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JULY 1951

168
ARCHITECTURAL FORUM

THE MAGAZINE OF BUILDING

UNIVERSITY OF HAWAII
LIBRARY
AUG 14 '51

Carl Koch's Fitchburg Library (p. 134)

Johansen's small house
borrows space three ways (p. 164)

Defense housing muddle (News—p. 36)

How to build more houses in 1952
—an open letter to NAHB (p. 131)

Mr. Wilson's G. E. develops
satellite plant pattern (p. 144)

Will the public buy flat roofs? (p. 169)

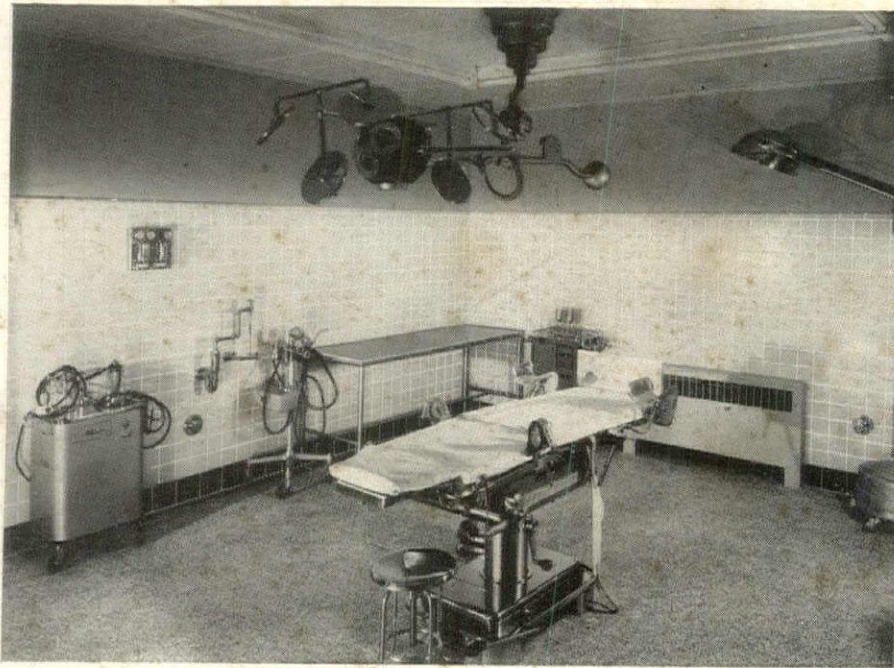
Top lighting for schools
photo-electrically controlled (p. 158)

← Engineering becomes architecture
in Italy's new exposition hall (p. 190)

7
1.95 2/1

softly-shaded and functionally correct . . .

the new, beautiful *Suntile* colors
increase the efficiency of any **HOSPITAL INTERIOR!**



*you get the right color
plus the permanence
of real clay **TILE!***

Can color help hospital interiors fulfill their functions *better?*

Color authorities say "yes."

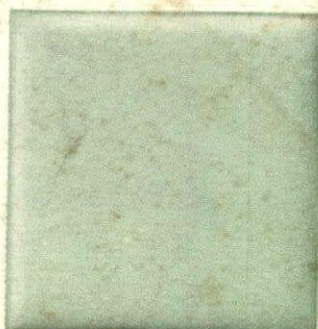
There's a *right* color—a most suitable, most beneficial color—for surgeries, wardrooms, corridors, and cafeterias . . .

The *right* color can relieve eye strain of doctors—impart visual and emotional benefits—provide a restful and cheerful environment for both patients and staff.

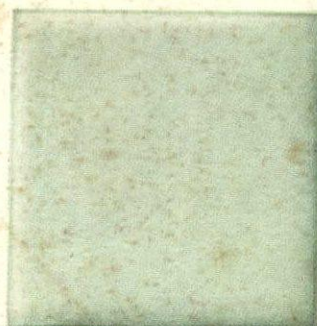
Suntile's beautiful new line of softly shaded colors has been scientifically developed to *fit the function of interiors*—not only in hospitals but in schools, institutions, commercial and industrial buildings.

This "color-fitted-to-the-function feature" gives you another reason for selecting color-balanced Suntile for walls and floors. Other well-known reasons for choosing this *real* clay tile are: permanence, ability to withstand heavy use, sanitation, ease of cleaning, low maintenance!

Write Dept. MB-7 for our new color booklet "Suntile Functional Color Recommendations." See your local Authorized Suntile Dealer. The Cambridge Tile Mfg. Co., P.O. Box 71, Cincinnati 15, Ohio.



Sea Green 511



Light Sea Green 513

Suntile SEA GREEN, LIGHT SEA GREEN
Recommended for hospital surgery

Shown above are two tones of Suntile Sea Green—an original and modern color designed by Suntile with the aid of Faber Birren, nationally known color authority. The soft tone Sea Green is recommended for surgeries and operating rooms; the bright tone Light Sea Green for other service areas. Both of these are carefully balanced green tints with a special satin finish. The tint is complementary to the color of human tissue and complexion—and will aid vision and reduce ocular fatigue for the surgeon. Both of these Suntile backgrounds present a dignified appearance, are visually restful and physically durable. These are only two of a complete Suntile line of 12 functional colors, adaptable to all parts of a hospital.

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Photos from THE FRENCHMAN © 1948, 1949, by Philippe Halsman, courtesy Simon and Schuster.



ATTRACTIVE Fenwal DETECT-A-FIRE horizontal mount combines smart design with unique operation. Gives sensitive response to temperature at any rate of rise — non-response to fast temperature jumps below pre-determined alarm level.



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DYNAMIC! New DETECT-A-FIRE Detector is Rate-Compensated to give *dynamic* fire detection. No thermal lag. No false alarms.

PLEASE SEND ME THE BASIC FACTS about the new Fenwal DETECT-A-FIRE horizontal unit for ordinary institutional, commercial, industrial, and marine locations.

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VOLUME 95, NUMBER 1



NEWS

LETTERS

REVIEWS

TECHNICAL LITERATURE

BEHIND THE BLUEPRINTS

EDITORIAL

Builders can produce more houses in 1952 provided they cooperate with manufacturers on the elimination of wasteful materials—an open letter to NAHB.

THE TYPICAL ARCHITECT

AIA survey reveals the profession's potential market and its earning power.

CHILDREN'S LIBRARY

In Fitchburg, Mass., Architect Carl Koch proves that the court-centered building is a first-rate solution for many a downtown problem, and that corrugated plastic sheets make an excellent luminous ceiling.

BRANCH LIBRARY

The Uncle Remus Branch Library in Atlanta, Ga., achieves a cheerful and sunny atmosphere with an exposed steel frame filled in with brick and glass. Architects: Stevens & Wilkinson.

MUSIC PAVILLION

The design of this large band shell by Architects Holabird & Root & Burgee is based on elaborate tests in the acoustics labs of the Armour Research Foundation.

G.E.'S SATELLITE PLANTS

Why and how General Electric is moving to the suburbs are important questions for every industrialist and industrial architect.

CHILDREN'S HOSPITALS

To satisfy top U. S. pediatricians, children's hospitals must be a substitute for home and school as well as an efficient medical plant. The Children's Clinic, Helsinki, Finland, and current U. S. projects show how to meet this new requirement.

SCHOOL WITH CONTROLLED DAYLIGHTING

Southgate Elementary School in Seattle is bathed in photo-electrically controlled daylight through overhead plastic sky lights. Architect: Ralph H. Burkhard.

SCHOOL WITH LOW CEILINGS

Kimberton Farms School in Kimberton, Pa., uses 8' ceilings to reduce scale and construction costs. Architect: Vincent Kling.

FLOATING HOUSE

Architect John Johansen's own house in New Canaan, Conn., is a very small house but it looks very big inside. How he did it is one of the best design stories of the year.

FLAT-TOP HOUSES

Builder Earl Smith in San Francisco undersells the market \$1,000 by exploiting the economies of slab floors and flat roofs. His 2,000 sold flat tops disprove the rule that the public is allergic to them.

A NEW KIND OF ZONING

A revolutionary proposal for improving the planning and use of low-density residential land by Charles K. Agle.

LOW COST STORE

Lane Bryant specialty shop for women shows how imaginative design can circumvent high costs and NPA restrictions. Architects Sanders, Malsin & Reiman use a wide-open island plan and simple fixtures to provide flexible, attractive sales space.

BUILDING REPORTER

A candid photographic report on numerous new buildings here and abroad.

BATHROOM OF 19-WHAT?

Interior Decorator T. H. Robsjohn-Gibbings has some very big plumbing ideas—a review.

NEW LIGHT SOURCE

Glass panel lights promise to replace incandescent bulbs and fluorescent tubes in tomorrow's luminous ceilings.

HOUSES FRAMED WITH BENTS

Architect Rene de Blonay suggests a fresh and economical substitute for conventional framing and foundation techniques.

CONCRETE EXPOSITION HALL

Engineer Luigi Nervi's enormous span in Turin, Italy, shows how precast and poured-in-place concrete can be efficiently combined to produce a monolithic structure.

PRODUCT NEWS

Cover: Turin Exposition Hall, photo by Moncalvo

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New Servel Water application and

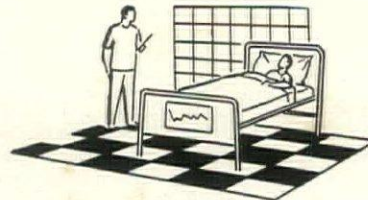
THE SERVEL WATER CHILLER—AN ECONOMICAL SOURCE OF CHILLED WATER OR AIR CONDITIONING



OFFICE BUILDINGS



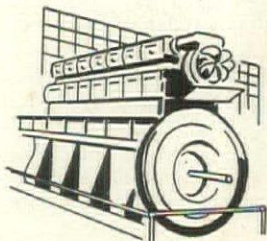
LARGE STORES



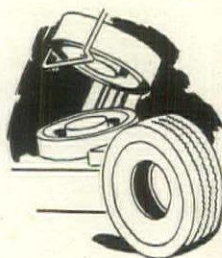
HOSPITALS



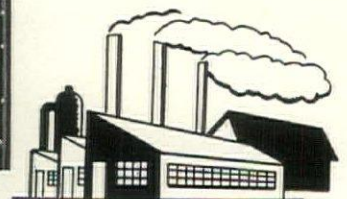
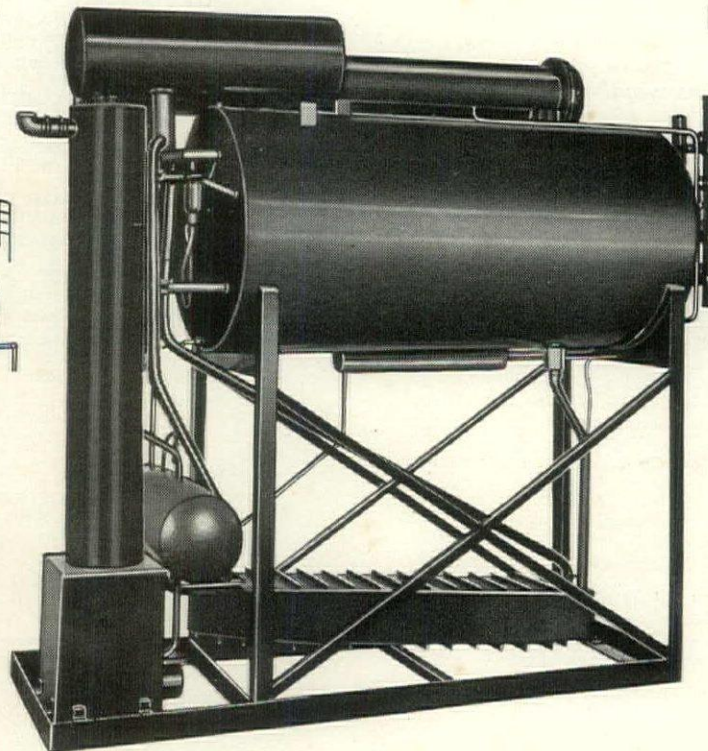
SCHOOLS



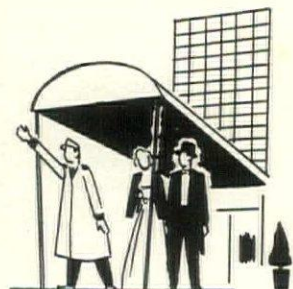
SPECIAL PRE-COOLING



INDUSTRIAL PROCESSES

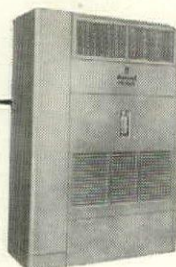


Factories



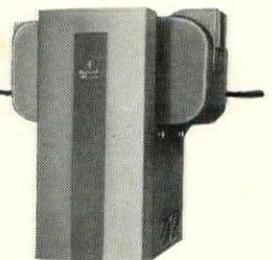
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DESCRIPTION: Rated capacity under standard ASRE conditions—25 tons. Hermetically sealed absorption refrigeration system. Refrigerant, water. Absorbent, lithium bromide. Source of energy, steam. Refrigeration unit operates under a vacuum, but the chilled-water circuit operates under ordinary pump pressure.



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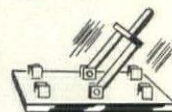


Chiller offers many operating economies



Uses steam from any source, even waste steam!

Electric-power needs are nominal



Light enough to install on any floor

Supplies chilled water or air conditioning

YOU'LL find it well worth while to consider the new Servel 25-Ton Water Chiller as a source of chilled water for industrial processing, or air conditioning. It's so light, quiet, and free from vibration you can install it on any floor, even the roof. You can operate it on steam from any source, at any pressure, produced with any fuel. If waste steam or waste heat is available, you can operate on it, and save most of the normal costs of fuel. And since electric-power requirements are negligible, you can usually connect it to existing electric systems.

Along with these installation economies, you get the operating benefits of Servel's famous no-moving-parts cooling system. This means dependable opera-

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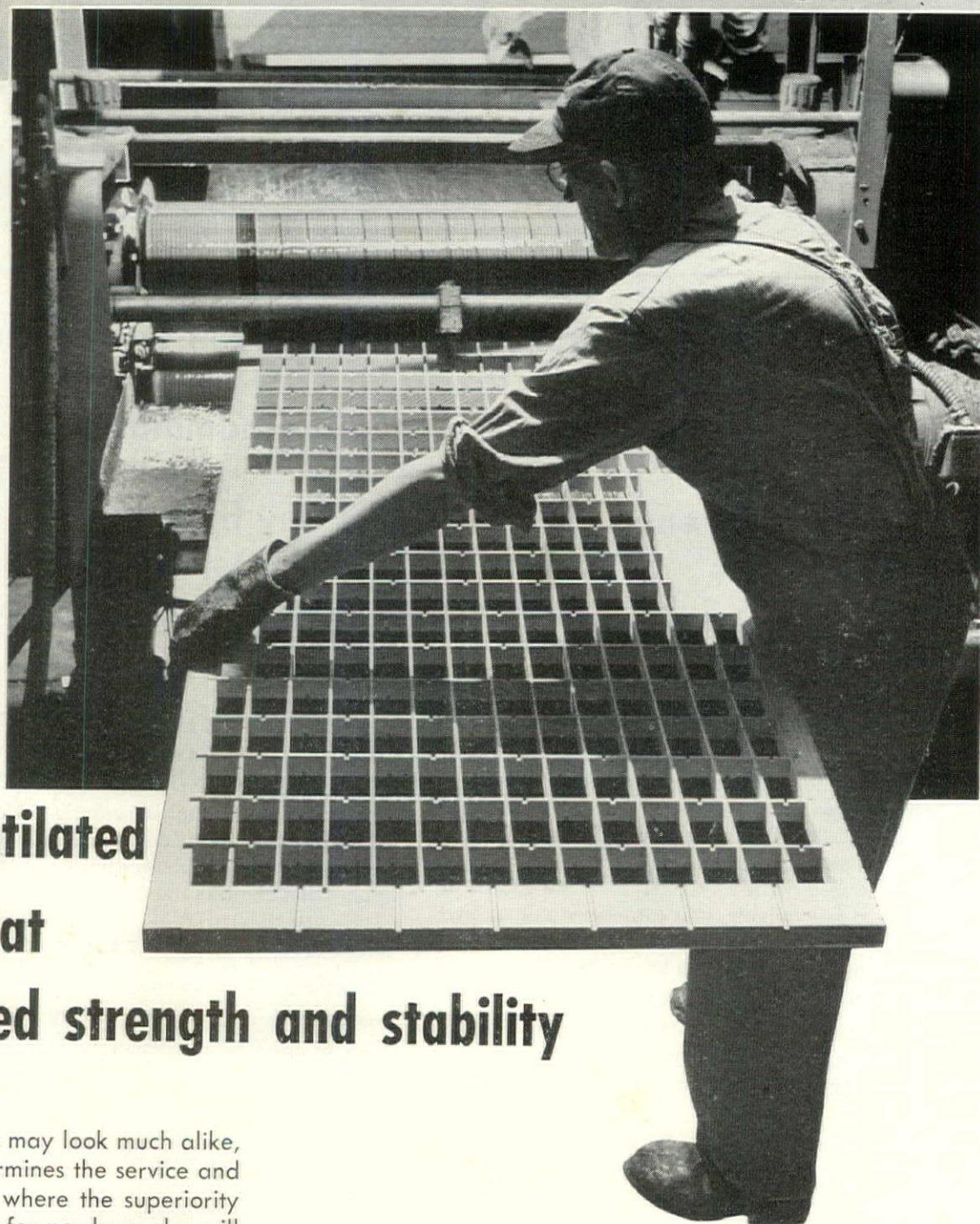
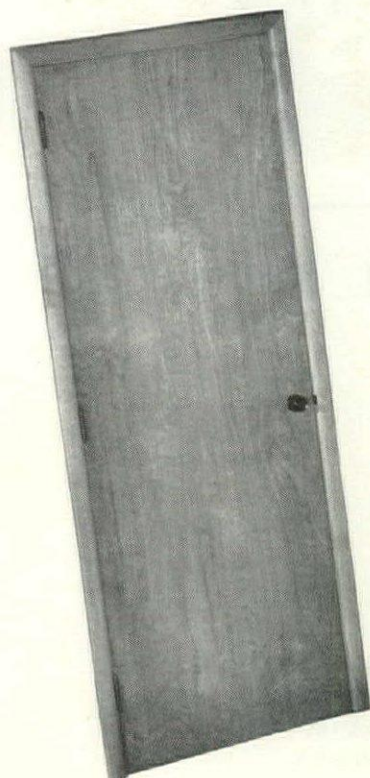
IF YOUR JOB CAN BE DONE BETTER WITH AIR CONDITIONING OR COOLING, IT CAN BE DONE BEST WITH SERVEL

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the interlocking, ventilated
all wood core that
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On the surface, flush hollow core doors may look much alike, but it's what's beneath the face that determines the service and satisfaction that you can expect. Here's where the superiority of Paine Rezo doors is most pronounced; for nowhere else will you find equal dimensional stability, nor such lightness in weight combined with great structural strength.

For these reasons architects and contractors everywhere have installed more than four million Paine Rezo doors in build-

ings of every type. No other hollow core door has been so widely endorsed, so thoroughly time-proved. Remember, when you specify Paine Rezo doors your satisfaction, now and in the future, is *unconditionally guaranteed*.

See SWEET'S catalog—or write for an illustrated data bulletin.

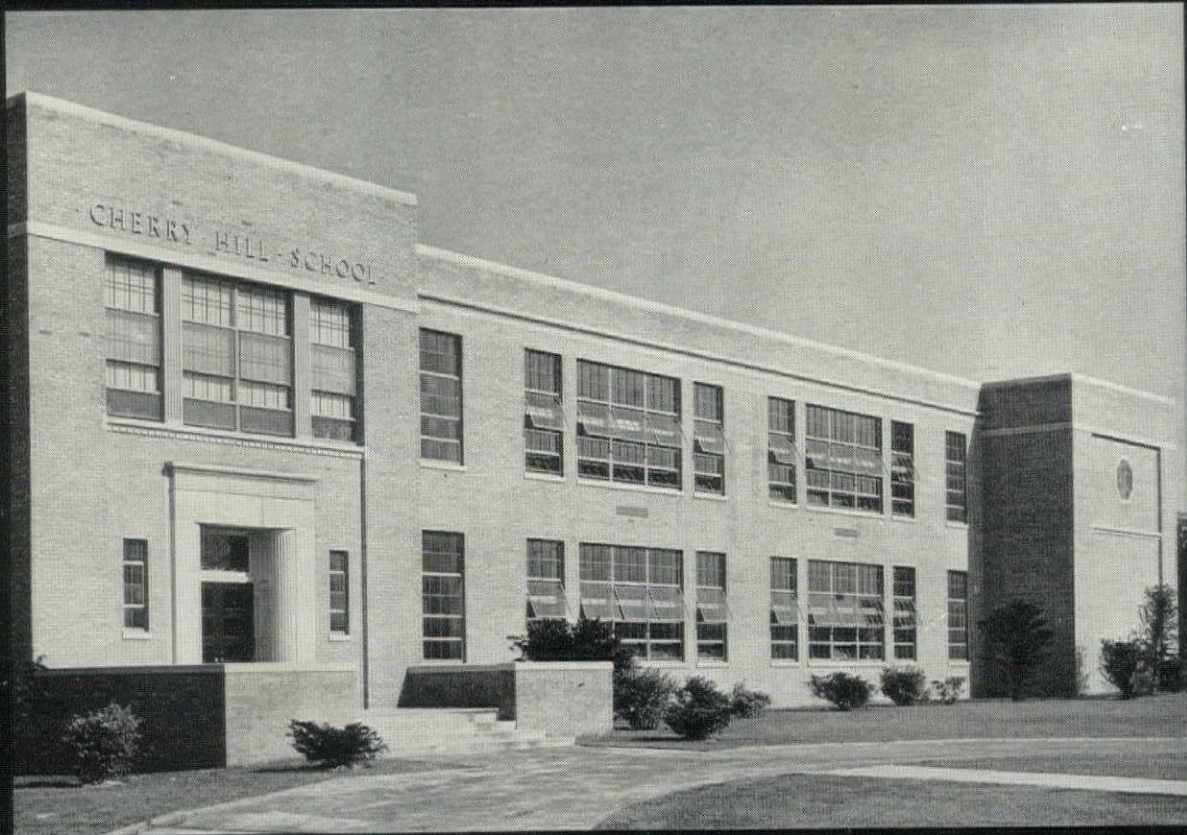
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PAINE LUMBER CO., LTD. *Oshkosh Wisconsin*

ESTABLISHED 1853

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SCHOOL WINDOWS

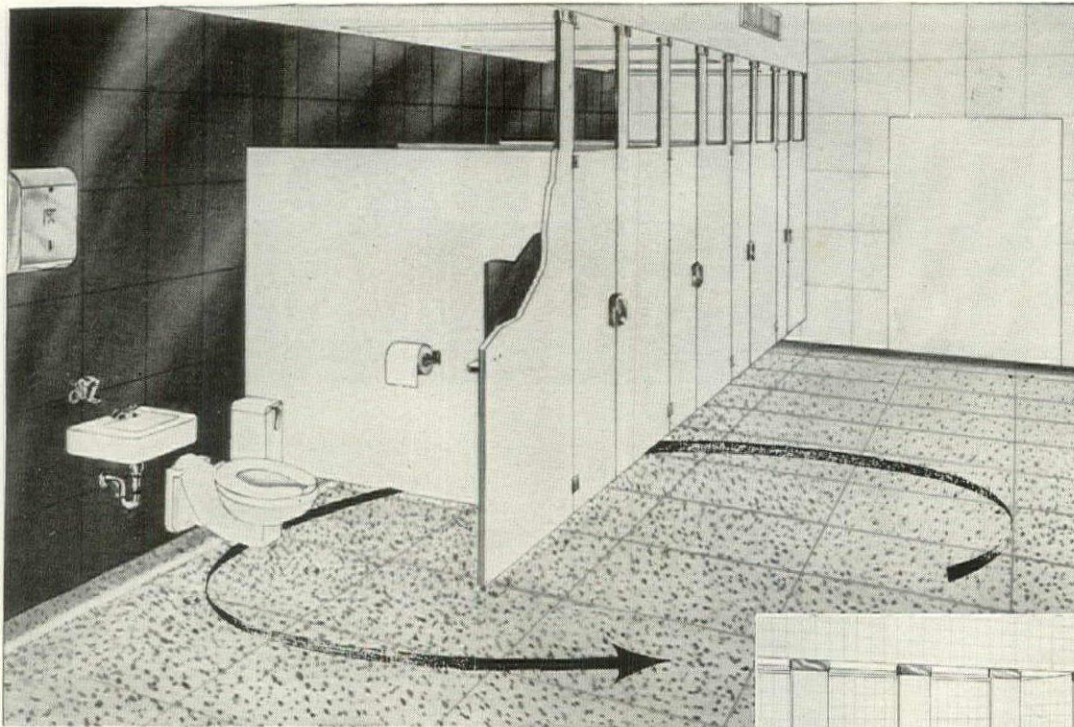


*Cherry Hill School, River Edge, N. J. Gustave J. Pfost, Architect
Terminal Construction Corporation, Contractors*

The advantages of modern treatment in school fenestration are apparent from the first glance at this photograph. Classrooms here receive generous natural illumination from "window walls" of clear glass set in narrow frames. Each desk enjoys full daylight and opportunity of a distant view for restful relief from close work. Easily controlled natural ventilation in warm weather also provides its benefits. Such schools have excellent child health records. Since these are Hope's Steel Windows, the record of economy in maintenance will also be outstanding.

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THE FINEST BUILDINGS THROUGHOUT THE WORLD ARE FITTED WITH HOPE'S WINDOWS



Floors are cleaned faster, easier in this modern ladies' washroom with these off-the-floor fixtures:

1. Wall-hung toilets.
2. Floor foot-flush valves.
3. Wall-hung lavatories.
4. Ceiling-hung partitions.
5. Towel and tissue dispensers, fastened to the wall.

Why

Off-the-Floor

Fixtures

are a "Must" for Modern Washrooms

"Keep the fixtures off the floor!"—A sound recommendation from the plant washroom designer who wants his client to have the best in employee health, morale and efficiency... a minimum of absenteeism and wasted man-hours. For example—wall-hung lavatories and toilets with ceiling-hung partitions aid a faster, easier cleaning operation. They reduce illness and absenteeism, too, by doing away with filth-catching corners and crevices, permitting better ventilation.

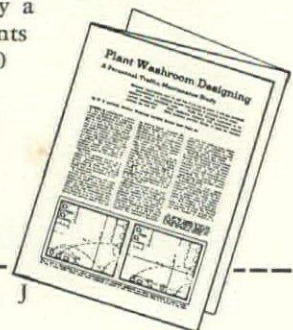
Labor and administration costs generally eat up 85-95% of a typical operation's sanitation budget. Stretch this figure out over the life of a building—50 years or more—and you'll

realize the full importance of passing every possible washroom labor saving on to your client in his new building.

Advice on off-the-floor fixtures is only one of many services offered by your Washroom Advisory Service man. Call him in. Get *all* the details—based on actual experience. He has the know-how gathered by a group of Scott-trained consultants who have serviced over 500,000 washrooms.

Contact Washroom Advisory Service, Scott Paper Company, Chester, Pennsylvania.

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"Plant Washroom Designing"



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Trade Mark "Washroom Advisory Service" Reg. U.S. Pat. Off.

Washroom Advisory Service, Dept. J
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At no cost or obligation, please send me your study of personnel, traffic and maintenance problems, "Plant Washroom Designing."

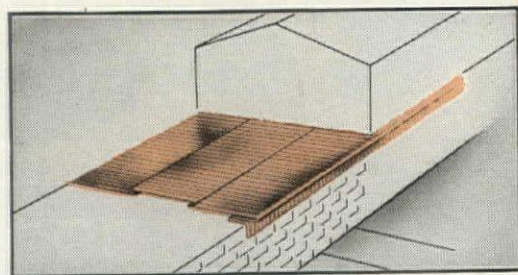
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Company _____ Title _____

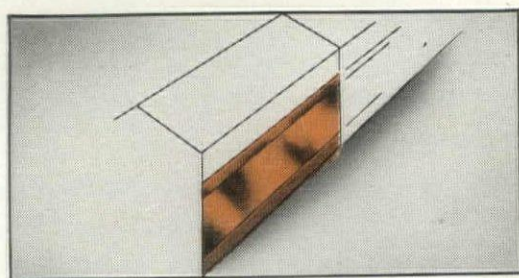
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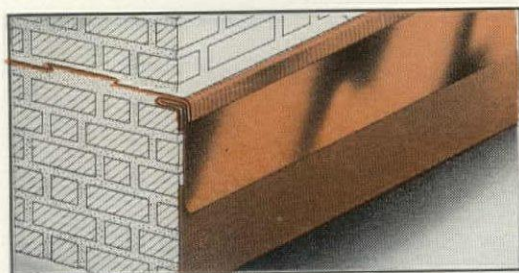
Announcing THE NEW CHASE ONE-PIECE THRU-WALL COPPER FLASHING and CAP FLASHING RECEIVER



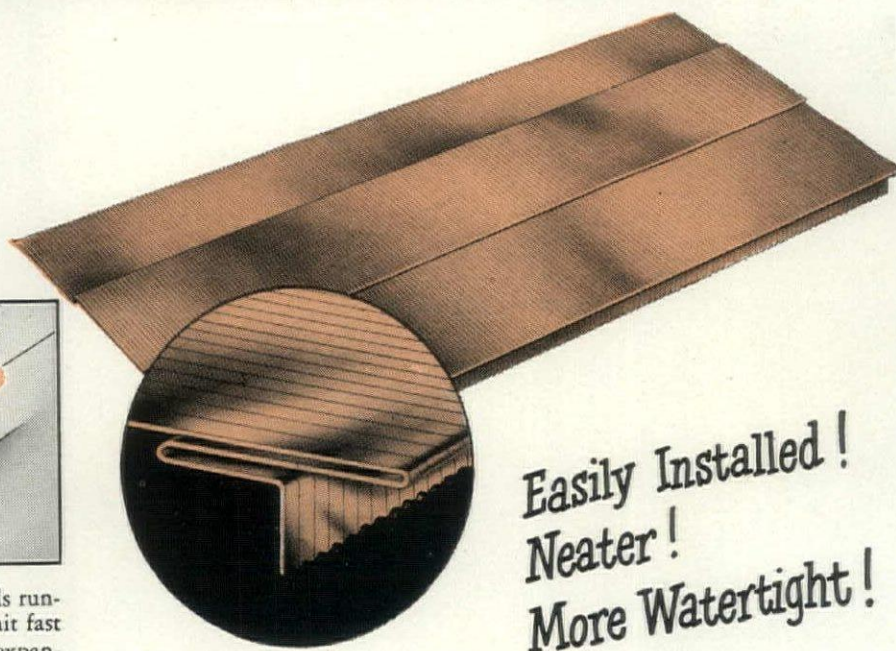
DRAINAGE CONTROL. Continuous channels running transversely through the wall permit fast drainage. This feature also provides for expansion and contraction.



MORE EFFICIENT CAP FLASHING. The added rigidity of cold rolled counter flashing eliminates the necessity of locking the cap flashing to the base flashing.



CAP FLASHING RECEIVER. Locks the cap flashing securely and permanently. The Cap Flashing Receiver also provides a guide to position the flashing during installation.



**Easily Installed!
Neater!
More Watertight!**

Here is a full weight copper thru-wall flashing (with a 3-way bond!) that combines an integral cap flashing receiver. The design* of this receiver permits the easy installation of cap flashing *after* the base flashing and roof are installed, without plugs or wedges to keep the receiver open. And since the cap flashing is never bent after it is inserted and locked in, it can be formed of *cold rolled* copper. The result: a neater, more watertight installation at reasonable cost.

Investigate the advantages of this outstanding development for flashing building walls. Send for free folder giving details and specifications.

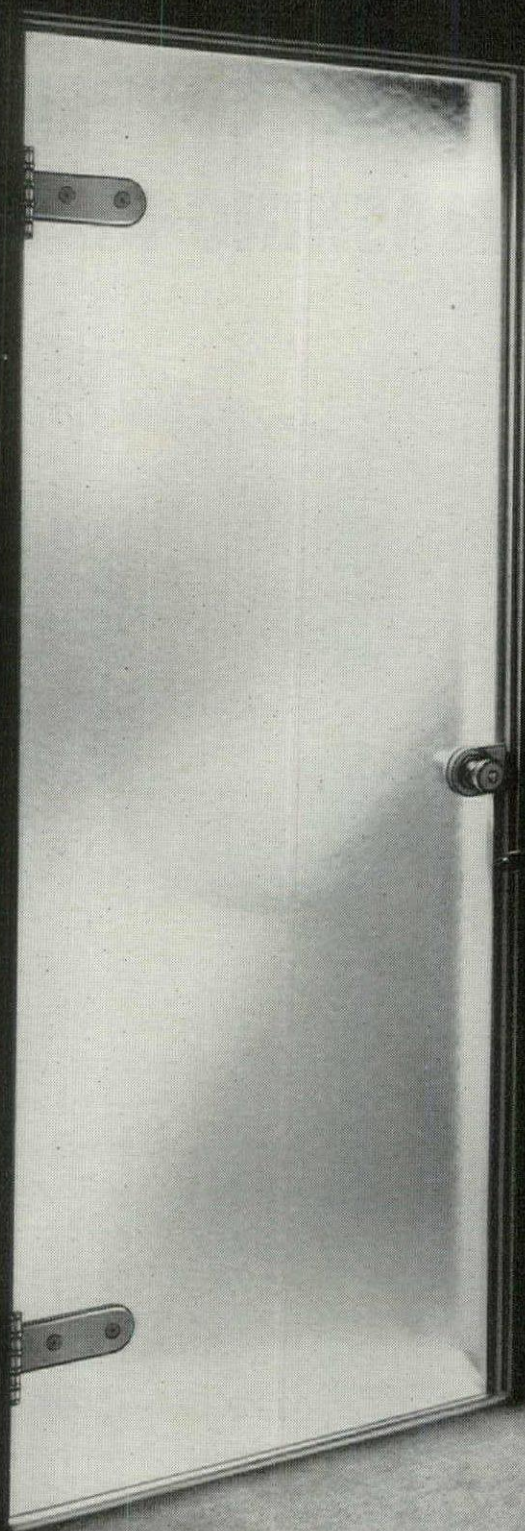
* Patent Pending

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for light!

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New, Beautiful, Different...

There's never been a door like it!

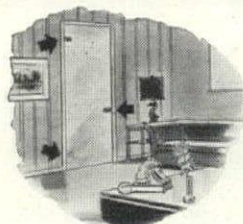
Modern Beauty—this $\frac{3}{8}$ "-thick door of jewel-like patterned glass adds an exciting touch to modern decoration. Designed for interior use only.



Provides Privacy—keeps people from seeing in, yet lets in *light*. Can be *Satinol** finished for even greater obscurity and diffusion.

LOOK AT THESE EXCITING FEATURES

Really Tough—it's tempered . . . 3 to 5 times tougher than non-tempered glass. Should its maximum resistance be exceeded, it does not splinter like ordinary glass, but disintegrates into little crystals.



Comes Complete—with sturdy hinges made especially by Stanley, and with handsome Sargent Hardware.

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Easily Installed—no cutting, mortising, drilling, tapping or painting. Door is available plain or drilled to take Sargent Door Closers or concealed LCN Closers.

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Thus, the same door can be used right or left hand.

Faultless Operation—can't warp or swell or shrink. Easy to open and close. Swings on ball-bearing, single-acting Stanley Hinges.

And Not High Priced—you can afford to use this beautiful door in almost any interior.

LOOK AT THESE INSTALLATIONS



See the clean, modern look the *Securit* Door gives this office. Gives privacy without blotting out light.

Think of the places you can use these wonderful new doors! Offices, schools, hospitals, homes, all kinds of modern buildings. Mail the coupon for a detailed folder or call your Libbey-Owens-Ford Glass Distributor. *Securit* Interior Glass Doors are made by the Blue Ridge Glass Corp., Kingsport, Tenn., and sold through L·O·F Distributors.



What a wonderful way to add distinction to a room.

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GLASS DOORS



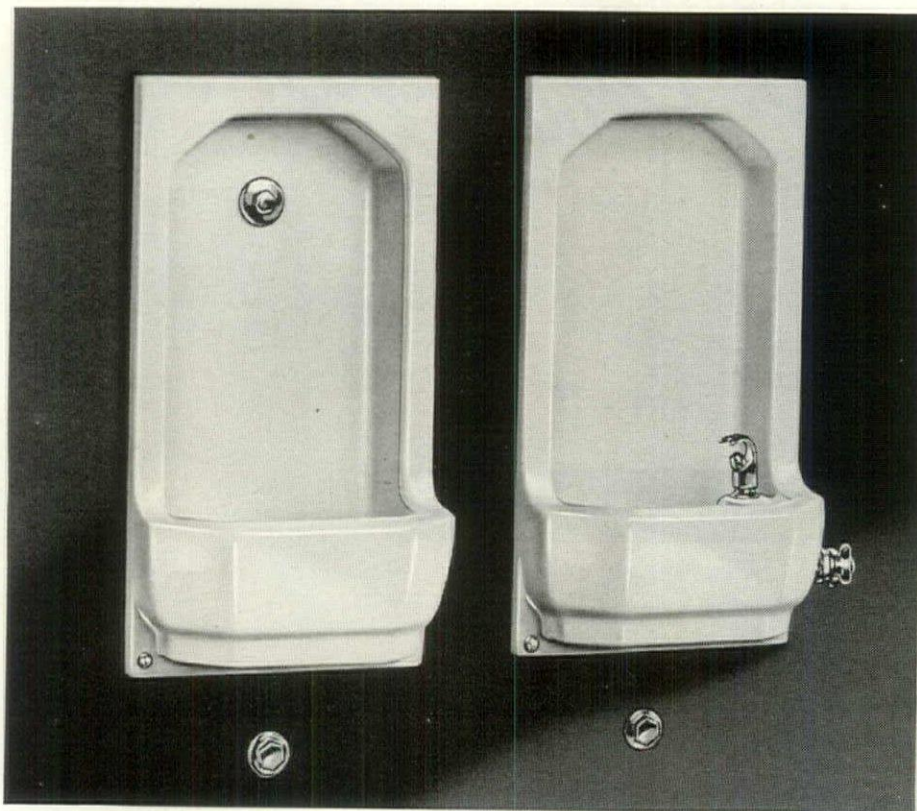
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Libbey-Owens-Ford Glass Company
B-771 Nicholas Building, Toledo 3, Ohio

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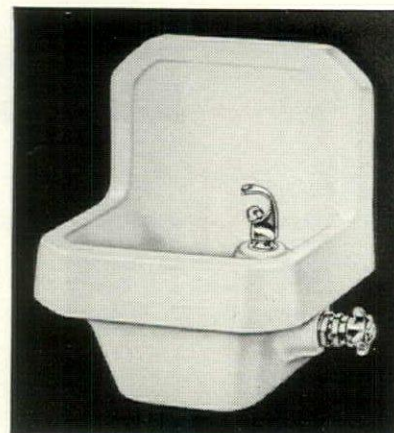
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City _____ State _____



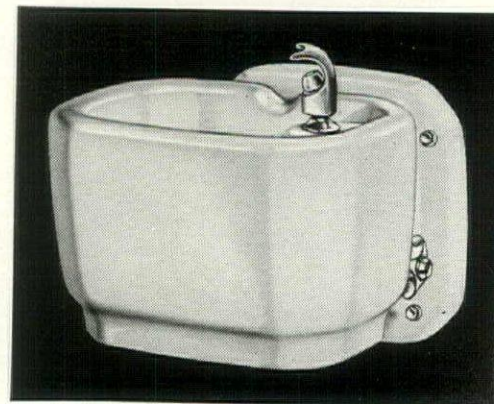
Glenbrook, Glenguard combination K-5362-A. Semi-recessed vitreous china drinking fountain and cuspidor—recommended for gymnasium or corridor. Height 26 $\frac{1}{4}$ " ; width (each) 14 $\frac{3}{4}$ ".



Rockbrook K-5340-A. Vitreous china wall-hanging type with back. Bowl 12 x 12 x 16".



Edgebrook K-5390-A. Enameled iron wall-hanging type. Bowl 12 x 8".



Daybrook K-5335-A. Vitreous china wall-hanging type. Bowl 14 x 10".

KOHLER

DRINKING FOUNTAINS

... for beauty, service, economy

Kohler drinking fountains are used in schools throughout the nation because they are efficient, beautiful in design, easy and economical to maintain, and conform to the health regulations of all States.

The drinking mound flows at the best angle and height for convenience and sanitation, and is kept uniform under varying pressures by an automatic volume regulator. A self-closing valve is adjustable for continuous flow. Mischievous squirting is prevented by a specially designed bubbler head.

Write for a catalog of Kohler plumbing fixtures for school washrooms, gymnasiums and corridors.

Kohler Co., Kohler, Wisconsin. Established 1873.

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS • AIR-COOLED ENGINES • PRECISION PARTS

BUS DUCT IS FLEXIBLE

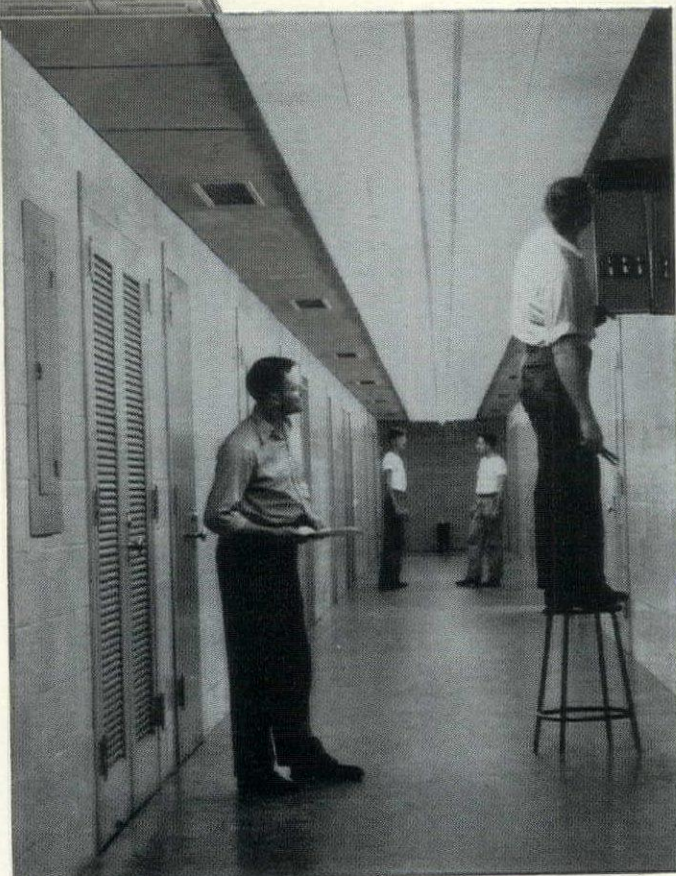
"We know we have maximum flexibility with Westinghouse BUS DUCT"

"Our experience with Westinghouse Bus Duct is new. Duct has been installed right into the building structure, leaving very little of the equipment exposed—yet we have access to every foot of it, giving us availability to all our circuits. We have found greater ease of installation and less maintenance. All in all, we know we have maximum flexibility with Westinghouse Bus Duct"—says head of Engineering Department of large Midwestern college.

You're money and equipment ahead with Westinghouse Bus Duct. Because it comes in completely prefabricated units of any desired length up to 10 feet, bus duct lends itself as readily to tight layouts as to long, open runs—sections are easily handled and quickly installed. For expansion or change-overs, duct is equipped with plug-in openings every foot; units may be dismantled and remounted, anywhere, quickly with minimum loss of operating time and no loss of duct equipment. For carrying capacity in limited space, Westinghouse Bus Duct has no equal. Be sure with Westinghouse quality.

Your Westinghouse representative can help with your power distribution problems. Or write for Bus Duct Manual B-4272A, Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Penna.

J-30045



Ceiling panels provide access to entire length of duct:



Dark runs on either side of the ceiling mark paths of bus duct in Electrical Engineering Building.



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

BUS DUCT





Bryant Model 304 Gas Forced-Air Vertical Furnace. 6 sizes, inputs from 45,000 to 145,000 Btu per hour, approved by A.C.A. for all gases. Features Bryant Hevigage 12-gauge steel heat exchanger and Bryant Push-Button Ignition (city gases only).

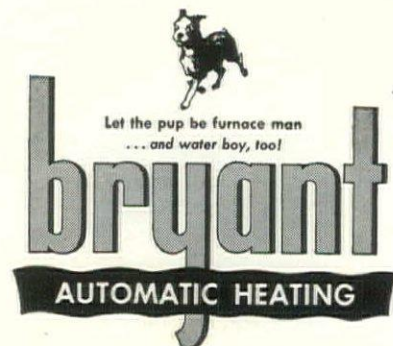
Squeeze-easer

FOR TODAY'S HOUSING

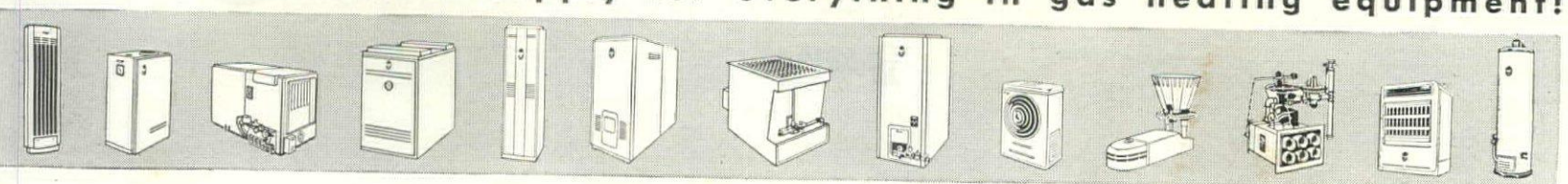
Bryant Gas Forced-Air Vertical Furnaces help solve today's important home space problem. They're the long-lived space-savers that can be installed almost anywhere . . . in basement, utility room or small closet. They require only slightly more than two square feet of floor space in their smaller sizes.

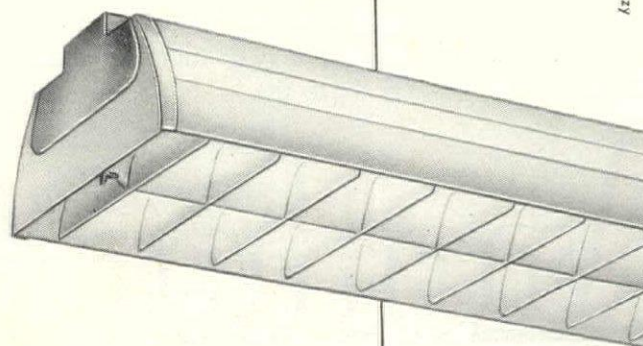
They provide the kind of fully automatic, trouble-free operation that pays off in economy and user satisfaction. The proof is in *thousands* of installations in single-family dwellings and in *thousands* of family units of multi-family housing which have Bryant *Personalized Heating*.

These slim, efficient Bryant Gas Forced-Air Vertical Furnaces will *fit* into your plans, will help *ease the squeeze* . . . to lower construction costs and provide more living space. Get full details from the Bryant Distributor nearest you or write direct: Bryant Heater Division, Dept. 104, Affiliated Gas Equipment, Inc., 17825 St. Clair Avenue, Cleveland 10, Ohio.

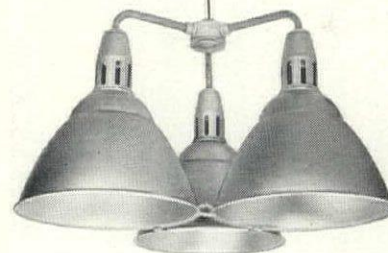
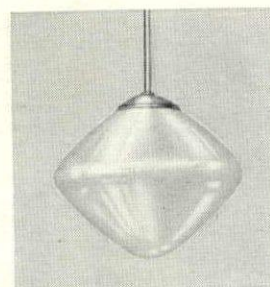
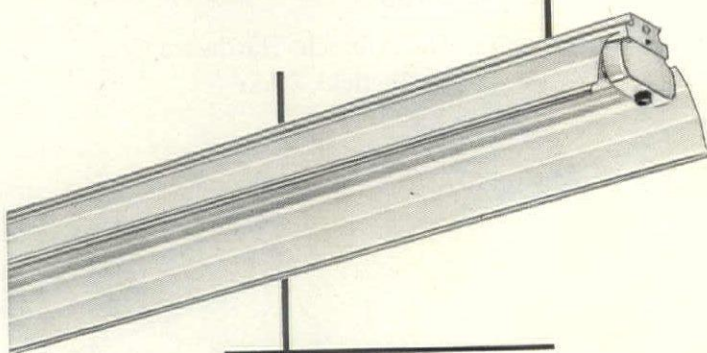


Your single source of supply for everything in gas heating equipment!





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And — important economic consideration — low overall cost (cost of equipment, installation and maintenance).

These constitute **VALUE** — lighting satisfaction.

You'll find all these elements in Miller lighting equipment — Fluorescent, Incandescent, and Mercury-vapor — built on an 8-Point **QUALITY** standard, on a background of 107 years' pioneering and progress in **GOOD LIGHTING**.

Proven by thousands of installations in stores, offices, schools, factories and public buildings, covering a wide range of lighting requirements.

Light with confidence the proven Miller way. Miller field engineers and distributors are conveniently located for nation-wide service.

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SINCE 1844

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ROLLING MILL DIVISION: Phosphor Bronze and Brass in Sheets, Strips and Rolls

AMERICA'S *Number 1* BUILDINGS USE

FARM BUREAU Insurance Building...

Impressive addition to the Columbus, Ohio skyline. Eight stories high, a full block square, quality built throughout—it fully measures up to the Midwestern tradition of doing things big, and doing them well.

Another Outstanding

Architect: Benham Richards & Armstrong,
Columbus, Ohio

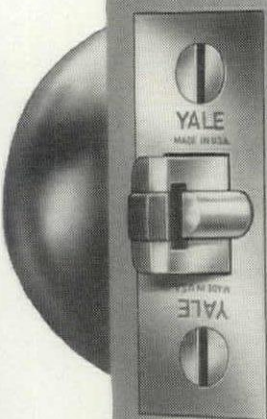
Contractor: Haig M. Boyajohn & Associates, Inc.,
Columbus, Ohio

Hardware Supplier: The Albrecht Hardware Co.,
Springfield, Ohio



Building Chooses

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Available in seven basic types for almost any door, right or left hand opening. Plain or deadlocking bolt. Requires very small mortise. Easy door thickness adjustment. Lock illustrated above shows key outside, push-button inside, for office doors.

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That's the story of YALE hardware—a practically unanimous choice whenever quality counts most!

No secret about the reason. It's YALE's thoroughgoing skill in the engineering and design of fine hardware, skill that has repeatedly paid off—in better security, lower maintenance costs and extra years of service.

These are benefits you can easily specify for the next job you plan, whether it's a great building or a small one.

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Or, for detailed literature, just write
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ELIMINATE PROJECTING SASH MEMBERS

R.H. MOORE

Modern Appliances for Modern Homes



CREATE A FULL-VISION "OPEN AIR" ATMOSPHERE

You can put inviting and attractive interiors on full display when you specify Kawneer Patented Flush-Glazing Sash.

The face of this sash is flush with surrounding wall and ceiling surfaces, thus eliminating any obstruction to vision. To the eye, the sash face and the surfaces on both sides of the glass appear to be a single smooth plane, continuous and uninterrupted by glazing assemblies.

In addition to affording full vision flush-glazing, this outstanding setting insures maximum safety and reliability, because it holds glass

firmly yet resiliently in place. For information, consult your Portfolio of Kawneer Details or write Dept. MB-73, 1105 North Front Street, Niles, Michigan; or Dept. MB-73, 930 Dwight Way, Berkeley, California.

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Acoustical correction in auditori

The two basic factors that influence hearing conditions in a general purpose auditorium are the design of the room and the selection and placement of acoustical materials.

1. HOW DESIGN PROMOTES GOOD HEARING

In the case of a new auditorium, good acoustics naturally begin in the design stage. A good design is shown in Plan 1 below. The ceiling and walls flare out from the stage and act as a huge megaphone in directing sound to the rear of the room. The sound that strikes these surfaces reaches the audience an instant later than the direct sound and produces a fuller, more resonant tone. While this design tends to reinforce direct sounds, it doesn't permit overlapping and delayed sound.

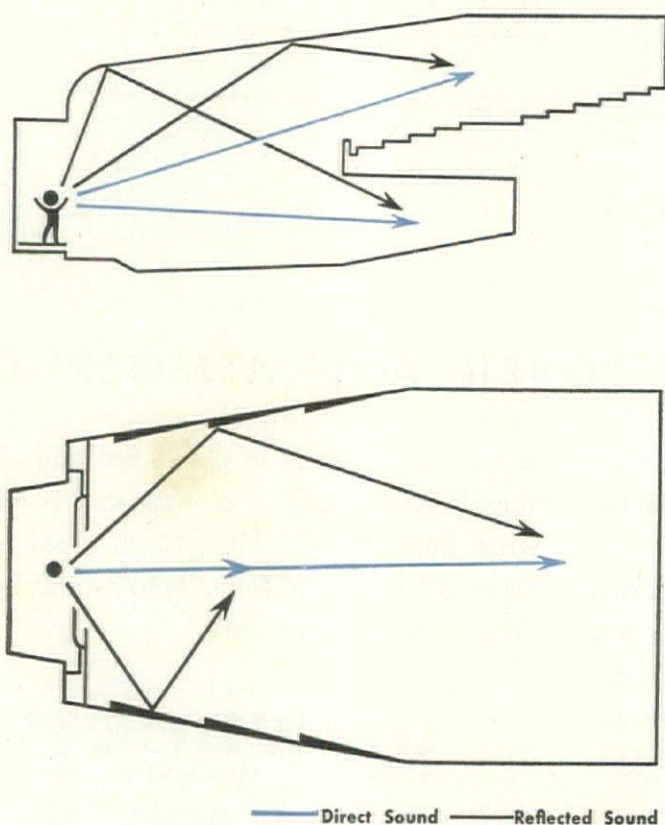
An example of bad auditorium design is shown in Plan 2. The room is rectangular in shape, the ceiling is high, and no attempt has been made to funnel the sound from the stage to the audience. As a result, sounds travel out on wide tangents and make distant reflections which reach the audience too late to reinforce the original sound. Annoying reverberation, overlapping sound, and echoes develop. Hearing conditions are impaired all over the auditorium.

Under-balcony areas are important

To achieve the best hearing conditions under this area should be carefully designed. Its ceiling slope have much to do with acoustics. An ideal under-balcony design. The ceiling height is greater toward the front of the balcony. This aids reception of both direct and reflected sound from the stage to persons in the back of the room. If most no reflected sound can pass under the balcony and the area is too deep for adequate sound reinforcement, a good rule-of-thumb is that the depth of the balcony should not exceed twice the height of the opening under the balcony.

The problem of curved surfaces

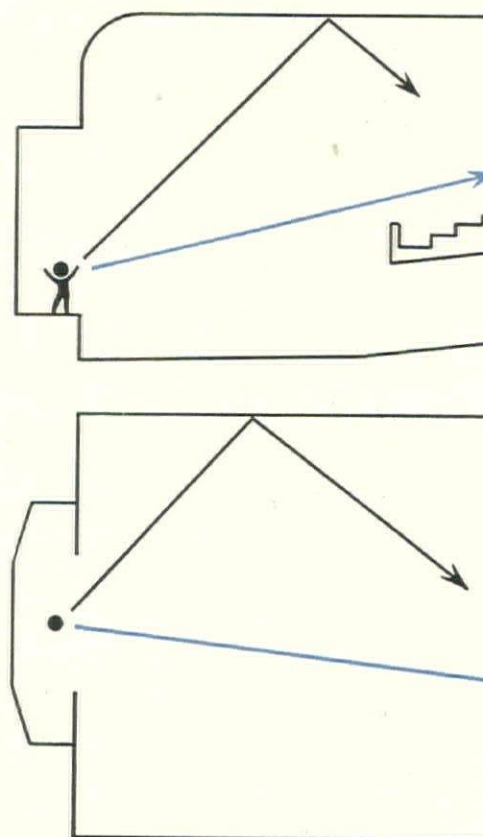
Curved wall and ceiling surfaces often cause trouble because they tend to focus delayed reflections in particular areas of the auditorium. A curved wall often has this effect and should be avoided. In the case of ceilings, however, this problem can be avoided by designing the ceiling so that its slope is either much less or much greater than the slope from the floor to the highest point of the ceiling.



Plan 1

Plan 1 represents a modern auditorium which has a basically good design for acoustics. Direct sound is properly reinforced by reflected sound.

Plan 2 shows an older, poorly designed auditorium. Here, reflected sound arrives too late, causing a delayed "echo." Acoustical materials will help.



2. HOW ACOUSTICAL MATERIALS CAN HELP

Acoustical materials will help hearing conditions in nearly all auditoriums whether new or old. How much material is needed often depends not only upon the design of the room itself but also upon the amount of other sound-absorbing surfaces within the room. For example, the varying size of the audience should be considered because people and their clothing are good sound absorbers. Figuring is usually based on an auditorium that's two-thirds full. Draperies and seats — especially upholstered seats — also absorb sound and may reduce the amount of acoustical material required.

In general, acoustical materials should be applied to those surfaces that reflect delayed sound. It's important, too, not to overlook the possibility of applying too much acoustical treatment. This results in a room that's partly "dead."

Ceilings

The front portions of very high ceilings and widely spaced walls often need to be heavily treated. Low ceilings and front walls that are designed to provide useful reinforcing reflections should be left untreated. In some cases, they may be treated partially in panels or strips or treated with a material of lower efficiency.

Walls

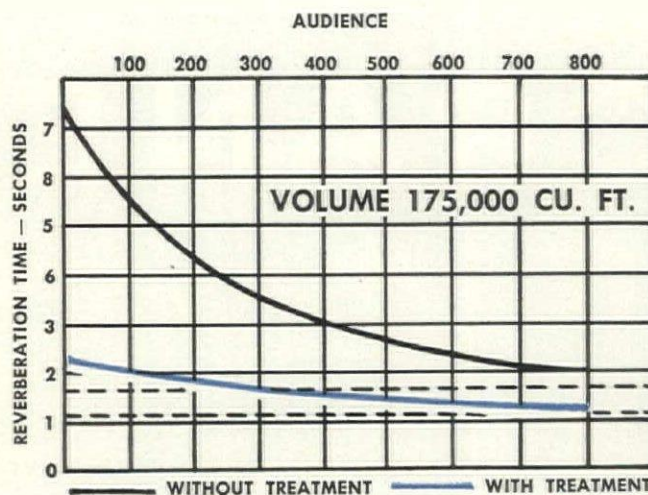
It's important in most auditoriums to have acoustical treatment on the rear wall. That's because this surface is far from the stage, and reflected sounds are likely to become badly delayed echoes. If acoustical treatment of the ceiling and rear walls is not sufficient or if these areas can't be treated, the side walls may need partial treatment.

Under-balcony

If under-balcony ceilings are properly designed, acoustical treatment is not usually required. Such ceilings serve to reflect sound to the rear seats, thus improving hearing conditions in that area of the auditorium.

Which acoustical material?

There are acoustical materials of many efficiencies, compositions, and finishes which may be used in auditorium installations. A complete selection of materials is available in the Armstrong Acoustical Line.

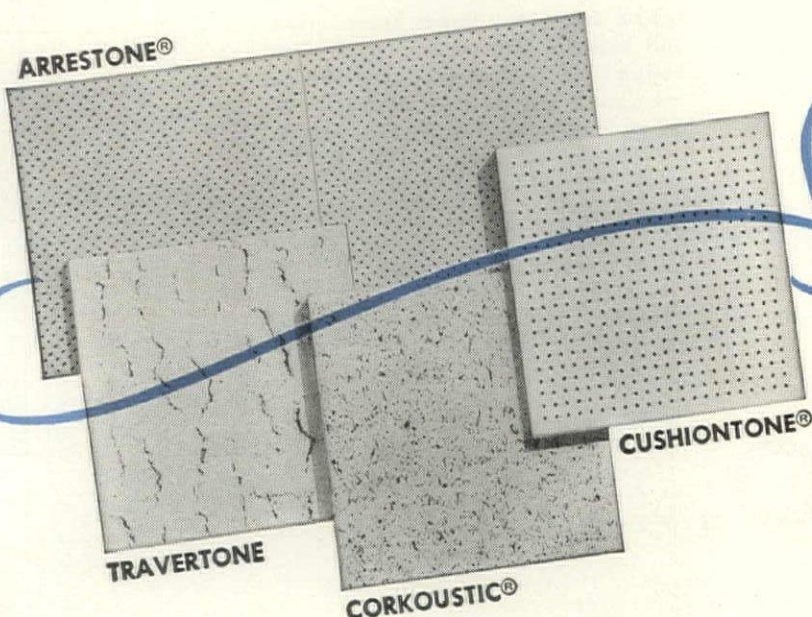


Reverberation time for an acoustically treated and untreated room of 175,000 cubic feet is plotted against the number of people in the audience. The acceptable range of reverberation time is shown by the area between the dotted lines.

Armstrong's Cushiontone is a perforated wood fiber tile that's low in cost and high in efficiency; Armstrong's Traverstone is made of mineral wool with a beautifully fissured surface; Armstrong's Corkoustic is a pure cork tile that provides both insulation and moisture resistance; Armstrong's Arrestone is a metal pan material, exceptionally high in efficiency; Armstrong's Perforated Asbestos Board comes in large panels backed with absorbing pads.

Armstrong's Acoustical Materials cover a wide range of frequencies. They offer various degrees of fire resistance, from combustible to incombustible. They offer beauty, moisture resistance, high light reflection, insulation value, and easy installation and maintenance. Your Armstrong Acoustical Contractor can give you valuable help in selecting materials and solving acoustical problems.

SEND FOR FREE BOOKLET, "How to Select an Acoustical Material," which answers many questions about sound conditioning. Write Armstrong Cork Company, 5407 Stevens Street, Lancaster, Pennsylvania.



**ARMSTRONG'S
ACOUSTICAL
MATERIALS**

CRANE

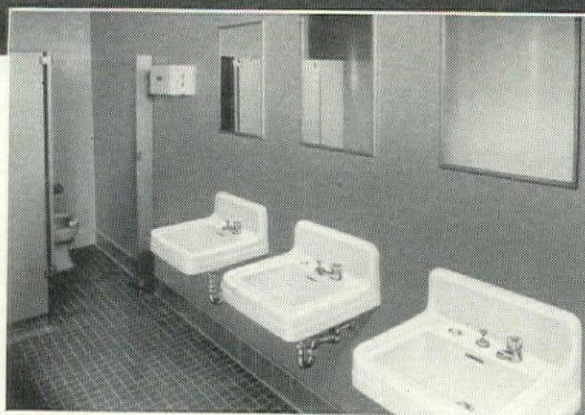
the preferred plumbing



SELECTED FOR
FIRST BAPTIST CHURCH
LONG BEACH, CALIFORNIA

Yes, Crane is the *preferred* plumbing in churches, too! It is selected for its modern design, lasting beauty and high quality. And when it comes to maintenance costs, Crane plumbing is a great respecter of church budgets.

Among the exclusive advantages of Crane plumbing are the *Dial-ese* controls that turn with finger-tip pressure, thus reducing wear and consequent dripping. For your clients' satisfaction through the years, always specify Crane, the *preferred* plumbing. Consult your Crane Branch or Crane Wholesaler.



CRANE RHODILE—Chosen by architects and builders for its simple, modern design. Crane quality porcelain enameled cast iron. Spacious rectangular basin and 6-inch high back. Exclusive *Dial-ese* controls. Size 20 x 18 in.

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AMERICA'S FINEST

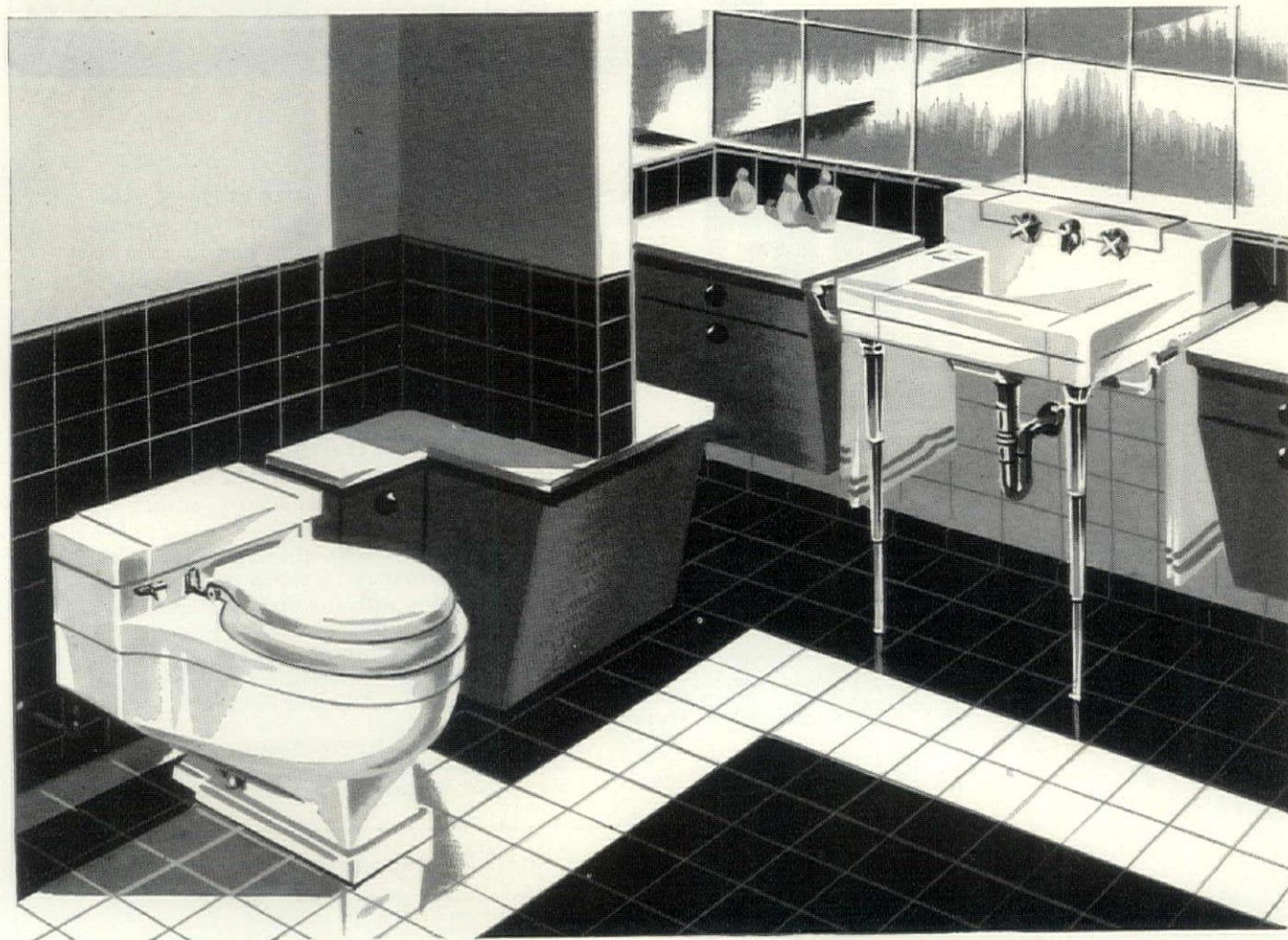
The low-level, integral tank design first sponsored by Case... it can be placed anywhere. Positive non-overflow, strong yet quiet flush and tank filling operation. Special safeguards for water protection include china channel enclosing riser, open atmospheric vent, etc. Bowl is 14" high in line with latest hygienic findings. Finest construction throughout.

Illustrated below with lavatory that has matched classic design motif—the new Case *Windell*.

For Bathrooms that keep QUIET...

THE CASE "ONE-PIECE"* operates so quietly it has a positive social value wherever installed. It enables you to spare your customers from bathroom noise that obtrudes on life in the rest of the house. Outstanding in quality, priced competitively, it is providing unequalled satisfaction in homes in a wide price-range. Distributed nationally—see your Classified Telephone Directory.

W. A. Case & Son Mfg. Co., 33 Main Street,
Buffalo 3, New York. Founded 1853.



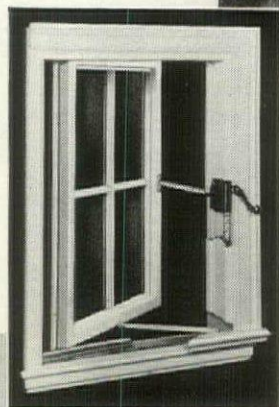
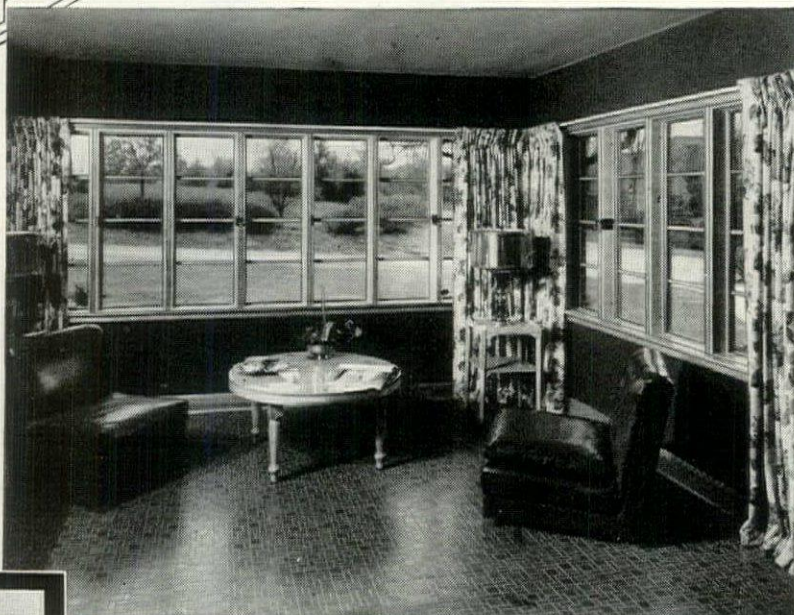
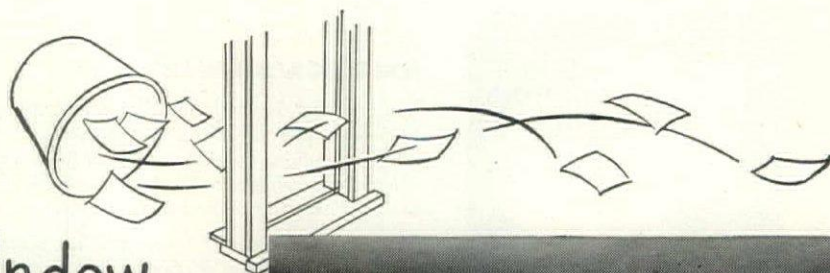
Case *Fine Vitreous China*

*PATENTED

Out the window went all existing ideas!

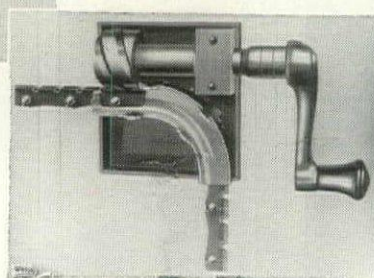
"Throw away all existing ideas about casements. Start from scratch and develop a unit that is better than anything else on the market."

That was the order we gave our engineers and research men. The result: the Curtis Silentite Casement. Here's why we believe no other casement can match it:



● **A COMPLETE UNIT**—with all parts pre-fitted—consisting of frame, sash, all operating hardware, insulating glass, screen and Mitertite trim. The illustration shows small unit with part of trim cut away to show how operating mechanism holds sash firmly in any position without rattling, swinging or vibrating.

● **MORE WEATHERTIGHT**—repeated tests show that Silentite wood casements cut total heating costs in a house about 16%—thanks to scientific weatherstripping and insulating glass, which serve as storm sash.



● **EASY OPERATION**—this special Curtis hardware provides 15 times the operating force available with the ordinary lever-type casement sash adjuster. There is no hardware on outside of frame or sash when casement is closed and the minimum of exposed hardware inside. Adjuster is removable.

● **PLUS**—Toxic water repellent treatment of all wood parts—reduced condensation—no sticking, binding or warping—quick, easy installation.

Curtis makes a complete line of
woodwork for homes of all types and
sizes. Make your next house "all Curtis."



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Gentlemen: I want to know more about Curtis Silentite casements, basement units and Silentite double hung windows.

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"PRESTIGE"

*emanates from
any building*

you build with

HANLEY DURAGLAZE BRICK

Along New York's famous Fifth Avenue, genuine beauty is always on parade.

Much credit can go to Hanley Duraglaze Brick for many of the handsome office buildings and apartments that line the avenue.

For example, consider this magnificent apartment house fronting on Central Park. Its beauty is impressive because it is built of Hanley No. 623 Duraglaze Brick—a manganese speckled shade of grey especially suited for modern designs.

This building, like all other buildings erected with Hanley Duraglaze Brick, will retain its "prestige look" through the years, because this superb brick will not stain or discolor.

Hanley Duraglaze Brick is also available in the following controlled shades:

501 Limestone Grey
723 Pearl White—Light Speck
725 Pearl White—Medium Speck
824 Oyster Grey—Medium Speck.

We will be happy to send you full information upon request.



Apartment house at 5th Avenue and 73rd Street, New York.
Architect, Sylvan Bien.

HANLEY COMPANY

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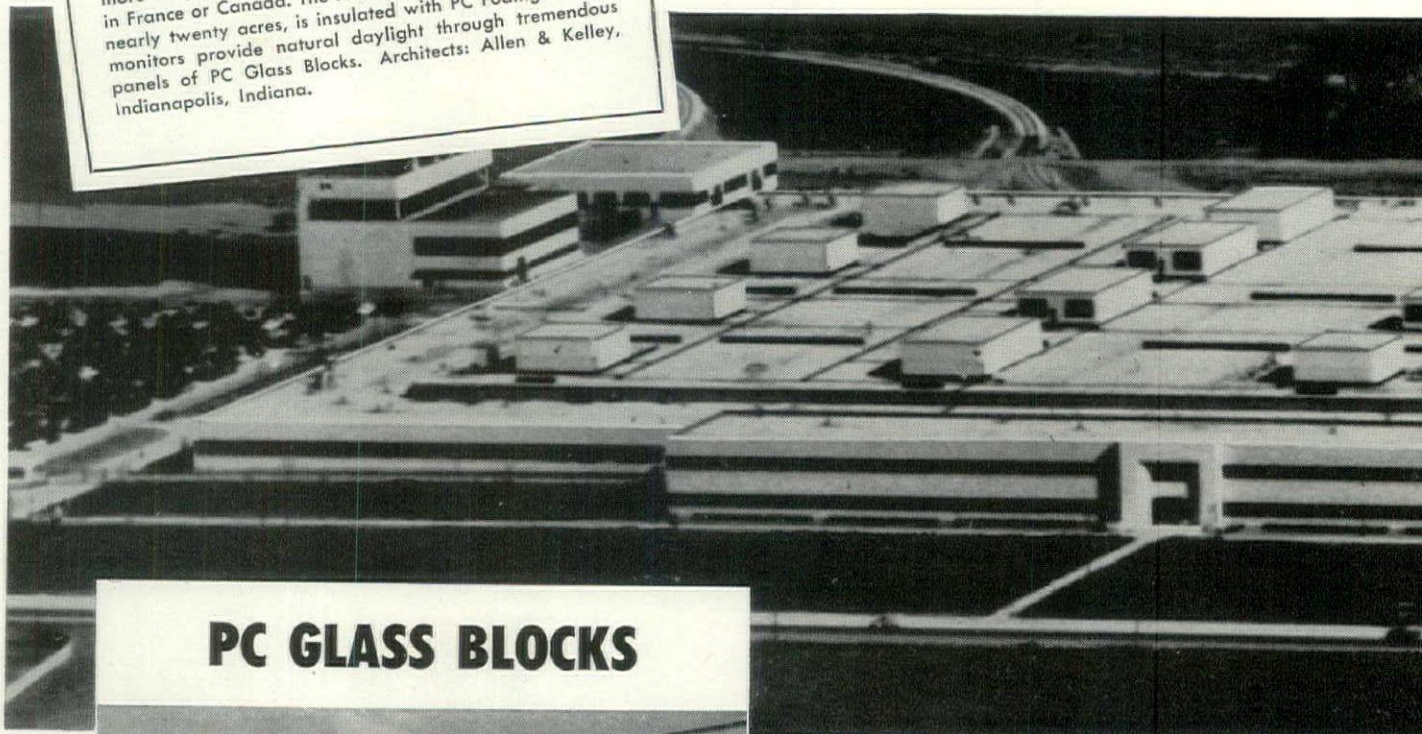


14545 Schaefer Highway, Detroit, Mich.

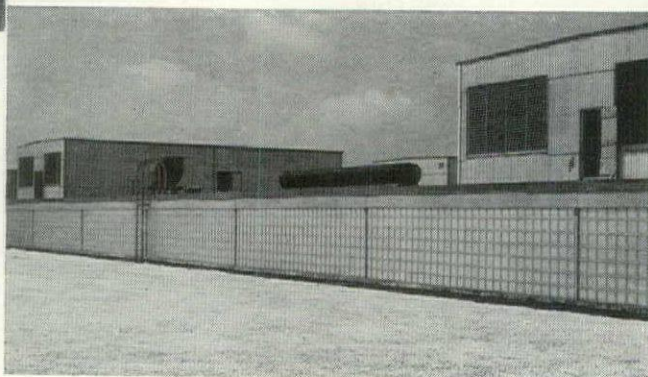
VERmont 7-3200

Western Electric selects for their

Western Electric's newest telephone set manufacturing plant at Indianapolis, Indiana, is capable of producing more telephone sets annually than are now in operation in France or Canada. The roof of this plant, which covers nearly twenty acres, is insulated with PC Foamglas. The monitors provide natural daylight through tremendous panels of PC Glass Blocks. Architects: Allen & Kelley, Indianapolis, Indiana.



PC GLASS BLOCKS



On monitors which are exposed to direct sunlight, 26,000 8" Soft-Lite* Prism B Glass Blocks admit natural daylight, diffuse and distribute the light over adjacent work areas. This eliminates the excess brightness or dimness that impairs the comfort and efficiency of plant personnel.

*T.M. REG. APPLIED FOR



GLASS BLOCKS

PC Glass Blocks are made of a special clear glass, admit natural color daylight. They are hollow, which gives them definite insulating value. Large panels of PC Glass Blocks also prevent infiltration of dust and grit, insure privacy, prevent pilferage. Easy cleaning and elimination of frequent breakage, puttying and painting effect important savings on maintenance.



improve plant operation

The more exactly your clients can control plant lighting, heating and air conditioning, the more efficiently and economically they can run their plants.

Many architects have found that PC Glass Blocks and PC Foamglas—the cellular glass insulation—help their clients improve those controls.

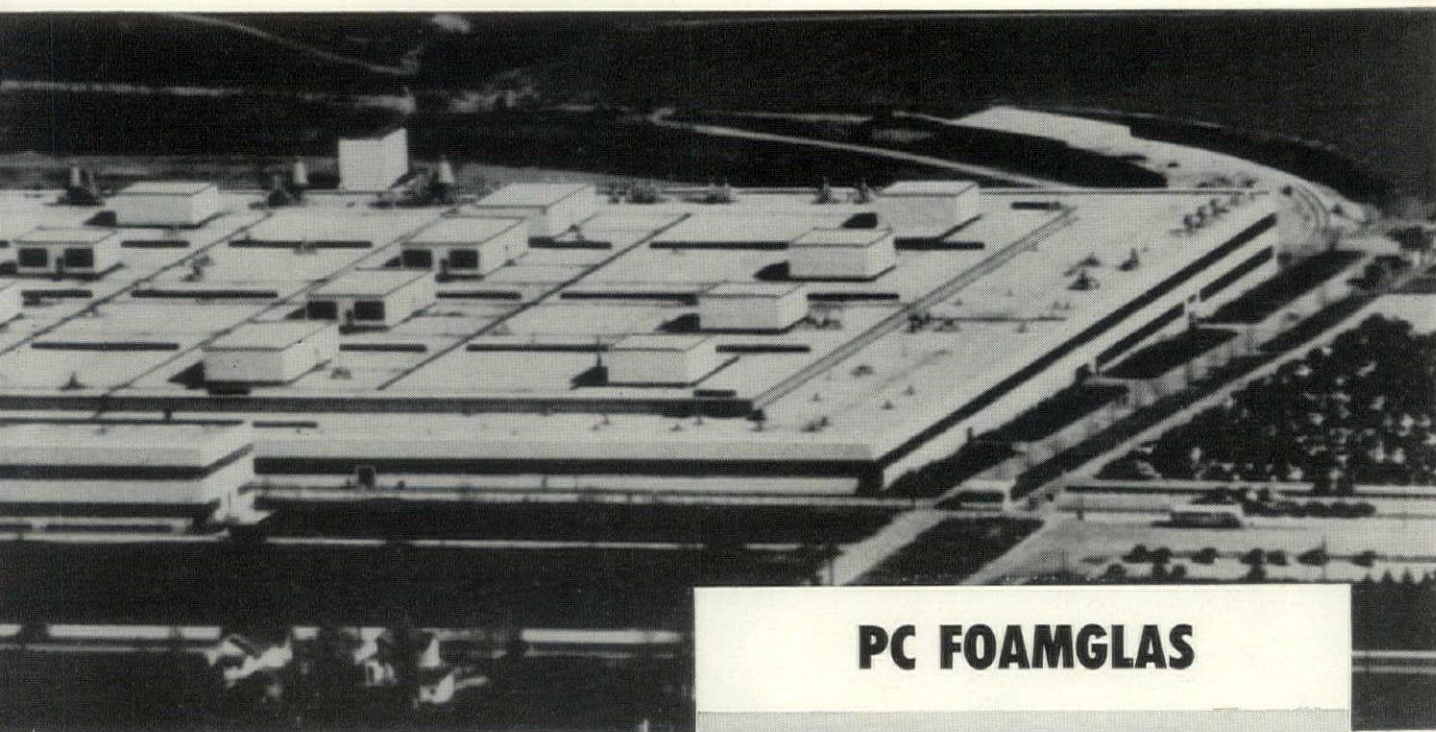
The blocks distribute clear, natural daylight evenly over adjacent work areas, thus improving working conditions and reducing the need for artificial lighting. The insulation helps prevent weather from interfering with

PC GLASS BLOCKS

— the mark of a modern building

PITTSBURGH CORNING CORPORATION

two Pittsburgh Corning Products newest telephone set factory



reduce operating costs

desired plant temperatures, thus reducing heating costs.

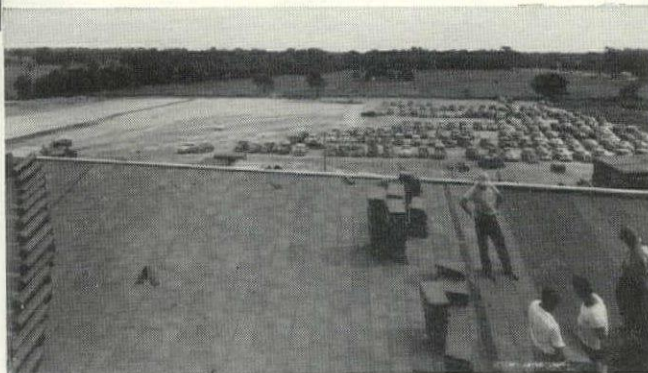
CHECK THESE MODERN MATERIALS

When you are considering building materials for new construction or modernizing projects, make sure that you have the latest information on PC Glass Blocks and PC Foamglas. Our lighting and insulation specialists will gladly consult with you on special problems. Meanwhile, drop us a line for free booklets. Pittsburgh Corning Corporation, C-71, 307 Fourth Avenue, Pittsburgh 22, Pennsylvania.

When you insulate with Foamglas

. . . the insulation lasts!

PC FOAMGLAS

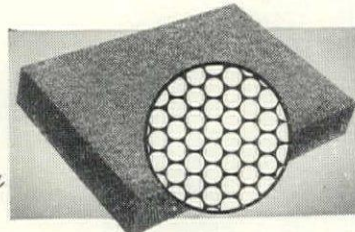


On roof insulating jobs that are measured in acres, it is especially important to select an insulating material that will give complete, long lasting satisfaction. Here you see workmen applying part of the 1,750,000 board feet of PC Foamglas that insulates the roof of this extensive plant.



FOAMGLAS®

the cellular glass insulation



The best glass insulation is cellular glass. The only cellular glass insulation is PC Foamglas. This unique material is composed of still air, sealed in minute glass cells. It is lightweight, incombustible, vermin-proof. It has unusually high resistance to moisture, chemicals and many other elements that cause insulation to deteriorate.

PITTSBURGH 22, PENNSYLVANIA

"IMAGINE!"



Here's Mr. Lemon calling on the Hatfields of 2421 McLean, Wichita, Kansas.

The Hatfields have occupied their new home for more than 6 months now, and Mr. Lemon, the builder, is anxious to learn how Mrs. Hatfield *really* likes her G-E Kitchen-Laundry.



"Now we never have any messy dishes setting in the kitchen any more. We just put them in the General Electric Dishwasher and forget them! They come out so very clean, too! It's so nice to stack the dishes in it late at night, too, and go right to bed soon after company leaves!"



"The twins and I were just doing the luncheon dishes, Mr. Lemon. It's wonderful to wash away garbage with the General Electric Disposall® and forget the mess of garbage cans and garbage trucks! *Every* housewife should have one!"



"Oh, the girls want to show you all the milk we keep in our General Electric Refrigerator. We certainly need lots of refrigerator space—and *do we have it!* Why, I have enough space to keep a whole week's supply of fresh and frozen foods!"

All this in my new home for only \$5.80* a month!"

Builder Clarence M. Lemon calls on Mrs. Jack E. Hatfield
—and is convinced, more than ever, that it's mighty smart to include
the General Electric Kitchen-Laundry in the houses he builds!



"I had never used electric cooking before. The thing that pleases me most about the General Electric Range is its speed and cleanliness. And the complete safety of this range gives me real peace of mind with our active four-year-olds!"



"Before I moved here, washing was quite a problem. But now that I have a General Electric Washer, I can wash soiled clothes at night—or at any time that is convenient. And, they come out so dry that . . .



"... I need run my G-E Clothes Dryer only a short time. No more carrying of wet clothes, no more clotheslines, no more clothespins for me! I certainly wouldn't want to part with this labor-saver and time-saver!"



"The best part of it all is that all these appliances were included in the total cost of the house. It costs us only \$5.80 a month extra to own them. We would have been mighty silly not to have taken advantage of this opportunity!"

"We sold our entire project of 49 houses the very first day. We included the General Electric Kitchen-Laundry because we felt it gave our homes a distinct advantage over others selling in about the same price range."



*Kitchen-Laundry equipment includes G-E Spacemaker Refrigerator, G-E Leader Range, G-E Sink with Automatic Dishwasher and Disposall,® G-E Automatic Washer, G-E Dryer, and G-E all-steel Base and Wall Cabinets. Home Bureau, General Electric Co., Bridgeport 2, Conn.

You can put your confidence in—

GENERAL  ELECTRIC

It's **EASY** to Use the
NEW NUMBERS

When you specify

A305 *IMPROVED* REINFORCING BARS

For years it has been customary to designate the size of reinforcing bars by their diameter— $\frac{1}{4}$ ", $\frac{3}{8}$ ", etc. Square bars were designated by the width of one side.

Now, with the improved A305 bars, numbers from 2 to 11 are used to designate bar sizes. These numbers denote the nominal diameter of the bar in eighths of an inch. However, as the new bars have the same cross-sectional area as the old bars, design tables do not need to be changed. The #3 bar, for example (nominal diameter $\frac{3}{8}$ ") has the same weight per foot as a $\frac{3}{8}$ " plain round bar. Bars #9, #10, and #11 are round bars equivalent in weight and nominal cross-sectional area to the former 1", $1\frac{1}{8}$ ", and $1\frac{1}{4}$ " square bars.

The accompanying bar chart explains these new designations.

Write for your **FREE** Copy
of this New Bar Card

CONCRETE REINFORCING STEEL INSTITUTE 38 SOUTH DEARBORN STREET, CHICAGO 3, ILLINOIS					
STANDARD A305 REINFORCING BARS					
BAR SIZES		WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS — ROUND SECTIONS		
OLD (INCHES)	NEW (NUMBERS)		DIAMETER INCHES	CROSS SECTIONAL AREA - SQ. INCHES	PERIMETER INCHES
$\frac{1}{4}$	2	.167	.250	.05	.786
$\frac{3}{8}$	3	.376	.375	.11	1.178
$\frac{1}{2}$	4	.668	.500	.20	1.571
$\frac{5}{8}$	5	1.043	.625	.31	1.963
$\frac{3}{4}$	6	1.502	.750	.44	2.356
$\frac{7}{8}$	7	2.044	.875	.60	2.749
1	8	2.670	1.000	.79	3.142
1	9	3.400	1.128	1.00	3.544
$1\frac{1}{8}$	10	4.303	1.270	1.27	3.990
$1\frac{1}{4}$	11	5.313	1.410	1.56	4.430

The new bar numbers are based on the number of 1/8 inches included in the nominal diameter of the bar.

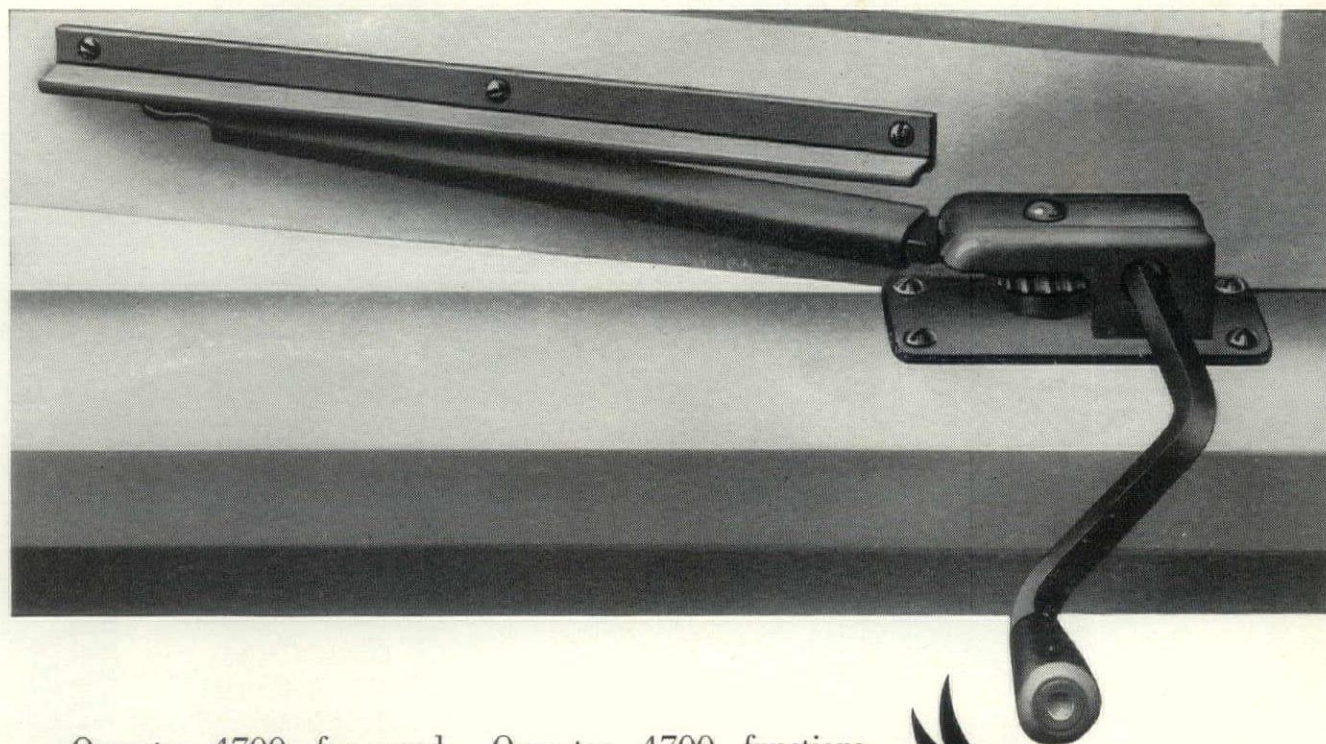
Bar number 2 in plain rounds only. Bars numbered 9, 10 and 11 are round bars and equivalent in weight and nominal cross-sectional area to the old type 1", $1\frac{1}{8}$ " and $1\frac{1}{4}$ " square bars.

The above weights are adopted as standards by the Institute in 1934 and supersede former practice. These weights have been approved through the U.S. Department of Commerce Simplified Practice Recommendation R 26-50.

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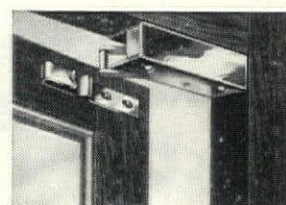
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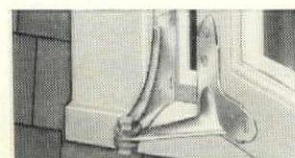
Operator 4700 functions without disturbing the screen and is a handsome bronze lacquer finished interior fixture. Its heavy brass channel guide, anchored at *three* points, will not bend or bind.

Operator 4700 is a cinch to install too. 7 screws—that's all!



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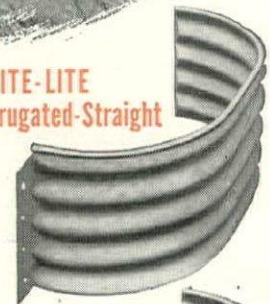
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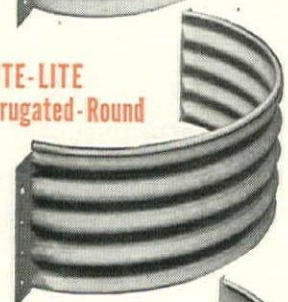
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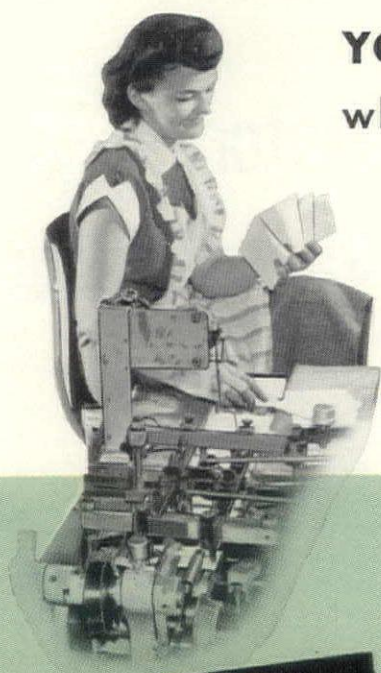
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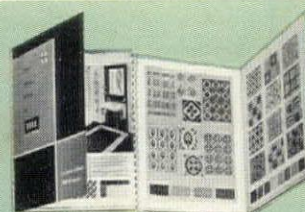
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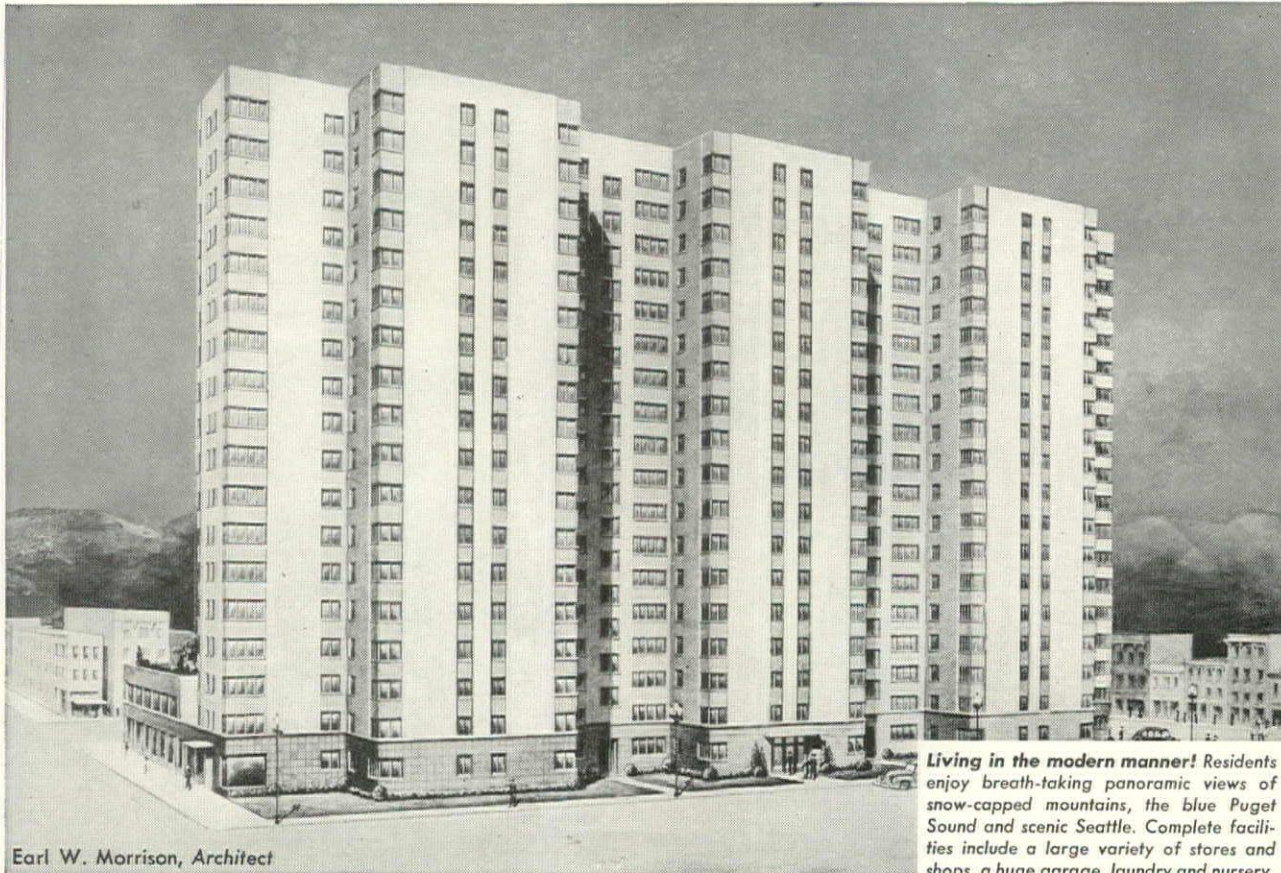
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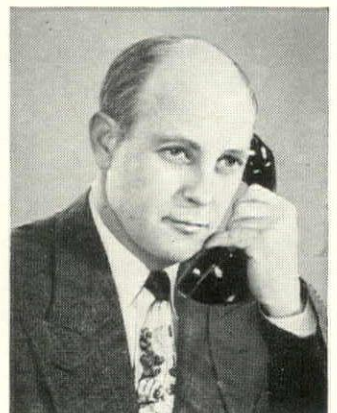


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Good American Home Program

Will Korea Truce Prove Boon To Homebuilding? Answers Iffy

Homebuilding—the only segment of the construction industry left even half-free of mobilization’s controls—reached a new crossroads. A cease fire in Korea might turn Congress’ cool attitude toward controls into active hostility. Even before armistice talks began, conservative legislators had written relaxation of Regulation W for auto sales into Defense Production Act extension (see p. 57). To homebuilders, this promised some easing of Regulation X credit restrictions on home sales should the Korean truce materialize. Theory was that an armistice would accelerate the buying slump in a long list of commodities like furniture, clothing and housing, make easier credit controls a political “must”.

Show goes on. But whatever happened in Korea, mobilization could not, would not be turned off. The overall boom in construction would continue, paced by industrial and military building (see table). (By the end of June, DPA had approved \$7.3 billion worth of new plants and equipment for fast tax write off, still faced a big backlog of applications. Employment in the nation’s contract construction rose 100,000 during May.) Pressure on tight metal markets would remain. No relaxation of Controlled Materials Plan Regulation 6 was in sight.

Slump at last. The other fork of homebuilding’s crossroads projected from the long-heralded slump in private housing starts, which arrived at last in June. Although the Bureau of Labor Statistics reported that starts soared to 130,000 units, 42,300 of the total was public housing, whose architects rushed to beat the June 30 deadline after which Congress might permit only a few public housing units to be built (see p. 61). Private housing accounted for 87,700 units, compared to 93,500 in May. A survey by THE MAGAZINE OF BUILDING indicated the drop was sharper in the West. Said San Francisco’s Henry Doelger: “A year ago we were starting five homes every 24 hours. Now we’re down to a single house every other day.” Even with the slump, homebuilders were well ahead of their mark for the first half of 1949:

1st 6 months, 1951.....	575,300
1st 6 months, 1950.....	705,700
1st 6 months, 1949.....	449,000

Silent sufferers. Homebuilders kept

strangely mum about their business. All through May, they had bellowed lustily to Congress and the public that housing was headed for a dizzy crash unless restrictions were eased. The timing proved unfortunate. When the BLS May figures came out, they showed starts of nonfarm dwellings up instead of plunging. This led to sour comment. Said Grover Godfrey, executive vice president of Dallas Home Builders: “There’s just too much double talk here as well as in Washington. Builders say they are going to start no more homes, but everyone who can get hold of a lot seems to be going right ahead and building on it.”

Through the cloud of conflicting forces tugging at homebuilding’s future, Mobilizer Charles Wilson flashed the month’s only strong light (see below): in 1952, builders might expect to repeat this year’s goal of 850,000 homes. If they adopted waste saving practices such as those outlined by THE MAGAZINE OF BUILDING’s two Round Tables and detailed by the National Association of Home Builders and American Institute of Architects, they might build more.

CONSTRUCTION BLUEPRINT FOR 1952

Defense Mobilizer Charles E. Wilson last month gave the construction industry a broad outline of what to expect next year. Ralph Walker, 1950 AIA president and chairman of a U. S. Chamber of Commerce subcommittee on construction mobilization, had complained that the building industry had a sense of frustration, felt it was being forced to sacrifice not 30% of its economy like other industries, but 70%. Wilson’s reply:

Dear Mr. Walker:

... As to the probable volume of construction in 1952, as you probably know, we are now engaged in a broad scale attempt to develop programs for the next year or two. While this work is far from completion, it is far enough along to allow a judgment that, after allowing for the increase in military and defense construction, the total volume in all categories in 1952 may approximate in physical terms about 80% of the volume of construction performed in 1950. In some categories, of course, as utilities, the volume may not be far from what it was in 1950. In others, such as public, industrial and military, it will be far above what it was in 1950, and in still others such as housing, it should be below 1950 but not below 1951 levels.

I believe there are real possibilities for making sizable cuts in the volume of critical materials used in construction. *To the extent that cuts are made in the use of critical materials per unit of construction, it should be possible to permit increases in the volume of construction.*

We have already taken vigorous steps to reduce material usage on government jobs. It is up to industry to do the same for private construction...

Sincerely,

CHARLES E. WILSON

LAST MONTH'S WASHINGTON DIARY

- 6/4 DPA warns that after June 15 it will process backlog of applications for fast tax write off before handling new ones
- 6/7 NPA delegates authority to process construction applications under M-4 to eight government agencies: FSA, VA, HHFA, Agric., Interior, PAD, Commerce, and DTA. (Delegation 14)
- 6/15 HHFA Administrator Foley redelegates authority granted him by NPA (6/7) to various constituent agencies, FHA, PHA, etc.
- 6/15 NPA instructs field offices to authorize construction where consumption of critical materials is insignificant to defense effort
- 6/19 Agriculture Department outlines application system for new farm construction under M-4, in accordance with 6/7 delegation of authority by NPA
- 6/21 NPA explains how to get construction materials under Controlled Materials Plan (CMP Reg. 6)
- 6/25 ODM Chief Charles E. Wilson announces appointment of Manly Fleischmann as DP Administrator

NEW CONSTRUCTION ACTIVITY (millions of dollars)

Type	June			1st 6 Months		
	'50	'51	Change	'50	'51	Change
PRIVATE						
Residential (non-farm)	1178	909	-23	5306	5248	-1
Industrial...	78	179	+129	429	895	+109
Commercial	110	130	+18	512	756	+48
TOTAL*	1892	1821	-4	8941	9928	+11

PUBLIC						
Industrial...	17	83	+388	73	349	+378
Military	9	85	+844	52	321	+517
Residential..	28	51	+82	175	252	+44
TOTAL* ..	673	879	+31	3024	3970	+31

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



OLD AUGUSTA MANSIONS BULGE WITH BOARDERS IN PADUCAH, 750 TRAILERS PARK ON SITES MINUS LEGAL WATER, SEWAGE FACILITIES

DEFENSE HOUSING FIASCO:

Year After Korea, Only 500 Units Actually Begun

A year after the Korean war began, and six months after Congress went to work on a Defense Housing Bill designed to get as many as 150,000 defense housing units built where and when needed, only 500 units were actually under construction—1/3 of 1% of the potential program. At such a snail pace, defense housing was headed for the worst fiasco of the entire defense effort. And private enterprise would get a black eye. Some blame belonged in Congress, which still had not passed the Defense Housing Bill. Some blame rested on HHFA, some with big private lenders who failed to see the public relations importance of lending in defense areas to save private enterprise from a flop. Probably the biggest trouble was fuzzy thinking all down the line. No private enterpriser in his right mind would put much of his own money into defense rental housing for the Government unless lured on by Klondike returns which would mean prohibitive rents. It looked too risky. Sale housing faced high construction costs: homebuilders must compete with Government for labor. No matter who puts up defense housing, the Government will have to take the risk. Only question is would it save the taxpayers money to let private enterprise do the work. The record of World War II indicated it would.

Last March 8, William J. Levitt, biggest builder of homes in the U. S., addressed HHFA Administrator Raymond M. Foley on the subject of housing around the Savannah River hydrogen bomb plant. Wrote Levitt:

"If we follow the type of thinking that calls for ordinary peacetime procedures in the doling out of commitments, the speculation of individual landowners and local builders, the petty and provincial tactics of local officials, the use and indulgence of antiquated hand-to-mouth building procedures, it is unthinkable to suppose that any proposed timetable (for defense housing) could become effective."

Last month, events began to make this warning look prophetic. With Congress still dallying over a defense housing bill, the government's only help to the defense housing program had been partial relaxation of Regulation X credit restrictions for 15,720 housing units in 20 areas designated as "critical" (see table, p. 49).

In most areas, builders hadn't had time to get started yet. But HHFA's own timetable* called for builders to be well underway in the first three areas, announced in

* HHFA gave builders 15 days to sign up for quotas under relaxed terms, another 60 to begin construction or risk having their easier credit allocation revoked.

March and early April. Foley called the sign up "generally good". Quotas for rental units were subscribed or oversubscribed in six of 11 areas where HHFA took applications before mid-June.

Few starts. But actually, a survey by THE MAGAZINE OF BUILDING correspondents on the scene revealed that on July 1 ground had been broken for only 500 homes or apartments which positively came under credit relaxation. All of these lay in Idaho and Paducah, Ky., where HHFA's program called for 1,500 units to be in the hammer and saw stage. In the Savannah River area, not a single housing unit under credit relaxation had been begun (although there was considerable home building outside it.)

Whose fault? Chief culprit was the mortgage pinch. Builder after builder with land, plans and an allocation under the credit relaxation found no lender willing to commit himself to buy the mortgage when the house was built. For this, young technicians doubled up in \$75 a month attic rooms could blame the Federal Reserve Board and Treasury Department, who triggered the shortage of mortgage money. (see p. 53). A bit belatedly, Administrator Foley did what he could to ease the flow of mortgage funds: on July 3, he ended for critical areas only the 60 day

waiting period for sale of mortgages to Federal National Mortgage Association. Simultaneously he earmarked \$350 million of FNMA funds to buy FHA and VA mortgages in defense areas. Compensating, Foley forbade FNMA to buy mortgages insured by FHA or guaranteed by VA in the pre-critical area days before March 1. But the net effect of Foley's move would be to give defense housing a much needed boost forward.

Second trouble was that relaxation of down payments did not close the gap between what cash defense workers had and what cash the rules required. Typical case was cited by Glenn Lovern, who represents both HHFA and FHA in the booming Paducah critical area: A permanent Atomic Energy Commission employe wanted to buy a home priced at \$11,500. Under the relaxed credit terms, this called for a down payment of \$2,350. But the FHA appraisal—based on value, not cost—came to only \$10,000, meaning the buyer would have to put up \$400 more, or \$2,750. The AEC man didn't have it. Under FHA rules, he couldn't borrow it. At month's end, he was still living in a \$125 per month bedroom.

Relaxation a flop. Builders were bluntly critical. Said Lloyd Brown of Idaho Falls' David M. Sweeney Co.: "Regulation X relaxation has been no help. The man who doesn't have \$2,700 for a down payment on an \$11,000 house doesn't have \$2,100 either." Even some of Foley's own lieutenants called the relaxation a flop. Said Kentucky FHA Director Patterson Walker, who had issued 332 commitments under relaxed credit terms but completed only seven loans: "The relaxation apparently is not working . . . is not providing the leeway for the average Paducah defense worker to hurdle the down payment." For this, it was hard to slice up the responsibility. Although the relaxed terms had been announced by HHFA, the schedule required

agreement by HHFA, the Federal Reserve and Veterans Administration.

Some builders—including outspoken Bill Levitt—cried that financing terms so far available for rental housing (85% loan) were unattractive. In San Diego—biggest by six-fold of the defense areas yet named—builders oversubscribed the 4,000 unit rental quota. But Builder John Severin, speaking for three firms with allocations for one sixth of the total, noted uneasily last month that there is no assurance the units would actually be built unless still-awaited VA or FHA appraisals justify the construction which involved what he said were very close profit margins. The finance terms bottleneck might be eased only by passage of the Defense Housing Bill. But builders themselves bore a lot of the responsibility for the impasse leading to the long legislative delay.

Lapse into temporary. Clearest indication that defense housing was off to a limping start came from the prime contractors on new atom-plants. At Savannah River, E. I. duPont de Nemours & Co., with an 8,000 man construction crew sleeping in spare attics, trailers and even a few tents for miles around, hastily invited 200 builders across the country to bid on construction and operation of temporary housing for 11,500 workers. In Paducah, where trailer camps without sanitation dotted the highways, F. H. McGraw & Co. of Hartford, Conn., was erecting a barracks for 500 workers, hired a subcontractor to import 250 old and ugly flat-top temporary houses from the Oak Ridge AEC plant. Although plans called for these scars to be removed in due time, one of the principal lessons of World War II was that housing put up as "temporary" usually becomes permanent through need. The resolution not to commit again atrocities of World War II temporary housing was weakening.

Wary on high. The AEC, which had hoped to avoid the headache of running any more Government towns, but came up with no large scale substitute plan, now feared it might have to build another Federal city after all in South Carolina.

Said an official AEC spokesman at Savannah River: "Both the number and quality of the plans for housing and the housing for which commitments have been issued (by FHA) are far below our needs. If someone doesn't start working on permanent housing soon, we are not going to have the housing available when our permanent staff arrives in this area."

Robert E. Rose, assistant to AEC Project Chief Kenneth A. Dunbar at Paducah chorused: "We aren't panicky about housing yet—but we are seriously concerned."

Uncoiled gears. Top level administration of defense housing included a feud. Ralph Kaul, chairman of Defense Production Administration's inter-agency critical areas committee which decides which areas deserve "critical" rating, did not see eye to eye with the way HHFA was running it. Friction or not, the defense housing program was tagged for big expansion in the last half of the year. Official predictions

were that total units programmed might reach 100,000 before January. How much would be built was another question.

Out of the muddle, one message was clear. Unless Congress and administrative policy makers in Washington took bolder steps, the scars of defense housing on critical areas would become worse and the smooth progress of war production might be impaired.

Paducah: FHA Officials Admit Relaxed Credit Rules Don't Make Homes Sell

From correspondents in major critical defense areas, THE MAGAZINE OF BUILDING last month received a composite picture of confusion, road blocks, and occasional bits of progress:

Of Paducah, Ky., Irvin S. Cobb, the town's late patron saint, once rhapsodized "she lies like a dimple in the cheek of the (Louisiana) Purchase." Hugging a pleasant site near the confluence of the Tennessee and Ohio Rivers, Paducah lived at mint-julep pace. Between 1940 and 1950 her population dropped 4% to 32,430. Then, last December 15 AEC announced plans to build a \$500 million plant to make uranium 235 on a 5,000 acre site 16 miles west of town, handed the job of building it—biggest defense contract ever given a private construction firm—to F. H. McGraw & Co. of Hartford, Conn.

Bedrooms: \$100 a month. Last month there was a scar in the dimple: the ugly mark of defense housing and the lack of it. Already at work for McGraw were 5,500 construction men. About 40% of them

were in-migrants. Another 1,300 were building a TVA power plant at Paducah. And 1,000⁺ more were working on one for a private utility combine across the Ohio at Joppa, Ill. The two plants will supply AEC with power. Soon, the overall construction force would rise to 16,000 workers. Two or three years hence, the three completed plants would require a permanent operating staff of about 2,000.

So Paducah hotels and motels were jammed. Hundreds of plant and construction workers occupied rented rooms in private homes at inflated prices. Samples: \$75 monthly, not including utilities, for an attic room; \$100 monthly for a bedroom; \$150 up for a small flat. Outside the city in McCracken County, 1,000 trailers cluttered the farm land along Highway 60

(Continued on page 41)



Though permanent, most defense homes are boxy bungalows. Worst is temporary Paducah flat top.



Better Paducah homes include 62-unit brick veneer project in woodland outskirts.



Three-bedroom Knox prefab is popular model at Augusta, Ga., sells for around \$10,000.



Bonforte Construction Co., biggest defense builder at Colorado Springs, erects stucco homes.

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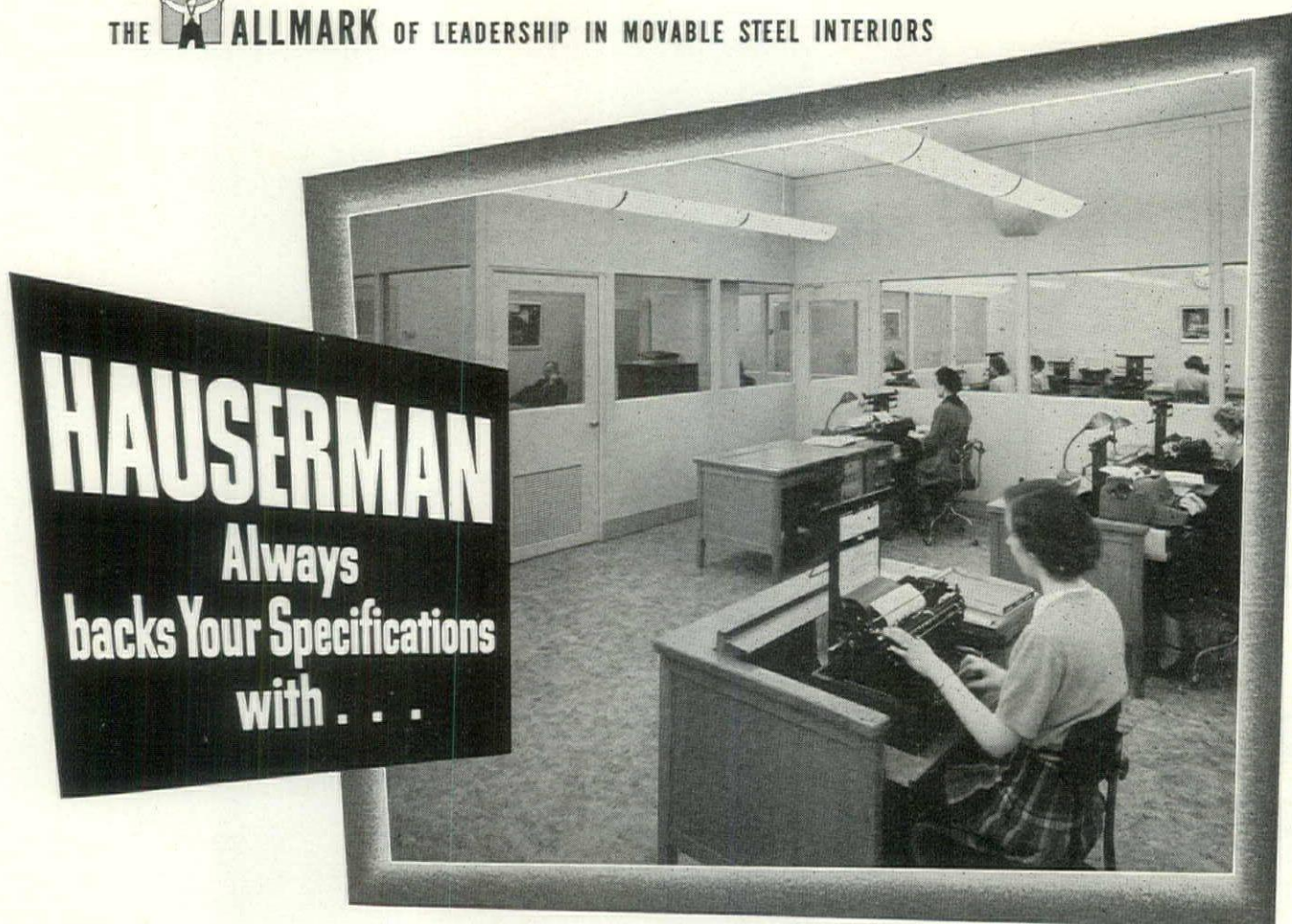
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leading to the plant. A few miles from the plant, a private operator had erected barracks ("for men to sleep," said the highway sign) which AEC executives referred to only with a shudder.

Nibbles at a big job. The small volume builders of Paducah, and a half-dozen bigger operators from Louisville, Memphis, Nashville and Evansville, pecked away in small bites at the job of homebuilding, crying that their efforts are hamstrung by the strangulation in the mortgage money market.

Warned Glenn Lovern, who represents HHFA as well as FHA in Paducah, "Construction of new housing in any large volume may face an almost complete shut-down in the Paducah area if the present shortage of mortgage money continues for another 90 days."

Groaned Ed C. Caine, straight-talking industrial relations superintendent of Union Carbide & Carbon Chemical Co., which will operate the Paducah AEC plant: "Since Jan. 10, all we've gotten has been double talk and a few for-sale crackerboxes, when what we need are rental units and decent, roomy homes at a reasonable price. The relaxation of Regulation X hasn't meant anything but talk to people strapped for cash."

Projects ran like these:

► Martin H. Conrad Co. of West Memphis, Ark., had land for a 443-unit, frame home subdivision. A few of the first 50 having FHA commitments were under construction. Planned were 30 two-bedroom units and 20 three-bedroom units, to sell between \$9,000 and \$11,000.

► Robert Mattingly, Inc., of Louisville had 100 lots a mile from the city limits, had FHA approval on 50 precut asbestos shingle, bevel and drop siding and cedar shake units, distinguished for having poured concrete foundations and plaster walls, but undistinguished as to design and size. His two-bedroom units (816 sq. ft.) would probably sell for between \$9,500 and \$10,000, the three-bedroomers (950 sq. ft.) for about \$11,250.

► Moore-Galbreath, from Columbus, O., had 38 Gunnison prefab homes roofed, hoped to have 54 finished this year on a 30-acre tract which will accommodate 100 units. Advertised prices (including electric range): two-bedroom units, \$8,875; three-bedrooms, \$9,575.

► Guthrie May of Evansville, Ind., planned to erect 150 national prefab homes, had 50 committed but none started.

► Brick veneer, two-bedroom homes, likely to be offered for between \$11,500 and \$12,000 each, were being built by McNeese Construction Co. of Memphis, which was well under way with 62 units.

► Roger Christie, a Paducah builder, had started work on a 50-unit project.

In addition, 12 to 15 smaller-volume builders wanted to build 125 to 150 homes this year—if.

Goal beyond hope. The "if" was the mortgage market. Said State FHA Director Patterson Walker: "It is doubtful that

the goal of 500 owner-occupancy units for the Paducah area in 1951 will be met. The goal of 500 new rental units for '51 is beyond the realm of possibility."

Case in point: The Memphis firm of Jack Haralson and J. W. Pilley had purchased land and obtained preliminary commitments for construction of 108 rental units just inside Paducah. But recent failure to obtain permanent financing forced abandonment of the project.

As a result, the only rental-units being built in the Paducah area were in an FHA Sec. 203 project of 60 five-room apartments outside the relaxed credit picture. This was backed by laundry owner Richard E. Fairhurst, who said:

"I could rent at least 300 apartments tomorrow. But the way things are, there's no temptation for people to crowd into rental building, only greater risk. I don't mean to invite any competition in town, you understand, but if somebody in private enterprise doesn't get encouraged to do the job, somebody outside private enterprise will."

Plea for 608. Said J. Ed Wade, President of Paducah's nine-member Real Estate Board and himself head of a lending firm: "With proper loan facilities, relaxed to something resembling the old 608, private enterprise can handle the whole thing. But the relaxation is absolutely essential—especially on the building of apartments."

Wade added that among the big money-sources, Metropolitan Life has pulled in its Paducah horns almost completely. Wade himself is a correspondent for New York Life and National Life of Nashville, both of which he said were unwilling to finance any more Paducah projects now.

Over the problem of accommodating the influx of 16,000 construction workers, AEC's Robert Rose, TVA Representative Fred Weiss and Vice President Frederick

Mayo of McGraw were not upset. Construction men were used to makeshift living quarters. They would get by. But counting the service workers attracted by the new plants, most Paducahans figured their permanent population would swell by 15,000 in five years. Yet up to the end of June, builders had applied for not a single one of the 500 rental units allocated by HHFA for relaxed credit. On for-sale houses, it was impossible to tell where things stood, because in Paducah (as in Savannah, Idaho and Corona, Calif.) HHFA was issuing no allocations to builders, instead would give them directly to eligible workers.

High costs, poor labor. TVA's Fred Weiss pointed up another trouble: "We've found home prices almost unreasonable," said he explaining why TVA built nine homes itself for key employees. One cause was that plots were bought at inflated prices. Robert Rawls of Southern Trust Co. of Louisville (which shares an upstairs office room with an attorney in Paducah because of the shortage of space) reported he paid \$1,000 for lots which went for \$350 to \$500 in pre-atom days.

For high prices, Paducah builders also blamed high materials (5 to 7% above Louisville prices) and inefficient labor: the best workers flock to McGraw. Asphalt tile costs 21¢ per sq. ft. laid in Paducah. It costs 18¢ in Louisville. Plastering costs \$1.80 a yard in Paducah, \$1.50 in Louisville.

An unhappy result of high costs was that—as builders conceded—almost all FHA appraisals fall below their sales prices. Mattingly, for instance, expected his \$10,000 two-bedroom homes will be appraised closer to \$9,000. So instead of \$1,800 down, he may have to require \$2,600 or \$2,800 down payment. "That's more than these AEC boys will have," he sighed.

Savannah River: Politics Plus Muddled Planning, Utilities Shortage Balk Action

The air around the Savannah River was so full of smoke that it seemed more than likely Congressional investigators would find quite a fire there, too. Fairly obviously, some people were less interested in getting housing built for the AEC's \$900 million H-bomb plant than in getting the house construction safely into the hands of good local Democrats. Plenty of home-builders were willing to explain off the record just who contributed how much to the Democrats' campaign funds and just what architect you must hire and just what lawyer you must retain if you did not want

your application snarled up in red tape. But everyone turned pale at the thought of being quoted. Even the Atomic Energy Commission's office withdrew the name of an official from a somewhat belligerent, authorized statement, explaining "we have to live with these fellows."

Nothing started. On top of the politics, there was lack of mortgage money, utilities and overall planning. Result: while 13 builders had been allocated 530 rental units under the relaxed credit terms, not a single unit of these was under construction.

(Continued on page 45)

Famous Contractors Approve when The THORO System Products are— *Specified*

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outstanding General Contractor,
Lakeland, Florida, has to say . . .

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November 16, 1950

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TEMPLIN'S INC.,
By *John F. Templin*
John F. Templin

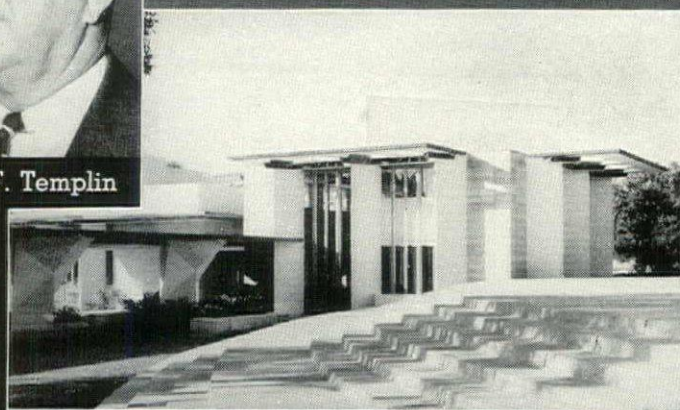
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Showing 1 of 18 buildings constructed for Lakeland's Florida Southern College. All with Thoroseal on exterior surfaces. John F. Templin, General Contractor.



Thoroseal Protection, Architect, Frank Lloyd Wright. General Contractor, John F. Templin.

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"The range of colors and the lasting brilliance of Thoroseal and Quickseal makes them a number one sales feature for the contractor who emphasizes quality at minimum cost."

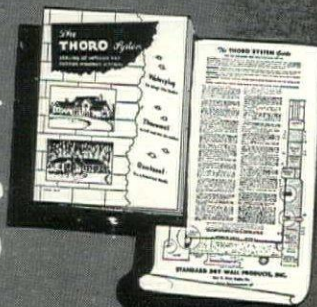
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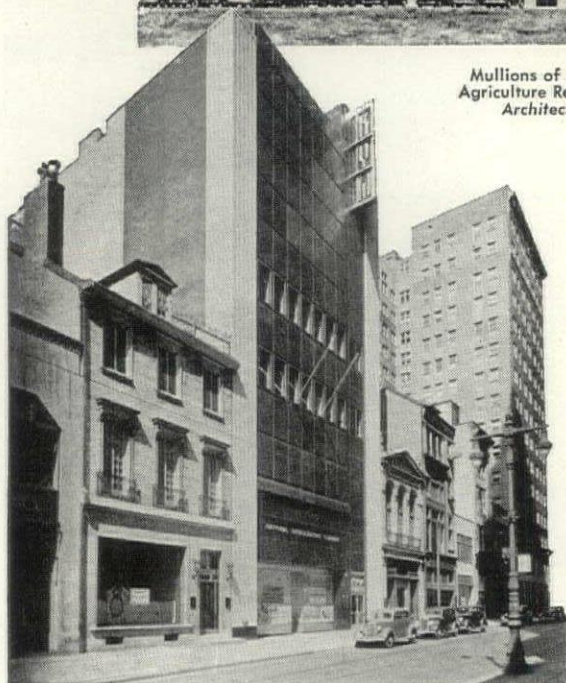
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Architect — Burton L. Schutt



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Mullions of Alberene Tremolite. U. S. Dept. of
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Architects — U. S. Dept. of Agriculture



Facing and paneling of Alberene Serpentine.
Station KYW, NBC, Philadelphia, Pa.
Architects — Tilden & Pepper

Spandrels of Alberene Serpentine. Continental Oil & Gas
Building, Houston Texas.
Architect — Kenneth
Franzheim



Veneers or Panels of ALBERENE Stone

When you're planning thin veneers on masonry backing or panels set in frames, here are the advantages you can count on from Alberene Stone, thanks to its unique combination of natural properties —

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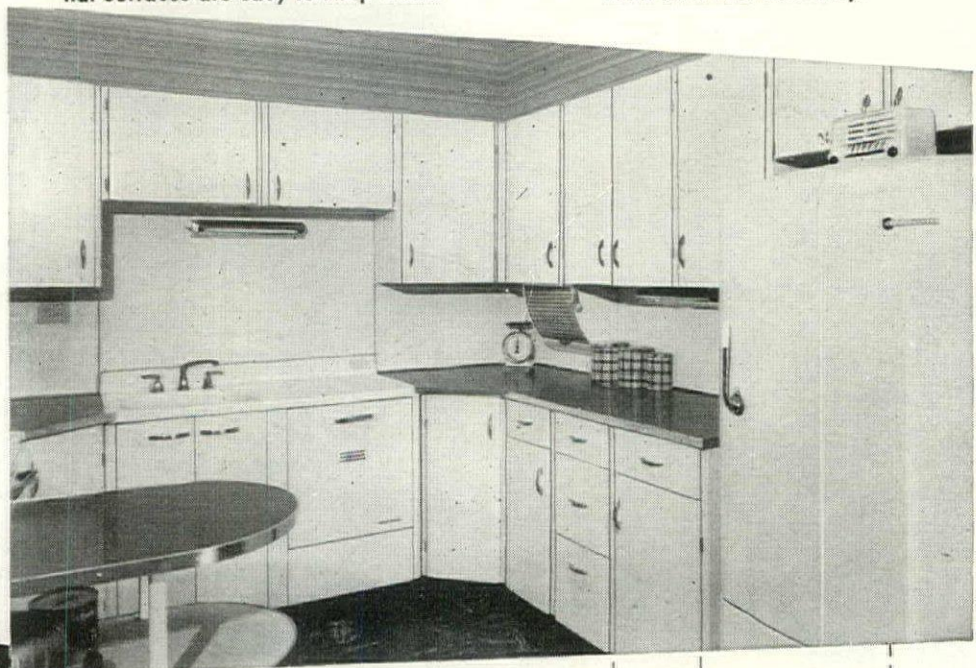
• For further information see Sweet's Architectural & Builders' Files 17c- Ca, 5c- Ca, 24b Ca. Details available to architects doing residential work in states east of the Rocky Mountains.

FAMOUS BILT-WELL LINE OF WOODWORK

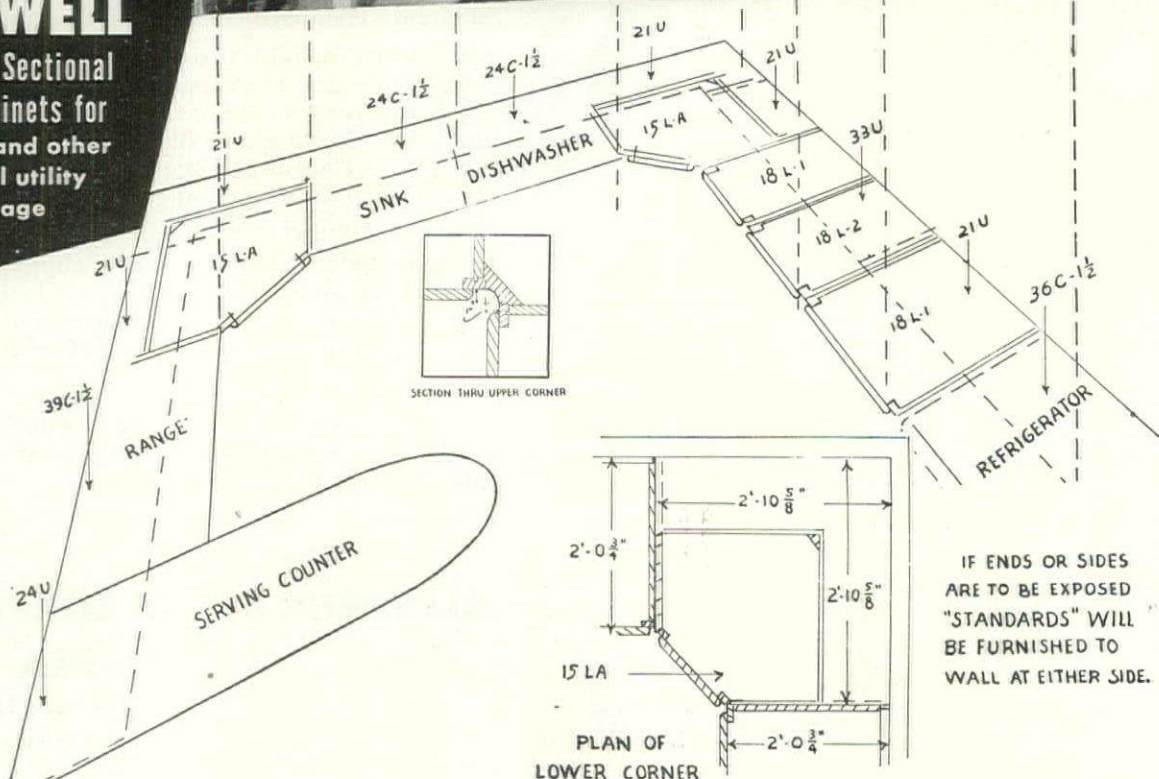
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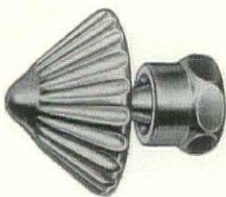
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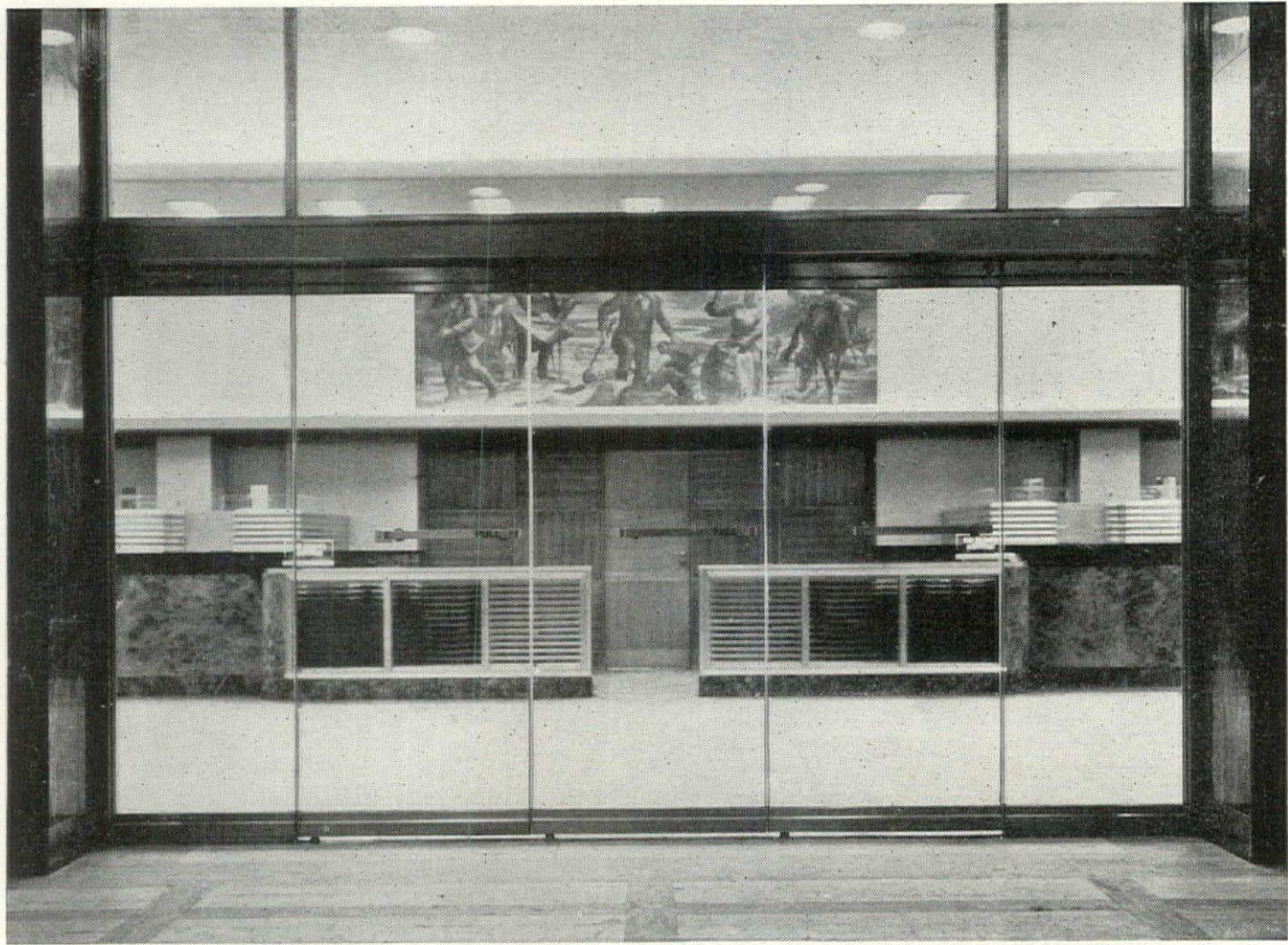
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W&D 3261



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Architects: Keene & Simpson, Kansas City, Mo.

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Friendliness is good business . . . for bank, store, theater, hotel, office . . . any building. What better way to express that feeling than with an "open" entrance that lets people see in . . . that welcomes them in.

*Tuf-flex** tempered plate glass doors make it easy to do. By making the entire entrance transparent they invite people in . . . build traffic. *Tuf-flex* doors are made tough to take the beating the public will give them. They're plate glass, $\frac{3}{4}$ " thick, tempered to make it 3 to 5 times

stronger than regular plate . . . so tough that *Tuf-flex* is being used in baseball parks as a screen to protect fans sitting behind home plate.

These beautiful doors come complete with bronze or alumilited aluminum fittings designed to take standard pivot hinges and other builders' hardware. You can choose from a variety of door designs and hardware finishes. See your Libbey-Owens-Ford Glass Distributor for full information. Or mail the coupon for our *Tuf-flex* door book. *



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Please send me a copy of your book showing uses of *Tuf-flex* doors, as well as your installation detail folder.

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FT. LEONARD WOOD: not one inquiry on rental allocations

At the FHA office in Lebanon, Mo., there hadn't yet been an inquiry about building relaxed credit rental units. Lack of mortgage loans stymied four would-be builders for sale from Rolla, Mo., who had site approval under FHA Section 207. Earl Jackson, the builder who also is area rent director in Rolla and Waynesville, noted "I even wrote my congressman about chances of an RFC loan, but it's been no dice everywhere."

SAN DIEGO: builders say \$500 profit margin too risky

In placid San Diego, the biggest yet of the critical area housing programs would reach a milestone of success or failure July 29, deadline for builders who over-subscribed a 6,000 housing unit quota to

THE REJECTED ONES

Up to June 27, the Inter-Agency Critical Areas Committee rejected the applications of these 20 communities:

Cleveland	Allentown-Bethlehem, Pa.
Amarillo, Tex.	Hamilton, O.
Granite City, Ill.	Sweetwater, Tex.
Lincolnton, Ga.	Hazel Park, Mich.
Mascoutah, Ill.	Port Hueneme, Calif.
Henderson, Tex.	Long Beach, Calif.
Magna, Utah	New Orleans
Cincinnati	Marietta, O.
St. Louis	Cape Girardeau, Mo.
Pampa, Tex.	Brownsville, Tex.

begin construction. Bank President A. J. Sutherland, past president of the National Association of Credit Men, doubted that builders could obtain loans for all 6,000. Many a builder feared that rental and sales price ceilings were too low to return a profit. One builder expected his two-bedroom house of 720 sq. ft. to cost him

\$8,000, including lot, leaving only a \$500 profit margin under HHFA sales ceilings. This could be wiped out by a small rise in costs. Three builders with allocations for 400 rental units said they were undecided whether to proceed because rent ceilings would yield less than the 12% per year they want for taxes, maintenance and profit. One builder gave up, returned a relaxation certificate for 120 units. Others begged FHA for higher ceilings.

COLORADO SPRINGS: no money, no starts; utilities trouble, too

Although builders fully subscribed Colorado Springs 1,000 quota, financing remained the joker. Not a single start had been made by the end of June. Said City Manager Kenneth R. Card:

"The mortgage money situation was so tight that when we first got our critical (NEWS continued on page 53)

CRITICAL DEFENSE AREAS: Summary of housing under relaxed credit controls

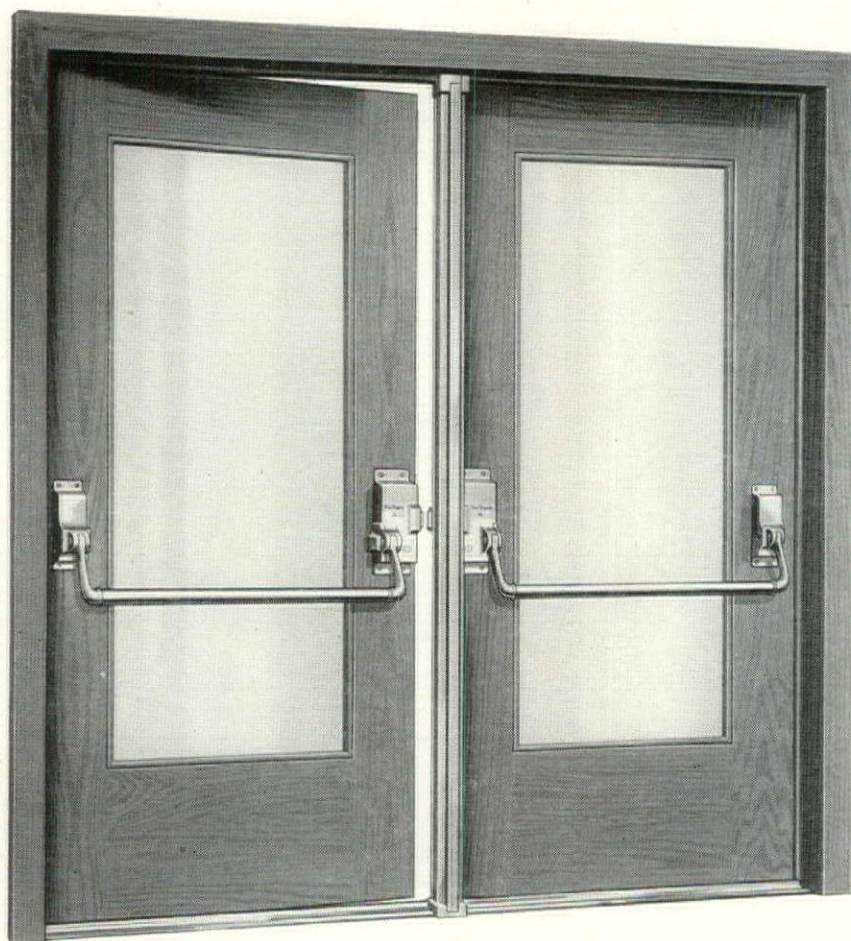
Date applications received	Areas	Defense activities	Total units programmed	Rental units programmed	Applications	Sales units programmed	Applications	Unit size	Rent		Sale	
									No. units	Max. rent	No. units	Max. price
Mar. 9	Savannah River	Atomic Energy Plant	1,150	1,000	530	150		2 bedrooms 3 bedrooms	590 410	\$70 80		no limit
Mar. 9	Paducah, Ky.	Atomic Energy Plant	1,000	500	none	500	332	2 bedrooms 3 bedrooms	350 150	\$85 95		no limit
Apr. 2	Idaho Falls Blackfoot, Arco } Idaho	Atomic Energy Plant	500	250		250						no limit
May 9	San Diego, Calif.	Naval Installations Aircraft Plants	6,200	4,120	5,295	2,080	3,394	1 bedroom 2 bedrooms 3 bedrooms	770 2,580 770	\$55 65 75	0 1,310 770	\$8,500 9,500
	Escondido, Calif. (subarea of San Diego)	Camp Elliott Miramar Naval Air Station	200	120		80		1 bedroom 2 bedrooms 3 bedrooms	20 80 20	55 65 75	60 20	8,500 9,500
May 11	Colorado Springs, Col.	Camp Carson Ent Air Base Peterson Field	1,000	500	540	500	460	1 bedroom 2 bedrooms 3 bedrooms	75 350 75	\$65 80 90	0 350 150	\$9,000 10,500
May 18	Corona, Calif.	Guided Missiles Laboratory of National Bureau of Standards	150	50	48	100	HHFA—no data	1 bedroom 2 bedrooms 3 bedrooms	18 27 5	\$65 75 85		no limit
May 23	Star Lake, N. Y.	Jones & Laughlin Ore Co.	75	45		30				\$55		\$9,000
May 28	Rolla, Mo.	Fort Leonard Wood U.S. Geological Survey	250	150	none	100		1 bedroom 2 bedrooms 3 bedrooms	25 100 25	\$55 65 75	0 75 25	\$9,500 10,500
June 11	Camp Cooke, Calif.	Camp Cooke U.S. Disciplinary Barracks	450	280	80	170	199	1 bedroom 2 bedrooms 3 bedrooms	45 200 35	\$60 67.50 75	110 60	\$8,500 9,500
June 13	Bremerton, Wash.	Puget Sound Navy Yard Naval Depot, Bremerton Naval Torpedo Station, Key Point	750	450	430	300	309	1 bedroom 2 bedrooms 3 bedrooms	75 225 150	\$60 75 90	150 150	\$9,500 10,500
June 13	San Marcos, Texas	San Marcos Air Force Base	50	50	50			2 bedrooms 3 bedrooms	40 10	\$65 75		
June 21	Tullahoma, Tenn.	Arnold Engineering Development Center	220	150		70		1 bedroom 2 bedrooms 3 bedrooms	20 90 40	\$60 70 80	50 20	\$8,000 9,000
June 21	Valdosta, Ga.	Moody Air Force Base	300	300				2 bedrooms 3 bedrooms	180 120	\$65 75		
June 21	Oceanside Vista, Carlsbad } Calif.	Marine Advanced Training Base, Camp Pendleton	500	400		100		1 bedroom 2 bedrooms 3 bedrooms	100 275 25	\$55 65 75	75 25	\$8,500 9,500
June 21	Salano County, Calif.	Mare Island Navy Yard Bonicia Arsenal Travis Air Force Base	600	480		120		1 bedroom 2 bedrooms 3 bedrooms	70 320 90	\$60 70 80	85 50	\$8,500 9,500
July 2	Quad City Area (Illinois & Iowa)	Rock Island Arsenal	750	250		500		1 bedroom 2 bedrooms 3 bedrooms	50 150 50	\$65 75 85	350 150	\$10,000 11,000
July 9	Tooele, Utah	Tooele Ordnance Depot Dugway Proving Grounds Int'l Smelting & Refining Co.	250	50		200		2 bedrooms 3 bedrooms	25 25	\$65 75	150 50	\$8,000 9,000
July 9	Brazoria County (Freeport), Texas	Dow Chemical Co. Freeport Sulphur Co. Stauffer Chemical Co. et. al.	600	300		300		1 bedroom 2 bedrooms 3 bedrooms	60 150 90	\$50 60 75	150 150	\$8,000 9,000
July 9	Hanford Operations Area, Wash.	Hanford Operations (atomic energy)	800	650		150		1 bedroom 2 bedrooms 3 bedrooms	25 500 175	\$60 75 90	75 75	\$10,000 11,000
July 9	Barstow, Calif.	Barstow Annex (Marine supply depot) Camp Irwin	200	120		80		1 bedroom 2 bedrooms 3 bedrooms	25 75 20	\$55 65 75	60 20	\$8,500 9,500
TOTALS			15,720	10,050		5,670						

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For your convenience, Von Duprin "Exit Engineers"—factory representatives and contract hardware distributors—are located in key cities across the country. Call in *your* Von Duprin "Exit Engineer" to review your exit needs. From the complete Von Duprin line, he can recommend the correct device for your requirements. If you don't know his name, write:



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Under certain conditions it is more efficient and economical to have the high pressure plastic laminates in your projects installed by the regular carpenter crew—as part of a more completely controlled work schedule. Therefore, you should know all about the new pre-fabricated Micarta bonded-to-Weldwood panels . . . whether you are now only in the planning stage, ready for specifying, or already under way.

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These $\frac{7}{8}$ " panels are sheets of standard thickness Micarta fused to Weldwood plywood with stabilizing back sheets. They can be sawed, trimmed, drilled and planed by any workman using inexpensive tools and are easily installed as kitchen counter tops, dinette table tops, sink enclosures, etc.

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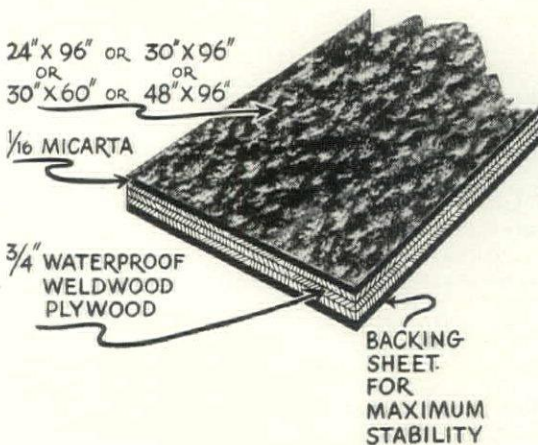
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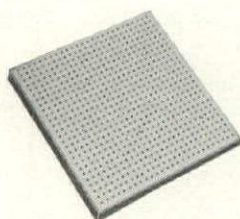
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A lightweight, rigid unit, combining acoustical efficiency with a durable, smooth surface. Perforations (to within 1/8" of the back) assure repeated paintability, easy maintenance. Available in a variety of sound-absorbent ratings. Dry rot proofed by exclusive Ferox* process.



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A cane fibre tile with a flame-resistant surface. This tile meets *Slow Burning* rating contained in Federal Specifications SS-A-118a. It may be washed with any commonly used solution, satisfactory for good quality oil-base paint finishes, without impairing its flame-resistant surface characteristics and without loss of sound-absorbing capacity. Repainting with Duo-Tex flame-retarding paint will maintain peak efficiency. Supplied in all sizes and thicknesses of regular cane tile.



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A totally new mineral fibre acoustical tile. Attractively styled to simulate travertine. It beautifies any interior and effectively controls sound reverberation. Lightweight, rigid and incombustible, it is factory-finished in a soft, flat white of high light-reflection rating.



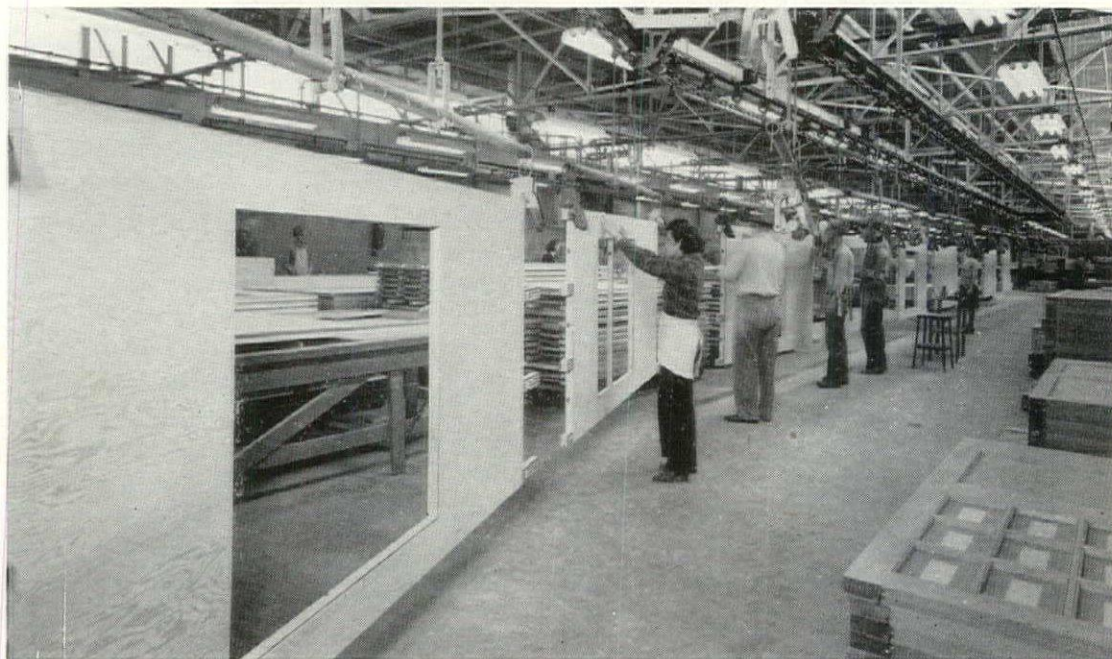
ACOUSTEEL*

Combines a face of perforated steel with a rigid pad of sound-absorbing Rock Wool to provide excellent sound-absorption, together with attractive appearance, durability and incombustibility. The exposed surface of perforated steel is finished in baked-on enamel. Acousteel is paintable, washable, cleanable.

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THE CORONADO, new-model Gunnison Home, is available in five sizes . . . two or three bedrooms . . . two elevations.



TWENTY-FIVE MINUTES is time enough to produce a home on the efficient Gunnison production line. Photo shows the quality-control inspection prior to the application of finishes.

Typical uses of penta-treated wood

Wherever wood is used, penta treatment will give it longer life. The following table gives the amount—in pounds—of 5% penta solution in oil that a cubic foot of wood should retain for maximum protection.

	Humidity average to low	Humidity average high
Sills and plates	6	8
Joists and girders	6	8
Screeds and subflooring	6	8
Factory flooring	6	8
Roof plank	6	8
Platforms and decking	6	8
Posts and fences	6	8
Cooling towers	—	8-10
Sign material	6	8
Millwork	6	8
Highway guardrails	6	8
Railway cars	6	8
Bridge timbers	8	10-12
Utility poles	8	8-10
Crossarms	6	8

Note: Higher treatments are recommended where wood is to serve under severe conditions, such as in the tropics. Recommendations will be furnished on request.

"You are assured of VALUE..."

"You are assured of VALUE when you buy a Gunnison Home," says Gunnison Homes, Inc., subsidiary of United States Steel Corporation, "because only the finest materials and craftsmanship go into the manufacture of these 'homes of tomorrow'!"

Wood, treated with Monsanto Penta (pentachlorophenol), is one of the assured-value features of Gunnison Homes. The Gunnison factory, at New Albany, Indiana, applies penta to the base of studs and the gutter end returns of all its homes. Gunnison dealers are instructed to penta-treat other important parts of the structures.

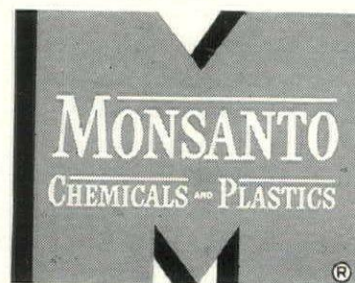
Water-repellent formulations of Monsanto Penta provide dimensional stability which is important in prefabrication. In the case of Gunnison Homes, penta formulations are clean. The treated wood

can be painted, varnished or given any of the modern finishes.

Monsanto Penta adds years to the life of wood by protecting it against termites and other wood-boring insects and by preventing decay caused by fungi. It is a stable chemical that gives lasting protection. It does not leach. Rain and ground water do not dissolve penta and carry it away.

Whether you employ wood in trim or for heaviest structural timbers, you can give it longer life with Monsanto Penta. Write for information on penta and for names of suppliers of penta-treated lumber, penta solutions or custom-treating service. MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1752-G South Second Street, St. Louis 4, Missouri.

DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Houston, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto (Canada) Ltd., Montreal



SERVING INDUSTRY . . . WHICH SERVES MANKIND

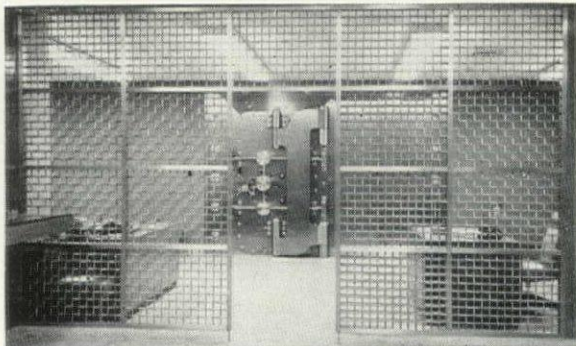
NEW BANK GOES STAINLESS

A new note in architecture for bank buildings has been achieved for The First National Bank and Trust Company, of Tulsa, Oklahoma. The new 20-story building combines beauty, dignity, comfort and efficiency.

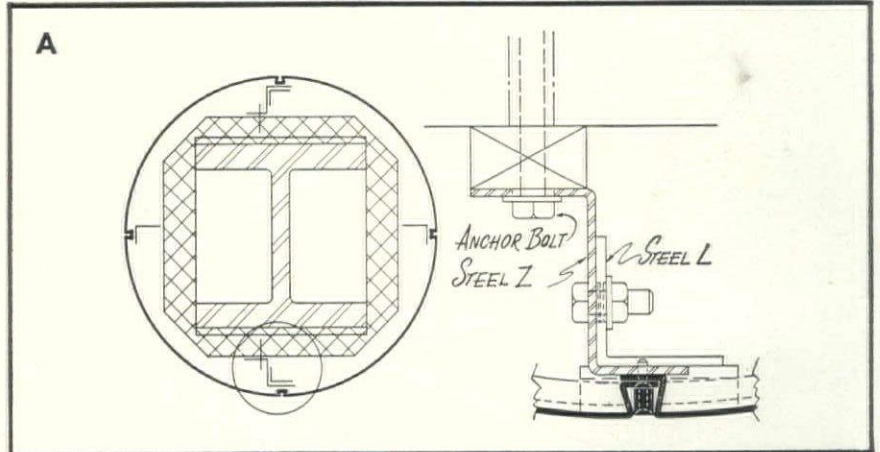
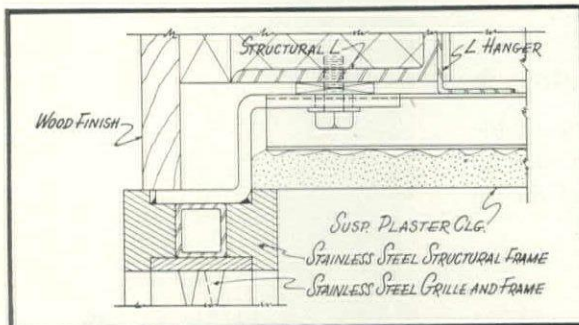
Carson & Lundin,
Architects
New York City



The street entrance, flanked by floor to ceiling windows, provides an open treatment. Window frames, mullions and door components are all stainless steel. Columns in the arcade are also sheathed with stainless steel.

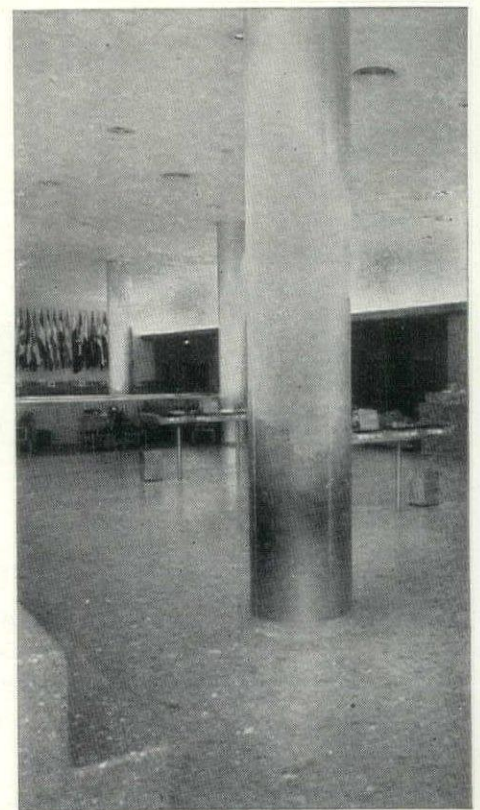
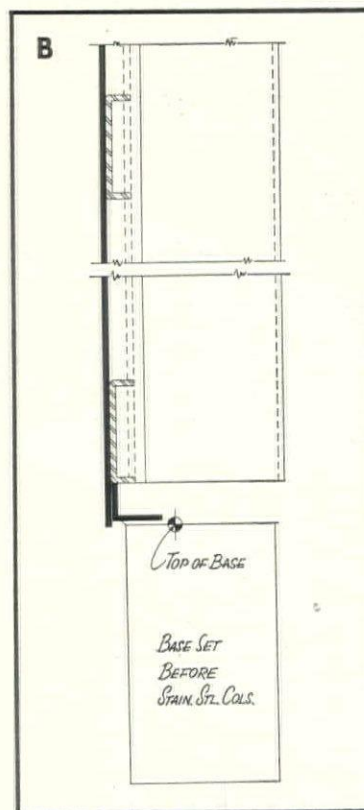


Stainless steel bar and wire form the grille work for the safety deposit area. Drawing shows detail of the stainless steel grille, frame, and supporting structure.



Stainless-sheathed steel columns support the weight of the building.
A. Cross-section of column segment showing method of attaching the stainless steel column facing.

B. Bracing detail through vertical section at the base.



The use of Armco Stainless Steel is restricted now, but here are some architectural applications you might wish to consider for the future: Doors and windows • Curtain Wall Panels • Marquees • Signs • Roofing and Roof Drainage • Restaurant Equipment and Fixtures. For detailed information see your Sweet's Catalog or write: Armco Steel Corporation, 3801 Curtis Street, Middletown, Ohio. Plants and Sales Offices from Coast to Coast.

Export: The Armco International Corporation.



EASIEST TO INSTALL!

Because H. B. Smith cast iron boilers are assembled from precision-machined sections and parts, they are easily erected at the installation with a minimum of labor.

EASIEST TO CONVERT!

H. B. Smith boilers are easiest to convert to different fuels, should the one in use become in critical supply. All operate with great efficiency with solid fuel, oil or gas. In low-cost natural gas areas, H. B. Smith boiler conversions are bringing clean, trouble-free, inexpensive heat to hundreds of users.

EASIEST TO EXPAND!

When increasing the capacity of an H. B. Smith boiler to meet additional heating requirements, or when replacing it, it is not necessary to tear out a wall, part of a foundation, or both.

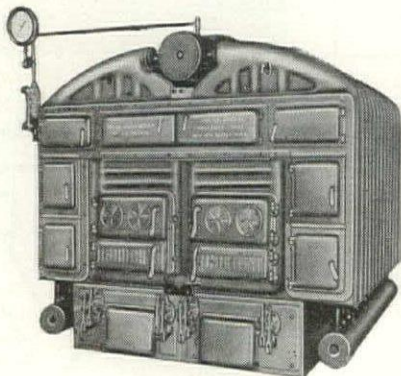
Give Your Customers the Benefit
of the World's Broadest Line!

H. B. *Smith*
**CAST IRON BOILERS
FOR HEATING AND
DOMESTIC HOT WATER**

100 Boiler-Burner Unit Means More Home Sales ▶

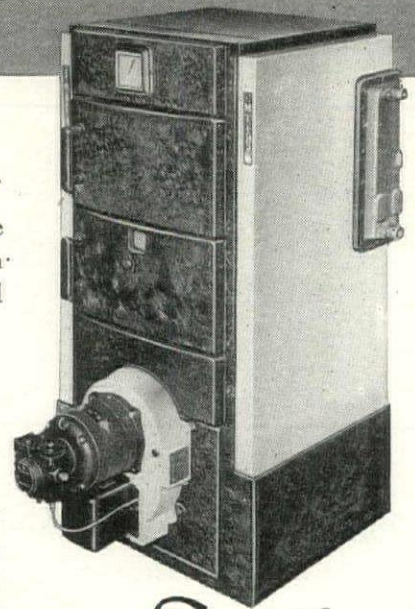
Compact, easy to install! Designed to give fast heat and plenty of hot water for the average home. Furnished with built-in tank type or

"tankless" water heater; available with flush jacket as shown, or with jacket expanded to conceal the oil burner.



◀ 60 Smith Boiler For Largest Installations

May be used singly, or in batteries for heating loads up to and over 100,000 sq. ft. steam radiation. Many of these large units installed in industrial plants furnish steam for process requirements as well as for heating and domestic hot water.



H. B. *Smith*
THE H. B. SMITH CO., INC.
Westfield, Mass.

W. P. Atkinson's suggestion that they endorse a boost in FHA and VA rates. Upshot: no action.

The U. S. Savings & Loan League called the new Federal Reserve policy "healthy and desirable." Norman Strunk, blond, boyish executive vice president, insisted that savings and loaners had plenty of money in their own coffers to finance all the mortgages needed during the last six months of 1951 (150,000) to reach the Government's housing goal of 850,000.*

Discounts & liquidity. This month came the first faint promises of change:

► Important support was growing among mobilization planners to permit lenders to charge home buyers bigger discounts on FHA and VA mortgages. Under present rules, lenders can charge buyers only a point service fee, plus another 1½ points where periodic inspection of a house under construction is involved. Under study—not yet firm policy—was a plan to loosen discounts to 3 or 3½ points. This, plus lenders' fees for appraisal and recording, might let mortgages sell at a discount in the secondary market without loss to brokers or builders. Actually, VA 501's already were being peddled as low as 95½ by investors whose homes were sold, who had to extricate themselves. But investors, lenders and builders were absorbing the losses. As J. Maxwell Pringle of the big mortgage brokerage firm of Stern-Lauer & Co., said: "This can't go on. People are not going to plan any new work. . . ." The discount proposal—which was advanced by builders at THE MAGAZINE OF BUILDING's Round Table on mortgages last month—had undeniable advantages. Biggest was political. Anything so overt as a raise in interest rates was supposed to be sure to stir up a hornet's nest of fuss by veterans. A discount system could be legalized administratively, could be ended when the need ends.

► Reports persisted in Washington that the Federal Reserve might act to add liquidity to holdings of Government bonds. One guess was that this would consist of support for the market at existing levels. At the moment, big holdings of Government bonds were hard to unload, even at 97.

► Savings were increasing, which would partly make up for the money once obtained through sale of bonds.

► Biggest portent of all was the Korean truce. Chances were a truce would make more money available for investment, because the Government might avoid deficit financing, people would not be in a buying mood, and industry would slow down its expansion. Some economists thought this might even lead to a surplus of money, send interest rates plummeting.

*Actually, Government housing leaders were seeking not a calendar year total of 850,000 homes, but an annual rate of 850,000, which means 425,000 starts the rest of this year.

Congress Gets Rough With Controls; Easier Reg. X for Veterans Foreseen

Postponed by a 30 day extension of the expiring Stabilization Act, the new Defense Production Bill receiving finishing touches in the House would be no legislative bargain for the Administration. Both the version the Senate had passed and the one the House was working on deny the President the right to apply controls to existing houses. Both measures reject proposals to let the Government build and operate defense plants. Even more disheartening to Truman's stabilizers, both bills would soften credit Regulation W for financing new and old cars. Few doubted that such action presaged a whittling down of all credit controls including Regulation X limiting mortgage terms.

Even in its shape at the start of July, the legislation struck at Regulation X. Veterans, including returnees from Korea, would be permitted to buy houses costing up to \$12,000 with only 6% down payments. This was an across-the-board provision, not confined to critical areas. True, the Senate tossed in some garbled language designed to withdraw the privilege if HHFA's slide rule brigade finds that for three consecutive months building volume has been high enough to make the rate for the year exceed its 850,000 unit goal. But this weasel seemed to stand a good chance of dying in the final legislative conference between the House and Senate.

Complex tie-up. In extending federal rent control for another year (a short continuing resolution kept the present law go-

ing during the interim) the legislation whacked away still more at real estate credit restrictions. Provision was made for their automatic suspension in any critical defense area designated by the Secretary of Defense and the Director of Defense Mobilization. However, Congress stopped short of going whole hog. The House measure removed Regulation "X" in critical areas only for houses costing up to \$9,000 (\$10,000 where construction costs are high). When a place was removed from the critical list, real estate credit control would swing back into action.

Part good, part bad. To the real estate fraternity, the special dispensations for critical areas were a mixed blessing: both bills authorized the Federal reconrol of rents in critical areas now devoid of ceilings. To give property owners a break, a 20% increase over rents prevailing in January 1947 would be allowed. Hikes already made would be deducted. By a last minute stratagem, the Senate tied the Defense Housing Bill to its version of the Defense Production Act. But indications were that the House would refuse to be swayed by such antics, would insist on separate handling of the two measures. Moving with the utmost deliberation, the House Banking Committee seemed unlikely to make up its mind about defense housing until late July. The brightening of the Korean picture was not making it any easier for administration forces to wrangle the bill through.

(NEWS continued on page 61)



WORLD'S BIGGEST CONTINUOUS FLOOR marks Federal office

WASHINGTON'S NEW BLOCK-SQUARE General Accounting Office has the biggest uninterrupted floors of any office building in the world. It packs 1,330,000 sq. ft. into seven stories. (Each of the five floors in the 3,500,000 sq. ft. Pentagon is much bigger, but these are broken up by two-score interior courts.) What makes the enormous GAO floors possible is air conditioning, to whose value the Public Buildings Service stands ready to write enthusiastic testimonials. GAO was designed solid, says PBS Chief W. E. Reynolds, to get maximum floor space within site limitations and the Capital's building height restriction, and to provide large open areas for GAO's miles of files and acres of business machines. The cost was \$21½ million, or \$15.16 per sq. ft. Defense Production Administration wangled space here, but Michael Di Salle's OPS was turned down.

YORK does New York's FIRST Fully Air Conditioned Skyscraper —The ESSO Building in Rockefeller Center

Three giant York Turbo Compressors of a combined 1700-ton capacity lead off a vast system of York equipment installed to air condition the handsome ESSO Building in the world's outstanding skyscraper development.

Whether it's a glamour job—or a vital defense job like the 24,000-ton refrigeration installation at the Hanford Atomic Energy Project—or the air conditioning of an existing building like the Bank of New York and Fifth Avenue Bank—you'll find York equipment at work in a way or on a scale that makes York the stand out leader.

Do you have important new construction on your schedule? . . . Do you plan to modernize an existing structure? . . . Do your D.O.'s call for air conditioning or refrigeration as a production efficiency tool?

Why not call in a York Representative and let him show you the point-by-point advantages of York equipment? . . . In this connection, here is the York story to remember:

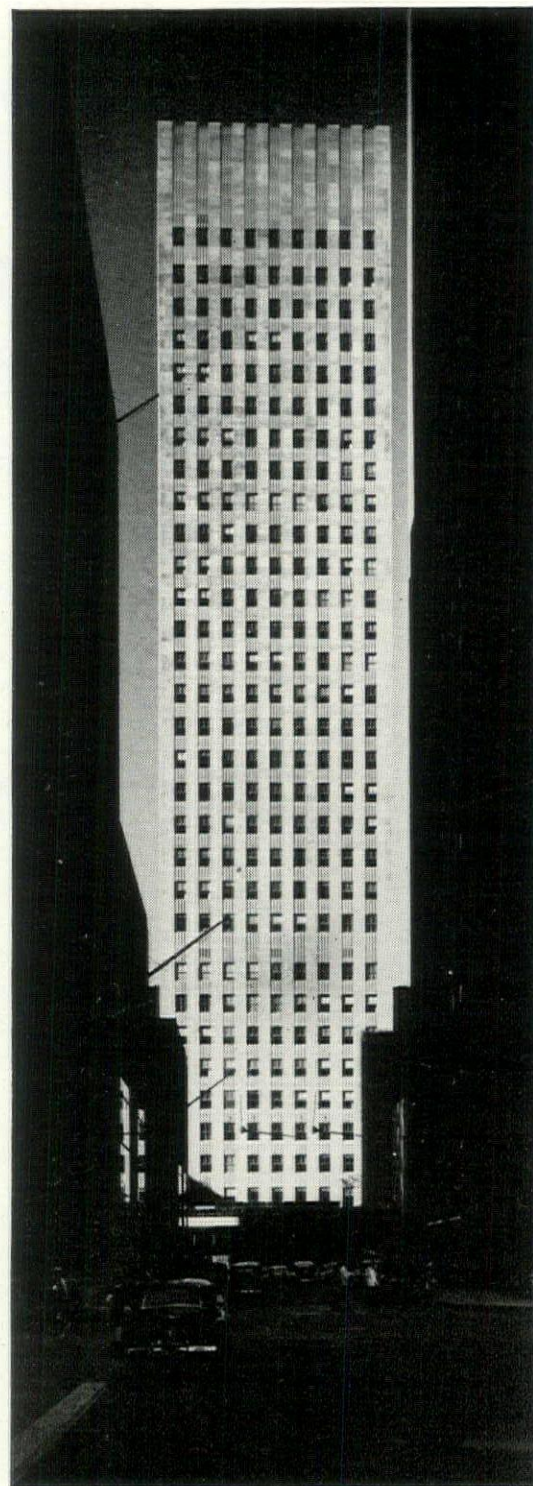
YORK offers you assistance with the most complete nationwide organization of trained engineers anywhere in the world.

YORK has had more experience in mechanical cooling than any other organization . . . 75 years of it . . . experience in doing jobs not easily solved by precedent.

YORK's CERTIFIED MAINTENANCE CONTRACT relieves you of post-installation responsibility, and relieves the client of maintenance for a nominal, known-in-advance service fee.

YORK works through you. Wherever possible, all contract air conditioning is channeled through architects, engineers, contractors.

Check today with your nearby York Representative listed in the classified directory, or write York Corporation, York, Penna.



EZRA STOLLER

Architect: *Carson & Lundin*

Engineering Contractor: *Buensod-Stacey, Inc.*

General Contractor: *John W. Harris Associates, Inc.*



The big advances come from

YORK

Headquarters for— **Refrigeration and Air Conditioning**

THIS \$2,000,000 High School in Williamsville, New York, is brand-new and modern throughout, but still there's a mellow "traditional" look to its lines and features. This handsome exterior is matched by an *interior* well qualified to stand the wear and tear of a thousand students. Many yards of Gold Bond Metal Lath and tons of Plasters were used...with this important result: The responsibility for the performance of these products is centered in one reputable manufacturer, National Gypsum Company! There are over 150 Gold Bond Products—each one fully described in Sweet's, and available at your Gold Bond Lumber and Building Materials Dealer.

GOLD BOND AGAIN!



**WILLIAMSVILLE HIGH SCHOOL
WILLIAMSVILLE, NEW YORK**

Architect:

Duane Lyman & Associates . . . Buffalo, N. Y.

General Contractor:

The John W. Cowper Co., Inc. . . Buffalo, N. Y.

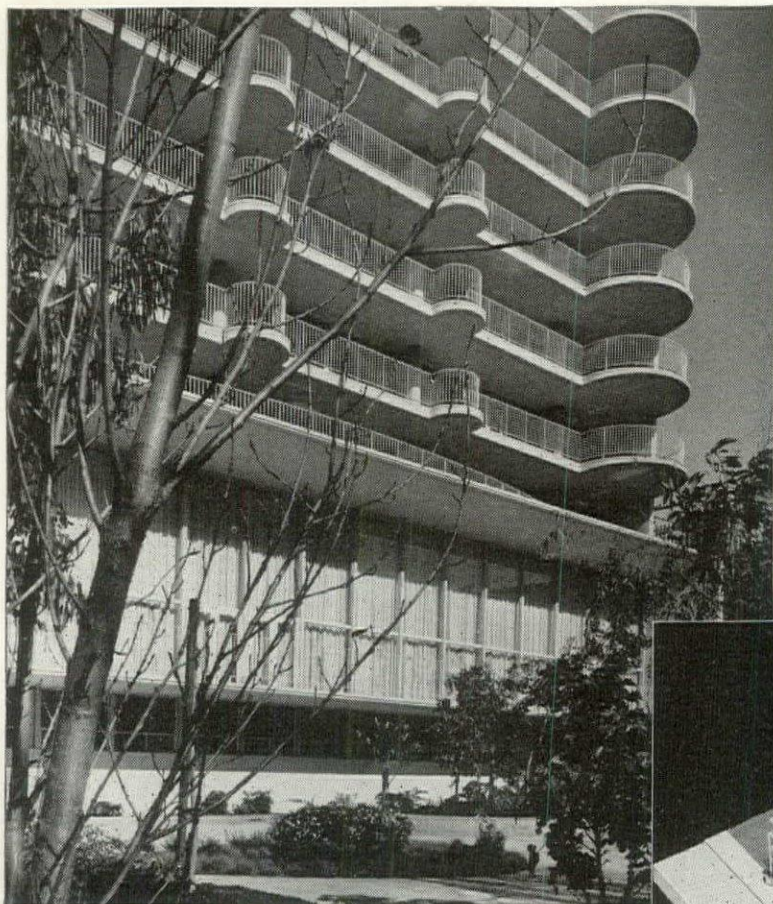
Plastering Contractor:

Fred Seitz, Inc. Buffalo, N. Y.

NATIONAL GYPSUM COMPANY • BUFFALO 2, N. Y.

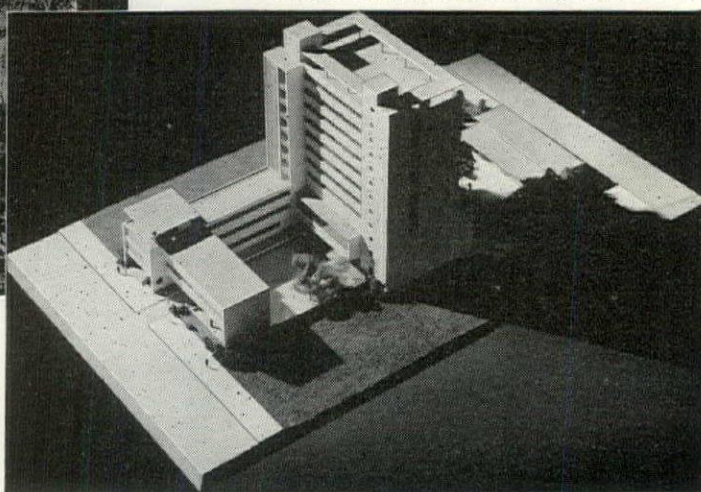
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**You'll build or
remodel better with
Gold Bond**



High on a San Francisco hilltop stands Maimonides Health Center—a proud structure devoted entirely to the care of the chronic sick. Every patient room faces south and has been given a floor-to-ceiling glass wall to provide a pleasant living environment and a tonic-effect view across the city. Beyond these picture windows are wind-sheltered, sunny balconies from which one may look downward into specially landscaped courts for other spirit-lifting experiences. Architecturally this fine building is as advanced as the rehabilitation program practiced within it.

Photos: DEAN STONE and HUGO STECCATI



ERIC MENDELSON • *architect*
ISADORE THOMPSON • *consulting engineer*
BARRETT & HILP • *general contractors*
PACIFIC ELECTRICAL & MECHANICAL CO., INC.
• *plumbing contractor*
COAST PIPE & SUPPLY COMPANY • *plumbing wholesaler*

ONE YEAR OLD AND ALREADY FAMOUS

MAIMONIDES HEALTH CENTER FOR THE CHRONIC SICK, which recently celebrated the first anniversary of its opening, has already earned the prediction that it may serve as a pattern for the development of similar facilities in many other communities. For a building which has been

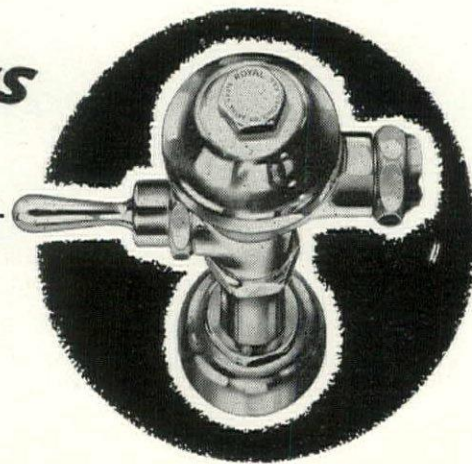
acclaimed as a pacesetter, it is significant that it is completely equipped with flush valves bearing the name that identifies unapproached leadership won and maintained through the years by superior efficiency and economy—SLOAN. Here is more evidence of preference that explains why . . .

more **SLOAN** *Flush* **VALVES**
are sold than all other makes combined



— SLOAN VALVE CO. • CHICAGO • ILLINOIS —

The SLOAN ACT-O-MATIC SHOWER HEAD is automatically self-cleaning each time it is used! No clogging. No dripping. When turned on it delivers a cone-within-cone spray of maximum efficiency. When turned off it drains instantly. It gives greatest bathing satisfaction, and saves water, fuel and maintenance service costs.



Graft in Public Housing Charged by AIA at Washington Conference

Before the last war, wags dismissed it as "the cost of doing business in New Jersey." Architects designing public housing projects often took it as a matter of course if Democratic leaders called on them for a donation to campaign funds—perhaps 15% of the fee.

Last month, pudgy, sharp-eyed Frederick Gutheim, assistant to AIA's Executive Director Edmund Purves, warned the National Housing Conference in effect that kickbacks were becoming a spreading scandal. Said Gutheim at the conference's 20th annual meeting in Washington's Statler Hotel: Public housers "should be con-

Reni Photos



AIA's Fritz Gutheim: Kickbacks a growing scandal

cerned over the disaffection of architects (which stems from) political contributions and kickbacks required by some local public housing authorities as a condition for letting architects do the work." Samples:

► In "one New England city," an architect was asked to give 10% of his fee after being recommended for a job.

► In another "large Eastern city" the word was passed that "several members of the authority would have to be taken care of by the architect who got the job."

► In "another large city," an architect was asked to contribute "15% of his fee for political campaign purposes."

Gutheim's audience—300 public housers from across the country—did not seem particularly shocked. They applauded politely. One listener remarked: "After all, housing authorities are appointed by politicians. It's not surprising there should be venality here and there."

Milestone. Gutheim's talk reflected the extreme annoyance of architects, who had been jockeyed by the Public Buildings Administration into taking lower fees, supposedly to advance a public cause, that they should also suffer political shake-downs.

Architects also took a kicking around from Sen. Paul Douglas (D., Ill.), who indulged in a lunchtime sermon on pitfalls that might retard public housing. The trouble with architects, said he, is that they are too anxious to build for posterity, to

have their creations stand as monuments to themselves. Keep architects under control, he counseled housing authority leaders. Douglas made no parallel proposals to control the activities of real estate agents or brokers.

By lucky timing, the conference also served to turn pressure on Congress to restore public housing in the new fiscal year. The House, by cutting the program to 5,000 units in an appropriation bill, had in effect killed it. But the Senate upped the quota to 50,000. The question was stalled in conference at month's end. HHFA Administrator Raymond Foley predicted the Senate figure would become law. But Sen. John J. Sparkman (D., Ala.), a powerful pro-public housing champion, noted that if the House conferees do not accept the Senate's 50,000 figure, result would be a roll call vote on the basic issue of public housing, where he thought the outcome was doubtful.

PUBLIC HOUSING BONDS: PHA will float \$860 million in year

The news was no comfort to builders hard-pressed for mortgage funds. The Public Housing Administration last month chose mid-July to float \$160 million worth of public housing bonds in the private money market. They will consist of simultaneous offerings by 58 local housing authorities in 20 states and Hawaii to refinance temporary loans from both Uncle Sam and private sources, and to finance erection of 100 new public housing projects.

Because PHA subsidy contracts with local housing authorities oblige the U. S. Treasury to pay principal and interest, underwriters rated the bonds as gilt-edge collateral—just short of actual Government bonds. Moreover, the housing bonds would have the advantage of complete exemption from federal income taxes. Thus they would probably command interest rates between 1.4 and 2%—compared to 2.75 for long-term Government bonds. Underwriters will bid on the exact interest rate separately for each issue.

The issue was the first offering of long-term local housing securities under the 1949 Housing Act, so it was unveiled with fanfare: a daylong "conference" in New York's Commodore Hotel which drew 450 public housing officials and municipal bond experts. HHFA Administrator Raymond Foley, an indefatigable speaker on the conference circuit, seized the occasion to plump for continuance of public housing during mobilization "at least propor-

tionate to the over-all volume of housing that we build."

But on the same platform, snow-thatched, ruddy PHA Administrator John Taylor Egan forecast that additional offerings of his housing bonds, at 60 day intervals, will total \$150 to \$200 million during the rest of this year, with another \$500 million during the first half of 1952.

Immediate impact of the housing bonds on the mortgage market would probably be slight, chiefly because they compete for investable funds at a different level.

WILSON'S REPORT lauds building industry on waste

In his second quarterly report to President Truman, Defense Mobilizer Charles Wilson this month singled out the construction industry for a pat on the back for its progress toward reducing waste. Unmistakably cited too, though not by name, were THE MAGAZINE OF BUILDING's Round Tables on eliminating waste in housing and heavy construction. Wrote Wilson:

"The construction industry has shown particular initiative in pushing conservation measures. For instance, specifications are being revised to substitute concrete for steel, or to reduce the weight of concrete so that less steel is needed.

"Privately sponsored conferences in which some of the nation's leading architects, engineers, contractors, labor leaders and educators participated have led to proposals which may result in large savings in both the material and the labor used in housing and heavy construction. A national convention of building code officials has recommended a uniform ordinance which will remove for the duration of the emergency local regulations which prevent conservation in building materials. Instructions for conservation have been given Government construction agencies."

ANTI-WASTE DRIVE: Jim Follin takes charge of DPA's program

Last winter, Engineer James W. Follin stamped out of NPA after much-criticized Frank Creedon, NPA facilities and construction chief, overruled his recommendation to defer M-4 construction controls until there was staff to enforce them. This month, lanky, florid Jim Follin returned to the mobilization fold. He took leave of his permanent government post as director of contract settlement for General Services Administration to move into the hierarchy a notch above NPA, as chairman of DPA's subcommittee on cutting waste in building.

Follin's addition to DPA's anti-waste team was one the building industry would applaud. The former managing director of the Producers' Council was both widely and favorably known. A native Washingtonian, he learned government ropes the long way, starting with a post in HOLC in 1935. Primarily, Follin's committee will

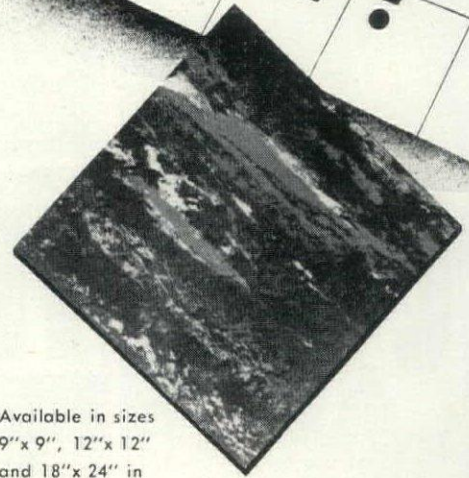
(Continued on page 66)



NEED A FLOORING FOR AN INDOOR HIGHWAY?

Did you ever consider lobbies as indoor highways? In a sense they are. They carry a continuous flow of foot traffic; often seven days a week. Like the outdoor traffic arteries, the flooring you specify for these "highways" must meet the same rigid requirements for durability. Add color and lasting beauty and you have HAKO Asphalt Tile Flooring.

It is significant that HAKO Asphalt Tile Flooring is finding wide application in more and more public buildings, as well as private homes and housing units. There is a wide selection of colors adaptable to an endless number of patterns and, HAKO Asphalt Tile Flooring can be installed directly on cement floors on or below grade, because it is alkaline and moisture proof. Look for our catalog in Sweet's.



Available in sizes
9"x 9", 12"x 12"
and 18"x 24" in
1/8" and 3/16" gauges



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I am interested in HAKO Asphalt Tile Flooring. Please forward me "Portfolio of Flooring Ideas AIA File No. 23 D," and "HAKO Asphalt Tile Flooring," catalog brochures.

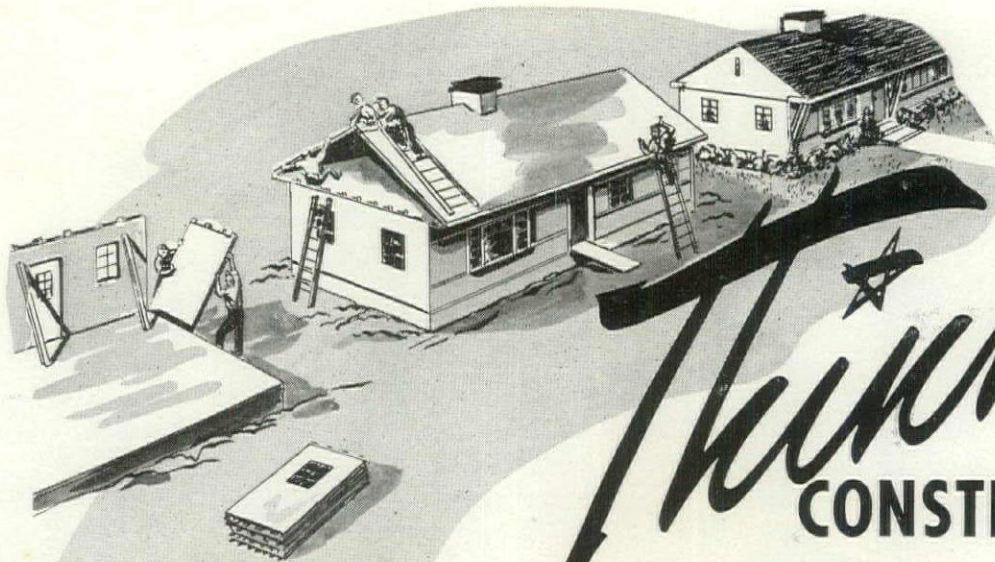
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BUILDERS, now is the time to think about YOUR future in building! Manpower is increasingly short . . . Skilled labor is at a premium . . . Time is of the essence!

Solve your manpower difficulties with **Gunnison Homes!** You can build twice as many homes, in half the time, without the uncertainties of conventional building! Field erection is simple, standardized, speedy, **requires a minimum of skilled labor!**

DEALERSHIPS are still available in certain areas.
Write Dept. F-5 for complete information.



Manufacturers
of Gunnison
Coronado and CHAMPION Homes



Gunnison Homes INC.

UNITED STATES STEEL  CORPORATION SUBSIDIARY
NEW ALBANY, INDIANA

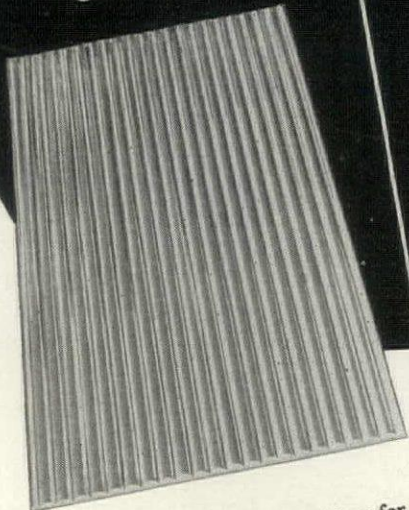
"Gunnison," "Coronado" and "Champion"—T.M. Gunnison Homes, Inc.

ANNOUNCING

Three New Additions To Corning Engineered Lightingware

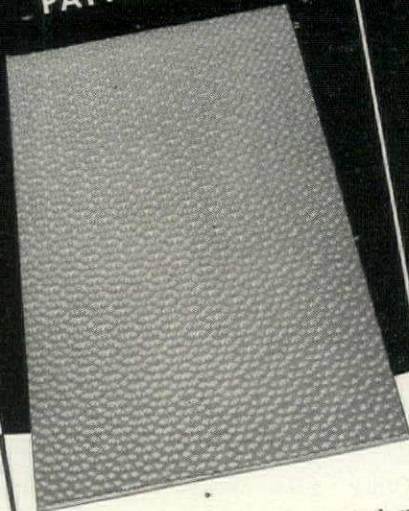
As a result of a continuing effort to give you new and better lightingware, Corning research has developed three new additions to the Corning line. Like all Corning Engineered Lightingware, they provide maximum efficiency, effective light control, and design flexibility. The coupon below will bring you complete information on these important new products. Mail it today.

CORNING CRYSTA-LITE



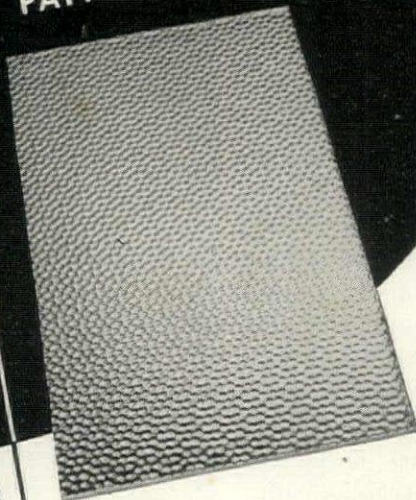
Here is an entirely new medium for prismatic control of fluorescent light. Utilizing linear prisms, it controls the distribution of light by bending high angle rays downward into zones where they are useful for illumination—gives you higher intensities with fewer fixtures and accurate brightness control. Efficiency is high. Made of water-white crystal, Corning Crysta-Lite is light in weight and non-color selective. Available in widths up to 24", lengths up to 100".

CORNING ALBA-LITE PATTERN 99



Corning Alba-Lite is an opal glass long recognized for its even light transmission, low panel brightness and high efficiency. The new pattern 99 is uniformly pebbled on one side to give greater "hiding power"—outline of light source is completely diffused. It makes for pleasing fixture appearance, is easy to clean. Available in (1/8" thick), widths up to 24" and lengths up to 100", Alba-Lite Pattern 99 is easily cut to special shapes or made into bends as required.

PYREX BRAND DIFFUSING GLASS PATTERN 12



Offers the ideal solution for incandescent lighting applications where special qualities of heat resistance are required. Made of PYREX brand glass No. 7740, it is highly resistant to thermal shock—is especially suitable for use with high wattage lamps or in outdoor installations. The uniformly pebbled surface provides excellent diffusion and even illumination. Available in widths up to 24" and lengths up to 60" (1/8" thick), it can be cut to any required shape.



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CORNING, NEW YORK

1851 *Corning means research in Glass* 1951

CORNING GLASS WORKS, Dept. MB-7, Corning, N. Y.

Please send information on:

- ☐ Corning Crysta-Lite ☐ Alba-Lite Pattern 99
☐ PYREX brand Diffusing Glass Pattern 12

Name _____ Title _____

Firm _____

Address _____

City _____ Zone _____ State _____

With Budget Bureau backing on top of mobilization powers, Follin will be in a spot to put action-getting muscle behind his plans. For instance, the armed forces were warned to build no housing exceeding 1,200 sq. ft. under the Wherry Act or with other taxpayer money. As a starter, DPA handed Building Research Advisory Board a \$50,000 contract to gather up the best available material on construction and engineering standards.

CMP BEGINS: optional role of building seems illusory

Like most of its other *pronunciamentos*, NPA's long awaited order clarifying building's status under CMP (CMP Reg. 6) was more significant for what it implied than for what it spelled out. Industry men were convinced of two things:

1. In terming the regulation "permissive" NPA was keeping its tongue in its cheek; was glossing over the all too apparent fact that any sizable building job that did not file for an allotment of critical metals was apt to be caught short by the end of the third quarter.
2. The plan clearly foreshadowed a permit system with all the trimmings, such as a further squeeze on the size and type of houses that could be built.

What made it all look disarmingly simple at first, was that a builder who does not put up more than a few houses a year or a contractor or owner engaged in other types of building construction not requiring a NPA permit can allot material to himself by filling out a simple form that can be passed back to the mill.

The trouble was that the self-certification ceilings were so low that, for instance, only shoestring builders could qualify: 2 tons of steel, 500 lbs. of copper, and 50 lbs. of aluminum per quarter.

Red tape made easy. Since NPA had to approve all commercial buildings, large plants, houses over 2,500 sq. ft., and apartments above three stories, CMP posed no administrative problem. Allotment requests are filled out on the same form seeking permission to start. The volume builder of homes was the only member of the construction family who has much choice whether he wants to clasp CMP to his bosom. For him, the big question was: could he be assured of enough metal without obtaining an allotment? Washington experts said that in early summer the answer was undoubtedly "yes" but might be "no" by fall.

Top Architects Urge More Teamwork

Two of architecture's top practitioners spoke up for more teamwork between architects and other construction planners last month. **Chairman**



last month. **Chairman Walter Gropius**, 68, of the Harvard Graduate School of Design, accepting for his Architects Collaborative a gold medal in architecture from the Architectural League of New York last month.

begged architects to form closer collaborations with engineers, contractors, builders and each other. Said Gropius: "The concept of the architect as the gentleman trustee for the wealthy client finds only limited application today. The public simply doesn't understand the task of the architect (that way). People want to buy building as a package for a fixed price . . ." As a result, Gropius contended, "our profession seems to be in a crisis . . . The average man thinks of the architect as a luxury to be called if there's extra money available for beautification . . . Small wonder over 80% of the buildings in the U. S. are built without an architect and that the average member of our profession makes less than a bricklayer in the East."

Other gold medal winners: **Henry Dreyfuss** in industrial design for his Criterion Lavatory; **Dean Cornwell** and **Sante Graziani** in mural painting; **Donald De Lue** in sculpture; **Thomas D. Church** associates in landscape architecture.

President **L. Morgan Yost**, 43, of the Chicago AIA chapter, whose houses contain as much glass as the next man's, heaved a droll verbal stone at windows, "the wonderful invention that allows us to see through a brick wall." Said he to a Chicago fashion lunch:

“Unfortunately, it is difficult to keep others from looking in (windows) so we put up shades which we always keep at half mast. We might have made the window that much smaller in the first place, but that would cut the amount of ventilation, which is another function of a window. The ventilation makes the shade flap, so we open the window from the bottom, but that's not very effective because . . . the hot air we wish to exhaust is at the top of the room. The window is further obliterated by an accessory known as a screen which keeps bugs out and father

busy. It spoils the appearance of the window from the outside, the landscape from the inside—and father's temper in the spring and fall . . . With the window in such a muddle the whole house is at a disadvantage. Yet this is still the type of window used in most buildings being built today—even by architects."

Another target of Yost irony: appliance manufacturers who design each item "as if to sit on a pedestal . . . all gleaming, bulbous and unfriendly." Result, in Yostland: kitchens and laundries become "individualistic showpieces with dust pockets between and behind." Yost remedy: more coordination between manufacturers, merchandisers, decorators and architects.

Died: **Paul Bauer**, 47, president of the Society of Residential Appraisers, of a heart attack at his home in Huntington, W. Va., June 27. **Hugh S. Robertson**, 70, builder of many Manhattan skyscrapers and onetime executive manager of Rockefeller Center, at his farm in Millerton, N. Y., June 23.

Karl Kamrath, 40, long known to his fellow architects as a tennis champion, last month celebrated a triumph that would have been impossible in the heyday of his youth: with Karl, Jr., 16 years old and 6' high, and as Kamrath says "too big for my shoes," he won the father and son tennis championship of Texas.

Mrs. Dorothy Wright Liebes, 51, top U. S. textile designer and weaver, was elected to the board of directors of Century Fed-



eral Savings & Loan Association in New York. In business only 16 years, California-born Mrs. Liebes, sometimes called the "pet resource of architects and decorators all over the country," converted a flair for unusual ma-

terials and textures into fat fees as consultant to such manufacturers at Goodall-Sanford Co., United Wallpaper, Inc., Dubeckmum Co., H. I. Herzman Scarfs, Kenwood Mills, Galashiels Mills.

Alexander Summer, president of National Association of Real Estate Boards, was elected a vice president of the newly-formed International Confederation of Real Estate Agents.

(NEWS continued on page 70)



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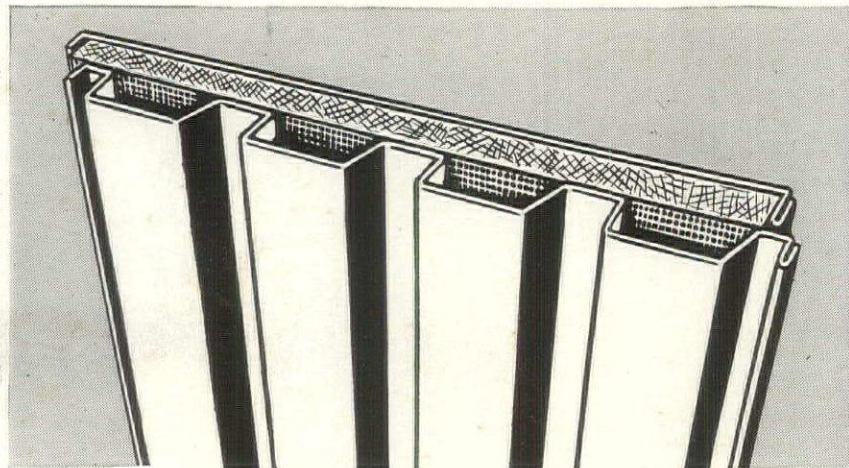
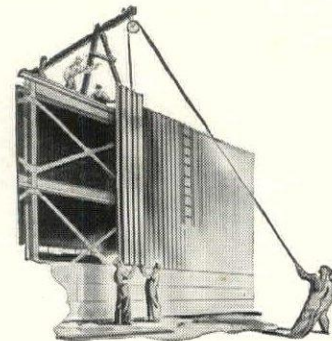
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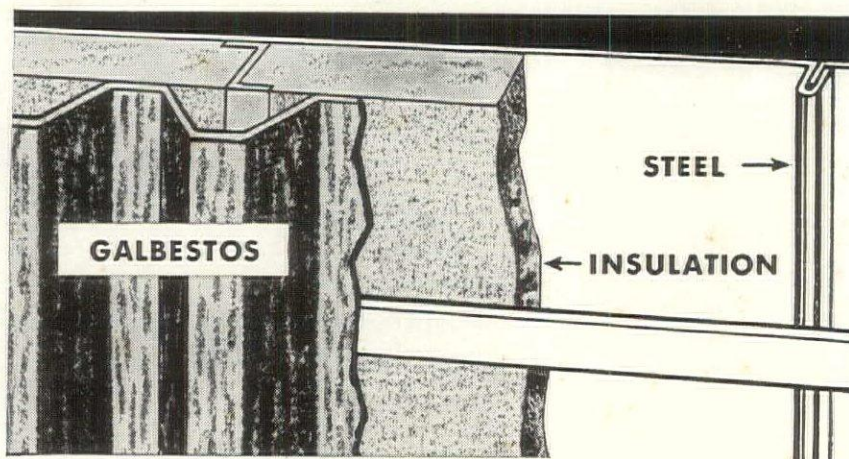
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BALTIMORE'S PROPOSED UNDERGROUND GARAGE, while potentially helpful to reduce downtown parking problem, also is urged by city leaders as an air raid shelter despite objections of civil defense experts. Each level would contain four rows of 100 cars each.

Edwin Stevens Smith

GARAGE-AIR RAID SHELTERS:

Despite Hazards, Cities Keep Planning Them

As civil defense machinery creaked into being last fall officials in city after city thought: why not solve the A-bomb shelter problem and the downtown parking problem with one piece of construction, a big underground garage?

It was not until March that the AIA formally put its finger on the fallacy of monster underground garage-shelters: they were too big to be useful. A garage holding 500 autos at 300 sq. ft. per car would accommodate 37,000 persons, at 4 sq. ft. each. But only eight minutes warning of impending air raids is forecast by top military men—a hopelessly short time to drive 500 cars out and let in 37,000 people, or even a tenth that many. If autos were left in place, the gasoline would create too risky a fire hazard, AIA held.* Besides, big shelters tend to enhance panic. Wartime experience in Britain proved a 50 person shelter was better.

True, large shelters could be turned into sleeping quarters. But London's were only 40% filled even during the peak of Nazi rocket and buzz bomb raids. Finally, AIA argued, even in peacetime, big garages complicate traffic snarls as they disgorge commuters onto streets already choked with rush hour drivers. The only useful dual-purpose construction, said the architects, would be small garages, widely scattered.

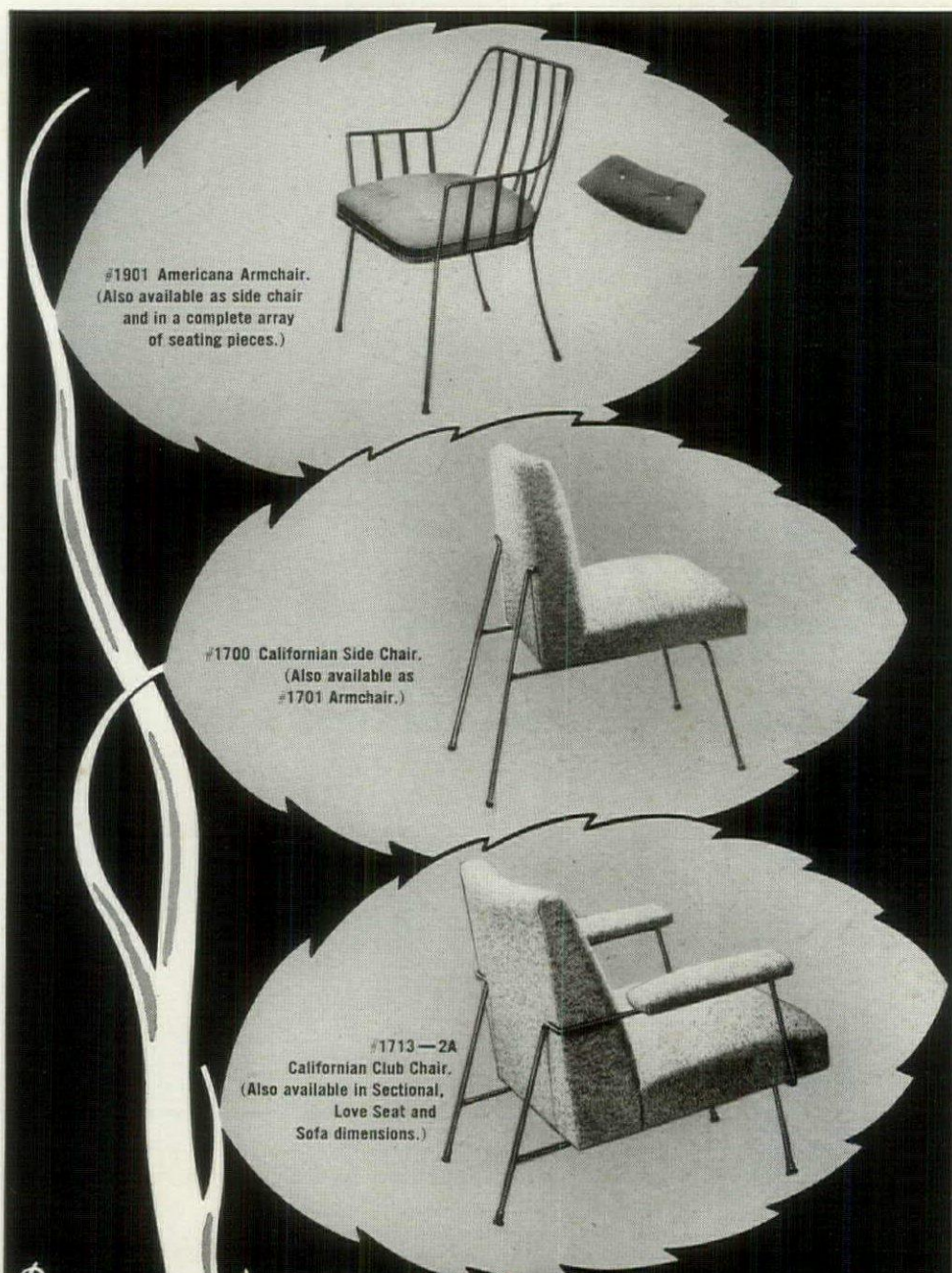
Few listened. The authoritative AIA voice helped persuade Office of Civilian Defense officials in Washington to cancel plans for Federal aid for combined garage-shelters. But it was evident last month that the AIA view had not yet penetrated the thinking of many local politicians in charge of civil defense or garage building.

Chattanooga, Detroit and Chicago had dropped plans for underground garages, but in Baltimore, Mayor Thomas D'Alesandro celebrated his re-election by unfolding blueprints for a \$3 million garage for 800 autos beneath Preston Gardens, a hillside sliver of green in the middle of the downtown brick and concrete. Pittsburgh planners, aware of the danger from gasoline, were wavering over whether to designate the Golden Triangle's big underground garage as a bomb shelter anyway.

No other place to hide. In San Francisco, forthright R. Adm. (retired) Albert E. Cook, city defense chief, officially labeled

(Continued on page 72)

* For further arguments, see THE MAGAZINE OF BUILDING (Apr., '51, p. 70).



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(Also available as side chair
and in a complete array
of seating pieces.)

#1700 Californian Side Chair.
(Also available as
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the U. S.'s first big underground garage (1,700 auto capacity on four levels beneath Union Square) as an air raid shelter. In this judgment, Cook was backed by impressive professional opinion. Wrote a survey committee composed of R. Adm. (retired) Carl A. Trexel, representing the American Society of Civil Engineers; Byron L. Nishkian, for the Structural Engineers Association of Northern California; and Sam E. Hays, for the Pacific Fire Rating Bureau:

Although the fire risk might make the block-square garage a tomb instead of a haven, this must be accepted as a calculated

risk. Lower floors should protect against blast and heat, anyway, except for a direct hit by a conventional bomb or a near-miss by a low level A-bomb. Most importantly, people would rush inside for shelter if there were a raid, whether the garage were called a shelter or not. So common sense dictated that officials should bow to the inevitable, take steps to minimize the inherent hazards, the trio concluded.

To this, leaders like Morris Ketchum Jr. in AIA's campaign against big underground garage-shelters retort: "Sure, but all we've said against it still applies. San Francisco

is saying 'it's unsafe, but we'll do it anyway'."

Los Angeles, starting construction on what will be the nation's largest subterranean garage (2,000 cars beneath Pershing Square), would have to face the San Francisco problem in about a year. So might Boston, where politicians still talked of digging up the Common for a 3,500 car garage.

AIA objectors to big garage-shelters were waging an uphill fight.

With all the talk of spending large sums on dual purpose construction of doubtful value, scarcely a cent was being plunked out on what the AIA held to be the No. 1 air raid defense need: construction of shelters in existing buildings. Even in Manhattan, abundant placards pointing to supposed shelters led actually in most cases to a lobby dangerously festooned with frangible glass, or to a building where even the superintendent didn't know where the shelter was supposed to be.

VA-HOSPITALS: bomb-resistant construction planned for four

Six months ago, the National Security Resources Board, which originally masterminded civil defense policy, crisply ordered the Veterans Administration to defer construction of two hospitals in Cleveland, and one each in Washington and San Francisco pending word on how to make them reasonably bomb-resistant.

Last month, the word finally came. Architects Ellery Husted and G. L. Schuyler, consultants to the Civil Defense Administration, recommended a central core amounting to one-tenth of each hospital's area and built with 12" concrete walls and roof, no windows. How would patients in window-equipped wards get into the bomb-resistant core during the 8 minutes expected advance warning of air raids? Retorted Husted: "When lion breaks loose in a circus, even the 80 year olds climb the tent poles."

The Veterans Administration indicated it would revise its plans for the long-delayed hospitals, call bids on the first in the fall.

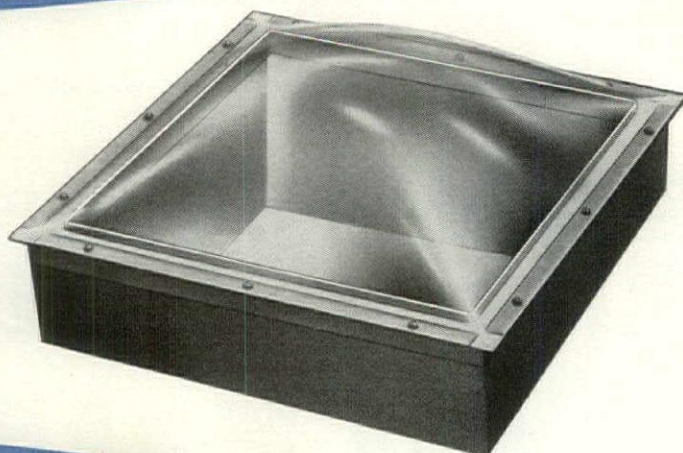
Civil Defense Chief Millard Caldwell invited U. S. communities which want to build hospitals to include core air raid shelters in their plans, let CDA certify them to RFC for a Federal loan.

Box score to date on the VA's whopping postwar hospital program:

Hospitals planned	66
Completed	30
Under construction	31
Still to be let	5
Total estimated cost	\$760,000,000

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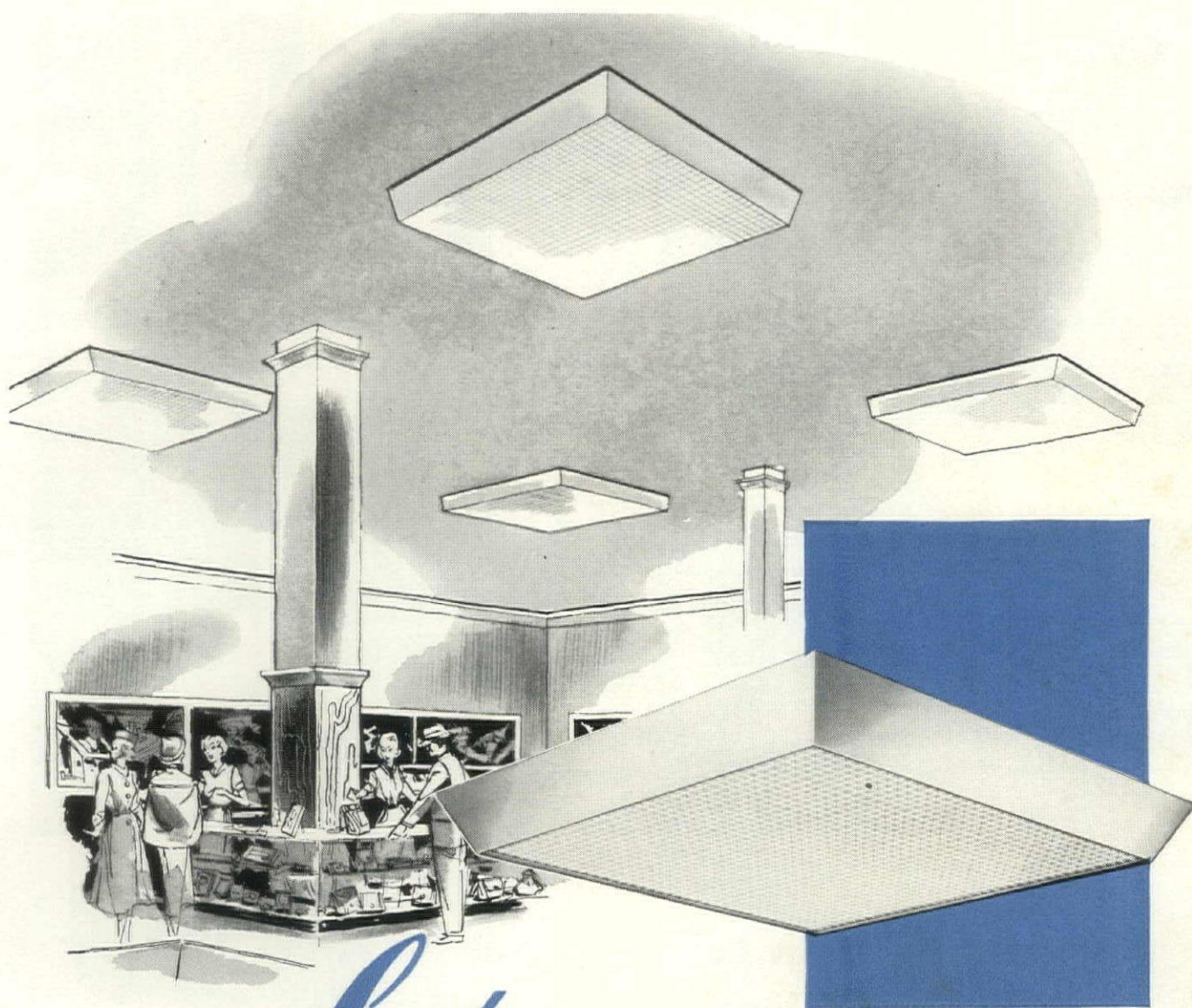
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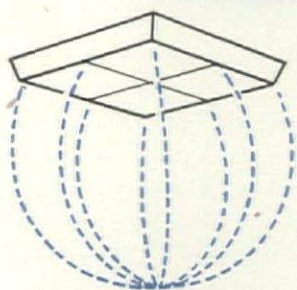
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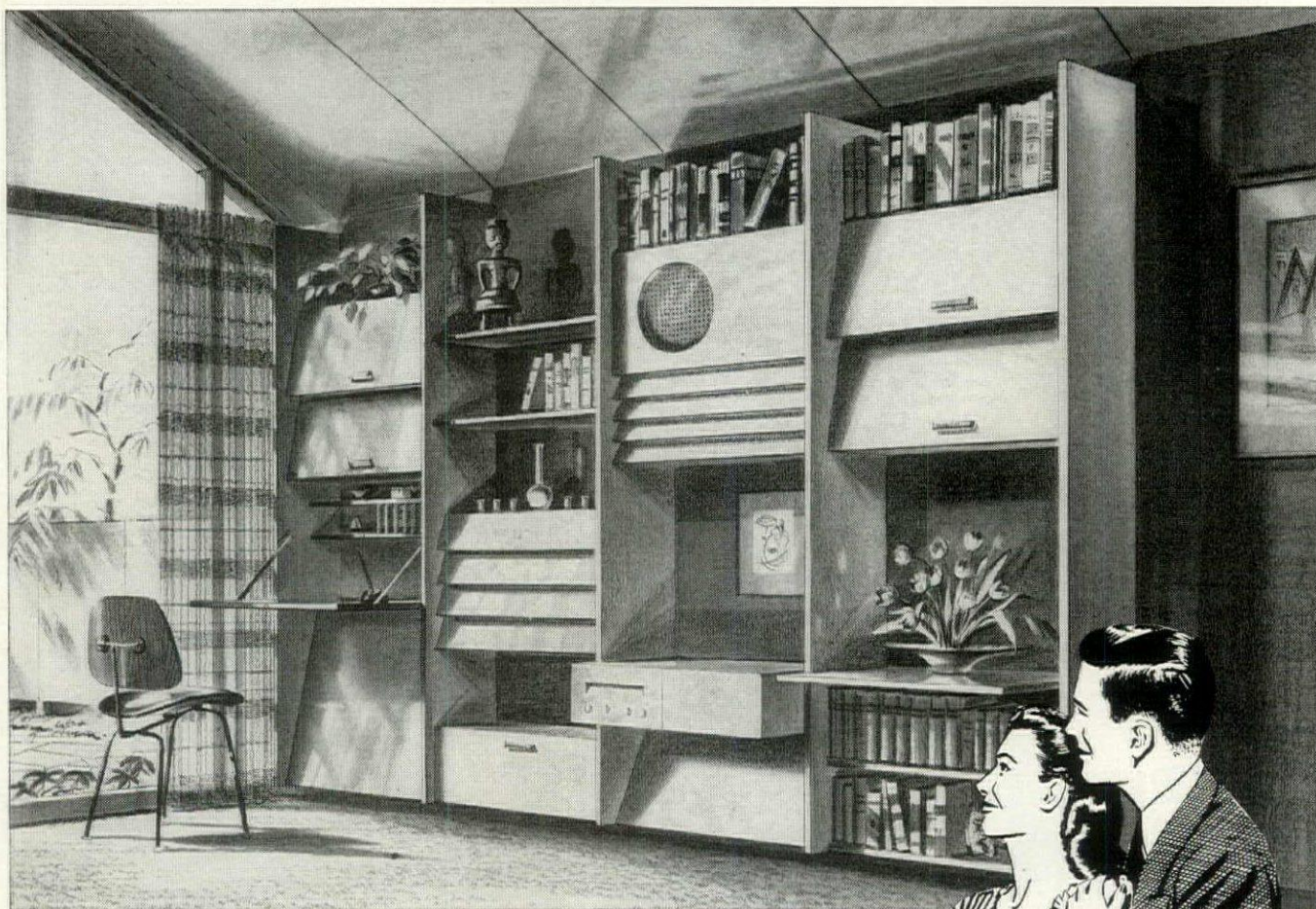
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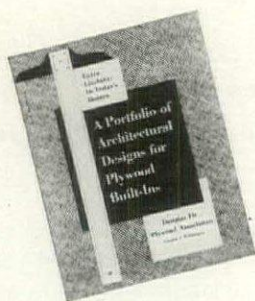
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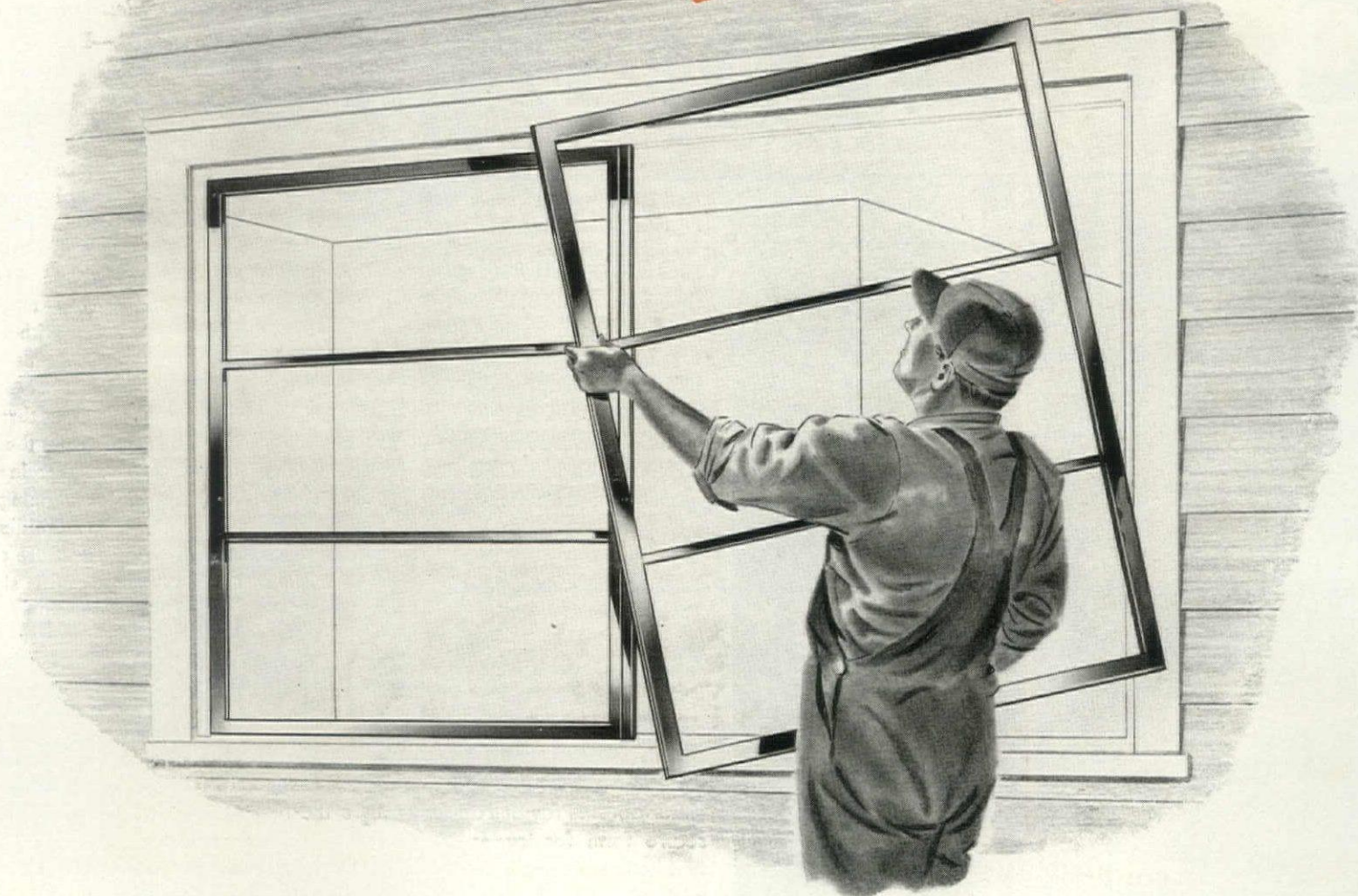
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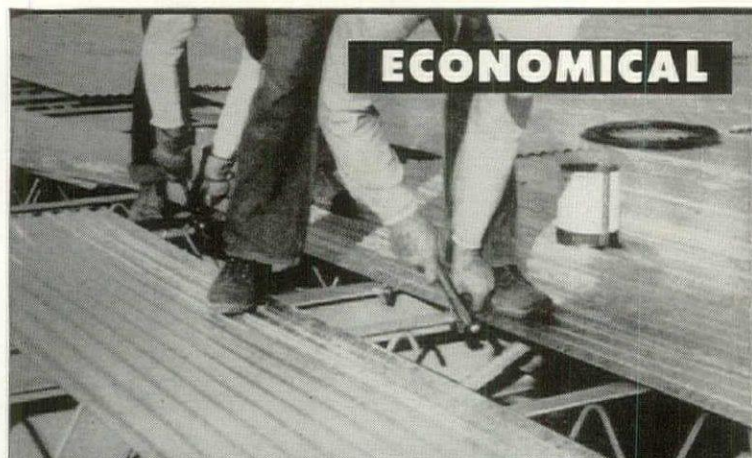
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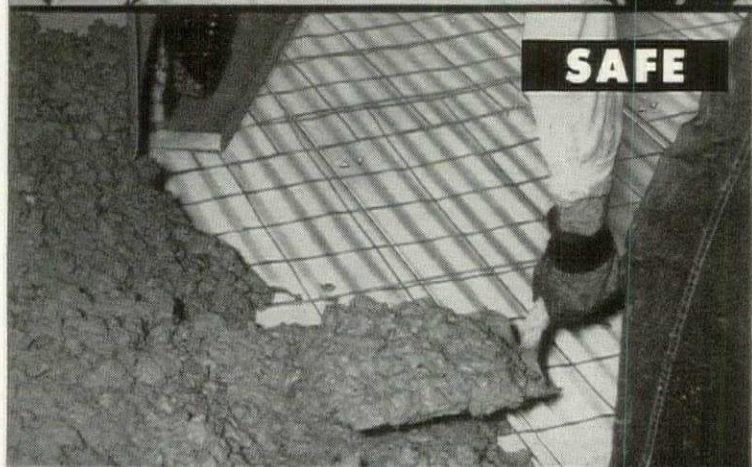
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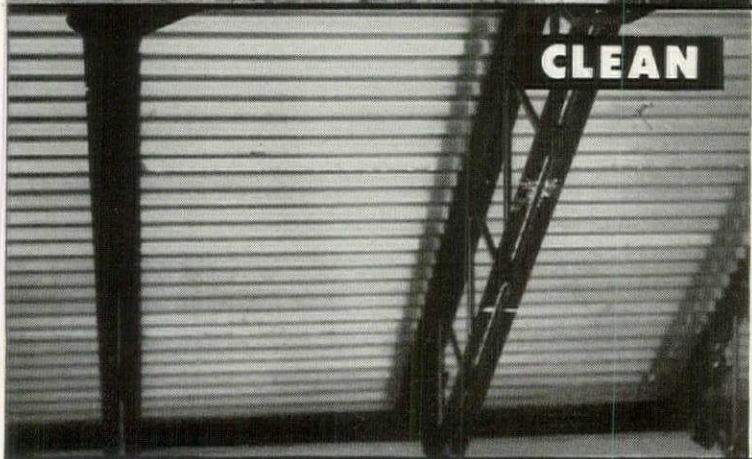
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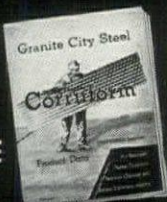
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LETTERS

WASTE IN BUILDING

The MAGAZINE OF BUILDING's continuing campaign against waste in building has prompted a continuing stream of mail from readers. Here-with, excerpts from recent letters on this subject; other letters begin on p. 88.—Ed.

... Hoover found 53%

Sirs:

... In 1923 Hoover's Commission on Waste ... said that 53% of the cost of building was waste. The Federated American Engineering Society broke this down to 65% to management, 21% to labor and 14% to the public. From these figures you can see that perfect management could cut building costs 33.45% without a new material or labor technique or increase in efficiency.

This is the reason why I have, through the years, been such a sticker to improve the management side of the picture for therein lay the greatest possible savings without running into the traditions, etc., affecting labor, building codes and use of material. These figures are of course old, but I am sure the hidden truth is still there.

ARTHUR BOHNEN
Evanston, Ill.

... how to save 15%

Sirs:

Please keep up the good work begun by the Round Table. It takes a lot of hammering to drive the best of ideas to the point where they will be generally effective. ...

Our local costs can be reduced 10% to 15% by the following: Eliminate all soil pipe above first floor and other non-essentials in plumbing; eliminate the waste of wall and floor space by improper location of doors and windows; maintain a minimum of 32" height between floor and top of window sill; eliminate lumber, masonry, cement and other structural material not required for a substantial structure; and use a plan in which every item of extravagance has been avoided. Another 10% to 15% can be saved by more efficient methods of construction, including the use of labor saving equipment and the use of labor in a way that each individual skill will be utilized to the best advantage. ...

HOWARD L. HYATT, Secretary
American Realty Co., Inc.
Terre Haute, Ind.

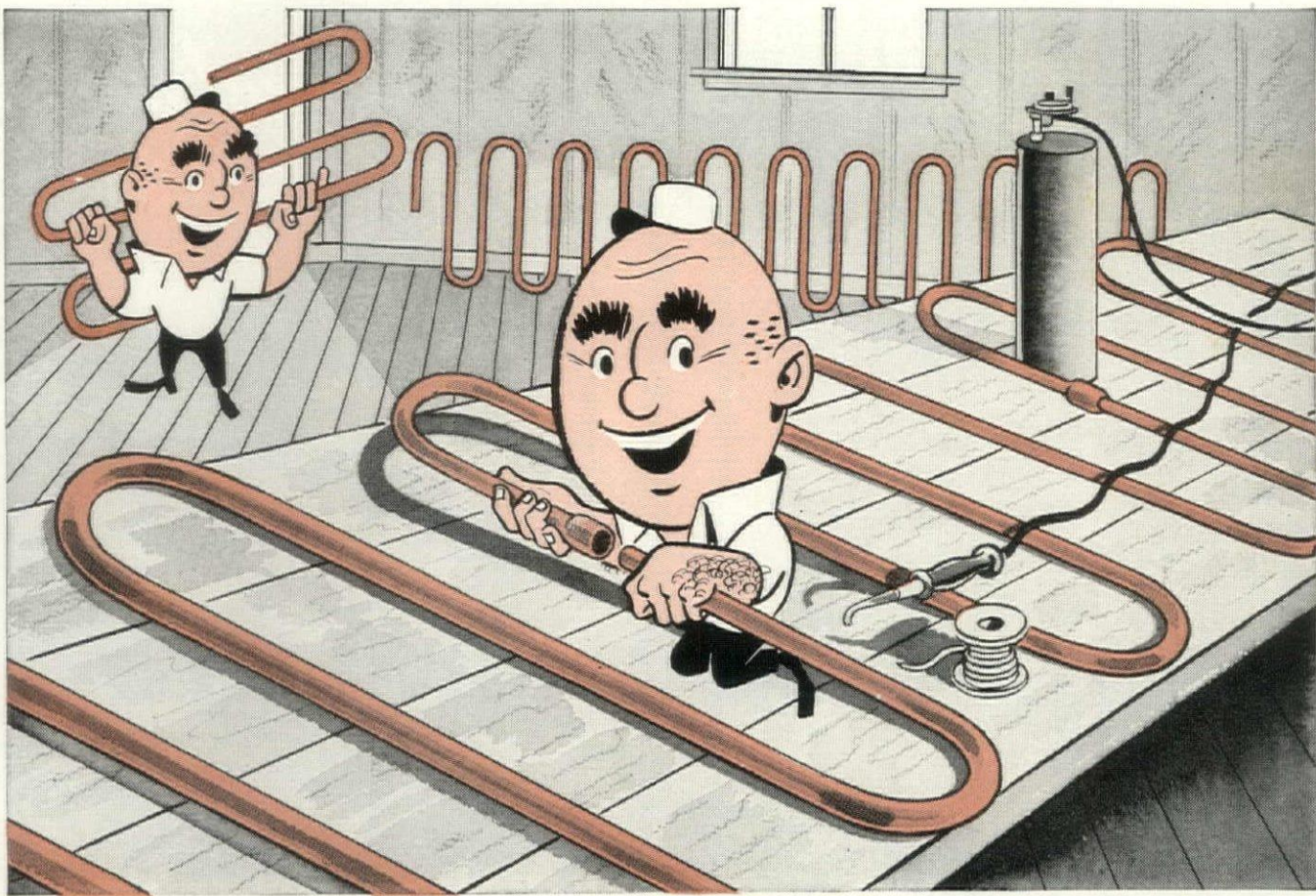
... Ohio's high aim

Sirs:

We have followed with considerable interest the articles on the Round Table discussions which have been conducted by THE MAGAZINE OF BUILDING over the past several months. ...

We have found in them some very pertinent information in connection with our writing a new building code for the State of Ohio. ...

The Ohio Association of Master Plumbers in
(Continued on page 80)



Form radiant heating grids faster, too ... with Bundyweld

NOTE that Bundyweld expanded end, above. It spells even easier radiant heating installation!

For twenty-foot lengths of Bundyweld Tubing can be sent to your building site with one end expanded (if specified). Then, one man quickly forms grid on simple fixture . . . slips unexpanded end into expanded end of the next grid, and silver brazes (or soft solders) grids into strong, permanent, leakproof union.

Two men can easily position the rigid, lightweight Bundyweld sections on ceilings or in floors. No hitches,

delays. In jig time, your Bundyweld radiant heating system is all set, to the tune of a major savings in time and costs.

Bundyweld is double-walled from a single strip, copper-bonded through 360° of wall contact. It's stronger-walled, thinner-walled; bends more readily without collapsing structurally. Uniformity, even flow, maximum heat conductivity are yours!

Write today for the complete Bundyweld radiant heating story. **Bundy Tubing Company, Detroit 14, Michigan.**

Bundyweld Tubing

DOUBLE-WALLED FROM A SINGLE STRIP

WHY BUNDYWELD IS BETTER TUBING



Bundyweld starts as a single strip of basic metal, coated with a bonding metal. Then it's . . .



continuously rolled twice around laterally into a tube of uniform thickness, and



passed through a furnace. Bonding metal fuses with basic metal, presto—



Bundyweld . . . double-walled and brazed through 360° of wall contact.

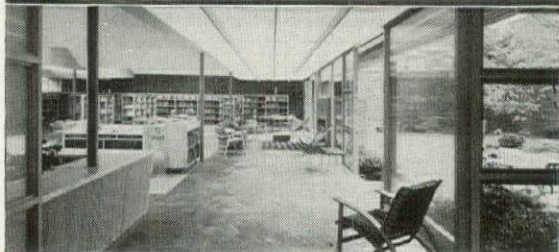
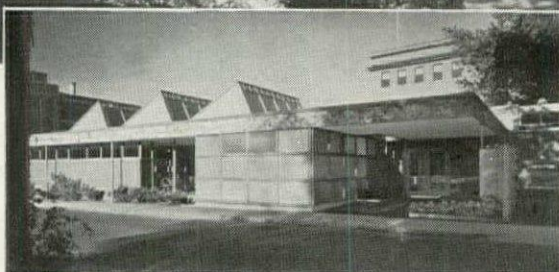


SIZES UP
TO 5/8" O.D.

NOTE the exclusive patented Bundyweld beveled edge, which affords a smoother joint, absence of bead and less chance for any leakage.



©
Ezra
Stoller-
Pictor



FITCHBURG YOUTH LIBRARY, FITCHBURG, MASS.

Architect: Carl Koch & Associates, Belmont, Mass.

General Contractor: H. Vincent Lindberg, Fitchburg, Mass.

TOP: Garden patio and study.

CENTER: Entrance hall and auditorium foyer.

LOWER: Registration desk and main reading room.

Some 7,000 boys and girls in Fitchburg public and private schools saved a million pennies to help build this beautifully conceived and executed informal library and auditorium for themselves.

It now stands as concrete evidence that American youth in Fitchburg — as in other parts of our great country — builds confidently for its future.

Lockwood takes a heartfelt pride in having furnished the finishing hardware equipment for this commendable venture in accomplishment of community spirit.

LOCKWOOD PRODUCTS USED

Ambassador Design
Mortise Lock Sets

•
Sherbrooke Design Key 'n Knob Sets

•
Push and Pull Bars

•
Ball-Bearing Door Closers

•
Window and Miscellaneous Hardware



LOCKWOOD HARDWARE MFG. CO.
FITCHBURG, • MASSACHUSETTS



- ✓ EXTRA KITCHEN SPACE
- ✓ COUNTER-LEVEL COOKING
- ✓ VERSATILITY IN PLANNING

Chambers® Built-In GAS Cooking Units

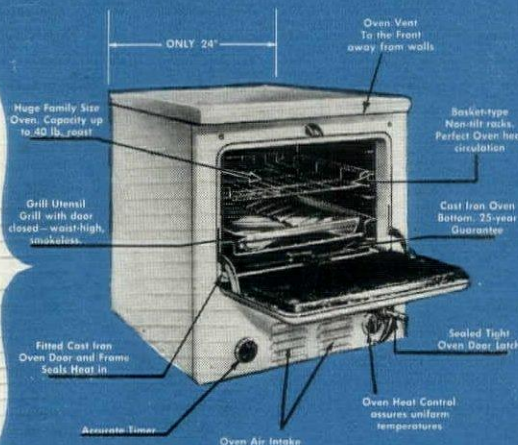
SPECIFY BUILT-IN GAS COOKING UNITS to utilize every inch of space. Stainless steel exteriors, and oven doors in a choice of seven decorator colors add a final touch to modern, efficient kitchen design. This innovation by Chambers, originator and master-builder of insulated ranges since 1910, is designed to transfer blueprint planning into every-day happiness for the homemaker.

FIT THESE GAS "BUILT-INS" INTO YOUR PLANS.

They fit where YOU want them to do the most good. The Chambers IN-A-WALL Oven requires only 24 inches of wall space for installation. It meets all the exacting safety requirements of the AMERICAN GAS ASSOCIATION, and may be installed flush on five sides even with combustible cabinet materials. Cooking top units are available too, either to drop into kitchen counters or to mount on a 27" wide base cabinet.

SELL THIS COOKING CONVENIENCE. New home buyers will welcome the advantages of sectionalized cooking equipment. They'll be specially attracted by the Chambers concept of counter-level cooking—of roasting, baking and grilling without crouching or stooping—of enjoying the speed, economy and flexibility of gas cooking with this new Chambers-created equipment.

IN-A-WALL
OVEN BY
Chambers
COOKS WITH
THE GAS
TURNED
off®



Send for
A. I. A.
Specification
Sheet
NOW!

Chambers Corp., Dept. AFT 71, Shelbyville, Ind.

Gentlemen:

Please send me at once A. I. A. Specification Sheet and other material describing the new Chambers Built-In GAS Cooking Units.

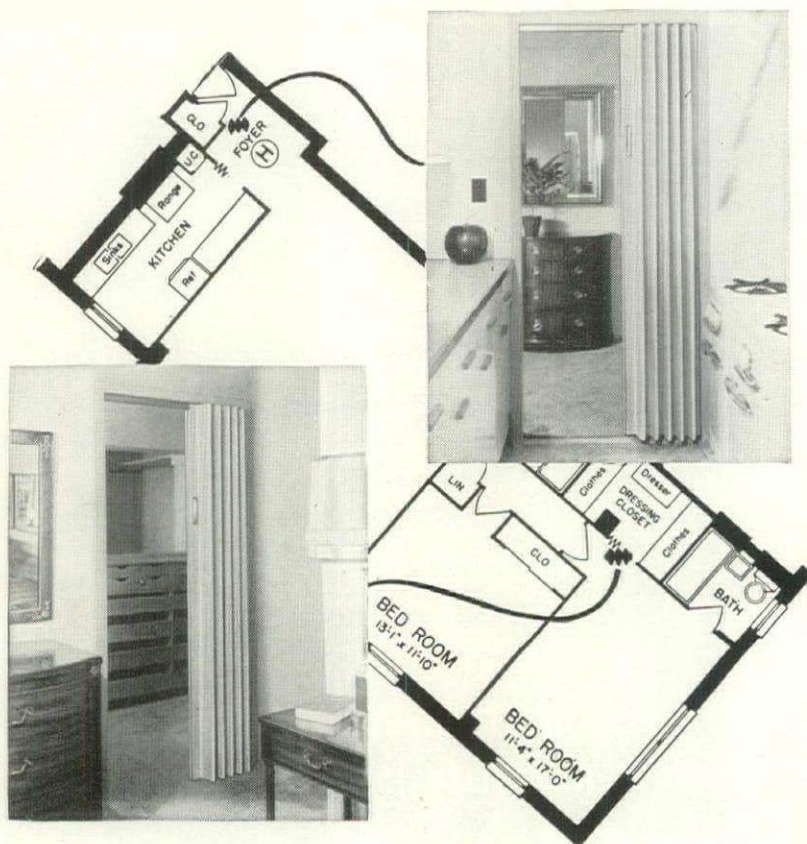
I am an () Architect () Builder-Contractor () Dealer

NAME

FIRM NAME

ADDRESS

CITY ZONE STATE



Metropolitan Life Selects "MODERNFOLD" Doors for Parkmerced and Parklabrea...

In its new San Francisco and Los Angeles apartment house projects, Metropolitan Life Insurance Company selected "Modernfold" doors for kitchen and dressing closet openings.

"Modernfold" doors—because they *fold* rather than *swing*—save 8 square feet of space per opening. They're simple to install, too. No provision need be made for recessing them into walls.

"Modernfold" doors provide value as a *permanent investment*. For example, *only* "Modernfold" doors have a double-strength steel framework.

And just as durable are the handsome, Vinyl-coated fabric

coverings. They withstand more flexing and abrasion than ordinary leather... clean with soap and water... won't support combustion.

Why not get the complete "Modernfold" door story—*now!* Write for full information.

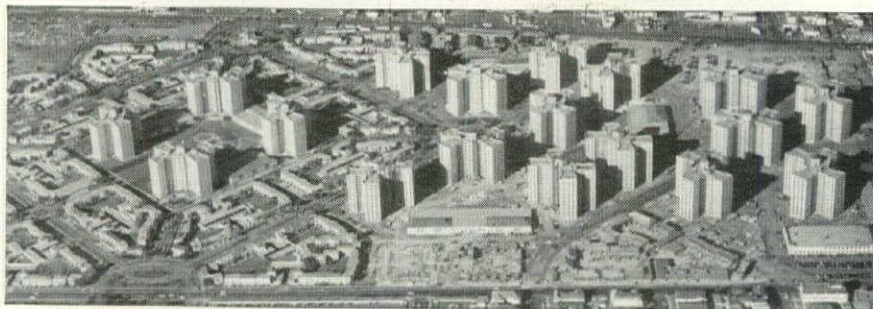
Sold and Serviced Nationally
NEW CASTLE PRODUCTS—NEW CASTLE, IND.

In Canada: Modernfold Doors,
1460 Bishop Street, Montreal.



COPYRIGHTED NEW CASTLE PRODUCTS 1951

New **Parkmerced Apartments**, housing approximately 1700 San Francisco families. New **Parklabrea Apartments**, housing approximately 2760 Los Angeles families. *Architect:* Leopold Schultze & Associates; *Owner:* Metropolitan Life Insurance Co.; *Builder:* Starrett Bros. and Eken, Inc.



LETTERS

their convention in February approved the National Plumbing Code and recommended to the writer as Code Coordinator for the new Building Code for the State, that it be given every consideration. . . . Every possible consideration will be given to it. . . .

It is our desire and aim in compiling a new State Building Code for Ohio to accept, insofar as may be practicable the nationally recognized standards with only such modifications as are necessary to adapt such standards to purely local conditions. . . .

We appreciate the work you are doing. . . .

PAUL E. BASELER
Code Coordinator
Columbus, Ohio

• And we congratulate Ohio and Reader Baseler for the work they are doing.—Ed.

. . . but not inadequate wiring

Sirs:

Your Round Table on waste in house building stated: ". . . that out of 7,766 local codes, there are still 541 which compel home builders to install more costly and elaborate wiring systems than are prescribed by the National Electric Code." This is equivalent to saying that the City of New York compels milk producers to maintain a lower bacilli count than the U. S. Department of Agriculture permits for milk shipped in interstate commerce. Just as the Department of Agriculture establishes minimum standards for protection of public health, so does the National Electric Code establish minimum standards for the elimination of fire hazards and avoidance of physical damage. Most Americans desire more than a bare minimum in what they buy, whether it be milk, or housing, or commercial structures.

Builders who meet only these minimum standards are generally not meeting their obligation to the public, because these minimum electrical installations usually result in one or more of the following:

1) Electrical installation will ultimately be more costly and will require more materials (including copper, and other critical materials needed for our war effort), as additions to existing installations use more labor and materials than would be used were an adequate installation made originally.

2) Inadequate illumination.

3) Inadequate number of plug-in outlets.

4) Inadequate power available for modern conveniences which are fast becoming necessities; e.g., ranges, dishwashers, home freezers, driers, clothes washers, ironers, mixers, toasters, etc. This condition encourages existence of fire-hazards through use of amateur makeshift additions to electrical installation.

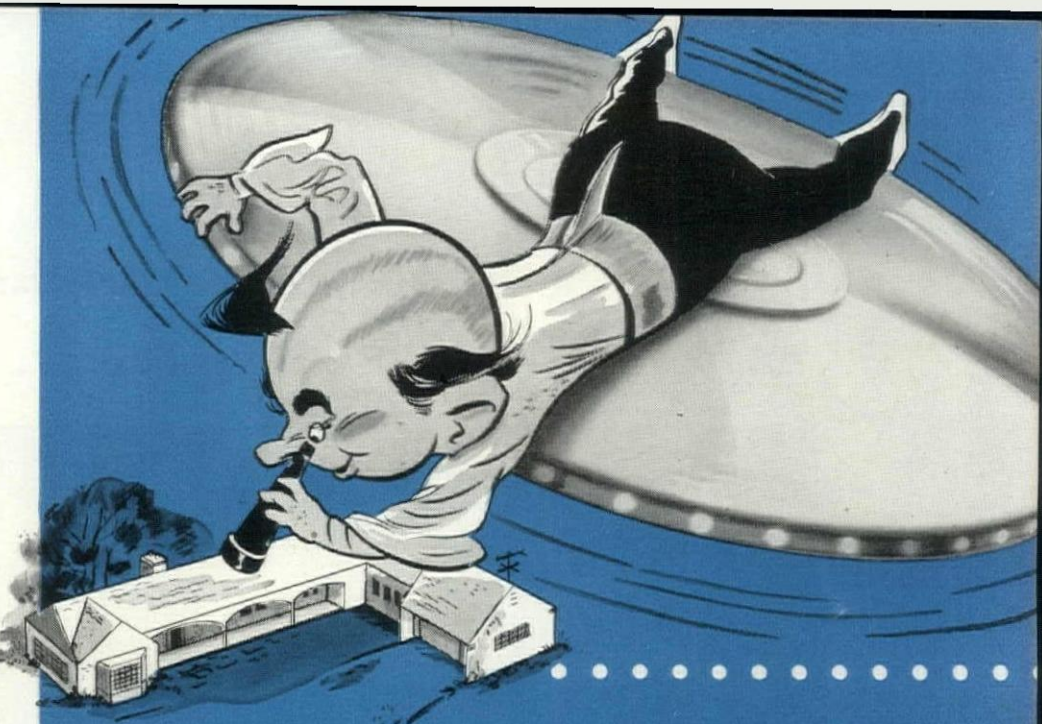
5) Encourages overloading conditions resulting in chronic fuse blowing.

6) Excessive wear of appliances caused by inadequate voltage.

Builders who recognize their obligation to the
(Continued on page 84)

MAYBE A MAN FROM MARS

COULD SEE THE
HIDDEN
CONSTRUCTION
OF YOUR HOME!



But . . . Customers Need Proof! Use *American Kitchens* to Prove Top Quality Construction Throughout!

Most customers have no way of judging the quality of internal construction. They don't have the X-ray eyes of a man from Mars—how can they recognize the built-in quality you feature?

Your prospects judge a house in terms of things they know . . . and they *know* a good kitchen from a cheap one! An American Kitchen spells high-quality . . . easily recognized . . . and prospects use it as a sort of measuring stick to judge the quality of the hidden construction as well.

It pays to feature American Kitchens. They are more economical because they give you more sales return per dollar, sell houses faster than any other brand. Builders from coast to coast use American Kitchens to add value to their homes. In addition, American Kitchens save money on labor costs because they are easy to install.

On your next project . . . feature American Kitchens and sell homes faster! Mail coupon at right today for free file.



The high quality of American Kitchens is proof of the quality of the hidden materials all through the house.

American KITCHENS

SELL HOMES FASTER

Free to Builders — MAIL TODAY

American Central Division, Dept. MB 7,
AVCO Manufacturing Corp., Connersville, Ind.
Please have my distributor send me
your new Architects' and Builders'
File.

Name _____
Address _____
City _____ Zone _____ State _____

AMERICAN CENTRAL
DIVISION



CONNERSVILLE,
INDIANA



On the double for Industrial Building

Saving Men... Money... Material



THE AUSTIN COMPANY, ENGINEERS & BUILDERS

There's a double job facing building today that has to be done on the double. For the industrial plant of America must expand... to build our defenses... to provide a healthy economy at home. And yet we must save our vital resources of men, material... yes, money, too. And to help you meet this double demand, Ceco

offers a double-duty building service... two construction methods. Each is versatile enough to meet specialized building needs... efficient enough to use a minimum of critical resources... two types of joist construction — fire-resistive — each saving three big ways.

Here's How Ceco Saves Vital Resources

CECO'S MEYER STEELFORM CONSTRUCTION

For Human Occupancy Buildings, light manufacturing plants, many other structures using any framing.

Saves Men because less time and labor are required to provide open wood centering and form work.

Saves Money by saving concrete... the "dead load" is kept at a minimum. Also, less lumber is used.

Saves Material because only a minimum of critically short steel is needed. Less concrete, too.

CECO'S STEEL JOIST CONSTRUCTION

For Human Occupancy Buildings and roofs of industrial plants using steel or masonry framing.

Saves Men because steel joists are light and easy to install. Special equipment is not required.

Saves Money because steel joists are self-centering. Concrete form work rests directly on the joists.

Saves Material because the "dead load" is amazingly low. Beams, columns and footings weigh less.



Ceco Steel Joists are practical as purlins in roofs of one story factories and plants.



Meyer Steelform Construction uses little steel, provides long spans, maximum manufacturing area free of columns.

CECO STEEL PRODUCTS CORPORATION

General Offices: 5601 West 26th Street, Chicago 50, Illinois

Offices, warehouses and fabricating plants in principal cities

**CECO
STEEL**

In construction products **CECO ENGINEERING** *makes the big difference*

Kentile functional flooring designs increase commercial efficiency

By speeding and directing traffic flow. Directional lines set in the floor with *Kentile Feature Strip* provide lanes that immediately show customers where to go...how to get there.

By easy-to-see identification. Merchandise counters, departments and sections can be clearly marked with *Kentile Alphabet Inserts* spelling out the appropriate name. *Kentile Numeral Inserts* effectively indicate floor numbers on elevator banks. Die-cut, decorative *ThemeTile* add a distinctive, individual air to any floor... can be used to pictorially identify a wide range of installations. *Custom-built Inserts* can be made up to any specification to identify units in a chain; picture corporate trade marks; etc.

Low-cost Kentile Floors are easy and economical to install and maintain...they go down tile by tile without costly interruption to "business as usual." And no floor is easier to care for...mild soap and water cleaning plus occasional no-rub waxings preserve the colorful beauty and crisp definition for years of hard, constant wear.

The following literature is available on request and is designed to aid in the specifying of floors and walls for residential, commercial or industrial building or remodeling.

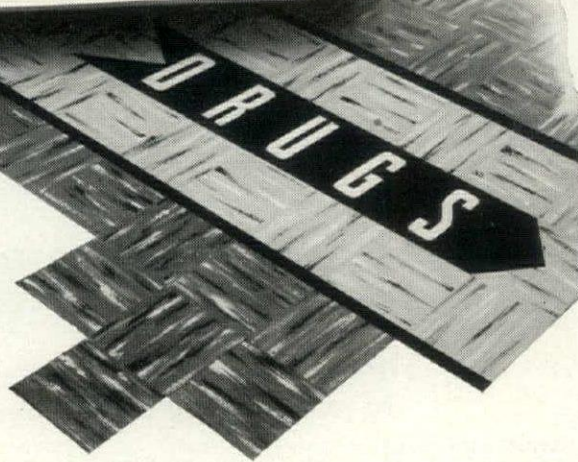
- ☐ Architects Specifications
- ☐ 16 Page Catalog—includes 4-color photos of Kentile installations
- ☐ Color Line Folder
- ☐ Kentile in Hospitals

- ☐ Kentile in Schools
- ☐ Recommended and Not Recommended Uses for Kentile
- ☐ Special Kentile (greaseproof) folder—showing full color line and typical installation

Please write the Kentile, Inc. office nearest you

✓ SPECIFY KENTILE BY NAME...because of its

- ...**appearance**—a complete range of marbled colors in Kentile and SPECIAL Kentile. Also, feature strips, decorative inserts, edging and cove base.
- ...**installability**—Kentile can be applied over any interior smooth wood, metal or concrete surface...even below finish grade over concrete on fill in direct contact with the earth.
- ...**availability**—Over 3,000 Kentile dealers throughout the country assure prompt attention to your needs.
- ...**service**—Nine conveniently located Kentile, Inc. offices and a nation-wide system of trained representatives plus a comprehensive selection of technical literature, are available to help solve any flooring problem.
- ...**low cost**—Installed prices are lower than those of practically any flooring material; varying with size and condition of floor; colors and thicknesses chosen and freight rates. Accurate estimates are available from any Kentile dealer—listed under FLOORING in your classified phone directory.



KENTILE®

The Asphalt Tile of
Enduring Beauty



KENTILE, INC., 58 Second Avenue, Brooklyn 15, New York • 350 Fifth Avenue, New York 1, N. Y. • 705 Architects Building, 17th and Sansom Streets, Philadelphia 3, Pennsylvania • 1211 NBC Building, Cleveland 14, Ohio • 225 Moore Street, S.E., Atlanta 2, Georgia • 2020 Walnut Street, Kansas City 8, Missouri • 1440 11th Street, Denver 4, Colorado • 4532 South Kolin Avenue, Chicago 32, Illinois • 1113 Vine Street, Houston 1, Texas • 4501 Santa Fe Avenue, Los Angeles 58, California • 95 Market St., Oakland 4, Calif. • 452 Statler Building, Boston 16, Mass.

*Say goodbye to the
hard-to-get lead pan
for Tile Showers*

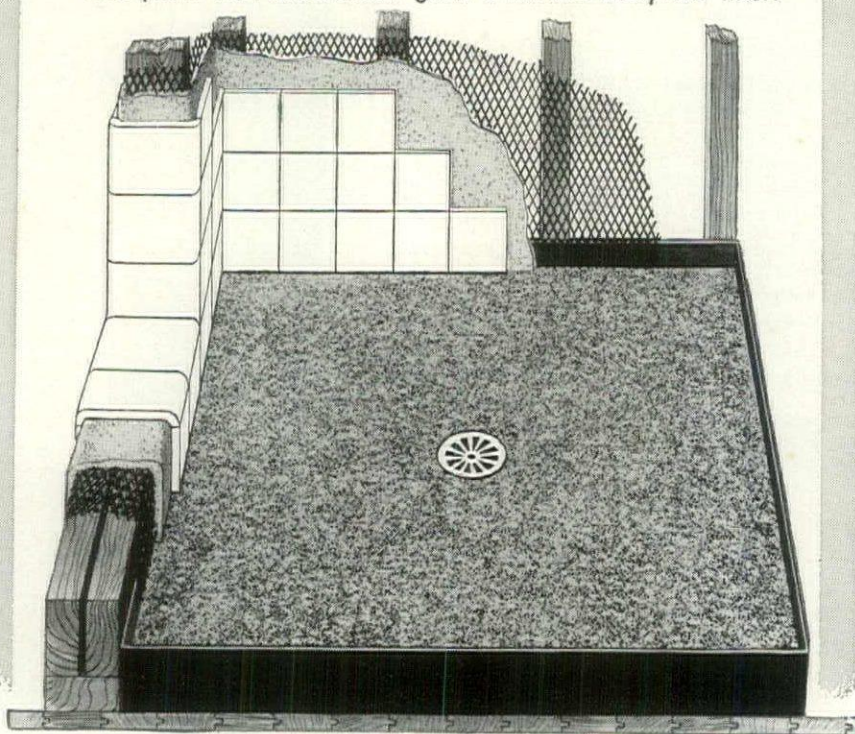
FIAT PRECAST TERRAZZO RECEPTORS



*I find Fiat precast receptors
make a definite saving
in building tile showers.*

**Save money . . . Save time . . .
Make a better tile shower floor**

One piece slab construction gives a lifetime leakproof floor.



**Available for prompt delivery
See your plumbing contractor**

STANDARD SIZES:

Square type 32" x 32" — 36" x 36" — 40" x 40"
Corner type 36" x 36" — 40" x 40"

The Fiat one piece precast receptor slab will not be affected by settlement of the building as would the old-fashioned "multi-

layer" construction of fill, lead pan, grout and tile. The rustproof metal receptor flange encases the tile walls making a leakproof connection.

FIAT

FIAT METAL MANUFACTURING COMPANY

Three Complete Plants
(Chicago area plant) Franklin Park, Ill.
Long Island City 1, N. Y. Los Angeles 33, Calif.

In Canada—Fiat showers are made by Porcelain and Metal Products, Ltd., Orillia, Ontario

LETTERS

public will continue using electrical installations well over the minimums prescribed in the National Electrical Code.

*Nassau-Suffolk Electric League
Valley Stream, N. Y.*

Sirs:

The right approach to handling the question of electrical installations would be: Establish a set of *design standards* for use during this period when conservation of critical materials is of greatest importance. The Industry Committee on Interior Wiring Design, an organization made up of representatives of the building and electrical industries, would be best qualified to develop such a standard.

Base all *workmanship and methods* of installation on the recommendations given in the 1951 National Electrical Code.

By following this approach, we would have the benefit of two accepted authorities, the first on the subject of design, and the second on the method of installation.

*A. CARL BREDAHL, Mgr.
Better Homes Bureau
Westinghouse Electric Corp.
Pittsburgh, Pa.*

• An excellent suggestion. We urge the collaborative AIA-NAHB committees to get together with I. C. I. W. D. forthwith.—Ed.

. . . to save marble

Sirs:

There is no question about the merit of the Round Table proposals for stretching critical materials. Couldn't architects agree on a standard size for toilet partitions, stiles, and even ashlar wainscot? We could then pass along the savings from reduced quarrying waste on these items. . . .

*ROBERT D. PROCTOR
Vermont Marble Co.
Proctor, Vt.*

. . . musical codes

Sirs:

. . . Many if not most codes are like the stand-ins required in contracts by musicians. Once they had a function: now they know they don't, but they're on the gravy train and the hell with the rest of us.

I trust a campaign like yours will be successful, and want only to add my weight to it, hoping enough others will do the same. . . .

*ARTHUR WISER
Clarksville, Ga.*

. . . without a national emergency

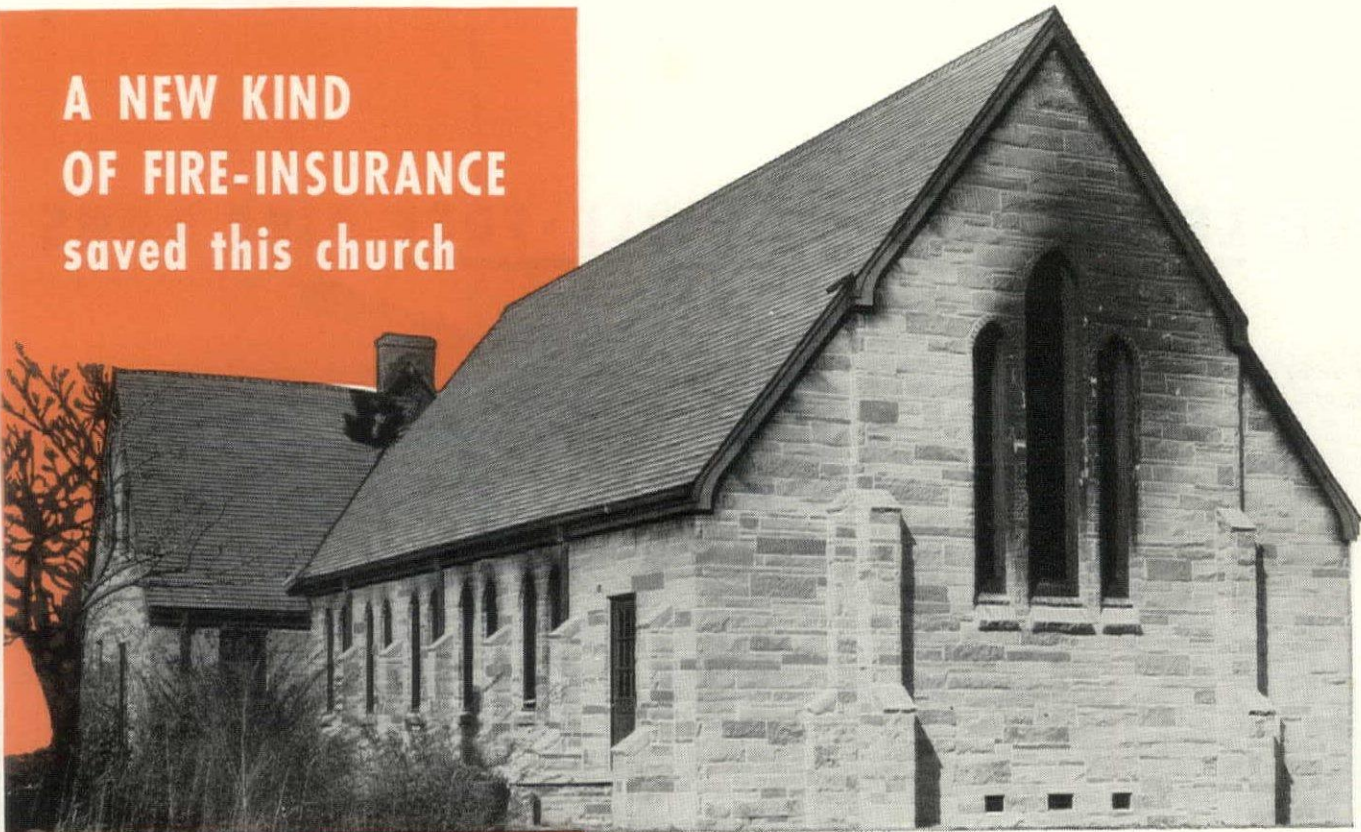
Sirs:

Without our government declaring a national emergency, it will be a long time before such ideas can be incorporated in local building codes due to the politics involved. . . .

*JOHN H. WEBER
Galesburg, Ill.*

(Continued on page 88)

**A NEW KIND
OF FIRE-INSURANCE
saved this church**



Rose Hill, N. C. Officials

Praise Carey Fire-Chex Shingles!

Excerpts from sworn statements by
Chairman of Mt. Zion Building Com-
mittee and Rose Hill, N. C. Fire Chief—

"Owing to the fire-resistant quality of the (Carey) shingles, the fire was held in check for three hours. I have no hesitancy in saying quite frankly that all of us attribute the saving of our buildings . . . to your very fine shingle."

W. D. Cerning
Chm., Bldg. Comm.
Mt. Zion Presb. Church

"It is a pleasure for me to recommend your shingle, from the standpoint of fire-resistance, without any reservation. The evidence in this particular fire speaks for itself."

H. B. Lunell, Chief
Rose Hill Volunteer F.D.

CAREY FIRE-CHEX SHINGLES

With interior gutted by fire, this church at Rose Hill, N. C. still stands—a tribute to the amazing fire-resistance of Carey Fire-Chex Shingles!

Despite intense heat and flames which gutted the interior of the Mt. Zion Presbyterian Church at Rose Hill, N. C., the Carey Fire-Chex roof remained virtually intact! Even when a section of the roof collapsed after supporting members burned through, Carey Fire-Chex shingles *prevented spread* of fire to adjacent roof areas and certain destruction of the entire building!

Carey Fire-Chex, made of a new, patented asbestos-plastic, are the first and only shingles ever to win Underwriters' Laboratories, Inc. highest fire-protective rating—CLASS A*. And, in addition to unequalled fire safety, Fire-Chex also offer longer life, greater beauty. Made extra-thick (weight 325# per sq.) for extra wind and weather protection, Fire-Chex feature new shadow-blend beauty—create roof designs copyrighted as works of art.

Give your clients the priceless fire protection, rich beauty and long, maintenance-free performance of Carey Fire-Chex Shingles. See your Carey dealer—or write *now* for illustrated literature!

*Without asbestos underlayment

FROM THE HOUSE OF CAREY

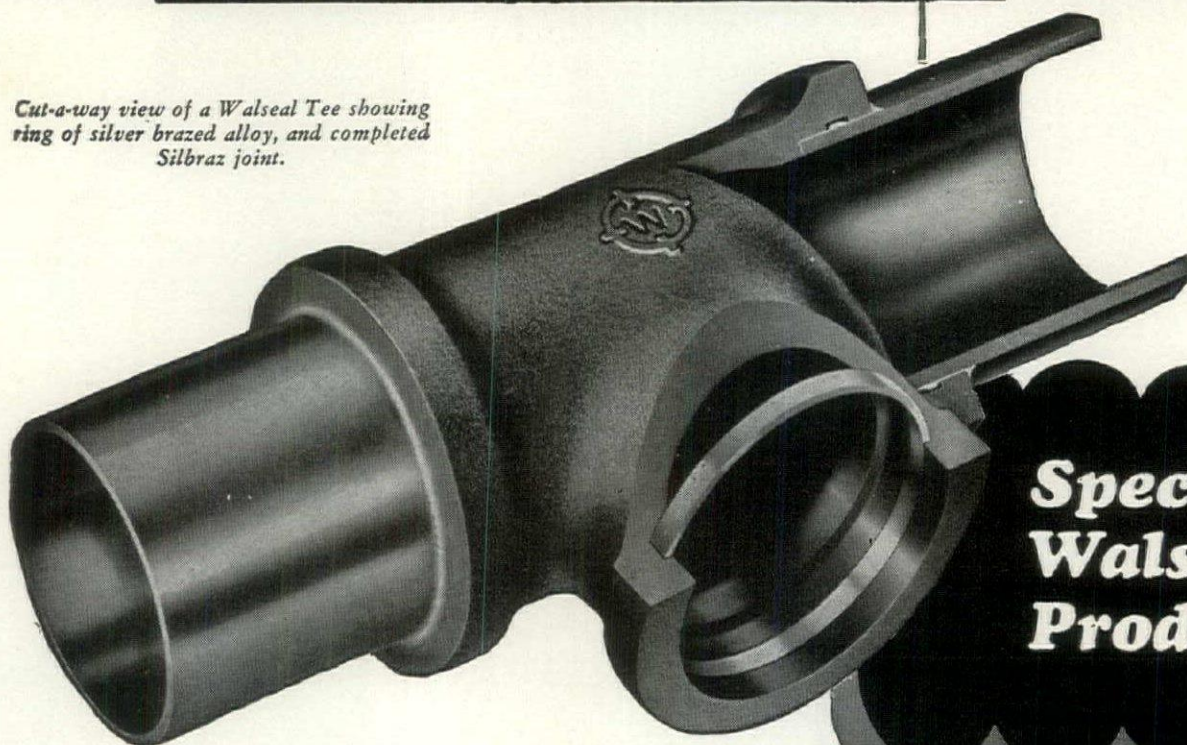
Bathroom Cabinets and Accessories • Ventilating Fans • Ceramo Asbestos Siding • Corrugated Asbestos Cement Siding • Fire-Guard Rock Wool Insulation • Fire-Chex Asbestos-Plastic Shingles • Other famous products for home, farm and industry.

Carey

The Philip Carey Mfg. Company, Lockland, Cincinnati 15, Ohio

FOR LEAKPROOF, TROUBLE-FREE PIPE RUNS

Cut-a-way view of a Walseal Tee showing ring of silver brazed alloy, and completed Silbraz joint.



**Specify
Walseal*
Products**

On all types of piping jobs where Type "B" copper or red brass pipe is used, trouble can be avoided by installing Silbraz* joints — made with Walseal valves, fittings and flanges.

Threadless, patented Silbraz joints are silver brazed (not soft soldered) pipe joints that are leakproof, trouble-free — permanent ... connections that will not creep or pull apart; that literally join with the piping system to form a "one-piece pipe line". Thus, these modern joints eliminate the need for maintenance and costly repairs — especially important where lowered operating costs are imperative.

For complete details on the modern Silbraz joint, made with Walseal products, write for a copy of Walworth Circular 84.

*Patented — Reg. U. S. Patent Office.

Make it a "one-piece pipe line" with WALSEAL

WALWORTH
valves and fittings

60 EAST 42nd STREET, NEW YORK 17, N. Y.

Recommended for

Hot and Cold Water
Circulating Systems

Boiler Feed Lines

Steam Return Lines

Condensate Lines

Low and High Pressure
Air Systems

Lubricating Oil Circulat-
ing Systems

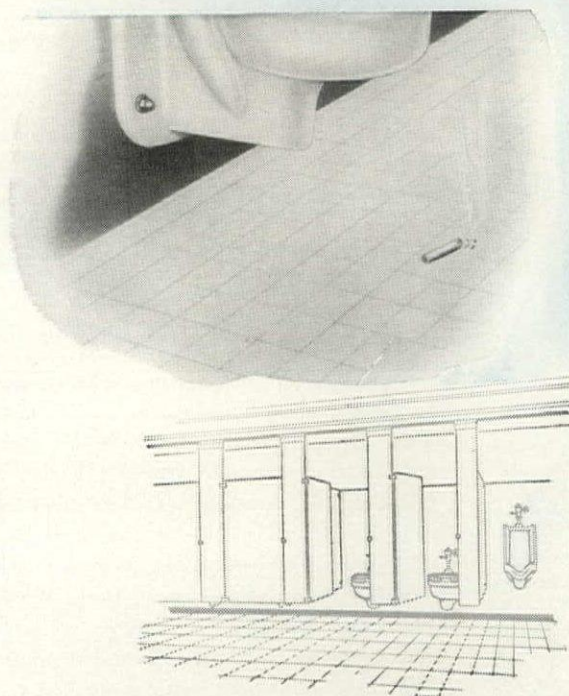
Industrial Gas Piping

Solvent and Vacuum
Piping Systems

Now You Can Build A NEW WAY *and Gain* *More Usable Floor* *Space*



—floor space that is usually required for floor supported equipment, thick load-bearing walls and space-hogging closet fittings and drainage lines. You gain more space on the surface of every floor and enough space between floors in a ten-story building to provide an entire extra floor. The New Way reduces the use of building materials, eliminates the necessity of suspended ceiling constructions to seal off drainage lines, saves time and labor and protects rest rooms against premature obsolescence. The New Way uses wall type plumbing fixtures installed the Zurn Way—the simple, fast, safe way to install wall type closets, lavatories, sinks and other fixtures. Zurn Wall Closet Fittings and Carriers lift sanitation to a new high and reduce maintenance of cleanliness to an all-time low. Insist on wall type plumbing fixtures and gain more usable floor space on every floor area in old and new factories, in hospitals and schools, in every type of building. Write for booklet entitled "You Can Build It (Cubic Foot of Building Space) For Less The New Way".



Fixture-Bare Floors Win Friends and Influence People

Yes, people in every walk of life because the immaculate cleanliness of fixture-bare floors arouses a sense of well-being and an incentive to cleanliness. Cleanliness and orderliness are universal in their appeal. Cleanliness is no problem in rest rooms where plumbing fixtures are off the floor because there is nothing to interrupt the sweep of the broom and the swish of the mop. Those who use such toilet rooms are moved to respect cleanliness and to help maintain it. Specify wall type plumbing fixtures—they reduce the cost of rest room maintenance and protect against premature obsolescence.

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

Sales Offices in All Principal Cities

Pre-eminent Manufacturer of Sanitary Products for the Protection of Human Health and Modern Structures.

Write for this booklet. It tells how "You Can Build It (Cubic Foot of Building Space) For Less The New Way".



The Zurn Carrier Catalog and Handbook describes the complete line of Zurn Wall Closet Fittings and Carriers for all makes and types of plumbing fixtures. Use it with Zurn Carrier Indexes and fixture catalogs to save time in selecting and specifying wall type fixtures.

WHY

ARCHITECTS
CONTRACTORS
AND BUILDERS
EVERYWHERE
ARE CHOOSING

PITTSBURGH INTERLOCK PLASTIC WALL TILE

It is designed
with the newest
BEVEL EDGE!

It's the only patented
INTERLOCKING
plastic wall tile!

U. S. Pat. No. 2323417
Other Patents Pending



It has been tested
and recommended by
Good Housekeeping!

It is accepted by U. S.
Dept. of Commerce
Bureau of Standards



It is lightweight. Will
not chip or crack! Solid
color thru and thru!

INTERLOCK's patented "interlocking"
feature assures foolproof self-align-
ment for quicker wall installations!
Locks on for the life of the wall!
INTERLOCK eliminates dirty cement
lines to give walls continuous expanse
of beautiful color.



For the best in wall tile, be sure to specify
Pittsburgh INTERLOCK Plastic Wall Tile.

Write today for details to Dept. AL

JONES & BROWN, Inc.
439 Sixth Avenue
Pittsburgh 19, Pa.

LETTERS

UP FRONT GARAGES

Sirs:

... It is pleasant to thumb through your pages. So many good ideas! Why it's just bursting open it's so full!

But why do so many plans stop the auto right up front with the daisies and honeysuckle?

Couldn't the lads drive on through to the backyard where the old tires and buckets would be less conspicuous.

Of course, the auto is important, but why brag about it so often. Perhaps more folks could purchase homes if they denied themselves those luxurious gasoline chariots. . . .

KENNETH LANGRAN
Dallas, Tex.

PANEL COOLING

Sirs:

Your April article on Panel Cooling was so good, it seems all the more proper to call your attention to one statement (on pg. 167) which . . . deprives a number of persons (myself among them) of credit justly due. . . .

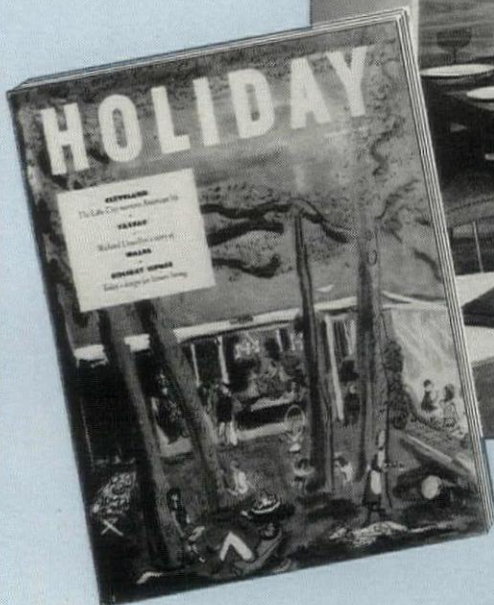
Mr. Leopold certainly deserves great credit both for his research work in this field and for the several papers about it which he has published. However, the building to which you referred—the 30-story Alcoa Building in Pittsburgh—is not in any sense "an adaptation of Leopold's plan," but the result of an entirely independent research and study, made jointly by the Aluminum Company of America and by our firm (Jaros, Baum & Bolles); neither of us had any knowledge of the details of Leopold's work during the inception and progress of this research, which was carried out at the New Kensington Research Laboratory of the Aluminum Company, under the close direction of Mr. E. S. Howarth (Chief of their Metal Working Division), and involved many months of work in a specially constructed test room, with many different designs and types of cooling panels.

The research program was originally suggested by us to the Aluminum Company, not for the Pittsburgh building, but for the earlier projected Alcoa Building for New York City. The studies then given to the possible use of aluminum ceiling panels for radiant heating and cooling antedated, by a considerable period, Mr. Leopold's work mentioned in your article. . . .

Neither Mr. Leopold nor the writer was the first serious worker in the field of radiant cooling. . . . Considerable study was given to this idea in Europe, 20 years or more ago, by the British firm of Richard Crittall & Co., Ltd.—in collaboration with whom the writer designed one of the first applications of radiant heating panels in the U. S. (the British Embassy in Washington). In the early 1930's Crittall's then American agents set up a radiant-cooled room in New York where a series of tests were carried out, some of which I witnessed. Prior to World War II radiant cooling ceilings were installed in several buildings in

(Continued on page 94)

Flexible furniture arrangement is assured at Holiday House, thanks to "Plug-In" Strip. Outlets all around the room permit the owners to plug in lamps, radios, television sets anywhere.



There's an electric outlet wherever it's needed in the kitchen.



Electrical Contractor: Fred DeBes

Painted any desired color, "Plug-In" Strip blends into the decorative features of the room.

Photographs
© Ezra Stoller

Holiday House

features "PLUG-IN" STRIP

for Easier, more Luxurious Electrical Living

Sponsored by Holiday Magazine, the "Holiday House" at Quogue, Long Island, was designed for easier, more luxurious electrical living. Architect George Nelson visualized "a structure in which science would replace servants, a house with so many advanced appliances that its leisure qualities would be literally built in."

It was natural that National Electric's "Plug-In" Strip should be specified for Holiday House because it represents the *ultimate* in electrical convenience, providing a spread of electrical outlets every 18" along baseboards and counter tops. There are 129 such outlets on the first floor of Holiday House, providing the future owners electrical convenience *wherever, whenever* it is needed.

"Plug-In" Strip is a professional multi-outlet wiring assembly that is: • **SAFE AND STRONG** • **ARCHITECTURALLY CORRECT** • **EASY TO INSTALL**

It is a modern, streamlined baseboard trim. No screws or soldered connections. Lifetime, fool-proof receptacles. Tamper-proof capping is permanently locked on. Outlets every 6" or 18".

Now it is impossible to have inconvenient electric service. There are three types of "Plug-In" Strip available: Type CF-2, for constant service; Type CF2-G, for grounding equipment; and Type CF-3, for either constant service or automatic wall switch control. All listed by Underwriters' Laboratories, Inc.

EVERYTHING IN WIRING POINTS TO

National Electric

PRODUCTS CORPORATION

1334 CHAMBER OF COMMERCE BLDG., PITTSBURGH 19, PA.



"Plug-In" Strip is a winner of the 1951 Lewis & Conger Home Safety Award.





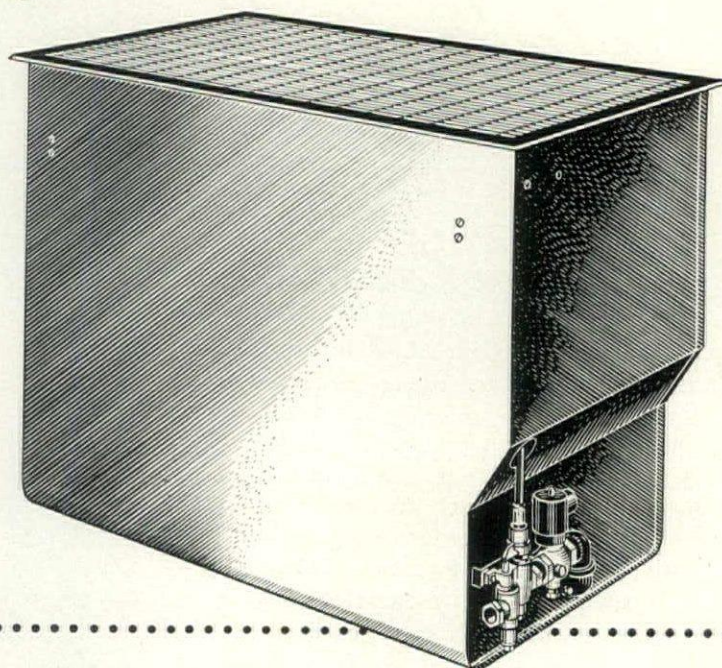
Automatic heat everyone can afford...

a TEMCO

GAS FLOOR FURNACE

The comfort, convenience and thrift of automatic TEMCO Gas Floor Furnace heat never fails to quicken the interest of a prospect. You can quickly convert that interest into a profitable sale by pointing out that only TEMCO offers all these outstanding features:

- A TEMCO Gas Floor Furnace requires no basement or costly excavating.
- Porcelain Enamel Heat Chamber carries 20 year warranty.
- Delivers completely automatic heat at the flip of a switch.
- Operates economically on Natural, Manufactured or L. P. Gas.
- Is backed by TEMCO's 30 year reputation for quality.



To learn how you can include completely automatic heat and still save on construction costs,
MAIL THIS COUPON TODAY!

TEMCO, Inc., Division B-309, Nashville, Tennessee

Please send me the complete story on low-cost automatic heat the TEMCO Gas Floor Furnace way.

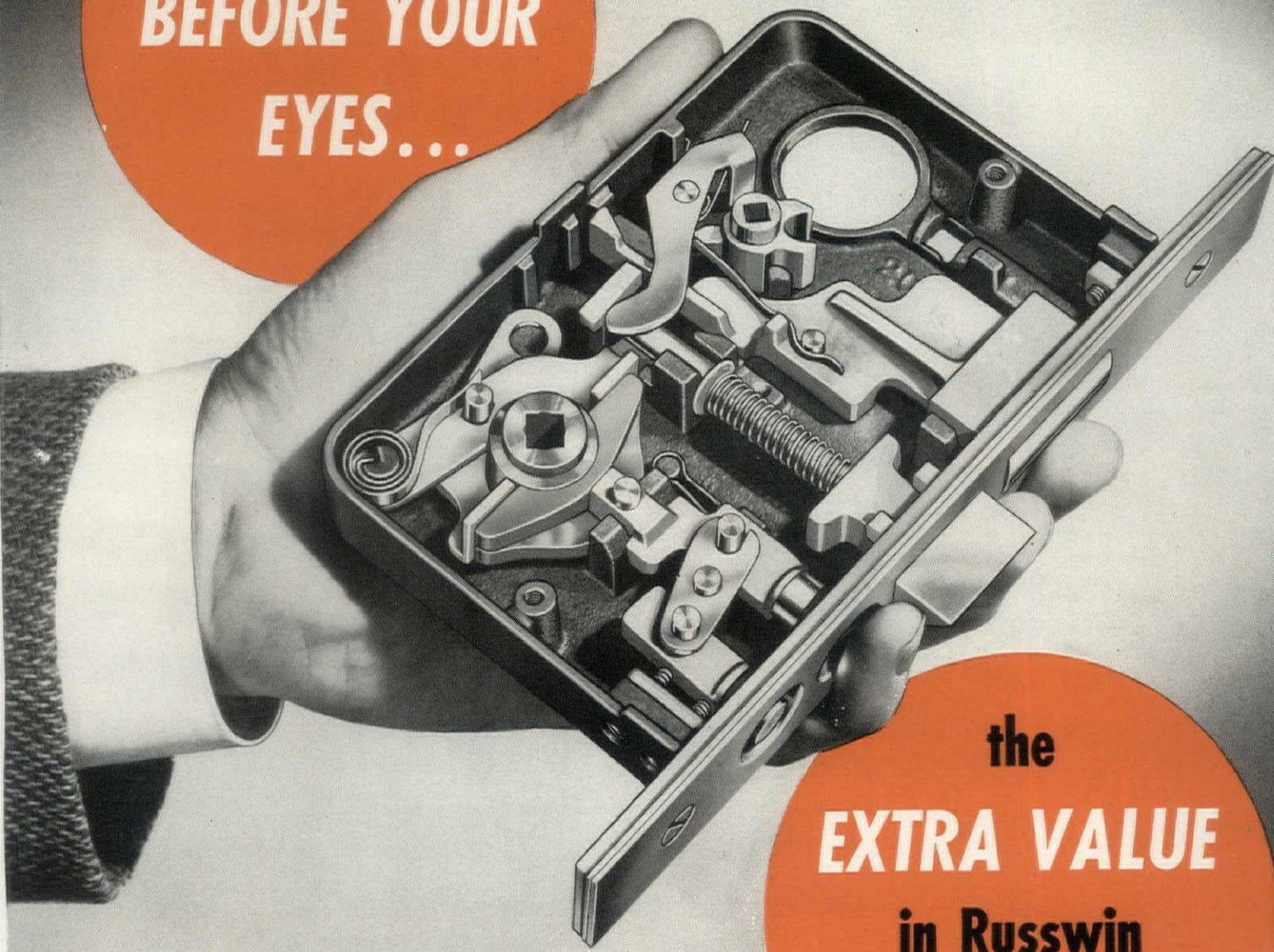
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City County

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**RIGHT
BEFORE YOUR
EYES...**



**the
EXTRA VALUE
in Russwin
"Ten Strike"
Locks**

With the cover off the case, it's easy to spot the Russwin "Ten Strike" Lock features that add up to *extra value*. Notice the exceptionally sturdy construction throughout . . . the forged brass knob hub and brass front with armored scalp . . . the heavy, formed, interior parts of rust-resisting steel . . . the smooth precision-made case that holds the parts in permanent alignment. Features like these have put Russwin "Ten Strike" Mortise Locks in a class by themselves for exceptionally long, trouble-free service . . . proving the economy of quality.

There are over 800 possible lock combinations in the Russwin "Ten Strike" Line . . . made from three base locks in two backsets. All have the famous Russwin Adjustable Ball Bearing Pin Tumbler Cylinder. One size mortise for all functions. Since all "Ten Strike" Locks are reversible, changes in door swings will not add to the cost of hardware.

Recommend locks with the *extra value* . . . the Russwin "Ten Strike" Lock Line. Write for catalog. Russell & Erwin Division. The American Hardware Corp., New Britain, Conn.

SINCE 1839
RUSSWIN
DISTINCTIVE HARDWARE

Proving the Economy of Quality

In the Hotel that "breathes" the Trade Winds—

El Panama, a Kirkeby Hotel,
at Panama City, R. of P.

IN the magnificent *El Panama*, Architect Edward D. Stone and his associates have produced a major design achievement. Its breezeway room and lobby-less ground floor already have set a trend. "Breathing" through its honey-combed structure, *El Panama* uses the trade winds to air condition rooms in both wings. In the central block, mechanical air condi-

tioning offsets high temperature and extreme humidity.

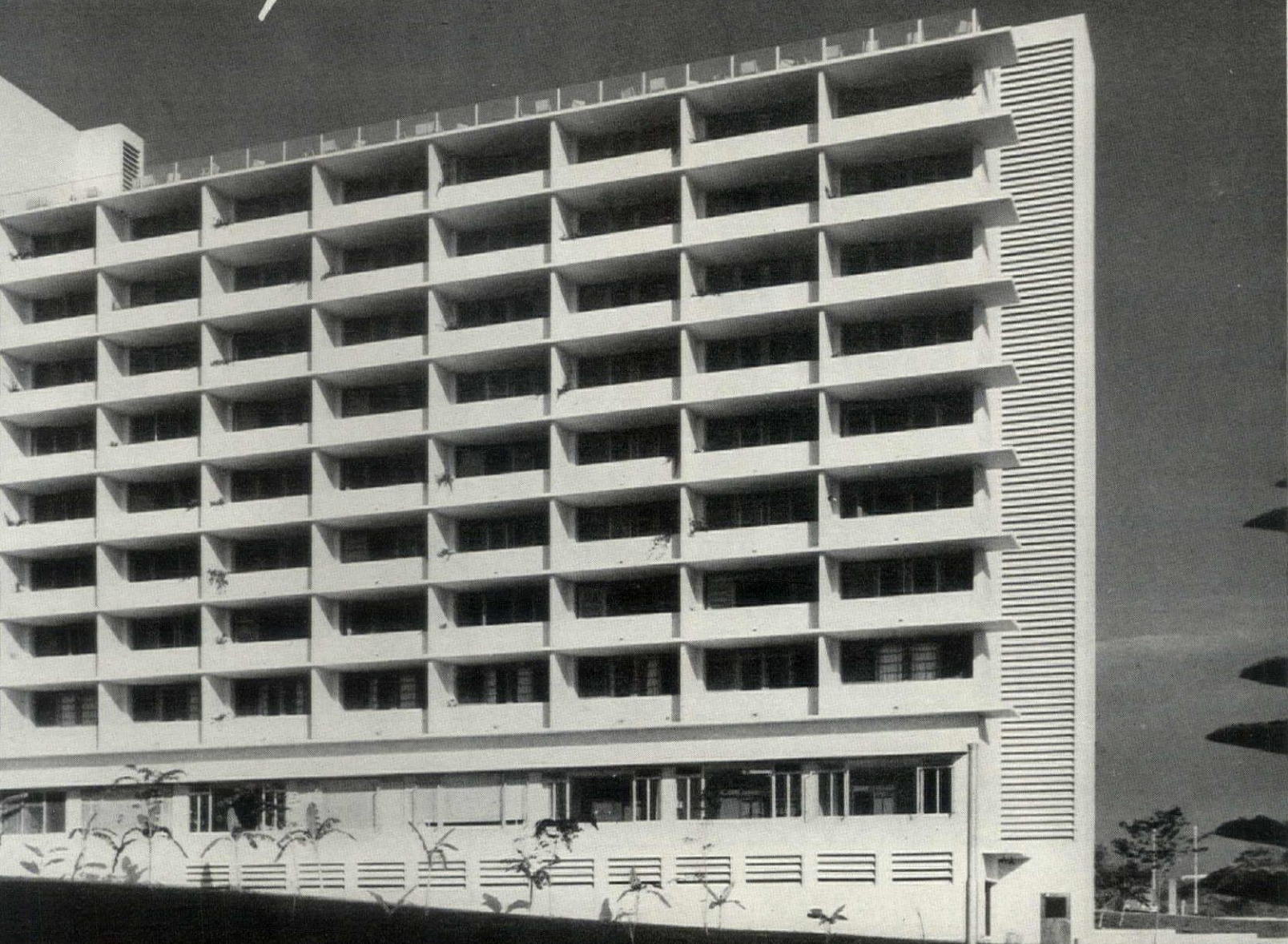
More than 25 tons of Wheeling Cop-R-Loy Sheets went into the hotel's ducts and vents—Cop-R-Loy, because its high rust-resistance offsets tropical corrosion.

Cop-R-Loy Sheets for ducts are only one of many products for which architects turn to Wheeling.

WHEELING CORRUGATING COMPANY • WHEELING, WEST VIRGINIA

ATLANTA BOSTON BUFFALO CHICAGO COLUMBUS DETROIT KANSAS CITY LOUISVILLE MINNEAPOLIS NEW ORLEANS

it's Wheeling COP-R-LOY steel sheets!*



The Wheeling Line of Building Materials includes: Steelcrete Reinforcing Mesh, Expanded Metal, Metal Lath and Metal Lath Accessories, Tri-Rib Steel Roof Deck, ExM Angle Partitions and ExM Vault Reinforcing to meet #10 insurance classification. *COP-R-LOY—THE COPPER ALLOYED STEEL—REG. U. S. PAT. OFF.



BUILDING MATERIAL DIVISION

NEW YORK PHILADELPHIA RICHMOND ST. LOUIS

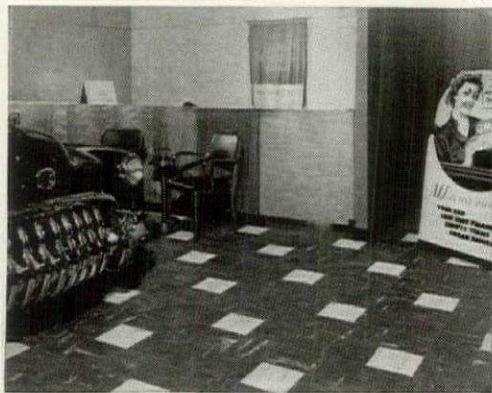
You can depend on

B. F. Goodrich Flooring Products



Leading architects, designers and decorators specify B. F. Goodrich Flooring Products because they know from experience that whatever the flooring problem may be, there's always a product from this quality line that will do the job better. One of these is

Arraflor



In restaurants, retail shops, showrooms . . . in fact, wherever the need is for a flooring that's durable, colorful, easy-to-clean, then specify B. F. Goodrich Arraflor.

Arraflor is a Vinyl Plastic Asbestos tile that is super resistant to oils, greases, fats, etc. This fact, plus the fact that it can be installed on, above or below grade, makes it particularly suitable for any basement area.

And the wide variety of clear, brilliant colors to choose from is your client's assurance of floors that will blend with any decorative scheme.

Write today for complete details about Arraflor and other B. F. Goodrich Flooring Products . . . the products that satisfy any flooring specification.

Here's another
B. F. Goodrich Flooring Product



**HOOD
ASPHALT
TILE**

for years of low-cost, handsome, quiet, easy-to-maintain flooring anywhere—on, above or below grade.

There's also: Rubber Tile, Rubber Cove Base, Rubber Stair Treads, Rubber Thresholds and a complete range of waxes, cleaners and cements.

YEARS OF BETTER FLOORING FROM YEARS OF BETTER RESEARCH

B.F. Goodrich
Flooring Division
WATERTOWN, MASS.

regions like Switzerland and Scandinavia with much lower dew-point than New York or Pittsburgh. All of these installations used cold water in coils embedded in plaster ceilings or concrete slabs—a construction which requires a considerable temperature-differential between the cooling water and the surface temperature of the ceiling. To give real cooling results, the water piping temperatures must therefore be low enough to cause possible condensation in our regions of fairly high summer dew-point; which is why *this* method did not progress here.

As a result of the work of Crittall and others, a Swedish engineer, Mr. Gunnar Frenger, developed a *metal* ceiling radiant heating and cooling panel system, on which he received various patents both abroad and in this country. The Burgess-Manning Co. has for some years manufactured metal ceiling radiant panels under license arrangement with Mr. Frenger and contributed to our final details for the Alcoa Building.

Compared to *plaster*, the great advantage of *metal* ceiling panels for *cooling*—as developed independently by Mr. Frenger, Mr. Leopold, and Mr. Howarth and myself—is that the high conductivity of aluminum makes it possible to have a ceiling temperature low enough to give *effective* radiant cooling—while the entire water piping system can be kept at a temperature of 60° F. or more, sufficiently high to avoid condensation troubles in an air-conditioned building.

It is a curious example of how similarly minds may approach a similar problem, that the "ten good reasons for panel cooling" given in your article are an almost verbatim parallel to various reports and letters which I have sent to the Aluminum Company in past years. In their case, also, studies . . . indicated that the gain in useful floor area from radiant cooling would be approximately equal to the addition of one and one-half usable floors to the building. . . .

ALFRED L. JAROS, JR.

Jaros, Baum & Bolles, Engineers
New York, N. Y.

• The statement that the Aluminum Co. was using an adaptation of Charles S. Leopold's panel cooling idea in its new Pittsburgh building was based on the following facts and assumptions:

Harrison & Abramovitz, the architects for the Alcoa Building in Pittsburgh, were also the architects for the TIME & LIFE project in New York. It was to them that Mr. Leopold first proposed panel cooling early in 1946 and it was largely to meet questions and objections they raised that TIME, INC. financed Mr. Leopold's laboratory work and the pilot plant installation.

This pilot plant went into operation and was shown to many visiting air conditioning engineers in August 1947. Mr. Leopold published his first report on his experimental work at the ASRE convention in Los Angeles in June '47. The experimental work for the Aluminum Co.'s panel cooling system was not started until nearly two years after Leopold published his research work for the same architects.

(Continued on page 98)

HERE'S PROOF!

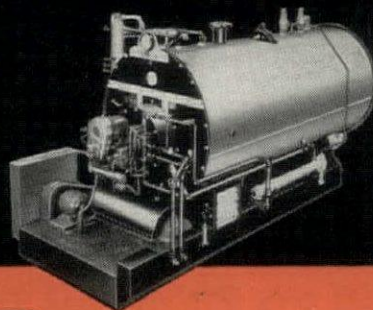
**Boiler rooms are
QUIETER, CLEANER, SAFER, with
SUPERIOR'S Built-in, INDUCED Draft.**

Superior's Induced Draft prevents the escape of combustion gases into the boiler room . . . even through an open port. For our photo shows one of our engineers observing the fire through the wide open pressure-relief port.

It also explains one other distinct advantage of induced draft . . . the fact that the fire is pulled through each successive pass without impingement and wear on refractory as is the case under forced draft. For that relief port is at the end of the first pass where the combustion gases are turning the corner into the second pass. If they weren't being led, some of them would find their way out through the open port.

Greater quiet; longer trouble-free operation; cleaner, more healthful atmospheres are other primary results. We can't tell you the whole story here, but you'll find it all in our new catalog. Write today to reserve your copy of the newest edition. Ask for Catalog 312

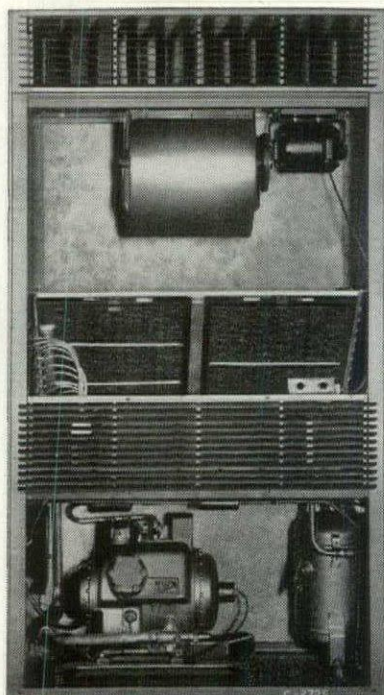
SUPERIOR COMBUSTION INDUSTRIES, INC.
TIMES TOWER, TIMES SQUARE, NEW YORK 18, N. Y.



SUPERIOR
STEAM GENERATORS



EVERYTHING YOUR CUSTOMER WANTS



IN A PACKAGE AIR CONDITIONER

Here are the reasons why your customer will be happy with his Worthington Package Air Conditioner:

QUIET—acoustically insulated cabinet . . . no belts to wear or get out of line.

VIBRATION-LESS—smooth-floating multi-mounted compressor . . . dynamically-balanced fan.

TROUBLE-FREE—compressor hermetically-sealed against dust and moisture . . . no pulleys, couplings or seals.

NO ATTENTION NEEDED—pressure-type oiling . . . never needs replenishing.

LONG LIFE—compressor surfaces finished to micro-inch accuracy . . . over-

size bearings . . . four rings per piston . . . dynamically-balanced crankshaft.

SAFE—high-pressure cut-out . . . high temperature safety switch.

CONVENIENT—finger-tip selection of temperature . . . thermostatic control . . . finger-tip adjustment of louvers.

ATTRACTIVE—plastic baked-enamel finish, scratch-resisting, washable . . . rounded corners, no projections . . . no "sweating".

ECONOMICAL—thermally-insulated . . . large copper-finned cooling coils . . . Worthington Feather* Valves.

Each Worthington unit—3, 5 and 7½ ton sizes**—is built to the same high quality standards as Worthington equipment for engineered systems, such as those described at the right. Write for Bulletin C1100-B29.

*Reg. U. S. Pat. Off.

**Also, for remote location: 7½, 10, 15, 20, 25 ton units

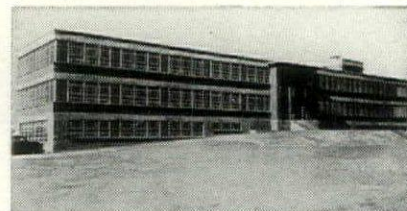
Another "Worthington-Conditioned" hotel

in the National Hotel Co. chain



The 400-room Washington Hotel, one of the leading hotels in the nation's capital, gets its air conditioning from a Worthington centrifugal refrigeration system, using chilled water. This is one of five National Hotel Company hotels to be Worthington-conditioned; the others are Hotel Jung, New Orleans; Travis Hotel, Dallas; Thomas Jefferson Hotel, Birmingham; Hotel Cortez, El Paso.

Off-and-On heat calls for Off-and-On cooling



The work performed in the research laboratory of Aluminum Company of America, East St. Louis, Ill., is of such a nature that excessive heat is produced intermittently.

Certain of the rooms are provided with a "wild zone" of air conditioning which goes into operation automatically when the heat-producing equipment is in use, and the normal air conditioning zone cannot handle the load.

This building is handled by a 125-ton Worthington air conditioning system comprised of two Freon-12 compressors and one evaporative condenser.

WORTHINGTON



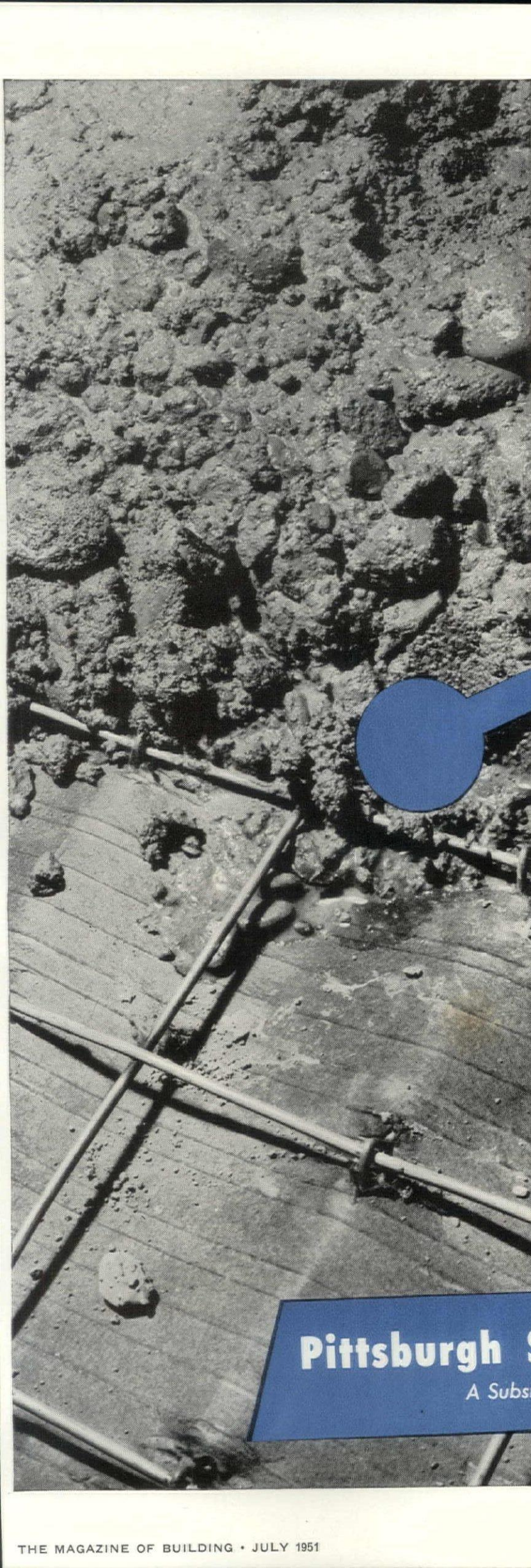
AIR CONDITIONING AND REFRIGERATION

INVESTIGATE

MORE WORTH WITH WORTHINGTON

Consult Classified Telephone Directory for nearest Worthington distributor. Worthington Pump and Machinery Corporation, Air Conditioning and Refrigeration Division, Harrison, N. J., specialists in air conditioning and refrigeration for more than 50 years.

A.I.S.



Look how the strong
welded mesh of

**Pittsburgh
Steeltex**

Floor Lath

assumes its proper
position in a
concrete slab

You can readily see why a slab poured over Pittsburgh Steeltex Floor Lath means a better, stronger floor. It is properly reinforced with embedded galvanized welded wire mesh and properly cured because moisture is retained by tough waterproof backing. Furthermore, construction costs can be cut since work may continue on the floor below while pouring is in progress. For further good reasons to specify Steeltex, see Sweet's or write for our catalog D.S. 133, Dept. MB, Pittsburgh Steel Products Co., Grant Bldg., Pittsburgh 30, Pa.

Pittsburgh Steel Products Company

A Subsidiary of Pittsburgh Steel Company

No Maintenance "Don'ts"

with

PLASCOR

The Chemical-
and Grease-Proof
Resilient
FLOOR TILE

Plascor is a floor tile a maintenance man doesn't have to baby. There are no "don'ts" to worry about. No "don't use sweeping compounds which contain oil or chemicals" . . . no "don't use oily soaps" . . . no "don't use hot water" . . . no "don't use strong alkalis" . . . no "don't let grease or chemicals stand on the floor" . . .

You can forget maintenance "problems" when you have a PLASCOR floor. Harsh cleaning agents leave it unruffled. Oily cleaning compounds are perfectly safe. Acids and alkalis it takes in stride.

You see, Plascor is made from TYGON, the chemically-inert plastic used for years as a protective lining for acid storage tanks. Plascor is built to take acids and alkalis, oils, and water. That's why it's rapidly becoming the preferred flooring for laboratories, chemical plants, hospitals, restaurants, etc.

But ease of maintenance is only one reason why you should specify PLASCOR. Plascor is whisper quiet. Plascor has cushioned comfort. Plascor is strikingly good to look at. And Plascor wears like no other resilient floor tile made.

Probably right now you have on your board a project where Plascor would be ideal. A note on your letterhead, addressed to Flooring Division, The U. S. Stoneware Co., Akron 9, Ohio, will bring samples and information promptly. Write today.

Thumbnail
Facts About
PLASCOR

Plascor is made from Tygon Plastic and resin-impregnated cork, molded under heat and pressure.

Plascor comes in tile form, 1/8" thick, and in 8 1/2", 11", 17" and 34" squares.

Plascor is available in eleven attractive marbled colors, with companion flexible cove base and feature strip.

Plascor can be bonded tightly to wood, concrete or metal.

Plascor is applied by recognized flooring contractors.



LETTERS

Without in any way questioning Mr. Jaros' statement that his firm had recommended research on radiant cooling at some earlier date for the since-abandoned Alcoa Building project in New York, it is still true that Harrison & Abramovitz were highly dubious about panel cooling when Mr. Leopold suggested it to them for the TIME & LIFE Building. They did not persuade the Aluminum Co. to embark on their independent research for the panel cooling of its Pittsburgh office until *after* the research for the TIME & LIFE Building was well underway and the pilot plant was in successful operation—open to the public.

As for the statement that the plans for the Alcoa panels "using wide spacing and, therefore, more aluminum"—most of the Alcoa tests were performed on panels on which the facing sheet was .094" or thicker (up to 1/2")—compared with Leopold's .062" used in the TIME-LIFE pilot plant. The change, therefore, to the thinner sheets as reported by Mr. Jörn must have been a late development. (See letter below)

THE MAGAZINE OF BUILDING's report (April issue) mentioned the earlier installations abroad but added that they "proved very little."

As far as we know, no scientific data had been published in any language on panel cooling prior to Charlie Leopold's paper presented at the ASRE convention in June of 1947. In the Journal Section of the May '51 issue of ASH&VE, Canadian Engineer C. Lorn Wiggs, in discussing Leopold's paper entitled "Design Factors in Panel and Air Cooling Systems," says "as far as we can determine there is no real scientific basis for the designs that were made in England and Europe." Professor F. W. Hutchinson of the University of California calls Mr. Leopold's ideas "the greatest in applied radiation for the last ten years."—Ed.

Sirs:

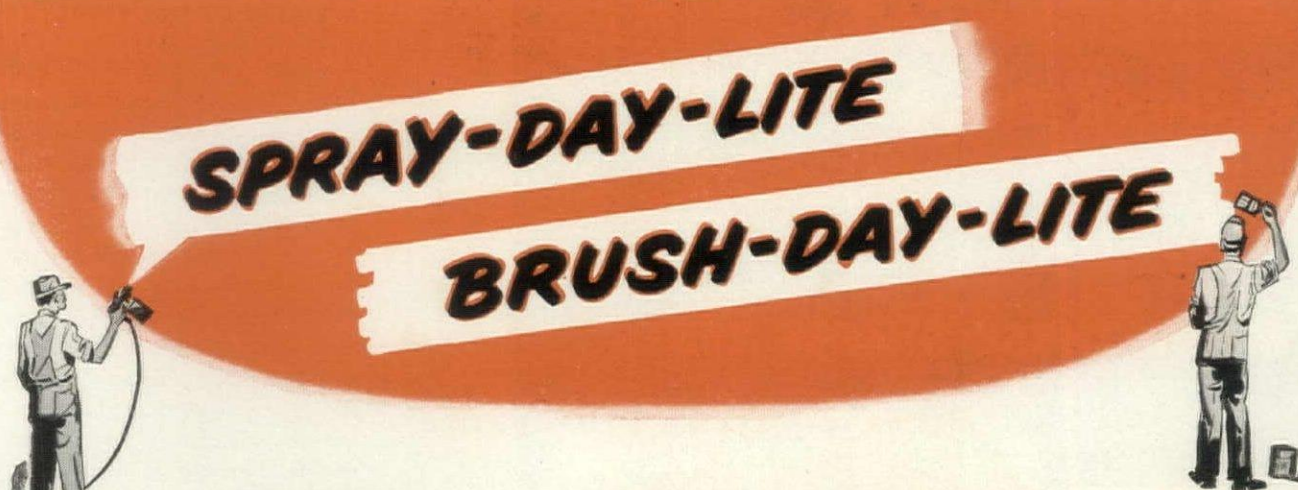
. . . The panel cooling system to be employed in Alcoa Pittsburgh offices is not an "adaptation of Leopold's plan," but is rather a "Burgess-Manning Ceiling." This ceiling was evolved by the writer from a patented system dating back some ten years, a system which has operated continuously for cooling as well as heating in Scandinavian installations for at least five years.

In contrast to the implication that the Alcoa office building will use heavier aluminum surface to counteract wider coil tube spacing, it should be pointed out: (1) The coil tube spacing in this Burgess-Manning Ceiling is to be double the 6" figure given for Mr. Leopold's system while the surface material is to be only 65% as thick rather than the 200% indicated. (2) The desired performance is achieved with this economy-of-material design since the entire ceiling surface normally devoted to acoustical metal pans is to be covered with panels which uncompromisingly combine the functions of maximum acoustical absorption and high capacity radiant panel effects. . . .

ALBERT T. JÖRN
Development Engineer
Burgess-Manning Co.
Chicago, Ill.

(Continued on page 100)

FLOORING DIVISION



SPRAY-DAY-LITE

BRUSH-DAY-LITE

IN 1951...more than ever...

it pays to use America's leading

one-coat

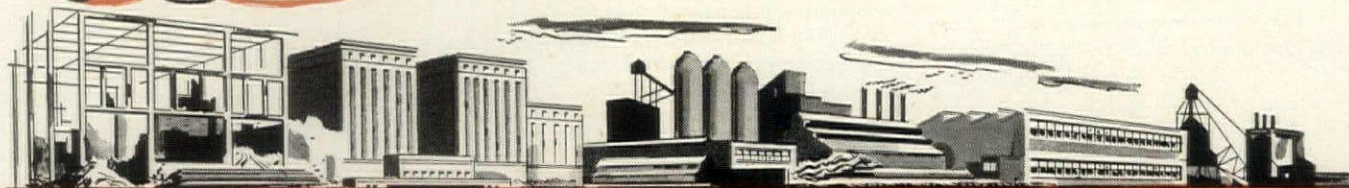
Interior Maintenance Paint!

America's First and Finest
COLOR SERVICE

to make your painting pay
extra dividends at no extra cost

A service comprising detailed color suggestions tailor-made for you by trained consultants from Glidden Color Laboratories with over 21 years of experience. These comprehensive color harmony plans for interior painting based on Glidden's famous Sight Perfection Program pay important extra dividends! For complete information about this free service, write Dept. G-751.

The rearmament program demands heavy duty wall paints that cover in just one coat and give more years of service. Glidden SPRAY-DAY-LITE and BRUSH-DAY-LITE do both . . . saving you critical time, labor, material and money. Their high light reflection improves vision and eliminates eyestrain . . . reducing spoilage, promoting safety, building better employee relations. In non-fading white and 10 attractive colors.



Glidden

Pacemaker in Paints

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PAINTS**



THE Glidden COMPANY • CLEVELAND 2, OHIO
IN CANADA: THE GLIDDEN COMPANY, LTD., TORONTO 9, ONT.

TO CHECK THE QUALITY OF A *Cabinet Shower* MAKE THESE SIMPLE TESTS

Check the Name Plate

If it's a Weisway, you can be sure there's quality in every design detail—even in hidden parts. Your client is assured long years of trouble-free shower bathing service.

Shake it! Bump it!

Does it clatter and rattle—a makeshift assembly? Give a Weisway this test... it speaks for itself. Thick gauge materials are corner sealed in compression tight joints.

Check the Wall

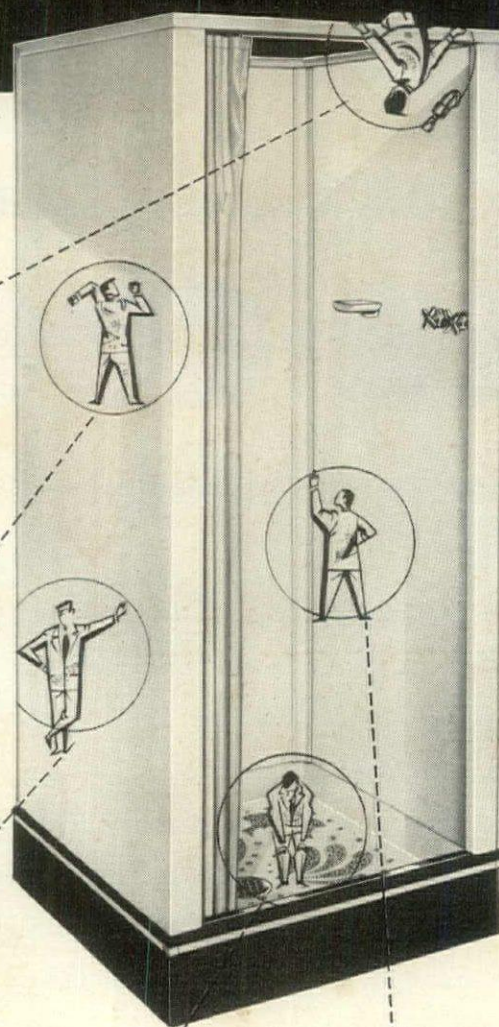
Are the walls of Vitreous porcelain enamel—Bonderized galvanized steel? These are the time-tested materials used in Weisways. Moreover, two separately baked-on coats of enamel mean years of lustrous beauty—unmarred by ugly rust streaks, crazing or peeling.

Examine the Receptor

Is it as quiet as the tread of a bare foot? Is it deep with high sides to give positive protection against leaking? The answer is "yes" with the Weisway exclusive Foot-Grip, No-Slip floor of vitreous porcelain enamel. It's permanently safe, sanitary, easy-to-clean.

Run Your Fingers Along the Inside Joints

In a Weisway Cabinet Shower you'll find that all joints are pressure-tight. No dirt-catching cracks here; no need for mastic or calking. That's one reason why Weisways are permanently leakproof.



Weisway

HENRY WEIS MFG. CO., INC.

702 Weisway Building • Elkhart, Indiana

LETTERS

ATKINSON ON THE MODULE

Sirs:

The editorial in your very interesting January issue points out that "the volume builders have solved most of the problems of low cost quantity construction that lie within their power to solve" and adds "the rest must await general adoption of modular coordination and the dynamiting of various inefficiencies now profitably entrenched."

THE MAGAZINE OF BUILDING has impressed me by its clear analysis of the home builder's present position. The National Association of Home Builders concurs that—in addition to the generally recognized need for clearing away the inefficiencies required by local codes and other obstacles—there exists a positive opportunity for raising construction efficiency much higher through modular coordination.

We do not agree, however, that we should merely await the general adoption of modular sizes and dimensions. Accordingly, just a few months back we joined forces with the sponsors of this movement. From here on in, you can expect to find us working closely with the AIA, the American Standards Association, and The Producers' Council in doing everything we can to accelerate the present trend toward modular coordination.

W. P. "BILL" ATKINSON, *President*
National Association of Home Builders
Washington, D. C.

PRIZE WINNING HOUSES

Sirs:

Congratulations! The house design competition (Mar. '50) was truly significant.

But I strongly urge, should a similar contest ever be forthcoming, the judges include not only builders and architects, but also *homemakers*. Someone who could point out to the "ivory tower" architects some of the jobs that are a part of homemaking, the space and storage requirements necessary for sane living.

The architect's general inability to cope with the ironing board is glaring. . . . They solve the problem by overlooking it and give us no storage space for a portable board—or else most inconvenient storage. Couldn't it pivot out from under a drainboard in the breadboard space and be sit-down height to boot?

The multi-purpose room idea is delightful and I was glad to see it in so many designs, but at the expense of an adequate kitchen and adequate storage space, it makes the home a hoax. The kitchen is squeezed down to the last 16th of an inch. Then we measure the cook and if she's not a perfect 36—throw her out, she won't fit! And that refrigerator you step into to open the oven door really frosts me. It's a hall, not a kitchen.

I wish the schools of architecture would institute the idea home economic majors are putting up with these days—a house or apartment where the architectural students could live for a period

(Continued on page 102)



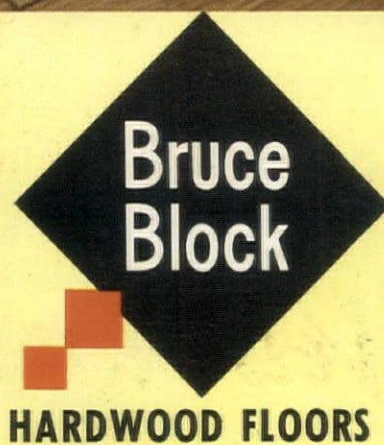
Modern...in design...in application

The ideal floor for use over concrete slab or wood subfloor

Bruce Block Floors fit right in with modern design and modern construction. From an appearance standpoint, they give smart style and decoration along with the natural, friendly beauty of hardwood. Structurally speaking, Bruce Blocks are most practical and economical because they can be laid in mastic over the concrete slab. Or they can easily be blind nailed over wood subfloors or old wood floors.

Owners find these solid hardwood floors warm, quiet and comfortable underfoot... and so easy to keep clean and shining at all times. They're thrifty, too... will last the life of a home or building. Even after many years of hard service, all their original beauty can be restored by refinishing.

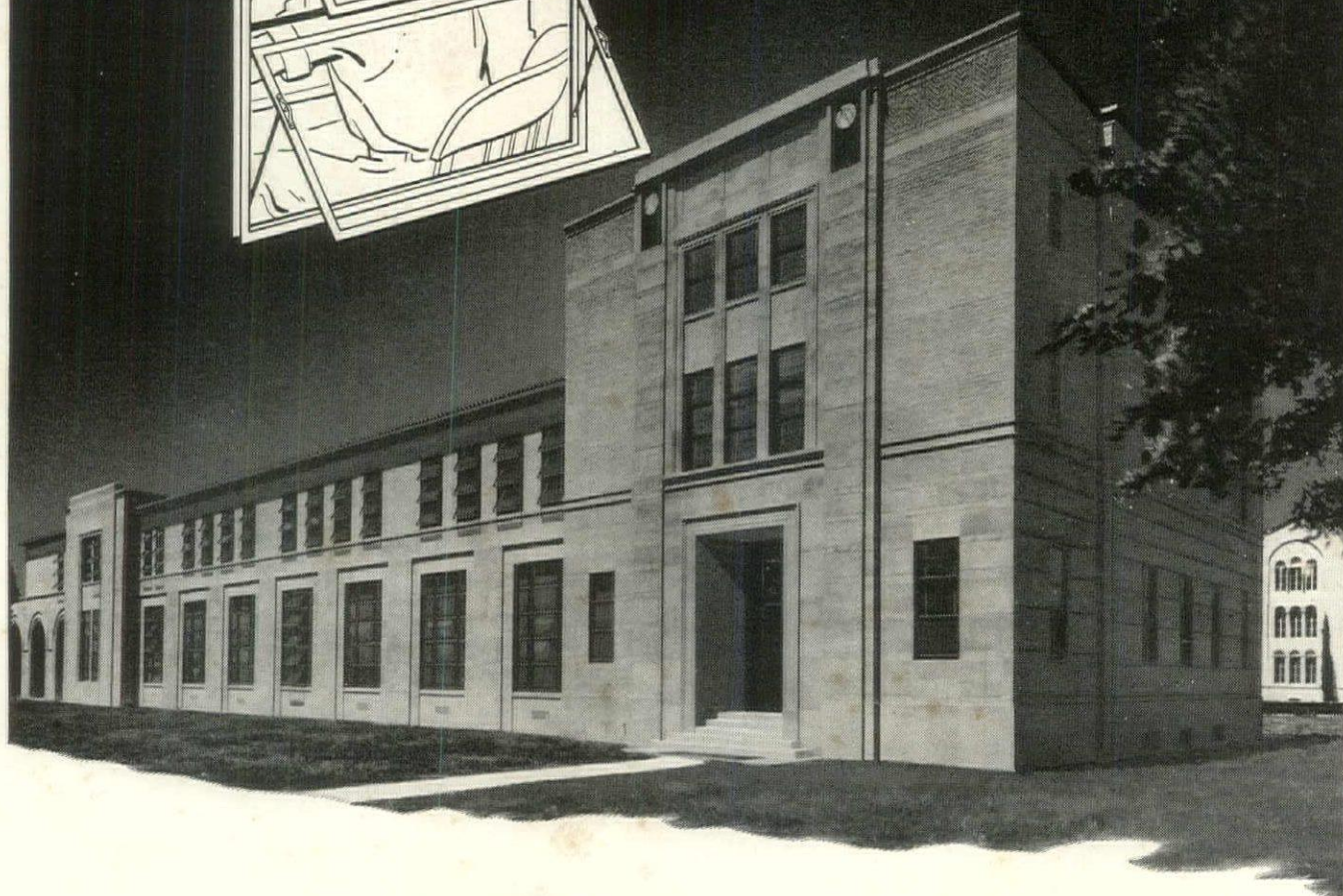
See our catalog in Sweet's Files, and write for new color booklet on "Modern Hardwood Floors of Bruce Blocks."



PRODUCT OF E. L. BRUCE CO., MEMPHIS 1, TENN., WORLD'S LARGEST MAKER OF HARDWOOD FLOORS

Other Bruce Products: Ranch Plank, Strip, Random-width Flooring • Lumber and Wood Parts • Terminix • Floor Cleaner, Waxes, Finishes.

TRUSCON...a name you can **build** on



Nice at Rice...those **better** Truscon Donovan Steel Windows

These are well-engineered windows . . . for well-engineered lighting and ventilation . . . in the Engineering Building at Rice Institute, Houston, Texas.

Credit: Staub & Rather, Architects

W. S. Bellows Construction Company, Contractors



The ventilators in Donovan Steel Windows operate in unison, either by manual control or by completely concealed mechanical operators, as desired. The awning principle of the ventilator construction permits the admission of air in inclement weather and the design completely eliminates all unsightly exposed connecting arms, screws, racks, etc. A wide variety of architectural layouts is possible with the Donovan Steel Window types available.

See Truscon's complete catalog in "SWEET'S" for full information on all Truscon Mark of Merit Products.

TRUSCON® STEEL COMPANY YOUNGSTOWN 1, OHIO
Subsidiary of Republic Steel Corporation



Choose the floor that's at the top*

***It's Flexachrome!...**

**At the top of Mt. Equinox,
in Vermont's Sky Line Inn...**

At the top of the list in quality, too



**This greaseproof, resilient floor tile
has a long list of advantages that
make it a "natural" for hotel flooring.**

Grease abuse is troublesome in food-handling areas.

That's another big reason why Flexachrome enjoys ever-growing popularity as a hotel flooring material.

For cafeterias, coffee-shops, and cocktail bars, grease resistance is a flooring "must." So, too, is resistance to acids and alkalis. Flexachrome has both.

But, exceptionally fine color and design versatility win other places of honor for Flexachrome in hotel planning.

Any room reflects credit on the house when it is Flexachrome-floored.

Choose from a wide range of sizes. Tile-at-a-time installation makes pattern possibilities almost endless.

And, the unusually wide color range ... from sparkling white through a

rainbow of brilliant, true colors to glossy black ... enables you to meet any decorative demand.

Flexachrome's tight, closely-textured surface makes sanitation a snap ... another important consideration in restaurants, and a big help in areas such as barber shops and beauty parlors.

Quick, easy installation and reasonable material cost hold down initial expense. While an absolute minimum of maintenance and extraordinarily long life make Flexachrome floors an investment you can't afford to overlook.

Your telephone book lists your Tile-Tex* dealer. Detailed literature, complete specifications and samples are yours for the asking. Design counsel and floor layout are also a Tile-Tex service. Write us today.

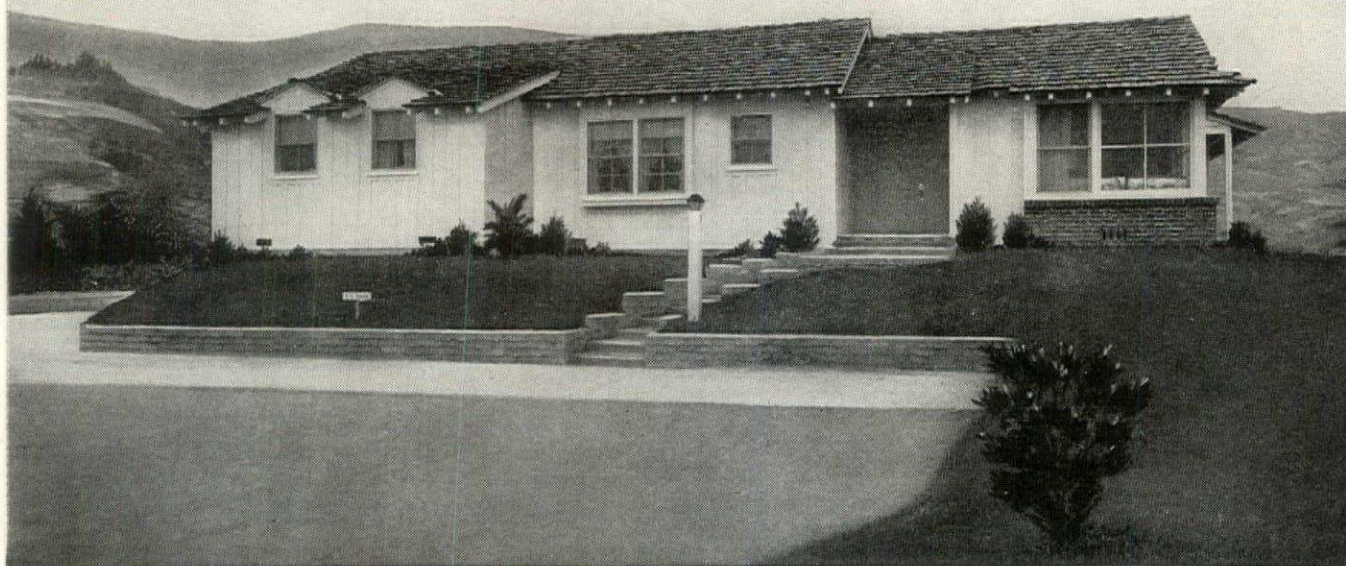
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FLOORS AND WALLS

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help make satisfied customers,"



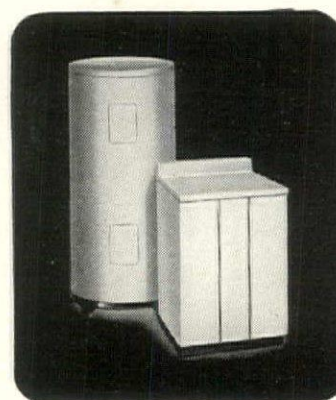
The distinctive homes built by Mr. Bob Swan, overlooking the Pacific Ocean, are as efficient inside as they are glamorous outside—and they have "oceans" of hot water, thanks to *Electric* Water Heaters.

says builder Bob Swan OF REDONDO BEACH, CALIFORNIA

"I've found," says Mr. Swan, "that everyone wants about the same basic features in a home—comfort, convenience, cleanliness and safety, with permanent values built in. To fill these requirements, one vitally necessary piece of equipment is an Electric Water Heater."

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The Wakefield Star and Commodore both have translucent Plaskon reflectors which completely shield the lamps and, when the lamps are lit, have about the same brightness as the ceiling above. This is a basic requirement of supplementary lighting systems for co-ordinated classrooms.



To Light a Co-ordinated Classroom
you need a luminous indirect fixture like the

Wakefield { **STAR (fluorescent)**
COMMODORE (incandescent)

- ① Only a luminous indirect fixture like the Wakefield Star or Commodore will provide smoothly distributed, well balanced light, free from glare and sharp brightness contrasts.
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"Organizing an Institute on Classroom Planning" is a booklet which will help you sell more school lighting in your community. Write for a free copy.

Our new 20-page book, "Supplementary Lighting for the Co-ordinated Classroom", deals comprehensively with modern classroom lighting. Write for a free copy.

THE F. W. WAKEFIELD BRASS COMPANY, VERMILION, OHIO

Wakefield **Over-ALL Lighting**
BASIC FOR CO-ORDINATED CLASSROOMS



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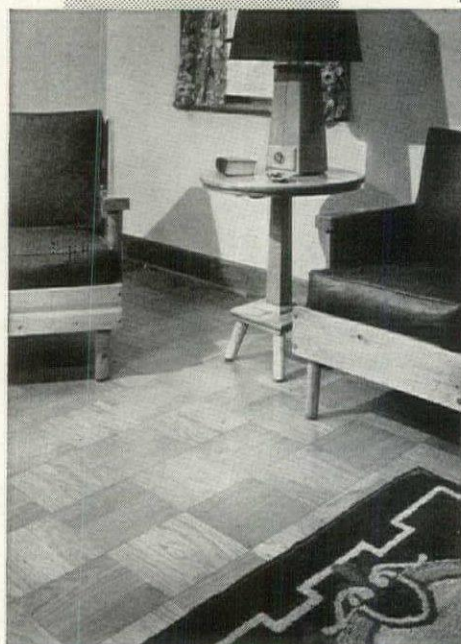
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Hardwood Floors
in Swank Apartments
and Modest Homes**

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But Parkay is economical as well as durable and smart. While offering the wearing surface of standard flooring, its thickness permits use with other resilient materials without changing floor levels. Laid with special adhesive on any sound, smooth sub-surface, Parkay installation is fast—and, being ready-finished, it eliminates costly on-the-job finishing.

Yes, Parkay is beautiful, durable, practical—and its cost, laid and ready for traffic, is little, if any, more than conventional strip flooring finished on the job. Parkay is available in two styles—9" x 9" Tiles and 9" wide Broadboard in random lengths. Write for free sample and complete information. Parkay, Inc., Louisville 9, Ky.



PARKAY

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LETTERS

of weeks and have the experience of *keeping house*. Then we'd really see some plans!

JOSEPHINE K. HARDING
Pleasanton, Calif.

Sirs:

All the winning houses in the design competition are one-story houses. Did the program specify a one-story house or is it that no design of a two-story house was good enough to get an award?

The winners have submitted a number of excellent solutions for the problem of the house itself but they have apparently not considered another important problem: the general appearance of a development based on 60' wide lots.

The majority of the houses are 48' wide (including garage), which leaves only 12' between the buildings. Such a development . . . would look very crowded: almost like row houses.

I think that a two-story, or at least partially two-story, house, although more difficult to design, provides a good solution to this problem. . . .

JACQUES E. GUITON, *Architect*
New York, N. Y.

• 1) The competition program did not require a one-story solution, but almost all contestants submitted one-story designs; 2) the 60' lot is, indeed, too small for the 1,000 sq. ft., one-story house.—Ed.

ARCHITECTURAL REVIEW REVIEWED

Sirs:

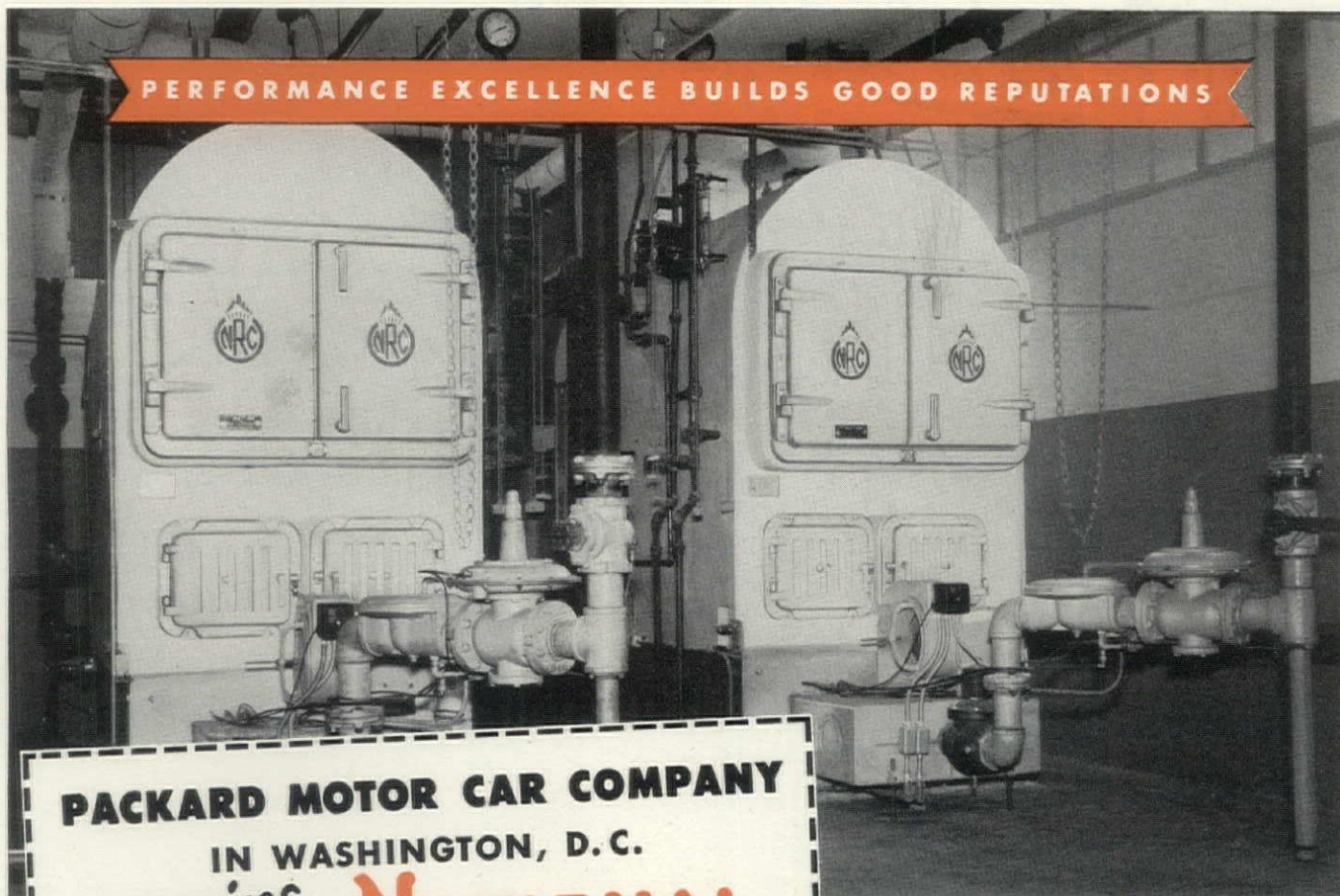
Disagreeable as the *Architectural Review's* American number may be (THE MAGAZINE OF BUILDING, Apr. '51, p. 158), it is our duty not to attack our attackers in a spirit of retaliation. Let us point out to the *Review* the honorable efforts that are being made to remedy the conditions it deplores. Let us broadcast not only to England, but to this country as well, the lessons Lewis Mumford is teaching and that Ralph Walker is pointing up. . . .

Let us be grateful for this opportunity for a new soul-searching. . . . Anyone who has seen the wanton ravishing of the countryside across the Potomac from Washington or across the Hudson from New York must agree that the problem we have permitted to develop is becoming rapidly insoluble under current practices of real-estate promotion and current legal regulations. It is all very well for you to talk about "high velocity of change," but it is quite a different matter to sit by. . . . It is the citizens by and large who must make planning work. The English, of course, have many of these problems, too, as Thomas Sharp and others there well realize. But their problems are theirs; ours remain our own responsibility. . . .

TALBOT F. HAMLIN
Professor of Architecture
Columbia University
New York, N. Y.

• Reader Hamlin has missed the main idea. The "persistence of a high velocity of change" in America was mentioned to point out, not to dismiss, our
(Continued on page 104)

PERFORMANCE EXCELLENCE BUILDS GOOD REPUTATIONS



PACKARD MOTOR CAR COMPANY
IN WASHINGTON, D. C.
modernizes with **NATIONAL**
COMMERCIAL STEEL BOILERS-

Two CA-5495-S National Commercial Steel Boilers, equipped with Lo-Blast Gas Burners—installed in the Packard Motor Car Company Building by Morris & Eagan Co., Washington, D. C.

One of the largest gas-fired boiler installations in Washington, D. C. is in the expansive building of the Packard Motor Car Company where two CA-5495-S National Commercial Steel Boilers are meeting the high demands for heat. They replace two older type cast iron boilers.

These large National Boilers are especially designed and engineered for use where extra heating capacity is a primary consideration—and their performance meets or exceeds all requirements of recognized codes and authorities.

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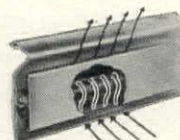
Cast iron National Heat Extractor boilers in sizes ranging in Net I-B-R Ratings from 170 to 10,300 sq. ft. of steam and from 270 to 16,480 sq. ft. of water.



National Steel Boilers in sizes ranging in SBI Net Ratings from 275 to 35,000 sq. ft. of steam and from 440 to 56,000 sq. ft. of water.



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"takes" a 75 ft. curve



This FOLDOOR installation at Elks Lodge No. 11, Pittsburgh, Pa. is a typical example of how FOLDOOR gives flexibility of space in commercial use. The long bar, shown in background at right, is completely closed off by six FOLDOORS (see above) for complete dining room privacy.

FOLDOOR is your answer any time the problem concerns flexibility of space . . . finding more usable space in the same area . . . or achieving easy and economical division of rooms.

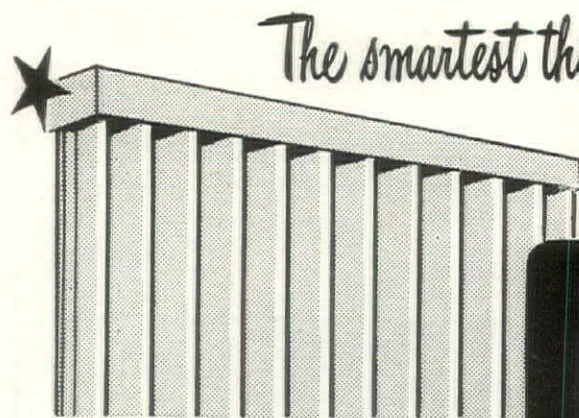
"The folding door with the cornice top" fits right into building and remodeling plans for business places, institutions and commercial establishments—for private homes as well.

Built with a sturdy frame of rust-resistant steel, FOLDOOR travels on a rugged, single piece, two-rail steel track. FOLDOOR occupies the least amount of "stack" space of any extensible door.

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LETTERS

problem. This magazine cannot be successfully accused of sitting it out, nor can preacher-prophets such as Mr. Lewis Mumford be credited with squarely meeting it.—Ed.

Sirs:

What meets the eye in many of our hometowns, large and small, has hurt our eye as much as critical visitors' eyes. Yet, unfortunately, despite all electronic tele-connections and fastest jet propulsion, we all are rarely capable of comprehending the problems of other areas—not to say, giving constructive advice. Peoples have remained distant to each other.

The British have often shown more understanding than we around the globe, and the *Architectural Review* belongs to the brainiest things in Britain and to the most tasteful. Yet it is very hard to agree with their interpretation of our troubles. Your constructive analysis and hints on how to proceed from here are heartening.

RICHARD J. NEUTRA, *Architect*
Los Angeles, Calif.

SOUTHERN SCHOOLS

Sirs:

Your April issue as usual was splendid in the varied building types and building problems covered, but I would like to take issue with the way in which the Atlanta school was presented.

The uninformed might be led to believe that all the South is as reluctant as Atlanta to release the shackles that would keep it forever bound to its "noble past." Could it not have been better said that Georgia now has found the way? . . .

Moreover, the glass block wall . . . is not the answer to the natural lighting problem in schools of the South. Though the proper amount of light may be supplied, an excess of heat is transmitted and . . . the glass block wall becomes intensely bright. In relieving the objects within of strong brightness ratios the wall itself becomes too intense. Surely an architect who has been in the South for any length of time should be aware that our heat cannot be economically controlled once it is admitted inside the building; the sun must neither be allowed to enter nor be allowed to store up energy in the wall . . .

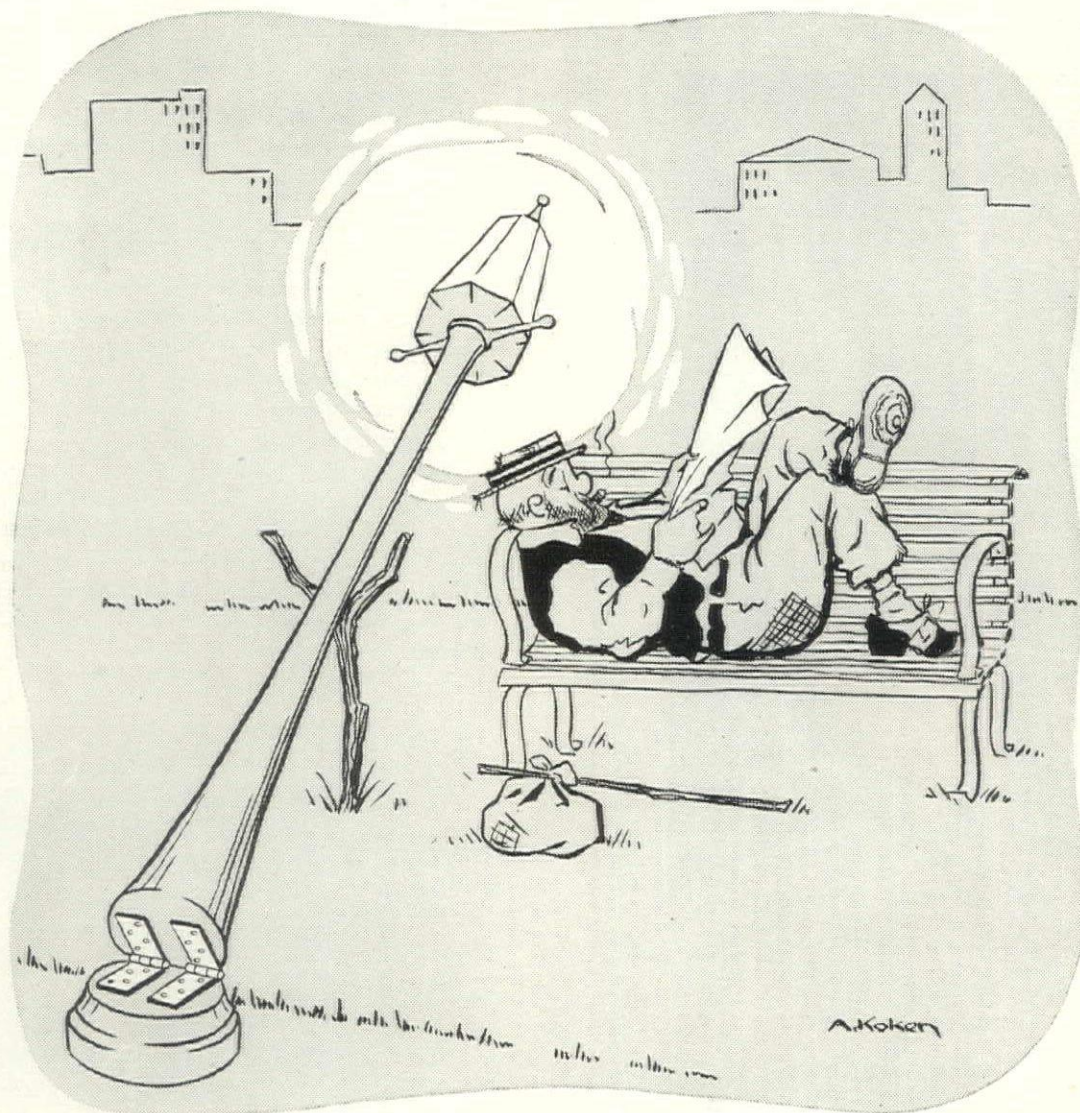
JESSE O. MORGAN, JR., *Architect*
Shreveport, La.

• While no one will challenge Reader Morgan's claim that other parts of the South are ahead of Atlanta in contemporary school design, some may challenge his opinion that glass block has no place in the lighting of southern classrooms.—Ed.

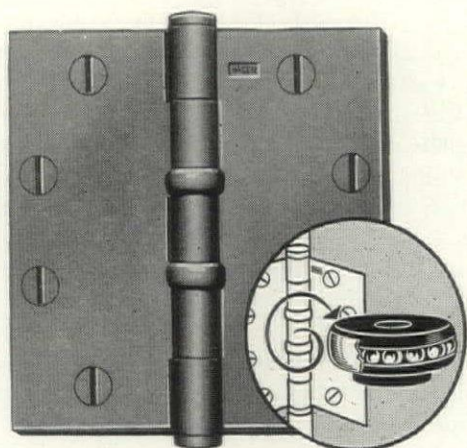
ERRATA

The book, *The Prefabrication of Houses*, is priced at \$7.50, not \$6.50, as erroneously noted in the May issue.—Ed.

Glenn Stanton of Portland, AIA's new President, went to the University of Oregon not the non-existent "University of Portland."—Ed.



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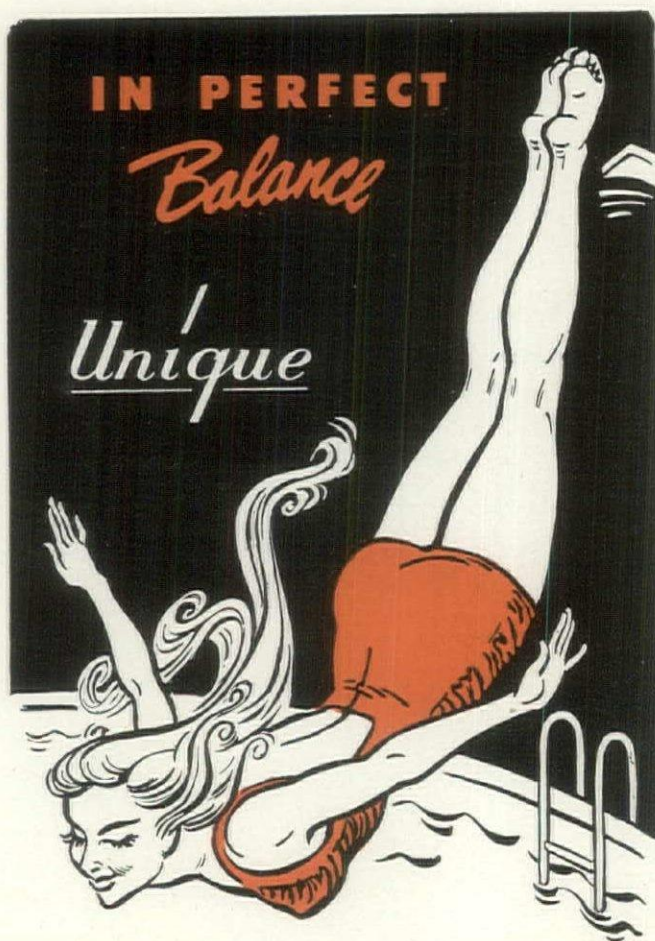
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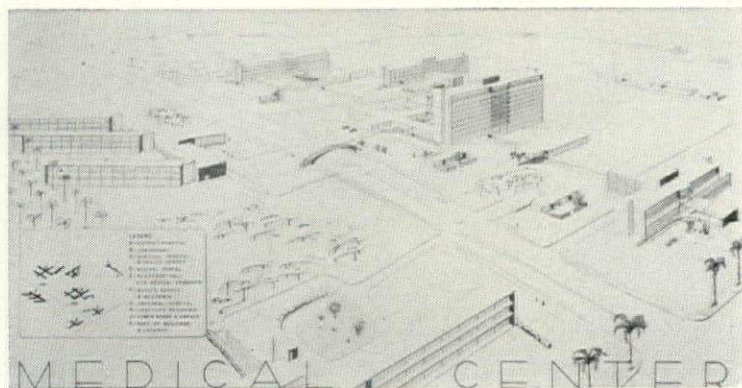
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REVIEWS

HOSPITALS — INTEGRATED DESIGN Revised edition by Isadore Rosenfield. Reinhold Publishing Co., New York, N. Y. 398 pp. 9 x 12 in. Illustrated. \$15.

Hospital planners the world over will welcome this second edition of famed hospital architect Isadore Rosenfield's comprehensive book on contemporary hospital design. Because both building technology and medical science have made such rapid strides in the four years since the original version was published, Rosenfield has now revised the text extensively and included a wealth of new material among the more than 500 plans and photographs.

In scope and organization, this edition parallels the first volume. Opening chapters point up the critical deficiency of hospital beds in the U. S., the inequity of their present distribution and the need for the type of regional and national integration of all medical facilities which the Hill-Burton act aims to achieve. Rosenfield emphasizes the efficiency and economy of the big hospital and the growing value of the regional medical center (see cut of his projected Rio Piedras Medical Center, Puerto Rico).



Regional medical center proposed for Puerto Rico and designed by Author-Architect Isadore Rosenfield.

The core of the book covers in detail the design requirements of the general hospital's main elements—the nursing units, radiology, operating, laboratory, maternity, pediatrics, out-patient and service departments. For architects new to hospital work, Rosenfield's brief, clear descriptions of the functions and space demands of these basic elements will be invaluable, but the author warns the neophyte hospital architect that the book is no substitute for an experienced hospital planning consultant. Special planning problems of TB, cancer, psychiatric, cardiac and chronic disease hospitals are dealt with in separate chapters. A concluding section on technical features of the hospital building includes two entirely new chapters by USPHS engineer Frank J. Sullivan and structural engineer Nickolas Farkas dealing respectively with the latest mechanical equipment and construction methods.

Despite its impressive weight of sheer facts and figures, this is no sterile textbook, but a highly personal reflection of Isadore Rosenfield's long years of experience in hospital work. The bulk of the illustrative material is drawn from the author's practice as both architect and consultant. In dealing with controversial questions of hospital design, he presents a fair cross-section of conflicting viewpoints, but strongly documents his own position. The excellent chapter, "Daylighting for Hospitals" exemplifies this technique. To answer those who would keep glass areas small for economical reasons, Rosenfield cites extensive medical evidence that plentiful daylight in hospitals is "a life-and-death matter." Besides aiding vision and patient morale, daylight is a vital germ-killer—light from gray skies, even though filtered through two thicknesses of ordinary glass is still germicidal.

The solution, says Rosenfield, is to use big glass areas with proper provision for orientation, shading and maintenance. (See cut.) And

(Continued on page 109)

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neers—in our 91 different offices—who have a lot *more* information right at their finger tips.

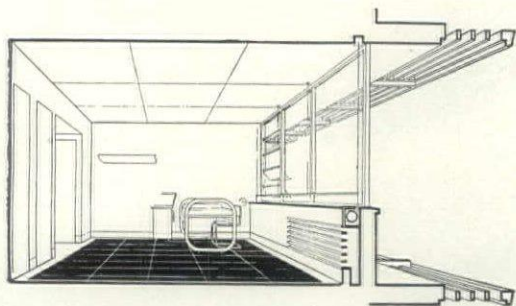
So, why not *talk to Honeywell*? Why not *write to Honeywell* for complete information on the equipment discussed in the column across the page? And why not do it *now*?

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REVIEWS

as for costs, "a whole row of operative window units installed in a single wall opening is cheaper per unit than the individual window-in-wall though still generally more costly than a solid wall of equal area."—B.P.



Combination of fixed and awning-type windows, slotted and solid overhang and translucent screen which rolls up from sill provides control of light, good ventilation, easy maintenance in proposed Faith Hospital, St. Louis, Mo. Murphy & Corruba, Architects.

ARCHITECTURAL GRAPHIC STANDARDS, Fourth Edition, by Charles G. Ramsey and Harold R. Sleeper. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y. and Chapman & Hall, Ltd., London. 614 pp., 9 x 11½". Illus. \$10.

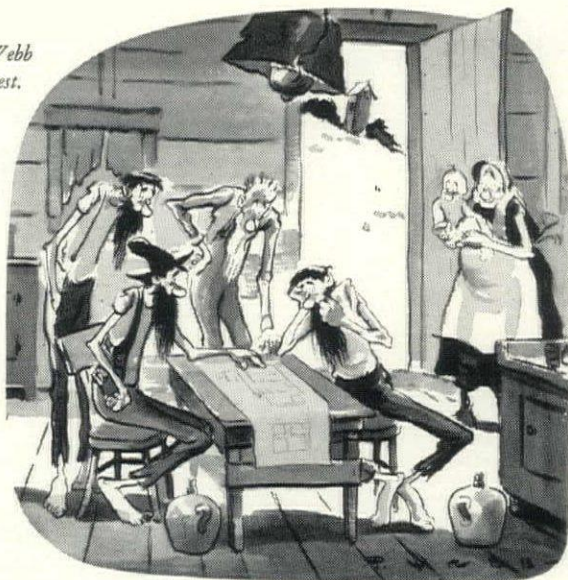
The most thumbed book in any architectural office is *Graphic Standards*, the encyclopedia of design details which, since its first publication in 1932, has been the bible of students, draftsmen and architects alike. The fourth edition of this important architectural tool is a big, new book. Almost double the size of the previous edition, it contains 368 entirely new plates, 151 revised ones; only 46 plates were left untouched. Even the 50-page index is more than twice the size of its predecessor, including some 12,000 cross-indexed entries.

As in earlier editions, the information is presented in illustrations giving comprehensive details on dimensions, uses, procedures, equipment, furnishings, fittings and appliances. Standards are followed wherever standards have been set; otherwise modern use is the guide. Among the new subjects included in the fourth edition are special fireplaces (two-way and corner varieties), precast concrete joists, modern wall types, corrugated wire glass roofing and siding, modular casement windows, eaves and water tables for flat roofs, television and home movies, household equipment and furnishings, parking garages and contemporary furniture.

The authors have been associated in private architectural practice in New York City for the past 30 years. Both are AIA members, Sleeper is an AIA Fellow and President of the Architectural League of New York. Ramsey is co-author of *Architectural Details* while Sleeper is author of *Architectural Specifications* and co-author of *The House for You*.

The authors may well be proud of their new *Graphic Standards*—a welcome addition to the profession's tool box.—JCH.

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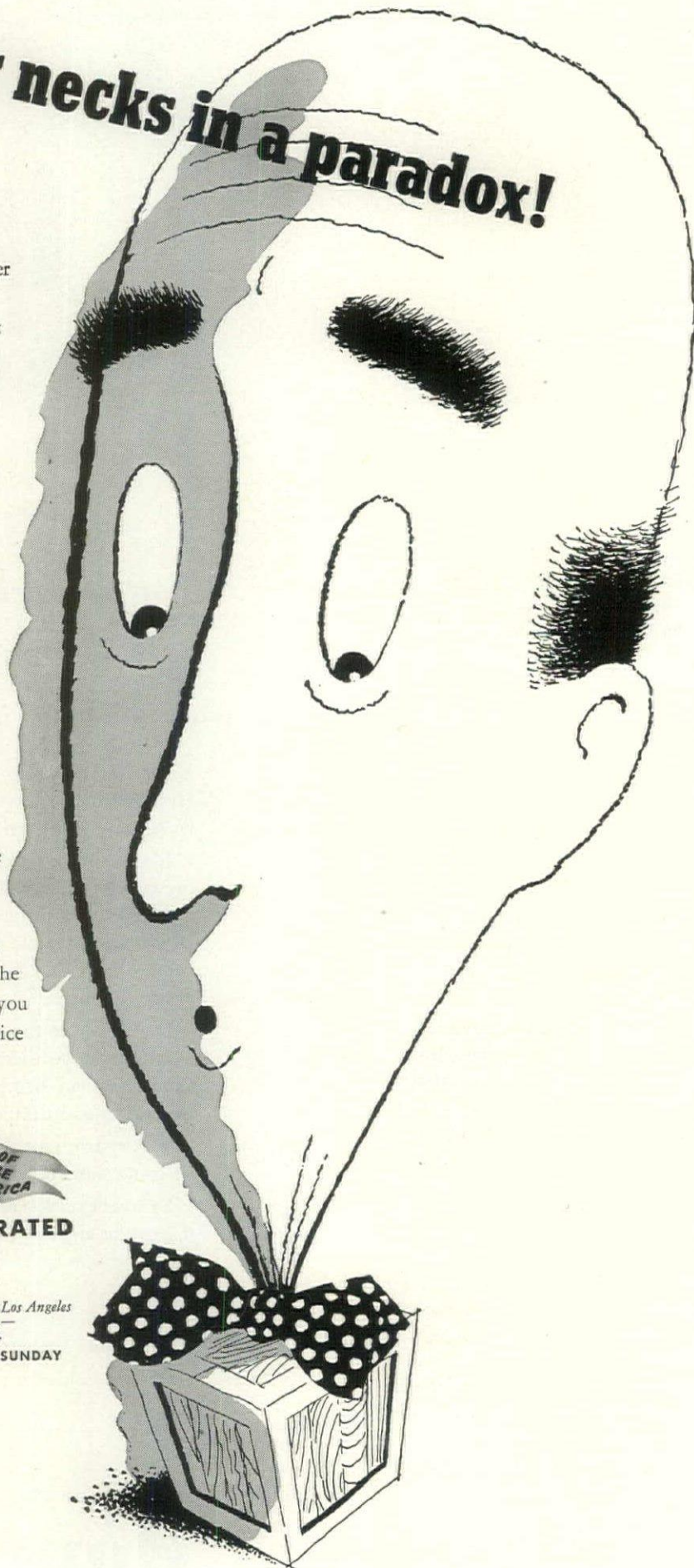
And don't forget, while general applications are limited, you can still use Revere Copper Water Tube in industrial processing lines, underground service lines and domestic hot and cold water lines. Check your Revere Distributor on the availability of these materials. He also will put you in touch with Revere's Technical Advisory Service in the event you wish to discuss your technical problems.

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Edgewater Park, Cleveland



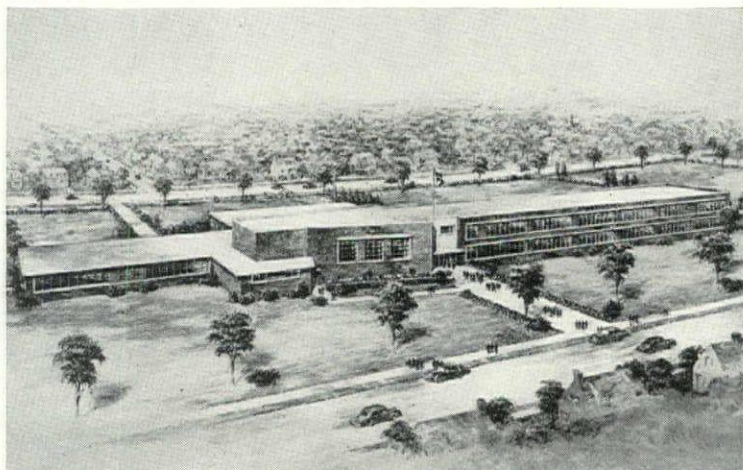
... News For Economy

ABOUT TIGHTEST CLOSING

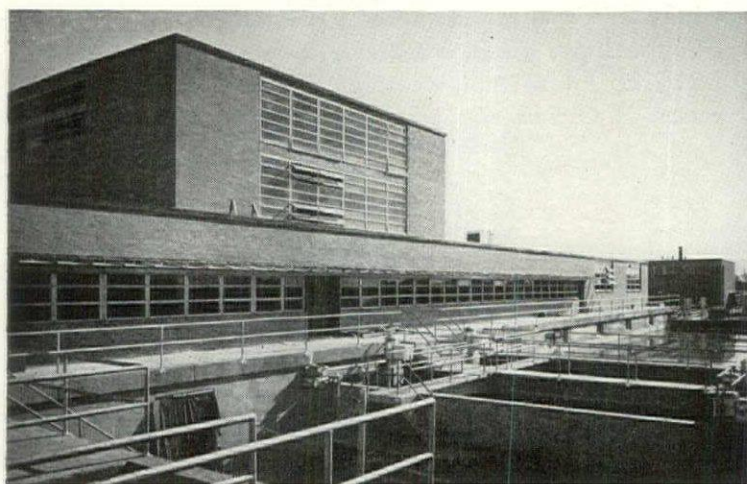
You really have something when, in one window, you can get the design advantages of Ludman's Auto-Lok Weatherstripped Windows, PLUS rock bottom upkeep, PLUS competitive original cost.

Auto-Lok's unrivaled tight closure slashes fuel and air conditioning costs. You save more by being able to clean the outside from the inside. Precision-balanced, adjustment-free Auto-Lok Hardware eliminates costly periodic maintenance.

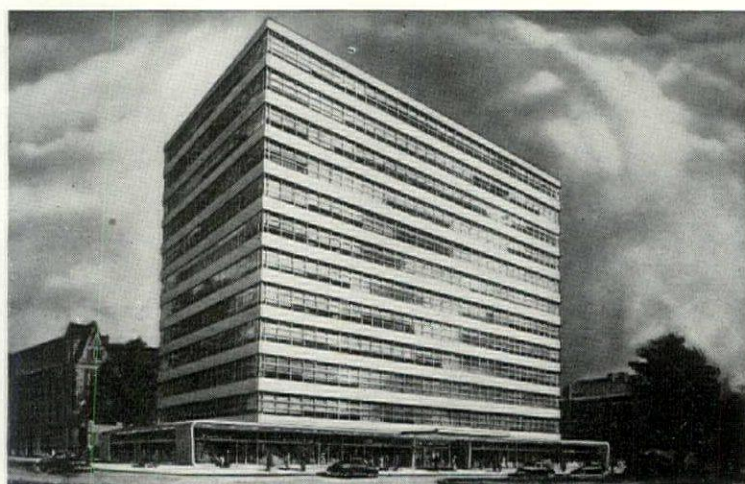
All over the country, Auto-Lok is the choice for just about every type of institutional, industrial and residential construction *because* Auto-Lok is the first and only window to successfully combine the BEST features of ALL window types.



SCHOOLS get distinct advantages from Auto-Lok windows. Without sacrificing beauty, 100% weather control is assured ... ventilation even when it's raining. And they're so easy to operate, even a child can open or close Auto-Lok in a jiffy. This school is Mary B. Munford Elementary School, Richmond, Virginia. Architects: J. Binford Walford, O. Pendleton Wright. Contractors: Thorington Constr. Co., both of Richmond, Va.



INDUSTRIAL and similar buildings offer little challenge to versatile Auto-Lok Windows. The complete Auto-Lok line provides infinite variations of fixed and movable sash. The patented Auto-Lok Mechanism is so versatile that Ludman Engineering can speedily adapt it to almost any special requirement. This is Park Cities Water Treatment Plant, Dallas, Texas. Powell & Powell, Engineers, Dallas, Texas.



APARTMENT & HOTEL managements need no longer worry about careless tenants who leave windows open and invite water damage to furnishings when sudden rains descend. Auto-Lok keeps out the rain, but lets the air in. Tight closing cuts air conditioning and heating costs. Cleaning time is impressively slashed because it's easily done from the inside. Shown above are Drayton Arms Apartments, Savannah, Ga. Architects: Bergen & Bergen. Contractors: Byck-Worrell Constr. Co.

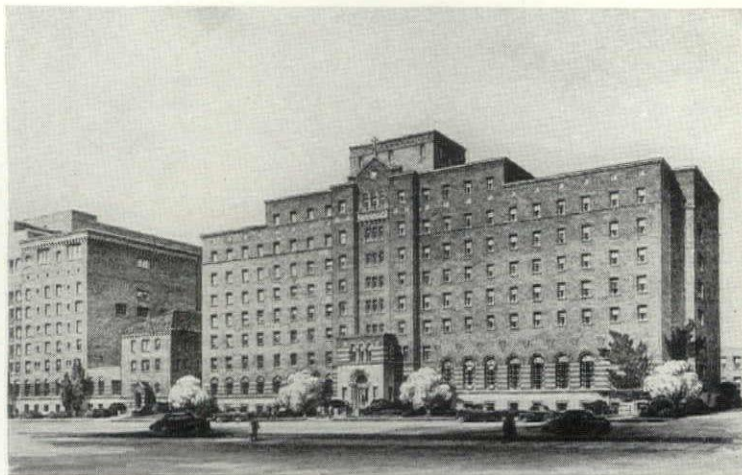
Auto-Lok **WINDOWS**
PATENTED **ALUMINUM**
weatherstripped **or WOOD**

IT'S NO LONGER NECESSARY TO COMPROMISE

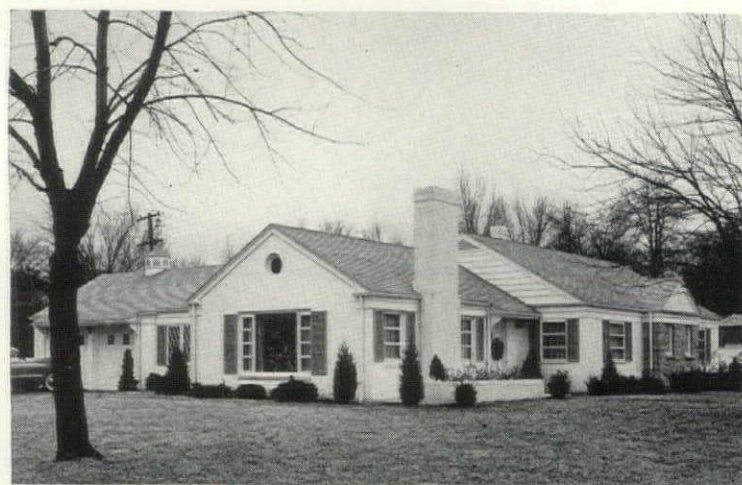
Only with AUTO-LOK have these architects been able to meet...economically...the particular window requirements of their buildings (illustrated) without sacrificing any of these vital window functions — — — — —

Minded Perfectionists

THE WINDOW EVER MADE



HOSPITALS, where draft-free climate control is a must, find that their window dollar goes further with Auto-Lok. "Cold spots" near windows are eliminated, dust and air infiltration reduced to a minimum heretofore believed impossible. Low upkeep costs also swung the decision to Auto-Lok. This is the De Paul Hospital School of Nursing, St. Louis, Mo. Architects-Engineers, Maguolo and Quick, St. Louis, Mo.



HOMES, large or small, enjoy all the advantages of Auto-Lok's advanced design. Homemakers are intrigued by the way Auto-Lok's top vent drops down when open, so that even the top vent is readily accessible from the inside for cleaning. Just flip the clips and remove the easy-to-handle interchangeable inside screens and storm sash. Auto-Lok Windows never stick, never rattle... This is the home of Mr. & Mrs. Ralph Smith, Toledo, Ohio. Designer and Builder: R. B. Johns Co.

ONLY AUTO-LOK GIVES YOU ALL THESE ADVANTAGES

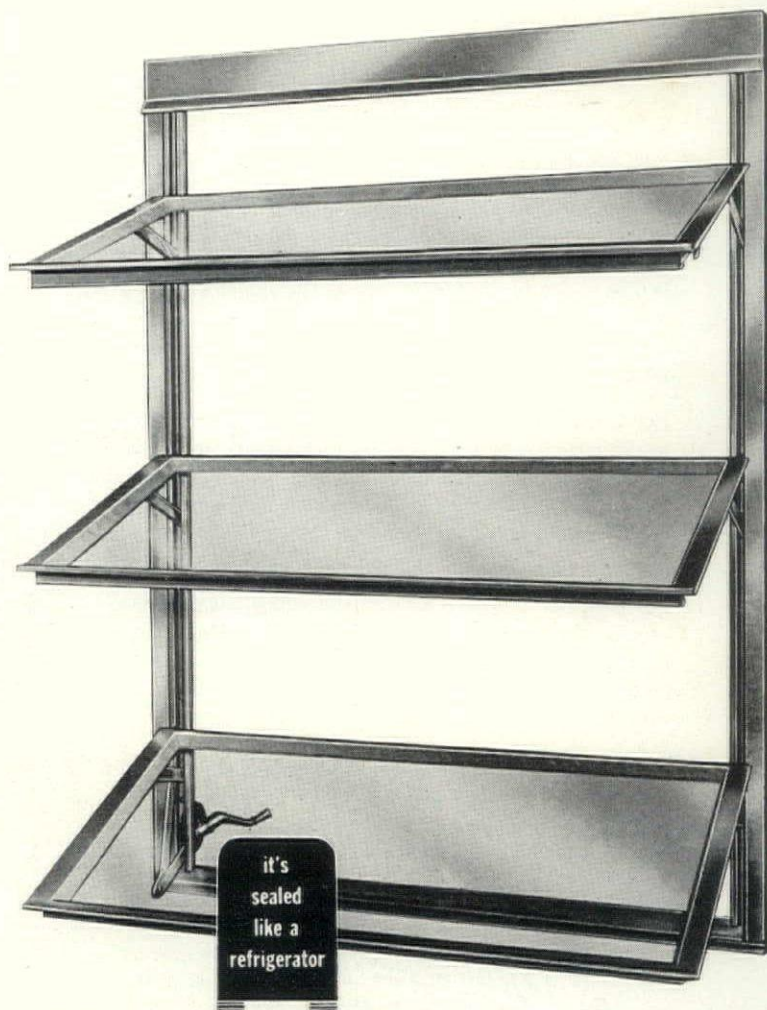
- Air infiltration reduced to a minimum -- only 0.095 cfm per foot.
- Distinctive beauty.
- No drafts -- air scooped in and upward.
- Removable inside screens and storm sash.
- Lower fuel bills.
- Maintenance costs at a minimum.
- Easily operated.
- Cleaned from inside.
- Sealed protection against storms.
- 100% ventilation, even on rainy days.



Write Our

ENGINEERING DEPARTMENT

Our engineers have been privileged to work with architects and owners in solving all types of window problems. Their experience, their fund of facts is yours to draw upon -- without obligation.



For details, see SWEET'S and write for name of nearby AUTO-LOK distributor and free booklet

"WHAT IS IMPORTANT IN A WINDOW?"

DEPT.
MB-7

LUDMAN
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P. O. BOX 4541 • MIAMI, FLORIDA

ANOTHER ADVANTAGE OF BUILDING WITH HOMASOTE . . .

IN ONE MATERIAL: **ROOF SHEATHING** **PLUS** **INSULATION** **for ASPHALT,** **ASBESTOS or WOOD SHINGLES**

• In many thousands of homes, Homasote is now serving as under-flooring, exterior wall sheathing and roof sheathing. In every case the Homasote provides great structural strength and maximum insulating value as well as an efficient, fast, economical and easy-to-use sheathing material.

Now—with Homasote and the Viking Staple—asphalt or asbestos shingles can be applied directly to the Homasote sheathing. Furring strips, 12" on centers, are applied to the rafters. The pre-expanded Homasote is then nailed to the furring strips. The shingles are applied to the Homasote in the usual manner, using 3/4" Viking Staples. The staples cross and lock in the Homasote—providing a holding power which has been tested with wind velocities up to 110 miles an hour!

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For both new construction and re-roofing—with asphalt, asbestos or wood shingles—you gain many advantages when you use Homasote for roof sheathing. Homasote is more economical—will not rot out. Remember also—Homasote's big sizes, up to 8' x 14', mean fewer handlings, fewer nailings, less labor, than are required with materials of smaller size.

Write today for literature and specifications data showing the many uses of Homasote. Please give us the name of your lumber dealer!

HOMASOTE COMPANY, Trenton 3, N. J.



... in Big Sheets up to 8' x 14'

... oldest and strongest insulating-building board on the market

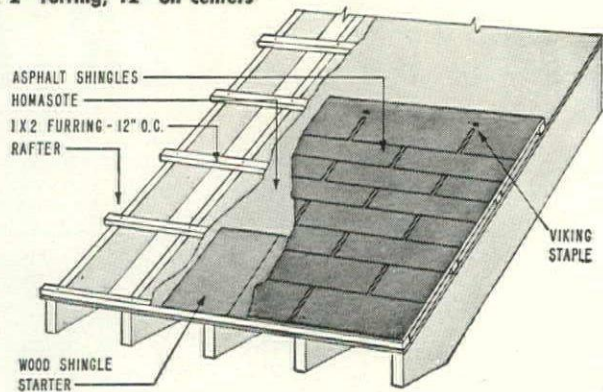


Nova Sales Co.—a wholly-owned Homasote subsidiary—distributes the Nova Roller Door, Nova-I. P. C. Waterproofing Products, the Nova Shingle and Nova-Speed Shingling Clip and the Nova Loc-Nail. Write for literature.



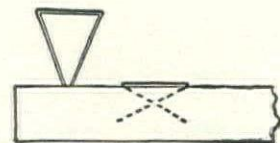
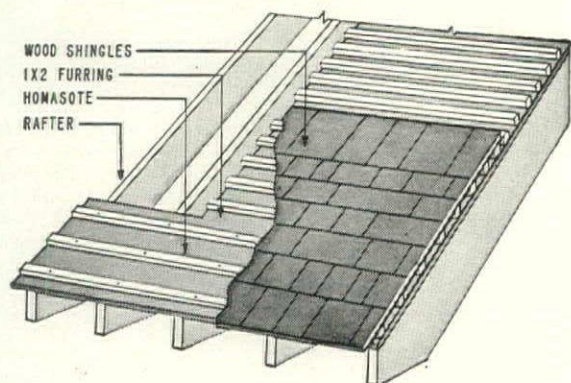
With ASPHALT or ASBESTOS SHINGLES

1" x 2" furring; 12" on centers



With WOOD SHINGLES

1" x 2" furring on centers determined by shingle size



THE VIKING STAPLE crosses and locks in the Homasote



America's finest
bathroom accessories
continue in production!



IS CRYSTAL-CLEAR

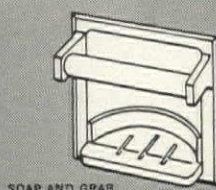
YOUR FUTURE

Crystallcrome by **HALL-MACK**

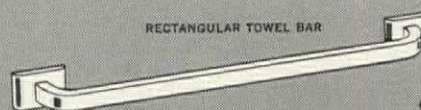
BATHROOMS DESERVE the best and bathrooms can *have* the best...jewel-like Crystallcrome by Hall-Mack! These sparkling accessories in gleaming chromed metal and crystal clear Lucite are your answer to the bathrooms of today and tomorrow. And Crystallcrome is available. Production has been tripled to meet increased demand.

there's no substitute
for Hall-Mack
quality

HALL-MACK will continue to produce bathroom accessories styled and built for a lifetime of use. Write for folder on available lines.



SOAP AND GRAB



RECTANGULAR TOWEL BAR



SINGLE HOOK

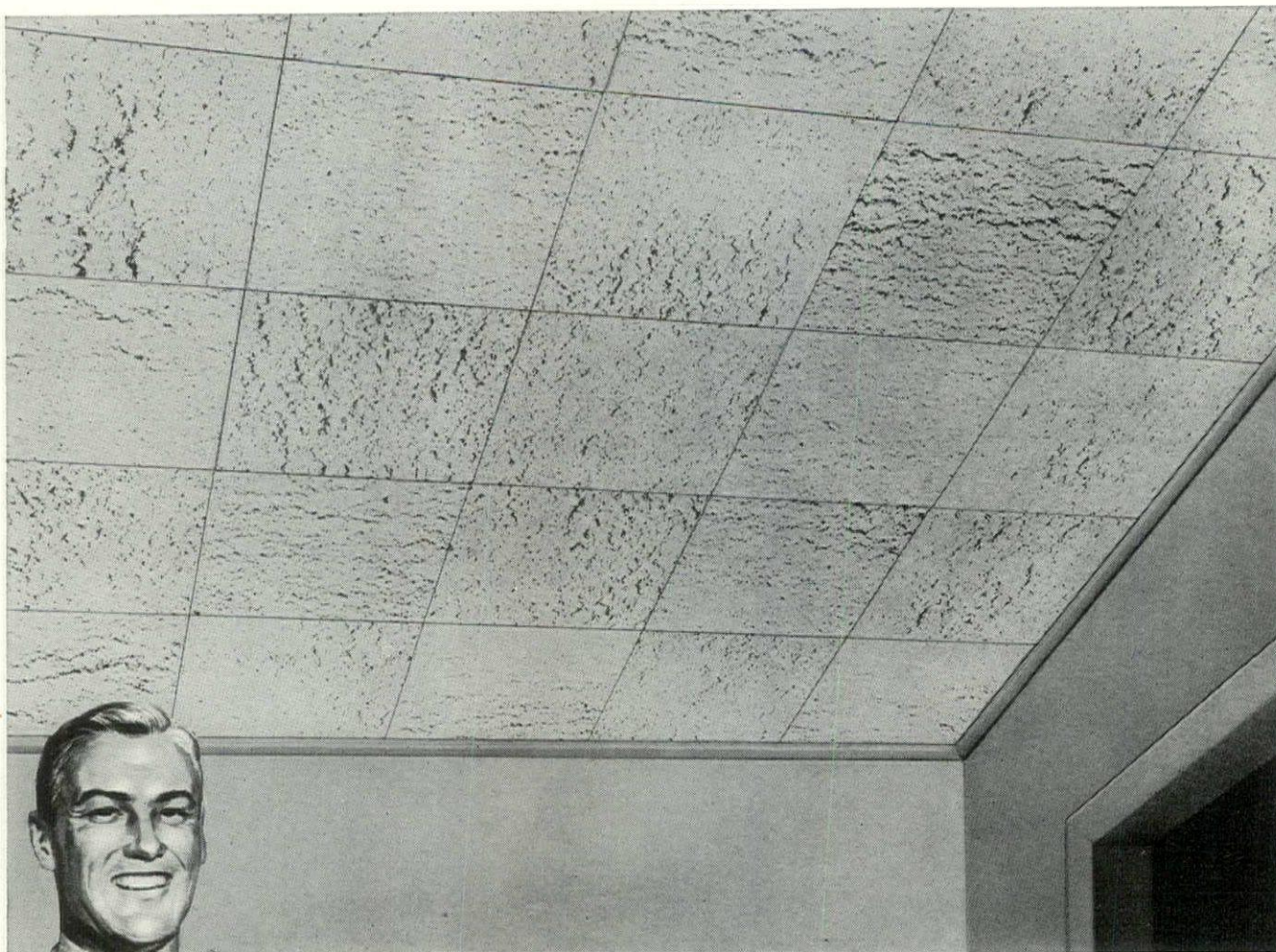
HALL-MACK®
Quality
ACCESSORIES

for Every Bathroom Style and Budget

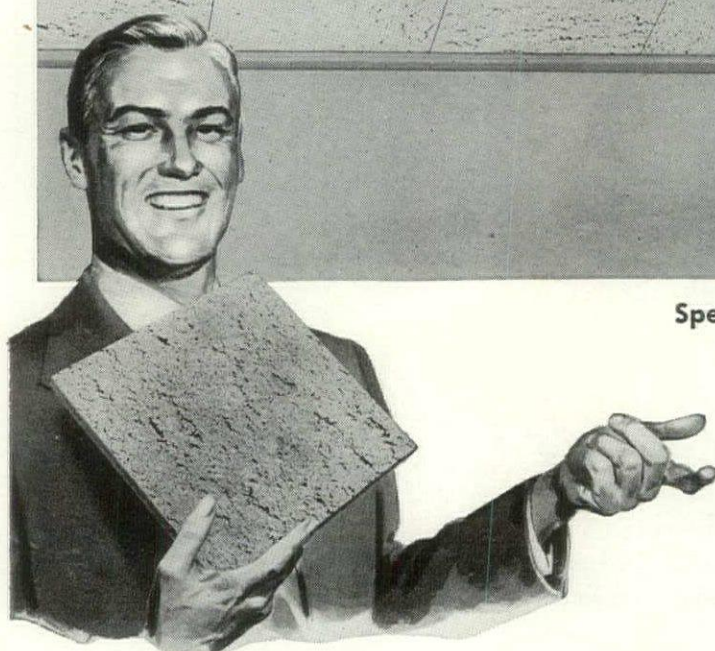
Sold by leading plumbing, tile and hardware dealers throughout the United States and Canada.

HALL-MACK COMPANY

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Specify this acoustical tile with its attractive fissured surface for current needs or future requirements.



It's Johns-Manville PERMACOUSTIC!

PERMACOUSTIC* TILE has an attractive fissured surface with great architectural appeal. The texture obtained by the fissures is distinctive and pleasing and avoids mechanical monotony of appearance.

Because Permacoustic is made of non-critical materials you can plan present and future construction without fear of shortages. Stocks are carried in all the principal cities in the United States.

Made of fireproof rock wool fibres, Permacoustic meets building codes which specify the use of non-combustible acoustical materials.

Permacoustic is furnished in popular sizes, can be installed by application to existing slabs or ceilings, or can be suspended using a spline system of erection.

Other J-M Acoustical Ceilings include *Fibre-tone**, a drilled fibreboard; *Sanacoustic**, perforated metal panels backed up with a non-combustible, sound absorbing element; and *Transite**, made of perforated, fireproof asbestos. For a free brochure entitled "Sound Control," write today to Johns-Manville, Dept. MB, Box 158, New York 16, N. Y. In Canada, write 199 Bay Street, Toronto 1, Ontario.

*Reg. U. S. Pat. Off.

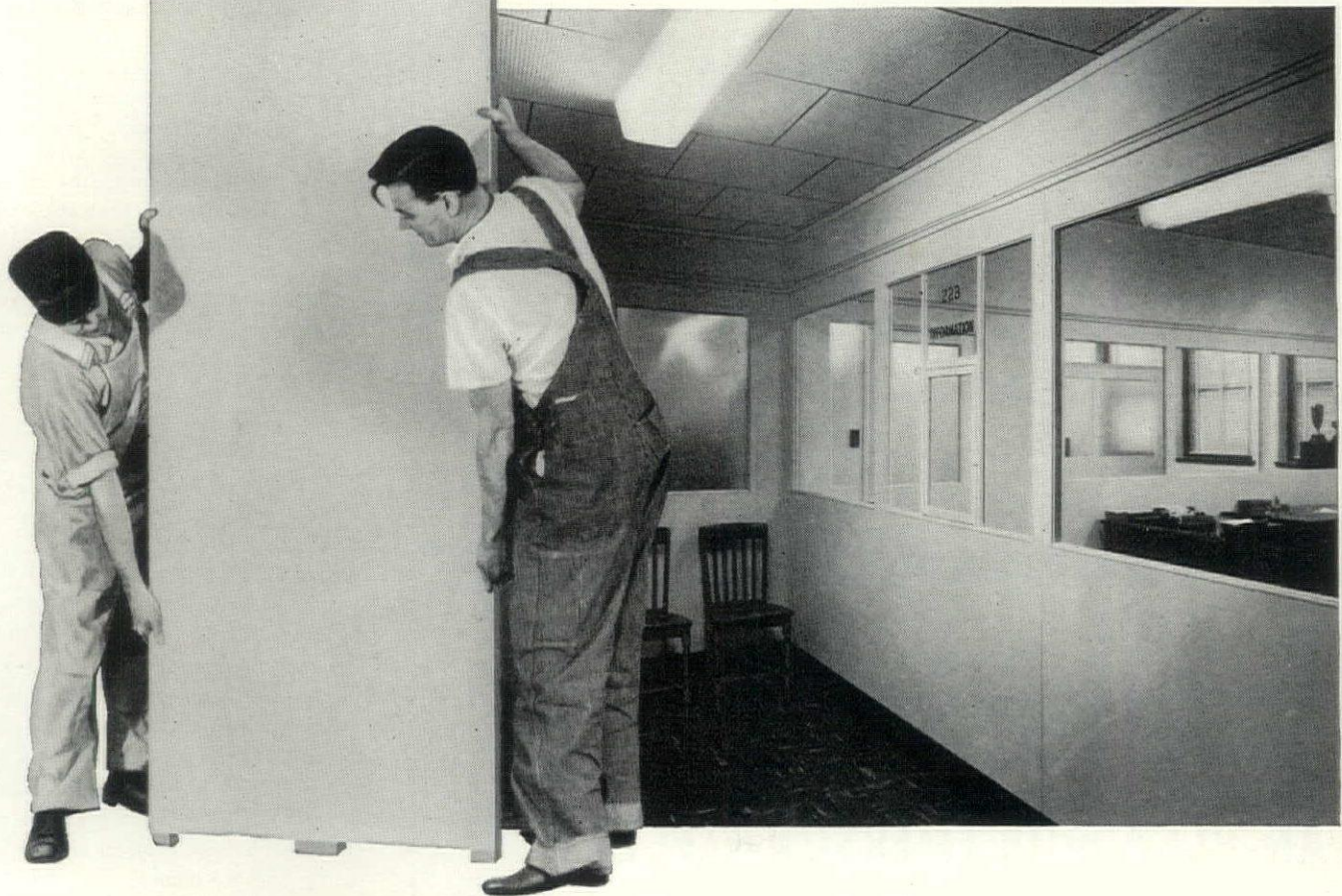


Johns-Manville

Movable Walls—Terraflex and Asphalt Tile Floors—Corrugated Transite*—Flexstone* Built-Up Roofs—Etc.

Conserve critical materials

Use J-M Asbestos Movable Walls



Because they are made of noncritical materials, J-M Universal Movable Walls give complete freedom in planning space arrangement in these days of expansion and change.

- Reallocation of existing space and partitioning of new space can be done easily and quickly with Johns-Manville Universal Movable Walls. Made of asbestos, these walls are ideally designed to help business and industry meet the space problems involved in the defense effort.

The flush panels have a clean, smooth surface that's hard to mar, easy to maintain, and will withstand shock and abuse. They're light, easy to erect and to relocate. The "dry wall" method of erection assures little or no interruption to regular routine.

Johns-Manville Movable Walls may be used as ceiling-high or free-standing partitions. The complete

wall, including doors, glazing and hardware, is installed by Johns-Manville's own construction crews and under the supervision of trained J-M engineers.

TRANSITONE Movable Walls—A recent and unique development of the Johns-Manville laboratories is the Transitone Movable Wall, with asbestos panels integrally colored. Non-fading pigments are blended into the asbestos fibres, thus eliminate the cost of periodic decorative treatment. The color goes all the way through each panel.

For details about J-M Movable Walls, consult your Sweet's Architectural File, or write Johns-Manville, Box 158, Dept. MB, New York 16, N. Y. In Canada, write 199 Bay Street, Toronto 1, Ontario.

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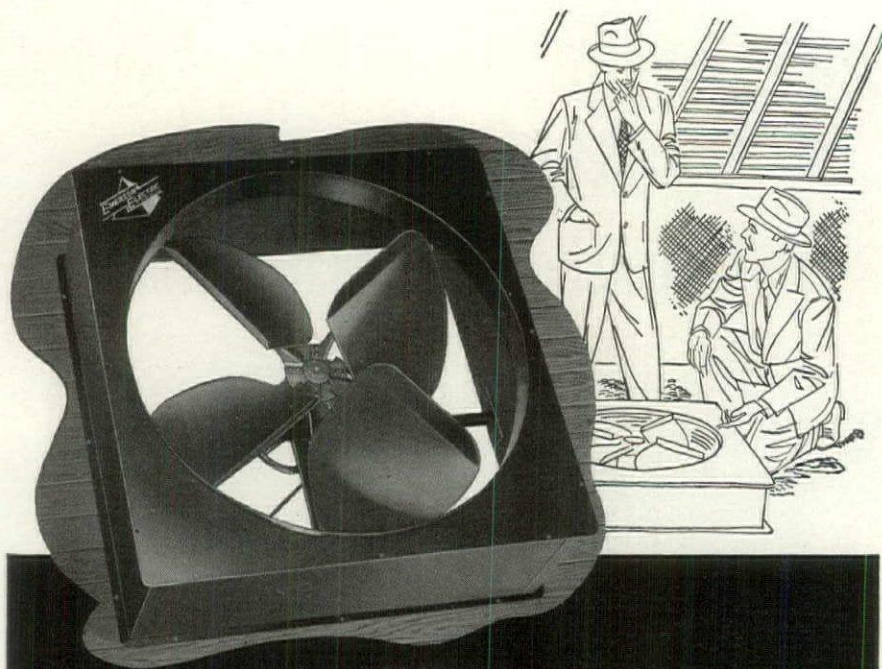


Johns-Manville

ASBESTOS

Movable Walls

INSTALLED NATIONALLY BY JOHNS-MANVILLE



TURN SUMMER HEAT INTO A SELLING POINT

FAN-PLAN with EMERSON-ELECTRIC ATTIC FANS

"Will it be cool in summer?" is a question most home buyers ask. You can answer "Yes" and chalk up satisfied buyers when you install Emerson-Electric Attic Fans in your homes. The reason is simple: The reputation of Emerson-Electric Attic Fans for dependable service means years and years of comfort to your clients. And remember, you save your clients half on in-

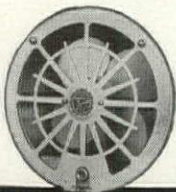
stallation costs when you install Emerson-Electric Attic Fans during original construction.

Specify these efficient, economical fans in your blueprints. Point out the advantages of this type of home cooling to home buyers. You'll turn summer heat into a selling point!

For complete data, write for Bulletin No. 421.

THE EMERSON ELECTRIC MFG. CO., St. Louis 21, Mo.

Specify Emerson-Electric Kitchen Ventilators
You put added "sales appeal" in your homes when you specify Emerson-Electric Kitchen Ventilators! Wall and Ceiling models are available for easy installation in any type construction. Don't overlook this look-for feature in modern home planning.



EMERSON **ELECTRIC**
FANS • MOTORS APPLIANCES

TECHNICAL LITERATURE



LIGHTING. Color Is How You Light It. No. FL-420. Adv. Dept., Sylvania Electric Products Inc., 87 Union St., Salem, Mass. 11 x 8 1/2". 24 pp. 50 cents.

An expanded version of the color and lighting booklet introduced by the same manufacturer two years ago, this publication helps the designer predict how a color will look under any of the eight kinds of "white" light now available. Colors (based on paints of four leading manufacturers) in the new edition are separated into five groups of eight colors each, according to the lighting under which they appear to best advantage. "It is not always desirable to show a color in its most vivid and lively capacity," the book states. "Sometimes in decorative and design work with colors, a softer, more subtle effect is required." While a verbal presentation of this kind of experiment is not the ideal solution to cataloguing the effects of light on colors, it is a helpful substitute to the designer who cannot fiddle with six or seven lighting arrangements and several paint colors before making his selections. As far as this analysis can go, the study is an excellent one. Also included is material on color definitions, color applications, the correlation of source and surrounding color, color psychology, color in industry, and merchandising and the home.

LIGHTING. Lighting Guide to Better Drafting. LS-137. Inquiry Bureau, General Electric Co., Nela Park, Cleveland 12, Ohio. 8 pp. 8 1/2 x 11".

The guide uses drawings and photographs to illustrate types of lighting systems for drafting rooms. Special attention is given to proper lighting for straight edges and shiny surfaces, and proper positioning of drafting boards. Also presented are helpful tips on the right illumination for tracing tasks, for index systems and for comfortable seeing of clerical work.

INSULATION. The Story of Perimeter Insulation for Standard Heating Systems. Dept. P-1 Owens-Corning Fiberglas Corp., Toledo 1, Ohio. 20 pp. 5 1/2 x 8 1/2".

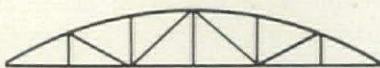
Because of the growing interest in basementless houses built with concrete floors on grade, the manufacturer has produced this informative brochure about perimeter insulation for slab construction. Easy to read, it contains many excellent diagrams which illustrate the proper method of installing glass fiber insulation below ground along the foundation wall. The booklet describes how heat is lost through the concrete floor slab

(Continued on page 122)

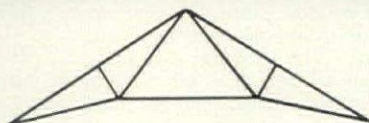
TIMBER TRUSSES...by Weyerhaeuser



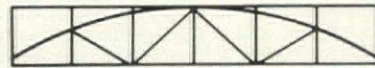
**FABRICATED
FOR FAST, ACCURATE
JOB ASSEMBLY**



The standard Monocord Bowstring truss



Pitch Type heavy timber truss



Flat Top modified bowstring truss

WITH another surge of heavy construction in the offing . . . with probable shortages and delays of some materials, Monocord Timber Trusses and other heavy structural members of wood can be relied upon to complete current and future projects.

Weyerhaeuser has the timbers . . . the facilities . . . and the experience to fabricate timber structural members of the heavier type to meet the job

requirements . . . to deliver such members clearly marked for accurate assembly and fast erection.

With fabricated timbers builders can proceed with factories, warehouses, depots, training centers, bridges, docks . . . and other projects calling for heavy construction.

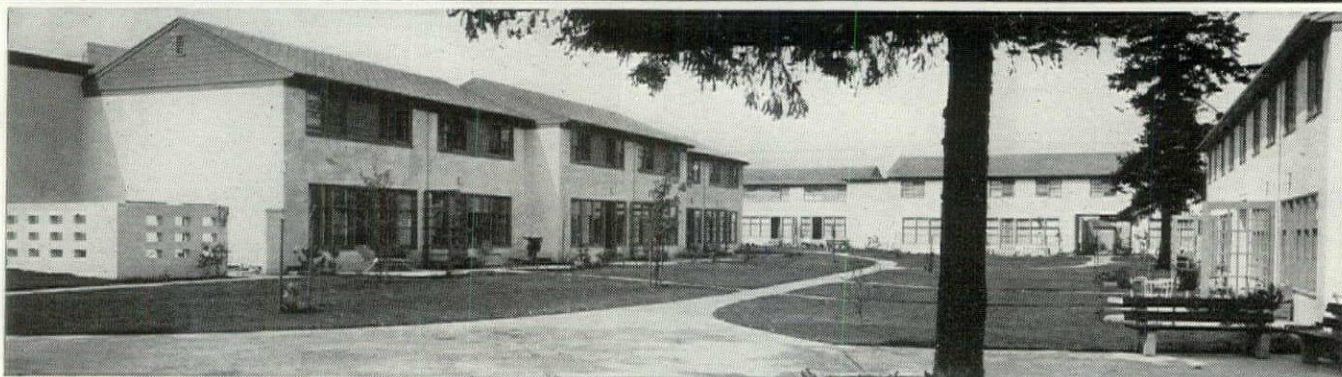
If you have projects involving such heavy structural members, write or wire our office for complete details.

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NEWARK, NEW JERSEY • TACOMA, WASHINGTON

AMERICAN-Standard

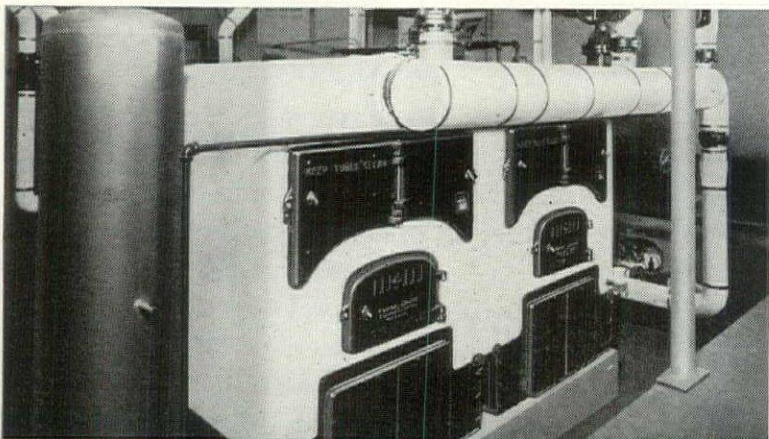
First in heating...first in plumbing



For economical heating and plumbing . . . **PORTLAND PROJECT CHOOSES**



▲ Smartly-styled American-Standard plumbing fixtures add to the tenant-appeal of any housing project . . . as illustrated by this Binford bathroom. The Ledgewood Lavatory and Master Pembroke Bath are made of rigid cast iron with a smooth coating of easy-to-clean enamel. The bath has low sides, wide front rim and flat bottom for comfort, convenience and safety. The Cadet Water Closet, of non-absorbent genuine vitreous china, features neat, close-coupled design.



AMERICAN-Standard

■ One of the Northwest's finest court-type housing projects is the Binford development in Portland, Oregon. The 276-unit rental housing is as modern as you'll find anywhere . . . and American-Standard heating and plumbing products play an important role in making it so.

Wherever they have been installed—in houses, hospitals, hotels, schools, large industrial buildings — American-Standard heating equipment and plumbing fixtures have proved their durability, ease of maintenance and dependability in service. And their outstanding construction qualities, smart styling and economy of operation have also won the enthusiastic approval of clients.

So, when you're specifying heating and plumbing products for *your* housing project, check the American-Standard line. Whatever the size of your project it offers you the widest choice of styles, types and sizes. **American Radiator & Standard Sanitary Corp.**, P. O. Box 1226, Pittsburgh 30, Pennsylvania.

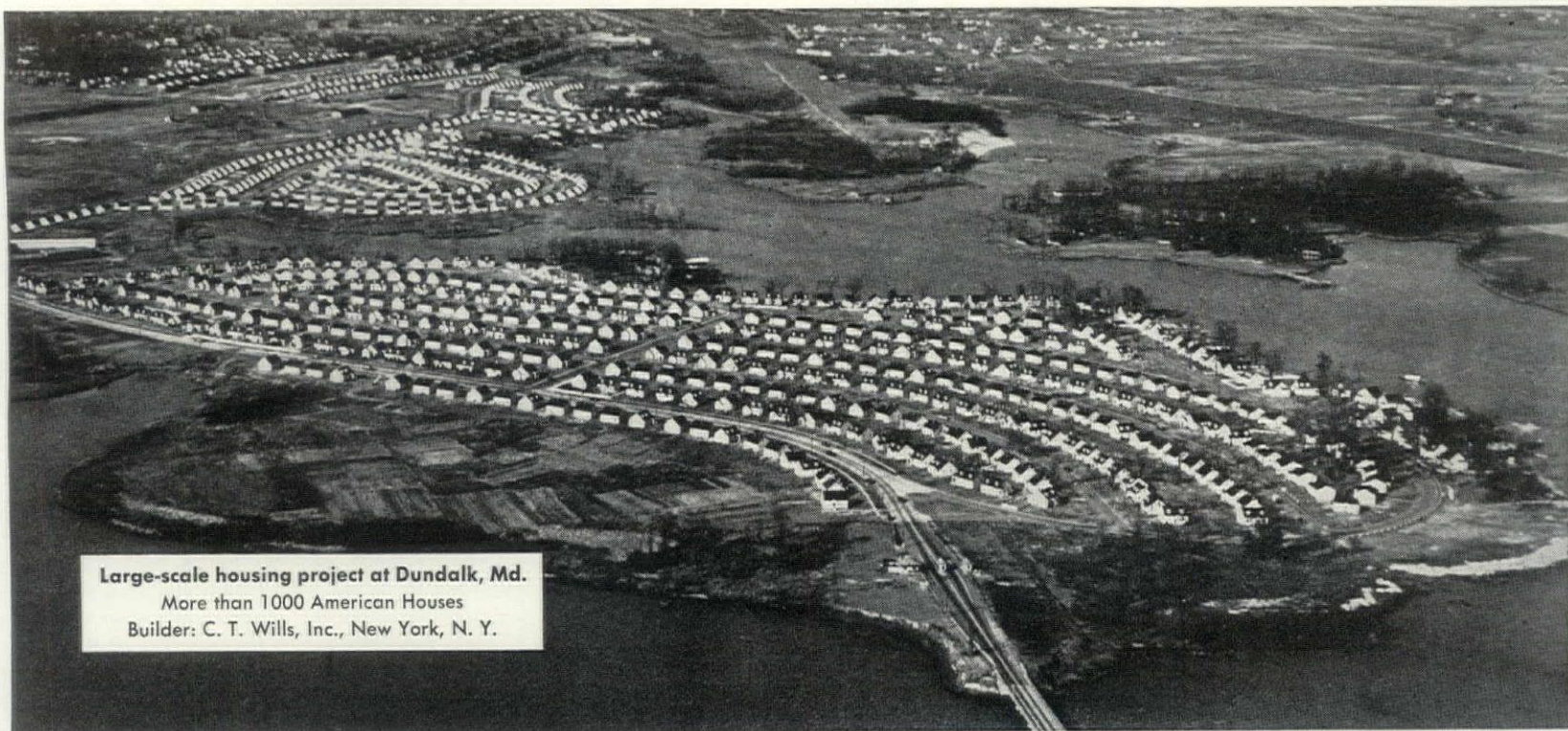


◀ The entire Binford heating system is fired by 13 oil fired No. 36 Water Tube Boilers. American-Standard Water Tube Boilers offer proven efficiency. And they're made in a wide range of sizes so that, either singly or in battery, they meet the heating requirements of virtually any type of building.

Serving home and industry
AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON

Today's most widely accepted method for **VOLUME BUILDING**

"Prefabrication at its Best"



Large-scale housing project at Dundalk, Md.
More than 1000 American Houses
Builder: C. T. Wills, Inc., New York, N. Y.

Here's a method of building that has justly *earned* the title "Prefabrication at its Best."

It is a method of building that is flexible enough to be used in the construction of a single family house of any style or size ... a large multi-family garden-type apartment ... or a thousand-family defense or military housing project.

It is a method of building that effects economies while producing superior finished structures.

It is a method of building that saves time and money, enables builders to meet erection schedules on time.

It is the American Houses' method of building and it has a record of accom-

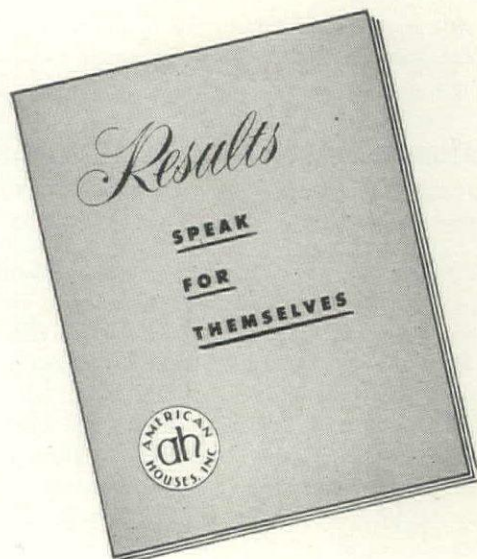
plishment that places it "*first*" in the field of prefabrication.

Whatever your interest in building may be—whether you are an architect, a builder, a realtor, a mortgage banker, or an industrialist with an employee housing problem, you should have the complete story on American Houses.

Our new booklet "*Results Speak for Themselves*" explains what American Houses' product and method have done for others—suggests what they can do for you. Send for your copy today. Please address your request to Dept. M-7.

* * *

Our plants are now serving most of the area east of the Mississippi.

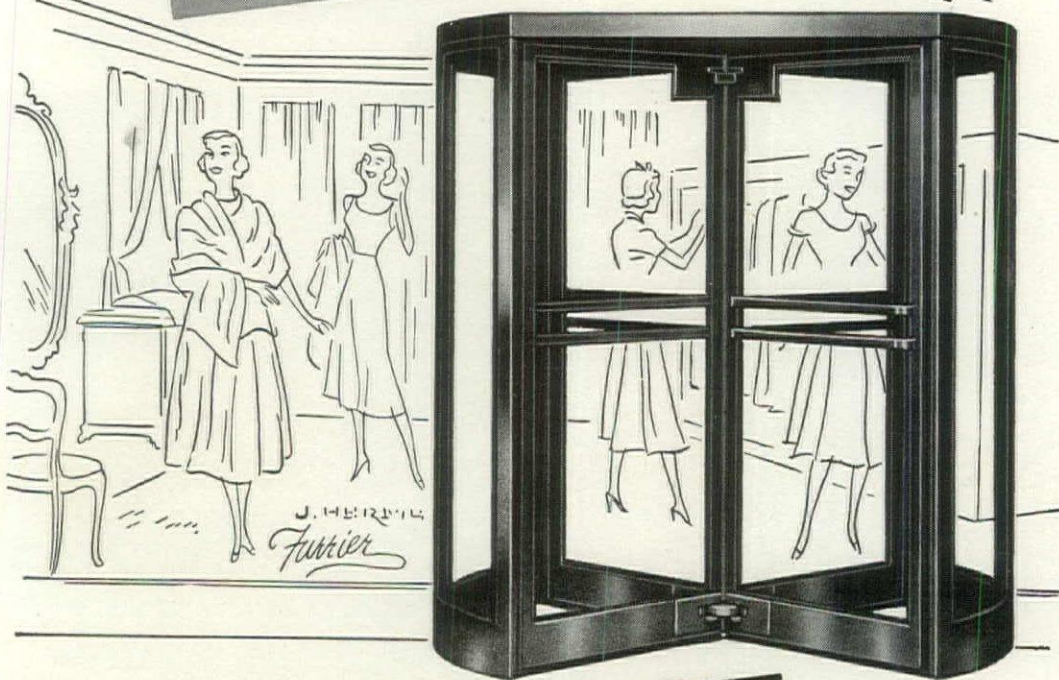


AMERICAN HOUSES, Inc.

165 West 46th Street, New York 19, New York

PLANTS: ALLENTOWN, PA. LUMBERTON, N. C. COOKEVILLE, TENN.

JULY HEAT accents the problem of EFFICIENT TEMPERATURE CONTROL



LOOK TO REVOLVING DOOR ENTRANCES FOR AN ECONOMICAL SOLUTION . . .

Illustrated is International's new, production-built Standard Model Revolving Door — most custom features at low budget price.

The warm days ahead mean increasing need for "conditioned" air. To keep down air conditioning costs for their clients more and more architects are recommending revolving door entrances.

These doors — "always open — always closed" — explain the savings which revolving door entrances contribute to air conditioning costs. Originally it means smaller capacity air conditioning equipment is needed. During peak cooling months the equipment is in operation less time each day — to save operating and maintenance costs. And, since overloading is eliminated, danger of breakdowns with the resulting discomfort is gone.

The architect who recommends revolving door entrances provides his clients these savings plus all the other benefits of this most efficient entrance.



FREE BOOKLET helps you plan more efficient entrances. Write for it now. For immediate information, consult the classified section of your telephone directory or see our catalog in Sweet's.



Periodic lubrication plus an annual check is the only maintenance required for years of service from a revolving door.

REVOLVING
INTERNATIONAL-VAN KANNEL
DOORS
1853 EDGAR STREET EVANSVILLE 7, IND.

In Canada — International-Van Kannel revolving doors are available through Eastern Steel Products, Ltd., Toronto and Montreal.

TECHNICAL LITERATURE

and fill if perimeter insulation is not used or improperly placed. Step by step, a practical sequence is outlined for applying perimeter insulation. The builder—and the house—benefit from the use of Fiberglas insulation, the booklet maintains, because the material is easily applied. Also, the increased heat retention of the structure sometimes permits use of a smaller heating plant.

AIR CONDITIONING. Practical Pointers on Air Conditioning. United States Air Conditioning Corp., 3300 Como Ave., S.E., Minneapolis 14, Minn. 16 pp. 8½ x 11".

Both the layman and the engineer will find this practical handbook on air handling and treatment worthwhile reading. Attractively illustrated, the publication describes the properties of air, problems of its control, and applications of different types of equipment.

HEATING. National Heating Products. Catalogue No. 586. Radiator Co., 221 Central Ave., Johnstown, Pa. 20 pp. 8½ x 11".

This two color booklet is a general catalogue of heating products for homes, stores, institutions and industries. Among the items pictured and described are cast iron boilers for oil, coal, gas or stoker firing; steel boilers for coal, gas or oil firing; gas boilers; convectors and enclosures; cast iron radiators; baseboard heating units; domestic water heaters; and horizontal and down-flow unit heaters. The catalogue contains essential data on the products, such as ratings, capacities, inputs and outputs, roughing-in dimensions and water heater recoveries.

SWIMMING POOLS. Koven Swimming Pool Manual. Koven Steel Swimming Pools, Inc., 155 Ogden Ave., Jersey City, N. J. 12 pp. 8½ x 11".

This manual covers the practical factors involved in planning community, resort, and private swimming pools. It also discusses the advantages of steel swimming pools and gives full design, construction and erection details of the Koven large and standard pools. Each feature is illustrated by a drawing or sketch.

STUD WELDING. Nelweld Power Units. Nelson Stud Welding Div., Morton Gregory Corp., Toledo Ave. & E. 28th St., Lorain, Ohio. 4 pp. 8½ x 11".

Performance characteristics of two Nelwelder power units which have been designed to extend the advantages of stud welding are described in this bulletin. Especially useful in construction work is the battery unit which has a self contained automatic charging device and operates from any 110V. a.c. convenience outlet. This unit, easily transportable is a trailer, welds studs up to ½". The company also manufactures a small compact unit for stud welding where power for running motor-driven generators is available.

(Continued on page 126)

STEP AHEAD WITH THE *Norman Three-Sixty*

THE FINEST IN OVERHEAD GAS HEATING FOR

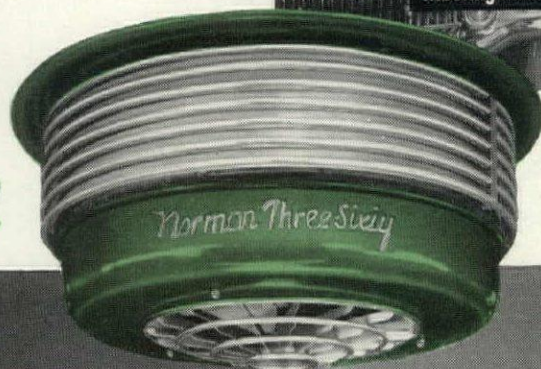
- Stores
- Shoppes
- Gas stations
- Offices
- Factories
- Small buildings
- 101 other overhead heating applications

The new circular design Norman Three-Sixty assures better, more comfortable circulation of heat over entire area . . . more attractive appearance for modern stores . . . simplified installations and servicing . . . countless other advantages never before possible with a suspended heater. Send for new illustrated folder just off the press. Mail coupon today to receive your free copy by return mail.

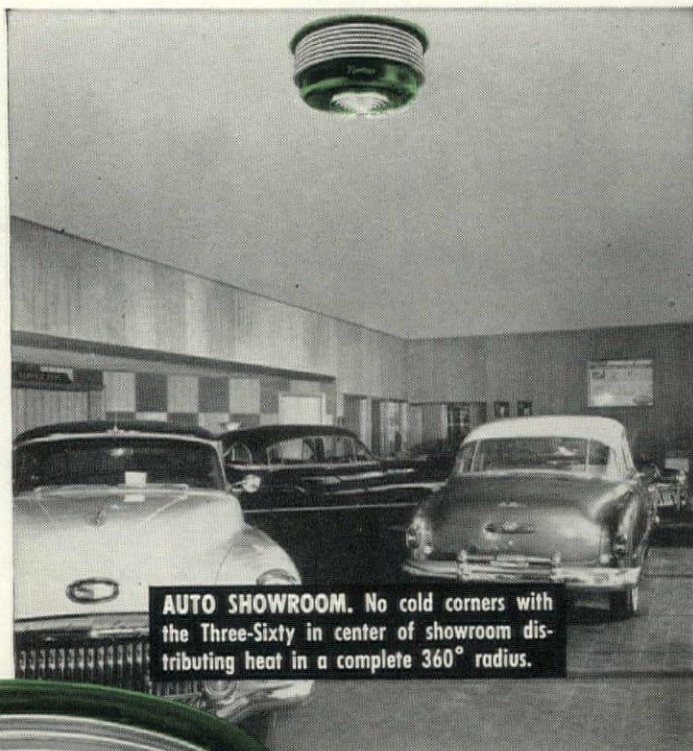
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* Trade Mark Registered

**FORCED CONVECTION OVERHEAD
GAS HEATER DISTRIBUTES HEAT
HORIZONTALLY IN 360° RADIUS**

Norman



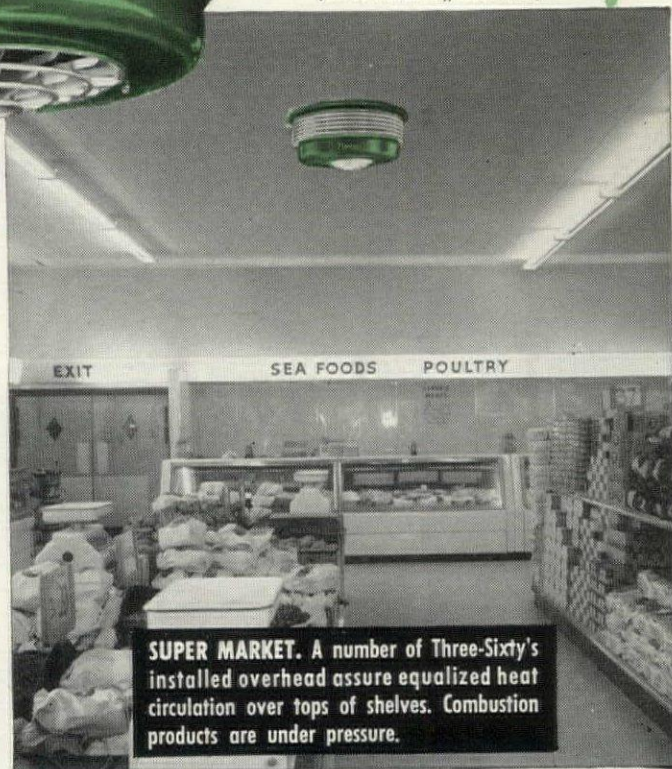
Three-Sixty
(U. S. Patent # 2519496)



AUTO SHOWROOM. No cold corners with the Three-Sixty in center of showroom distributing heat in a complete 360° radius.



SMART FASHION SHOPPE. See how the trim lines of the Three-Sixty harmonize with this modern shoppe. Note shallow mounting and depth.



SUPER MARKET. A number of Three-Sixty's installed overhead assure equalized heat circulation over tops of shelves. Combustion products are under pressure.



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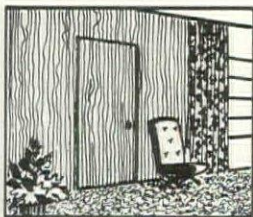
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"My efforts since I've been practicing for myself, is to get rid of it. The less hardware that is in evidence, the better. The more you get the hardware out of sight, and make less of it, the more you are going to be modern and in line with modern architecture."

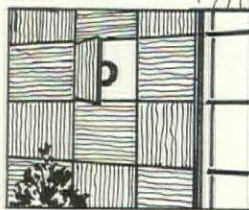


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"Hardware is still too ornamental—it isn't sufficiently simple."

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★ All quotes taken from Mr. Wright's address before the Pacific Coast members of the American Society of Architectural Hardware Consultants and the National Contract Hardware Association at the Arizona Biltmore in Phoenix, Arizona.

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TECHNICAL LITERATURE

WOOD. Wood Study Kit. Timber Engineering Co., 1319 Eighteenth St., N.W., Washington 6, D. C. Box of specimens: $8\frac{1}{2} \times 7\frac{1}{2} \times 6"$. Manual: 84 pp. $5 \times 7\frac{1}{2}"$. \$8.50.

Neatly packaged in a small pine box, the wood sample kit contains 54 specimens of important commercial species of wood and wood products in current use in the United States. A 10 power hand lens, knife, and descriptive literature are included. The manual describes the properties and uses of each species and gives data on forest resources. Architects, engineers and others in the building field should find the study kit a valuable reference.



FIRE PROTECTION. Summary of Metal Lath and Plaster Fire Resistive Ratings. Metal Lath Manufacturers Assn., Engineers Bldg., Cleveland 14, Ohio. 4 pp. $8\frac{1}{2} \times 11"$.

This comprehensive summary lists the thicknesses required in providing metal lath and plaster fire protection for columns, steel beams, girders, trusses, floor and steel roof deck assemblies, and hollow and solid partitions. The tables give 85 fire-resistance ratings for these structural details ranging from one to four hrs.

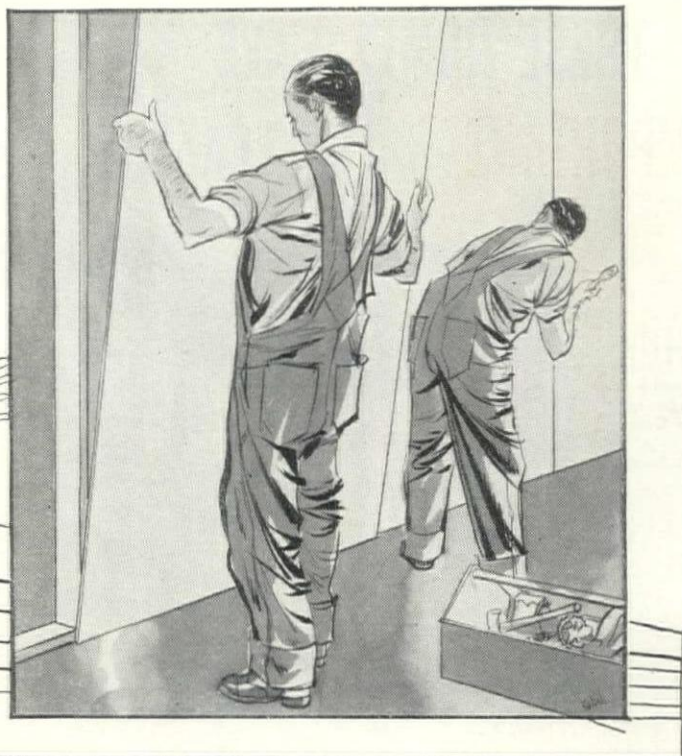
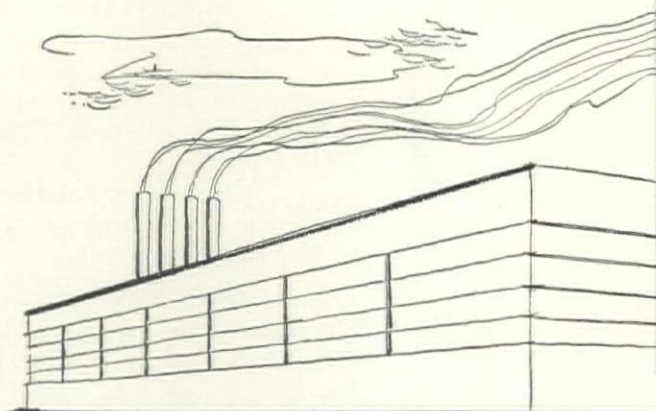
PIPE. Byers Wrought Iron Pipe. Engineering Service Dept., A. M. Byers Co., Pittsburgh, Pa. 4 pp. $8\frac{1}{2} \times 11"$.

Compiled to assist technicians in design and application work, this engineering manual contains information most frequently required on wrought iron pipe. Incorporating all data needed for heating, flow and deadweight calculations, the tables list sizes and dimensions for standard and extra strong pipe, and give figures on areas, circumference, length per sq. ft. of surface, length per cu. ft. of volume, gallons per lin. ft., and weight of water per lin. ft. Chemical composition, properties, and general and special applications of wrought iron pipe are condensed on one page. Also included are a radiant heating conversion chart, a formula for use in designing snow melting systems, and specifications for wrought iron pipe.

FLOORING. Mastic Flooring Underlayments. Industrial Products Div., Flintkote Co., 30 Rockefeller Plaza, New York 20, N. Y. 4 pp. $8\frac{1}{2} \times 11"$.

The compositions and mixtures for the two types of asphalt emulsion and rubber latex flooring underlayments are described in this folder, together with recommended practice for applications. The mastics are said to provide a smooth level base, resistance to shock, effective sound deadening, and moisture resistance for installations of decorative floor coverings.

Good deal...3 ways !



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Architect, builder, plant owner . . . they all have their reasons for calling on Masonite Hardboards when building or remodeling a factory.



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Particularly the savings in time and material. For him, these all-wood panels offer broad surfaces that are easy to paint, easy to keep clean. They never split, splinter or crack; they resist moisture, dents and abrasion. And they last indefinitely.

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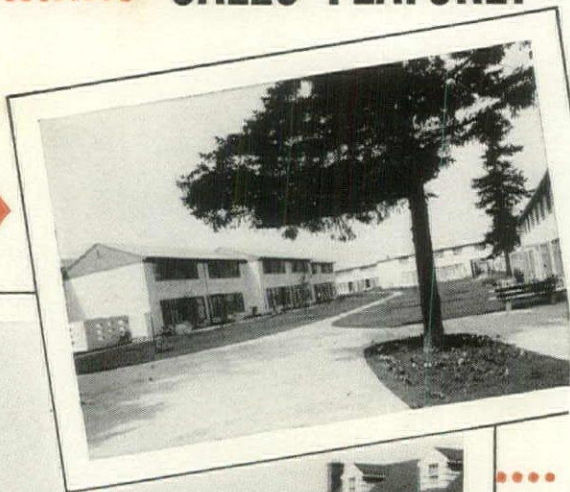
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used **Dura-Seal** in this
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Portland, Oregon.



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Here's a favorite *visual sales feature* with thousands of builders and architects throughout the country . . . **Dura-seal Combination Metal Weatherstrip and Sash Balance!** **Dura-seal** provides complete weather protection that saves fuel and prevents the infiltration of dust, dirt and soot. It assures smooth, easy window operation and window beauty. It eliminates paint-stuck windows, old-style pulleys, cords, weights and box frames. And with **Dura-seal**, plank frames are used, thereby permitting the use of narrow mullions and trim.

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Sweet's File, Builders, Section $\frac{3g}{Ze}$

Architects! See Sweet's File, Architectural, Section $\frac{19b}{Ze}$

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BEHIND THE BLUEPRINTS



PIER LUIGI NERVI is an Italian designer whose thin, beautiful concrete structures have been compared to Robert Maillart's. Combining the academic and the practical, Nervi is a partner in the engineering and construction firm of Nervi and Bartoli, and professor of architecture at the University of Rome. In addition to structures like the Turin Exhibition Hall (p. 190), a prize-winning *tour de force* done in 1948, Nervi also designs bridges, ships, and aqueducts.



Thirty-five year old **VINCENT KLING** practices a brand of modern architecture that won him seven prizes and top honors as a student at Columbia University's School of Architecture, a scholarship at MIT, and after graduation, awards by the Museum of Modern Art and the AIA. Kling now has a busy, diversified Philadelphia practice, designs schools (including the striking Kimberton Farms School, p. 162) hospitals and labs.



Architect **RALPH BURKHARD** is a native down-easterner, born in Bar Harbor, Me., and raised in New York City. An MIT alumnus (1931), he worked in various New York and Washington offices from graduation until World War II, was employed in Boeing Aircraft's Engineering Department during the War. For the last six years, he has had his own architectural practice in Seattle. A recent Burkhard design is the expertly engineered Southgate School (p. 158).



Architect **JOHN MACLANE JOHANSEN** was born in New York City, received his Bachelor of Architecture from Harvard in 1941. He worked for Carl Koch and Marcel Breuer in Cambridge, and Skidmore, Owings & Merrill in New York, did design research for the National Housing Agency in Washington from 1944 to 1946. Since 1949, he has had his own practice in New Canaan, Conn., designing country houses like his own imaginative and meticulously-detailed house (p. 164).



Articulate, jovial **EARL ("Flat-top") SMITH** is a Seattle-born, third generation house builder. Starting at 14, he worked for his father, eventually became a merchant builder on his own. He formed the Earl W. Smith Organization following World War II, built 1,100 flat-roofed houses near San Francisco in 1950 (p. 169). An able industry spokesman, he is on the Executive Committee of NAHB.



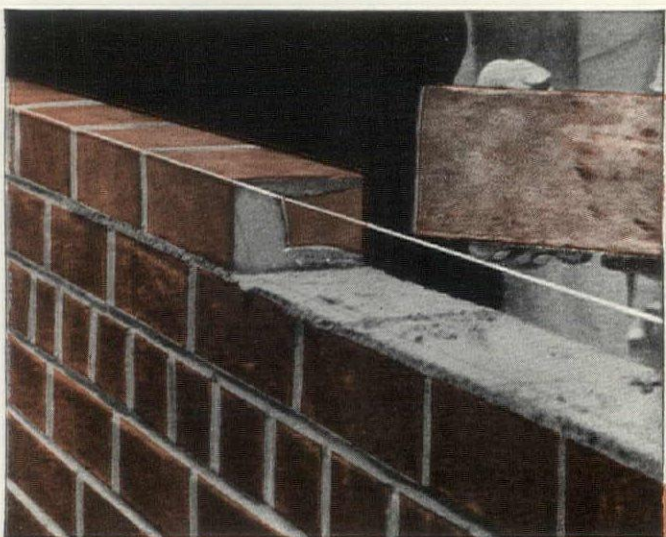
WALTER SANDERS, ARTHUR MASLIN and DON REIMAN are partners in a two-office design firm with headquarters in Ann Arbor, Mich., and New

York City. All three teach and practice architecture, Sanders at the University of Michigan, and Malsin and Reiman at Columbia University. Sanders and Malsin have been partners since the end of the war. Reiman became an associate in 1949. The New York branch, headed by Malsin and Reiman, does store design (e.g. the Lane Bryant chain, p. 178), mass housing and small homes. The Ann Arbor output is mainly residential.

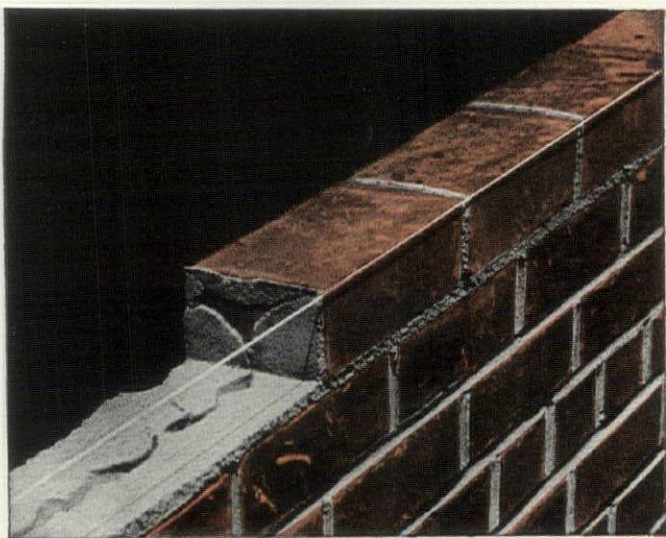
GOOD BRICKWORK = GOOD DESIGN + GOOD WORKMANSHIP + GOOD MATERIALS



Slushing does not properly fill the voids in the head joints.



When mortar is spotted on only one corner of the brick, slushing seldom fills the voids.



Even when mortar is spotted on both corners of the brick, slushing will not always fill the voids.

"SLUSHING"

INVITES

LEAKAGE

IN BRICKWORK

WE SUGGEST THAT—

Brick should always be so laid that when the brick is shoved into place, the head or cross joint will be filled solid with mortar, without slushing. If the joints are not completely filled, water may leak through the voids to the inside of the building.

The photos at the left show the voids that often result when slushing is used to "fill" a joint. Even when mortar has first been spotted on both corners of the brick, slushing cannot be relied upon to fill the voids completely.

The great plasticity of Brixment enables the bricklayer to throw plenty of mortar onto the brick to be placed — to use plenty of mortar in the bed joint — and still shove the brick easily into position, with excess mortar oozing out all around, and with all voids filled.

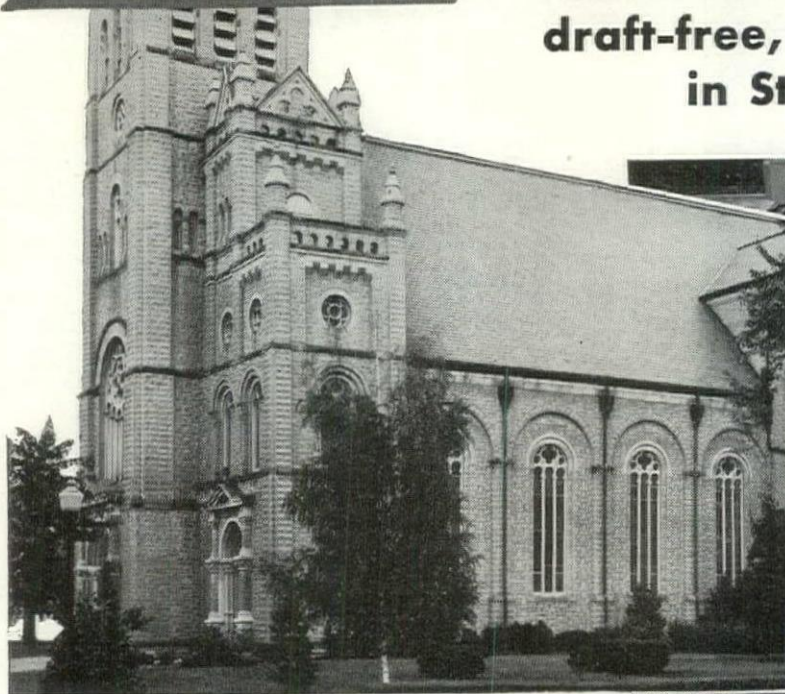
BRIXMENT

Brixment mortar has greater plasticity, higher water-retaining capacity and bonding quality, greater resistance to freezing and thawing, and freedom from efflorescence. Because of this combination of advantages, Brixment is the leading masonry cement on the market.

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**modern radiant heating with
NATIONAL STEEL PIPE assures
draft-free, year-round comfort
in St. John's Church**



ST. JOHN'S CHURCH in Delphos, Ohio, is a good example of a hard-to-heat building made comfortable with radiant heating.

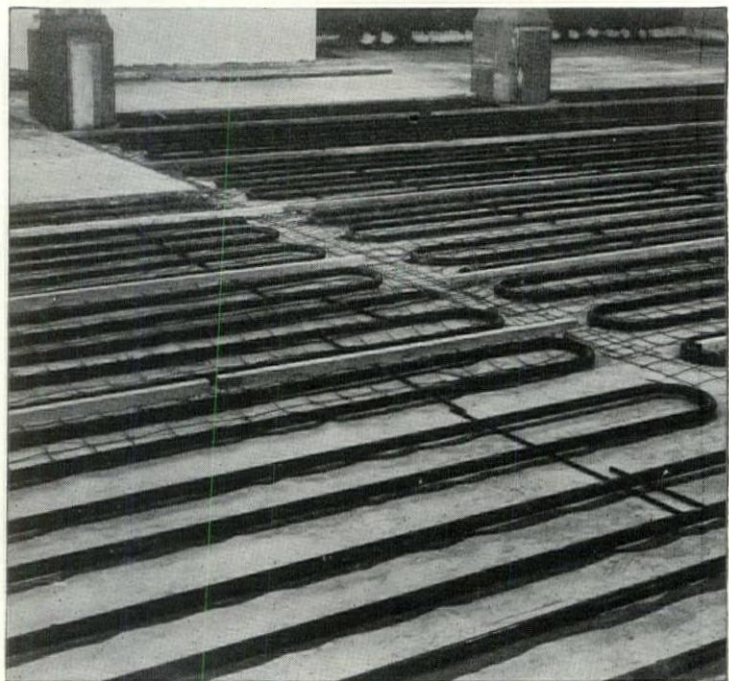
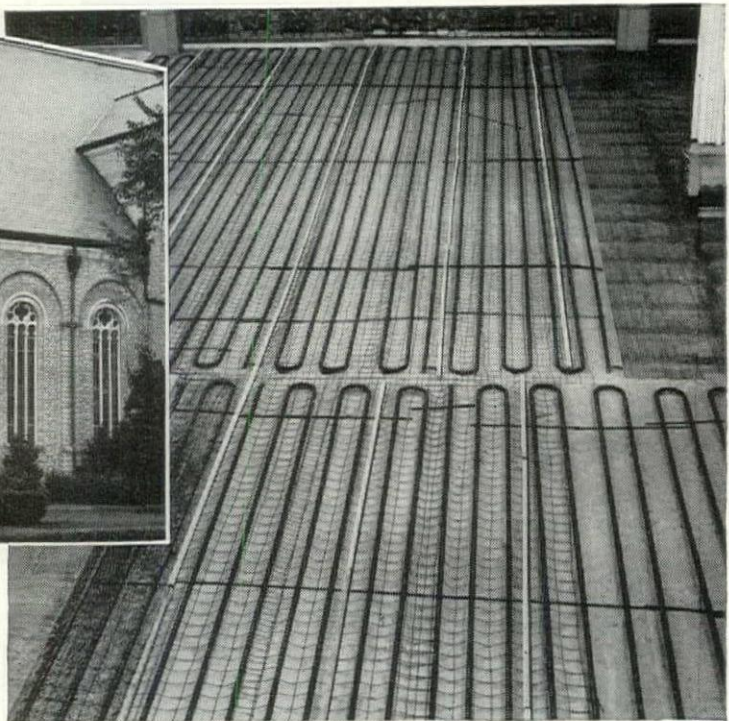
The auditorium in this beautiful old stone church is 135' x 65'. The vaulted ceiling is over 65' high. Here was a natural for radiant heating.

To keep installation costs down, the insulating paper was laid right over the old wood floor. Then came $\frac{3}{4}$ " steel bars. Finally, 10,110 feet of $1\frac{1}{4}$ " National Steel Pipe was tied to the bars and over this a 2" layer of concrete was poured.

Now, at last, the floors are warm. The entire auditorium is comfortable. And the room is free from obstructions, hot spots and cold spots.

Why did they use National Steel Pipe? For one thing, it's economical in cost... it is readily welded, it is strong, yet sufficiently ductile to permit easy bending. But best of all is its record for long life and trouble-free service. It has been standard for conventional hot water heating for over 60 years.

If you are planning a future radiant heating installation for a church, garage, store, terminal, factory, warehouse or plant, remember that National—the world's largest selling pipe—has all the qualities that make for a successful application.



NATIONAL TUBE COMPANY, PITTSBURGH, PA.

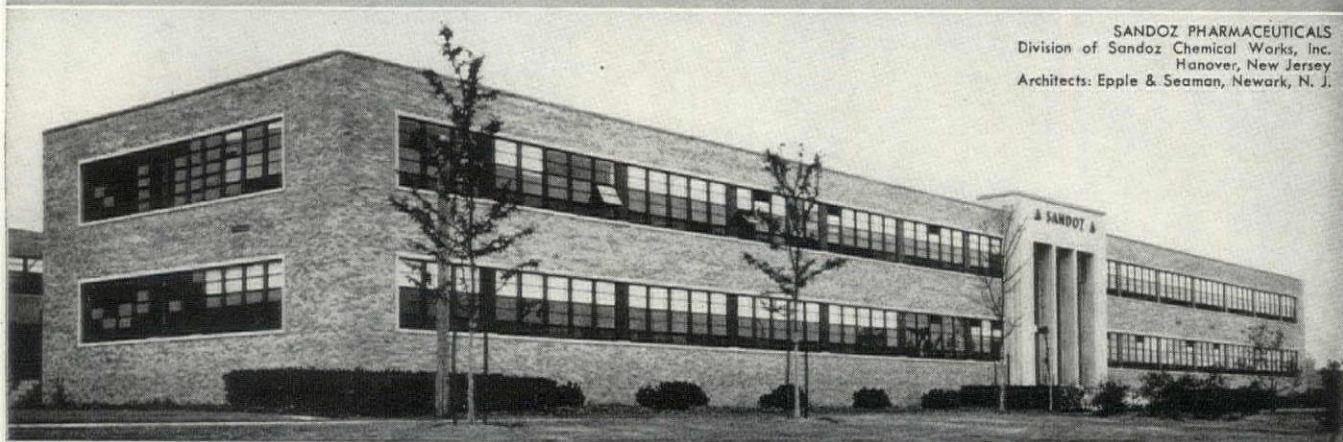
COLUMBIA STEEL COMPANY, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS - UNITED STATES STEEL EXPORT COMPANY, NEW YORK

NATIONAL Steel PIPE

UNITED STATES STEEL

5 PEELLE MOTORIZED FREIGHT ELEVATOR DOORS

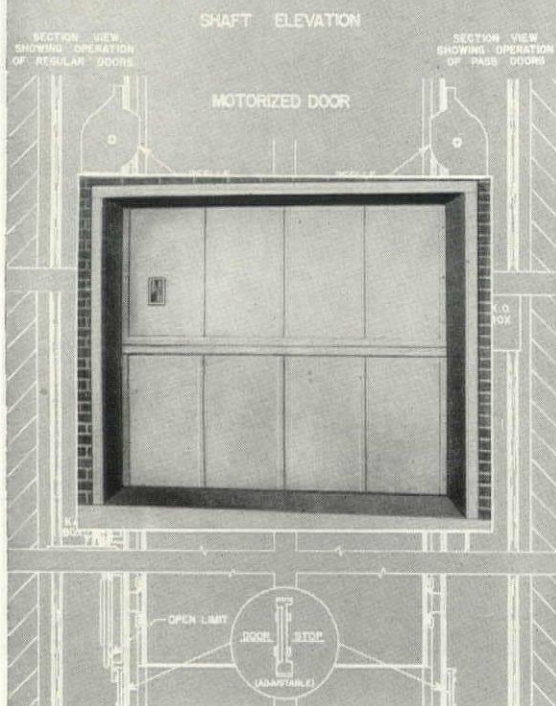
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How to build more houses in 1952

An open letter to NAHB

Defense Mobilizer Charles E. Wilson has now put the question of how many houses can be built in 1952 squarely up to the home builders themselves. Said he (see p. 35):

"To the extent that cuts are made in the use of critical materials per unit of construction, it should be possible to permit increases in the volume of construction."

In other words, if the home builders want restrictions eased to permit more home building next year, they had better get busy and do something about saving as much as possible of the materials that now get wasted in every home.

It is no secret that Mr. Wilson is deeply interested in the attack on waste launched by THE MAGAZINE OF BUILDING Round Table last January. But the home builders would be foolish to sit back and wait for Mr. Wilson to work out the savings for them and blast away the code obstructions. He is too busy getting his country ready for war. They would also be foolish to sit back and wait for Mr. Foley to give a lead. After six months his FHA has not even moved to eliminate the waste imposed by the widely varying standards of its own 62 local offices.

In a free enterprise, profit incentive economy like ours those who stand to profit most by any development are expected to work hardest to bring it about. The home builders stand to profit most from cutting their waste. To the extent that waste reduction saves materials, says Mr. Wilson, it will permit bigger home building quotas. To the extent that waste reduction saves dollars, it will not only ease the mortgage money crisis but also reduce the down payments required under Regulation X, which was carefully drawn to encourage low cost housing. So from every angle the home builders' volume and profits next year will increase in proportion to how far they cut their wastes.

Fortunately, a program to effect many of these savings and so permit more activity in 1952 has already been carefully worked out, first by THE MAGAZINE OF BUILDING Round Table, then by the ably detailed report of the collaborative AIA-NAHB committees to which the Round Table referred certain specific questions, and finally by the HHFA Advisory Committee on Resource Conservation in Dwelling Construction.

A program is all ready—but nothing will come of the program until somebody takes hold of the program and translates it into action. And that, we believe, puts it squarely up to Bill Atkinson, Frank Cortwright, John Weinhart, and the National Association of Home Builders.

Take the matter of saving lumber, for example:

In one sense, lumber is not yet a critical material, for at a price plenty of lumber is available. On the other hand, the shortage of lumber is reflected in a 300% price increase since 1939. The Round Table, the AIA-NAHB committees, and the HHFA committee have carefully worked out a new series of lumber sizes that will not only save more than 25% of the framing lumber required, but will also save millions of hours of carpenter labor and bring lumber dimensions back in line with the dimensions of other materials like wallboard, carpets, cabinets, etc.

But here we face the old question of which comes first, the chicken or the egg?

The lumber manufacturers are ready to supply the new sizes, but first they ask some assurance the home builders will buy them (otherwise there will just be more waste from stocking two lines in the lumber yards—the old dimensions and the new). The builders say they would gladly buy the new economy sizes—but they are not available. And so nothing happens.

And nothing will happen until NAHB, representing those who will profit most, gets busy and makes it happen. If NAHB will line up its members to order only

the new series and if NAHB will get a few of its biggest builders, like Fritz Burns, Dave Bohannon, Earl Smith and Bill Atkinson to start the procession, the

Or take the matter of doors

At the Round Table no waste was criticized more often than the waste caused by lack of standardization on door sizes. The AIA-NAHB committees, backed by the Executive Committee of the A.I.A. Board of Directors recommended a standard height for all doors, with two standard widths for outside doors and two stand-

lumber industry will gladly meet them half way—and then the 25% saving in framing lumber can be realized almost overnight.

ard widths for inside doors. Everyone agrees that the savings from this standardization would be great both to the manufacturers who make them and to the builders who install them. Nothing has come of these recommendations. Nothing will come of them until NAHB does something about them.

Or take the matter of standard plumbing assemblies

The Round Table recommended and the AIA-NAHB committees detailed a standard spacing of toilet fixtures to permit all builders the same economies Bill Levitt has achieved through his standardized plumbing assemblies (they come in three pieces, and he budgets only 45 minutes per house of shop and field plumbing labor combined to install them). Bill Levitt has offered to

let the industry cash in free of charge on the research which developed his standard units. The plumbing manufacturers are ready to fabricate the assemblies. Hundreds of builders are asking where they can get them.

But nothing is happening. And nothing will happen until NAHB gets busy and makes it happen.

Or take the new national plumbing code

Metals are the most critical shortage of all. The new national plumbing code will save nearly half the weight of metals now required for plumbing in the average house. At long last it has been published, sponsored by practically everyone interested in plumbing. But practically nothing is being done to realize these savings and if adoption of the new code in 2,200 communities must wait out the usual interminable delays the savings may still be a hope 20 years from now.

Fortunately there is a short cut which might realize these critical savings almost overnight. That short cut is an organized revolt of the home builders against the absurd wastefulness of almost every present plumbing code.

Under the police power the state (and by delegation the community) has the right to impose code requirements necessary to the protection of health, safety, and perhaps happiness. *It has no authority to impose code requirements which contribute nothing to health, safety or happiness.* Every present plumbing code requirement in excess of the standards set by the new National Code clearly exceeds the code making authority of the state—in fact, the American Public Health Association strongly criticizes even the new National Code as excessive and wasteful. How can the courts enforce the old codes' still more excessive requirements in the face of the unanimous opinion among health authorities that they serve no useful purpose? A few good court decisions could kill off these anachronisms as dead as the courts killed the Blue Eagle. The simple procedure required is for builders to start a series of court actions asking writs of mandamus to permit plumbing installa-

tions approved by the new National Code and all its sponsors, regardless of any antiquated veto in the local code.

This is not a risk for the individual builder to take single-handed. It would expose him to too many reprisals from city officials and waste profiteers. This is a job for NAHB, and some of its biggest members would have to show the guts needed to take the lead in the revolt. It would help if NAHB would line up the support of the veterans' groups (on behalf of the veteran home buyer now victimized by the wastes in the old codes), of the General Federation of Women's Clubs, of the American Medical Association, and other civic organizations. It would help if NAHB would line up the U. S. Department of Justice to intervene in the test case, as it once offered to do on a similar code problem. Perhaps Mr. Foley's help could be enlisted. It would help perhaps most of all if NAHB could get defense mobilizer Wilson to join in a statement urging the importance to rearmament of stopping the waste of critical materials forced by the old plumbing codes. All this is a big job, but the rewards to the public and to the home builder would be enormous. And it is clearly a job for NAHB.

These are just a few instances out of many where NAHB by taking the lead can do a real service to its members and to the home buying public, and to the defense economy. We hope the Association will accept Mr. Wilson's challenge and make it possible to build a lot more than 850,000 houses next year with a lot less waste of critical materials and critical inflationary dollars.

THE TYPICAL ARCHITECT is his own boss, has a staff of eight

and 7,900 potential clients, but his earnings are surprisingly small.

AIA survey results give the industry its first real statistical appraisal of the design profession

Concerned about the future of the profession, The American Institute of Architects two years ago logically decided to find out exactly where the profession stood before recommending changes. Last month, with the release of the results of a comprehensive survey of the nation's architects, the profession for the first time had a picture of itself and a basis for study and action. The picture was in some aspects surprising—even shocking:

► *The market for architectural service is wide open. There is only one architect for every 7,875 people in the U. S. In some states the potential market is greater than 20,000 per architect.*

► *Seven out of ten architects are individual practitioners, in business for themselves or with partners.*

► *Most architects are general practitioners. Only about one-third of those who replied specialize in a single type of building design—usually educational or residential buildings.*

► *Architectural offices are typically small. The average staff consists of 7.5 people, about half of whom are draftsmen.*

► *Half of the profession relies heavily on consulting engineers for structural know-how and 70% call in consulting mechanical and electrical engineers.*

► *Architecture is not a lucrative profession. The typical AIA practitioner begins at \$5,400 and his earnings do not reach the modest peak of \$14,000 until he is 62 years old!*

Such are the salient facts uncovered by the AIA's Survey Commission. Comprised of ten men and chaired by Dr. Edwin S. Burdell, president of Cooper Union, the Commission sent detailed questionnaires last fall to the nation's 19,137 registered architects—AIA's entire roster of 8,461 plus 10,676 non-AIA architects whose names were obtained from the various architectural registration boards throughout the country. (In addition 1,197 special questionnaires went to registration boards, faculty members, etc.) By the November 30 deadline 6,605 replies (35%) had been received—3,744 from AIA members (44%), 2,861 from non-members (27%).

On the basis of information gleaned by this survey the Commission later this year will make its recommendations to AIA for changes

in professional activities and in the education, practical training and registration of architects.

Meanwhile the survey's factual findings, some of which are presented in detail below, permit the individual architect for the first time to stand back and take a good look at his profession, and they let the entire industry in on some of the profession's private life and private opinions.

WHERE ARCHITECTS WORK

As shown by the accompanying map, Connecticut, New Jersey and Nevada are well supplied with architects; each architect in these three states has a potential clientele of 5,000 or less people, compared with the national average of 7,875. At the other extreme, nine states have only one architect per 20,000 or more population. (Before architects start migrating to these nine apparent oases—shown in white on the map—let them consider their relatively small building volume.)

The survey highlights other aspects of the distribution of architects:

► AIA membership does not correspond to the general distribution of the profession; thus the New Jersey AIA, despite the state's high density of architects, can only muster 18% of the state's 1,031 total, compared with the

national average of 44%. Above the national average are 35 states.

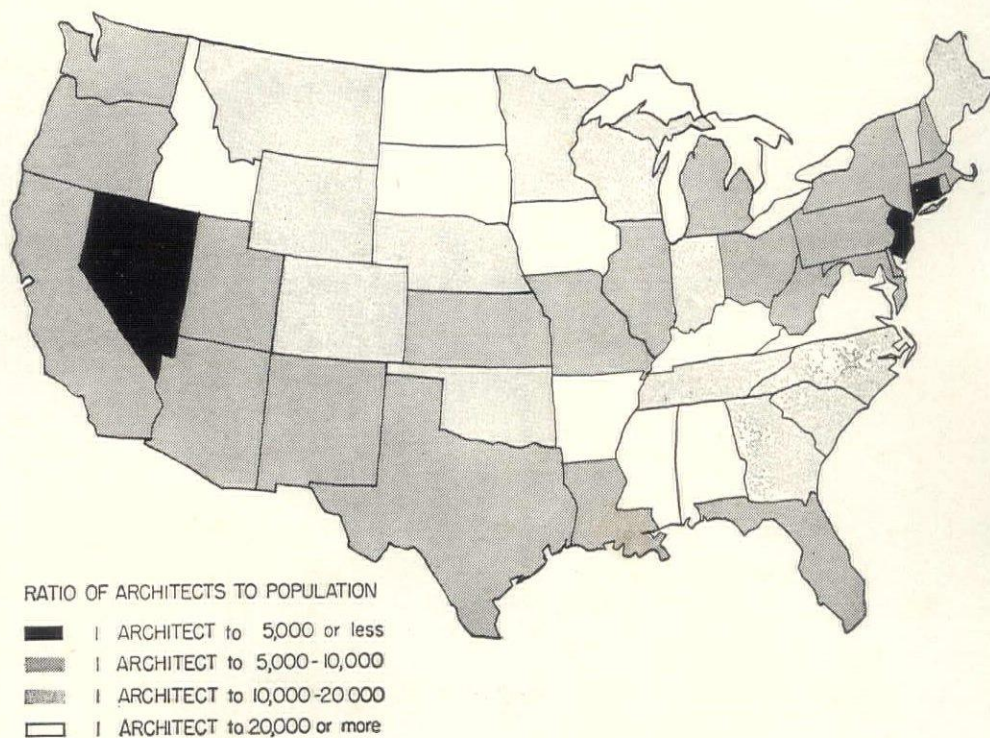
► Numerically New York State has the most registered architects—2,945 or 15% of the total. Others at the top of the list: California (1,922), Illinois (1,433), Pennsylvania (1,230), New Jersey (1,031), Ohio (995). ► Forty per cent of the profession earns its livelihood in communities of 500,000 or more population; about 25% serve cities in the 100,000—500,000 bracket; only about 10% live in towns of less than 25,000 population.

HOW THEY WORK

Most members of the profession are rugged individualists. These private practitioners account for 70% of the profession. The greatest proportion of the balance—19%—are employed by firms whose primary function is not necessarily architecture—presumably stores, manufacturing concerns, etc. Only 5% are classified as publicly employed architects working for various branches of government. The remaining 6% are divided equally among teachers and those who are engaged in non-architectural work, are retired or are unemployed.

While 80% of the AIA members are classified as private practitioners, only 55% of the non-members are independent operators.

(Continued on page 260)





Photos: Ezra Stoller—Pictor

DOWNTOWN OASIS

Youth Library is happy center of industrial Massachusetts town

LOCATION: Fitchburg, Mass.

CARL KOCH, Architect

FREDERIC L. DAY, JR. & LEON LIPSHUTZ, Associates

H. VINCENT LINDENBERG, General Contractor

SPECIALISTS: Gyorgy and Juliet Kepes, Artists; William Talbot, Sculptor; Bolt, Beranek & Newman, Acoustics; Dr. Domina Spencer & Leonard F. Martin, Lighting; Adolph Ehrenzeller, Heating & Ventilating; Frost & Higgins Co., Landscaping; Bettinger Enamel Corp., porcelain enamel finishes.

Between a blackened 19th Century library and a big General Electric plant in the aging center of Fitchburg, Mass., architect Carl Koch has created a green oasis and put a U-shaped building around it. This is the Fitchburg Youth Library, a building so full of innovations that architects, painters, sculptors, planners and engineers will long be talking about it.

Here are some of the reasons:

- It breaks with the stripped-down "austerity look" of most modern public buildings, reintroduces painted and sculptured decoration with new materials and new techniques.
- It demonstrates one of the most interesting luminous ceilings devised to date: sheets of corrugated vinyl plastic suspended beneath fluorescent tubes and held in light metal rails (see detail).
- It shows one or two fascinating new ways of controlling and directing sound.

► And it suggests that small towns can afford fine public buildings if they do multi-duty (this one combines five different civic functions under one roof).

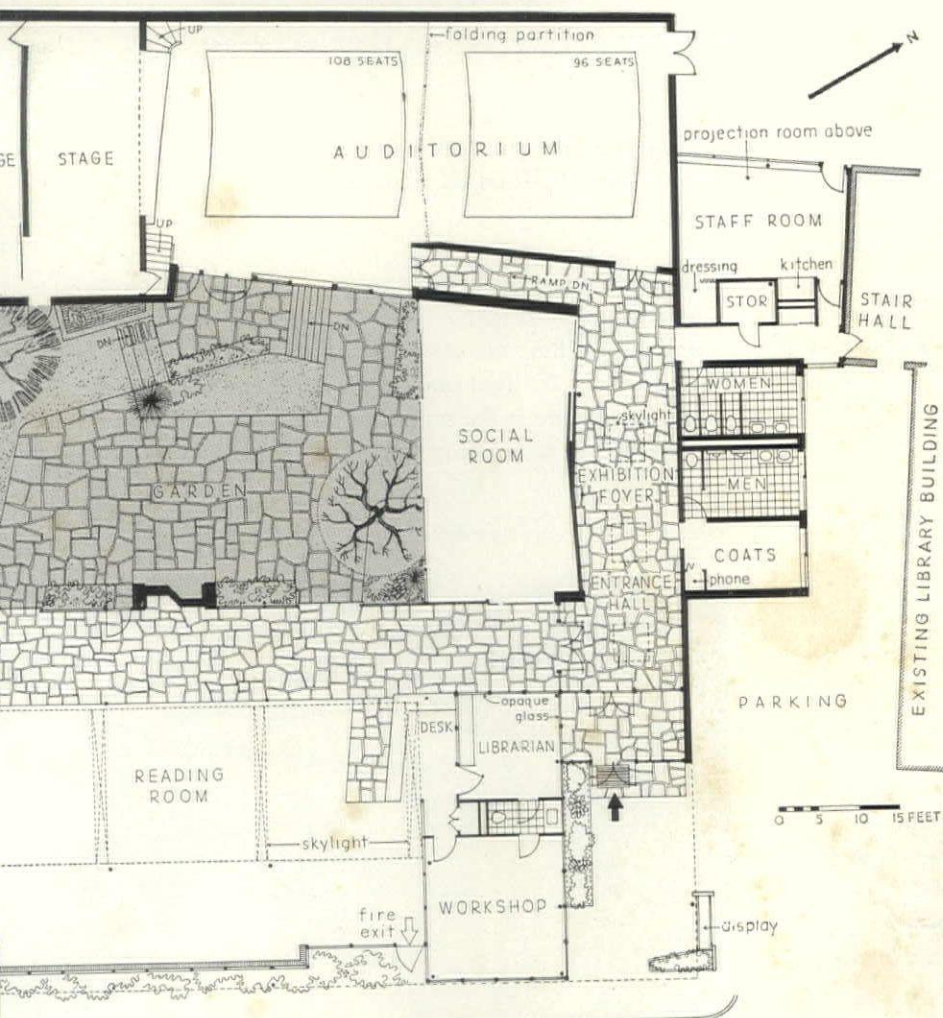
Integrated arts

The first thing people notice when they pass the Fitchburg Library is something they haven't seen in a modern building in a long time: a lot of colorful touches contributed by painters and sculptors. Along the full length of the roof line they can see a brightly painted frieze-fascia; on the gables overlooking the garden court they notice painted sheet metal cutouts representing wise owls; and in the court itself there is a sculptured fountain of stainless steel. Together these decorative touches produce a richness and gaiety long abjured by the advocates of stripped-down austerity and plain simplicity; but somehow the effect is vastly different from the old gimcrack swept away with the advent of modern architecture.

Closer observers will see the specially clever way in which art has been brought back from exile, and the new methods

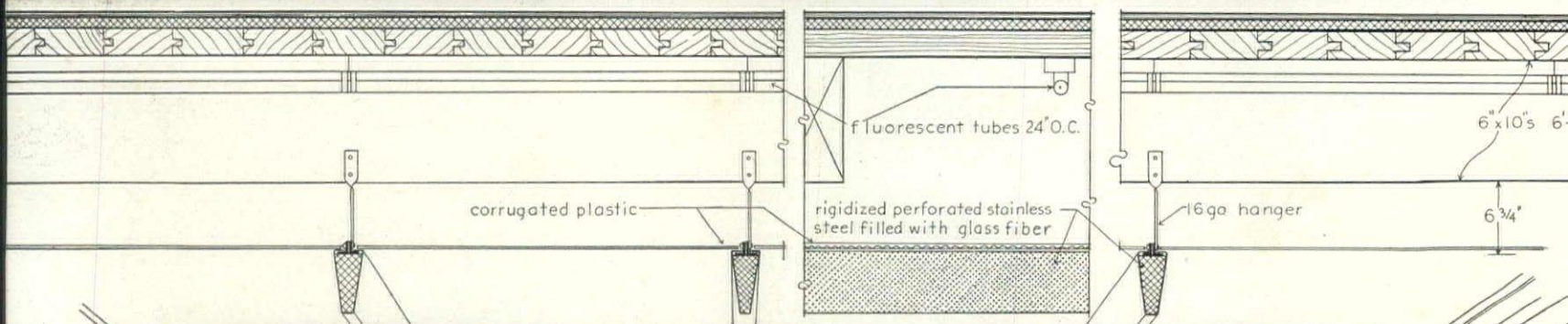


Photos: Ezra Stoller—Pictor



Koch has employed to restore the once-flourishing collaboration with other artists. They will note, for example, that the art in no way interferes with the architecture: The fascia is needed in any case, and its decorative painting will in no way decrease its efficiency. The owls are a positive help to the composition of the building—they take away the blank obtrusiveness of the big gable-ends for the sawtooth skylights. And the fountain is definitely needed to cool the garden court in the summer—how much better, then, to have a sculptor make it than to pick it out of a manufacturer's catalogue!

There is yet another side to Fitchburg's art that makes it very different from the elaborate frills of earlier periods: The materials used by the artists are the industrial building materials of today, and the techniques used in putting the art together are strictly mid-20th Century. The frieze-fascia is no dirt-catching, crumbling limestone doodad; it is made of rigidized sheet steel, painted and then porcelain-baked to give it a clean, weather-resistant surface that will require practically no maintenance. The owls, too, are of porcelain enameled steel, and even the spout of the fountain is made of this tough new material. Throughout the artists have used the welder's torch with the same facility with which their predecessors used to wield the painter's brush; and in this imaginative experimentation they have taken a material with a reputation for vulgarity—porcelain enamel—and introduced it into the polite and dignified society of the fine arts. Says Koch: "Welding, glazing, concrete pouring, any number of techniques used every day in building are highly susceptible to sculptural, plastic and color treatment." Fitchburg is impressive proof of this; it is also just a beginning, the opening of



View of reading room showing construction of luminous ceiling

new vistas to architects, sculptors and painters alike.

What made Fitchburg's architect-artist teamwork successful is the fact that it began right at the start of the design process. The Koch-Kepes-Talbot team was interested in an integrated end-product—not in a scramble to see whose work would get the most attention in the end. And, as a result, the whole team can be proud of a job to which each member contributed a part without which Fitchburg would be a poorer building.

Luminous ceiling

Second only to the frieze-fascia, the most striking feature of the Youth Library is its completely luminous ceiling. Designed by MIT experts Spencer and Moon, the ceiling is the best answer to date to every architect's prayer: How to get a luminous surface that can receive movable partitions at almost any point.

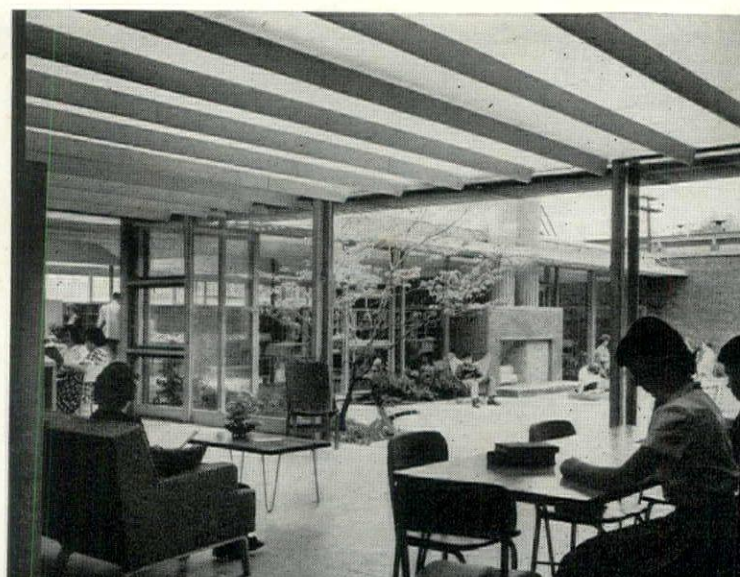
This is what Fitchburg's ceiling consists of: Long sheets of corrugated, translucent vinyl plastic, 2 to 3 ft. wide and as light as paper, are clipped between narrow metal rails hung from the ceiling, and are illuminated from above from fluorescent fixtures. Any time the fixtures need repairs, you can simply lift the plastic sheets and get at them without trouble.

Complete installation (including fixtures, wiring, etc.) costs between \$1.80 and \$2 per sq. ft. So impressive is its performance that architects Skidmore, Owings & Merrill recom-

mended the Fitchburg ceiling in all offices for their proposed Ford Center (BUILDING, Dec. '50). Among its technical advantages are:

- ▶ It has none of the glare troubles encountered in troffer ceilings where brightness contrasts between light source and unlighted ceiling are often disturbing;
- ▶ It provides 50 foot-candles or more at desk level with minimum glare at the source. This high level is particularly desirable in a building one side of which gets so much daylight;

Social room opens upon garden court





Social room and reading room (opposite) have mobile bookshelves

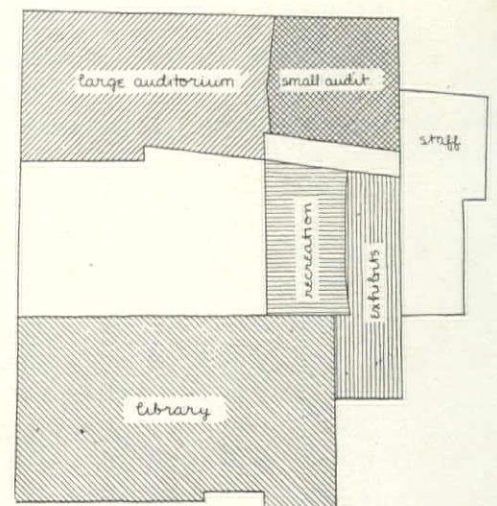
► The plastic's "softening point" of about 150° is about the same as the temperature at which sprinklers go into action, so that the vinyl sheets would just crumple and drop out of their frames (very lightly) at the first sign of a fire. Consequently, sprinkler heads can be kept above the luminous ceiling and completely out of sight!

Acoustics re-thought

To handle his problems of sound-absorption architect Koch called in acoustics specialists Bolt, Beranek & Newman of MIT, devised a system of ceiling fins that run the entire length of all reading rooms. These fins (see detail) are wedge-shaped in section, and formed out of rigidized, perforated steel, which is then filled with sound absorbing fiber glass. The fins are handsome, cost only 40 cents per ft. MIT experts report that in one test room such fins were as effective as standard acoustical material covering the entire ceiling.

In the gallery-foyer, sound absorption has been gained in more traditional ways, using perforated asbestos board with fiber glass backing on one wall and as a lining for the plastic glass skylight cove (see p. 138). In the auditorium, however, acoustical problems were handled in a bolder manner. The wavy profile of the hung ceiling, made up of oak battens, eliminates echoes, diffuses and directs sound emanating from the stage. The result is so perfect that no public address system will ever be installed.

Plan of Youth Library is arranged in five zones grouped around garden court. Some areas can be used by themselves at night after rest of building has been locked up.



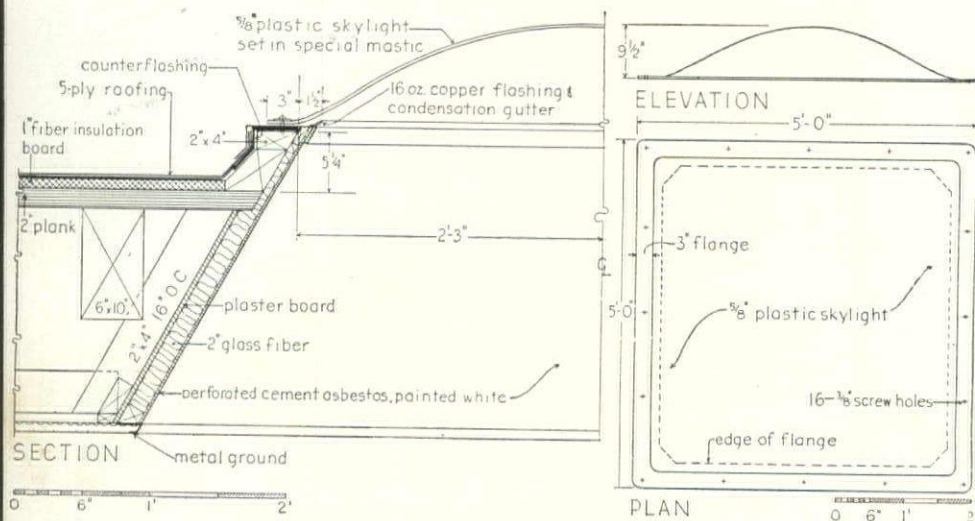
Multi-use plan

The idea of centering low buildings upon an interior sun-court is almost as old as architecture itself. In reviving it at Fitchburg, Koch proved that it is today a first-rate solution to many a midtown problem, where the citified neighborhood must be kept out, and a view of a countrified setting for every room is highly desirable—as in places where children work and play.

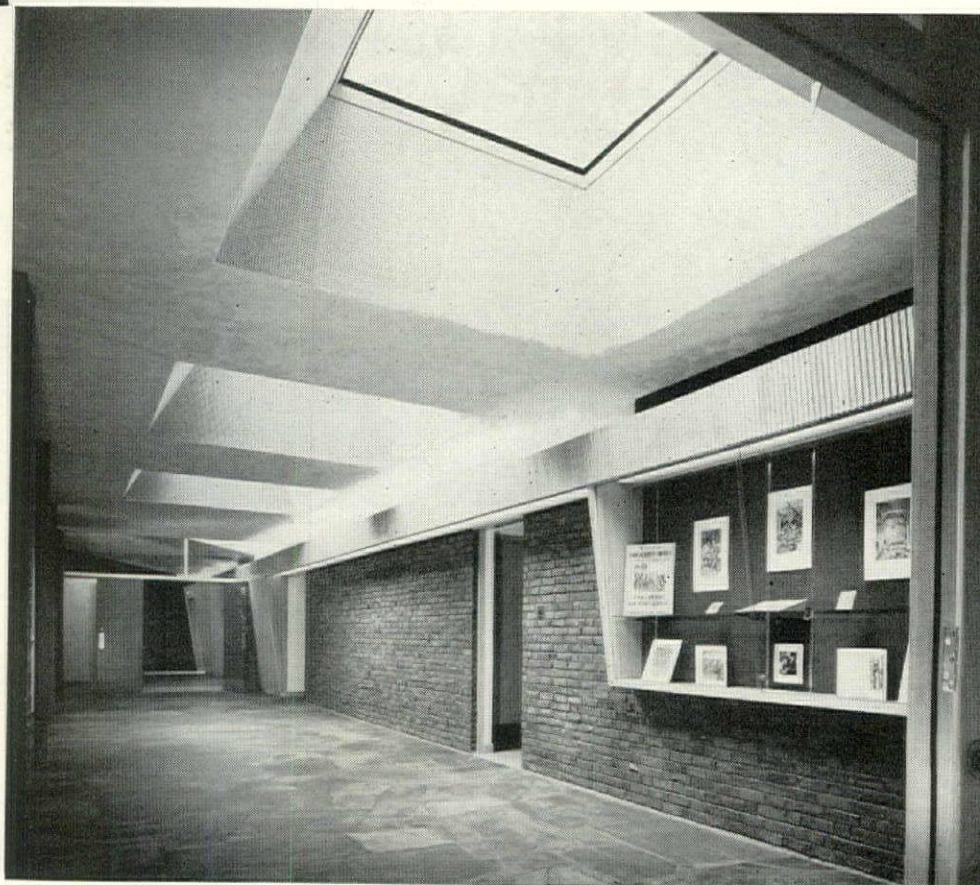
Fitchburg got this handsome Youth Library chiefly because its 43,000 citizens were willing to make real sacrifices for something



Main entrance to Youth Library contains display case visible from Main Street several hundred feet to the north.



Plastic domes (see detail above) set into roof above foyer help to light exhibition gallery.



they wanted badly. More than matching the city's \$100,000 appropriation, the citizens raised \$120,000 by subscription, got another \$10,000 from the children who earned the money doing odd jobs and saving pennies from their allowances. When people make that kind of effort, they have a right to expect a lot for their money. Architect Koch gave them just that: For about \$210,000 (including furnishings and with money to spare for books and operating expenses) he gave Fitchburg five buildings in one around his little public square:

- ▶ A fully equipped Youth Library with librarians' offices;
- ▶ A Social Room which acts as a small community center (when the mobile book-shelf units are pushed against the wall) for record-concerts, discussion groups, listening to broadcasts;
- ▶ A small exhibition gallery with excellent top lighting, which doubles as the auditorium foyer; and
- ▶ Two meeting halls (one with a fully equipped stage), which

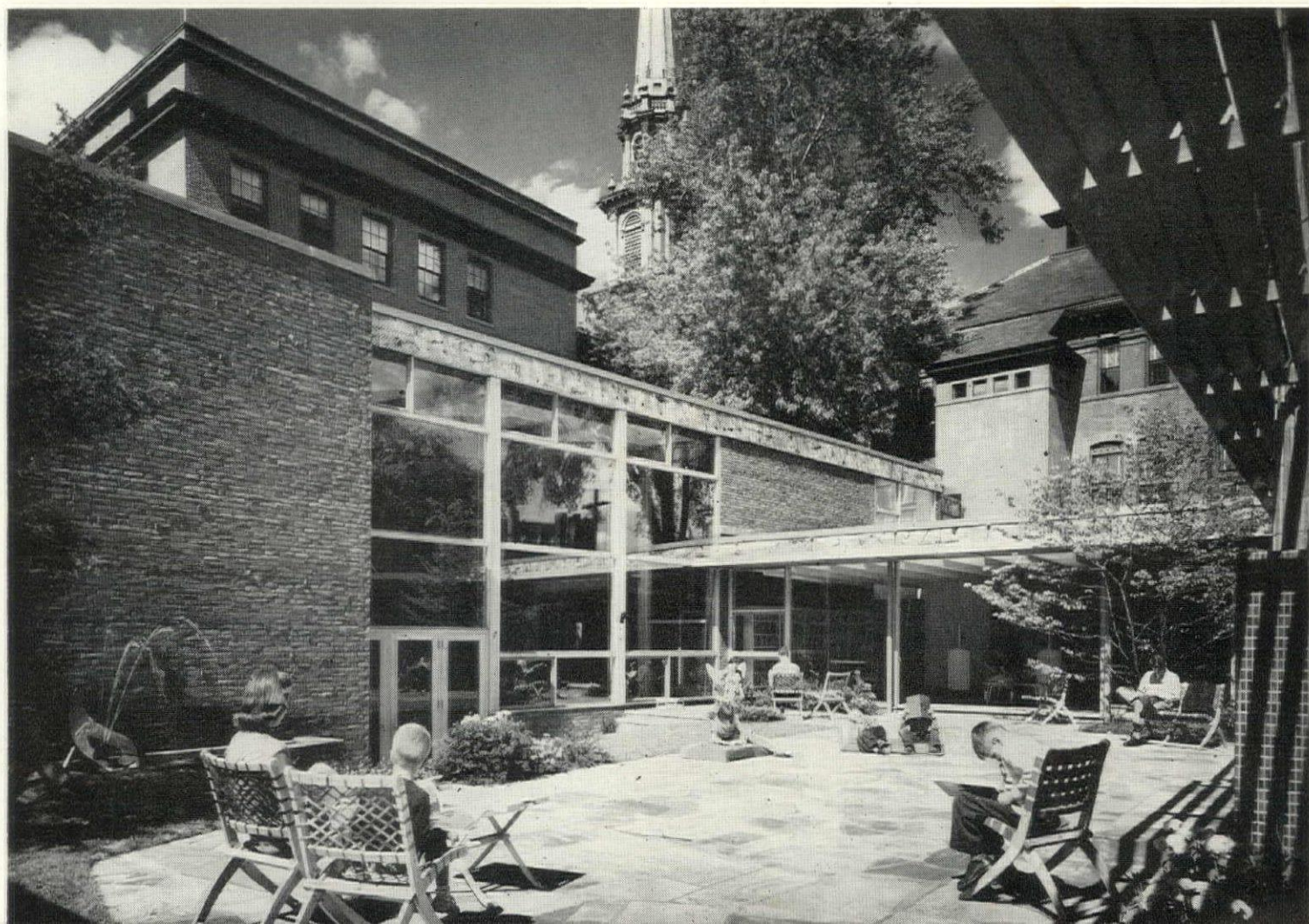
can be used separately or thrown together into one 204-seat theater. This area can function even when the rest of the building has been locked up for the night.

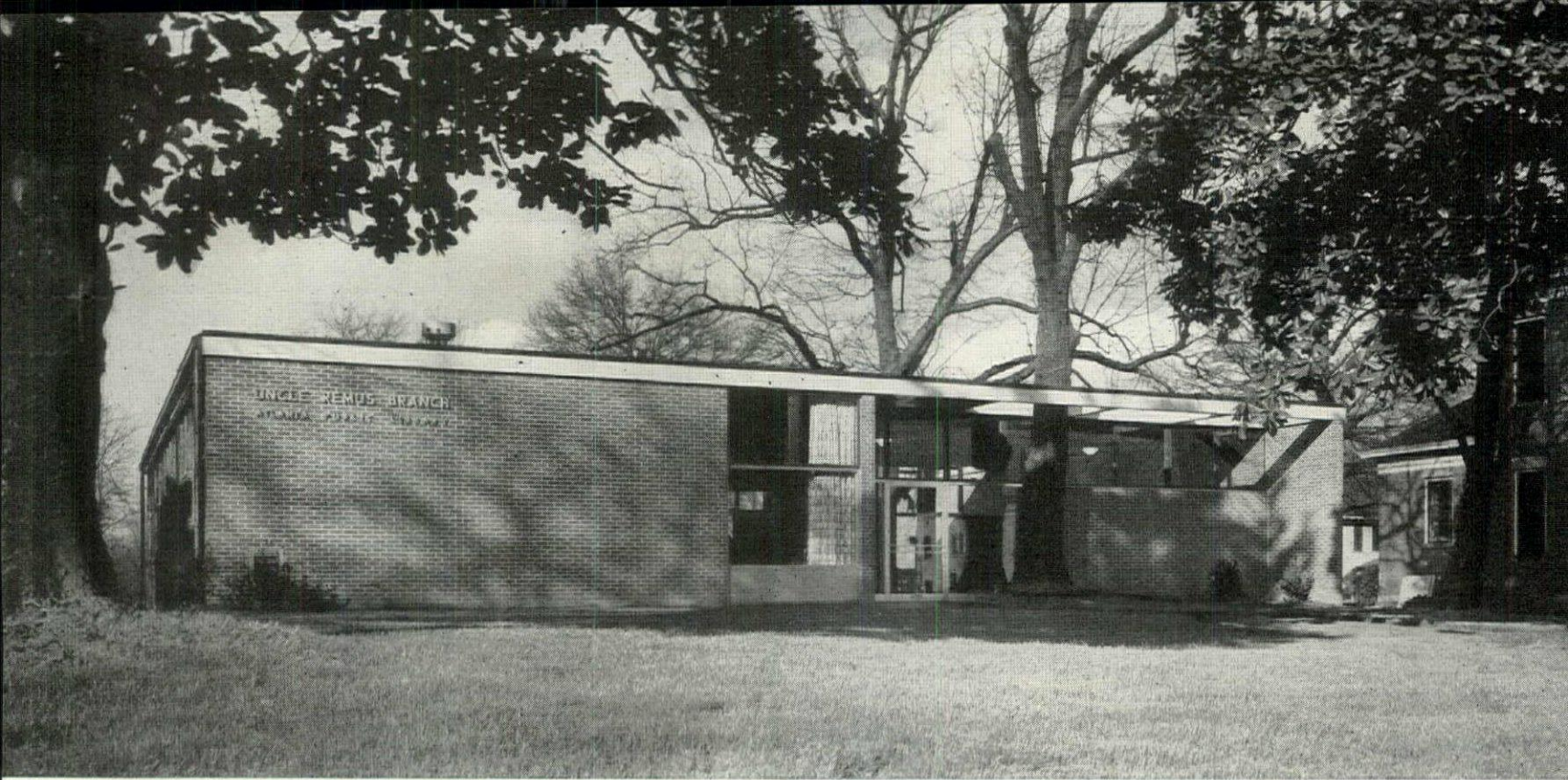
Community center

The success of the Youth Library must depend in the end upon how enthusiastically it is used. To date, both use and enthusiasm have been unusual—thanks not only to the activities of an energetic librarian, but also to the fact that, in this building collaboration between artists, engineers, architects and librarian was excellent from the start. Certainly the plan is good, the light is good, the sound is good, the art is good and the landscaping is good. But none of these clamors for special attention; all are subordinated to the making of a harmonious whole. That harmony is what makes architect Koch's library the nicest possible place for Fitchburg's children to spend a few quiet hours.



Auditorium (above) can be divided into two separate meeting halls, has elaborate acoustic ceiling. Curtain was designed by the Kepeses. View of garden court (below) shows stainless steel fountain by sculptor Talbot at left.





Photos: (above and opp.) Gabriel Benzur

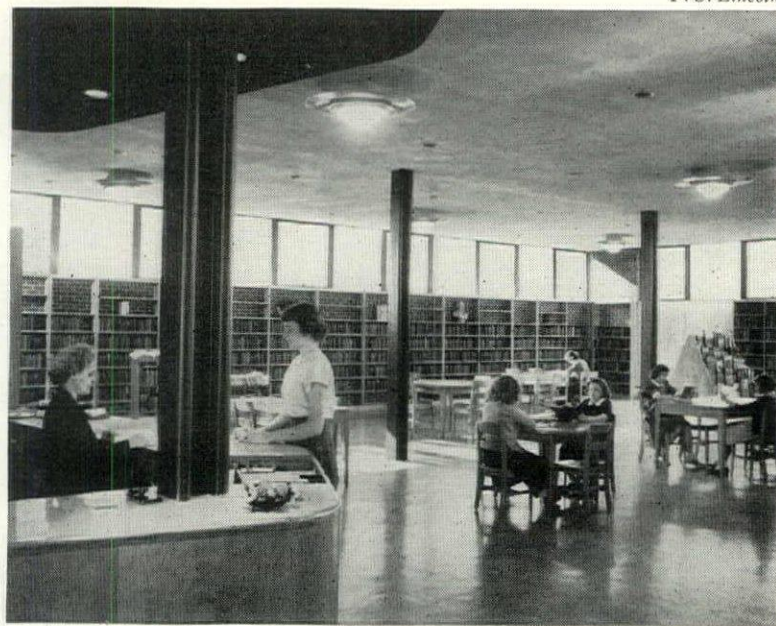
BRANCH LIBRARY is cheerful structure of steel, brick and glass

LOCATION: Atlanta, Ga.
 STEVENS & WILKINSON, Architects
 JULIAN H. HARRIS, Sculptor
 SIANO CONSTRUCTION CO., Contractors

Top officials of the Atlanta Public Library system were enthusiastic: "The most delightfully designed library in Atlanta," said one. "Beautiful . . . simple . . . charming . . . a joy to use as well as to work in," said another. "It radiates beauty and dignity," added a third. The cause of their delight was architects Stevens & Wilkinson's latest Atlanta landmark: The Uncle Remus Branch Library. Capacity: 4,500 books for children, 6,500 for adults. Area: more than 4,000 sq. ft. Total cost: \$73,500 (incl. air conditioning, landscaping and furnishing).

For sheer directness of expression this little building would be hard to beat: Its frame is steel—H-columns set in 17'-7" square bays form the structural cage. Into this cage are set panels of brick (to back up peripheral shelving), glass bands (above the shelves), floor-to-ceiling sheets of glass where the interior can be opened up fully to the garden or the patio. This "Chinese kite" effect of alternating open and closed panels is carried through in the roof as well: Above the semi-enclosed patio only one bay of the roof is closed in; the other three are open and frame a great oak tree left on the site to become part of the architecture. The architects did their own landscaping on the long and narrow lot, taking great care to leave existing trees.

Esthetically this library is another job in the increasingly familiar Mies van der Rohe idiom. Unlike the work of some other Mies followers, this pavilion is proof that the firm discipline of the regular steel cage is no straight-jacket, but a wonderfully flexible framework in which anything can happen. It isn't "box-architecture," as some have said; it is flexible, varied, complex and cheerful architecture, pulled together and unified in the end by the regular skeleton of its steel bones.

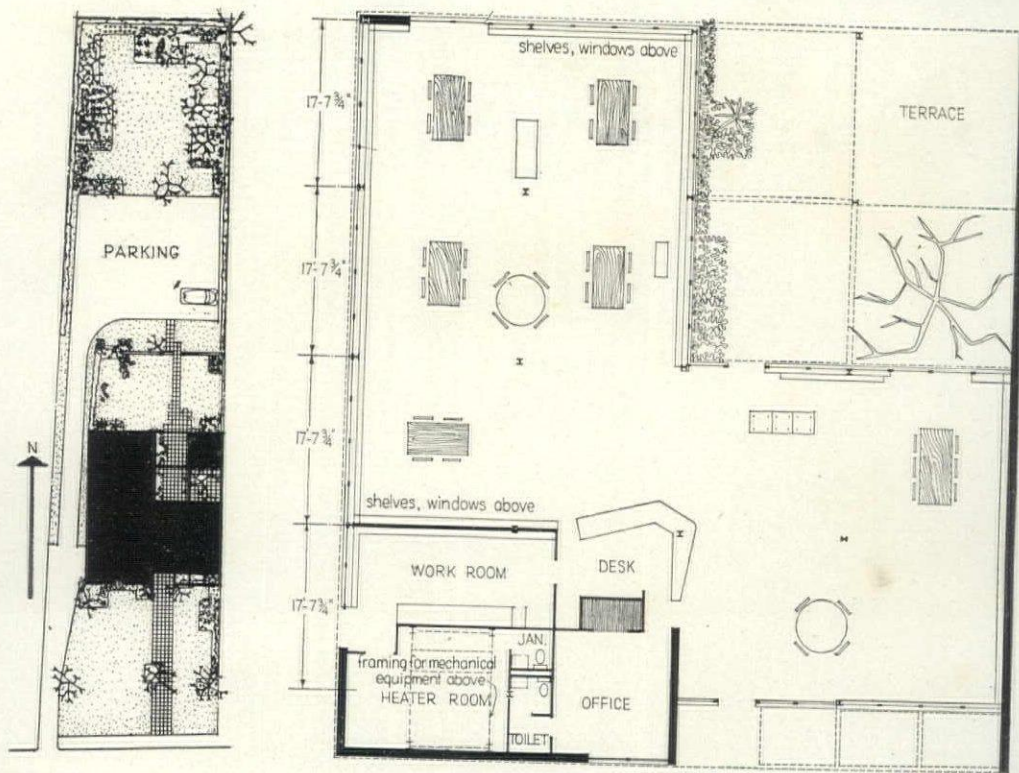


F. S. Lincoln

Librarian vetoed floor shelves in the reading room area that might block view from control desk. Fireproofing plaster for interior columns was formed to follow contours of steel. Floor is rubber tile on concrete, which in turn was poured on top of layer of hollow tile. Membrane waterproofing between concrete and hollow tile completes careful insulating job.

Semi-enclosed patio faces rear of 92 x 360' lot, is frequently used as an outdoor reading room and children's story-telling space. It also serves as additional entrance to building from parking area in rear of lot.

Street facade of Uncle Remus Library faces south, is shaded by two existing magnolia trees. Plot plan (right) shows old garden retained at the rear of the lot.





BAND SHELL pioneers new ground in acoustics

LOCATION: Highland Park, Ill.

HOLABIRD & ROOT & BURGEE, Architects

HERLIHY MID-CONTINENT CONSTRUCTION CO., Contractors

This handsome new pavilion on Chicago's North Shore is the result of some of the most advanced experimentation done in any acoustical testing lab to date.

When the old, rustic Ravinia Band Shell burned down in Spring of 1949, Chicago music lovers got together, raised \$195,000 of the \$350,000 necessary to build Holabird & Root & Burgee's new Ravinia Pavilion. This fan-shaped steel structure has now been in use for more than a year and Chicagoans, who felt deeply sentimental about the old building, have rapidly transferred their affections to the new one. The reason is not only that its architects made it so goodlooking; people are equally happy about its fine acoustics. These fine acoustics Ravinia owes to some of the most amazing research ever done in this field.

"If we use sound waves in proportion to the size of scale models, we can take the guesswork out of acoustics," announced Armour Research's Dr. Howard C. Hardy when Ravinia was completed. Under his guidance, acoustics experts had taken the precise model prepared by the architects, filled it with sound waves proportioned to fit the scale of the small model. "To be proportionate the test sounds must be of high frequency," Hardy added. "Some of them must be ultrasonic. Ultrasonic sounds are too high pitched for the human ear, but they act the same as sound waves in full-size structures."

The model used was scaled to 1/20th full size. The tests were therefore conducted with sounds 20 times the frequency of an average orchestra's music. "When we made an ultrasonic sound in the model," Hardy explained, "it was the same as a musical note played by the orchestra in the full-sized pavilion. We even had ultrasonic people." These were simulated with a blanket of superfine glass wool crumpled over

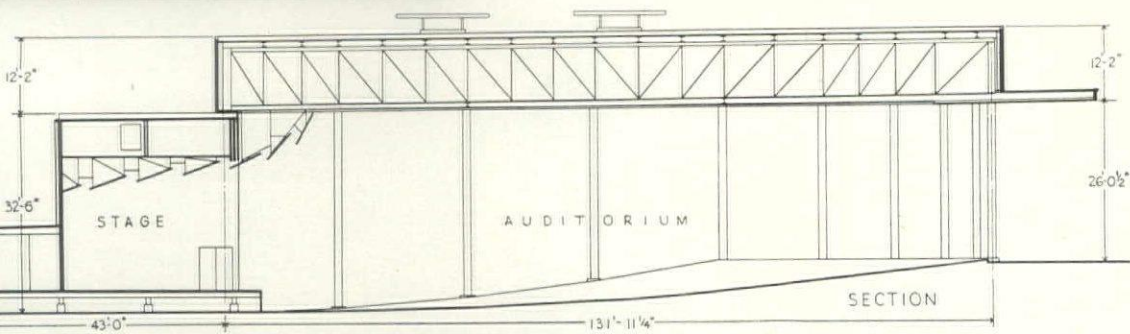
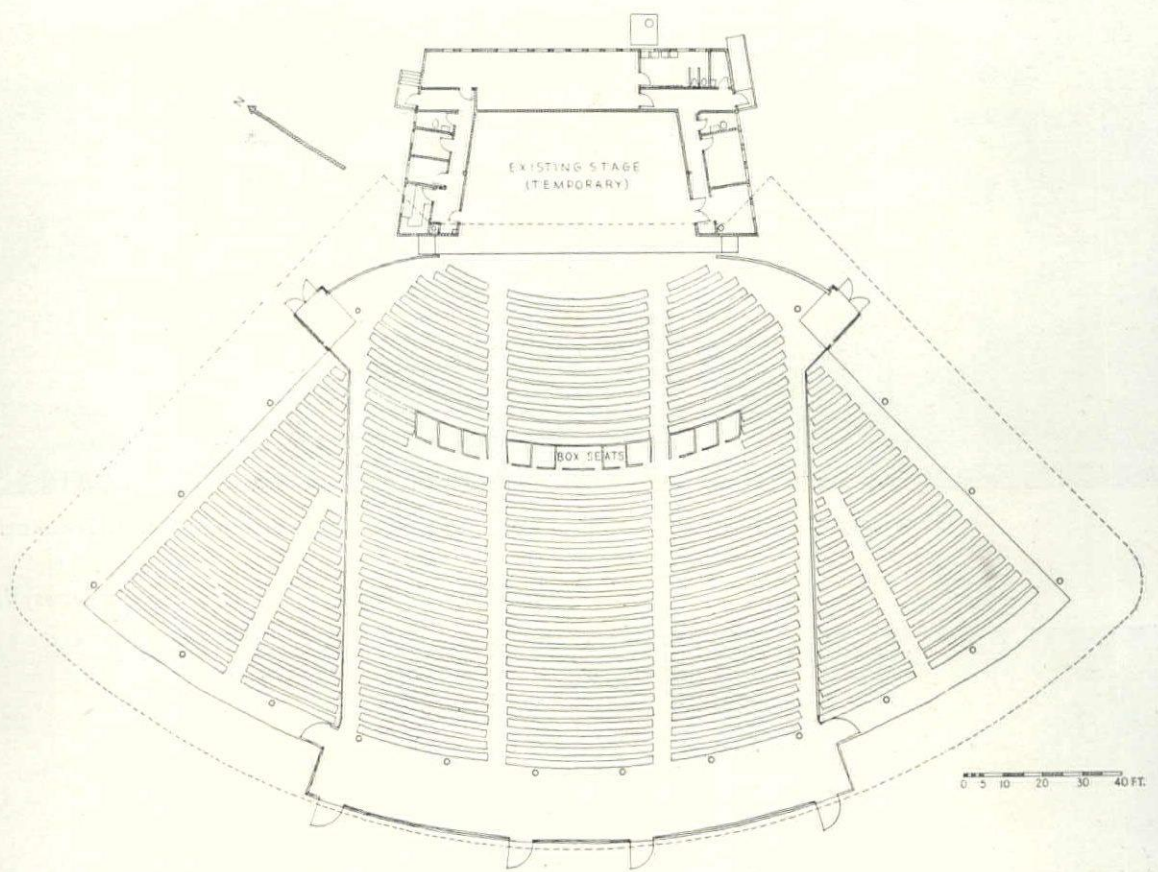
the seating area indicated in the small-scale model.

Acoustical properties of the Band Shell were checked with a microphone sensitive to ultrasonic sounds. The mike was attached to a bamboo pole and the engineers used this acoustic "fishing rod" to pick up readings at every miniature seat. The sound emanated from special ultrasonic speakers placed at the center of the model's stage. Other problems tackled: Reverberation inside the shell, good acoustics on the stage (so that musicians can hear all other instruments), echoes.

The architects' first design stood up amazingly well under Hardy's high frequency and ultrasonic tests. The openness of the structure eliminated all echoes. The mesh ceiling which visually "cleaned up" the structure permitted sound to pass through the ceiling surface to be reflected from the cement asbestos board laid on top of the steel trusses, 10' higher up. Sole criticism: Sound distribution from front to back of the auditorium was somewhat uneven. This was corrected by adding a series of baffles over the stage (see section.) A further recommendation—redesign of the stage house—could not be followed immediately, and a temporary stage had to be left in place due to budget limitations.

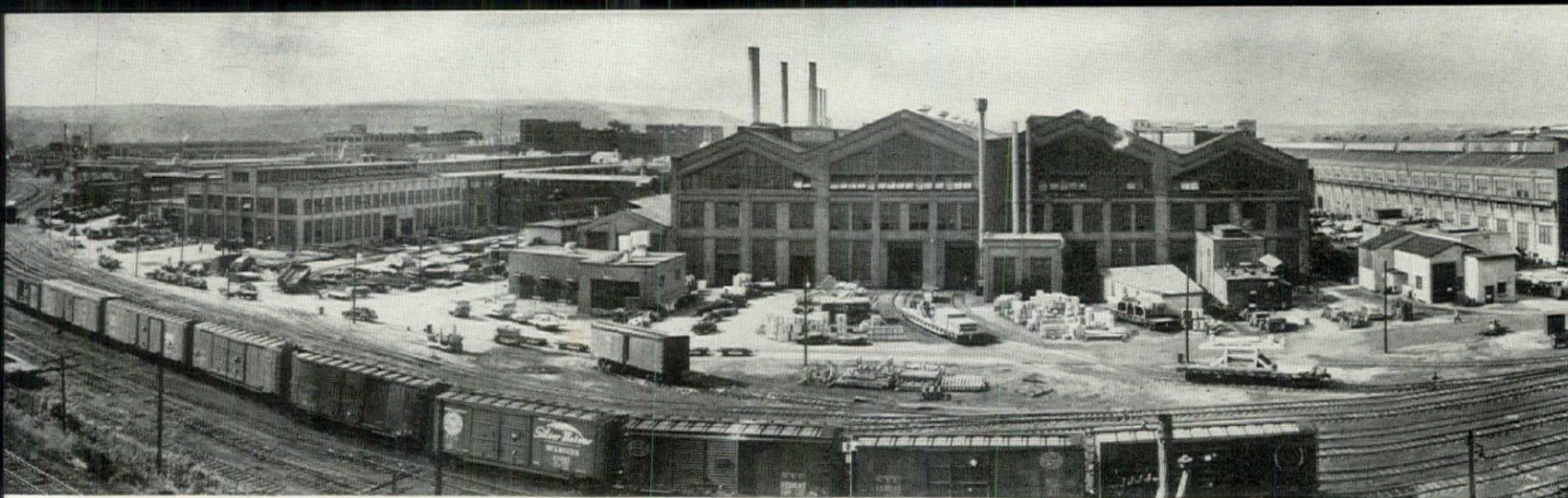
New Ravinia's capacity is twice that of the old wood structure: more than 3,000 seats. In addition many hundreds of listeners sit out of doors, listen to the music from a special amplifier system developed by Armour. During the first seven weeks of operations, 117,000 Chicagoans were able to attend the concerts at Ravinia.

Ultrasonic tests and scale models can prevent the building of acoustical monstrosities," concluded Hardy. "At relatively small cost we can now *predict* acoustics, not tolerate what we get when the building is up and the money spent."



Photos: Hedrich-Blessing Studio





GE wisely decided to add no more building to its plant concentration in Schenectady . . .

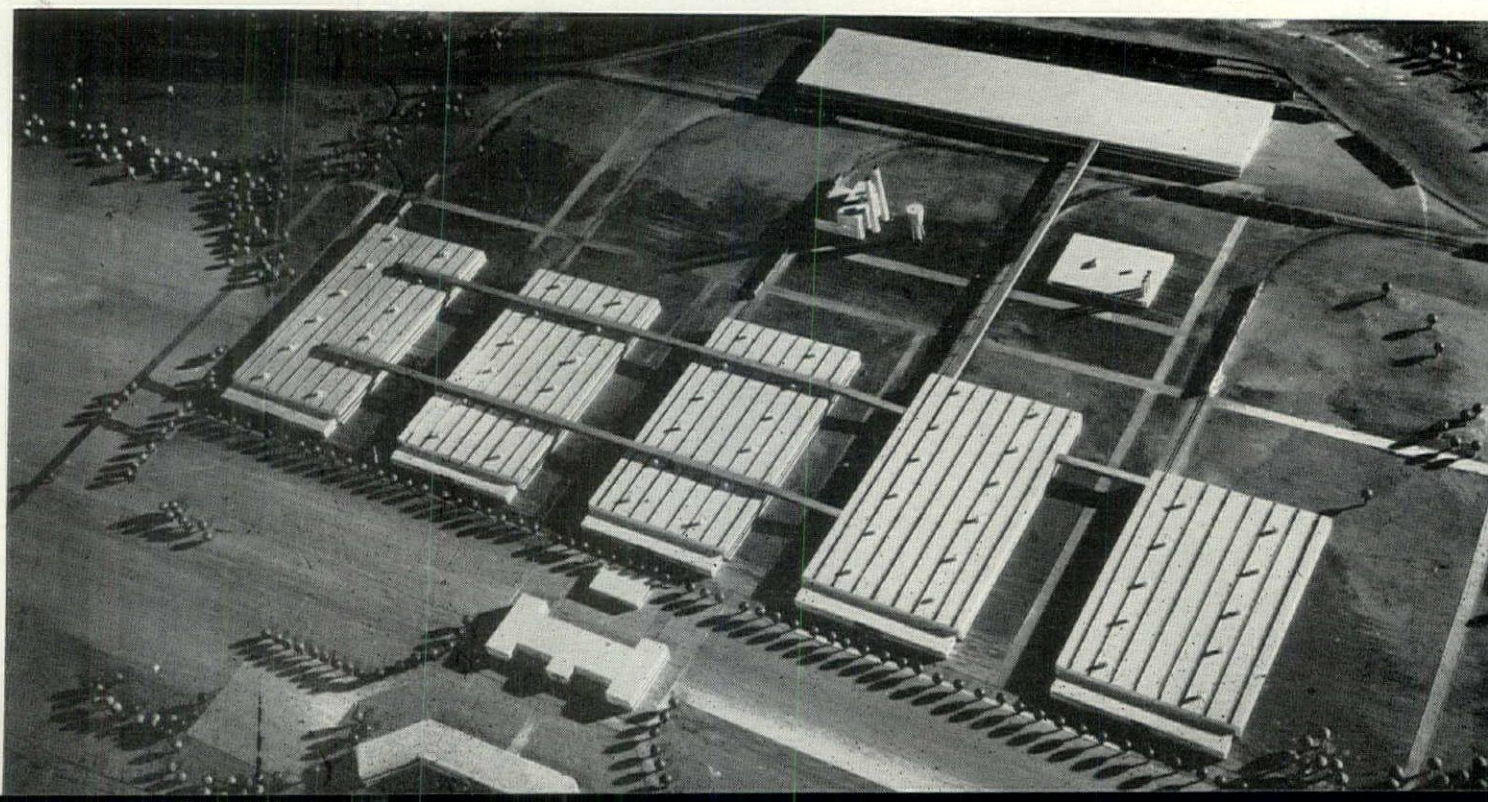
. . . and located electronics plants among grassy lawns on a 191-acre site outside Syracuse

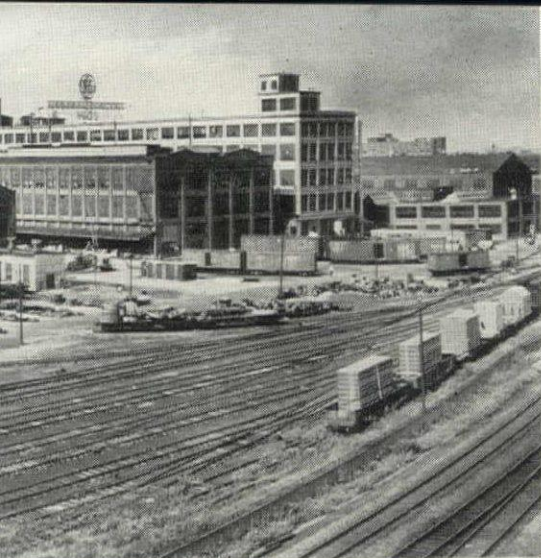


. . . liked the suburban pattern well enough to adopt it for its next big building job

LIFE

. . . a park-like headquarters for appliance manufacturing outside Louisville





BIG INDUSTRY MOVES TO THE COUNTRY

How one of the biggest U. S. corporations, the General Electric Co.,

is building small suburban plants

Up and down the rural U. S. from the valleys of California to the flatlands of the Mississippi, in the grasslands of Kentucky and echoing between Colorado's air-cooled peaks, the clang of steel on steel and the grunt of the bulldozer can now be heard. Industry is on the move—at a pace and a scale not even seen in the big building years of World War II.

The fact that one-third of our population is crowded into just 19 giant targets, each one ringed by dense-packed industry and transport, is speeding industry's flight to the country. But this is only the newest acceleration of a movement that has been gathering momentum over the last decade. Manufacturers are basing their moves on the incontestable fact that it costs less to do business out in the country, where they do not have to pay for trucking delays, for the high cost-of-living of urban workers, for higher taxes, for higher utility rates. Even more influential is the greater worker productivity reported by industries which have moved to suburban locations.

If industrial decentralization is hailed by planners as the answer to urban congestion, by industrialists as the path to lower costs, and by the military as the only protection against modern warfare—why don't more owners build their new factories out in the country? Probably the biggest reason is that few industries have solved the intricate managerial and production planning problems involved in locating a new building away from a going parent plant.

The General Electric Co., that hulking accumulation of products and factories, can be said to reflect most of the obstacles to planned decentralization in an exaggerated degree. In the first place, GE's prewar management was highly centralized. President Gerard Swope was so completely the boss of this already vast corporation that critics used to joke that an executive's rank could be assessed by how far his office was located below Swope's 46th floor office in GE's Manhattan headquarters.

When GE looked around at its swollen plants and laboratories after the war (93 plants, 160,000 employees), it registered the fact that employment at the main Schenectady works amounted to over 30,000—a figure representing slightly more than one member out of every family in the city. Parking space for workers at the Schenectady plant occupied as much space as the buildings themselves and, before quitting times were staggered to ease the congestion, workers waited 30 minutes for the traffic to move out. Similar concentrations existed at Lynn, Mass., at Erie, Pa., at Bridgeport, Conn.

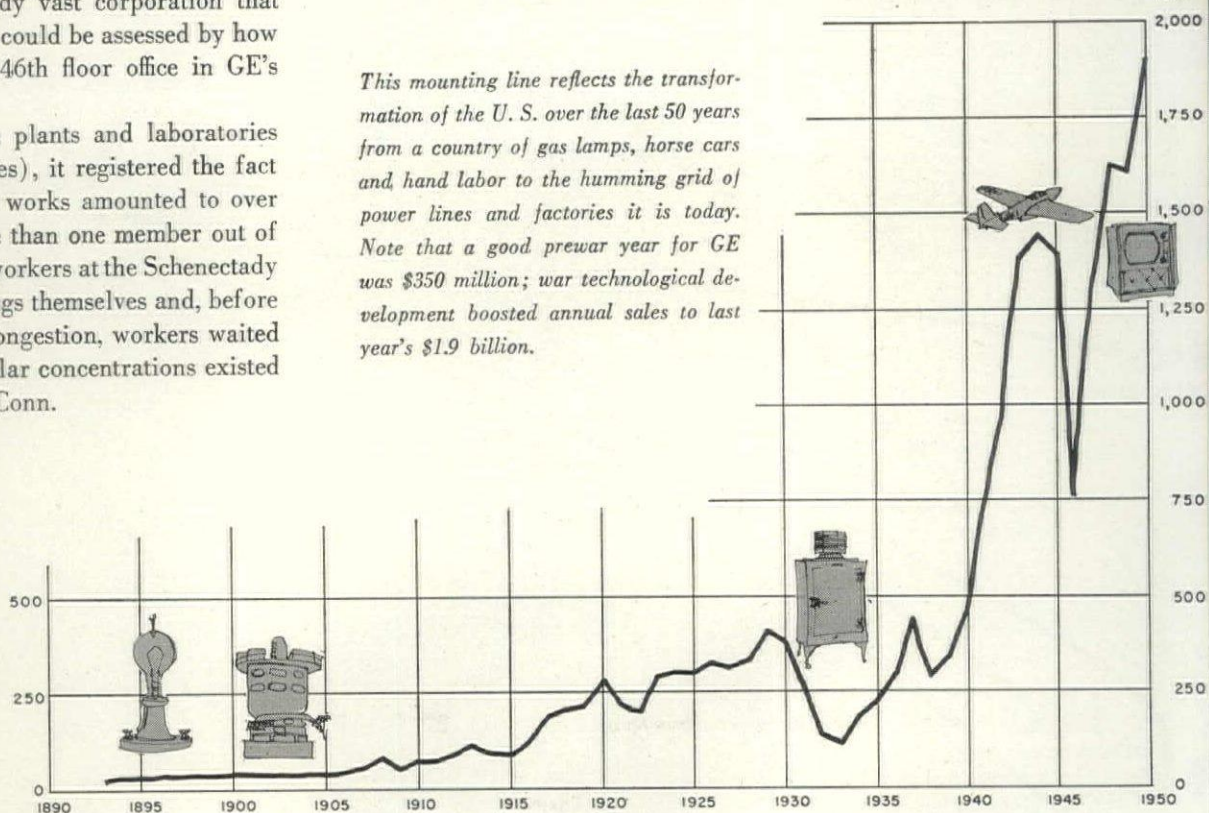
Appliance Park outside Louisville will look something like this model (l.). Overhead conveyors will carry parts and products between buildings. GE plans to start first building this fall, use it first for jet engine manufacture, convert it later to appliances. GE hopes to complete Park by '57, expects it to employ 16,000. Site was chosen so steel could be shipped down the Ohio River.

It didn't take GE long to decide that, as President Charles Wilson (now on leave as ODM boss) says: "We are all through with those big plants requiring 20,000 to 40,000 people."

But when GE faced its biggest postwar expansion move—into the war-born electronics industry which perfected radar and produced television—it found that building smaller plants meant solving not only the problem of decentralized management and of decentralized handling of materials and products but an even more ticklish question. This was the intimate relation of electronics production to the research activities of its vast Schenectady laboratories. To solve all these problems at once, GE hit upon a pattern which it called the "satellite plan of manufacturing." Then it bought 191 acres 12 miles outside Syracuse and built campus-like Electronics Park as the nucleus of this pattern. GE's satellite plan (detailed on the following pages) may well set a building pattern which will enable industries to reap the dividends of dispersal and still hold on to many advantages of centralization.

GE likes its experience among the grassy lawns of Electronics Park—and its much longer experience at the lamp department's suburban headquarters, Nela Park, built in 1913 outside Cleveland—well enough to use the suburban park-like development as a major pattern for the \$350 million worth of expansion it expects to make over the next five years. This will be the pattern for its next big building venture, Appliance Park, to be located ten miles from downtown Louisville. Here GE plans to create a manufacturing, engineering and marketing center for all its major appliance departments and has asked Albert Kahn Associates to design showcase buildings.

This mounting line reflects the transformation of the U. S. over the last 50 years from a country of gas lamps, horse cars and hand labor to the humming grid of power lines and factories it is today. Note that a good prewar year for GE was \$350 million; war technological development boosted annual sales to last year's \$1.9 billion.



SATELLITE PLANTS: research says when they move out from suburban hub

GE's Electronics Park outside Syracuse is more than a suburban, campus-like development of three handsome, air-conditioned manufacturing buildings plus laboratories and other service buildings.* It is also the hub of a wide wheel of satellite plants, all operating under the Park's headquarters staff.

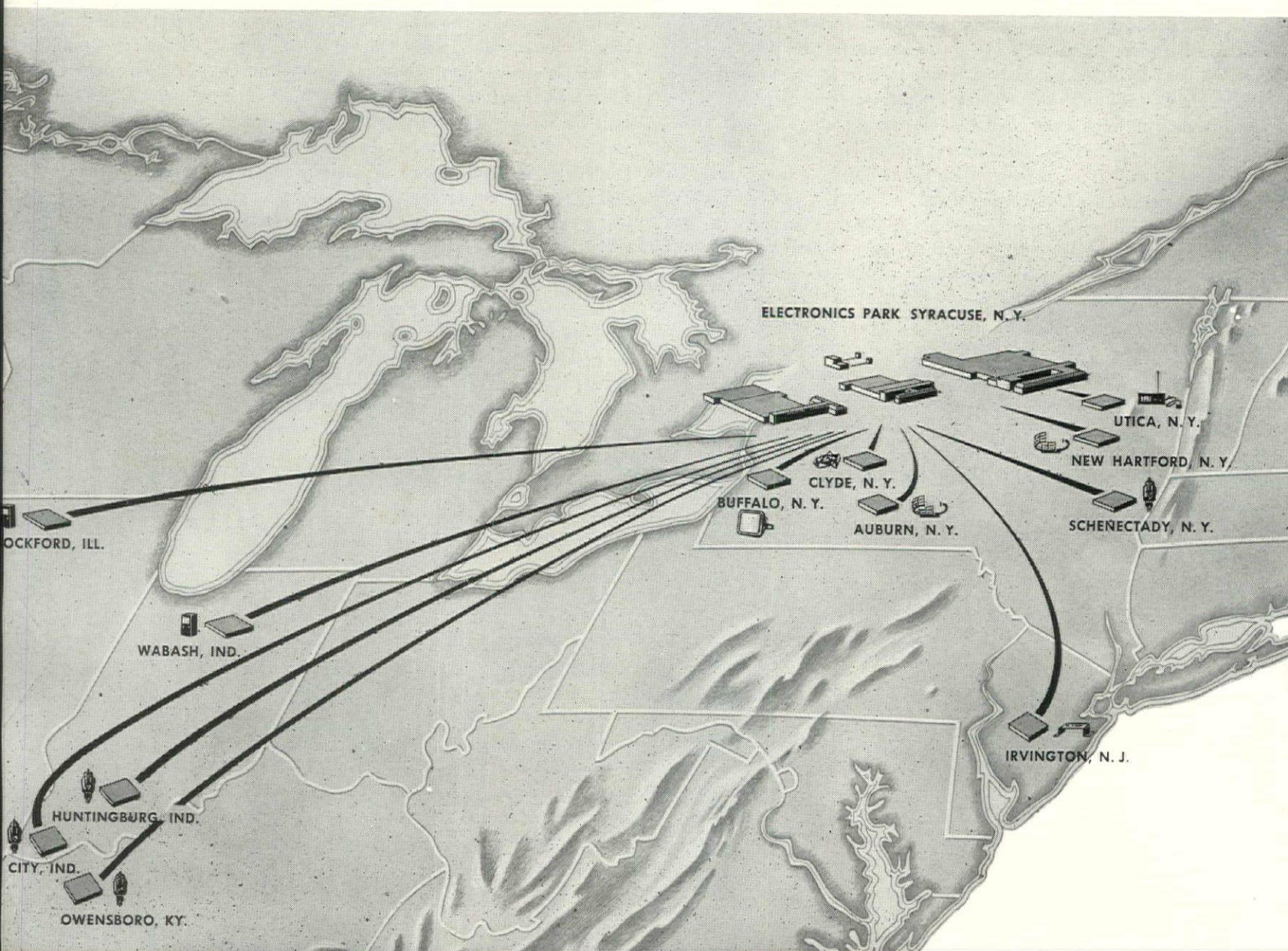
GE executives, including Dr. W. R. G. Baker, vice-president of the Electronics Department and an engineer who had a lot to do with the development of television, figured out this satellite plan of building way back in the last years of World War II. It has proved to be a flexible instrument, more than adequate to meet the demands of a booming industry whose phenomenal postwar rate of expansion not even GE's far-sighted executives completely foresaw. Today a \$2.5 billion industry and expected to double in 1951, electronics has been called the "nerve center of modern industrial power." GE's contributions to this technological revolution range from tiny germanium diodes assembled under microscopes to 50' long international short wave transmitters and from an electronic-eyed umpire built for the Dodgers' training camp to control equipment accounting for half the cost of today's military aircraft. The precision with which both Park and satellite buildings house this astonishing variety of products can probably be attributed to Dr. Baker's guiding principle: "Electronics is not a business but a science." Heart of the Park's manufacturing space is the laboratory building (now being tripled in size), and it is the research activities of this laboratory which shape the satellite plan.

*All designed by Giffels & Vallet, L. Rossetti.

The first big decision GE made about postwar expansion to accommodate electronics production was *not* to add on to existing electronics facilities at Schenectady or at Bridgeport, where the company's prewar radio assembly plants had rubbed elbows with the headquarters of the appliance department. The next big decision was to locate the electronics department independently on a suburban site, to set a firm ceiling on the labor force that might be recruited at this site and to plan for expansion beyond this ceiling at satellite plants (see map, below). Labor ceiling initially set for the Park itself was 6,000; actually the rate of electronics expansion was too fast to be contained within this ideal ceiling and today employment at the Park, which the trade once called "Baker's folly," amounts to over 11,000.

Allotment of production space is determined by a general principle of holding relatively newer types of production, more dependent on central research activities, to the Park buildings. Lines in heavy production, in which the research and engineering development phases are essentially completed, are the first to be moved out to satellite plants.

It was this satellite method of building which gave GE room quickly to expand its television manufacturing facilities at the Park. When television began to boom, all radio receiver manufacture was moved out to satellite plants and Park facilities converted to television. This put television receiver manufacture under the close attention of the Park's centralized staff of research and development engineers.





Alfred Eisenstaedt: Life

The flexibility of the satellite plan is now helping GE add new war-connected products. The policy of buying or building small independent plants gives the electronics department room in which to take up war contracts without making the major commitment of, say, dismantling part of its highly mechanized facilities for TV set assembly (see photo, above). Since the problem of determining how long the boom market in TV sets (7 million produced last year) will hold up under credit restrictions, material shortages, etc., and how fast war contracts will appear to take up the gap is the most delicate one the electronics industry faces, GE's highly flexible system of space allotment puts it in excellent shape to meet whatever lies ahead.

In planning factories where production can be rapidly shuffled around, GE executives have accumulated considerable know-how ranging from such tricks as not painting factory ceilings ("nobody looks at them") and identifying multiple piping installations by adhesive tape carrying printed identification (much quicker and cheaper than color-key painting) to such major decisions as a confidence that 28' wide bays are adequate for most electronics production ("We have recovered from that general postwar feeling that you had to have an acre of space without a single column in it"). For more details on how GE builds, see the following pages.

ROOM FOR WAREHOUSING is a big bonus of well-planned suburban location

The headquarters-plus-satellite plan of building is important because it maintains many of the advantages of centralization while giving some room for dispersal into smaller plants. One of these advantages, as we have seen, is centralized research, whose importance can hardly be over-estimated. Most of today's research miracles are the children of industrial centralization; only the huge corporations have the capital and other facilities to mount an offensive into the unknown big enough to maintain today's rate of technological advance.

Another advantage of a central manufacturing point served by smaller plants is that the central point can be developed as an assembly center for major products and the satellite plants as producers of parts or subassemblies. When the central assembly plant is located out in the suburbs, adequate warehousing and shipping space can be built at the assembly point—an overwhelming advantage now almost unobtainable by a plant in a crowded industrial area.

Electronic Park rapidly outgrew the large amount of warehouse space allocated when the buildings were laid out, and additional warehouse space is now in plan stage. Products made at the Park are now being stored in various buildings in

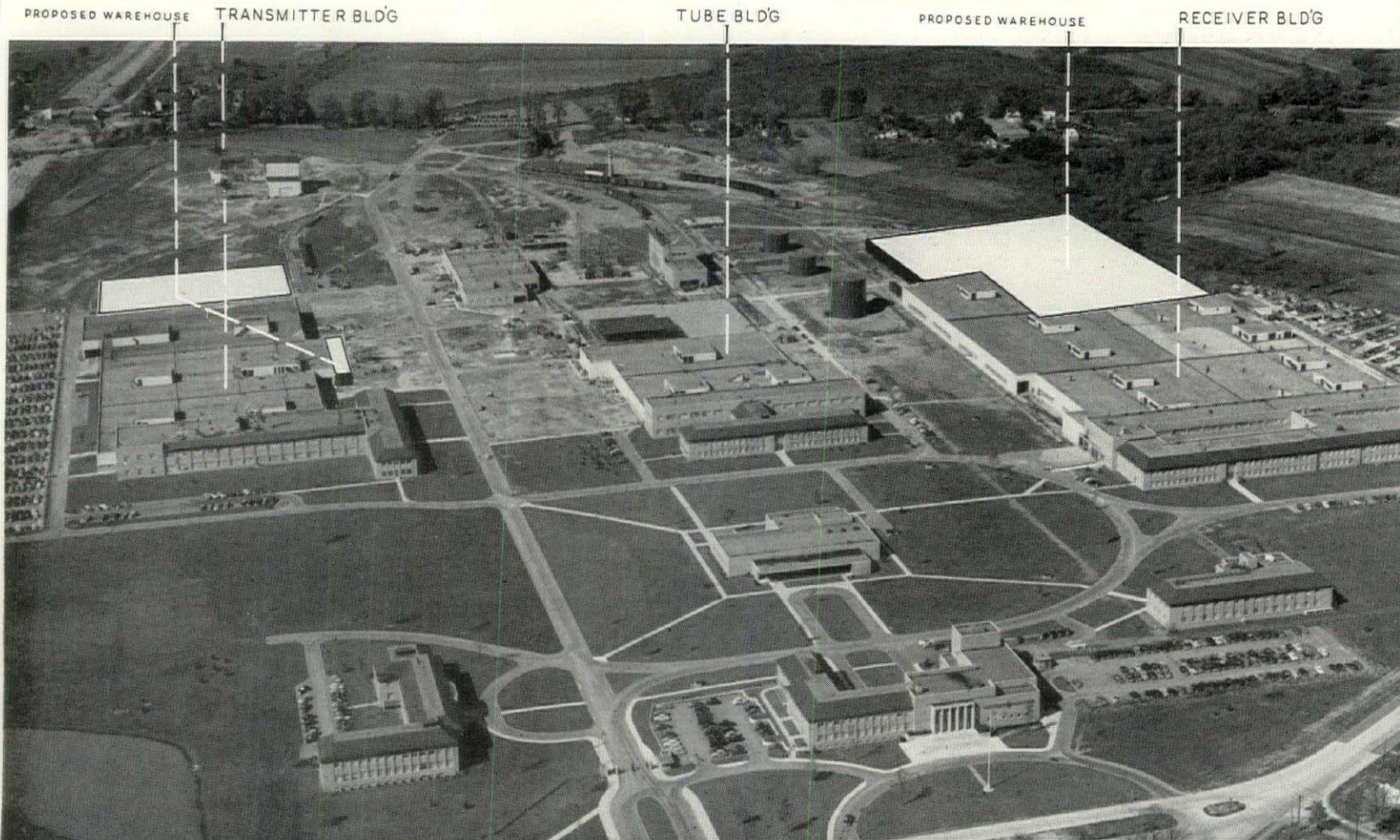
and around downtown Syracuse (most of them leased space) and as far as 30 miles away in Auburn. GE figured that its cost of warehousing, failing the provision of space at the Park, would increase by \$1 million by 1955—or by considerably more than the annual cost of the new warehouse space it wants to build.

Disposition of the warehouse space as shown in the photo below was a decision involving some 20 Park executives. It also involved the hope that completely automatic handling equipment, based on electronic eye controls, could be employed for the major storage item: finished TV sets. The planners considered several alternatives: 1) a central warehouse in which products of all three manufacturing buildings would be stored, believing that such centralization was necessary to make the most economic use of warehouse equipment and labor. 2) two separate warehouses, one to connect with the transmitter building, on the basis that custom-built products (ranging from huge television and radio sending equipment to a myriad radar devices) would not be adaptable to handling by mechanical means like TV sets and tubes and, furthermore, required last-minute testing which had to be done adjacent to production areas. This view prevailed and the present plan is to build separate warehouse space for the transmitter building.

Automatic selection equipment for handling packaged TV sets may be added to the large warehouse at some future time. Estimate is that warehouse mechanical equipment, including automatic selection, would cost about \$2 million, but would pay for itself in about three years by reducing required labor force by one-third. GE is already using one of its own two-way radio communication systems in directing the locomotive which shunts freight cars around in the Park's loading yards.



New warehouse space will be added at Electronics Park as shown in air view below. Television picture tubes made in tube building will be carried to warehouse in back of receiver building by a long out-of-doors conveyor. Transmitter building needed its own warehouse because of last-minute testing of equipment as shown in photo (L.).



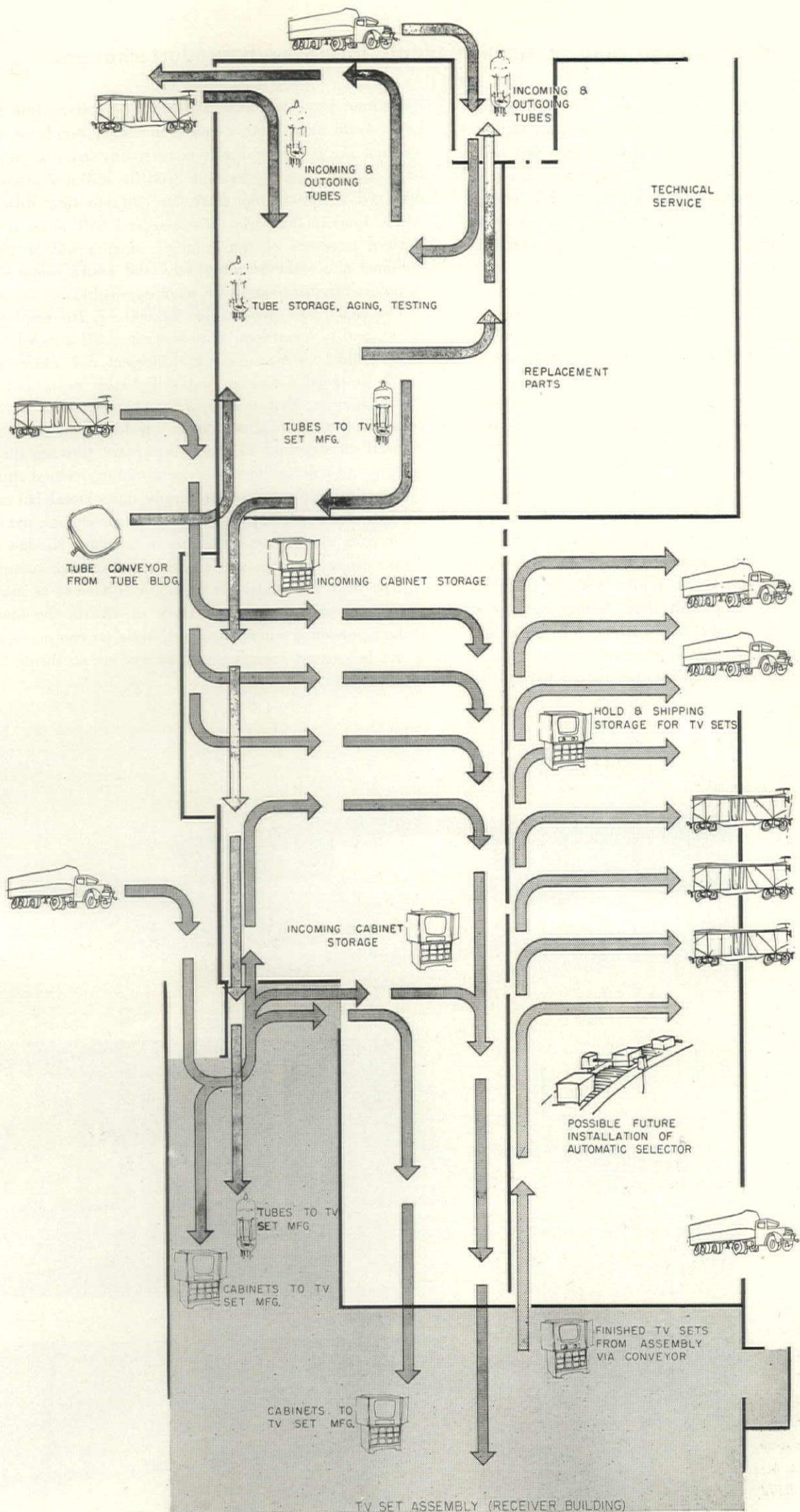


Diagram shows how parts and products will move through warehouse planned to adjoin the receiver building. Some of the television picture tubes made at the Park are shipped to other TV set manufacturers; these will come into the warehouse by conveyor from the tube building. GE produces enough TV sets to make it feasible to install equipment for completely automatic handling of packaged sets by electronic eye sorting—an idea long dreamed of by warehouse designers.

FLEXIBILITY is main design goal in satellite plants facing swift product changes

Flexibility for future changes in production is a main goal in the design of all GE satellite plants. In the biggest satellite building project to date, a plant between Utica and New Hartford, N. Y. expected to cost about \$15 million with equipment, GE has been able to plan for a highly flexible interior by applying some of the things it learned in operation of the transmitter building, one of the three main manufacturing buildings at Electronics Park.

This new plant (page opposite) will be used to produce electronics equipment for military purposes (GE makes all types of radar—air, sea and land, search and height-finding, anti-aircraft and fire control systems; another and relatively new military product is transportable microwave relay equipment for radio communication—this means that soldiers no longer have to string telephone wires from battle fronts to rear areas. Some of these products will be moved out from present production at the Park's transmitter building to the New Hartford plant and to the Auburn plant, below). Exacting tests of this wide range of electronics equipment are an important part of production. This means that about a half-dozen different kinds of high-frequency power must be introduced at testing stations on the assembly floor. In the Park transmitter building, GE had built these testing stations at fixed points in the assembly area, soon discovered that changes in arrangement of assembly operations were apt to stumble over them. In planning the new plant, GE looked beyond the

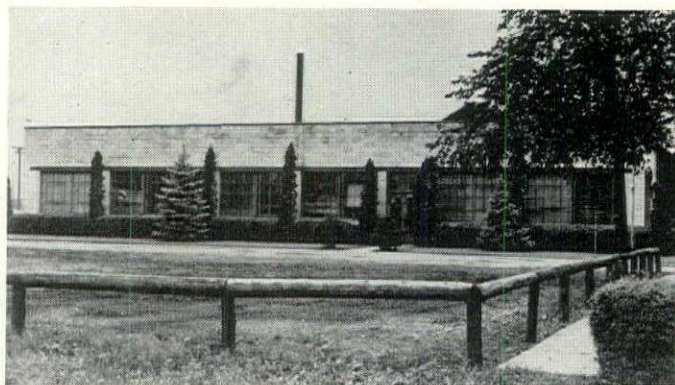
immediate production use and realized that built-in test stations would have another and even bigger disadvantage: they would make it impossible to convert this space to some other kind of manufacture when the need for military products was over. GE planners, therefore, in collaboration with Walter Kidde Constructors, who designed and will build the plant, devised a system of test cubicles which could be bolted to columns above the working area and easily removed or relocated when necessary (see page opposite).

The plant will amount to 338,000 sq. ft., employ about 2,500, and is located on a 50-acre site. GE decided 21 x 50' bays would be adequate for both present and future uses, and Kidde designed a cantilevered rolled steel beam and column frame, figuring that this would cut 3' from the wall height required for a truss structure. Kidde counts on exterior drywall construction to speed this plant through the winter season, and will use insulated metal siding secured directly to the steel girts. Penthouse air supply units (total fan capacity, 530,000 cfm) will supply one outside air change per hour in winter, six air changes per hour in summer. Kidde's heating studies show that the interior heat load of lights and people will be such that winter air supply will have to be introduced at 63° to maintain a temperature of 72° in the plant. The factory portion is windowless and, while air cooling equipment is not in current specifications, provisions are being made to install it later.

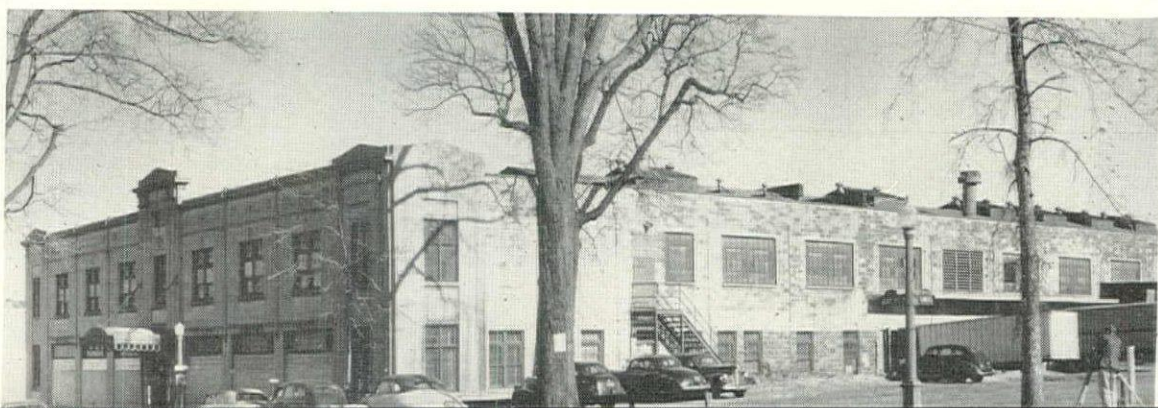
Auburn plant, just finished last month, was intended to produce television receiver sub-assemblies, but will be used instead for military electronics production. Adjusting to odd bay spacings, GE was able to get this plant up in about seven months by buying steel which the builder, Siegfried Construction Co., Buffalo, had already purchased. GE prefers bays of 21 to 28', based on a 7' module composed of 3' long work bench and a 4' aisle.

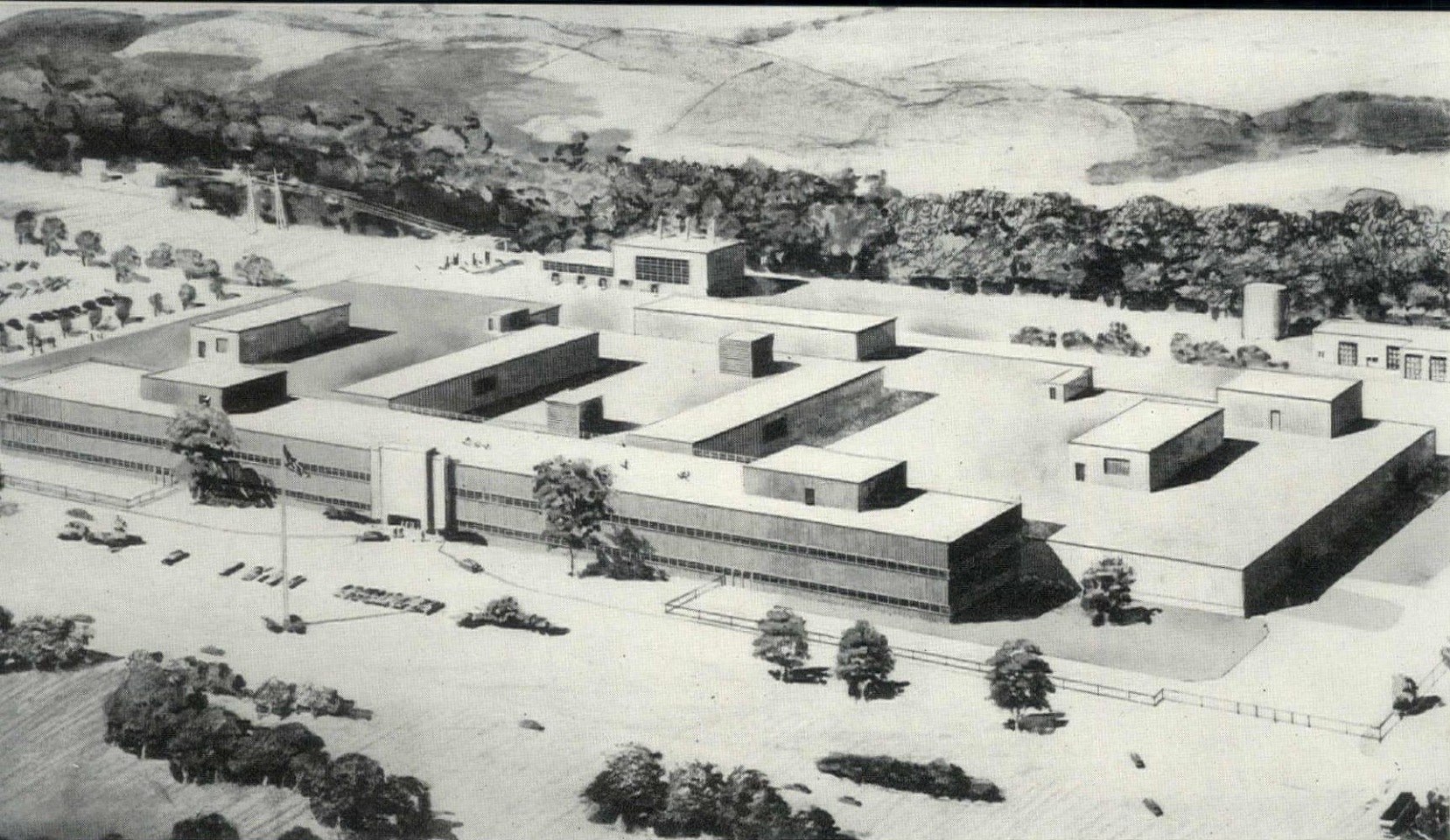


Tiny plant at Clyde, N. Y. may someday make some of GE's big tube manufacturing plants obsolete. Built originally to make small portable radios, this plant was recently reopened and converted at a cost of \$1.50 a sq. ft. to manufacture of high purity germanium and of germanium diodes. The diodes are made of a small block of germanium and two "cat whisker" contacts, replace two vacuum tubes in each GE TV set. Pea-sized, they are assembled under microscopes. Scientists think germanium assemblies may eventually replace many kinds of vacuum tubes.

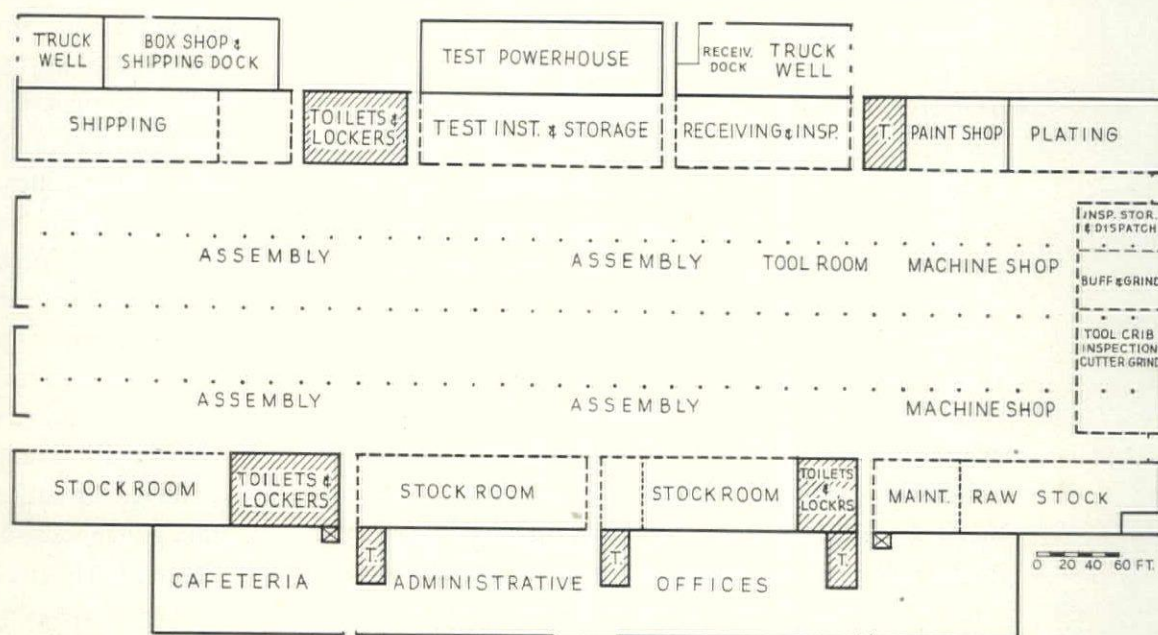


Utica plant will make two-way radio equipment for commercial use. Mobile two-way radio has become a big business and is finding new applications. Examples: supervision of large construction jobs, directing materials handling in warehouse and factory operations. GE is spending about \$1 million to renovate 70,000 sq. ft. in this old two-story plant, because it couldn't wait for the steel to build a new one.

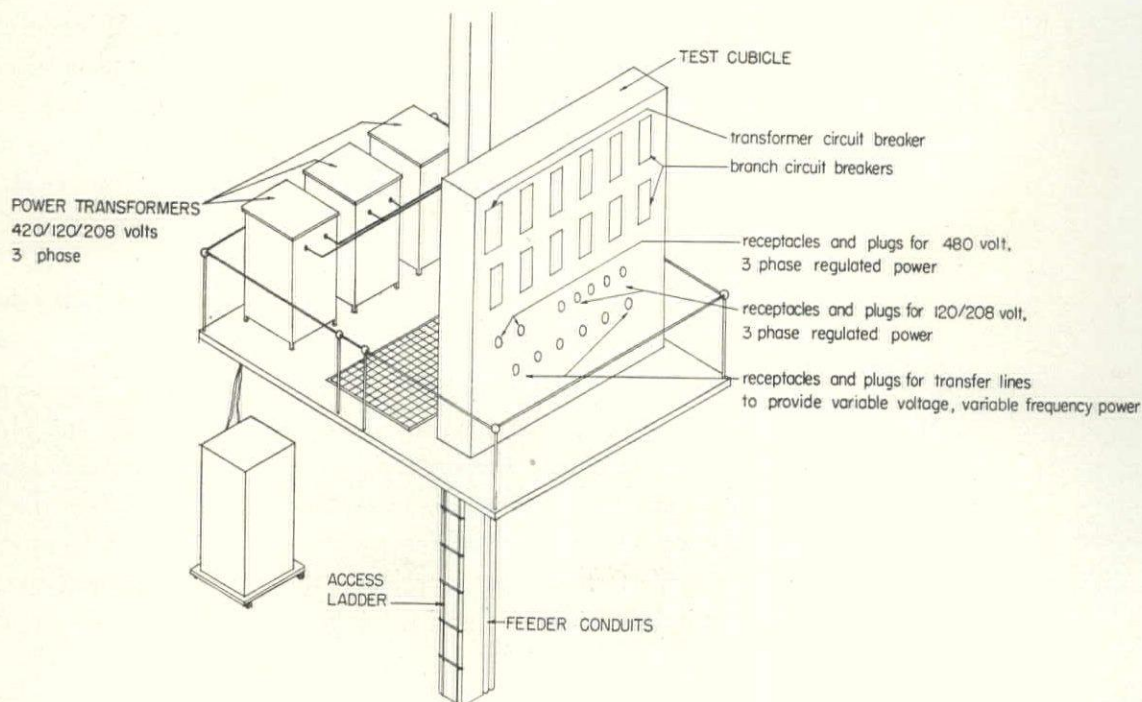




Two-story section at front of plant will house administrative offices and cafeteria on first floor, engineering laboratories on the second. Offices are completely air conditioned and laid out to a 10'6" module (half of the 21' bay width) to provide for flexible partitioning. For office lighting, GE decided to use a recessed troffer fixture, each one providing a single fluorescent tube backed up by reflecting aluminum, set on 4' centers. This gives a lighting level of 45 to 55 foot-candles. Walter Kidde, constructors, designers and builders.



Some 18 or 20 of these test cubicles (r.) will be hung over the assembly area. Essentially they are a small switchboard mounted on a steel platform. Underfloor wiring will connect each cubicle with a big switchboard in the test powerhouse (see plan) where special generators produce high-frequency current. By making proper plug-in connections at central switchboard, current of any desired voltage or frequency can be made instantly available at test cubicle. Equipment being tested can then be wheeled up on dolly and plugged into cubicle switchboard.



CHILDREN'S HOSPITALS.

To make them match new medical thinking, U. S. planners can take a tip from the Finns

"The U. S. lags behind other countries in only one field of hospital planning—the design of children's facilities."

This was the verdict of Australia's famed hospital architect, A. G. Stephenson, at the end of his recent world tour. What impressed Stephenson most in Europe's newest children's hospitals was their homelike quality, produced by bright, pleasantly scaled patient rooms, gay colors, informal furnishings, sunny terraces, cheerful play space and classrooms. Outstanding example: the Children's Clinic in Helsinki, Finland (opposite).

Since top U. S. pediatricians now prize such amenities, Helsinki's friendly clinic holds some valuable lessons for U. S. hospital planners. Its assets and shortcomings in terms of current U. S. medical thinking are analyzed below. For examples of how this thinking is being applied to projected facilities here, see pages 155-157.

New drugs and techniques have reduced the danger of contagion in U. S. hospitals and freed many young patients from strict segregation rules. Early ambulation after surgery is recommended for youngsters too. Former child scourges like pneumonia, scarlet fever and diphtheria have been brought under control, but there is a growing demand for chronic disease beds—especially for long-term rehabilitation after polio, cerebral palsy and children's heart diseases. Psychology has become as valuable as medicine in speeding recovery.

All these developments have increased the importance of cheerful surroundings and more space for occupational therapy, exercise and education. Though these features are most important in chronic hospitals (Helsinki's patients average 20-25 days), most U. S. doctors think that they are also essential on a smaller scale even for short-term child patients.

Helsinki's finger plan opens rooms to sunny terraces

Many of the Helsinki clinic's most pleasing qualities derive from its curved finger plan. (Opposite.) Spread of the fingers opens all children's rooms to the south or southwest to catch the warmest sun and a view over surrounding pine woods. (Western sunlight is welcome this far north.) Setbacks on the patients' side of wings form

full-length terraces, provide direct access to the outdoors for each room. The curved section linking the fingers contains adjunct facilities, staff classrooms, administration and outpatient departments. At its north end are two low buildings for resident doctors.

This plan not only provides good orientation, but accommodates 370 beds and complete services in four stories without requiring too much horizontal travel. Concentrating labs and other adjunct facilities in the curved central section makes them easily accessible from the nursing wings. In size and number, however, adjunct services are not up to U. S. standards.

Though most U. S. pediatricians would not go as far as the sun-hungry Finns in providing fresh-air treatment, many like the idea of keeping children's facilities close to the ground. Says Dr. Lawrence Slobody, pediatric chief of New York's Flower-Fifth Avenue Hospital, "I see no sense in building children's hospitals tall. If economics permit, they should be low, with plenty of window walls to give children a feeling of freedom and easy access to the outdoors."

Helsinki's arrangements to detect and isolate contagious incoming patients are more elaborate and space consuming than those used in many U. S. children's hospitals—particularly since the advent of anti-biotics. Contrary to the best U. S. practice, both in-patients and out-patients use the same entrance, reached by a sloping drive to the second floor level (plan, right). Contagious suspects are detoured outdoors to small examining rooms, then sent to one of two 30-bed floors in adjacent wings for either observation or treatment. Many U. S. doctors would rather save space by isolating contagion suspects on regular ward floors.

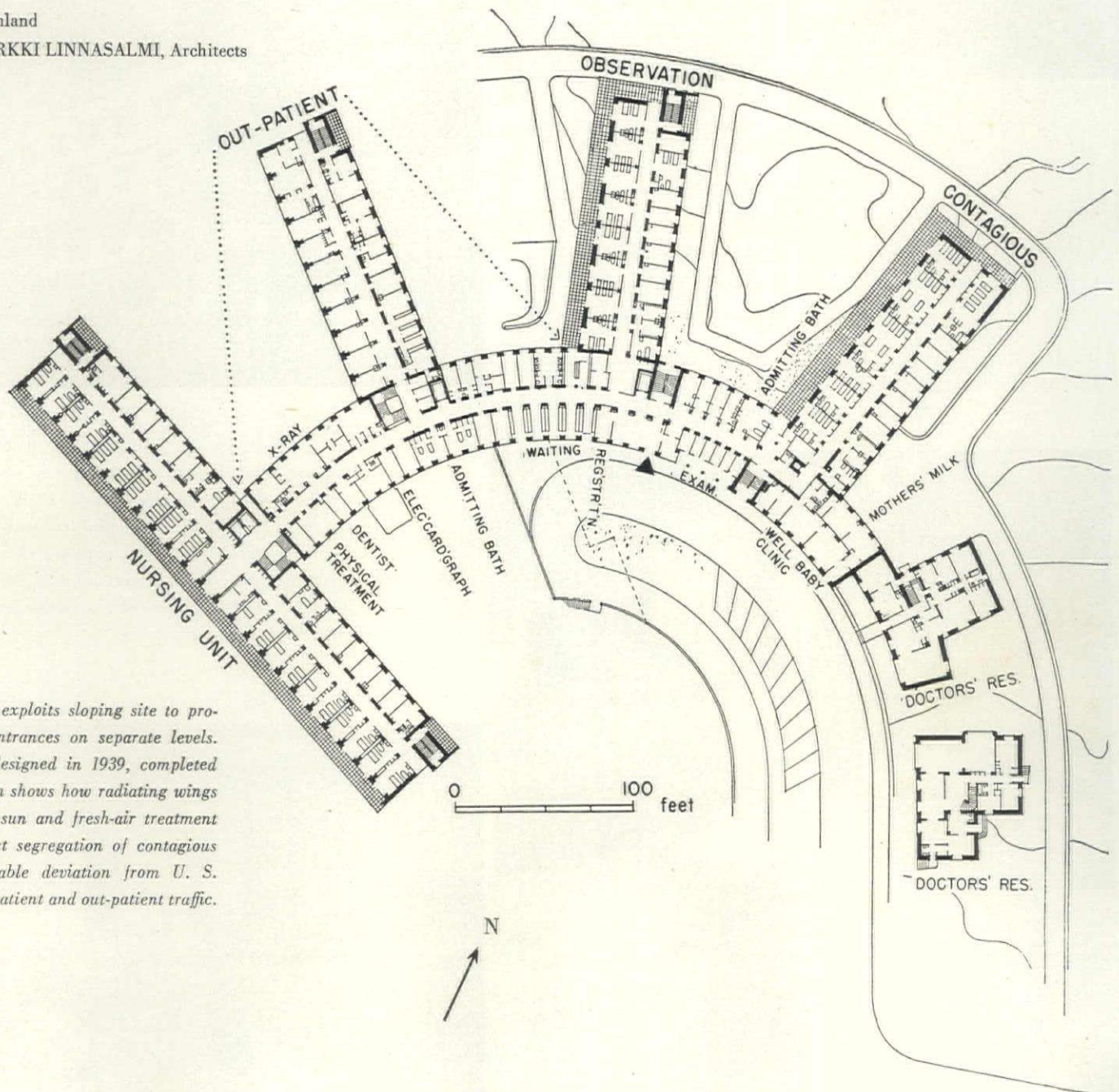
Nursing units are cheerful, efficient

The layout of Helsinki's nursing floors admirably meets the sick child's needs for close supervision, good light, air and play space, and grouping by ages and illnesses. All nursing stations and utilities are on the north side to free the balconied sunny exposures for patient rooms. Glass panels in partition and corridor walls, plus an elaborate system of listening and signaling devices give nurses constant control of patients. Each station

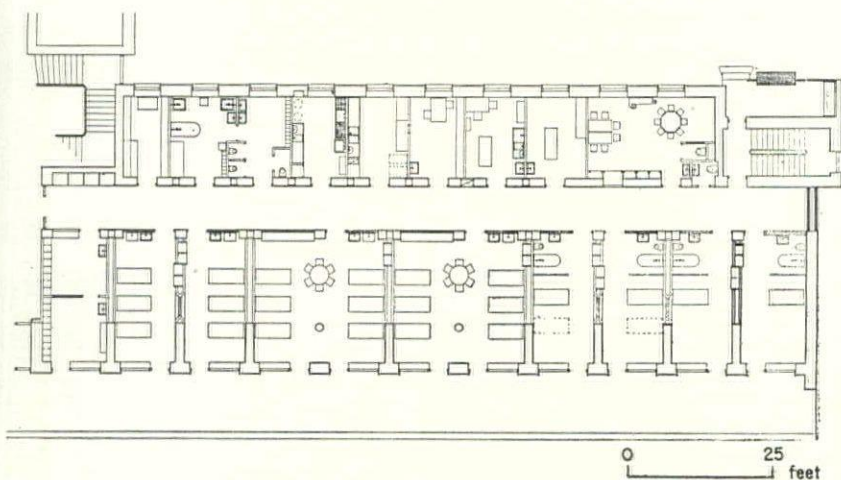


Photos courtesy of K. V. Anttila

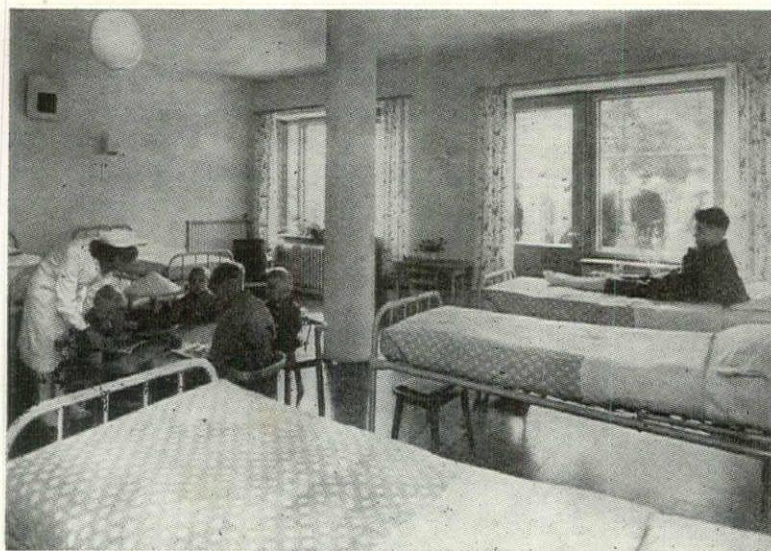
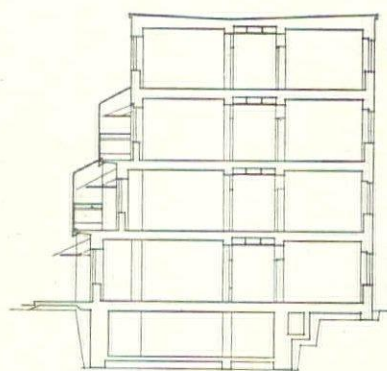
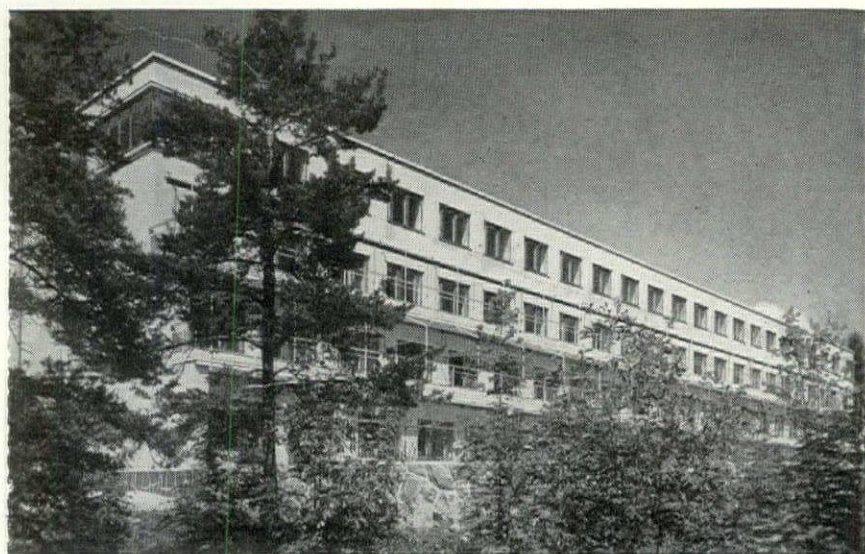
LOCATION: Helsinki, Finland
 UNO ULLBERG AND ERKKI LINNASALMI, Architects



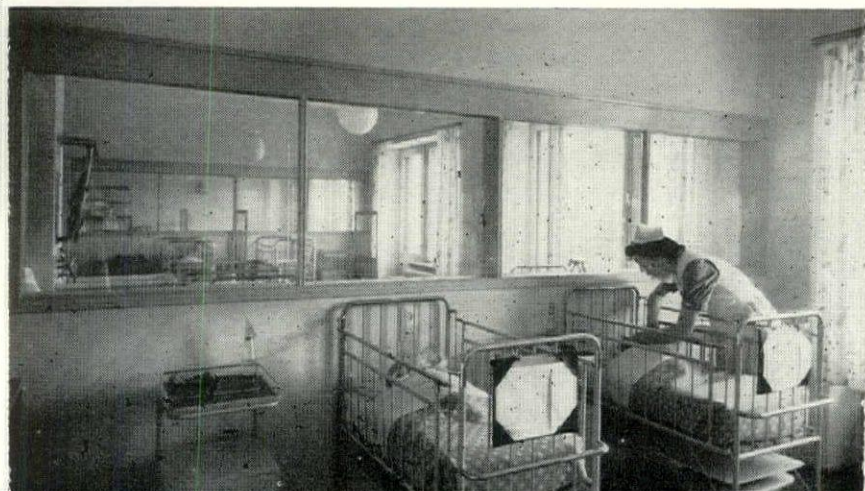
Finnish children's clinic exploits sloping site to provide staff and patient entrances on separate levels. (above) Structure was designed in 1939, completed in 1947. Second floor plan shows how radiating wings meet Finns' demand for sun and fresh-air treatment for all patients and strict segregation of contagious facilities. Note questionable deviation from U. S. practice of separating in-patient and out-patient traffic.



Main patients' wing (below, left) contains two 24-bed nursing units on each floor. Nursing stations are centrally located on north side of units, flanked by utility and treatment rooms. (Plan, above) Note play space in wards, classroom across the corridor.



Section through main nursing wing shows how setbacks provide broader terraces, larger rooms for older children on lower floors (left). Sun-control is by awnings supported on pipe frames. Big windows, glass panels in partitions add cheer to infants' wards, facilitate supervision (below). Construction is reinforced concrete and brick faced with stucco.



serves a maximum of 25 beds, all within 50' of its central location. (Plan, left.) This not only saves steps but helps give children a sense of security by keeping their "mother substitute" within view.

The lost feeling which comes over children in big wards is avoided here by maintaining a 6-bed per room limit. All non-contagious rooms are big enough to provide bedside play space and accommodate visitors comfortably. (Because many U. S. pediatricians now favor more contact between parents and hospitalized children, larger patient rooms in children's units may be required in the future.)

New U. S. pediatric units combine amenities and economy

U. S. hospital planners are finding ways to adapt many of the desirable features of Helsinki's clinic even to the smallest children's facility—the pediatric section of a general hospital. The problem is to balance the added space requirements of the new pediatric theories with the need for economy in hospital construction, operation and maintenance. A typical solution is the proposed pediatric unit of the 200-bed Long Island Jewish Hospital (plan, right).

Occupying half of a nursing floor, the 34-bed unit is larger than average for a hospital of this size because the surrounding suburbs expect a high birth rate. Since the site made southern orientation for any large number of rooms impossible, the architects used a double corridor plan to centralize nursing stations and utilities and free the entire perimeter for patient rooms.

Even though there will be a rapid turnover among its predominantly acute patients, the unit provides a 15' x 25' combined class and playroom opening to the south on a large cantilevered balcony, which is shaded and sheltered by a corresponding overhang above. With this feature, the child's normal play and education can be continued even though his stay in the hospital is short.

Isolation beds for older children are well insulated from the rest of the unit by a sub-corridor with separate utility and toilet facilities. Between the isolation nursery and the main corridor is a small examining room where doctors can look over their patients without entering the nursery proper.

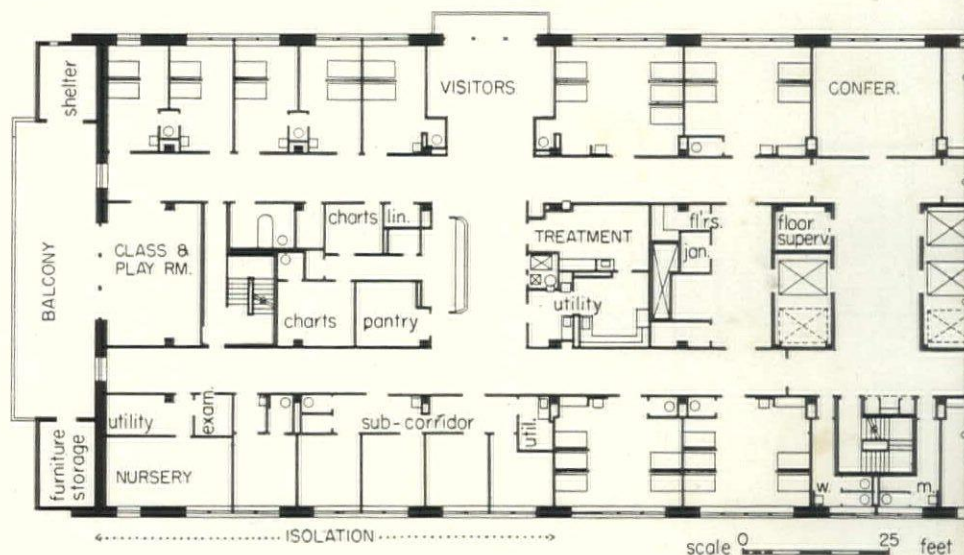
Children's wing provides complete care, cuts costs

Many U. S. pediatricians consider a children's wing linked to the general hospital of a medical center the best answer to a complete child care program in big cities. This arrangement not only avoids costly duplication of facilities, but assures a valuable swapping of ideas. For complicated diseases like polio, it makes specialists in every branch of medicine available. In return, the children's unit provides clinical experience for the center's medical students.

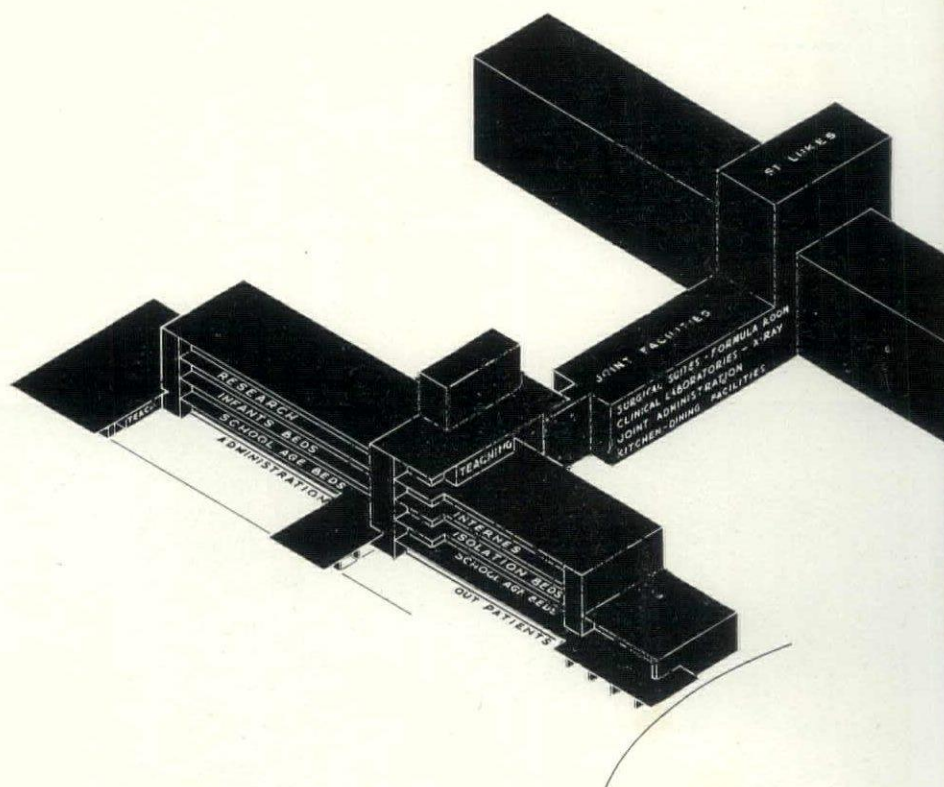
A good example of this type is the new Texas Childrens Hospital in Houston (schematic view, right). Planned to handle particularly difficult diagnostic and therapeutic problems, this 100-bed wing will be joined to the general hospital of the Texas University medical center.

In the link between the two buildings are jointly used facilities — surgical suites, formula room, laboratories, radiology unit, administration, kitchen and dining space. The children's wing includes a large ground-floor out-patient department, two nursing floors and a floor for research labs and interns' quarters. Teaching space is provided in a large auditorium at ground level and in a pent-house section.

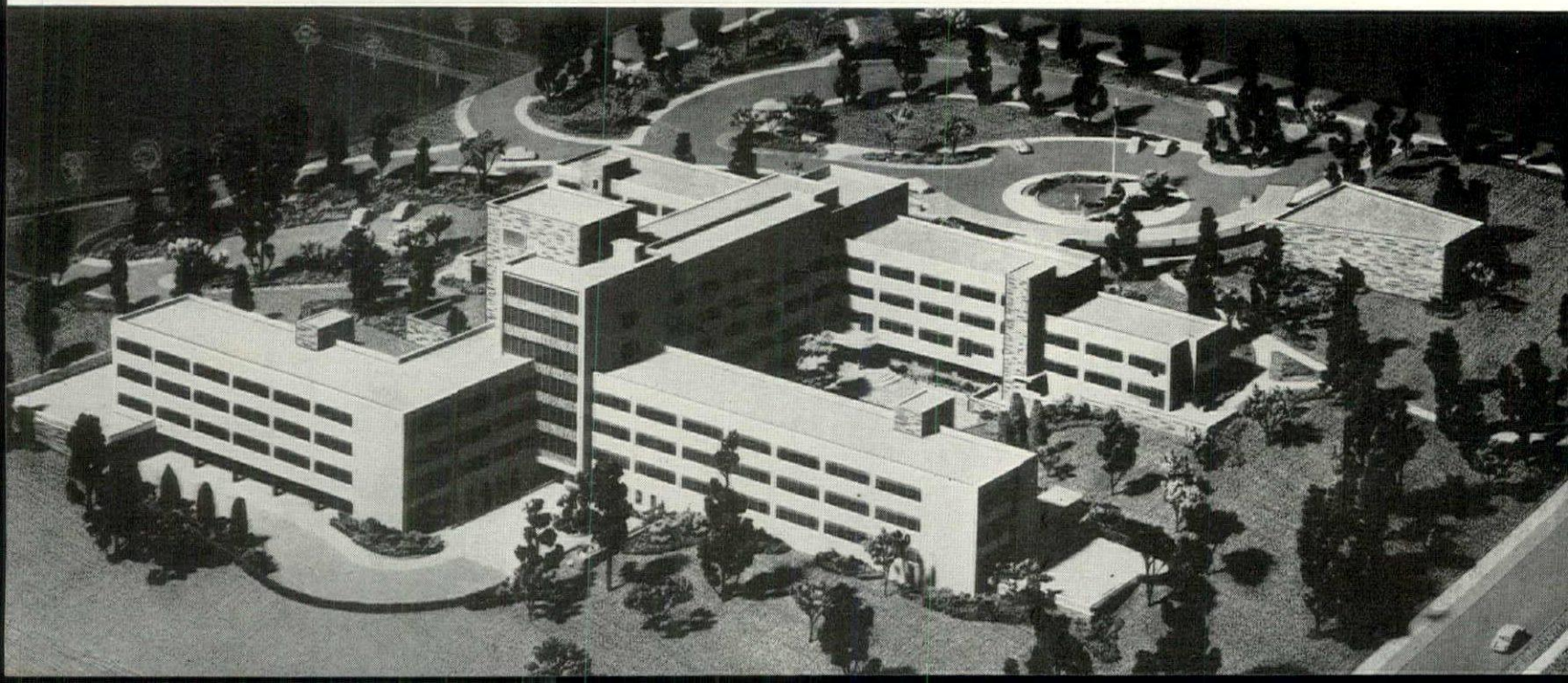
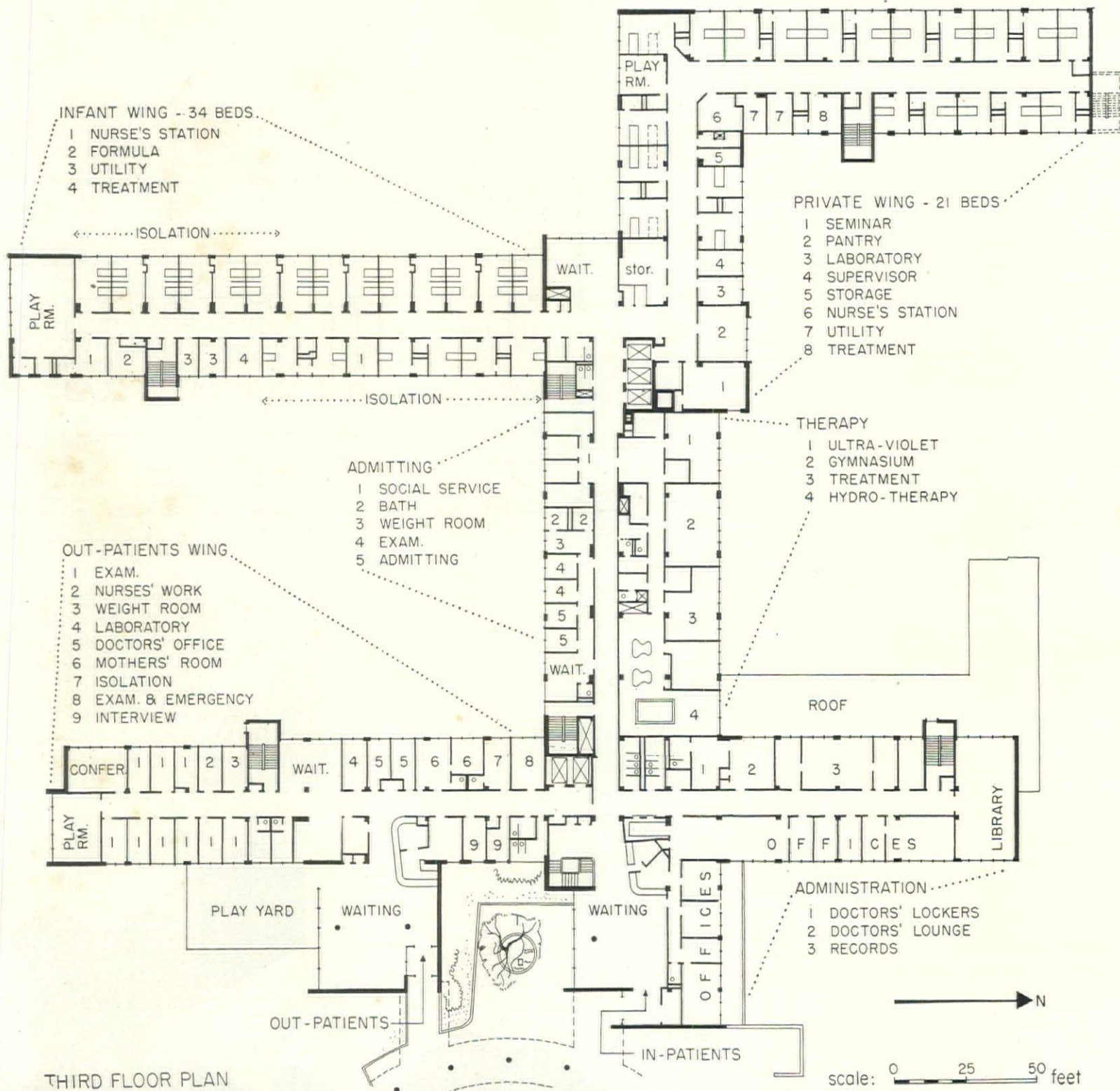
Patients' rooms have continuous windows shaded by deep, louvered overhangs. For both psychological effect and easy supervision, all interior partitions will be glass from bed-height to ceiling.



PEDIATRIC UNIT with double-corridor plan is designed for efficient nursing care. Maximum run from nursing station is 60'. Integral toilets, glass partitions, close grouping of utility and treatment rooms around station also lighten nurse's work. Station does not have a direct view of all rooms, but nurses on duty get natural light and air through visitors' waiting room across the corridor. Long Island Jewish Hospital, Lewis A. Bramson, architect.



Texas Children's Hospital will be linked to projected general hospital of medical center, permitting joint use of many facilities, access to specialists, teaching and research programs. Estimated cost: \$2,000,000. Milton Foy Martin, architect.



Cheerful U. S. children's hospital is a community project

LOCATION: Seattle, Wash.

YOUNG & RICHARDSON, CARLETON & DETLIE, Architects

SCHMIDT, GARDEN & ERICKSON, Consultant Architects

DR. HERMAN SMITH, Medical Consultant

Here is an up-to-the-minute U. S. counterpart of the Helsinki clinic—Seattle's new \$5 million Children's Hospital. Planned as the nucleus of a complete child's care center for the whole Northwest, the 200-bed structure will broaden the functions of the city's beloved 44-year-old Children's Orthopedic Hospital.

Throughout its history this institution has been supported mainly by volunteer women's groups. They not only raise all funds but assist the hospital staff in routine tasks, teaching, occupational therapy and rehabilitation. To carry on this tradition, the new building will contain extensive facilities for volunteer workers. Two floors of the out-patient wing (diagrams, left) will be given over to volunteers' workrooms, meeting space, shop, lounges and lockers.

Located on a 25-acre hilltop site near the University of Washington's new medical school, the hospital is oriented to give most patients a western outlook toward the Olympic Mountains. Nursing units are limited to three stories to give children easy access to surrounding gardens and play areas. Traffic and supply avenues are simplified by placing boiler room, kitchen, laundry, adjunct facilities and operating rooms in the central section connecting the nursing units with the out-patient and administration wing.

The hospital is packed with features designed to make the stay of long-term patients as pleasant as possible. Rooms have strip windows with low sills to open up the view, a maximum of four beds, and individual toilets. Glass panels in corridor walls will aid nurses' supervision, make it easy for convalescent children to watch the passing show. Private rooms are big enough to accommodate a second bed for mothers. Each nursing unit has a south-facing playroom closely controlled by the nursing station. At ground level below the northwest wing are classrooms, play rooms and workshops which open onto an arcade and onto a broad outdoor terrace. Facing south between nursing and out-patient wings is a big paved sun court for the use of all patients. Even the anesthesia rooms are completely disguised as playrooms with a gay Peter Rabbit motif and a wealth of toys—no equipment is visible.

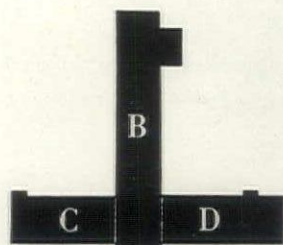
Because the hospital is completely dependent on the continuing interest and support of local citizens, the architects made a special effort to make the public feel at home in it. All waiting rooms have a pleasant outlook and are of adequate size. Though logically separated, both the in-patient and out-patient waiting rooms have easy access to a big dining area on the floor below. Typical of the devices used to interest visitors in the hospital's work is a glass viewing panel set in the corridor wall of the hydro-therapy room, just off the main in-patient entrance.

Present facilities are capable of serving an additional 120 beds—to be accommodated by adding two floors to the present nursing units. Future expansion of the out-patient department will be accomplished by extending the fourth floor to the south; the administration wing may be extended to the north. The building will be of reinforced concrete construction with ceramic veneer and stone facing. Estimated cost: \$2.14 per cu. ft.



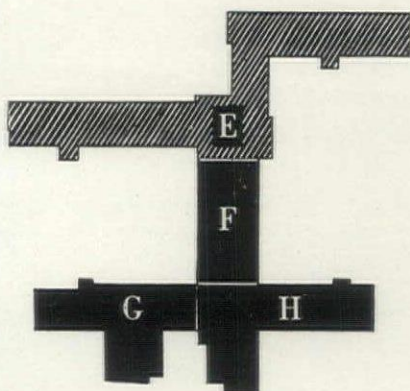
5th FLOOR

- A. Operating & central sterile storage



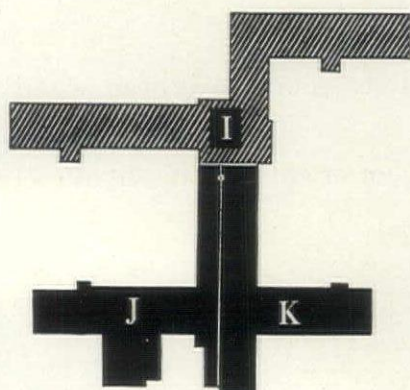
4th FLOOR

- B. Radiology & dental
- C. Out-patient exam
- D. Laboratories



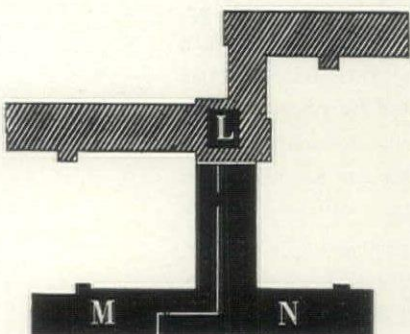
3rd FLOOR

- E. Nursing units bed total 55
- F. Admitting & therapy
- G. Out-patients wing
- H. Administration



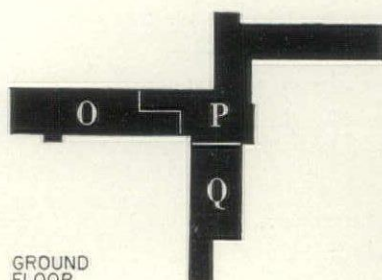
2nd FLOOR

- I. Nursing units bed total 73
- J. Administration & volunteer center
- K. Kitchen & dining facilities



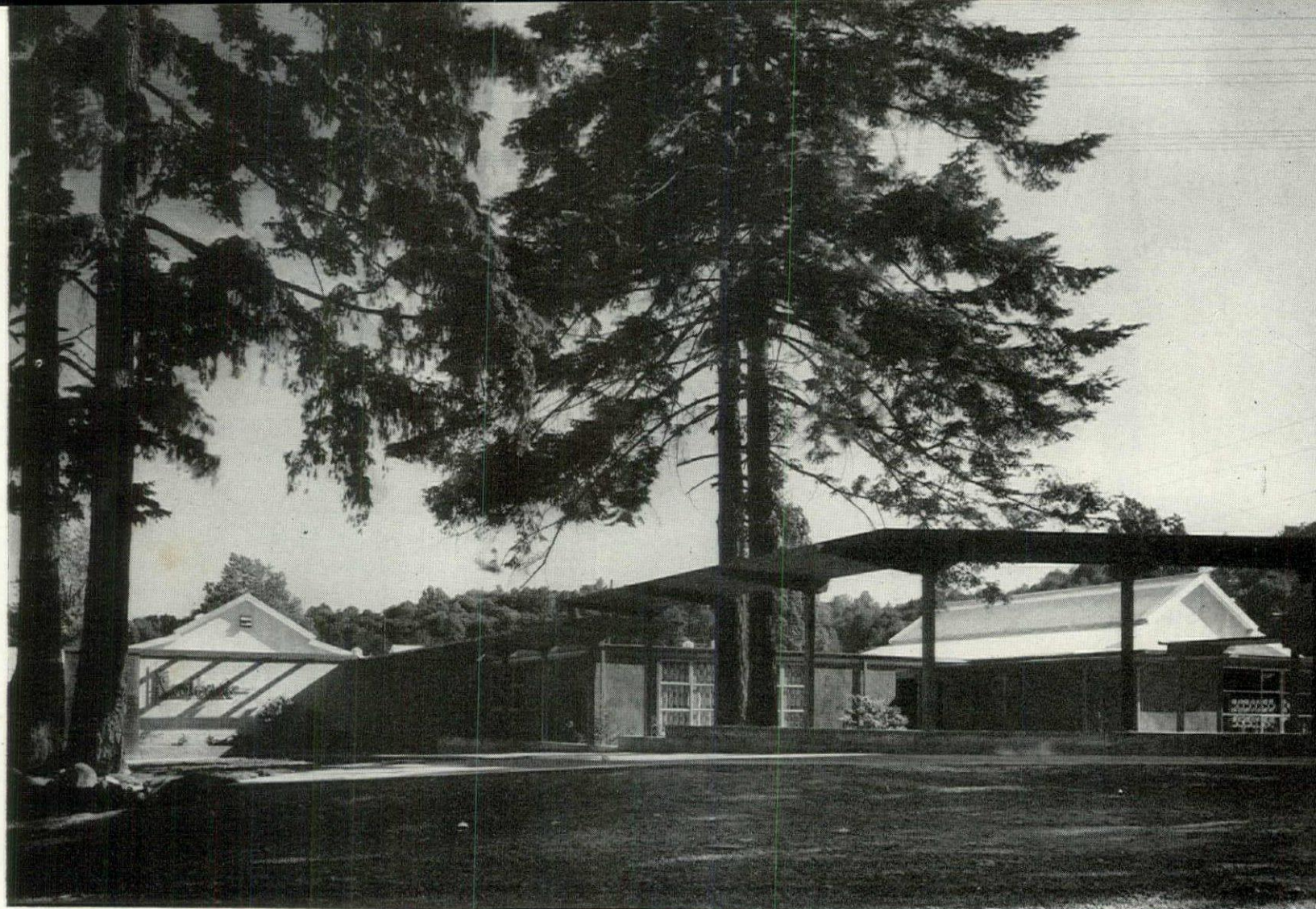
1st FLOOR

- L. Nursing units bed total 65
- M. Volunteers' lockers & lounges
- N. Laundry, storage



GROUND FLOOR

- O. Storage
- P. Occupational therapy, play & classrooms, chapel, morgue
- Q. Heating & mechanical equipment



Photos: Dearborn-Mass

School with controlled daylighting puts the light source overhead where it belongs, permits classroom orientation in any direction

SOUTHGATE ELEMENTARY SCHOOL, Seattle, Wash.

RALPH H. BURKHARD, Architect

L. N. ROBERSON CO., Electrical & Mechanical Engineers

HARVEY H. JOHNSON, Structural Engineer

TUCKER & CO., INC., General Contractors

Automatically controlled overhead daylighting may well make this the most talked-about school of the year.

How to get perfect classroom lighting has intrigued architects for a full generation. Most attempts have used various combinations of big south windows with small north clerestories and employed fixed sunshades of one kind or another to screen out direct sunlight and sky glare. Consequently, the layout of school buildings has been closely tied to a fixed orientation—regardless of the dictates of the site and the requirements of the building program.

Thanks to a radically new approach to classroom lighting this new school is planned with reference to function rather than orientation; its small windows are for vision only and, like the 9' ceilings, are scaled to the size of its occupants; and its natural lighting approaches the ideal.

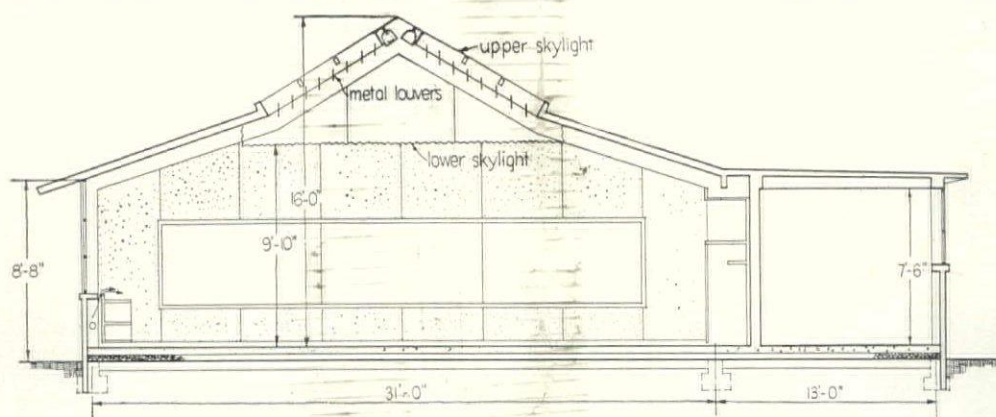
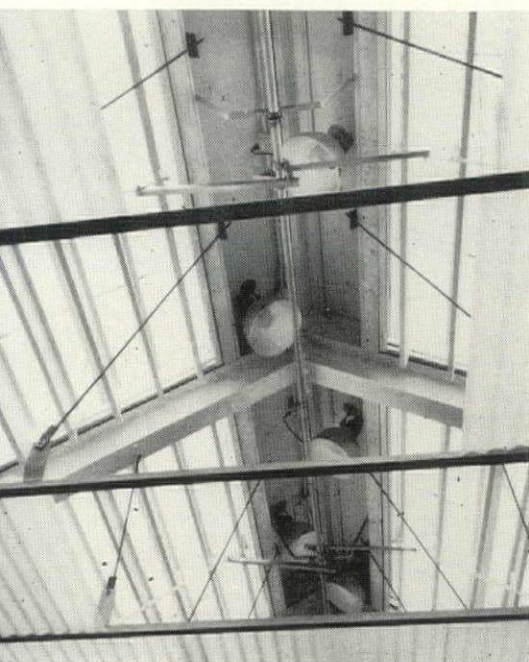
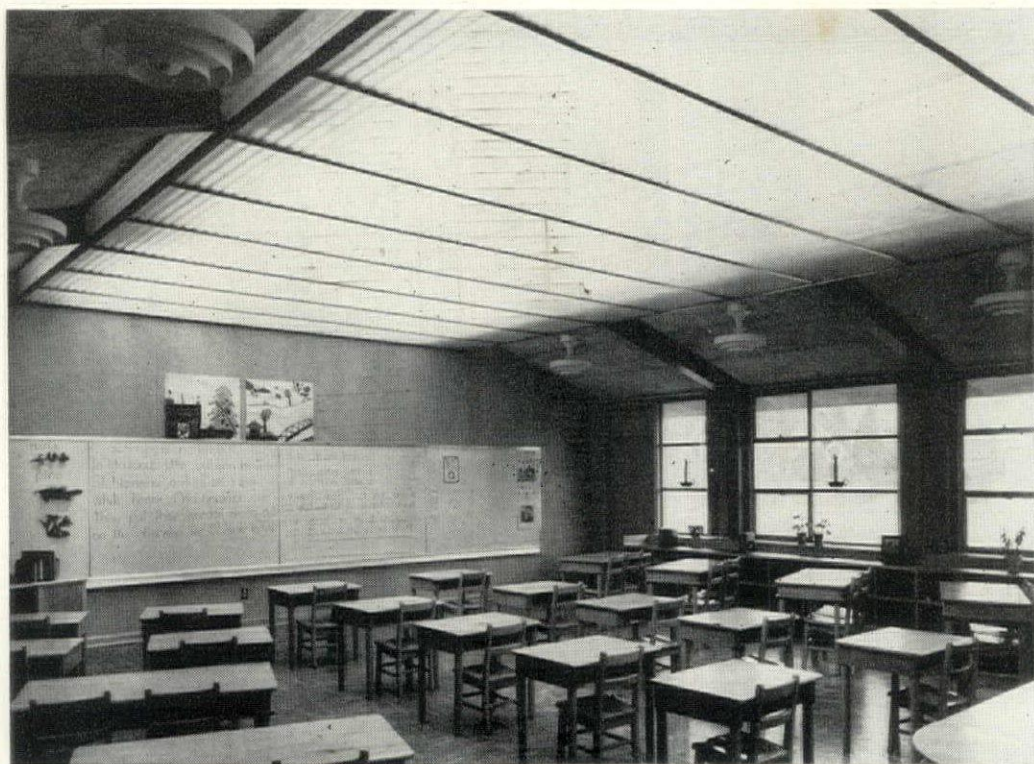
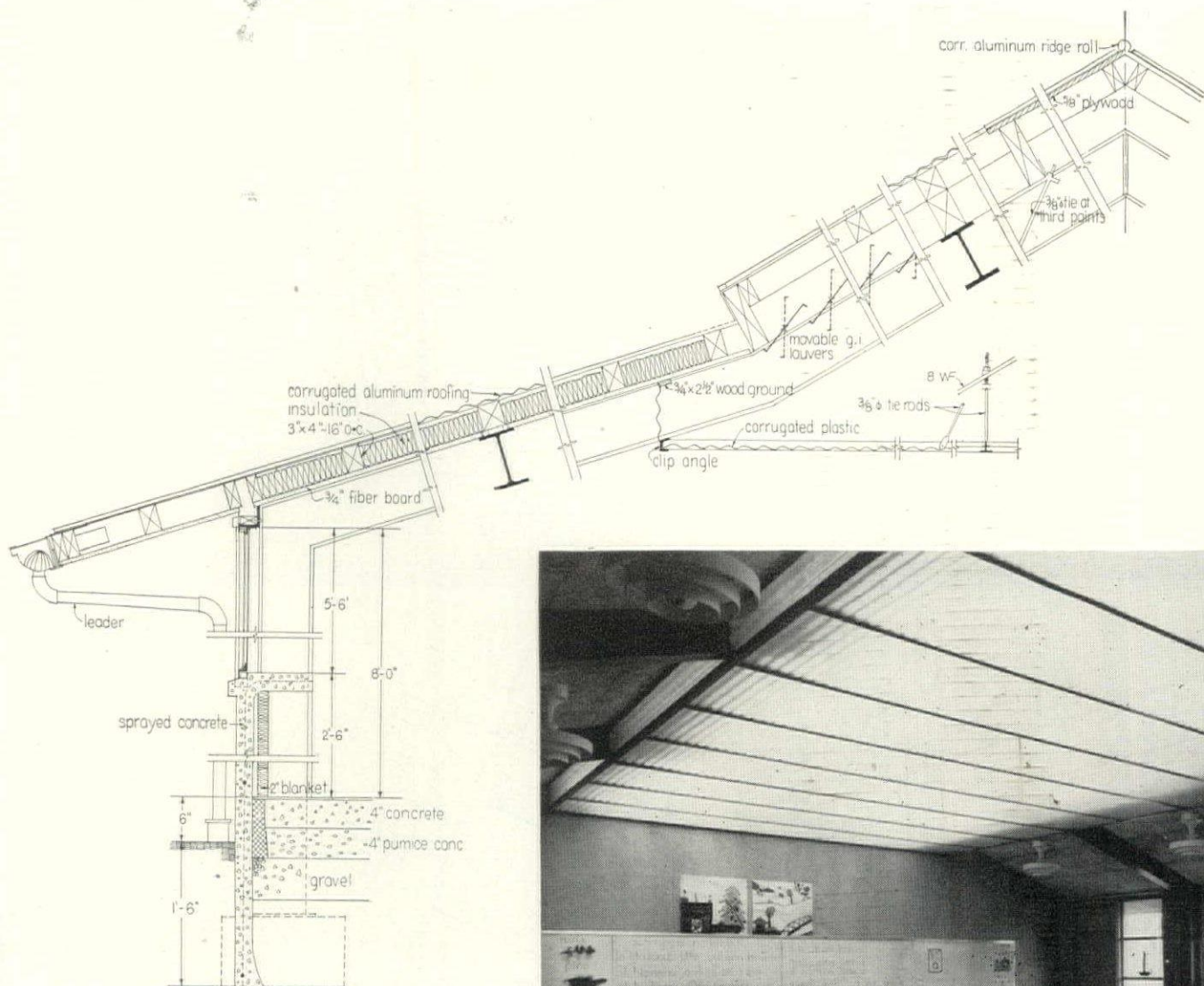
Beginning with the premise that the classroom should be daylighted from above (because the eye is accustomed to such lighting), Architect Burkhard has developed the old skylight into a highly efficient mechanical device for admitting, diffusing and controlling light. Along either side of the ridge of the corrugated aluminum roof he inserted panels of corrugated translucent plastic. Beneath these are

hung adjustable metal louvers and then another layer of corrugated plastic panels to form the classroom's ceiling. Each of the three elements in the "lighting plenum" is a diffuser. The louvers are controlled by reversible electric motors. These are automatically activated by photo-electric cells located inside the room and adjusted to maintain 150 foot-candles on the work surface. The motors are also push button controlled by the teacher who may create a "black out" during a movie or a "brown out" during a rest period.

Side glare through the small windows is minimized by 3' roof overhangs and can be completely eliminated by drawing the draperies without impairing the natural lighting of the room and without requiring artificial light.

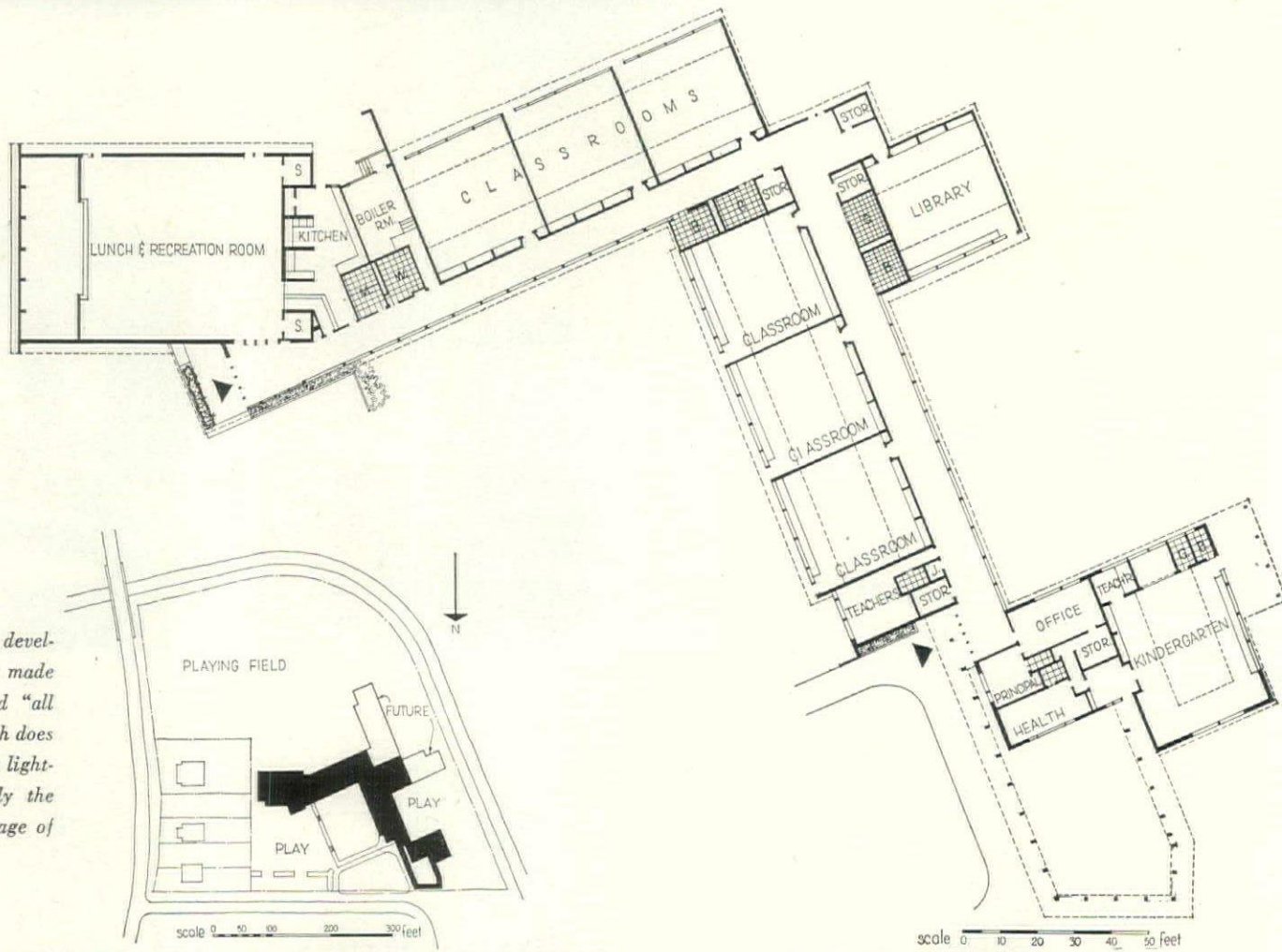
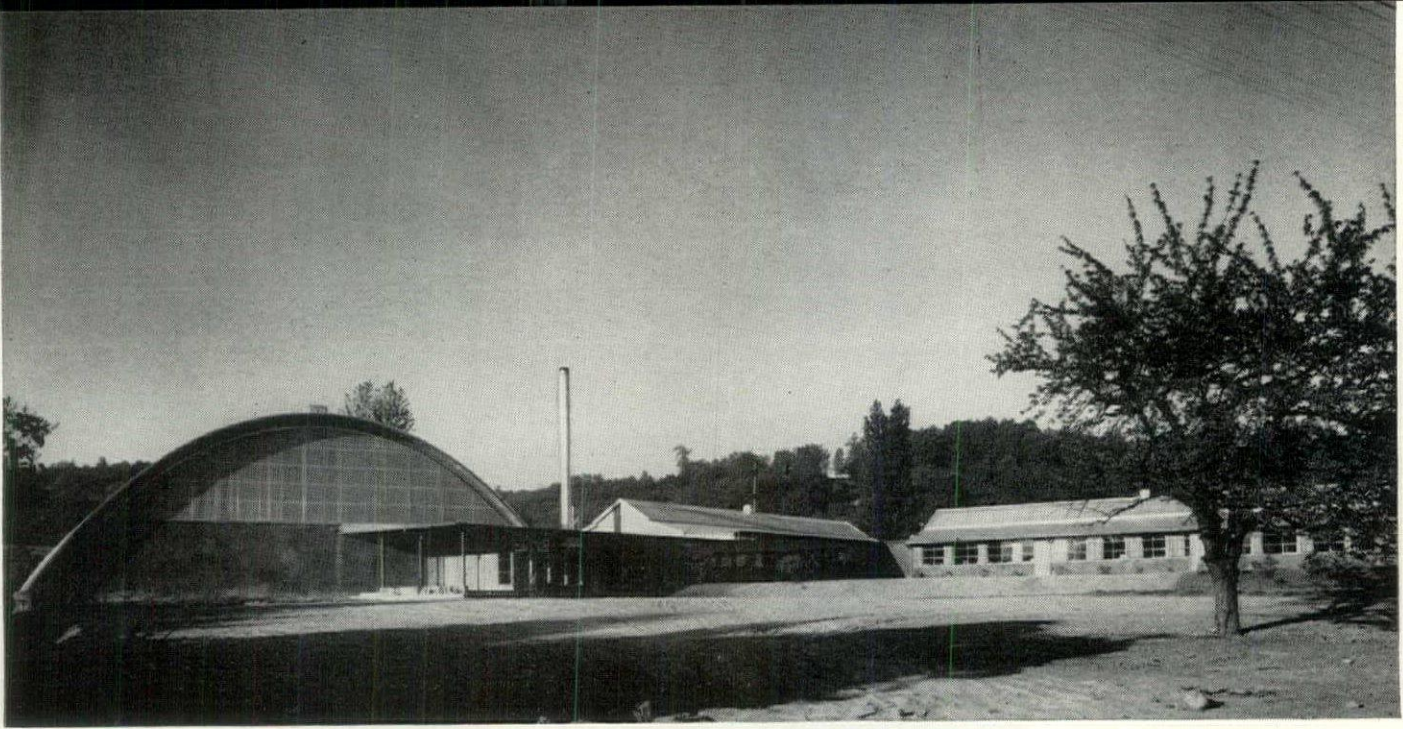
When, due to weather conditions, the light level in the room drops to 35 foot-candles, a second set of photo-electric cells turns on incandescent lights hung from the ridge pole within the plenum and designed to boost the light intensity at the work surface to 70 foot-candles. Four auxiliary, manually operated incandescent fixtures are hung on either side of the plastic ceiling in each classroom.

Taking advantage of his top-lighted "all-directional classroom," Architect Burkhard was able to put aside the usual



"Lighting plenum," with several corrugated plastic ceiling panels removed, is pictured at left. Upper view shows white painted metal louvers open, admitting maximum sunlight through corrugated plastic skylight. Lower view shows louvers being closed by apparatus linked to a reversible electric motor activated by a photo-electric cell within the room. System is adjusted to maintain 150 foot-candles on the work surface; artificial lights automatically supplement daylighting when

intensity drops below 35 foot-candles and bring the level up to about 70 foot-candles. The plastic panels are integrally reinforced with glass fiber matting to give them strength, shatter resistance and dimensional stability. The plastic skylights cost \$1.75 per sq. ft. in place, the plastic ceiling, \$1 (compared with \$2.50 to \$3 for wired glass). The louvers cost \$1.85 per sq. ft. installed; the control equipment, about \$315 per classroom. Total construction cost: \$11.90 per sq. ft.



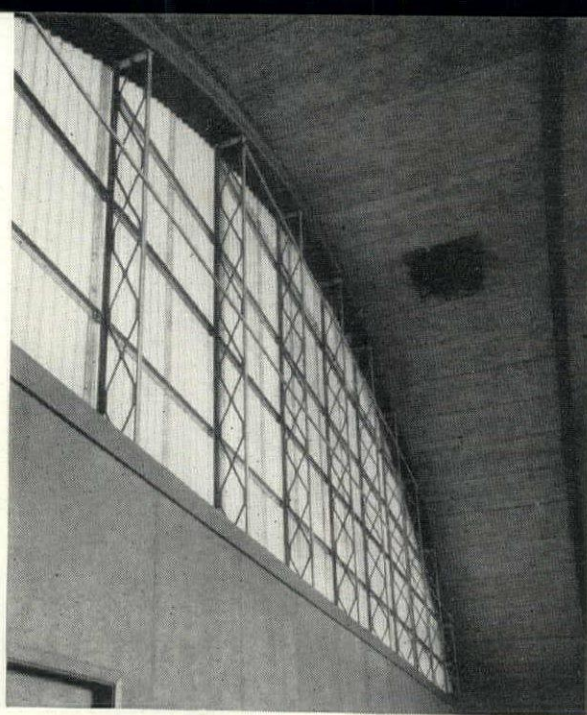
Cross shape of completely developed school (site plan) is made feasible by the top-lighted "all directional classroom" which does not rely on windows for its lighting. Floor plan shows only the first and now completed stage of construction.



orientation requirements to plan his building to make the most of the 5½-acre site and to arrange the elements in a sense-making manner. A cross plan resulted with two kindergarten classrooms in one wing and the other six grades divided in pairs among the other three wings—each facing in a different direction and its own play area (see site plan—floor plan shows the first stage of construction, now completed). Thus, the building is divided rationally into small masses, the children are segregated according to age group and the project as a whole gains an inviting, informal appearance (photo p. 158).

Other noteworthy features:

►The structure is a rigid steel frame. Curtain walls are made of rich concrete sprayed on a wire mesh and against a single form. Thus, reinforcing steel and forming costs are minimized. Partitions are of dry wall staggered stud construction with 1/8" cement asbestos sheets cemented to



1/2" plaster board to give them a hard, durable finish.

►The heating system combines the benefits of convection and radiant panels. Hot water circulates first through under-window convectors (to raise quickly the air temperature and counteract down drafts) and then circulates through radiant floor coils. However, solar heat from the skylights has greatly reduced the fuel bill.

►Mechanical ventilation is provided by thermostatically controlled fans in the gable ends. In summer they exhaust solar heat from the "lighting plenum" and classroom air which filters up around plastic ceiling panels. (Unless the louvers are adjusted to screen out the direct sun in spring and fall, solar heat during these seasons would boost the classroom temperature to 80°.)

►The arched-rib recreation hall is lighted with vertical panels

of green-tinted plastic which are strong enough to withstand the impact of a baseball.

►Construction cost of the 20,600 sq. ft. school (eight classrooms) was \$243,139 or \$11.90 per sq. ft., excluding the \$14,125 architect's fee, but including a \$7,900 sewerage disposal system. Ultimate unit cost will be substantially lower upon completion of the two additional classroom wings, because the expensive utilities and common facilities have already been provided.

Southgate's principal, Wynne Rogers, is enthusiastic about his new school and its new lighting techniques and materials: "Educators from all over the state are amazed at the shadowless, glareless illumination . . . in each classroom The children are much happier and seem to be more alert in their studies because of the efficient lighting."

Country School scaled to the small child, holds ceilings to 8', costs to \$7 per sq. ft.

KIMBERTON FARMS SCHOOL, Kimberton, Pa.

VINCENT KLING, Architect

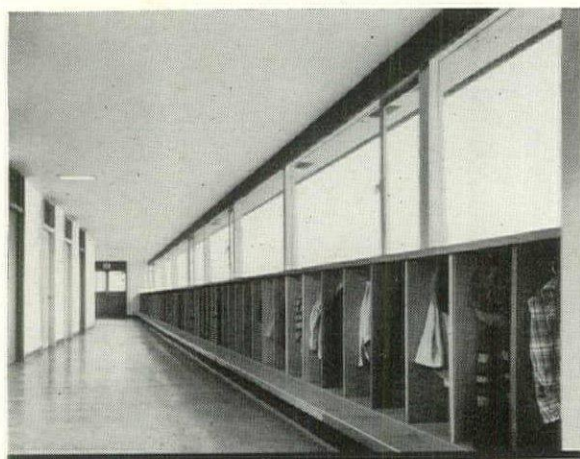
NASON & CULLEN, General Contractors

Since the pupils of this private country school are small (kindergarten through second grade) but are accustomed to the big outdoors, Architect Kling tried to keep the building small in scale and at the same time spacious in feeling. He was handsomely successful—as the photographs attest—and at the remarkably low construction cost of only \$7 per sq. ft.

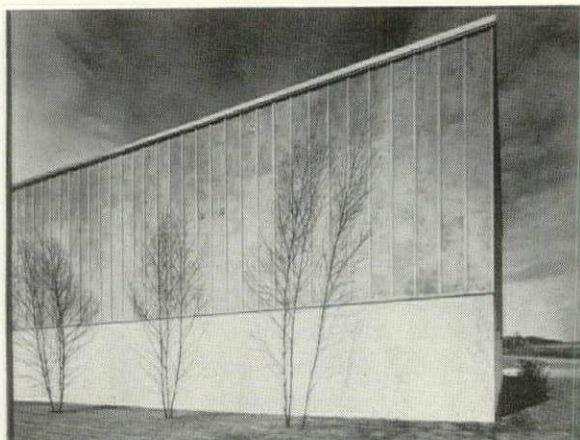
The school's small scale which contributed to cost reduction was achieved mainly by building close to the ground on a radiant heated slab and by keeping the classroom ceiling to 8'—and 2' below the Pennsylvania average. However, the economy and scale of the low ceilings were achieved at some sacrifice of natural light.) Walls and partitions are inexpensive unpainted concrete block. They are laid up in stack joint to improve their appearance and facilitate the filling of their cores (exterior walls only) with expanded mica insulation. Floors are asphalt tile.

Costs were further minimized by taking advantage of the sloping terrain to place the auditorium under one end of the classroom wing where it is combined with the corridor and two-story gymnasium. In this economical three-way use of space the corridor doubles as the auditorium's main access aisle, separating it from the gym which doubles as a stage. Three steps up from the corridor, the gym is top-lighted by multi-colored skylights of corrugated plastic of various sizes set in a random pattern. Walls are of unpainted stack-joint concrete block which support the aluminum painted steel framing members of the roof. The classroom corridor is open to the upper part of the gym as a balcony.

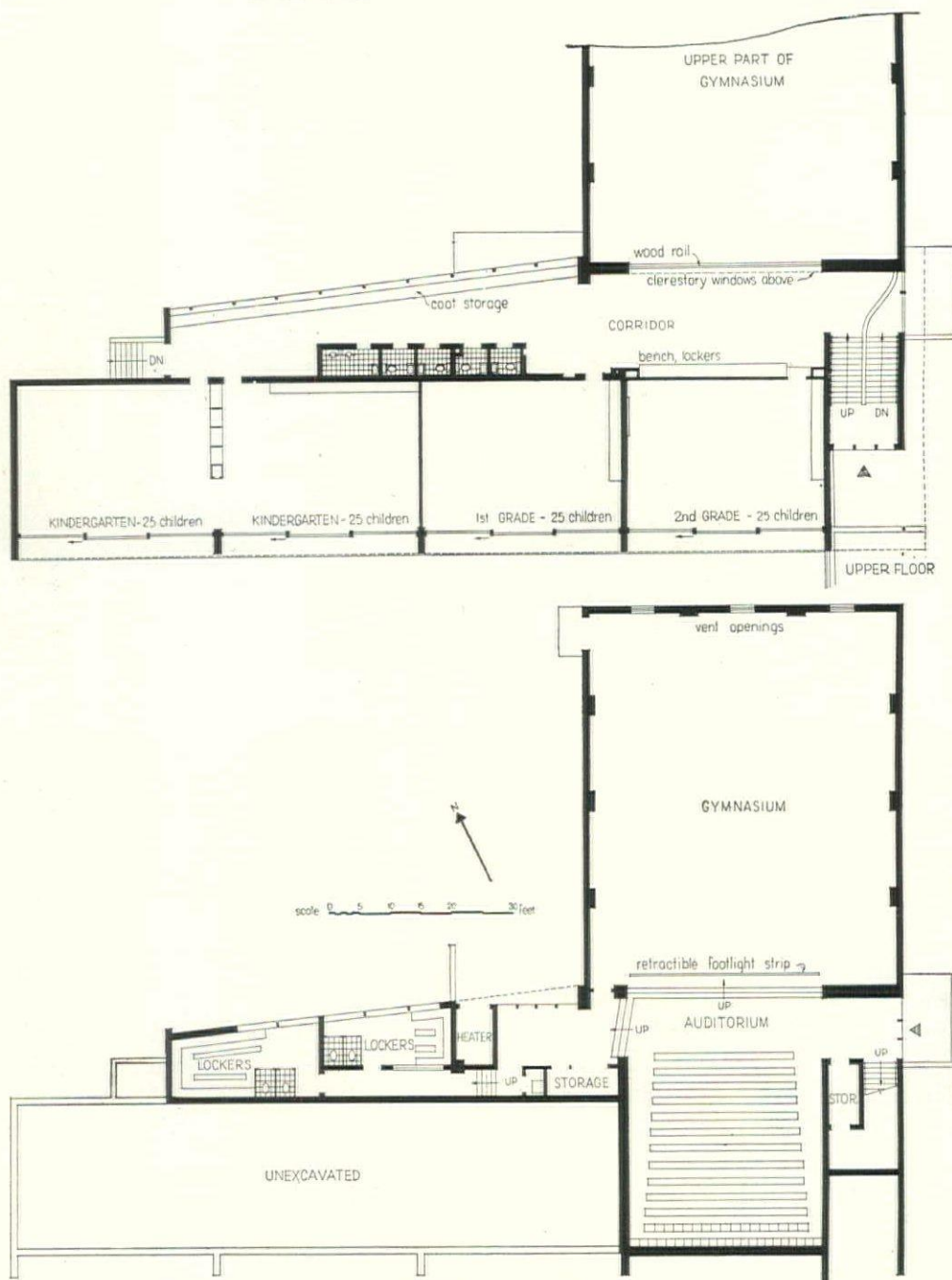
The new school building is part of a private philanthropic institution which brings progressive education to a large percentage of the local farm children as well as to many others in the area.



Coat storage along classroom corridor



Gymnasium exterior wall

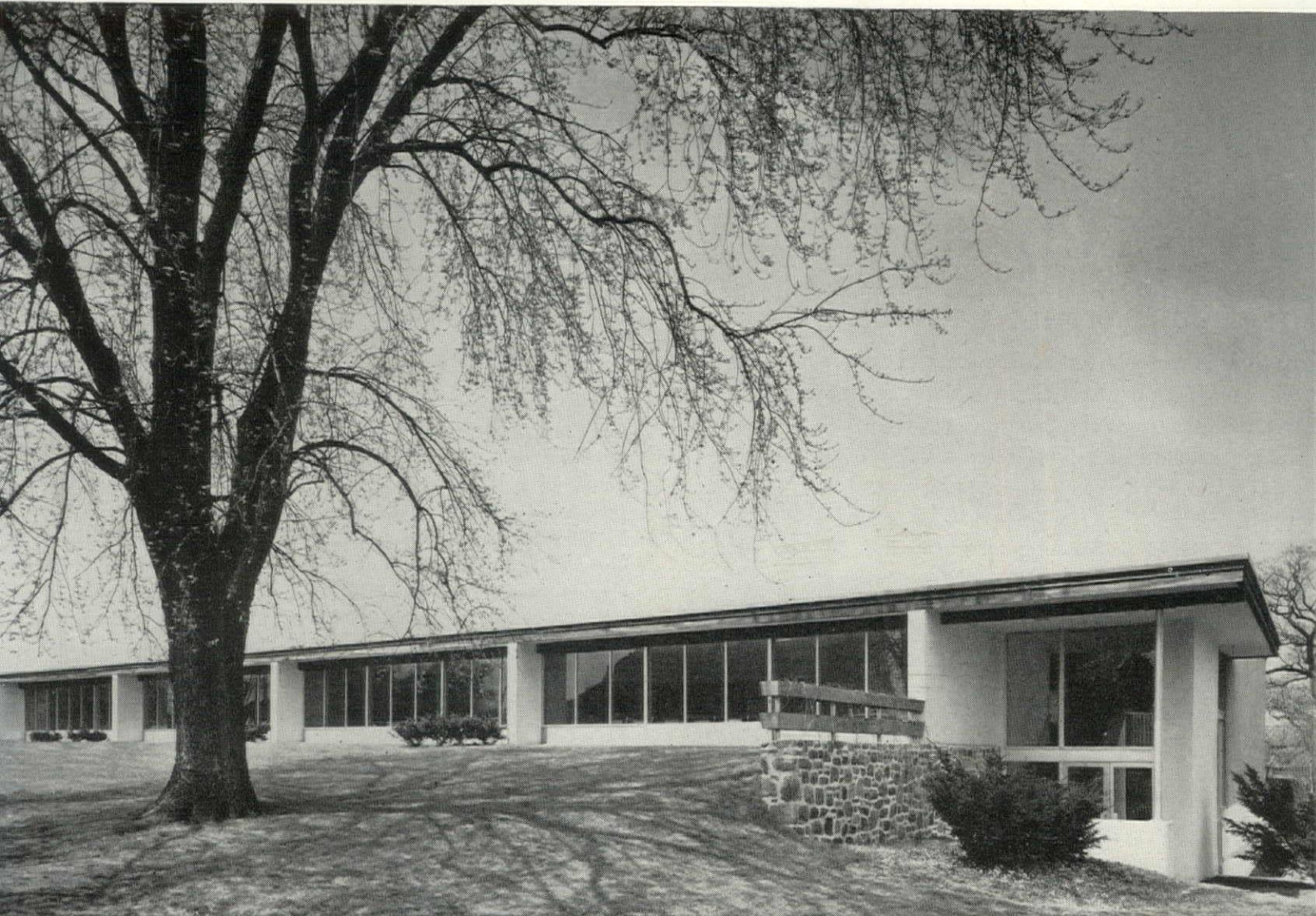




Photos: Damora

Classrooms are generously proportioned (24 x 32' for 25 children) and opened to the south and a farm view by a wall of glass. A 3' 6" roof overhang shields the glass wall. Center third of this

wall in each room slides open. Photo above shows two spacious kindergarten rooms combined by opening a folding partition. Below: exterior view toward the main entry.





Photos: Damora

A PLATFORM RAISED ABOVE A FIELD

LOCATION: New Canaan, Conn.

JOHN MACL. JOHANSEN, Architect

PAUL BORGLUM, General Contractor

This is a very small house that is very big inside. It is, also a house that seems to float above the landscape and yet is half buried in the ground. It is, finally, a very simple house built after some of the most elaborate thinking an architect can put into a design. How John Johansen resolved these contradictions makes one of the best design stories of the year.

Borrowed space

The Johansen House has an upstairs living floor 30' x 33' with a sleeping floor 26' x 33' underneath. The upstairs in effect contains five rooms: study, hall, kitchen, dining and living rooms. The downstairs contains three bedrooms, two baths, two dressing rooms, a playroom and a utility room. For compactness of planning and clarity of organization this house would be very hard to beat.

The astonishing fact is that (upstairs, at least) it would be equally hard to beat for spaciousness. The secret is that Johansen let each upstairs room borrow space from the next, and let the combined interior borrow space from the outside. The principle of freely flowing

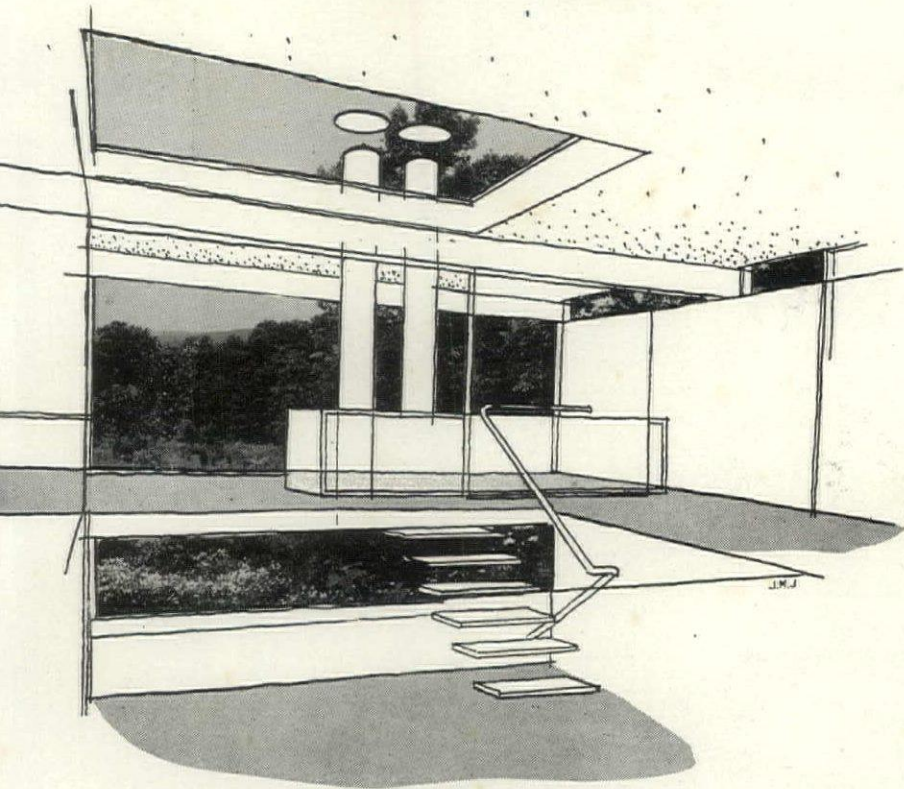
space is familiar; what is not so familiar is the principle of letting space flow up and down as well as horizontally.

To borrow space from above, Johansen placed a large skylight over the center of the house; to borrow space from below, he made the wide open stairwell a central feature of the plan. Moreover he placed the living room a mere half-level above the outdoor sitting area on the lawn, so that communication between the two becomes possible and perfectly natural.

Johansen put his bedrooms downstairs because it is "psychologically natural to retire to lower, more secluded quarters for the night." With a 2'-4" sill, anyone sitting up in bed can look out across flowers and grass, see the trees and hills beyond. Johansen thinks that the 2'-4" sill height is just right—neither too high to give you a depressing sense of "basement living," nor too low for privacy.

Floating platform

Especially at night, the living floor looks suspended above grade and seems to rest on glass: All around the lower floor ceiling line are strips of glass that visually raise the living floor up into the air.



JOHANSEN: "The effect here is like the one you get in an 'exploded' drawing of any piece of equipment: Each part is very clearly defined, and no two parts touch or overlap to confuse the definition.

"To articulate the structure, I have tried to express each part separately, rather than permit different elements to disappear within a continuous shell. To get this sharp definition there are sheets of glass that separate the roof plane from the floor plane, strips of glass that separate the roof plane from the plane of an exterior wall panel, and large voids around free-standing partitions, cabinets, fireplace flues and so forth.

"Architecturally, this technique produces two results: First, from the outside, it enables you to look into and through the building with constantly changing vistas and effects as you walk around it. The checkerboard pattern at night is particularly good. Secondly, there is a similar checkerboard effect when you look out from inside the house. You then see a series of fragmentary views of the landscape which finally fit together like parts of a puzzle. You always know where you are in relation to the landscape.

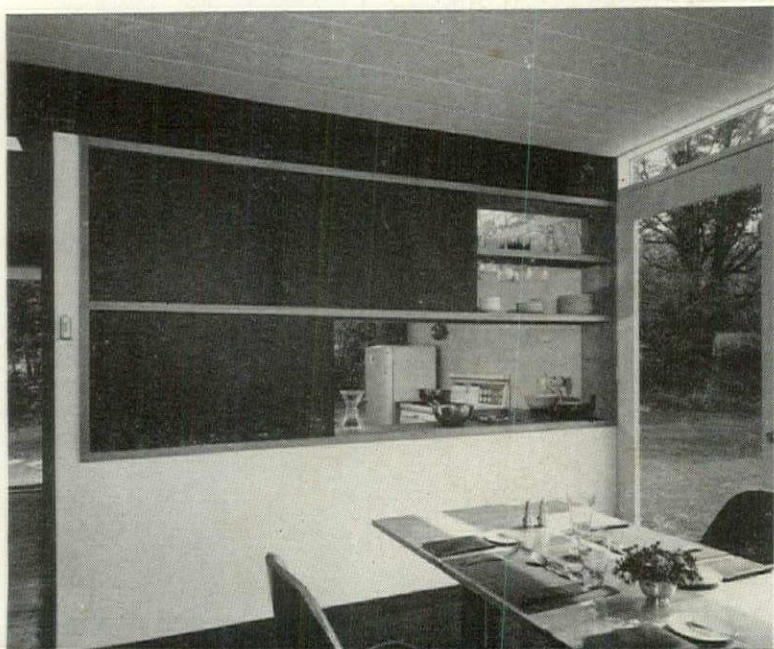
"Glass is not used as fenestration. It is really used as the nearest thing to air, to fill in areas and voids left after the structural expression was adequately completed. The structure is 'positive,' the glass 'negative.' This use of glass in the openings of the frame and in the roof itself avoids that monotonous, stratified feeling one gets when window openings, no matter how large, are found only in walls."





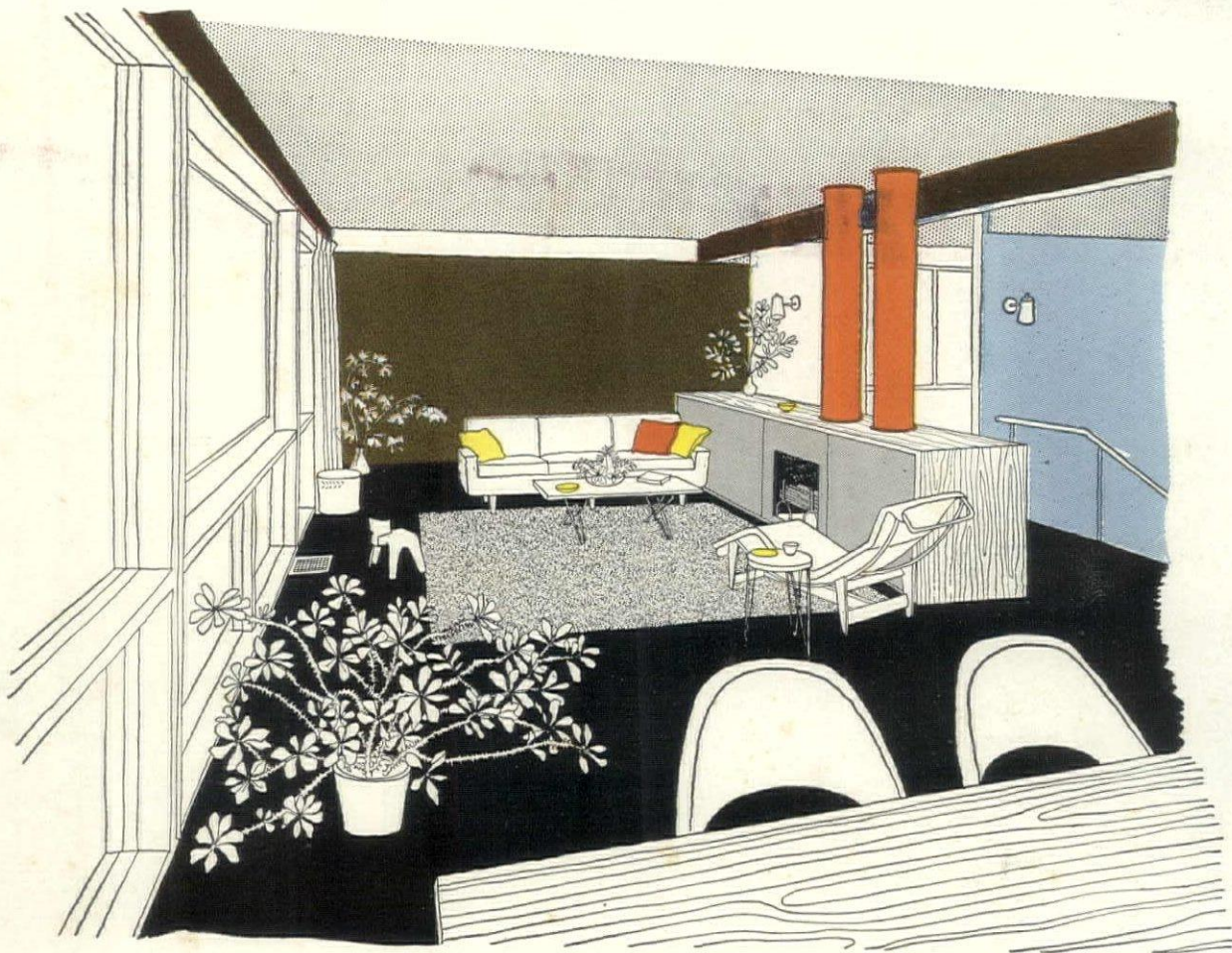
View of living room looking south shows freestanding fireplace cabinet at left, sliding window at right. This can be opened even on sunny winter days so long as no other windows are open on living floor to create a draft. In the summer, entire top floor can be cross-ventilated.

Pass-through cabinet between kitchen and dining areas can be closed with sliding panels. Note glass strip below ceiling line along south wall and dropped girder meeting into it.



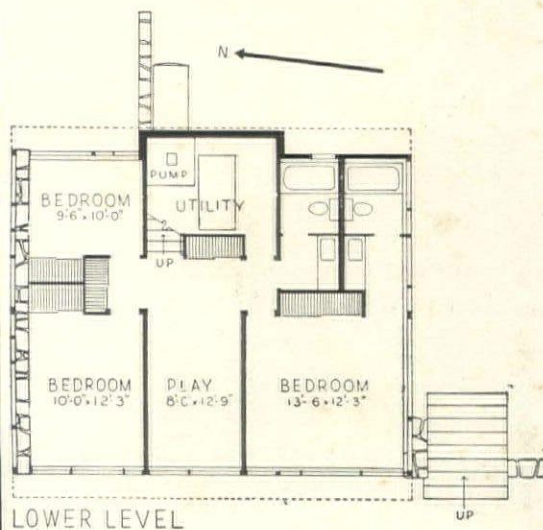
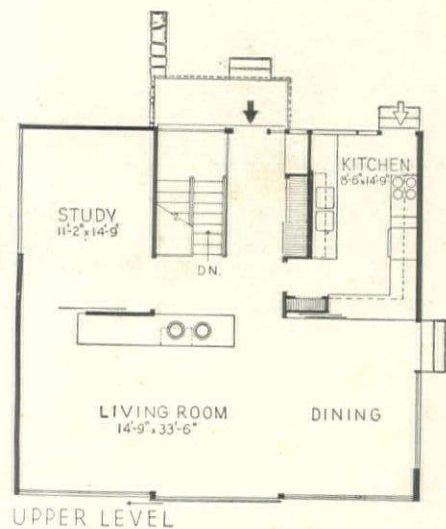
Johansen put much thought into the fenestration. On the top floor exterior walls were divided into three horizontal slices. The top slice is as deep as the dropped girders that run north-south; this slice is, therefore, glazed on the north and south walls only, and taken up by the dropped girders on east and west facades. The next slice is 5'-6" deep, reaches down to the sill height, and contains most movable sash. The bottom slice (from sill line to floor) is about 2'-6" high. All changes in wall material—from glass to solid and back to glass—conform to this pattern; and the horizontal muntin strips dividing the wall slices alternately form sills or heads for different glazed areas. The living room (for example) is circumscribed in glass—a fact which increases its apparent size.

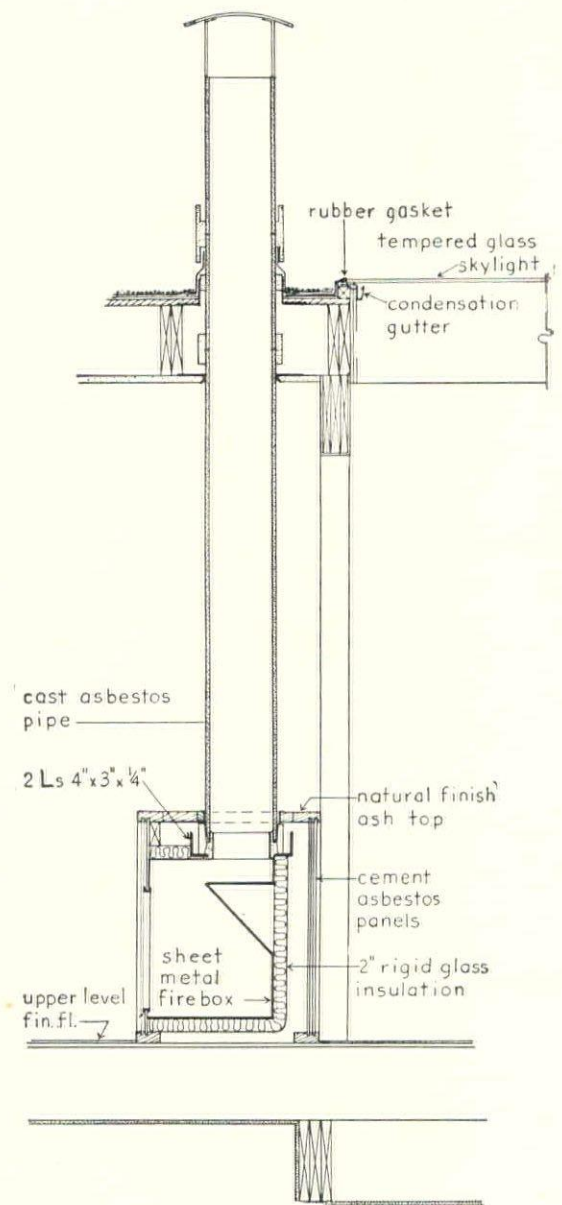
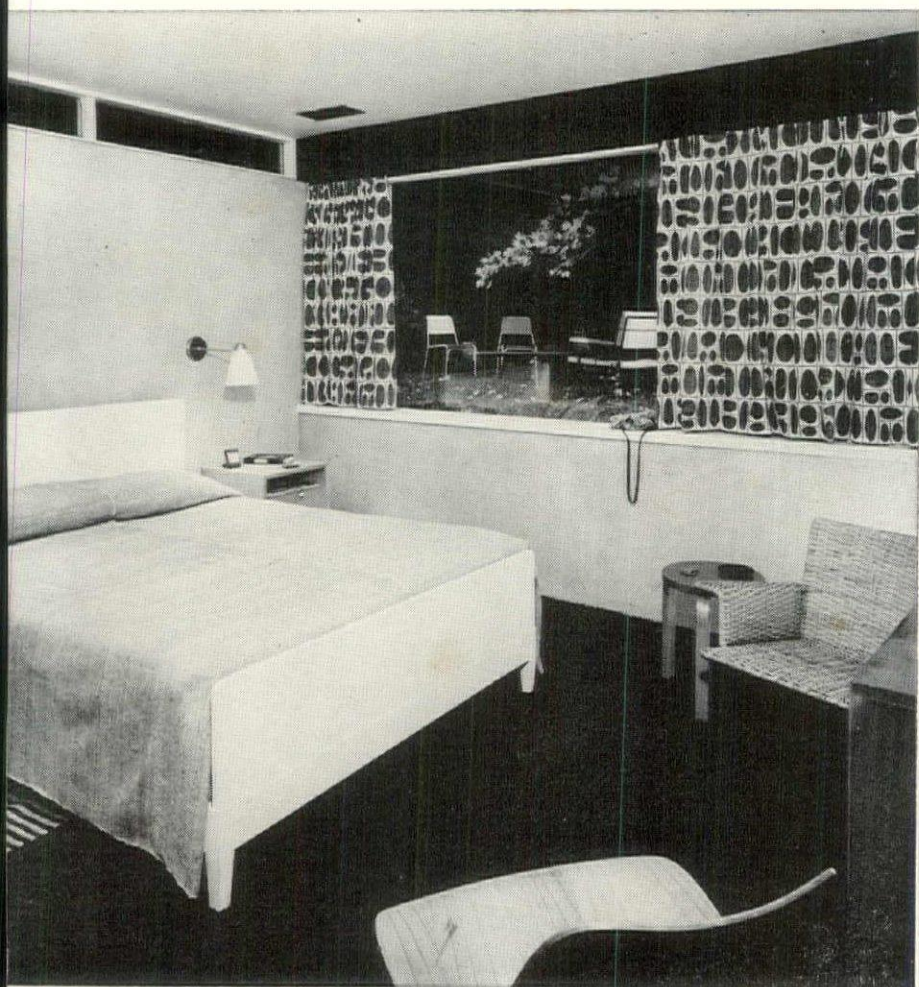
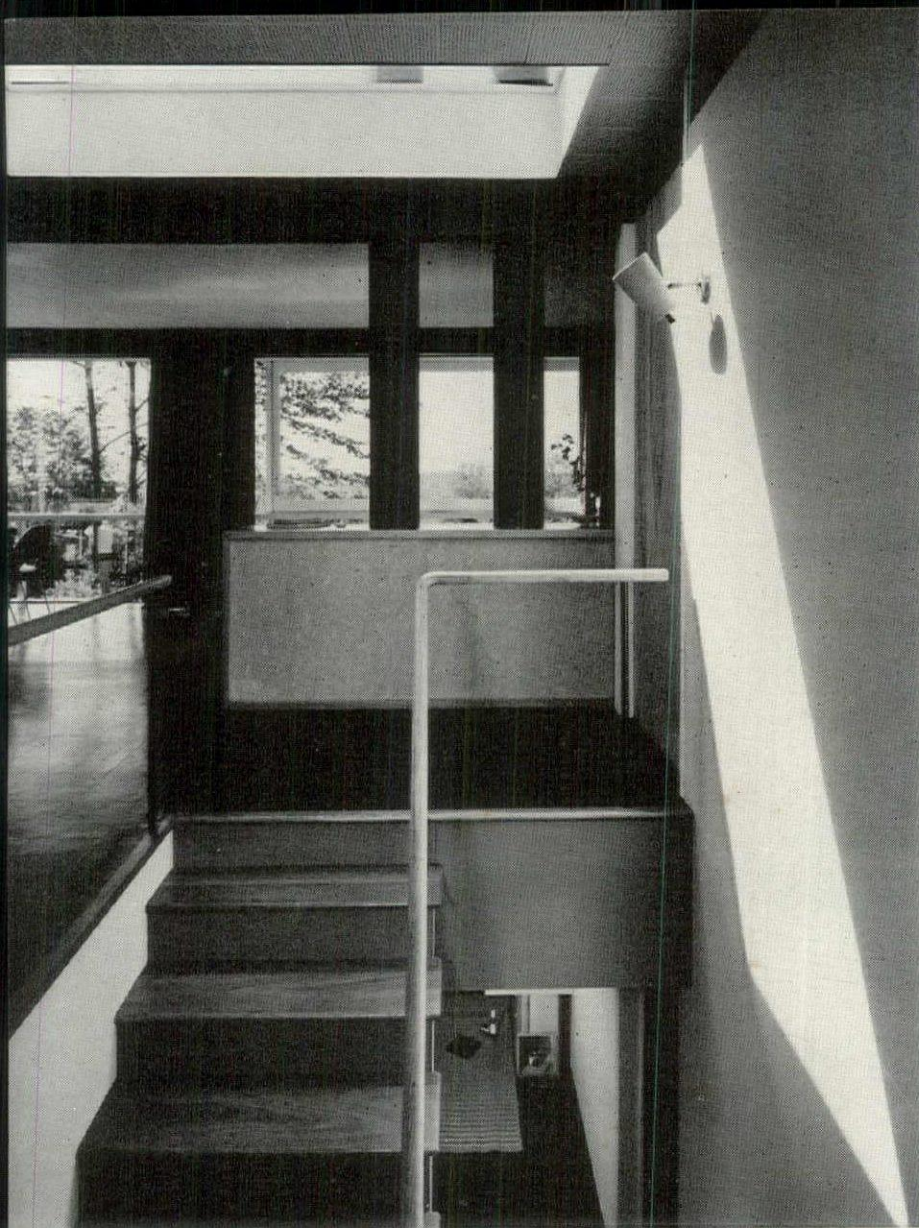
By making his house virtually transparent, Johansen included the landscape as an architectural element; but by raising his house above the grade, he made a clear distinction between the work of man and the work of nature. By expressing his structure clearly, he demonstrated his interest in precise detail and refinement of form; but by his imaginative use of natural light and of bright colors, he showed that there are other, more poetic and more intangible values as well. "I hope we can keep the disciplines of form and detail characteristic of Mies van der Rohe," he said recently, "and the basic psychological experiences so prevalent in the work of Wright. But we should avoid 'charm' in place of meaning and 'form' justified entirely by function and planned environment."



Drawing shows approximate color scheme of living area. Low cabinet at right is faced with sliding asbestos board panels, contains (in addition to fireplace) a radio cabinet, wood storage bin and space for miscellaneous other storage. Flue at right serves

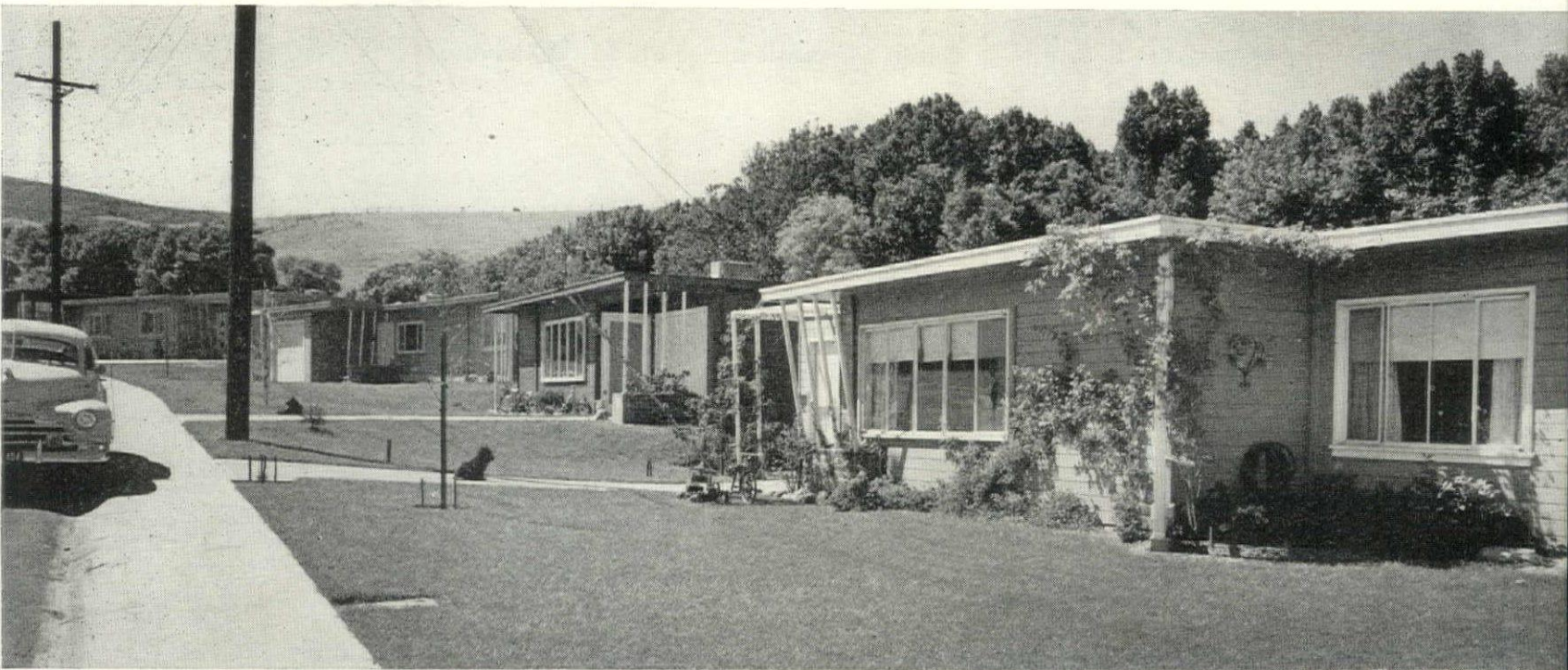
heater on lower floor. Both flues are of asbestos pipe. Ceiling is covered with acoustic tile. Reclining chair in foreground is early design by Le Corbusier. Picture below shows study at northeast corner of house. This can be used as additional guest room.





Detail of fireplace shows firebox of 3/16" boiler sheet held by metal brackets. Cost was \$80. Firebox is at least 2" away from all combustible materials. Skylight behind fireplace is 4' x 9' in size, 1/4" thick and made of tempered glass strong enough to hold the weight of a man. Rubber gasket all around glass is similar to type used in bus and car windows.

Typical bedroom shows glass strip on south wall to depth of dropped girder, large windows down to level of lawn on the west. Sill height is 2'-4", low enough to avoid sense of "basement living." Floor is exposed concrete. Total cost of house (incl. allowance for architect's fee) was \$24,500.



Roger Sturtevant

FLAT-TOP BUILDER HOUSES: California's pioneering Earl Smith

demonstrates that the public will buy them by the thousands if the price is right. He makes the price right

with some new foundation and framing tricks

Will the public go for flat-topped builders houses?

For an answer see pages 174 and 175. Architects can make flat tops compare in no, and every FHA office would have agreed. But that was before Earl W. (Flat-top) Smith set out to prove they were all wrong. Since then several other builders have corroborated Smith's demonstration on a smaller scale.

Are flat tops cheaper?

Smith says they save him over \$300 a house and contribute to further "contemporary design" economies of \$700. Most flat-top experimenters confirm this \$300 figure though higher insulation costs may wipe out the savings in cold states.

What about good looks?

For an answer see pages 174 and 175. Architects can make flat tops compare in attractiveness with pitched roofs but flat tops require more skill.

Back in 1947 Earl Smith was a small builder of conventional houses across the bay from San Francisco. He worked hard and sold 29 of them. The next year he switched to flat tops and sold 65. Today he is the biggest builder in the Bay area and one of the biggest in the country, with a 1949 record of 125, a 1950 record of 1,148 and a 1951 goal of 2,500 if he can lick the mortgage money crisis.

"In 1947 I made two decisions," Smith says in explaining his growth.

1. "The public was at last ready to accept modern architecture.

2. "Modern architecture would permit tremendous savings through simplified construction."

Partly due to the flat roof, partly due to the concrete slab floor and incidental economies, Earl Smith says these savings added up to \$1,030 (see box) on his first "contemporary" house compared with the house he had been building.

Modern design does not necessarily mean the same thing to Earl Smith that it means to Gardner Dailey, William Wurster or Ernest Born. To Smith it means mainly a direct approach to the best and simplest way to build with today's materials and today's labor. "And this means giving a great deal more house for the money, more value. It means a simpler, cleaner package—a

more functional type of house. A flat roof is essential to modern design. A slab floor and dry-wall construction come next."

Earl Smith's convictions about housing go back a long way. He was a carpenter long before he was a builder. No cloak and suiter turned builder to make a quick buck, he is the son and grandson of builders. When he left school at 14 he went to work on his father's housebuilding operations in the Bay area. For years he carried a carpenter's union card. He learned precisely why a house cost what it did, and the more he studied conventional houses the surer he was that even a small builder like himself could make tremendous savings through simplified design, even if he could not attain the quantity buying and assembly line erection savings of the big developers.

Smith's approach to cost cutting was direct. He first looked for the easiest way to do a job. Then he studied the bugs that might develop in such a method and analyzed why a method that apparently was best was not also cheapest.

What he did about his floor costs is a good example of his approach

Builders in other parts of the country were just beginning to lay slab floors and Smith saw that a poured slab floor should be a lot cheaper than a wooden floor over a 2' crawl space that was standard all over California. In addition to being cheaper, it would permit lower plumbing costs because pipe runs would be shorter and easier under the slab, and it would save hundreds of dollars on carpenter labor by bringing the whole house so low that it could be framed without scaffolding by a man standing right on the ground or on boards laid across saw horses. It would also offer a big dividend on design by making the small house lower and therefore less box-like.

Trouble was that some builders who tried slab floors without radiant heating had difficulty with dampness and moisture. Radiant heating was a needless expense for small houses in mild California, where a small floor or wall heater was quite adequate. Many California builders, therefore, had given up the slab floor as impractical.

Not so Earl Smith. Instead of giving up, he set out to lick the dampness problem, developed a double-pour system (see photo) which puts a waterproof membrane beneath the entire floor and between the floor and the outside foundation wall. Result: no moisture—not even condensation—and a saving of perhaps \$700 a house compared with an oak floor over crawl space. Smith uses the same wooden forms on almost 50 houses to pour the L-shaped

Smith's breakdown of his \$1,030 savings

	House with conventional pitched roof & crawl space	Smith's flat-top & slab house	Smith saves
Grading, excavation, foundation forms and steel reinforcing	\$178	\$145	\$33
Waterproofing	9	35	—26
Concrete vs. girders, joists, sub-floor	867	569	298
Asphalt tile vs. oak floor, linoleum, and kitchen & bath sub-floor	516	151	365
Plaster board	176	128	48
Install plaster board, texturing, painting	525	428	97
Sidewall framing and labor	210	172	38
Roof carpentry	115	77	38
Gable carpentry	10	0	10
Beam and planks vs. roof framing & ceiling joists ..	418	402	16
Gable lumber	44	0	44
Sheet metal & heating	150	139	11
Roofing material & insulation	316	258	58
Totals	\$3,534	\$2,504	\$1,030

(Both houses had 1,009 sq. ft. Construction costs on conventional house were \$5,826 and on Smith's house were \$4,733. Items not shown above were identical for both houses.)

outside footings, believes his method costs very little more than a monolithic pour.

Flat roof saves money

Smith's approach to the flat roof cost problem was also typical. When flat roofs were first introduced most architects maintained they would be cheaper, but after 20 years most merchant builders were still skeptical about their economy and many architects were doubtful. Smith decided it was time for some carpenter thinking about roof costs and sat down to figure out what should be the easiest possible way for a carpenter to frame a house. The result is a frame house with a carpenter labor bill which Smith says is only \$384, with the carpenters doing the framing, interior cabinets and hanging the doors. This \$384, says NAHB's Leonard Haeger, is hardly a third the national average for houses of that size. It is less than one famous builder pays for the interior carpentry and roof on a much smaller masonry house.

Some will criticize various aspects of Smith's framing as minimum construction. His scheme calls for plenty of nails and sometimes the nails have to be driven at an angle for added strength. He does not develop the full strength of either studs or joists, but notches his beams to rest on headers notched into the studs (this actually complicates his framing, but it lowers his roof 8"). But none can deny that carpenter Smith has done a job of cutting his carpentry to the bone. And with "every frame

house in America structurally overdesigned" (Round Table *Technical Report*, THE MAGAZINE OF BUILDING, Feb., '51), perhaps the worst that can be said of his finished job is that it is less overdesigned than most.

All studs come from the mill pre-cut to 7'8" height and there is no stud sawing on the job except above and below windows.

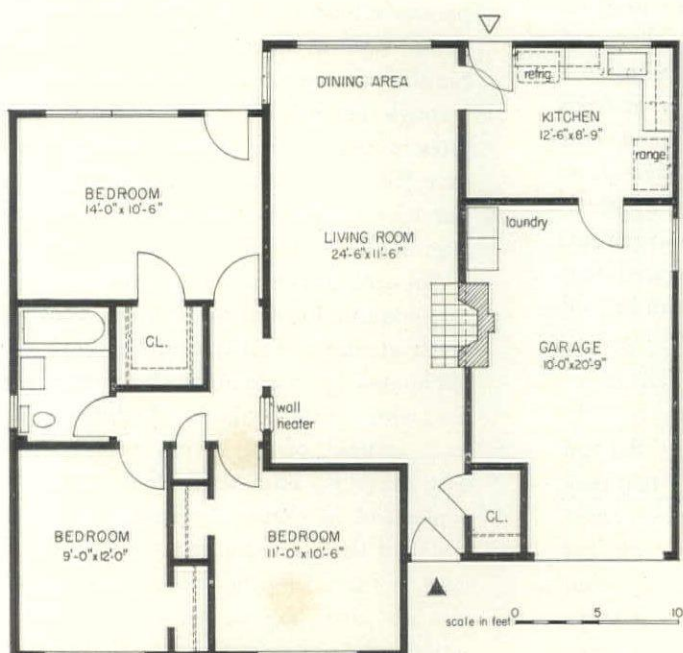
Another innovation in his construction is the unique way he crowns his slab. He wanted a very slight crown in his roof to speed up drainage to gutters and downspouts. Yet he wanted to avoid the labor of cutting different length studs for a shed roof. He decided the best method was to put the center of his slab 5/8" higher than the perimeter and to slope the floor in all directions. Thus the studs of the interior partitions at the center of the house are 5/8" higher than exterior studs and force a slope in beams and roof. The slight crown in the floor becomes one with that in the roof.

Builders are not in accord about the economies of a flat roof. Most agree with Earl Smith that there is a \$300 to \$400 saving in a house selling for around \$10,000. Some believe there are savings over a pitched roof only if the house is L-shaped or has rooms that jut out so as to cause complications in roof framing. In other words, they believe a square or rectangular house with a low pitched roof is just as cheap as a flat roof.

(Continued on page 172)



Photos: Roger Sturtevant



Smith's floor plan above has 1,300 sq. ft. and sells for \$8,250. This is the house shown in the photographs. Another plan with 1,260 sq. ft. is \$8,000. A 1,080 sq. ft. house is \$7,100.



Interior photos show attractive stained ceiling made of kiln-dried, tongue and groove 2" x 6" planks and 6" by 8" beams.



H. M. "Tod" Sloan has been building small flat tops in Albuquerque and claims he saves over \$300 per house. (See photo). On the other hand, Don Drummond of Kansas City built about 30 houses with flat roofs (see photo) and then could not get more land approved for flat tops and switched to pitched roofs. To his surprise, the flat tops cost about \$200 more than the conventional roofs. He says this was because he finished the ceilings and also used more expensive insulation in the flat roofs.

A Washington, D. C. builder had the same experience. Clyde Verkerke has built a variety of houses with flat, shed and butterfly roofs ranging in price from \$12,000 to \$30,000. Because of local codes he had to install 5-ply roofing on his flat design which he says cost about \$300 more on a \$15,000 house than using good quality shingles on a pitched roof.

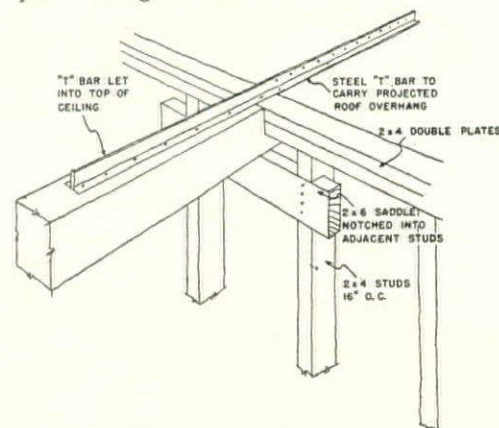
These builders are in complete accord on one point: they agree with Smith that the public will buy them. Drummond says his flat houses outpulled the others by five to one—and this was in conservative Kansas City. Verkerke has not built a large development of flat roofs, but those he did build were quickly sold. Builder James Albert of Miami finds that people prefer his flat designs. With Earl Smith taking the lead in the San Francisco Bay area, other small-house builders have offered flat roofs for sale and found that when the savings were passed on, they sold more easily than conventional designs.

It would seem to boil down to this: the buyers of small houses have no pre-conceived ideas about roof design. There are enough people in any one area who want something clean, fresh and different from the old stock pattern to provide a real market for flat-roof houses if they look well. Whether they would pay as much money for a flat roof is open to argument, but Smith has clearly demonstrated that when the price is right, flat tops can be sold in surprisingly large numbers.

Can they look well?

The trouble with most builders' flat top houses is not that they are flat but that they are small. There are many well-designed houses throughout the country with flat roofs. But they are fairly large. As soon as a flat-roof house is drawn out it stops looking like a box. This principle has been used by some designers of small houses who add a breezeway and a garage at one side which gives the house greater width. The houses shown, pp. 174-5, illustrate the importance of strong horizontal lines and an overhang. They also show how much a background of trees or a foreground of landscaping helps any flat-roof house.

Earl Smith wanted a flat roof partly because it tied in so logically with his desire for an overhang. He extends the planks from 22" to 30". On the two sides of the house where planks run parallel with the outside wall he uses inverted T-shaped steel outriggers to hold them, as seen in top photo at right and in sketch below.



He designed his own house as he has been designing all the houses he and his father have built for some 25 years. He is proud of his work and of the fact that he had such features as a big, rearward facing window before others did. He thinks an architect could improve it, but he is suspicious of what he might add to his costs.

An even more important reason why he does not want an architect is that now he feels the house is entirely his baby. He does not want to share it with a foster parent who comes in to make a few suggestions. "I don't have any interest in a job unless it is my own," he says. He feels he would lose this strong pride of ownership if he became a builder of other peoples' designs.

The right architect could certainly help Smith achieve some additional savings through better planning, but Smith hesitates to call one in, arguing that "I could save \$50 or so with back-to-back plumbing but why save only that much if it would ruin my floor plan?"

But architects who have studied his floor plans are highly critical of them. They say much greater livability could be built into his houses by an architect who would come up with better plans. Architects are most critical of his living room, which they say is attenuated and generally unpleasant in shape. Because it is in the center of the house and has doors on both sides, it turns into the traditional dog trot with no place for an undisturbed family gathering. Another criticism is that the kitchen is so far from the front door.

One architect pointed out that the house winning the NAHB-FORUM contest, which had 150 sq. ft. less than Smith's house (including garage space), managed to provide a pleasant-shaped living area actually larger than Smith's and segregated from other activities so as not to be a runaway.



Don Drummond built 30 flat tops in Kansas City, designed by David Runnells, and found they were popular with his public.

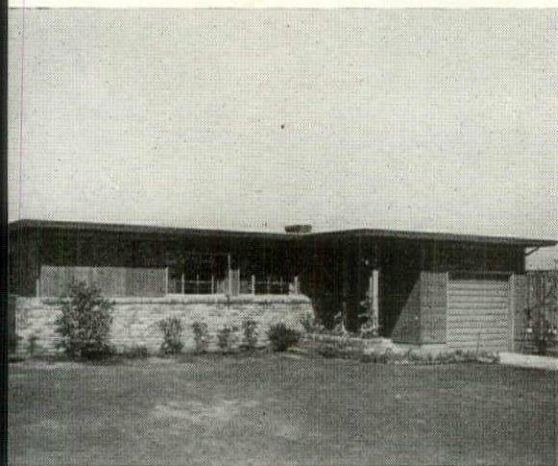


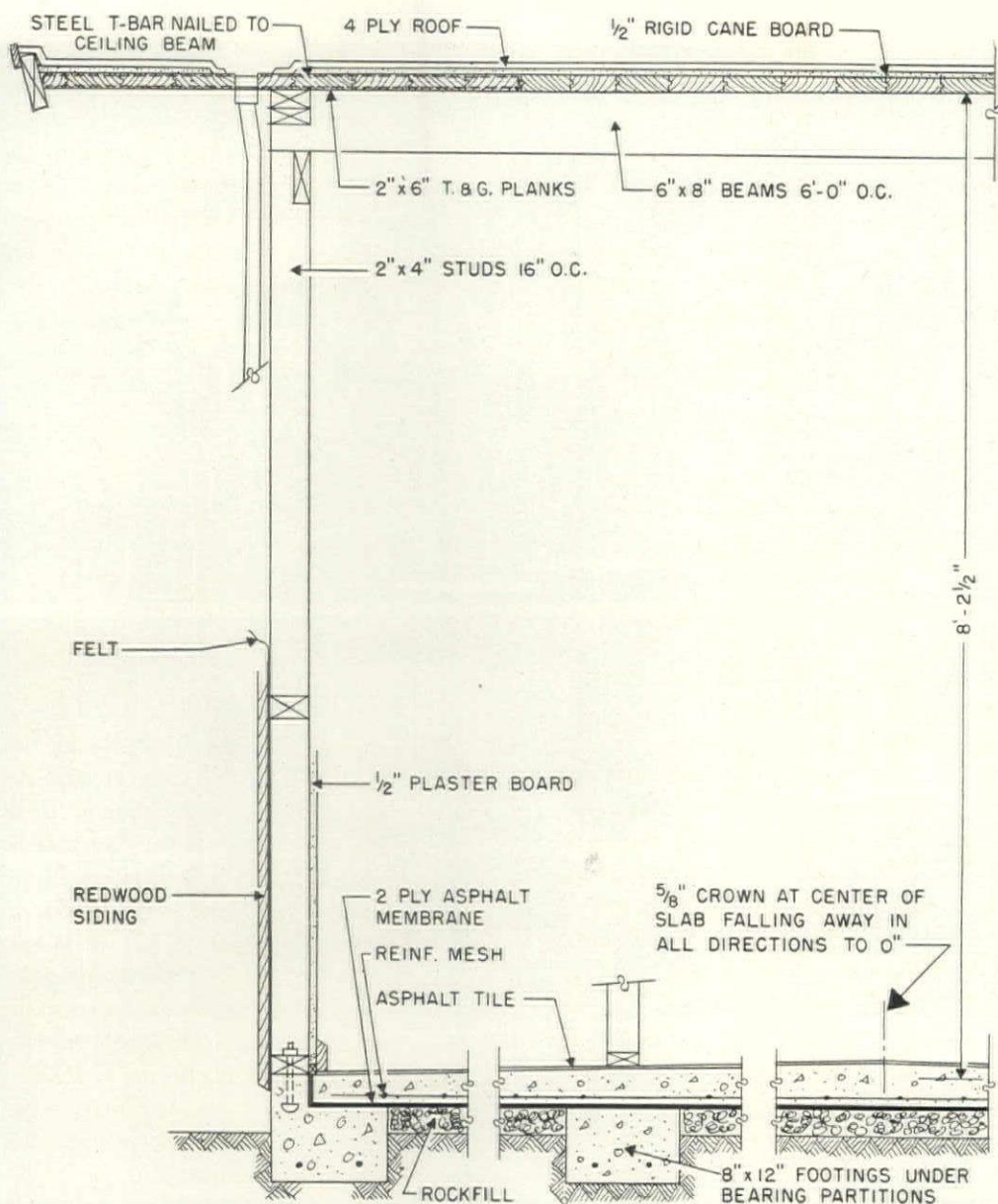
Photo: McCurry

Herbert Goodpastor designed this \$7,300 house for Jere Strizek who is building 775 at Town & Country village, Sacramento.



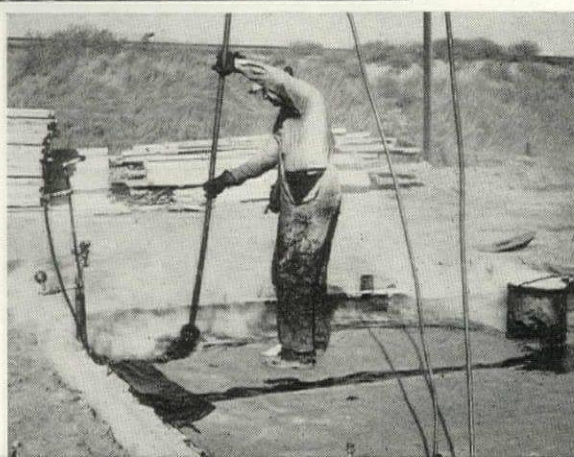
Photo: Caplin & Thompson

H. M. ("Tod") Sloan designed and built flat tops like this in Albuquerque and is now building more in Colorado Springs.



Above: carpenters installing planks on one of Smith's flat roofs. Note steel T-bars for cantilevering overhangs.

Mopping moisture barrier against the L-shaped perimeter section that forms first of two pours for slab.



The prize-winner had a smaller kitchen but got more use from its space, whereas Smith's kitchen had three doors that spoiled about one-half its usefulness. Smith's house had the edge in bedroom size, but the space gained was not equal to the difference in total size of the houses.

Another criticism against Smith's houses is that they are so close together. If his lots were 60' wide instead of 50 an additional 10' could be put between the houses. This would give enough space so that windows could be built into the sides of bedrooms, giving natural cross-ventilation. The \$250 to \$300 the extra land would cost would be an excellent investment for the families living there. More landscaping would also be of great value.

Early troubles with FHA and the neighbors

An important part of Earl Smith's story is the trouble he had in 1947 in getting his flat-top house accepted. After he had his plans drawn he discovered FHA wanted no part of a flat-top design. Officials agreed that his house might be cheaper, but told Smith the public didn't want such a house and that it would be a poor risk for a mortgage. They advised him to forget it and to stick to conventional houses.

Lending institutions told him his ideas were unsound and that his contemporary design would lead to bankruptcy.

Convinced that his only recourse was to build a prototype he began construction in one of his earlier subdivisions. As word spread through the neighborhood that a flat-top house was going up there was angry talk of an injunction. To make peace with his old customers, Smith had to go from door to door explaining his house, showing sketches and promising that if people didn't like the house when it was done he would add a pitched roof. The neighbors voted a reprieve and sat back to wait.

Smith did some of the work on the new house himself and one day just before it was finished a young woman to whom he will be eternally grateful drove past in a convertible. She took a good look, then turned around and came back.

"What a beautiful house," she said. "If it's for sale, I'd like to buy it."

Those were the sweetest words Earl Smith had ever heard. "It's for sale," he told her, "and you can have it." She brought her husband back the next day and they became the first of hundreds of couples who have bought Smith's houses. The neighbors liked the house as well and there was no more talk of injunctions.

FHA, too, changed its mind. As the house progressed Smith invited FHA officials to see what he was doing. The frost

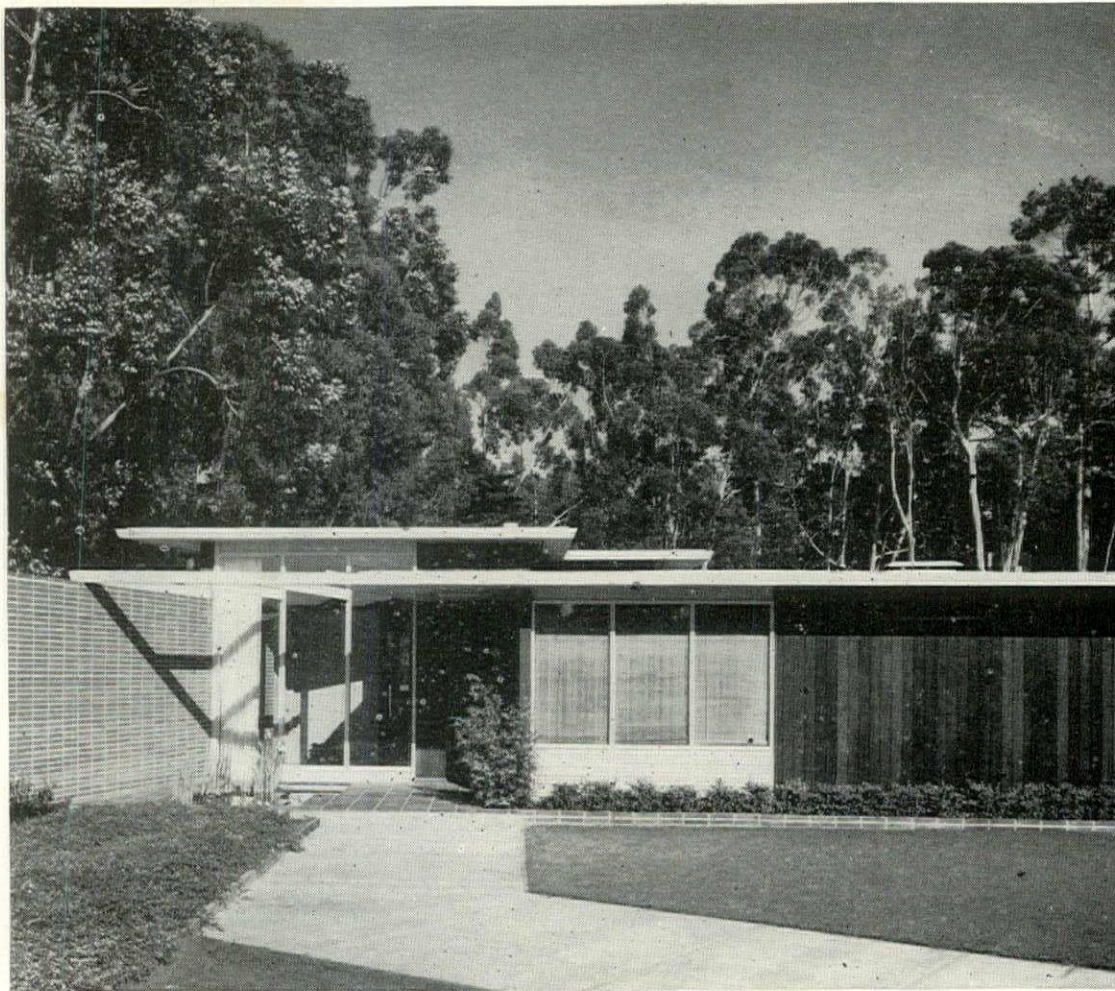
gradually thawed. When the cost figures were finally in and Smith could prove he had built a house for about 20% less than other builders were doing he found he had friends instead of critics in FHA. So impressed was regional director D. C. McGinness that he suggested Smith build a group of 64 houses. This became the first tract of its kind with that number of flat-tops. Especially gratifying to Earl Smith after his troubled beginnings was the award of a regional first prize from the National Association of Home Builders for this development.

As to the future, Earl Smith hopes to continue selling in the low-cost field. He feels the lower he can get his costs, the more he will be giving the people who need housing most.

For his three stock houses actual construction costs are \$5.78 per sq. ft. excluding land. Delivered prices of his houses with land run from \$6.35 to \$6.60. True, he supplies no sidewall insulation, almost no kitchen equipment, a very low cost heater and few of the extras that help sell higher-priced houses. But his aim is to give the most enclosed space he can for what his customers can pay. He could give larger lots, larger rooms and more luxury—but only at a price. His aim now is to sell a house for around \$6,000.

"It would be easy to build a better house at more money," says Smith. "But my aim is to build a good house for less money. That's a real job."

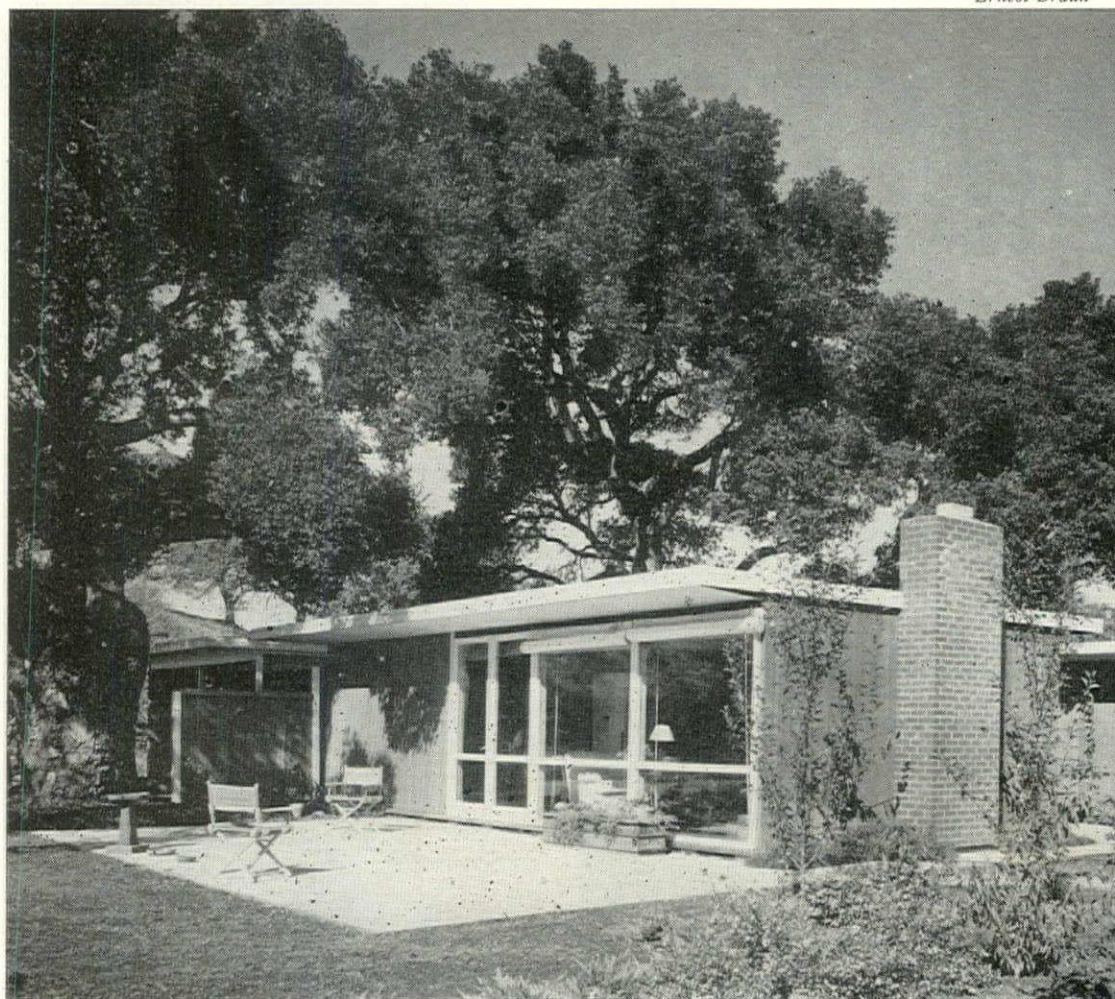
Architects Funk & Stein designed this good-looking house for the Peninsula Housing Association at Palo Alto, Calif. It is one of several designs at Ladera which demonstrates that flat roofs can be done attractively.

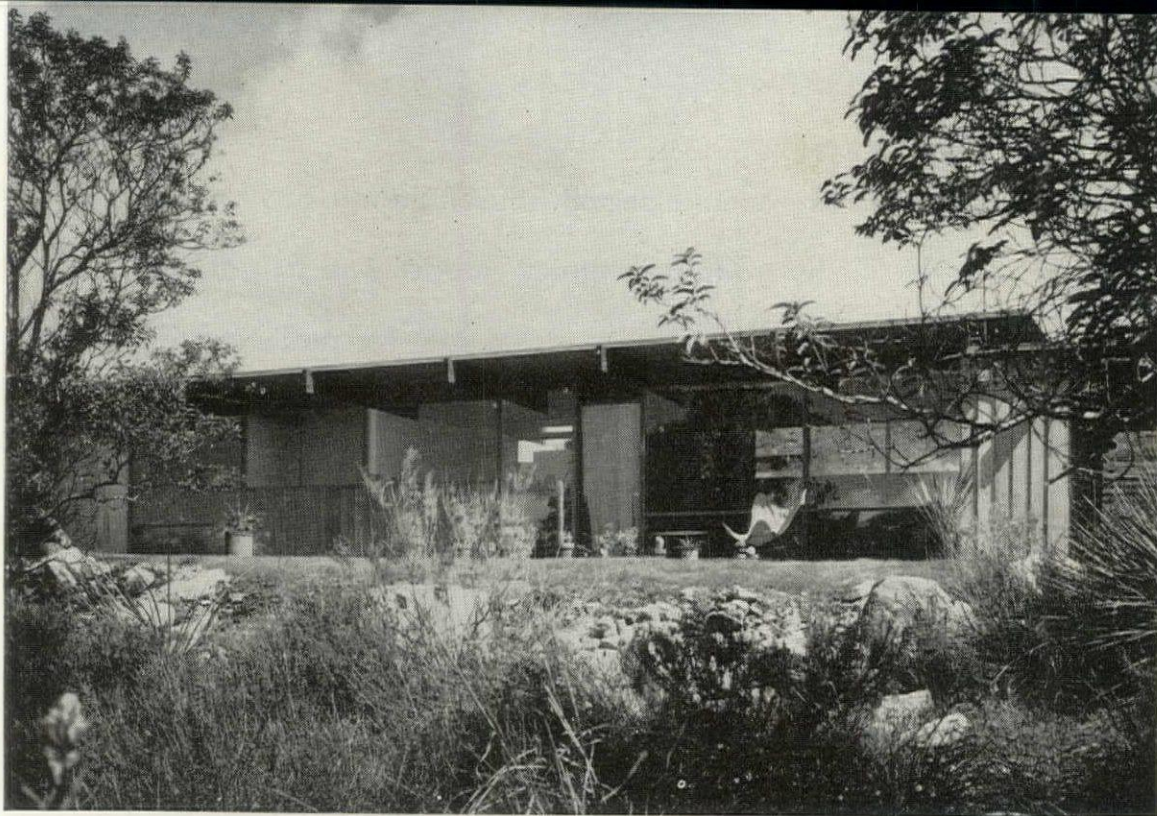


Architects Campbell & Wong show how a small house can be handled in a big way with all facade elements in good proportions.

Roger Sturtevant

Ernest Braun

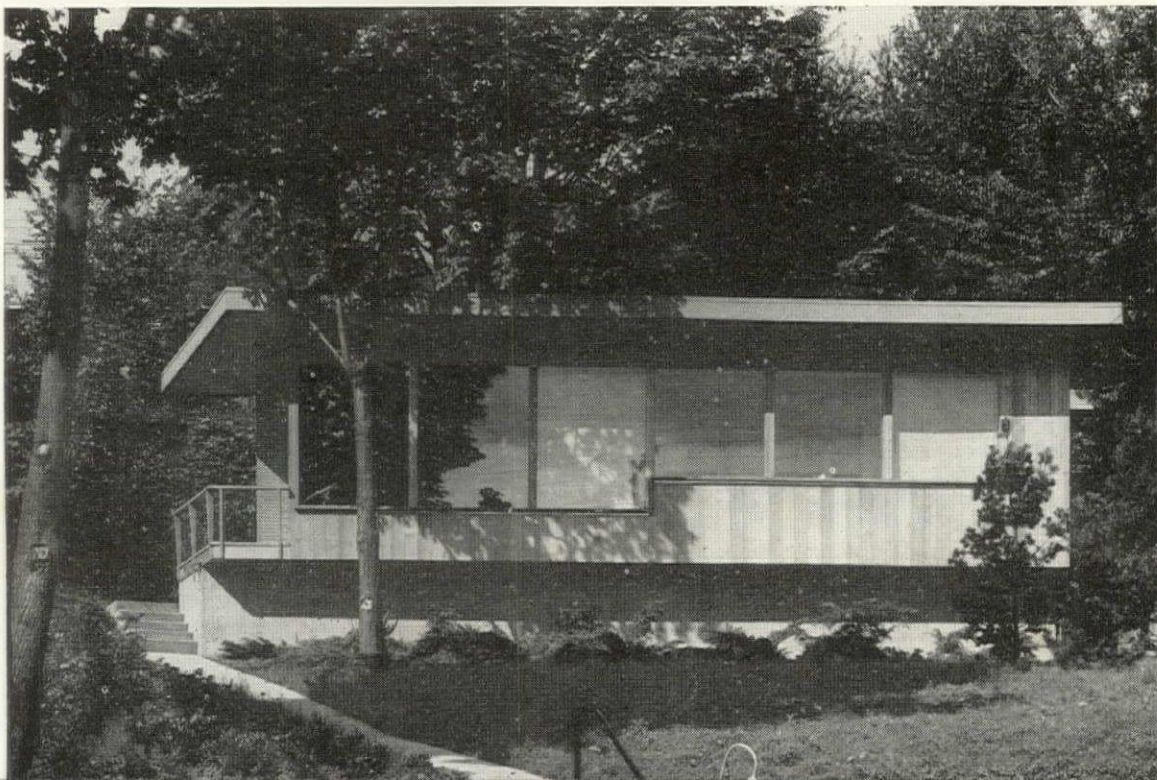




Handsome flat top designed by Byles & Weston in California. On half-acre plots these houses sold at \$11,000 to \$13,000 depending on size (1,024 to 1,134 sq. ft.) or \$10.74 to \$11.46 per sq. ft. Sales price is from \$3 to \$4 per sq. ft. higher than Earl Smith's but lot is much larger.



Wurster, Bernardi & Emmons did this house several years ago in California. While this is considerably larger than a typical builder's house, it shows the value of an L-shaped design with a wide overhang (plus landscaping) for a house with a flat roof.



A wide fascia, wide overhang and the strong horizontal lines made by the cantilevered floor make this house seem larger than it is. It was designed by Chiarelli & Kirk of Seattle for Corley & Brown. These four houses demonstrate how much a background of trees or plantings help a flat-top design.

Photos: James H. Reed, Roger Sturtevant, Dearborn-Massar

A NEW KIND OF ZONING

would permit housebuilding anywhere on the lot
by trading arbitrary setback and height requirements
for realistic bulk controls.

Why must all subdivision houses from coast to coast be set back a prescribed distance (usually 25 to 30') from the property line?

Why must the homeowner be forced to cut his lot in half—with too little in front for a good front yard and too little in back for a good back yard?

Why must the typical subdivision street be a monotonous cheese-box-on-a-raft row of houses?

These and similar zoning questions have long bothered Community Planner Charles K. Agle, an associate with Harrison, Ballard & Allen, and are behind his proposals for more intelligent land planning.*

A revolutionary proposal for improving
today's wasteful land planning

—by Charles K. Agle

Little thinking has been evident in the relation between city planning and the livability of houses since the initial epidemic of zoning ordinances in the Twenties. In an age when an atom bomb is produced from scratch in six years, a quarter of a century is a long lapse between thoughts.

Before questioning present techniques of zoning low density urban-residential areas, it is important first to establish principles covering what we want and to review recent technical progress.

THE PURPOSE OF ZONING

Low density zoning *should* provide:

1. *Assurance of light and air.* An owner *should* be protected from loss of light and air because of the proximity, bulk or shape of his neighbor's house.

2. *Privacy.* An owner *should* be able to protect his privacy without sacrifice of light,

* Housing and community planning consultants and authors of New York City's new pacesetting zoning proposal (THE MAGAZINE OF BUILDING, Sept. '50), Norfolk, Va.'s redevelopment plans (THE MAGAZINE OF BUILDING, May '50) and countless subdivision site plans across the country.

The author is grateful to Hugh Pomeroy, Earl von Storch, Ann Copperman and Kenneth Kassler for criticism of his first draft, though not necessarily full endorsement.

air or usability of any of the open space of his lot.

3. *Full use of land.* An owner *should* be enabled to develop fully his open land as practical garden or play space. He should not be required to sterilize much of it.

4. *Freedom of design.* Without infringing on his neighbor's rights, an owner *should* be free to build his house in one, two or more stories and of any shape he pleases.

5. *Protection of neighborhood character.* Development of new structures and re-use of old ones *should* be consistent and in a manner not detrimental to neighborhood character.

ZONING HAS NOT KEPT PACE WITH TECHNOLOGY

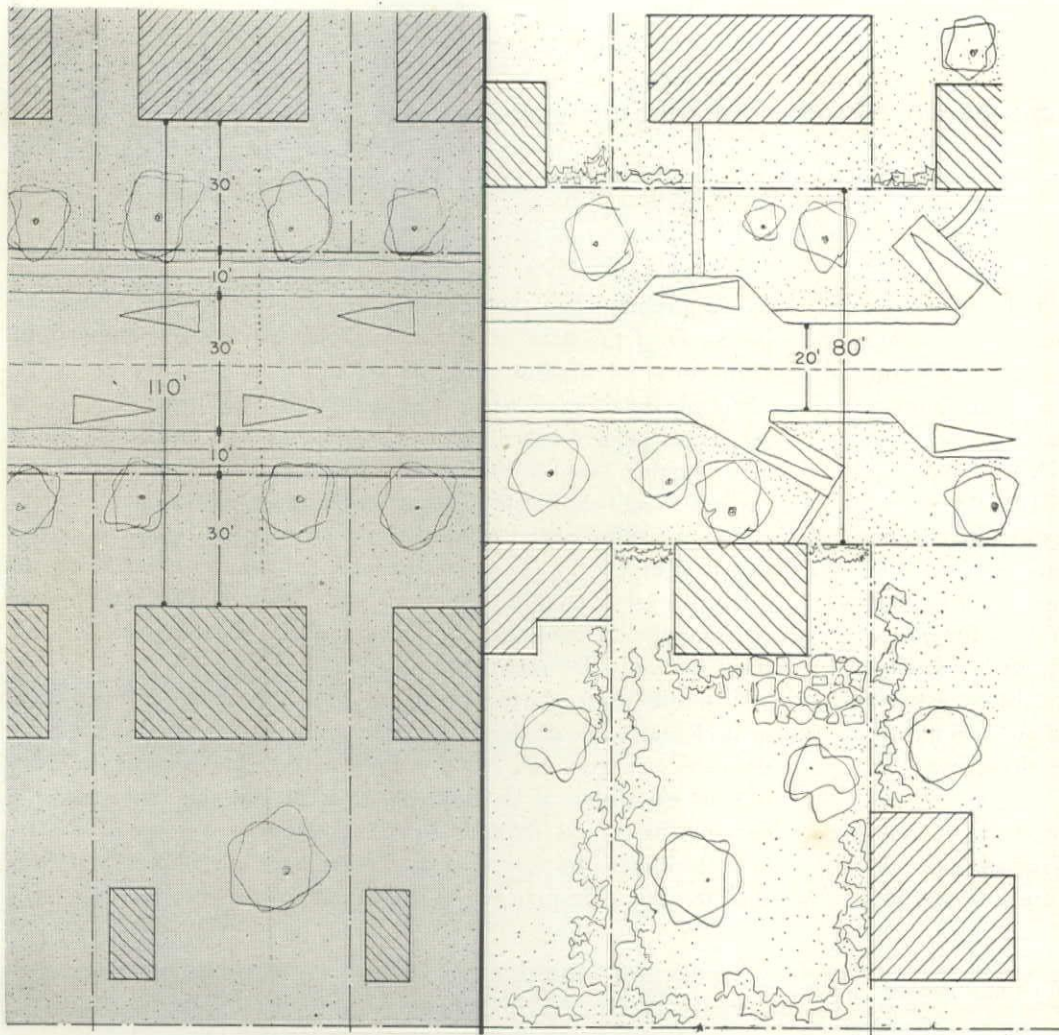
Technical developments in the building industry, now too commonplace to ignore, plus others to come, lead to one inescapable conclusion: *There is no technical or functional necessity for a house to be of any single shape or location on a lot.* Therefore any control which is technically unnecessary constitutes a deprivation of private right and must be very carefully scrutinized for compelling grounds of public welfare.

Zoning has failed to respond to many advances in manufacturing and architecture. For example:

► *Slab-on-ground construction* plus *big double glazed windows* which go to the floor and approach the level of the outside ground, can remove the earlier barrier between inside and outside space.

► Conversely, the low cost of *ventilating fans* and the adaptation of *louvers* to domestic use have dissociated windows from ventilation. These features, plus the growing use of *clerestory windows*, translucent *glass block* walls and *skylights* mean that ventilation and light can be provided anywhere in a structure without reference either to outlook or in-look. We are therefore free, as far as the house itself is concerned, to manipulate view and privacy as best fits design rather than structural considerations.

Because of the shrinkage of enclosed space occasioned by increasing costs and the habitual economy of land subdivision into compact lots, joint planning of the inside and outside space is almost mandatory if we are to avoid further deterioration in quality. Manifestly a picture window opening onto a street or onto little or no space is an absurdity. Organization of open land into areas which are large enough to use, and which at the same time can be made private, is essential. The smaller the house and lot, the more compelling this becomes. Zoning must not prevent such development.



STREETS, TODAY AND TOMORROW. Typical result of today's obsolete zoning and wasteful land planning is the residential street at the left with its wide paving to accommodate parking, oversize public right-of-way, uniform setbacks. By comparison,

the street at the right dramatizes several benefits of the proposed new kind of zoning: narrower street and right-of-way, off-street parking bays, absence of setback requirements. Bigger and better used building lots would be the result.

- *Insulation* and various forms of light wall construction have made outside walls almost as free in use as interior partitions. Indeed, if interior privacy is adequately considered by computing and providing sound insulation for partitions, outside walls may be as cheap.
- The mechanical development of *refrigeration, heat, garbage disposal, washing and drying machines* has removed all necessity for a hidden or rear service yard.
- The increasing use, bulk and weight of the *automobile* makes its introduction to the rear of the lot correspondingly wasteful of land and driveways expensive to surface. Better finish on cars also makes shelter for them less necessary. Off-street parking bays which

neither impede traffic nor intrude on the otherwise improved lot are becoming commoner, and built-in or attached garages as part of the main structure are standard practice. It appears reasonable to expect greater use of full time street parking, off street parking bays or, at least, the storage or shelter of the automobile as near the property front as possible.

Stables, manure piles and outhouses traditionally were in the rear (and for good reason). Garages and sheds followed suit; but the present universal use of the motor car and its servicing off the premises have changed the picture. Accessory buildings no longer need exist nor, if they do exist, do they need treatment different from the main structure.

Planner Agle's new approach to the zoning of low density urban residential areas includes these five revolutionary proposals:

- 1 Setback requirements and height limitations would be discarded in favor of controls on bulk based on the ratio of floor area to lot size.
- 2 Houses would be built — not on a straight line — but anywhere on the lots.
- 3 Building on the property line — front, rear or side — would be possible without sacrifice of privacy by relating building height and fenestration to land coverage.
- 4 Parking bays alongside the street would replace the costly garage and driveway and keep the cars off the lots.
- 5 Thus freed of parking space, street widths would be reduced from 26' to 20' and the distance between facing houses from 110' to 80' at substantial savings to the municipality, the builder and the buyer.

Complete freedom in plan arrangement, shape, and location of the structure must not preconceivedly be denied by zoning without good reason.

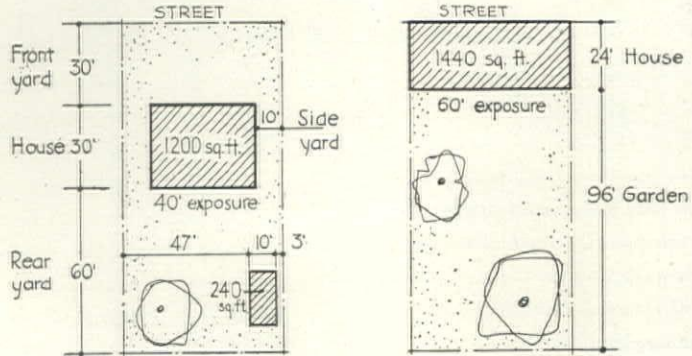
TODAY'S ZONING TOOLS ARE UNREALISTIC

Current techniques of zoning in low density residential areas have not achieved the benefits originally intended. Worthy as some of the principles may have been at the outset, they have largely miscarried by such preoccupation with the tools of zoning that basic needs have been forgotten.

The conventional tools include 1) minimum yard requirements, 2) classification of structure in terms of occupancy, 3) separate rules for accessory buildings, 4) height limitation and 5) minimum standards of floor area or cubage. Most of these tools are inadequate to satisfy current needs as outlined above.

Yard requirements. Rigid yard provisions force the house into the middle of the lot. It therefore can be only a lump, outlooking in all directions and exposed to view and lack of privacy from all directions. Such constriction would not have caused an avoidable hardship 200 years ago. It then was most efficient to group all rooms around a central fireplace

DEVELOPMENT OF 60 x 120' LOT in today's subdivision (left) wastefully cuts it up into four small yards with detached garage at rear. Proposed new zoning, with the same size house and attached garage built on three of the property lines of the same size lot would give the home owner one big, useful yard 60 x 96'.



SPECIALTY SHOP exploits an island plan to gain spaciousness, lower costs

LOCATION: Manhasset, N. Y.

SANDERS, MALSIN & REIMAN, Architects

Here is proof that imaginative design can meet the challenge of high construction costs and defense restrictions on commercial building. This handsome interior of the newest Lane Bryant specialty store cost only \$3.50 per sq. ft.—less than half the average of the chain's other shops—and used a minimum of strategic materials.

Main reason for this big saving was a fresh approach to planning a self-selection store. Like Lane Bryant's other suburban shops, this was designed to operate with a small staff and let exposed merchandise sell itself to browsing customers. Instead of confining stock and fitting rooms to the perimeter of the existing building shell, the architects put most of them into three low islands right on the selling floor (plan, opposite). These defined the various departments informally, provided each with individual stock and fitting facilities, assured easy circulation by customers and control by the staff and maintained the feeling of a big cube of uninterrupted space throughout the whole selling area.

To avoid the monotony of completely exposed stock, most dress racks were placed in a continuous band of lightly framed, partially screened alcoves at the sides of the floor. Alcoves are tied together

by a sparkling white overhead grid which is carried clear around the perimeter of the store to define the large central space and capture the interest of window shoppers.

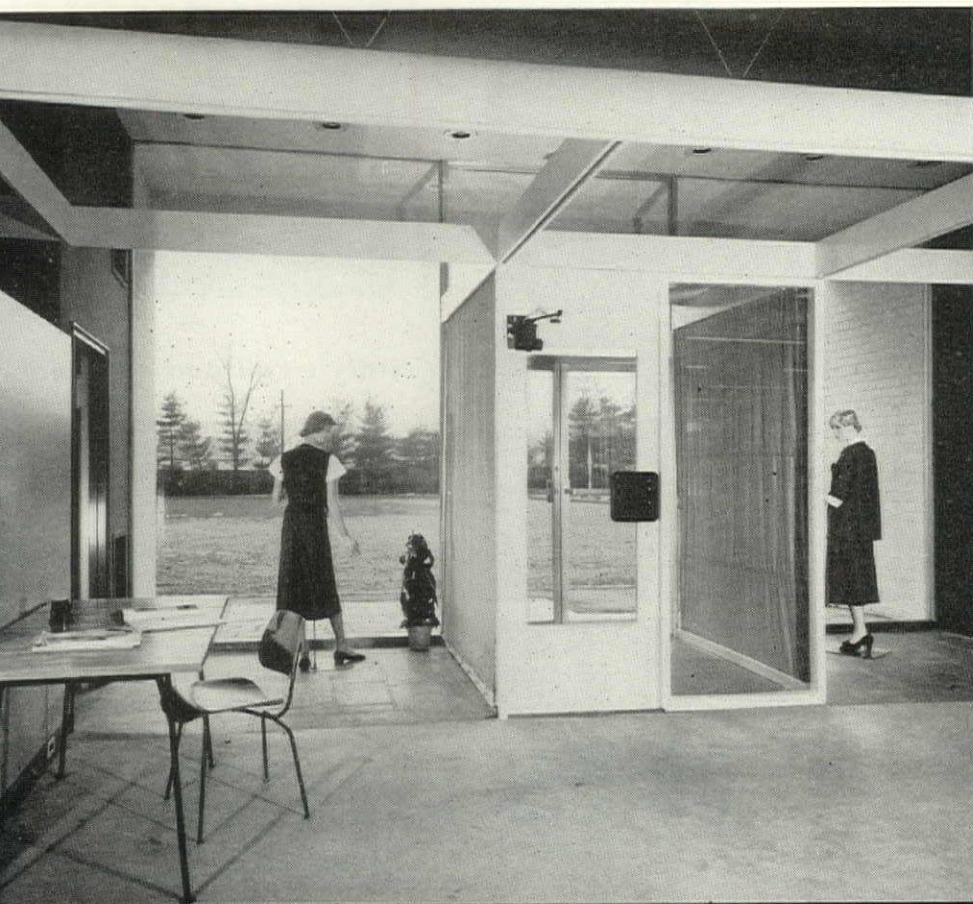
Simple detailing of fixtures permitted all work to be done on the job by carpenters instead of in a cabinet shop. The islands are of stud framing faced with 1 x 4" vertical cedar siding outside and pressed wood board inside. Alcove framing consists mainly of 2 x 2" posts supporting plywood screens and an overhead lighting and curtain grid of 1 x 8's. To create an informal country atmosphere, the architects use low tables of natural ash slats on an iron base instead of conventional counters. Designed for easy assembly on the job, these cost only \$30 each.

From the management's viewpoint, one of the store's biggest assets is its high degree of flexibility. The combination of island storage units, alcove racks and movable floor fixtures permits easy contraction or expansion of departments to meet seasonal fluctuations in demand. Says Lane Bryant's New York manager George T. Palley, "for flexibility and low operating costs, this layout beats anything we have seen. We plan to use it as a pattern for future operations."

Photos: Ben Schnall



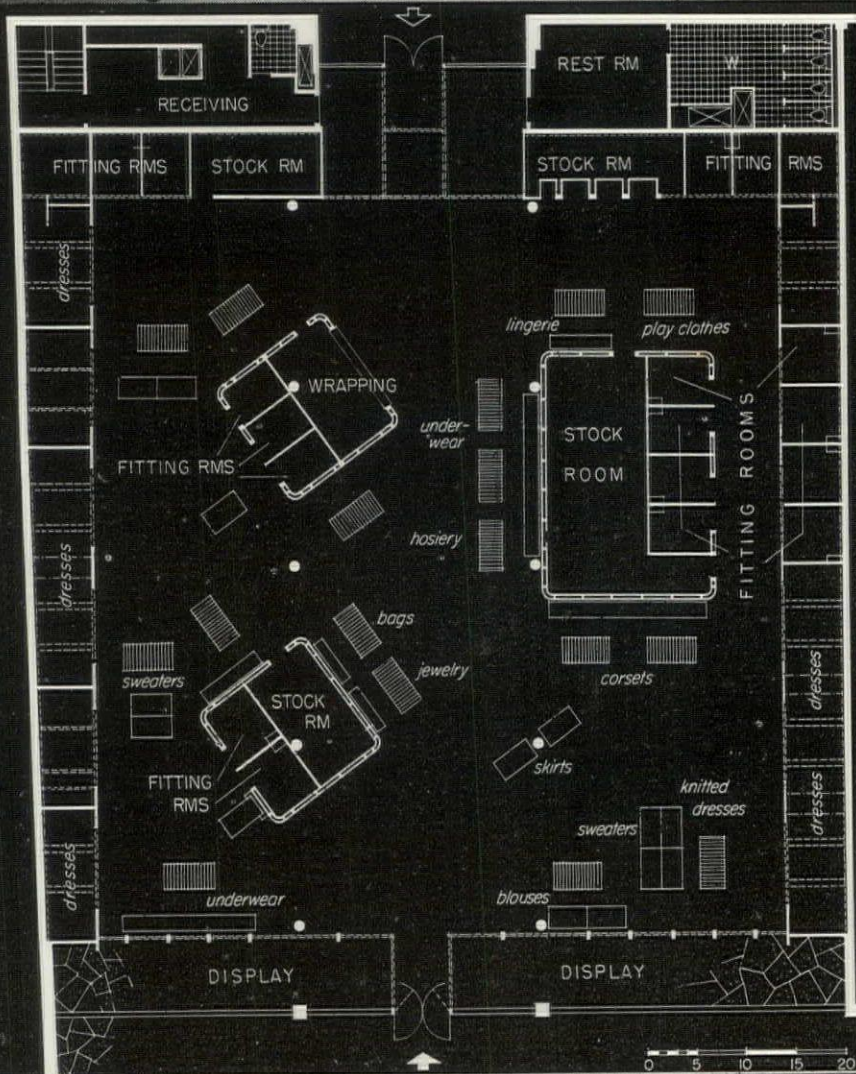
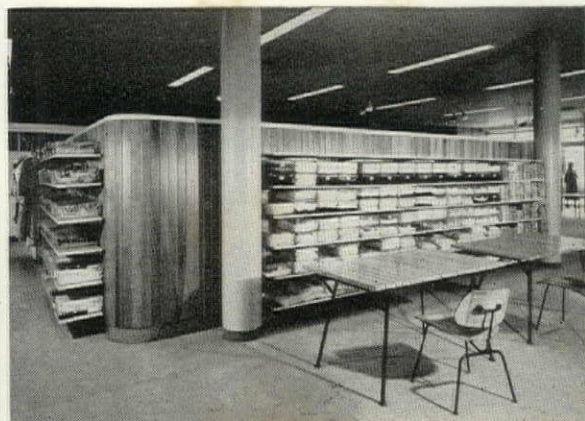
Natural cypress stock room islands, light tables of iron and natural ash provide effective background for merchandise, create a spacious, informal atmosphere. High reflective surface of light gray carpeting and daylight from big glass areas at both ends of store offset brightness contrast of recessed fluorescent fixtures. Flexible suspended aluminum reflectors highlight displays.



Cost Breakdown

Carpentry & fixtures	\$8,172
Lighting fixtures	4,415
Electrical installation	1,460
Painting	3,300
Furnishings	1,963
Carpet	6,533
Total	\$25,843

Storm doors (left) are tied into framing of overhead perimeter grid at entrances to street and rear parking area. Inner door and glass panel may be easily removed, leaving side sections of bright yellow canvas as a permanent decorative accent. Suspended grid is hung by plastic-coated clothes line with wire core. Stock and fitting room islands carry shelves of exposed merchandise (below).



White grid over dress alcoves (above) supports strips of incandescent bulbs which protrude slightly to give added sparkle. Yellow painted plywood panels are used to screen exposed stock, serve as display background. Walls are deep brown. Oil paintings add intimacy.

Existing store front (left) was keyed to new interior by putting flagstone flooring and low cypress wall in display window, adding planting and a Chaim Gross sculpture to sidewalk.



BUILDING REPORTER

Italy's railroad terminal —modern and monu- mental

1.

No matter who rules their country, Italian architects and stone masons keep its public architecture grand, unified, noble. Two major elements characterize Rome's new railroad terminal. One is a horizontal office building slab stretching one full side of a square (it is 775' long, 93' high). Another major element is a glass super-porch in front. This is the waiting room—under a roof like a great rolling wave, supported on a series of massive but graceful S-shaped concrete beams, which are cantilevered forward no less than 63'. There are glass skylight slots flanking each beam.

3.

The office slab, faced with pink granite and travertine, is characterized by a series of nine full-length narrow horizontal slots, one above another, which look from a distance like big masonry joints or rustications—they are the windows, only 21" high, two to each floor (one at eye-level of a man standing, the other at the ceiling).

The list of architects, winners of a competition, is almost as long as the station: L. Calini (eng.), E. Montuori, M. Castellazzi, V. Fadi-gati, A. Pintonello, A. Vitellozzi.

4.

1. Waiting room with office building in rear. 2. Office building with two window slots to each floor. 3. Head-on view of waiting room showing skylight slots along beams. 4. Waiting room and ticket office with pink granite floor, red granite seats. 5. Train concourse—note delicate conjunction of glass and roof.

Photos: 1-2) A. Cartoni; 3-4-5) Vasari

5.



Germany's up - to - date

Parliament lets "light into politics"

1.

The most up-to-date Parliament buildings of today are found not in England (whose reconstruction was purely nostalgic) or in the U. S. (the Dome was built long ago) but in Germany, where architect Hans Schwippert reconverted and extended existing buildings of the University of Bonn.

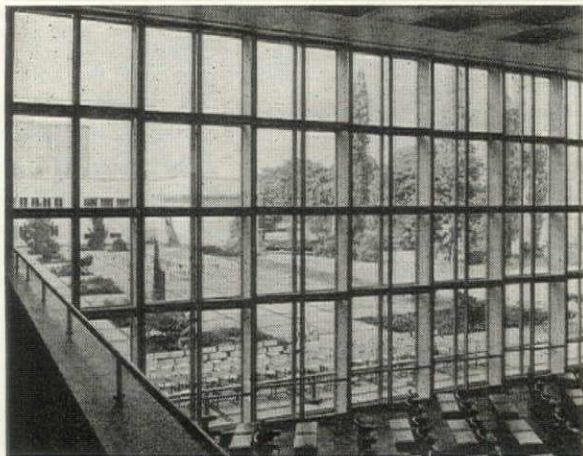
Said Schwippert, "Politics are a dark affair, let's let in light." So Germany's delegates will sit flanked by two monumental glass walls looking across landscaped terraces to the Rhine. Their large plenary chamber normally seats 420 delegates, can seat 850, is designed to double as a concert hall replacing the bombed-out Beethoven auditorium. It is fully air-conditioned, has splendid acoustical properties (double, nonparallel walls, double windows and doors, a checkerboard ceiling of alternately dropped panels), cold-cathode lighting, mechanical equipment including earphones.

3.

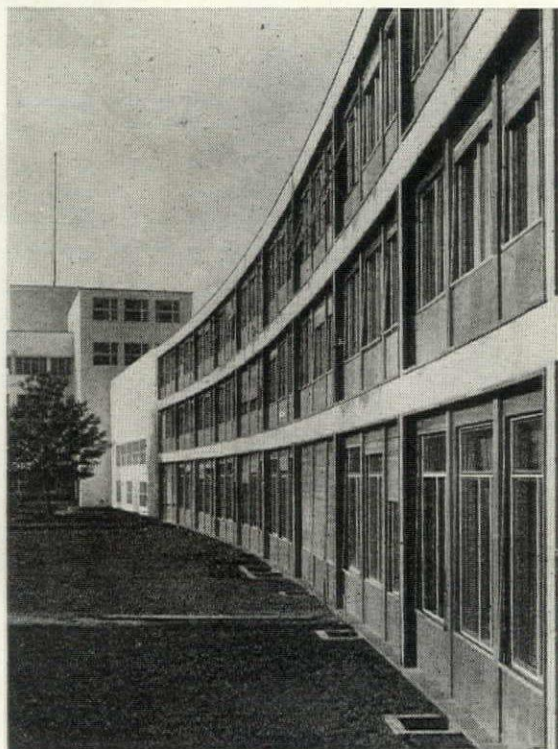
In addition to the plenary chamber: press and visitors' galleries, a smaller Senate chamber, a restaurant with 200' of French doors opening to the terraces on the Rhine. The architecture picks up where Hitler interrupted.

1. General view. 2. View towards the Rhine from plenary chamber. 3. Administration wing. 4. Plenary chamber which doubles as concert hall.

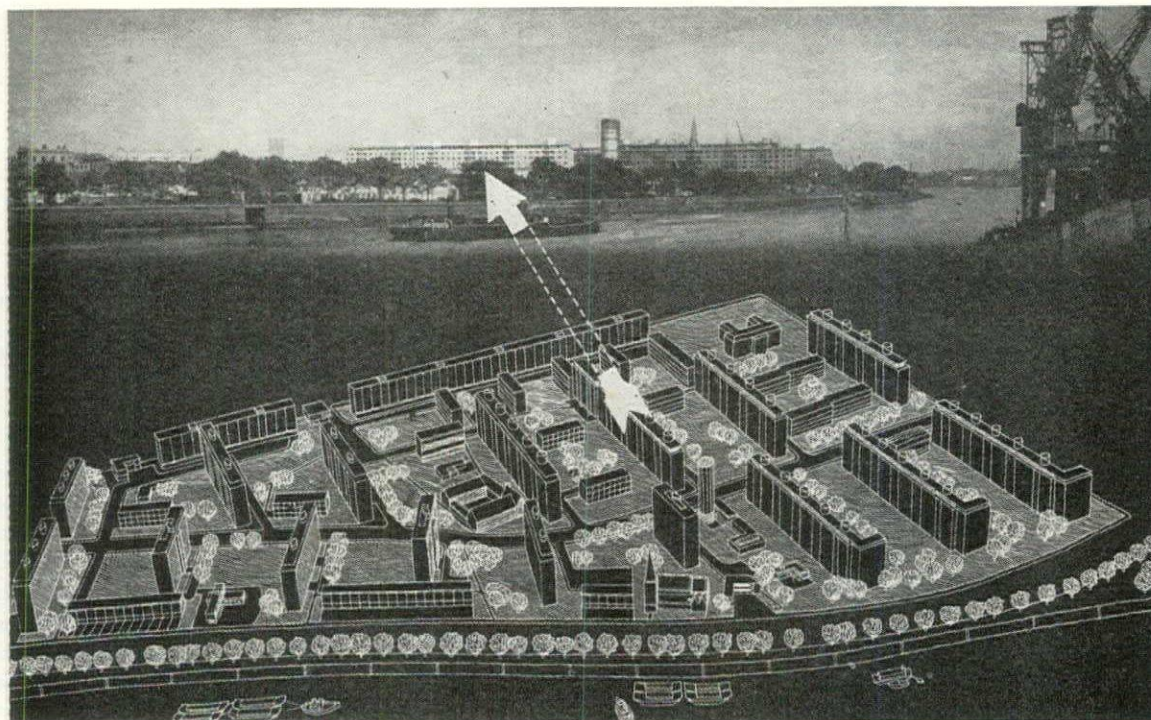
Photos: 1) Hugo Schmolz; 2-3-4) Renger-Patzsch



2.



4.

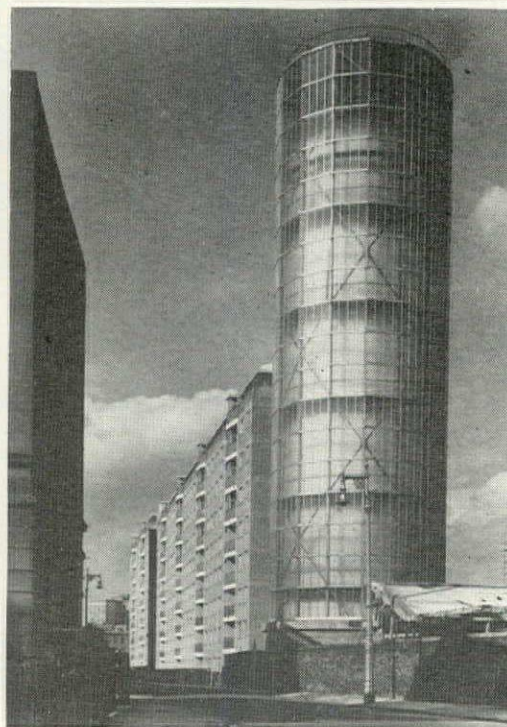
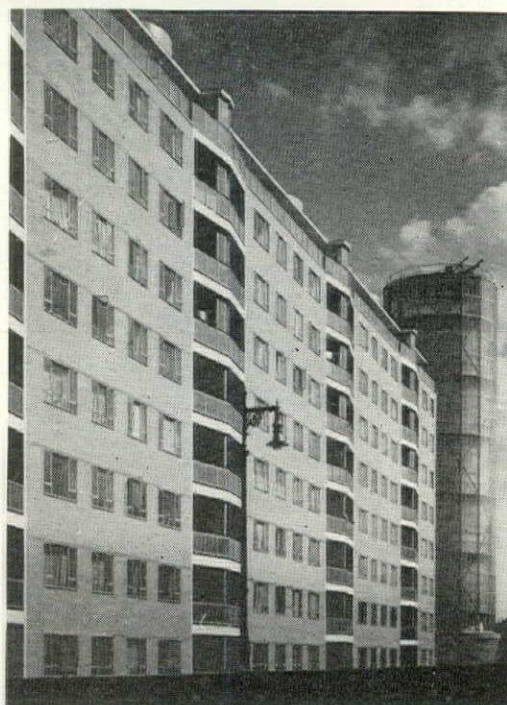


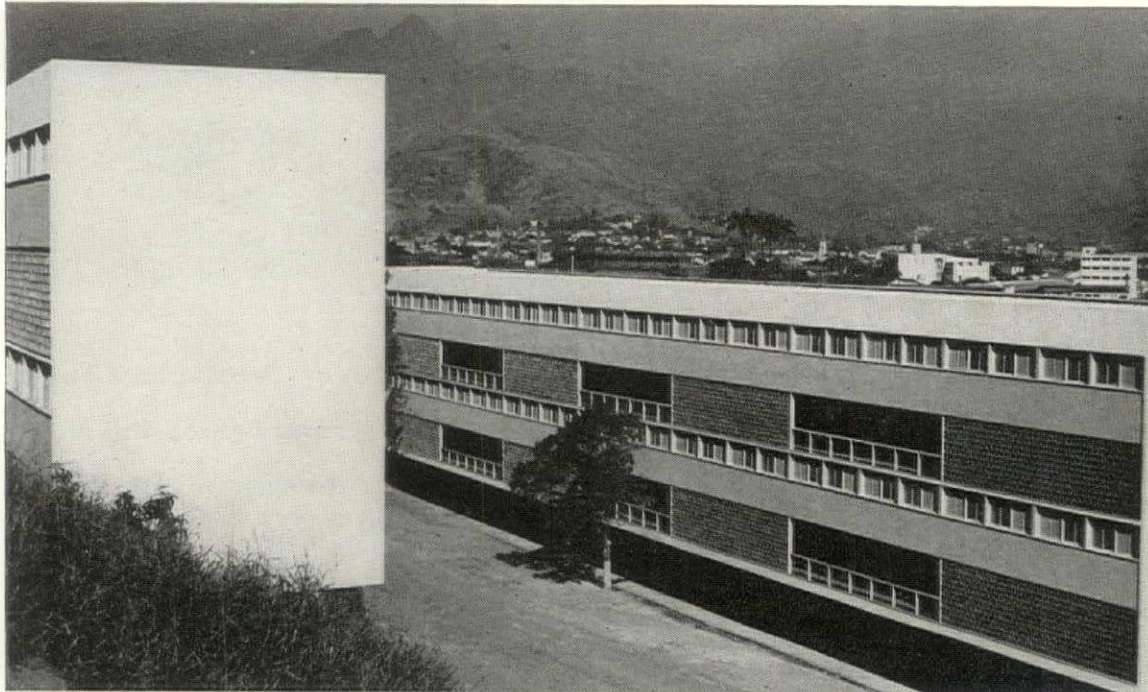
All photos and illustration courtesy of Architectural Review

Paskey to Pimlico — London's new housing

1. In the hilarious movie, *Passport to Pimlico*, the residents of this London district set up for themselves as loyal subjects of the Duke of Burgundy. As far as Burgundy from the usual jail-like austerity of U. S. apartment housing at large scale, public and private alike, is Pimlico's new housing by the Westminster City Council. Somehow, despite stringency of money and land, the architects have been able to hold density at 200 to the acre (against New York's 400); and they have been able to afford glass stairhalls as architectural accents and relief. And, finally, the engineers discovered that Battersea Power Station across the Thames was throwing tons of hot water back into the river. Using an existing tunnel, they tubed this waste water at 200°F. to a silo-like "accumulator" tower, thence circulated it through radiators to supply heat to rooms, and finally diverted some to "calorifiers" on rooftops where it was mixed to produce 130° domestic hot water.

2. Drawing of complete scheme (from the *Architectural Review*)—arrow shows completed unit. 3. Glassed-in stair halls add interest. 4. Balconies of stair hall lobbies 5. "Accumulator" using waste hot water from power plant (see text).





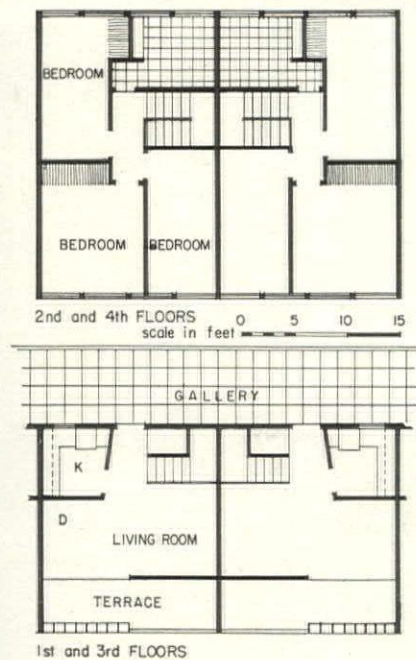
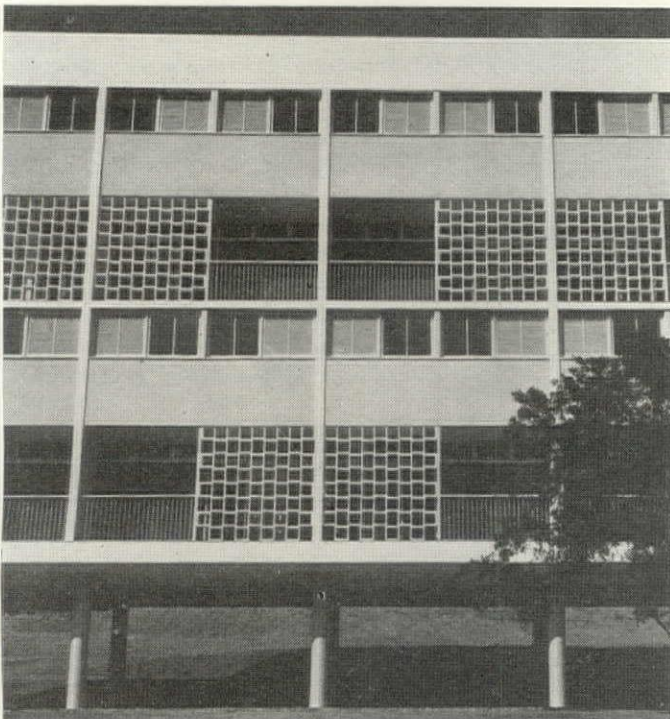
Brazil's housing is bright

Doors and window sash of these Brazilian apartments are painted yellow; the trim, the jalousies, the balcony rails are white. The squares of open grille work along the balconies, through which the sun plays with shade and children play with the view, are salmon colored baked ceramic.

1.

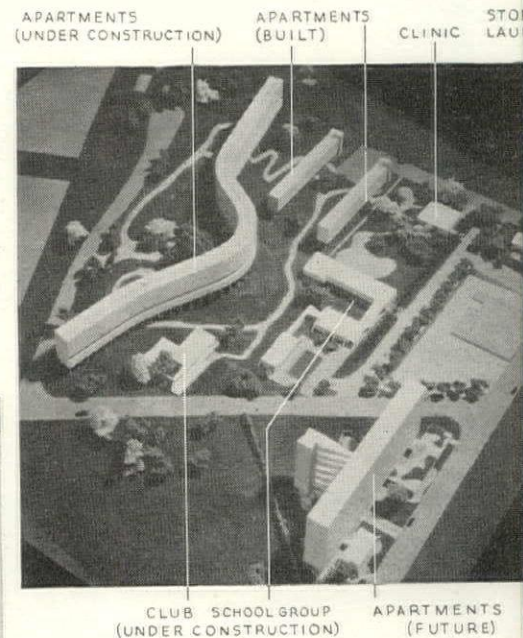
This is a public housing project for lower paid workers and government clerks, built cheaply but not glumly. The view came free, was used well. Apartments are on stilts to provide shaded recreation space beneath. Included in the project: a sun-shaded market and laundry (below), schools, clubs, swimming pool. A. E. Reidy, architect.

Photos: Marcel Gautherot



2.

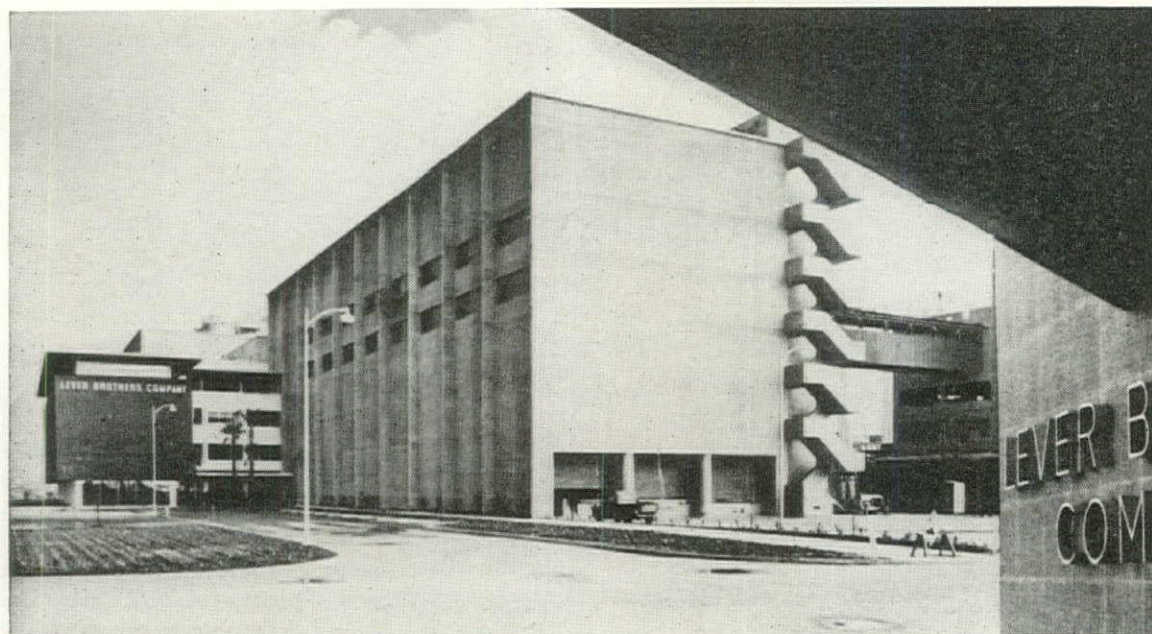
3.



1. Uphill side of 4-story twin duplex apartments showing balconies. 2. Downhill side showing access gallery (note open shaded area in ground floor column space). 3. General scheme. 4. Market building, stores and laundry at right foreground; clinic in middle, distant; apartments left and above.



4.



Lever Bros. plant takes soap processing out of doors

1.

In the rapidly growing Central Manufacturing District of Los Angeles there opened in June (with 300 present employees and 30,000 job applications) the colorful new \$25 million Lever Bros. plant. It brings a fair share of Lever's soap manufacturing processes out of doors, to join airplane manufacture and food processing in the open though smoggy air.

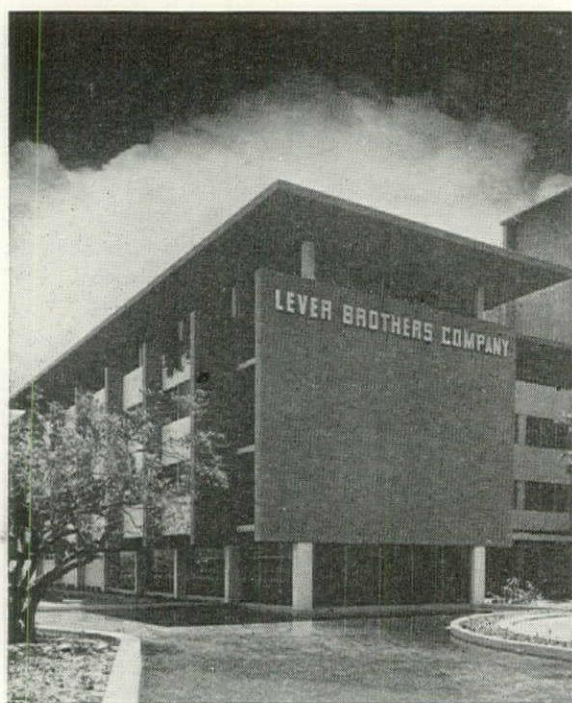
The Bechtel Corp. of Los Angeles (engineers and builders) laid out the two main manufacturing buildings joined by an office and service wing (foreground, bottom view), the detached processing units, the steam plant. Welton Becket & Associates, architects, had charge of the design. They proportioned the gray-green buildings, gave them a range of red cement tile piers or "fins" for an effect of height, ribbed the off-yellow concrete spandrels for ease of maintenance and better appearance in use, created spacious lobbies, plastic adjuncts such as stairs.

For employees there was supplied a modern restaurant, a health and medical clinic, a set of light airy locker rooms.

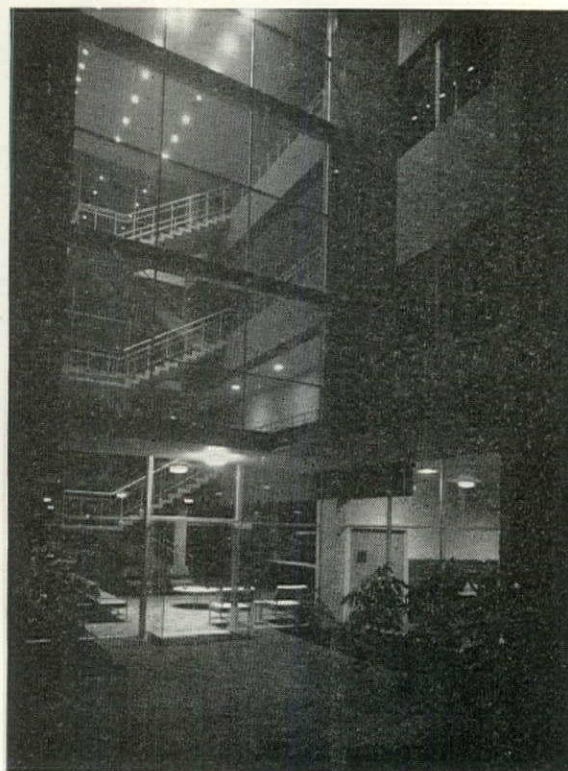
To keep down soap dust there is a vacuum cleaning system; the fluorescent lights are vaporproofed, enclosed in tempered glass; smoke control systems prevent soot; a deodorizing plant prevents dissemination of industrial odors.

Though there is an elaborate water conservation system in ever-drying Los Angeles, the architects intend ultimately to install a reflecting pool before the entrance.

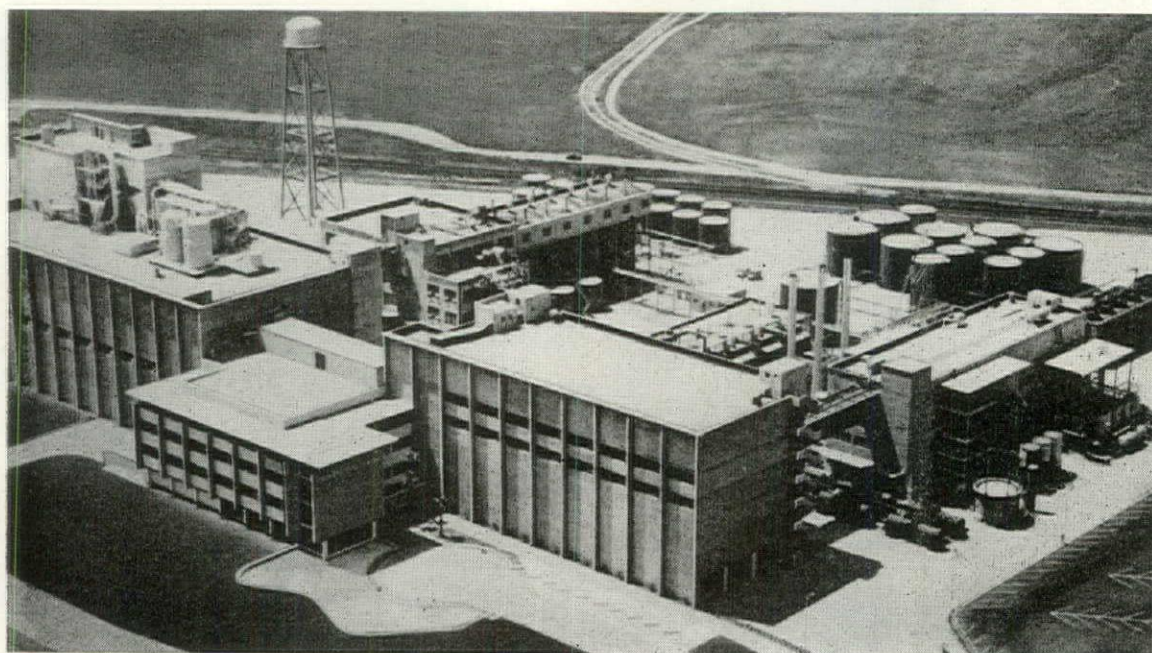
1. Approach to the plant. 2. Close-up of Administration Building. 3. Entrance lobby and stairs. 4. Air view, showing many storage tanks connected with outdoor processing.



2.



3.



4.

HELLO THERE, MR. HADRIAN

"The desire for privacy is a wish as old as human habitation. Only one man, as far as I know, succeeded in obtaining it. At Tivoli on the outskirts of Rome, the Emperor Hadrian built himself the largest villa in the world. Among its sprawling ruins can still be seen a circular colonnade roughly the size of a city block. Inside the colonnade is a deep marble-lined canal surrounding and completely isolating a circular suite of rooms. The Emperor crossed the canal on a light bronze bridge, hinged to be closed after him when he reached his island retreat. This imperial extravaganza has remained unique in the history of the search for privacy. But the thought is a good one."—Terence H. Robsjohn-Gibbings, in *Look Magazine*.

And Mr. Gibbings' bathroom is a good one too. It was designed for *Look Magazine*, June 5, 1951, and printed with an accompanying essay by Mr. Gibbings, who is famous as an interior decorator, furniture designer, and author of two books, *Goodbye, Mr. Chippendale* and *Mona Lisa's Moustache*. (In the latter he sharply criticized the international style of modern architecture, which he thinks is a degenerate plot against the people.)

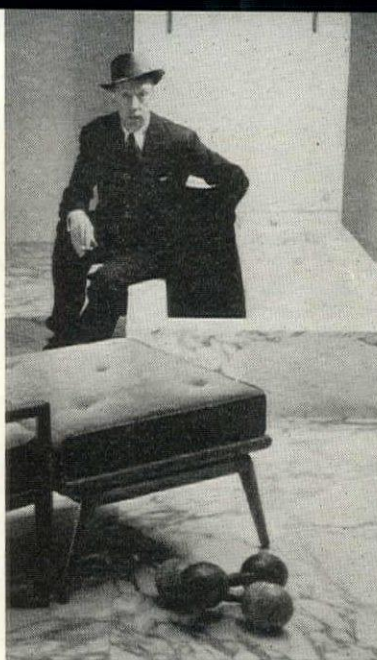
There is more beautiful marble in T. H. R-G's glorious temple of serene hygiene than in any perhaps since Hadrian's own, and the tub has a converting sofa-top, wall-hinged to be closed much like an Emperor's light bronze bridge, or the pages of a magazine. The title of all this is Bathroom of 1960.

"Even in the most modern of modern houses," Mr. Gibbings says, "it (the bathroom, or bath, as degenerate draftsmen are likely to abbreviate it.—Ed.) is usually cramped in size and generally unimaginative. In other words, bathrooms, as they are being built today, are obsolete. . . . If it is the dream of some modern architects to make the house a 'machine for living,' they can spare their efforts as far as the present-day bathroom is concerned, for it is already—alas—a 'machine for washing'."

Mr. Gibbings is a man who scorns the double negative, but relies heavily on the double positive. His temple to the Great Wash is lavishly furnished with pieces of his own design, with the exception of an imported \$120 Paavo Tynell adjustable lamp fixture hanging over the tub, which fixture houses a sun lamp. The area of this room is approximately 400 sq. ft. (a Levitt house is about 800 sq. ft.); cubage of the bathroom is difficult to estimate for there appropriately is no ceiling in sight. There is a dressing table for each of those majestic marrieds, him and her, and adjoining rooms for the water closet and shower, which do look a little cramped. It is doubtful, indeed, if Hadrian would have spat in either one of them.

But there had to be concessions, for Mr. Gibbings' room is not entirely without an economic basis. He suggests that space be gained for it by making smaller and less expensive bedrooms.

So we are all of us looking forward to 1960, when our elbows will be turned outward in spacious bathrooms, when we will all ride down the Nile in outboard motor boats. This life will not be without its aspects of sadness, however; think of sitting there alone in that tub on a desolate Saturday night.—W. McQ.



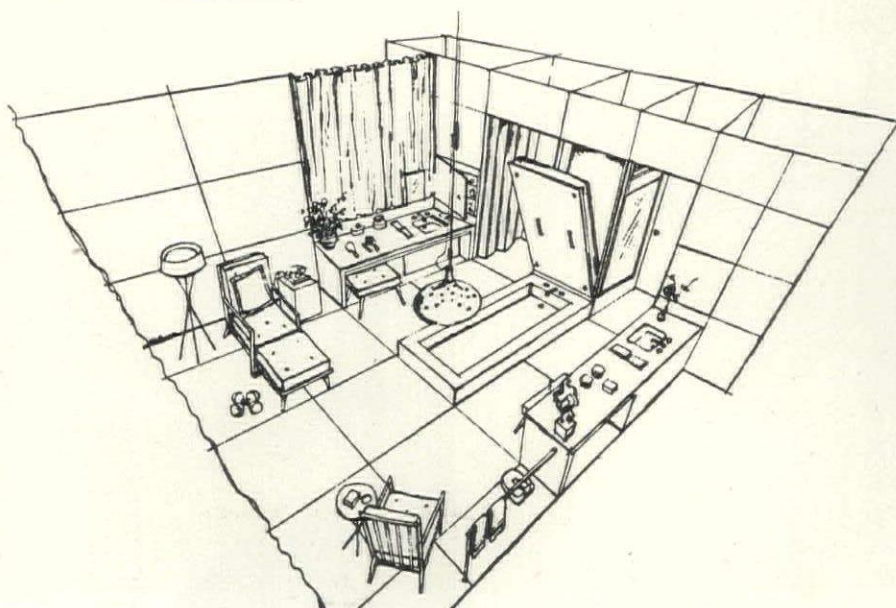
Rothstein

ALAS

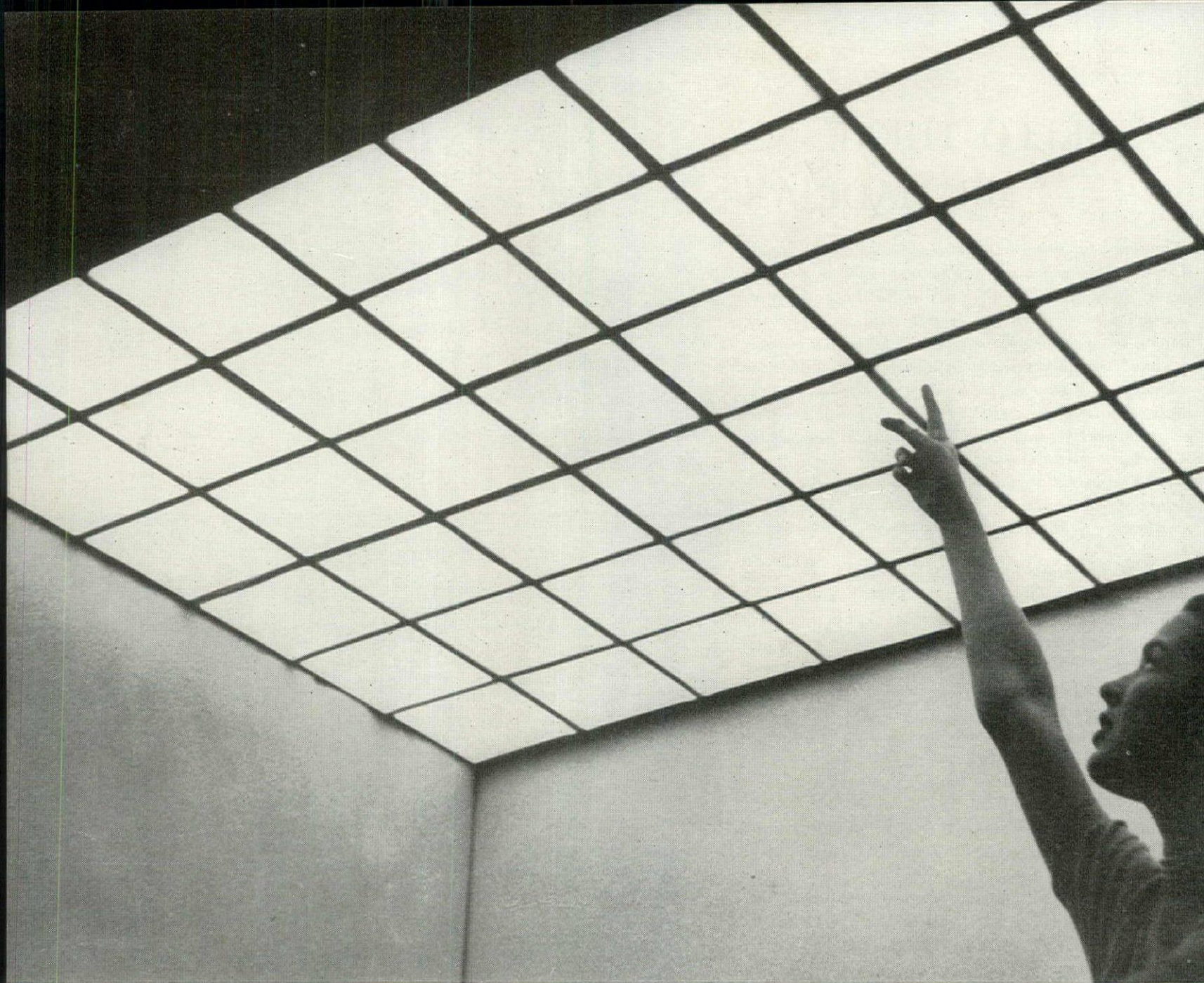


Courtesy: Look Magazine

ALAS

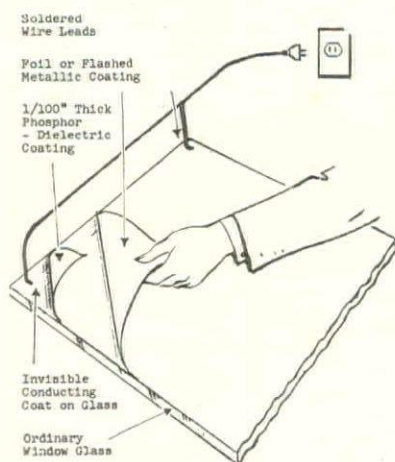


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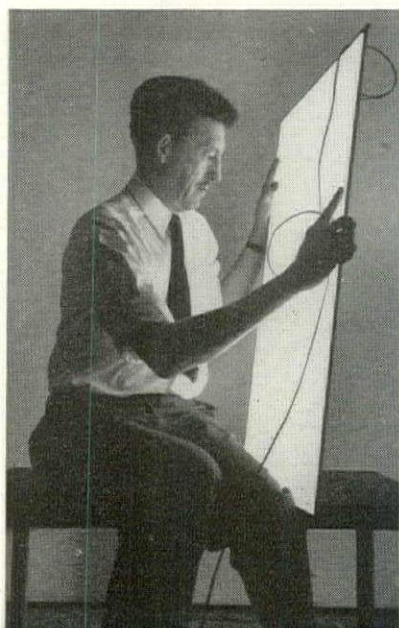


NEW LIGHT

Soon you may be able to specify lighting by the square foot



Life: Andreas Feininger



A third electric light source to add to incandescent bulbs and fluorescent tubes is being perfected by one of the big U. S. lamp companies. Sylvania Lighting last month unveiled the early results of its development of a source which emits light not from a point (incandescent bulbs) or a strip (fluorescent tubes) but from an *area*.

The new invention would give the kind of light we now get from "luminous ceilings" whose diffusers of glass or plastic hide incandescent and fluorescent lamps. But there is no need for lamps behind the diffuser in "Panelite" (the name Sylvania uses for this development); the light source is a built-in radiating surface applied to a flat sheet like glass silvering on the back of a mirror. (see sketch).

Electrically, the phenomenon is distinctly different from incandescent and fluorescent lighting. In incandescent bulbs, a wire filament is stimulated to radiation by electric current; in fluorescent tubes—a type of electric discharge lamp—current excites an imprisoned gas, which makes the tube's phosphor coating glow. Panelite, whose technical name is electro-luminescence, involves neither incandescence nor gaseous discharge; its materials luminesce directly under the influence of the alternating electric field. Specifically, a film of phosphor (about $\frac{1}{100}$ " thick) is dispersed in a dielectric and placed between a sandwich of two conducting plates. One plate is electric conducting glass or plastic; the other is a thin metallic conductor like vaporized aluminum. Electrical connections are made to a contact strip along one edge of the glass, and to any convenient spot on the metallic layer. When the current is on, the phosphor luminesces completely and immediately, and light is produced through the glass side of the sandwich.

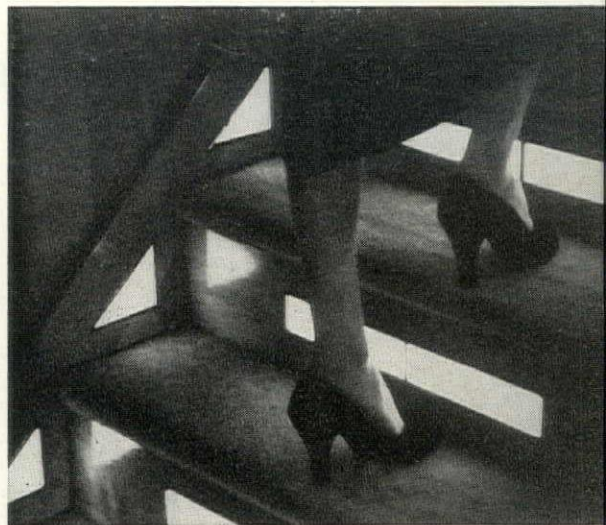
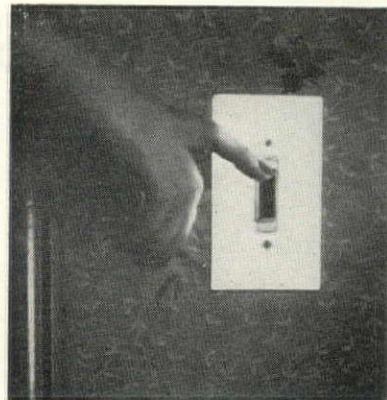
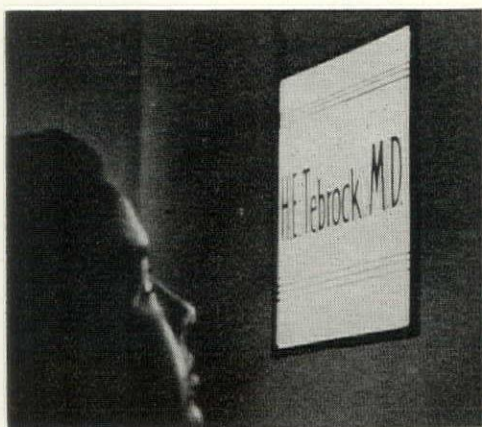
In their present stage of development these panels emit but little illumination. Several colors of phosphor are in use; green is the brightest and the only one now commercially available. One type presents a green luminosity at 0.1 foot-lambert (the brightness of a white object in full moonlight) when the lamp is connected direct to the usual 120 volt, 60 cycle house current. A small 500 volt step-up transformer can bring this up to 2.0 foot-lamberts. A transformer about the size of a pack of cigarettes can service panels a foot or two square. Yellow, blue, and daylight white will soon be available in Panelite.

This important development is directly in line with the long push toward larger and cooler light sources. When perfected, it may do away with all freestanding light fixtures except those used for decoration. The number of luminous ceilings, already increasing rapidly (see right), will multiply immediately when this new source becomes as powerful as those now in use. How long this will be, Sylvania is not saying, but the company has enough confidence in the new development to stake out its claim now. Sylvania made its reputation by its early sponsorship of fluorescent lighting; it is taking no chances on lagging in this newest direction.

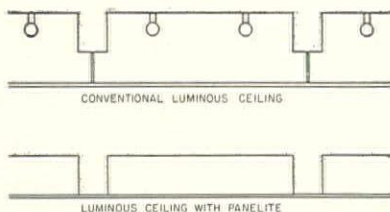
Anticipated uses for Panelite in its present stages of development include luminous ceilings, but only in such darkly lighted places as cocktail lounges. For the time being most of its uses will feature lighting only a step beyond phosphorescence, such as clock faces or signs (photos, right). But lighting experts remember that in 1938, fluorescent lighting was considered by most to be only a trick.



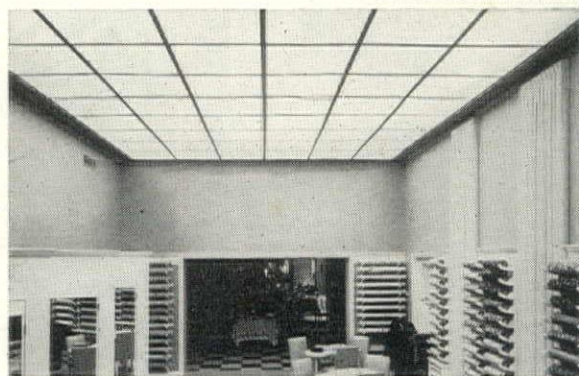
Present practical uses for the lighting panels include signs, switch indicators, and warning lights. Power consumption in such uses is negligible.



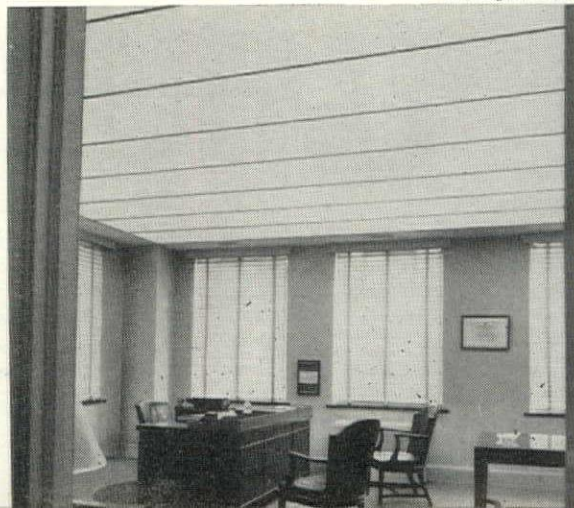
Growing popularity of luminous ceilings built by present techniques indicates bright future for the new method, if its illuminating level is raised. Plastic or glass ceilings (with photographic eggcrate included in glass, below) can today maintain light levels as high as 60 foot-candles without discomfort. Schematic sections show how much vertical space new development conceivably could save in installations of this sort.



Martin Electric Products

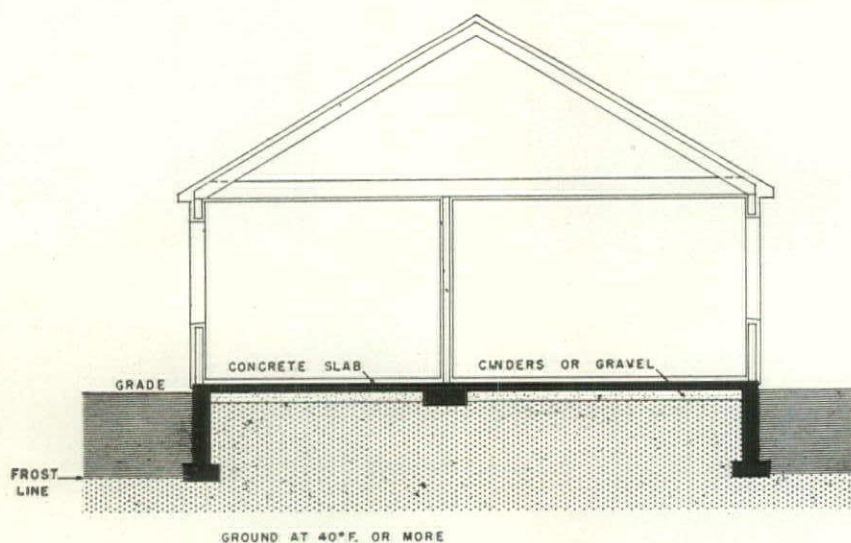


Corning Glass Co.

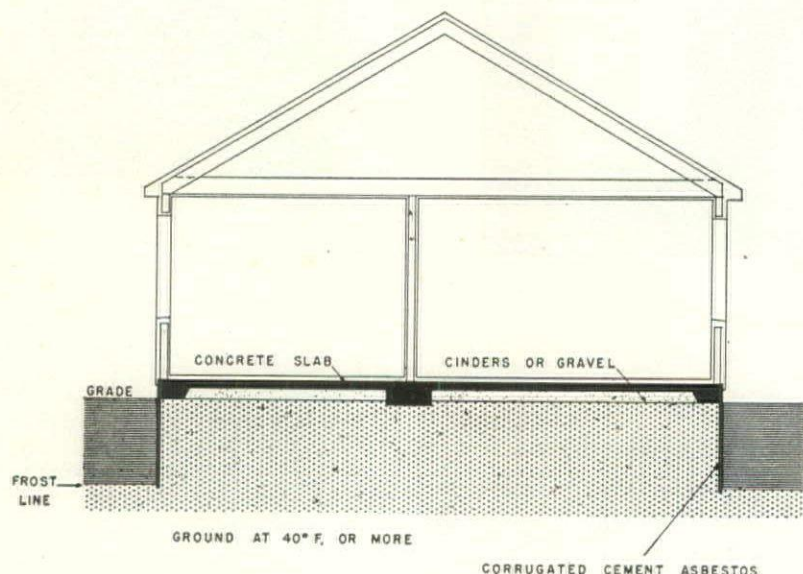


FRAMING HOUSES WITH BENTS

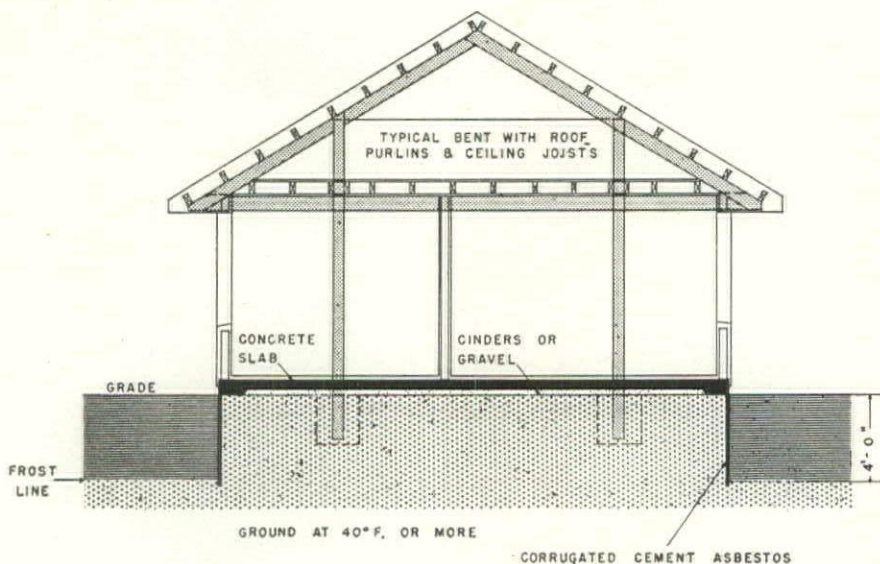
An architect makes two suggestions to save money and materials in the single-story house-on-grade



Conventional slab-on-grade house protects slab from frost, which might heave it, by masonry foundation walls.



Composition-boards, corrosion-resistant, with high insulating ability, replace foundation walls in this house to shield slab.



Most important suggested saving is in framing of house, where timber bents replace post and lintel construction

Framing and foundations are two of the most important places for saving money and material in the small house, according to a round table of experts who were assembled in January of this year to explore the possibilities of conservation (THE MAGAZINE OF BUILDING, Feb. '51). In the search for simplification and saving, Architect Rene de Blonay of New York has come up with two suggestions bearing on those operations:

1. Bents for framing, as they have been widely used in larger structures

De Blonay argues that construction criteria now in use are not based on scientific developments, but on experience gained empirically over the centuries, pointing out that residential architecture is still erected with the most primitive of precedent: the post and lintel. The bent would be a real advance.

2. A corollary — foundation frost-insulation by building board

De Blonay recommends the insulation of ground slabs from frost action—not with poured foundation walls—but with corrosion-proof insulation board trenched around the periphery.

The usual house-on-grade (upper left) has a slab poured on periphery foundation walls which do two things: 1) receive the load of the superstructure and 2) extend below the frost line to act as a thermal barrier, blocking the heaving action of the frost on the slab in winter, and making it possible to reduce the depth of inside footings.

Analyzing these two functions separately Architect de Blonay devised and patented the two separate solutions, and figures their total cost is below that of the usual practice (see chart next page).

If the only function of the foundation wall is thermal insulation along the perimeter, he says this can be accomplished by digging a narrow but deep (below frost) trench around the area where the slab is to be poured, dropping in corrosion-proof insulation board, and immediately backfilling with earth to maintain the vertical insulation in place. The entire space under the house is now frost resistant and the shallow footings will not heave. The saving over the usual masonry foundation walls is estimated at 75% or better, labor being reduced to a minimum.

The other saving, the use of rigid bents for the frame of the house, follows naturally.

This is because the economical timber bent (the next structural step beyond the simple truss) should not be supported at its extremities by posts but by vertical members somewhere in between (see bottom, left). Between the bents are framed small roofing purlins, effecting substantial reductions to the basic timber costs of the house. Legs of the bents, which could easily be prefabricated in quantity, are solidly embedded and anchored in shallow footings. Note that the relative openness of the bents in the attic space makes that space more usable than in the case of the usual attic truss. Lateral bracing can be provided by joists resting on the bottom chords, from which the ceiling is also hung.

This structural method results in considerable timber economies (see tabulation), and produces further derivative economies. For example, exterior as well as interior walls become mere screens or curtain walls and could be easily prefabricated in large sizes.

Only disadvantage of the scheme is the necessity for interior posts, but the simple house plan at the right shows how these can be absorbed into partitions. The system of construction is flexible, because the design of the bents can be changed to a considerable degree by positioning the vertical members closer or farther from the ends. Moreover, additions to the house could be made subsequently with a minimum of expense by extending the floor slab in any direction and adding bents, since the structural frame of the house consists only of an umbrella shed.

Step by step, construction of the foundation and frame goes like this:

► A 4" to 7" wide trench, 4' deep, is excavated by machine along the perimeter of the house, and rigid sheets of insulation material are dropped in vertically, their top edge level with grade. The trench is immediately back-filled.

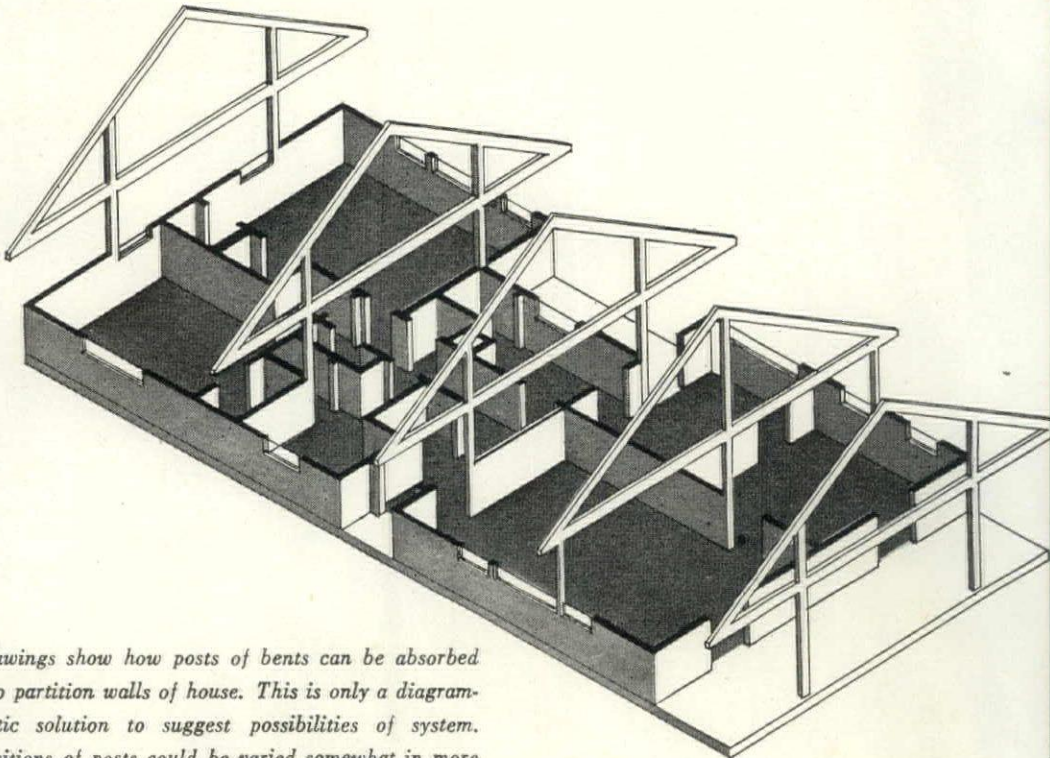
► Excavations 2' x 2' are dug to receive the posts of the bents.

► The preassembled bents are erected in these excavations, their bottom ends treated to prevent rot. The square holes are then filled with concrete.

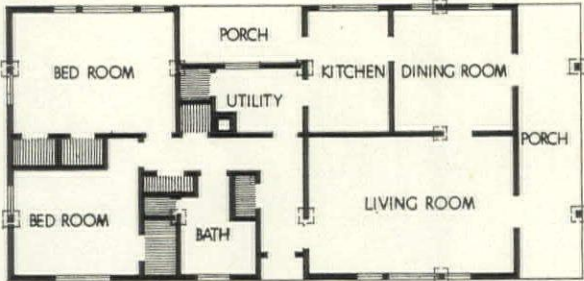
► The insulated slab is poured at once to protect soil under the floor from frost damage.

► Roof purlins and ceiling joists are secured to the bent.

► Roof sheathing and finish roofing are fastened to the purlins. The result is an umbrella-like shed, under which partitions and exterior walls can be located to suit convenience and comfort. De Blonay points out that the house imposes no other necessity for special heating, insulation, termite shields, lightning protection or anything else other than the standard safeguards and criteria of good practice.



Drawings show how posts of bents can be absorbed into partition walls of house. This is only a diagrammatic solution to suggest possibilities of system. Positions of posts could be varied somewhat in more carefully-studied plan.



CONVENTIONAL HOUSE ON GRADE
(1,250 sq. ft.)

	cu. ft.
RAFTERS: 2"x10"-16" o.c.....	120
CEILING JOISTS: 2"x10"-16" o.c....	114
EXTERIOR WALLS: 2"x4"-16" o.c..	38
INTERIOR WALLS: 2"x3"-24" o.c....	23
EXCAVATION	1220
FILL	435
CONCRETE	1149

CONVENTIONAL HOUSE

LUMBER	295 cu. ft.
EXCAVATION ..	45 cu. yds.
INSULATION ...	
FILL	16 cu. yds.
CONCRETE	42.5 cu. yds.

HOUSE WITH BENTS
(1,250 sq. ft.)

	cu. ft.
PURLINS: 2"x8"-16" o.c.....	68
CEILING JOISTS: 2"x8"-16" o.c....	48
BENTS: 4"x6"	50
EXTERIOR WALLS: 2"x3"-24" o.c..	20
INTERIOR WALLS: 2"x3"-24" o.c....	23
EXCAVATION	296
INSULATION	25
FILL	435
CONCRETE	525

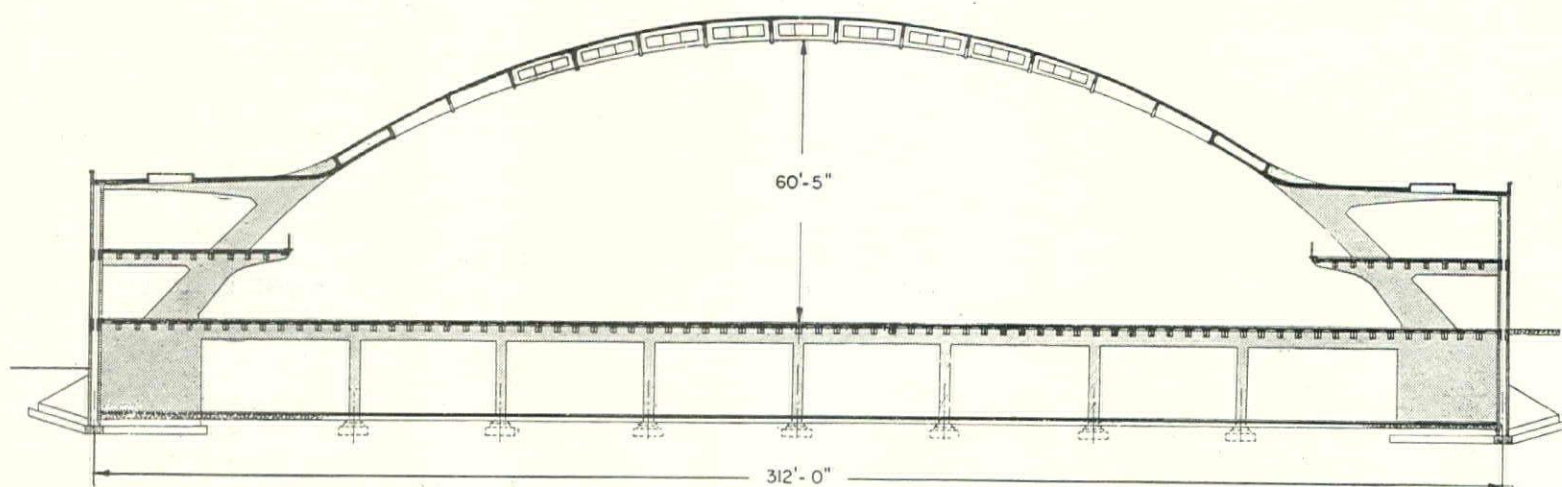
HOUSE WITH BENTS

SAVING EFFECTED

209 cu. ft.	29%
11 cu. yds.	75%
25 cu. ft.	None
16 cu. yds.	None
19.5 cu. yds.	54%

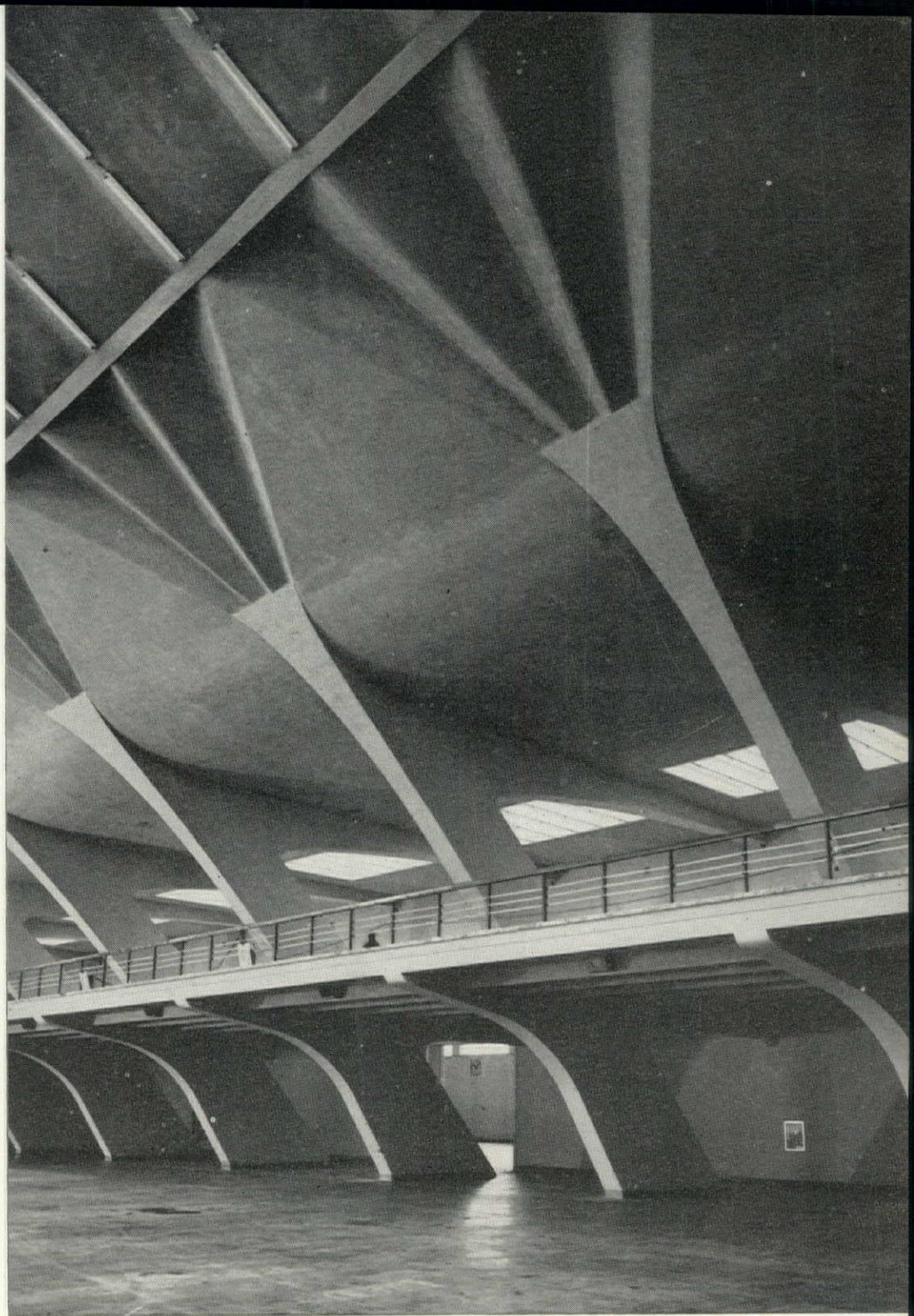


Museum of Modern Art
That's a full-size automobile, not a model



PIER LUIGI NERVI'S
EXHIBITION HALL
 IN TURIN, ITALY

The compressive splendor of concrete
 is expressed by a great engineer



Photo

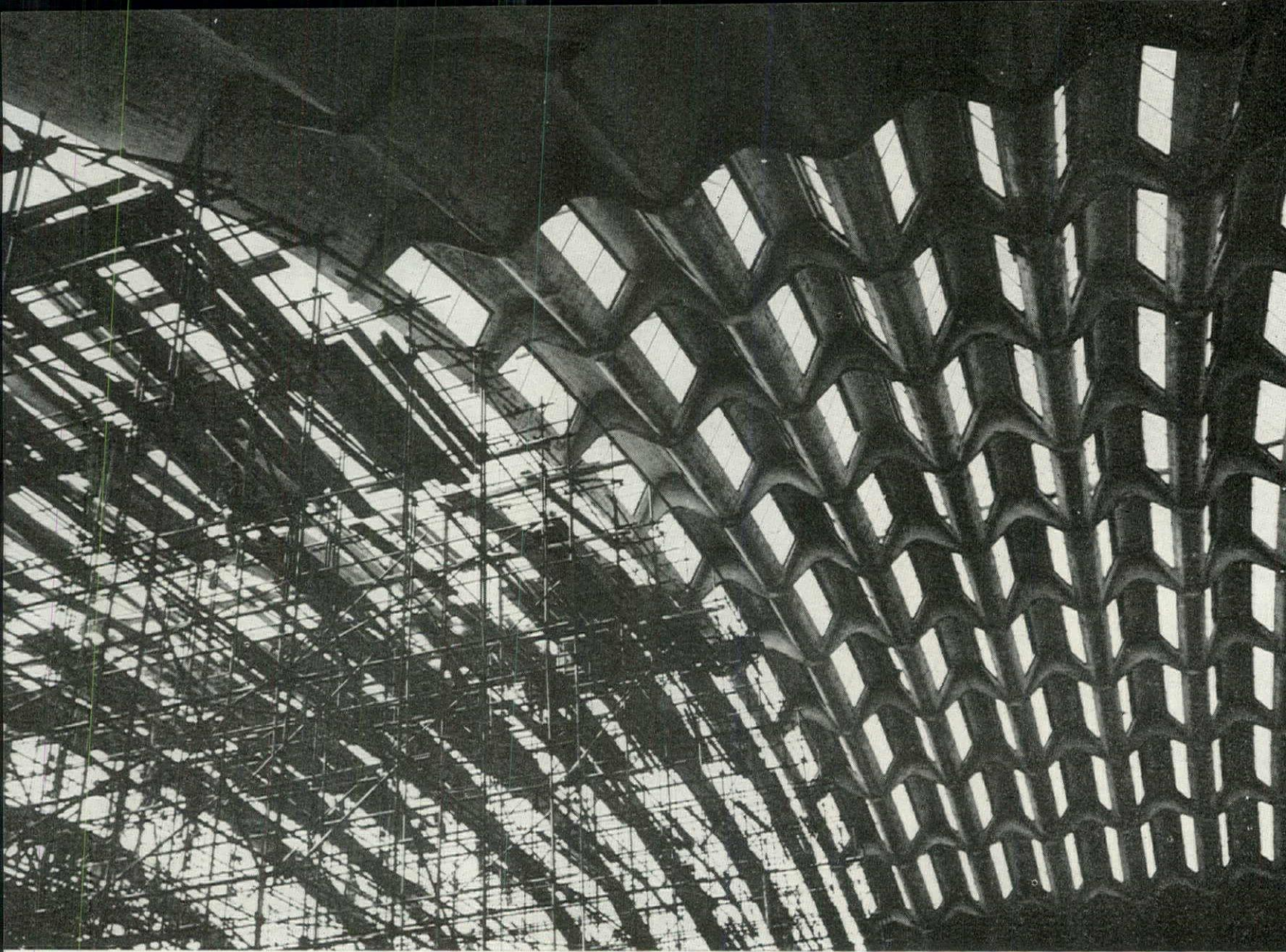


Stresses from this tremendous roof (width, 312'; length, 250'; weight, seemingly nothing) fan down into the stems which also support a gallery (above). These stems collect and transmit the thrust to the masses of concrete below grade.

The exhibition hall in Turin shows how precast concrete and poured-in-place concrete can be used together, without losing the advantages of either. It also shows that great engineering is fluent architecture.

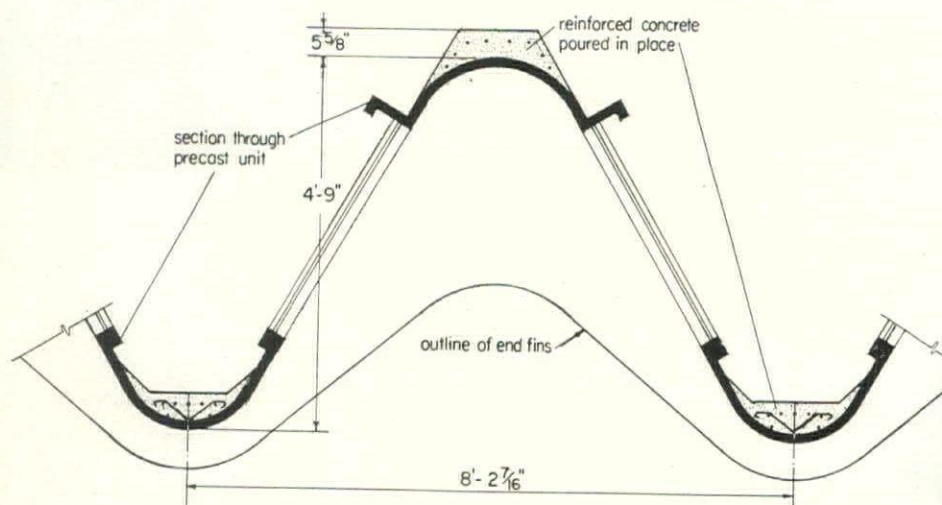
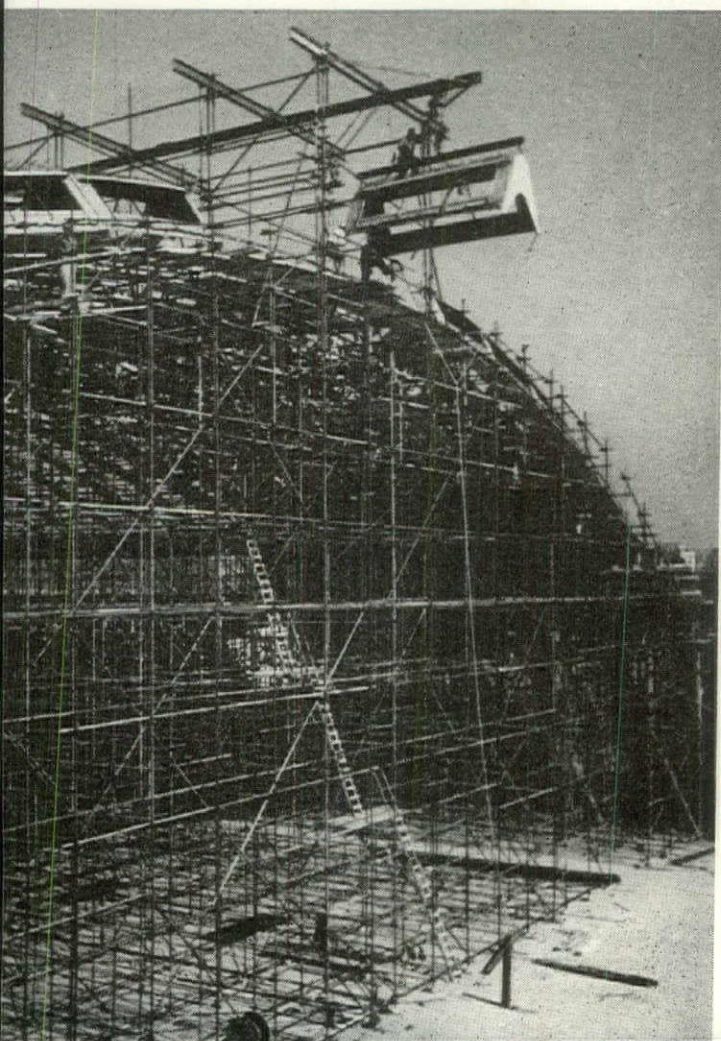
In 1947, the engineering firm, Nervi & Bartoli, was asked by the Italian government to solve the construction of a building already generally laid out, to replace a bomb-damaged exposition hall. They were asked to design a great roof which would admit light and be economical and *fast* to build. A second problem was to design a smaller rotunda at one end, 132' in diameter, facing the Po.

The engineers turned to a solution they had previously used in less imposing structures—a corrugated barrel vault. The foundations, up through the slender abutments and the fans above them, were poured in place. But the roof of the vault was made of sizable prefabricated sections, cast carefully around their reinforcing in molds on the ground, then hoisted up into place. The precision possible in this method of pouring gave a light, windowed roof which could not have been formed up in the air. And the pattern, which gives the building scale and excitement, has a structural purpose in every curve. To see this, turn the page.



Photos:

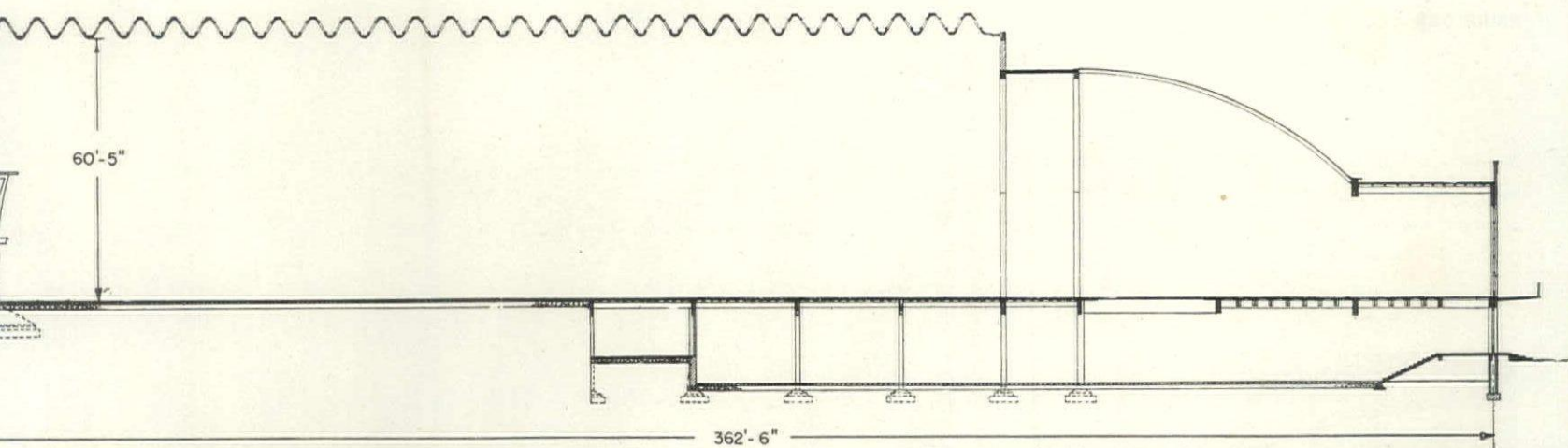
The prefabricated sections are 8' 2" wide, 5' 4" high, and each weighs 1½ tons



The prefabricated bones of the vault are shown on this page in place, in transverse section, and in transit.

Each one is made of a thin shell of concrete which is curved (and usually pierced by two big windows) and held in shape by a thicker stiffener cast integrally at each end. When the sections are mated, the stiffeners form the sensuous curves which undulate over the hall.

The expense of fabricating and handling these members was more than paid for by the great saving in steel and concrete resulting from the use of the strong corrugated shape. These shapes were molded successively



Photos: (top) Moisio; (others) Moncalvo

on forms which could be taken apart, then re-used.

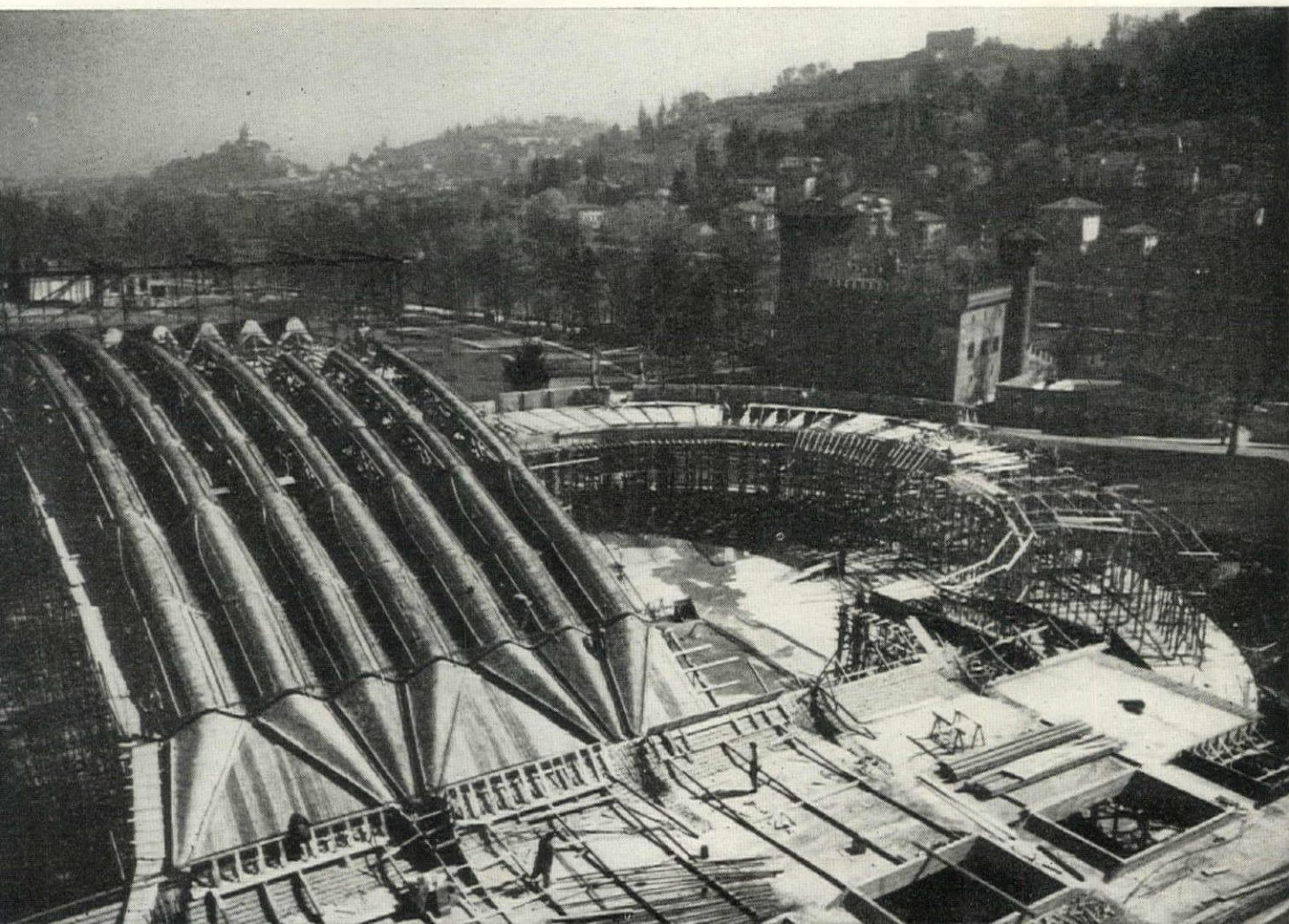
Mesh and reinforcing bars were left jutting from the edges of the shells to serve as connectors when the sections were in place on the scaffolding. They were finally bonded together and the whole structure was made monolithic by concrete poured on top the prefab sections.

Tubular metal formwork, easily demountable and re-usable, supported the barrel while it was being assembled. This was done by quarters; the scaffolding was moved after each quarter was completed—but did not have to be demounted, just lowered slightly and shifted. Work went fast—an average of 30 of the big prefab elements were placed each day.

The rotunda at the end of the barrel posed its own problem, since the supports had to be high, slender and infrequent for good circulation and vision. This turned out to be a prefab operation too.



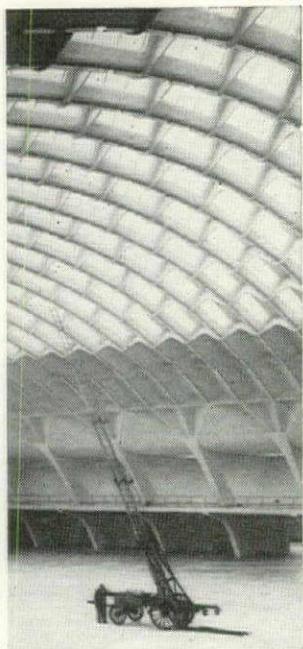
The web of strips visible in the ceiling does not support the cupola. That job is done by curved diamond shaped slabs which rest between and above the ribs (which are only separators and stiffeners).



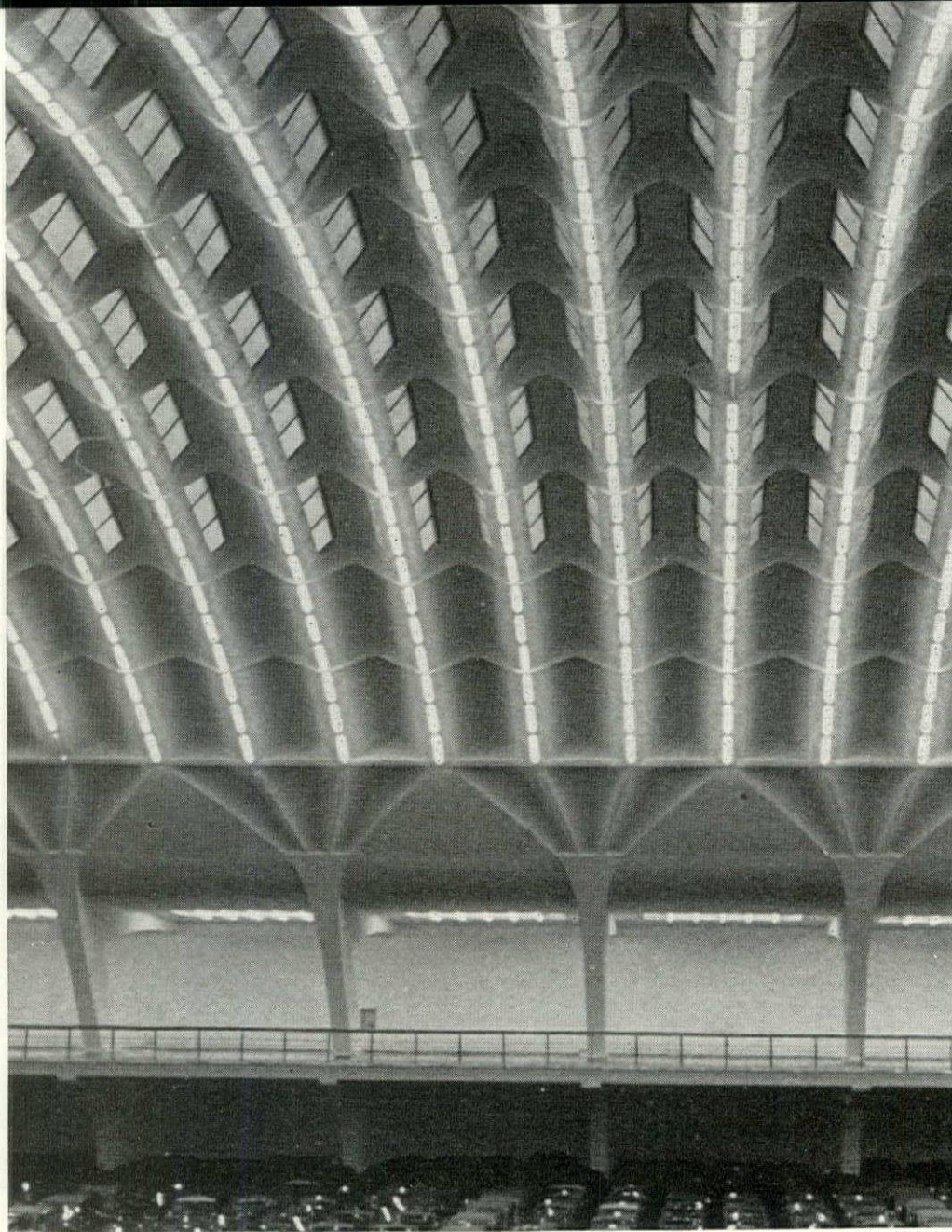
EXHIBITION HALL, TURIN

A final touch to the engineering is provided by the unusually adroit use of fluorescent tubes to light the great hall at night and on dark days. Naked, in pairs, the lights follow the transverse arches in lively structural pattern.

Moisio



Also lively is the job of climbing a ladder and replacing burned-out lamps that flicker off the morning after a big exhibition night like the one shown below.



Museum of Modern Art

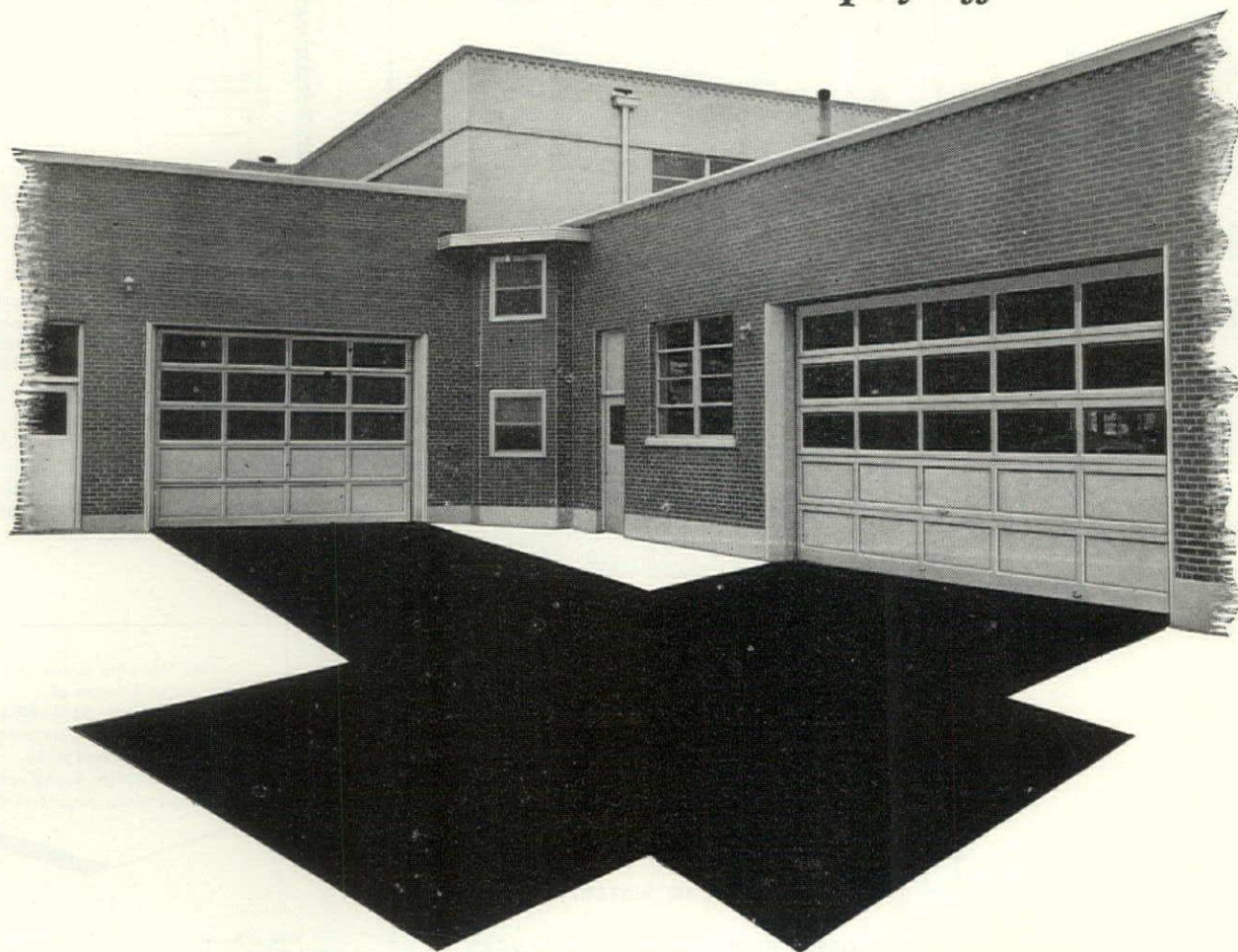
Moncalvo





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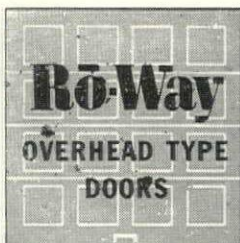
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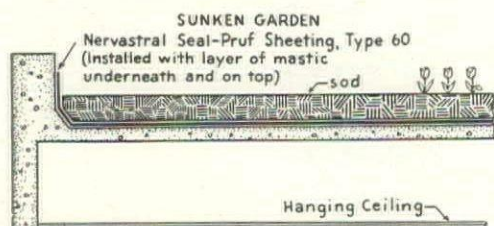
WATERPROOFING QUALITIES

Nervastral Seal-Pruf satisfies every type of waterproofing specification, because one ply will withstand a minimum of 40 pounds pressure p.s.i. against outside water.

ELASTICITY

The excellent coefficient of elasticity in sub-zero temperatures of Nervastral Seal-Pruf permits it to follow expansion and contraction of structures without breaking.

In addition, this unique sheeting is highly resistant to alkalis, acids, salt water and chemicals, and it is not affected by the laitance of Portland cement.



Nervastral Seal-Pruf waterproofs locations under sunken gardens—prevents ingress of cold air to rooms below, and condensation on ceilings.

Nervastral Seal-Pruf affords an ideal medium for:

MEMBRANE WATERPROOFING

of foundations, retaining walls, basements, subways, tunnels, etc. which must be watertight.

SPANDREL BEAM WATERPROOFING

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WATERPROOFING BOX and VALLEY GUTTERS

WATERPROOFING and SHOCKPROOFING HEAVY MACHINERY FOUNDATIONS

Nervastral Seal-Pruf not only gives complete protection from water penetration, but helps to absorb shock and cut vibration.

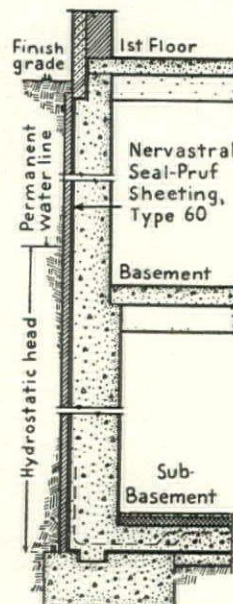
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Nervastral Seal-Pruf supplies an efficient moistureproof barrier, prevents condensation.

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as white



as snow



the whitest white cement...

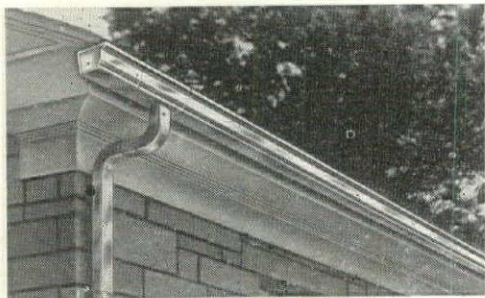
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ALUMINUM

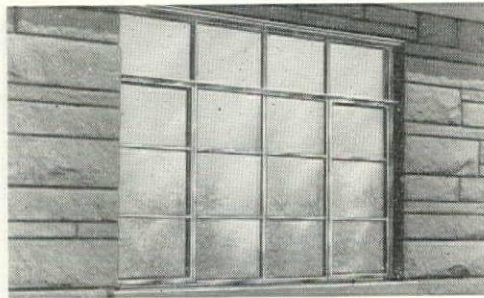
To industry, the decisive advantage of aluminum is measured in dollars and cents...low initial cost, low application cost, no painting, the practical elimination of maintenance.

To the homeowner, all this is important, too. But most appealing to his pride is the beauty of aluminum...expressing by the very modernity of its appearance the promise of trouble-free performance through the years. Gutters that add a softly gleaming trim to his house, that cannot stain the walls...windows that can never rust, warp or rot...these are *visible* improvements in aluminum. Aluminum insulation, though hidden in walls or ceiling, makes itself felt in summer and winter comfort. In some residential and many farm and commercial applications, aluminum roofing and siding is as handsome as it is efficient.

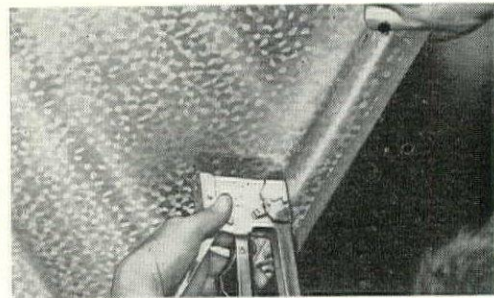
The advertisement reproduced on the facing page therefore has a message for *all* who are planning to build...and for their specifying architects. For literature please write to **Reynolds Metals Company**, Building Products Division, 2019 South Ninth St., Louisville 1, Ky.



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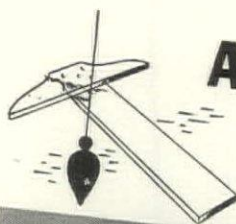


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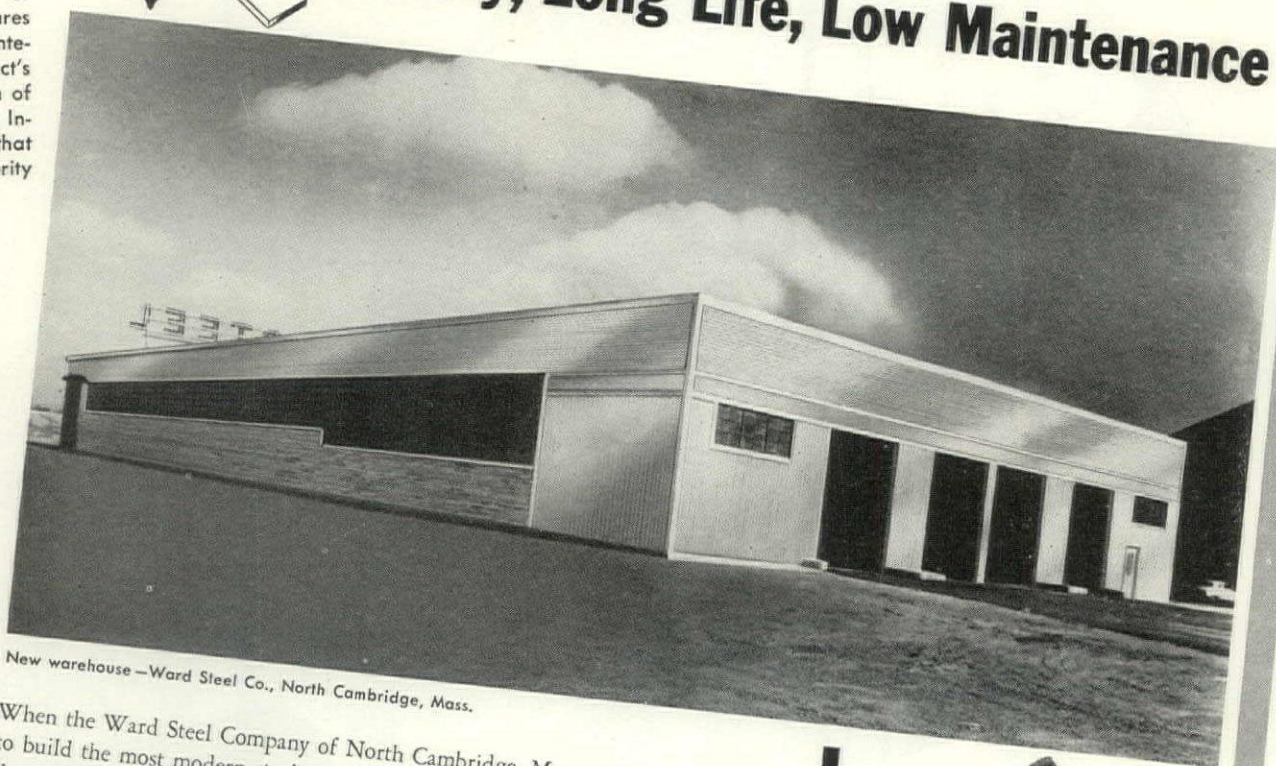


REYNOLDS

s advertisement, which ap-
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Aluminum's radiant heat reflectivity was another deciding factor. On walls or roof, it reduces inside summer temperatures and cuts winter fuel bills. An interesting detail in this building is the contrasting horizontal and vertical application, with aluminum corners and edging. For technical assistance and application details, call any Reynolds Office. Literature on request.

• Offices in principal cities...check your classified phone book for our Building Products listing, or write Reynolds Metals Company, Building Products Division, 2005 South Ninth St., Louisville 1, Ky.

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REYNOLDS *Lifetime* ALUMINUM INDUSTRIAL CORRUGATED

ALUMINUM

Aluminum is required for planes and other military uses. Production continues on products shown...also on Reynolds Lifetime Aluminum Nails, and Flashing. Total supply, however, is necessarily reduced. Keep checking your supply sources.

SPENCER

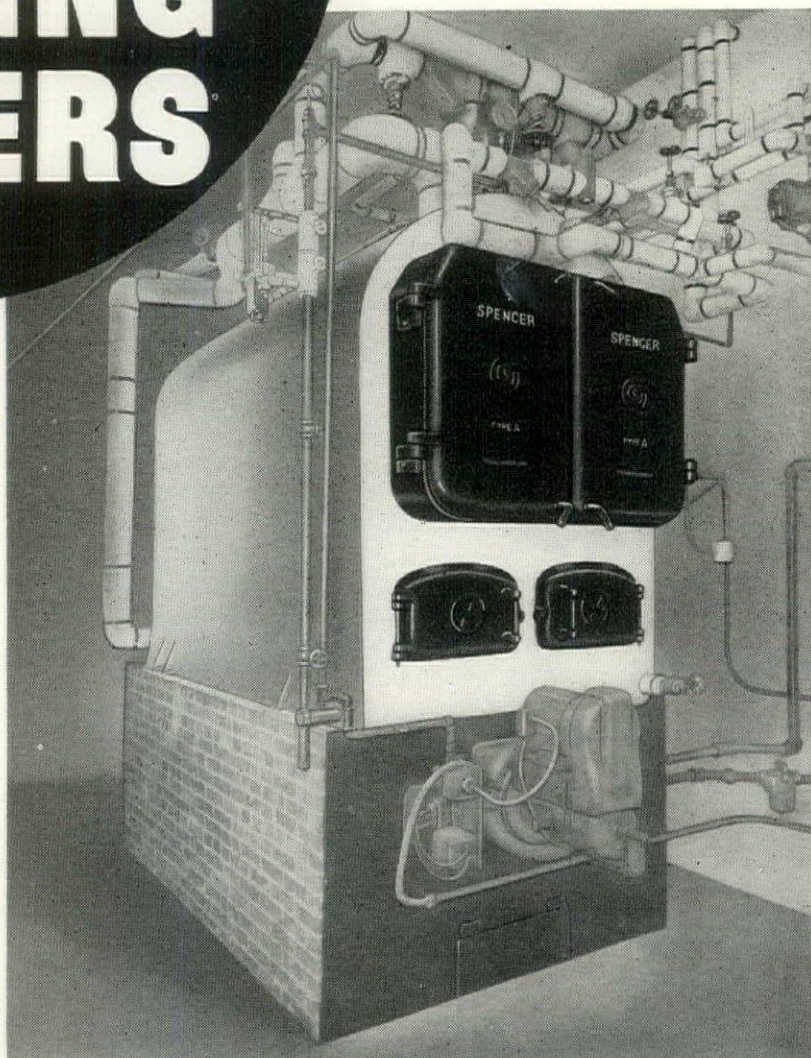
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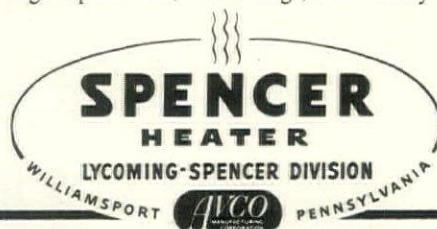
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for every building,
for every fuel.***

Both cast iron and steel . . . a selection of 76 models . . . versatile, dependable, backed by more than sixty years of leadership . . . precision-engineered and manufactured to give superior, *guaranteed* service.

Write for Spencer Catalogue today.



One of the four efficient Spencer Steel Heating Boilers which supply the fifteen buildings of the modern River Edge Apartments, River Edge, New Jersey.





For truly distinctive floors specify KENCORK

because of its...

...**appearance.** No artificial binders of any kind color the natural shadings of the pure, top grade cork. Kencork's tones are a random blend of rich nut brown providing subtle shadings that blend with any decorative scheme ...harmonize with any color plan.

...**durability.** Approximately six inches of tough cork are compressed under heat and pressure. The result is a tough, resilient tile. Many Kencork Floors in daily service for over 35 years look like new...retain all their resilient quiet, warmth and comfort underfoot.

...**installability.** Kencork is quickly, easily and economically installed over any smooth interior surface that is not exposed to sidewalk grit and grime.

...**availability.** Over 3,000 Dealers throughout the country assure prompt attention to your needs. Look under FLOORING in your classified phone directory for the Kentile Dealer nearest you.

...**low cost.** Kencork costs less than most wall-to-wall broadloom carpeting...far easier and more economical to clean...outlasts carpeting by years. And, with the new 3/16" gauge Kencork, this luxury Floor and Wall is within the reach of even the most modest building or remodeling budget.

...**service.** Nine conveniently located Kentile, Inc. offices and a nation-wide system of trained representatives plus a comprehensive selection of technical literature, are available to help solve any flooring problem.

The following literature is available on request and is designed to aid in the specifying of floors and walls for residential or commercial building or remodeling:

- | | |
|---|---|
| ☐ Architects specifications | ☐ 4-page, 4-color folder showing Kencork installations |
| ☐ Recommended and not recommended uses for Kencork | ☐ About Cork—An Architect's Handbook on Kencork |

Please write the Kentile, Inc. office nearest you.

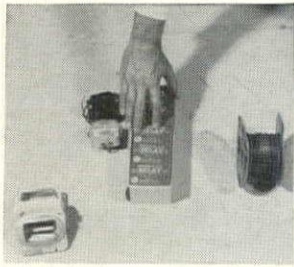
KENCORK® FLOORS WALLS

KENTILE, INC., 58 Second Avenue, Brooklyn 15, N. Y. • 350 Fifth Avenue, New York 1, N. Y. • 705 Architects Building, 17th and Sansom Streets, Philadelphia 3, Pa. • 1211 NBC Building, Cleveland 14, Ohio • 225 Moore Street, S.E., Atlanta 2, Ga. • 2020 Walnut Street, Kansas City 8, Mo. • 1440 11th Street, Denver 4, Colo. • 4532 South Kolin Avenue, Chicago 32, Ill. • 1113 Vine Street, Houston 1, Texas • 4501 Santa Fe Avenue, Los Angeles 58, Calif. • 95 Market Street, Oakland 4, Calif. • 452 Statler Building, Boston 16, Mass.

PRODUCT NEWS

REPORT ON LOW VOLTAGE SWITCHING SYSTEMS. They save money, critical materials

Two manufacturers who have been investigating the money and material economics of low voltage switching systems had news for builders this month. Touch Plate Manufacturing Corp., a California producer, found its wiring method could save 14½ lbs. of steel, 2½ lbs. of copper in a typical 724 sq. ft. house. General Electric Corp. announced that in a large office building—



By using low voltage remote control switching equipment pictured at left, the copper and steel items at right were saved in a house having a floor area of 724 sq. ft. (Note size of hand photographs for comparison.)



New
FOR
You

Problems of Interior Design
solved with "Automatic 400" CEILING SPRINKLERS

- PROBLEM •** The maintenance of utmost fire safety without sacrificing modernity of interior design.
- SOLUTION •** "Automatic 400" Ceiling Sprinklers—they blend perfectly with the appointments of the most tastefully arranged interior.
- RESULT •** Beauty where you want it . . . protection when you need it.

Full information, including installation photographs in color, is contained in our NEW BULLETIN 67. Write for your copy today!

"Automatic" Sprinkler
FIRST IN FIRE PROTECTION



"AUTOMATIC" SPRINKLER CORP. OF AMERICA—Dept. M, P. O. Box 360, Youngstown 1, Ohio
Please send me without obligation, your Bulletin 67 on the "Automatic 400" CEILING SPRINKLER

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Company _____
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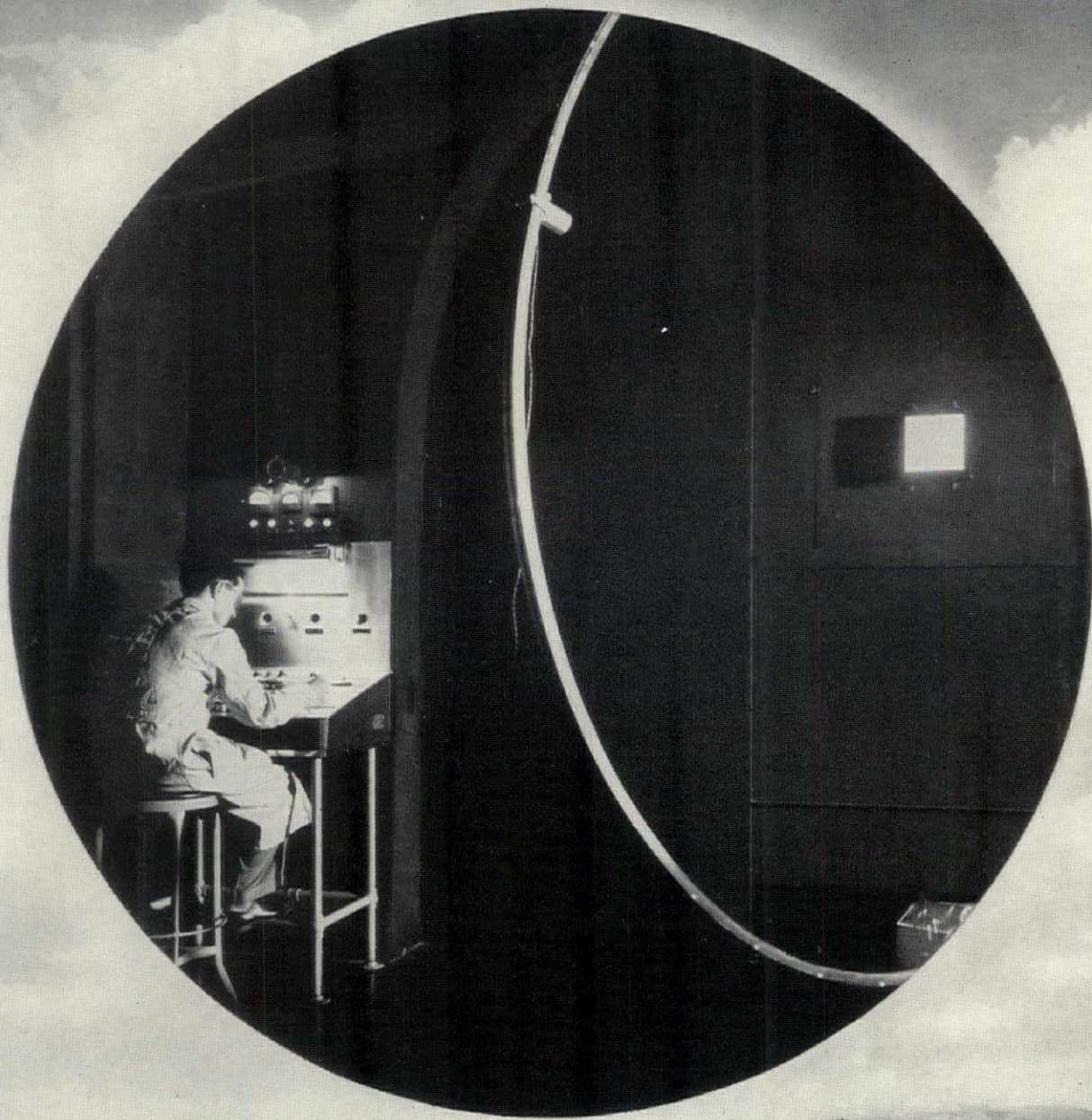
the first big commercial application of low voltage switching—it had saved the building owners \$42,000, and had helped the materials conservation program by using 5 tons less copper than a conventional wiring system.

Although this kind of relay-impulse wiring made its formal debut for complete residential circuits about three years ago (see *Low Voltage Switching Systems*, THE MAGAZINE OF BUILDING, Dec. '48), it has been used in principle ever since. The first length of 24 V. No. 18 wire was rigged to a relay coil to ring a doorbell, and is included in the *National Electric Code*. Today, its metal saving feature takes precedence perhaps over its advantages of convenience of adequate outlets and safety from electric shock.

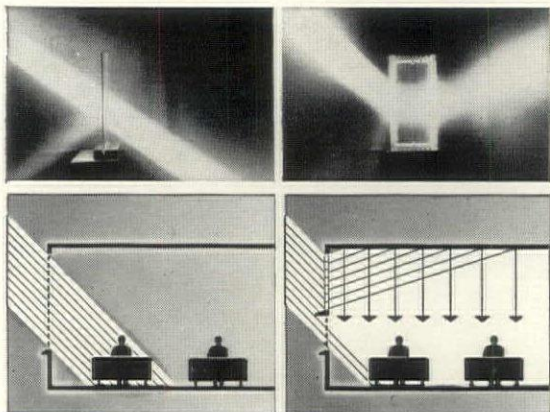
Aiming its patriotic sales guns at the large construction market of low cost homes, Touch Plate (see Product News, THE MAGAZINE OF BUILDING, Apr. '50) conducted tests in a West Coast defense housing project to compare installations of conventional wiring with a modified version of its own low voltage remote control system. For maximum material conservation, the manufacturer placed the relays in the phenolic box fixtures rather than using the gang box method with a master control panel (ordinarily the luxurious pivot point of low voltage systems). Itemized below is the net material saving achieved in the experimental installations by the Touch Plate (phenolic box) system over the standard cable circuit wiring:

Conventional wiring	Net saving of	
	Touch Plate	material
Copper wire sizes		
14/2	223'	109'
14/3	10'	0'
12/2	19'	0'
Steel		
Outlet boxes	11	0
Switch box, single	7	0
Switch box, 2 gang	2	0
Connectors	88	44
Staples	166	83
Hangers	11	0
Total Net Saving		
Conventional materials ...	19 lb. 8 oz.	4 lb. 1 oz.
Touch plate	5 lb. 1½ oz.	1 lb. 10 oz.
Total net saving per		
724 sq. ft. house	14 lb. 6½ oz.	2 lb. 7 oz.

(Continued on page 206)



Operator can set both artificial sun and traveling photocell to any angle or altitude and read resulting light value. All controls work automatically. Readings are taken at high speed and can be recorded electrically.



Direct sun causes uncomfortable brightness near windows, extreme contrast in other parts of room. Insulux Fenestration directs and spreads daylight to ceiling, keeps brightness at comfortable levels.

HE MAKES "DAYLIGHT" TO ORDER FOR Daylight Engineering STUDY

What happens in a building when the "sun" shines on a light-directing block is measured by the photocell traveling on this hoop. On the other side of the glass block shown in the picture an artificial sun can be set to simulate daylight conditions in any season in any geographical location at any time of the day.

These tests are part of the research-in-daylight program at the Daylighting Laboratory, Engineering Research Institute, University of Michigan, where special projects are set up to study methods for obtaining best quality daylight . . . how to make it do a better lighting job.

One significant better daylighting result is the development of Insulux Light Directing Glass Block No. 363. This new block controls light so efficiently that a building virtually "turns with the sun." Entire glass areas transmit free daylight from early morning to late afternoon.

A Daylight Engineer will be glad to show you the benefits the new Insulux Glass Block® can bring to your structures. Just write: Daylight Engineering Laboratory, Dept. MB-7, Box 1035, Toledo 1, Ohio . . . Insulux Division, American Structural Products Co., Subsidiary of Owens-Illinois Glass Co.



INSULUX FENESTRATION SYSTEMS

— by the leaders of Daylight Engineering

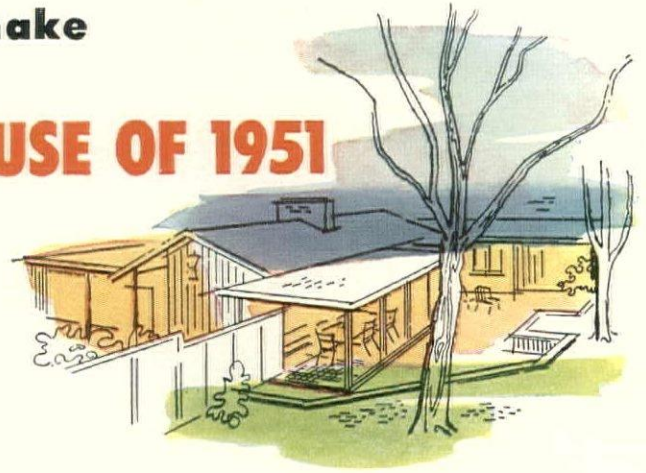
how **MOSAIC** tile helped make

THE PACESETTER HOUSE OF 1951

a spectacular success

The editors of "House Beautiful" have pioneered some unusually practical uses for Mosaic Tile in their *Pacesetter House for 1951*.

Architect—Julius Gregory
Builder—Robert Chuckerow Construction Company
Tile Contractor—R. L. Leonardi, Inc.



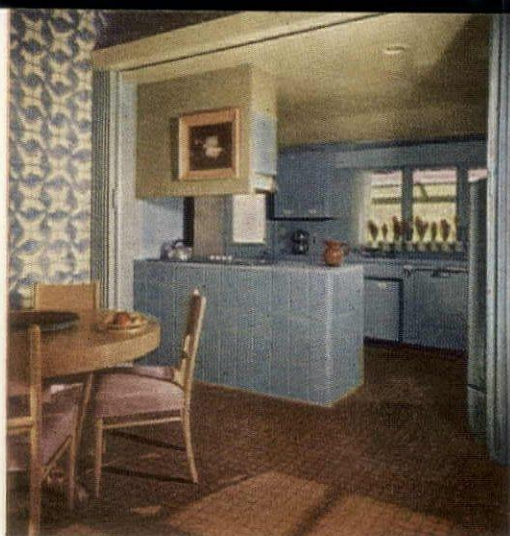
The "House Beautiful" Pacesetter House of 1951, at Dobbs Ferry, New York.





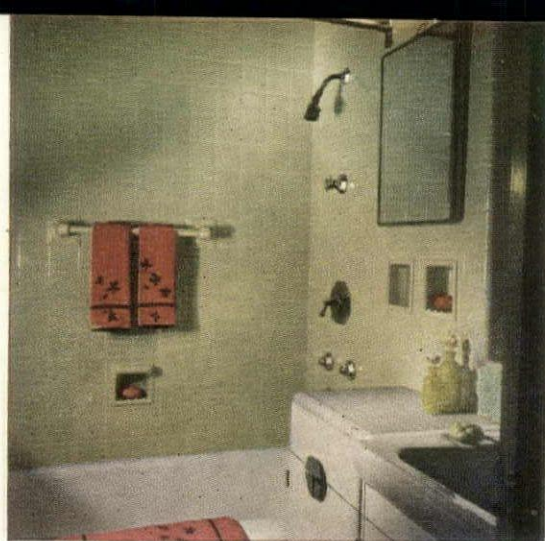
IN THE OUTDOOR living room the rich, earthy, red of the Mosaic Granitex Tile floor blends perfectly with its garden setting. Continuous traffic from the garden areas across this floor will never mar its surface or texture. Neither sun nor weather will change its permanent color. This floor may be hosed daily, for Mosaic Tile is impervious to moisture and stains.

Floor—Granitex Mosaic, Pattern No. 1779-A3.



BLUE FAIENCE TILE is an ever-beautiful finish on the sides of this combination serving bar and cooking peninsula. The hand-crafted appearance of Faience aids in blending the casual character of the living-dining area with the trim efficiency of this ultra-modern kitchen. Other types of Mosaic Tile are used on work counters, splash boards and walls for the utmost in easy cleaning and lasting beauty.

Peninsula—6" x 6" Faience color No. 2102.



MOSAIC TILE in this bathroom will turn in top performance for the life of the house because water and moisture will never effect the tile nor the manner in which it is set.

The vanity top and the floor are unglazed ceramics, an especially hard and durable type of Mosaic Tile, with permanent color throughout its wear-proof body.

Harmonitone wall tile color—No. 161.
Vanity top and floor color—No. 201 Velvetex.

From these pictures, you can visualize how Mosaic Tile, an extremely practical material—and used in every room in the *Pacesetter House*—may be used on both vertical and horizontal surfaces.

For example, Mosaic Faience Tile, which makes the fireplace wall so outstanding, offers opportunities of great interest if planned for elevator lobbies and for other large surfaces where everlasting beauty, utility and rock-bottom maintenance are required. For such uses, the cost of Mosaic Faience Tile will be no more than that of equally sturdy materials. In fact, it will probably be less.

There are other patterns you will want to see. Or, taking a clue from this job and from such other jobs as the ceramic Mosaic wall in Harvard University's recently completed graduate school, you may wish to develop your own design for the job you plan for Mosaic Tile.

In either case, Mosaic's Design Department is at your service. There is no obligation.

Center of attraction in *Pacesetter House* is this truly magnificent and really distinguished floor-to-ceiling fireplace wall, which serves also as a decorative partition between living and dining areas. Made of Mosaic Faience Tile, in a special design, its colors are there to stay; can't fade or bleach. Floor of living and dining area is Granitex Mosaic, which is also used on the floor of the outdoor living room.

—fireplace wall Mosaic Faience Tile, pattern No. 6056.

—floor Granitex Mosaic, pattern No. 1779-A3.

ON THE FLOOR at the windows in the master bedroom, Mosaic Faience Tile, in a delightful green, is used as an "indoor greenhouse." Here plants live in ideal atmosphere, on a floor that will never stain and which is so easy to clean.

Mosaic Faience Tile—Color No. 2164.

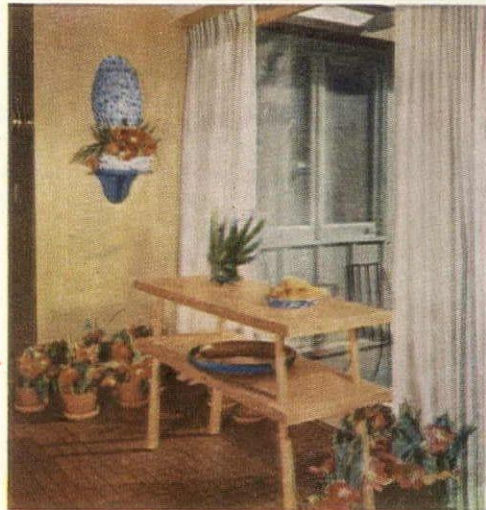
NO MATERIAL is more practical for window sills and window shelves. Here Mosaic Granitex are used as a broad under-window shelf—fine for plants, books, knick-knacks—an ideal combination of durability and decorative texture.

Shelf is Granitex Mosaic, color No. 1228.



THE DINING ROOM FLOOR is a continuation of the living room floor, a feature that contributes to the feeling of spaciousness which is apparent throughout the house.

Floor—Granitex Mosaic, Pattern No. 1779-A3.



THE PACESETTER HOUSE is open to the public until July 1. We'd like you to see it if you are in the East. It's at Dobbs Ferry, just up the Hudson River from New York.

Mosaic Tile offers a great deal to modern, contemporary design. No other material is more functional. No other material provides so much in color, long life or freedom from maintenance. The Mosaic Tile Company offers freely of its assistance to those architects, builders and owners who want to investigate our products for their jobs. Ask any Mosaic representative or write Dept. 29-4, The Mosaic Tile Company, Zanesville, Ohio.

THE MOSAIC TILE COMPANY

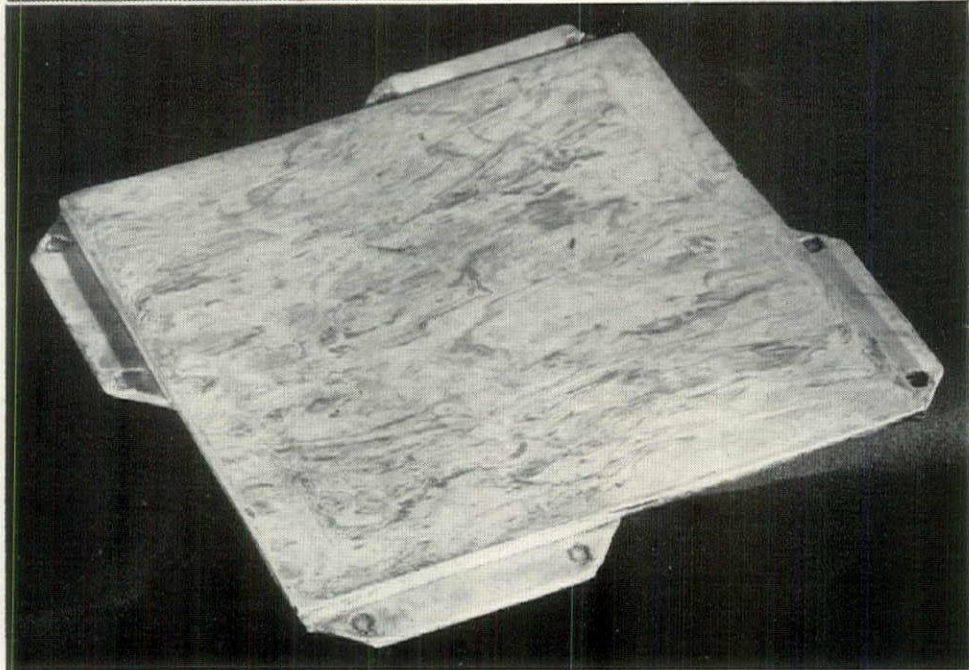
General Offices—Zanesville, Ohio

Member Tile Council of America

MOSAIC

SHOWROOMS, OFFICES AND WAREHOUSES IN PRINCIPAL CITIES ACROSS THE NATION.

After 30 years of
POUNDING WEAR
what other tile could
look this good?



Here is one of the first pieces of Wright Rubber Tile ever made. It *looks* like it might have been in use only a few months, yet it has seen hard wear for *thirty years!*

The first 15 years, this tile was used in a store. When the store was rebuilt, the tile was relaid in a residential kitchen. It has been there for 15 years *and is still in use.*

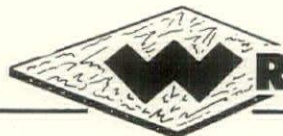
During these thirty years, this tile has lost less than one-tenth *its original thickness.* It appears to be good for another couple of hundred years.

Today's Wright Rubber Tile is thirty years better than the tile shown here. What greater proof could you want that Wright Rubber Tile is your best buy.

WRIGHT MANUFACTURING CO.
5204 Post Oak Road
Houston 5, Texas

**FREE SAMPLE KIT
FOR ARCHITECTS**

Write today, on your letter-head, for a complete set of 4x4 samples of Wrightex Rubber Tile in 21 beautiful colors.



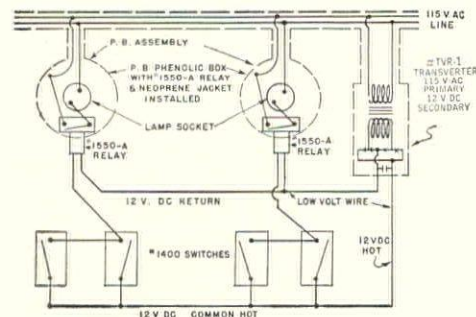
WRIGHT RUBBER TILE

FLOORS OF DISTINCTION

- ♦ WRIGHTEX—Soft Rubber Tile
- ♦ WRIGHTFLOR—Hard Surface Rubber Tile
- ♦ WRIGHT-ON-TOP Compression Cove Base

2867

PRODUCT NEWS



Delivered assembled, the phenolic box mechanism is similar to the wiring for a door bell. Instead of ringing a buzzer, it turns lights on or off.

Installation of the low voltage wiring is simple. The small switch plates can be mounted directly with wood screws to wall board, and in plaster construction, plaster rings may be used instead of steel outlet boxes. All fixtures and outlets are wired "hot", but the magnetic relays do the actual switching in the plastic boxes at the fixture. The coil protrudes through the large knock-out hole in the box, separating the 12 V. and 115 V. circuits as required by the National Electric Code. Cost of the Touch Plate system with low voltage switching is higher, however, than standard wiring: an average installation in a small home runs about \$192.50; the conventional, about \$155.

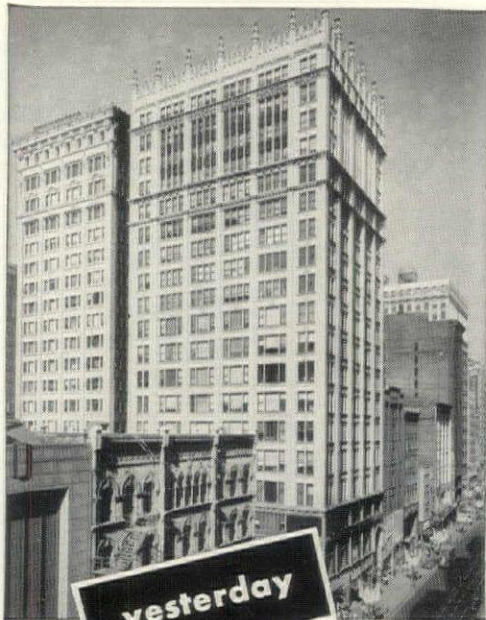
Using the Adequate Wiring Bureau's 1949 Average Certified House as a basis for comparison, General Electric calculates that with its remote control low voltage system, a 42% saving in copper and an 86% saving in steel would result in the wiring from wall switches to the lighting fixtures and outlets in the average home. The company also points out an additional feature in these jittery days: remote control would permit the homeowner to obtain an immediate blackout from various locations. A "lockout" relay could be installed to give absolute assurance against the lights being turned on during the blackout period. But G-E has its sights directed far beyond residential buildings. This spring at a gala Construction Materials Fair, complete with transoceanic cable and popcorn, the Bridgeport, Conn. plant showed the press a new application of remote control wiring: lighting in commercial buildings. This new use makes practical for offices the use of 460/265 V., 3-phase, 4-wire distribution, a power level previously restricted to industrial applications because a safe economical switching system rated at 265 V. had not been available. In the remote control system demonstrated at the fair, the load current is handled by small solenoid relays which are approved by Underwriters' Laboratories for the high circuit voltage. The relays are operated from a 24 V. supply, and the wiring for the switches is insulated from the higher voltage power system. According to G-E, in addition to the safety offered by this switching method, savings of 24% of the cost of a conventional electrical system and 33% of the weight of copper were achieved in a

(Continued on page 208)

DUNHAM

vari-vac differential heating

Cuts fuel costs up to 40%



yesterday

*North American Bldg.,
Chicago, Illinois
Agent: Central Realty & Investment Co.
Architect: Holabird & Root & Burgee*



to-day

*Bastian-Blessing Company, Chicago, Illinois
Architect: Fox & Fox; Heating Contractor: F. W. Lamb Co.*

provides precision temperature control for every type—every size—building

No matter how frequently or rapidly outside weather conditions change, Dunham Vari-Vac* Differential Heating instantly compensates for these variations—and delivers the precise amount of steam needed to assure maximum comfort.

Fuel Savings Up 40% are not at all uncommon on a Vari-Vac heated building. That's because this precision temperature control system utilizes a "continuous" flow of sub-atmospheric steam at pressures and temperatures that vary with outside weather and inside temperatures. Since heat supply and demand are *always* in perfect balance, there is never any need to overheat and waste valuable fuel dollars.

Choice of Systems Best Suited to Your Needs. Seven different systems are available, depending on the degree of control desired. And whether you specify a manually operated Basic Job or a fully automatic Supreme Job, your client is guaranteed maximum fuel economy and comfort... regardless of the size, type, age or location of his building.

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Send for Free Booklet 2101-5. Tells all you'll need know about this amazing system—how it operates, how it may be fitted exactly to your needs. Write for your copy.



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- **AVAILABLE**—unaffected by curtailments or shortages
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- **BEAUTIFUL**—lend themselves to any interior decor
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- **DRAFTLESS**—ventilation regulated
- **PROVEN**—over a million installations in the last 20 years
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**Specify *SUN-SASH*
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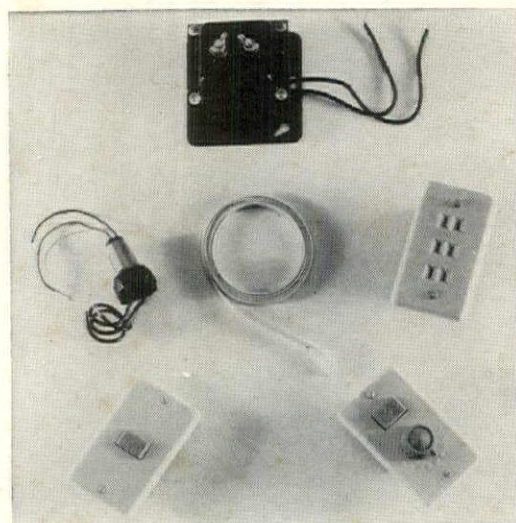
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Address _____

City _____ Zone _____ State _____

Occupation _____

PRODUCT NEWS



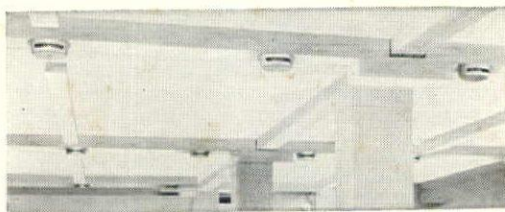
The typical components of a remote control wiring system utilized in a large office building.

Delaware office building having a floor area of 180,000 sq. ft. In hard cash the saving amounted to \$42,000; in critical copper the saving was 5 tons. For more modest office buildings of about 60,000 sq. ft., G-E states that the saving would be about 15% in cost and 30% in the weight of copper when the 460/265 V. remote control system is utilized.

Manufacturers: Touch Plate Mfg. Corp., 1766 Seabright Ave., Long Beach 13, Calif. General Electric, Construction Materials Dept., Bridgeport 2, Conn.

HIGH PRESSURE DIFFUSER distributes air without drafts to room occupants

Having proved the merits of its outlet for high velocity air distribution systems in the Kaufman store (see *New High Velocity Air Conditioning System*, Sept. '50, *THE MAGAZINE OF BUILDING*) W. B. Conner Corp. is now making the Kno Draft high pressure diffuser generally available. Designed particularly for use in department stores, the HPC II is applicable to any large open area

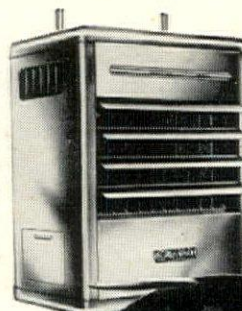


where there is a medium noise level, and is especially practical where small ductwork can be left exposed. Several design features permit greater temperature differentials between supply and room air. A smaller volume of sharply cooled air therefore can provide the same cooling effect as a larger supply of air at higher temperature. In operation, the air enters the unit through a circular perforated damper cylinder which has an adjustable felt covered piston. A central damper

(Continued on page 210)

REZNOR

*World's
largest
selling
gas
unit
heater*



HUNG FROM
CEILING OR
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Summertime is LOW-COST TIME

Summertime is the most convenient season for you to install Reznor gas unit heaters. And, every heating man will tell you that he can install them now for less cost than in winter. Reznor units are actually "automatic" heating machines that meet commercial, industrial or residential requirements everywhere... installed singly or in multiples. Write today. There's a Reznor dealer near you.

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One job . . . one cost . . . with Roddiscraft quality plywood

One job — one cost — no need for redecorating — little maintenance — a permanent job that will pay off in the years ahead. A Roddiscraft paneling job will last as long as the building itself. Shortages of paint, paper and labor don't worry the owner of a building with Roddiscraft paneled walls. Maintenance is negligible — finish is permanent. Add to this the dividends of matched veneers in a wide variety of native and foreign hardwoods, and you have beauty, utility and long-range economy.

Choose your requirements from warehouse stocks of Birch, Maple, Walnut, Oak, Mahogany, Prima Vera, Avodire, Blonde Limba, Chen Chen, Gum, Knotty Pine and Douglas Fir. Or ask your Roddiscraft representative to show you the Roddiscraft Veneer Sample Book containing fifty-one actual veneer samples.

For a characteristics and cost comparison of the veneers most widely used, see Sweet's Architectural File, Page $\frac{5b}{Ro}$ or write for the folder, "Roddiscraft Hardwood Plywoods for the Quality Trade."

Roddiscraft

RODDIS PLYWOOD CORPORATION

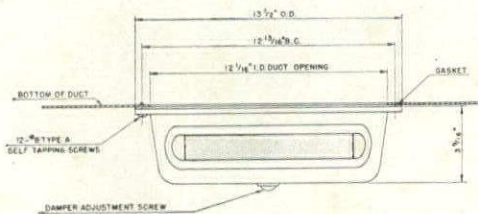
MARSHFIELD, WISCONSIN

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PRODUCT NEWS

screw controls the area of perforated screen through which the air is passed, thus permitting the diffuser to eject any amount of air between 90 to 180 cfm, or to be shut off completely. After passing through the damper, the air is directed by a perforated baffle to a jet type of exit which extends partially around one side of the unit, and is expelled just below ceiling level where its velocity causes it to mix with room air before reaching the zone of occupancy. The baffle prevents the high velocity primary air (25° colder than



Simple in design, the high-pressure air diffuser has only one moving part—its adjustable felt-covered damper.



for every type of building— your specification of **FOLLANSBEE TERNE METAL ROOFING**

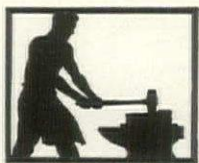
schools and public buildings

assures your clients complete satisfaction because Follansbee Terne Metal is *permanent, weathertight, fireproof, colorful, attractive and windproof.*

industrial plants

it is architecturally styled to suit any type of building—for new roof construction or the renovation of an old one. See A.I.A.-12-C-1 for full details about the roofing with a future.

residences



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COLD ROLLED STRIP POLISHED BLUE SHEETS
SEAMLESS TERNE ROLL ROOFING

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Plants—Follansbee, W. Va.

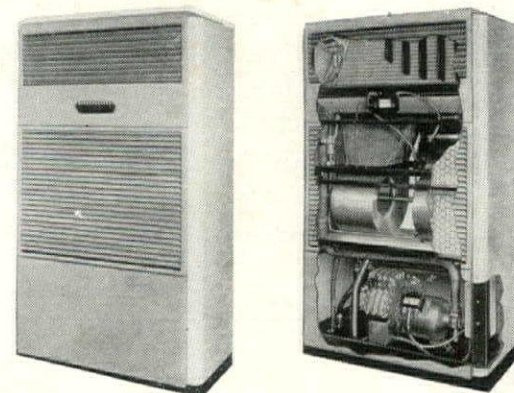
Follansbee Metal Warehouses
Pittsburgh, Pa., Rochester, N.Y., and Fairfield, Conn.

room ambient air) from entering the room directly and causing drafts. A layer of glass fiber insulation on the bottom of the unit deadens the air movement noise, cutting it to about 50 decibels. The type HPC II units sell for about \$20 each. Other Kno Draft high velocity models said to have sound levels as low as 38 decibels (suitable for hotel bedrooms) are being tested in experimental installations.

Manufacturer: W. B. Connor Engineering Corp., Shelter Rock Lane, Danbury, Conn.

PACKAGED AIR CONDITIONER has eight ton cooling capacity

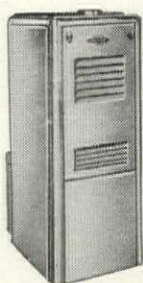
A 7½ h.p. self-contained air conditioner capable of handling a 96,000 Btu cooling load has been added to the Westinghouse SU Unitaire line. Like the 2, 3 and 5-ton models, the 8-ton SU-81 is designed to provide comfort in offices, stores, and homes during the summer by cooling, dehumidifying, circulating, and filtering air. The conditioner also can be adapted to year round service by adding either steam or hot water heating coils and an outside duct connection for ventilation air supply. Factory assembled, the Unitaire contains a hermetically sealed freon-12 compressor, water cooled condenser, direct expansion coil, and centrifugal fan. Connections for water, drainage, and electricity are the only installation requirements. A welded frame supports all the components of the conditioner, and



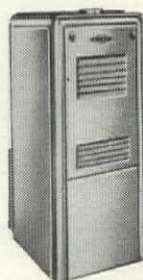
the cabinet is constructed of steel panels finished in semigloss gray enamel. The SU-81 stands 85" high, covering a floor area 51 x 25½". It weighs 1,380 lbs.

Manufacturer: Westinghouse Electric Corp., Readville St., Boston 36, Mass.

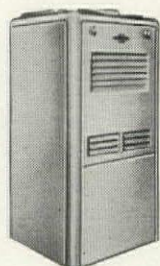
(Continued on page 214)



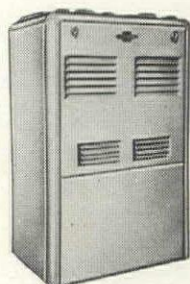
Model GA-63: 62,500 Btu input with Natural, Manufactured, Mixed or LP-Air Gas. 60,000 Btu input with LP Gas. Height 55", width 22", depth 26".



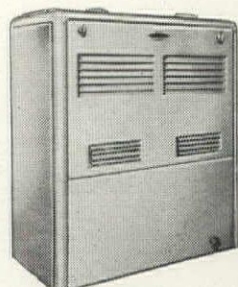
Model GA-90: 90,000 Btu input with all gases. Height 55", width 22", depth 26".



Model GA-120: 120,000 Btu input with all gases. Height 55", width 28½", depth 26".

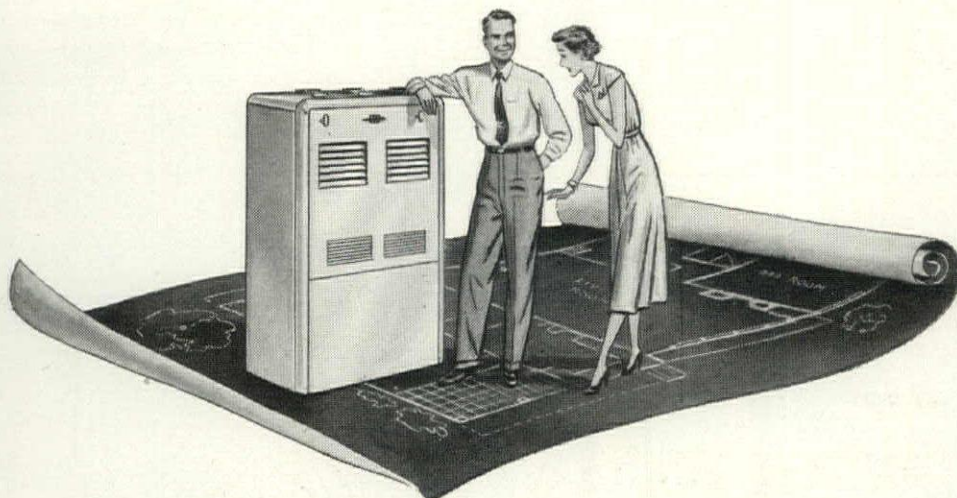


Model GA-150: 150,000 Btu input with all gases. Height 55", width 35", depth 26".



Model GA-210: 210,000 Btu input with all gases. Height 55", width 48", depth 26".

Top off those home plans with a DELCO-HEAT GAS CONDITIONAIR



Modern gas heat is a big selling addition to any home "package." It will make every home you build more attractive to home buyers. So offer them the best—offer them a home equipped with all the practical advantages of a Delco-Heat Gas Conditionair.

Five new models are offered, each featuring a really important technical first—the exclusive Multi-Rad heat exchanger, with continuous-welded construction. In the Multi-Rad, each of the multiple sections completely encloses the flame from a separate burner head. This gives a maximum radiation area to the Conditionair's heat exchange system, so that it can extract the greatest amount of heat from the fuel.

Specially engineered ribbon-type twin burners are used. These cast-iron burners have stainless steel ribbons that are easily removable for routine cleaning and servicing. Design assures more even flame, more complete combustion, positive ignition and quiet operation.

Delco-Heat Gas Conditionairs are AGA-approved for all types of gas and for high altitude installations.

With their outstanding Multi-Rad heat exchangers, ribbon-type twin burners, and blower-filter units powered by Delco Appliance's famous *Rigidframe* motor—Delco-Heat Conditionairs will mean a more satisfied owner for every home you build.

Delco Appliance Division manufactures a complete line of automatic home heating products—oil and gas conversion burners, oil and gas Conditionairs, oil-fired boilers and coal stokers—as well as the complete line of Delco Electric Water Systems for domestic running water supply beyond city water mains.

MAIL COUPON TODAY!

**GENERAL MOTORS
DELCO-HEAT**

DELCO APPLIANCE DIVISION, Dept. MB-27
GENERAL MOTORS CORPORATION
Rochester 1, New York

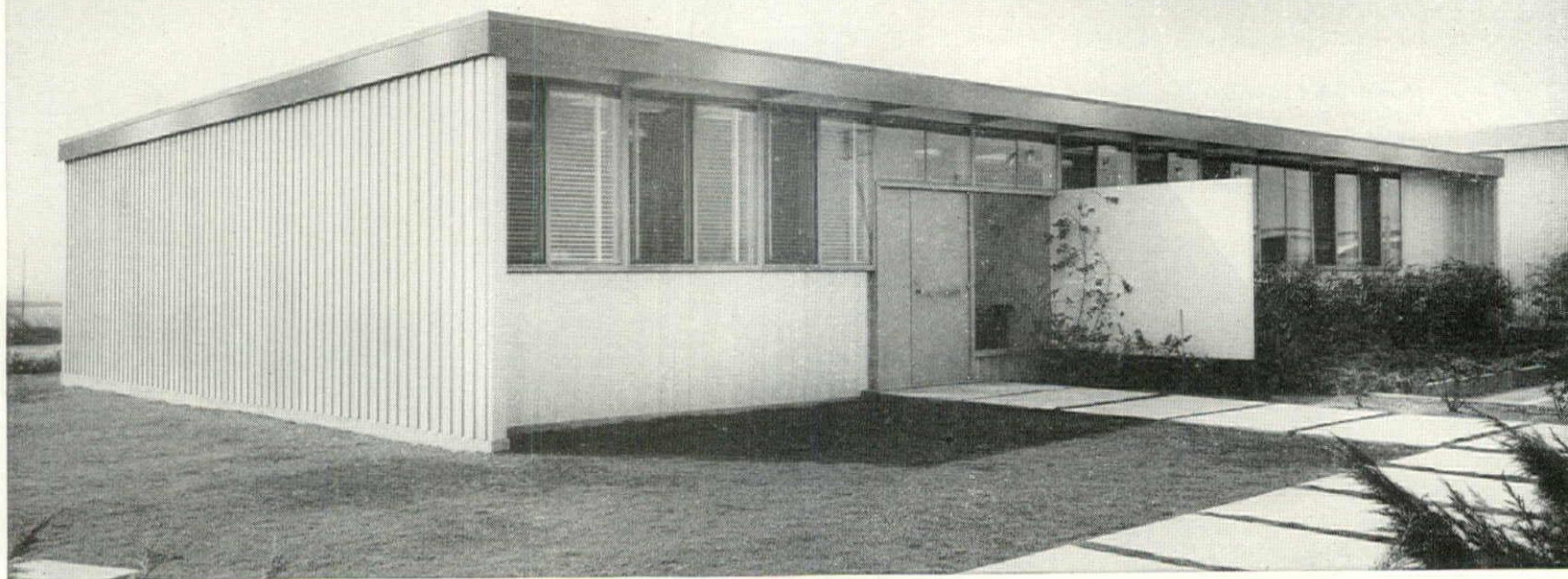
Please send me further information about Delco-Heat Products:

Name

Address

City Zone State

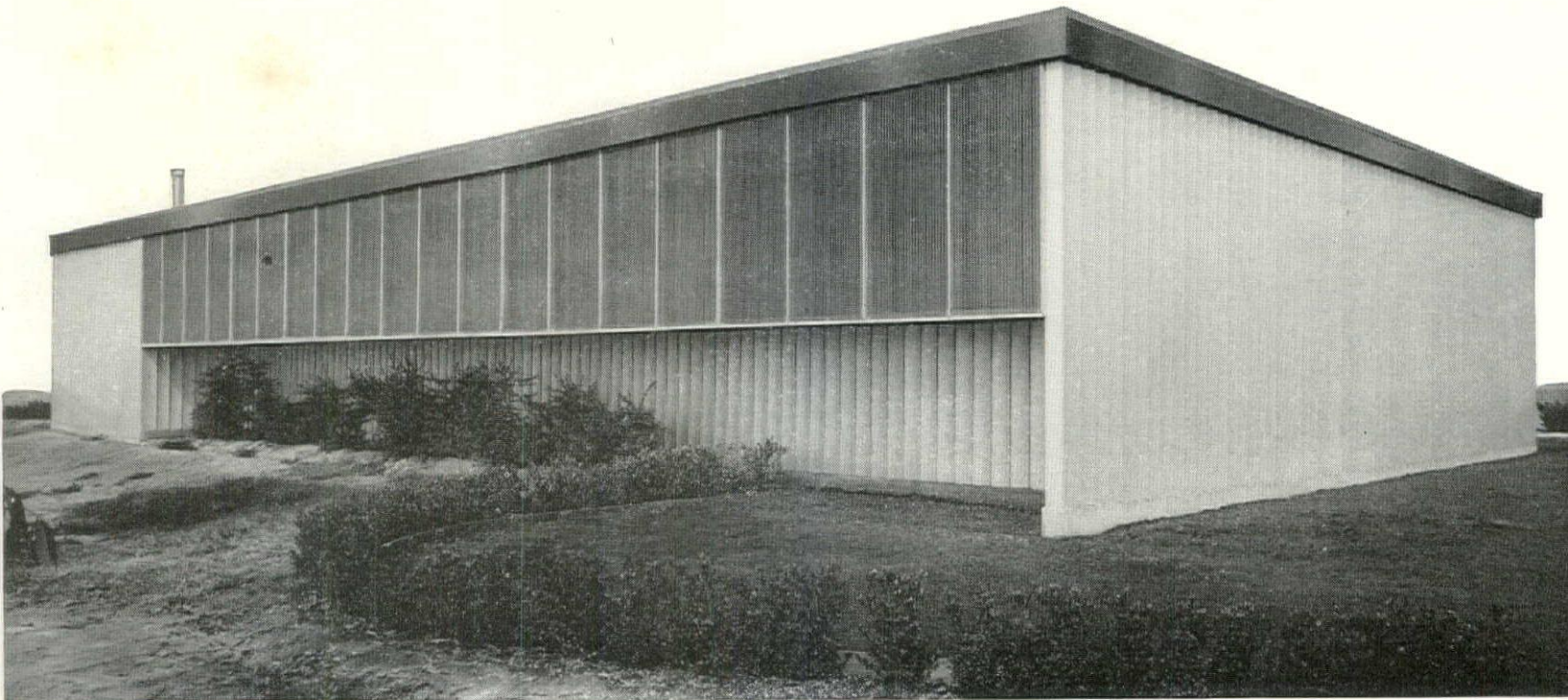
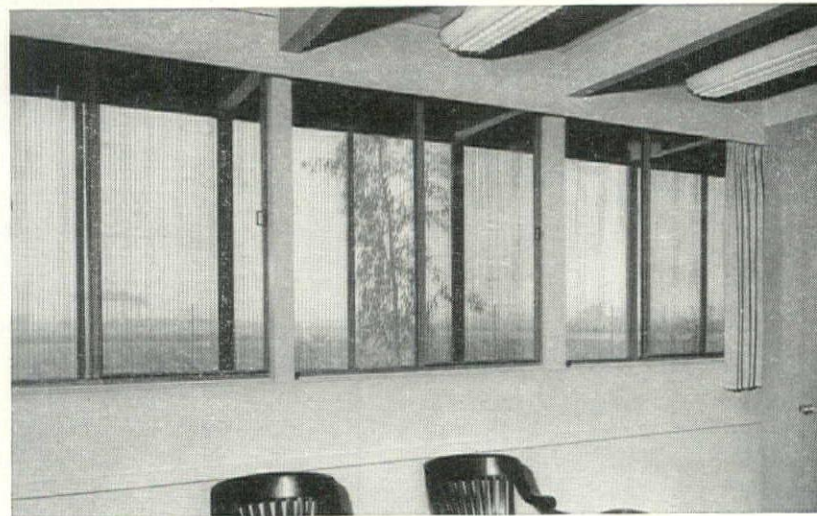
WHY YOU SHOULD PLAN AHEAD



KAISER ALUMINUM SIDING, applied vertically, gives an effect of added height to the Lane-Wells Company executive offices in Los Angeles. Installed under tension, the curved surface of Kaiser Aluminum Siding is rigid, sound-deadening, insulating. Maintenance costs are low, for the lustrous enamel finish is baked on.

KAISER ALUMINUM SHADE SCREENING on the southwest windows of the Lane-Wells offices cuts glare and heat by stopping the sun's rays outside the glass. Comfortable light and air are freely admitted and visibility to the outside is unobstructed.

THIS LOW-COST industrial structure combines the advantages of Kaiser Aluminum Shade Screening and Kaiser Aluminum Siding. The Shade Screening screens out insects and the direct rays of the sun that are responsible for fading, and insures maximum privacy.



WITH ALUMINUM

VAST expansion of production facilities will make aluminum among the most plentiful of building materials!

For instance, Kaiser Aluminum is increasing its production of primary aluminum by 80 per cent.

This plentiful supply of aluminum will encourage many new uses of this strong, light, rustproof metal in the building fields.

By keeping aluminum in your plans, by using it whenever and wherever you can—*by planning ahead with aluminum*—you'll be better prepared to use it in a wider variety of applications in the future.

You may have to substitute for aluminum

Kaiser Aluminum is helping to meet the needs of national security—supplying vast amounts of aluminum to manufacturers of essential items.

But Kaiser Aluminum building products are still available.

So check with your suppliers before you specify any substitute materials. There's a good chance you'll be able to give your clients the best: *Aluminum!*

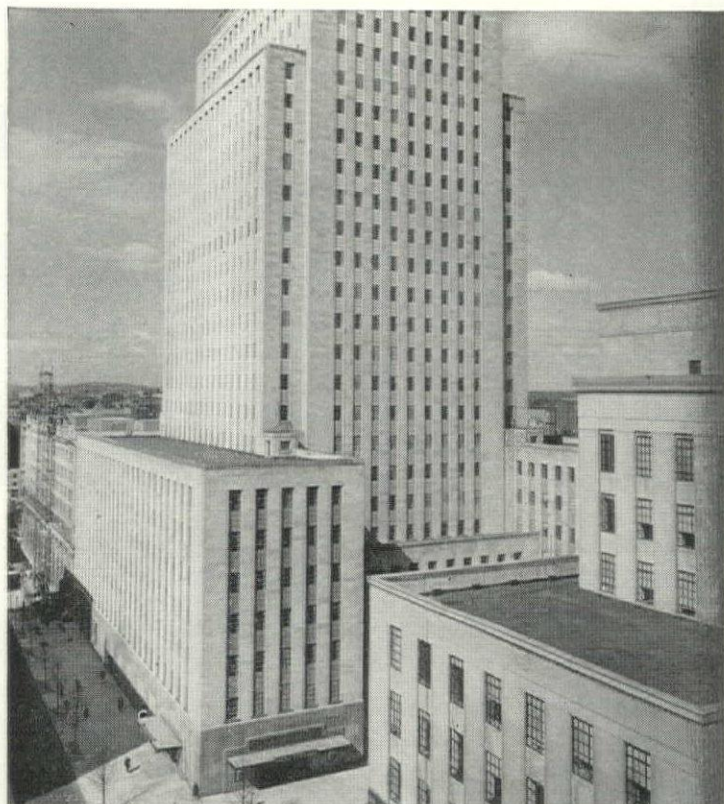
Aluminum is the building material of tomorrow

Building materials made of Kaiser Aluminum offer exclusive advantages in design, beauty and quality. Representative applications of Kaiser Aluminum building materials in use today are shown on these pages.

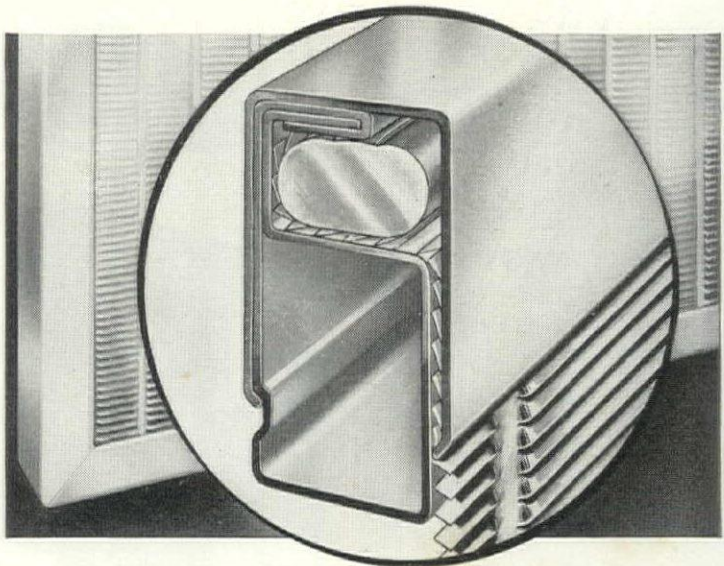
For full information about Kaiser Aluminum building products—and for AIA files—write: Kaiser Aluminum & Chemical Sales, Inc., Oakland 12, California. Sales offices in principal cities.

Kaiser Aluminum

**A major producer of
building materials for home, farm and industry**



KAISER ALUMINUM was used in the ductwork of the John Hancock Mutual Life Insurance Company building at Boston. Because of its lightness, crews were able to install ductwork faster, with less worker fatigue. Easily fabricated on the jobsite, Kaiser Aluminum Utility Sheet cut handling and scrap costs. Never requires painting. Uninsulated, it delivers as much heat as insulated galvanized material.



KAISER ALUMINUM SCREEN FRAME is readily assembled from framing sections, trim cover sections and cast aluminum corners. When framing Kaiser Aluminum Shade Screening the spline is used only at the top and bottom of the screen. No screws are needed. The frame may be used with conventional wire cloth screen as well as Shade Screening.

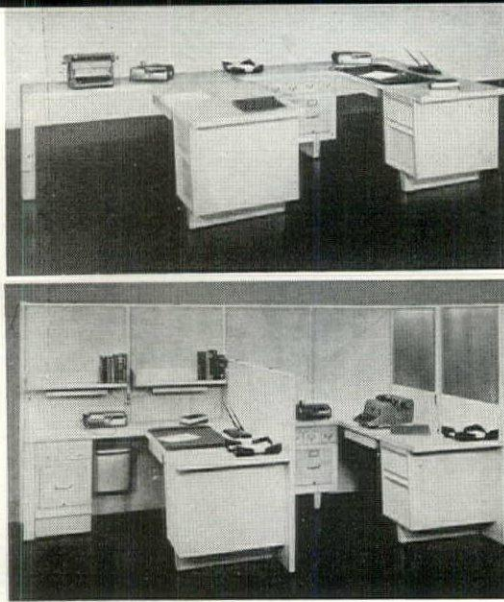


THIS FISH NET SHED, covered with Kaiser Aluminum Roofing, is designed for a seaside location in a hot climate. The roof is highly resistant to the corrosive action of salt spray from the nearby ocean because Kaiser Aluminum Roofing is *solid* aluminum—not clad or veneered. And Kaiser Aluminum Roofing reflects up to 60 per cent of the sun's rays, which means a reasonably uniform, cool temperature under the shed.

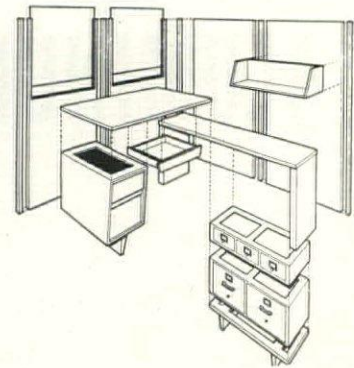
PRODUCT NEWS

MODULAR OFFICE SET-UPS take less space, cost less than conventional arrangements

Joining little-name producer Korda Industries (see One-Man-Sized Office, Aug. '50 THE MAGAZINE OF BUILDING) big-name manufacturer Globe-Wernicke is now marketing sectional office equipment made of wood. G-W's Techniplan L-shaped units make efficient use of costly floor space, requiring about 18% less area than conventional desk and seating arrangements. Figured in yearly



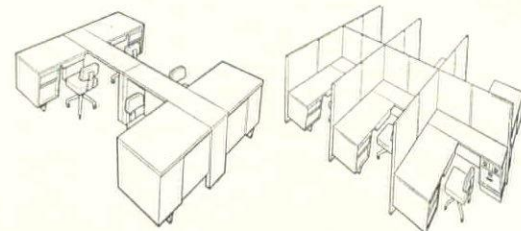
Limitless multiple arrangements may be made with these sectional pieces of all wood office equipment.



rental value per square foot, the saving to the building owner is substantial; the comfort and convenience to the worker, incomputable beyond perfunctory time and motion studies, are also greatly improved.

Techniplan offices are flexible and easily put together. When space requirements change, they are just as simply demounted and reassembled. Hundreds of multiple layouts—with and without partitions—are possible. The arrangements focus on a core of desks and center runners with various sectional units for letter files, map and drawing cabinets, and card index cases, built-in book shelves and even waste-baskets. There are also electrical fittings for connecting lighting fixtures, fluorescent troughs, intercom systems, telephones, etc. All the pieces have leveling devices to compensate for uneven floors. The desk tops are 30" wide and come in 40, 45, 50, and 60" lengths. Auxiliary desk tops are 18" wide and either 33 or 66" long. Pedestals stand 29" high. The full height partitions are 66"; three-quarter height 48". Architects and office planners can custom tailor the modular pieces to achieve sensible work space for all kinds of stenographic, bookkeeping, sales engineering, junior executive, and clerical units.

Without partitions a basic Techniplan office for one worker—a desk top, center drawer, pedestal, auxiliary desk top, and end supports—sells for about \$212. By adding another desk top, center drawer and pedestal, a two-worker plan is achieved at an additional cost of \$133, or for



about \$172 per person. A one-man office with four full-height all wood partitions lists at \$490. The additional sections needed to make the semi-private arrangement adaptable for two people would cost about \$352.

While the inevitable prospect of millions of 40 hr. work weeks being spent in more compact cubby holes may be somewhat frightening to the designer who wishes to maintain individuality for his building's occupants, the Techniplan polished birch and glass units are mobile and handsome enough to offset their sociological implications. *Manufacturer:* The Globe-Wernicke Co., Cincinnati 12, Ohio.

(Continued on page 218)

You can't make a good kitchen with only a good range... and you can't make a good ventilator with ONLY a good housing

9-SPEED SWITCH
This exclusive Blo-Fan feature makes it as easy to regulate the rate of ventilation as it is to control the speed of a car.

the blade's the thing!

A good electric exhaust ventilator must have a good housing—and, many on the market today look very much alike—but, it's what is inside that makes the difference. **THE BLADE'S THE THING!!!**

How much air can be moved efficiently, quietly and effectively against pressure depends on the blade used in any ventilator. That's why the famous Blo-Fan blade is designed to combine the better principles of a

fan and blower... The Blo-Fan blade moves air with the power of a blower, the volume of a fan.

Blo-Fan keeps the housewife's workshop cool, clean and comfortable.

PRYNE & CO., INC.

Box A-751, Pomona, Calif. • 130 Adams St., Newark, N. J.
Warehouses: Los Angeles, San Francisco, Chicago, Atlanta

\$3,000,000 PROJECT puts college in hotel business . . .

uses Frigidaire Refrigerators and Ranges throughout.

LOCATION: Clemson, South Carolina

WILLIAM G. LYLES, BISSETT, CARLISLE & WOLFF, Architects and Engineers

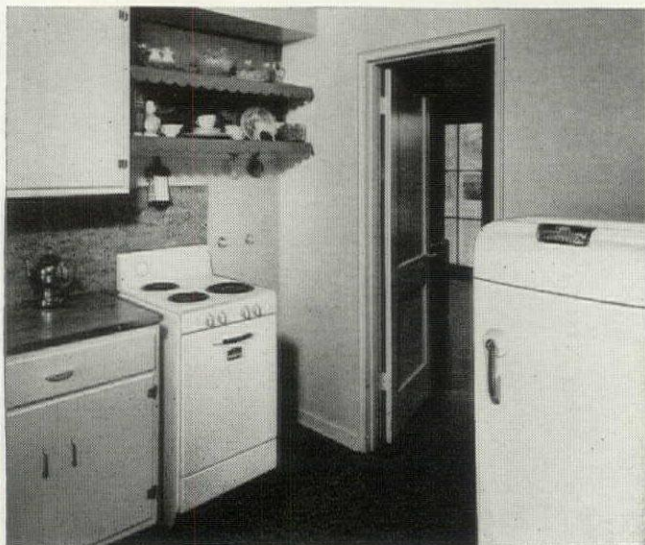
DANIEL CONSTRUCTION CO., General Contractors

A unique fund-raising venture undertaken by Clemson College in Clemson, South Carolina, casts this famous educational institution in the unusual role of innkeeper. For not only will this \$3,000,000 project pay for itself and later bring the school an annual 6-figure income, it will also provide the surrounding community and the tourist trade with much-needed hotel, apartment and public dining facilities.

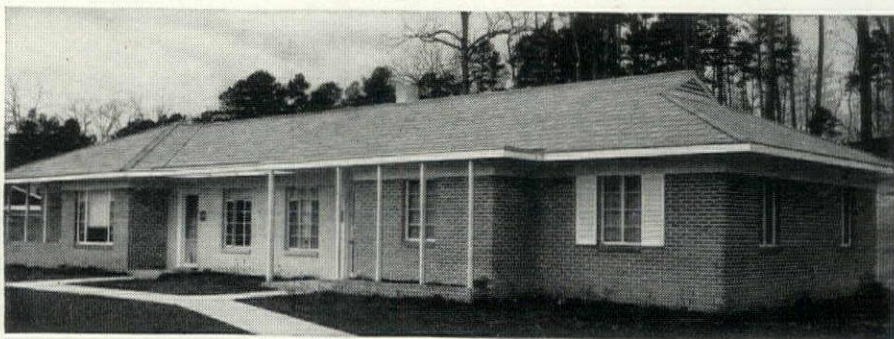
In carrying out the modern design of this 51-building group, it was only natural for general contractor Charles E. Daniel to choose Frigidaire Refrigerators and Electric Ranges for both the hotel and apartment kitchens. Mr. Daniel says: "In selecting and planning the equipment for the newly-completed Clemson House and Housing Project . . . Frigidaire products were chosen throughout to assure us that Clemson College would be granted years of excellent service. We know we have completed this project with the finest equipment available because Frigidaire products have a long-standing reputation for quality and serviceability."

A phone call will bring you detailed information on any Frigidaire Appliances you are interested in. Call your Frigidaire Dealer—or the Frigidaire Distributor or Factory Branch that serves your area. See Frigidaire catalogs in Sweet's Files or write Frigidaire Division of General Motors, Dayton 1, Ohio. In Canada, Leaside (Toronto 17), Ontario.

Compact Frigidaire Refrigerators and Electric Ranges, shown below, are standard equipment in Clemson Duplex Apartments as well as in hotel apartment kitchens.



Clemson House, modern, 250-room hotel, consists of 130 hotel rooms furnished in the latest decor, each room with private bath—plus one- and two-bedroom unfurnished apartments.



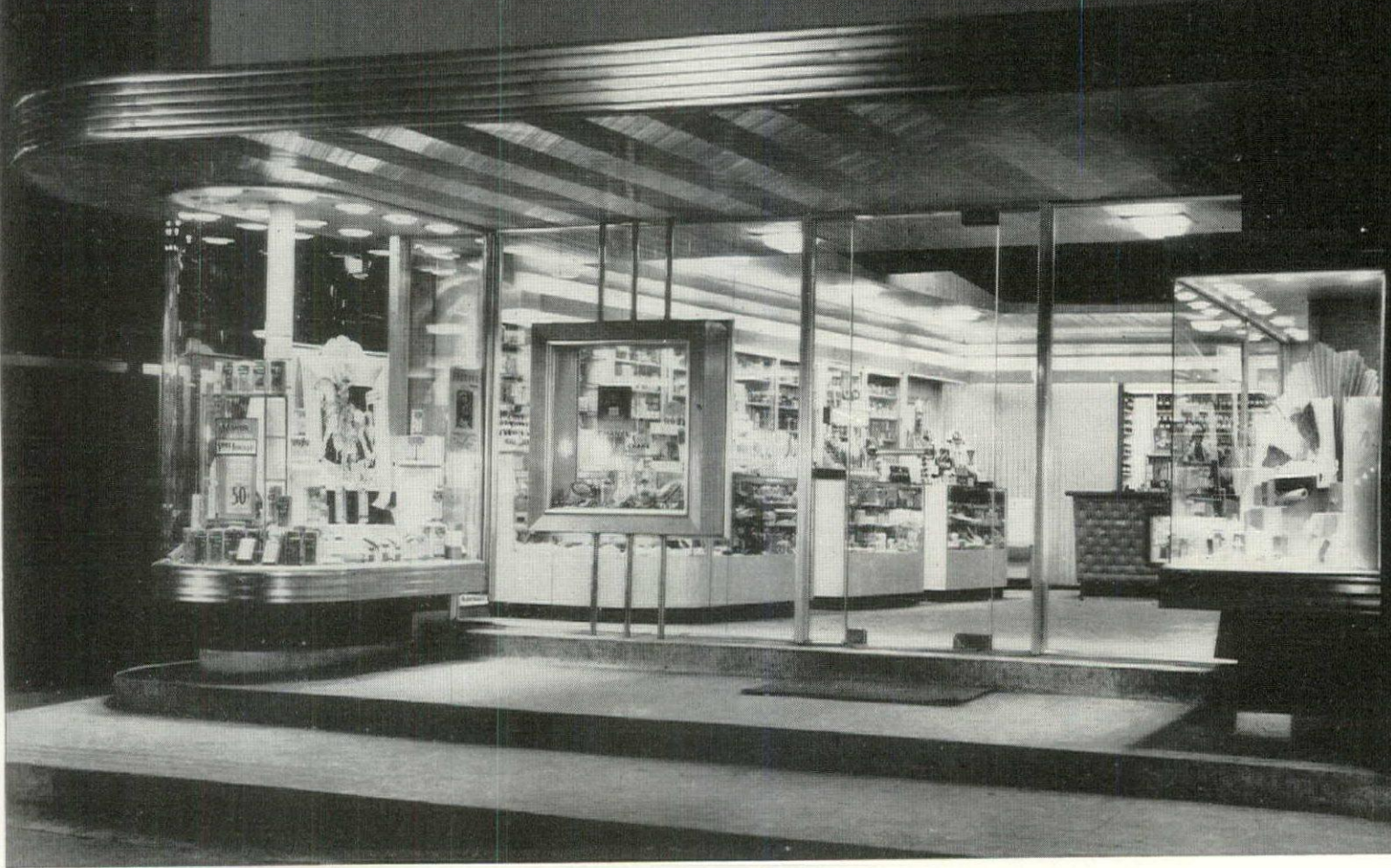
Shown above is an exterior view of one of the fifty buildings, overlooking Clemson Campus, which contain 150 modern, garden-type apartments.

FRIGIDAIRE America's No. 1 Line of Refrigeration and Air Conditioning Products

Refrigerators • Food Freezers • Water Coolers • Electric Ranges
Home Laundry Equipment • Electric Water Heaters • Air Conditioning
Electric Dehumidifier • Commercial Refrigeration Equipment

Frigidaire reserves the right to change specifications, or discontinue models, without notice.

For jobs that give



THIS OPEN-VISION drug store in Montreal, Canada, is an excellent example of what can be achieved in store modernization with Pittsburgh Products. Merchants know that a store like this stops more passers-by, impels them to enter, increases sales. They know, too, that Pittsburgh Glass Products are leaders in the store modernization field. In your locality there are undoubtedly scores of prospects for store remodeling work. Make sure you use Pittsburgh Products. The complete line, the wide range of designs possible with Pittco Store Front Metal, and the installation knowledge and experience of Pittsburgh's artisans combine to give your customers the best possible jobs. Architect: Elio Vinelli, Montreal, Canada; Contractor: O. Langlois, Montreal.

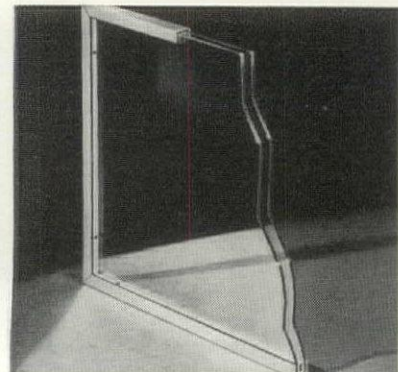
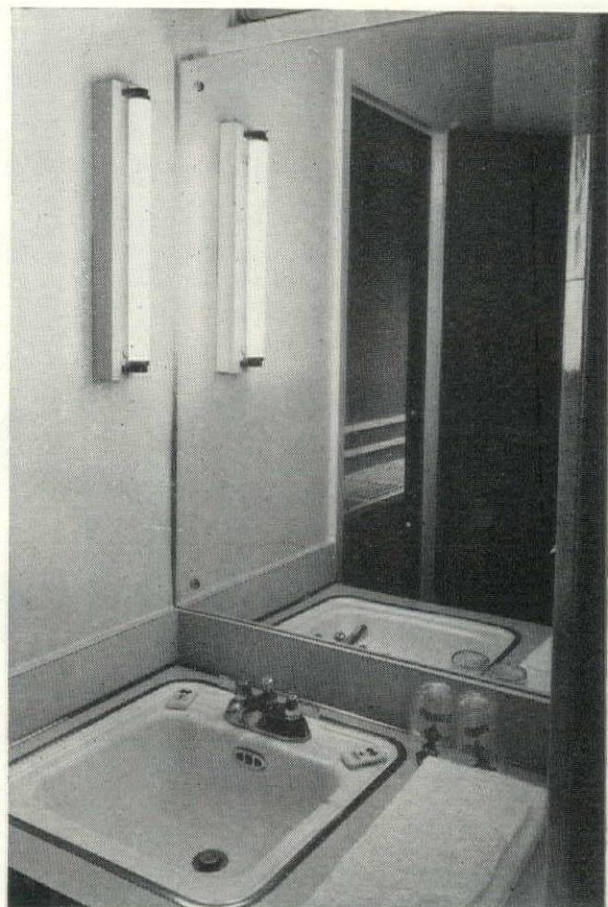
WITH READY-BUILT Carrara Structural Glass Panels, the high quality, enduring beauty, permanence and ease of cleaning inherent in this wall material are available to low-cost homes. These panels were developed for use in bathroom recesses and for stove backing in the kitchen. Prefabricated units, assembled at the factory, their installation is quick and easy. There's no cutting on the job and this reduces your labor costs substantially. Like fine Plate Glass, Carrara is mechanically ground and polished to a flawless, brilliant surface. It won't stain, fade or discolor with age. It doesn't absorb odors. It's not affected by grease, grime, grit, acids, water and pencil marks. And Carrara Glass is available in ten attractive colors.



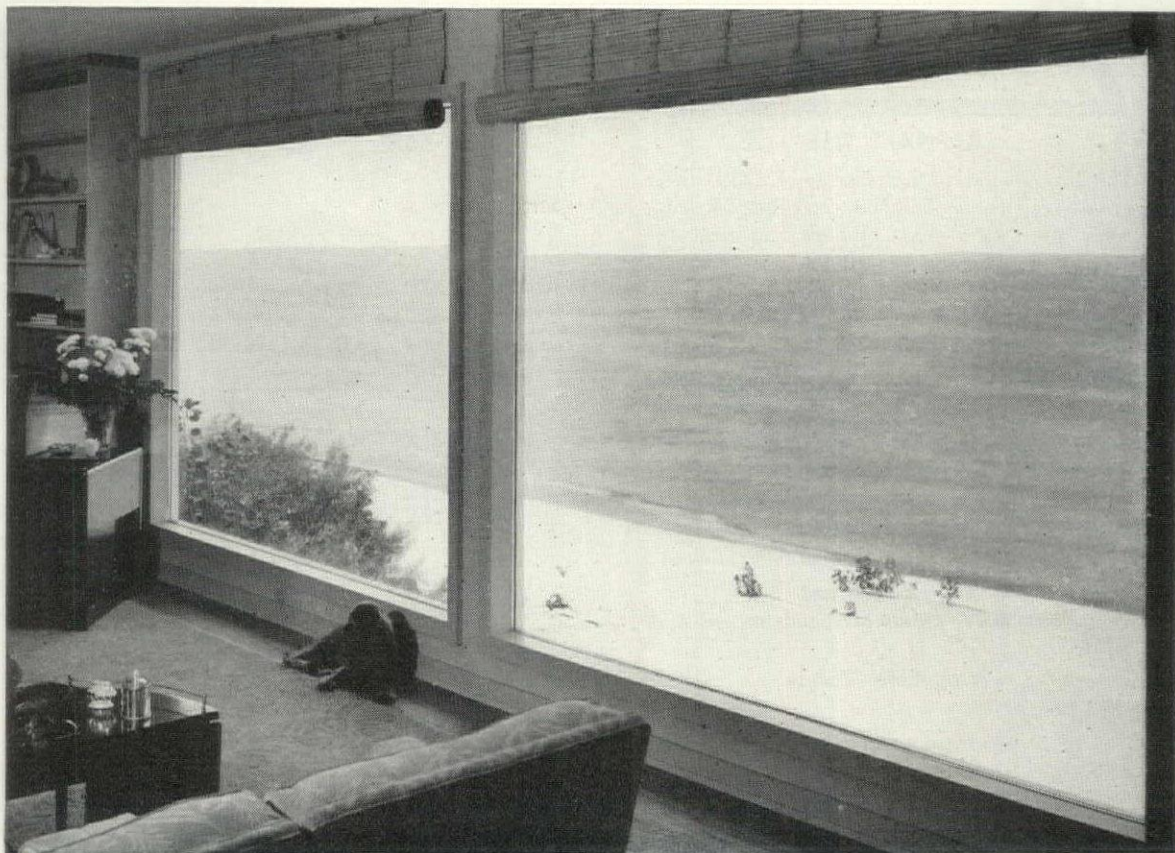
lasting satisfaction . . .

Pittsburgh Glass can help you!

A GOOD MIRROR is indispensable in the bathroom. And in *any* room in the home, wall mirrors add charm and sparkle, increase the apparent size of the room. When you include Pittsburgh Mirrors in your homes, or in remodeling plans, you impress your customers with the fact that they are getting plus value for their money. Pittsburgh Mirrors are available in types and styles for every structural and decorative need. They are made from genuine Pittsburgh Plate Glass, offering superior reflectivity. Tourinn Motel, Allentown, Pa. Architects: Malcolm Graeme Duncan and W. Lee Moore, Scarsdale, N. Y. Contractor: Straight Construction Corp., New York City.



USE TWINDOW, Pittsburgh's window with built-in insulation, in your homes. Recommend it to homeowners who plan on remodeling. The demand for large, insulated windows is increasing. And Twindow is the ideal unit for this work. It's a completely prefabricated window, consisting of two or more panes of Pittsburgh Polished Plate Glass, with a hermetically-sealed air space between. The entire assembly is enclosed in a stainless steel frame which makes handling and installation safe and simple. Twindow reduces heat loss through windows, minimizes downdrafts, adds to inside home comfort the year around. Under normal conditions, Twindow reduces the tendency for condensation to form. The cutaway view above shows the construction of a Twindow unit with two panes of Plate Glass. Architect: Ray Stuermer, Chicago, Ill.



Build it better with **Pittsburgh Glass**

See the complete listing and descriptions of Pittsburgh Plate Glass Company products in Sweet's Catalog Files.

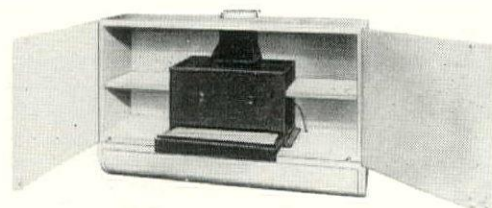
PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

PRODUCT NEWS

WALL CABINETS have practical design gimmicks for the homemaker

Three additions to the Lyons cabinet line are unusually well designed kitchen accouterments. The first new cabinet, an air exhaust unit, is designed for placement above the range. Measuring 42" wide, 13" deep and 24" high, it provides handy shelf space for cooking utensils and keeps the kitchen cleaner and cooler by removing steam, odors, and grease laden vapors before



Looking like an ordinary storage cabinet, the air control unit draws in hot greasy cooking vapors and discharges them through a duct to the outside.

they can disseminate into the room. Its filter can be pulled out like a drawer for a quick soap and water washing. Discharging air at a maximum rate of 350 cu. ft. per min. through a duct to the outside, the air control unit has a sealed motor and flexible connections which prevent vibration transmission. It retails at \$129.95.

"Finger tip" cabinets (pictured below left) for convenient storage of small kitchen items are attached easily to the underpart of regular Lyons wall cabinets, giving them a graceful rounded effect and utilizing wall space otherwise wasted. Light finger pressure releases the bottom-hinged doors. Measuring 13" deep and 5" high, the small shelf units are made in lengths from 12 to 30" and range in price from \$11.30 to \$14.15, f.o.b. Aurora, Ill. Designed for location directly over

Better Colors More Color Choice

With Premium Quality, Grease Resistant

AZPHLEX

ASPHALT TILE

The through-and-through beauty of AZPHLEX grease-resistant asphalt tile won't fade or wear away, even after years of hard and constant service. Pigmentation is all the way through every tile, from top to bottom—protected by the tough, fine texture that gives AZPHLEX its remarkable resistance to indentation and abrasion.

AZPHLEX demands nothing more than routine maintenance to keep its new-floor beauty through many long years.

Highly Resistant

to greases, fats, oils, soaps and compounds

Tough Surfaced

for increased resistance to indentation and abrasion

Wide Color Range

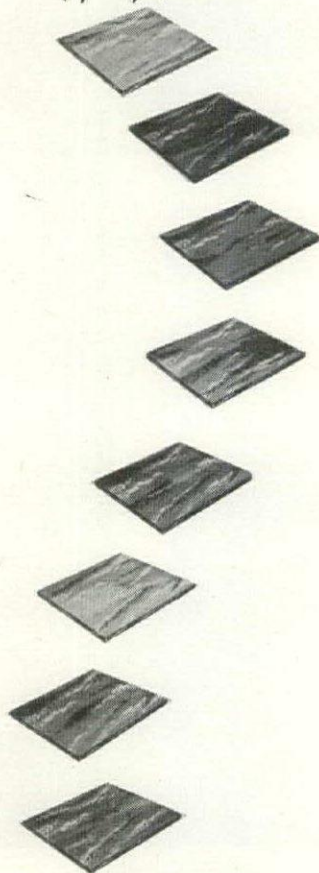
15 clear, permanent colors

Moderate Price

is only a few cents more a square foot than ordinary asphalt tile

For a floor that gives maximum service—look to AZPHLEX!

For complete information see or call your flooring dealer or contractor—or write to Dept A



SEE SWEETS' 1951
CATALOG FOR
COLORS AND SIZES

UVALDE ROCK ASPHALT CO.

Makers of AZPHLEX and AZROCK Asphalt Tile
FROST BANK BLDG. • SAN ANTONIO, TEXAS



the refrigerator, the dry storage cabinet is especially suitable for cereals, salt, etc. Built with wire baskets that swing the contents out within easy reach, the cabinet has a duct in the rear which allows air over the refrigerator to circulate freely, "dry condition" the foods, and escape through grilles on top of the cabinet doors. It is 36" long, 13" deep, and 16 $\frac{3}{4}$ " high, and sells for \$37.50.

Manufacturer: Lyon Metal Products, Aurora, Ill.

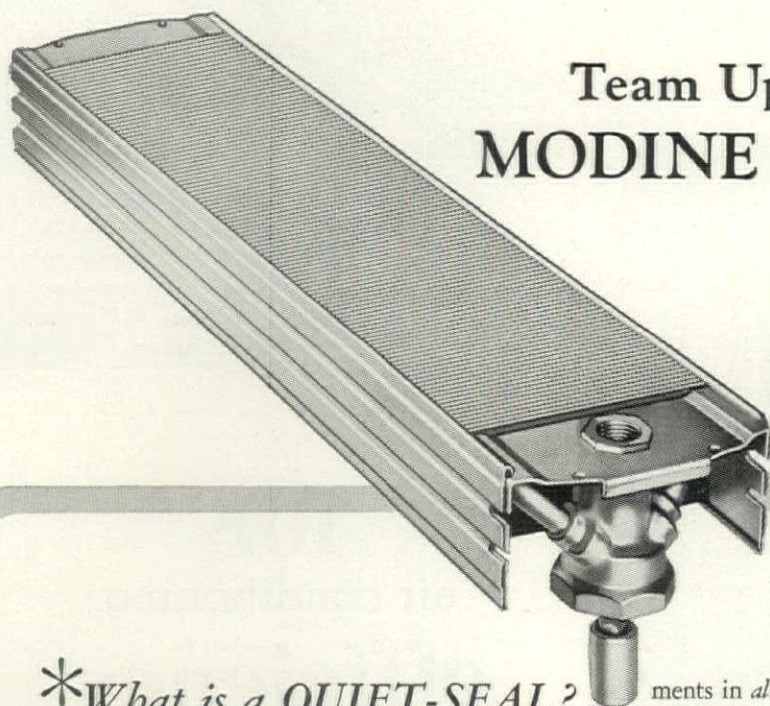
COMBINATION KITCHEN APPLIANCES save room space in small apartments, motels

Covering little more than 4 sq. ft. of floor area the \$349 General kitchen neatly packs a refrigerator, large storage drawer, sink and three-burner gas range in a single, easy-to-install unit. (Other models have three electric burners for 220 V. and two burners for 110 V. installations.) When the range cover is lowered, it provides an ample drainboard for the 12 x 16" sink bowl. The entire top of the combination kitchen is made

(Continued on page 222)



If you're planning to use ONE-PIPE STEAM
to cut installation and maintenance costs . . .



Team Up With MODINE QUIET-SEALS*



*What is a QUIET-SEAL?

"Quiet-Seal" is the trademarked name of a Modine Convector designed specifically for use on 1-pipe steam systems. Patented heating unit (above) provides fast, smooth, quiet performance at full-rated capacity. Because steam, condensate (and air, when present) all flow in one and the same direction, the basic causes of water-hammer, gurgling and spitting of air-vents are eliminated. Free and easy venting prevents air binding or water-logging . . . a cause of slow response and reduced capacity.

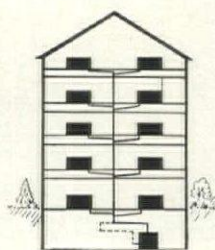
Many thousands of Modine Quiet-Seals now in service, prove conclusively the possibility of providing excellent 2-pipe convector performance on 1-pipe steam systems.

Quiet-Seals Improve 1-Pipe Steam Performance — By permitting superior temperature control and system balance, Quiet-Seal Convectors greatly improve 1-pipe steam performance.

Having approximately 1/17th of the metal mass and 1/20th the internal volume of an average cast iron radiator, Quiet-Seals heat up many times faster . . . and as a result . . . almost simultaneously.

With Quiet-Seals, a 1-pipe steam system can be brought up to temperature much more rapidly than with ordinary radiators. Temperature require-

ments in *all parts* of a building are quickly satisfied. Consequently—unbalanced performance, caused by excessively long heating-up periods, is avoided . . . and the difficulty of providing satisfactory temperature control is eliminated.



Damper Modulated Heat Delivery for Comfort and Economy — Personalized room temperature control by manual adjustment of convector dampers eliminates expense of valves . . . discourages wasteful over-heating. When valves are used on 1-pipe steam radiators, they must be of the "on-and-off" type which do not permit modulation of heat delivery. *Only convectors offer this important refinement in 1-pipe steam heating.*



R-1102

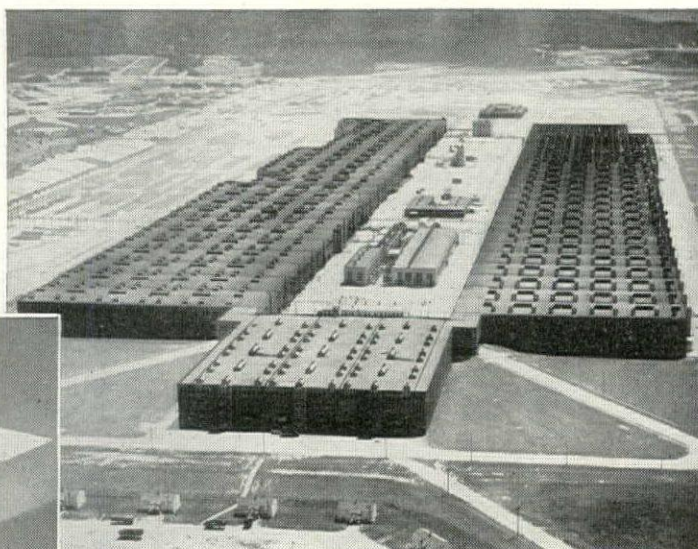
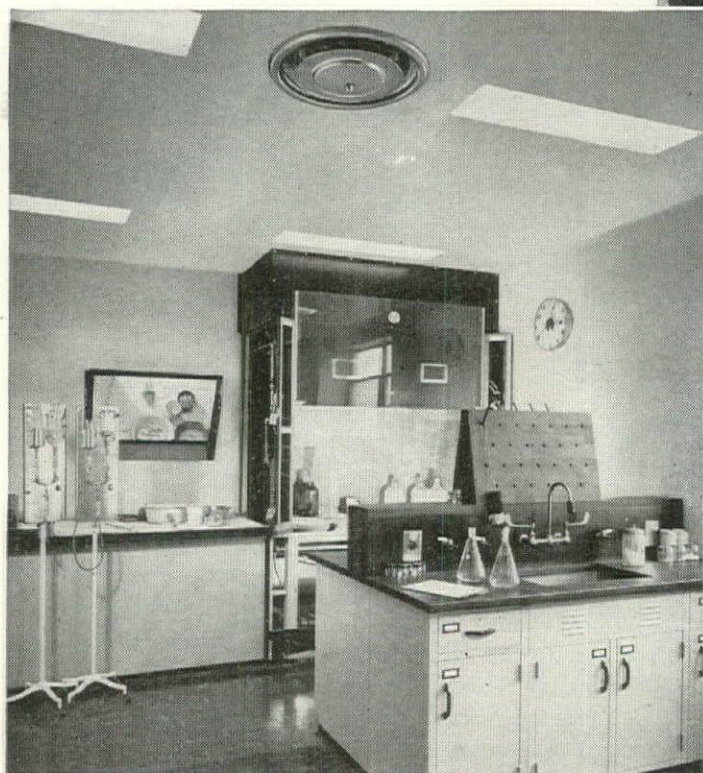


Free Bulletin Available — For additional information on Modine Quiet-Seal Convectors and 1-pipe steam heating, get new Bulletin 250-B. Call your Modine representative . . . listed in the classified section of your phone book. Or write to Modine Mfg. Co., 1507 Dekoven Ave., Racine, Wisconsin.

Modine CONVECTORS

kno·draft

adjustable air diffusers



for
air conditioning
efficiency
at Oak Ridge

Atomic energy plant at Oak Ridge, Tennessee, with detail of typical Kno-Draft Adjustable Air Diffuser.
Architects and Engineers: Skidmore, Owings, and Merrill.

Precise efficiency governs all operations at the U.S. Atomic Energy Commission's Oak Ridge plant. So distribution of conditioned air is through Kno-Draft Adjustable Air Diffusers—chosen because they circulate the air gently, *without drafts* . . . assure thorough, instantaneous mixing to maintain an even temperature throughout the conditioned area.

Also, Kno-Draft Adjustable Air Diffusers permit accurate control of air volume and direction *after* installation. This simplifies preliminary engineering and permits easily made changes to meet altered

conditions—an important consideration.

Efficiency governed the choice of Kno-Draft at Oak Ridge. But for many installations, beauty is a first consideration. Kno-Draft Adjustable Air Diffusers have this, too . . . the quiet simplicity that fits unobtrusively into any surroundings. There are types and sizes to meet every requirement.

KNO-DRAFT DATA BOOK: Complete specifications, engineering and installation data on Kno-Draft Adjustable Air Diffusers. To get your copy, simply fill in and mail the coupon. No obligation, of course.

TRADE MARK "KNO-DRAFT" REG. U. S. PAT. OFF.

W. B. CONNOR ENGINEERING CORP.
Danbury, Connecticut
Air Diffusion • Air Purification • Air Recovery
In Canada: Douglas Engineering Co., Ltd.,
190 Murray Street, Montreal 3, P. Q.

W. B. CONNOR ENGINEERING CORP.
Dept. D-71, Danbury, Connecticut

Please send me, without obligation, my copy of the Kno-Draft Air Diffuser Data Book.

Name

Position

Company

Street

City Zone State



For lobbies and public areas where first impressions are created, Armstrong's Rubber Tile contributes outstanding floor beauty. The rich colors are enhanced by sharply defined marbleization. A new, exclusive Armstrong adhesive permits the installation of Armstrong's Rubber Tile Floors over grade-level concrete slabs.

Reception Lobby
Dr. Pepper Company, Dallas, Texas
Thomas, Jameson, & Merrill, Architects

ARMSTRONG'S RUBBER TILE
ARMSTRONG CORK COMPANY • LANCASTER, PENNSYLVANIA

of heavy gauge porcelain enameled steel. Another General product, a 4 cu. ft. refrigerator topped with a one piece porcelain 14" sink and drainboard, sells for about \$319. Used next to a 21" range, the refrigerator-sink provides a complete working kitchen just 4' wide. The company also manufactures a combination range-refrigerator, the General Chef, which has become popular for installations in offices as well as resort hotels. *Manufacturer: General Air Conditioning Corp., 4542 E. Dunham St., Los Angeles 23, Calif.*



Kelvinator's new small range and under-the-counter refrigerator may be installed with a 39" sink and drainboard for a complete kitchen measuring 5' wide.

Another enthusiastic Fitzgibbons booster reports...



"Fuel consumption has been much lower than anticipated and the boiler's domestic hot water has fulfilled all the requirements we have—full automatic washer, automatic dish washer, two baths and powder room."

The above quotes from an actual letter are typical of the many reports received from home owners everywhere. The Fitzgibbons "400" Series steel boiler makes friends with everyone—home owner, architect, builder, and heating contractor. It's tops for fuel economy, easy installation and trouble-free operation. Specify it on your next job. Write for Bulletin MB-6!

A Fitzgibbons "400" Series steel boiler provides comfort with economy in this modern residence of Mr. Karl Loucks Kingston, Pa.

Men who know boilers select...
FITZGIBBONS

Fitzgibbons Boiler Company, Inc.

General Offices: 101 PARK AVENUE, NEW YORK 17, N. Y.
Manufactured at OSWEGO, N. Y. • Branches in Principal Cities

65th Anniversary



1886-1951

KITCHEN APPLIANCES take little space, do full-size jobs

Designed for apartments and small homes, three new Kelvinator kitchen appliances make good use of the minimum space they occupy. The under-the-counter refrigerator is only 2' wide and 34½" high but has 9 sq. ft. of shelving with a storage capacity of 4.3 cu. ft. Its door hinges are offset so that the refrigerator may be installed flush with adjoining cabinets. Called the AB, the model sells for \$210. The 21" wide ER-1 electric range has a full size oven and three surface units and is priced at \$165; the ER-14, having an additional burner and automatic preheat cutoff, retails at \$175. A top floodlight, electric clock and oven timer assembly is available for the ranges at extra cost. The refrigerator and either range may be combined with any standard 39" sink and drainboard for a fully equipped kitchen 5' wide. *Manufacturer: Kelvinator Div., Nash Kelvinator Corp., Detroit 32, Mich.*

NEW RANGE MODELS feature push-button cooking, swing-out broiler

Marking its first year of home appliance production, the Murray Corp. of America has introduced fourteen new neatly styled gas and electric kitchen ranges. All the ranges have large thermostatically controlled ovens and are fully lined with porcelain enamel. One of the 1951 line, the 20" Rangette (below right) is suitable for limited space kitchens. It has four electric surface units and its modest size is matched by its price tag of \$180. A similar 20" model, the EB-5 with three surface units, retails at about \$170. The EB-75 Supreme range uses plastic push buttons set on the backsplash for regulating cooking heat. Colored from deep red for "hot" to pink for "simmer," these controls show at a glance seven heat gradations. Priced at \$165, t



36" gas range (above left) with divided features seamless burner bowls and a handy in the storage compartment. It is easily converted for use with manufactured, natural or bottled gas. The 44" gas range has a swing out broiler and glass window in the oven door.

Manufacturer: Murray Corp. of America, Dayton, Pa.

(Continued on page 226)

NATIONAL HOMES presents New 1952 "Super-Thrift" Homes

Completely Restyled, Outside
and In — New Lower, Smarter
Roof Lines—Dozens of Import-

ant Refinements to Meet To-
day's Demand for Larger, More
Spacious Homes at Low Cost



National Homes again proves its leadership with these sparkling new 1952 versions of the sensationally popular "Thrift Home." They are already winning orders from value-wise home seekers, at close to 1950 peak. If your volume has bogged down, investigate. Your inquiry will be held in strict confidence.

ALREADY A *Smash Hit!*

First showing of 1952 National "Super-Thrift" Homes at Lafayette drew over 4,600 people, produced hundreds of prospects, dozens of immediate orders. National dealers elsewhere report equal enthusiasm for new designs. Your territory may be open. Get the facts!



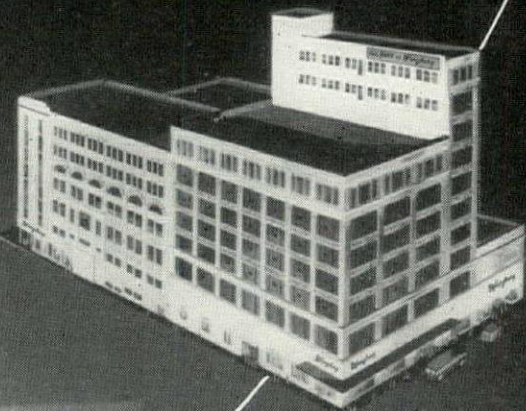
NATIONAL HOMES CORPORATION Lafayette, Ind., and Horseheads, N.Y.

NATION'S LARGEST PRODUCERS OF PREFABRICATED HOMES

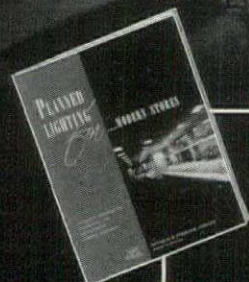
a LIGHT job* *well done*

WITH PITTSBURGH PERMAFLECTOR LIGHTING EQUIPMENT

OUTSTANDING! This one word completely describes the illuminating results so easily and successfully achieved at famous Wurzburg, the heart of Grand Rapids. Pittsburgh Permalector Equipment enabled Wurzburg to plan with imagination and light for their needs. Top performance with "custom designed" appearance was assured. Fluorescent and incandescent units, and combinations of both, meet every lighting requirement.



*
Wurzburg
of Grand Rapids



FOR MORE LIGHTING KNOW-HOW

Write us your lighting interests—stores, offices, banks, buildings or schools. A bulletin covering the subjects will be mailed to you.

PITTSBURGH REFLECTOR COMPANY

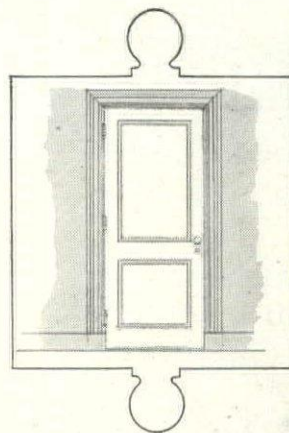
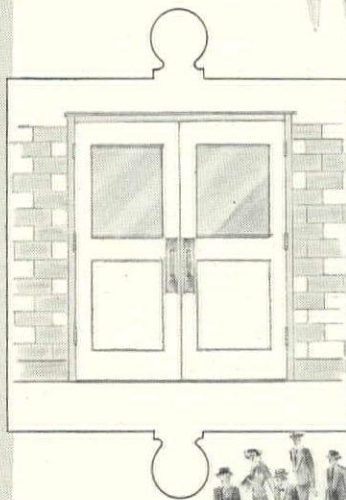
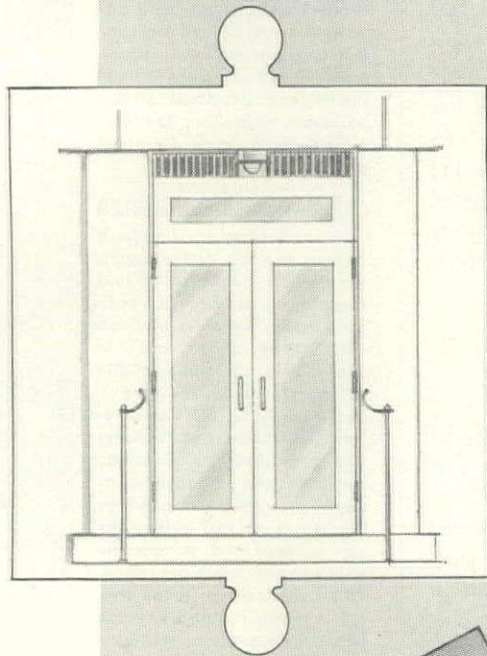
401 OLIVER BUILDING • PITTSBURGH 22, PENNSYLVANIA

MANUFACTURER OF FLUORESCENT & INCANDESCENT LIGHTING EQUIPMENT

Permalector Lighting Engineers in All Principal Cities

PITTSBURGH PERMAFLECTOR LIGHTING EQUIPMENT IS DISTRIBUTED BY BETTER ELECTRICAL WHOLESALERS EVERYWHERE

Which
STANLEY TEMPLATE
BUTT HINGES
should you
specify for
METAL
DOORS ?



THERE ARE THREE THINGS TO CONSIDER: weight, size, and usage of the doors in the building you are planning. For medium weight doors receiving average frequency service, specify Stanley 2 Ball Bearing Template Butt Hinges (shown). For heavy or large metal doors, or metal doors with high frequency service, Extra Heavy 4 Ball Bearing Template Butt Hinges should be specified.

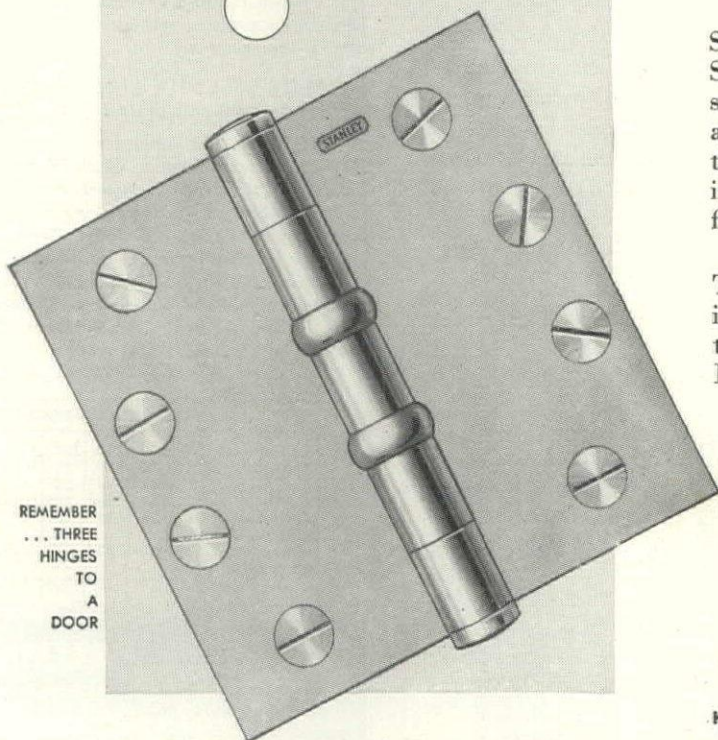
WHY STANLEY?

Stanley Template Butt Hinges are made to U. S. Standard Template and fit *exactly* the sinkage and screw hole location in both door and jamb. This accuracy in manufacture saves time on the site, cuts the cost of building, and assures the smooth-operating hinge-and-door teamwork that makes satisfied clients.

Insist on butt hinges that bear the name "Stanley". There is an "Architectural Hardware Consultant" in your vicinity whose specialized knowledge and training are at your service. The Stanley Works, New Britain, Connecticut.

Stanley Template Butt Hinges are made in steel, brass, bronze, stainless steel, and aluminum. Exact in size and gauge of metal, each Stanley hinge has the class number stamped on the back.

REMEMBER
 ... THREE
 HINGES
 TO
 A
 DOOR



STANLEY

Reg. U.S. Pat. Off.

HARDWARE • TOOLS • ELECTRIC TOOLS
 STEEL STRAPPING • STEEL

ANOTHER FIRST by MOR-SUN

Manufacturers of Pressed Steel
WARM AIR FURNACES
THE
MOR-SUN
EXCHANGE PLAN ...

The MOR-SUN Ball Flame Oil Burner NOW ... The MOR-SUN Gas Burner LATER ... but home owners pay for only one ... plus a very small exchange fee!

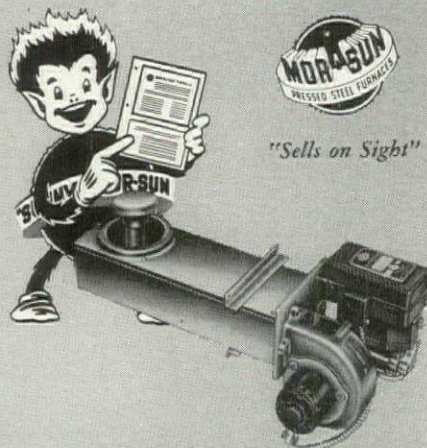
You don't have to be in a quandary for lack of information on availability of gas! Because MOR-SUN has the answer!

Thousands of home owners want gas heat — but gas companies must protect industrial users for defense production — material for pipe lines is on the critical list ...

So far, the only answer has been expensive dual fuel burners, costly to install, to operate and to service. But MOR-SUN has the right answer ... here it is!

With the MOR-SUN OV line of furnaces, we give the home owner a certificate that entitles him to exchange the high efficiency MOR-SUN ball flame oil burner for the famous MOR-SUN gas burner at any time within a two-year period, through his installer, for a very small exchange fee!

The home-owner gets standard time-proven equipment with low first cost and low operating cost. When and if he changes to gas, he has an AGA approved gas furnace! A natural, investigate now!



FILL OUT AND MAIL THIS COUPON TODAY

I'd like to know more about the MOR-SUN Exchange Plan.

NAME _____

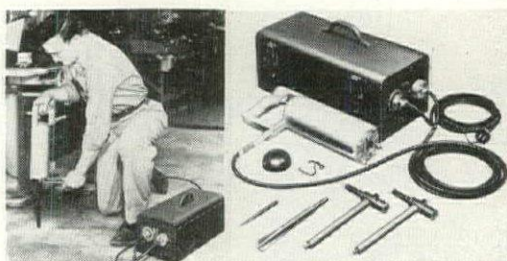
ADDRESS _____

CITY _____ STATE _____

MOR-SUN Furnace Division
MORRISON Steel Products, Inc. DEPT. OVX

645 Amherst St., Buffalo 7, N. Y.

PRODUCT NEWS



PORTABLE ELECTRIC HAMMER is versatile construction instrument

Skilsaw's new portable electric hammer has few moving parts to be maintained. A specially engineered power unit consisting of two alternately energized magnetic coils eliminates the need for bulky gears, cranks and connecting rods. Striking 3,600 blows a minute, the hammer may be used for drilling and channeling in concrete; vibrating concrete forms; and chipping, scaling and cleaning of many materials. A patented contour grip handle makes the tool easy to hold and operate during several hours of use. The 1 1/8" hammer is 16 1/4" long and weighs 20 lbs. It has an efficient operating range of 3/4 to 1 1/8" diameter star drills. The device's \$175 price tag includes two drill chucks, two 15' rubber covered extension cords, three star drills, and a sturdy steel case containing a built-in selenium rectifier.

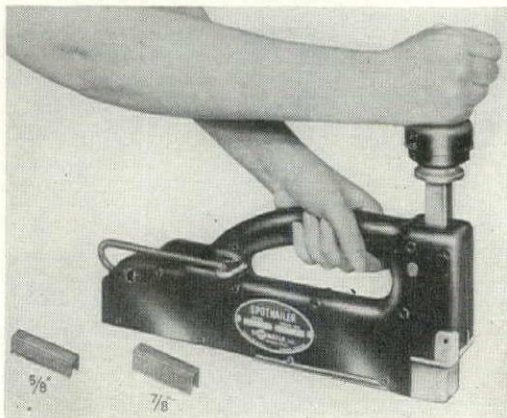
Manufacturer: Skilsaw, Inc., 5033 Elston Ave., Chicago 30, Ill.

STAPLING DEVICE is handy building tool

A portable nailing machine, the Spotnailer Model AHE drives a heavy 16 gauge 7/8" staple into soft or hard wood with one blow of the fist or rubber mallet. Sub-flooring, roofing and wallboard may be fastened securely and quickly without hammer marks. Several changes have been made in the new model. An easily loaded magazine of additional capacity, a redesigned molded plastic frame, and a positive feeding and driving mechanism contribute to the improved performance of the instrument. The heavy staples have spread points for sure gripping power and may be driven through two or more pieces of material to brad against a steel plate. The Spotnailer will drive the staples flush or may be adjusted to counter-sink them. Model AHE sells for \$30.

Manufacturer: Spotnails, Inc., 1218 Sherman Ave., Evanston 20, Ill.

(Continued on page 230)



SPECIFY the

Sedgwick
Multi-Stop Electric Traction
DUMB WAITER

for
**SAFE • DEPENDABLE • ECONOMICAL
SERVICE**

Where There Are 3 or More Landings to be Served

PROVED IN PERFORMANCE ... by thousands of installations operating successfully from coast-to-coast — in hospitals, hotels, restaurants, clubs, libraries, schools, stores and other commercial, institutional and industrial buildings.

ENGINEERED FOR THE JOB

Sedgwick Multi-Stop Dumb Waiters embody the most advanced electrical and mechanical engineering features and are designed and built to meet the highest standards of dependable operation, low-cost maintenance and finished appearance.

AUTOMATICALLY CONTROLLED

With momentary pressure push buttons at each landing opening, the car can be called and dispatched as desired. Each push button station is provided with "open door" and "in use" signal lights to expedite efficient use of equipment. Sedgwick Type "SL" Combination Door Locks and Switches are provided for hoistway doors to prevent opening of any door, except that at which the car is at rest — thus the car is permitted to operate only when all doors are closed. Other refinements in the control system include reverse phase relay, overload relay and non-interference relay.

COMPLETE SEDGWICK LINE MEETS EVERY REQUIREMENT

In addition to the Sedgwick Multi-Stop Electric Traction Dumb Waiter, Sedgwick also builds the Roto-Waiter, designed especially for two-stop service — such as under-counter, back bar, or similar limited space installations. Other Sedgwick Dumb Waiters — including both electrically and manually operated types — are likewise available in a wide range of sizes and capacities. Steel towers and enclosures can be supplied where desirable. Specify, too, Sedgwick Steel Dumb Waiter Doors for complete satisfaction.

Write for Illustrated Booklet AFTO

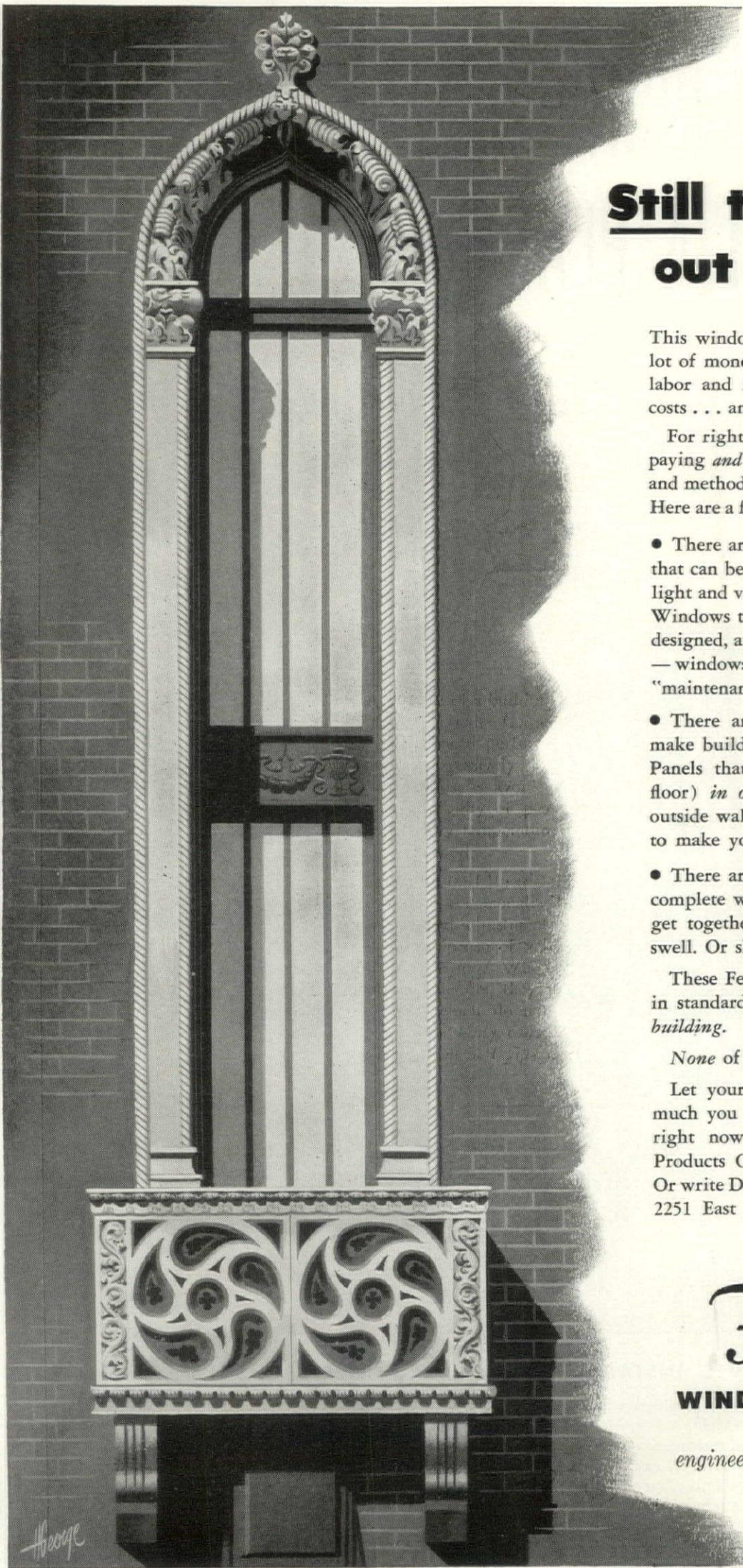
STANDARD DIMENSIONS

	200	200	300	300	500	500
Capacity in lbs....	50	100	50	100	50	100
Speed in F.P.M....	24"	24"	30"	30"	36"	36"
Car Width.....	24"	24"	30"	30"	36"	36"
Car Depth.....	36"	36"	36"	36"	48"	48"
Clear Inside Hoistway Width....	33"	33"	39"	39"	45"	45"
Clear Inside Hoistway Depth....	29"	29"	35"	35"	41"	41"

Sedgwick MACHINE WORKS
88 Eighth Ave., New York 11, N. Y.

ELEVATORS • DUMB WAITERS • RESIDENCE ELEVATORS
STAIR-TRAVELORS • ROTO-WAITERS • SIDEWALK ELEVATORS
FREIGHT ELEVATORS • DUMB WAITER DOORS

THE MAXIMUM IN SAFETY...
THE ULTIMATE IN ECONOMY — SINCE 1893



Still throwing money out the window?

This window was never standard. Someone threw a lot of money into it—and *out* of it—for extra time, labor and materials. Measure that waste at *today's* costs . . . and keep your tape handy.

For right this minute plenty of people are paying, paying *and* paying, for "modern" building materials and methods that are just as outmoded and inefficient. Here are a few ideas that will help *you* help *them*:

- There are standard steel windows of modular sizes that can be easily combined into whole walls of daylight and ventilation. Windows that *control* fresh air. Windows that are Hot-Dip Galvanized in a specially designed, automatically controlled new Fenestra plant — windows that put new meaning in the term "maintenance-free."
- There are standard metal structural panels that make buildings grow by *areas* instead of by *inches*. Panels that are ceiling and silencer and roof (or floor) *in one package*. Panels that let you zip up outside walls — then down and up again farther out to make your building bigger.
- There are standard hollow metal doors that come complete with frames and hardware . . . prefitted to get together in a hurry. Doors that can't warp or swell. Or shrink. Or splinter.

These Fenestra* Building Products are engineered in standard types and sizes to *cut the waste out of building*.

None of your money goes out the window.

Let your Fenestra Representative show you how much you can save on jobs that are on your board right now (he's listed under "Fenestra Building Products Company" in your Yellow Phone Book). Or write Detroit Steel Products Company, Dept. MB-7, 2251 East Grand Boulevard, Detroit 11, Michigan.

*Trademark

Fenestra

WINDOWS • PANELS • DOORS

engineered to cut the waste out of building

George

INTRODUCING A PANELBOARD WITH A PLASTISOL HEART

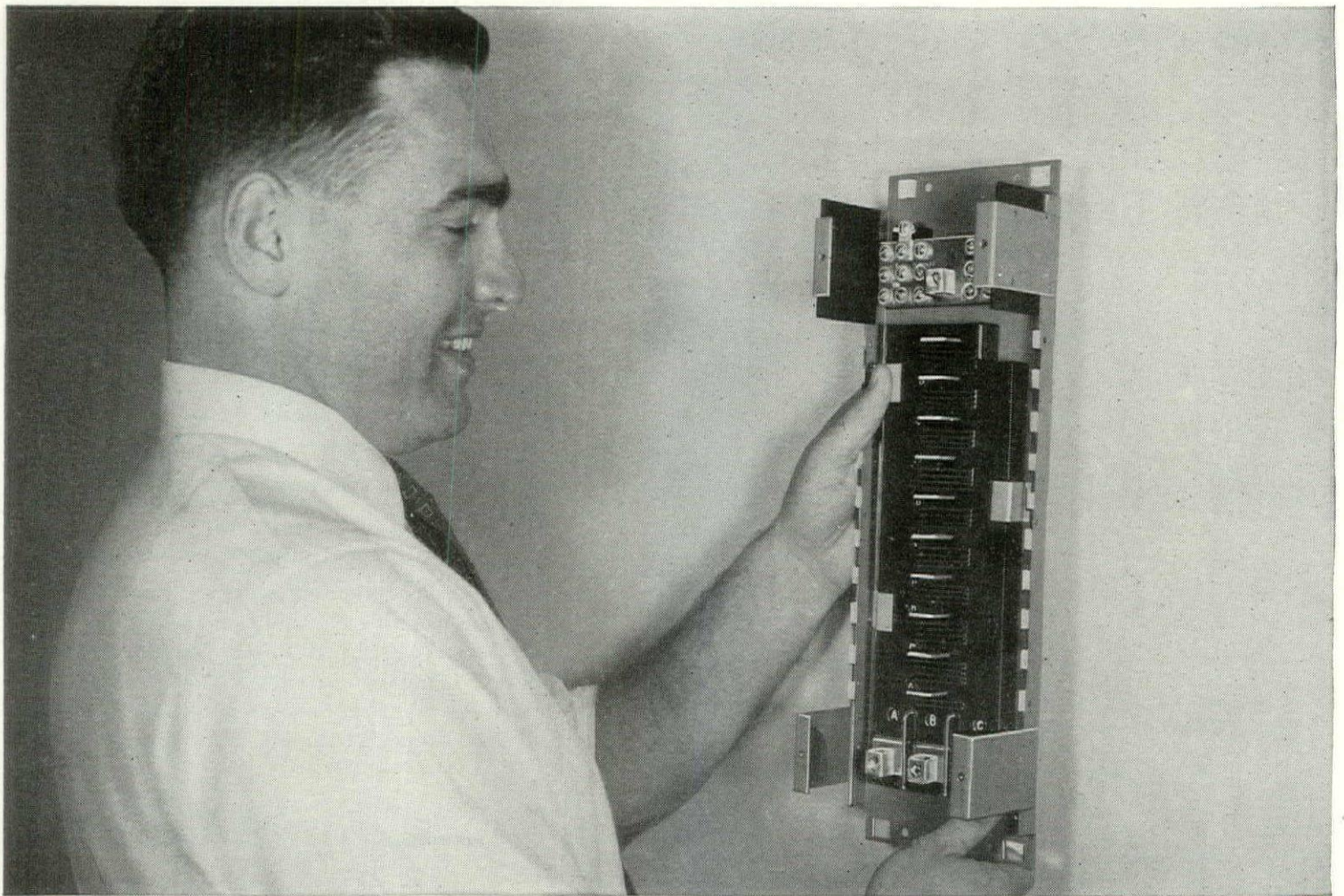
Now—for the first time—a new insulating material, Plastisol, is used as the heart of a complete line of panelboards.

The interior of Trumbull's new NLTQ Panelboard is formed with bus bars *molded in* a plastisol base. This plastisol material has many advantages over all other types of insulation: highly resistant to either acid or alkali; no harmful aging; no shrinking or embrittlement; highly resistant to tracking and carbonizing; will withstand temperatures of 212 F without harm; has very high thermal conductivity (even at minus 30 F) and is an excellent radiator of heat. Tests show

copper bus bars encased in plastisol run 10% cooler than in open air!

Trumbull's plastisol base is Underwriters' Laboratories, Inc. approved, and is completely endorsed by The Electrical Council.

The NLTQ Panelboard is furnished with lug-in mains or circuit breaker mains in capacities up to 225 ampere bus bars, in a range of 4 to 42 circuits. 3-wire, 120/240 volt A-C or 4-wire, 3-phase, 120/208 volt A-C, solid neutral. Provision can be made for increasing any bus capacity up to 210 amperes; also sub-feed, meter loop, through feed and split bus. **Write for Bulletin TEB-14.**



NEW INTERIOR SAVES INSTALLATION TIME, PROVIDES SEQUENCE PHASING

The interior is compact, allowing ample room for wiring. As shown in the picture at the right, it is mounted in the box by means of four posts and compression springs; this speeds installation, permits removal for ease in wiring.

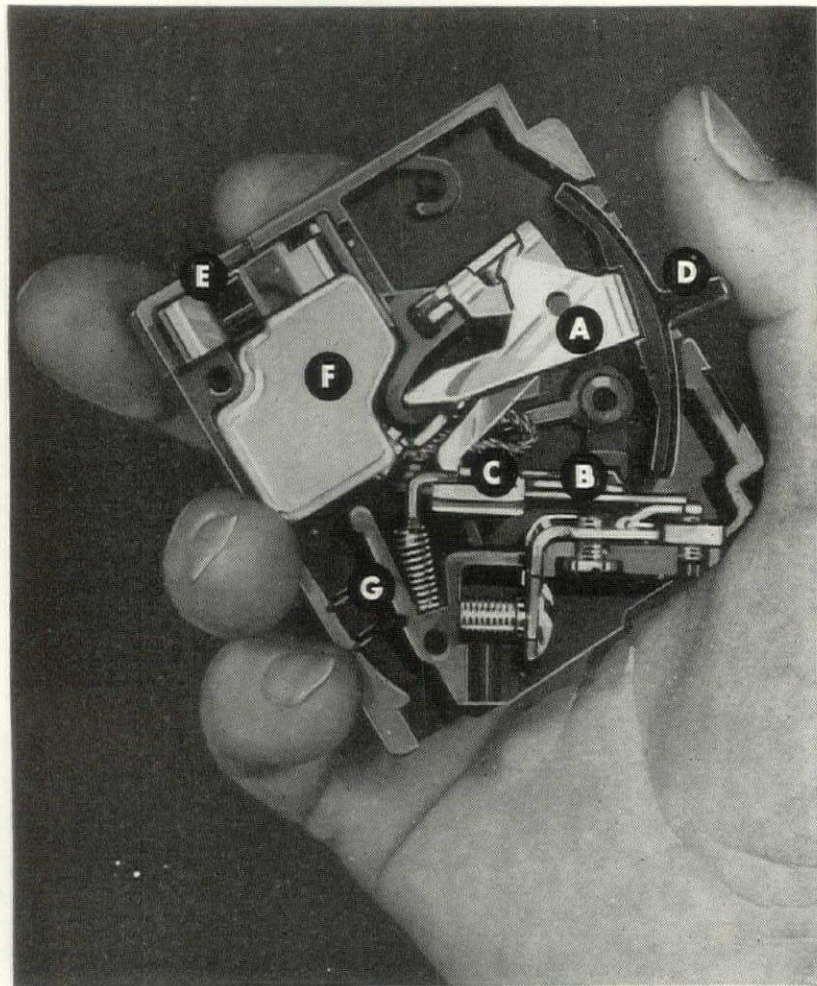
The bus bar and stab assembly is silver-plated copper for positive conductivity. Line terminals are heavy-duty,

silver-plated, solderless.

Another unique feature of this interior is that by ingenious design, sequence phasing is built into the Panelboard. Each adjacent Breaker is on an alternate phase, which assures balanced loads and circuits.

Phases are permanently identified by molded-in letters.

You've never before seen a **CIRCUIT BREAKER** like this in a panelboard



QUICK-MAKE, QUICK-BREAK Trumbull's new TQL interrupts with a *snap*. No matter how sloppily the handle is operated, the movable contact arm (A) opens or closes *fast and clean*... reduces burning or arcing of contacts.

DOUBLE PROTECTION *thermal and magnetic* Trumbull's new TQL trips automatically by (B) time-delay thermal action of excessive overload (but not by harmless temporary overloads) or by (C) instantaneous magnetic action for short circuit.

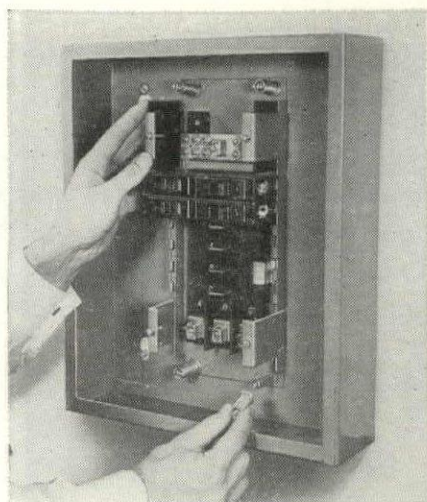
TRIP-INDICATING When an overload or short circuit causes the Breaker to trip, the handle (D) moves to mid-position between OFF and ON where it is easily observed from a distance.

TRIP-FREE Trumbull's new TQL Breaker automatically trips independently of the handle—it trips for a fault condition even though handle is held in ON position.

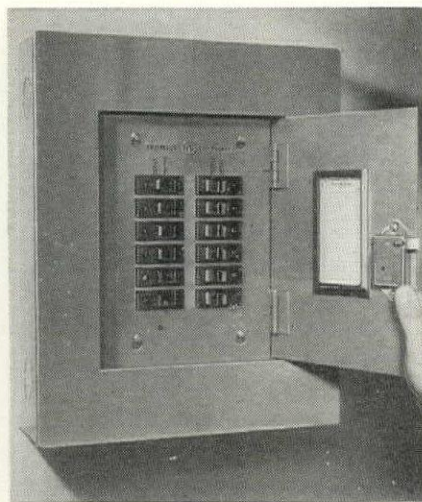
OTHER FEATURES Pressure-type silver-plated copper contacts (E)... arc chute (F) made of special refractory material... exhaust chamber (G) to cool gases... completely tamper-proof... Underwriters' Laboratories Inc. approved.

INTERCHANGEABLE All ampere ratings are physically interchangeable.

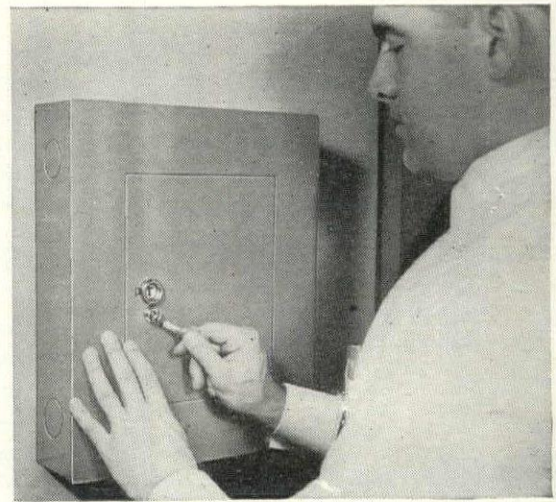
RATINGS 15, 20, 30, 40, 50 amp; 120 volt A-C, single pole, single throw. Interrupting: 5000 amp. 120 volt A-C, 120/240 volt A-C. Two-pole operation, independent trip, possible with handle extensions.



COMPRESSION SPRINGS save nuisance of nuts and washers, allow fronts to be lined up regardless of uneven box installation.



ONE-PIECE WELDED ASSEMBLY of front and barrier saves installation time. Front is attached to interior by means of four screws.



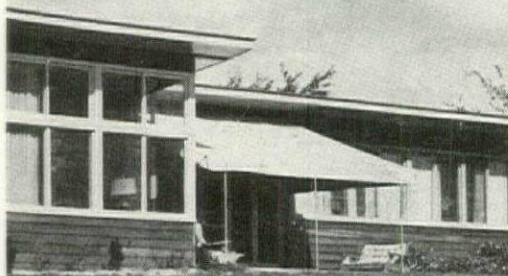
COMPLETELY PROTECTED With door locked, screws are concealed, front cannot be removed. Note attractive appearance; invisible hinges.

TRUMBULL ELECTRIC

THE TRUMBULL ELECTRIC MANUFACTURING COMPANY

PLAINVILLE, CONN.

• MAXIMUM QUALITY



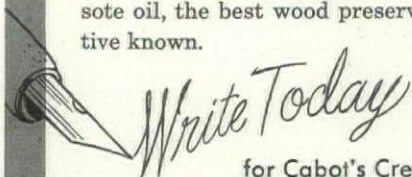
Architect: William Lescaze, New York

• MINIMUM COST...

Specify CABOT'S CREOSOTE STAINS

Cabot's Creosote Stains are ideal for today's tight building budgets. Cost 1/3 as much as good paint... produce a long-lasting attractive finish for all exterior woodwork, shingles, clapboards or siding. Available in a wide variety of attractive colors, clear brilliant hues to weathering browns and grays. And the colors in Cabot's Stains remain true, even after long exposure.

Cabot's Creosote Stains give years of protection from termites and decay because they contain 60% to 90% of pure, refined creosote oil, the best wood preservative known.



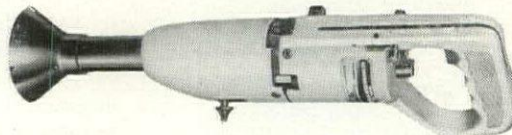
for Cabot's Creosote Stain Color Card and complete information. Samuel Cabot, Inc., 730 Oliver Bldg., Boston 9, Mass.

CABOT'S CREOSOTE SHINGLE STAINS

PRODUCT NEWS

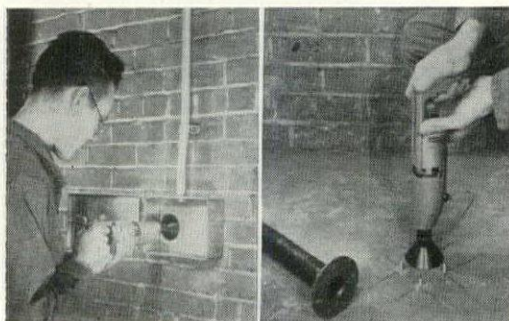
PORTABLE POWER TOOL shoots stud into steel, concrete

For 135 years Remington Arms has been supplying sportsmen with firearms and for the past several years has made cartridges for other manufacturers' powder actuated industrial tools. This month Remington (now an E. I. duPont subsidiary) came up with its own portable stud driver. The new instrument weighs little more



than 5 lbs. and is equipped with several safety devices which protect the operator and those nearby. Remington's engineers claim that use of the stud driver can save as much as 75% in labor over other current methods of joining or attaching fixtures to such structural materials as concrete, steel, wood, brick, asbestos siding and roofing. The energy of the tool is provided by a small charge of specially developed propellant powder—about three grains—which generates enough power to drive a steel stud into a 3/4" thick steel plate or into cured concrete so that only a two-ton pull will remove it. To use the gun, a cartridge with a plastic heel cap, colored to indicate the powder charge, is inserted in the mouth of the 32 caliber case. The studs vary in length from 5/8 to 2 3/4", and are made of a tempered steel alloy which is said to resist shattering when driven. The studs are made in 20 different sizes in four types: standard nail head, break-off head (for semiflush mounting), externally threaded screw, and internally threaded sleeve. After loading the gun the operator must press the neoprene-lined steel guard firmly against the work surface and depress the safety button before squeezing the trigger. The stud driver cannot be fired if its guard has been removed from the muzzle, and elimination of any of the simple preparatory steps will prevent the gun from firing. A firing pin indicator reveals instantly to the operator whether the gun is cocked. The tool has a very low recoil and makes little more noise than a pop gun. A number of accessories have been designed for the Model 450 for specialized construction jobs, such as attaching electrical conduit to concrete and steel, and attaching corrugated steel and asbestos roofing and siding to steel frame buildings. The Remington Stud Driver sells for about \$119.50.

Manufacturer: Remington Arms Co., Inc., Bridgeport, Conn.



They walk with SAFETY



on NORTON non-slip Floors and Stairs

- Permanently non-slip
- Extremely wear-resistant
- Non-resonant

Never again need you worry about anybody slipping on floors, ramps or stairs. Positive, permanent non-slip protection—even when wet—is the guarantee you get with Norton Floors.

The extreme wear-resistance of Norton Floors to the heaviest foot traffic makes their installation an economical investment in long, trouble-free service. Also, they are quiet and comfortable to walk on.

You have four choices of Norton non-slip floor products: (1) Stair and Floor Tile, (2) Ceramic Mosaic Tile, (3) Aggregate for Terrazzo Floors and (4) Aggregate for Cement Floors.

Write for our free Catalog No. 1935 or see our Catalog in Sweet's Architectural or Engineering Files.

NORTON COMPANY

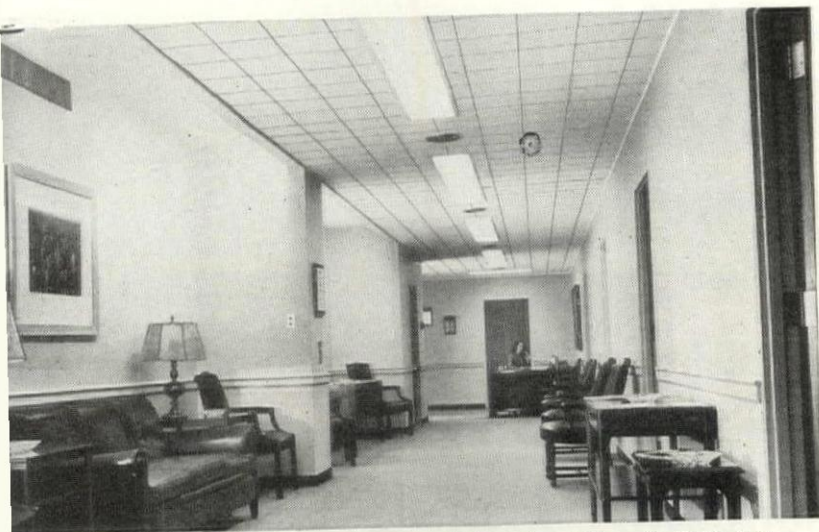
Worcester 6, Massachusetts



TRADE MARK REG. U. S. PAT. OFF.

Making better products to make other products better

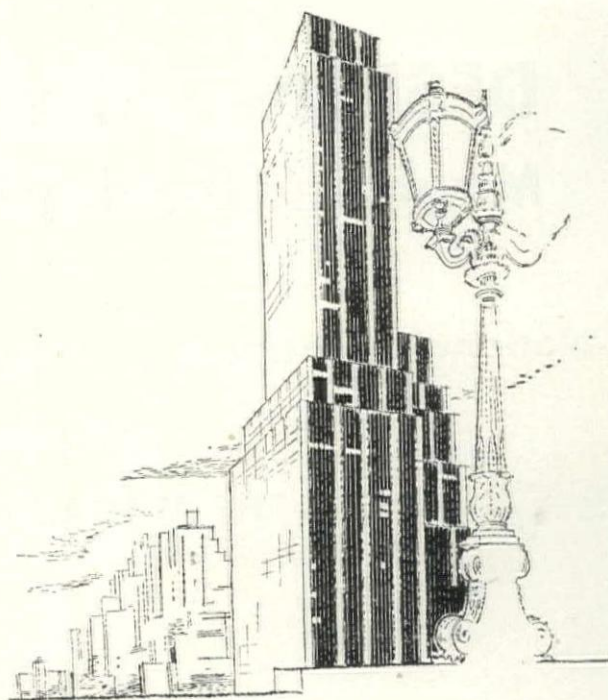
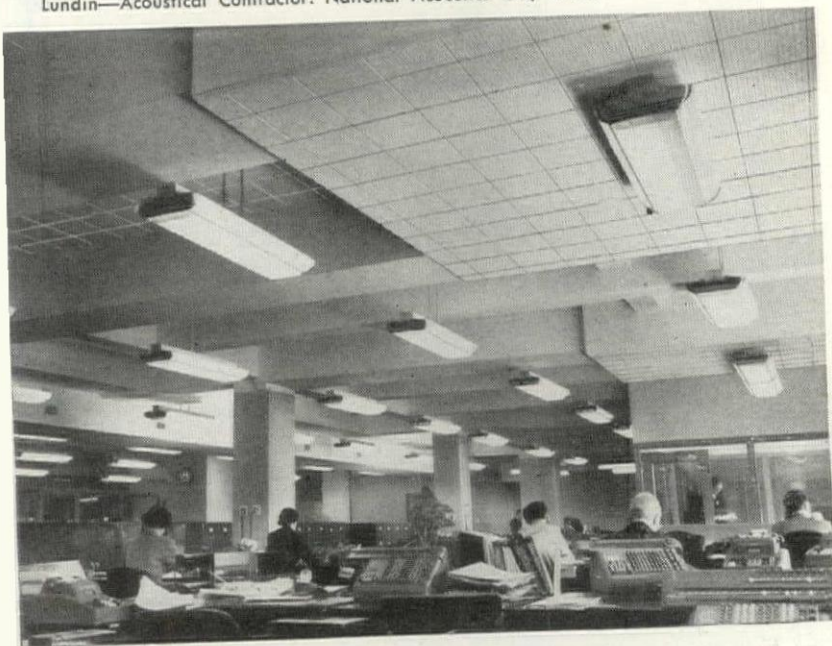
NON-SLIP FLOORS



Above and below: Installation in American Airlines, Inc., Offices. Architect: Kahn & Jacobs—Acoustical Contractor: National Acoustics Co., N.Y.C.



Below: Installation in Canada Dry Ginger Ale, Inc., Offices. Architect: Carson & Lundin—Acoustical Contractor: National Acoustics Co., N.Y.C.



DESIGN for Quiet, Firesafe BEAUTY

In 100 PARK AVENUE, Fiberglas* Acoustical Tile—the modern, low-cost, incombustible acoustical material—hushes noise in over 150,000 sq. ft. of office space. It's specified by architects for a number of tenants because it offers a unique combination of values:

- Fire Safe
- High Acoustical Value
- Decorative Beauty
- Good Light Reflection
- Ease of Application
- Sanitary
- Cleanable and Paintable
- No Sustenance for Vermin
- Dimensional Stability
- High Insulation Value
- Low Cost

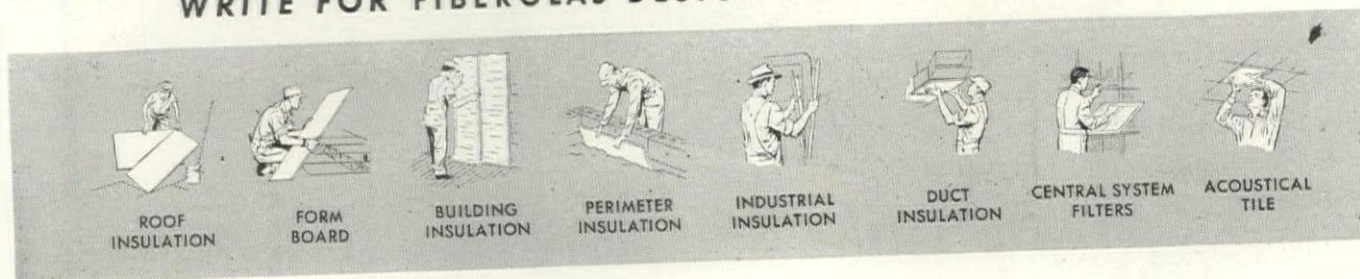
For complete specification information on Fiberglas Acoustical Tile, see Sweet's Files—Architectural, or call your local Fiberglas acoustical contractor, listed in the yellow pages of the phone book.

Owens-Corning Fiberglas Corporation, Department 67-G, Toledo 1, Ohio. Branches in principal cities.



*Fiberglas is the trade-mark (Reg. U. S. Pat. Off.) of the Owens-Corning Fiberglas Corporation for a variety of products made of or with fibers of glass.

WRITE FOR FIBERGLAS DESIGN DATA _____



\$6,500 DESIGN COMPETITION Magazine Display Rack Contest

sponsored by
the National Association of Magazine Publishers
and Architectural Forum,
THE MAGAZINE OF BUILDING.

problems

To design a complete magazine display rack installation in the following four classes of magazine retailers:

- a** Drug Stores
- b** Hotels, Office Building Lobbies and Air, Rail and Bus Terminals
- c** Super Markets
- d** Department Stores, Cigar and Stationery Stores

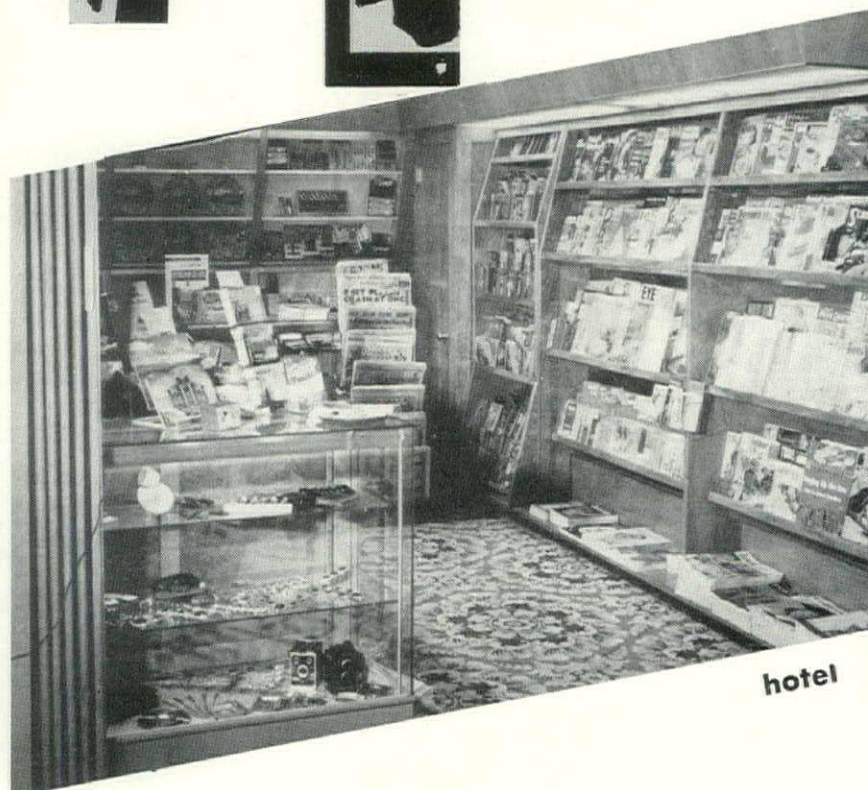
purpose

To improve the design of magazine display facilities. To stimulate the interest of architects, industrial and store fixture designers in installations that will not only fit their surroundings, but will also develop the maximum sales potential for the space allocated to magazines.

To encourage cooperation and consultation between architects, industrial and store fixture designers and magazine distributors. At the present time too many of these display fixtures are designed by persons who have not made an adequate study of the problems involved.

basis of awards

- 1) the functional layout and esthetic appearance of the display in relation to its surroundings.
- 2) the effectiveness of the display fixture in allowing for the greatest number of full cover displays within a given area
- 3) the utility of the display rack in a large number of similar outlets, for example, a drug store magazine rack should be useable in a large number of drug stores
- 4) relative economy of installation
- 5) ease of handling for the magazine stand manager.



hotel

awards

First Grand Prize \$1,000
(the entry which in the opinion of the judges is the best in the contest. It may lie in any of the four groups, A, B, C or D)

Three First Prizes of \$500
(for entries chosen best in the three groups not represented by the grand prize)

Four Prizes to Distributors of \$250
(for those who cooperated with the winners of the \$1,000 and \$500 prizes)

Four Second Prizes of \$250
(one for each group)

Four Prizes to Distributors of \$125
(for those who cooperated with the winners of the second prizes)

Fifteen additional Prizes of \$100
(to be distributed among groups A, B, C or D unless the judges decide on a different distribution)

form of submission

Judgment will be based on photographs and black and white drawings of completed stands. Each exhibit shall comprise at least one photograph of the rack loaded with magazines and another of the empty rack, both taken from the same point— $\frac{3}{4}$ front view. There shall be another photograph showing the facility and its surroundings.

Drawings as follows: front view, end view and a vertical section through each display space—all at a scale of one half inch equals one foot.

Any exhibit submitted becomes the property of the Contest Commission.

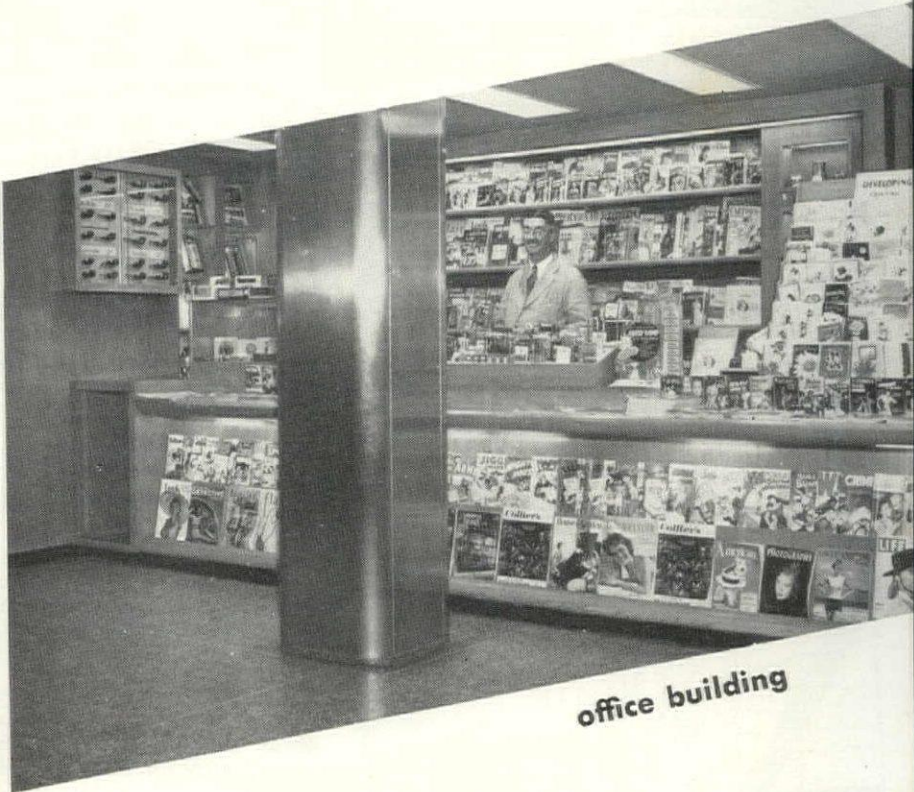
The jury of judges will be made up of people from the field of publishing chosen by the National Association of Magazine Publishers and architects to be nominated by Architectural Forum, THE MAGAZINE OF BUILDING.

dates

Contestants may submit any installation completed during 1951 through June, 1952. Contest closes July 1, 1952.



chain store



office building

eligibility

The competition is limited to architects, industrial or store fixture designers and draftsmen or their employees.

Contestants must register (coupon, right) to receive the program which will include further details of the competition. This is an announcement only; conditions governing the competition and the awards are set forth in the program.

John Callender, AIA, Professional Adviser
c/o Architectural Forum, The Magazine of BUILDING
9 Rockefeller Plaza, New York 20, N. Y.

I intend to enter the NAMP-FORUM Rack Design Competition.
Please send me the program, including the conditions governing the competition and the awards.

name _____
firm (if any) _____
address _____
city _____ state _____

check one: ☐ architect ☐ designer ☐ draftsman

A NEW KIND OF ZONING

(Continued from page 177)

core and to avoid heat loss by having small windows and a minimum of exposed wall surface. The semispherical igloo and the Cape Cod cottage were natural engineering approaches to this neat loss and shelter problem.

Technical conditions today are quite different. Insulation, double glazing and circulating heating systems have invalidated the igloo concept. With those technical problems solved, the stair is now beginning to disappear, since

it is the one element requiring unnatural physical exertion. Current popularity of "ranch" type stairless plans is not a fad but has its roots in inevitable technical and physical evolution and is a tangible improvement in quality.

The greatest mass of residential construction throughout the country consists of one-family structures on subdivision lots. Typically, side yards separating buildings are too narrow

either for privacy or for any tangible use of the land area. Front yards lack privacy from the street. But front yard requirements force all buildings into a line so that side yard privacy is automatically lost, and severely handicap the full exploitation of a rear yard because of reduction in that area. Rear yard requirements have the same negative features—they force the buildings into a line and make even full front yard development impossible.

With respect to light and air an analogy can be drawn between an orchard and a group of houses. The tree depends directly on light for productivity. Hence, the staggered or hexagonal pattern of tree planting. Only a moron would plant fruit trees the way the standard zoning ordinance forces citizens to plant houses.

The "cheese box on a raft" principle of yard setbacks inhibits the evolution of domestic building. One story houses cannot be put on small, or even medium sized lots without denying the property owner these rights:

- To build a house taking full advantage of planning and technical progress.
- To make the best free use of the open space he owns.
- To secure privacy for himself without infringing on his neighbor's privacy of sight and sound.
- To secure his full share of light, air and sunshine.
- To avoid the monotony of substantially duplicating his neighbor's house.

The denial of these rights violates essentially every principle suggested earlier.

Classification of dwellings. It is hard to swallow the logic or have faith in effective enforcement of regulations dependent on "one-family," "two-family" and "multiple" terms.

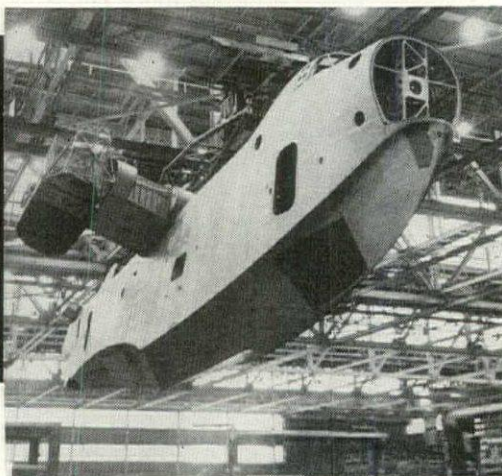
Confusion on this point suggests a statistical dog chasing its tail. The 1950 census says a dwelling unit is a group of rooms or a single room occupied by a family or other group of persons living together, and having a separate entrance and cooking facilities. In 1940 a dwelling was the quarters occupied by a household, which was defined as a family or other group of persons living together. Essentially, then a dwelling unit is what houses a family, and a family is what lives in a dwelling unit.

While adequate for demographic speculation, this can be very perplexing to a building inspector confronted with a set of plans having a separate wing for servants or a separate guest house, to an owner who wants a hot plate for coffee in the bedroom, or to a sociologist trying to sort natural families out of eight

(Continued on page 236)

Prominent Aircraft Manufacturer Selects **COOLITE** Heat Absorbing and Glare Reducing **GLASS**

Designed and built by The Glenn L. Martin Co. for destruction of enemy denizens of the deep, this P-5M-1 Marlin anti-submarine seaplane is one of many being readied for use by the U. S. Navy.



Over 90,000 sq. feet Glazed in Three Exposures in Glenn L. Martin Buildings

Appreciation of the vital role played by regulated daylighting in keeping production at high level prompted management of The Glenn L. Martin Company to explore thoroughly the advantages of heat absorbing and glare reducing glass for its huge plant in Baltimore, Md.

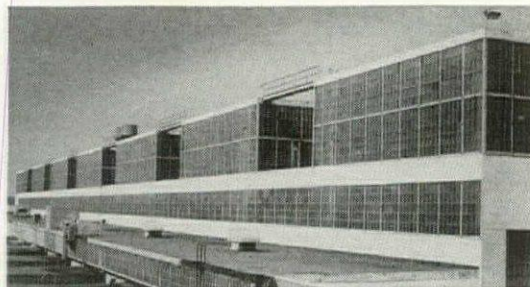
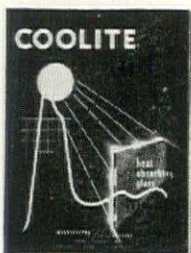
Following conclusive tests, Coolite was specified in "B" and "C" buildings where it has since demonstrated its ability to control sunlight and solar heat to meet exacting requirements.

According to Martin Company executives, Coolite, Heat Absorbing and Glare Reducing Glass admits maximum natural light while excluding blinding sun rays that cause eye fatigue and lead to inefficiency and production declines.

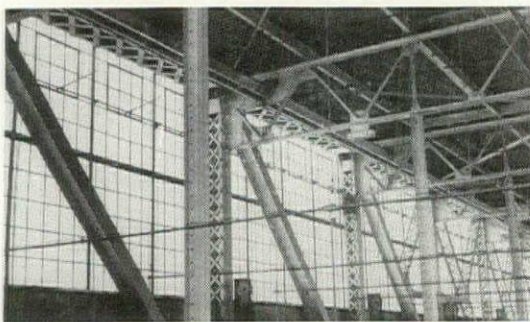
In buildings glazed with Coolite, glare reduced, there have been no complaints from workers due to sunlight glare. Yet on bright days electric lights can be completely shut off in the final assembly areas. As a result, the company considers Coolite glass indispensable in all the south, west and east exposures of its buildings.

Like many others you too may find that whether used in new construction or modernization, Coolite, Heat Absorbing and Glare Reducing Glass can provide increased efficiency and economy. For details, see your nearby Mississippi Glass distributor.

Send for free catalog,
"Coolite Heat Absorbing
and Glare Reducing Glass."
Samples on request.



West elevation of The Glenn L. Martin Co's "B" building glazed with Coolite, Heat Absorbing and Glare Reducing Glass.



Interior view of Coolite in a southern exposure. Note even distribution of soft, comfortable daylight.

Rolled, Figured and Wired Glass by Mississippi is "Visioneered" for better daylight illumination. Available in a variety of patterns and surface finishes, all scientifically designed to distribute light to best advantage.

MISSISSIPPI Glass COMPANY



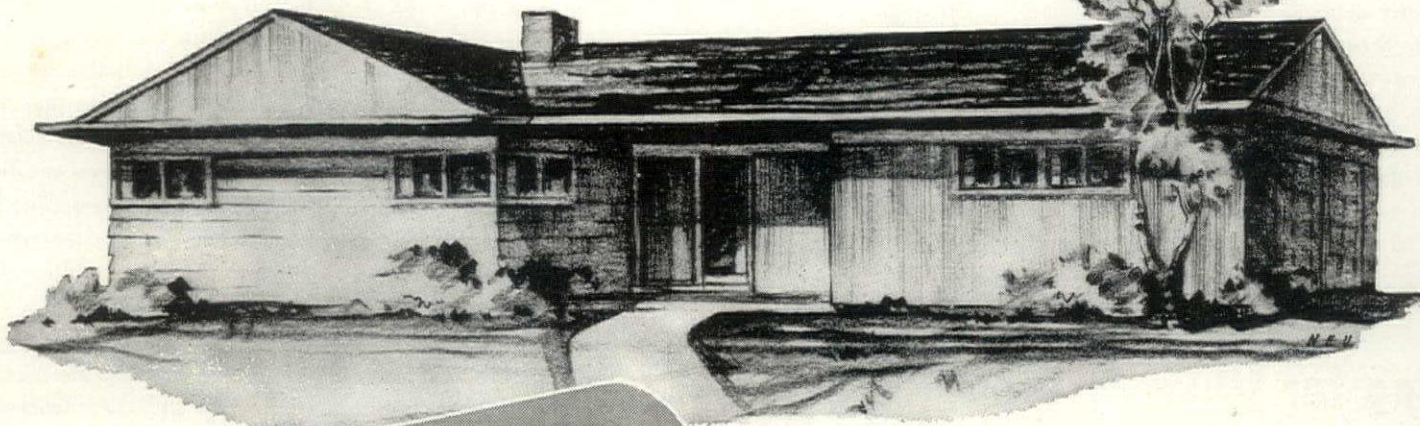
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These "New-Design" homes are big news in the home-building market. They're designed by three of the nation's leading contemporary architects. The Peaseway Eastwood, Crestwood and Archwood are 2, 3, and 4 bedroom homes. They offer quality, durability, livability, and easily-cared-for spaciousness. And they sell easily! Peaseway homes are FHA approved.

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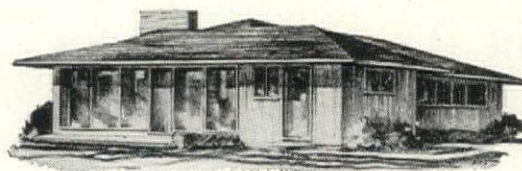
Start now to dominate the building market in your community. Just drop us a line on your letterhead asking for the Peaseway Plan. Within a few days you'll receive the full story. Remember—the number of Peaseway franchises still open is limited—so don't delay, write today!

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Two bedroom home. Modern as this moment. Designed by Robison Heap noted contemporary architect.

A NEW KIND OF ZONING

people living in one room, and to a taxpayer wondering whether a married son and daughter-in-law are dependents. Tax assessors generally have thrown up their hands and by so doing have ignored both "families" and "dwellings." A structure does not change, whether it is occupied by an old lady with four great danes or by parents with married children, over-staying guests and a fleet of servants. Attempts to define the dwelling in

physical terms is further clouded by "open" plans and multi-purpose rooms, sliding partitions and a great variety of appliances from one burner electric hot plates to full sized kitchens.

This debate can go on and on. Since social occupancy, partitions and equipment at least have weaknesses, a simpler and less fickle measure is needed for uniform and effective balancing of residential space by zoning.

Separate rules for accessory buildings. The effect of accessory buildings on neighbors as to light, air and privacy is not different from that of a main structure. It is difficult to see logic in a ruling that allows a car to live 3' from a line but decrees that the owner must live 35' away, and that a detached garage have different treatment from one that is attached to the main structure. The size and appearance of some garages moreover is now far different from today's smaller houses.

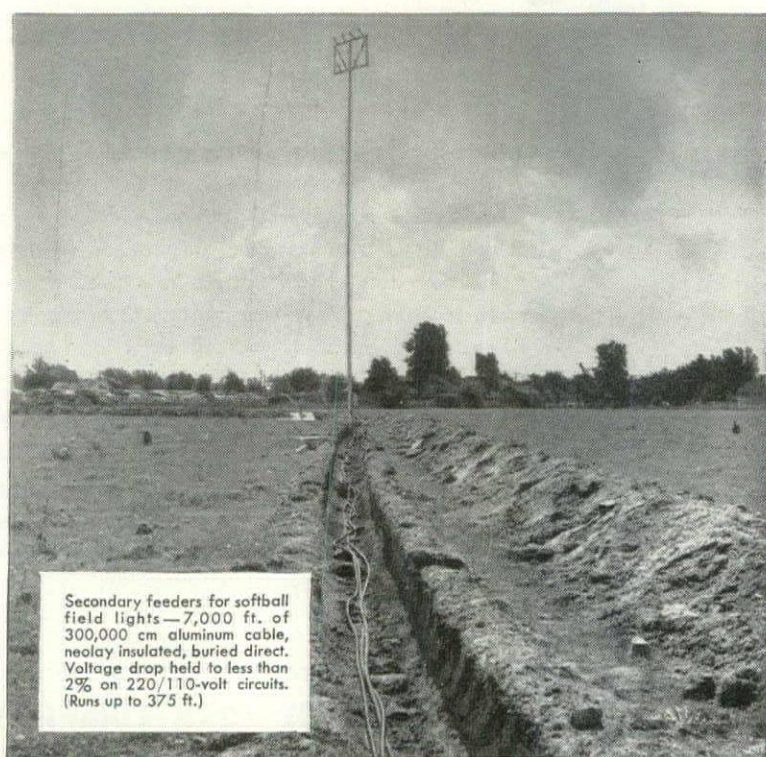
Minimum area and cubage standards. Attempts have been made in the past to safeguard the character of a neighborhood, both through zoning and restrictive covenant, by minimum cubage, building and lot area, value and racial standards. While standards of space are defensible for welfare reasons and on grounds of population density in relation to municipal facilities, other devices have either been found of clouded legality or unworkable. Race restrictions are unconstitutional; value restrictions are illegal; and nobody figures cubage the same way twice.

It has also become apparent that houses of a size out of balance with the resale market are as much of an ultimate menace as too small structures. Families are becoming smaller. Widespread great fortunes are precluded by current taxes. The old time "servant class" is passing. A mansion once designed to accommodate a large family or as buttress to the prestige of the owner seldom has continuing usefulness in its original form. Compact neighborhoods of mansions within a generation can be expected to incur changed or mixed use. They have and may continue to produce some of the worst blight to be found in the country. Encouragement of large size, as a means of prestige or protection of surrounding property values without proper relation to land size has accordingly become a fallacy.

Height limitations. The usual ordinance incorporates some limitation as to height of structures, but fails utterly to control bulk. Indeed, if the setbacks were ever thought of as bearing on bulk, it can be demonstrated that the addition of a few feet greater depth and width to a lot would permit volume of ridiculous proportions. Conversely, when lots are small, the yards and height limitations operate to remove any latitude of design or, in some cases, even to preclude any construction. Because of these facts, present controls have little to do with the protection of light and air or bulk of the dwellings themselves, and the only beneficiary is the nonexistent horse in the street.

(Continued on page 238)

Shooting for low-cost installation?



Secondary feeders for softball field lights—7,000 ft. of 300,000 cm aluminum cable, neolay insulated, buried direct. Voltage drop held to less than 2% on 220/110-volt circuits. (Runs up to 375 ft.)

figure it in aluminum

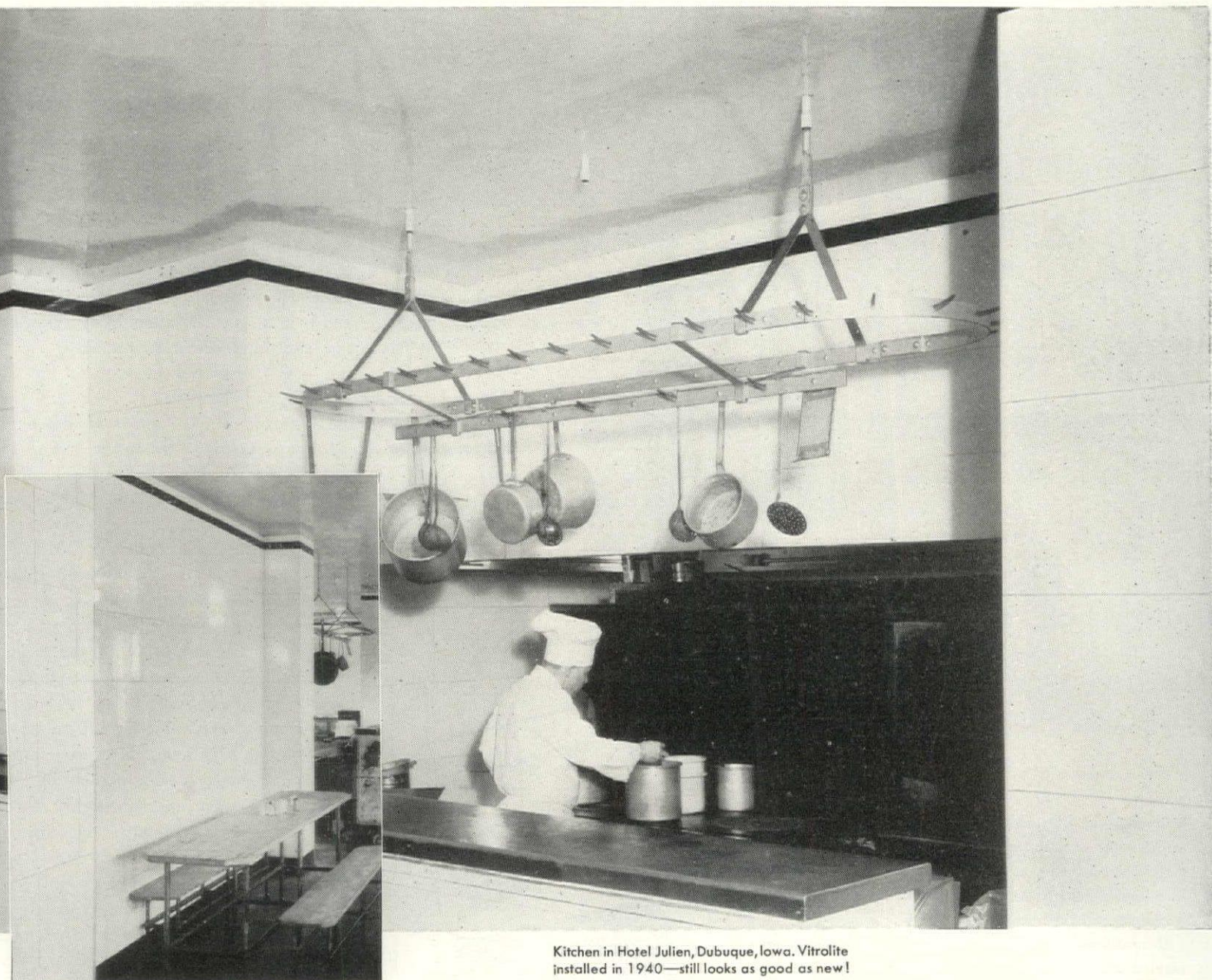
You can't miss seeing the saving when you figure wiring in aluminum. For distribution lines, power and feeder cable, for industrial wiring—insulated aluminum electrical conductors cost less to buy, less to install. The bigger the cable, the greater your saving. For names of manufacturers, call your nearby Alcoa sales office (look under "aluminum" in your classified tele-

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Although the rearmament program prevents unrestricted sale of aluminum, we are ready to help you with the planning required for electrical wiring projects. Get the facts! Write for "Questions & Answers About Aluminum Conductors and Installations".

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Kitchen in Hotel Julien, Dubuque, Iowa. Vitrolite installed in 1940—still looks as good as new!

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Vitrolite comes in sizes up to 30" x 36" for interior walls. Joints are trim and narrow. It is ground and polished to mirror-like smoothness. *Vitrolite* comes in a wide variety of correlated colors. Think of the places you can use this lustrous glass facing—washrooms, lobbies, corridors, cafeterias. It makes a good impression *wherever* it goes.

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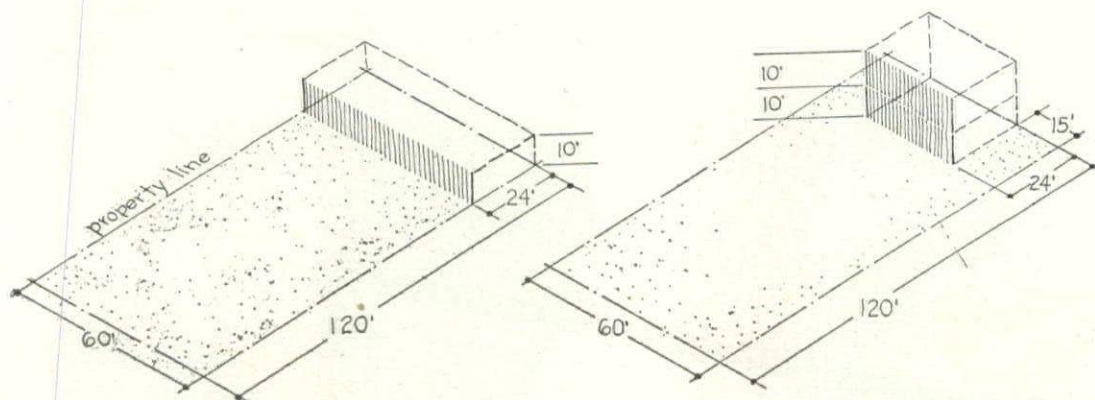
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FLOOR AREA RATIO is suggested as a modern substitute for the usual height and land coverage limitations. F.A.R. of 0.2 for a 60 x 120' lot (7,200

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A NEW KIND OF ZONING

NEW TOOLS DESIGNED FOR MODERN ZONING

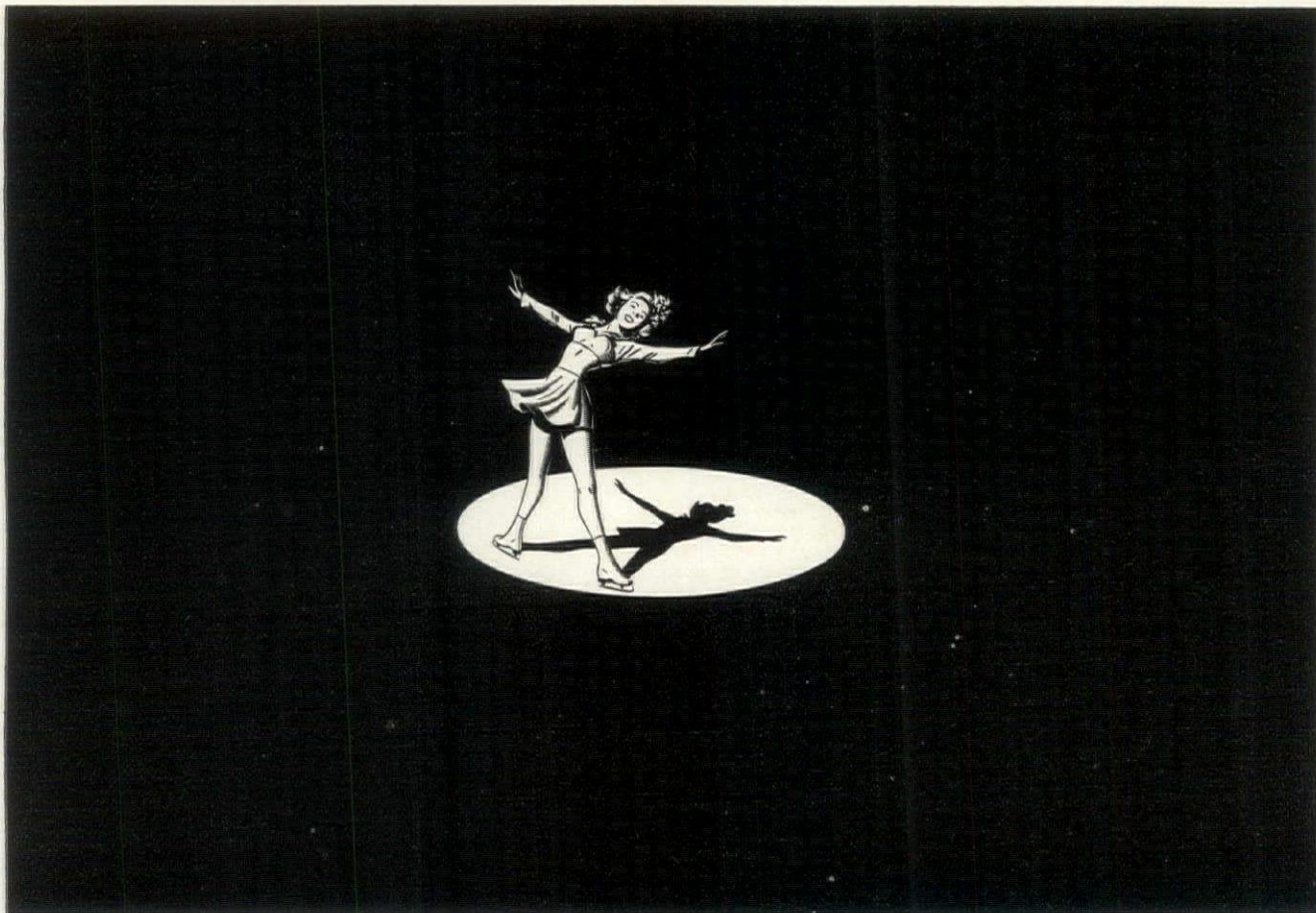
Floor area ratio to control bulk. Study of the past few years has persuaded most authorities that the general quality of space and openness of an area is dependent on the bulk of buildings in relation to the land area. Early attempts to control this include "coverage" and height, but difficulties in avoiding inequities and in application are such that these are now considered inferior to the "Floor Area Ratio." The "F.A.R." is a ratio between the aggregate of all floor areas of a building including outside walls, to the area of the lot within property lines. A F.A.R. of 1.0 means that, on a 7,200 sq. ft. lot 7,200 sq. ft. of floor area may be built on one floor, or 3,600 sq. ft. on each of two floors. A F.A.R. of 0.5 means that 3,600 sq. ft. may be built on the same lot in one or more floors, e.g., 600 sq. ft. on each of six floors. A F.A.R. of 0.20 means that 1,440 sq. ft. can be built, and so on.

Advantages lie in the fact that crowding of the lot or neighborhood can be prevented while leaving reasonable latitude to the owner in the design of his structure. Its simplicity, clarity and equity, when parcels of land of different size exist, are also highly desirable. It also substantially reduces the problem of social occupancy which has been so troublesome in definition and enforcement.

While not completely comprehensive in its scope, it does require fewer supplementary controls, in low density areas, than other devices. Since it should be applied to all covered areas, including garages, carports, porches, breezeways and other accessory construction like garden houses, tool sheds, and studios, special provisions for control of such related bulk are unnecessary. The use of square feet is progressively supplanting the cubic foot in cost estimating because of the inconsistency of figuring pitched roofs at high cubage vs. flat roofs at no cubage, and the necessity for partial allowance for depth of foundations, height of chimneys, and volume of porches. While maintaining a fair parity in volume, it serves equally well for one, one and one-half, and multi-story buildings. It at a glance makes perfectly definite to an owner what his maximum possibilities are and protects the neighbor because he also knows what to expect.

Bulk controls to preserve neighborhood character. Extra family occupancy and the crowding of rooms by too many people present problems beyond the scope of practical enforcement in a zoning ordinance. If this is granted, it then follows that the bulk of a building in relation to the lot area is the only

(Continued on page 240)



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GOT AN air conditioning problem or job that requires something extra in the way of effort to get it done? If you have, checking with usAIRco is a mighty good idea! Bending over backwards to keep our customers happy is an old usAIRco habit. As a matter of fact, we're kind of glad to

see a job that has a lot of folks shaking their heads because delivering results when the going's rough is where we of usAIRco really shine. We've learned through more than 25 years of experience that there's no job too big, too tough or too small. If the problem's one involving air, usAIRco tackles it. The sum total of this background and experience is always available whenever you need it. Our engineers and technicians will be johnny-on-the-spot whenever you call. To get better acquainted with usAIRco and its many products, why not write for our new booklet titled, "Practical Pointers."



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A NEW KIND OF ZONING

really effective control of the degree of aggregate openness or density of a neighborhood.

The distinctions between "one-family," "two-family" and "multiple" can then be discarded without jeopardy to neighborhood character. For example, if we assume a 1,440 sq. ft. dwelling in a 0.20 district, a lot of 7,200 sq. ft. would be required for one such dwelling, about 15,000 sq. ft. for two, and so on. On this basis it can be argued that a

double dwelling in one structure of 2,800 sq. ft. on a lot of 15,000 sq. ft. produces a more handsome result and better character than two small houses on the smaller lots. This argument can be extended to four and more unit structures, bearing in mind that they are controlled by the same F.A.R. and the more condensed the units, the greater the open space.

The danger of too wide inconsistency in structure sizes within a neighborhood must,

however, be recognized in some areas. While a two-family house on one floor may be esthetically superior to a small one-family cube, neighborhood sentiment might preclude a large building with hundreds of apartments, even though surrounded by ample space. In such areas a maximum floor area per structure could serve as a simple and effective device. It is impossible to forbid an owner the right of renting his single house. It is probable that the prejudice against the admixture of rental units in a low density neighborhood may be more against inconsistent building types than against tenure itself. The exercise of the F.A.R. within minimum and maximum aggregate limits might cure this common apprehension without putting the owner in the customary straight jacket.

This control, moreover, provides the best hope of effective treatment of or reuse of older mansions. If an old house of 4,000 sq. ft. in a 0.20 district is on a lot of 20,000 sq. ft., it is difficult to prove that the preservation of the house and grounds, and its use by four families, presents a lower quality than four small houses on the same amount of land.

It would, of course, be necessary to control any such conversion by refusal of a building permit to remodel if inadequate land surrounds the building.

There may be fear in some quarters that such conversion and reuse will deteriorate values; "rooming houses" are a constant bugaboo. The reverse will probably be true *provided* the F.A.R. is adhered to. Experience has shown that large old houses enjoy a very poor market and are frequently "dumped" at fractions of their cost when no longer occupied by their initial owners. Luxury housing, like luxury automobiles, has the greatest shrinkage in value since it is the most particularized in design and purpose. It therefore follows that conversion of an old mansion to four high-class rental apartments is financially preferable to dumping, and that such financial advantage supports, rather than depreciates, surrounding values. It can also be observed that the deterioration occasioned by rooming houses occurs only when the land was overbuilt at the outset, but this defect was not serious while the building was under-occupied. An oversize new mansion occupied by two people, with enough open space for two people, presents small danger compared to occupancy by 20 people. However, if the mansion had enough land for 20 people, conversion will not upset the neighborhood balance as determined by the F.A.R.

Building on property lines without sacrifice of privacy. The usual ordinance is free-

(Continued on page 244)



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DOORS, FRAMES
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► **SLIDING CLOSET
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★ Sliding closet door units are available in two styles. (1) Frames are 1-piece welded assembly or (2) with header, jambs and track in knocked-down form. Door panels are identical. Both are complete with all hardware.

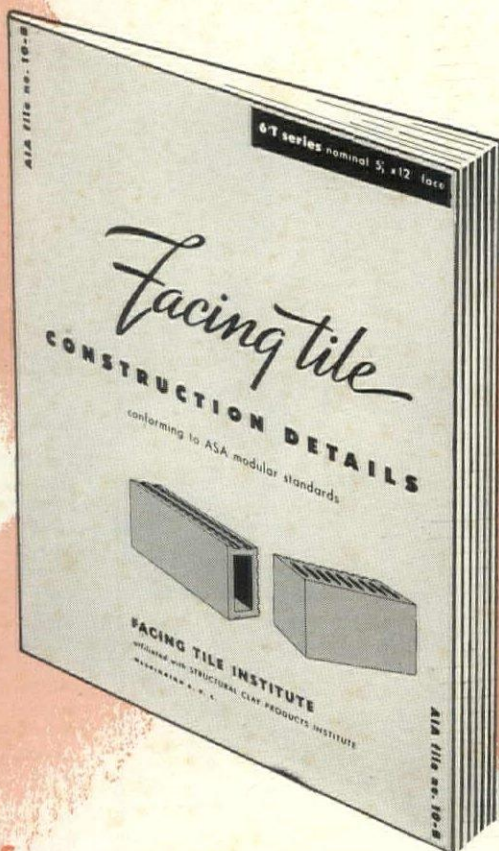
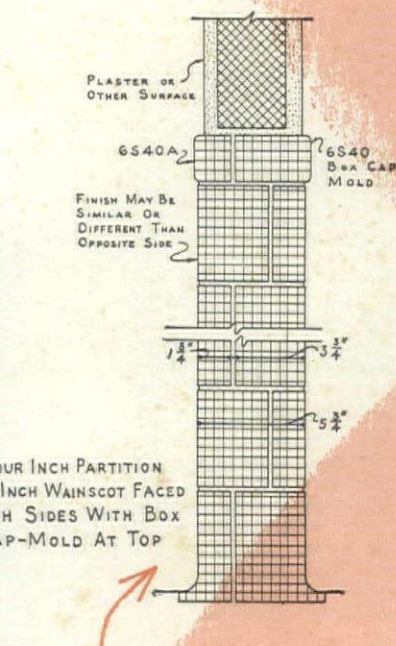
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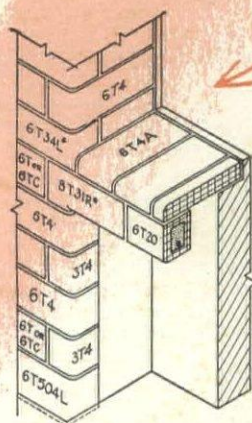
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Also shown are 4", 6" and 8" partitions bonded to the main wall with rounded edges and copings. Locker and cabinet recesses with octagon protection around columns or piers are another feature. One page, devoted to radials, demonstrates 12" and 24" external radial corners plus 48" internal corners.

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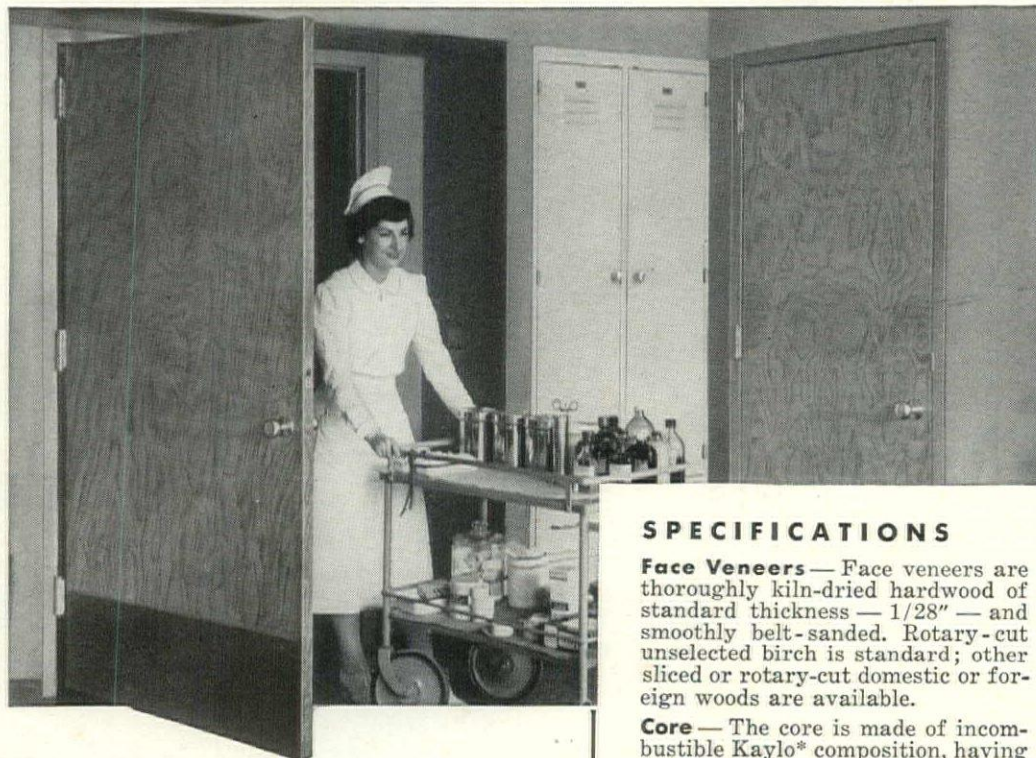
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No wonder Weldwood Fire Doors have the acceptance of fire officials...and are being selected for all kinds of buildings—all over the country. (Including the United Nations Building in New York.)

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SPECIFICATIONS

Face Veneers—Face veneers are thoroughly kiln-dried hardwood of standard thickness — 1/28" — and smoothly belt-sanded. Rotary-cut unselected birch is standard; other sliced or rotary-cut domestic or foreign woods are available.

Core—The core is made of incombustible Kaylo* composition, having a normal density of 20 pounds per cubic foot. The core sections are joined together with tongue-and-groove joints, as approved by the Underwriters' Laboratories. The core is smoothly sanded prior to application of crossbands and face veneers.

Banding—The banding is of birch, treated with Class "A" fireproofing agent. The top banding is 1/2" in thickness; the side banding 3/4"; and the bottom banding is 1 1/2" in thickness, made by laminating two 3/4" pieces.

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Adhesives—The core and edge banding are bonded together with a waterproof resin glue. The entire core is sized on two sides to insure perfect glue bond between core and crossband. The core, crossband and face veneer are bonded with waterproof Tego film phenolic glue by the hot plate process.

Sizes—The thickness of all fire doors is 1 3/4". Available in range of standard sizes up to and including 4' by 7'.

Vision Panel—If required, a vision panel frame for a 10" x 10" light (only size available) shall be provided carton-packed and complete with screws. A baked finish of light brown metal paint is provided on all surfaces. Glazing with 1/4" wire glass shall be done by others.

*T. M. Reg. Owens-Illinois Glass Co.



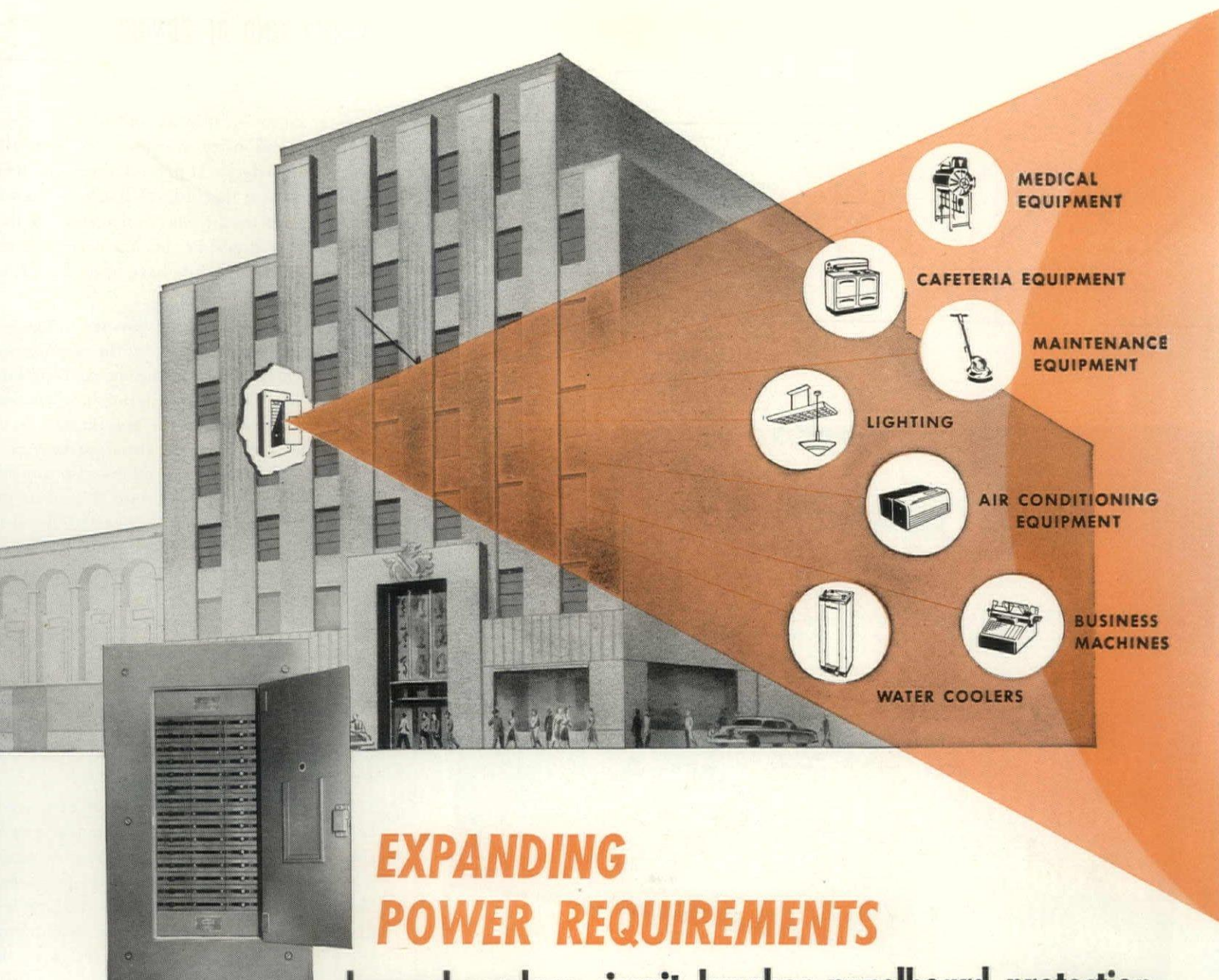
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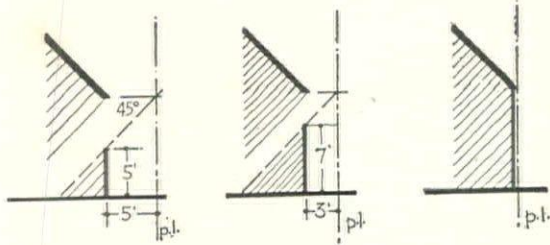
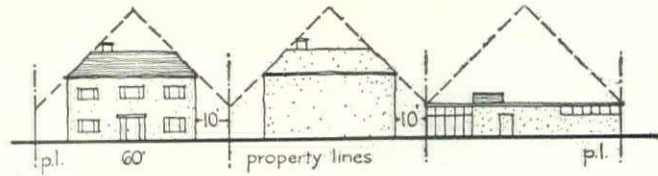
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A NEW KIND OF ZONING



LIGHT AND AIR are assured under proposed new zoning by control of window sizes. A house with its side wall on the lot line would have no windows (near sketch left); sill height of window in side wall set back from lot line (other sketches, left) would be controlled by 45° line from a point 10' above the property line. Sketches above illustrate suggested means of controlling bulk: a defining "tent" with 10' high side walls and a 45° roof pitch.

quently inconsistent in its control of access to buildings and often silent on garden wall fences and hedges. At present, therefore, there is no guarantee that a level line of sight will not be obstructed anywhere on a property line. This is as it should be, but the reverse implications of this principle have never been fully explored.

An individual's right of privacy in his own house is fully recognized, by the requirement of legal entry before intruding, and his land is protected by the prohibition against trespassing. Although not as specifically established, the protection of visual privacy to a height not detrimental to others also appears defensible. We can back into this principle by stating that it would be legally difficult to destroy all hedges and fences on the ground that one owner has the visual right to his neighbor's land.

As far as light and air are concerned there is no practical distinction between a dense hedge (possibly with thorns), a picket fence and a garden wall. If we accept a wall or hedge above eye line, practical indifference to what is on the other side of the wall may also be granted.

It is suggested that this height of privacy be recognized at 10' above natural grade, above which neither solid planting or structural barrier to light would be permitted. Manifestly it should be fixed at something less than infinity to keep our hero, the owner, from being at the bottom of a well created by the neighbors, and the eye line seems well justified as a minimum. Serious loss of light and air by raising it from 7' (eye line when standing on a low porch or terrace) to 10' would be difficult to establish.

The 10' figure suggested is based on other human or absolute dimensions. For some millions of men have been about the same height and about an 8' ceiling height is here to stay. Two feet additional is ample to raise the floor of a building enough above grade and to construct an adequate roof.

This line of reasoning supports the conclusion that a low structure without windows can be placed on any side or rear property line without damage to neighbors. Substantial freedom in use of land can then be re-established.

Similar arguments can be marshalled against front yard requirements. Fences and hedges of substantial opacity are common. More cogent in 1951 is the legal impossibility of preventing a neighbor from parking his car in his driveway, which obviously destroys the esthetic continuity of front yards. Indeed, one of the usual arguments about front yard d

(Continued on page 248)

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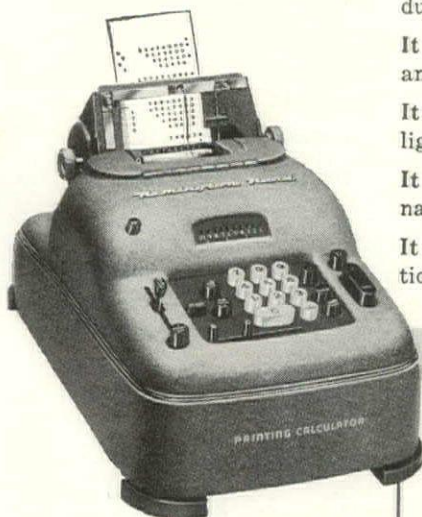
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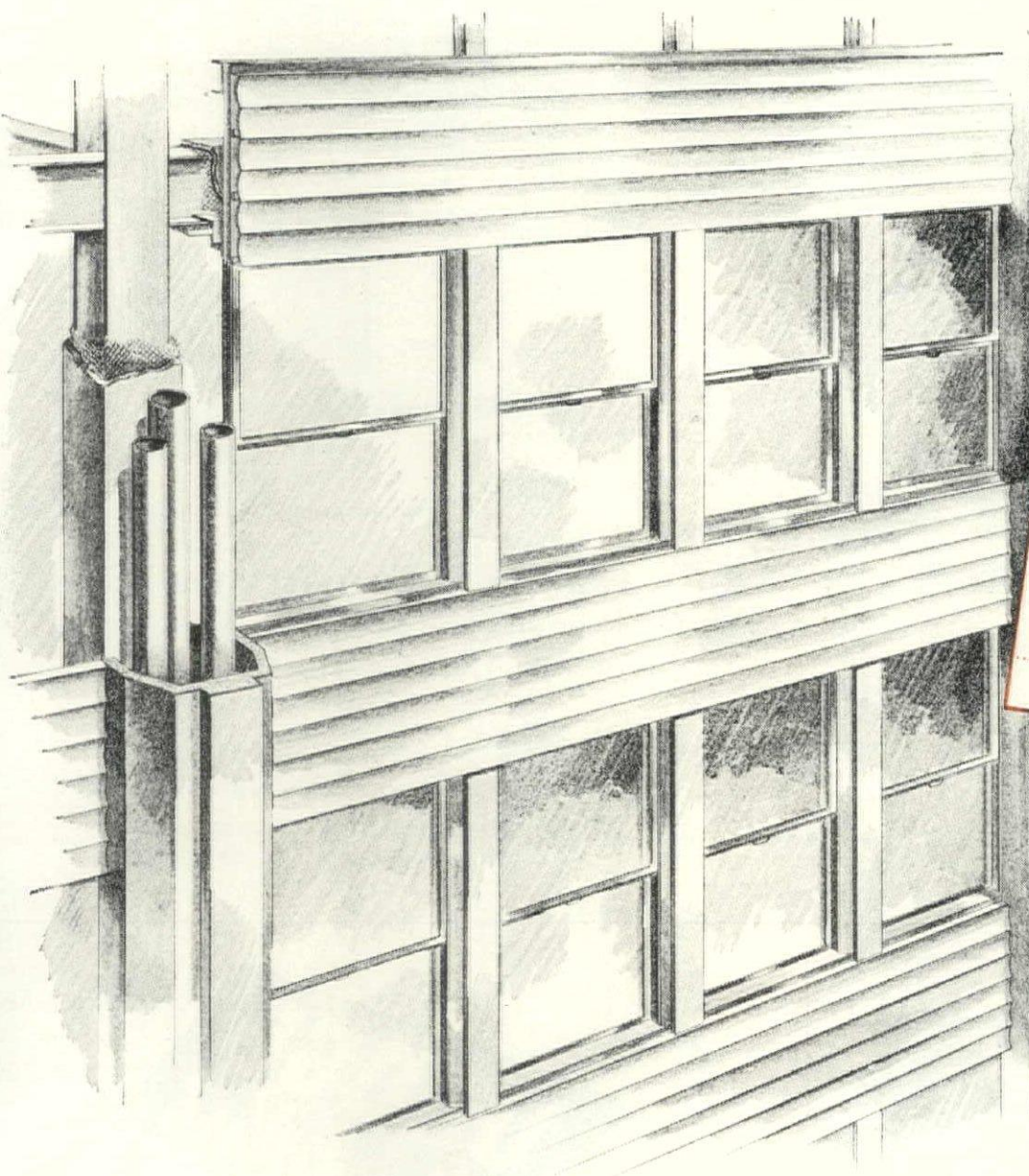
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notes from the architect's sketch pad



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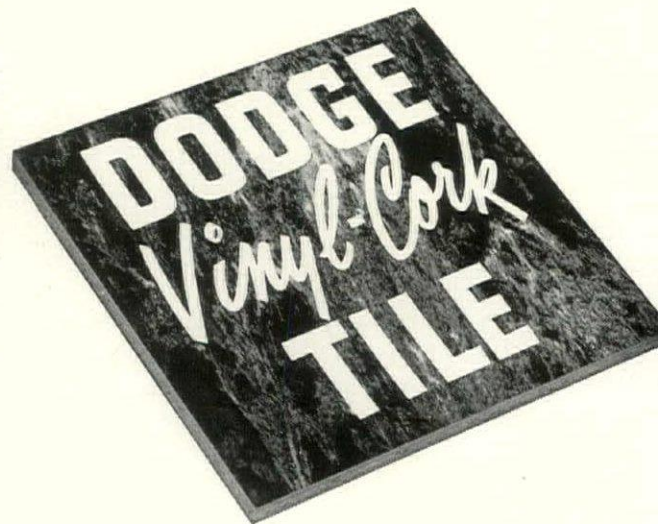
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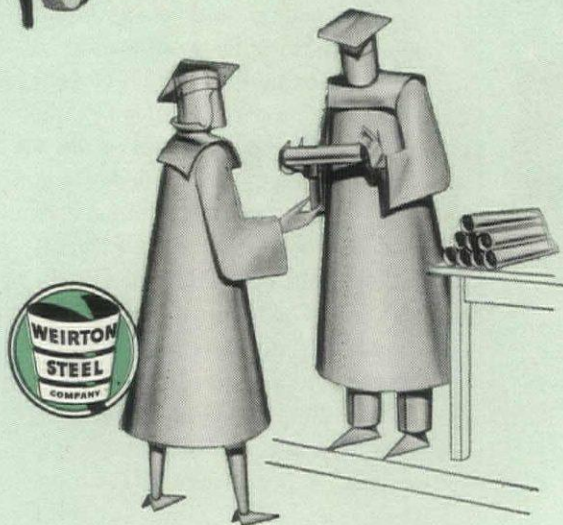
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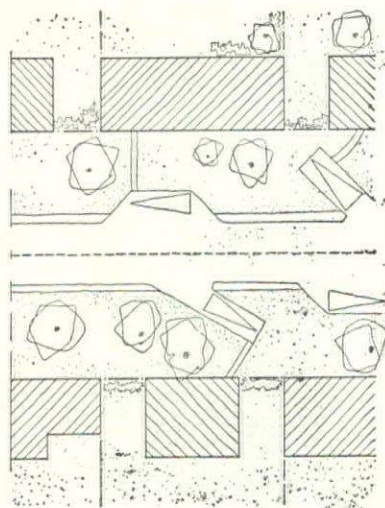
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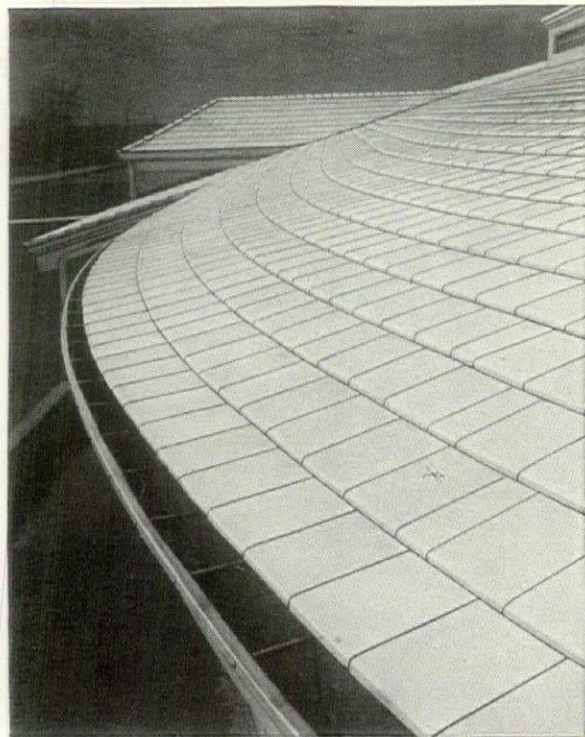
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A NEW KIND OF ZONING

PARKING BAYS on either side of a two-lane street would cut width of street to 20', make possible a relatively narrow and economical right-of-way: 80' instead of the usual 110'.



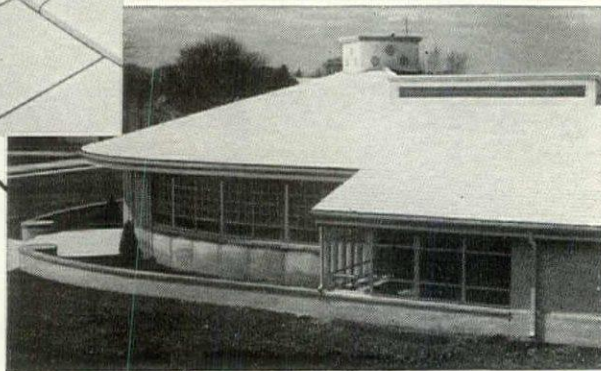
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Tilton Grade School, Rochelle, Ill. Raymond A. Orput, Architect, Rockford, Ill.

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mensions is to provide space for parking the car between the sidewalk and the house. The car has a roof and covers an area. The construction of an open carport to keep the rain off the car seems a next logical step. Then a trellis on one side. The same vagary is frequently present in regulations that allow an open porch or stoop to project beyond a building line. Then screens, then storm windows, then heat.

Low street-walled houses with small openings are common throughout Europe and afford maximum possibility for interior gardens. Whether the excessive sacrifice of better "interior" open space is still justified in this country in light of technical and planning developments is an open question.

Off-street parking in the street. Transportation by motor car in this country has reached the practical status of a public utility except for the fact that the automobile is privately owned. The flow and terminal storage of the units has become a public concern, is not responsibility.

An articulated street and highway pattern is as fundamental as the use of different voltages and conductor sizes or different pipe sizes in utility distribution, or for that matter blood circulation in the human body. Residential streets therefore will have small volume, slow speed, and little noise. The undesirability of long private driveways has been pointed out. On-street storage, or parking in lanes which otherwise could be used for movement should not be permitted because of snow removal and waste of an entire lane for sporadic parking. Off-street bays as part of the paved surface seem reasonable.

This suggests something to hang our hat on for residential rights of way. Two moving lanes 20' wide should be a minimum. Diagonal one-car parking bays on one side of the street will require another 20'. (A two car bay would require 25' to provide adequate sight lines for the drivers when they move the parked cars onto the street.) As a hedge against future contingencies, this 20' clearance should be allowed on both sides. Space for 2' wide sidewalks adjacent to the rolled curbs should be left on one or both sides of the street whether or not they ever get built. This suggests an 80' right of way in all cases.

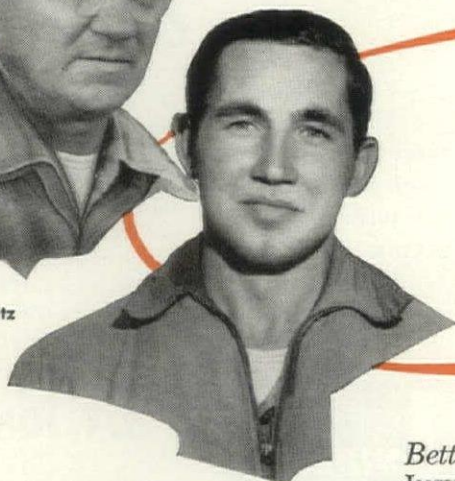
Dedication of this space does not, of course, mean that all improvements suggested must be built. Many owners will still prefer garage storage, and many cities, for the time being, will prefer 27' pavements and no bays. Obviously, in a low density residential neighborhood parking bays would be intermittent, if

(Continued on page 252)

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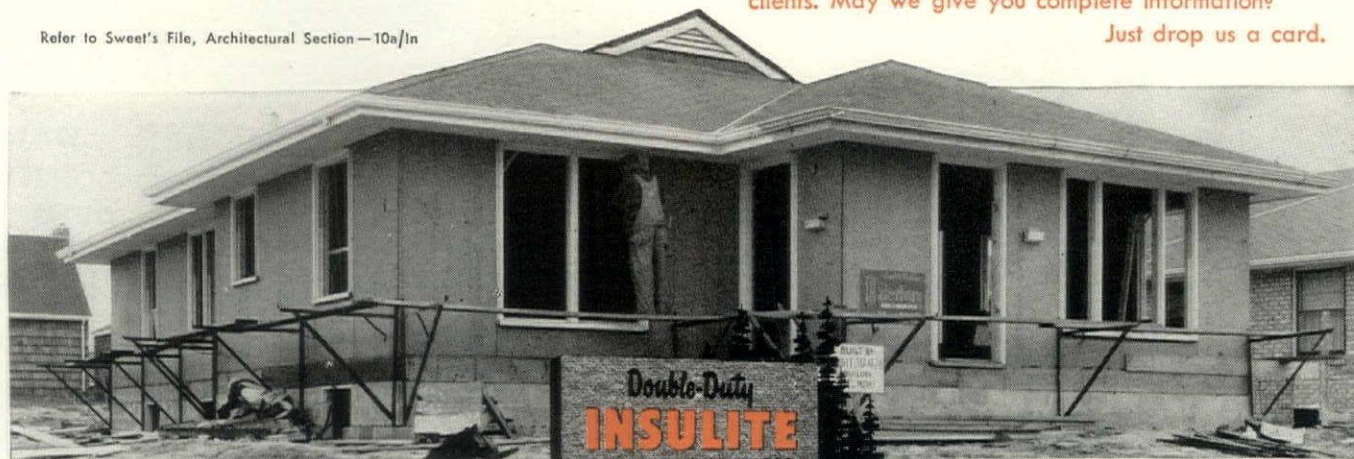
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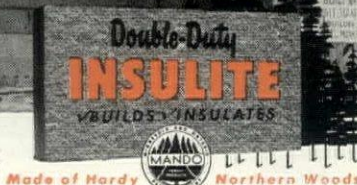
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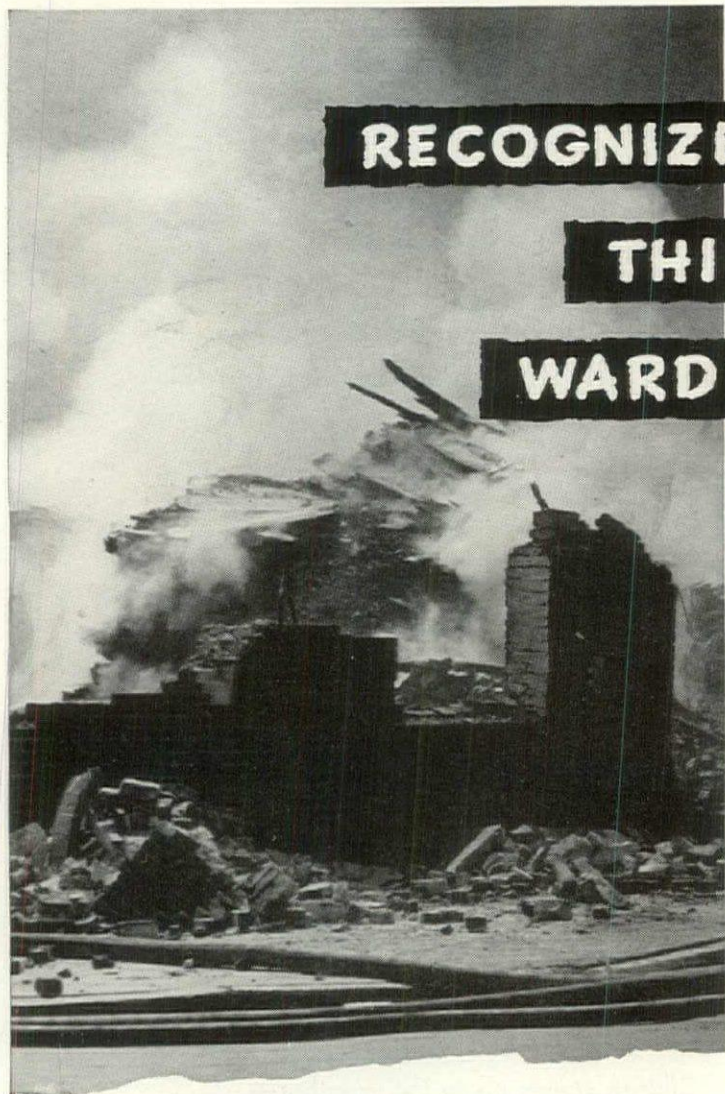


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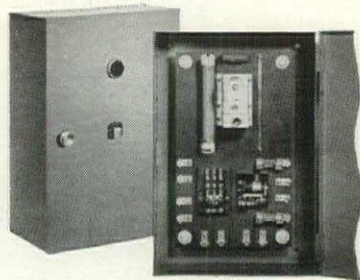
THIS

WARD?

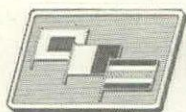
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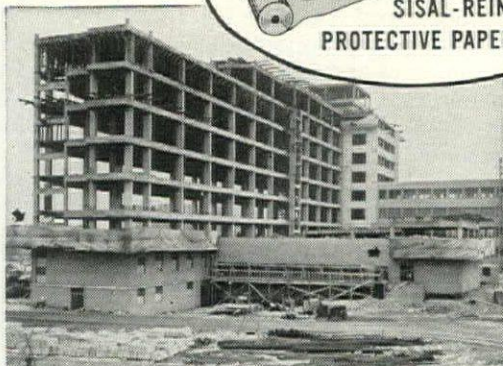


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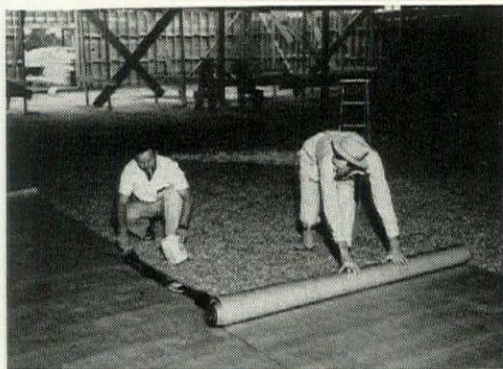
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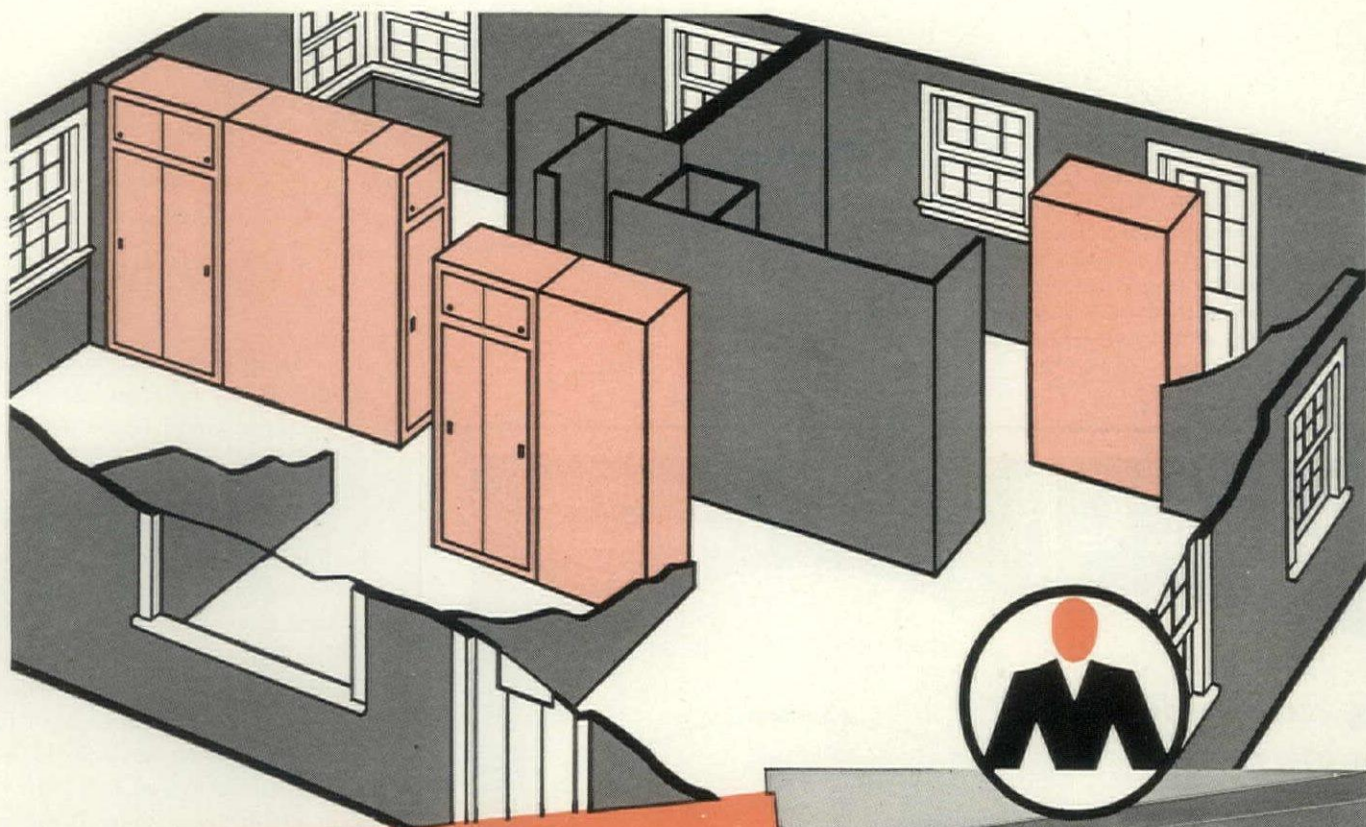
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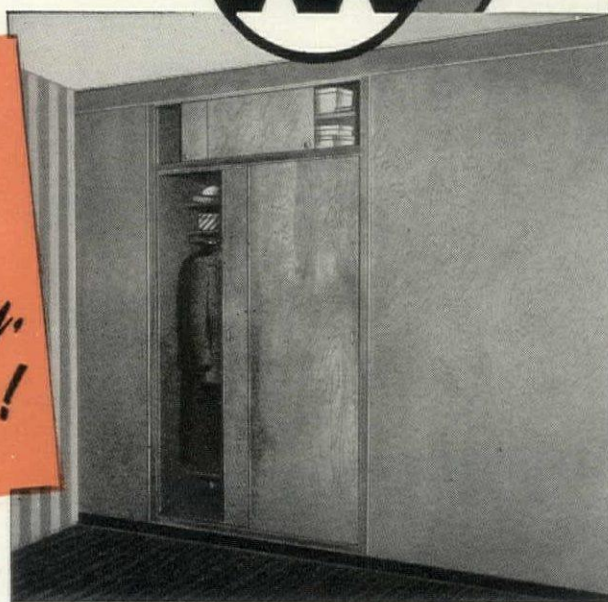
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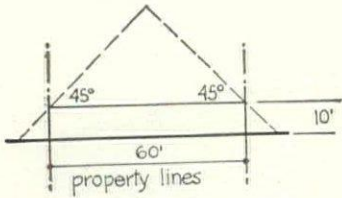
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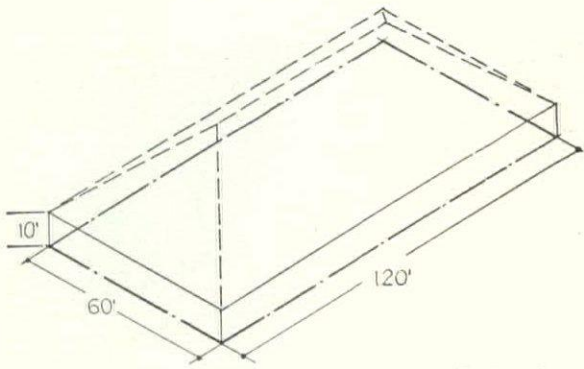
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CONSTRUCTION "TENT" would control bulk and assure neighbors of adequate light. No structure would extend outside this "tent" which is comprised of planes sloping inward and upward at an angle of 45° from the vertical and beginning at lines 10' above natural grade on all property lines.



any. It is clear that much space will be left open and landscaped. Specifically, there would be 30' left open on either side of a 20' road in the middle of an 80' right-of-way.

This suggests that front yard setback building line requirements in zoning might be discarded in favor of better rights of way. A further sacrifice of usable lot area beyond the 80' right-of-way line should be very carefully scrutinized. Because of the delicacy of established tradition, in some cases a judicious compromise might be necessary between community public sentiment and full individual development of lot area. Since it appears, however, that 80' between building lines is adequate to provide ample space for character landscaping, flow of minor controlled traffic, and parking, additional sacrifices should not be necessary.

SUMMARY OF SUGGESTED CONTROLS

The following principles of control are suggested to put zoning on a parity with other developments in architecture, planning and industry:

► **Floor Area Ratio.** 0.20' or 0.30 or less, depending on the particular area and character of the city. The F.A.R. should embrace all covered areas, including garages, carports, porches, breezeways, and sheds.

► **Light angle above 10'.** No structure or part of a structure may be built outside a plane sloping inward at an angle of 45° from the vertical and beginning at a line 10' above natural grade on all property lines.

► **Windows in relation to property lines.** When facing property lines, except on the street side, the sill of windows should not be below a 45° plane sloping downward and inward from a line 10' above the grade on the property line. (This is the same as the plane of the neighbor's construction, continued.) If the window is on the floor, this means that the wall must be 10' away from the side line. If a clerestory window is used at 7' from the ground, the wall may be within 3' of the line. The neighbor may then protect his privacy or build his house to a 10' height on the property line without destroying the light of the first owner.

► **Shape of lot for computation.** In the case

(Continued on page 256)



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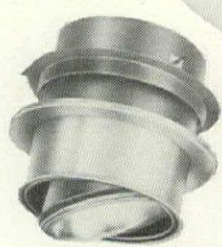
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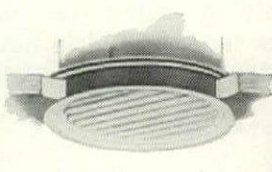
No. 502
Compact, Adjustable to 27° in any direction, 150W—Par 38



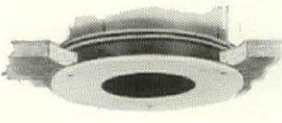
No. 503
Semi-Recessed for shallow Depth. 27° adjustability. 150W—Par 38



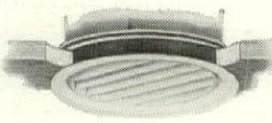
No. 508
27° adjustability. Accommodates Clip-on Louver. 150W—Par 38 or R-40



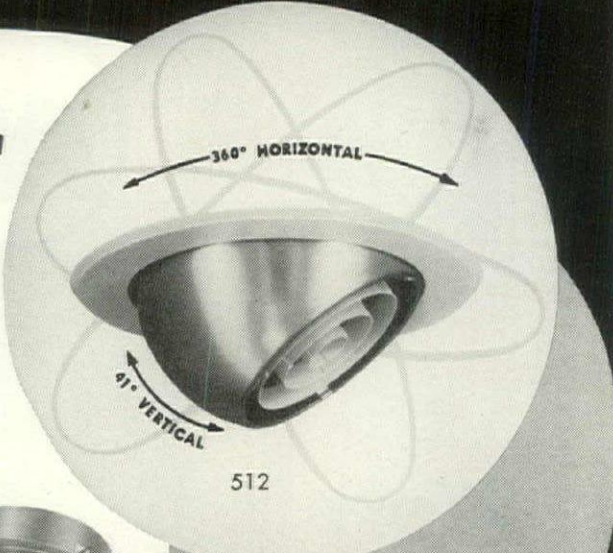
No. 509
Open bottom adjustable accent light. 35° adjustability. 150W—Par 38 or R-40



No. 510
Louver bottom adjustable accent light. 35° adjustability. 150W—Par 38 or R-40



No. 511
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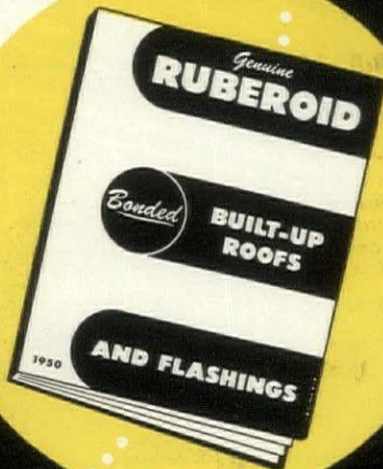
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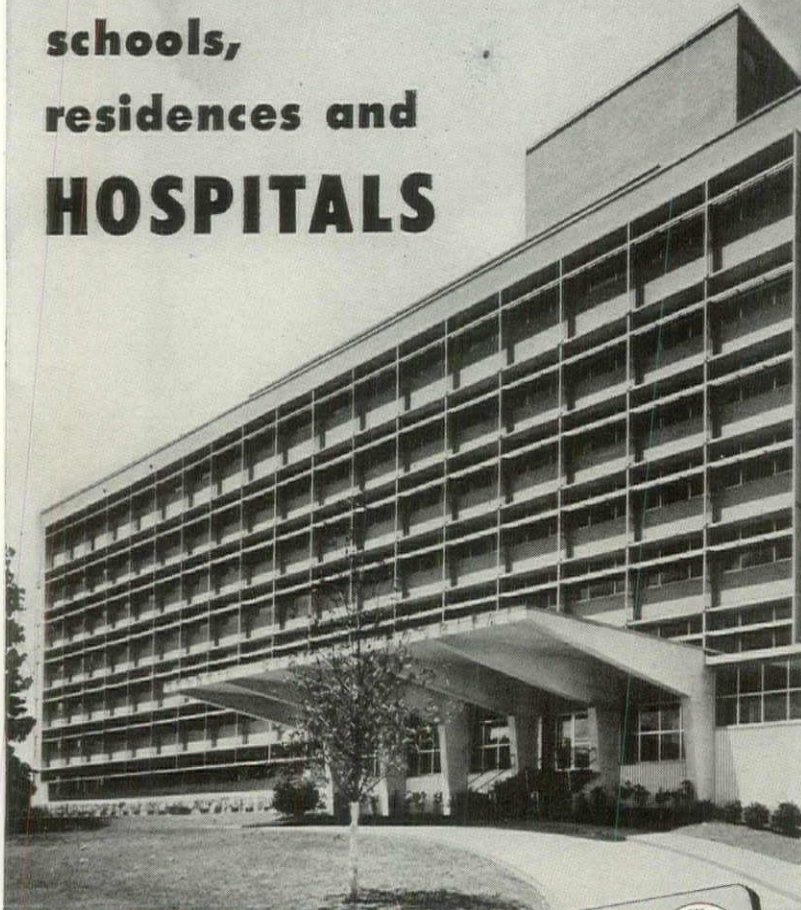
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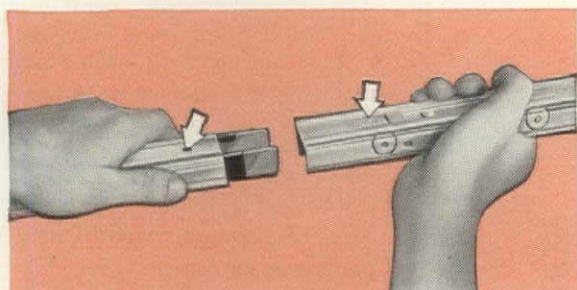
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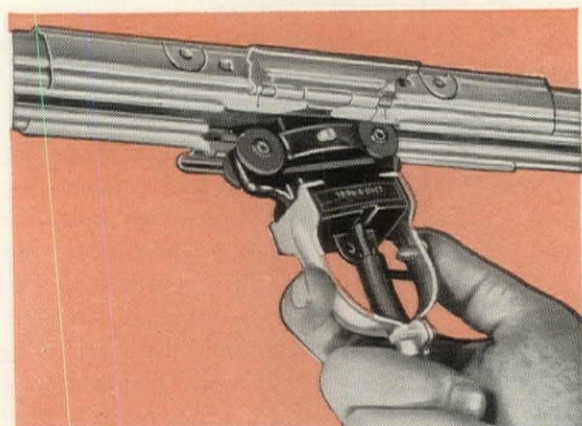
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A NEW KIND OF ZONING

an extremely long and narrow lot, or a large tract of odd shape, the F.A.R. may allow over-use of the land adjacent to other buildings. It is therefore suggested that the F.A.R. be applied only to the largest rectangle, whose length is no greater than twice its width, which can be inscribed within the lot dimensions, and that construction be confined within this area.

► **Minimum Standards.** Minimum lot sizes and street frontage are essential devices now in

common use. A minimum and a maximum aggregate floor area would be a workable supplementary device to establish standards where desirable or expedient in a particular neighborhood. A minimum Floor Area Ratio is not feasible however, since that would require building up to the full capacity of a large piece of land, rather than developing a portion properly and reserving the rest for future use.

► **Height of Building.** No additional control of the height of buildings is necessary. The F.A.R. and the light plane will control it adequately. A two-story building, 20' to the eave line and with a sloping roof automatically needs a 10' sideyard.

WHAT THESE NEW ZONING TOOLS WOULD ACCOMPLISH

The effect of the freedom provided by these proposals is indicated by the diagrams on page 177. Particular attention is invited to the magnitude and comparative usability of the consolidated open space on a typical 60 x 120 lot.

Absolute privacy is achievable, or the further consolidation of open space is possible by joint agreement to omit walls, fences and hedges and to develop a common open lawn.

The proposals are entirely permissive, and a man's freedom to build in a conventional pattern is still preserved.

Older neighborhoods completely built up would not be much affected, one way or the other. Where vacant lots exist in built-up areas, circumstances would differ.

A run-down neighborhood would appreciate a new building of any sort, since a neglected vacant lot is no asset to anyone. In these cases, the proposals would be of demonstrable positive value, since a man would be more likely to build if he were able to provide himself with complete privacy and insulation from the surrounding environment than if it were inescapable.

Owners already in a neighborhood of apparent stability might resist the intrusion of construction in the customary front yard, and compromise on this point might be necessary. However, the advantages of freedom, privacy, consolidated usable open space, and ability to make full use of one's land in a day when space is shrinking around us should not be overlooked.

Since the suggestions are new and have no precedent either in 200 years' tradition of the country or in the customary environment of each houseowner, they cannot be expected to gain immediate popularity. However, there should be little resistance to their application to open areas or cases where an entire block is to be assembled for rebuilding, since they restore rights which should not have been removed in the first place.

Other ideas should develop. However, something has to give—and quickly—if we are to avoid further prostitution of livability to the triple evils of high cost, careless subdivision and inadequate planning.

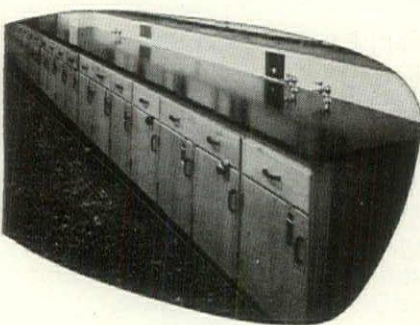
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CONDENSED SPECIFICATIONS

Footings

—poured concrete, reinforced under columns.

Foundation Walls

—poured under exterior walls, interior foundation walls of block.

First Floor Framing

—precast concrete joists with 2½-in. slab, reinforced with steeltex, monolithic finish. Certain floors are slabs on gravel fill, reinforced, waterproofed, and provided with pipe trenches around perimeter.

Exterior Walls

—4-in. brick, 2-in. cavity, 8-in. block, painted or plastered and painted.

Roof

—precast insulating roof slab, covered top side with built-up roof and acoustical tile on underside.

Acoustical Tile

—perforated fiber board, prefinished where noted.

Floor Finishes

—rubber tile, linoleum and asphalt tile.

MATICO chosen because it ideally meets exacting flooring requirements of new South Elementary School.

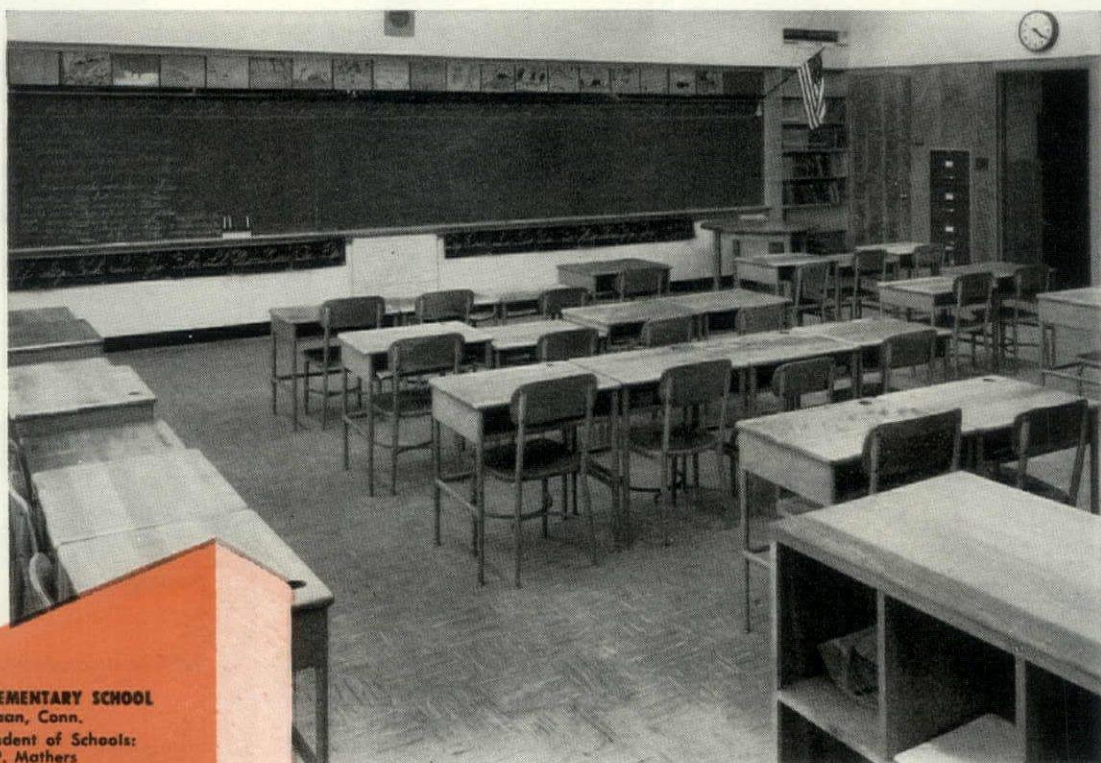
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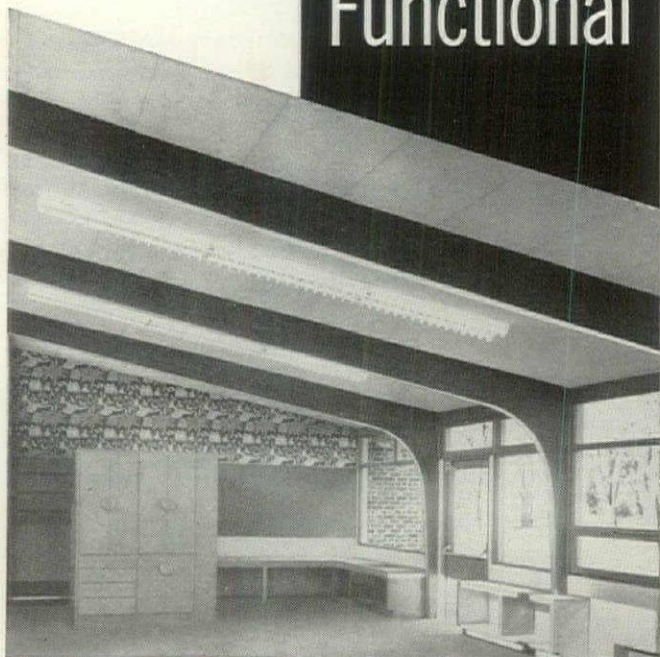
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Flair for the Functional



Classroom in new elementary school at Waitsburg, Washington

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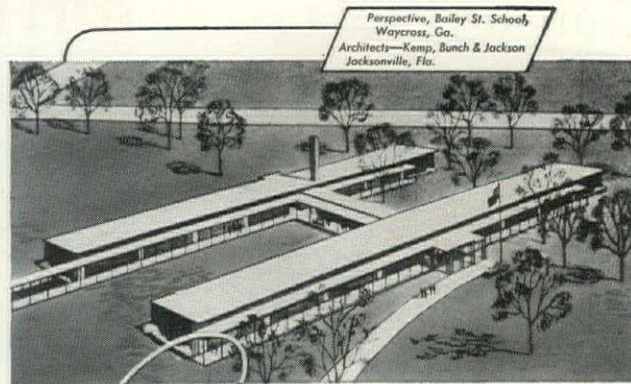
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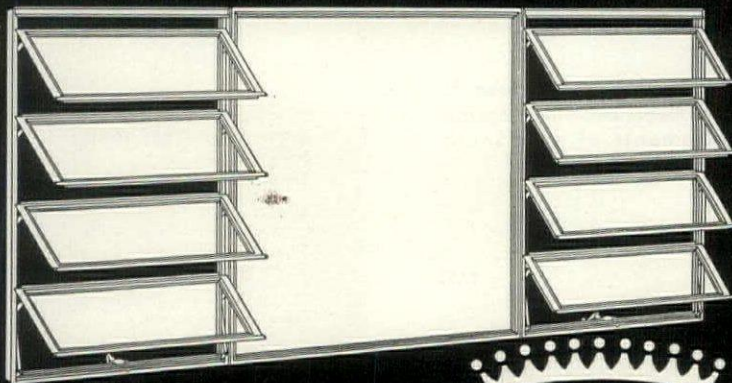
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Preparations for this gigantic project included construction of a pile casting yard 1,000 feet long, traversed by 135-foot gantry crane—and building two of world's tallest piledrivers with 136-foot leads.

Raymond's performance on Morganza project is ample evidence of its ability to solve unusual problems efficiently and economically.

*Design and Construction under Supervision of
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DRIVING 3,700 RAYMOND PRECAST PILES FOR MORGANZA FLOODWAY CONTROL . . .

LEFT: No. 1 rig about to drive one of first piles. This Universal-type piledriver, designed by Raymond especially for this project, is probably world's tallest—has leads 136 feet high.

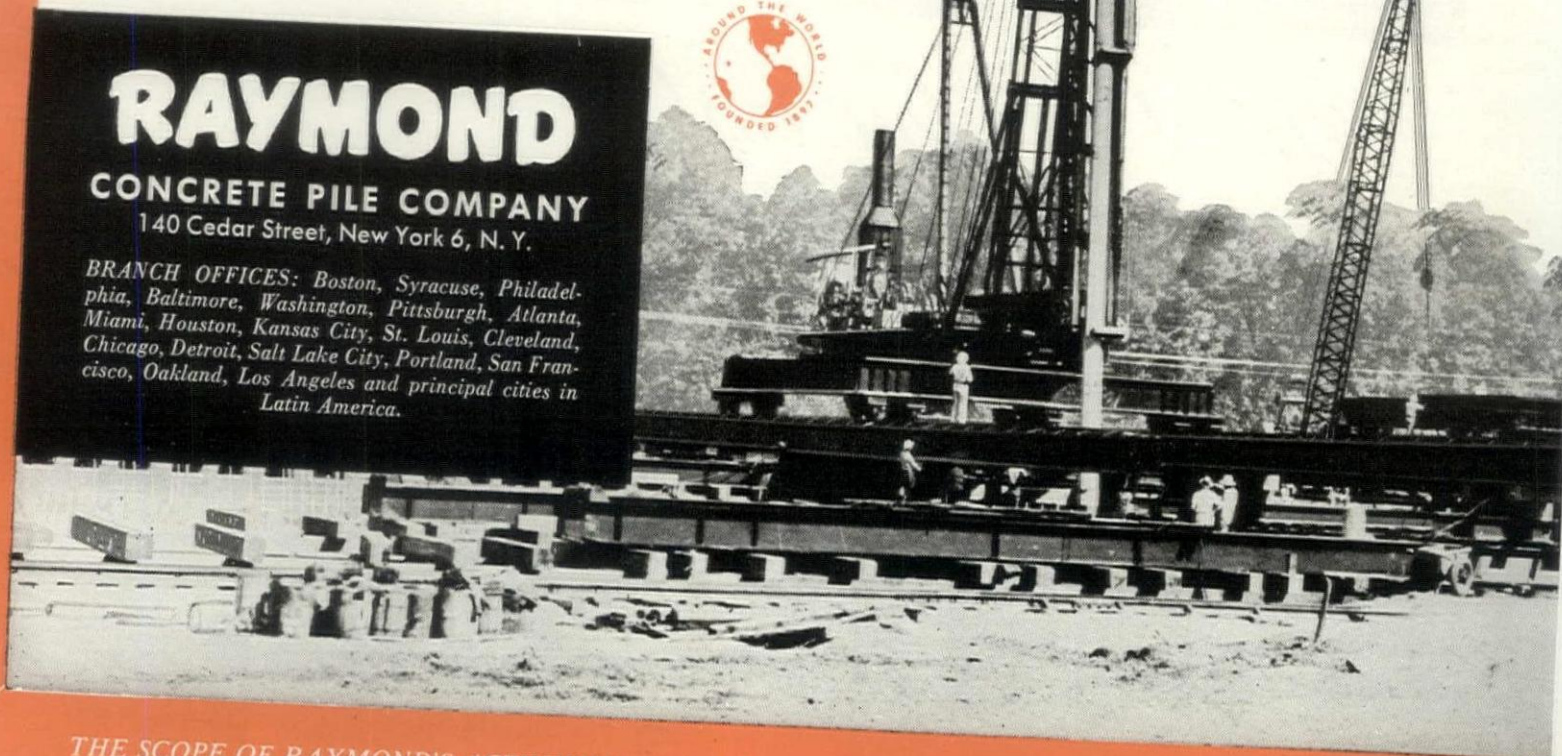
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THE TYPICAL ARCHITECT

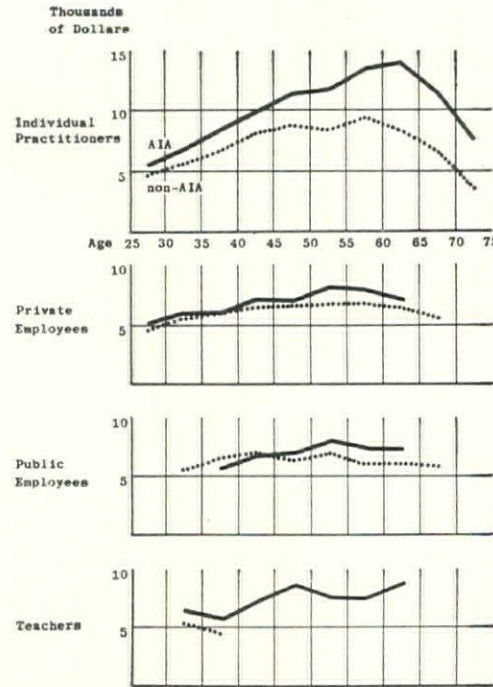
(Continued from page 133)

HOW MUCH DO ARCHITECTS EARN AT VARIOUS STAGES IN THEIR CAREERS AND IN VARIOUS FIELDS?

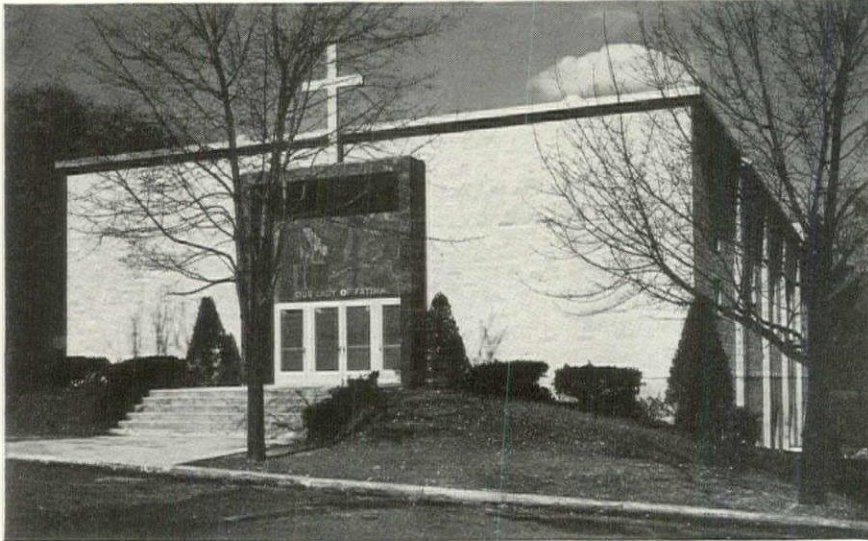
Despite the claims of contractors to the contrary, the architectural profession is not a gold mine. According to the 1949 median annual earnings of AIA members in individual practice, the young architect receives only \$5,400 a year, and he can look forward to an annual income of only \$14,000 at the end of the next 35 years, when he will be 62. (By comparison, the 1947 gross income of all

the nation's 136,000 private practicing doctors averaged \$17,500.) Of course, since these are median figures, they mean that half of the reporting architects earn more than these amounts while the other half earn less.

Even less generous are the rewards for AIA members who work for others. The median man in this group never gets up to \$9,000 a year.



Our Lady of Fatima Church, Scarsdale, N. Y. • Architect: Robert A. Greene, Tarrytown, N. Y.
Contractors: Caldwell & Stott, Inc., New York City



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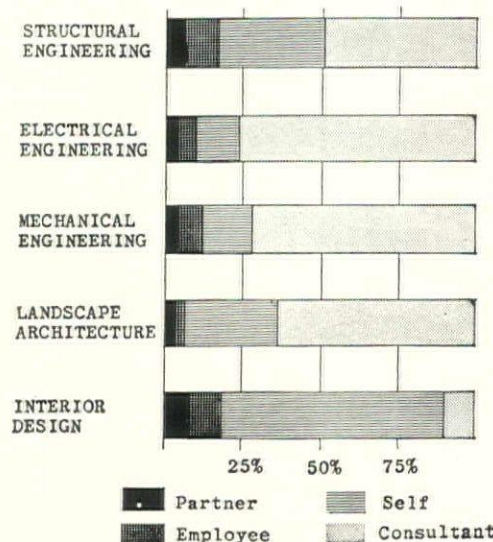
HOW DO THEY EARN THIS MONEY?

Only a relatively small portion of the architect's time is devoted to design. The typical AIA practitioner spends 10% of his work day on each of the following phases of architecture: administration, client relations, drafting, specification writing and construction inspection. Another 20% is devoted to "over-all activities"; only the remaining 30% is available for architectural design.

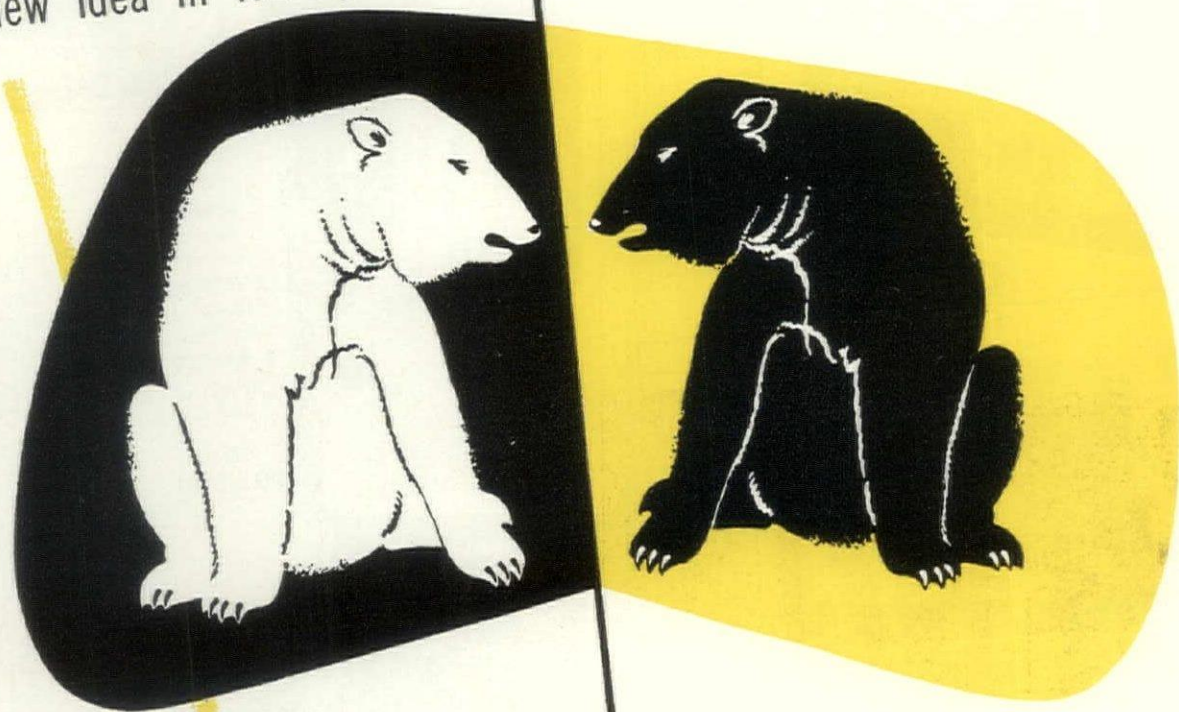
HOW HEAVILY DO THEY RELY ON OTHERS?

The AIA survey clearly indicates that the profession relies heavily on engineers for technical assistance. This is particularly true in the fields of mechanical and electrical engineering where 75% of the architects call in engineers for consultation. About half of

(Continued on page 264)

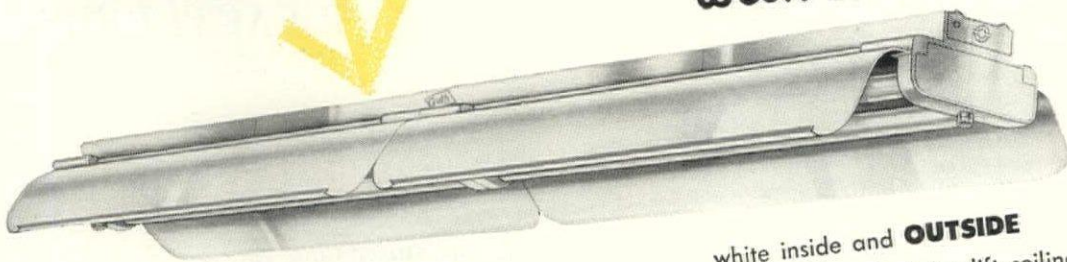


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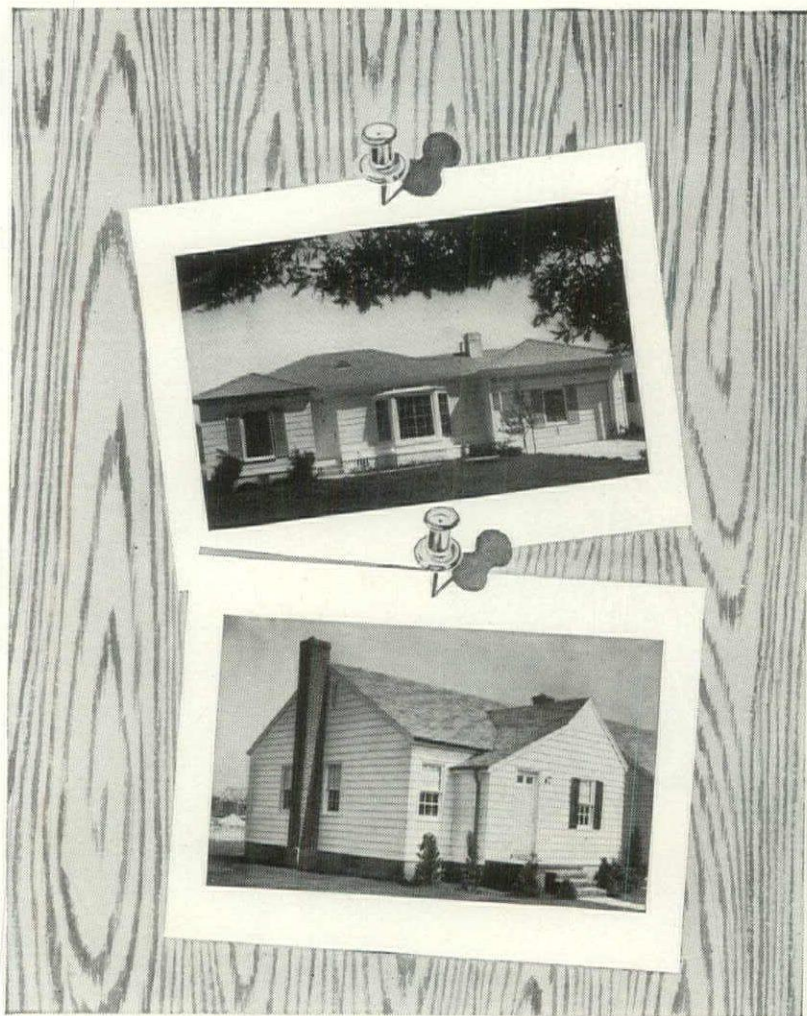
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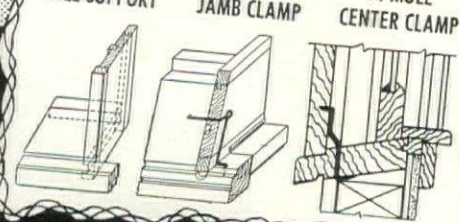
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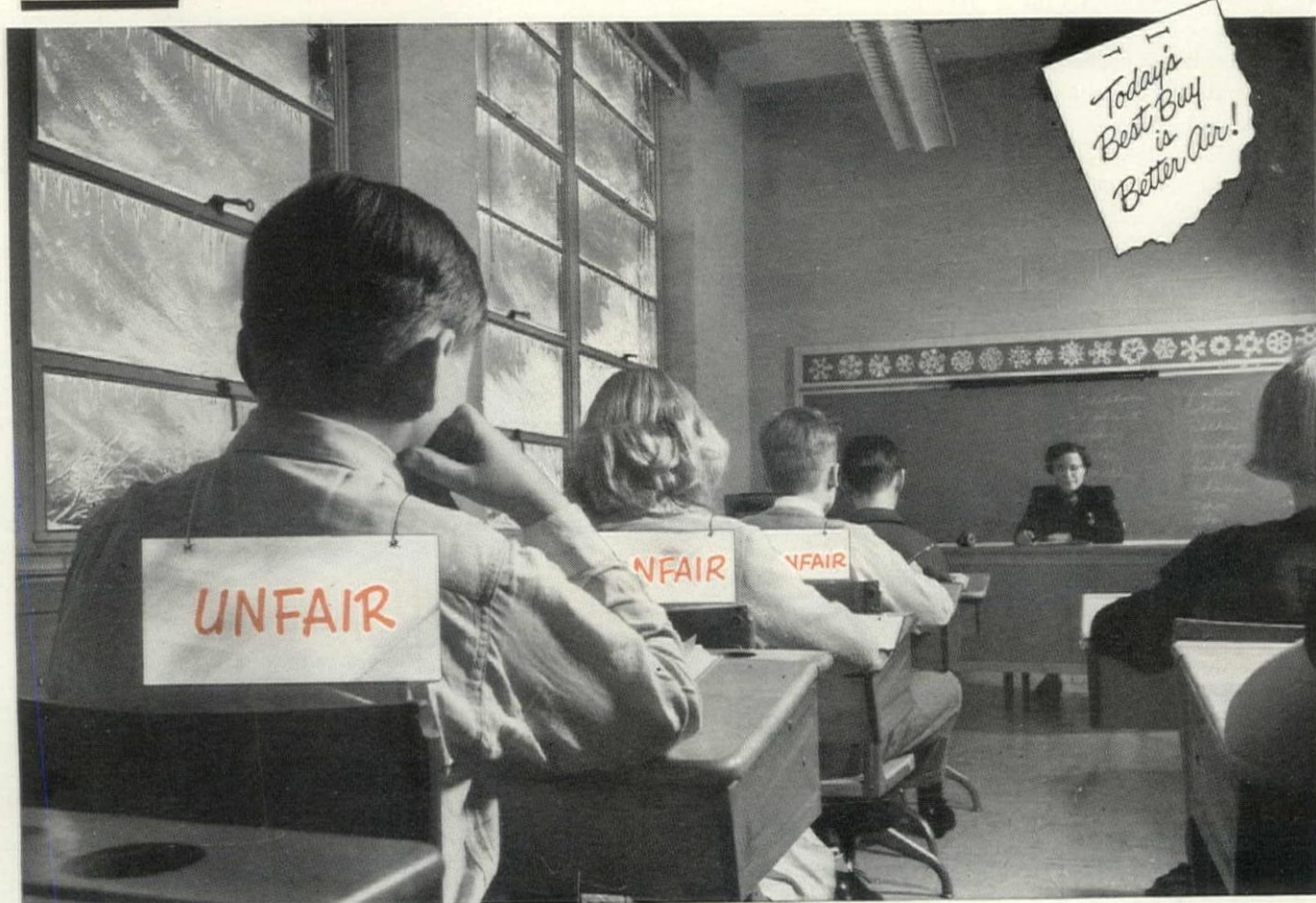
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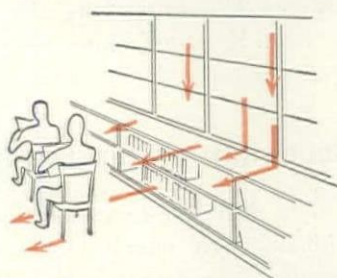
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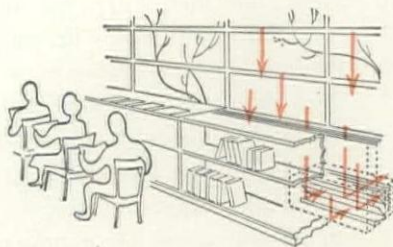
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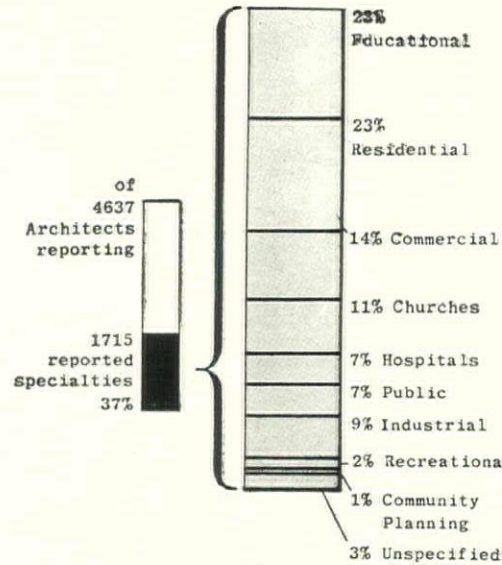
THE TYPICAL ARCHITECT

them also use outside help in structural engineering; the other half either do the structural designing themselves (30%) or call on qualified employees or their partners.

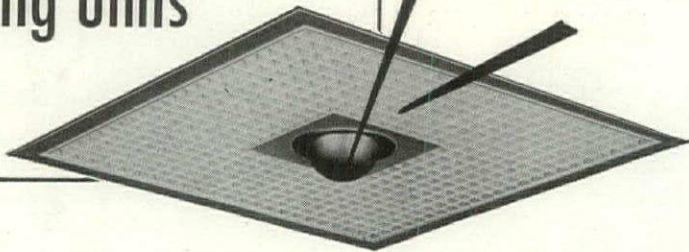
The architect apparently considers himself more of an interior designer than a landscape expert. Thus, while only 10% seek the consultation of interior design specialists, 70% call in landscape architects to help them with their outdoor problems.

IN WHAT FIELDS DO THE ARCHITECTS SPECIALIZE?

Of the 4,637 architects who answered the question concerning specialization of work, only 1,715 or 37% claimed single building specialties. Of this group 23% specialize in educational buildings and another 23% in residential buildings. Other areas of specialization are indicated in the chart which appears at the right.



Skylike® blends 2 types of lighting units into 1



1. the soft, indirect light of silvered-bowl incandescent lamps.
2. the sleek, modern look of fluorescent-type troffers.

Silvray's SKYLIKE lighting system offers your commercial clients many advantages not found in any other lighting system, yet uses only silvered-bowl incandescent lamps.

Designed along modular concepts for recessed or semi-recessed use, SKYLIKE fixtures may also be surface-mounted in old or remodeled interiors without sacri-

fice in lighting quality. Units fit 24" x 24" ceiling tiles — require minimum (7 $\frac{3}{4}$ ") recess depth.

SKYLIKE units cost only $\frac{1}{2}$ to $\frac{1}{3}$ as much as other equipment delivering comparable results. Ease of maintenance permits similar savings, for units can be relamped from the floor and require only an occasional cleaning with a damp cloth.

Here's real proof of SKYLIKE efficiency

These unretouched photographs demonstrate the versatility of the SKYLIKE louvered incandescent lighting system. In each case, the only light source used

was that of the SKYLIKE units—note the soft, even distribution of light... the complete absence of glare, harsh shadows, and sharp light cut-off lines.

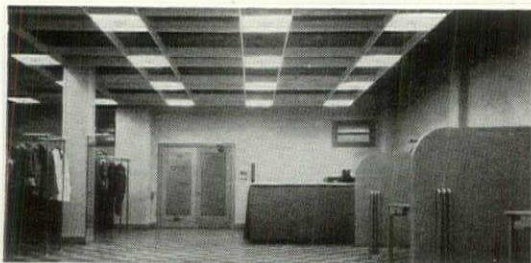


Photo by Milton Mann Studios

A unique SKYLIKE application is pictured here in the showroom of Irving A. Belking Furs in San Francisco, California.

Notice how architect Bernard J. Saboroff's gridwork of 1 x 6 pine serves to hide the unsightly high ceiling, as well as to support the patterned group of recessed Silvray SKYLIKE units.



Selected for warm color and ease of installation, surface-mounted SKYLIKE units replaced out-moded globe-type units in the remodeling of the Levy Brothers Store in Elizabeth, N. J.

Variable lamp sizes — from 150 to 500 watts — permit day-to-day changes in lighting intensities.



Send for complete SKYLIKE information. A comprehensive booklet describing the Silvray SKYLIKE system is yours for the asking. To get your copy, write Graybar Electric Company, Inc., Graybar Building, New York 17, N. Y.

S17-137

**SILVRAY
LIGHTING INC.**



HOW BIG IS THE FIRM?

On the basis of 4,016 architectural firms reporting a total payroll of 30,129 persons it appears that the average establishment has 7.5 persons. In this hypothetical organization the principals number 1.5; graduate school employees, 2.3; registered architects, 1.0; candidates for registration also 1.0.

The work load of the typical office breaks down as follows: 43% drafting, 14% clerical and stenographic and 12% engineering. Designers, project managers and outside superintendents handle in almost equal proportion another 23% of the load. The remaining 8% is done by specification writers, administration and research personnel.

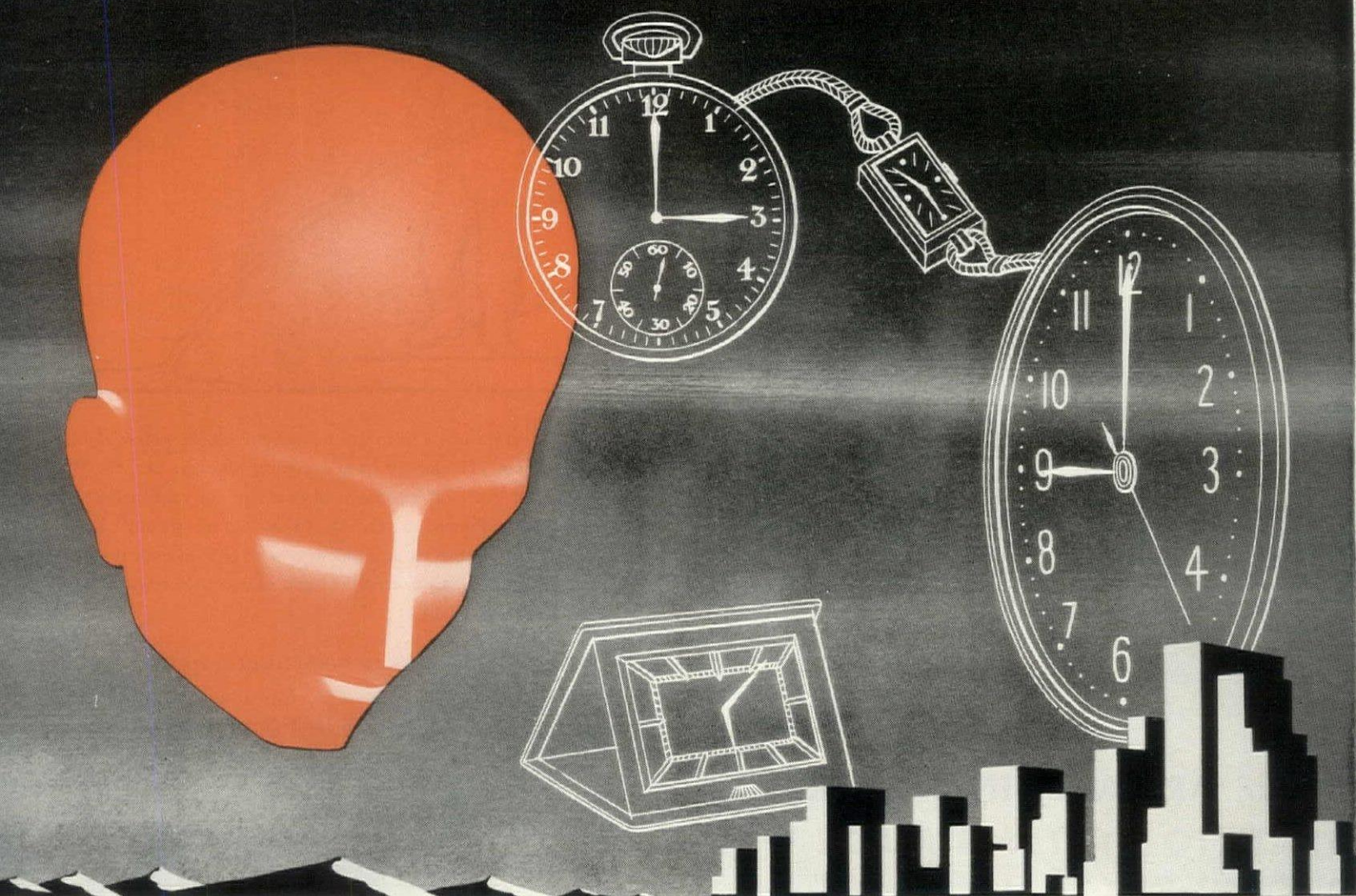
EDUCATION OF THE ARCHITECT

The AIA questionnaire covered the individuals' own education, as well as their opinions concerning architectural education in general. On the first count it was found that 56% of the architects had earned at least one college degree; 10% had two degrees.

On the other hand, 39% of the architects report that their entire training was obtained in architectural offices or that they were certified from trade schools, technical institutions or other non-degree colleges.

The AIA survey indicates that the profession is satisfied with its educational and pre-registration apprenticeship—only the mechanical design and site planning aspects of on-the-job training were singled out as inadequate. A large majority of the respondents approved of the character and length of the registration examination, although there was less agreement concerning the wording of examination questions.

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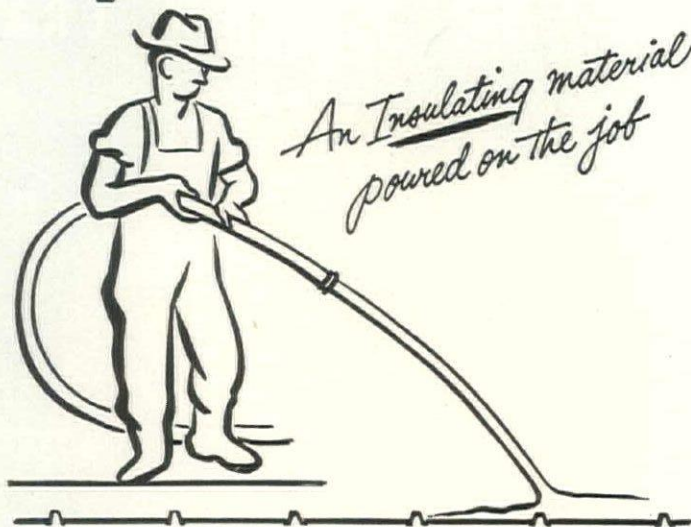
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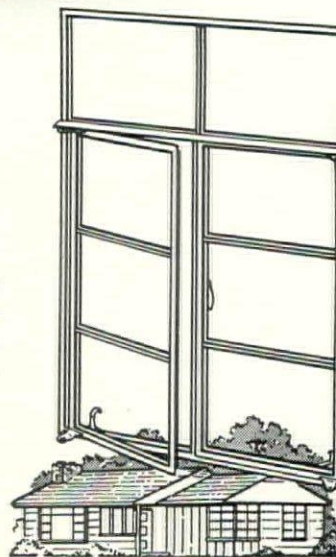
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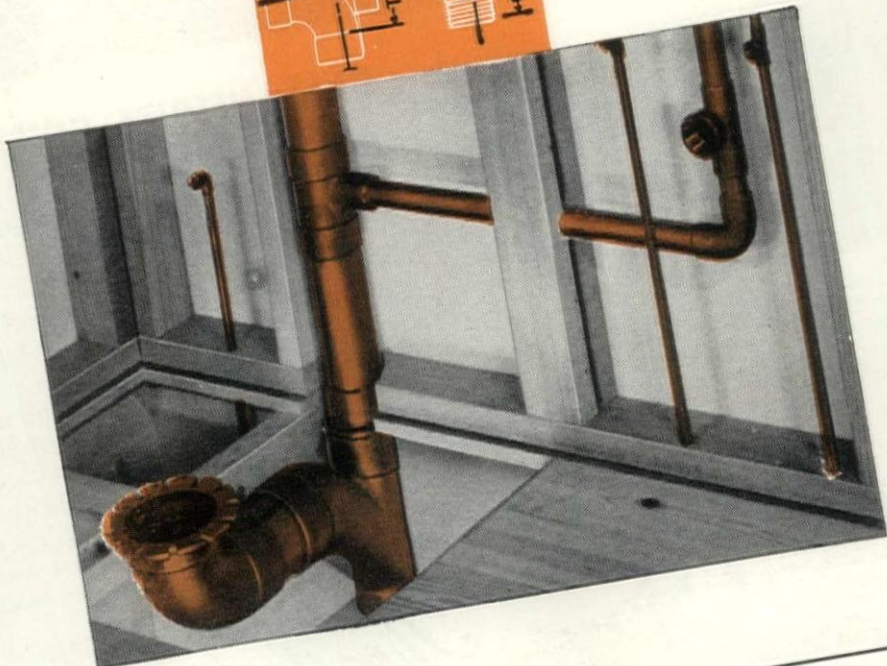
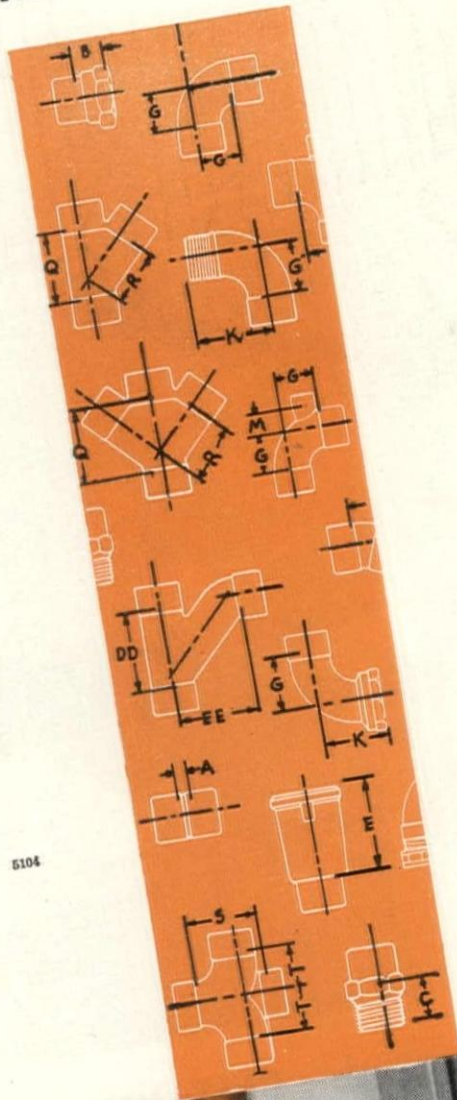
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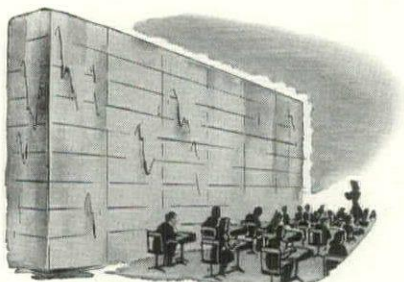
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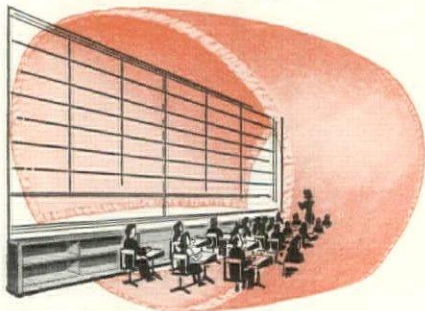
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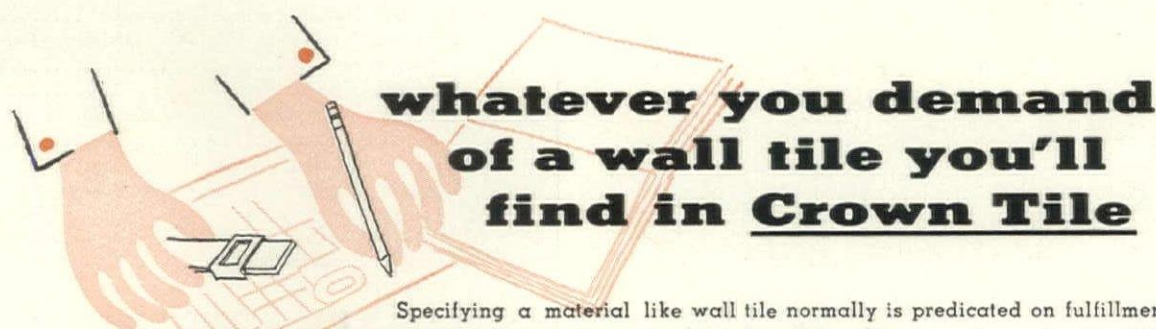
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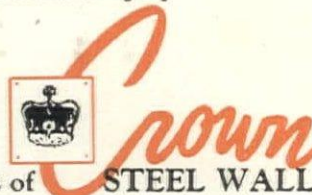
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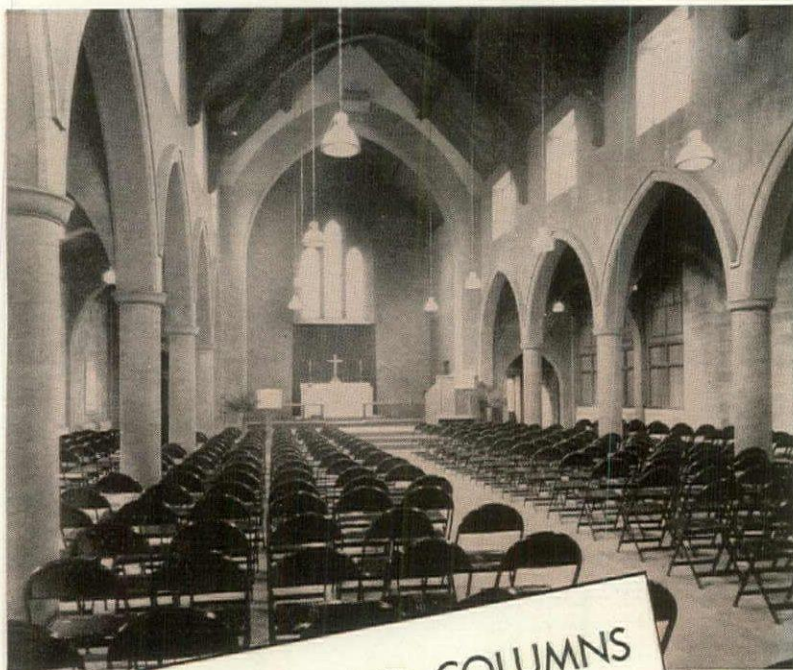


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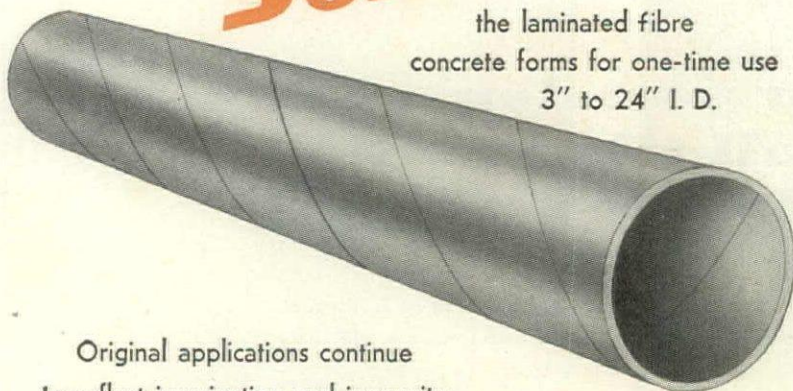


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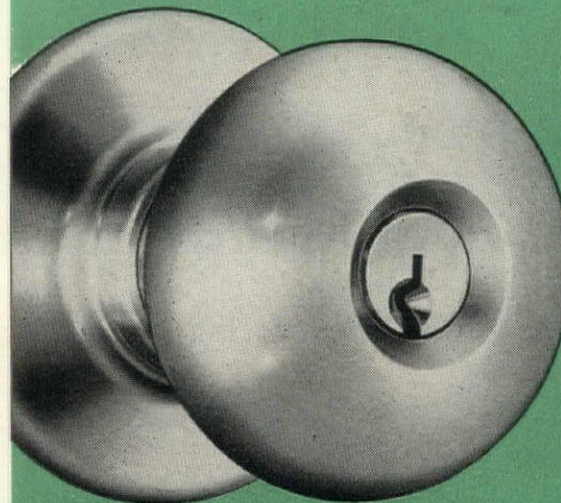
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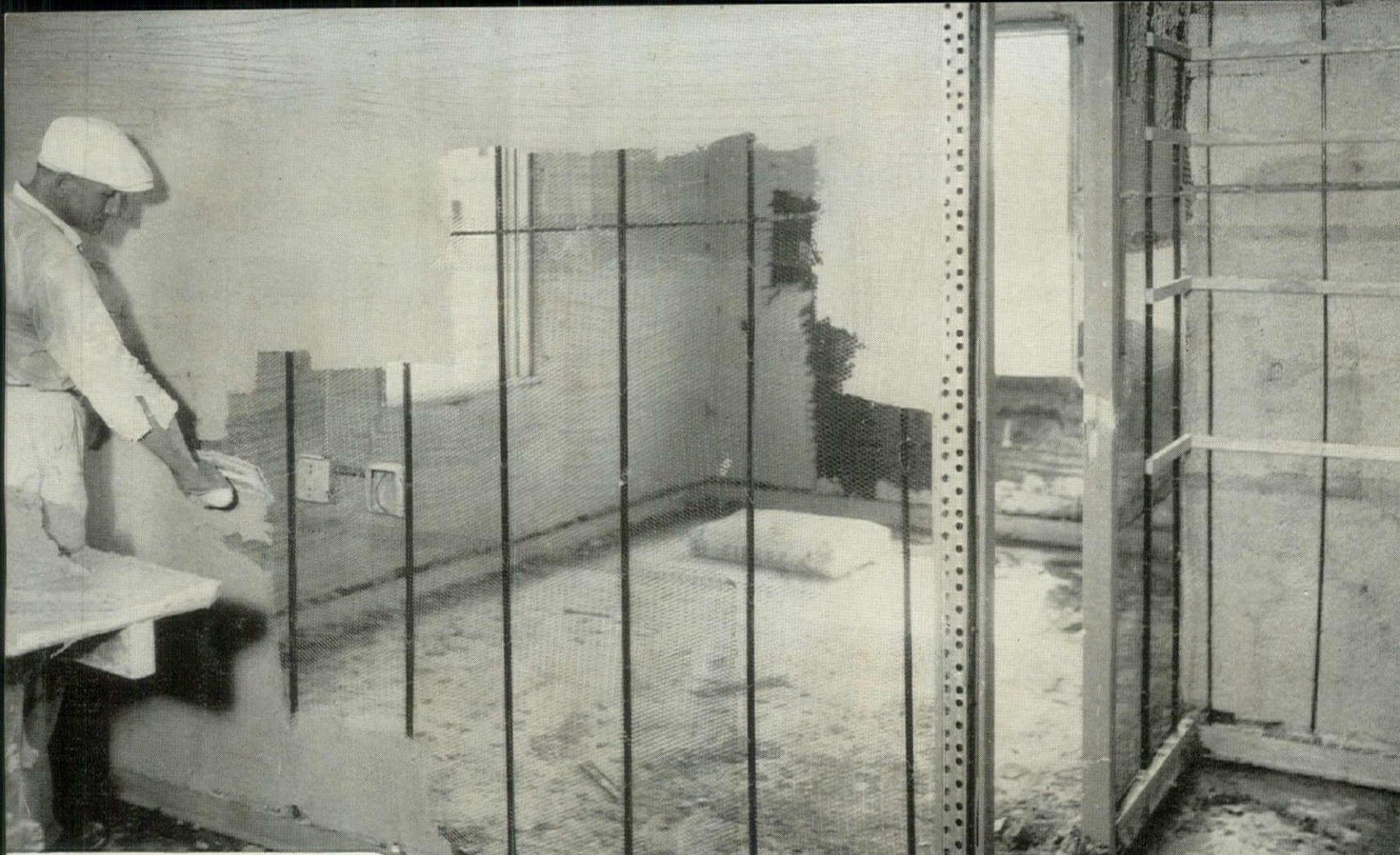
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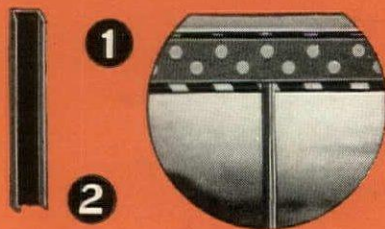
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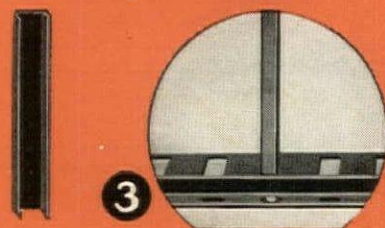
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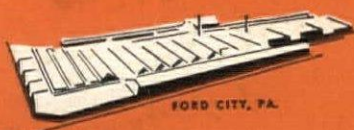
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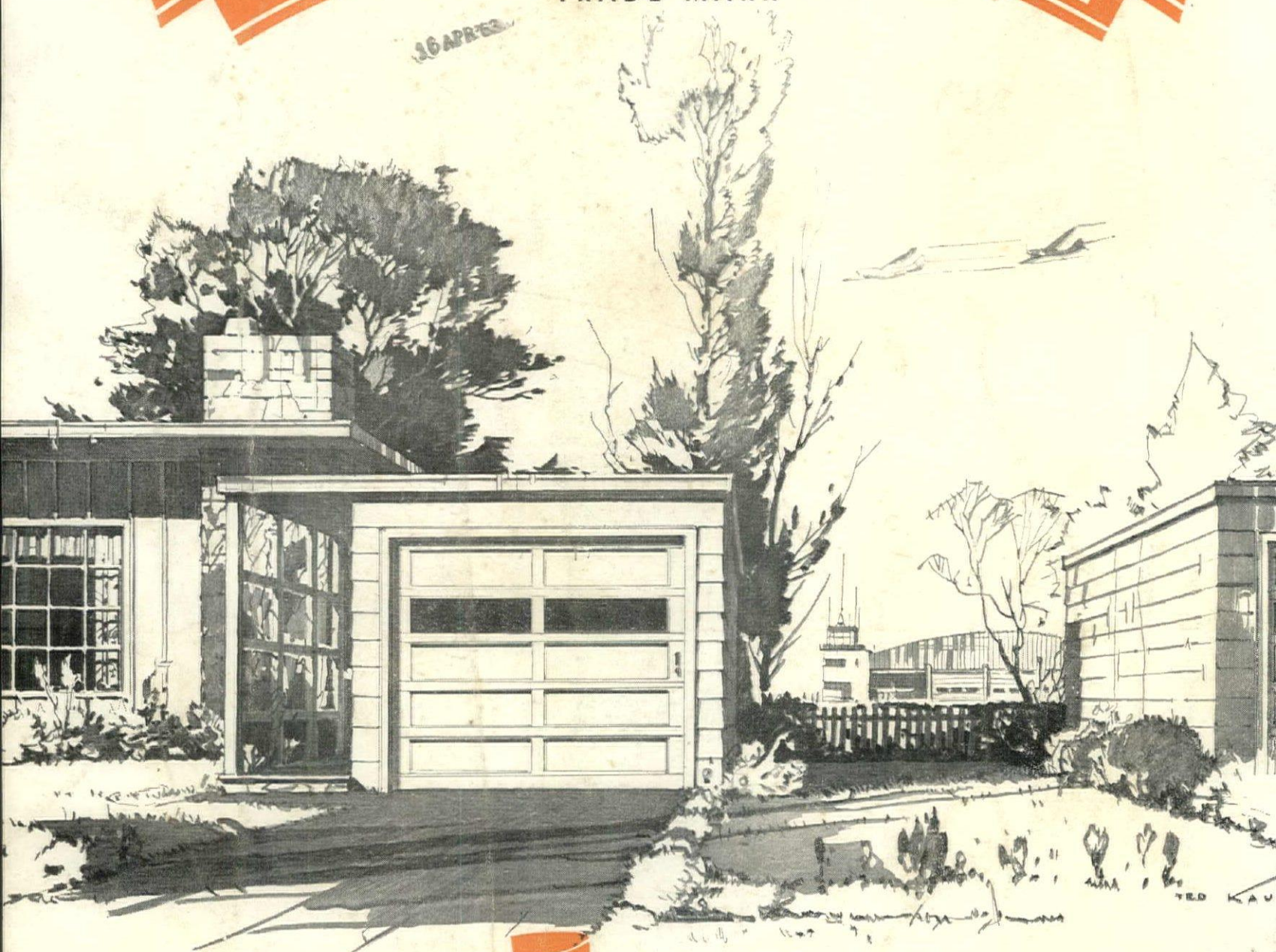
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