the September 25th issue. Readers who are vitally interested in modern school facilities for their children . . . modern buildings for their businesses . . . modern features for their homes.

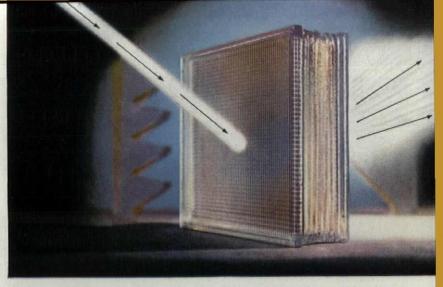
This advertisement is one of a series to promote a better understanding of the full scope of Owens-Illinois facilities. It gives people a better understanding of what Owens-Illinois Glass Block* can do. It will help to make your job a little easier the next time you recommend glass block. And it advises, "Consult your architect for advice."

If you would like a copy of the booklet offered, just write to Dept. 15, Kimble Glass Company, subsidiary of Owens-Illinois, Toledo 1, Ohio. *Formerly known as INSULUX

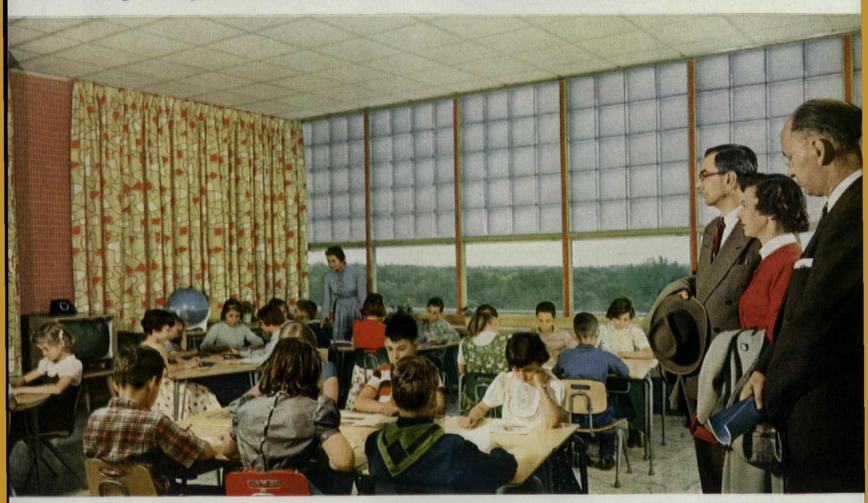
OWENS-ILLINOIS GENERAL OFFICES (D TOLEDO 1, OHIO



For **pupils** . . . poorly lighted classrooms can be a thing of the past, because of . . .



this **product** . . . a light-directing Glass Block that *controls* the light in daylight-offering . . .



you parents . . . an opportunity to bring the "classroom of tomorrow" to your schools today.

Schools, offices, factories, homes can now get the daylight they need, *where* they need it, with amazing Owens-Illinois Glass Block.

This Glass Block actually captures rays of daylight, changes their direction by bending them upwards so that they reflect from the ceiling to be evenly dispersed. Physicists worked for over ten years to develop this Glass Block to its present perfection. Consult your architect for advice on use of this amazing product.

FREE! "The Classroom of Tomorrow"

Parents, teachers, school officials, and others interested in better schools can learn the full story of Owens-Illinois Glass Block, and how it brings a new concept of design to schools, by sending for our booklet "The Classroom of Tomorrow." The 16 pages in color also show new ideas in decorating colors, equipment, and classroom activities. Write Department 15, Kimble Glass Company, subsidiary of Owens-Illinois, Toledo 1, Ohio. A "practical engineering" formula, the coordinated effort of top designers, engineers, and marketing analysts, stands behind the entire family of Owens-Illinois products:

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Owens-Illinois

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OWENS-ILLINOIS GLASS BLOCK AN (D) PRODUCT DOW LATEX... bringing a new concept of perfection in paints...



LATEX PAINTS can be applied right over plaster hot spots

They eliminate long waits for plaster to cure . . . and they have excellent sealing properties over a wide variety of surfaces Latex paints can help you cut days off your building schedules. For these modern paints can be applied over plaster before it's cured completely —even while plaster is still green. And they give the same excellent results on dry wall construction, wood, concrete block, and many other materials . . . a smooth, colorful surface that has unusual durability and washability!

In addition, latex paints offer you these advantages: They're easily applied, so quick drying they can be recoated the same day . . . let painters finish a job in a minimum of time! And their lack of objectionable odor means occupants can move into a painted room right away.

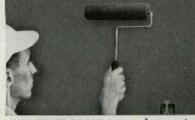
Leading paint manufacturers make latex paints in a wide range of colors and in texture and specialty paints. They will be glad to supply you with further information upon request. For a list of their names write Dow Plastics Sales Department, PL516M, THE DOW CHEMICAL COMPANY, Midland, Michigan.



FOR POROUS SURFACES... Latex paints have excellent sealing properties over cinder block, concrete block and many other porous surfaces.



FOR DRY WALL CONSTRUCTION ... Latex paints give the same excellent results a smooth, colorful surface that's both washable and durable!



TWO COATS IN ONE DAY... Latex paints dry to the touch in twenty minutes to an hour, can be recoated the very same day.

you can depend on DOW PLASTICS



EASY TO CLEAN . . . Latex paints are unusually cleanable. They're wiped clean with soap and water, and without any damage to surface appearance.



how JOHNSON CONTROL PROTECTS one of the NATION'S MOST TREASURED BUILDINGS



MONTICELLO

INSTALLING

Monticello, Charlottesville, Va. (Restoration Program). Milton L. Grigg, F. A. I. A., architect, Charlottesville; Wiley & Wilson, mechanical engineers, Richmond; R. E. Lee & Son, general contractor, Charlottesville; Wachter & Wolff Corp., heating and air conditioning contractor, Richmond.

Monticello, home of Thomas Jefferson, is one of America's most inspiring buildings. Recently restored to its original design, the famous mansion has been equipped with a modern system of

JOHNSON, CU

Johnson Automatic Temperature and Humidity Control. The system is designed to *preserve* and *protect* the building and its many valuable contents, rather than for comfort alone,

The temperatures in each of six zones are controlled by Johnson T-315 Submaster Room Thermostats which regulate hot and cold deck dampers on the new central air conditioning system. These special purpose thermostats are conveniently reset from a remote central control point. During the heating season, they maintain each zone at a constant temperature of 72°F. In the cooling season, they vary the zone temperatures from 72° to 80°F. as the outdoor temperature rises from 70° to 95°F.

The Johnson Zone Thermostats are concealed inside the original fireplaces which, together with their flues, have been converted to air returns. No thermostats or grilles are visible to visitors. A master temperature control panel is located in the mechanical equipment room with the central air conditioning equipment.

Of special importance is the year 'round protection afforded by Johnson Humidostats which regulate the relative humidity in relation to the outdoor temperature. Relative humidity ranges from 20 per cent at 0°F. to 50 per cent at 72°F. or above.

The accuracy and flexibility of the *Monticello* installation are typical of Johnson Control Systems, because each one is specifically planned, made and installed by Johnson to meet the exact needs of the individual control problem. That is why you will find "Planned-for-the-Purpose" Johnson Control not only in the nation's outstanding buildings, but in public, commercial and industrial buildings of all types and sizes.

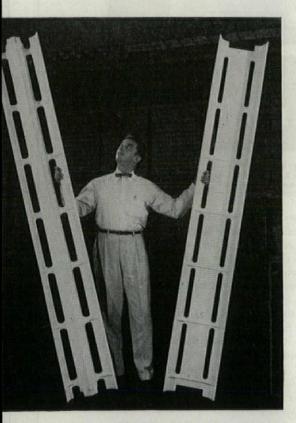
The nearly 70 years of experience of the nationwide Johnson organization is at your disposal without obligation. Next time you have a temperature control problem, call an engineer from a nearby branch office. JOHNSON SERVICE COMPANY, Milwaukee 2, Wisconsin. Direct Branch Offices in Principal Cities.

SINCE 1885

MANUFACTURING • PLANNING

For the industrial lighting value of your lifetime

See! Examine! Compare! THE NEW LIFETIME CFI SERIES



FULL 8-FT. PORCELAIN REFLEC-TORSI An exclusive Lifetime CFI feature! Competitive fixtures give you two 4-foot reflectors to form an 8-foot section — twice as many pieces to handle during installation, twice as many joints to interfere with alignment of runs. Another exclusive: every square inch of reflection surface is finished in snow-white Lifetime porcelain enamel. Apertures die-embossed for strength and appearance. Day-Brite announces the sensational new CFI-25 with 25% upward component and the CFI-10 with 10% upward component_both with important new features that promise a lifetime of unparalleled lighting performance.

From Day-Brite, the pioneer, came many of the early developments in uplighted industrial fixtures.

Now — from Day-Brite, the leader, comes a great new advancement in industrial lighting — the new Lifetime CFI series.

Today, the CFI-25 brings you all the desirable comfort benefits of 25% uplighting within a practical price range.

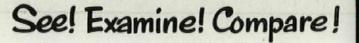
This is a goal sought by many in the

lighting industry. A few manufacturers have actually marketed 25 % uplighted fixtures. Until now, none had succeeded in keeping fixture costs within reasonable limits.

Day-Brite — and only Day-Brite offers you advanced visual comfort for industry at an economically justified price. If you can afford *any* industrial lighting, you can now afford the lifetime benefits of the finest fixtures ever to reach the market.

See! Examine! Compare!

CFI-25 REFLECTOR SUPPORTS 358 POUNDS1 Here's a rugged test for any reflector. Supported only at its extreme ends, the 8-foot CFI-25 reflector remains perfectly straight and rigid bearing the full weight of a 358-lb. man—no bend, no sag, no spread. That's because new ribbed construction reinforces lateral stability and a longitudinal "V" louver reinforces lengthwise rigidity (and also provides comfortable 30° cross-wise shielding). These super-rigid reflectors assure straight, true alignment of fixture runs.





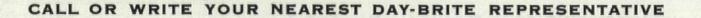
See! Examine! Compare!

You must see this revolutionary new industrial series yourself to appreciate the lifetime advantages it offers. Examine the CFI-25 and the CFI-10. Compare them with other industrial fixtures. Mark your calendar now to arrange a *Lifetime CFI* demonstration—and know firsthand why this new series is the industrial lighting value of your lifetime!

Complete details of the CFI-25 (left) are covered in Bulletin OD-626. The CFI-10 (right) is described in Bulletin OD-625. Write for either or both today! Day-Brite Lighting, Inc., 5471 Bulwer Ave., St. Louis 7, Mo. In Canada: Amalgamated Electric Corp., Ltd., Toronto 6, Ontario.

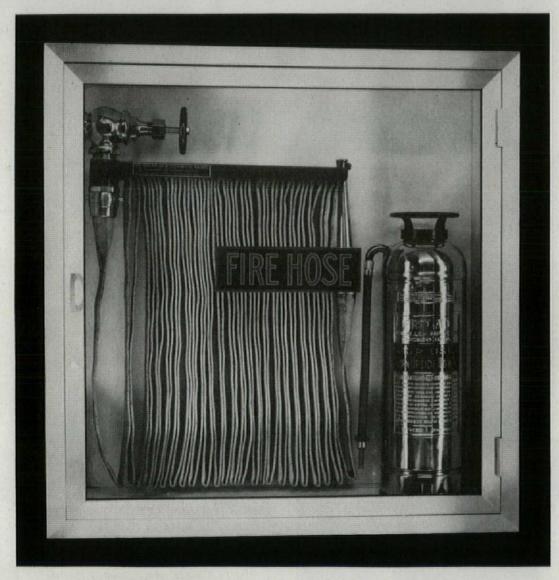
"DECIDEDLY BETTER"

DAY-BRITE. Lighting Tixtures



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Wherever a more attractive or modern treatment is desired.

Sleek "satin-finish" extruded aluminum members, deftly joined.

No exposed screws or open seams. Protective coating of methacrylate lacquer.

Available in standard types and sizes.

Write for Catalog or phone ALLEN sales office in 25 principal cities.

LETTERS

RUDOLPH AIA ADDRESS

Forum:

Your coverage of AIA's Boston convention (AF, July '54) was thorough and comprehensive—a very stimulating memorandum of an outstanding experience.

Your reporting of Paul Rudolph's address is especially welcomed. His frank, thought ful analysis of our present tendencies is very refreshing.

> CLAIR W. DITCHY, president The American Institute of Architect Washington, D. C.

Forum:

. . . He has a way of putting words to gether that is both stimulating and agreeable

CARL FEISS, chief Planning and Engineering Branch Housing & Home Finance Agency Washington, D. C.

Forum:

. . . You were right in publishing young Rudolph's address. He gives one a lot to think about. But I wish somebody had ever a small percentage of the answers! As a traditional architect by taste and training I am very much in sympathy with his approach to this complex problem.

One thing that surprised me at the convention was the number of "digs" taken at the extreme modernists by so many of the speakers. I came away not quite so ashamed of being an old fogy.

> MARION SIMS WYETH, architec Poundridge, N. Y.

Forum:

Thank you for printing the stimulating paper presented by Paul Rudolph at the AIA convention. Quite apart from his criticism of the typically poor space relation ships among buildings which is undoubtedly valid, he has, regrettably, deprecated such standard zoning ordinance requirements as setback lines and minimum side yards.

For tracts of sufficient size which are to be developed under one ownership, many ordinances contain provisions whereby the normal specific restrictions may be relaxed if the site plan provides an equivalen amount of open space and preserves certain other amenities. However, for buildings no in common ownership, both in this country since colonial days, and in Europe (and possibly in the Near East), setback line and side-yard requirements have proved their worth in preserving open space for natural embellishment and for protecting a property owner from the whimseys of his neighbors. Setback restrictions do not re continued on p. 70

W. D. ALLEN MANUFACTURING CO. . Chicago 6 . New York 7





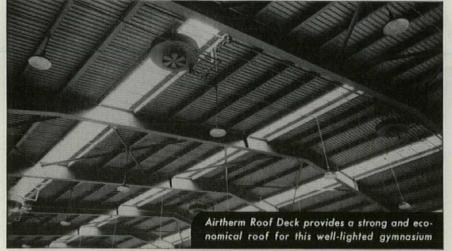
STAYS WORKABLE LONGER

To get a good bond between concrete blocks, the bricklayer must shift and adjust each block to its final position, before the mortar has stiffened.

Brixment makes it easier for the bricklayer to do this. Brixment mortar stays plastic longer in the wall because it has high water-retaining capacity, which provides greater resistance to the suction of the block. This gives the bricklayer more time to adjust and shift the block to its final position, while the mortar is still plastic enough to form a good, tight bond.







designed for a wide range of applications

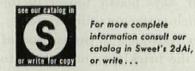
Airtherm Steel Deck Sheets are furnished in 30" widths (the widest in the industry) with five ribs spaced on 6" centers. These ribs, 15/8" deep, have a bearing surface of $\frac{5}{8}$ " and a top opening of only $\frac{3}{4}$ " wide. These wider, self-aligning sheets mean fewer longitudinal laps with resultant savings in construction time and costs.

Airtherm Decking provides a strong, safe and durable steel roof in flat, pitched or arched construction. It has been proved in installations as side walls, partitions, canopies, and as a sub-base for concrete or aggregate flooring. This versatility, plus its attractive appearance, has led to many unique applications in a wide range of structures.

18-GAUGE AIRTHERM ROOF DECK	PROPERTIES
Section Modulus (in.) 3	.220
Moment of Inertia (in.) 4	.263
Resisting Moment (in Ibs.)	3960
o care for all contingencies relative to	geographical areas and

various purlin spacing, Airtherm Decking is also manufactured in No. 22 Gauge and No. 20 Gauge metal thicknesses.





MANUFACTURING COMPANY

745 South Spring Avenue St. Louis 10, Missouri

In this church the attractive appearance of

beauty to the clean design

painted Airtherm Roof Deck adds functional

Member: Metal Roof Deck Technical Institute

LETTERS continued from p. 68

quire a building to be located at this line nor to be aligned with it.

Larger lots to allow greater freedom in the siting of buildings and to allow one relief from his neighbor's choice of architecture, and more skillful subdivision layouts to relieve the monotony of endless streets are important. But until the glad day arrives when all building is in the hands of men who recognize the bedroom window raised 2'-6" above the floor for what it is, let us be slow to abandon zoning restrictions which have accomplished much in the creation of natural open spaces, in the preservation of health and fire safety standards and in imposing some measure of orderliness where chaos might otherwise exist.

> LESLIE S. O'GWYNN Bethesda, Md.

PRESTRESSED STEEL

Forum:

The article on prestressed steel applications in your July issue was excellent.

> VINCENT A. OTTO Technical liaison officer Engineer Research and Development Labs. Fort Belvoir, Va.

Forum:

Congratulations on your effective presentation of prestressed structural steel. It is a type of construction which, though generally new to engineers, has a wide potential application to the design of economical metal structures. . . .

However, in any economic comparison of prestressed and nonprestressed steel construction, the results will be valid only if the overload capacity (factor of safety) is the same in both cases. Allowable stresses should not be used as the sole strength criteria for the design of prestressed structures. . . .

EDWARD COHEN

Ammann & Whitney, consulting engineers New York, N. Y.

Forum:

A very interesting and timely article. JOSEPH K. GANNETT The Austin Co. Cleveland, Ohio

Forum:

Your presentation of "Prestressed Steel" (AF, July '54) was enjoyed very much. There is clear evidence today of a revival of creative thinking in structural design and analysis.

Prestressing steel is a natural projection of the concept of prestressed concrete. Its practicability is amply demonstrated by examples given in your article. However, its range of economic feasibility is yet to be charted. Savcontinued on p. 72

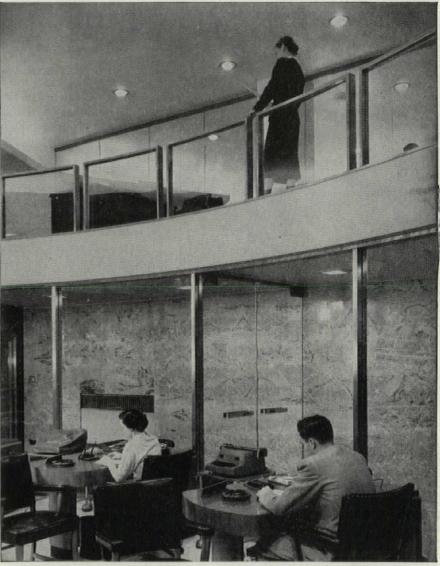


Bank entrance is open, spacious, inviting, in ENDURO and glass.

ENDURO frames with glass screens give circular stairway "open" effect.



Even bank vault entrance appears spacious, thanks to ENDURO with glass. Home Federal Savings and Loan Assoc. of Chicago. William Sevic, Architect.



ENDURO and glass separate lobby and banking floor, act as balcony rail and draft screen.

ENDURO combines with glass to create Spacious interior

• Designers of this bank have achieved a feeling of ample space in an area in which no space is wasted. They've done it by using large glass areas, with ENDURO Stainless Steel supplying necessary structural strength and safety.

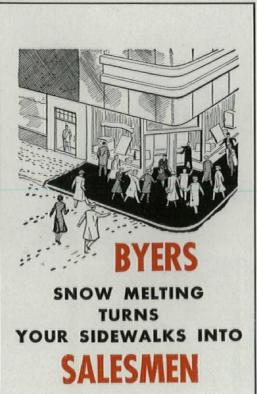
ENDURO and glass belong together. ENDURO's strengthto-weight ratio is extremely high. It is tough, durable. You can use thinner, lighter sections and still design rugged, weathertight construction. No need to "beef up" the section to allow for eventual weakening. ENDURO Stainless Steel stubbornly resists rust and corrosion . . . fights fatigue . . . maintains its great strength through the years.

ENDURO maintains its handsome appearance, too. It is solid stainless steel, with no applied surface to chip, peel, or flake away. That distinctive lustre is a permanent quality. Its smooth surface is easy to clean and to keep clean.

Use ENDURO to spark client enthusiasm. It responds beautifully to your creative ideas, producing striking architectural effects. Competent ENDURO fabricators are ready to work with you. Republic metallurgists will be glad to help develop projects you have on paper or in the idea stage. Sweet's File has more facts, or write:



See Sweet's for data on Republic Pipe, Sheets and Roofing ... Electrunite E.M.T.... Republic Rigid Steel Conduit .. Berger Lockers, Bins, Shelving and Cabinets . . . Truscon Steel Windows, Doors, Joists and other Building Products.



When snow starts falling this winter, plan to be among the growing number of snow-melting users who have discovered that dry, hazard-free sidewalks pay off handsomely in customer good will. You'll find that this thoughtful gesture on the *outside* is just as important as polite salesmen and quality merchandise on the *inside!* And, it eliminates a recurring maintenance chore!

Byers Wrought Iron pipe has long been the No. 1 choice for snowmelting installations. Coils of this time-tried material, embedded in sidewalk or driveway, carry hot water that makes snow disappear as it falls. Wrought iron is easy to weld, resists corrosion, and withstands damage during installation. Because it keeps serving when vulnerable materials fail, it's the dependable way to add sidewalks to your sales force.

This bulletin covers the entire field of snowmelting . . . design, installation, operation ... and explains why depend-

ability demands the use of Byers Wrought Iron pipe. We'll be glad to send you a copy on request. Write A. M. Byers Co., Clark Building, Pittsburgh, Pa.





LETTERS continued from p. 70

ings in material may not be sufficient to offset increased construction costs under ordinary circumstances. The question of fire resistance has much greater significance in a prestressed steel building than in a prestressed concrete one.

Type of failure is another area where more knowledge is needed if we are properly to evaluate the place of prestressed steel in structural design. Sudden failures give inspectors no chance to detect weak spots and to propose necessary repair.

> ROBERT K. LOCKWOOD American Society of Civil Engineers New York, N. Y.

Forum:

Prestressing structural steel is another gadget to keep in the structural engineer's bag of tricks, to be used if and when the necessity or desire arises. It will not be generally useful on routine design problems because the unfamiliar details and techniques may make the cost greater than ordinary construction. The selection of this method will be based mostly on economy because esthetically prestressing of steel leaves a great deal to be desired.

Your magazine is quite stimulating. I hope you will continue to present articles of this nature.

> MILO S. KETCHUM Ketchum & Konkel, consulting engineers Denver, Col.

Forum:

The article is very well written, and I am pleased to note that it indicates a possible field for the use of prestressing materials in conjunction with steel structures.

In your summary of "Mild vs. High-Strength Steels" the statement is made that hot-dip galvanized bridge cables are used at a working strength of 90,000 psi. If these strands were to be used to prestress a steel structure. they would probably be used at an initial stress of 140,000 psi, since the application of live-load would cause practically no change in the strand....

> H. KENT PRESTON, engineer Construction Materials Div. John A. Roebling's Sons Corp. Trenton, N. J.

NORTHLAND

Forum:

The article on Northland (AF, June '54) is one of the best done thus far on shopping centers.

> WALTER E. KROENING Assistant general director Capitol Court Shopping Center Milwaukee, Wis.

continued on p. 76

Specify Custi-luminus ceilings!



for LOW-COST CONTROL of LIGHT, SOUND and AIR FLOW

THE OVERALL CEILING OF LIGHT THAT INCREASES OVERALL EFFICIENCY!

Here is the trend in modern lighting! A solid ceiling of light that provides soft, shadowless illumination and also hides pipes, ductwork and sprinkler systems — it modernizes old and new buildings!

Made of unbreakable, corrugated LUMI-PLASTIC with noise absorbing ACUSTI-LOUVERS, it is glareproof, clean and easy to keep clean labeled by Underwriters' Laboratories for installation under existing sprinkler systems!

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FOR SCHOOLS - FACTORIES -PUBLIC TOILETS

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Now you can specify *white* seats for all schools, hotels, factories . . . all public buildings, without fear of discoloration. Independent research laboratory tests prove that New Olsonite White Shock-Proof Seats will not yellow—even after years of service. These tests also show that Solid Olsonite Shock-Proof Seats have *five times the impact strength of ordinary solid seats*.

New Solid Olsonite Shock-Proof Seats are made of one material molded into one piece. Even deliberate abuse won't crack, chip or discolor them.

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SWEDISH CRUCIBLE STEEL COMPANY Plastics Division, 8561 Butler Avenue, Detroit 11, Mich. Solid Olsonite Shock-Proof Seats (#1050 White) will be installed throughout the outstanding COMMUNITY HIGH SCHOOL in North Chicago, Illinois,

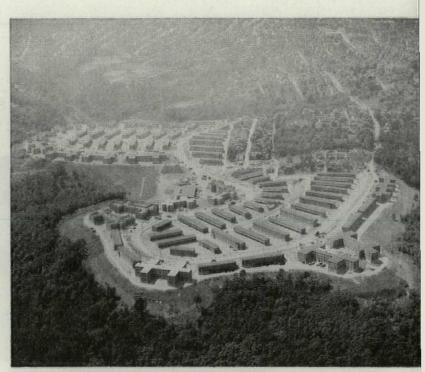
ARCHITECTS AND ENGINEERS: Warren Holmes Company Lansing, Michigan

PLUMBING WHOLESALER: Warren Barr Supply Company Chicago, Illinois

PLUMBING CONTRACTOR: Commonwealth Plumbing Company/ Chicago, Illinois

A-2-54



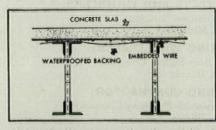


\$13-million low rent public housing project, St. Clair Village, 79 buildings, 723 units in 3-story buildings, 366 units in 2-story row houses. Concrete floors poured over Steeltex. Marks, Fisher & Simboli, Architects. George Levinson, Design Engineer. Ragnar Benson, Inc., Contractors.

\$5-million Bigelow Apartments, at the top of Pittsburgh's famed Golden Triangle tower 20 stories, contain 465 units all air conditioned. Steeltex Floor Lath provides reinforcement for all floors. Arthur E. Tennyson, Architect. Martin C. Knabe, Structural Engineer. Behrman & Passel, Contractors.



New 3-story addition to Shaler Township High School added 20 classrooms, upped accommodations from 750 to 1400 students, cost \$1.35 million, has gym, auditorium, three shops, offices and locker. Steeltex Floor Lath on all floors. Charles M. & Edward Stotz, Jr., Architects. Geo. H. Chilli, Contractor.



NOTE: In the cross section 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.

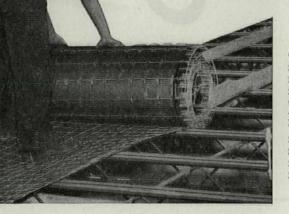
Why building designers i for reinforcing concre

Pittsburgh, City of Vision, is one of the most progressive cities in America today. Once dirty and smoky and threatened constantly with floods, Pittsburgh, now undergoing a renaissance, is one of the country's cleanest cities.

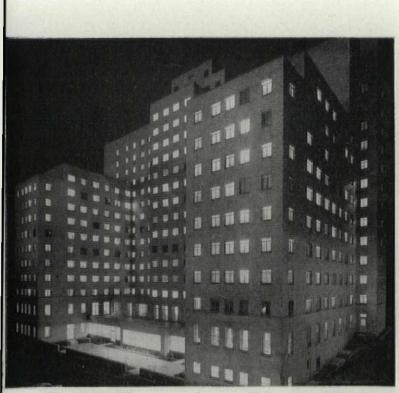
A vast network of dams in the headwaters of the Allegheny and Monongahela make damaging floods virtually impossible. A stream purification program is well under way. A new \$5-millionper-mile east-west parkway, partially completed and in use, will speed traffic through the city's heart without cross streets or traffic lights. New skyscrapers, new research centers, new industrial plants, new parks, new off-street parking garages have brought about a boom in new apartments and public housing, new schools and hospitals, new shopping centers.

When buildings of this type are being designed, poured concrete decks are most desirable and when you pour concrete, it is only natural to specify Steeltex Floor Lath, the galvanized steel wire reinforcing which carries its form on its back (see cross section below left).

Steeltex requires no additional form or pencil rod reinforcing. It costs less to install than other types of forms



One man can roll out a 125' roll of Steeltex in a few minutes. Steeltex provides both waterproof form and steel reinforcement for concrete floors, roofs.



The \$3.5-million nurses home at University of Pittsburgh towers 14 stories, completely air conditioned, contains library, recreation room, reception rooms, cafeteria seating 400—comfortable living quarters for 600. Steeltex in upper floors. Ingham, Boyd & Pratt, Architects. Trimble Company, Contractors.

ittsburgh specify STEELTEX® oors and roofs

and reinforcement for concrete because Steeltex can be rolled out like a carpet, stretched with a special tool, and clipped tightly in place by one man (see photo below left).

Steeltex with its waterproofed backing also prevents waste of concrete by reducing leakage to a minimum from the freshly poured slab—craftsmen can continue working on the floor below without getting splattered. Expensive clean-up time is eliminated.

Steeltex insures a strong floor because embedment of steel reinforcing takes place automatically (see note below left). Steeltex allows concrete to cure slowly, properly—guards against excessive cracking—can be installed over any type of joist—will support ample safe loads from 109 to 886 lbs. per square foot depending on spacing of joists and thickness of slab. No wonder Steeltex has been the choice of architects, engineers, contractors, and building owners alike, not only in Pittsburgh but wherever concrete slabs are poured over joists.

If your building plans call for poured concrete floors, roofs, plaster walls or ceilings, masonry veneer or Portland cement (Stucco) exteriors, there's a type of Steeltex reinforcing that will do the job better, faster, with less effort at lower overall cost.

For complete details 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." It's yours for the asking.



manufactured by the

Pittsburgh Steel Products Company

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St. Clair Hospital, Mt. Lebanon Township, Pa., serving the growing South Hills area has 116 beds—cost \$1.34 million. Steeltex used in all floors. Kuhn & Newcomer, Architects. R. A. Zern, Structural Engineer. H. Busse, Contractor.



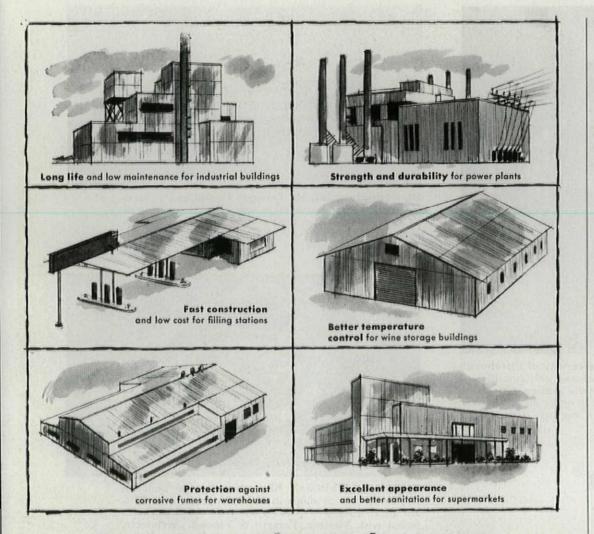
Brentwood-Whitehall Shopping Center built on two levels has 25 shops in 210,000 square feet—80% are air conditioned—parks 1,000 cars. All floors reinforced with Steeltex. Forsyth & Blezard, Architects. Leland Cook, Structural Engineer. Landau Bros., Contractors.



Mammoth decks in this fabulous \$10-million terminal building at \$42-million Greater Pittsburgh Airport, were poured on Steeltex Floor Lath. Last year 2.5-million people including travelers spent \$20 million at ticket counters, restaurants, nightclub, theater, hotel and shops. Joseph Hoover, Architect. Leland Cook, Structural Engineer. Dick Construction Co., Contractors,

Here are other recent buildings in Pittsburgh and vicinity using Steeltex:

Amberson Gardens Bedford Dwellings Center-Negley Apartments Greentree Apartments Hebron Grade School Kennilworth Apartments Pennsylvania College for Women (Administration Building) Shadyside Presbyterian Church (Chapel) St. Augustine's High School Talbot Towers (Housing Project) Union Railroad (Office Building) Westinghouse Educational School Westinghouse Electric Corporation (Atomic Project Buildings)



For more value at low costfigure first in Kaiser Aluminum!

The structures above are only a few of scores that have demonstrated this fact to architects and builders...

No other building material offers as many advantages as Kaiser Aluminum corrugated industrial sheet—at such a low cost!

Kaiser Aluminum sheet gives extra value because it's strong and durable, lasts for generations without painting or costly maintenance. It provides its own insulation, keeping structures warmer in winter, cooler in summer. It resists corrosive fumes and gases.

Kaiser Aluminum sheet cuts costs because its light weight makes possible savings on transportation, handling and erection. You can also use a lighter, less expensive understructure to support aluminum sheet. This means you can offer lower bids against competing materials!

So, whatever you're building-figure first in Kaiser Aluminum Industrial Roofing and Siding-for better value at low cost!

For A.I.A. File and complete information, contact any Kaiser Aluminum sales office listed in your telephone directory. Or write Kaiser Aluminum & Chemical Sales, Inc. General Sales Office, Palmolive Bldg., Chicago 11, Ill.; Executive Office, Kaiser Bldg., Oakland 12, California.



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Low Cost-Provides a combination of advantages not available in other materials at any price.

Light weight—Reduces transportation costs. So easy to handle that construction is faster, lower in cost. Often permits the use of lighter, less expensive framing.

Strong – The increased depth ($7/_8$ ") of the corrugations of Kaiser Aluminum sheet provides greater load carrying capacities over the longer

spans of modern industrial construction. **Corrosion resistance**—High resistance to most industrial fumes. Can't streak with red rust. Maintains attractive appearance indefinitely.

Low maintenance – Never needs painting. Resists heavy winds and hail.

Cooler, Brighter Interiors—By reflecting hot sun rays, aluminum keeps interiors as much as 15° cooler. Aluminum's high reflectivity insures extra interior light.

LETTERS continued from p. 72

Forum:

I'm sure the Northland story will prove very interesting to all your readers, as it has to the client I showed it to. Being a businessman, he said: "Let's see there what it says about the owners."

EDWARD A. EICHSTEDT, landscape architect Detroit, Mich.

Forum:

... a magnificent job....

LLOYD B. REID Traffic engineering consultant Detroit, Mich.

Forum:

Since I have in the past been critical of FORUM's careless treatment of landscape architects and landscaping, it is no more than fair that I should now offer praise where praise is so thoroughly deserved for your treatment of Detroit's Northland Center.

Northland is an ideal example of the kind of cooperation that is necessary to the creation of real architecture, and all the participants are to be congratulated, including FORUM for its even-handed distribution of credit.

> JAMES FANNING, landscape architect New Canaan, Conn.

REFERENCE POINT SCHOOL

Forum:

The story on the Heathcote Elementary School at Scarsdale, N. Y. (AF, July '54) is indeed an interesting one. The innovations in this building provoke thoughtful consideration of many of the more or less established concepts in school building arrangement.

> GEORGE D. ENGLEHART, director School Building Services Division of Public Schools Department of Education Jefferson, Mo.

Forum:

A sensitive and expansive presentation.... Your pictures certainly catch the spirit as well as reveal the details in a way which no publication has approached.

> ARCHIBALD B. SHAW, superintendent Scarsdale Public Schools Scarsdale, N. Y.

Forum:

The Heathcote story is well done and, like many other FORUM presentations, has already proved to be good reference material in our counseling sessions with school administrators and architects.

You mentioned in the story that here is a "reference point in school design" like the famous Crow Island School in 1941. We agree, but we hope that it does not become a *continued on p. 78*

... the finest structures rest on

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NEWARK AIRPORT PASSENGER TERMINAL Newark, New Jersey

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LETTERS continued from p. 76

prototype as did the Crow Island School. Heathcote is designed for a specific program and a specific climate. It is this approach to the design that makes Heathcote a success. If Heathcote is "cribbed" in the Southwest as was Crow Island, it will be unsuccessful. . . .

> H. JOE BROWN, architectural assistant School Plant Services School Administration Services Texas Education Agency Austin, Tex.

MOST-TALKED-ABOUT HOSPITAL

Forum:

I have mixed feelings about the plan of the Kaiser Walnut Creek hospital and diagnostic center (AF, July '54), but high commendation for the policy of the FORUM to present new ideas. Knowing Dr. Garfield's reputation for progressiveness, thoroughness and sound planning, I only hope that some of the elements which appear confusing to me will work out satisfactorily in practice.

Since we are developing one of the strong programs in the country in hospital education, planning and administration, we follow the FORUM's material in this field closely.

> JOHN R. McGIBONY, M. D. Professor of Medical and Hospital Administration Graduate School of Public Health University of Pittsburgh Pittsburgh, Pa.

Forum:

Your article on the Kaiser Foundation Medical Center at Walnut Creek, Calif. is very well done. Dr. Garfield has created much which is of benefit to hospital planning. There are a few problems which time will test and which may prove of great benefit to total hospital planning.

The increased use of electronic devices is a question mark in my mind from the point of maintenance and over-all expense. And as beneficial as the outside approach to patients' rooms may be, I would not wish to lose control of patient traffic as demonstrated.... Hospital personnel would experience some difficulty in controlling the patient who may wish to leave the hospital against doctors' advice.

In general, however, Dr. Garfield and his associates have pioneered many new approaches which will be of great benefit in future hospital design. Many of us are only waiting for time to prove the worth-whileness of these new ideas.

> MADISON B. BROWN, M. D. Executive vice president Hahnemann Medical College and Hospital Philadelphia, Pa.

continued on p. 80

and in **HOUSTON...**

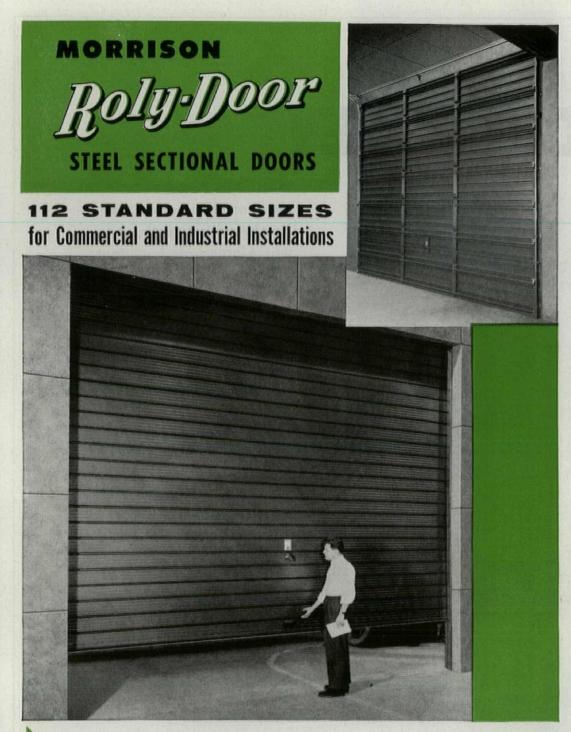
In Houston, Texas, as in every other center on the North American continent where large-scale, important building goes on, Aetna Steel, world's largest manufacturer of hollow metal products, is very much in the picture.

Aetna is proud to be the supplier of hollow-metal doors and frames to what will soon stand as the most dramatic feature of this thriving Southwest city's skyline the new 20-floor, \$16 million aluminum-sheathed tower of The Second National Bank.

SECOND NATIONAL BANK, Houston, Texas ARCHITECT: Kenneth Franzheim F.A.I.A., Houston, Texas CONTRACTOR: W. S. Bellows Construction Corporation, Houston, Texas

AETNA STEEL PRODUCTS CORPORATION

730 FIFTH AVENUE, NEW YORK 19, N. Y. WORLD'S LARGEST MANUFACTURER OF HOLLOW METAL PRODUCTS PRODUCERS OF: The new Arnot Partition-ettes; Arnot Functional Office Furniture; Hospital and Laboratory Equipment; Under-Counter Bank Equipment; Actna Steel Doors and Frames; Kahr Bearings; Boyle Metal Office Partitions (Actnawall).

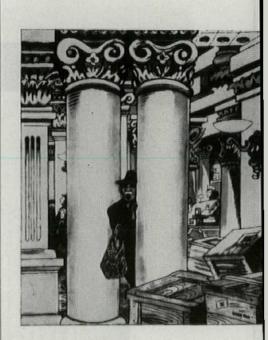


You can confidently specify Roly-Doors for every commercial or industrial building you design. Their clean, modern, distinctively simple lines blend with any style of architecture . . . their functional design ensures safe, easy, trouble-free installation and operation (manual or electrical) . . . and their all-steel construction provides a durability that defies weather and years of hard use. Available in 112 standard sizes, there's a Roly-Door for every overhead door requirement.

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INSIDE RUSSIA

Forum:

In the March '54 issue of your excellent magazine I read a most entertaining article about Russian architecture, the conclusion of which was that the Russians had perhaps invented the Woolworth building. In this connection, I call your attention to a cartoon (above) which appeared in the June 20th issue of the Russian magazine *Krokodil*. The cartoon attacks the fondness of Russian architects for columns, decoration and what-haveyou. It may be used as proof, from Soviet sources, that Russian buildings look as bad on the inside as they do on the outside.

> NAME WITHHELD Foreign Service officer US State Dept.

MODERN MET

Forum:

I think your layout and the comments on the redoing of the Metropolitan Museum (AF, May '54) are excellent for many reasons. The first is the fact that so many regional museums are in the process of like renovations and the suggestions of your critical observers carry considerable weight with those of us responsible for recommendations in regard to such changes. However, I do feel that the article itself could have been somewhat longer, including very important details which contribute to the total visual quality found in the museum. The special lighting and color used in walls and trim contribute tremendously to the success of the present installation.

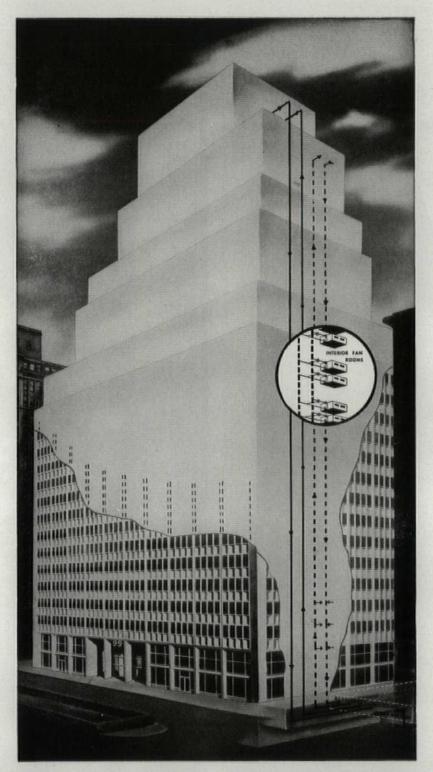
> ROBERT M. CHURCH, director Philbrook Art Center Tulsa, Okla.

A separate article on the Met's new lighting appeared in the March issue.—Ed.

continued on p. 84

Roly-Do

applica



WATER IS CHILLED by Worthington centrifugal refrigeration units in subcellar, then fed through riser (dotted line — "up" arrows) to interior fan rooms. Water returns to sub-cellar

(dotted line — "down" arrows) to complete circuit. Solid lines show condenser water circuit. Double lines show chilled water system (one in each face of building) for room units.

New building trend set by air-conditioned skyscraper

This 26-story structure at 99 Park Avenue is distinctly different from anything ever built in Manhattan.

It's completely sheathed in self-cleaning aluminum, with reversible windows set with heat-resistant glass.

99 Park is also going to set a new standard in comfort for its tenants. Dependable air conditioning is provided by a Worthington system made up of two 665-ton centrifugal refrigerating units, which supply chilled water to 38 Worthington-equipped interior fan rooms. These distribute cooled, dehumidified air to the interior offices on each floor. The centrifugal units also furnish chilled water for individually controllable room conditioners enabling tenants in the outer offices to select their own climate.

For more than fifty years, Worthingtonengineered air conditioning installations have been serving business and industry. Whether large or small, Worthington systems are all Worthington-made, not just Worthington-assembled. For the full story, contact your nearest Worthington district office, or write to Worthington Corporation, Air Conditioning and Refrigeration Division, Harrison, N.J.

Tishman Realty & Construction Co., Inc., Owners and Builders; Emery Roth & Sons, Architects; W. R. Cosentini & Associates, Consulting Engineers; Raisler Corporation, Mechanical Contractor; Cushman & Wakefield, Inc., Agent.

A.4.52

WORTHINGTON

CLIMATE ENGINEERS TO INDUSTRY, BUSINESS AND THE HOME



New Phantom Elevator Attendant Cuts Waiting Time In Half

You're going from the lobby to the 9th floor in an operatorless elevator. The traffic is light. The car stops at the third floor for an upgoing call. The doors open. A passenger gets in. You wait.

Then come the seconds that seem like hours. It may be only five or six—but it's time wasted. This is the *fixed* interval in present operatorless systems when elevators are held at intermediate floors, regardless of traffic intensity.

Westinghouse solved this problem with *Traffic Sentinel*, an invisible beam projected across the doorway that substitutes for a car attendant. This electronic "phantom attendant", always alert, closes the doors promptly after the last passenger has entered or left the car. It adjusts door closing *automatically* according to the intensity of the traffic, substantially reducing unnecessary waiting time. Doors remain open only as long as the traffic flow requires.

This is the latest Westinghouse Elevator contribution to more efficient operatorless service. It's part of our Selectomatic Traffic-Controlled System, today's fully automatic heavy traffic Elevatoring for office buildings, hotels, hospitals, and stores. We'd like to show you this system in action. Send the coupon, or call our nearest office listed in the Yellow Pages.

Westinghouse Elevators

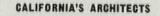
PASSENGER AND FREIGHT ELEVATORS • ELECTRIC STAIRWAYS PROTECTIVE MAINTENANCE AND SERVICE

YOU CAN BE SURE ... IF IT'S Westinghouse

Send for booklet with complete information on this new equipment.

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Please send me booklet on "Traffic Sentinel."
NAME AND TITLE
COMPANY
CITY
STATE

LETTERS continued from p. 80



Forum:

There in plain print was the accusation that John Lloyd Wright had displayed sign indicating that he is an architect! (AF Aug. '54.)

We know he is an architect, he knows he is an architect, the world knows he is an architect; without any disrespect or pro fanity of thought, God knows he is an architect; and now he is specifically accused o hanging a shingle with AIA after his name which the discerning members of the California board of examiners construe to indicate that he is an architect!

There are all kinds of men classified a architects, but the ones who show the divinspark are made by the Almighty, not by any board of examiners.

Again practicing engineering, eh? I wel remember the time during stress of wa when John Lloyd Wright hired out for a few weeks in one of the large aircraft plant and they put him in the mechanical en gineering department. That time he picked up a mistake which had been approved by all the registered mechanical engineers up to and including a vice president, and he quickly and neatly corrected what had all ready lost weeks of critical time. He was reporting to me for that short time. remember how he baited me to see if would catch it. What red faces!

I have just been out to Woodland Parl where I read this FORUM article to the monkeys. They all moved over to one side of the island to make room for the California Board to hold sessions. Smart people monkeys.

> W. L. PHILLIPS, enginee Bellevue, Wash.

Forum:

Three cheers for your Professor Thrugg and Oceanside's Municipal Judge L. W Cottingham in connection with the John Lloyd Wright controversy (AF, Aug. '54) In view of the interest in this case, the following true copies of California Business and Professional Law are self-explanatory and rather curious:

The Professional Engineers Code, Par. 6736 "No person shall use the title 'structural engineer' unless he is a registered Civil Engineer in this state and, furthermore, unless he has been found qualified as a structural engineer according to the rules and regulations (i.e., examination, etc.) established therefor by the board."

Now then, the architects code, Par. 5537 "Plans and drawings by uncertified persons permitted: by structural engineers. This chapter does not prevent any person from *continued on p. 86*



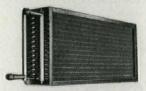
conditions

new home of



Marlo

MARLO AIR HANDLING UNITS



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MARLO EVAPORATIVE CONDENSERS AND COOLING TOWERS



L he magic of remodeling has transformed an older Detroit building into a handsome new main office and bottling plant for the James Vernor Company, producers of Vernor's Ginger Ale.

A striking combination of enameled glass and porcelain makes this architectural and construction masterpiece one of the most eye-catching structures on famed Woodward Avenue.

Air conditioning, of course, ranked high in the plans for modernization, and Marlo equipment exclusively was chosen for the important year-round comfort-conditioning job.

Whatever your air conditioning problems -large or small, simple or complex-you'll find the answer in the complete line of Marlo equipment.

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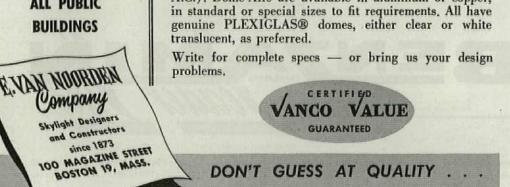
SEE BETTER-FEEL BETTER-WITH VANCO VENTILATED DOME-AIRS..

FOR THE FINEST IN MODERN DESIGN OF SCHOOLS . . . LIBRARIES HOSPITALS AND ALL PUBLIC BUILDINGS

Dome-Air combines power-controlled ventilation with the standard VANCO DOMELITE, factory assembled, and mounted on insulated metal curbing. Dome-Airs are packed and shipped as complete units - ready to install over roof opening. Dome-Air's insulated curbings are provided with Roofer's Flashing Flanges. 8" power fans come in standard units, but 10" or 12" are available at slight extra cost - if specified. More than one power fan can be installed in a single unit. Dampers open and close automatically with operation of switch (110 Volt A.C.). Dome-Airs are available in aluminum or copper,

DON'T GUESS AT QUALITY .

YOU KNOW-WHEN IT'S VANCO!



LETTERS continued from p. 84

making any plans or drawings for his own buildings or from furnishing to other persons, plans, drawings, specifications, instruments of service, or other data for buildings, if prior to accepting employment or commencing work on such plans, drawings, specifications, instruments of service, or other data, the person, so furnishing such plans, drawings, specifications, instruments of service, or data, fully informs such other person or persons, in writing that he, the person proposing to furnish such plans, drawings, specifications, instruments of service, or data, is not an architect. . . . This information is deemed to have been given by a structural engineer when he uses the title structural engineer on all instruments of service."

To compel an uncertified person and also a structural engineer to give written notice that he is not an architect and allow a civil engineer to go scott-free seems rather ridiculous, particularly in the case of the structural engineer who is basically a civil engineer to begin with but with a little more specialized sophistication. This particular curiosity is simply a small reflection of the confused politics and petty bickering among professionals claiming to create laws for the public's interest. . . .

> JOHN BURRITT Fresno, Calif.

Forum:

The sketch of John Lloyd Wright's controversial store in Oceanside, Calif. (AF, Aug. '54, News) tells the story better than words.

California's licensing act may be in part responsible for the high quality of architecture produced in this state. Witness the AIA honor awards this year (AF, July '54).

> JAMES MOUNT, architect Santa Monica, Calif.

FLLW IN VENICE

Forum:

Paul Laszlo, in a letter published in your August issue, expressed concern over the possibility that Venice might soon have a Frank Lloyd Wright building. . . .

It would seem to me that the one architect who could design a building for today that would have the spirit of Venice is Frank Lloyd Wright.

It is a discouraging sign for the cause of architecture that Mr. Wright's building on the canal should cause so much controversy among those who should know better.

> BRADLEY RAY STORRER Dearborn, Mich.

> > continued on p. 88



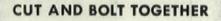
UNISTRUT[®]adjustable metal framing solves complex pipe supporting...

VERSATILE SYSTEM INSTALLS QUICKLY, ON THE JOB...SAVES TIME AND MONEY FOR ELI LILLY AND COMPANY

Complicated piping such as in the Eli Lilly and Company pharmaceutical plant at Indianapolis, Indiana, required supporting capable of working in difficult spots, around corners, bends...a supporting that could be put up quickly, yet economically.

UNISTRUT framing was the ideal solution. For this quick-erected system is simply cut and bolted together, custom fit to the job. No welding, drilling or skilled labor required. UNISTRUT framing reduces engineering detailing and installation time. And it is completely adjustable, permitting alterations or changes at any time.

Supporting shown here was erected from stock channel, fittings, beam clamps, pipe rollers—all part of the complete UNISTRUT framing system. This versatile framing method will save you hours and dollars on thousands of mechanical and electrical supporting jobs. See your UNISTRUT Distributor for complete details, or send the coupon for a free copy of the UNISTRUT handbook. Supporting piping in difficult places is easy to accomplish with adjustable UNISTRUT framing. Note the many different arrangements and angles supported. Pipe clamps, too, are part of the UNISTRUT system.



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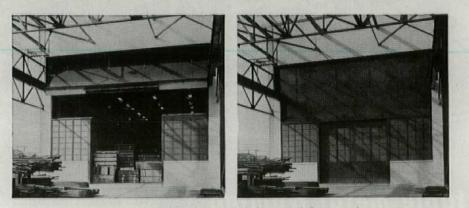
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Architect—Albert Kahn Associated Architects and Engineers, Inc. General Contractor—Maxon Construction Company, Dayton, Ohio.

. of increased working efficiency and reduction of heating costs!

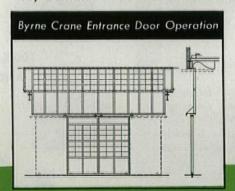


hen a craneway extends from inside a building to an outside railroad siding or storage yard it's an open and shut case that Byrne can provide the finest in a depend-

able closure. This craneway opening shown above provides a substantial reduction in heating costs with the added advantage of increased working efficiency.

Byrne crane entrances combine upward acting doors at the crane rails with swinging or sliding doors below. The upper door is always motorized, the lower doors may be specified for manual or motor operation. Interlocks insure complete safety, with automatic or selective controls located as desired.

Crane entrance doors are furnished in steel, or aluminum which is gaining increasing acceptance as a construction material. Windows may be installed as desired for consistent architecture.



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LETTERS continued from p. 86

HOSPITAL ENGINEERING

Forum:

The article by Charles F. Neergaard in th March Forum on "How to Cut Hospital Me chanical Costs" is quite useful. I wish t commend him for demanding more adequate complete and competent mechanical engineer ing consultation in the planning of building and the design of heating systems. It is to often true in this field that a man's ability i judged by "how many" he has done rathe than "how well" he has done them. The ad ceptance of "standard engineering practices as a standard of proper or adequate design the prime reason we have such things as boiler radiation and piping systems frequently tw or three times too large. The design of me chanical systems shouldn't be, and doesn' need to be, that arbitrary.

Panel heating and cooling can be accom plished with air in preference to water, and this frequently allows the central ventilation to be combined into one system of air distri bution. Panel cooling with water without sup plementary dehumidification control would b a constant condensation problem in most re gions, whereas an air panel allows this con trol without such difficulties. There are quite a few very successful installations of thi type, most of which have been of the floor panel variety. A panel cooling system with water finds favor principally in the case o very high lighting loads where the heat emitted can then be absorbed by a water coil system in the ceiling with water high enough in tem perature that condensation is not possible.

J. RAYMOND CARROLL

Assistant professor of mechanical engineering University of Illinois Urbana, Ill.

NEW TOWNS

Forum:

... As a planner wearied with frustrations in trying to reshape old cities ... I find pleas ure in learning that someone at any rate is realizing the planner's dream—building a socially and economically well-founded city from scratch (Don Mills, AF, June '54).

There is of course nothing especially new about the idea or the town structure. One goes back several decades to Ebenezer Howard. The other is a composite rarely brought together. This does not lessen the instant achievement.

I have only a few critical comments: 1) the residential lots might well have been more varied in size—at least some could be considerably larger than the uniform 60'; 2) although exterior lots are faced inward, there appears to be no protection to most of the project boundaries by a greenbelt reserve; 3) *continued on p. 90*



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LETTERS continued from p. 88

the project goes out of character and may be unbalanced by its outsize shopping center.

RUSSELL VANNEST BLACK City and regional planner New Hope, Pa.

Forum:

I congratulate you on the comprehensive account of the new town of Kitimat....

DOROTHY E. WHITEMAN, executive secretary The Bureau of Urban Research Princeton University Princeton, N. J.

Forum:

It is indeed gratifying for one in the Canadian architectural profession to note recent recognition by the FORUM of developments in the field of Canadian town planning. The very extensive and excellent coverage of both Don Mills and Kitimat certainly shows well what is being attempted in Canada.

ARTHUR F. PEACH, architect Sudbury, Ontario

Forum:

After reading "Environment and Building Shape" in your August issue, I blinked in amazement at the rendering of Kitimat's downtown civic and commercial center in the same issue.

The Olgyay brothers have shown through painstaking research what the basic building shapes should be, and why, in the four climatic regions. According to their findings, closed compact forms are preferable in the cool zone (into which northern British Columbia surely falls), because of their relatively dense cubature. Elongated unilateral buildings are not favorable. The layout should provide shelter against winds. Larger building units should be grouped closely, but spaced to utilize beneficial sun heat treatments. The buildings should be joined to minimize heat loss....

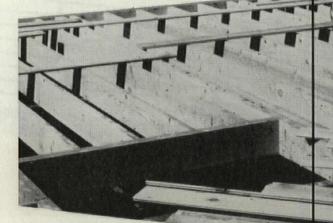
Well, if I hadn't recognized the foliage in the rendering of Kitimat's civic center, I would have sworn that it depicted a scene somewhere closer to the equator than Kitimat!

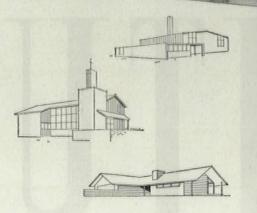
Large expanses of glass (even insulated glass); narrow canopies; flat roofs; wide open stairways serving obviously busy areas; open promenades with delicate railings, and wide open centers of activity obviously vulnerable to north winds spell—the tropics. Which Kitimat certainly is not!

I understand from your article that Kitimat is blessed with weather consisting of "seemingly incessant rain, snow and winds." I also understand that "natives of British Columbia prefer to keep nature at arm's length rather than in their hair." Furthermore, I am told that Kitimat's creators, wishing to forestall wind and drifting snow, "conceived curved streets for visual reasons and to serve as windbreaks." A close study of all the published plans indicates that their civic *continued on p. 95*

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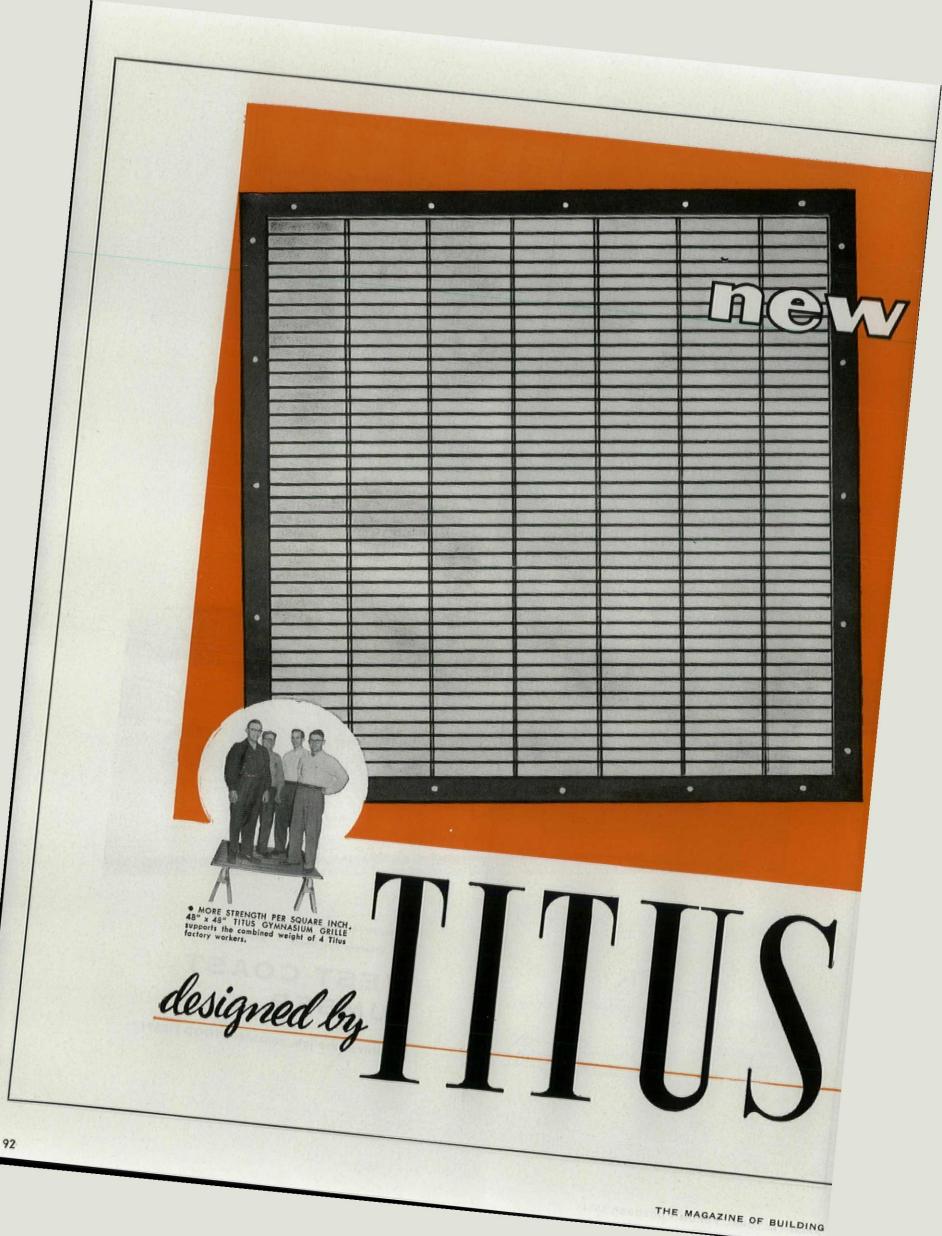




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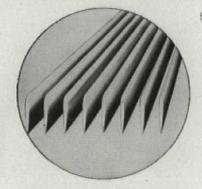
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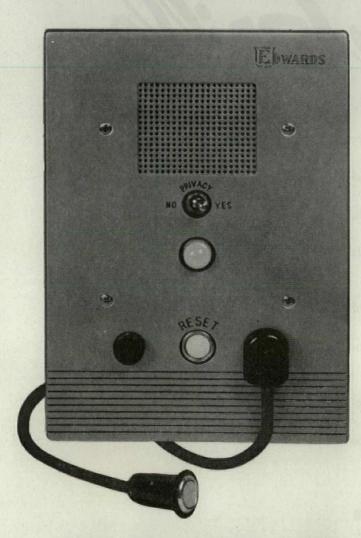
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EDWARDS AUTOMATIC RESET NURSE'S CALL STATION CUTS TRIPS TO BEDSIDE

Here's a complete system that does *triple* duty! The Edwards Nurses' Call System not only allows patient to call nurse and nurse to call patient . . . it also has the new Edwards automatic reset and privacy features. Calls are automatically reset from master station, eliminating need of nurse resetting call in patient's room. Bedside stations are provided with privacy switch or lamp – giving patient knowledge of nurse's supervision. Plug-in type construction permits instantaneous replacement, even by untrained hospital personnel.

All this . . . *plus* the other well known Edwards advantages: master station about half the size of most others...keys that serve two patients each... super-sensitive Stromberg-Carlson amplifier picks up slightest whisper from patient's bed. For complete information write for Bulletin HO-13, Edwards Company, Inc., Dept. AF-10, Norwalk, Conn.



Patient always has knowledge of nurse's supervision stations in the Edwards Nurses' Call System are available with indicating light or privacy control switch.



No more running to patient's bedside to reset station when nurse releases "talk" button after completion of call, station automatically resets... cannot be accidently reset.



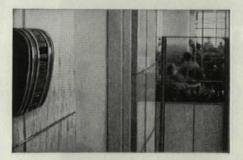


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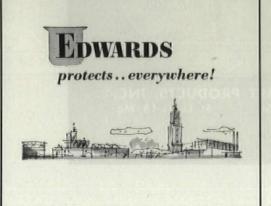


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LETTERS continued from p. 90

center fails to meet their self-assigned conditions.

> ALOYSIUS SCHUSZLER, architect Cleveland Heights, Ohio

• Unfortunately, the independent architects and builders who are building Kitimat do not have the same respect for the climate as do Kitimat's master planners. Added proof of this fact are the colonial houses now being built by the hundreds at Kitimat (see p. 158).—ED.

Forum:

Your article on the new Canadian town of Don Mills (AF, June '54) is only mildly interesting, genially platitudinous. I would like to know how it was financed and by whom. How were (or are) the utilities being paid for? Has a school been built? Is the town a self-governing corporate entity? And so forth.

Why not a good comparison piece between this town and Park Forest on the *process* of effectuation, the problems of future expansion, the managerial difficulties?

HENRY S. CHURCHILL Philadelphia, Pa.

• The community is financed by a variety of means: Argus Corp. (Industrialist E. P. Taylor's holding company) and several insurance companies and banks. The community lies within the jurisdiction of the township of North York, one of 14 suburbs recently incorporated into greater Toronto. The township will take over the roads, sewage system, and so on. The first elementary school will open this fall, serving the residents of the nearly completed northwest quadrant. Land is set aside for churches but none is in the planning stage as yet,

Don Mills Developments, Ltd., sells off all residential and industrial land, will retain only the shopping center at the center of town. Individual entrepreneurs, not Don Mills Developments, Ltd., own and operate the apartment buildings.

When some of the problems of expansion and management get far enough along to provide an educational case study, Reader Churchill's suggested comparison will be considered.—ED.

WARPED SURFACES

Forum:

The article on warped surfaces (AF, Aug. '54) is very good and clear. The method of analysis without bending-membrane analysis-does not consider deformations of the surface. Consideration of such deformations and the necessity of making them consistent will often lead to bending stresses in the structure of the same order of magnitude as the membrane stresses computed from membrane theory. If the pitch of a warped roof structure is zero, then, instead of a warped suface, we have a flat plate, with loads carried entirely by bending. As the pitch increases, membrane action becomes progressively more important. At some stage bending presumably becomes negligible. But, no one has figured out when this stage is reached.

> ERIC REISSNER · Professor of mathematics, MIT Cambridge, Mass.

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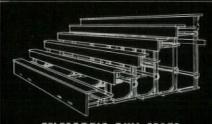
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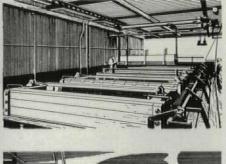


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2 Available anywhere. There are many kinds of treated lumber, but 48% of all clean pressure-treated lumber is "Wolmanized" brand. This means that nearly as much of it is specified and used as is the combined total of all other kinds. Distribution as well as quality earns such acceptance. 24 qualified wood preserving plants in the United States and Canada provide coast-to-coast distribution, assure certain delivery.

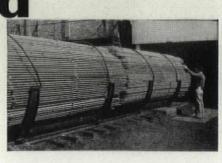
3 Uniform treatment. Wherever you buy Wolmanized clean pressure-treated lumber you can be sure that uniform treatment is providing a product of undeviating high quality. The Wolman brand salts are produced under a single exact formula. High pressure treatment processes by which Wolman preservative, in solution, is driven deep into wood fibers must also meet rigid Koppers requirements.

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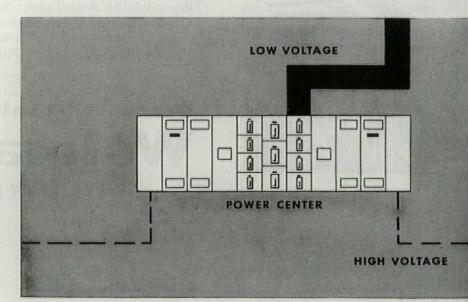
4 Proved dependability. The Service Records that demonstrate Wolmanized lumber's application versatility also prove its dependability. Actual case histories of how Wolmanized lumber has served others, and how it can fill your needs have been compiled into an informative brochure. For full information write: Koppers Company, Inc., Wolman Preservative Department, Pittsburgh 19, Pennsylvania.

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A DESIGN STANDARD LIKE THIS DEMANDS USE OF MODERN POWER

The standards being set in today's office building design call for full utilization of modern electrical power. It's an important consideration—in view of such necessities as high-speed elevators and modern lighting, the heating, ventilating and air conditioning systems.

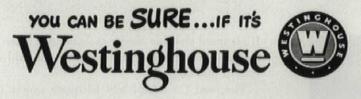
These devices, as you know, have placed greater demands on a building's electrical system. *More* power must be carried. And power *quality* has had to be improved to minimize outages, assure well-regulated voltage.

Thus, a modern, completely adequate electrical system is extremely vital if the service devices you design in are to operate at peak efficiency. Literally, it's an integral part of the building's foundation. It should be considered in the study stage ... keyed to the services that will operate from it ... built with equally modern electrical power equipment.

By so doing, you'll be bringing the power facilities up to the standards you've set for design. And you'll be providing your client with a better building—economically sound and adequately equipped to handle the many functions it must perform.

For assistance on modern electrical system planning, call the construction application engineer in your nearest Westinghouse Office. Westinghouse Electric Corporation, Construction Dept., Building 12-L, East Pittsburgh, Pa.

DP-5002-A



WHAT IS A MODERN ELECTRICAL SYSTEM? It's an integral part of basic design-not superimposed or considered after the building is under construction.

The modern system is planned around requirements for reliability, versatility and convenience. And it stresses electrical characteristics essential to building services. Therefore, system design will vary—based on the type of building involved.

The Spot Network System, left, is an example. It emphasizes "reliability"—an important requirement in large office buildings. Efficient, high-voltage power is brought close to building loads from two or more sources. An electrical fault at one source will not interrupt power to the loads being served.

FOR YOU ... 24-page book, covering modern electrical systems and equipment for commercial buildings. Valuable adjunct to your design planning. Write at no obligation for *Cornerstone or Tombstone*, B-6151. Westinghouse Electric Corp., 3 Gateway Center, P. O. Box 868, Pittsburgh 30, Pa.

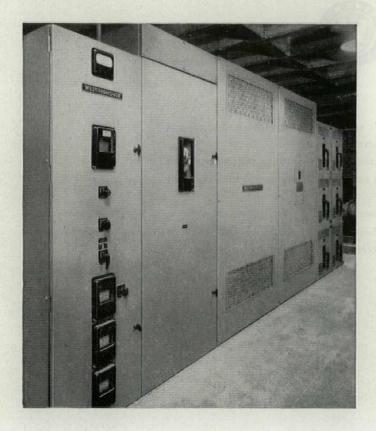


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14



MATCH PEAK TRAFFIC WITH PEAK POWER



High-speed elevator service—demanded when tenants must be moved quickly during heavy traffic hours—should begin at the electrical system planning stage.

The need for completely adequate power distribution makes this so. Not only do high-speed elevators require *more* power, but their drives are usually located in the penthouse—far removed from the power source. Thus, the electrical system must carry *heavier* loads *greater* distances. Yet, it has to hold voltage and power losses to a minimum.

A typical way: *High-voltage* distribution—carrying high voltage from power source in the basement close to the electrical center of load in the penthouse. This modern practice stabilizes voltage. It eliminates line losses that result from long runs of secondary lines. It assures adequate capacity for heavy electrical loads.

At the center of load, then, high voltage is stepped down to operating levels with a Westinghouse Dry-Type Power Center. It installs anywhere to feed the elevator equipment and other local loads. No need for a vault. And the dry-type transformers and air circuit breakers minimize maintenance.

DP-5002-B

WESTINGHOUSE DRY-TYPE POWER CENTER ...

a compact substation that permits high voltage to be carried close to elevator and other remote loads. Comes ready to install.

MATCH MODERN AIR CONDITIONING WITH MODERN CONTROL

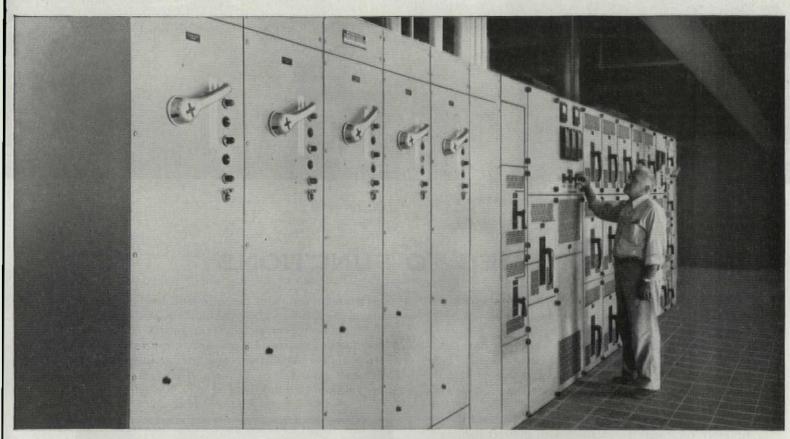
Modern air conditioning is another tenant demand completely dependent on the electrical facilities behind it.

A number of motors and controls is involved in the modern air conditioning system. Thus, early steps should be taken electrically to assure continuous circulation of conditioned air—to the various building services.

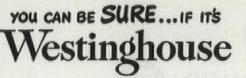
In many modern buildings, all control equipment is located in one spot. This brings about easier operation and simplifies maintenance. More complete integration of the controls is possible with a Westinghouse Control Center. It centralizes motor starting and protective devices in a compact enclosure that installs easily in any convenient location. Then, operating personnel can check operation of all motors at a glance.

In addition, Westinghouse Control Centers meet future requirements. This flexibility is due to standardized design and modular construction of the units.

DP-5002-C



WESTINGHOUSE CONTROL CENTER centralizes electrical control for building air conditioning systems in a single enclosure. At right: Secondary control for wound rotor motor drives . . . typical of the Westinghouse complete line of air conditioning compressor motor control.







animation animat



MATCH FIXTURES TO FUNCTIONS

Effective illumination demands this consideration: Lighting systems must be matched to functional requirements, yet blend harmoniously with building design.

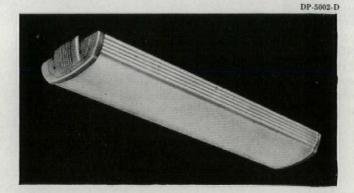
This is particularly difficult in general office areas where sharp contrasts must be minimized. Thus, to keep contrast between fixture and ceiling down—to prevent specular reflection from shiny surfaces—indirect lighting is required.

When you select the fixture, you must balance the desirability for comfort—obtained with indirect lighting with the requirement for efficiency, realized through direct lighting.

Other factors also affect the selection. Fixture design and proportion and the ultimate lighting layout must blend with interior design.

Above is an outstanding example of how these considerations have been met. A Westinghouse CD-80 Luminaire was selected. It assures both comfort and efficiency by providing direct *and* indirect lumination. It blends well with room proportions . . . gives quality light for detailed office work . . . maintains the same high level of balanced design that exists throughout the building.

Architecturally, complete advantage was taken of the 10' ceilings. Fixtures were suspended approximately 2'. This permitted installation of a comfortable system of continuous semi-indirect lighting. Today, it still maintains a desk-top lighting level of over 40 footcandles.





PROVIDE MAXIMUM RENTAL SPACE

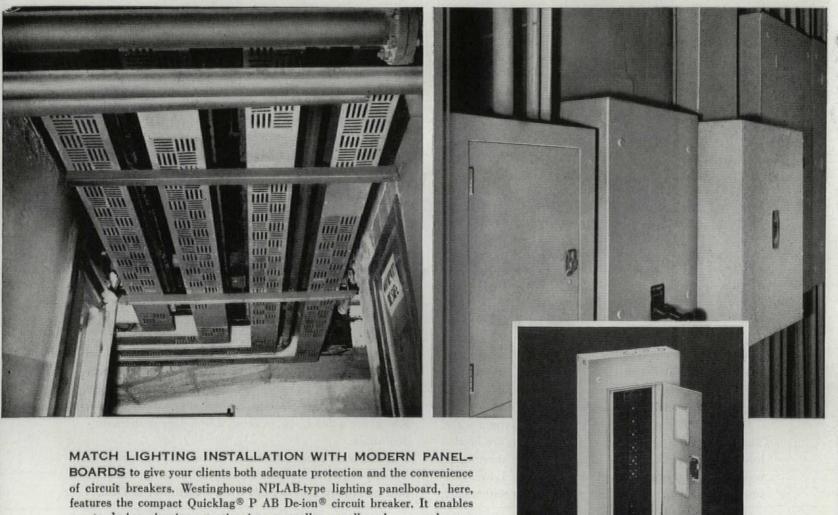
The heavier electrical loads elevator, air conditioning and lighting systems place on a building's power system make selection of its component parts a vital consideration. This equipment must have adequate capacity for increased loads. Yet, it should be compact to release maximum space to your client.

Modern distribution equipment answers these requirements. Example: Westinghouse Bus Duct-a highly efficient way to distribute low-voltage power. Up to 5000 amperes, in fact, it packs more power into less space than any other method of secondary electrical distribution.

Westinghouse Bus Duct comes in standard, prefabricated sections that adapt perfectly with building plans. It can be installed in elevator shafts or wireways. When exposed, its neat appearance blends well with interior design.

The inherent flexibility of bus duct is another "plus". It provides adequate reserve capacity to handle future loads. Expensive rewiring is eliminated.

DP-5002-E



you to design circuit protection into a smaller panelboard . . . and saves valuable closet space.

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School boards and taxpayers also like daylight walls. They mean lower electric bills, because lights are needed less often. Lower maintenance, because there's less wall area to paint and glass is easy to clean. Lower construction cost, because daylight walls are so economical.



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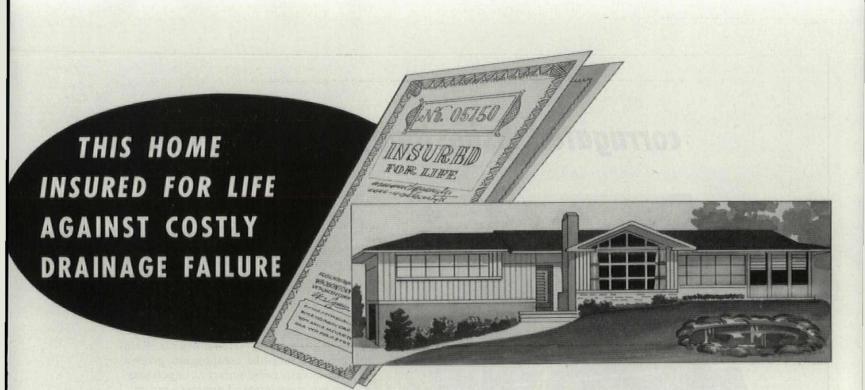
on School Daylighting If you have anything to do with school construction, you should have this authoritative book on the different ways of daylighting schoolrooms. For a free copy of How to Get Nature-Quality Light for School Children, write Dept. 42104, Libbey-Owens-Ford Glass Co., 608 Madison Ave., Toledo 3, Ohio. In climates where heat saving is essential, you can glaze daylight walls with *Thermopane** insulating glass. It cuts heat loss by 44% to 50%, compared to single glazing, so areas near windows stay comfortable. Rooms are quieter, too, because *Thermopane* muffles outdoor noise.

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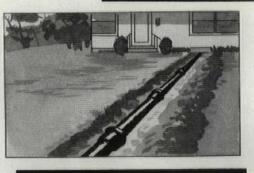
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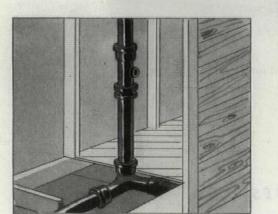
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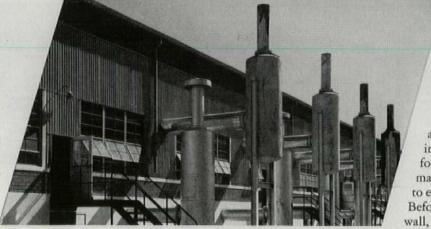
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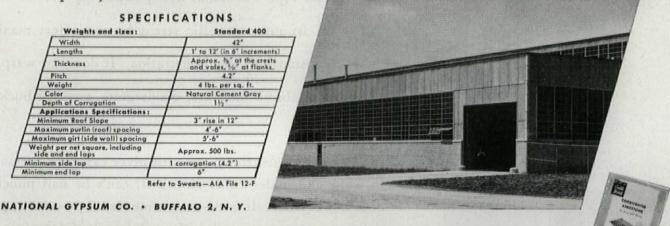
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High school with four-story classroom wing. Keokuk High School and Community College, Keokuk, Iowa. Perkins & Will,

Is there a better way to finance them?

OCTOBER 1954

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THE MAGAZINE OF BUILDING ARCHITECTURAL FORUM

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* House & Home, ARCHITECTURAL FORUM's sister publication, is devoted exclusively to homebuilding.



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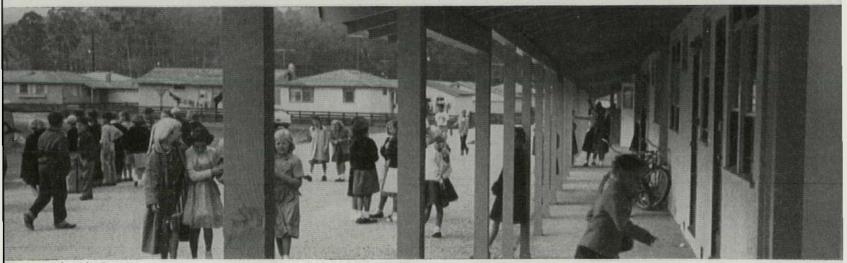
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LIFE-Jon Brenneis

Row of houses becomes a school (see p. 110) as classroom deficit keeps on climbing

Is there a better way to pay for schools?

While Florida puts the Sunday driver to work, while PTA argues for federal funds, and while planners toy with the idea of government insurance, big builders experiment with some ideas of their own: schools for rent, schools of houses, schools financed with higher home prices

Against the need for 120,000 new classrooms this year and every year through 1960, only 50,000 rooms will have been added by Dec. 31. The problem is easy to state, if difficult to solve: money.

Old methods of financing schools are failing to meet the needs of the second half of the twentieth century. In the eighteenth and nineteenth centuries, it was logical to make property taxes the source of school funds because much of our economy was based on the value of property. Only in the last 50 years has it changed to an economy that largely measures its wealth in terms of income created by manufacturing.

Today people everywhere—and particularly those whose communities have been flooded with small low-cost houses—are looking for a better way to provide schools. Some communities think that they have already found the answer. Even the motorists who pay for Florida's schools do so happily. Georgia and South Carolina use the sales tax to pay for school buildings which are rented to local districts; Massachusetts uses its general tax fund to help local school districts pay off their bonds, and Maryland lends money to its districts at the bargain rate of $1\frac{1}{2}\%$.

While federal aid to education is a perennial subject of Congressional debate, this year will hear the subject broadened to cover FHA-like insurance for school loans.

All these plans are presented in some detail below, along with a

check list of ways in which any school district's building funds may be stretched and a discussion of the stop-gap devices builders are using pending the invention of a better way to finance schools.

In Florida: the people ride to school

Since 1953 fund raising for Florida's schools has been relatively painless. In that year the state decided to use the money it got from motor vehicle licenses to pay for new school buildings. (Revenue is divided among counties on a population basis.)

Since the license fee did not go up and since the people were already paying the tax, there was none of the pain usually associated with finding new sources of revenue.

In Georgia and North Carolina: state-built schools for rent

Using sales tax proceeds, Georgia's State School Building Authority builds schools for local systems on a lease-purchase basis. (The local district pays a yearly rental and at the end of 20 years takes title to the school.) The State Authority sets aside money for a county district based on \$7.50 per sq. ft. and an arbitrary number of square feet per student. According to Atlanta Architects Frank J. Bull and Richard L. Aeck: ". . . it becomes a neat trick to meet the county's needs for as nearly as \$7.50 per sq. ft. as is possible" when local bonding ability is exhausted. A committee of the Georgia State Department of Education decides how many schools a district needs and how large they should be and the School Building Services Division establishes a program for each school. The nonprofit State School Building Authority then finances these schools on land deeded to it by the local system and the Authority pays each local board enough money to pay the rent. Since the state constitution forbids bond issues by the legislature for this purpose, the "authority" device is used to create a "private" group to float bonds. Since Georgia's credit is better than most of its districts, the cost of such bond issues is lower than it would be if local areas tried to float issues.

South Carolina has a system similar to Georgia's. A 3% state sales tax is earmarked for school construction with the state contributing 75% of the cost and the local community the rest.

In Massachusetts: state aid for local school bonds

With money received from the state legislature's general tax fund, Massachusetts' School Building Commission defrays part of the yearly interest and amortization costs incurred by the local boards through bond issues. The amount paid to each district varies according to the general income in that area and ranges from 30% to 60% of the total amortization and interest costs. This differs from the South Carolina and Georgia systems in that each of the Massachusetts districts issues its own bonds.

In Maryland: state loans at 1 1/2 %

Once a year each county in Maryland presents its estimate of how much it will need to build new schools in the coming year. The State Education Dept. examines the requests and sends the legislature the combined requirements. The legislature passes a single appropriation bill and authorizes one omnibus bond issue with the revenue from the bonds turned over to the State Education Dept. Up to this point the system is similar to the others already mentioned. But instead of handing over the money to the districts, Maryland lends the money to each of its counties at $1\frac{1}{2}\%$. Maryland's better credit rating saves the counties roughly $1\frac{1}{2}\%$ interest. Since 1% interest equals 15% of the total construction cost (on a 30-year issue), by using this system Maryland enables its counties to cut their costs by about $22\frac{1}{2}\%$.

In Washington, D. C.: talk of federal aid and insurance

Despite the strides that some states have made in solving the problem of paying for schools, many people hold that the only real solution is some form of federal aid.

President Eisenhower has called a White House conference for this year (to follow state meetings) to study the school crisis. From the meeting is supposed to come a program designed to meet the needs of the nation. At this juncture, no one can safely predict just how far the President will go in requesting federal funds for school construction. On the record of his past statements it appears that at most, he will favor aid to the poorer states.

Hole Alt

Another proposal that is likely to be made at the White House conference is to establish some form of federal insurance for school construction. Advocates reason that a good part of our postwar housing boom was created by federally insured homes, that a major part of the school shortage has been caused by occupants of those homes and that therefore the only logical way to finance the needed schools is to use the same device that got the homes built, i.e., federally insured construction.

A school insurance program would not require great expenditures. Instead it would place the credit of the US behind the needs of the local communities. In this way, proponents argue, lower interest rates would be obtained and school districts would be able to tap funds held by institutional investors (banks, insurance companies, corporate pension funds, etc.) who are not willing to put their money in low-interest, locally backed bonds but will invest if the federal government stands behind an issue.

In other cities: schools by homebuilders

Among the many people who do not favor federal aid to schools are some who place the responsibility on the housing developers who, they believe, should be required to set aside land to meet the educational needs of the people they bring into a district. Some contend that they should also build the schools—at nominal costs—and lease them back to the local school boards. Most builders have not seemed concerned about such contentions until the advocates of this plan became a large group, as often as not old inhabitants of the areas undergoing expansion. They began blocking—or threatening to block—new home construction.

Some builders have agreed to build the schools, lease them to the school board for a yearly rental. At the end of a specified time, the board takes over full ownership. Other builders have agreed to set aside a number of their houses for use as temporary classrooms until the district can build a permanent school. When the permanent school is built, the builder takes back the houses and sells them as the dwellings they really are.

Designed originally for homes, they do not provide the facilities that schools must have. The lease-purchase system is probably a better plan, but even Bill Levitt, one of its active proponents, has no illusions about the method; he knows it is merely a short-term, emergency solution. Both systems manage to let the districts get around their bonded debt limits but this in itself is not necessarily a good idea. Since only a relatively large homebuilder can afford to provide such schools, neither system helps the small community that suddenly gets 100 or so homes dropped into its midst.

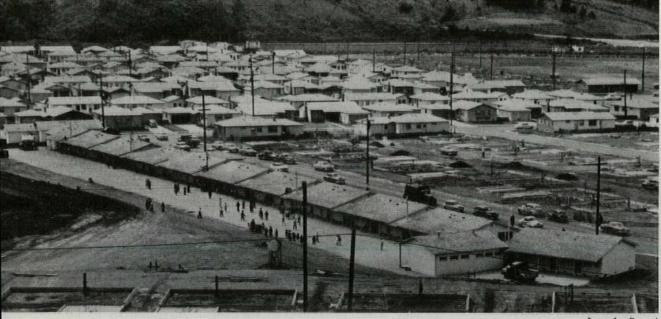
Examples of three such homebuilder school operations are detailed on the following 2 pages.

FOUR WAYS TO STRETCH AVAILABLE BUILDING FUNDS:

1. Establish realistic property assessments. Some districts set assessed valuation at 10% of full value, others at 20% and a few go over 50%. Property assessments that are less than the district can afford restrict needed building. Adequate tax rates must be established along with property valuations before a district can properly plead inadequate funds.

2. Encourage industry to move into town to help carry the school tax burden. This is difficult to do unless the community can offer suitable industrial sites, power, labor force, reasonable taxes and low transportation costs.

3. Every effort should be made to bring a community's bonded debt limit up to modern standards. (Most of them were set in the horse and buggy days.) This, of course, requires pressure on the state government. This would help many communities (particularly the elder, wealthier ones) but is not a cure-all; it merely makes it possible legally to issue bonds. New and growing towns cannot carry the costs of bonds. 4. Some states use a so-called equalization program to alleviate the school building problem. The state pays each district a sum of money based on the total assessed valuations and the number of pupils attending its schools. By reducing each district's outlay for operating costs, the state frees local funds for construction. The fallacy of equalization programs is that the base is not equal. The difference in rates of assessed valuations between districts throws any attempt at equalization out of line. Such a program is sound only if assessed valuations are realistic.



Temporary solution to shortage of schools in Linda Mar came when Andres Oddstad put up eleven of his houses in a row, left out partitions and connected units with covered walks.

Levitt's onswer to problem was to build two schools of concrete block and brick, using very little steel. Schools—leased to local board—have two wings with all-purpose room in center. Wings have five classes on each side; all rooms have own toilets and outside entrances.

LIFE-Jon Brenneis

In Linda Mar: the builder lines up eleven houses under one roof for use as a school

For years Linda Mar was a quiet little coastal town in California, 15 mi. south of San Francisco. Then along came Builder Andres F. Oddstad Jr., with plans for adding 3,500 new homes. This fall 650 of his \$9,500 to \$11,500 homes were occupied by families with 400 children of elementary school age. The school board thought it might find room for them but there were obviously more children due to move into the area as more houses were finished, and the old schools certainly could not carry that heavy a load. Rumbles of discontent were heard. Before a ban on further construction could be started, Builder Oddstad offered to build 11 of his houses (minus the room partitions) in a row, connect them by covered walks and rent them to the district for \$950 a month until the district could build a permanent school. Once the permanent building was operating, Oddstad would take back his buildings, put in the partitions, take down the covered walks, add garages and sell them as houses.

Last month the "school"—ten classrooms and an administration building—opened for business. It was financed by a San Francisco bank which considered the classrooms as "unfinished homes" so they could conform to mortgage procedures. (The 1954 Federal Housing Act, passed after the Linda Mar arrangements were made, permits FHA to insure loans on houses used as schools.)

In Park Forest: the builder proposes that home prices be raised to help pay for schools built

Homebuilders must become deeply and actively concerned with schools if they want new areas opened for housing development.

In building Park Forest, Ill. we learned this early. Despite much well-meaning advice that education was a public responsibility, we saw clearly that our private business could not succeed unless we took a deep interest in our schools. At first we limited our participation to these two actions:

1. We paid subsidies to overburdened school districts until state aid became available and new property came on the tax rolls. A gap of 12 to 18 months had to be made up in the case of a new or extremely small school district which found itself suddenly overwhelmed with a large student body.

2. We provided temporary school facilities, principally in apartments and houses, until permanent buildings could be opened.

This program became archaic overnight. Our school population soared, the cost of building permanent facilities mounted, and so did operating costs. Soon it was clear that we must also provide some interim assistance for permanent schools.

We tried to meet this need by setting up our not-for-profit school corporation, and this has indeed helped up to now. The corporation would contract with the appropriate school district to build a school or schools. The site, plans and estimated costs would be approved not only by the school officials, but by a popular vote as well. So would the contract by which the school district would lease the school until such time as it attains sufficient bonding power to acquire the building and pay for it. Under this program five fine schools have been built in Park Forest. The School districts have actually paid for and taken over one of these schools, and they are about to take over two more. Meanwhile, a fairly acceptable educational program has been maintained.

All has not been peaches and cream, however.

For us as builders, the program has been very costly. Our company has given the school districts \$500,000 in operating subsidies, loan assistance, and land at par value. In addition we have advanced nearly \$1.4 million to the not-for-profit corporations tying up working capital we needed and could have used more productively elsewhere.

For the community, the program also has its disadvantages, for it pledges its future bonding power too far ahead for sound business practice.

Consequently, we are now developing a new program which should go straight to the heart of the problem, which is this:

The average middle- and lower-income house goes on the assessment rolls at a figure too low to give the community the added bonding power required to provide its share of the community facilities it would require. It goes on the assessment rolls at a figure \$200 to \$250 too low to meet the added need for new schools for the children who will live in the house, \$500 too low to meet the added need for new schools plus the added need for other new community facilities.

Some of this \$500 gap can be covered by commercial valuations,



In Levittown: the builder provides handsome, low-cost schools for rent to the town

When Bill Levitt set out to build 16,000 homes 20 mi, from Philadelphia he set aside land for schools and planned to leave the construction of those buildings to the Bristol school board. But, when the board received plans for two schools each costing \$1 million, a crisis was at hand. The township simply could not afford to spend that much. Levitt saved the day by offering to build two 20-room schools at \$500,000 each, lease the schools to the board which would get title to them after 20 years. The board jumped to accept. Rental of \$38,000 a year for each school is to be paid to the specially created Levitt Educational Foundation, Inc. (Levitt financed the buildings himself by plac-

simultaneously—by Community Builder Philip Klutznick

some by personal property assessments. Later on some will be covered by future industrial development, but not enough. In fact, we are satisfied that our tremendous child population, complicated by high building costs and operating budgets, is producing such an aggravating imbalance that we fear the problems ahead will be in some ways more difficult than those we have encountered in the past.

Therefore, we are approaching new development differently. We will continue to use the same not-for-profit corporation approach, but we will contract with the school district to make an outright gift of \$200 to \$250 to the not-for-profit corporation out of the price of each house sold and to make a loan for the remainder which can be repaid within 12 to 18 months after completion of the house. This will make permanent schools available at about the time the new families move in.

This approach cannot be used so directly by homebuilders who are not erecting whole communities, but I cannot help thinking it suggests a solution that can be broadly applied.

We have always believed that a house alone without community facilities is an unstable investment. When housing is desperately short any roof may do, but as the market settles down the absence of schools, adequate water supply or modern sanitary sewers will markedly reduce the value of the house. Perhaps lenders (conventional, FHA and VA) should consider adding 5% to $7\frac{1}{2}\%$ of the valuation public bodies to provide these facilities. ing mortgages with private banks.) Had it built similar schools by floating a 35-year bond issue, the school board's financing cost would have been about \$67,500 per year. Operating and maintenance costs are to be paid by the board in the normal fashion— Levitt takes no part in this phase of the schools.

Levitt made just one stipulation when he offered to build the schools—he would have to do it his way. He put up buildings without frills, using many of the same materials that go into his houses. But each room in the new schools has its own bathroom and outside entrance—features that usually go with highpriced schools. According to Levitt, a good part of his savings came from the type of frame he used. By putting up a one-story structure containing two rows of classrooms and a central hall, he was able to do without steel—using concrete blocks as bearing walls. (He also used the concrete blocks as interior walls, painting them but leaving them otherwise unfinished.)

The fact that he was already on the site building homes was another major factor in keeping costs down since it reduced overhead. In effect, he was able to build the schools with his left hand and write off much of the expense of planning the schools and ordering materials against the costs of his homebuilding operation.

The only steel used in his schools is for the two-story, all-purpose room (auditorium-gymnasium combined). The concrete blocks are covered on the outside by panels of colored striated cement asbestos board.

When he was through, Levitt had built light, airy schools, each covering 38,400 sq. ft. Based on 30 pupils per 40' room, the costs came to \$12.36 per sq. ft., 96¢ per cu. ft., \$23,750 per classroom and \$791 per pupil for a total expenditure of \$475,000 for each building and \$25,000 for each lot.

Beyond the cost question, Levitt's lease-purchase school is probably preferable to the temporary-home type used in Linda Mar simply because Levitt's buildings were planned as schools.

One of the real dangers in the temporary-house method is that such a "school" may become permanent if the district using the system cannot or will not boost its tax rate.

Districts that might find the temporary-home idea appealing are the kind that have the most trouble raising the cash they need to pay for permanent schools because they have little nonproperty revenue available and cannot afford high property levies.

Both methods have a common shortcoming: the builder has no maintenance worries; that is up to the schools. Since maintenance can add 25% to yearly operating outlays, savings in original costs by using cheap materials can easily vanish as upkeep rises.



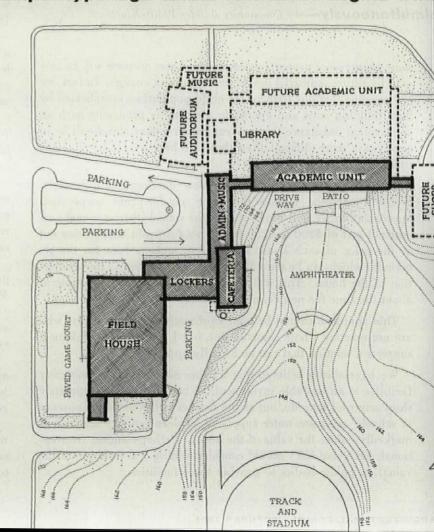
Sprawling campus-type high school contradicts dogma with

KEOKUK HIGH SCHOOL AND COMMUNITY COLLEGE. A Keokuk, Iowa. A 24 classrooms. A 850-pupil capacity.

FEATURES: A imaginative use of highly irregular site. A Four-story academic unit with magnificent view from lounge-corridors. A Practical features like sunshades, operating windows, glazing and student traffic used for maximum visual drama. 🛦 Bilaterally lighted classrooms facing north, borrowed south light from corridors. A Opentop locker and tackboard walls between corridors and classrooms. A Through-ventilation in mild weather, no heat loss from classrooms to corridors in cold weather. A Handsome and varied color schemes and flooring patterns throughout. A Wellplanned waiting spaces in administrative area. A Stage usable as extra classroom. A Big fieldhouse for wide range of year-round sports and for community affairs. ▲ Separate fieldhouse lobby with striking view through glass trophy case across sports or exhibits floor below. ▲ Well-conceived expansion plan.

CONSTRUCTION: A slab on fill. Academic and administrative units of reinforced concrete, with 12'-4" cantilever on south academic wall. A Identical bays, permitting re-use of formwork. A Walls, brick with block backing. A Partitions, chiefly 4" concrete block. A Fieldhouse framed with rigid steel bents, walls block-backed brick. A Low-pressure steam supplies finned pipe-heating elements in academic corridors and unit ventilators elsewhere.

COSTS: A construction, exclud-Ing architects' fee: \$1,274,-350; \$13.60 per sq. ft.



Reynolds

a light-swept four-story classroom wing

PERKINS & WILL, architects and engineers DEAN, ROSE & MUDRA, site development DAVID GILL, landscape architect LOVEJOY CONSTRUCTION CO., general contractor Keokuk, a small industrial center tucked into the angle of the Mississippi and Des Moines Rivers, is obviously a town with an unusual tradition of civic pride. It shows at once in the magnificently tree-lined streets, in the enchanting town park perched on a Mississippi bluff, in the loving maintenance given the older school buildings.

The tradition stood the town and school board in good stead back in 1950 when bids were opened for the proposed new high school. Coming just after the start of the Korean war, bidding was flabbergastingly high. There were the usual reactions of shock, disappointment and frustration, the usual temptations to settle for a "safe" minimal substitute. But doggedly the board determined absolutely not to compromise on quality of concept or quality of construction, instead worked with the architects on the hard, uphill job of rethinking the necessities, postponing some of the desirables. Their instructions: "We still want the best doggone high school in Iowa."

What they got is one of the best doggone high schools in the country.

"They never let frustration jell into timidity," says Architect Phil Will, "and I'll never cease to honor them for it."

This is a daring school in many respects. With a full year's operation behind them, the big innovations have been judged by the administration, teachers, maintenance men, students and community; the report card says "Excellent." The most provocative feature is the four-story stack of classrooms—superficially an old-fashioned idea now discredited, but carried out here in a way that has nothing to do with old-style stacking. Showing what *can* be done by reconsidering the stack, Perkins & Will have now rehabilitated and rejuvenated the whole idea of the multistoried high school. A second big feature is use of open partitions between corridors and classrooms.

"Granted good classrooms, it is the *spaces around and between* instructional rooms that make the difference between a good routine school and an outstanding school," says Will. Here, as in this firm's other pace-setting schools—like Crow Island (AF, Aug. '41) or Heathcote (AF, Oct. '52 and March '54)—the "spaces between" are rich with ideas.



Fins painted red, window strips picked out in yellow, strolling humans behind glass make a lively pattern

Classroom corridors create an ever changing pattern outside

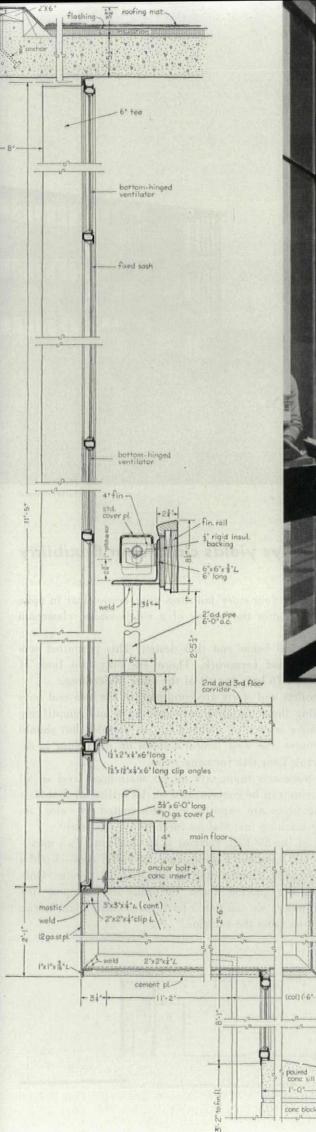
Wall's character shifts as viewer's vantage point shifts.

Viewed from end, fins dominate wall, give it solid look. Here is an academic building in which the architects have used every means to say "Learning is a live and vital thing."

First of all the building dominates the campus, spanning a ravine on the highest piece of ground. The campus looks to it; and it looks into the rest of the campus and far beyond—into the community and Mississippi Valley farmland.

The architecture itself is alive. The 6" vertical sun fins and openglazed corners give this facade a striking three-dimensional character. Red of the fins and yellow of the operating window frames contribute a scintillating color pattern. South sunlight and sky reflections add some of the magic of distant mountains: a bluish look where the fins catch shadows, brilliance where they catch sun.

But the real life in it is the people. At class changes, the whole facade suddenly becomes a fascinating theater of strolling, conversing, crisscrossing adolescents. And the moving patterns of their bright clothing—plaids, stripes and prints—behind the high-keyed pattern of the wall say with the truth of symbolism that here are a building and a crowd made for each other.





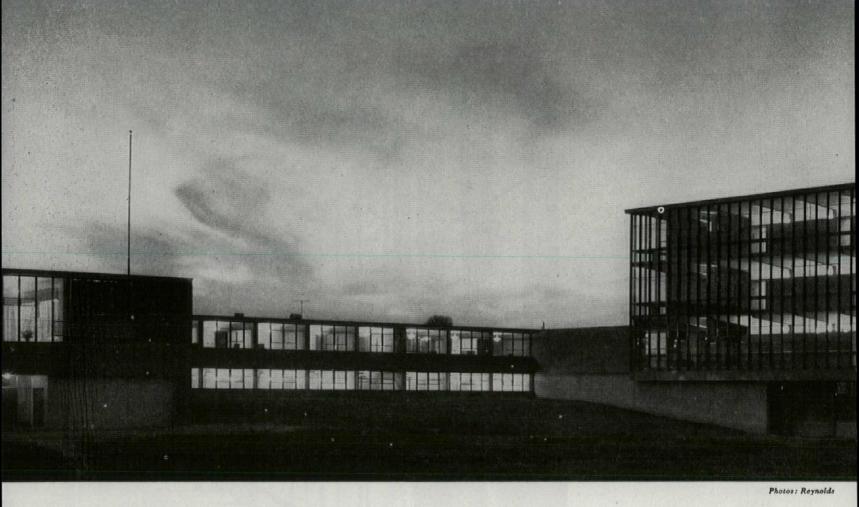
... and are the heart of the school inside

CANTILEVERED CORRIDORS tiered up south facade are open, above locker-tackboard partitions, to classrooms tiered up north side. Architects provided for future glazing at partition tops, but experience shows no need for it; thus in high school architects are doing for Kellog, Iowa, only separation will be suspended lockers.

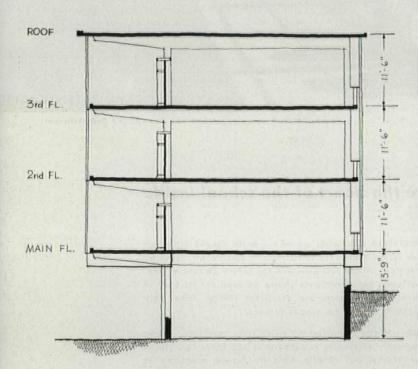
NOISE: not one complaint on noise from corridors. When classroom audiovisual equipment is too loud, it disturbs other rooms, but this is fixed by tuning machines at proper room-audience level. LIGHT: corridors shade rooms but transmit light. Corridors have no electric lights; room lights are used relatively little. Students enjoy sunflooded corridors. HEATING AND VENTILATION: in warm weather, north and south windows are opened, breeze sweeps building. When classroom heating-ventilating units operate and north windows are closed, smoke tests show air in rooms behaves as if partitions were closed too; nobody knows why. Corridors are heated with finned pipes behind guard rail. Exposed risers are painted, add to cheerful pattern. Typically corridors are heated only briefly in morning; solar heat does rest.

+

rises



Structural regularity of economical 12' bays yields classroom flexibility



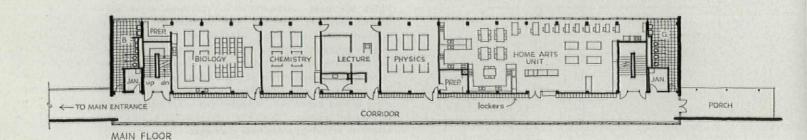
Simplification made this four-story building very economical in spite of the fact that it embodies the luxury of a single-loaded classroom corridor.

▶ Each floor has identical beam and slab design. This permitted economical re-use of plywood formwork. There are only two lines of columns and each floor's 76 bays are all of the same dimensions.

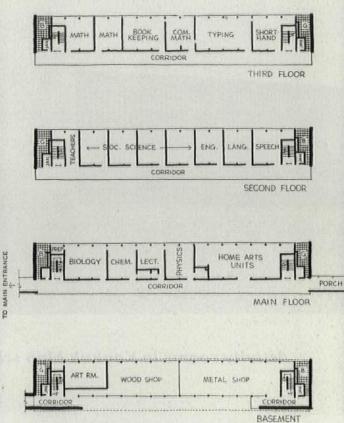
▶ Janitor's closets, toilets and stairs are combined in the two end bays on each floor, making these the only untypical bays and simplifying plumbing stacks. There is now no demand for an elevator but should one be wanted in future, the west janitor's closet on each floor is designed with a removable floor slab for conversion.

▶ Laboratories and home-arts rooms are all on main-floor level so all special classroom piping can be concentrated at the ceiling of first-floor shops. These ceiling pipes are exposed and designated by color, incidentally supplying teaching material on mechanical equipment.

Window washing of the 50'-high exterior is no problem. Two menone on the ground, one handling a guide rope from the roof—wield a brush-equipped telescoping aluminum tube attached to a hose. Only complaint: windows are puttied from the outside—"Suppose the children do pick out putty; we can put it back more easily than we can replace broken windows from the exterior."







Night view shows classroom lights spilling into corridor over open partitions

in Keokuk high school

Plans show variety of rooms obtained from 12' bays. "Standard" room is two bays. Bilateral lighting keeps rooms bright throughout 28' depth, also permits interior partitioning of special instructional equipment or supply rooms. (See enlarged main-floor plan, opp. p.) Ground floor has protected outdoor corridor under cantilevered overhang. All partitions are removable.





Classrooms have full windows on north, as in homemaking room (above). Biology laboratory (left) shows typical south wall of classroom, with 7'-6"-high, partition at corridor, 3'-6"-high opening above. Classroom color schemes vary; most have three wall and tackboard colors and light-colored asphalt tile flooring. Some floors have inlaid color strips to aid in lining up movable furniture.



Photos: Reynolds

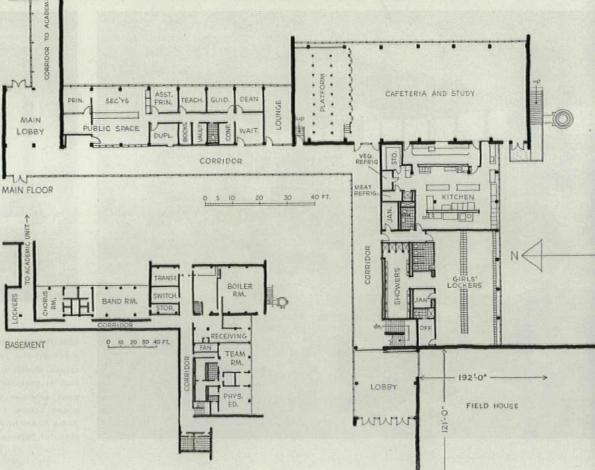
Activity rooms in Keokuk high school have been rethought—to return extra value

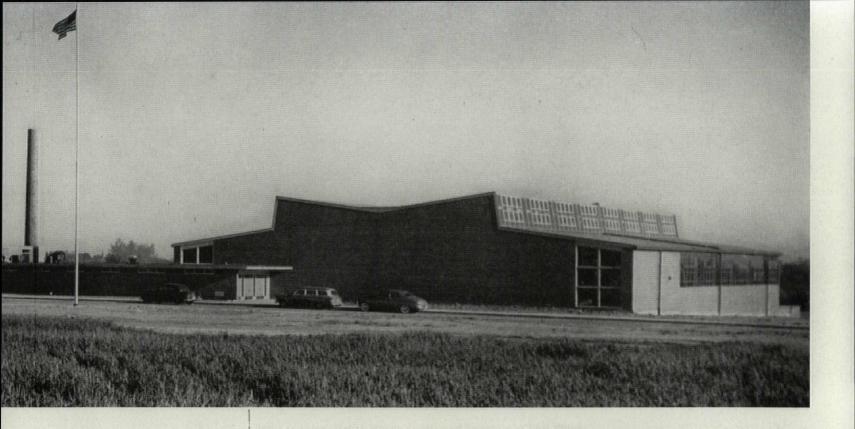
When original plans were reworked to meet inflated costs, auditorium, shop building, library at south ground level and junior college campus at north ground level had to be sacrificed or postponed. Results: the cafeteria-assembly combination is a success but putting the library there too is makeshift. Revised library plans, about to go into construction, give this a more convenient and appropriate location than the first scheme, off the main lobby. This will also give more architectural importance to the entrance and add room for visual education at ground level. Junior college students, although they lack their terrace, have a lounge at their end of administration. When other items were cut, the fieldhouse was enlarged. Says Principal Franklin Stone: "We have so very much more than a gym, and at little greater expense."

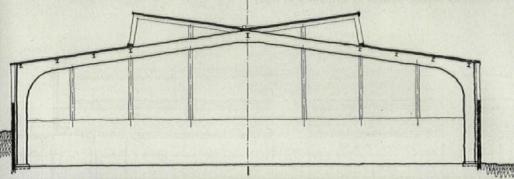


Main lobby flows into administrative waiting space and principal's anteroom around double-sided bulletin board. Wide main corridor (see plan) also has seating, serves as lobby continuation.

Plan of school's central wing puts main lobby between academic unit and administrative-activities area; secondary lobby, important for sports and community affairs, leads to fieldhouse and cafeteria-assembly. Future library will open off main lobby, will be similar to clerestoried cafeteria-assembly space. Music on ground floor annoys no one.





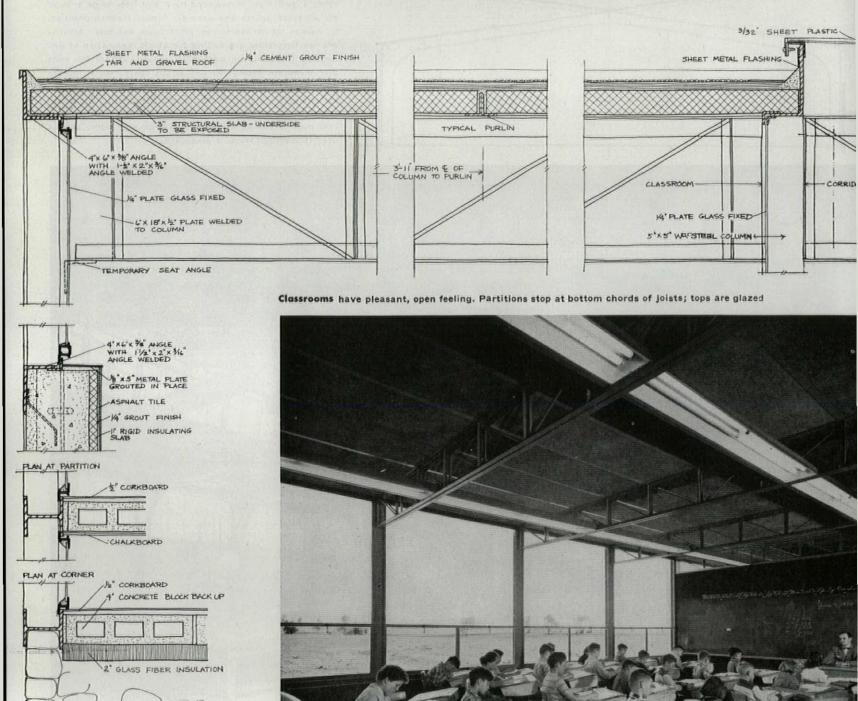


Fieldhouse is 192' (eight 24' bays) x 121', seats 3,000, contains a gym floor surrounded by a dirt floor large enough for all track sports and even for indoor football practice, as well as for garden shows, small fairs, exhibits. Bleachers for long sides are rolling for quick restoration of encircling track during basketball season. Those for wide dirt areas are assembled like circus seats. Girls' lockers are on level above, will eventually lead into 48' x 121' balcony gym, also to be equipped with rolling bleachers to retain present seating capacity. Lights are on pulleys; rear door is size of firehouse's so hook and ladder can be used if overhead work is necessary.





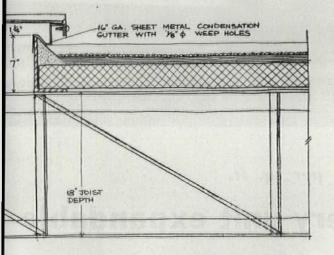
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South wall is protected by exterior shades at left, entry at right
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-8'6'*8'6"+8'6"*8'6"			N	
CLASSROOM	←CORKBOARD CLASSROOM LOCKERS	CLASSROOM	CHALKBOARD	-26-7 42"
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SLIDING DOORS SKYLIGHT OVERHEAD			82	
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austerity and romanticism:

crisp steel and bumpety stone



Photos: Hedrich-Blessing

Corridor gets toplight, transmits it to classrooms



yield a thrifty and elegant small school

Here is a bold and adroit exercise in design. Architects Paul Schweikher (new dean of Yale's school of architecture) and Winston Elting have juxtaposed Mies-like steel framing with Vikinglike tower and walls, successfully achieving an effect at once austere and romantic, but all of a piece. Much of the design success, inside and out, springs from the meticulous precision of the detailing (left), starched up with heavy angle irons. Steel throughout is warm tan to blend with variegated stones; most other finishes are neutral grays. All this elegance was surprisingly economical: the school came to \$20,000 under the budget!

In spite of the piquancy and surprise of the stonework, this is profoundly adults' architecture. Its appeal is coolly intellectual, not sensuous. It is witty, not playful. This of course raises the old, knotty question about the rights and wrongs of subordinating the architect's taste or personality to the personalities of those for whom he builds-in this case (if the children still have their birthright), the most sensuous and playful segment of the population.

SCHWEIKHER & ELTING, architects SAMUEL LEWIS & ASSOCIATES, mechanical engineers E. W. SPROUL CONSTRUCTION CO., general contractor

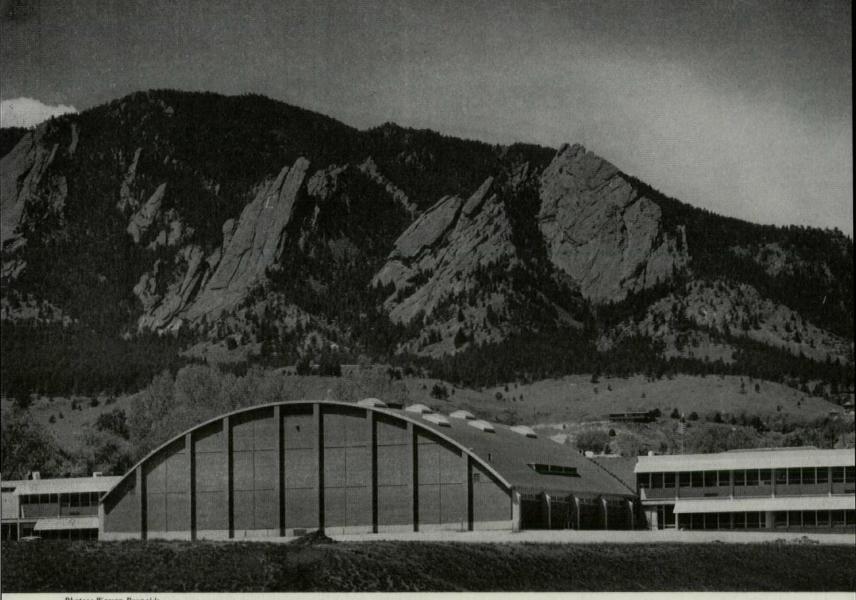
CONSOLIDATED ELEMENTARY SCHOOL

▲ Schaumburg, III. ▲ 4 classrooms. A 103 pupils.

FEATURES: simple, economical plan and detailing. A Playroom divisible by partition rising from basement.

CONSTRUCTION: reinforced concrete floor over basement, slab elsewhere. A Exterior walls fieldstone and concrete block or solid stone, east and west; insulated concrete or steel sash, north and south. A Partitions, concrete block. A Roof, steel joists; precast concrete plank. A Hot-water fin radiation heating.

COSTS: construction, excluding architect's fee, \$122,033; \$13.50 per sq. ft.



Photos: Warren Reynolds

Prestressed and precast concrete yields a \$12.50 per sq. ft.

junior high with every unit expandable

UNIVERSITY HILL JUNIOR HIGH SCHOOL

Boulder, Col. A 17 classrooms. A 400 pupils.

FEATURES: plastic skylighting in gym and at inner walls of classrooms. ▲ Metal-louvered awnings on east and west windows. ▲ Sloping site used to set gymnasium conveniently at halflevel elevation between ground and main floors and to avoid gymnasium bulk dominating upper-level entrance facade. ▲ Community-use facilities separated by corridor gates from academic portions. ▲ All elements of school expandable for doubled enrollment.

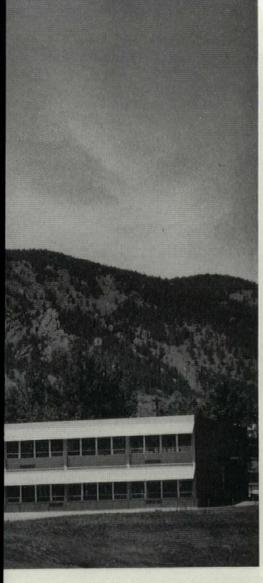
CONSTRUCTION: foundations: caissons because of unstable shale substructure. ▲ Framing: classroom unit, prestressed concrete

poured to main-floor level, precast post and lintel above; auditorium, precast concrete columns, laminated plywood beams; gymnasium, laminated plywood arches. A Walls and spandrels: precast concrete sandwich panels or cavity brick. A Partitions: chiefly exposed brick. A Ceilings: acoustic plaster. A Floor: reinforced concrete joists or precast concrete channel slabs. Roof: classroom unit, prestressed concrete panels: auditorium and gym, timber decking. A Hotwater convectors in classrooms. hot air in administration, unit heaters in gym, forced ventilation in auditorium.

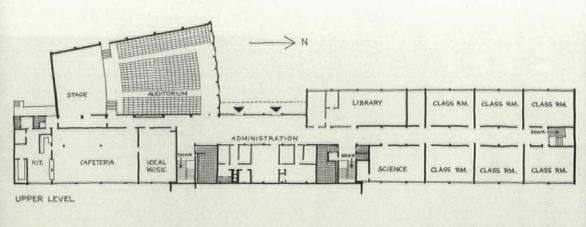
COSTS: construction, excluding architect's fee of 6%, \$642,400; \$12.50 per sq. ft. When the tidal wave of elementary-school enrollment hits junior high in a few years this school will be ready. It is now built for 400 pupils, but every element is designed so it can double capacity—without being uneconomically overbuilt in the meantime.

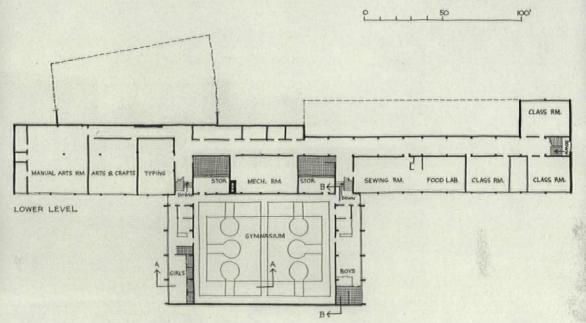
The precast wall of the gymnasium pictured in the foreground above can be taken out and the gym expanded by adding more members to the existing structural arch system; locker rooms under the haunches will expand simultaneously. The auditorium, now seating 567, will be given a balcony over its northern bay, requiring no structural change. In the shop-arts-typing portion of the academic unit, walls can be removed and this area given over to expanded shop space. Laboratories and more vocational space can be added to the southeast; other classrooms will be added to the north by extending the present corridor at half (stair landing) level. Administration now houses advisory offices that can go into the new structure, leaving more space for administration proper. The kitchen, a shade overelaborate for the present, can serve 800 with tighter time scheduling.

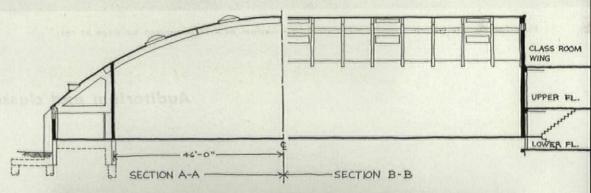
The cost figures show how economical this school's unusual prestressed and precast concrete construction proved. The architect reports the prestressed concrete roof of the central core cost about \$1 per sq. ft. in place, comparing favorably with the cheapest nonfireproof and highmaintenance materials. Precast concrete and insulation panels cost \$1.30 per sq. ft. in place, less than local brickwork. For more details on construction, see the following pages.



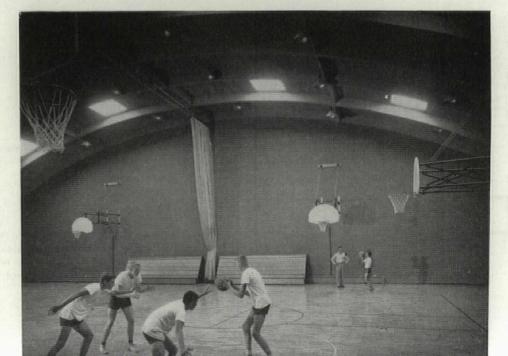
Rear elevation shows low side of site with gymnasium at left. Ground floor of classroom unit is dug into slope, with lower-level classrooms ranged along single-loaded corridor.

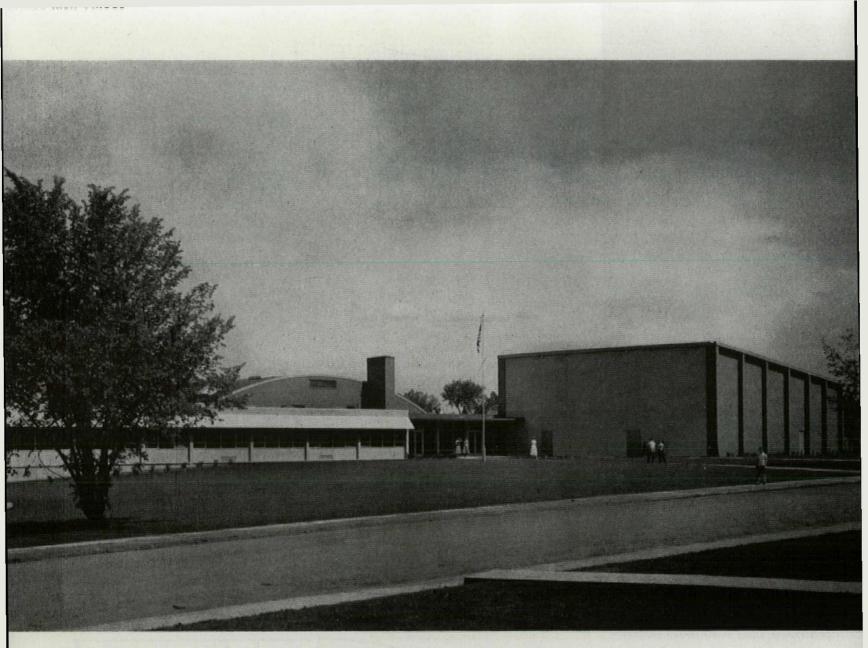






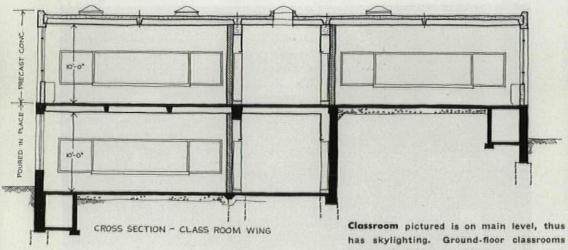
Gymnasium is framed with 27'-high laminated wood arches running the length of the room. The architect reports that "although the height is greater than required for basketball, the arches were more economical than any type of truss system we could have devised; the wood is entirely in compression and uses the curved shape structurally." Use of arches also reduced the number of calsson foundation penetrations into unstable shale below. The long dimension was chosen for arching both because of immediate economy and ease of future expansion. Arches are spaced 16' o.c. to take 2"-wide matched wood decking without purlins. The curved shape is also used to put economical locker rooms under the haunches. Concrete walls, including the removable end wall, are precast as in school's other units. There are no windows; ample plastic domed skylights-the largest, 6' sq. -give 40 foot-candles even on dull days.





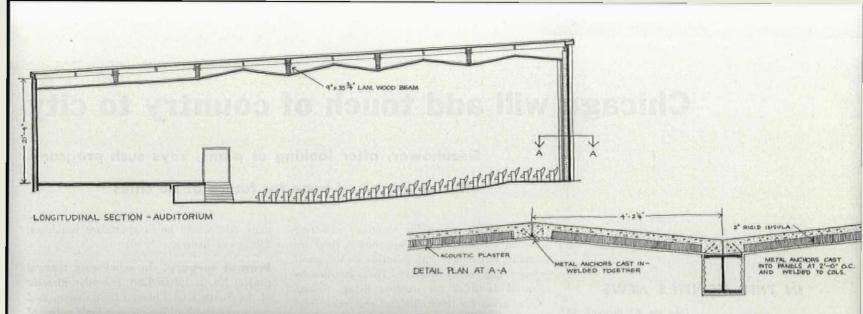
Main facade has entrance beside auditorium; gymnasium bulk is minimized by slope at rear

Auditorium and classrooms use the same kind of



has skylighting. Ground-floor classrooms (see section) face east. Most of area to west of ground-floor corridor is unexcavated.



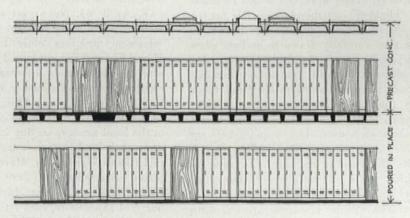




precast insulated panels

Auditorium has interesting precast concrete end wall with wide-sawtooth profile and columns exposed on inside (see interior photo, left; exterior, opp. p.), Wall slabs are 6' x 8' precast panels, similar to those used for spandrels in academic unit. Panels were cast face down 11/2" thick, reinforced with mesh; on top of this, 11/2" of glass-fiber insulation was laid, then a second laver of mesh-reinforced concrete was poured, giving both interior and exterior concrete surfaces. In the case of these auditorium end-wall panels, a decorative exterior pattern of rectangles was cast in the downward face of the slabs. All openings in either full wall or spandrel panels throughout the job were cast in the panels. Decorative brick walls of the auditorium have columns exposed on the exterior. The auditorium roof is economically framed with a commercial grade of laminated plywood beams, with timber joists and wood decking. The suspended fireproof ceiling is acoustic plaster on metal lath.

JAMES M. HUNTER, architect SWANSON-RINK & ASSOC., electrical engineers MARSHALL & JOHNSON, INC., mechanical engineers MARSHALL & JOHNSON, INC., mechanical engineers McNICHOL CONSTRUCTION CO., general contractor



PARTIAL LONGITUDINAL SECTION - CLASS ROOM WING

Roof construction of academic unit is one of the school's most remarkable features. Beams and roof slabs are entirely prestressed concrete. Drains, skylight openings and patches were all precast in 4' x 20' slabs. Big slabs were then swung into place with crane using handling rings, were set in position across beams and grouted home.

Up to main-floor level, prestressed structural members of academic unit were poured in place with dowels exposed. All structural members from this point upward were precast with exposed dowels which were welded on job to dowels from understructure, and grout-packed. Walls were filled in with windows and with precast sandwich spandrels. These are same type of panel as that used in auditorium wall construction (see above).

Plastic-domed skylights give highly uniform natural lighting at desk level throughout main-floor rooms. Metal louvers on east-west windows control glare and aid in achieving uniform light levels.

Chicago will add touch of country to city

Eisenhower, after looking at plans, says such programs

offer new basis of hope for future of US cities

Much of the reason for America's withering urban residential neighborhoods is their inability to compete with suburbia for the growing young family of today. These families demand facilities for outdoor living, private play areas for their children, protection from street traffic and a degree of community cultural uniformity. These are available in the sprawling suburbs, but they are not available, for the most part, in high-density urban areas where multistory apartment houses are packed side by side on congested blocks, emptying out into congested streets.

It was to try to put city living back in the race against suburbia that Architect Harry Weese laid out plans for one of Chicago's most promising reconstruction projects—its urban renewal project No. 1 which may well become a prototype of the attack on city slums, envisaged in the Housing Act of 1954

Arcades, town houses. The plan, sponsored by the kinetic South East Chicago Commission, calls for renewal of parts of 21 square blocks located near the Illinois Central Railroad tracks north and south of 55th St. at a cost of some \$26 million. It is an area originally built up for the Columbian exposition in 1893 and now a hodgepodge of good and bad residential and commercial buildings. It is one of the "infestations of blight" that the commission, backed by the University of Chicago, is trying to clear out of the once-fashionable Hyde Park district.

Unlike most slum clearance projects, this one is a highly irregular piece whose boundaries were determined by the character of the existing structures. Each building in the area was carefully inspected by Weese and by the Chicago Land Clearance Commission staff to determine whether it could be classified "blighted" and therefore eligible for federal urban renewal funds. The boundaries were then carefully drawn to exclude whenever possible the ineligible buildings and to include all blighted buildings. Architect Weese's plans submitted to the Land Clearance Commission provide for an arcaded shopping district along 55th St. and a mixture of town houses, elevator apartments and double maisonettes. The project would utilize the existing rectangular streets and utilities, yet it successfully separates much wheel traffic from pedestrian traffic.

Gardens will be provided for each townhouse unit. Some streets would be closed to help provide playgrounds and park spaces. The area's existing 1,600 dwelling units would be cut to 712 units, but the proportion of family-sized dwellings would rise. Of the 712 units, 545 would be in apartment buildings, 258 in row houses.

Prompt surgery. In announcing renewal project No. 1, Julian Levi, executive director of the South East Chicago Commission, said it was the result of the commission's policy of "carving out the infected tissue of our neighborhood and replacing it with good tissue. Surgical operations of this kind, we believe, can save the life of Hyde Park if they are conducted with intelligence and dispatch."

When Chicago submitted the plans to HHFA for approval recently, a group of Chicago leaders took the occasion to show them to President Eisenhower. The President commented that such programs give a new basis of hope for the future of America's cities.

As it should be, urban renewal project No. 1 is conceived as part of a larger neighborhood conservation scheme. Three others, also being planned with a \$100,000 research grant from the Field Foundation, are to be undertaken under Illinois' pace-setting Neighborhood Redevelopment Corporation Act. In the three projects, a total of 26 blocks will be redeveloped by corporations organized by property owners of the district. Renewal project No. 2 will be a new park immediately adjacent to the Project No. 1 area. Still other parts of the plan to save the 750-acre Hyde Park community from encroaching slums are on the planning boards.

Row in San Francisco. With decisive moves like these, Chicago was increasing the lead it already has on other big US cities in attacking its slum problems. Other news: in San Francisco, where the firing of Redevelopment Director James E. Lash last March (AF, April '54, News) set off a hurricane in local politics and brought the city's redevelopment program close to a standstill, Mayor Elmer Robinson bowed to HHFA pressure, replaced Lash's successor and fired the redevelopment commissioner who was at the bottom of the trouble. Things had reached such a state that HHFA had cut off payments to the local agency, leaving its 14 employees a month behind in their wages. After a hurried trip to Washington, Mayor Robinson replaced Redevelopment Director Robert J. Dolan, former assistant chief clerk of the board of supervisors, with retiring City Properties Director Eugene J. Riordan, a civil engineer and veteran real estate appraiser. Forced to resign as a redevelopment commissioner: Paul T. O'Dowd, in private life a private detective.

IN THIS MONTH'S NEWS

(see pp. 41 through 56)

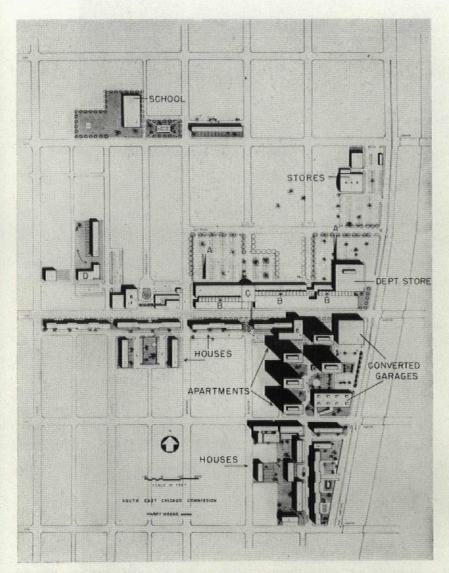
John Lloyd Wright wins second round in a test of the California licensing law

HHFA pins down eligibility rules for cities' participation in urban renewal program

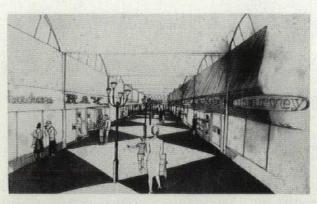
AGC survey shows contractors expect boom to last, but with increased competition

Carpenter-machinist pact, ending lengthy jurisdictional war, signed in Los Angeles

Manufacturers Trust Co. puts up a glass building in New York; Statler, a new hotel in Hartford



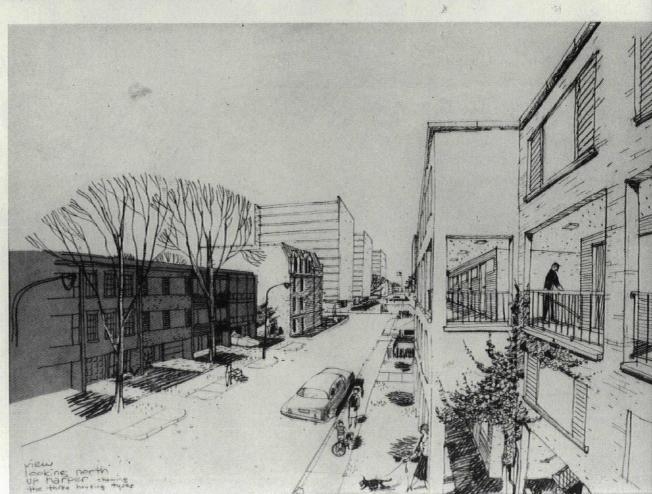
Over-all view of project (school at top is not part of the scheme of things, although Architect Weese feels it will be an important adjunct) shows irregularity of boundaries caused by character and location of existent structures. Houses were placed south of 55th St. (horizontal, center) to be nearer the University of Chicago, with high risers (dark patch) placed on land that had a high reuse value.



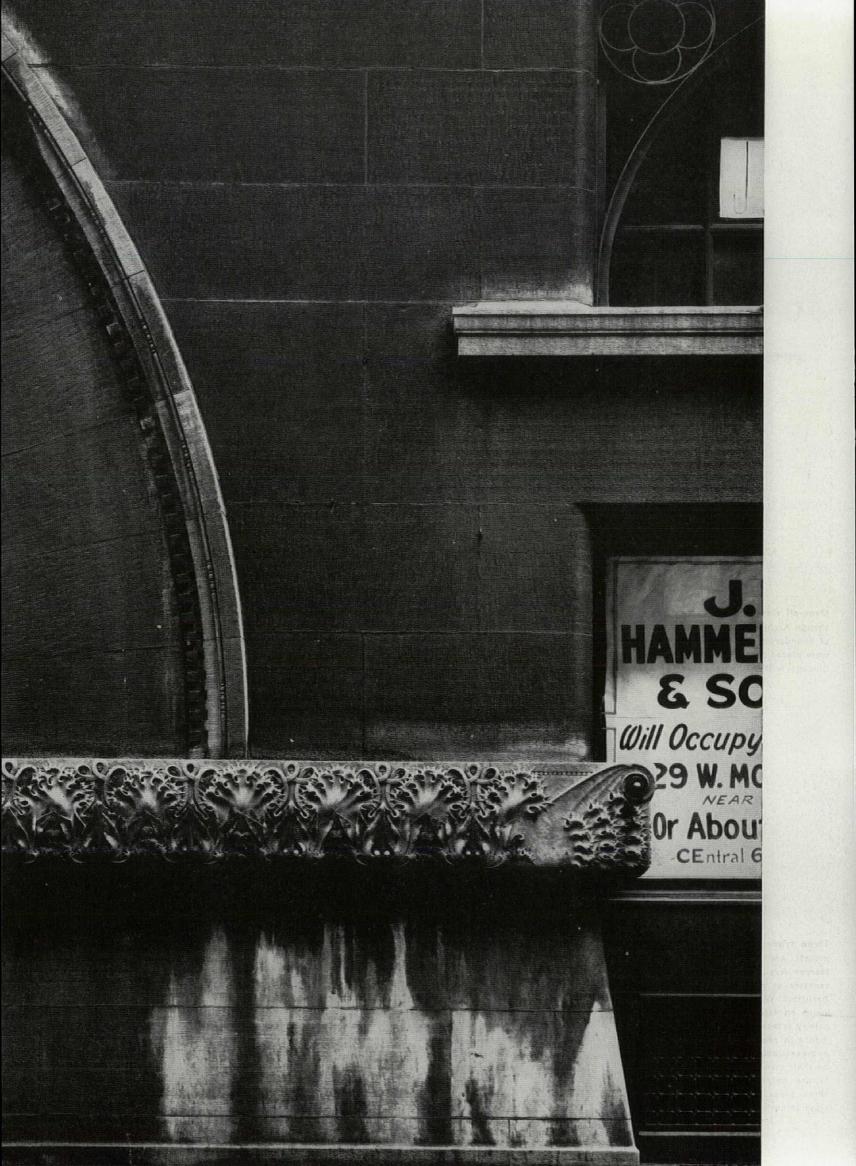
Shopping arcade of 800' is completely enclosed to protect pedestrians against weather, boasts diamond-patterned flooring and lampposts along the stretch to break monotony. A 27' truck tunnel runs below the street, with access to all stores. Tunnel entry and exit are marked A in plan (left); arcade, B; plaza, C.



Front view of town-house models, illustrating the variety of design possible in owner-occupied dwellings in urban areas. Gardens in this instance are placed in front—the expected procedure when lack of rear area prohibits such planning. Car space is available under the houses.



Three types of housing in the project are shown in view of Harper Ave., with double maisonettes at right (described by Architect Weese as "one row house on top of another, with gallery access,") high rise apartments in rear center and town houses—single-family dwellings on their own lots—at left. This is the only street where the three types will be placed so close to each other.



N THE late nineteenth century a magnificently businesslike city dared build an original kind of building; that era of Chicago's history is still with us as strongly and uniquely as pyramidal Egypt, in the existing work of Louis Sullivan, Chicago's lyric architect.

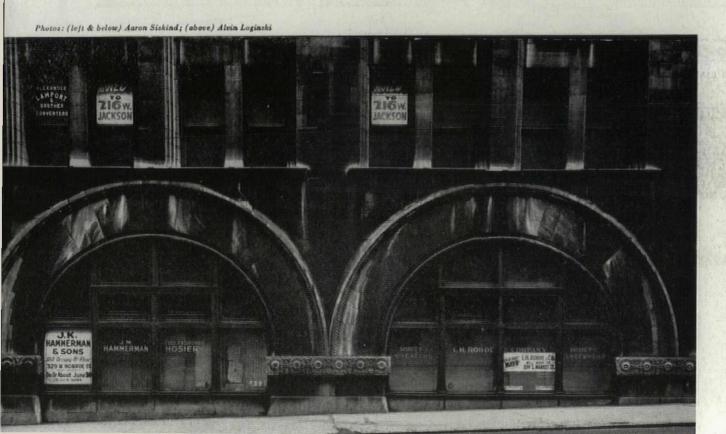
In one voice Sullivan was able to talk directly in inspirational terms to the merchants of the eighties and nineties who were becoming merchant princes, to the other fine architects around him, and to the people who were just plain bustling through Chicago looking for a handle to wealth. He said that architecture should not merely mirror the times in which it happens, but should shape and impel them, should make history; the mark of his enthusiasm and poetic genius is still on his city.

On these six pages are photographs from a recent collection inspired by Aaron Siskind, assistant professor of photography at the Institute of Design, who assigned his classes the valuable task of recording this cultural legacy before it is all chipped away or painted over. Sullivan would have appreciated this, for he was anxious that his vitality endure. He tried to ensure this himself. Toward the end of the century, when Chicago shied back in genteel embarrassment from the cultural frontier and refused to build in Sullivan's robust way any longer, the architect turned to writing. His message was composed in wise anguish; our captions are quotes from his writings.

Today, 30 years after Sullivan's life ran out in a Loop hotel room, architects who are looking desperately to find subjective content or significance in "modern" work might well look to this architect. The subjective was where he began; he saw architecture in deep moral terms. "Form ever follows function" is only a part of that famous paragraph of Sullivan's; it is worth reading on: ". . . that this is the law—a universal truth. That the main function, so far as you will be concerned, will focus in the specific needs of those who wish to build, and that such needs are quite apt to be emotional as well as what is generally called practical." Chicago's SULLIVAN in new photographs



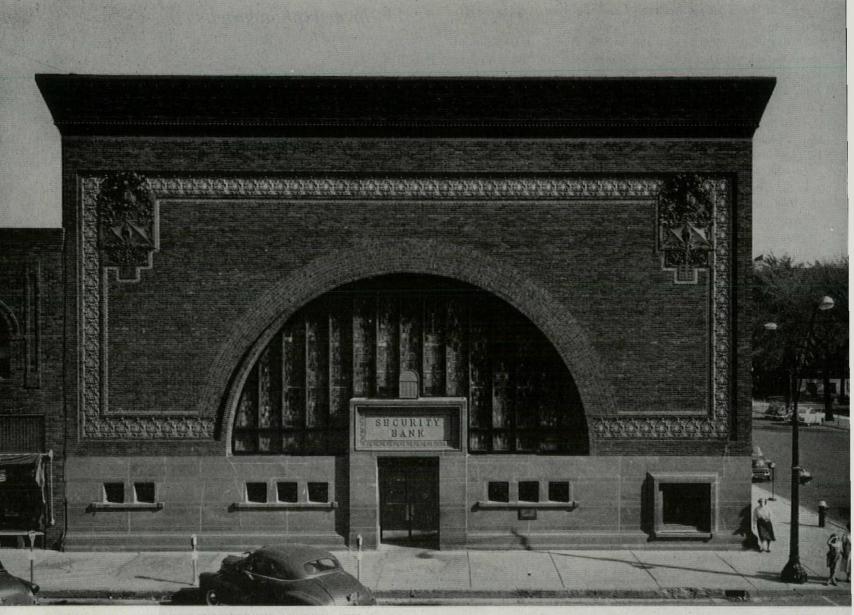
WALKER WAREHOUSE (SINCE DEMOLISHED), 1888-89



"Well then, tell me now ... what characterizes a real architect?

"First of all a poetic imagination; second, a broad sympathy, humane character, common sense and a thoroughly disciplined mind; third, a perfected technique; and, finally, an abundant and gracious gift of expression. "Then you don't value logic. "It has its excellent uses."

James Blair

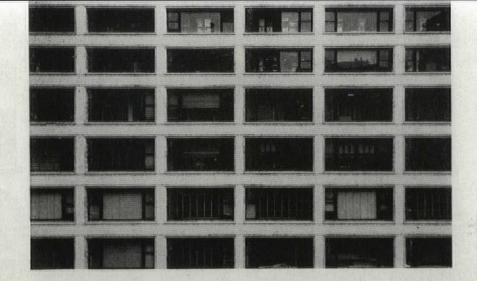


NATIONAL FARMERS BANK (NOW SECURITY BANK), OWATONNA, MINN., 1907-08

"... More subtle, more intricate, more subjective than either pier or lintel, the arch has just so much more of man in it.

"... The arch is, of all constructive forms, the most emotional. It is susceptible in possibility and promise to the uttermost degree of fulfillment that the creative imagination can forecast."

"... We shall have discerned the limitations as well as the great value of unadorned masses. We have in us romanticism, and feel a craving to express it. We feel intuitively that our strong, athletic and simple forms will carry with natural ease the raiment of which we dream, and that our buildings thus clad in a garment of poetic imagery, half hid as it were in choice products of loom and mine, will appeal with redoubled power, like a sonorous melody overlaid with harmonious voices. . . "Unless subjectivity permeate an artwork, that work cannot aspire to greatness."



SCHLESINGER & MAYER DEPARTMENT STORE, NOW CARSON PIRIE SCOTT, 1899





Photos: (above) Alvin Loginski; (below) Aaron Siskind; (opp. p.) Asao Doi

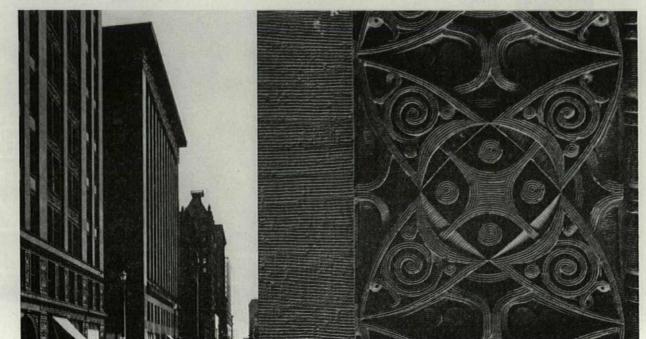
AUDITORIUM BUILDING, 1887-89

"... Nor do you now know what a man of unfettered observation and fair average intelligence might soon have learned to know and fully grasp, namely: that every building you see is the image of a man whom you do not see. That the man is the reality, the building its offspring. That the bricks, stones, steel and what-not came into place in response to an impulse; and the cause at work behind that impulse was mental, not physical."

"... But tell me: When you say the value of a building, do you really lay more stress on the subjective value than on the dollar value?

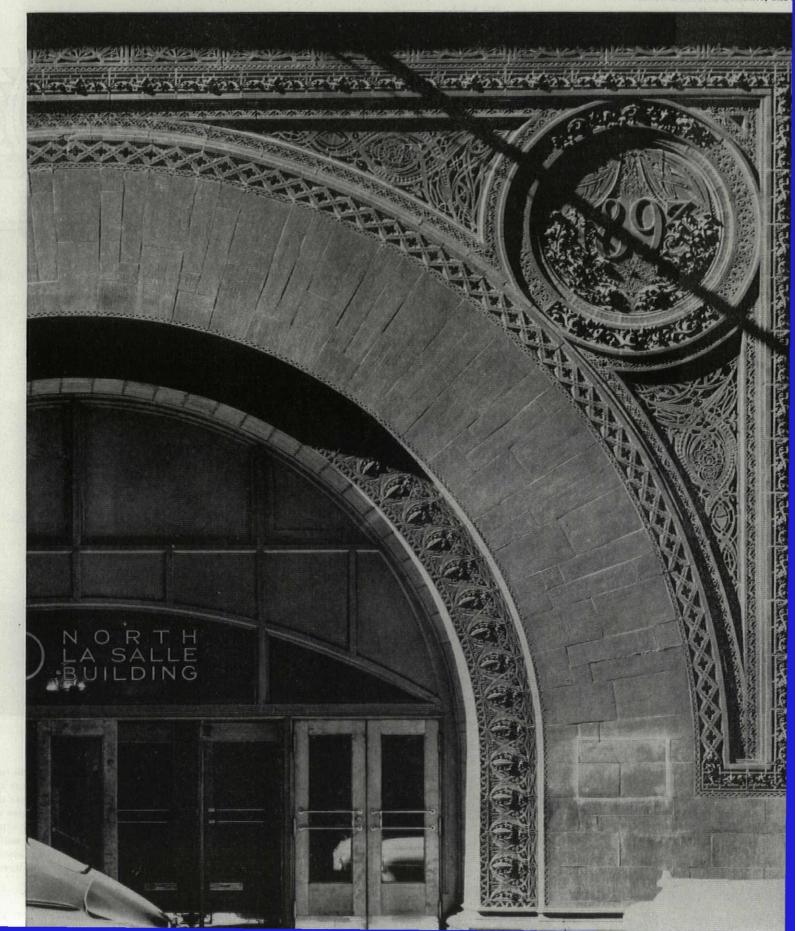
"On both. For human nature determines that subjective value, sooner or later, becomes money value; and the lack of it, sooner or later, money loss. The subjective value is inseparable from the affairs of life; to ignore it would be moonshine."

WAINWRIGHT BUILDING, ST. LOUIS, 1890-91



"Is architecture a plaything, or is it a great force—a revelation of human character and an inspiration? Is it a remnant, or is it a whole cloth from which we are to make for us new garments? Is it human, now, or is it posthuman? Has it a foundation, or has it none? Is it a part of human utterance, is it a phase of universal speech, or is it dumb?"

"... I insist strenuously, that a building should live with intense, if quiescent, life, because it is sprung from the life of its architect. On no other basis are results of permanent value to be attained."

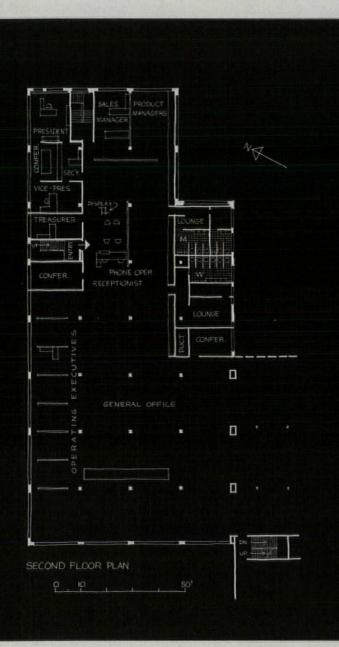


OFFICE OF MERIT-the first in a series

Whether he is a store executive, manufacturer, hospital executive, government official, architect, engineer, contractor, or any one of the many other professional and businessmen with a stake in building, every FORUM reader is interested in offices. He works in one. To serve this common interest, FORUM on these pages inaugurates a new department which will present the newest and the best ideas in office design, furniture, fixtures and finishes.

This month's object lesson concerns the handsome interiors which Thomas & Betts Co., manufacturers of wiring devices, built into the second floor of an old factory.

Any reader who feels that publication of his office might help others make their offices more attractive, efficient or comfortable is invited to submit pictures.—The Editors





Storage partition puts waste space to work

Forming a partition between the general clerical area and the utility rooms, the bank of metal file cabinets is raised 4!/2" off the floor to facilitate filing and cleaning, and is topped with wood cabinets to make use of this usually dead space. Walls are painted gray to contrast with the white plastic ceiling and the light red asphalt floor tile, and to blend with the gray metal furniture to be installed in the future. The luminous ceiling of corrugated plastic is supported beneath fluorescent tubes by acoustical baffles. In the adjoining clerical area baffles run in opposite direction.

THOMAS & BETTS CO., owner GORDON POWERS of POWERS & KESSLER, architects W. R. COSENTINI ASSOCIATES, consulting engineers WILHELMS CONSTRUCTION CO., general contractor LOCATION: Elizabeth, N. J.

COMPARE YOUR OFFICES WITH THESE

Their good design contributes to the profit margin

by raising efficiency and morale and by keeping within a modest budget

These handsome offices occupy the made-over second floor of a small factory building and are a tribute to the talents of the architect and the good taste of the owner. They cost only about \$250,000—less than half the estimated cost of putting the 130 employees in a comparable new building. And they are designed to save money throughout their life by raising the efficiency of the staff, smoothing intraoffice communication, boosting morale, reducing absenteeism and attracting and holding high quality employees.

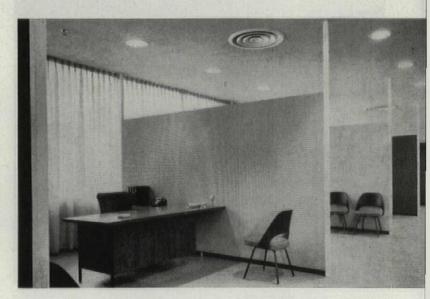
Ranging from fabric walls to open-end offices, the devices used to save construction and operating costs are pictured on these and the following pages. The basic devices are good lighting, air conditioning and sound control and their careful articulation. For example, the architect points out that "luminous ceilings are often used like wallpaper, running in and out of all irregular spaces and covering the entire area. This merely emphasizes the irregular shape and creates a disorderly appearance. Instead, we formed two dynamic panels of luminous ceiling, one $33' \ge 136'$ and one $65' \ge 70'$, with acoustic baffles running in the opposite direction for each panel. The highly irregular space now is unified. Sparkling downlights in the surrounding acoustic plaster ceiling give the same over-all intensities as the luminous ceiling (40 foot-candles). Air-conditioning diffusers become accents by designing them as aluminum drums to hang below the ceiling for the proper diffusion of air."

Other details worth noting and not covered in the picture captions: 1) Fin-type radiators around the building walls supplement the zoned air-conditioning system; they offset body heat losses to the window walls. 2) The luminous ceiling does extra duty as a mask for the maze of beams, ducts, sprinkler pipes and heads and lighting equipment above the ceiling level. 3) The hollow perforated steel baffles which support the luminous ceiling have a noise reduction coefficient of 40%. 4) Color is exploited as an inexpensive design element: gray walls serve as a background for the brightly colored storage walls, cabinets and dwarf partitions which are only three quarters as high as the ceiling.



Reception area is screened with sound barriers

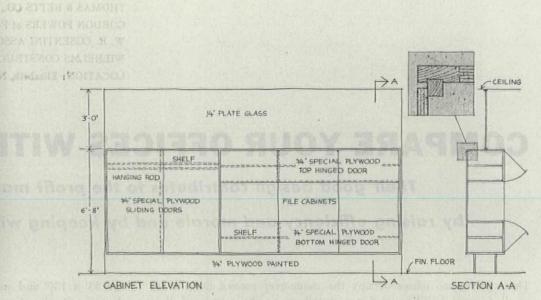
Part of the general office area, the reception room is marked by a big 7' x 28' acoustic absorption panel 6" thick. It separates the reception room acoustically from the general office area, but the absence of doors and 3' opening between the panels and ceiling permit the two spaces to flow together visually. Framed in wood, this sound barrier consists of $1\frac{1}{2}$ " mineral wool blankets on each side of a solid gypsum core and is covered with perforated pressed fiberboard on the effice side and with yellow duct fabric and bronze wire screen on the reception room face.



Open-end offices aid supervision and communication

To eliminate the mental block posed by a door and to permit closer supervision of the big general office area, these offices for operating executives are open-ended. The success of such a scheme obviously depends on sound control, achieved here by the acoustical plaster ceiling, perforated face of the acoustical partitions (one side only; the other side is paneled in walnut) and wall-to-wall draperies. Recessed fixtures in this area maintain the light at same level (40 foot-candles) as the adjoining luminous ceiling. Colors of screens were selected in consultation with occupants.





Secretary's office has built-in files

Because it doubles as an entry to the president's office (below), this secretarial office must be tidy as well as efficient—a requirement met with ease by this unique storage partition built around a battery of two-drawer file cabinets. Above and below the files are shelves with hinged doors; to the left, a coat closet for the secretary and her boss. The storage partition is topped with glass to borrow light from the conference room on the other side. (Cabinet details are shown at right, above.)

Specifications

FIXTURES: recessed ceiling lights, Calculite, Lightolier Co.; hanging lights, Finland House. Air diffusers, Tuttle & Bailey. Luminous ceiling, Luminous Ceilings, Inc. Locks and latches, "Stilemaker," Russell & Erwin. Plumbing fixtures, Crane Co. and American-Standard. Convectors, Vulcan Radiator Co. Sprinkler heads, Reliable Automatic Sprinkler Co.

FINISHES: floors, asphalt tile, Mastic Tile Corp. Carpet, Master Carpet Co. Wall paint, Pittsburgh Plate Glass Co. Doors, Rezo, Paine Lumber Co. Metal trim, Milcor, Inland Steel Co.

FURNITURE: executive office desks, chairs and cases, Jens Risom. Semiprivate office and reception room chairs, Knoll Associates. Desk and case tops, black and walnut picwood, Formica Co.

FABRICS: carpets, Master Carpet Co. Draperies, Creative Looms.



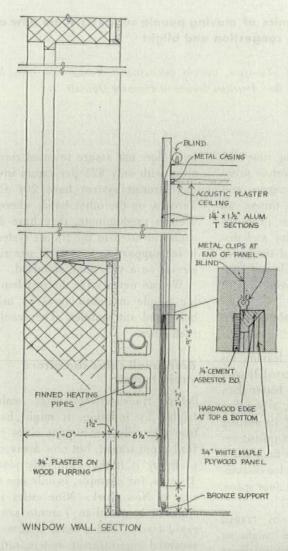
Haircloth draperies camouflage old windows

The wall-to-wall draperies in the sales manager's semiprivate office serve four purposes: 1) Their color harmonizes with the red of the floor tile, the gray of the painted partition, the white of the acoustical plaster ceiling and the natural walnut and upholstery fabrics of the furniture. 2) Their open weave diffuses the light from the windows. 3) Their absorbent folds reduce noise reverberation. 4) Their gauzelike quality camouflages the old factory-type windows lurking in the background. The sliding panel of white plastic permits the sales manager to see and talk with the product managers next door.



President sits before a permanent window blind

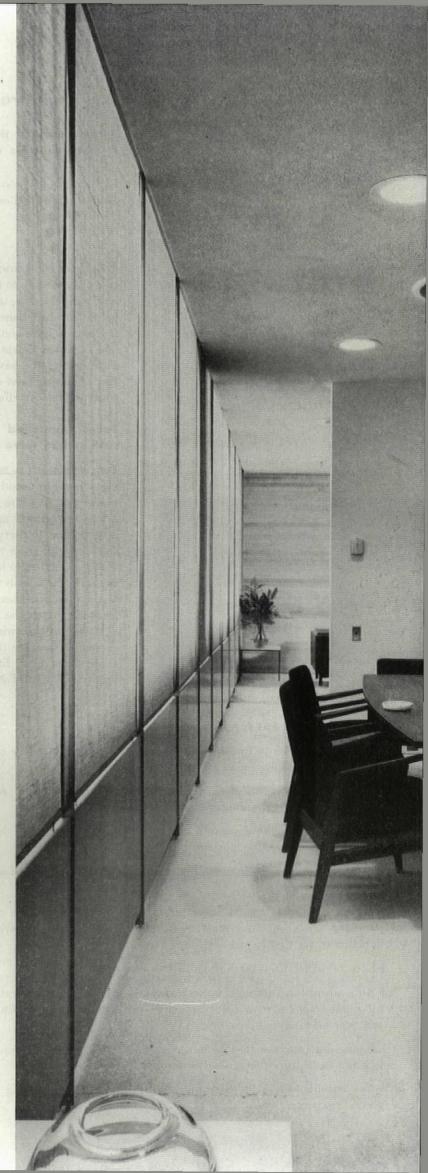
The panel of 21/4" natural maple strips behind the president's desk is more than a beautiful foil for the room's white and blue-gray walls and its warm gray-beige carpet; it is an inexpensive means of masking the factory windows. (Air conditioning and electric light make such tricks feasible.) The walnut furniture is upholstered in tough black transportation cloth and natural leather; the wall cabinets' sliding doors are white enameled. Like the desks of all other executives, the president's is L-shaped, with the smaller wing lowered to accommodate the telephone, dictating machine and similar office equipment.





Fabric panels create translucent screen

This 50'-long wall running from the vice president's office (above) through the conference room (right) into the president's office is actually a row of continuous factory sash and an old brick spandrel wall inexpensively dressed in fabric and plywood. The windows are curtained with stretched panels of silver-gray haircloth, and the spandrel wall is covered with naturally finished panels of white maple. Both materials are set between bronze T-section uprights. The fabric panels serve the same purposes as the draperies in the sales manager's office (photo, far left). In detail drawing above, note how plywood panel is capped with hardwood.



Can rapid transit save your city?

A close look at the economics of moving people suggests some new answers to the problems of urban congestion and blight

Excerpts from an address by E. L. Tennyson, traction commissioner, Youngstown, Ohio, before the National Planning Conference of the American Society of Planning Officials.

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



Planners have known for a long time that transit is the key to the whole urban problem. If planners, transit managers and politicians had done the right things, we would not have today's serious problems of congestion, blight, bankruptcy and dissatisfaction. We have neglected the problem of moving most of the people and have concentrated our efforts on moving a few.

Buses compound the problem, rather than solve it

You cannot sell a motorist on leaving his car at home or outside the congested district unless you give him something better than a bus averaging 9 mph or less, a bus that is scheduled to carry 150% of its seating capacity if it is on time. (Most transit vehicles 35 years ago had enough floor space to carry 150% loads without undue discomfort, but modern buses have less door space, less aisle space, less headroom.)

Buses are so widely used by transit companies because they can be bought on credit and require little private investment in physical plant. But this minimum invest-

Tennyson's nine tips for planners

People will switch to transit in large enough numbers to relieve congestion if transit is fast enough, cheap enough and on time.

• Planners can solve the traffic problem by coordinating transit and highway development and by building transit right into our cities.

Since most people go downtown by transit, transit development should be put ahead of expressway development.

Subsidy should not be given to highways unless transit is offered equal help in proportion to use.

▶ Private companies cannot make the large investments that are necessary in congested areas, so cities must treat rapid transit like highways for all of the citizens, for that is just what they are.

Fast transit service is often cheaper than slow transit.

▶ All kinds of facilities must be welded together to form an integrated economical rapid transit system for every city—railroads, buses, streetcars, subways and expressways.

> Zoning requirements must be drafted with the transit rider in mind, if zoning is going to improve the general community.

New communities should have rapid transit built into them, along with streets, sewers and water lines.

ment does not assure low-cost rides. Many cities with only \$25 per capita invested in their transit system have 20ϕ fares. In Toronto, on the other hand, where electric vehicles predominate, they have \$175 per capita invested in the transit system and it is self-supporting at 8 $1/3\phi$ per ride, with service on a very high standard.

We can never solve the problem of moving people in urban areas by using only buses and automobiles. They conflict with each other.

Even small cities can afford rapid transit

Before transit-system wage scales were tripled by inflation, it might have been true that only the biggest cities could afford rapid transit, but now many cities can profit by it if they will only plan for it. Toronto, for example, is only one tenth the size of New York. Nine cities in North America larger than Toronto are without rapid transit, and a tenth is abandoning a potential rapid-transit system rather than improving it or integrating it with the freeway system.

Perhaps the reason why this city has no interest in rapid transit is that the facilities are privately owned. The federal corporate income tax, when applied to transit, makes private financing of new facilities impossible. The tax on the necessary return on investment alone takes over 5ϕ per ride additional, 33% more than the cost of the service. Corporate income taxes on rapid transit price the product out of the market and prevent private business from doing anything about rapid transit.

This same tax rate, applied to automobile operations on the Ohio Turnpike, would require \$21 million alone during the first year assuming earnings that would give investors the market rate of dividend on their stock. Against this the first year's gross has been estimated at \$15 million. In other words, the turnpike would be \$6 million short of a total revenue sufficient to pay its federal taxes alone, without meeting a single dollar of operating expense, amortization, other taxes or dividends. There would be no Turnpike. To solve this inequitable tax situation a few

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LIFE-Alfred Eisenstaedt

New York's newest big theater: rubbish

Excerpts from FORTUNE, Aug. '54

cities have already built transit facilities for lease to private operators.

Tax benefits should be figured like highway benefits

The path of the automobile has been smoothed by generous computations by traffic engineers right up to the Bureau of Public Roads. They use a financial analysis called the "benefit ratio" to justify the huge expenditures of tax money on superhighways. Typically, this analysis computes the time that would be saved by motorists using an expressway instead of existing streets over a period of 30 years. This time saved is evaluated at 2ϕ per minute and divided by the construction cost to get the benefit ratio.

If, for example, 10 million cars per year use an expressway 5 mi. long, and save $7\frac{1}{2}$ minutes each or 15ϕ , the 30-year savings would be \$45 million. The expressway might cost as little as \$4 million per mi. or \$20 million. The benefit ratio would be $2\frac{1}{4}$.

I cannot accept this method of accounting which justifies the expenditure of public funds by the computation of hypothetical private savings. Nevertheless, if we accept it because our government has, the benefit ratio must be used for transit too.

Let us assume a rapid transit line was built for a medium size city, and that it would attract 60,000 riders per day. Assuming the same right of way as the expressway mentioned above, but without the expressway, this line might cost about \$15 million. Such a 5-mi. route would save each rider about 121/2 minutes as compared to surface bus travel, or 25¢ under the benefit ratio using 2¢ per minute. (It thus appears that the rider should be given his 20¢ ride free, with a nickel refund.) Seriously, the 60,000 daily riders would accrue benefits of \$150 million in 30 years, giving a benefit ratio of 10, compared to 21/4 for the expressway. Since the expressway is figured at near safe capacity, whereas the rapid transit is estimated at only one seventh of capacity in this case, \$1 spent on transit could do as much good as \$4.50 to \$31 spent on highways in concontinued on p. 192

Although the great buildings of Rockefeller Center look no less eternal than the pyramids, Lipsett, Inc., has moved right into the middle of them and is destroying the Center Theater. The theater is only a little more than 20 years old and is the most recent big one built in Manhattan. On the last night of his TV show in the theater, Milton Berle made some nostalgic remarks about the place that caused people in the know to snort. Rockefeller officials, wasting no tears on an old error in judgment, simply snapped: "We don't look behind. We look to the future." The logic governing New York real estate is complicated, but one rule is invariable: anything is rubbish if it does not make money. Because it was too big for plays, too small for opera, Rockefeller Center's magnificent Center Theater never provided a proper return on the original investment. It cost \$3.5 million to build. It is costing around \$500,000 now to tear it down, and only about \$50,000 of it is considered salvageable scrap. In the cavity it leaves will rise a 19-story office building costing \$11 million, but promising "an adequate return."



office building finance

Trends in

Halfway between ownership and sale-leaseback is the new real estate bond issue

Excerpts from an address by Glenn McHugh, head of the City Mortgage Dept. of Equitable Life Assurance Society before the National Association of Building Owners and Managers

One of the most interesting outgrowths of the sale-leaseback is the real estate bond issue.

In the sale-leaseback, the original owner usually becomes the long-term tenant. The new owner is willing to take on ownership if the investment is sound, gives him a reasonable return and requires no management on his part. The price paid for avoiding management is a lower-than-usual return; some sale-leasebacks have been based on as little as 4% to $4\frac{1}{2}\%$ return, including write-off. We feel such rates are too low. We figure this way: suppose a corporation has a new industrial plant and wants to sell it to us. If they had asked for a first mortgage, the rate would probably be $4\frac{1}{4}$ or $4\frac{1}{2}\%$, because of their high credit rating. In the case of a first mortgage, we would have got a one-third hedge against the future; we only lend two thirds of the value, and if something happens, we have a 33 1/3% safety factor.

When we buy the plant for leaseback, we do not have that hedge, and I feel we are entitled to something in its place perhaps 1/2%. Moreover, New York law requires us to write off 2% of our investment in both land and building each year. When you add up the 41/2% interest, the 1/2% hedge and 2% write-off, you arrive continued on p. 202 YOUNG MEN

Architecture is a difficult profession in which to gain *raction. The young architect, when he begins to scramble up the slippery slope to an established practice, knows he has to offer something special against the competition of his established elders. A good many young architects offer design.

The paradox is that in recent decades this design offering has not been young or new, but a kind of design learned from the elders of the profession, the great originators. The young men of several generations have listened to such men as Aalto, Corbu, Gropius, Mies and Wright and then have colonized our culture with their ideas.

But this is only a beginning for young men in architecture. There comes a time of insistent need for originality, for evolution. The young architects owe it to themselves, to their teachers, even to the great architectural techniques which they have inherited, to take ideas and develop them further, not merely repeating. For architecture never stops; if it does not go forward, it goes backward. In the first half of this century the tendency of architects to coast backward into history for their inspiration has triumphantly been turned into a real forward momentum, but will the momentum be held? The question is real.

In June '51, FORUM showed in a Young Men's issue the work of some then little known young men. Most of them today are proving further to be providers of the forward push the profession needs from the young. Here, on these 18 pages, is another group of young architects emerging to take up the same task.

We do not have that hodges and friend are called to constitute in the formaperious is the domains. Note that requires as to write of 2% of or in most to both had and boilding each "Than you add yo the Colo interest to be hedge and 2% series of, you at constant on a

Drive-in church in Venice, Fla. by 31-year-old Victor A. Lundy (see p. 142).



A DRIVE-IN CHURCH IN THE DRIVE-IN STATE



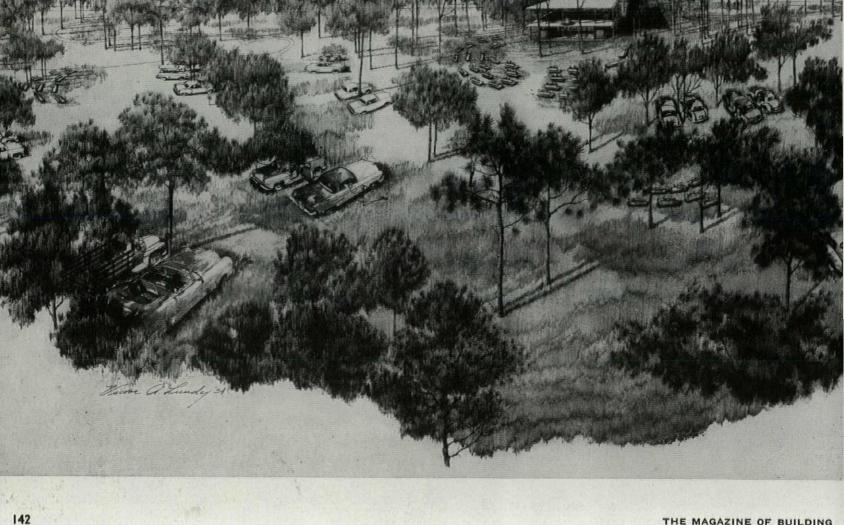
LUNDY, 31, holds bachelor and master degrees In architecture from Harvard, won the Rotch traveling scholarship, saw three years of infantry service in World War II, practices in New York City and Sarasota.

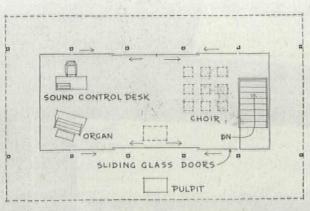
VENICE-NOKOMIS PRESBYTERIAN CHURCH LOCATION: Venice, Fla. VICTOR A. LUNDY, architect ROBERT W. BRADY, general contractor

This young idea survives the easy mockery it inspires. The architect was presented with a pleasant pine-punctuated, level Florida site, and a total building budget of \$4,000. The congregation included permanent residents as well as a mobile winter population, which goes to Florida to escape cold formalism as well as cold weather. The temporary structure meets the demands admirably, preserving the site with its trees and garden-sanctuary informality. It is a building which can be adapted when the permanent church is built, or sold and converted into a house.

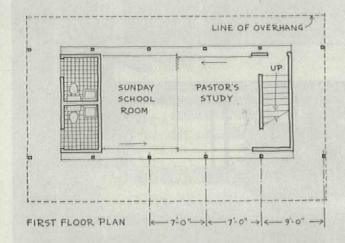
There are 50 speaker stations on the 41/2-acre plot, scattered with careful informality under trees to avoid the grim feeling of drive-in movie theaters. "Not a tree was disturbed in locating the stations and the building. By using slender verticals in scale with the surrounding pine trees and by using very little glass I tried not to make the building an intrusion on the site but rather a fundamental little structure through which the congregation could look beyond and around to the real sanctuary, and in the future to the permanent structure as it rises." The drive-in church has been very successful, sympathetic as it is to the special needs of invalids and physically handicapped, families with small children, tourists and people who do not want to dress up, attracting even truck drivers-and their trucks.

Congregation is dispersed among trees on parklike site

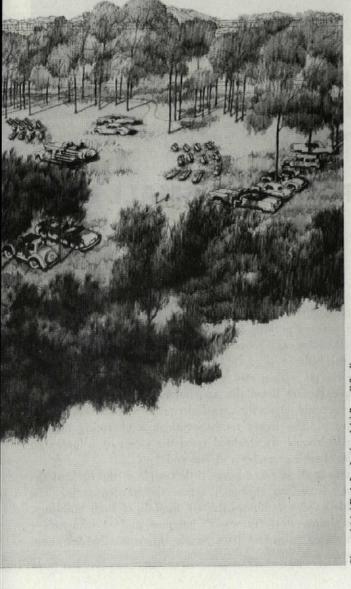




SECOND FLOOR PLAN



Pulpit is on second-floor overhang of temporary building



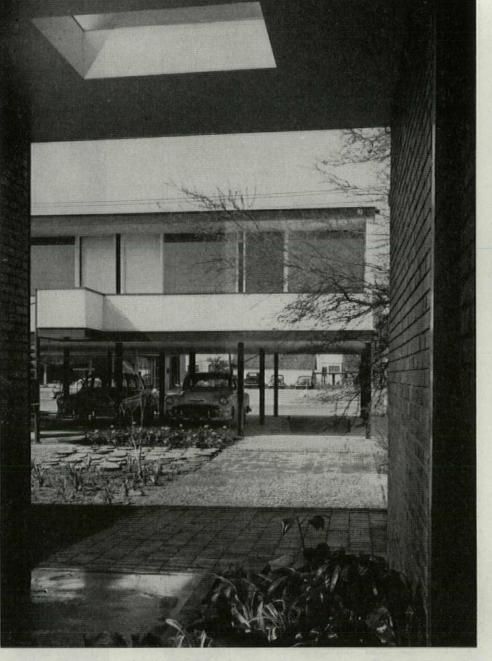
Photos: (right) V. A. Lundy; (top left) Burnell Studio





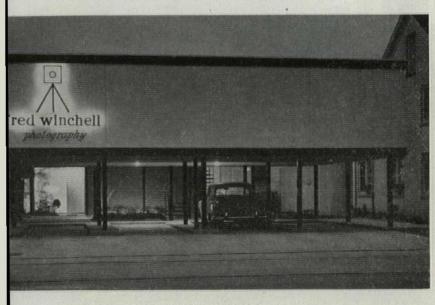
KEELAND, 28, graduated from the University of Houston in 1950. TAYLOR, 26, is a graduate of the University of Texas School of Architecture. Both practice independently in Houston, were associated on this one Job only.

FRED A. WINCHELL STUDIO AND APARTMENTS LOCATION: Houston, Tex. HARWOOD TAYLOR— BURDETTE KEELAND JR., architects J. W. LANDER CONSTRUCTION CO., general contractors R. S. CHRISTIANSEN, engineer BISHOP & WALKER, landscape architects



Apartment wing and street beyond seen from studio at rear of plot

STEALING SPACE ON A SMALL LOT

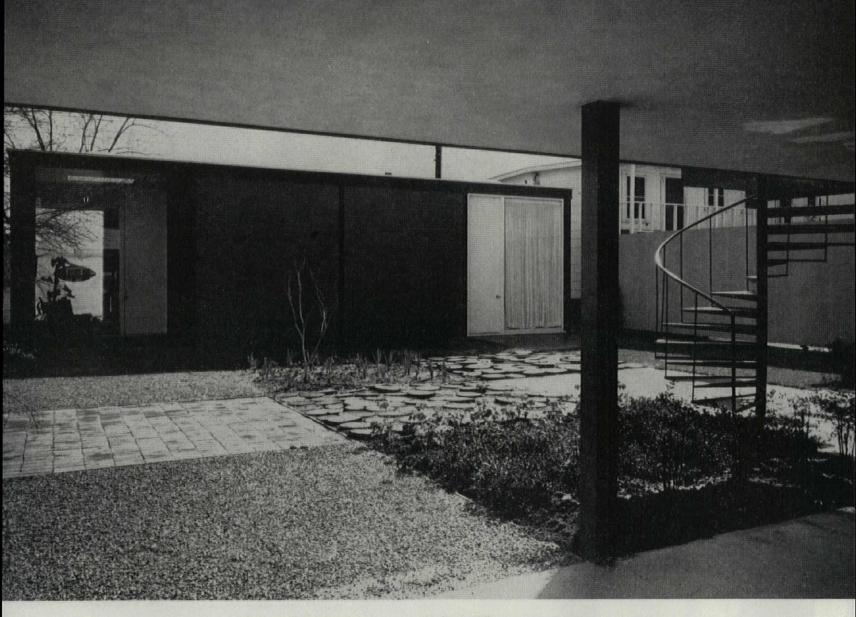


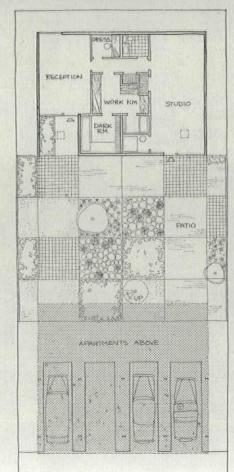
Street view. Black wall hides alley for apartment air conditioners

The site is $50' \ge 125'$. On it the photographer-client wanted a secluded studio, a patio for outdoor photography, a pair of rental apartments to carry the project, a good advertising face on the street and covered parking for at least four cars. He got everything he asked for, and some trim architecture too; it had to be trim to fit this bill.

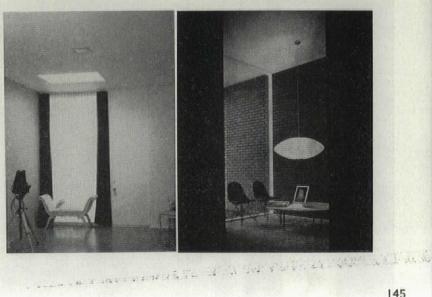
To get outdoor space, and a long, interesting vista from the street, the designers lifted the apartments on 7'-6" stilts. This device also accommodates the cars underneath, and gives the apartments privacy. The living rooms overlook a charming interior court; the bedrooms are shielded from the street by a long sign bearing the client's escutcheon at one end.

The studio itself is a handsome little temple at the back of the plot, with a luxurious approach across the garden patio. The floor of this garden continues the 10' module of both buildings, which are simple steel frame—5" columns and 8" channels filled with stucco, glass and brick panels. Cost: \$31,561, or about \$10 per sq. ft.





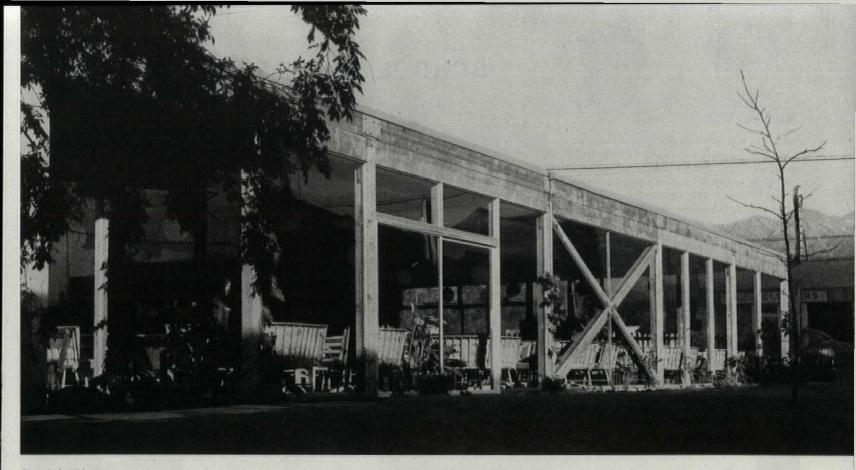
Studio building viewed from carport. Ceiling of carport was kept low (7'-6") to give visitors a lift by contrast when they enter the rear studio, which has an 11' high ceiling.



In the studio: workroom (left) is high, lighted top and side. Reception room (right) of brick and glass relies on furnishings for decoration.

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Street facade features pattern of timber framework, which, like timber crossbracing, is code requirement transformed into major design element

SKELETAL RESTAURANT IN TIMBER

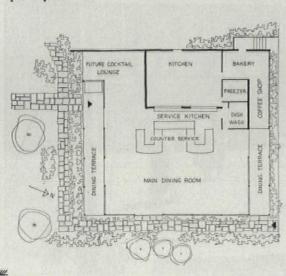
Zoning regulations demanded that this structure be all timber or masonry, without steel, yet the designer and owner were after a light, open environment. Within the large space defined ruggedly by the geometrical timber frame, a planar treatment accomplished this. The planes: glass, fixed in wood stops; bright-painted concrete block walls; white acoustical ceiling.

The public area is executed as one large, sunny enclosure, sheltering the dining room and open terraces, entry and waiting room, and coffee shop. All definition of space is accomplished simply by furniture arrangement, plants or movable screens. (Stewart also designed the furniture and other details, right down to the menu.) Radiant heating in the slab permits use of the outdoor terraces most of the year. The building cost a total of \$82,585, or about \$10 per sq. ft. KIPP STEWART, 26, majored in industrial design and architecture at Chouinard Art Institute, teaches, has worked for Charles Eames, designs furniture as well as structures.



TERRACE RESTAURANT LOCATION: Arcadia, Calif. KIPP STEWART, designer; FREEMAN CAMPBELL, associate CARSE CARPENTER, structural engineer SHEPARD MORGAN, general contractor

Photos: S. C. Burden



Timbered frome is played against cement-block walls

Service core is a center of dining area





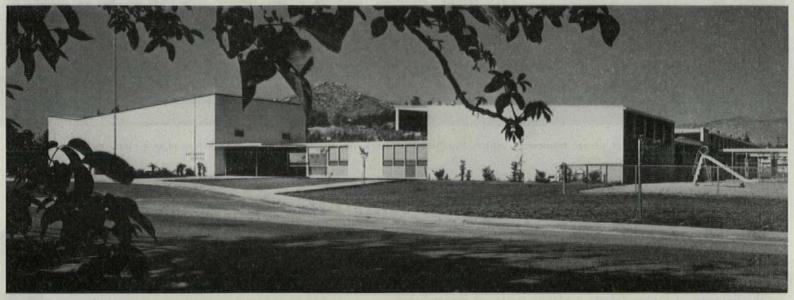
CAUGHEY & TERNSTROM, both under 40, have been partners two years. TERNSTROM graduated from the University of Southern California in 1940, also spent more than three years in the navy. CAUGHEY graduated from Yale Architectural School in 1938, went West to work on the coast and serve three years in the navy.

PACHAPPA SCHOOL, Riverside, Calif. M. H. CAUGHEY & C. C. TERNSTROM, architects HEERS BROTHERS, general contractors WILLIAM PORUSH, structural engineer HILBURG, HENGSTLER & TURPIN, mechanical, electrical engineers

SCHOOL SHIELDED FROM THE SUN

Points worthy of note in the trim, low-cost building (\$11.50 per sq. ft; total, \$292,680): > exterior metal louvers on both north and south glazing in classrooms to stave off sky glare as well as sun; > both side walls of classrooms 100% glazed, horizontally stiffened with exposed X-rod bracing; > frame and stucco construction throughout; > classroom partitions of plywood plastered on one side against sound transmission, left naked as own finish on other side (and serving also as the only shear bracing in the building—there is no diagonal sheathing).

Bright colored and cheery, this 12-classroom school accepts the bright sun and California's kids with unostentatious, but real, architectural charm.



Covered crosswalks connect two main wings of school, save hallways





Photos: (above) Ben Schnall; (opp. p.) Julius Shulman

Reised on stilts, building projects toward street to form protected parking space and entry

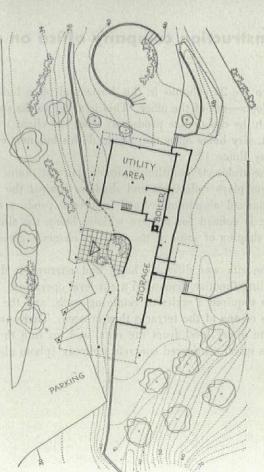
HILLSIDE HEADQUARTERS FOR A CONTRACTOR



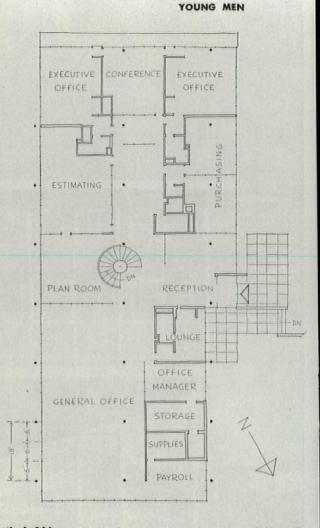
ROBERT CIKA, 38, was born in Hungary, attended Cooper Union and Columbia University, worked as a carpenter, cabinet maker and field engineer, was with Antonin Raymond six years, Harrison & Abramovitz three. GERARD SILVERMAN, 34, attended New York University and graduated from Yale, had three years service with the Army Engineers, worked for Harrison & Abramovitz and Skidmore, Owings & Merrill.

LAUREX OFFICE BUILDING LOCATION: Woodbridge, N. J. SILVERMAN & CIKA, architects TERMINAL CONSTRUCTION CO., general contractors (and owner) JAROS, BAUM & BOLLES, mechanical engineers GABRIEL SENES, structural engineer SMITH & SILVERMAN, electrical engineers ologi, and 10 million of the of class plant adopt adopt when a plant adopt radit, conding beach it

Their emphatic terestru bitat-almenting glass we den administregaly: plat, deliberate essentin threaters a lat al-hol







Plastic bubble skylights keep the central portion of the office floor as well lighted as the periphery. At night and on dark days, cold cathode tubes above the luminous plastic celling can deliver 85 foot candles at the desk level. Hung 18" below the concrete roof slab, the ceiling slopes up to the slab at the edge (photo below).

Photos: Ben Schnall

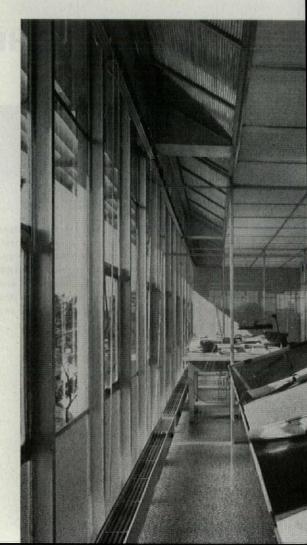
Construction company office on a hillside

There are 24 columns in this horizontal office building, and 16 of them are outdoors—out of the office. This is a key to the spirit of clear efficiency with which the design was produced; what the client wanted was a plain, simple, light, airy home office that would do his business credit, standing beside New Jersey Route 17.

The architects' solution is simple, but not plain. Their emphatic structural system plays reflections and shadows against the heat-absorbing glass wall, a standard aluminum-framed industrial product of notable beauty; everything is defined for the eye without being *too* simple; deliberate separation and shaping of some of the concrete elements gives the design a lot of body, too.

The site was difficult. Long and narrow, it drops 40' in 100', yet the building function demanded a one-level operation. Slope and drainage conditions required a series of retaining walls, and the office floor was set on the edge of one of the terraces thus created. There are two principle entrances: at the upper level from the rear, and up into the center from underneath, via a spiral reinforced concrete stairway (photo above). Cost: \$16 per sq. ft.

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From across street building is first rate advertisement for builder

From higher level clients and office workers can park, enter without walking upstairs



A NEIGHBORLY OFFICE BUILDING



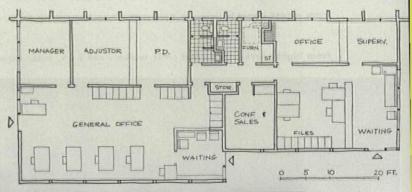
THOMAS A. BALZHISER, 34, graduated from Montana State College in 1942, was a navy man in the war, graduated University of Oregon in 1949. ALAN SEDER, 29, joined him in partnerhsip in 1953 after graduating the University of Illinois in 1949 and working for Schmidt, Garden & Erickson in Chicago and for other offices in Eugene.

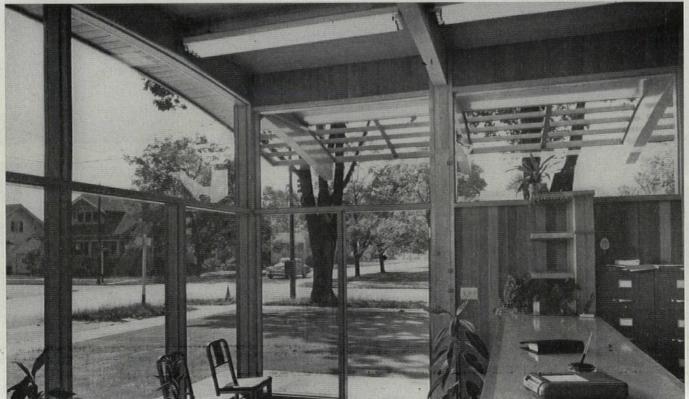
BALZHISER & SEDER, architects E. L. SCHREINER, general contractor

Glass walls of waiting room open on pleasant neighborhood

The shape of this insurance office building is deliberately calculated to create a strong identity, yet not shock the predominantly residential neighborhood it inhabits. The use of laminated beams (curved on a 60' radius, the least-expensive shape other than straight), combined with enough glass to reveal the structure, did this job without flamboyance.

The flavor of wood is all through the building in the interior wall finishes of cedar boards, either matched or deliberately varied. Cost: about \$10 per sq. ft.





SCHOOLHOUSE INTO CIGAR FACTORY

Reversing the usual trend, these architects took an old school and converted it to another use—a cigar factory. The substantial character of the original building was not toyed with, after the lower windows had been bricked up to accommodate humidification space for tobacco inside. But the original was not allowed to inhibit the new wing, either; it is a long trim steel-framed corridor production line, bounded by exterior pipe columns whose footings were designed to take the load of an additional 20'-wide bay on either side when further plant expansion becomes necessary. New construction cost: about \$7.50 per sq. ft.

Photos: (below) Ben Schnall; (opp. p.) Tom Burns Jr.



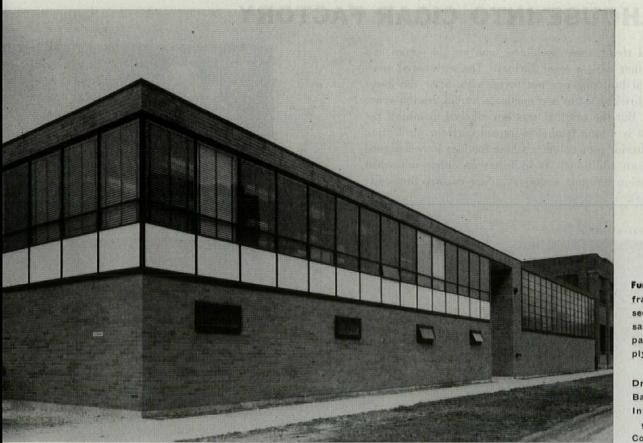
EDWARD W. SLATER and DANIEL CHAIT are both 33, honor graduates of Pratt Institute in New York, saw navy and army service respectively in World War II, worked in numerous N. Y. offices.



New wing is joined to old school building by central truck dock

Old school was partially bricked up to aid manufacturing process





HEM OWNO

Furniture factory has continuous steel frame with bar joists in 33' bays. Office section is set high, and standard window sash is filled from floor to desk height with panels of porcelain enamel steel glued to plywood core.

Dresher Manufacturing Co., Chicago. Barancik, Conte & Associates, architects. Inland Construction Co., general contractor.

Cost per sq. ft.: \$5,50; total: \$135,000.

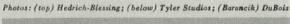
A NEW FIRM WITH AN INDUSTRIAL PORTFOLIO

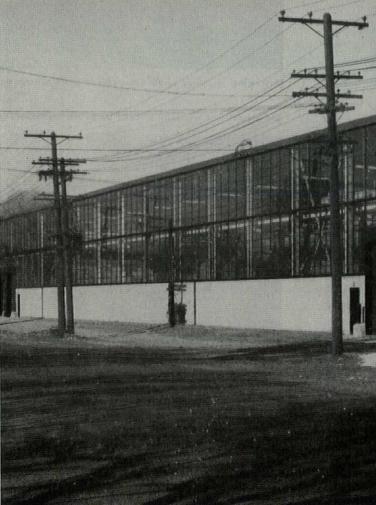


RICHARD M. BARANCIK, 29, has studied at U. of Nebraska, at Cambridge at the U. of Chicago, at the Beaux-Arts and at the U. of Illinois. RICHARD N. CONTE, 36, studied at the U. of Illinois. Both served in the army.

In Des Moines on a speaking engagement last fall, Philip Johnson of the Museum of Modern Art took pleasure in turning his listeners toward one another in cautious inquiry by calling a new warehouse building (right) near the statehouse a "perfectly beautiful building." His architect's eye was sharp; most local Des Moines citizens, if they knew about the building, knew it only as an enviably inexpensive job for the client, under \$8 per sq. ft.

This office and warehouse for a steel company is an example of how the bustling firm of Barancik & Conte is hitting them high and low with architecture and economy. The other two buildings shown on this page are two more of the architects' feats in the fine tradition of Midwest industrial design. Recent commissions as far from home as Philadelphia attest the success of the firm in this highly competitive field.







Steel company structure is crisply divided in plan and on facade into factory area and administrative area. Big doors are for trucks. Interstate Steel Co., Evanston, III. Barancik, Conte & Associates, architects. Cost per sq. ft.: \$7.90; total: \$197,500.

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Scrap-yard building is 70' x 300', admits both trucks and railroad cars. Office wing added later has window sills which are I-beams turned on their sides, filled with terrazzo. Robinson Bros. Steel Co., Des Moines, Iowa. Barancik, Conte & Associates, architects. Arthur Neumann Bros., Inc., general contractors. Cost per sq. ft.: \$7.80; total: \$196,139.

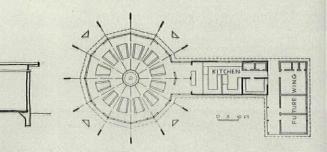


ROGERS (right), 37, graduated from Princeton in 1939, then got his masters in architecture In 1942. After drafting for Cross & Cross in New York, and spending three years in the navy, he formed a practice in 1946. TALLIAFERRO (middle), 32, a graduate of the University of North Carolina in 1944 and the Marine Corps in 1946, was made a partner in 1949. Associate LAMB (left), 28, graduated from Georgia Institute of Technology in 1943, from the Merchant Marine Academy in 1944, and in architecture from the University of Michigan In 1950. The girl scouts of Anne Arundel County have a fireplace in the new dining hall of their summer camp that is a fascinating device. Out of use, it lifts up into the air, telescoping out of the way into its chimney stack. Nor is the big timber tepee around it without surprises; built by amateurs, it proved the professional quality of its design by winning an award of merit from the AIA at the Boston Convention this year.

There were several basic requirements in the design program for this building: a dining room (capacity 100), kitchen and storage space and a recreation room with a fireplace affording maximum visibility for scout rites. Less-tangible demands: low, low cost, and if possible a structural system which volunteers could assemble.

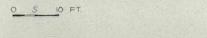
The designer let the building grow from the campfire, expressing it in a circular plan with 360° visibility and dining tables radiating from the center. The conelike structure gave him not only a symbolical building shape, but a good pattern of natural convection currents venting at the peak. Then he had to worry about getting it built, for the 8" x 16" rafters needed were too big for volunteers to handle.

The solution: treating the structure as a single cone, with compression members in a rough ring to diminish the number of framing members, which are stabilized by tension rods. The clear span is 42'. Designer Lamb superintended construction; total cost was \$14,500.



Tepee's eleven "poles" each consist of two 2" x 12"s to midspan and single 2" x 12" to peak. Structure is well braced by concrete.

GIRL SCOUT LODGE LOCATION: Annapolis, Md. RODGERS & TALLIAFERRO, architects CHARLES E. LAMB, designer

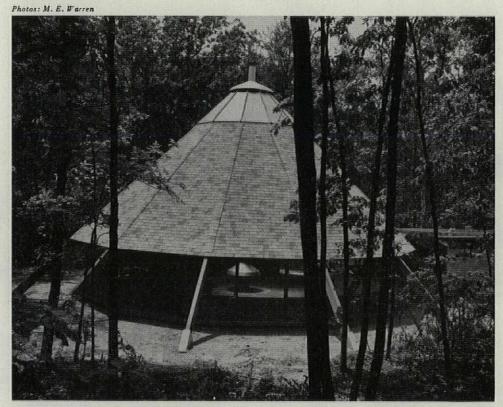


COUNTER BAL

FIREPLACE FLUE

COUNTER WEHTS

HOOD VENT



TENSION RODS

COMPRESSION MEMBERS

1 - 2" × 12"



Fireplace in center is lowered to help convert tepee into recreation hall

At mealtime fireplace is lifted out of way to make room for table service





Houses, 300 at a crack, are produced by Johnson & Crook's expert building operation. Made of prefabricated sections, the houses are set one-half story into the ground.

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Neighborhood A is developing fast in the wake of clearing which is now nearly complete. Part of Minette Bay recreation area shows at upper right, part of city center at lower right.

The survey of the second

Industry builds

KITIMAT __ America's "new town" prototype

The story of its housing, its zoning and its master planning—by the planners

... but first a report of progress on the ground

-by Julian Whittlesey, one of the planners, fresh back from Kitimat

The switch has been thrown from the great Kemano hydroelectric project in to the transmission line over the snow caps to Kitimat. The first stage of smelter and seaport is operating round the clock. A thousand men are smelting and at least an equal number are town building. A hundred families, making do in temporaries at the port, are eyeing hundreds of housing units going up 4 mi. upriver on the townsite and 75 or so are already in purchased houses in the first neighborhood with the swirl of all-out town building all around them. More families wait at a distance to join their menfolk and read of progress as reported in the Kitimat Northern Sentinel—local paper with world-wide subscribers.

Winter will find 300 to 400 families living in the first neighborhood served by a handsome local shopping center designed by Architects Semmons & Simpson. Children will go to the adjoining school now designed by Sharpe, Thompson, Berwick & Pratt. Both are Vancouver firms. Russell Baxter & Associates, local Kitimat architects, are preparing plans for the Anglican Church at the first neighborhood center. Merchants and businessmen are negotiating to build in the city center, and in the service center which has already sprung to life with local contractors' establishments. The local paper now housed in a shanty is among those about to build. The rail line is being laid down the valley.

The municipality of Kitimat is wrestling with money by-laws to extend roads and utilities started on the account of the Aluminum Company of Canada who, with the province, are the prime land grantors for the building of the new city. Swan Rhodes & Wooster of Vancouver did the civil engineering for Alcan's part of the work.

Large-scale builders are vying with each other to produce the best housing for the market. Norman Hullah, expert B. C. developer, has built 80 splendid prototypes in singles, twins and rows on Alcan's account and is finishing 50 singles on his own. Johnson & Crooks are "highballing" along with 310 more on their account.

Color, variety, the mountain backdrop and vistas over the fiord make Kitimat's first neighborhood sparkle. A people, mostly young, and all energized by their vision of life and work in Kitimat, set a fast pace. A dozen or so are having their own houses built and throwing in some of their own labor as "sweat-equity."

Meantime Alcan can say that Kitimat, as a people, a government and a city building operation, has come of age. As one of the prime grantors of land, Alcan keeps a watchful eye over the master plan it sponsored. It continues to clear new land on which the municipality opens up roads and utilities. These are financed from taxes. While Alcan is the biggest taxpayer, there are plenty of others who eye money by-laws as they affect taxes on their own home or local business. So Alcan has succeeded in starting a public town. Though it has built prototype housing and stores and may build more prototypes as time goes on, these are soon sold and Alcan's work narrows down to its prime function. This, along with that of the province, is to open new land and assure that town development stays on the main track of the master plan.

What assurance is there that booming Kitimat will keep on the track of its master plan?

There are two main forces which will keep present and future development on the track: one is legal, the other is operational, and both are based on planning.

The legal tools, all shaped up from the master plan which Alcan sponsored, are these:

1. Conditions under which the province releases crown land to Alcan and others as prime developers, as well as to the municipality, meantime continuing licenses for forest use of undeveloped land.

2. Land use conditions which Alcan attaches to the sale or lease of land to private developers and to any jurisdictions making public facilities, be they roads, utilities, schools or hospitals. Such conditions are held to a minimum; they are designed to provide insurance lest municipal zoning regulations drawn from the master plan should fail or waiver at some crucial point, and to provide a foothold for influencing orderly design.

 Municipal zoning regulations tied in with the municipal building code which in turn is influenced by provincial and federal codes and recommended standards.

The operational tools which support the master plan include the three-way contact during the planning process between the planning consultants, the Aluminum Company of Canada and the provincial departments concerned with municipal developments including education, health and natural resources. Now, even though the master plan is completed, the planning consultants are still retained to continue contact and to extend it to the British Columbia architects and engineers concerned, to the municipal government now that Kitimat is incorporated, elections held, and administration boards and departments set up. (The school board and the public works office are examples.) The planning consultants will also keep the master plan up to date with actual field conditions. This involves adjustments to reflect detailed topography and to take due account of the exigencies of market demand and Alcan's negotiations with private developers. (The underlying utility framework of the master plan has proved to be a major influence in preserving the planned order of development where it might otherwise have gone off the track.)

Alcan's own planning staff, headed by J. E. Dudley, has a continuing part in negotiation with private developers, checks on what they finally come up with and sees to it that it is carried out in a manner consistent with the master plan.

Kitimat is to be a public town, houses built by private enterprise

Housing and financing were complicated because Kitimat is not to be a company town. No company, however powerful, could hope to order up and operate a complete town with all the auxiliary features. A public town is the converse of a company town. The problem is to cause the town to get built, to coax it to organize, finance, govern itself, to set up taxes and credit.

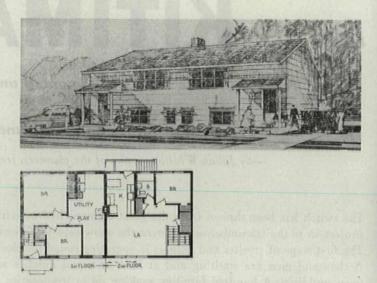
It was evident that Alcan must prime the pump; neither state nor federal government could act on a town not yet here. Steps were taken for earliest possible municipal incorporation enabling public debt to be incurred for schools, hospitals, utilities, roads.

Meanwhile sources of independent financing were periodically tested: government and private mortgage sources, risk capital by operative builders and commercial firms. Family housing for initial plant workers had to be ready and much more in sight. Starting Kitimat was bound to be a bootstrap operation—equipment piled on the beachhead, tents at first, then barracks, messhalls—a man's frontier, no women, no liquor, just work, and overtime pay the prime incentive. Temporaries got first priority. Permanent housing on the company's account was programmed to types, materials and methods. The hope was that operative builders working at first for the company would branch out into their own operations. This is now happening,

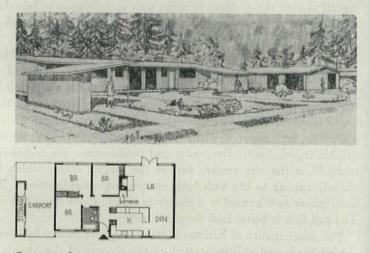
How homes will be financed*

Alcan will build no rental houses in Kitimat. Manager Dudley explained the buying terms: homes now being built would sell for around \$11,000 in Vancouver, but transportation and high labor costs make the Kitimat price \$14,000. Central Mortgage & Housing Corp. is granting first mortgages of \$9,360 (90% of the Vancouver value); the purchaser makes a \$700 down payment, and the balance, \$3,940, is assumed as a second mortgage by Alcan. But to encourage home ownership and offset Kitimat's higher prices, Alcan gives every employee who builds a house a monthly bonus of \$2,85 per \$1,000 of the home's cost. This is \$39.90 per month on a \$14,000 home, roughly equal to principal and carrying charges of the second mortgage. This leaves the purchaser with a monthly payment of about \$60 to make, plus his bonus.

Any time within ten years Alcan will buy back a house at predetermined depreciation rates from anybody wishing to sell and leave. The buy-back price is arranged so that, with the taxes he has paid, he will be out the equivalent of about \$55 a month rent.



Two-story houses being produced by Builders Johnson & Crooks (construction photo, p. 158) may be single, twin or row. Rendering above shows garden side; other side has attractive balcony.

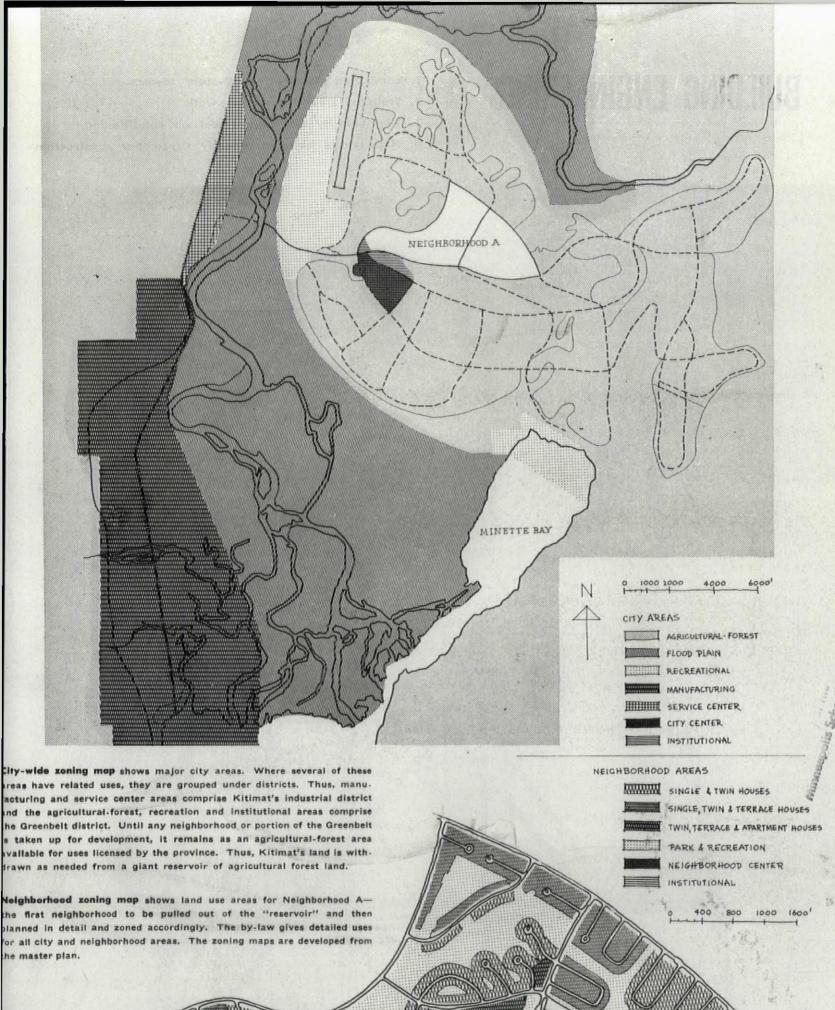


One-story houses by Builder Norman Hullah are of post-and-beam and panel construction with high-sloped ceilings throughout. Fifty of these low, solid, colorful houses are already occupied.

Kitimat's neighborhood A and city center (foreground)--July '54



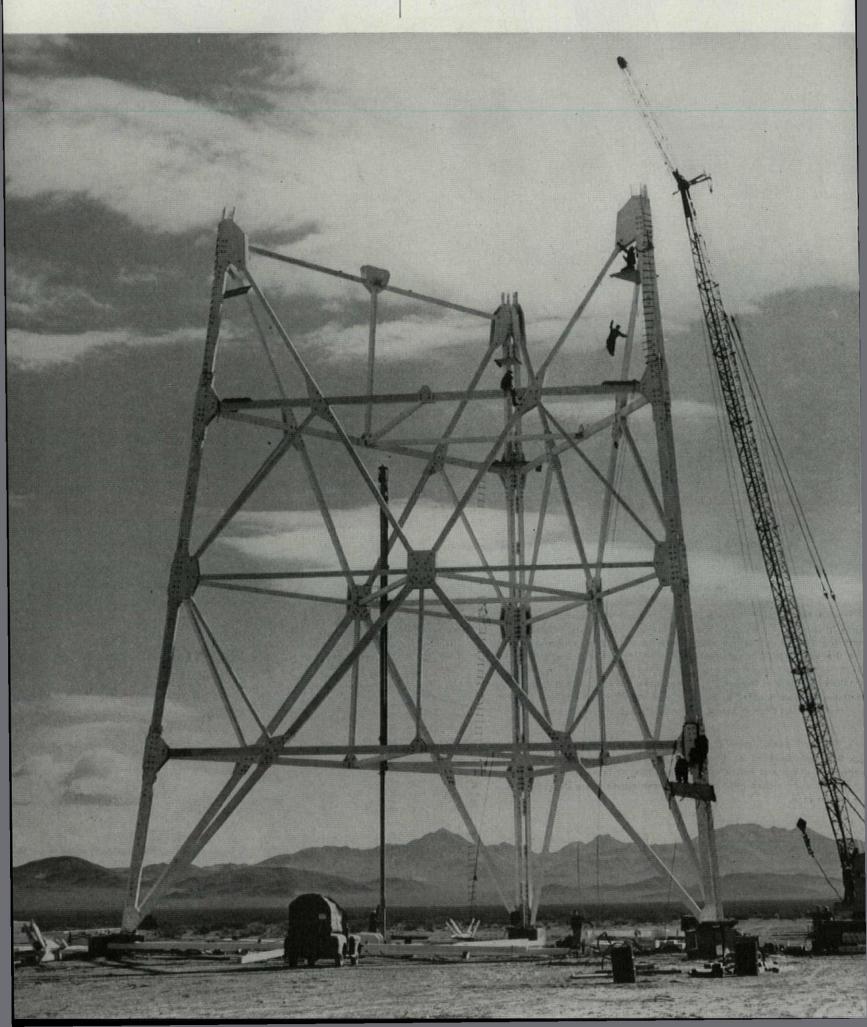
^{*} From MacLean's Magazine



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BUILDING ENGINEERING

- 1. Laminated timbers for 30-story towers
- 2. Stainless steel for curtain walls
- 3. High-velocity air for low-cost air conditioning
- 4. High-tensile bolts for speedy skyscraper construction



1. TIMBER SKYSCRAPERS

Twin target towers stand 357' high on bases 80' wide

Timber framing outbid steel for two 357' towers (the world's tallest timber structures) at the Naval Ordnance Test Station, Invokern, Calif. Though bids are not available, the towers cost an estimated \$400,000. Built 600' apart, these boldly engineered towers are surmounted by laminated wooden sheaves to carry three 4" manila ropes by which 21/2-ton targets can travel between the two towers for the development of naval guns and gunners. Ropes are attached through eyes to 1" cable falls several hundred feet away from the towers. At initial tests, deflection of the tower tops under design loading was less than 6" inward. (A failure in the ropes once caused a sudden release of tension and considerable strain on the towers, but the whip at their tops was under 9".)

The towers are three-sided structures, each side an independent panel tapering from 80' at the base to 5' at the top. The tower is calculated to stand on two sides only should the legs of one panel become damaged.

Design loading: 30 psf wind load on the projected area of the three legs and on twice the projected area of the diagonals (equivalent to 110-mph gale) plus a load of 28 tons suspended 250' off the ground between the two towers.

Laminated construction. For economy, all timbers are laminated from 2" x 10" structural grade Douglas fir, then finished 9" thick and varied in depth as required. Legs, for instance, are 145%" deep at the base, while diagonals average about 6" deep. Gusset plates and connecting members are of 25%" plywood, fastened with metal connectors and 7%" bolts.

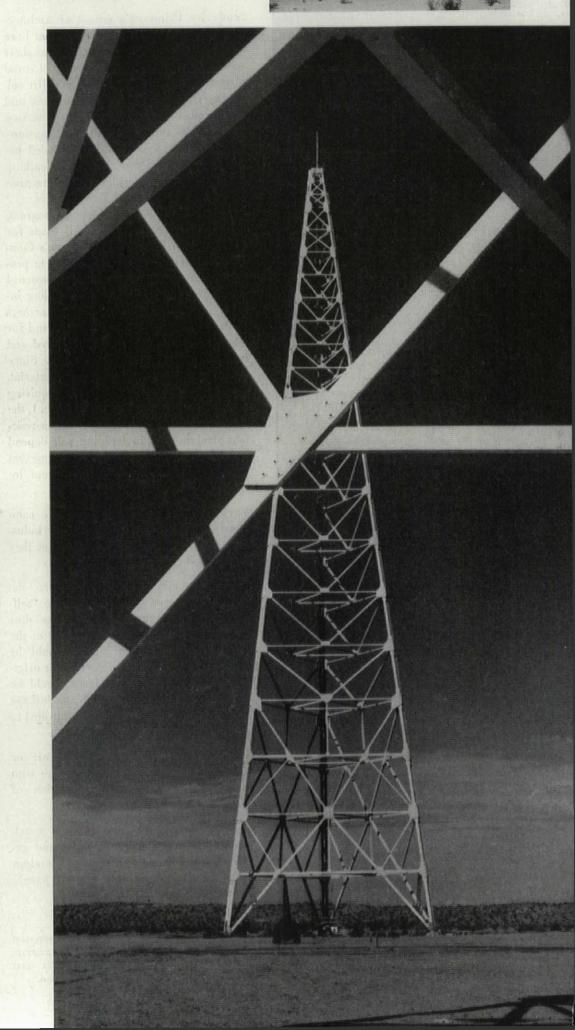
Each side panel is built with 24' leg members throughout, joined by a K-brace web system. Above 240' the K-brace sections are 12' deep, while the top three sections are 7' deep each.

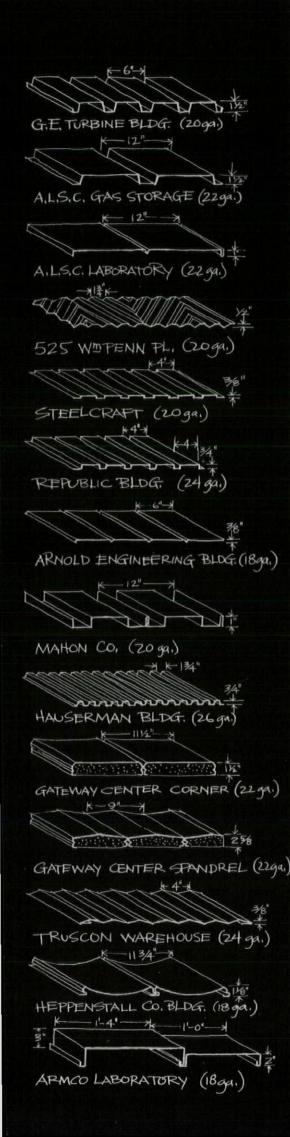
The structural design was by Holmes & Narver, consulting engineers, fabrication by Summerbell Roof Structures and erection by Henry E. Robertson Co.

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Workmen are dwarfed by the 24' long 9" x 14%" laminated timbers of this huge tower. Legs stand 80' apart on triangular concrete base.

Timber connecting plotes and 7%" bolts can be clearly seen in framing close-up of twin of 357'high tower in middle distance. Air connections are made with steel shear plates back to back.





2. BEHAVIOR OF STAINLESS STEEL CURTAIN WALLS

Research report reveals merits and deficiencies of existing installations to hel

Study by Princeton's school of architecture of the 30-odd US buildings that have used stainless-steel walls reveals that sheet metals require careful design to avoid visual distortion, corrosion and excessive dirt collection. Other major findings: thickness and profile must be balanced; a curved section best permits expansion without distortion; horizontal surfaces should be avoided because they collect dirt; and many calking materials require considerable maintenance because of their rapid deterioration.

Part of a two-year research program, Princeton's preliminary study is made for the American Iron & Steel Institute's Committee of Stainless Steel Producers to provide sorely needed data on stainless-steel walls for the guidance of the building industry. The committee and the researchers at Princeton see a tremendous demand for metal walls that can be prefabricated and installed quickly at reasonable cost. Since stainless steel is a high-quality material, expensive in first cost (though requiring practically no subsequent maintenance), the extent to which this highly weather-resistant steel is used in building will depend largely on the ingenuity and economy that goes into its design, fabrication and installation.

Performance. Stainless steels are completely weather-resistant in urban, industrial and rural areas, whether or not they are cleaned regularly.

Appearance. Although properly designed stainless-steel panels may be "selfcleaning" above a certain airborne dust level (as observed on the 87th floor of the Empire State building), they should be cleaned occasionally to preserve their original sheen. Horizontal surfaces should be avoided as they collect dirt. Water leakage from inside the panel must be controlled to avoid streaking.

Calking alone will not prevent air or water leakage because it deteriorates with continual expansion and contraction of joints.

Dust pattern. Wherever there is metalto-metal contact between interior and exterior surface skins, a dust pattern develops reflecting the inner framing of the panels.

4111

Surface configuration balance stainless-steel thickness and cross-section for maximum strength. Slightly curved surface shows least distortion from expansion and contraction. **Distortion.** Finally, the greatest problem is to control surface distortion while using a minimum thickness of steel. The controlling factors—thickness, unbroken surface area, "flatness" of face, configuration must be carefully balanced since even the smallest physical distortion may produce unsightly visual disturbances. On this major problem the report notes:

The lightest metal observed, a 26-ga. prefabricated panel with 3/4" ribs, 3/4" deep, shows no distortion.

▶ Flat panels of 24-ga. steel, well reinforced, show no distortion when no more than 3" wide for a depth of 3/4". This same thickness of steel in 4" V-sections, 3/8" deep, appears distorted unless extensively reinforced.

Minimum thickness for relatively wide, flat faces is 22 ga. (.031''). This presents a satisfactory appearance when used with lightweight insulation in flat rigidized panels 10" to 12" wide and $1\frac{1}{2}$ " deep.

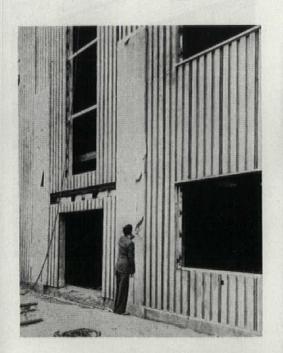
A slight distortion occurs in 16"-wide panels of 18-ga. stainless.

• Visual distortion is overcome by a slight curvature in the panels, which helps relieve local expansion and contraction.

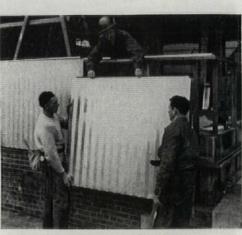
Since a factory-made curtain wall requires volume production for economy, the report points out that there must be considerable agreement among those responsible for the design before it is likely to be widely accepted.

Experience abroad. The trend to thin metal curtain walls is increasing rapidly both here and overseas, notably in Germany, where many curtain walls are manufactured using formed aluminum and stainless steel, and in England, where the emphasis is on prefabrication and lightness. We can benefit from British experience with the pitting of stainless steel in their exceptionally corrosive atmosphere, since this experience serves as an accelerated weather test for us. They find that the occasional cleaning of exterior metals is the best deterrent to corrosion.

In conclusion, the report states that study, now under way, is needed to develop design and performance data, to be used to fabricate full-size wall sections, each analyzed in regard to initial and maintenance costs, building codes, speed and method of erection, backup materials, interior finishes and window applications. uide today's designers in use of stainless-steel wall panels

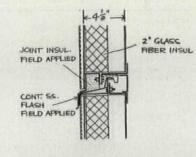


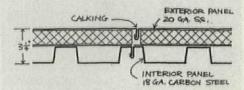
IS GASS SILL

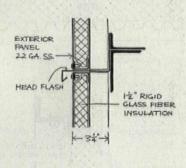


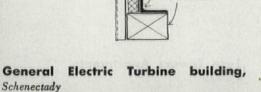
20 GA GARBON STEEL CALKING 2" GLASS FIBER INSUL.











3"x4" L / 4"x6" SILL

Construction: 20-ga. square-ribbed panels 31/4" deep, 2' wide and of varying length attached to structural frame with spot welds 12" o.c., at flat 18-ga. carbon steel interior panel. Glass-fiber insulation 15/6" thick; "U" factor of 0.14.

Performance: In four years this wall has required no maintenance. Some minor rust spots have occurred but seem to be deposits left from other metals at time of erection. Poor drip design has led to discoloration at the fourth-story window soffits where water marks can be seen from below.

Designers: Stone & Webster Engineering Corp.

Truscon warehouse, Baltimore

Construction: a vertical "V" corrugated 24-ga. stainless-steel panel prefabricated in 36" and 60" widths. This light-gauge panel is reinforced by horizontal angle stiffeners 30" o.c., insulated with 2" glass fiber and backed with 20-ga. carbon steel panels. Thickness 4½"; "U" factor 0.11.

Performance: this panel has the shallowest corrugations of any in this study, 4" wide "V's" only %" deep. This does not appear sufficient to prevent surface distortions from thermal and other hidden forces. The lower panels bowed out vertically due to thermal expansion and the vertical joint between panels opened and closed with the weather, squeezing out the calking in the joint. Though the exterior surface has never been cleaned no rust spots or corrosion could be observed.

Allegheny Ludium Research Laboratory, Brackenridge, Pa.

Construction: walls are composed of H. H. Robertson standard panels having an exterior ribbed surface of 22-ga. stainless steel and a flat interior panel of 18-ga, metal coated carbon steel. There is no direct metal-to-metal contact between the two surfaces. Insulation between them is $11/2^{\prime\prime\prime}$ rigid glass fiber. Panels are welded to supporting channels on the frame of the building. Thickness $31/4^{\prime\prime\prime}$; "U" factor 0.18.

Performance: good, except for a few minor cases of dimpling at spot welds, which is accentuated by the high reflectivity of the metal. This tendency of sheet metals to deform at fastenings must be watched carefully during installation.

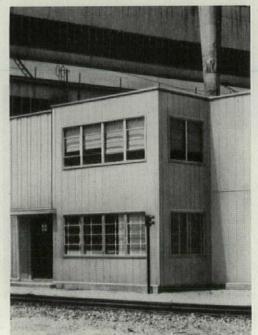
Designers: William York Cocken, architect.

Designers: Truscon Steel Co.

Behavior of stainless curtain walls



3' RIGID INSUL 26 GA SS. CORRUGATED CONT: SS. FLASHING FLED INSTALLED COL: FLASHING FLASHING



HOCK BOLT IB GA.S.S. PANEL SS CAP PLASHING SS SCREWS CAP



Prefabricating plant of the E. F. Hauserman Co., *Cleveland*

Construction: prefabricated panels about 5' x 6'-8" high are attached to a steel frame by angle clips bolted to angle girts and by bolts to welded nuts inside each metal panel. The exterior sheet is of 26-ga. stainless steel, the lightest gauge ever used in curtain wall materials, strengthened by small vertical ribs, four every 7". The interior sheet, of carbon steel, is joined to the exterior sheet by a cork spline to avoid metalto-metal contact. Inside the panel is 3" of inorganic rigid insulation. Thickness of the panel: $3\frac{1}{2}$ ".

Performance: since erection in 1950, these panels have required no maintenance and show no evidence of corrosion.

Designers: The E. F. Hauserman Co.

Armco Steel Corp. laboratory and dispensary, Middletown, Ohio

Construction: 18-ga. stainless exterior panels in 16"-wide sheets fastened to the girt angles by hook bolts. Interior walls are furred out with wood and covered with foil-backed rock lath and plaster or hardboard. Wall thickness: 3". Insulation: 2" glass fiber giving a "U" factor of 0.11.

Performance: Armoo tested various methods of construction. Where painted hardboard was nailed directly to the wooden furring strips, without using a vapor barrier, every strip was discernible on the hardboard. This clearly shows the importance of a vapor barrier. Although open hearth furnaces are close by, no corrosion or discoloration can be seen. Some slight waviness in the width of the 16" panels developed during fabrication.

Designers: Peter J. Weich, architect.

Twin Towers Apartments, Chicago

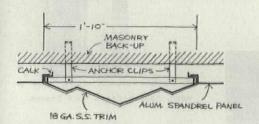
k2前 k1之"

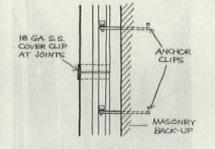
Construction: spandrel sections of 22-ga, stainless steel, horizontally ribbed and backed with $1/_2$ " lightweight insulating concrete. Vertical stiffening is provided by 34" x $1/_2$ " stainless-steel channels, set 28" o.c. Each 3" spandrel section is bolted to reinforced concrete spandrels. Horizontal joints overlap and are welded, vertical joints butted and calked.

Performance: satisfactory. In effect, this building uses stainless steel, not as a curtain wall, but as a veneer for masonry.

Designers: A. Epstein & Sons, architects and engineers.







Empire State building,

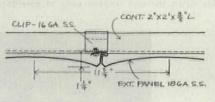
New York City

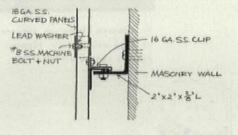
Construction: 18-ga. stainless-steel mullions between windows and cast aluminum spandrels are attached by straps to structural steel spandrel beams. Column covers are 22" wide and anglebraced on the back. Each joint is calked for weathertightness, requiring a major maintenance operation which has to be repeated every few years.

Performance: there is no evidence of corrosion on the stainless-steel trim used on this building. A gray-to-black deposit covering the steel on all sides up to the 84th floor is easily removed by soap and a damp cloth or a rubber eraser. In spite of this layer of dirt, the trim gleams in direct sunlight. Above the 84th floor the stainless-steel strips are comparatively free of dirt and have never been cleaned since the building was erected.

Designers: Shreve, Lamb & Harmon, architects.





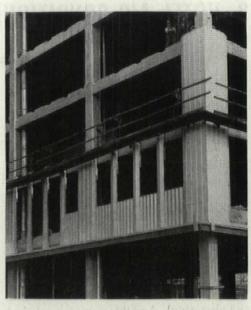


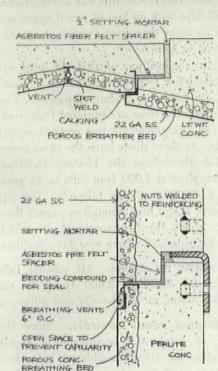
Heppenstall building, Pittsburgh

Construction: this existing brick building was entirely enclosed in stainless steel. Concave strips of 18-ga. stainless, 1134" wide, 11/4" deep and 14' long, are bolted to clips on stainless-steel supporting angles, which in turn are bolted to the masonry wall. Vent holes, 3_8 " diameter, are provided at 2' centers. The roof is also covered with stainless steel.

Performance: the concavely curved profile of the vertical wall members is most practical for stainless steel, as the curvature takes up thermal expansion and contraction. The renovation was completed in 1952; the steel appears in excellent condition chowing no distortion or corrosion.

Designers: Hoffman & Crumpton, architects.





Gateway Center,

Pittsburgh

Construction: prefabricated concrete spandrel, mullion and column panels faced with 22-ga. stainless steel. Back of the steel is first a 11/2''layer of porous concrete as a "breathing" space and a further 6" of lightweight perlite concrete, giving a "U" factor of 0.23. Spandrel, mullion and column cover panels are first bolted, then welded into position. Wall thickness: 51/2''.

Performance: some unfortunate waviness has appeared over the stainless-steel surfaces, the cause of which has not yet been determined. Possible causes of the blistering: 1) the relatively flat surfaces are too flat to permit thermal expansion and contraction without distortion; 2) the backup concrete shrank in setting, causing buckling of the steel sheet to which it is bonded; 3) the steel sheet might not have been truly flat initially.

Designers: Eggers & Higgins and Irwin Clavan, architects; Starrett Brothers & Eken, builders.

3. HOTEL AIR CONDITIONING

High-velocity and low-temperature air supply permit small ducts and inexpensive controls, help hold costs to \$750 per room

Painstaking engineering analysis of an airconditioning problem paid off in the 36year-old Lincoln Hotel in Indianapolis. The central system exploits high-velocity (4,000 fpm) air at a low supply temperature (58° F.), and thus provides highquality individually controlled air conditioning. Cost of supplying 250 rooms of this 400-room hotel was only \$728 per room (plus about \$20 a room extra for furring and plastering). And this was accomplished in 60 days with no loss of rental space and with no more than four rooms out of commission at a time.

Since the ceilings of this old hotel are relatively low $(9\frac{1}{2}')$, ducts had to be small and, for low costs, as short as possible. Two zones on each floor are supplied from rooftop fan equipment via two vertical supply ducts. As these ducts have the same crosssection throughout the 15-story building, air supplied at 4,000 fpm falls to an average 3,000 fpm at floor take-offs. This air velocity is still high enough to permit floor ducts of one third conventional size which can be concealed above new false ceilings.

No noise, no drafts. Air velocity falls again (to 2,000 to 2,600 fpm) in the branch ducts, room take-offs and diffusers.

Individual room controls. Since the type of hotel-room occupancy is highly variable, the client considered individual room controls mandatory. Here, with a stable high-velocity system, room temperature is controlled by varying the incoming air supply. This is done by a simple wall control operating the damper in each room.

Minimum revenue loss. By placing refrigerating equipment in the basement and air purifying equipment on the roof, economical concentration of equipment is achieved without taking up valuable rental space. Vertical supply ducts are placed in unused space at the ends of corridors and in the elevator lobby. Air return is via existing pipe shafts running up from bathrooms to roof, where return air can be exhausted or purified and recirculated.

Cost of the remodeling was low: air conditioning, \$150,000; electrical, \$12,000; and two penthouses, \$20,000 — total, \$182,000. The installation was designed by Gardner Savage and Bevington, Taggart & Fowler, Inc., consulting engineers, in cooperation with Connor Engineering Corp.



1. Penthouse fanrooms supply 58° air to two vertical main ducts at 4,000 fpm.



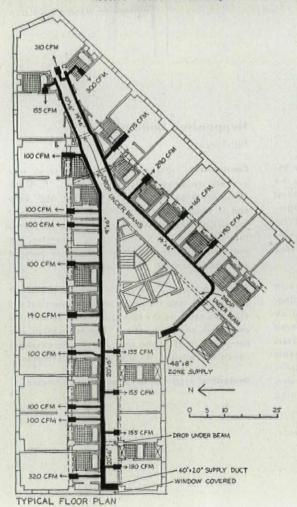
3. Branch ducts reduce air velocity to 2,000 fpm at room take-offs.

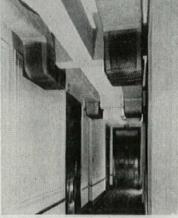


2. Exposed main ducts hung outside hotel by-pass top-floor dining rooms, then enter building to continue down through unused ends of corridors.



7. Acoustic lining of diffuser cuts noise of high-velocity air supply. Double reflectors reduce air velocity.

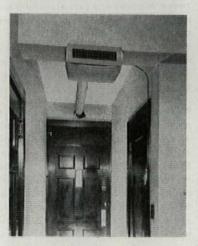




4. Double branch ducts, only 6" deep, pass beneath floor beams.



5. New false ceiling hides ducts with new lighting and acoustic tile.



 Room diffusers are high up to avoid drafts. Ductwork will be hidden by new false ceilings.

4. BOLTING SPEEDS STEEL ERECTION

Mile High Center saves time and money with high-strength bolts and wire reinforcement of concrete

Two 23-story steel-framed office buildings erected simultaneously in Denver, Col. allow direct comparison of bolting vs. riveting.

The Denver Club building, with 2,615 tons of structural steel, was riveted in 18 weeks; while the larger Mile High Center building, also 23 stories high and with 4,606 tons of structural steel, was bolted in 13 weeks, thus saving at least five weeks in steel erection time.

Direct per-ton costs for bolting proved about the same as for riveting, according to Bethlehem Steel engineers who erected the Mile High Center, but they cite other important advantages for bolting: 1) more strength-the high-tensile steel bolts have greater shear, tensile and fatigue strength than rivets; 2) smaller erection crewsonly two men per crew are needed for bolting compared to the four-man crews used for riveting, and further, bolting is easier, requiring no specialized training; 3) less noise-the pneumatic wrenches used to tighten the high-tensile bolts make less than half the racket of a rivet gun and for considerably less time.

High-strength floor reinforcing

As well as high-tensile bolts, the Mile High Center uses new high-tensile wire fabric to reinforce its 5" thick lightweight concrete floor slabs. The 3" x 16"-6/10 welded wire fabric is designed for stresses of 29,000 psi thanks to a minimum yield strength of 56,000 psi (ultimate 70,000 psi). The fabric is draped continuously over 8'-4" spans, providing negative reinforcing over the supporting beams and drooping to provide positive reinforcing at midspan.

There is a further saving of about 10% in floor steel since the floors are designed as composite beams, with the floor steel acting in unison with surrounding concrete to resist live loading. Poured at the same time as the floor slab itself, this concrete provides fireproofing as well as added strength.

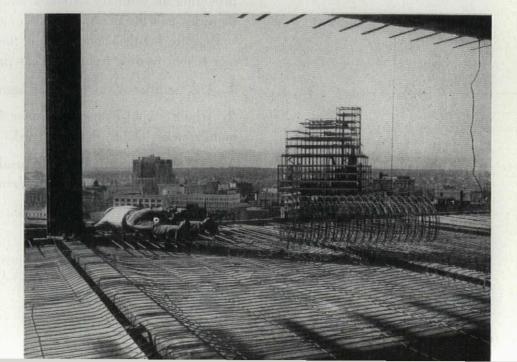
The Mile High Center is designed by Webb & Knapp, Inc., with Kahn & Jacobs and G. Meredith Musick, associate architects. George A. Fuller Co. is the general contractor. continued on p. 210

Mile High Center (AF, Set. '53) was framed in only 13 weeks with aid of high-strength bolts and pneumatic wrenches.

that bolts, with hardened steel washers, can be bolt to refusal, thus tightness can be controlled by the operating air pressure.

... pneumatic impact wrench drives home each

High-tensile wire mesh provides both positive and negative reinforcing for the floor slabs. Composite beams and slabs are poured as one, using expanded clay concrete of 2,500 psi.





Tapered steel peg lines up framing members so

screwed into place by hand, then . . .





Hedrich-Blessing

Kitchen-cafeteria in Palatine, III. school. Perkins & Will and Charles Klopp, associated architects

How to cut the cost and confusion of SCHOOL FEEDING

Children, teachers and taxpayers all stand to benefit from

new developments in cafeteria and lunchroom planning

Booming school enrollment has forced school administrators, architects and kitchen planners to look for new answers to the old problem of the school lunch. In existing schools as well as new ones, the answer is no longer a simple matter of providing an ordinary cafeteria and a big dining room. The high cost of such facilities and the pressing need for classroom space has ruled them out.

Happily for the school people, the children and the taxpayers, the search for new school feeding techniques has paid off in at least five ways:

1. The traditional cafeteria has been restudied for greater efficiency.

2. Whole school districts are now fed from a central kitchen with the aid of mobile steam tables, delivery trucks and a small serving area in each building.

3. In existing schools the overcrowded dining room has been supplemented by food carts from which lunch is served in classrooms.

4. In new schools the dining room has been replaced by the space-saving and cost-saving multipurpose room.

5. Vending machines, which dispense sandwiches, ice cream and all kinds of beverages, are saving floor space and manpower in schools as well as in idustrial plants and offices.

For the cafeteria: faster service

Although the cafeteria is here to stay, the kind that forces hungry children to suffer the tortures of a long, single serving line is on the way out. The modern cafeteria recognizes that while some children require a full meal, others need only a bowl of soup, a glass of milk or a dessert to round out the sandwich lunches they bring from home. There are many ways to accomplish and speed up the service operation:

• Dispense milk and ice cream (the two most popular à-la-carte orders) from a separate table well out of the way of the regular serving line. (A student attendant and student cashier might operate this table.)

Invite vending-machine concessionnaires to handle the à-la-carte demand for milk, ice cream and soft drinks.

Provide two serving counters (each 30' to 35' long) when more than 250 students are to be fed at one sitting.

▶ Widening of the serving-line aisle to permit and encourage children to leap-frog each other and by-pass parts of the food counter.

▶ Offer three types of service with one line for each: 1) a standard lunch, 2) à-la-carte selection, 3) beverages only.

Success or failure of a cafeteria may depend more on the space relationship established by the architect in his preliminary design than on the precise equipment layout suggested by the kitchen planning consultant. Although conditions vary greatly in different communities and even in schools within the same school district, some rules of thumb are useful in early stages of design. As a rough preliminary guide, these space allowances are often used:

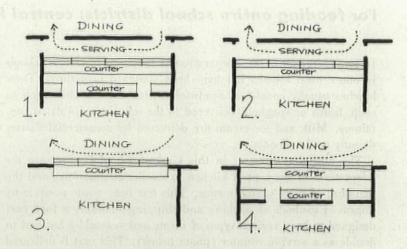
	per seat	per student
Dining-room area	10 to 12 sq. ft.	3 sq. ft
Kitchen and serving area	5 to 6 sq. ft.	2 to 3 sq. ft.
Total area	15 to 18 sq. ft.	5 to 6 sq. ft.

These data are based on assumption that some students go home for lunch and that the others eat in three sittings. Kitchen areas include storage, toilets for staff, office, etc.; 3 sq. ft. per student are needed for 100 meals in three shifts, 2 sq. ft. for larger numbers.

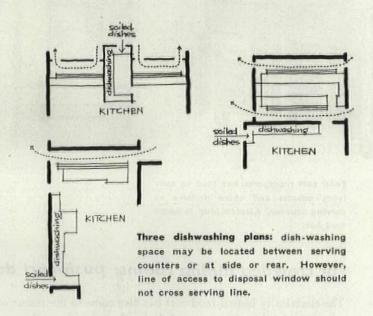
The area required for a school cafeteria varies with the degree of separation between the kitchen, serving area and the dining room. Although it is ideal, complete separation of these three areas requires more space than when only the kitchen is separated from the serving counter. The most economical plan in both use of space and construction calls for a large opening in the wall between kitchen-serving area and dining space with drop doors to shut off the kitchen-serving area when the dining room is used for other purposes (sketch No. 3, right, above). This construction is not so "soundproof" as a fixed wall with ordinary doors but could be made so by using two sets of drop doors. It does save space, because the back serving counter is in the kitchen where it can be used for preparing meals and the space in front of the forward serving counter for circulation of the serving line is in the dining room which may be planned as multiuse space.

School menus are usually much simpler than those for commercial cafeterias. School cafeteria costs can be minimized if the planning is closely related to sample menus provided by the school board. If the school is going to serve only soup and sandwiches, little equipment will be required. On the other hand, if a choice of two meats, several vegetables and salads is offered, obviously more elaborate equipment will be needed.

School cafeteria managers point out that they generally employ as kitchen help local women who have had no experience in the use of commercial restaurant equipment such as steam jacketed kettles, giant pressure cookers and large bake ovens. Some women learn to use and like this type of equipment, but often it stands



Four serving-counter plans: 1) Completely enclosed serving room between kitchen and dining room. 2) Service line in kitchen, no back counter. 3) Service line in dining space in front of in-wall serving counter with sliding doors. 4) Service line in dining space in front of separate service room.



idle. Morever, the school kitchen may be used by local community groups inexperienced in the use of efficient restaurant equipment.

Automatic dishwashing equipment is an important part of the modern school cafeteria. The smallest school might get by with a domestic type of washer, but most schools will require the commercial type. Dishwashing is generally separated from the kitchen by a partition, but some recent, well-planned small kitchens have done away with this barrier so that the dishwashing counters may also be used in the food preparation process before a meal.

The receiving area should have direct access to the truck platform—not across or down a hall. Storage room and walk-in cooler, if used, should be close to the receiving door and under the direct observation of the chief cook's desk so that she may check on all persons and supplies moving in or out. Space is required for the storage of garbage and rubbish cans, empty crates and boxes, and cases of bottles being held for pick-up. A slop sink or a hose and floor drain are required for cleaning garbage cans.

Although these suggestions and the *Design Standards* prepared for FORUM by Architect Harold R. Sleeper (p. 174) point the way toward efficient school cafeteria planning, the detailing of a big school kitchen may best be done with the aid of an expert. The potential labor savings in a well-planned kitchen usually warrant his employment either by the architect or the school.

For feeding entire school districts: central kitchens

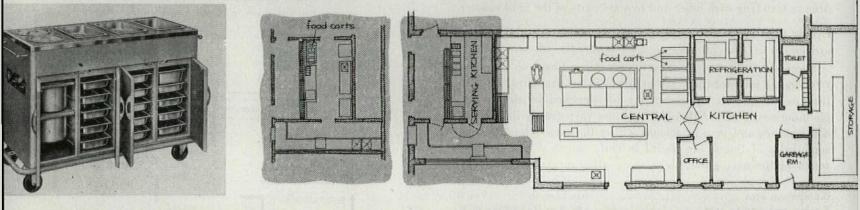
In some large cities the preparation of lunches for several schools in one central kitchen has long been standard procedure. These lunches usually consist of sandwiches plus one hot dish such as soup, beans or spaghetti delivered to the schools in insulated containers. Milk and ice cream are delivered by commercial dairies directly to the schools.

The new developments in this kind of school feeding are the adaptations of the central kitchen to smaller communities and the handling of more varied menus. This has been made possible by improved methods of packing and shipping—notably a food cart designed to keep various types of meats and vegetables hot and to double as a serving counter (photo below). This cart is delivered from the central kitchen by a truck equipped with an elevatorlike hydraulic tail gate which lowers the carts to the doors of the various schools. They are then pushed into place in the kitchen or serving line and their extension cords are "plugged in" to keep the food hot through the three 45-minute serving periods.

Although soups, stews and creamed dishes may taste equally well when kept for some time before serving, potatoes and most green vegetables lose some of their flavor and vitamins. Therefore, the central kitchen tends to limit menus to those items that will stand holding.

The central kitchen (usually located in the community's biggest school), the dishwashing facilities in the other schools and the truck and food carts cost less than kitchens for all schools.

A variation on the central kitchen-food cart theme is the use of food carts to extend feeding facilities from a school equipped with a kitchen to a new kitchenless school within pushing distance.



Food cart transports hot food to outlying schools and there doubles as serving counter. Electric plug-in keeps food hot. **Central kitchen** in Latham, N.Y. elementary school (W. Parker Dodge Associates, architects and engineers) supplies adjoining kitchen and similar serving kitchens in five other schools, a typical example of which is shown at left.

For crowded dining rooms: push-cart decentralization

The electrically heated food cart has also come to the rescue of the schools which have outgrown their lunchrooms—by making every classroom a lunchroom. The idea of delivering hot lunches directly from kitchen to classroom was pioneered in California three years ago, has enjoyed a growing acceptance in existing schools and is now influencing the planning of new schools.

A typical example of how the pushcart helps existing schools is found in Brazosport, Tex., where the school enrollment was so high and the building budget so low that Frank G. Moosberg, director of lunchrooms, was forced to serve some of the lunches in classrooms. He started with a 115-v. electric steam table (the bids ranged from \$465 to \$525) and a semi-enclosed hospital food cart with four shelves (\$138 to \$165) to haul milk, silver, napkins, some trays and desserts. These items were loaded in the school kitchen and delivered to all classrooms from kindergarten through fourth grade. Originally the carts were pushed into each room, but it was found that this caused overcrowding and confusion. It has proved more convenient to have the children come into the hall between two rooms to get their food.

Two part-time luncheon workers with these two carts have no difficulty in serving up to 230 pupils in eight to ten rooms in 50 to 60 minutes. Result: what started out as an emergency method has been adopted as standard procedure for classes up to sixth grade. They now have 14 food-cart steam tables in operation.

Brazosport teachers prefer feeding in the classrooms: "It eliminates the noise and crowding and shoving of the little ones in the lunchrooms. We have better control of the pupils while eating and have an opportunity to teach better eating habits and social graces." Says the management: "Thousands of dollars that would have been spent on additional lunchrooms have been saved. We not only save money here, but have a better feeding program."

In other schools the pushcart has been used as a substitute for a serving counter in the teachers' dining room, thus making it unnecessary to place this room immediately adjacent to the kitchen.

Solution for cafeteria overcrowding in Freeport, Tex .: . . . service from food carts in hall and

... dining in classrooms



For multipurpose rooms: built-in flexibility

The multipurpose room is not a new idea. But there are new ideas on how to make it better serve its various purposes-including school feeding. The principle need has been for effective sound barriers between kitchen or serving area and dining area so that the latter may double as a study hall, library, art classroom -all of which require quiet. If the space for an aisle can be afforded, the use of a fixed partition to separate the serving area from the dining room is the most satisfactory method of keeping out the kitchen noise. Where space saving is important, the division between the service area and the dining room might well be a series of openings extending from the counter to eye level with mullions to furnish stable joints between vertical or horizontal sliding doors. These doors should be of relatively heavy wood or metal construction to furnish the mass and stiffness required for good sound insulation. They should have a tight fit or felt strips to reduce leakage around the edges. An alternate would be the use of a folding partition having a sound reduction factor of 35 db or better. Where a high degree of sound insulation is required either between the kitchen and the dining area or to subdivide the dining area for alternate uses, the use of double partitions is often specified.

Other important considerations:

▶ If the room is large, folding partitions will increase its flexibility by dividing the space into several rooms of different sizes.

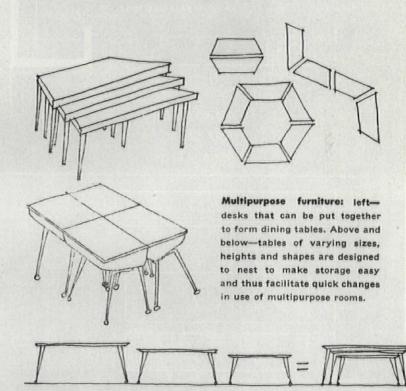
▶ If the room is to be used for study as well as dining, it must have better lighting than is required for dining alone.

▶ If it is to be used for educational movies, black-out curtains should be specified and provision made for use and storage of the projector and screen.

▶ If the secondary use is to be for an assembly room or gymnasium, provision must be made for the storage of tables and seats. There are several methods of accomplishing this. Tables with benches attached may jacknife into the wall or, after folding, may be moved on their own rollers into convenient storage space. The use of stacking furniture is gaining popularity with the introduction on the market of tables and desks designed specifically for use in school multipurpose rooms. Some stack vertically, others nest horizontally (see sketches). For dining rooms serving kindergarten through sixth grade, sets of tables of different height for different age groups provide ideal seating for both instruction and lunch, with the added feature that they can be nested.



Multipurpose room: study hall-library becomes dining room when big door over serving counter is raised. Greenwood Jr. High School, Blue Island, III. Perkins & Will, architects-engineers.



For low-cost mechanized service: vending machines

Experiments in the use of vending machines have been conducted in Chicago schools over a period of three months.

Although the number of machines and the variety of items vended in each of the Chicago schools varied greatly, the largest installation offered a long list of foods: white and chocolate milk, fruit juices, carbonated beverages, hot soup, sandwiches, hot dogs, French fries, potato chips, pies, cakes, ice cream, fresh fruit and candy. The test showed that the students bought more beverages than when sold over a counter, and although the consumption of milk more than doubled, some authorities were disturbed by the increase in use of carbonated beverages. Others felt that the vending machines prompted students to select meals which are not so well balanced as the hot lunches provided by the school cafeteria.

The vending machine will probably not replace the school cafeteria but it may be of real value for supplementary purposes such as adding soup or milk to a lunch brought from home.

Photos: (below) Fran Byrne; (top) Kranzten Studio



Vending machines at work in Lakeview High School, Chicago

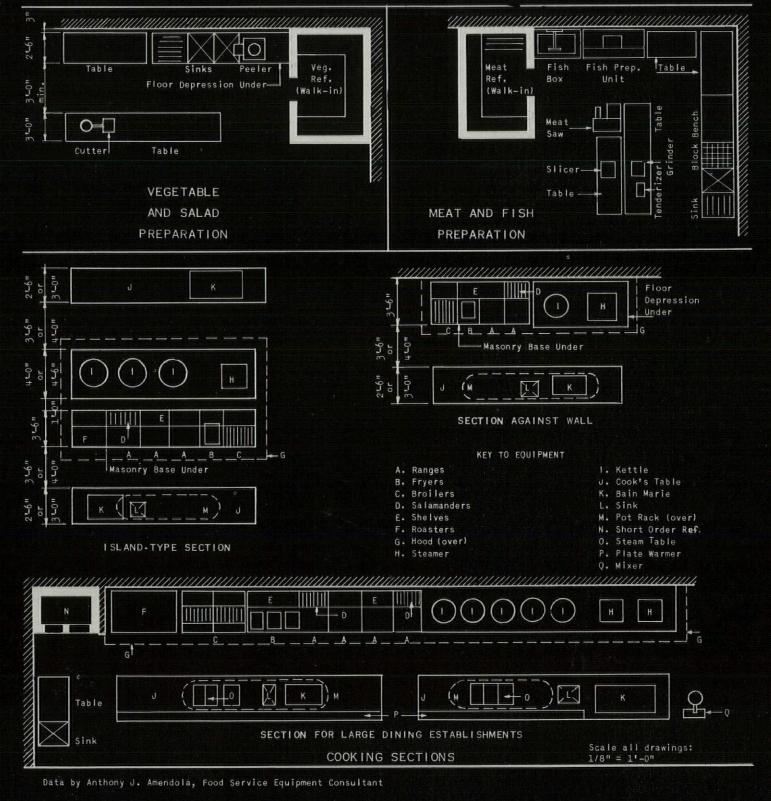
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KITCHEN PLANNING

This and the following page show schematic drawings of various kitchen areas. The drawings are intended to show efficient functional relationships of the main equipment and do not attempt to present design solutions to kitchen equipment layout. Type, quantity and layout of equipment will vary with anticipated patronage and menu. For example, large kitchens may need more items, such as ranges and kettles, than are shown under "Cooking Sections". Small kitchens may combine in a cooking area functions shown separately below, such as cooking and baking.

Work aisles:

If no thru-traffic, minimum width is 3'-0''. With 2 parallel work tables, minimum aisle width is 3'-6", preferably 4'-0" to 4'-6".



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DESIGN STANDARDS AND DATA

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Star 1 N. NE

KITCHEN PLANNING – CAFETERIAS

A cafeteria differs from other restaurants in two major ways:

1. It generally requires more advance preparation for hot foods. 2. It does not dispense food to counters within the kitchen proper, because it is a patron self-service operation.

Employee cafeterias should be as near to the work areas as possible but should provide a completely different change of scene.

plant cafeteria (60-75% is average) depends on: 1. length of lunch period.

46 47

0

Storage

35 00 1 40

33

00

37

32

000

Veg

Serves about 200 persons at one sitting

2. proximity of work areas to cafe-teria (over 700-800 feet distance de-

48

35 36

0.0

COMMERCIAL CAFETERIA

les

8 22

ters employees from using cafeteria).

42

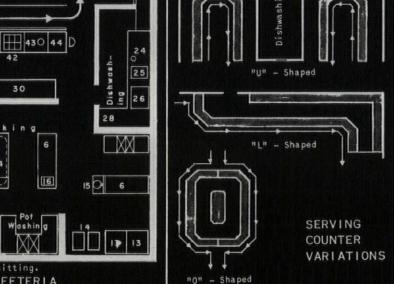
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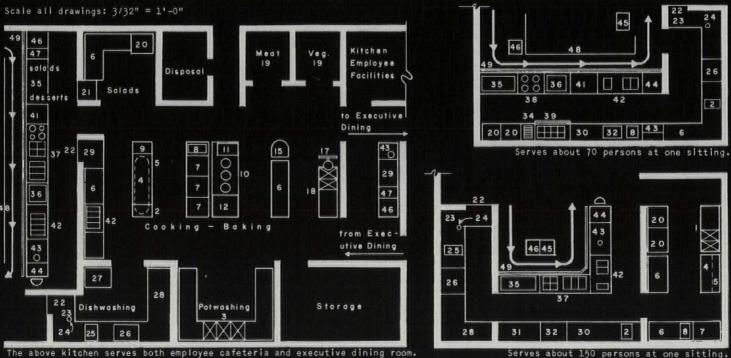
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16

3. presence of nearby commercial restaurants or cafeterias. 4. regulations governing eating in the plant (work area) itself. 2.3.4 One cafeteria line can handle 5-10 persons a minute. Employees having 30-minute lunch 5. periods should be served within the first 7 minutes. 7. If a bus boy is required in a 1. plant cafeteria, add 10% to the number of seats. 2. commercial cafeteria (100-200 11. seats), add 10-15% to the number 13. of seats. NOTE: Some industrial plants are using mechan-15: ized food trucks, with refrigerated and hot food compartments, to go to the on-job employee at 17. 18. break-time or mealtime or both. conveyor 20. beit bu 21. Dishwash 22. 23. 24. 25. 24 Dishwash-ing 27.28. 2.5 "U" - Shaped 26 30. 31. 32. 28 33. 34. MM 35.37.33 "L" - Shaped



KEY TO EQUIPMENT Sink Sink, in counter Sink, Pot-washing Cook's Table Pot Rack (over) Work Table Range Fryer Bain Marie Kettles Steamer Roast Oven Bake Oven Cooling Racks Mixer Slicer Peeler Vegetable Sink Refrigerator, walk-in Refrigerator, reach-in reach-in Refrigerator reach-thru Pass-thru windòw Soiled Dish Table Scrap Hole Pre-wash Sink Dishwasher Silverwasher Clean Dish Table Food Warmer Clean Dish Tal Food Warmer Back Bar Dish Cabinet Griddle-Grill Waffles Toaster Cold Pan Milk Cold Pan Steam Table Steam Table Soups Sandwiches Bread Table Display Stand 39. 41. 42. 43. lce Cream Cabinet Coffee Coffee Cashier Water Cooler Tray Stand Silver Stand Traffic Guide Rail Tray Slide Rail 44. 45. 46. 48. 49.



Serves about 150 persons at one sitting.

architectural forum

DESIGN STANDARDS AND DATA

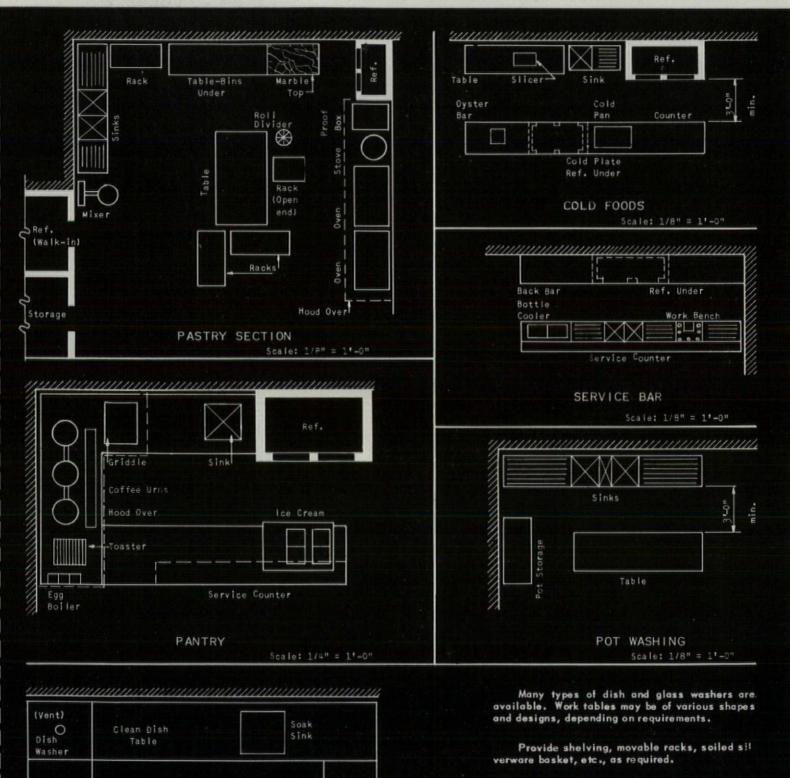
Copyright 1954 by HAROLD R. SLEEPER, F.A.I.A.

KITCHEN PLANNING

Pre-wash

O Scrap Hole

Data by Anthony J. Amendola, food service equipment consultant



Silver washers, dryers, and burnishers are sometimes incorporated in this area.

Check local codes for use of garbage grinder under scrap hole on soiled dish table.

DISH, GLASS, SILVER AND TRAY WASHING

Glass

C

Washer

0

0



Corrugated roof decking for added rigidity (p. 248)



Flush door aluminum for light weight (p. 236)

Hi-Fi speaker 12' across for auditoriums (p. 250)

Corrugated metal panels provide ceiling finish and acoustical control

Enameled perforated metal backed with mineral wool has long been used as an acoustical ceiling treatment where the requirements of the job call for an incombustible, highefficiency, low-maintenance material. It is often used in square tilelike units, presumably because most other acoustical materials occur in that form. A more efficient way to use metal is in the form of ribbed or corrugated sheets which are self-supporting over a span of several feet. Light-gauge perforated metal, rolled to the same sections as roof decking, has long been on the market as an acoustical ceiling material. Now US Gypsum offers a perforated corrugated metal for this purpose. The advantage of the corrugated form is its lower cost, high accoustical efficiency and the opportunity it offers for a change of pace in room decoration. Corrutone can be installed for an average cost of 65¢ per sq. ft. and has a sound reduction coefficient of .90 at 1,000 cycles. It comes in standard sizes of 2' x 2' and 2' x 4'. Corrugated sheets are supported at each end by continuous Z-splines, 11/4" deep, which are in turn supported by 11/2" furring channels 5' o.c. Complete accessibility is provided to the space above the ceiling; any panel can be removed by pushing up on it and sliding it over the adjacent panel. For maximum efficiency, an acoustical ceiling should be fully integrated with recessed lighting fixtures and air-conditioning outlets. The illustration shows one method of using recessed lighting fixtures with Corrutone. Manufacturer: US Gypsum Co., 300 W. Adams St., Chicago.

continued on p. 232

Metal ceiling consists of 2' x 2' and 2' x 4' panels of corrugated metal which are easily integrated with 2' square lighting fixtures in this demonstration installation.





NEW PRODUCTS

for antitects my

OPEN LETTERS

To Bob Weinberg:

You had the audacity the other day to propose nothing less than a 30-year program for FORUM and we love you for it.

You said the last 30 years had been the establishment of contemporary architecture. In this you said the magazines had been a major force and FORUM leading. The next 30 years, you said, should establish the idea of an *architecture of cities*—the deliberate construction not of picture buildings but of a *city picture*.

You said that 30 years ago the average US citizen thought you had to go back to colonial Williamsburg to find truly beautiful buildings but we know now that we can create them out of the needs and methods of our own time. You pointed out that the average US citizen still thinks you have to go back to old towns and villages of Europe to find truly beautiful towns, on tourist tickets. Within 30 years we should realize we can create them for ourselves.

In Europe, you said, there is still some living memory of how such things are done. You spoke of a German city where the city architect-think of it, over there an architect always heads planning! - had the municipality make a free gift to a landowner of air rights above a certain stretch of sidewalk, and positively demanded of him that he build his new front out over a sidewalk arcade. The reason? At the head of the street was a fine old church. In the "street view" a narrowing of the street at just the point chosen by the city architect would give this church a more suitable "frame."

It may take us a long time in the US to arrive at sophistication like that. And some patient groundwork must first be laid. But some time back we at FORUM had set our feet on the new path.

The first point to be made is

that with every building we put up we are building and rebuilding not only our own structures but building and rebuilding America. Next, there has to be realization that whole districts have to be developed or "redeveloped" at a time, and the tools for this exist. Ever since 1949, FORUM has been examining case after case, proposal after proposal, not only for "new towns" but for "urban redevelopment" and rehabilitation.

Then, after that, there has to be realization that even the practical, utilitarian building of our time can be harmonized better with its neighbors. In our modernization issues, both this year (May) and in 1950, we went into detail about how this can be done. In September of 1953, in talking of "curtain walls," we talked of the discouraging look that some of them give to the street and we proposed remedies. In that issue we also scolded the ambitious redevelopers of Pittsburgh and Philadelphia for bringing architecture last, not first, into their schemes.

Part of the problem lies in getting people to see that there actually *is* such a thing as outdoor "space." The average American thinks this space out of doors is nothing but so much air. Next month we shall print pictures showing that city streets and spaces are outdoor "rooms."

We have even talked (April '54) about the advantage of design for roadside structures—our roadsides are America's fastestgrowing visual slum.

Our European cousins, especially in England, can get quite impatient with us. We can't help that. Step by step is the only way you and we together can win. You can help, not only by suggestions but by watching more closely what FORUM is trying to do, and bringing it to the attention of your business friends.

To John Lyon Reid:

Through some exceptionally keen school men who were deeply concerned about it, we have heard that a truly good-looking school can give the architect medals from architectural juries and a demerit from school boards for the very same reason—sheer attractiveness!

The curious reasoning of school men and public runs like this: we have to have our schools cheap. A cheap school cannot look good. And a good looking school does not look mean and cheap. An architect who makes a cheap school look good is wasting his time and ours. A school board member can never explain it to his constituents. Even if it is cheap it doesn't look cheap, and that's fatal.

The good common sense of our people has to be brought somehow to bear on this. Surely this, the most prosperous country on earth, cannot tolerate the doctrine that being cheap and looking cheap and acting cheap, and cowardly to boot, toward one's own children, is the finest way of being an American.

To get down to cases, we hear that doing fine architecture has been a positive hindrance to you personally. There was that California district (let's not name it) where every school that you built for it was a prize winner-three in a row! Think of it! And did they give you a bonus and banquets for it, because all this was done handsomely within their budgets? Not in the least. Your reward was, as I hear it, that a mistaken committee of citizens began looking extra hard for "further possible savings," and decided to try somebody else as architect.

Our scouts tell us that this district's new architect is a fine man too, so on the surface of it your loss is not yet the loss of the community. But let's hold on a minute. Is *he* going to have to be a hang-dog architect to succeed with them? Is *he* going to have to act cheap and look cheap?

Elsewhere in this issue we are trying to get at the financing mess that seems to condemn the US to poorer schools at just the time when we have raised the far-fromcheap Buick to third place among our cars, and are preparing to give lots and lots of us the luxury of color TV.

But something is deeper wrong than financing. Where are we as architects if our fellow citizens do not even know that being noble or nasty in building expression is a choice that does not necessarily make the difference of a single copper? I hope every architect who reads this lets some school board member read it over his shoulder and start thinking about it. —DH.



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But he has something else to offer which is just as vital to customer satisfaction. That's the *extra care* with which he handles every *installation detail*! Call it "follow-through" or "thoroughness" or "pride in a job well done." It's all these things and it's mighty important to you. It means you can save time by depending on your RO-WAY Distributor to help select the proper size and type of RO-WAY door for the appearance and service requirements of each installation. It means you always know your RO-WAY Distributor shares your own interest in seeing that every job is done *right*!

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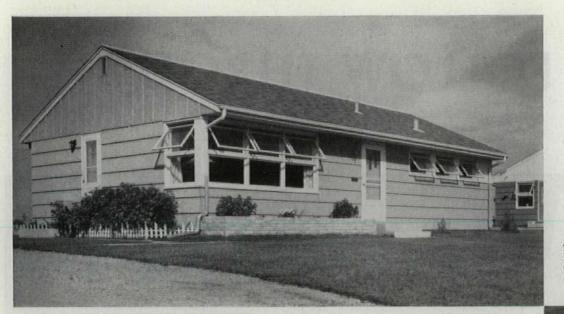




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Materials Methods

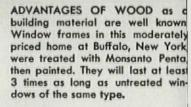


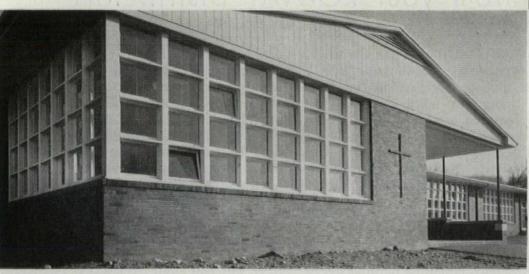
ATTRACTIVE WINDOWS AND FRAMES in this Richfield, Minnesota, development are all protected by Penta against insects and rot.

WOOD WINDOWS

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CLASSROOM WINDOWS in this New Jersey school are Penta-treated. More flexible than many other materials, wood provides singular advantages in style and economy. Penta treatment increases the service life of the wood.

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11/2"C.R.C.



Gold Bond Travacoustic or Acoustifibre -12"x 24

OPENS UP FAST FOR MAINTENANCE WORK

Lift up and out! That's the way acoustical ceiling tiles are removed to provide access to hidden utilities in this latest Gold Bond "J" Suspension System development. Now, whitepainted exposed "J" Channels carry the acoustical tiles, and at the same time add a smart design effect.

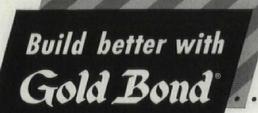
The "J" System is used to build suspended ceilings that hide heating and air conditioning ducts, electrical wiring and plumbing. Because 12" x 24" Gold Bond Travacoustic

or Acoustifibre units are easy to lay on the "J" Channel flanges, installation moves fast.

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Write our Architect Service Department for Technical Bulletin No. 577 showing complete details and drawings of the new Gold Bond Exposed "J" Suspension System.

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MET ARCHITECTS' REQUIREMENTS FOR 35-FOOT VERTICAL WINDOW TREATMENT WITH NARROW HORIZONTAL LINE RELIEF

Behind the bold, imaginative design and engineering that built the Keokuk, Iowa High School is a story of how Ceco helped solve a knotty lighting problem and achieve the architect's aim. The Problem: Architects Perkins & Will visualized a design that would relieve the broad reaches of the lowa countryside with a vertical effect and at the same time achieve a functional approach to better daylighting. Mindful that students need natural daylight, and relief for their eyes by gazing at distant outside scenes, the architects wanted a "wall of windows" that would perform all functions to an optimum degree. Standard window treatment would have left unsightly horizontal lines to mar the design's bold vertical appearance. Since the vertical lines of the windows were accentuated by the mullion treatment, it was believed necessary to minimize horizontal lines by keeping them narrow and of the same size. Here's how Ceco helped solve the problem: To create the illusion of a single 35-foot tall window, three Ceco Standard Steel Architectural Projected Windows were nested one on top of another and welded together by

Ceco Construction Crews in the field. Vertical expansion was made possible by clips at the head and sill of each unit. Horizontal expansion was accommodated through the joints at the vertical "T" mullions. Thus, at no extra cost, the effect desired by the architect was achieved . . , a massive expanse of vertical lines, uninterrupted by heavy horizontal sight lines at the windows. The assembly method provided a tighter weatherseal, and a color scheme of windows that was most unique. For areas needing ventilation at inaccessible heights, mechanical operators were installed for easy control from the floor.

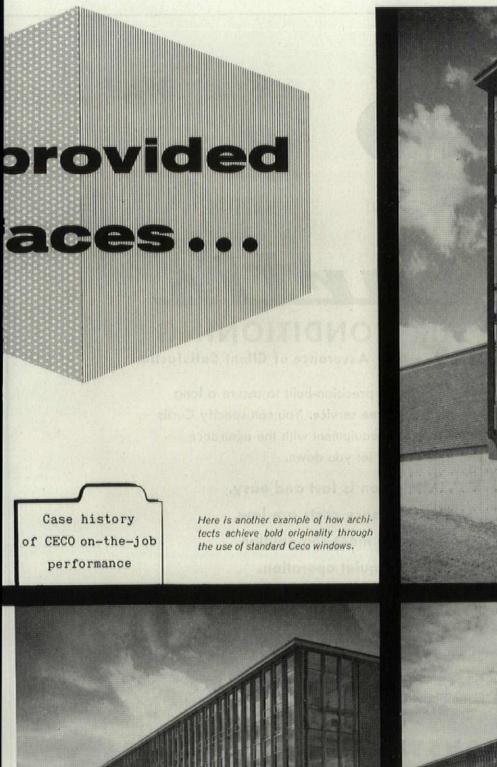
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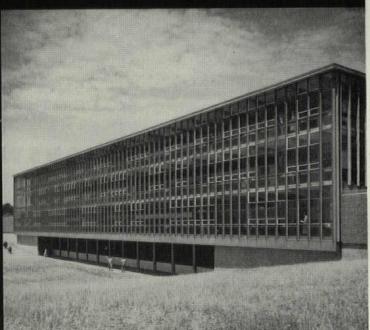
The Result: Viewed from a sharp angle, the protruding "T's" give the effect of a wall of steel. As the viewer moves toward right angles to the building, the windows begin to unfold, until, viewed head-on, they have the effect of a wall of 35-foot high windows. The "School of Changing Faces" is another example of architect-contractor-supplier teamwork in action. Next time consult Ceco on your building problem. Consult Sweet's files for Ceco windows and screens.

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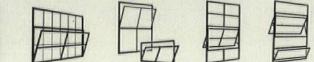
CECO - AMERICA'S WIDEST LINE OF STEEL AND ALUMINUM WINDOWS





1—View of wall of windows in Keokuk High School. Note how the "T" mullions create an illusion of a steel wall in the distant areas of the school face.

2—As you move around this wing of the Keokuk High School, the face of the building begins to change in character as the windows become more evident, the mullions less prominent.















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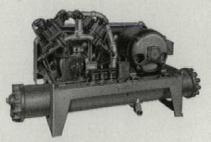
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The new Gunners Mate School, at Great Lakes, is a revolutionary concept in school construction. It is a building within a building, for within a glass shell is a free-standing, three story classroom area. The exterior, an intricate steel framework 235 by 240 by 55 feet, supports 1,130 steel Lupton fixed and projected windows. With the exception of the entrances, all glazing is with green, heat repelling glass. Built at an approximate cost of \$1,750,000, this new school is a tribute to the skill and imagination of the architects and engineers. Sparkling in the sunshine like an emerald jewel, it combines beauty and efficiency to an unusual degree.

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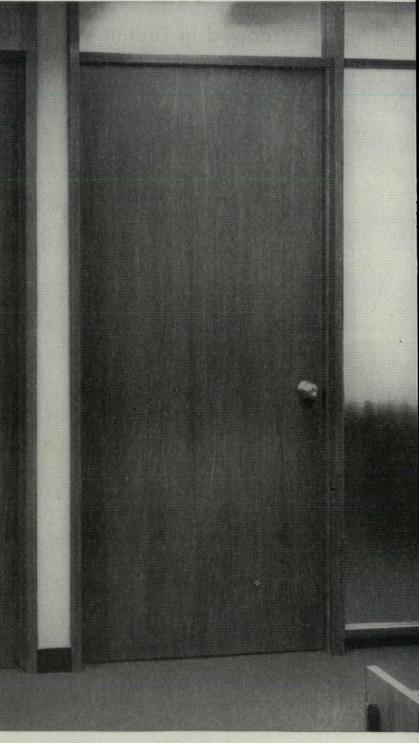
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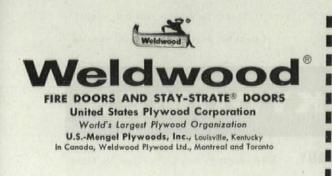
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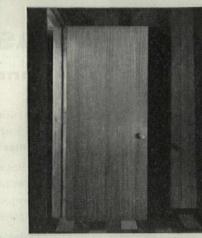




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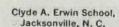
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Wascolite Skydomes are available in White Translucent or Clear Colorless acrylic plastic. They come in 3 basic shapes — square, rectangular, circular — and in a wide range of stock sizes.

CREDITS: Leslie N. Boney, Architect; M. L. Skinner, General Contractor; Isham B. Hudson, Superintendent of Schools.

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UN DEPENDING

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Architectural concrete gives large or small hospitals a clean-looking, attractive appearance. Left: 20-bed Decatur County Hospital, Oberlin, Kan. T. W. Williamson & Co., Topeka, architect and engineer. Below: 120-bed Jackson-Madison County Hospital, Jackson, Tenn. Architect: J. Frazer Smith, Inc., Memphis; structural engineer: A. R. Jessup, Nashville.



BETTER HOSPITALS



Concrete frames and floors ensure structural strength of McNeal Memorial Hospital addition for nurses' residence in Berwyn, III. Architects and engineers were Burnham and Hammond, Chicago.

Right: utility and restful charm can be achieved with concrete masonry interiors, as in the laboratory and reception room of the Phillip Fife Medical Building, Guthrie, Okla. W. H. Schumacher, Oklahoma City, was architect and engineer.

are built with CONCRETE

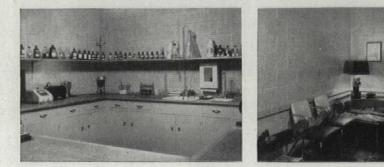
More and more modern hospitals are being built better with concrete. Hospital planners have found that architectural and structural concrete and concrete masonry can help them achieve the maximum in rugged strength and durability, attractiveness and overall economy.

In architectural concrete, the broad versatility of concrete construction is especially apparent. Walls serve as structural members, and at the same time lend themselves to almost unlimited variation in exterior treatment and ornamentation. Such effects can be cast integrally with the walls.

For typical examples and design details, write for the free booklet, "Concrete for Hospitals." It is distributed only in the U.S. and Canada.

PORTLAND CEMENT ASSOCIATION Dept. 10-7, 33 West Grand Avenue, Chicago 10, Illinois

A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work



How to give your clients a new concept of indoor weather

Honeywell Customized Temperature Control is becoming a "must" in all types of modern buildings

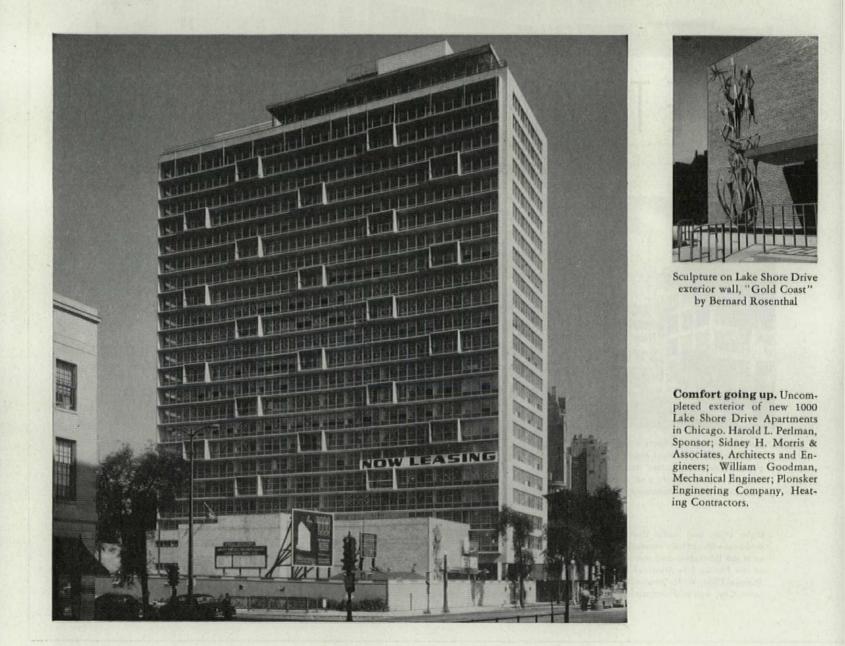
In building design, in kitchen facilities, in picture windows and a hundred other ways – the new apartment building rising at 1000 Lake Shore Drive in Chicago will offer tenants the finest in modern city living.

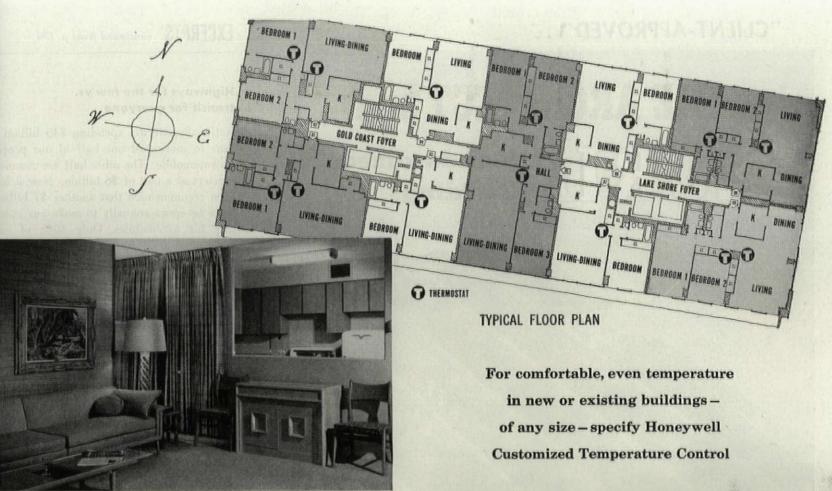
And in keeping with this tradition of the finest, heating comfort will be assured by a Honeywell Customized Temperature Control installation. This will take the form of Individual Apartment Temperature Control. Each apartment will have one or more thermostats, as the floor plan indicates.

The story, in brief form, of the Honeywell Customized Temperature Control installation in the new 1000 Lake Shore Drive Apartments in Chicago is told by the pictures and captions on these two pages. The *techniques* used, applied to your particular problems, can help you give clients the indoor weather they've always wanted—customized to their requirements.

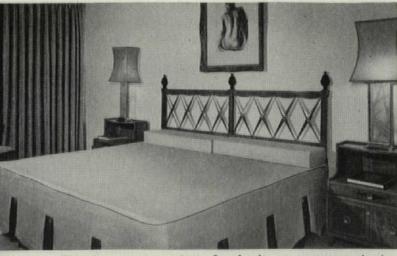
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Sleeping area comfort. In the larger apartments having two exposures (see floor plan) there's a second thermostat in the sleeping area. This enables tenants to maintain a second, cooler temperature in the bedrooms for more healthful sleeping. And with one or two thermostats in each apartment tenants on the north are just as comfortable as those on the south-no matter how bitter the winter winds.



Whether it's an apartment, office, school, shopping center,

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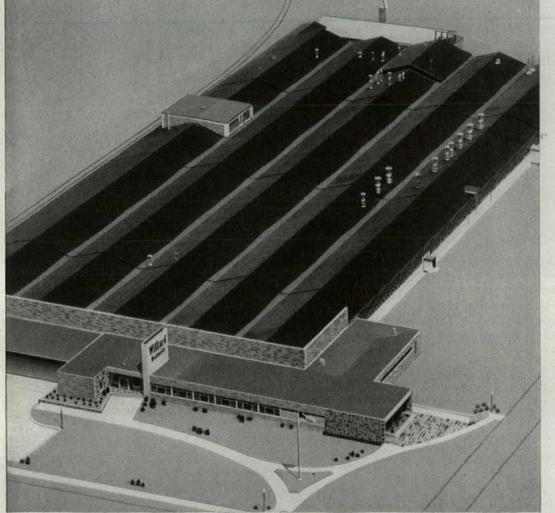


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511 FIFTH AVENUE, NEW YORK, 17, N. Y. District Offices: ATLANTA • PHILADELPHIA • BOSTON • CHICAGO • WASHINGTON, D. C. EXCERPTS continued from p. 139

Highways for the few vs. transit for everyone

Nationally, we are spending \$40 billion year to move just one half of our people by automobile. The other half use common carriers at a cost of \$6 billion. Now it ha been recommended that another \$7 billion must be spent annually to make our roads safe for automobiles. Only 40% of our population is licensed to drive on these expensive facilities. Only 25% own automobiles. How can we justify such a dis proportionate expenditure on a minority of the population? Even in a smaller, less congested city like Youngstown, 54% of the people come downtown by transit. As cities increase in size the percentage rises to 70%, 80% and sometimes 90% in congested cities with good rapid transit service. Why can't we get proportionate attention paid to transit? A fraction of the highway dollar would end urban congestion if spent on taking transit out of the traffic jam.

The conclusions of the FORUM'S Round Table on urban traffic are basic (AF, Feb. '54). They include the recommendation that the price mechanism be used to ration street space, just as it rations everything else. If this were done, sufficient money would automatically become available to construct the facilities necessary to satisfy the demand. I am sure it would also solve the transit problem by emphasizing the true economy of transit service. I commend the Round Table Report to all planners. They can obtain solid support for vital programs when support can be drawn from such sources as FORUM'S Traffic Round Table.

Even though three fourths of our families own automobiles, all members of the family do not usually travel together. For this reason, it is not necessarily true that car ownership automatically reduces transit riding-not if acceptable transit service is offered. In Toronto, there is one automobile for every three people, but every man, woman and child in that area averages 275 transit rides per year, exclusive of transfer rides. In the 1951 Annual Report of the Toronto Transportation Commission it was pointed out that "The increase in passenger automobile registration in York County since the end of the war in 1945 has been over 95%. The number of passengers carried on the City System of the Commission since 1945 has remained virtually constant. The Commission believes it can meet this competition from motorcars." This is the kind of thinking that will solve the transit problem.

continued on p. 196

KEOKUK sets the PAGE

Every student's a stovel Herman Nelson Unit Ventilators prevent classroom overheating at Keokuk by delivery of ample air to maintain room temperatures at comfort level.

New Iowa High School Outstanding In Design — and Classroom Comfort!

K EOKUK refused to tie to tradition. Result—America's most modern secondary school! Consisting of an academic wing, cafeteria and field house, this unique structure combines dash with dignity and the pleasant with the practical.

The academic wing is of particular interest. This dominating, multi-story building achieves bilateral daylighting for all classrooms; features sun-flooded, deck-type corridors which double as student lounging quarters. And in the interest of student comfort and good teaching practice, all classrooms are equipped with modern Herman Nelson Unit Ventilators. Selection of the Herman Nelson Unit Ventilator was based on its ability to provide *all three* essentials for classroom comfort. Granted, heating and ventilating are two such essentials, but the third, COOLING, is a "must" to compensate for the uncontrolled heat from students, lights, sun and skyshine through glass—prevents the recognized dangers of the overheated classroom.

For further information on how you can do the complete job of cooling, heating and ventilating more effectively and economically, see our catalog in Sweet's Architectural File, or write Herman Nelson Unit Ventilator Products, American Air Filter Company, Inc., Louisville 8, Kentucky.

Provides COOLING, HEATING, VENTILATION, ODOR CONTROL All at minimum cost



American Air Filter Company, Inc. SYSTEM OF CLASSROOM COOLING, HEATING AND VENTILATING

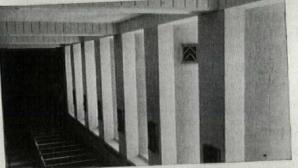
Build Better with

Detail in the office of a well-known manufacturing plant — Vibrapac Block — 2 course 8" high and 1 course 4" high. (Unretouched photo)









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NOW you can create distinctive exteriors and interiors at low cost ... because VIBRAPAC Better Block combines beauty, utility and permanence that compares favorably with any other masonry material. You build a reputation with every structure you erect using this highly regarded, economical block masonry.

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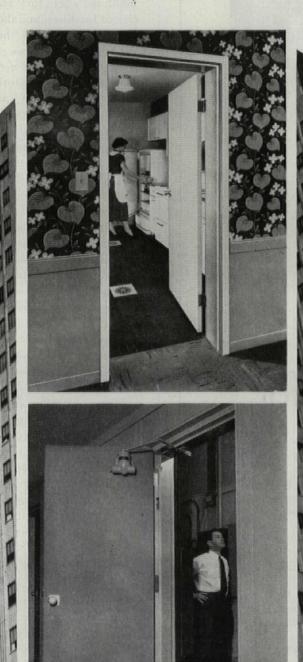
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50# Anniverson

1904-1954

skyscrapers

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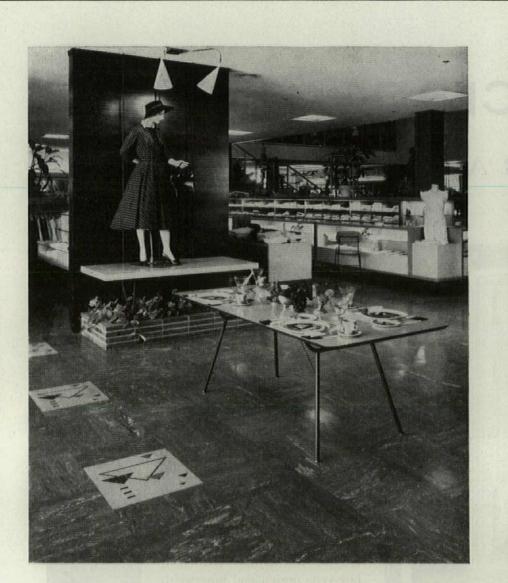
USF

195

HOLLOW METAL DOORS AND FRAMES

Here's beauty, permanence and perfect balance for use in hightraffic buildings. Internal box-type design and innerweld construction provide exceptional rigidity without excessive weight. Truly modern doors for modern buildings: $1\frac{3}{4}''$ flush design, acoustically silenced, up to $1\frac{1}{2}$ hour UL label and finished to specifications for field application of hardware. You'll find full details in Sweet's Catalog.

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Because of these characteristics, Wright Rubber Tile is particularly appropriate in large, heavy-traffic jobs, where maintenance costs might otherwise become excessive.

Pictured above is Battelstein's fashionable River Oaks Store in Houston. Wright Rubber Tile was used in all principal sales floor areas.

WRIGHT MANUFACTURING CO. 5205 Post Oak Road, Houston, Texas



EXCERPTS continued from p. 192

New buildings and neighborhoods must be planned for transit

Planners often require that new buildings provide off-street parking. Is it not more important to require new buildings to provide transit service if they do not choose to locate convenient to existing transifacilities? The requirement for extensive parking facilities forces the location of buildings where they are far removed from transit facilities, and therefore far removed from a majority of the people. A transirider cannot make use of highway facilities if he does not have a car available at the moment, but any motorist can make use of transit facilities, anytime.

We need some neighborhoods designed for families who do not own automobiles. Real estate developments are often located without regard to transit. That makes i very difficult for millions of families who do not have cars, and it scatters the potential transit riders so that they cannot be served conveniently or economically Would it not be possible to zone a residential district-in a convenient location where it could get good transit service-so that automobile storage is prohibited as a permanent thing? Only short-term parkers would be permitted. If a man can be stopped from boarding people in certain districts, why cannot a man be stopped from boarding autos where they do more harm than good?

Home ownership in some new communities costs only \$60 per month with all improvements. However, these places are often built without means of public transportation, and residents must add \$70 per month to their budgets to provide for additional automobile transportation. Transportation expense is all out of proportion to the cost of home ownership.

Transit must be separated from traffic

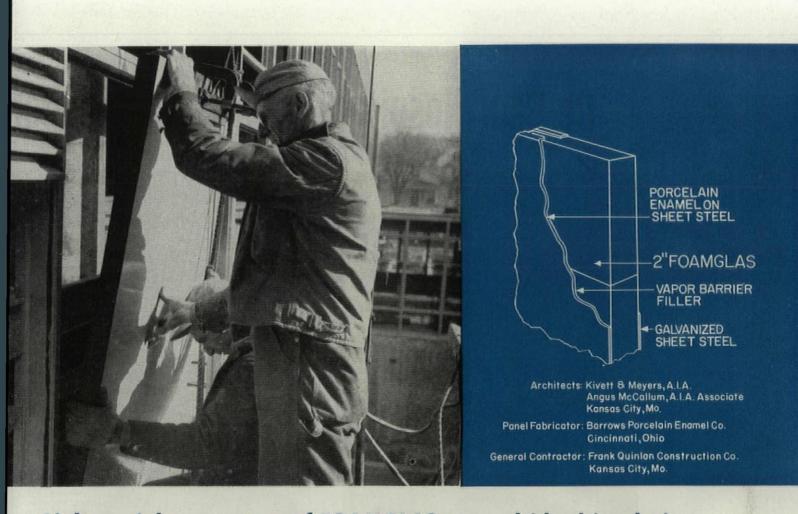
We need much greater investments in our transit systems. We need to invest in big, fast, rail rapid-transit cars that can increase the output of bus drivers by 150% or more, double schedule speeds, give a smoother ride, operate on time during traffic jams and snow storms, and offer enough seat space so that the man on the aisle doesn't have to sit in it, as he does on a bus. The 10" of added width that are needed cannot be permitted on city streets. We have got to separate transit from traffic.

We spend \$500 per capita on express continued on p. 200

WRIGHTEX WRIGHTFLOR VINYL TILE ECONOTILE

ARCHITECTURAL FILE

4795



Light-weight, waterproof FOAMGLAS proved ideal insulation for curtain wall panels at Douglass Elementary School, Kansas City, Missouri

Light-weight and waterproof, FOAMGLAS proved to be the ideal insulation for prefabricated curtain wall panels used on the new Douglass Elementary School, Kansas City, Missouri. This unique cellular glass insulation used as the core of porcelain faced panels for the new School, has been a major factor in making them a success.

The Douglass School panels were designed to secure ideal performance in non-load bearing curtain wall construction. They had to be light, rigid and weather-proof, with consistently good insulating qualities. They had to be free from possible deterioration and the formation of moisture traps. They must also be fireproof, verminproof and require little maintenance. FOAMGLAS is the only insulation that meets all these requirements. Here's why:

Since the sealed glass cells of FOAMGLAS are impervious to moisture, its insulating performance is consistent and long-lasting . . . reducing costly maintenance and replacement. In addition, this unusual insulation is light, yet strong and rigid. It is fireproof, vermin-proof and acid-proof.

You, too, are sure to find that FOAMGLAS is the ideal insulation for panel or other construction. Let us send you a sample and complete



information on how you can best use FOAMGLAS to meet your insulating needs. Write today telling us the use you have in mind.

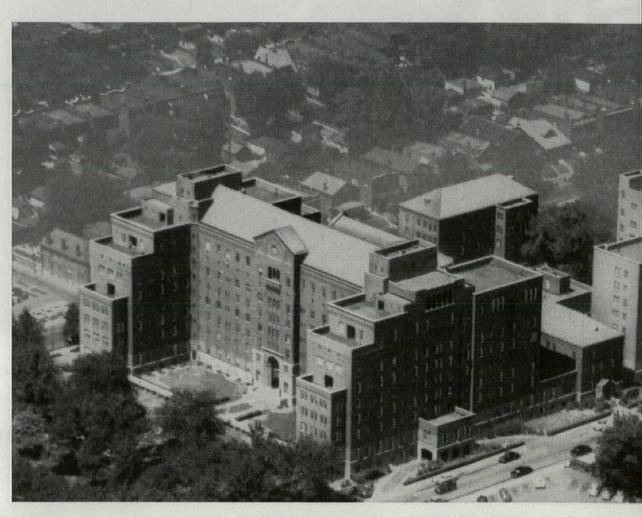
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Pittsburgh Corning also makes PC Glass Blocks

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For you see... Dunham patented temperature controls on variable vacuum steam mains can lower fuel bills on *any* building... regardless of *size, type, age or location*. With Vari-Vac, outside weather conditions and inside heat losses promptly and automatically control steam consumption so that you need less steam for more comfortable heating. What's more, you can "zone heat" with Vari-Vac to meet varying conditions of building exposure and occupancy.

There's far more to both the cost-saving and comfort features of Dunham Vari-Vac. For full information, write for bulletin 2101-A. C. A. Dunham Company, Dept. AF-10, 400 W. Madison Street, Chicago 6, Illinois.



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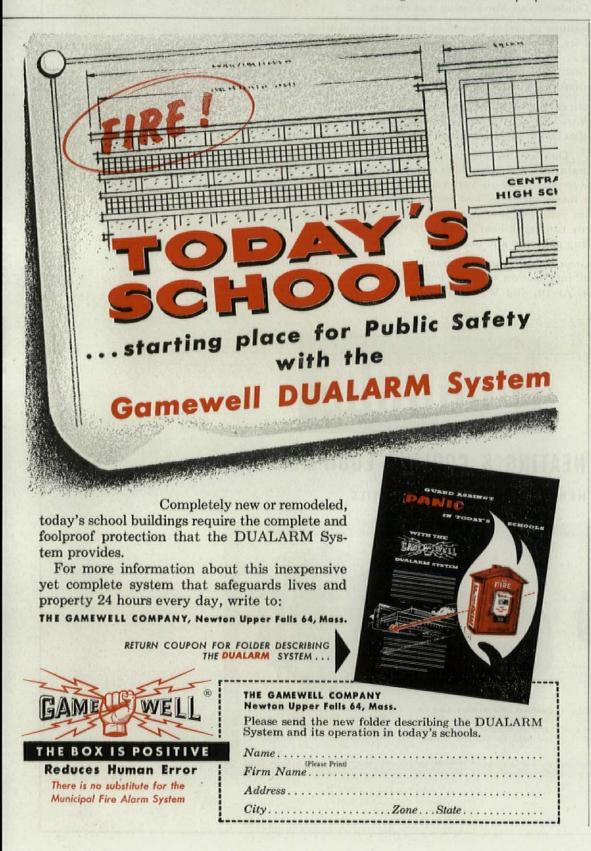


Dunham Unit Heaters. Line includes heating-cooling units, vertical, horizontal discharge and large blower unit heaters.



Dunham Vacuum Heating Pumps. Single and Duplex models. No close clearance parts. Only one moving element.

ways that only 40% of the population is licensed to use; yet we seldom get practical about spending \$175 per capita to achieve excellent transit service that 100% of the population can use. The \$175 can even be financed with self-liquidating bonds. If we must build expressways to satisfy motorist pressure groups, why not add just 5% to the investment so that a transit line can be included that will boost the number of people carried by 400%? Do not waste that 5% on a bus lane either. The bus lane will be limited to a safe capacity of only 8,000 persons per hour in high-cost, minimum-comfort vehicles. A rail line with the same right of way can move 40,000 people per hour each way. It will be free of delays caused by automobiles, particularly on slippery or foggy days when the greatest number of people need



dependable transit service. Split-second schedules can be adhered to on a private right of way. With buses, a traffic delay of only one minute on a route serving only 1,333 passengers per hour will cause an overload of passengers so great that many will have to be passed up, and all of those accepted will be packed to the doors. Some later bus will then run with empty seats, which benefits no one.

With the new urban supercongestion and our present-day wage scales, it takes at least 5 mills per mi, from every seat in a bus, occupied or not, just to pay the driver. With rapid transit, this cost is cut to 2 mills or less, a 60% reduction. Personal injury and property damage can be cut two thirds by substituting rapid transit for bus service. Power costs can be cut in half for the same amount of horsepower. Most important, travel time can be cut in half, if not more. The number of vehicles can be reduced 60%, without reducing the number of seats at all.

Transit has found a new use for railroads

It isn't necessary to build complete subways to obtain rapid transit. The only essential ingredient is a schedule speed of 18 mi, per hour or faster. This 100% increase in speed will necessitate a private right of way, but we already have some of it. Railroad tracks are often the same width as transit tracks. In the past four years, new types of railroad equipment have been developed which provide economical rapid-transit service on main line railroads. These new developments have made it possible for railroads to make money with one-car trains carrying only 50 to 90 riders. The railroads cannot do this job alone, however, for free transfers and schedule coordination are essential.

Every planner should study the existing rail network, looking for an opportunity to charter railroad service for transit riders, or for lightly used lines that can be shared with rapid transit. Many urban redevelopment plans should include proposed, if not actual, rights of way for transit.

In Youngstown, our planners have recommended development of a rapid-transit line that would cost only \$150,000 per mile to put in service. An expressway in the same area has been estimated at \$8 million per mile. The \$8 million per mile for the highway would be paid out of taxes; the \$150,000 for rapid transit would come out of the fare box.

Exit Fixtures for emergency doors, Locks for other doors

For proven performance, for simplified maintenance ...
specify Corbin Exit Fixtures for the emergency exit doors of any building to be equipped with Corbin Unit, Cylindrical or Mortise Locks. You can recommend Corbin Exit Fixtures
with complete confidence. Rugged simplicity of construction ... almost frictionless Oilite bearings ... permanently-aligned unit design ... insure responsive action at all times.
Other quality features include drop-forged levers and a foolproof dogging device. P. & F. CORBIN Division The American Hardware Corporation, New Britain, Connecticut



SAVE

EXCERPTS continued from p. 139

at a 7% rental for a 25-year deal.

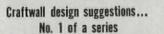
In the intermediate zone between 1009 ownership and the 66 2/3% zone, the reestate bond issue has come into play. works like this:

Supose the Smith Co. wants a new offic building but would rather be a tenant tha an owner and does not want to make an investment beyond ordinary tenant in provements. It gets the Jones Co. who wil build and manage to help plan the buildin and arrange financing. Jones Co. become the owner and gives long-term (usuall net) lease to Smith Co. If the credit o Smith Co. is A or AA, an insurance com pany will finance up to 90% of cost, upo completion or as a construction loan, b purchasing all of the real estate bond issued by the Jones Co. on the propose building. These bonds provide the insur ance company with two assurances o repayment: 1) a first mortgage on th property, and 2) assignment of the Smitl lease. The Smith lease should be for a annual amount big enough to pay interes on the bonds, to make regular sinking fune payments so that all of the bonds will be retired by the end of the lease and to leave something for equity. Since cost properly includes a reasonable builder's profit and architect's fee (and sometimes tenant im provements), the legal owner, Jones, has a very thin profit equity. He has a man agement control which limits his return until the insurance company is paid off And as owner and manager, he in effec has obligations to two owners: the owner of the money and the owner of the credit Either or both will really give him trouble if he does not perform as agreed.

I submit that the sale-leaseback concep and its first cousin, the bond issue, have injected some strange changes in the con ventional relationship between landlord tenant and managing agent. The ex-owner now the tenant, still has all the manage ment problems under his net lease, yet he has to go to an owner for permission (and for additional money, if he can get it) to make major changes in his building. It his money need is substantial and if he has a low rental to start with, he may find the price of the new money rather high. That is, the rent will not be quite so low as it was before. Yet, he has no other place to go, and usually he has no right of repurchase even if he had capital.

One of the tip-offs that the owner did not take too seriously in the early days of the sale-leaseback was the nominal continued on p. 206

How to Design for a Touch of Colonial America... Economically



Illustrated is Cherry Craftwall Style 300 . . . size $32 \ge 64$ -in., vgrooved, cross-scored, and pegged . . used in combination with paper. Roddiseraft matching hardwood trim. One of the many designs possible with Craftwall.



HARDWOOD PLYWOOD PANELING

• If you are designing colonial dining rooms in homes and restaurants, Roddis factory-finished Craftwall paneling can add authenticity and save you money. Roddiscraft offers a plate rail height. There is no waste. And the wood pegs in the style illustrated add a touch of true colonial charm.

Craftwall offers many new design opportunities. It's made in seven woods, four styles and three sizes. Stock items in hardwood moldings and trim to match are made for doors, windows . . . the entire room.

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Good plastering – big savings.

Davings with Wheeling Metal Lath actually start with manufacturing. Precision machines in control from start to finish eliminate human error.

All sheets are uniformly flat . . . no buckling, no fishtailing . . . machine-cut to uniform, true right-angle corners. Every sheet is a perfect rectangle.

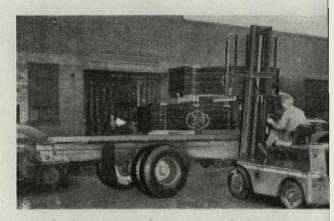
Savings mount when Wheeling *packages* Metal Lath in its exclusive "Engineered" Package . . . 500 sheets in compact lifts of fifty 10-sheet bundles. Follow a load of Wheeling Metal Lath from the factory to the warehouse to the job-site to the job:



4. Truckload of Wheeling Metal Lath at the job-site. Each Package is uniform . . . just the way it left the factory . . . trued up parallel sides and angle ends uncrushed.



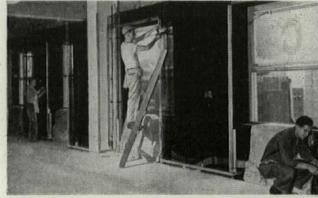
8. Lathers get busy...work swiftly...every sheet is true, flat, rigid. Minimum selvage edge prevents overlap bulges and avoids waste.



1. Unloading. Tremendous saving right here. One man a fork truck unloads a car in 45 minutes...job for took 16 man-hours!



5. Ready to unload. Insert levers behind center and . . . *h* Falling off the truck can't damage *that* Paekage. It's rult's solid! It's tight!



9. Ready for the plasterers. Wheeling Metal Lath guara a good plastering job. That's because it "gives" and "brea ..., allows for contraction and settling.

get both with Wheeling Metal Lath!



2. Storing — another big saving. Wheeling's "Engineered" Metal Lath Packages stack ceiling high without shaking or wavering ... because the Packages are *flat*!



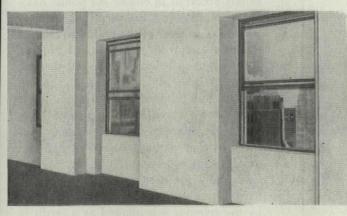
6. Workman has to deliberately *cut* open the Package. This, plus *weight* of the Package makes pilferage virtually impossible . . . another saving.



3. Color-keyed near ends and number-stenciled for weight identification are time-saving features. Each bundle is tagged for easier counting.



7. All set. Lather inserts baling hook into bundle and hoists with block and tackle to desired floor. Every sheet is uniformly rectangular. Every corner a perfect 90°.



10. Another job well done with Wheeling Metal Lath... and savings, too, all along the line because of handling ease, packaging care, product superiority.



The complete line of Wheeling building materials includes Metal Lath and Metal Lath Accessories, Expanded Metal, ExM Angle Frame Partitions, Steelcrete Reinforcing Mesh, Steelcrete Vault Reinforcing, Tri-Rib Steel Roof Deck, Cop-R-Loy Galvanized Sheets, and SofTite Galvanized Sheets.

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EXCERPTS continued from p. 202

charge he made for renewals. He was getting 51/2% and 6% net rental for 30 years. He figured he would be out at that time, so when it came to discussing renewals, he foolishly granted these renewals for 1% or 11/2% or 2%.

This is being changed. We notice the change particularly in our post office deals today. The owners are now looking for capital gains. They are willing to forego income for the five- or ten-year period of the lease, and they are looking forward to capital gains at the end of that period. Their ownership interest is more lasting.

Why careful design does not always save money

Digest of remarks by Architect Perry Coke Smith of the firm of Voorhees, Walker, Foley & Smith before the Building Research Institute.

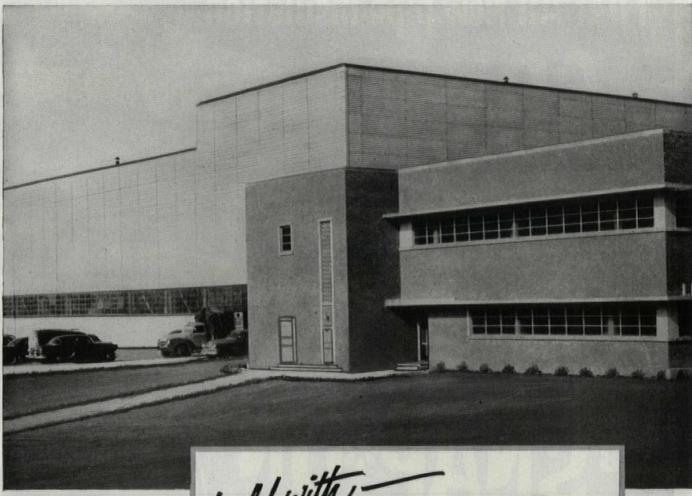
In designing buildings, the things we think we are arranging particularly well in the interests of costs, both in the manufacture of the subassembly and assembly in the field, later disappoint us because cost savings are not realized. Old unit prices are applied by subcontractors regardless of what the new arrangement is. The owner does not get the saving; the subcontractor merely makes more profit due to someone's sterling efforts in design.

One of the most outstanding examples of this occurred in one of our public housing projects. We designed the concrete wall columns clear of the wall. The exterior wall was simply 6" of structural tile and 4" of common brick. This meant that the structural tiles did not have to be cut around the columns and that the walls were not weakened by being notched.

But we discovered that no money was saved by that method. As a matter of fact extra money was spent, for in the masonry subcontract for a subsequent job of ordinary design the amount of tile displaced by the columns was allowed as a credit to the job!

However, architects should not give up trying to design such economies. They should give the contractors more time in which to prepare accurate bids and should call the contractors' attention to each unusual design detail which should yield lower costs.





Corrugated Transite makes a major contribution to the handsome exteriors of the new Link-Belt, Ltd. plant in Outario, Canada. The uninterrupted shadow lines have been created by installing the large sheets horizontally.

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For maintenance-free exterior walls and roofs, plus protection from fire, rot and weather

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Investigate Johns-Manville Corrugated Asbestos Transite and learn how you can build quickly and easily . . . have an attractive, longlasting, trouble-free structure regardless of size or purpose. For complete details write Johns-Manville, Box 158, Dept. FM, New York 16, New York. In Canada write 199 Bay St., Toronto, Ontario.



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G-B Snap*On is 4 to 10 times lighter than other pipe insulations. It is virtually immune to damage —won't break or crumble when dry, won't get gummy or muddy when wet. It will not shrink, rot, mold or decay.

A SNAP TO APPLY!

G-B Snap*On is flexible and resilient—snaps quickly around piping. The single seam is closed with staples, wire or bands. One man can easily handle lightweight 6' sections. No dust, no coarse irritating fibers. G-B Snap*On cuts easily with any knife. It can be left "as is", covered with canvas, painted or finished as desired. It is available with factory-applied vapor barrier facing for cold piping.

LOW IN COST!

G-B Snap*On Pipe Insulation, as a material, costs no more than conventional insulations for any given job. Its unusual characteristics make it far cheaper to store, handle, and apply; users report application savings up to 50%!

AVAILABLE IN SIZES 3/4" TO 24"!

G-B Snap*On comes in one-piece sections in a complete range of pipe sizes from 34" to 24", and in wall thicknesses down to 1/2".

> See Sweet's File (Architectural) or Write for Samples and Complete Information

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with Structoglas... New concepts of design and construction are being created daily.



your safe specification s for quality... Structoglas

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 Frangkiser & Tewksbury Mission, Kansas

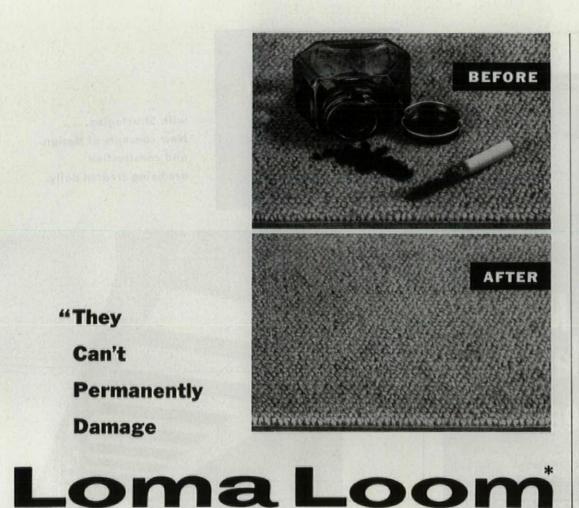
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- Every sheet meets highest standards of quality
- Assures perfect translation of your design into a finished feature

Str.	sinforced plastic panels STRUCTOGLAS DIVISION International Molded Plastic 4387 W. 35 St., Cleveland 9,	s, Inc.
Glass free	Please send me your latest catalog and new bo "18 PLANS for Home Improvement". No oblige Name	
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Carpet."

There is no such thing as a permanent stain, cigarette burn, or scuff damage in Loma Loom carpeting.

All you do is cut out the damage and replace it with a new piece the same size and shape. Not even you will be able to tell where the repair was made. In this Loma Loom plus, one of your major nightmares is eliminated!

And Loma Loom - the tough Nylon and sturdy wool blend with the built-in sponge rubber cushion - is noise-proof and shock-proof.

And don't forget - it can be laid over any type of flooring, including cement, tile, and plywood.

Selling Agents WEIL BROS. TEXTILES, INC., 31 East 32nd St., N. Y. 16, N.Y.



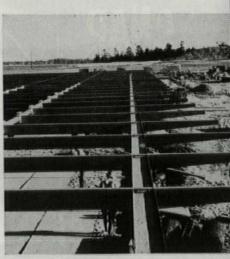


BUILT-IN SPONGE RUBBER CUSHION

A Product Of for all Purposes ONE PARK AVENUE. NEW YORK 16. N.Y.

BUILDING ENGINEERING

continued from p. 168



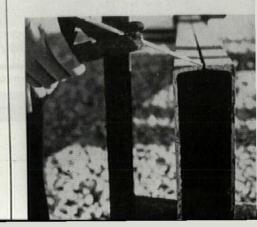
Steel box frame cuts time and cost

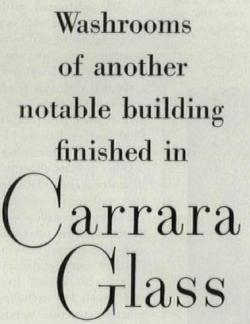
Box girders and columns, made by weldi together light 10" channel sections, w fabricated on the ground into 72' tiltbents at the single-story Joseph R. Brys High School at Greenville, S.C. Design to frame two classrooms on each side of central corridor, the steel is extrem light, only 2.2 psf, and costs only \$89 ton erected, giving a surprisingly low 1 per sq. ft. Erection was rapid, too. seven-man crew put up 17,000 sq. ft. of bents, 8' o.c., and braced with T-section welded to the bents, in 21 hours.

To help relieve dead load stresses, ea bent is in effect "prestressed" by putti an upward camber in the 30' main span End columns are welded to the box girde at an angle, 3/4" from the vertical. each bent is lifted (at midspan) its weig causes sufficient deflection of the girders bring the columns back to the vertice where they are anchored to the base plat The result is an upward camber of 5/8" each unloaded main span.

This unique design proved so success that it is being used in five more Sou Carolina schools. It was developed by ' E. Freeman Jr., architect, and R. Gauger, structural engineer.

continued on p. 2







Philadelphia General Hospital. This modern hospital, recently completed in Philadelphia, Pennsylvania, was designed by Gilboy and O'Malley, Architects and Engineers, Alfred Clauss, R.A.—Partner, Philadelphia, Pa.

H^{IGH} hospital standards of asepsis and sanitation may begin in the operating, delivery and other specialized treatment rooms, but they don't end there. Hospital administrators insist upon the greatest possible degree of cleanliness throughout the hospital.

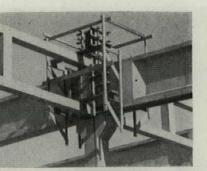
And that's one important reason why more and more architects specify Carrara Structural Glass for hospital washrooms. For Carrara Glass is easy to keep clean, shining and sanitary. Carrara is all glass, with a smooth, homogeneous texture that is highly impervious to the attacks of acids, water, steam, soap, chemicals and cleaning compounds.

Its surface is mechanically ground and polished to an unusually smooth, even surface. And because Carrara is manufactured in large sections, there are fewer joint crevices to catch dust and dirt. Carrara wipes clean readily with a damp cloth, greatly simplifying the maintenance problem.

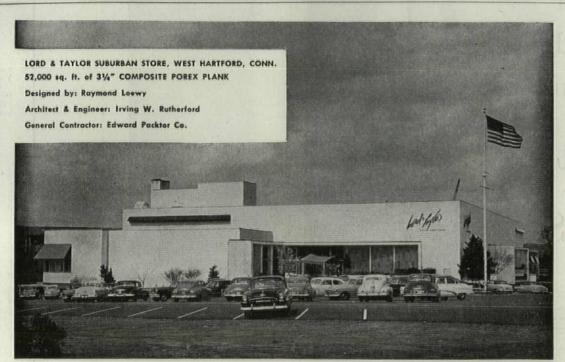
Additional information on Carrara is available from Pittsburgh Plate Glass Company, Dept. 4315, 632 Fort Duquesne Blvd., Pittsburgh 22, Pa.







Prestressed girders span 82' in this entirely precast concrete warehouse. Girders weighing 22 tons are hoisted by two cranes to be simply supported on column heads. Poured concrete joint between precast girders and sway frames is made with demountable formwork.

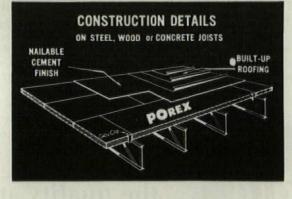


For Lowest Cost HEAT INSULATION-SOUND CONTROL and FIRE PROTECTION-POREX

When roof decks must provide maximum quality at minimum cost, architect after architect chooses POREX...because POREX combines all these properties:

- STRUCTURAL STRENGTH
- . LIGHT WEIGHT
- . NAILABILITY
- INCOMBUSTIBILITY
- HEAT INSULATION
- SOUND CONTROL

Plain POREX for short spans and Composite POREX for long spans are also ideal for Auditoriums, Gymnasiums, Schools, Armories and many other uses. For floors, precast lightweight concrete channel slabs and plank are available.



SAFE UNIFORM LOADS

Type of POREX	Thickness Slab Finish		Weight ibs/ sq. ft.	Safe loads lbs/ sq. ft. Span 1'4" 2'0" 3'4" 6' 8'				
Plain	13/4"	1/4"	7	100	60	-	-	-
Plain	3″	1/4"	10	-	100	50	-	-
Composite	3"	1/4"	14	-	-	-	100	60

PORETE MANUFACTURING CO., North Arlington, N.J. Precast lightweight concrete products since 1920

Precast warehouse

costs \$5.68 per sq. ft.

Because structural steel was not immediately available, this 150' x 1,200' cotton warehouse completed this year at Long Beach, Calif., was entirely precast, including 82 prestressed girders spanning 75' main bays and 42 concrete Vierendeel trusses spanning 25' secondary bays. Construction cost of the warehouse was \$1,072,718, or \$5.68 per sq. ft., including a \$96,000 sprinkler system. While the long prestressed girders cost \$100 each more than exposed structural steel, they came out \$100 cheaper than steel in this cotton warehouse where fireproofing is mandatory.

Other precast elements in the warehouse structure include 25' interior columns, 29'- high wall panels and 25' x 4' roof panels.

Prestressed girders are $4\frac{1}{2}$ ' deep, weigh 22 tons and are prestressed with 12 cables, each $\frac{1}{4}$ " diameter, using the Prestressed Concrete Corp. system. Design loading is 60 psf plus 17 psf live load. Including roof panels but excluding wall panels, the concrete structure weighs 68 psf; the 29' x 22' wall panels weigh 27 tons.

The warehouse was designed by the late Structural Engineer J. H. Davies; James R. Bole, associate.

Fluorescent lighting

at 400 cycles ups efficiency

Because current reversal in A.C. circuits takes place faster at 400 cycles than at 60 cycles, a lamp at the higher frequency does not deionize each half cycle; consequently it gives a more constant light having up to 50% greater output. After long research, General Electric has applied high frequencies to commercial lighting and states that it should prove particularly economical for high bay industrial lighting systems.

GE's first installation will supply electricity at 400 cycles and 600 v. to 490 8' fluorescent lamps covering 42,000 sq. ft. at a new Union College Field House in Schenectady, N. Y. Advantages: 1) 25% more light output; 2) initial cost down 10%—the savings on wiring more than offsets the extra cost of a rotary convertor to generate 400-cycle current; 3) weight of lighting fixtures halved due to the more efficient capacitor ballasts that can be used at 400-cycle operation. The installation is designed by General Electric Engineer Howard D. Kurt.

continued on p. 216

J&L Junior Beams prove

economical, adaptable



at Orgill Brothers \$2,000,000 warehouse

Five hundred and fifty tons of J&L Junior Beam roof purlins have been specified for Orgill Brothers new \$2,000,000 wholesale hardware warehouse in Memphis, Tenn. Both architect and contractor agree that Junior Beams enabled them to save money on this 14-acre project and complete the job on schedule.

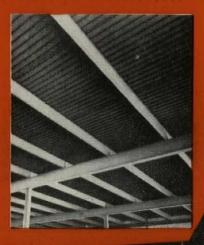
Architects W. C. Jones and W. C. Jones, Jr., chose Junior Beams because their physical characteristics permitted greater economy in design, allowed more head room, better clearance and thus provided a better stabilized building. In addition Junior Beam's light weight made for fast, easy handling during construction, as well as during hauling to the building site.

Clinton J. Wagner, Vice President of S&W Construction Company, contractors on the job, reported that "we found Junior Beams to be adaptable and economical for this type of construction. Deliveries were satisfactory and well ahead of schedule. This was a great factor in enabling us to complete the project on time."

Additional savings were outlined by B. S. Merrill, structural engineer for the architects. He said, "we had 6500 sprinklers to install and the use of Junior Beams effected considerable savings . . . I would estimate we would have had to put in 10 to 20 percent more heads if we had used some other joist and at \$20.00 a head you can see what we saved."

Take a tip from the men who built Orgill Brothers Warehouse, Junior Beams are adaptable, rigid, shrinkproof, fire resistant, vermin-proof, and impervious to termites. Write for more information today. Our new booklet, *J&L Junior Beams*, shows how these modern structurals are being used as floor joists and roof purlins, with loading and spacing tables for various spans.





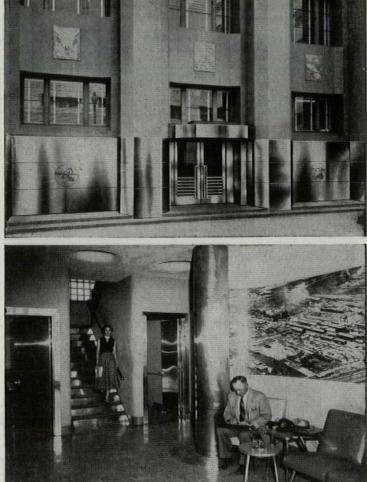


Wherever people give a building a beating



or

inside



That's the place to use STAINLESS STEEL

"INFO" for Architects and Builders

- "AL Structural Stainless Steels"—12 pages on stainless grades, properties, forms, finishes, standard "specs," uses and advantages.
- 2 "Stainless Steels for Store Fronts and Building Entrances"—40 pages of valuable data on examples and details. A1A File No. 26D.
- 3 "Stainless Steel Curtain Walls"—A 24-page progress report on methods. A1A File No. 15-H-1.

Write for Details Address Dept. B-58 You *have* to design for maximum attractiveness in those areas of buildings which have most traffic—such as building fronts, marquees, entrances, lobby details, railings, etc. Yet those same places are exactly the locations where you need maximum utility, too.

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What's the *best* material to use? Just remember that stainless steel—and *only* stainless steel—gives you the nearest-toperfect combination of satiny beauty and rugged toughness. No other material is as good-looking and at the same time as strong, hard-surfaced and resistant to rust or discoloration. No other material requires as little maintenance, cleans as easily and lasts as long.

In short, whether you're considering Allegheny Metal for just the "hard-wear" spots or for an entire curtain-wall design, keep this fact in mind: no other material costs as little over the long pull as stainless steel. Let us give you any information or tech-

Allegheny Ludlum Steel Corporation, Oliver Bldg., Pittsburgh 22, Pa.



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HUDDITIONE outpoints them all!

FEATURE	MODINE AIRDITIONER †	CONDITIONER	CONDITIONER B	CONDITIONER C	CONDITIONER D
Available in 4 types? (Console, concealed, overhead and deluxe ceiling models.)	YES	NO	NO	NO	NO
Number of fan speeds	4	3	3	2	2
Can end panels be removed to facilitate piping?	YES	YES	NO	YES	NO
Is ample space provided for piping?	YES	YES	NO	YES	NO
Is coil easily reversible for right or left-hand piping?	YES	NO	NO	YES	NO
Does design prevent condensate from dripping into fan casing?	YES	NO	NO	YES	YES
Is coil protected from objects dropped thru upper grille?	YES	NO	NO	YES	YES
Are motors lifetime lubricated?	YES	YES	NO	NO	YES
Can power assembly be easily removed?	YES	NO	NO	YES	YES
Is internal wiring done at the factory?	YES	YES	NO	YES	YES
Is front small and easy to remove?	YES	NO	NO	NO	NO
Is offset for toe space provided?	YES	NO	YES	YES	NO
Are two access doors provided?	YES	NO	NO	NO	NO
Are corners square for ease of recessing?	YES	NO	NO	NO	YES
Projection into room when recessed to full depth	6"	Not recessable	71/2"	8 ½ "	6"

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THE QUALITY CHART TELLS THE STORY. Only Modine AIR ditioners have all the extra quality features that mean superior cooling and heating . . . longer

life . . . quieter operation. For all the facts, see the Modine representative listed in your classified phone book or mail the handy coupon below . . . today !

LOOK! AIRditioner is styled by Jean Otis Reinecke, leading industrial designer. Attractive marine green primer is often used as finish coat. Console model is shown recessed.

LISTEN! You can enter a room in which an AIRditioner is running and hardly be able to tell it is operating. Quiet operation certified by decibel ratings.



A-1225



Here's the brand **new 800**extra-efficient Ozalid machineat a new low price!

Product of 30 years of Ozalid experience, the 800 is a compact model of advanced design with phenomenal production capacity.

It handles roll or sheet stock as wide as 42", prints and develops in continuous one-step operation as fast as 30 feet a minute, with front or rear delivery. Easy to operate —all controls close at hand, big feedboard, and twin blowers carry off heat and vapors.

The improved mercury vapor lamp works faster, lasts longer, uses less current. New jet atomizer maintains high vapor pressure, assures complete and uniform development. Vapor circulation is automatically regulated to machine speed. Parts are easily accessible.

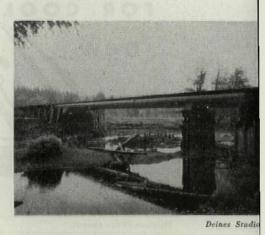
The 800 will turn out prints of any kind in volume, and in more than one color, has innumerable applications. And it's priced far below any print machine of like capacity and versatility. Ask the nearest Ozalid distributor to show you the 800 (see phone book). Or write to 154 Ozaway, Johnson City, N. Y.

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BUILDING ENGINEERING

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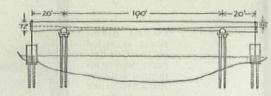


"Prestressed" Logs

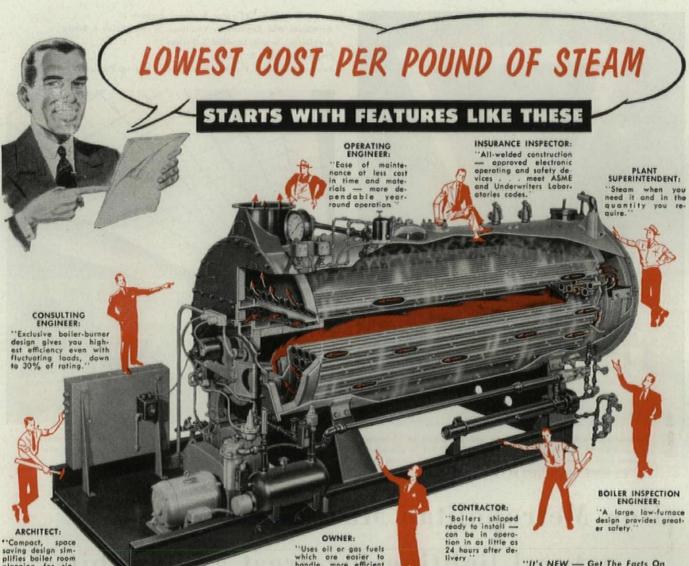
span 100' bridge

This is the strangest bridge construction since Pauline's perilous suspension between two cliffs. Instead of bringing in tons of structural steel, engineers for Rayonier Inc., big cellulose producer, used four 140' Douglas firs to build a 100' railway bridge over a gravel-bed river in one of the company's northwest forests. A clear span was necessary to avoid the log jams that harassed the multiple piers of the previous bridge.

A hundred feet is a large span for a shallow timber bridge. Here, by means of counterweighted ends, the main span is given an upward chamber of 3", unloaded, with the result that there is no deflection under full 260 ton loading. The 140' firs,



each about 6' thick at the base and 3' at the top, are stripped and laid (with thick and thin ends alternating) across two pier foundations so the ends of these Bunyan-size logs are cantilevered out 20' each side. Concrete slabs (97 tons, 50, cu. yd. each) are hung from ten 15%" steel cables slung over each end of the logs. The weights in effect "prestress" the main span by applying a negative bending moment equal to half the positive bending moment due to live loading. Each concrete deadhead is anchored to the ground by eight piles driven before the concrete is poured around their exposed tops. Cost of this ingenious improvisation: roughly \$30,000 -"Peanuts for a bridge!" says one of the designers, Rayonier Engineer W. K. Merridith.



*Compact, space saving design sim-plifies boiler room planning for sin-gle or multiple units.''

"Uses oil or gas fuels which are easier to handle, more efficient and lower in operat-ing cost

"It's NEW - Get The Facts On The CB Boiler - Write Today"

that's why you profit most from Cleaver-Brooks self-contained boilers

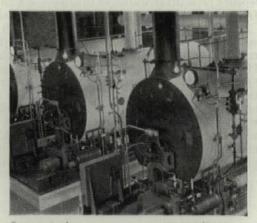
• Top to bottom, inside and out, you get more money-saving features when you specify or buy Cleaver-Brooks self-contained boilers. You make an investment in quality that pays off in lowest net cost per pound of steam for processing or heating.

YOU BENEFIT from more than 20 years of experience, working closely with men who have made it their business to be *right* about boilers. You profit from complete coordination throughout planning, installing, supervising and final operation.

YOU BENEFIT from self-contained design and original four-pass con-struction. These Cleaver-Brooks engineered "firsts," plus forced draft, 5 sq. ft. of heating surface per boiler hp, and exclusive burners, all contribute to highest heat transfer, Guaranteed 80% thermal efficiency when firing with oil is the direct result!

Whether you're planning a new steam plant or modernizing, make certain you get the complete Cleaver-Brooks story before you buy. See your Cleaver-Brooks representative, or write for catalog AD-100. Cleaver-Brooks Company, Dept. L-336, East Keefe Ave-nue, Milwaukee 12, Wisconsin, U.S.A. Cable Address CLEBRO - Milwaukee — All Codes.





One typical owner can count on yearly savings (\$15,000 fuel and \$10,000 labor) from this battery of three 150 hp Cleaver-Brooks self-contained boilers.

NOW - FIRST SIZES OF THE CB BOILER ARE MADE IN CANADA, TOO.

BOILERS ... STEAM OR HOT WATER ... FOR HEATING OR PROCESSING, IN SIZES FROM 15 TO 500 hp, 15 to 250 PSI.



Incandescent and fluorescent light are combined to illuminate this exhibit of 16th and 17th Century English Art in glare-free, shadow-free lighting. Water-white curved lens panels and lenslites blend the two types of light.

Architects—R. B. O'Connor & Aymar Embury II Architects and Engineers—Voorhees, Walker Foley & Smith Architects—Brown, Lawford & Forbes Engineers—Edw. E. Ashley

Recessed Lighting Fixtures by Eastern Lighting Products, Inc.



Ceiling in this room is of specially designed panels of waterwhite crystal by Corning. Louvers of Alba-Lite shield directional lighting used to highlight centers of attention.

How Metropolitan Museum created natural lighting for great art exhibits

Visitors to New York's "new" Metropolitan Museum now enjoy the world's great art treasures in shadowfree, glareless lighting.

free, glareless lighting. In his role as the Museum's consulting engineer for the \$9,000,000 restoration program, Laurence S. Harrison sought to create a lighting system approaching the ideal qualities of daylight in the exhibit rooms and corridors. He achieved his aim with a combination of incandescent and flourescent lighting, skylights and a wide variety of Corning Engineered Lightingware.

CORN

Cornin

Corning developed a new waterwhite crystal glass with true color transmission characteristics to meet exacting specifications. This glass in 2-ft. square panels is installed in the skylight ceilings, in the second floor galleries. Formed into curved prismatic lens panels, it is also used extensively in recessed fluorescent troffer fixtures in lighting the first floor galleries.

True colors assured

Corning Alba-Lite glass because of its ability to diffuse and transmit fluorescent light without altering color is used in the fixture installed in the ground floor galleries.

Corning's PYREX brand "Double-Tough" Lenslites are used to direct the light from incandescent lamps. They resist both thermal and impact shock.

You find the answer to a great variety of lighting problems in Corning Engineered Lightingware. To learn more about the many kinds of Corning lightingware available, write for Bulletin LS-43, "Architects and Engineers Handbook of Lighting Glassware."

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ING GLASS WORKS	Please send me a copy of the "Architects and Engineers Handbook of Lighting Glassware."				
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Why LUMINUM for Roof Deck

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he architect who specifies a Roof Deck has in mind, first, the flat supporting basis for a built-up roof-with its further detail of vapor barrier, insulating board and successive protective layers. So far as concerns the built-up roof itself, the requirements of the deck material are primarily structural.

Equally a part of the Deck, however-and a source of endless heavy expense in many large buildings-is its undersurface. Where this surface is to be exposed, and where the material requires protective coating – as in the case of steel, wood or concrete – periodic painting, often with elaborate scaffolding, is expensive and impedes normal use of the area.



Aluminum, fabricated in a de-sign meeting all structural requirements, is a practical answer to this problem. It is rustproof, requiring no painting for moisture protection even in highly humid atmospheres. It is corrosion-resistant, suitable for industrial applications where atmospheric fumes would attack other materials. The aluminum undersurface is also radiant heat reflective - which, under many conditions, will re-duce the cost of year-round tem-perature control. Its light reflectivity helps in illumination of the area, and the material presents a

modern appearance. In addition, the lighter weight of Aluminum Roof Deck speeds installation, saving labor cost.

UMI

PRODUCTS

Reynolds Lifetime Aluminum Roof Deck. Aluminum O32" and .036" thick (No. 20 and No. 19 B & S Ga.), formed into panels having six stiftener ribs 1.75" deep and 4.8" center to into panels having six stiftener ribs 1.75" deep and 4.8" center to gigidity. 25" wide (coverage 24"), lengths up to 14'6". Write for added Book including load-span and insulation tables. Reynolds Metals Company Building Products Division, 2020 S. Ninth St., Louisville 1, Ky. REYNOLDS DE BUILDING SEE "MISTER PEEPERS," starring Wally Cox, Sundays, NBC-TV Network.

ARCHITECTURAL FORUM . OCTOBER 1954

ALUMINUM ROOF DECK

STEEL PURLIN

NO. 14 x 34" HEX. HEAD SELF TAPPING SCREW AT VALLEYS ONLY

STEEL PURLIN

STEEL PURLIN

"RIV-WELD" COMPOSITE NELSON STUD WELDED TO PURLIN

"TOPSIDE" TYPE "A" FASTENER

FASTENER CLIP



The life and non-slip effectiveness of an abrasive tread depend on the amount of abrasive it contains and on the even distribution of the abrasive over the wearing surface. To many, the two treads above may look alike, but when the abrasive is removed and compared the difference between them becomes apparent.

For maximum safety and longest life, insist on Feralun for treads, nosings, thresholds, floor plates and elevator sills.

*After the pieces were photographed, sulphuric acid was used to dissolve the iron. The residue (abrasive) from each piece is shown in the test tubes.

AMERICAN ABRASIVE METALS COMPANY . IRVINGTON 11, N. J.



NEW DESIGN IN EXHIBITIONS. By Richard P. Lohse. Published by Frederick A. Praeger, 105 W. 40th St., New York 18, N. Y. 260 pp. 91/2" x 11". Illus. \$13.50

This first basic book on modern exhibition architecture includes the finest work of architects and artists in the US, England, France, Italy, Germany, Holland, the Scandinavian countries and Switzerland done in the past 20 years. More than 600 photographs, plans, structural details complement the text. The introduction describes exhibiion techniques, themes and forms as well as the achievements of pioneers in the field from 1851 to 1930. The balance of the book illustrates national, industrial, small manufacturing, scientific, cultural, social and political exhibitions of many types-75 in number-ranging from the Finnish Pavilion at the 1937 Paris Exposition Universelle to the Good Design exhibition at Chicago's Merchandise Mart in 1950; from the exhibit of Medieval Italian goldsmiths at the Triennale di Milano in 1936, to the Haus Berlin exhibition at Hanover in 1951.

Richard P. Lohse, the author, is a Swiss architect who has specialized in exhibition design. He is editor-in-chief of *Bauen und Wohnen*, a major Swiss architectural journal.

His book is exciting, instructive and beautiful.

DATA BOOK FOR CIVIL ENGINEERS, VOL. III. FIELD PRACTICE (2nd ed.). By Edwin E. Seelye. Published by John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N.Y. 394 pp. 5" x 8". IIIus. \$7,50

See

SWEET'S

Catalog

1954

12b/Am

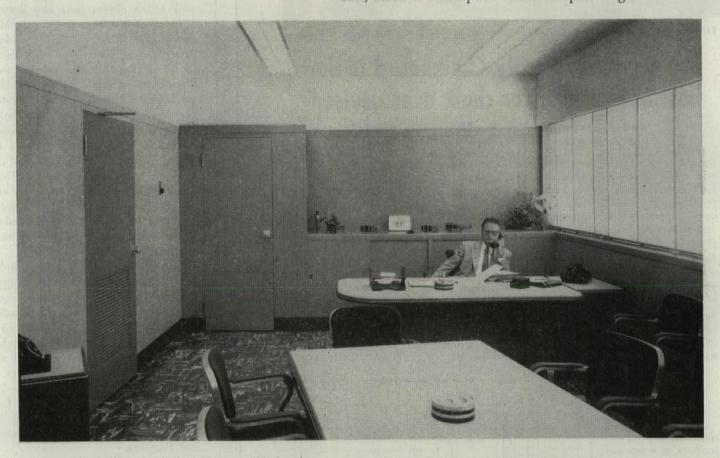
This new edition of *Field Practice* is a handy reference book for construction men and building inspectors. Each section opens with a comprehensive checklist for any given job, followed by detailed construction procedures, advice on quantities of materials required. recommended report forms and many useful charts and tables. Several new features have been added to the 1947 edition: field erection methods and equipment, defects in masonry construction, corrosion of metals, surveying and soil behavior.

continued on p. 222

MILLS MOVABLE WALLS GIVE YOU



• National Malleable and Steel Castings Company employs Space Control throughout its new Technical Center to make sure of future as well as present efficiency in its use of space for advanced testing and research. Mills Movable Metal Walls will keep these interiors flexible, always adaptable to changing requirements, because they can be moved to fit new layouts—quickly, easily and at very low cost—whenever the need occurs. Complete changes can usually be made overnight or during a week end, sometimes in a matter of hours, without commotion, dust, debris or interruption of normal space usage.



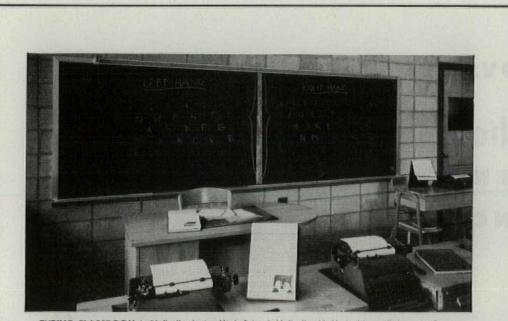
Executive Office, Technical Center o iNational Malleable and Steel Castings Company, Cleveland, Ohio. Dalton & Dalton and Associates, Architects.

With this efficient mobility Mills Walls combine distinctive architectural design, attractive appearance and structural stability, achieved by Mills exclusive all-welded flush panel construction. Available in a wide variety of pleasing colors in baked-on enamel finishes, they require no maintenance except occasional washing to keep them looking fresh and new.

Write for the new 68-page Mills Catalog or see it in Sweet's Architectural File.



THE MILLS COMPANY • 944 Wayside Road • Cleveland 10, Ohio Representatives in All Principal Cities



TYPING CLASSROOM in Valhalla Junior High School, Valhalla, N. Y. Architect: Robert A. Green.

Eye-saving Armorply Chalkboard is the best background for chalk ever devised

And it's easy to install . . . readily used for visual aids . . . is guaranteed for the life of the building

See Armorphy Chalkboard just once and you'll agree-the old gray slate ain't what she used to be! Here is a really modern chalkboard-scientifically designed for maximum readability and with a surface that's perfect for presenting magnetic visual aid material.

Tests show Armorphy Chalkboard's soft, pleasing green color is best for young eyes. And its reflectance factor of 18.5% is ideal (see diagram).

Save on installation because Armorphy needs no costly fixed grounds or surface preparation: it mounts directly to wall. Use Armorply without trim

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World's Largest Plywood Or

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and this saving can be as much as 30%! Never needs refinishing. Tough porcelain-on-steel face † won't shatter, buckle, warp or break under impact, stress, temperature changes or concussion. Lifetime guarantee. Armorply Chalkboard is guaranteed for the life of the building in which it is installed.

Armorply Chalkboard has industrial applications, too. Specify it for shipping rooms, training departments, airline and bus terminals, conference and board rooms, engineering departments -wherever the finest Chalkboard is wanted. TPORCELAIN FACES BY BETTINGER CORP.

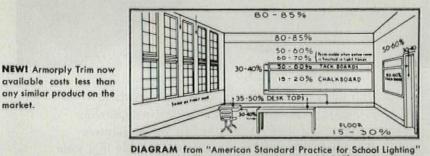


DIAGRAM from "American Standard Practice for School Lighting" recommends reflectance factor of between 15-20% for chalkboard.

MAIL COUPON for brochure and free sample or visit any of the 73 U.S. Plywood or U.S.-Mengel Plywoods showrooms in principal cities.

	United States Plywood Corporation 55 W. 44th St., New York 36, N. Y. FREE SAMPLE: Please send a sample of Armorphy Chalkboard and descriptive literature. AF-10-54			
(BOARD*	Name Company			
DRPORATION	Address			

BOOK REVIEWS

continued from p. 220

The author, a senior partner in one of country's most respected consulting engine ing firms (Seelye, Stevenson, Value & Knech also prepared Vol. I on Design and Vol. on Specifications and Costs, both valual reference works that have proved highly u ful to the building industry.

THE NEW ARCHITECTURE IN GREAT BRITA -1946-1953. By Edward D. Mills. Published Reinhold Publishing Corp., 330 W. 42nd St., No York 36, N.Y. 209 pp. 91/4" x 121/2". Illus. \$9.00

Here, exhaustively featured with numero well-chosen photographs and drawings, a 15 of Britain's best postwar buildings. S lected to embrace all major building type each example is objectively discussed terms of planning, construction technique durability and economy. In addition, esthe ics is covered in two ways, a first-hand r port by the architect concerned outlining h design objectives, followed by brief critica comments by the author, himself an arch tect of distinction and a Fellow of the Roy Institute of British Architects. Throughou the emphasis is descriptive rather than crit cal, as Sir William Holford points out i a modest foreward. "It is not unknown for elaborate criticisms to date more rapidl than the buildings."

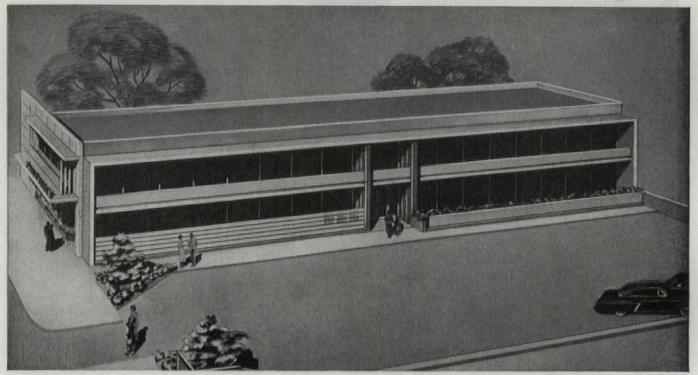
Some of the more notable buildings an the multistory box-frame apartments-th Hackney flats-by the author in cooperatio with Engineer Ove Arup, the Finsbury flat by Tecton, the prize-winning Pimlico Scheme also in London, the Brynmawr Rubber Fac tory-a much discussed group of shell con crete structures by the Architects Co-Par nership, the Royal Festival Hall-by Arch tects Robert H. Matthew and J. L. Martin and the Dome of Discovery, by Archited Ralph Tubbs and Engineers Freeman Fo and Partners.

CLIMATOLOGICAL ATLAS OF CANADA. Prepare by Morley K. Thomas. Published by the Na tional Research Council of Canada, Ottawa. 25 pp. 11" x 81/2". Spiral bound. Many charts. \$

In the years between 1920 and 1950, mos of that vast area of North America calle Canada has recorded air temperatures of 60 F. below zero. (The Yukon has scraped minu 70°). For this, and a great deal of pleasante information, this new Canadian publication i extremely valuable. In fact, anyone conten plating any construction anywhere in Canad would be very shortsighted indeed not to hav a copy. The big book does not concern itse with theory, but with a thorough documentation tion of temperatures, winds, insolation, etc. from Atlantic to Pacific, from Minnesota 1 Ellsmere Island.

continued on p. 22

Plan for future electrical requirements with General Electric Q-Floor Wiring



Edmond J. Jura A.I.A., Architect—Amarillo Doyle Construction Co., General Contractor—Amarillo Blum and Guerrero, Engineers—Dallas Franks Electric Co., Electrical Contractor—Amarillo

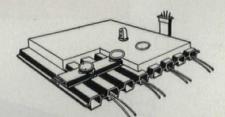
Architect's rendering of the front elevation of the Amarillo Medical Center Building, now under construction. General Electric Q-Floor wiring is used throughout the building to permit easy expansion of circuits.

Constantly changing electrical needs for X-ray machines, sterilizing equipment, operating room lighting, physician call systems, and telephone service can be taken in stride by the new Medical Center Building in Amarillo, Texas. The General Electric Q-Floor wiring system makes every square foot of floor space available for outlets. No costly alterations, no litter, no tie-up of space.

Q-Floor, a cellular steel subflooring, saves construction time, materials, and weight. Each cell is a raceway or conduit for present and future circuit requirements. New outlets can be installed any time, any place. A Q-Floor-equipped building is *always* ready for changes in service needs.

The General Electric Q-Floor wiring system can be used in industrial, institutional, or commercial buildings. For more information, call your G-E Construction Materials district office or write to Section C42-104, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

GENERAL



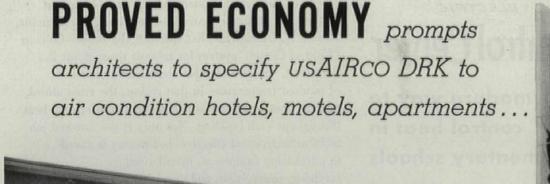
cross section drawing showing Q-Floor cells, header ducts, floor plugs, and wiring.



ELECTRIC

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The USAIRCO DRK completely processes and conditions air within a single "packaged" unit. Air condi-

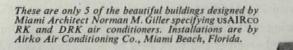
tioner, compressor and evaporative condenser sections are combined in this one assembly, housing two complete refrigeration circuits.

By continually recirculating water, the DRK evaporative condenser saves 95% of water consumption costs. This compact central station unit requires a minimum of floor space. For example, dimensions of the 30 hp. DRK are: Length: 1371/2''; Height: $84\sqrt{8''}$; Depth: 531/4''. The USAIR co DRK is wired with a two-stage thermostat, which automatically

The USAIRCO DRK is wired with a two-stage thermostat, which automatically starts one or both compressors, depending on load requirements. When full load capacity is demanded, both compressors function. When load is reduced, only one compressor is automatically activated.

In areas with definite limitations on starting current, the USAIRCO DRK is the ideal application because starting current requirements are only $\frac{1}{2}$ of normal, due to the automatic time delay relay.

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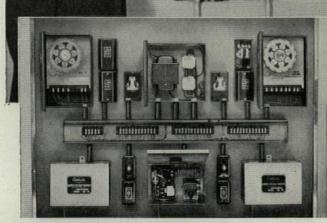


...modern way to control heat in elementary schools

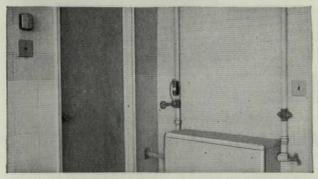


Today progressive engineers are standardizing on simplified, all-electric systems which provide newest features for accurate control at lower cost. For example, Marcus R. Durlach, Jr. has specified the Barber-Colman "Control Center" system for schools throughout the Southeast. In spite of rapid and wide variations of outdoor temperature in that region, the streamlined, modern control system provides even, comfortable heat throughout each building. Not only is the finished job more attractive and effective, but money is saved in purchasing equipment, installation, servicing, supervision, and operation.

(Left): Swansea Elementary and High School, Swansea, South Carolina, Architect: Jesse W, Wessinger, AlA, West Columbia. Engineer: Marcus R. Durlach, Jr., Columbia. Heating Contractor: W. B. Guimarin Company, Columbia.



"Control Center" panelboard as it arrives on the job ... prewired and prechecked, ready for swift, error-free connection.



In Cafeteria, Barber-Colman Room Thermostat (left) and Strap-on Thermostat (center) control operation of cabinet-type heater.

"Control Center" panelboard integrates components and accessories for heating system, serves as central junction point for wiring and adjustments, Three Proportioning Motor-Operated Valves at right are controlled by Adjustable Ratio Outdoor Reset Controls mounted at bottom of panelboard.

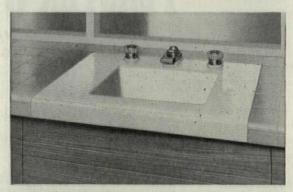
Radiant floor panels, unit heaters, and finned pipe radiation are combined in the four-zone system to provide most effective heating of each area in the Swansea School. Temperature is lowered evenings and week ends by Seven-Day Time Clocks with manual override switches. Adjustable Ratio Outdoor Reset Controls position the Motor-Operated Valves, increasing or decreasing heat flow as dictated by outdoor temperatures. Every modern control feature is incorporated here, yet this simplified automatic electric system costs less to own, operate, and maintain than conventional systems. For complete information, phone your nearby Field Office, or write us.

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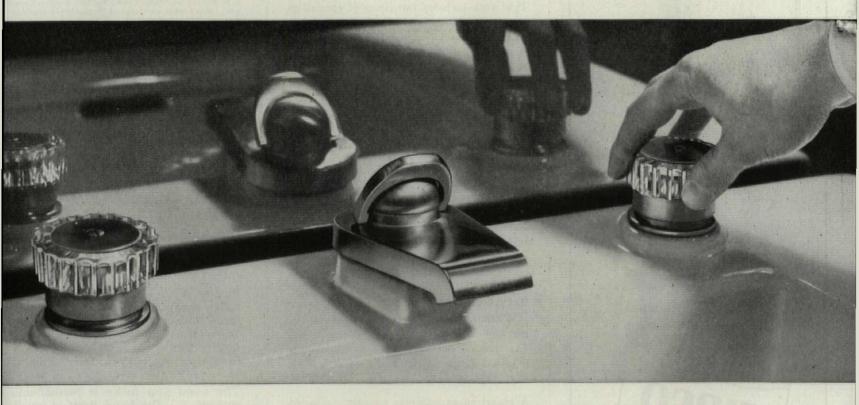
When asked to name a preference in plumbing, most people choose Crane. In fact, on all counts-design, quality, workmanship and long life-



Crane Criterion lavatory, styled by Henry Dreyfuss, either fits into counter-top or stands alone on brush-finish chromium-plated legs. Dial-ese controls, Securo waste, choice of eight Crane colors. Two sizes: $21\frac{1}{2}$ " x $17\frac{3}{4}$ " and $30\frac{1}{4}$ " x 22".

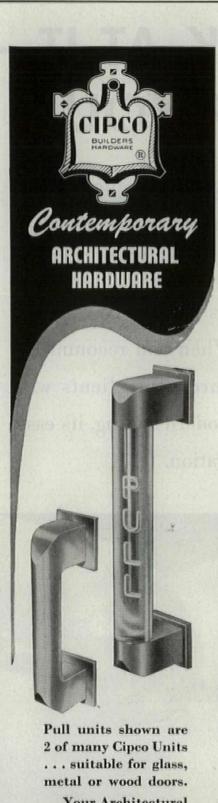
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BOOK REVIEWS

continued from p. 222

URBAN PLANNING EDUCATION IN THE US. By Frederick J. Adams. Published by The Alfred Bettman Foundation, Cincinnati, Ohio. 58 pp. 81/2" x 11"

This report is concerned mainly with the present status and adequacy of professional education in urban planning.

CODE MANUAL FOR THE STATE BUILDING CON-STRUCTION CODE. Published by the State Building Code Commission, 1740 Broadway, New York 19, N.Y. 295 pp. 81/2" x 11". \$3

This code manual is a guide for building officials, architects, engineers, builders, owners and others to assist them in the interpretation, application and enforcement of New York's State Building Construction Code. It is also a graphic presentation of good building standards and technical data which should interest all code authorities.

LIBRARY PLANS AND COMPACT BOOK STORAGE. Proceedings of the 1954 ACRL Building Plans Institute. Published by the Association of College and Reference Libraries, 50 E. Huron St., Chicago 11, III. 108 pp. 81/2" x 11". Illus. \$2.35

This work includes two items of special interest to architects and librarians: an article on the "Evaluation of Compact Book Storage Systems" by Robert H. Muller, and two bibliographies on "College and University Buildings" for 1953-54 and 1939-45.

A BIOGRAPHICAL DICTIONARY OF ENGLISH ARCHITECTS—1660-1840. By H. M. Colvin. Published by Harvard University Press, Cambridge, Mass. 821 pp. 9" x 6". \$12.50

This book contains, in alphabetical order, biographies of over 1,000 English architects and master builders who worked in the 17th, 18th and early 19th centuries, together with fully documented lists of their works and a long introductory essay on the building trades and the architectural profession.

MARBLE USED AS A RADIATION SHIELD. Based on a talk by Dr. Marshall Brucer, chairman of the Medical Div., Oak Ridge Institute of Nuclear Studies. Published by the Marble Institute of America, 108 Forster Ave., Mount Vernon, N.Y. 32 pp. 8" x 11". Illus. No charge

A report on experiments recently conducted at Oak Ridge to determine the most effective and most economical protection against highvoltage radiations of the latest cancer treatment machine, the cobalt 60 hectocurie teletherapy unit.

After discussing effective shielding materials and the economic factors involved in achieving an adequate degree of shielding, the report concludes with design recommendations for a prospective treatment room.





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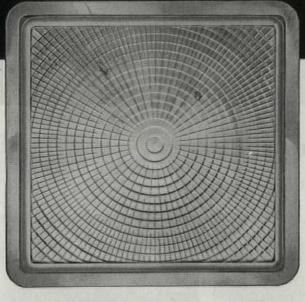
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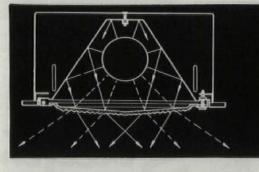
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Ever been cowed by a client?

Model for Dairy Plant Courtesy Pratt Institute Brooklyn, N. Y.

The average architect rarely gets called on to design a milk factory where he has to deal with bovine living habits. In a "bossy"-to-bottle production under one roof, like the one shown here, you've got to consider such things as sanitation and temperature control. As a rule cows don't seem to care much what school of architecture you follow, so long as the detail is right.

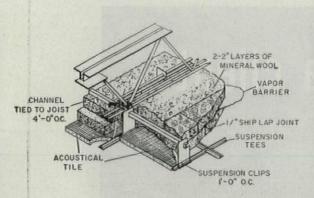
One way to win contented cows is to specify the right roof. An insulated roof deck like this may be flush, creating a drippage problem—or curbed. In either case, there's a right answer to this and practically every other roofing problem you're

Typical detail from Ruberoid Specification Book showing Roof with Curb and Insulation

likely to run into in Ruberoid's Built-Up Roofing Specification Book. It contains complete roof "specs" for smooth surfaced asbestos, coal tar pitch with gravel or slag surfacing, or gravel-andslag surfaced Ruberoid Special Bitumen, plus working details for a wide variety of flashing and eave construction. Write for your free copy to The Ruberoid Co., 500 Fifth Avenue, New York 36, N. Y.



NEW PRODUCTS continued from p. 177



SUSPENDED CEILING supplies fireprofing, accoustic treatment, thermal insulation, easy access

Fyrate, Inc. has developed a suspended accoustic tile ceiling which has a two-hour fire rating. All work is handled by the accoustical contractor in one light, quick, dry operation. Small furring channels 4' o.c. are wired to the bottom of open web steel joists. Special stainless steel clips 1' o.c. support the regular T-bar suspension system which carries the acoustic tile. Between the bottom of the joists and



Student Physiology Laboratory, Wayne Medical School, Detroit, Mich.

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Planning and installing an efficient, practical, economical laboratory-whether for medical school, hospital, atomic energy or industrial project – calls for *specialists*. That's why so many leading architects call for Kewaunee. They recognize the value of Kewaunee's half century of experience in designing, engineering and building fine laboratory equipment. Equipment

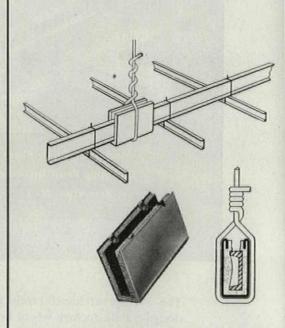
They recognize the value of Kewaunee's half century of experience in designing, engineering and building fine laboratory equipment. Equipment planned for the maximum efficiency, convenience and productivity of technicians. Equipment permitting greatest flexibility of arrangement, both for present needs and future expansion. Equipment that measures up in every detail to the most exacting laboratory requirements. To help you plan the most practical, efficient and

To help you plan the most practical, efficient and economical laboratory, Kewaunee offers you – without cost or obligation – the services of a complete planning and engineering staff. Feel free to take advantage of this invaluable Kewaunee service. It is yours for the asking.



the top of the ceiling tile, two 2" layers of mineral wool are installed with an aluminum foil vapor barrier between. When tested at the Underwriters' Laboratories, this construction passed the two-hour fire test. Acoustical tests showed a .95 noise reduction coefficient. Sound transmission through the floor was also markedly reduced. The excellent thermal insulating properties of this construction are also an advantage, particularly in an air-conditioned building. The plenum spaces are well insulated from the conditioned spaces and the load on the air-conditioning equipment is thereby reduced. Easy accessibility to the plenum space is provided at any point. The entire construction weighs less than 3 lb. per sq. ft. and costs \$.90 to \$1.22 per sq. ft. depending on the size of the job and the labor rate.

Manufacturer: Fyrate, Inc., 832 Eastman St., Chicago.



FELT-LINED CLIP FOR HUNG CEILINGS reduces floor-to-floor sound transmission

A simple but effective device for combating the nuisance of sound transmission through the floors of multistory buildings is the Nelson Sound Insulation Saddle. It is a deep channel 4" long, lined with heavy felt and designed to fit over the standard 11/2" steel furring channels. A saddle is placed on the furring channel at each suspension point and the hanger wire tied around the saddle. There is thus no metal-to-metal contact between the floor slab and the ceiling and sound transmission is considerably reduced. The saddle is made of 16-ga. cold-rolled steel, lined with 1/4" wool felt; it weighs 6 oz. and costs 35¢ each in quantities up to 5,000.

Manufacturer: David V. Nelson & Associates, 612 N. Michigan Ave., Chicago 11.

continued on p. 236

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Across the length and breadth of the roof it covers, new Celotex Channel-Seal Roof Insulation forms an actual *network* of interconnecting channels. These "escape routes" permit free circulation of air away from high-pressure air pockets beneath the roof surface. With this exclusive design, an extra margin of safety against costly roof damage is assured.

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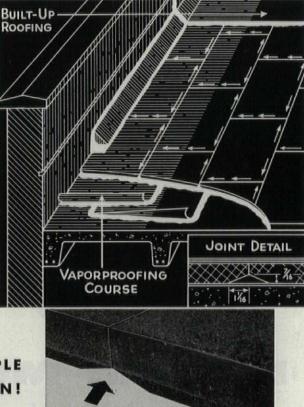
Channels are formed by the bevels (1/16" high, 11/16" wide) on all bottom edges of units as they're laid on the deck. High-pressure areas, building up from rising surface temperatures, are relieved by air

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When you enter the ground floor of the American National Bank of Austin, Texas, you do not see the usual phalanx of vice presidents behind glass-topped desks. Instead there are attractive shops—shops paying *high rents* to the owners. Peelle Motorstairs make it possible to release this high-income, ground floor space for profitable rentals. And, besides making it convenient for the bank's patrons to go to and from the banking offices on the second floor, Peelle Motorstairs add much to the modern design of the entire building.

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This is just one of the many fine buildings in which Peelle Motorstairs have been advantageously used in plans for better use of space and *higher income*. Peelle Motorstairs are designed and engineered for economical, long-lasting performance under modern conditions. Their handsome appearance is the outward manifestation of the advanced engineering that has assured their widespread preference.

Write for full information and technical details.

STANDARD OIL COMPANY (KENTUCKY), ATLANTA, GEORGIA. General Contractor: Wesley & Co. Inc., Atlanta, Ga.; Roof Deck Contractor: Hoge-Warren-Zimmerman Co., Atlanta, Ga.; Architect: Engineering Dept., Standard Oil Company (Kentucky), Atlanta, Ga.



FIREFIGHTER" ROOF DECK specified for Oil Storage Plant

STANDARD BIL COMPANY

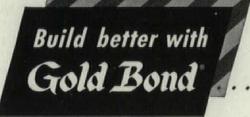
A Gold Bond "Firefighter" Roof Deckbuilt with incombustible gypsum-covers this Standard Oil bulk plant and office. Approximately 55,000 square feet of *natural* fire-resistance was poured into this roof structure.

Gold Bond "Firefighter" Roof Decks are adaptable to any design—pitched, barreled or flat. Application is fast... up to 30,000 sq. ft. can be poured in a day. The low dead load of "Firefighter" Decks permits lighter supporting structures for greater construction savings. And maintenance costs are low. Decks can be cut and patched to meet any modifications.

For full details on "Firefighter" Roof Deck, write National Gypsum Company, Buffalo 2, New York for Technical Bulletin No. 589 EN, or call or write the Gold Bond Roof Deck Specialist at the following National Gypsum Sales offices:

Eastern Division: Walter Wielgus, Graybar Bldg., New York 17, N.Y. Northern Division: Leo J. Shields, Merchandise Mart, Chicago 54, Illinois Central Division: David L. Sheehan, 634 Terminal Tower Bldg., Cleveland 13, O. Western Division: Robert L. Avant, 6119 Berkshire Lane, Dallas 5, Texas Southern Division: W. Kemp Harris, Jr., 3252 Peachtree Rd. N.E., Atlanta, Ga.

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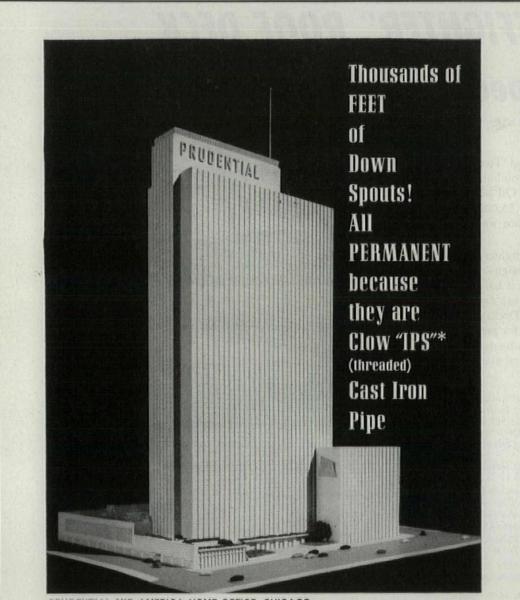
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ALUMINUM DOOR has honeycomb core

One of the few aircraft building techniques that has been adopted by the building industry is the sandwich panel made with a honeycomb core. This construction makes possible the production of extremely lightweight panels of remarkable rigidity-properties which are especially valuable in a door. Kawneer's new flush aluminum door uses these principles. The core is a rigid honeycomb of resin-impregnated paper with a cell width of 3/4". Skins are of .031" aluminum, finely corrugated, backed with 1/10" hardboard which distributes local impact loads and minimizes denting. Core and skins are bonded with phenol-resorcinol-formaldehyde resin in a hot press. Long edges of the door are banded with aluminum extrusions which are exposed on the face. The new door is waterproof and is intended for exterior use as well as interior. The aluminum faces are double lapped at the top edge and sealed with mastic; Styrofoam is inserted in the lock cutout area to prevent entrance of moisture at that point. Weepholes in the bottom edge ventilate the interior to permit the escape of moisture or condensate.

Sizes range from $2' \cdot 0'' \ge 6' \cdot 8''$ to $4' \ge 8'$, all $1\frac{3}{4}''$ thick. A $3' \ge 7'$ door weighs 67 lb. and costs 175 to 200 in place, including hardware and extruded tubular aluminum frame. Types are available with internal reinforcing designed for butt-hung, pivoted, center-hung and offset installation. Glazed or louvered panels may be installed on order. Conventional knob-type locksets may be used or a specially designed push-pull plate, with or without a lock, is available. All exposed aluminum is anodized.

Manufacturer: Kawneer Co., Niles, Mich.

CORE MATERIAL FOR FIREPROOF DOORS is light in weight and dimensionally stable

Weldrok is the name given by US Plywood to a new core material for their well-known line of wood-faced fire doors. Doors with the new core have been tested by the Underwriters' Laboratories and approved for "B" and "C" labels (one-hour fire resistance). Weldrok is a close relative of Kaylo which was formerly used as the core material for Weldwood fire doors until it was withdrawn from the building market more than a year ago. The new material, like its predecessor, is an indurated silica and lime product of low density and relatively high strength. Although it is cellular, the pores are microscopic, hence the earlier name "Microporite." Besides its remarkable fire resistance, the material has other advantageous properties. It is inert, dimensionally stable, immune to rot and termites, good thermal and acoustic continued on p. 240 INSULATING STRUCTURAL BUILDING PANELS FOR ARCHITECTURAL BEAUTY

SEAPORCLAD

Architect & Engineer: Welton Becket, F.A.I.A. and Associates, Los Angeles General Contractor: C. L. Peck, Los Angeles

Where Wilshire Boulevard begins—in downtown Los Angeles—stands the new, nine-story home of *Standard Federal Sav*ings and Loan Association.

Known as the "narrowest little skyscraper" in the West, this modern structure appears as a sheer block of blue glass. *Actually* the exterior finish is of grey-blue porcelain **SEAPORCLAD** spandrels alternating with a series of continuous bands of wide, sealed windows.

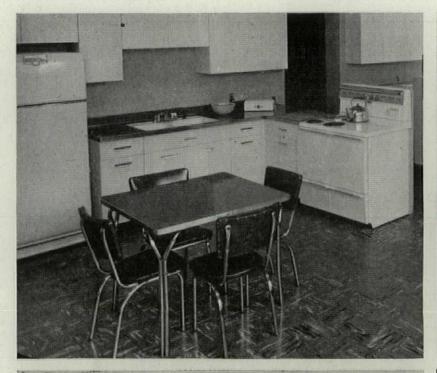
The **SEAPORCLAD** panels lend architectural harmony to the whole, giving the building a functional appearance with a pleasing simplicity of design.

There are a few areas in which Seaporcel Metals, Inc., is not represented. Inquiries from interested agents are invited.



SEAPORCLAD* Insulated porcelain panels (flat-as-glass) are of sandwich construction combining the use of various cores laminated under high pressure to skins of diversified metals. It is available in the widest range of textures and colors to harmonize with practically every type of structural material and architectural mood. SEAPORCLAD is permanent and of lasting, indestructible beauty.







TILE BY TILE, you can't beat VINYL FLOORING for durability **Proof of durability** of vinyl tile is its use in home economics laboratory of Kearny High School, in Kearny, New Jersey. Here, the tile stands up under extreme wear, resists stain by spilled foods, cleans in a jiffy.

What is "vinyl" tile? This new floor covering is made from synthetic resin, fillers, stabilizers and plasticizers. The resin and plasticizers are the binders and the most important ingredients—they impart durability, abrasion resistance, grease and stain resistance, flexibility, heat and light stability.

How can you use vinyl tile? This tile is your answer to questions of durability and rich, colorful appearance in flooring. Vinyl tile comes in a wide array of colors—light to dark; soft, warm pastels; unusual marbleized effects. You'll find it ideal wherever wear's a problem. It also keeps its gloss; requires little maintenance and can be used over practically any kind of dry, smooth subfloor. These advantages make vinyl tile the fastest growing floor covering. Available in a wide price range.

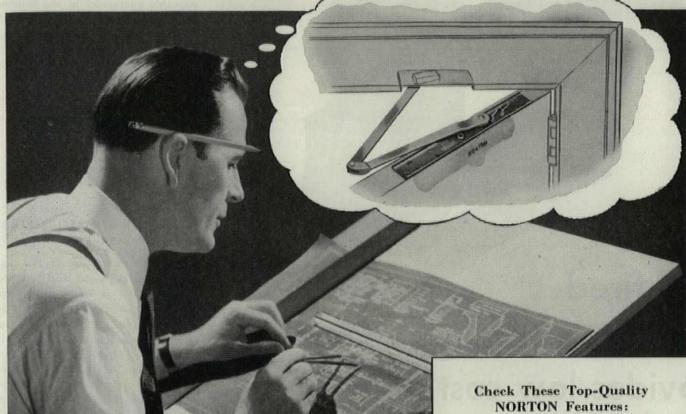
Monsanto's role: This new development in flooring is made possible by Monsanto Opalon* vinyl resins and Santicizer* plasticizers. For more information on the companies manufacturing vinyl tile, get in touch with the nearest Monsanto sales office or write to Organic Chemicals Division, MONSANTO CHEMICAL COMPANY, Box 478, St. Louis 1, Missouri. *Reg. U. S. Pat. Off.

MONSANTO

CHEMICALS *** PLASTICS

SERVING INDUSTRY WHICH SERVES MARKIND

The advantages of a Liquid Door Closer plus that "Streamlined Beauty" your modern building needs... NORTON "INADOR" GIVES YOU BOTH!



No matter what type of building is involved, look into Norton's "Inador" for interior applications! This Closer gives you the reliability, durability, low maintenance, and precision workmanship you've come to *expect* from Norton Liquid closers. But the "Inador" gives you beauty, too...isn't unsightly or bulky...is streamlined through its "Inador" construction to fit the needs of *modern* design! Yes, Norton "Inadors" can *take it* under severest use, and at the same time enhance the *appearance* of your build-ing. Available in "Regular Arm" and "Holder Arm" models, which are distinguished by engineering "know-how" and finest materials!

Specify Norton—the name that's become the industry's standard—with confidence you've chosen something "special." Write for full information on the "Inador"—and other Norton closers-to:

Rack and Pinion Construction gives uniform, positive checking at every point!

New Aluminum Shell for lighter weight, robust wear. Proved by use on our surface closer for over 7 years!

Special spring-of the highest quality steel!

Non-gumming, non-freezing hydraulic fluid permanently lubricates every inside moving part!

Double adjusting levers, at top of plate, easily moved by the fingers. One adjusting lever controls speed of closing action. The other governs latching action when door is semi-closed!

Famous Guarantee! Norton Door Closers are guaranteed for 2 years providing proper recommended sizes are used!



NORTON DOOR CLOSER COMPANY, DEPT. AF-104 Division of The Yale & Towne Manufacturing Company Berrien Springs, Michigan

"Over 70 Years of Leadership in the Door Closer Industry"."

NEW PRODUCTS continued from p. 236



Coal fired with a Will-Burl stoker provides low cost heating with a factor of greater safety

Efficient combustion assured under ever-changing fuel bed conditions with a Will-Burt Air Controlled Stoker makes bituminous coal the most practical fuel for low cost heating in schools, hospitals, institutions, greenhouses, country clubs, churches and so on.

Automatic Air Control, an original exclusive feature available with Will-Burt Stokers, prevents starving or an oversupply of air to the fuel bed.

Specify coal heating for schools, hospitals, and institutions, and wherever a *factor of greater safety* is of utmost importance.



insulation, and it does not harm woodworking tools (important when locksets or vision panels are cut on the job). Weldwood Fire Doors are available in sizes up to 3'.6" x 7'.0" x 13/4", in a wide variety of face veneers. Edge banding is of fireproofed wood; adhesive is phenolic resin, hot pressed. Price of a 3' x 7' birch door is about \$56. This product carries one of the most remarkable guarantees in the building industry, being unconditionally guaranteed against warping and twisting for the *life of the in*stallation. In the event of failure, replacement is promised, *including all labor costs* of hanging and refinishing.

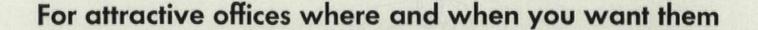
Manufacturer: US Plywood Corp., 55 W. 44 St., New York 36, N.Y.

COFAR WITH SPRAYED-ON VERMICULITE passes four-hour fire test

Successful combination of two well-known products has produced what is almost a new product. Cofar is a corrugated steel panel 11/4" deep with wire reinforcing welded to the upper side. It is used as a permanent. form and reinforcing for concrete floor and roof slabs. Vermiculite plaster, sprayed on the underside of the corrugated steel, furnishes fireproofing, acoustical treatment and an attractive finish. This construction was subjected to the standard ASTM fire test recently at the Underwriters' Laboratories in Chicago, and easily won a four-hour rating. The test structure was a 41/2'' stone concrete slab on 24-ga. Cofar with a 1/2" vermiculite plaster undercoat. The construction successfully withstood the fire for more than four hours, as well as the subsequent hose stream and the final double loading. Cost of this construction in the New York area is between \$.89 and \$1.16 per sq. ft. These figures break down as follows: Cofar delivered 35¢ to 37¢; installation (welded) 6¢ to 7¢; shoring 3¢ to 4¢; negative steel 5¢ to 6¢; concrete slab 31/2" to 5", 20¢ to 30¢; vermiculite plaster, average 1", 20¢ to 32¢.

The test demonstrates that Cofar can be fireproofed without the expense of a hung ceiling, and makes it possible for this type of construction to be approved by local building departments. If preferred, the vermiculite plaster may be applied in a uniform 1'' thickness, following the contour of the underside of the Cofar. The result is a corrugated finished ceiling, attractive in appearance and acoustically efficient.

Manufacturers: Granco Steel Products Co., Granite City, Ill. and Vermiculite Institute, Chicago. continued on p. 248





are noncombustible...lower priced, come in pleasing colors

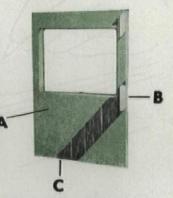
Johns-Manville

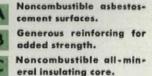
Johns-Manville Class A Movable Walls combine a handsome appearance so important to an attractive office with the longtime economies of quick, easy space partitioning and rearrangement. They offer you advantages never before combined in an asbestos movable wall.

Class A Movable Walls are noncombustible. They consist of an all-mineral core and sturdy asbestos-cement surfaces. The attractive finish is a tough, hard film many times thicker than on the usual movable partition. It is mar and scratch resistant . . . rejects stain and soil . . . can be easily washed and even scrubbed, if necessary. If damaged, Class A Movable Walls can be touched up inexpensively to look like new . . . and, unlike other types of factory-finished partitions, can be repainted with ordinary paint.

Both flush and glazed partitions are available in ceiling high or free standing heights. Walls are erected complete with doors, door hardware, glass and trim. They are installed by Johns-Manville's own Construction Department, thus every job, large or small, receives the benefit of Johns-Manville undivided responsibility.

An estimate will convince you that the cost of J-M Movable Walls compares favorably with other types of wall construction. For details, write Johns-Manville, Dept. AF, Box 158, New York 16, N. Y. In Canada write 199 Bay Street, Toronto 1, Ontario.







These men can work in comfort close to and facing this <u>Frosted</u> Aklo window wall because it cuts down glare and heat. Springs Cotton Mills, Lancaster, S. C.

This daylight filter adds usable floor space

In this plant, men can work close to and facing the windows —right up where the daylighting is best.

What about glare and sun heat? These irritations are subdued by the Frosted Aklo* Glass in the windows. This blue-green glass softens and diffuses direct sunlight and sky brightness, as well as dazzling reflections from ice, snow and other bright surroundings.

Aklo Glass in $\frac{1}{4}$ " thickness shuts out as much as 44% of the sun's radiant heat. That's why it is so widely used in modern plants, especially for south and west exposures.

Naturally, men can do more and better work in plants where their eye-comfort and their bodily comfort are cared for. The use of *Aklo* is aimed straight at the bedrock objective of getting more production per man-hour and per square foot of space.



HEAT-IN-MOTION TEST SHOWS AKLO'S BENEFITS!

Get a quick demonstration of *Aklo's* advantages right at your desk. Your L·O·F Glass Distributor or Dealer will be glad to give you this radiometer demonstration. Look for his name in phone book yellow pages, under "Glass". Or write directly to Libbey Owens Ford Glass Co., 608 Madison Avenue, Toledo 3, Ohio.

Ask for the booklet, "Filtered Daylight", as well.



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For Cost-Saving, Comfort, Convenience



RUSCO HORIZONTAL SLIDE PRIME WINDOW





FULVUE PRIME WINDOW

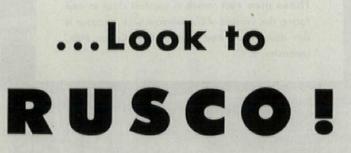
VERTICAL SLIDE PRIME WINDOW

Prime house door...screen door

... ventilating window-all in one unit!

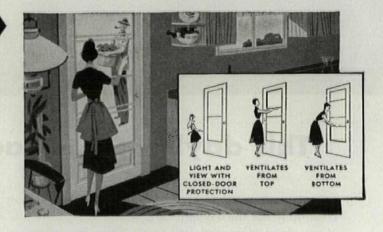
THE RUSCO 3-In-1 WINDO-DOOR

Rusco 3-in-1 Windo-Door inserts fit standard 1%" and 1%" wood doors. Give you a twin-slide operating window, complete with full Fiberglas screen panel, in a door, thus providing added window area in the room at minimum cost, plus added light and controlled ventilation. Ideal for kitchen, terrace, side door or porch. Properly used, Rusco Windo-Doors can effect big economies in construction and enable you to offer more house for the money.



Fully Prefabricated, Ready-to-Install RUSCO PRIME WINDOWS

Rusco Prime Windows are complete, ready-to-install units made o hot-dipped galvanized tubular steel. They are pre-glazed, finish-painter with baked-on enamel and fully weatherstripped. Insulating sast (optional) gives exclusive MagicPanel[®] rainproof, draft-free ventila tion. Rusco's Fiberglas screen will not rust, rot, corrode or stain-neve needs painting. Sliding glass panels are removable *from inside* for safe easy cleaning. Rusco Windows make big savings in installation time and cost. Available in horizontal slide and vertical slide models. Also in 3-panel and 4-panel "Fulvue" style for extra-large window areas.





Permanent Year 'Round Protection

RUSCO AII-Metai VENETIAN AWNINGS & VENETIAN-TYPE DOOR CANOPIES

Metal door canopies and window awnings are among the fastestgrowing and most wanted home equipment items on the market. Rusco Awnings and Canopies are sturdily constructed, beautifully finished in baked-on enamel and styled with horizontal lines that conform with good architectural design. Awnings give "see-through" visibility, free ventilation, controlled light.

For illustrated literature and name of your nearest Rusco dealer-phone, wire or write



THE F. C. RUSSELL COMPANY

Dept. 6-AF104, Cleveland 1, Ohio • In Canada: Toronto 13, Ontario



Ceiling by the Daylight Ceiling Co., San Francisco, Calif.

Plastic ceiling paints a room with light

What a beautiful and practical way to light a room! Fluorescent strip units behind these transluscent plastic panels make it bright as day... give it a clean, modern appearance.

The panels, made of BAKELITE Rigid Vinyl Sheets, rest on a light metal frame. They're simple to install and maintain—light in weight, easy to clean, instantly removable. They not only light the room, but also conceal pipes, ducts and ceiling projections.

The plastic ceiling makes provision for fire extinguishing and air conditioning systems. The panels soften and fall at critical temperature and can be arranged to permit free circulation of air. Sound absorbent material fastened to the suspension frame provides excellent acoustical conditioning.

Periodic redecoration isn't necessary with a ceiling like this. BAKELITE Rigid Vinyl Sheets resist discoloration, cracking or warping. They are dimensionally stable. They resist moisture, oils and combustion.

There's almost no limit to the versatility of BAKELITE Rigid Vinyl Sheets. You can use them for screens, lamp shades, signs and dozens of other decorative applications. Get acquainted with these modern materials. For detailed information, write to Dept. YV-14.



with a complete line of

devices to select from

You can specify EXACTLY

According to the specific door holding, door stop-

ping, shock absorbing, and door-noise elimination

problem . . . according to the use, size, material

and style of the door and door opening . . .

yes, even according to the hardware budget

according to the type of the building . . .

... you can specify a GJ device that will

meet most any door control problem.

CABINET and DOOR CATCHES

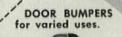
door control problem

according to each individual

OVERHEAD DOOR HOLDERS and shock absorbers concealed and surface mounted. Many styles for exterior and interior doors.

floor and DOOR HOLDERS and BUMPERS in many desirable designs.

> lever and plunger type DOOR HOLDERS



INVISIBLE LATCHES

Your recommendation is backed by a 30 YEAR GJ REPUTATION for quality hardware, precisely made from the finest materials

refer to catalog no. 54 for full description and details.

GLYNN • JOHNSON CORPORATION 4422 north ravenswood ave.

DOOR MUTES and

chicago 40, illinois

ARM PULLS



7.GARAGE roof takes 12 hours.

8. SCHOOL ready 1 month earlier.

9.PLANT speeds construction 25%

HOW FLEXICORE CUTS JOB TIME, SAVES ONE WEEK TO TWO MONTHS!

People moved into these buildings way ahead of schedule, because *precast floors and roofs* cut construction time.

When the jobs were ready for floors or roofs, the Flexicore slabs were all ready to be installed. Erection was fast, averaging 2500 square feet a day in almost any weather.

Architects, superintendents and owners

reported savings of one week to two months on the jobs pictured above.

Flexicore slabs are easy to work with. You can clear-span up to 22' 0'' or 26' 0'', depending on cross-section sizes ranging from $6'' \ge 12''$ to $8'' \ge 16''$. Hollow-casting reduces their dead load. Cores can be used for wiring, piping, even heating and cooling. Smooth under-surface makes finished ceiling. Saving of on-the-job labor makes the cost low.

See Sweets for more information. For all the facts, phone your nearest manufacturer or write for catalog.



HE FLEXICORE MANUFACTURERS ASSOCIATION - PRODUCERS OF PRECAST CONCRETE FLOOR AND ROOF SLABS

labama—Birmingham labama Cement Tile Co. hone 4-8651 olorado—Denver lexicore Co. of Colorado IAin 6456 orida—Miami Iniversal Concrete Pipe Co. hone 2-1472 (Hollywood) orida—Tampa Iniversal Concrete Pipe Co. 'hone 4-3931

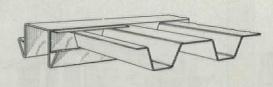
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NEW PRODUCTS continued from p. 240





2200 and 2300 with all the features that have made the white enamel cast iron HAWS Series 2000 so popular for school classrooms. Raised and sloped mounting rim that keeps water off deck or table top...VANDAL PROOF socket flanges and fittings...chrome plated sink strainer with non-removable grid... and availability with any combination of HAWS faucets and fixtures. For Acid-Resisting Enamel finish, specify HAWS Series 2000.

Write today for illustrated Detail Sheets on 2000, 2200 and 2300 Series!

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HAWS Series 2300, Model No. 2350 (Pat, applied for)

> DRINKING FAUCET CO. 1443 FOURTH STREET (Since 1909) BERKELEY 10, CALIFORNIA

METAL ROOF DECK uses short-spa rugated panels between flush subpurlins

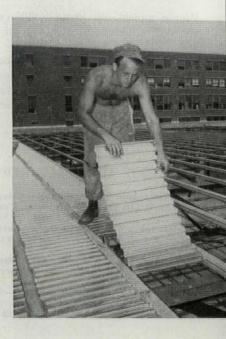
The Ingersoll Roof Deck, developed three years of intensive research, cons a series of closely spaced subpurlins in place, between which are clipped panels of corrugated metal, which m galvanized steel, aluminum or por enameled steel. The floating corrugate els, although adequately supported a curely anchored against uplift, are f expand and contract-an important pe pecially when aluminum is used. Sub are 2"-deep cold-rolled steel, 14 or 16 pending upon the span. They are acc aligned on 2' centers by means of a lig and are then welded to the structural p Corrugated panels about 2' x 3' in s



then dropped in place between the subp and secured by means of slide-on clips resulting structure proved under test somewhat stronger and more rigid that ventional 18-ga. steel decking, and it has approved by the building department several major cities. Prices to the cont are: galvanized 31ϕ per sq. ft., alur 42ϕ , porcelain enamel 45ϕ . Cost of in tion is about the same as for conversteel decking.

Manufacturer: Reflectal Corp., subsidi Borg-Warner Corp., 310 S. Michigan Chicago 4.

continued on



New Modular MULTI-VENT[®] concealed ceiling panels

<u>COSTS LESS TO INSTALL</u>

than ordinary air diffusers!



LABOR SAVING INSTALLATION FEATURES

■ ADAPTABLE... Duct can be shop built with 3-inch diameter openings at approximate panel locations. Duct work can be installed, flexible tubes with valve snapped in, and system balanced prior to and independent of ceiling erection. Panels can be located without regard to position of lighting fixtures and partitions.

FLEXIBLE... compressible tubing permits wide latitude in alignment, thus radically reduces installation cost by eliminating all need for time consuming close fitting sheet metal work.

■ ADJUSTABLE... orifice valve can be simply set by wing nut for varied amount of air delivery. Individual panel adjustments do not disturb the overall balance of the system.

■ COMPLETELY CONCEALED..., ANY STANDARD PERFO-RATED 12" x 24" ACOUSTICAL METAL CEILING PAN (supplied by the ceiling contractor) functions as the distribution plate for the MODULAR MULTI-VENT PANEL. The panel simply replaces the acoustical pad and nests snugly in the pan which snaps into ceiling tee runner, unhampered. Ceiling face is undisturbed.

MULTI-VENT, DIVISION TH

Sales and Engineering Representatives in Principal Cities of United States and Canada

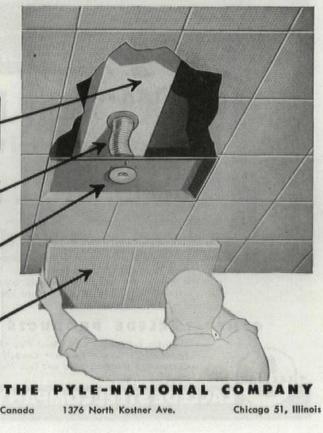
Yes! That is the big news in commercial, institutional, and industrial air conditioning for 1954.

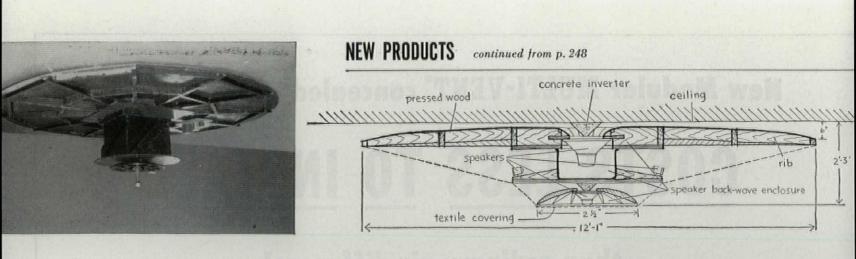
Now you can install this superior low velocity pressure displacement type of air distribution for metal pan ceilings at a far *lower* cost than the high velocity injection type.

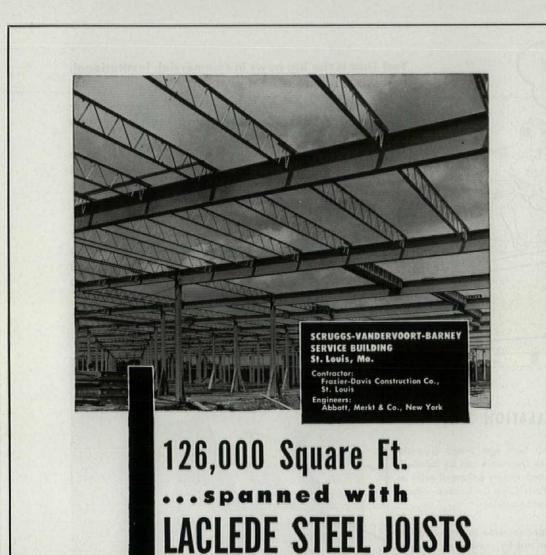
This is possible because the new MODULAR PANELS are so extremely simple and easily positioned. They can be assembled and installed in a few seconds by hand without the use of tools —a tremendous saving in labor cost!

Distributing air by Multi-Vent's gentle pressure displacement assures perfectly even air motion, and exceptional uniformity and control of room temperatures. The total absence of strong air streams or blow eliminates all the usual sources of draft complaints and permits complete freedom in locating panels and in relocating partitions.

Write today for detailed literature.







Framing large areas presents no problem with these light-weight, open-web joists. Here, for example, is the 126,000-square-foot Service Building for Scruggs-Vandervoort-Barney, one of St. Louis' leading department stores. Scheduled for completion in early fall, this is one of many buildings through-out the nation erected with Laclede Straight Chord Steel laists – the choice of more and more contractors for fact

Joists-the choice of more and more contractors for fast,

Centering • Electrical Weld and Gas Weld Tubing

Multi-Rib Reinforcing Bars • Steel Pipe • Welded Wire Fabric Form and Tie Wire • Spirals • Conduit • Corrugated Steel

LACLEDE PRODUCTS

ACLEDE STEEL COMPANY

economical construction.

OTHER

SOUND REPRODUCING SYSTEM distributes high-fidelity sound uniformly over auditorium

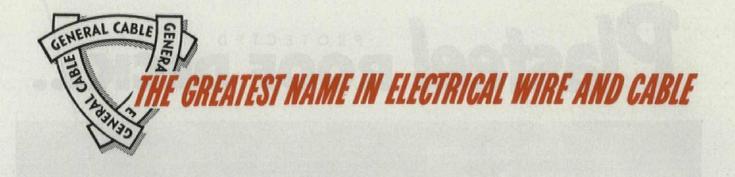
The Radial Exponential Transducer (R-E-T for short) is a high-fidelity reproducing system which radiates sound uniformly in all directions. The unit, in the general form of a shallow cone 12' in diameter with a projection of 21/2', is normally installed on the ceiling, but may be mounted on a wall or even on a floor. The plane of the ceiling or wall is used to distribute the sound, in a process that is somewhat analogous to indirect lighting. The 15" speaker (boomer) is directed at the ceiling, which distributes the sound horizontally out of the ring-shaped "mouth" between the top of the unit and the ceiling. The floor of the mouth and the top of the R-E-T is an inverted, saucerlike structure whose section follows an exponential curve, similar to that of a horn. This process is repeated at smaller scale for the 8" speaker located at the apex of the cone; this medium-range speaker is directed upward at a circular plane which is part of the unit. The three "tweeters," however, are aimed directly at the audience, each covering an angle of 120°. The two saucers are constructed of radial wood ribs cut to the required curve and covered with hardboard, backed between the ribs with 1" or more of reinforced concrete. The entire structure can be covered with cloth or rigid decorative material.

Where the plane of the ceiling cannot be used, an artificial plane can be constructed at the proper height and R-E-T attached to it. In new construction, the entire unit can be fully recessed, and the circular opening in the ceiling covered with a grille. The unit weighs over 1,000 lb. and costs in the neighborhood of \$3,500 installed.

In addition to the uniform sound distribution resulting from its radial design, and the ultra-high fidelity (from 20 to 20,000 cps) achieved by the use of five speakers, other performance features claimed are: immunity to feed-back and reverberation disturbances, high degree of transient response, and high conversion efficiency resulting from the use of the ceiling plane for sound propagation. The first R-E-T installation was completed in July 1954 in the auditorium of the Buhl Planetarium in Pittsburgh, Pa.

84B Kingston Ave., Pittsburgh 5.

continued on p. 254



POWER TWINS

... Newest, Most Practical Team for Plant and Equipment Wiring



VARNISHED CAMBRIC OR RUBBER INTERLOCKED ARMORED CABLES SAFETY M. I. WIRING SYSTEMS



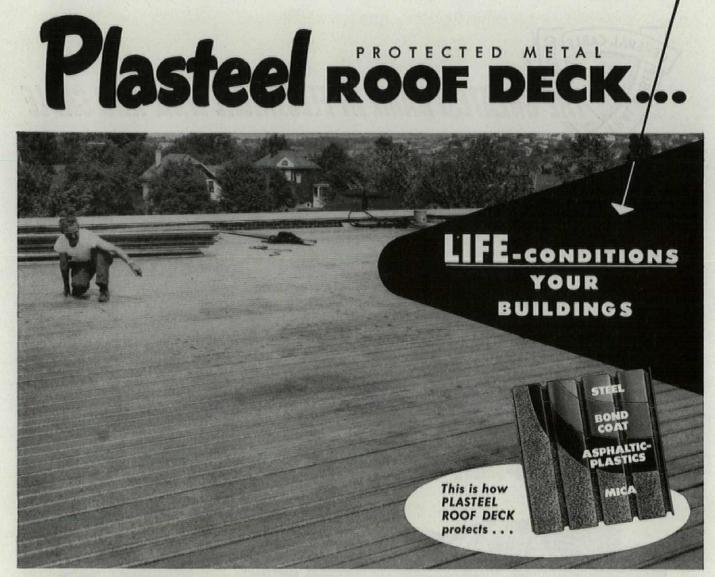
BARE, WEATHERPROOF, INSULATED WIRES and CABLES FOR EVERY ELECTRICAL PURPOSE The famous Power Twins combine lower installed costs with unique adaptability. They are ideal for electrical wiring without conduit in close areas and under, down and around beams and pillars...where power needs vary... where plant layout presents difficulties.

Varnished Cambric or Rubber Interlocked Armor Cable is designed for both low and high voltage requirements, (lighting and power control) and is available with steel, bronze or aluminum armor.

Safety m.i. Wiring System, all mineral insulated and exclusive with General Cable, is ideal for all applications up to 600 v. where heat, vapors, moisture, aging are of particular concern. Lower installed cost! Small diameter saves space! Trains easily for neat, compact installation. Investigate this popular combination before you buy. They can save you time and money.

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Tailored to Your Needs -

- Choose Plasteel Protected Metal Roof Deck where you need the most protection — and especially where severe corrosive conditions prevail. No other decking gives you so much protection. With built-in corrosion resistance this roof deck eliminates periodic painting and maintenance. It's LIFE-conditioned from core to surface—to extend the LIFE-expectancy of your buildings.
- In addition, Plasteel manufactures roof deck of galvanized steel for those installations with less severe corrosive conditions and painted enamel decking for installations where economy is a major factor.



Let our representative in your area study your particular application for the right recommendations.

> Let our Engineering Staff estimate your roof deck needs for maximum efficiency and economy.

PLASTEEL PRODUCTS CORPORATION Washington, Pennsylvania

Sales Offices in all Principal Cities Plasteel Roof Deck is made of high strength steel in 24" widths with 4 integral continuous ribs spaced 6" on centers, having a depth of $1\frac{5}{6}$ ". Plasteel Deck Sheets are available in lengths up to 25 feet — with telescoping ends to provide for snug nesting of end laps.

also ROOFING - SIDING - INSULATED PANELS

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the ultimate in efficiency where budgets control the building plans

The First Methodist Church of Plainfield, Iowa, had to be more than just a church to warrant the expense of its construction. Consequently, architects Schweikher & Elting, al-though limited by a budget of \$67,000, designed this remarkably flexible building for the 1300 church members. It includes:

- A church assembly room for 140 worshippers.
- A social hall with stage that will seat up to 90 people.
- A 350-sq. ft. kitchen to serve the social hall.

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- Four distinct classrooms with sliding walls. Will seat 70 persons.
- All the storage, office and service space required of a small community building.
- A complete radiant heating sys-tem of USS NATIONAL Steel Pipe.

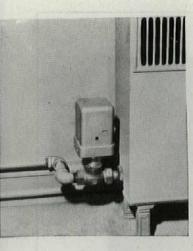
In such installations where effi-ciency is the key word, there is no better choice of materials to be made than NATIONAL Pipe—dependability at a moderate price. So dependable that architects and contractors have been specifying it for over 60 years as the "standard" for conventional plumbing and heating systems. They

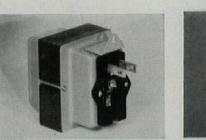
NATIONAL Steel

know that NATIONAL Steel Pipe has the inherent characteristics necessary to meet the requirements of such applications—smooth, uniform bending; sound, strong welding properties; and long service life—char-acteristics that have made it the largest selling pipe in the world. For further information on the ap-plication of USS NATIONAL Steel Pipe to radiant heating and snow melting services write:

melting services, write:

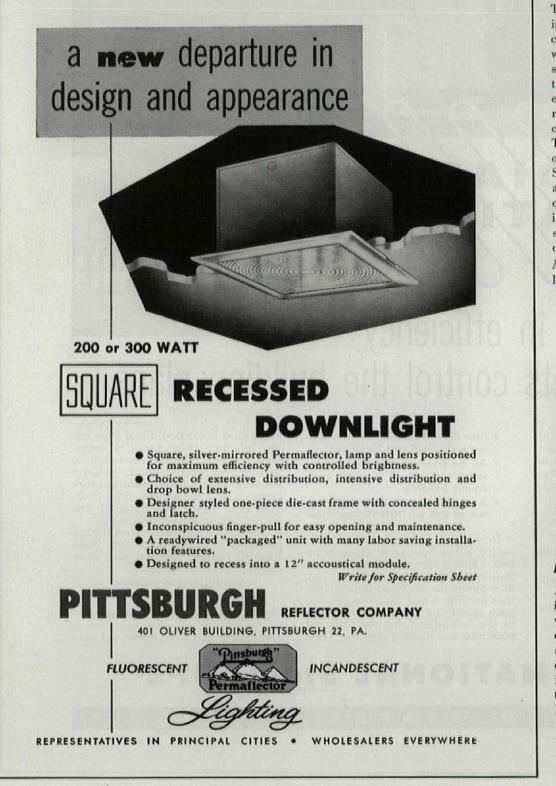
NATIONAL TUBE DIVISION UNITED STATES STEEL CORPORATION PITTSBURGH, PA. COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO PACIFIC COAST DISTRIBUTORS UNITED STATES STEEL EXPORT COMPANY, NEW YORK







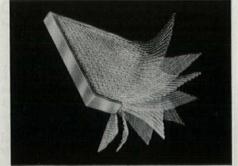
Components are (I to r) valve, transformer and thermostat



INDIVIDUAL THERMOSTATIC CONTROL brings modern comfort to old buildings

The luxury of a thermostat in every room is now within the realm of possibility, even in old buildings. A new low-cost system developed by Minneapolis-Honeywell can be installed in any room that has a radiator. No floor or walls need be torn up and the installation can be made without disturbing the occupants. Building owners can install the system in one room at a time as budget or other conditions permit.

The system consists of three parts: a motorized valve, a transformer and a thermostat. The two-position motorized valve is installed in place of the hand valve on the radiator and controls the flow of low-pressure steam or hot water. Manual operation of the valve is possible in the event of power failure. The small transformer plugs directly into any convenient electrical receptacle. The thermostat is a new round design with a snap-on plastic cover that can be painted or papered to match the wall. This thermostat was among the 50 examples of American industrial design selected by the Society of Industrial Designers for exhibition at the Triennale in Milan. The three parts are connected by inconspicuous low-voltage wiring which can be concealed if desired. The system can also be used for the control of window or console type air-conditioning units. Manufacturer: Minneapolis-Honeywell Regulator Co., Minneapolis.



ALUMINUM FILTER never needs replacement

Another maintenance problem can be eliminated by the use of all-aluminum air filters which will, under normal conditions, last indefinitely. Evans *Life-Long* filters are precision made for commercial, industrial and residential use. Frames are of extruded aluminum and the filter packs are made up of multiple layers of die-cut corrugated aluminum. Extremely high efficiency is claimed for the units: large quantities of dirt are removed from the air without seriously impeding the air flow. The filter is designed with large *continued on p. 258* versatile... time-proved





STARK

glazed facing tile

School, hospital, public or industrial building—there's a wide variety of architectural requirements which Stark Glazed Facing Tile can meet with equal success.

And you can depend on Stark's quality. This rugged, pre-finished material is made from the finest clays, glazed, graded and inspected to maintain consistently high standards. It has been proved in many thousands of fine buildings erected over the past 40 years.



A. Lobby Entrance, Whipple Heights School, Canton, Ohio. Architects, Walter Caldwell & Associates, Cleveland B. Radiology Department, North Shore Hospitol, Manhasset, N. Y. Architects: Isodore Rosenfield C. United States Steel Corporation, Foirless Works, Morrisville, Pa. D. Cafeteria, Archbishop Stepinac High School, White Plains, N. Y. Architects: Eggers & Higgins E. Stoten Island, N. Y., Ferry Terminel. Architectss Madigan-Hyland F. Corridor, St. Jean De Dieu Hospitol, Montreel, Ouebec Consdo.

This single structural material gives your clients these multiple advantages-

INITIAL SAVING of a fast-building, modular wall-and-finish-in-one. LONG-RANGE ECONOMY of easy cleaning, durability, no redecorating. LASTING BEAUTY of fired-in colors that help fit surroundings to task.

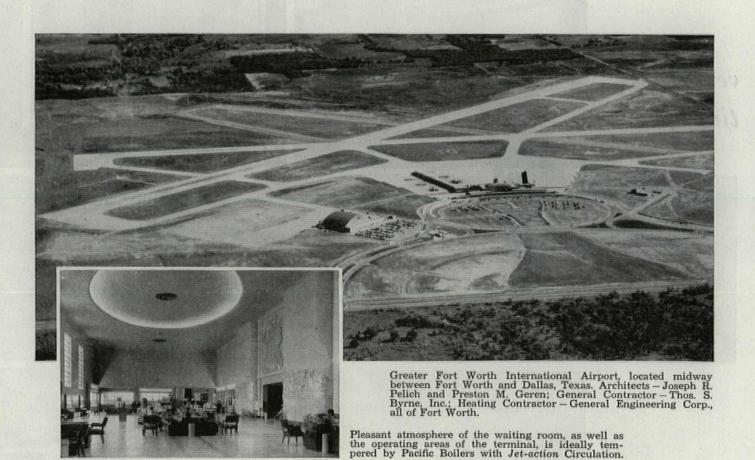
NEW CATALOG—A copy of our new catalog showing shapes, sizes, short form specification, etc. is available to you without cost. Address Dept. AF-10.



Ceramics, Inc., Canton 1, Ohio



14305 Livernois Avenue, Detroit 4, Michigan + 15 East 26th Street, New York 10, N.Y.



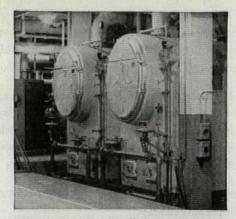
Pacific Boilers with Jet-action Circulation temper climate at Fort Worth airport terminal

WHEN temperatures drop at the Greater Fort Worth International Airport, Pacific Boilers go to work quickly and efficiently in the modern new terminal building. Steam is speeded on its way almost instantly . . . for Pacific Boilers and only Pacific Boilers—have superfast Jet-action Circulation!

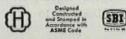
What's so different about Jetaction Circulation? The secret is in Pacific's circulating connections. Like miniature jet nozzles, they blast supercharged streams of steam and hot water across the heating tubes, sweeping away—and keeping away heat-insulating bubbles that would ordinarily cling to the tubes and slow down heat transfer. Tubes absorb heat faster...response is practically immediate!

Your customers would welcome this faster heating action, too! Because, in addition to its quicker response, *Jet-action* Circulation wrings more heat from a given amount of fuel than any other system!

To give your customers this extra efficiency and economy, specify Pacific Boilers. They come in all sizes, for all fuels, for any type building . . . and they are easy to install. For complete data call your Pacific representative today.



These two Pacific Boilers, rated at three million btu per hour each, heat the terminal building. Pacific Boilers make installation easy, because they can be shipped in one, two or three sections, depending on individual requirements.

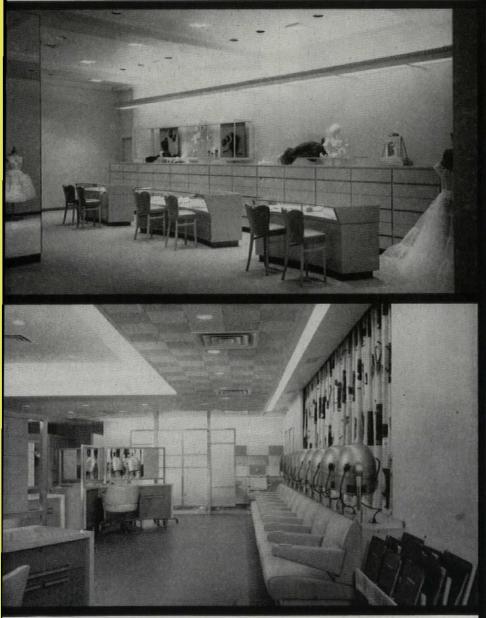


UNITED STATES RADIATOR CORPORATION: Boilers, Radiators, Heating Accessories • Pacific Boilers • Cyclotherm Steam Generators • Metal Products • Drayer-Hanson Air Conditioning and Commercial Refrigeration



/ They tried it... / They liked it... They came back for more!

Architecture by DeWitt & Swank, Dallas • Designer Eleanor LeMaire & Associates, New York
Photographs by Ezra Stoller



(top illustration) Lingerie Department, Neiman-Marcus Store, Dallas, Texas (bottom illustration) Beauty Salon, Neiman-Marcus Store, Dallas, Texas

JOANNA WESTERN MILLS 22ND & JEFFERSON CHICAGO 16, ILLINOIS

Canadian Representative: Daly & Morin, Ltd., Lachine Montreal, Quebec, Canada Joanna Western Mills Co. Export Division: 1 Exchange Place Jersey City 2, New Jersey





48,132 SQUARE FEET OF JOANNA Vinglized

WALL FABRIC is contributing its distinction and color to the elegance that is NEIMAN-MARCUS

The Dallas store of Neiman-Marcus is known the world over for the elegance it brings to downtown shopping.

Part of the beauty that is Neiman-Marcus is Joanna Vinylized Wall Fabric. Their original order of 4,500 sq. ft. was supplemented in 1953 by 43,632 sq. ft. more. The attractive colors and texture of Joanna Vinylized Wall Fabric proved to be another inducement to women to shop at Neiman-Marcus.

Beauty is only part of the story, however. With so many possibilities of wall decoration to choose from, why did the management select Joanna? The answer is economy. Joanna Vinylized Wall Fabric lasts for years, it cuts decorating costs to the bone. You see, Joanna is built to take heavy punishment. It resists bumps and scrapes . . . dirt washes off with soap and water. And Joanna Vinylized Wall Fabric is fire resistant, it is classified by the Underwriters' Laboratories.

Yes, they tried it and they like it ... and they came back for more.

TAL BY

PAINTING

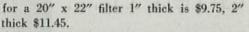
DECORATING

OF AMERIC

BRILPAPER RESEARCH BUREAU

NEW PRODUCTS continued from p. 254

openings on the inlet side and progressively smaller openings toward the outlet side. This permits lint to be caught on the inlet face without matting over the surface. Finer particles are carried deep inside the pack before they are caught. Due to the high capacity of the Evans filter, it does not have to be cleaned frequently. Cleaning is a simple operation which can be done with a hose; suds should be used if greasy dirt is involved. List price



For industrial installations, $2' \times 2'$ extruded aluminum frames with molded neoprene gaskets are available. These self-aligning frames can be easily bolted together horizontally and vertically, and can be carried to a height of 16' without additional bracing.

Manufacturer: George Evans Corp., Moline, III.



Chicago's modern 860 Lake Shore Drive Apartments are equipped with Montgomery Operatorless Elevators.

THROUGHOUT THE WESTERN HEMISPHERE

Montgomery Elevators are serving prominent commercial, residential and industrial buildings everywhere. Montgomery is one of the few companies engaged in the exclusive manufacture of passenger and freight elevators, gearless and geared, electric and hydraulic, self-contained and dumb waiters. All systems of control and operation including the latest variable voltage and operatorless service are available.

Montgomery features include Load Limitor, the exclusive Oil Cushion Safety and Lever Type Oil Buffer for shallow pits — features that assure modern and safe elevator service for all type buildings.

Montgomery Elevators transport passengers in Valparaiso, Chile, apartment and office building.





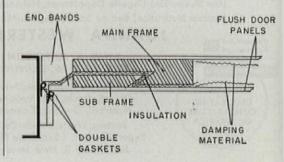
SOUNDPROOF DOOR gives 35-lb. reduction

New as a standard product, the Munchhausen door is designed according to principles successfully used by the company in many custom installations. The door is to all outward appearances a normal flush panel wood door, except that it is somewhat thicker (25%") than usual, and has rabbeted edges. But in its construction, the door is unique. It is a sandwich, consisting of two plywood panels on wood frames, which are separated from each other by a thin strip of insulating material. The separation is complete, from edge to edge and top to bottom, so that there is no throughconductivity of sound at any point. Panels on opposite faces differ substantially in their natural frequency. The two halves of the door are staggered at the edges so that each can close on its own gasket. The rabbeted door stops have double gaskets. Automatic plunger-operated drop seals are provided.

The Munchhausen door was tested at the Bureau of Standards according to ASTM E90-50T and averaged 35 db. reduction through the door and frame; with the door plastered into the frame, the average reduction was 40 db. In actual use in an acoustically treated room, performance considerably exceeds these figures. Sizes range from 24" to 48" wide and from 72" to 96" high; weight is under 7 lb. per sq. ft. Standard finish is birch. A 3' x 7' birch door costs \$198 including gaskets.

Manufacturer: Munchhausen Soundproofing Co., 25 W. 85 St., New York 24, N.Y.

Technical Publications, p. 262



HEALT



YOU CAN EXTEND or contract ¼" PG's easily by hand to meet all desired c-c spacing requirements within a range of 6 to 18". William Sincox, Heating Contractor, Union, N. J. says: "My men find PG's install faster...make a neater job"

"Radiant panel floor and ceiling jobs have never been as easy as they are today with Anaconda's new PG's[®]."

Mr. Sincox should know. He's just finished installing a total of 70 PG's in a new Maplewood, N. J. home. Six-



THE RECREATION ROOM is served by one of the 3 zones of this home's heating system. Architect: Katz and Metsky, Newark, N.J. Builder: The Kopp Construction Co., Irvington, N. J.

teen ½" PG's were used for the floor installation in the basement recreation room, shown above. Fifty-four %" PG's were used for the ceiling installations in the rest of the house.

Mr. Sincox goes on to say, "My men like to work with PG's because they come ready to install. They don't have to do any hand bending on the job. And they don't have to string up coiled tubing.

"We've found that the expanded end of each PG reduces the number of fittings needed. It also cuts the number of solder joints we have to make just about in half.

"Last but not least, PG's make a much neater, more efficient job. No sags that might cause air pockets or require excessive thickness of plaster to cover. We're sold on them."

On your next job see for yourself how PG's make installation easier and cut costs. They are available in two sizes for both ceilings and floors – 50 linear feet of %" or %" Type L tube. Write for Publication C-6 which gives the full story. The American Brass Company, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario. 5410A *Patent Applied For.



Copper Tube PRE-FORMED Panel Grids* for Radiant Panel Heating

... but how does your office design Sound?

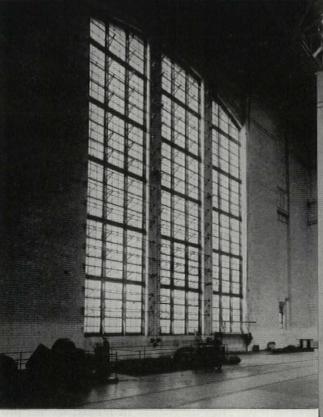
Only Fiberglas* Sound Conditioning delivers all these values:

- **1.** Acoustical Value. High noise reduction coefficient—up to .90—equal or superior to any material.
- 2. Fire-Safety. Easily meets all safety codes. Carries the Underwriters' Laboratories label service.
- **3.** Beauty. The most complete fire-safe line of decorative textures, patterns and colors. Light reflection in many cases over 80%.
- Permanence. Will not warp, buckle, expand or contract under varying temperatures and humidity. Odor-proof, rot-proof, sanitary.
- 5. Maintenance. Easily cleaned by standard maintenance methods. May be sprayed or brush-painted.
- **6.** Low Cost. Actually the *lowest* cost fire-safe ceilings available. Lightweight, easy to install and maintain. Provides added thermal insulation.

Owens-Corning Fiberglas Corporation, Toledo 1, Ohio.

*Fiberglas, Sonofaced, Stria and Noise-Stop are trade-marks (Reg. U. S. Pat. Off.) of Owens-Corning Fiberglas Corporation.





BEFORE: Pivoted windows, with applied operator equip-ment on inner wall. Ventilator operation was inefficient; glass breakage and maintenance demands were severe.

AFTER: Truscon Donovan Windows, replacing older pivoted windows, provide trouble-free ventilator operation and improved appearance. Note simple, concealed operators.

TRUSCON DONOVAN WINDOWS **Solve A Power Plant Pressure Problem**

Power plants have special window problems. Equipment operates at high pressure. Burners gulp great amounts of air. Because of rapid air consumption, pressure variations occur. Windows must open and close rapidly to compensate.

This station formerly was equipped with pivoted windows. But, operator arms had largely failed. Ventilator control was lost. The solution was a new installation of Truscon Donovan Steel Windows.

Now, they can open and close ventilators rapidly and simultaneously. Air pressure is more precisely controlled. Operators are completely concealed and protected against possible corrosion, Maintenance is substantially reduced.

These are large window openings. Subject to heavy windload. Rigid, heavy sections are needed to resist bending under wind pressure and protect against glass breakage. Truscon Donovan Windows have that needed strength of section.

What large-area window problems do you have? Using Truscon Donovan Steel Windows you can group great expanses of ventilators in attractive interior and exterior building elevations. Truscon window engineers will help you design specific applications. Write:

TRUSCON STEEL DIVISION STEEL REPUBLIC REPUBLIC 1102 ALBERT STREET . YOUNGSTOWN 1, OHIO STEEL Export Dept: Chrysler Bldg., New York 17, N.Y. NAME YOU CAN BUILD A ON 11 Marshall Frank school architects: regardless of how much more you might spend, you cannot buy a more practical or a more dependable school sound system than a **Bogen**



A system for every budget, functionally designed according to the recommendations of the U. S. Office of Education, and built by the country's largest manufacturer of sound systems.

David Bogen Co., Inc. 29 Ninth Ave., N.Y.14. see catalog ^{31a}/_{Bo} in Sweet's File

TECHNICAL PUBLICATIONS

ALARMS

Kidde Ultrasonic Alarm Systems. Walter Kidde & Co., Inc., Advertising Dept., Belleville 9, N. J. 12 pp. 8" x 11"

ALUMINUM

The Aluminum Data Book. Reynolds Metals Co., 2500 S. Third St., Louisville, Ky. 220 pp. 6" x 834". Spiral bound

DISPLAY FIXTURES

Spacemaster Visual Merchandising Equipment, Reflector Hardware Corp., 2235 S. Western Ave., Chicago 8. 130 pp. 11" x 8½"

ELECTRICAL WIRING DEVICES

Eagle Catalogue of Electrical Items. Eagle Electric Mfg. Co., Inc., 23-10 Bridge Plaza South, Long Island City 1, N. Y. 56 pp.

FIRE FIGHTING EQUIPMENT

Industrial Fire Hose and Fittings. Boston Woven Hose & Rubber Co., P. O. Box 1071, Boston 3, Mass. 8 pp. 81/2" x 11"

FLOOR COVERINGS

KenRubber Tile Floors for Cushioned Beauty. Kentile, Inc., 58 Second Ave., Brooklyn 15, N. Y. 8 pp. 81/2" x 11"

FLOORING

Concrete Flows Now . . , and for The Future. Kalman Floor Co., 110 E. 42nd St., New York, N. Y. 28 pp. 81/2" x 11"

DPS Masterplate Bul. No. 38 for "Iron-Clad" Concrete Floor Surface. The Master Builders Co., 7016 Euclid Ave., Cleveland 3, Ohio. 12 pp. 81/2" x 11"

GRANDSTANDS

Wayne Type "H" Steel, Portable Grandstands. Wayne Iron Works, Wayne, Pa. 8 pp. 8½" x 11"

GROUTING

Embeco Nonshrink Method of Grouting. The Master Builders Co., 7016 Euclid Ave., Cleveland 3, Ohio. 16 pp. 81/2" x 11"

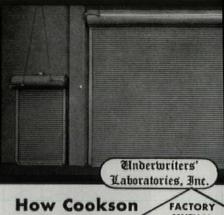
HEATING, VENTILATING AND AIR CONDITIONING

Acme Flow-Therm Packaged Liquid Chillers. Dept. 220, Acme Industries, Inc., Jackson, Mich. 4 pp. 81/2" x 11"

American Blower Venturafin Unit Heaters, Bul. 7517. American Blower Corp., Detroit 32, Mich. 44 pp. 81/2" x 11"

Boiler Water Level Controls and Safety Devices, McDonnell & Miller, Inc., 3500 N. Spaulding Ave., Chicago 18. 8 pp. 31/2" x 81/2"

CB Boiler. Bul. AD-135. Cleaver-Brooks Co., 326 E. Keefe Ave., Milwaukee. 4 pp. 8½" x 11" continued on p. 266



Pre-Labelled "SERVIRE" FIRE DOORS Simplify Architect's Problems

By specifying Cookson preinspected and pre-labelled automatic drop steel rolling "Servire" Fire Doors, the architect is relieved of the responsibility of "spelling out" specification details in regard to fire protection.

This not only saves time, but avoids possible errors or confusion. By merely specifying a prelabelled door, the architect can be certain that every door will meet all specification requirements in gauge and galvanizing of slats; automatic drop mechanism and fusable linkages; proper material and construction of end locks, guides, barrel, etc.

For Cookson "Servire" Fire Doors are pre-inspected at the factory by Underwriters' Laboratories and by Factory Mutual Laboratories... whose labels are recognized by fire rating bureaus and local inspectors.

When ordering standard or oversized fire doors, avoid complicated specification details, and be sure that all current requirements will be covered, by specifying Cookson "Servire" Fire Doors with the U-L and F-M labels.

•

COOKSON NON-AUTOMATIC SERVICE DOORS are also available with the U-L and F-M labels, relieving the architect of listing specification details covering construction of service doors.

tion of service doors. See full details in our catalog.



GRESON THE COOKSOL COMPANY 1535 CORTLAND AVENUE SAN FRANCISCO, CALIFORNIA

all set for high scores in classes and sports with

lighting

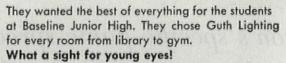
Guth school

Baseline Jr. High School Boulder, Colo.

GYM: Guth Gym Lights (high bay and low bay)

CLASSROOMS: GuthLite, Jr.®





Guth-Light helps make school days happy daysmore "A's"-more baskets! Less fatigue from eyestrain -a brighter future with normal vision protected.

Study or play-it's all fun for the pupils at Baseline!

leaders in Lighting Since 1902

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. ST. LOUIS 3, MO.

Write for detailed information on Guth School Lighting today.



For modern building requirements where specific flame resistance is needed, certain fabricators can supply panels and sheets with HETRON polyester.

Hetron's specific flame spread rating makes it possible to utilize the advantages of polyester-glass fiber sheet for <u>interior</u> applications

Now, when clients ask for polyesterglass fiber sheet, or when its use will contribute to utility and beauty, you can specify it even in coded areas where specific flame resistance may be required.

Glass fiber sheet made with HETRON* is self-extinguishing, and has high flame resistance, permanently built in.

Definite flame spread ratings It has specific flame spread ratings of 75 or less, equivalent to the Building Officials Conference of America classification of "slow-burning." This rating, established in independent laboratory tests, compares with ratings of 100 for red oak and as high as 500 for veneered wood.

You can specify HETRON-based sheet wherever you want the advantage of polyester-glass fiber construction—plus permanent fire resistance. (For exterior applications where ultraviolet exposure will be severe, we suggest you consult

*Trade-mark

with your fabricator or with us.) The sheet is available from fabricators, in a wide range of sizes, gauges, and colors, flat or corrugated, translucent or opaque. It is priced only slightly higher than sheet made with ordinary resins.

We do not make HETRON sheet, but will gladly send you complete information on where to get it. Write also for technical specifications and flame spread data on HETRON. Names of fabricators are available on request.



From the Salt of the Earth -

HOOKER ELECTROCHEMICAL COMPANY 54 UNION STREET, NIAGARA FALLS, N. Y. NIAGARA FALLS • TACOMA • MONTAGUE, MICH. • NEW YORK • CHICAGO • LOS ANGELES CASS OF SERVICE This is a full free Tredy ran of Cable-Tredy ran of

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SYMBOLS

P I PRENTICE , EDITOR ARCHITECTIRAL FORUM= 9 ROCKEFELLER PL NEWYORK=

CONGRATULATIONS TO FORUM. HAPPY TO INFORM YOU THAT FORUM HAS WON THREE AWARDS IN INDUSTRIAL MARKETING'S 16TH ANNUAL= COMPETITION FOR EDITORIAL EXCELLENCE. YOU HAVE BEEN AWARDED THE BRONZE PLAQUE FOR BEST SINGLE ISSUE (OCTOBER, 1953) IN A FIELD OF SOME 475 ENTRIES OF OUTSTANDING QUALITY AND TWO CERTIFICATES OF MERIT FOR BEST SINGLE ARTICLE (URBAN TRAFFIC FORUM, FEBRUARY, 1953) AND FOR BEST GRAPHIC PRESENTATION (THE EFFECT OF OFFICE WINDOWS ON DESIGN

SEPTEMBER , 1953). THESE AWARDS BRING FORUM'S TOTAL NUMBER OF AWARDS IN INDUSTRIAL MARKETING'S ANNUAL COMPETITIONS UP TO 18-- MORE THAN HAVE BEEN AWARDED TO ANY OTHER BUSINESS PUBLICATION =

MERLE KINGMAN MANAGING EDITOR INDUSTRIAL MARKETING=

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

SURCO DOES IT, AGAIN!

Again SURCO comes to the aid of contractors with a new tile setting bed that is superior in waterproofing, resiliency, and durability; and can also be used to level up walls and floors. SURCO Yellow Label applied 1% to 14 inch thick provides a bed that tile adheres to quickly and strongly — 86 pounds per square inch makes tile stay put.



Tile was laid on SURCO setting bed at night, this busy kitchen was ready for use the next morning. Over 2700 square feet was laid without moving any large equipment.

 See Sweet's File for further information or write:



TECHNICAL PUBLICATIONS

continued from p. 262

Clear Weather Ahead for Your Business and Air Conditioning for the Big Jobs. Chrysler-Airtemp, Div. of Chrysler Corp., Dayton 1, Ohio. 6 pp. each. $8\frac{1}{2}$ " x 11"

The Electronic Control Story, Barber-Colman Co., Rockford, III. 24 pp. 61/4" x 81/2"

Lawler Type "S," Bul. S-6. Lawler Automatic Controls, Inc., 453 N. MacQuesten Pkwy., Mt. Vernon, N. Y. 12 pp. 81/2" x 11"

Nelex Mineral Insulated Heater Cable Units, Bul. 1603. Nelson Electric Mfg. Co., 217 N. Detroit, Tulsa, Okla. 8 pp. 81/2" x 11"

Packaged Boilers. Wm. Bros. Boiler & Mfg. Co., 1057 Tenth Ave., S. E., Minneapolis, Minn. 9 pp. 81/2" x 11"

Shaw Panel Baseboard Radiators, Catalogue B. Shaw-Perkins Mfg. Co., Pittsburgh 19. 12 pp. $81/2'' \times 11''$

Testing and Rating Code for Boiler-Burner Units. Heating, Piping and Air Conditioning Contractors National Assn., Suite 1843, 30 Rockefeller Plaza, New York 20, N. Y. 8 pp.

KITCHEN EQUIPMENT

File (for loose-leaf binding) of counter and heavy duty commercial electric cooking equipment No. JN-500. Hotpoint Co., Commercial Equipment Dept., 227 S. Seeley Ave., Chicago 12. $8/2^{"} \times 11^{"}$

Hospital Dietary Services. Hotpoint Co., Commercial Equipment Dept., 227 S. Seeley Ave., Chicago 12. 72 pp. 8/2" x 11"

LIGHTING

Daylighting Your Schools. Wasco Flashing Co., 87 Fawcett St., Cambridge 38, Mass. 8 pp. $8!/2'' \times 11''$

The Gratelite Story of Its Louver Diffuser. The Edwin F. Guth Co., 2615 Washington Ave., St. Louis, Mo. 8 pp. $81/2'' \times 11''$

Marco Holophane Catalogue. Marvin Mfg. Co., 648 Santa Fe Ave., Los Angeles. 18 pp. $8!/2'' \times 11''$

Smithcraft Fluorescent Lighting Equipment. User Price Catalogue Schedule U-216 (36 pp.) and U-216-A (8 pp.). Smithcraft Lighting Div., Chelsea 50, Mass. 81/2" x 11"

Sylvania Fluorescent Lighting Guide Book. Sylvania Electric Products Inc., 1740 Broadway, New York 19, N.Y. 24 pp. $8\frac{1}{2}^{\prime\prime} \times 11^{\prime\prime}$

MAINTENANCE

Complete Sash Maintenance. The Tremco Mfg. Co., 8701 Kinsman Rd., Cleveland, Ohio. 18 pp. $81/2'' \times 11''$

OFFICE FURNITURE AND EQUIPMENT

Hamilton Drafting Room Equipment. Hamilton Mfg. Co., Two Rivers, Wis. 34 pp. 9" x 12"

continued on p. 270



What will America look for in a 1955 House

What's around the corner in house design? One thing is sure. Househunters won't be easy to satisfy. They're watching and waiting for design, planning, materials and equipment that offer them more house —less housekeeping.

What will clients want you to give them in '55?—sunken baths, TV-play areas, freestanding fireplaces? How far has public taste swung over to floor-to-ceiling glass, low-pitched roofs and open kitchens? What can you plan in air conditioning, landscaped patios and closet walls?

See the answers in HOUSE & HOME:

A HOUSE & HOME subscription brings you the last work on the latest in houses—*handsomer* homes with more built-in convenience . . . quality homes that are safer investments . . . homes that show you, not where house design comes from but where it's going.

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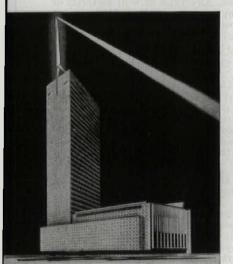
house+home

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 P. P. Mondel, A. Sheri ("Constraintand and and and a start function sensed."

Traffic tells the elevators what to do



REPUBLIC NATIONAL BANK Dallas, Texas

The new 40-story REPUBLIC NATIONAL BANK BUILD-NG, with its four basement levels, will have 17 Otis AUTOTRONIC operatorless elevators. This is one of more than 175 new and modernized office buildings, hotels, hospitals, banks, and department stores that have given AUTOTRONIC elevatoring an overwhelming vote of confidence—by buying it!

Architects: Harrison and Abramovitz, New York City Architects: Gill and Harrell, Dallas Contractor: J. W. Bateson and Company, Inc., Dallas Elevator traffic is people. They step into operatorless cars and press buttons for the floors they want. They touch upper floor corridor buttons to call UP or DOWN cars. These calls vary constantly in number and frequency during a busy building's day.

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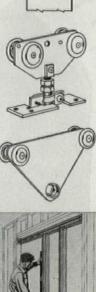


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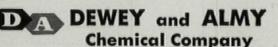
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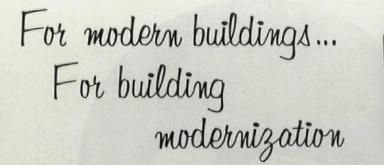
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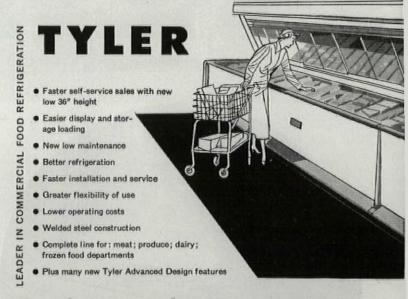
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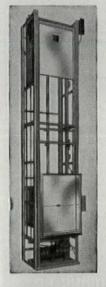


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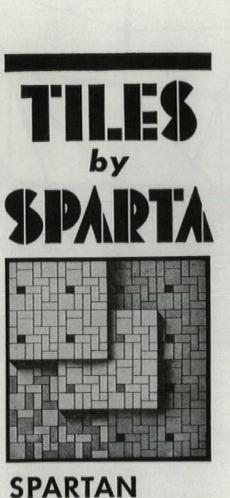
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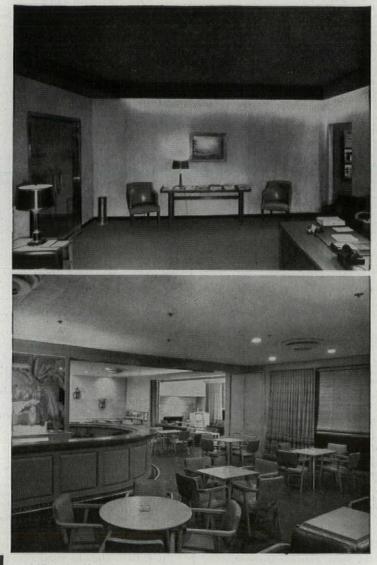
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