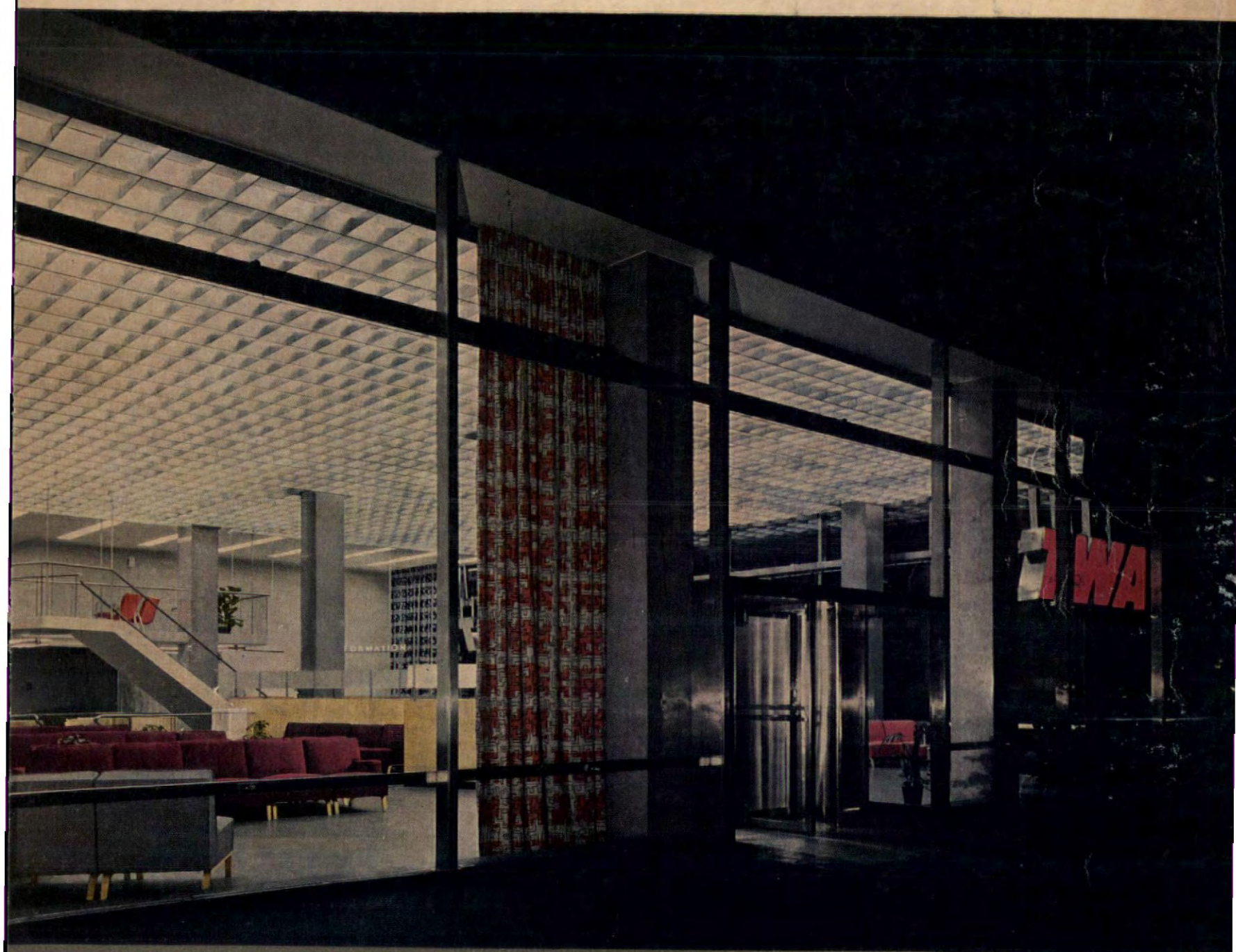


The Architectural

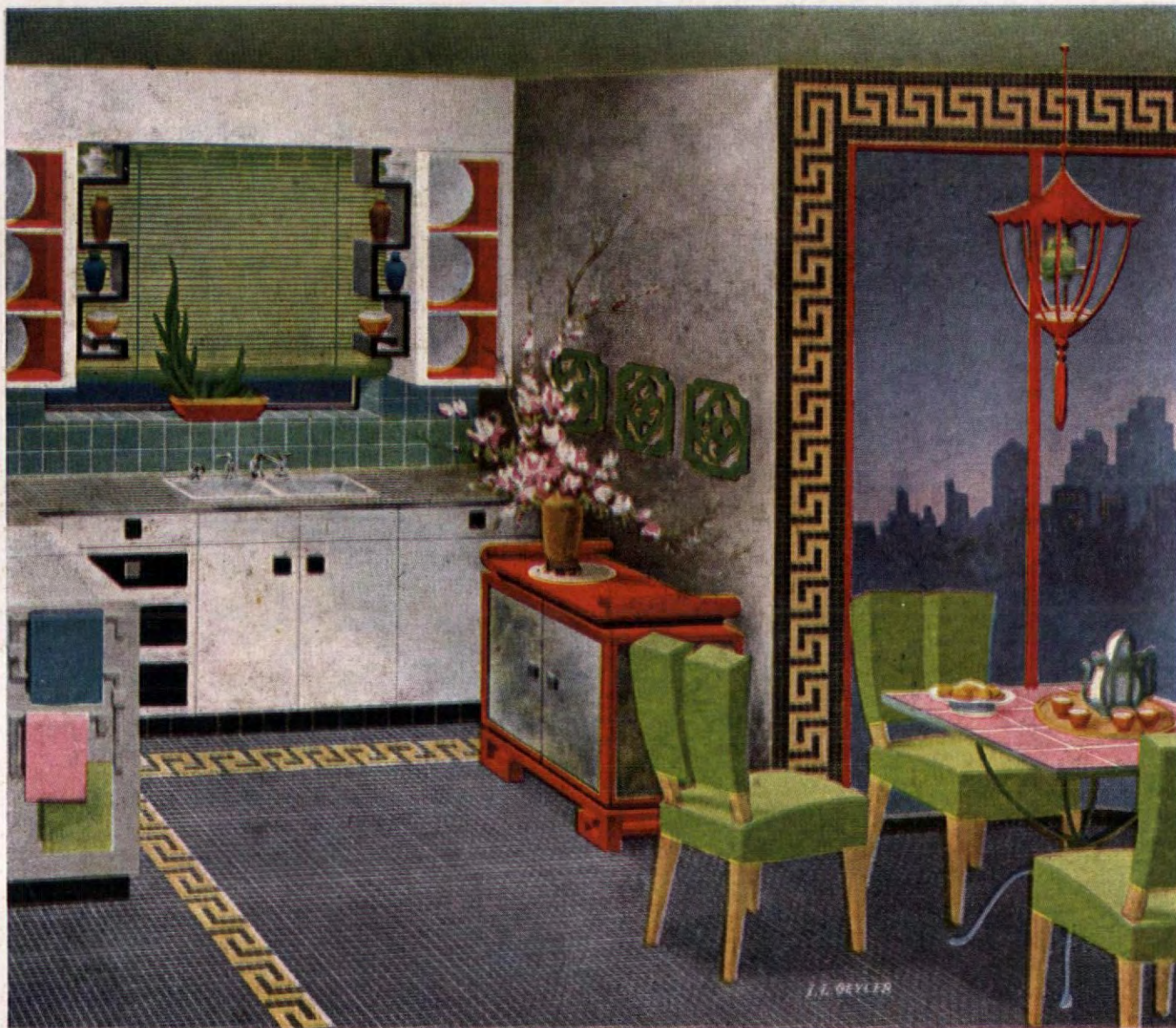
# FORUM

Magazine of Building




March 1947





**Color Balanced Suntime puts INTEREST in the Home!**

Hold the charm of colorful rooms bright

*Color Balanced* **Suntime**  
  
*Bright with color • Right for life*

for life in beautiful real clay Suntime.

**THE CAMBRIDGE TILE MFG. CO., CINCINNATI 15, OHIO • Member of the Producer's Council**



# The PLANNING BOARD

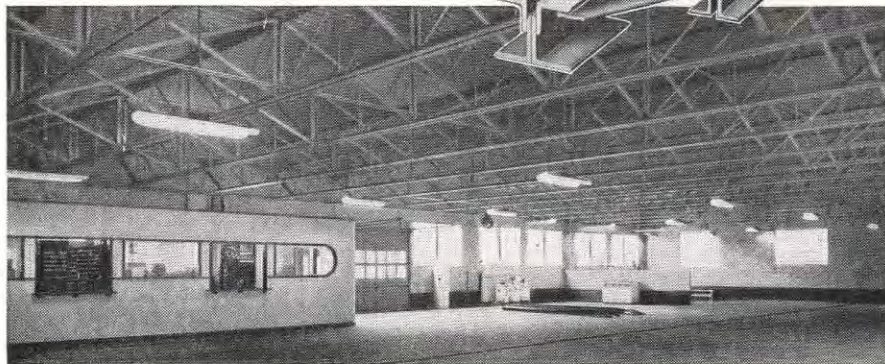
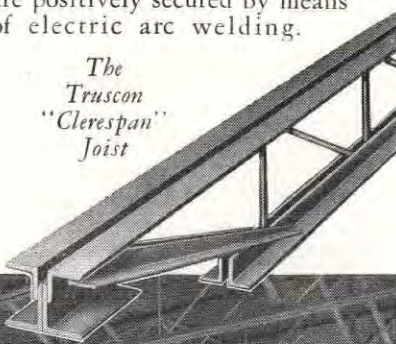


*The Truscon Planning Board says: "Right now, as of Jan. 15, the big question is deliveries, and it's anybody's guess as to what actually*

*will happen. Our present delivery schedules read like this: Industrial Windows, 20 to 32 weeks; Office Building Windows, 24 weeks; Ferrobord Steeldeck, 16 weeks; O-T Steel Joists, 8 weeks; Clerespan Joists, contingent upon ability to get structural shapes. But somewhere along the line the bottleneck on one or more materials may break, and the whole system of production would be rapidly speeded up. Our suggestion is that you keep in close touch with your Truscon representative, and work with him on all specifications."*

having top and bottom chords, each composed of two hot rolled angles with plain round individual web members except for bridging posts, which are composed of hot rolled angles. Truscon "Clerespan" Steel Joists are designed in accordance with standard accepted engineering practice. Top chords are designed for bending between panel points as well as for direct compression. All connections are positively secured by means of electric arc welding.

The  
Truscon  
"Clerespan"  
Joist

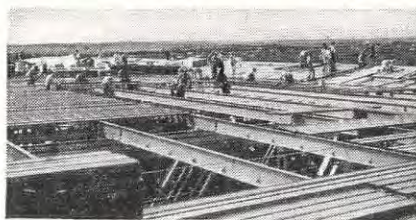


## For Those Long, Long Reaches

If you're working on a job that involves big areas of open floor spaces, let your slide rule play with the interesting figures on Truscon "Clerespan" Joists. A great many beautiful, obstruction-free areas up to 64 feet in width have been attained with this strong, light-weight joist. Such a variety of jobs as the Safeway Stores, Omaha; National Lead Co. Shipping Building, St. Louis; La Salle St. Station Train Shed, Chicago; Boulder High School, Boulder, Colo.; Ohio Bell Telephone Co. Office and Storage Building, Zanesville, Ohio, and hundreds of others in wide variety, indicate the many building needs met by "Clerespan" Joists.

Fundamentally, a Truscon "Clerespan" Steel Joist is a Pratt truss

Your Sweet's File, or your new Truscon catalog on "Clerespan" Joists, will give you complete details on this practical steel construction member. And don't forget to ask your Truscon representative to help you in designing and engineering buildings that require large floor areas without posts, or supports except at joist ends.



## Roofs—Big or Small

Whether it's just a small store or a big factory building, you'll find the answer to your roof problems in Truscon "Ferrobord" Steeldeck.

If you have a flat, pitched or curved roof on which to put an economical, permanent deck, "Ferrobord" permits you to meet all the requirements of such a job.

"Ferrobord" Steeldeck consists of a parallel system of strong structural interlocking steel members, which present a smooth surface over which can be applied built-up roofing of any type, with or without insulation. "Ferrobord" is made from both 20-gauge and 18-gauge copper-bearing strip steel, having an ultimate strength of not less than 50,000 lbs. per square inch. Each unit is 6 inches wide and has a depth of either 1½ or 1¾ inches.

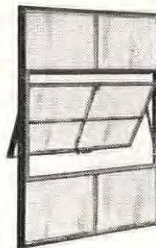
With these specifications you can design a roof job that's got strength and effective area coverage at reasonable cost. The Truscon Steel Company will be glad to cooperate with local roof companies in selecting the proper type of insulation and built-up roofing to meet certain definite requirements of structures.

## Johnny-on-the-Spot

*The Truscon Steel Company has engineering and sales offices in 43 major cities, strategically located throughout the United States. Each of these offices is manned by experienced men who have been in the designing and structural business a long time, and are capable of giving you helpful, intelligent service on your daily problems. There's a Truscon man in your own town, or just a short trip away. Don't hesitate to ask him to call on you, no matter where you are.*

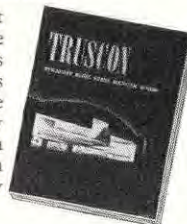
## Which Way— In or Out?

There are a lot of times when you need a commercial window that's not only good looking but one that must meet special requirements. For instance, if windows must be screened, the outward projected type is the answer. The same is recommended when the ventilator must not, in an open position, intrude on the interior clearance required for crane movement, nor interfere with shades. Conversely, the ventilators may project in and provide needed ventilation without extending beyond the building line. The Truscon Commercial Projected Window is especially made for requirements of this kind. It's a good window to use for designing large window areas, too. Write for literature on the Truscon Commercial Projected Window, giving you complete mechanical features, construction details, and types and sizes.



## New Literature

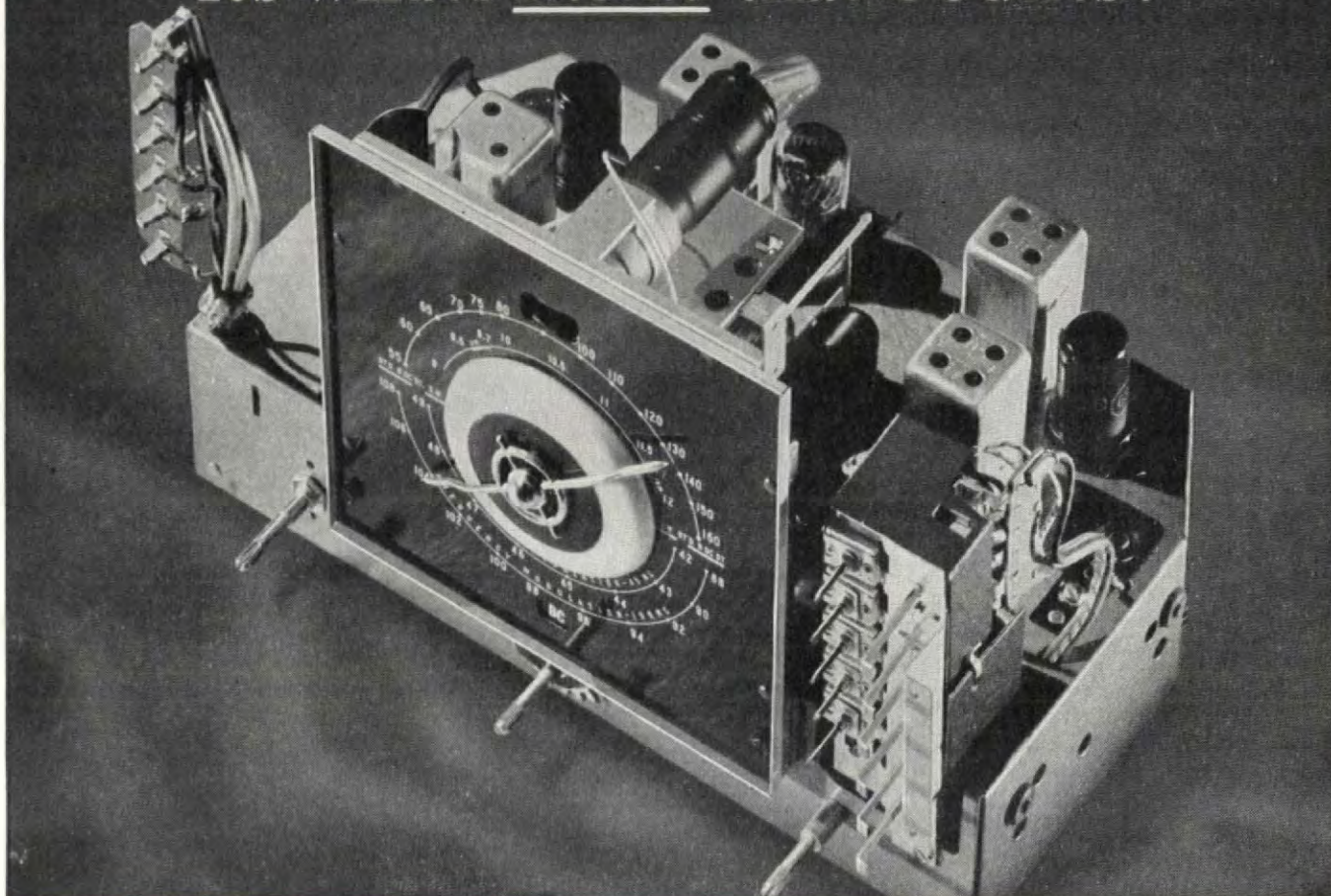
A complete new booklet on Truscon Straight Slide Steel Hangar Doors is available on request. This is a product on which we can make reasonably quick deliveries. If you have any airport jobs on your boards, get this new booklet now.



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



## It's what's *Inside* that Counts!



WITH A RADIO, the cabinet counts as furniture. But it's what's *inside* the cabinet that makes the difference in tone, in power, in clarity and trouble-free performance.

With building products, too, it's what's *inside* that counts. Your eye seldom sees the values that make the important difference.

That's why building-wise people insist on Celotex Building and Insulating Products. They know the raw materials which go into Celotex products are the finest that nature can grow and man can refine.

They know, too, that rigid production controls all along the line *guarantee* the uniformly high quality of every product bearing the Celotex name.

Tireless laboratory research perfects materials and methods still *more*... helps to maintain Celotex leadership year after year.

These, plus more than a quarter of a century of

building materials "know-how," are the invaluable ingredients in every Celotex product.

They make a big difference in performance... in long life and low cost maintenance. A difference that has proved its value on hundreds of thousands of building jobs of every kind.

\* \* \*

There aren't enough of these famous Celotex products to go around *now*—but our plants throughout the country are working day and night to increase production. Everything possible is being done to speed the time when we can supply you with all the Celotex products you need.

Building Board	Celo-Rok Sheathing and Wallboard
Interior Finish Boards	Celo-Siding Cemesto
	Celo-Rok Anchor Lath and Plaster
Flexcell	Rock Wool Insulation Triple Sealed Shingles
	* * *

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REG. U.S. PAT. OFF.  
**BUILDING PRODUCTS**

THE CELOTEX CORPORATION • CHICAGO 3, ILLINOIS



# FORUM

The Architectural  
MAGAZINE OF BUILDING

MARCH 1947



Published by TIME Incorporated

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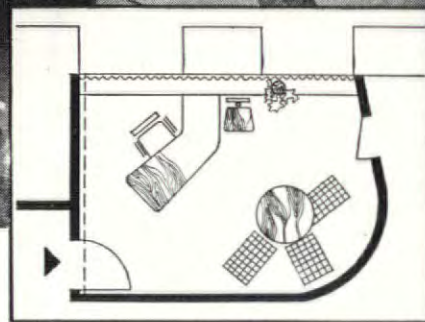
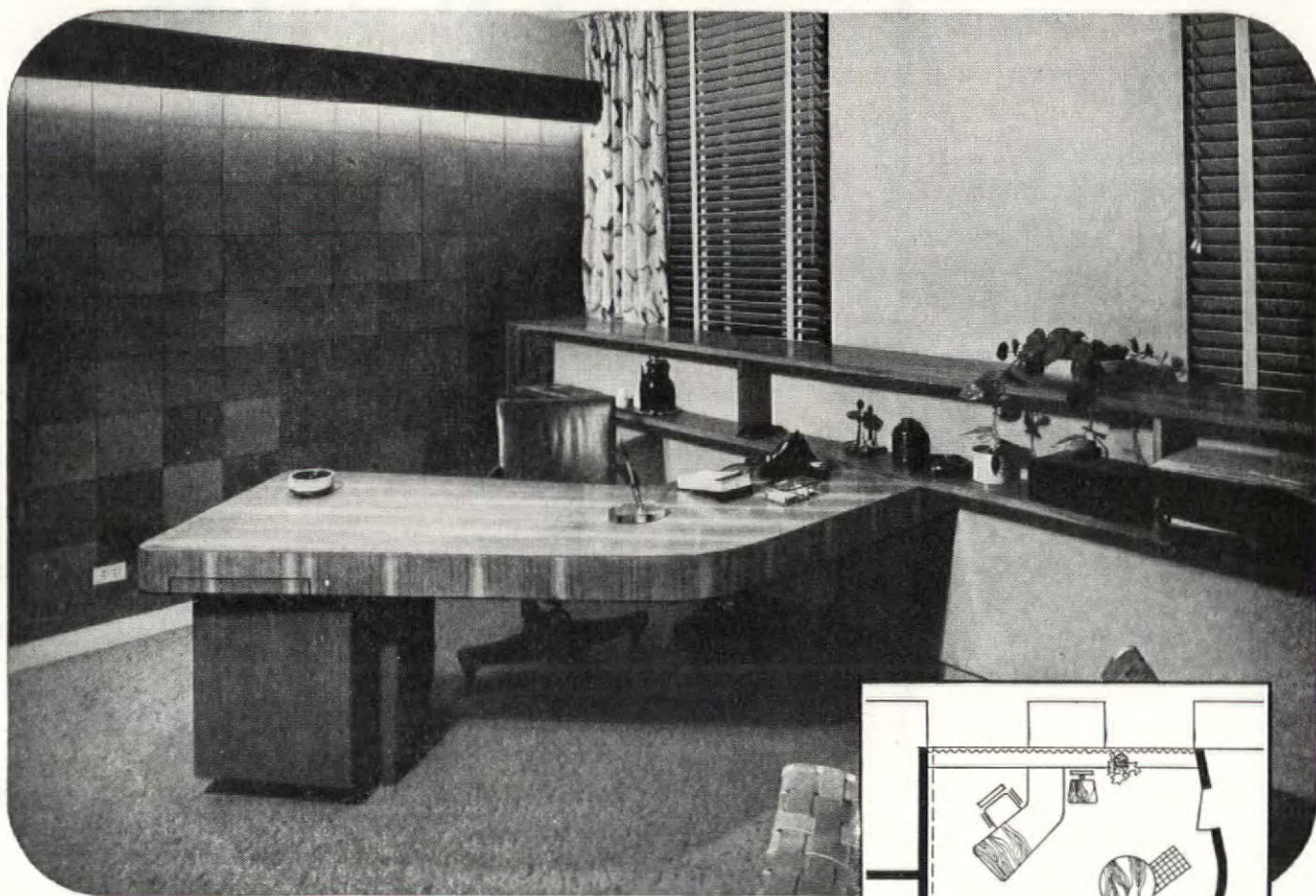
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VOLUME 86, NUMBER 3

NEWS	9
LETTERS	22
FORUM	50
ANNOUNCEMENTS	54
HOUSES	77
Hilltop house and small apartment in California by Gardner Dailey . . . house in Dover, Massachusetts, Eliot F. Noyes, architect . . . house in Evanston, Illinois, William F. Deknatel, architect.	
TWO TICKET OFFICES	87
Primitive art, eye-catching color and tropical planting sell passersby the idea of a South Seas cruise. Raymond Loewy Associates, designers. . . Scientific routing of passengers and baggage helps make travel a pleasure rather than an ordeal. Skidmore, Owings & Merrill, architects.	
MILL GUEST HOUSE	94
A friendly addition to a Maine industrial plant proves a real asset. Eaton W. Tarbell & Associates, architects.	
HOUSES U.S.A.	97
A brief review of the development of domestic architecture in America. Part II, 1820-1946, the Revivals and Eclecticism.	
GREATEST HOUSEBUILDING SHOW ON EARTH	105
Ringmasters Kaiser and Burns prefabricate a standard house chassis, finish it in the field with myriad variations, sell it with brassy fanfare.	
PRODUCTS AND PRACTICE	114
Microclimatology—provocative facts on "breathing-line" weather.	
REVIEWS	130
Exhibitions . . . Effect of the Corporate Income Tax on Investment in Rental Housing . . . Hospitals, Integrated Design . . . Your City Tomorrow.	
BUILDING REPORTER	162
Frozen food cabinet . . . smokeless coal heater . . . suspended unit heater . . . plastic coated fabrics . . . hydraulic elevators.	
TECHNICAL LITERATURE	184
Aluminum alloys and mill products . . . roofing and siding . . . photomurals . . . sound systems.	

Cover photo: (TWA Ticket Office) Hedrich-Blessing





*Let's get to the bottom*

## OF OFFICE PLANNING

**... WITH  
BIGELOW  
RUGS**



**BIGELOW CURLWEAVE**  
*A new Lokweave development*

*This is the designer's sketch drawn by Donald Deskey Associates for this modern office of Mr. E. P. Shuneman, manager of the Bigelow showroom and sales office, Merchandise Mart, Chicago.*

Here's a manager's office that shows what good planning can accomplish. In a relatively small area, modern design has created ample working, conference and display space, a feeling of dignity and roominess. When you get right down to it, there's one thing that gives this office . . . or any office . . . beautiful, yet quiet simplicity. That's the floor covering of Bigelow Contempora.

Bigelow Contempora is a luxuriously sculptured carpet that adds richness and color to office design. It's Lokweave too . . . made by the special Bigelow weaving process that means no installation waste. Lokweave carpeting stands up longer, is durable and thus truly economical. Bigelow's Carpet Counsel will help you choose from a complete line of better-than-ever floor coverings.



**BIGELOW-SANFORD CARPET CO., INC.**

**140 MADISON AVE., NEW YORK 16, N.Y.**



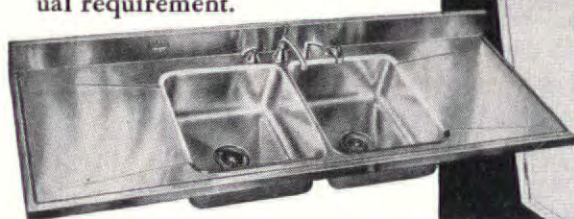
PRESENTING THE NEW, MODERNIZED



# ELKAY *Lustertone* STAINLESS STEEL CABINET SINKS

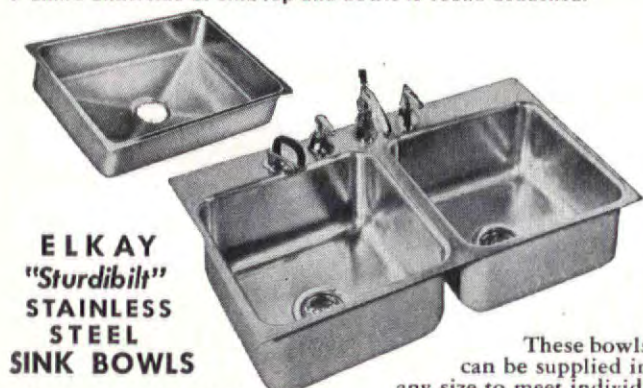
Whether your contract calls for a new construction job or a modernization project, there's an

**ELKAY**  
*Lustertone*  
**CABINET SINK**  
that will meet every individual requirement.



## 9 Points of Superiority

- 1 ELKAY "Lustertone" Cabinet Sinks are built of 18 U. S. standard gauge (extra heavy) genuine solid 18-8 stainless steel.
- 2 The stainless steel tops are bonded to and reinforced with heavy gauge formed metal.
- 3 Drainboards, sink bowls, rims, and splashers are welded integral into one sheet of metal.
- 4 All corners in sink bowls—horizontal, lateral and vertical—are rounded to 1 3/4 inch radius.
- 5 Intersections where sink bowls meet drainboards are welded and rounded to a large radius.
- 6 Intersections where drainboards meet back and return end splashers and where back splashers meet return end splashers have rounded corners.
- 7 Drainboards have a definite, liberal fan shaped pitched area insuring positive drainage.
- 8 Front and back surfaces adjacent to the sink bowls are pitch-beveled to provide additional drainage.
- 9 Entire underside of sink top and bowls is sound deadened.



**ELKAY**  
**"Sturdibilt"**  
**STAINLESS**  
**STEEL**  
**SINK BOWLS**

These bowls can be supplied in any size to meet individual requirements. Built of 18 gauge stainless steel. All corners are covered to 1 3/4" radius. They are made with 1" flat rim or with shelf for deck type faucets. These bowls are especially designed to be used with linoleum or other composition tops.

## 5 Standard Sizes

ELKAY "Lustertone" Stainless Steel Cabinet Sinks are offered in five standard sizes. The 54 inch and 60 inch sinks are furnished with 18" x 20" single bowls; the 72 inch sinks are furnished with either 18" x 25" single bowls or 18" x 34" double bowls; the 84 inch sinks are furnished with 18" x 34" double bowls. All bowls are 7 1/2 inches deep. ELKAY "Lustertone" Sinks are equipped with stainless steel basket type strainers. They can be supplied with the latest design "Deck type" chrome finished faucets and spray. All standard sinks have 4 inch back splashers.

### CUSTOM-BUILT SINKS

In addition to these five standard sizes, ELKAY Stainless Steel Cabinet Sinks can be supplied in any size and shape to meet individual requirements. Send us your specifications.



A new beautifully illustrated Folder giving complete information about the ELKAY "Lustertone" Cabinet Sinks is now ready for you. Send for folder A.F.-147.

ELKAY PRODUCTS ARE AVAILABLE THROUGH PLUMBING CONTRACTORS

**ELKAY MFG. CO., 1874 South 54th Avenue, Chicago 50, Illinois**



Meet the  
**Adlake Window**  
 Maintenance Man



**THAT'S RIGHT** — he hasn't a thing to do but loll in the sun—because **NO MAINTENANCE IS REQUIRED** with an Adlake Aluminum Window. You install it—you forget it.

**ONLY ADLAKE** combines non-metallic weather stripping and serrated guides to stop excessive air infiltration and give you finger-tip control. What's more, its lustrous aluminum sash requires no painting or maintenance. No warp, rot, swell, stick or rattle—*ever*.

**TRULY**, the Adlake Aluminum Window fulfills your every architectural requirement! Complete information and data will be mailed you on request. Drop us a postcard today . . . there's no obligation, naturally. Address: The Adams & Westlake Company, 1101 N. Michigan, Elkhart, Ind.

**THE**  
**Adams & Westlake**  
**COMPANY**

Established 1857 • ELKHART, INDIANA • New York • Chicago



FURNISHERS OF WINDOWS TO THE TRANSPORTATION INDUSTRY FOR OVER 30 YEARS



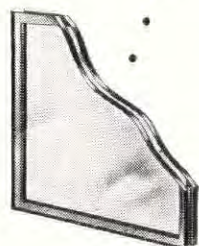
# Thermopane

REG. U.S. PAT. OFF.

NOW MADE IN

# 55

STANDARD SIZES



*Thermopane\**, the original windowpane that insulates, keeps on gaining in popularity. Its insulating efficiency makes practical the modern trend to larger windows in architectural design... an efficiency proved through actual use from Iceland to Mexico.

That's why we have expanded our standard sizes to 55—based on American Standards' Association 4-inch modular

PICTURE WINDOWS			
(3/4" Plate Glass and 1/2" air space)			
Width	Height	Width	Height
35 1/2	x 48 1/8	48 1/2	x 50
55 1/4	x 48 1/8	56 1/2	x 50
75	x 48 1/8	64 1/2	x 50
35 1/2	x 60 3/8	72 1/2	x 50
55 1/4	x 60 3/8	80 1/2	x 50
75	x 60 3/8	96 1/2	x 50
42	x 66	64 1/2	x 58
42	x 72	72 1/2	x 58
84	x 66	80 1/2	x 58
84	x 72	96 1/2	x 58
96	x 66	116 1/2	x 58
96	x 72		
DOUBLE HUNG WOOD WINDOWS			
(DSA Window Glass and 1/4" air space)			
2-Light		4-Light	
Width	Height	Width	Height
24	x 24	24	x 11 5/8
28	x 24	28	x 11 5/8
32	x 24	32	x 11 5/8
36	x 24	36	x 11 5/8
40	x 24	40	x 11 5/8
44	x 24	44	x 11 5/8
24	x 28	24	x 13 5/8
28	x 28	28	x 13 5/8
32	x 28	32	x 13 5/8
36	x 28	36	x 13 5/8
40	x 28	40	x 13 5/8
44	x 28	44	x 13 5/8
RESIDENTIAL STEEL SASH			
(DSA Window Glass and 1/4" air space)			
Width	Height	Width	Height
16	x 12	14	x 10
16	x 11 5/16	14	x 9 5/16
14	x 12	14 3/4	x 12
14	x 11 5/16	17 1/4	x 12
		12	x 12

construction. This means greater design flexibility for the architect, more opportunity for the use of this time-proved insulating glass unit.

Consult your nearest L·O·F distributor for latest information about delivery dates and the complete range of non-standard sizes. Or write for our latest *Thermopane* folder. Libbey·Owens·Ford Glass Co., 2137 Nicholas Bldg., Toledo 3, Ohio.

\*Reg. U.S. Pat. Off.

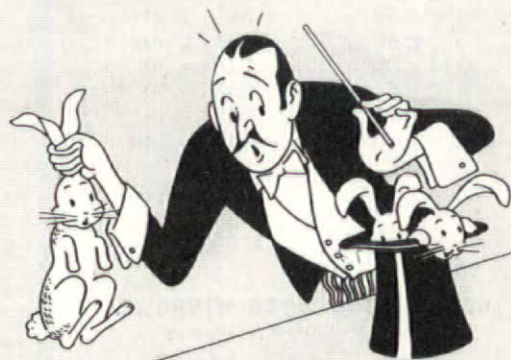


**LIBBEY·OWENS·FORD**

*a Great Name in* **GLASS**



**Holds 50% more...  
uses no extra floor space!**

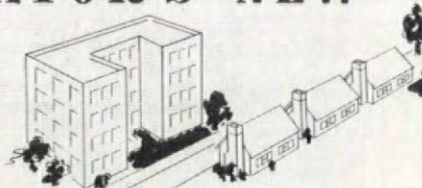


*Only 3 $\frac{7}{8}$ " higher  
Still 23 $\frac{7}{8}$ " wide*



## See KELVINATOR'S NEW "SPACE SAVER"!

FOR APARTMENTS



AND LOW COST HOMES

Introduced only two months ago, Kelvinator's new "Space Saver" Refrigerator has become one of the year's most talked about developments among builders and architects.

They have found it the ideal answer to that problem of providing a family-size refrigerator and also allowing extra space for other labor-saving electrical appliances.

See it to appreciate how Kelvinator engineers and

designers have achieved 50% more room—a grand total of 6 cubic feet of storage—in a cabinet only 3 $\frac{7}{8}$ " higher and using no more floor space than preceding 4 cu. ft. models. And note, too—that's it's a Kelvinator... quality through and through, from its handsome Permalux finish to its famed Polarsphere cold-making mechanism with an outstanding record of trouble-free performance.

### AND LOOK AT THESE FEATURES!

**High Speed Freezer**—Made of stainless steel for permanence, beauty... faster, concentrated cold. Frozen food storage, too.

**Room for Tall Bottles**—Extra room for tall bottles on both sides of freezer. Greater height between shelves increases storage.

**Handy Chilling Tray**—Dual purpose, chilling and defrosting tray... an unbreakable, drawn aluminum container.

**Sturdy Shelves**—Made of closely welded steel bars, plated to keep their brightness. Dishes slide easily but won't tip over.

**Beautiful Exterior**—Made of welded steel with a lustrous, long-wearing Permalux finish... completely stain-resistant.

# Kelvinator



DIVISION OF NASH-KELVINATOR CORPORATION, DETROIT



REFRIGERATORS • ELECTRIC RANGES • HOME FREEZERS • WATER HEATERS



# NEWS

## PRICES

Big contractors expect stabilized prices and volume building soon p. 9

## WASHINGTON

Rent boost truce p. 12

Controls crumble p. 12

Public housing for rent to veterans p. 12

## PREFABRICATION

Operative housebuilders back factory house p. 12

## LABOR

Pact to end strikes p. 14

Apprentices showing up on building jobs at highest rate in 20 years p. 14

## DESIGN

United Nations drafting room is already at work p. 11

Churches plan \$650 million building job p. 14

Design moves merchandise in Hoving stores p. 15

**BUILDING MONTH.** It was a hesitant month: the industry seemed finally to have reached the end of a long hard winter of war and reconversion, but it had not yet felt anything resembling the genial warmth of spring. Normalcy had not yet been gotten back to, and it was becoming steadily more apparent—even to the most resolute normalists—that nobody knew what, if anything, normalcy was or if, indeed, we had ever been there at all. It was equally clear that for Building, as for the rest of the U. S., the iridescent postwar dreamworld had soundlessly melted, like a plastic mix that just didn't jell. But exactly what Building was getting on to, it was hard for anybody to say. There were, as always, plenty of straws in the wind—there were, in fact, dozens of them and they were all pointing in different directions.

The momentary hesitancy was apparent in Chicago where five thousand home builders gathered to tell each other just how things were going. This year it was different: the tyrannical face of the federal government had almost disappeared from view (Frank Creedon appeared long enough to report big boosts in rent limits on new construction in Chicago and New York). There was almost nothing left to be against (the builders took it out in exchanging a few slugs with organized labor). But as to exactly what they were for, the builders (trading a few troublesome reports of new houses too high-priced to connect with buyers) were less sure than ever.

**Man in the Street.** Gallup found the man in the street just as worried as he was last year. His No. 2 worry (cost of living was No. 1): where to find a place to live. The National Association of Real Estate Boards did not suggest that the opinion of the man in the street was an unfair measure of the opinion of countless people indoors, but it did say firmly that a mere 1,500,000 houses would take the edge off the Great Housing Shortage. Provision of just 100,000 more. NAREB added, would be dangerous; this would mean market saturation.

Real estate activity generally was still dropping gently from its peak last spring. But, despite war and reconversion, Metropolitan Life happily reported a substantial profit on the invested funds of its 32 million policy holders and said it had liquidated almost all of its foreclosed real estate, having on hand now only a paltry \$32 million worth, or about one-third the amount it has invested in new housing.

**Man with a Gun.** It was a hard month for landlords. Even dignified Republican Senator Tobey was moved to levity by some of the exhibits of the downtrodden property owner which the lobbies produced for rent control hearings. In Washington and New York, apartment owners rose against rooftop installation of television antennae as bulky and dangerous ("Just another growing pain," television spokesmen said calmly), only to hear that a British inventor had taken out a patent on a helicopter landing platform guaranteed to turn any man's house into an airfield. In San Francisco, a 63-year-old landlord shot and killed two tenants, whom he had been unable to persuade to move. "They just made too damn much noise," he told police.

Everywhere the clotted cities were having transit troubles. In San Francisco,

sentimentalists kicked up a row about the threatened passing of the cable cars. In New York, Bellevue hospital set up a disaster unit staffed by two surgeons in preparation for hearings on raising the subway fare, evidently expecting something like the five o'clock rush. The *Washington Star* nosed out of government files a dreamy proposal for a Federal City where PBA seemed to think 221,000 persons would be living in the 21st century. Belatedly designed for the "motor age", the plan called for a 72-mile-square site adjoining the present capital, to be divided into 35 cells "like living tissue" by dual super-highways.

**Gadgets.** In Brazil, where skyscrapers are going up as fast as Quonset huts here, the biggest shortage was in building sites, and one enterprising contractor blasted away a mountainside to get a place to build a subdivision. But in the U. S. the gadget designers were, as usual, busier than anybody else, and by month's end had produced: a \$7,000 desk, equipped with bar, electric razor, sun lamp, and a magnetic holder which would suck a tossed pen into place; an almost self-sufficient typewriter which would make up business letters from various combinations of recorded sentences; a pullman berth which an athletic passenger might possibly be able to lower without troubling the porter. They were, however, still baffled by a device to slow up the snapping-turtle doors in which New Yorkers have been catching their arms and legs ever since the unwelcome advent of the single-deck Fifth Avenue bus.

**Troubles.** But although it was hard to say just why, things did seem to be looking better. The two rival garden clubs of Natchez, Miss., who have not spoken to each other for a decade, finally composed their differences. This year visitors to the famous Natchez spring pilgrimage will for the first time be able to see all the antebellum homes in the vicinity on one tour. St. Patrick's Cathedral, which has for the last year been stripping down its sensitive Gothic carving to a point where it can stand up to New York winters, said that, harring strikes and bad weather, it would be free of scaffolding in time for Easter. Writing in the *Times*, shirt-sleeve planner Robert Moses said New York was going to be quite a town in 1960, but happily looked forward to "new problems . . . for man is born unto trouble as the sparks fly upward and, without trouble, would become flabby, bored, atrophied and useless." Everybody seemed to feel that it was going to be a nice spring.



## PRICES

### BUILDING HOLD-UP

**Price stability and Big Building are not far ahead, top contractors say.**

Would the boom building market stumble on climbing building costs? Big building contractors queried last month by the FORUM agreed that a big volume of work is now stalled by prices. But most believed that price stability is not far off, and that stability will mean Big Building. This is what they said:

**M. E. Kalette, James Stewart Co., New York:**

A combination of high costs and unpredictability of costs is holding up construction. Unpredictability is more important. There are occasions when high costs can be justified on the basis of emergency and need, and work will go ahead. Even if it's high, people know what price they can expect to pay. Right now even lump-sum prices are subject to change. Costs are unpredictable not because of wage rates—these can be stabilized by agreement—but because of delays in equipment. Only a general release of supplies throughout the materials and equipment industry will stabilize building costs. A great volume of industrial construction remains to be done. Far from cutting off the market for industrial building, war plants are the greatest construction stimulus this country has ever known. Every industry with a DPC plant has rendered obsolete every other plant.

**Robert Dowling, City Investing Co., New York:**

Present high costs are meaning both delay and abandonment of apartment construction. My guess is that prices will soften somewhat this fall and somewhat more next

fall. Labor costs are very important in present high costs levels, due to scarcity and inefficiency. Right now a luxury-type apartment house costs about \$1.50 a cubic foot. A drop of one-fifth to one-fourth would encourage apartment construction. Costs are 60-70 per cent higher than 1941.

**Admiral Ben Morreel, Turner Construction Co., New York:**

Tabulation shows that, of projects coming through our New York office alone over the last 12 months, some \$48 million worth have been held up because of prices. There are undoubtedly a lot of delayed projects which we haven't even seen, but this figure covers only projects where owners have asked us to figure for them. If the present price situation lasts too long, it will result in definite, permanent shelving of some jobs. If we can be jolted off the high price shelf, most jobs will go ahead.

As the effects of the removal of restrictions are felt, material costs will come down and material supplies will increase (research data indicates that in most lines of materials there will be a surplus in 1947 compared to estimated requirements). Everything depends on stabilization of labor costs, and this does not mean decreases in labor rates. In order for work to go ahead what is more important than bringing prices down is stability. If costs can be stabilized so that the competition and ingenuity of the building contractor can go to work, we will bring those prices down.

**George A. Bryant, Austin Co., Cleveland:**

Month by month a growing volume of work is being placed with us, but undoubtedly much industrial construction is being delayed by high prices. Orders for construction being placed now are from firms which

just can't afford to wait for prices to fall before they build. One firm, for instance, figured it could pay the cost of a new plant in two or three years and would miss the market entirely if it didn't build now. We tell clients to build only that which is necessary, vital and will pay for itself quickly.

We don't look for a sharp drop in construction costs soon. Prices of materials are leveling off and, by mid-year, should decline to some degree as supply begins to meet demand. Labor costs, however, will stay up. Hence, despite lower costs of materials, it is not likely that there will soon be an appreciable recession in building costs, which are now 60½ per cent higher than 1941, according to our index.

The great volume of postwar industrial construction has not begun to be tapped. Stabilized prices and plentiful materials should release a tremendous volume.

**C. F. Sieder, H. K. Ferguson Co.:** We specialize in construction of industrial chemical plants. People in that line can't afford to wait for lower prices before building. So, our work is booming. But undoubtedly much work not immediately necessary is being held up by high prices.

Construction costs won't come down soon, but we don't think they will go higher. Prices of materials are leveling off and probably will stay where they are. Labor costs also should remain fairly constant in the next year. We're hoping that increased labor efficiency will give more production for the same money but this is an intangible upon which we can't count.

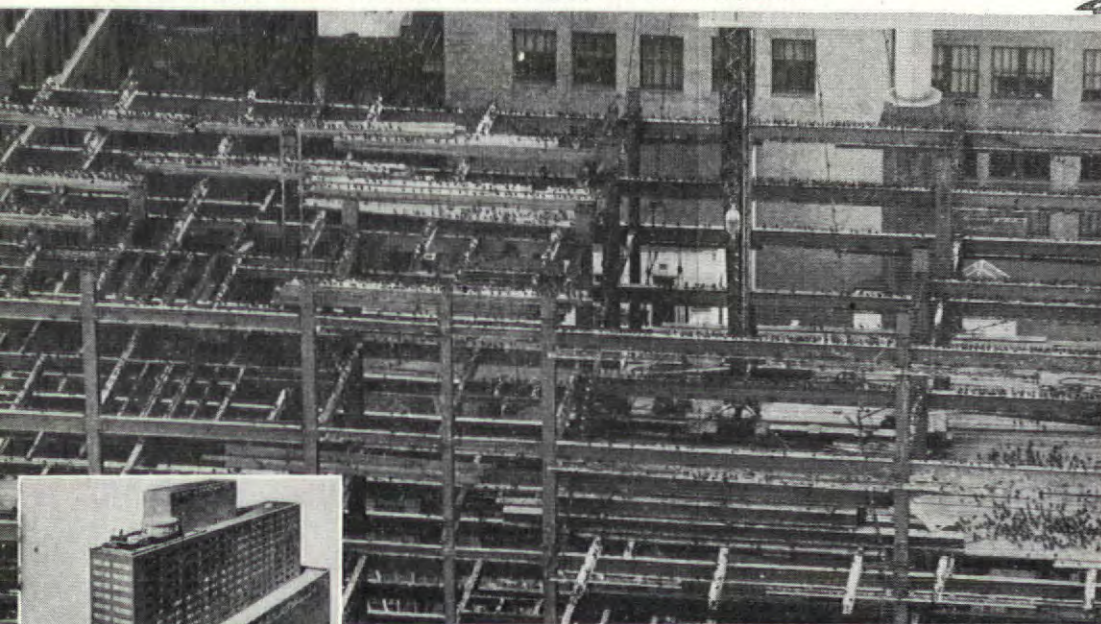
Building costs now range from \$3.50 a sq. ft. for the simplest type of construction, such as a warehouse, to about \$5.50 up to \$7.50 a sq. ft. for a factory. These figures represent an approximate increase of 60 per cent over 1941 costs. Stabilized prices and plentiful materials will set a large volume of industrial construction projects in motion.

**Albert Kahn Associates, Detroit:** Much work, both public and private, is being held up now because of high prices. No price drop is expected soon. Lower prices depend upon increased labor productivity in the building trades and supplier industries and an end to strikes. The average cost of factory construction is now \$6.50 to \$9.00 a sq. ft. depending on requirements and details. In 1941 the comparable figures were \$4.00-\$6.00.

The cream of postwar factory building is not entirely skimmed off. The period of rush work, of immediate must projects, is largely past, but many new projects which from the builders' point of view are more desirable than much of the work on additions and alterations in the reconversion period remain to be carried out. Plentiful materials and stabilization of prices would probably result in an increase in volume but no immediate boom. Volume of industrial and commercial construction in coming years will be largely dependent upon

(Continued on page 12)

**STARLINGS** are newest building headache in Cincinnati, where builders of the \$12 million Terrace Plaza hotel (see FORUM, Dec., '46) can find no way to discourage thousands of birds from roosting on the steel work at night. When these unwanted hotel guests leave in the morning, steel girders are so slippery as to be hazardous for workmen. All these birds are descendants of a flock of 80 brought to New York in 1890 to check an insect plague infecting metropolitan trees. Bird experts say that the lively and bustling starling has by now completely given up trees, will roost only on buildings, preferably in big cities.



Kolling, Lehker & Toy, Inc.

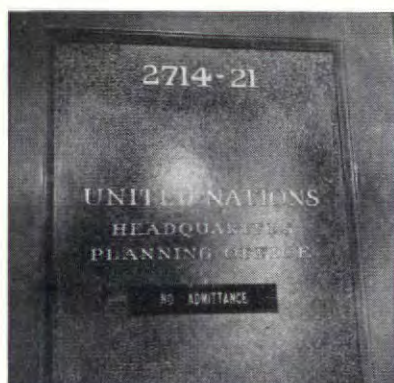


# UNITED NATIONS: MEN AT WORK

Keystone



**HEADQUARTERS ADVISORY COMMITTEE:** (l. to r. at head of table) Secretary-General Trygve Lie, U. S. Warren Austin, Planning Director Wallace Harrison, committee secretary Glenn Bennett.



Wallace Harrison thought the first skyscraper, a 40-story building, could go up in 20 months. Nicholai Bassov, the Soviet engineer who is believed to have established a world construction speed record at Stalin-grad during the war, agreed. LeCorbusier was already hard at work, leaning over his drafting table in the planning office in the RKO building, where Manhattan's skyscrapers tower on every side like a challenge to the men who have promised to top the record of the best of them. Howard Robertson had just arrived from England; Dr. Ssu-Ch'eng Liang, who represents China on the board of design, was commuting from Yale, where he is teaching; Oscar Niemeyer of Brazil would soon be here. Draftsmen (borrowed from Harrison's office and from the other three participating U. S. firms, see cuts) were already busy outlining alternative solutions for locating the five basic UN units on the East River site. The steel companies had promised top priority. Labor had promised "continuous operation." Everything was moving on the double; everybody wished permanent peace was as close as UN's permanent building seemed to be.



**DIRECTOR HARRISON** (r.) and Nickolai Bassov, U.S.S.R. (c.) with translator Serge Wolff.



**BRITAIN'S** Howard Robertson looks on as France's Le Corbusier sketches.



**CHINA'S** Dr. Ssu-Ch'eng Liang with committee secretary Bennett.

Werner Wolfe, Dave Robbins



**PARTICIPATING ARCHITECTS** Ralph Walker and Louis Skidmore welcome Britain's Robertson.



**SITE PLANNER** Gilmore Clarke with architect George Dudley.



**HARRISON** with members of his office: Oscar Nitzchke, Harmon Goldstone, Max Abramovitz.







**Republican Senator Charles Tobey, chairman, Senate Banking Committee:**

*Let us heed the inarticulate voice of the slum dwellers, as well as that of the property owners.*



**George Englar, National Apartment Owners Association:**

*There are eight million victims of OPA discrimination . . . Thousands of rent units throughout the country are on strike . . .*



**Seddon Etherton, Mich. Property Owners Assoc.:**

*Rent control is licensed larceny . . . It did not aid the war worker, it only gave him more money to spend in the beer garden.*



**Herbert Nelson, Natl. Assoc. Real Estate Boards:**

*Rent control is a plot to turn private property into a public utility.*



**Margaret Springer, Rose Canan, property owners:**

*Rent control is a menace to our American liberty and freedom.*



**Arthur Binns, Natl. Foundation Property Owners:**

*Rent decontrol will mean the end of housing shortage.*



**Alfred Stern, Emergency Comm. on Rent, N. Y. State:**

*Rent control must stay . . . The American people will not stand for being thrown out on the street.*



**Gen. Philip Fleming, head, Office of Temp. Controls:**

*Shortage of funds may stop rent control enforcement.*

the extent to which firms can accumulate reserves and public savings to finance replacement of obsolete plant.

#### **Harry H. Hilp, Barrett & Hilp, San Francisco:**

Some construction work is being held up locally because of high prices, but delays are more on account of CPA confusion and scarcity of materials. There's much more work to be done if we could get a definite green light from CPA. We have a contract to build a new Medical-Dental building on Post street. In August 1945 we could have built it at a cost of from \$13 to \$14 per sq. ft. if CPA had let us go ahead. Now the cost is up to \$19 or \$20 and construction is delayed for that reason. This figure is typical of current office building construction costs in San Francisco. Between \$12 and \$15 a sq. ft. would be the current average on Class A apartment house construction. By our own yardstick, building costs are up 100 per cent over 1939 and about 75 per cent over 1941.

## **WASHINGTON**

### **RENT BOOST**

**Congress favors 10 per cent increase.**

After a week of listening to the best examples of the impoverished property owner which the real estate lobbies could round up (see cuts), the Senate Banking Committee seemed to be agreed on a 10 per cent increase in ceilings. Although Senators Wagner and Murray had jointly introduced a bill extending rent control with no increase, few thought this bill stood a chance in the Republican-bossed Congress. Even the most earnest proponents of rent control would probably be obliged to agree to a 10 per cent increase to get control extended at all. The plan which most Republicans seemed to favor would:

- ▶ Up ceilings by a flat 10 per cent.
- ▶ Strip controls from new construction and from any rental units not on the market between February 1, 1946 and January 31, 1947.
- ▶ Erase ceilings on luxury rents (\$225 or more after the 10 per cent increase).
- ▶ Turn over enforcement to the federal courts.

### **CONTROLS DIE**

**60-day waiting period to be eased.**

Tart Jesse Wolcott, chairman of the House Banking Committee, summed up the Republican attitude on continuation of building controls: "Before we go home, we should make certain that continuation of the Patman Act will not do more to discourage building from now on than to promote it." But most of the building controls authorized by the Patman Act were already melting away.

The House had refused to vote any more money to continue the administration of rent control and the building limitation order. It seemed likely that money would be squeezed out in some way or other for

continued rent control, but many believed the order limiting nonresidential construction would soon be allowed to lapse.

Two more premium payment plans—covering lumber in Washington state forests and nails—will end on March 31. Premiums for cast iron soil pipe and pig iron will end on June 30. Housing Expediter Frank Creedon has already promised to ease up on the requirement that builders must hold a house for 60 days for possible veteran purchase. Exactly how easement will work has not yet been decided. One possibility: the 60-day waiting period might be counted from the start of construction, instead of from completion.

### **PUBLIC HOUSING FOR VETERANS**

**Douglas bill for low-rent construction.**

Liberal Congresswoman Helen Gahagan Douglas (Dem., Calif.) decided it was time for some public action on veterans' rental housing. Said she: "The veteran is not a buyer; he is a renter and he can only pay from \$30 to \$50 a month. Millions of veterans are looking for rentals at that price and cannot find them because they do not exist under any housing plan now under consideration." Forthwith, Mrs. Douglas introduced a bill which, by adding a new title to the U. S. Housing Act of 1937, would provide:

- ▶ \$1 billion in federal loans to local public housing authorities for construction of veterans' rental housing. Loan period would be 60 years, interest 2½ per cent.
- ▶ \$20 million in annual federal subsidies to insure moderate rents.

Only veterans whose incomes are not more than six times the rents stipulated could be admitted to projects. Mrs. Douglas made it clear that her bill was intended as no substitute for a long-range public housing program, but only for emergency action imperatively needed now.

## **PREFABRICATION**

### **QUIET REVOLUTION**

**Operative builders take to factory house as end to material worries.**

Although much of the postwar dream world had dropped quietly into the wastebasket with the used advertising copy, one part of it had come true. The revolution in house-building was no longer just around the corner. Born at last of war metal-working techniques, the industrialized house, in a dozen different versions, was a reality.

One sign of this quiet but decisive revolution was the alacrity with which operative housebuilders had turned to the factory-built house. Shortage of conventional building materials had given a tremendous opening to the factory builder who could promise to deliver a house in one piece. Some of these developers laced the factory-built units with conventional construction for variety.

Washington let it be known that, except for processing a few already in the mill, no



more guaranteed contracts will be let for factory-built houses (there will be more contracts covering new building materials; hardwood-surfaced plywood flooring is an example of applications now under consideration). But the ten guaranteed market contracts already signed and the few still pending would, Housing Expediter Frank Creedon figured, mean production of 100,000 factory-built houses this year. The more conventional prefabers, going ahead without benefit of government coverage, were expected to produce another 150,000 houses. Last month's heavy bundle of news from the industrialized sector of the industry spotlighted these leading contenders in the 1947 market:

**Lustron Corp. and General Homes** (see FORUM, Feb. '47) decided to share a Curtiss-Wright airplane plant in Columbus, O. Finally securing its hotly debated RFC loan (\$12½ million), Lustron scheduled a monthly output of 2,500 houses by next September. Its "Esquire" (built-in furniture) porcelain enamel steel house will sell (erected but

*Charles E. Moore*



General Homes house

without land) for about \$7,100.

General Homes has a \$225,000 RFC loan and a guaranteed market contract covering 1,700 aluminum panel houses. Its complete house (erected, without land) will sell for \$5,865.

**Clements Corp.** MacMillan Clements, who developed steel-and-plywood containers for high explosives and gun powder during the war, has turned his know-how to housing. With the aid of a \$1,100,000 RFC loan and a guaranteed market contract for 2,500 houses, this firm expects to reach an output of 300 houses a month by September. Allegheny-Ludlum fabricates .0008-inch steel strip for this house, ships it to U. S. Plywood for bonderizing to fir plywood. Steel-and-plywood sheets are then shipped to the Clements plant for grooving and folding into hollow panels, which are filled with a cotton insulation. The steel surface is cleansed and pickled to a dull finish.

The Clements house package (including all structural elements but not plumbing or wiring) will sell to dealer-distributors for about \$3,000 f.o.b. Yonkers. This 720 sq. ft. house is expected to sell to customers for not more than \$7,500, including land.

**Higgins Homes, Inc.** Shipbuilder Andrew J. Higgins landed a \$9 million RFC loan and promised 70 houses a day from the war-plane plant near New Orleans which he has leased from the government. Higgins ships enameled steel panels in a variety of

(Continued on page 14)

## LAST OF THE OLD LADY

When this pressed-brick-and-granite relict of the elegant eighties was built on Murray Hill, Grand Central station was a rambling frame terminal from which travelers arrived in hansom cabs, Broadway's white lights glittered at 14th street, and New York's smart shopping center was on the lower East Side.

The famous old Victorian who has held her place against business upstarts for 62 years is now doomed to make way for a 30-story office building, with demolition stayed only by housing crisis and the fierce legal battle waged by old residents. Long-time bon vivant owner Benjamin Bates operated the hotel "for pleasure", loved her so much he refused to have her red face washed except by hand.

*Photos: Fenno Jacobs, William Pruzan*



**SKYSCRAPERS** now tower over Murray Hill hotel on every side. J. P. Morgan, who used to step over to dinner from his house on 36th street, fought a losing battle to preserve the residential character of this midtown neighborhood.



**CHERRYWOOD HORSESHOE BAR**, handcarved and trimmed with cupids, is where Mark Twain, a long-time guest, leaned between billiard games. It also reflected the white ties of Presidents Cleveland and McKinley, Diamond Jim Brady, P. T. Barnum, Tammany boss Richard Croker, all of whom are said to have behaved like gentlemen.



**HOTEL** is a museum of Victorian interiors and a study in the evolution of U. S. plumbing. Present operators brag that no other New York hotel has rooms big enough to hold furniture in Murray Hill bedrooms.





colors and finishes, sends along his special "thermo-con" mix. Thermo-con, added to cement and water on the job site, provides a fill for the specially designed low carbon



Higgins, engineer Maury Diggs

steel panels, offering high thermal and acoustical resistance. Enameled steel sash and door frames used in houses will also be merchandised to conventional builders as corrosion-proof and requiring no finish. The Higgins "thermo-namel" panels offer great construction flexibility. They will serve equally well for the low-cost house backed by the RFC loan and for the 15-room mansion he expects to build for himself, complete with an oval swimming pool, circular bars, circular sunken tubs—all molded from thermo-namel. Each of the four Higgins sons will get a thermo-namel house, too.

**Tech Process, Inc.** Architect George H. Stoner, who worked on the atom bomb plant for Stone & Webster during the war, and engineer Fritz Mergenroth, who helped build some of Europe's massive concrete fortifications, are placing a bet on a steel-and-concrete system adapted from industrial construction. Their house is based on a 9 by 12 ft. panel made by spraying concrete on a steel frame. Panels are not bearing walls; the structure is supported by steel framing. The concrete panels will be fabricated at plants in Boston and Portland, Me. or, for big jobs, at the site. Prices (not including land) have been fixed



Stoner-Mergenroth house

at \$6,000 for a 2-bedroom minimum house and \$8,000 for a 3-bedroom house. The system permits a great variety in plan. This firm is backed by realtor Saul G. Chason, Portland, who plans to erect these houses in planned neighborhoods. A model house will be put up next month for consideration by the Boston Housing Authority.

## LABOR

### PACT

**Building labor and building contractors agree to keep work going.**

Building contractors and building labor last month solemnly handed around a peace pipe which, they hoped, would last long enough to make the rounds of local union and employer groups. But scarcely was the

pipe well lit in Washington when 500 striking metal lathers in New York slowed work for three days on \$100,000 worth of public and private housing and 1,500 Jersey carpenters said they were "sick."

These walkouts are exactly what the Associated General Contractors and the AFL Building Trades Department hope to avoid by their national agreement. AGC's Herbert Foreman and AFL's Richard Gray shook hands over a proposal to set up a National Conference Committee with the power to arbitrate local disputes while work continues.

Such a formula has worked well in the electrical construction industry, which formed a Council on Industrial Relations in 1920. The Council established a reputation for fair dealing by refusing to cut wages in a Detroit dispute, one of the first referred to it. Since then it

McAvoy



GRAY

has arbitrated more than 40 local disputes and made its decisions stick. President Truman had congratulated the construction industry on its effort to make permanent peace. Everybody hoped the Council machinery would forestall costly work stoppages in the present bull Building market. But there were some facts unpromising enough to dim any starry-eyed view of the industry's new rapport. Biggest of them: the well-known difference between policy piously announced by international officers of the building unions and action taken by the imperious locals. Nor does the arbitration plan cover specialty contractors. Three who took part in all discussions but said they preferred to set up their own machinery are: the Tile Contractors Association of America, the National Association of Master Plumbers, the National Association of Heating, Piping and Air Conditioning. The joint Council would not be permitted to arbitrate disputes between the AFL and any employer "on whose operation a non-union condition exists." Thus strikes resulting from an organizing drive would not be covered.

### NEWCOMERS

**Union door is finally swinging wide to building apprentices.**

For over a year building trade unions have been noisily promising to open the door to apprentices. But only in recent months has the door been visibly swinging wide on a local basis. Breaking through restrictive traditions barring new workers from their guarded ranks, union locals have speeded up apprentice training for the first time in twenty years. A FORUM survey of

Reni



FOREMAN

key cities found last month that, without special announcement or fanfare, the parade had started. Down the road leading to Building's waiting jobsites was coming a welcome figure—the new building worker. Unlike the average construction worker already on the job, he was young, probably a World War II veteran, with an immediate personal interest in seeing new homes go up. He had other characteristics that the industry was finding likeable. Having seen and helped to hurry-up jobs during the war he had little taste for the spread-the-work tactics of older workers, consequently, he was anxious, when permitted, to try out new tools, materials and methods of work.

**Atlanta.** Embarking on the greatest apprentice training program in the city's history, Atlanta had some 3,000 apprentices in training. The model apprentice-training program of Atlanta's carpenters had already attracted the attention of General MacArthur who was having it adapted to vocational schooling in Japan. Under it, Atlanta had 557 apprentices in training; only 120 had been enrolled a year ago. Similarly, Atlanta could boast of 135 apprentice electricians, twice last year's enrollment. Most significant element in the story in the Atlanta region was the part played by building materials manufacturers who had sparked training programs in middle-sized cities like Augusta, Brunswick and Athens and even in completely rural districts.

**Los Angeles.** The prewar ratio of one apprentice to eight journeymen had been raised to one-to-four in this city whose smashing training breakthrough accounted for 7,730 apprentices in building trades courses. These new battalions promise to do much to remedy the chronic slowdown and lowered efficiency with which building employers in the area have charged die-hard union elements. (Example: an LA lather laid 2,000 laths in a day's work early this year. He was reprimanded by the local union and told to keep his output below 1,200 laths.)

**Chicago.** Nearly 5,000 apprentices are training in Chicago through union and city vocational schools. In addition, 4,000 men over the standard apprentice age—chiefly veterans with building trades skills—were being qualified as journeymen on the basis of their abilities. Many thought this the most hopeful activity on the entire building labor horizon. Chicago builders found that inexperienced, but army-schooled technicians could easily be put to work on large construction jobs, where specialization replaced the "all-around man". The totals on building labor were already encouraging. During the last year 15,000 men joined the ranks of Chicago's journeymen builders.

**Detroit.** Enrolled apprentices numbered 2,157, including 600 carpenters, 230 bricklayers, 330 electricians, 230 plumbers and 140 painters. Carpenters and bricklayers



had waived traditional journeymen to apprentice ratios, to allow as much as a one-to-one balance between masters and trainees. Carpenter union heads promised to expand the number of apprentices to 1,500 as work becomes available.

**Denver.** The center of the vast mountain area reported 600 apprentices in the building trades, a bustling total when stacked against last year, when less than 100 were being trained, and bigger than any training program in previous Denver history.

**Dallas.** 750 apprentices compared impressively with last year's estimate of 125.

**Boston.** The line-up for apprentice jobs had already outpaced the volume of work ready to absorb new workers. Some 2,000 apprentices were in training.

## DESIGN

### NO SKYSCRAPERS

**Churches will build, but stay out of real estate business.**

Protestant churchmen said they will build \$650 million worth of churches over the next few years. None of them will be skyscrapers; this time the churches have decided to stay out of the real estate business. A few have institutional building programs, covering a variety of needs (see cuts).

Although the 36-story building the Methodists built in Chicago's Loop in 1928 still wears its lighted cross, the church (which conducts services on the first two floors) has found this office building a scarcely profitable operation. One Los Angeles church has reported a tidy income from the apartments which occupy the upper floors of its building. But most of the other church ventures into investment building, inspired by the general building excrement of the twenties, have had a sorrier history. This time the churches expect to give their attention to improved plan and construction.

Lighting, for instance, has become a subject of both theologic and architectural importance. Most churches are inadequately lighted, Dr. C. Harry Atkinson, Baptist building counsel, told the North American Conference on Church Architecture in New York last month. In many cases, he said, lighting fixtures have become an "end in themselves" and "objects of idolatrous admiration." Dr. Atkinson wants enough light so that every worshipper can see to read his hymnal. "The marked rise of literacy in recent years and the subsequent increase in congregational participation in the services of worship have created a demand for comfortable lighting."

### STORES WITH PERSONALITY

**What makes a woman buy?**

Walter Hoving, well-known in retailing as the ball-of-fire who bounced up from Macy's training squad to become executive vice-president at 30, has never underestimated the importance of design in moving merchandise. "People prefer one store to

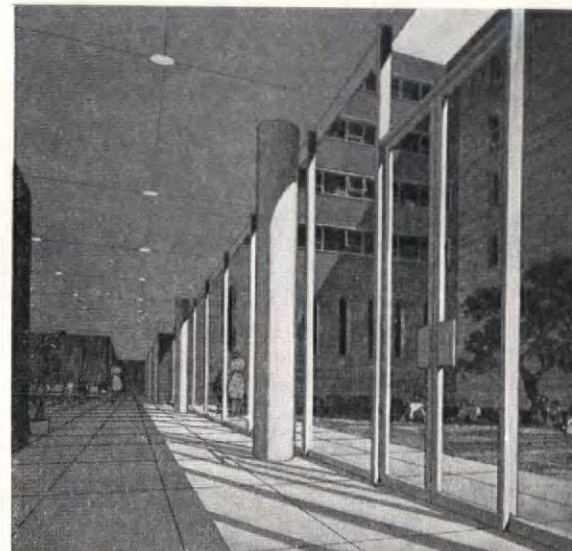
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Jerry Cooke, Pix, Inc.

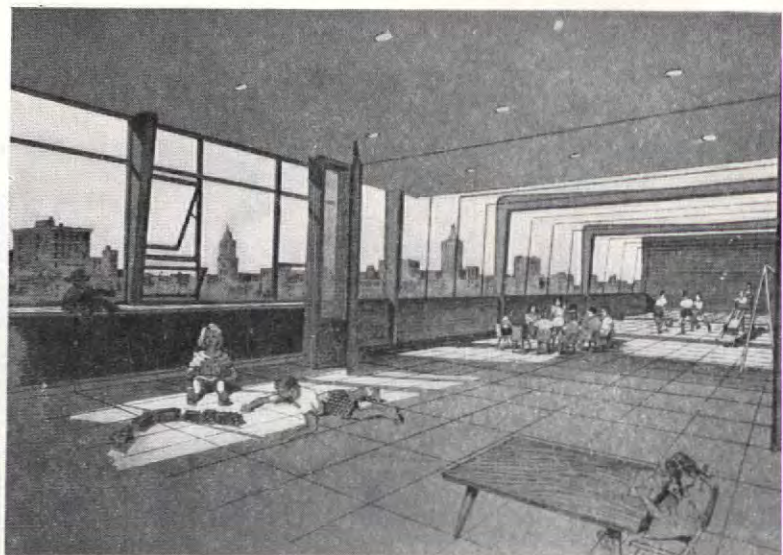


## ST. BARNABAS HOUSE: new pattern for a charity mission.

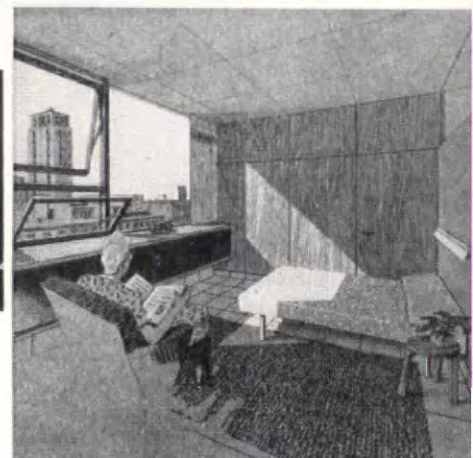
Not far from the Bowery, in Manhattan's seamiest slum neighborhood, the Episcopal diocese of New York maintains an 83-year-old, pitifully inadequate hostel for homeless and troubled women and children. Now the church plans to replace it with a new \$500,000 building designed by architects Ketchum, Gina & Sharpe.



The new St. Barnabas goes beyond mere reform of the present building which is not only crowded and unsafe but depressing and "institutional". It has been planned for spacious grace.



The cramped roof playground, the jam-packed dormitories, the dim, cell-like bedrooms will give way to sunlit, cheerful play and sleeping rooms arranged for maximum flexibility and comfort.





another because of its personality," Hoving says. During 10 years as president of Manhattan's Lord & Taylor department store, he and vice-president Dorothy Shaver achieved personality so successfully that occasionally police assistance was required to move the crowds in front of the famous (unlimited budget) L. & T. window displays.

Last month it was plain that Walter Hoving's business future, like that of many another U. S. enterpriser, would turn on whether he could climb the present steep Building market. It was also plain that he was counting on a highly specialized design know-how to help him do it.

When Hoving left Lord & Taylor last year to form the Hoving Corp., he hoped to follow in the giant footsteps of Allied Stores, whose retail empire covers 71 choice properties. But Allied built its holdings at depression prices. The Hoving Corp., on the other hand, confronts a period in which stores are high-priced and hard to buy. Good shopping locations are as scarce and as high-priced as existing stores, while steep building costs (see page 10) sharply limit investment in new construction.

Hoving's first move showed he had found a way to bypass these hurdles. Acquiring New York's Bonwit Teller store from Atlas Corp., he immediately announced a Bonwit Teller branch for Boston. To the surprise of the Back Bay, this new Hoving store will be housed in the old New England Museum of Natural History, whose Corinthian-pilastered facade fronts on busy Berkeley street in a section between the Statler and Ritz Carlton hotels and near the Commons.

Securing this prime location on a lease from the New England Mutual Life Insur-

ance Co., Hoving will install ladies' ready-to-wear under the coffered ceilings from which only recently hung such Museum prizes as the giant pterodactyl skeleton and the American oyster catcher (rare) taken by Daniel Webster in 1837. Plans for converting this historic museum are being prepared by Leland & Larsen, Boston architects.

To give the store New York sex appeal in a ladylike way that Boston would find irresistible, Hoving brought in William Pahlmann, an interior decorator who had gathered a reputation for both himself and the Lord & Taylor store by a series of model rooms. Because department stores set popular standards in interior decoration and because Pahlmann quickly developed a style which managed to be both spectacular and inoffensive, he has probably cut as wide a swathe across the American home as any other designer you could name. What Pahlmann had done for the house, Hoving hopes he will do for the store.

Both men understand each other thoroughly in the matter of what a store interior should do to its customers, and both present a rather solid front against what an architect is likely to produce on the subject. Pahlmann is particularly appalled by the average architect's inability to detach himself from a passion for natural wood finishes. "They make everything look like a man's shop. They don't even bleach the wood. If only they saw what that yellow

glare does to—say, lingerie display."

In the Boston store, lingerie will be shown (but in carefully small quantities; display, like everything else in retailing, is now an exact science) against a background of "bedroom colors"—grayed pastels to you, bub. Customers will make their selection with the benefit of "intimate lighting", carefully graded to suggest "night lighting". (Fluorescent light, like natural wood, is something staff members have learned never to mention in front of Pahlmann).

There will be only one counter in the entire store, and this Pahlmann has reluctantly admitted to the third floor sports department, apparently feeling that sweater customers are not yet ready to give up hanging around a counter. Everywhere else ladies will sit at tables on chairs and be expected to refrain

from poking about in the wall cupboards, where merchandise will be kept under wraps for strategic display by high-powered sales girls.

The counterless store is only an easy jump from the deskless office, a notion also favored by both Hoving and Pahlmann. Hoving has always liked to decorate his offices like a living room and use a table instead of a desk. He usually points this out to visitors immediately, adding that a "desk creates too much awe and makes those who wish to speak freely speak a little less freely." This sometimes halts conversation for at least five minutes. Since Pahlmann equips his office in the same way and gives much the same reason, it is difficult to trace the exact origin of this, as of the other design principles which both men employ with a conviction of infallibility impressive to their competitors in this nervously feminine field.

With the familiarity of a man who has spent a decade around department stores, Pahlmann also declares violently against the stilted legs which some architects think lend chi-chi to shop counters. "Salesgirls feet are always tired," he says. "Stilted counters merely give a full view of tired feet in sloppy shoes, together with the wad of tissue and the box lid just dropped."

It is intimate know-how like this that got Pahlmann the Boston job, that will take him to the store Hoving will start building next spring on Chicago's Michigan Boulevard from plans prepared by Shaw, Naess & Murphy and to other stores which Hoving expects to locate in cities as yet unnamed. Architects inclined to bridle at what happens to their buildings after the carpenters leave might pause to reflect that until they master the obscure art of a color mix that can persuade a woman in a fitting room to buy a dress she cannot afford, in a color she never liked, there will always be an interior decorator.



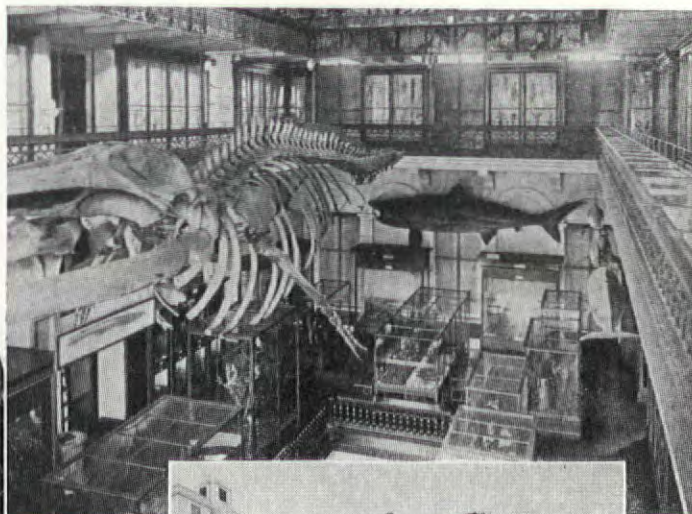
HOVING



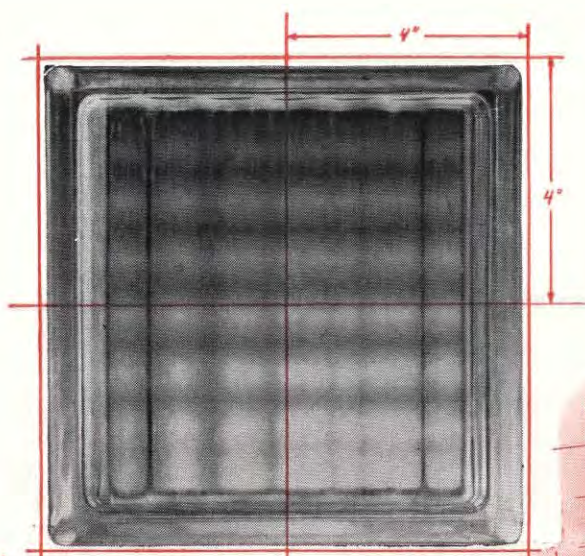
PAHLMANN



**HOVING BOSTON STORE** will locate in museum building (r.) after refurbishing by decorator William Pahlmann, whose elegant hand is apparent in New York's Prince Matchabelli showroom (l.). No display windows will be cut in museum's dignified exterior. Some of the upper interior balconies, which are topped by a round clerestory, will be left intact.







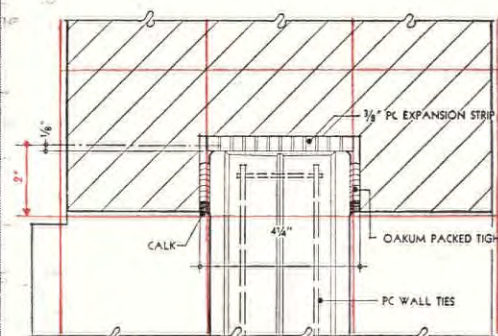
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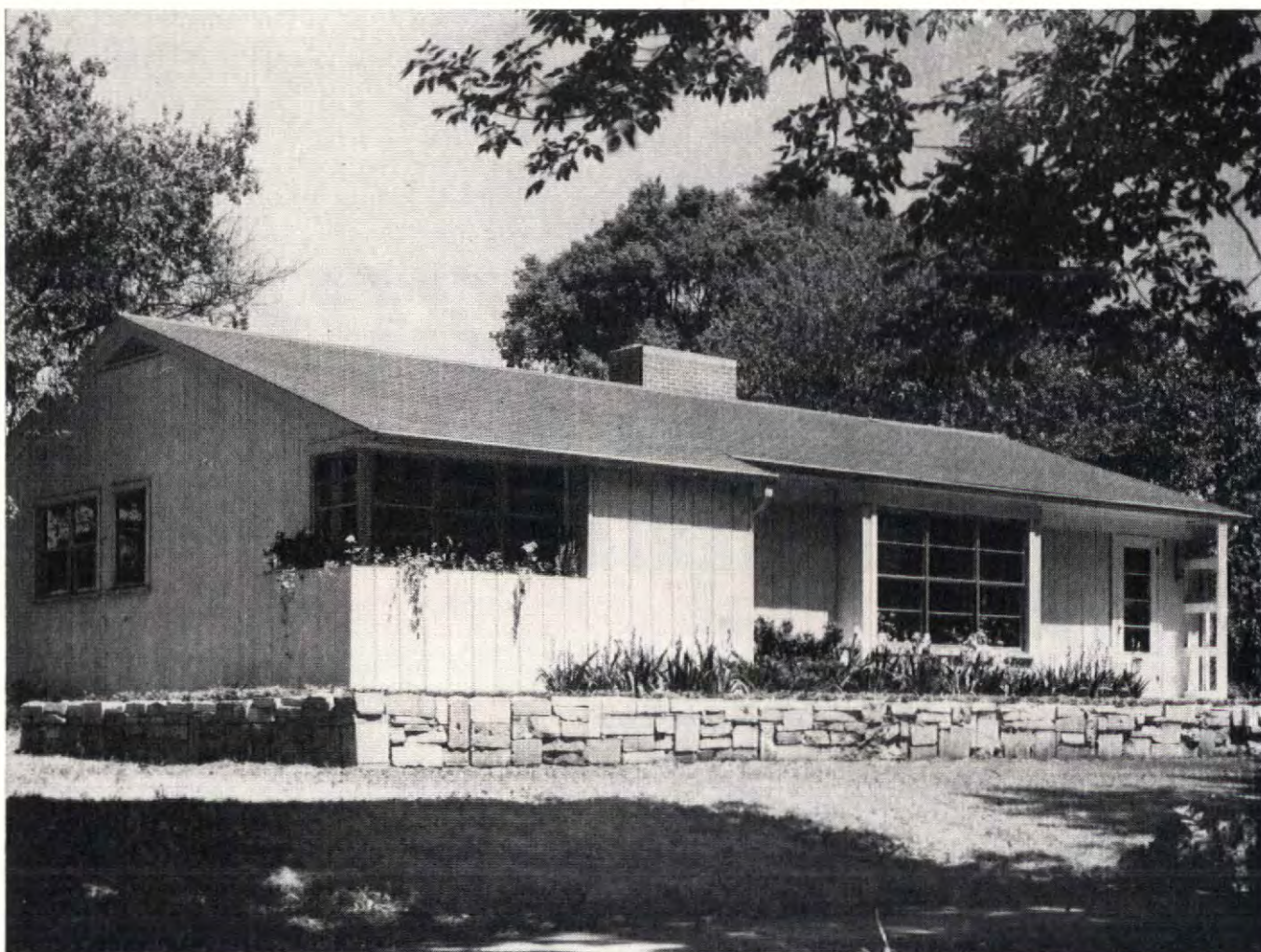
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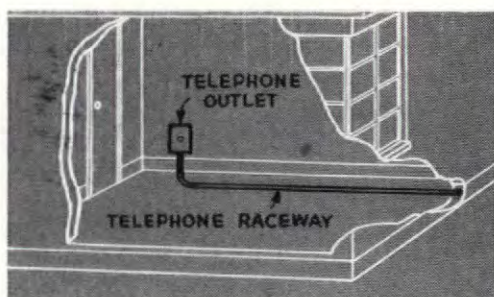
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Granville Keith, Architect

## **EVEN MODERN MIDGETS SHOULD BE "TELEPHONE CONDITIONED"**



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When there is no basement, the telephone installer generally cannot run wires up through the floor to the telephone location. But a simple wiring channel *installed before the floor is laid*, avoids attaching telephone wires in plain sight on baseboards and around window and door frames.

Every small home should have raceways for telephone wires. Your Bell Telephone Company will be glad to help you plan economical telephone wiring facilities. Just call your Telephone Business Office and ask for "Architects and Builders Service."

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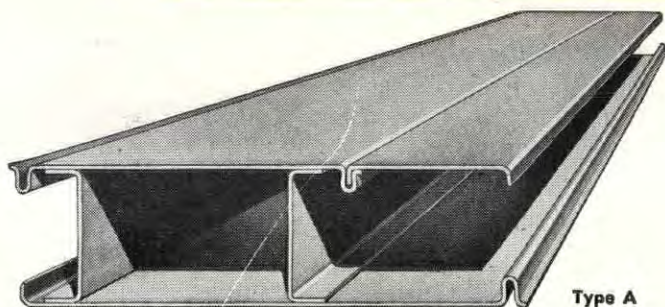




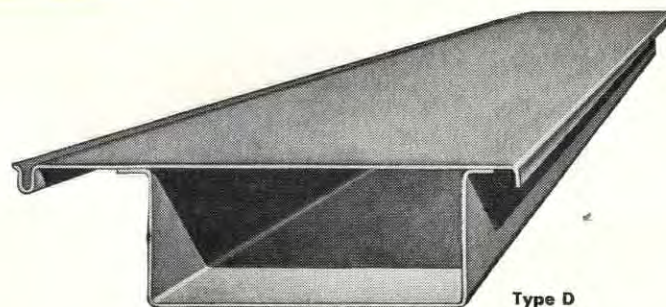
# Fenestra

**MATERIALS FOR COMPLETE**

## METAL PANELS

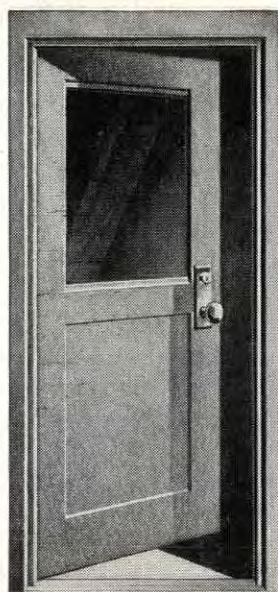


Type A

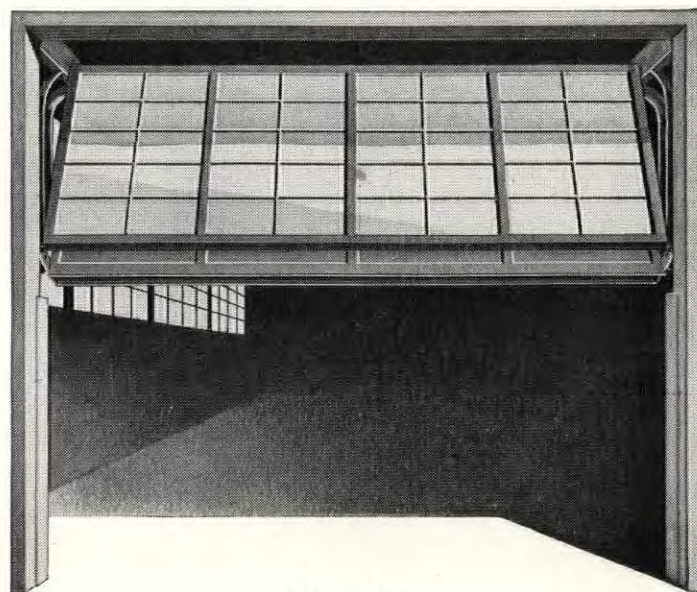


Type D

## STEEL DOORS



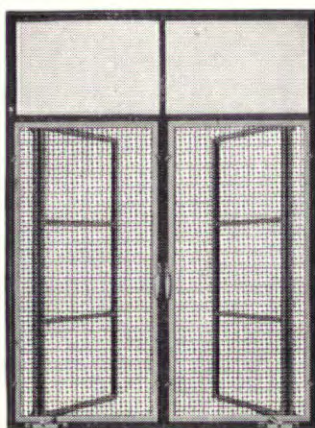
Swing Type



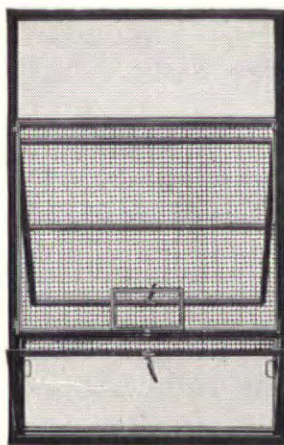
Turnover Type



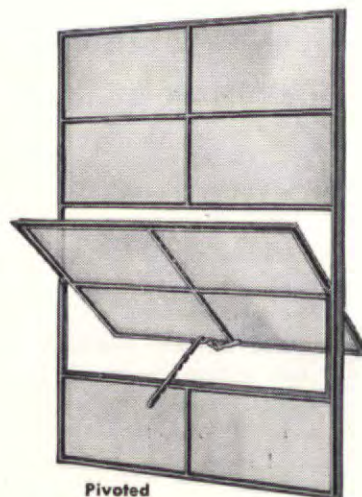
## STEEL WINDOWS



Residence Casements

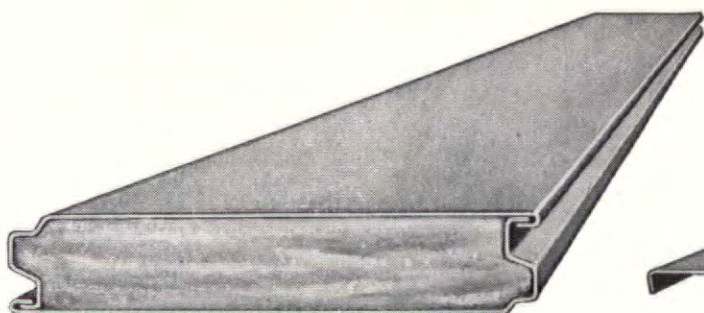


Fencraft and Fenmark

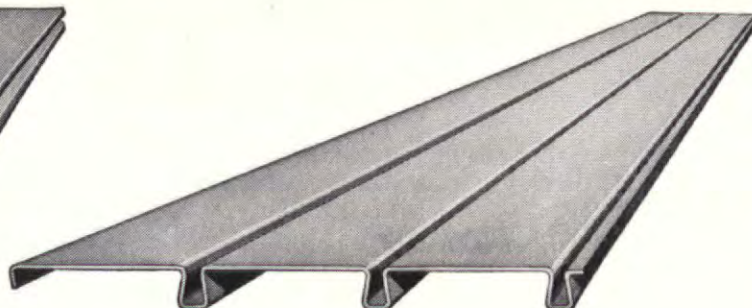


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Prefab Pros and Cons . . . Defense of Roger Allen . . . The Fireproof Question . . . Construction Loans for G.I.'s . . . The British Mind at Work . . . Sour Notes on the U.N. Site Choice.

## PREFAB PORTFOLIO

Forum:

I am writing to congratulate you on the current issue of the FORUM. I like your choice of houses in the first section; I like the inserted historical section. But especially I like the last section on the prefabricated houses. Your text is clear, informative and, thank goodness, not too subjectively enthusiastic. I think you have kept a good balance . . .

PHILIP C. JOHNSON  
Museum of Modern Art  
New York, N. Y.

Forum:

Congratulations for the splendid presentation of Production Line Structures in your January issue. Many architects and contractors have already called to see our Units and the response has been overwhelming at this very early date . . .

KENNETH N. LIND  
Production Line Structures  
Los Angeles, Calif.

Forum:

I cannot understand how an architectural magazine can hold out prefabrication as bait to subscribers or can actually sponsor such a movement.

. . . Traditional home building has been developed around the idea of producing custom-built homes to fit families in varying standards of living and diverse economic conditions. It has been developed to expand in inflationary periods and survive during depressions.

Industrial prefabrication, on the other hand, creates a capital plant which must be supported during depressions. It necessarily standardizes the design and planning of homes and thereby stifles expression of family life and casts it in a common mold. It must be priced to meet competition in various locations where costs of construction vary considerably.

. . . Transportation may be logically industrialized and standardized. But to standardize family life . . . is not in accordance with American principles of freedom of expression . . .

CHARLES E. KRAHMER, Architect  
Newark, N. J.

Forum:

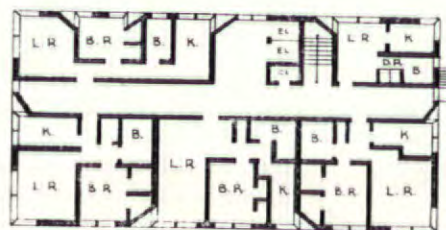
In the "Letters" column of your November '46 FORUM I was headlined as Mr. "Poison."

For this favor I will elaborate a little on what was the trouble: Your whole

magazine disappointed me in that it seemed to take an extremely passive attitude to the greatest building boom that has ever been before us . . . Yes, you presented a series on prefabrication and other aspects of housing, but these seemed to have no fire back of them—instead, you dwelt most heartily on remote mansions for millionaires (something that by rights are even illegal to construct nowadays, or were at the time of publication). You were more concerned with the upper fifty thousand's housing problems than with those of the lower fifty million . . .

I am a firm believer in the use of mass production methods, whether it be the manufacture of better automobiles, airplanes, shoelaces or houses and apartments. In this respect, I consistently feel that houses can be mass-produced at great economic saving, yet not be a series of "crackerbox" designs like those so many present day prefabricators are wasting time on. They can be as distinctive as any better-grade house today. But what both the architectural profession and the building trades need is a renaissance . . .

My own invasion of the architectural field is meeting with dismal failure—unless a building revival resurrects it this year. I developed a patentable type of packaged window unit which is best described as "a corner window for a room that is not in the corner of a building." Its purpose is the



Plan and detail of "corner" window

more economical construction of buildings through the elimination of indentations in the outside wall plan by the novel method of placing a sash in a partition wall abutting an outside wall window.

. . . The idea for this window was an outgrowth of my own desire to build a seven-room house by the most economical method,

yet have double corner windows in the master bedroom. It is several hundred degrees less wild than the Fuller house which received so much publicity in your magazine.—Is that firm broke yet?

D. G. LEWIS

Sunnyvale, Calif.

## SOUTH AMERICAN SLIP

Forum:

In your article on South America (FORUM, Nov. '46), I want to thank you for including our building and for the kind words about Colombia, its architects and architecture in general. However, on p. 107 there is a mistake in the caption, "New construction jams Bogota's old streets." The scene belongs to Medellin. My name has also suffered considerable distortion at the hands of the printers, being indicated with an L instead of an S . . .

FEDERICO VASQUEZ  
Medellin, Colombia, S.A.

## SHADES OF COTTON MATHER

Forum:

I see among your January "Letters" that one Alan Mather doesn't like Roger Allen's stuff. O.K. Every man to his own opinion. My own is (a) that Allen is the No. 1 architect-humorist of my long lifetime, and (b) that the best of his work ranks with that of any humorist of the time, architect or no. Such is my confidence in the taste and discernment of my professional brethren that I'll bet a bottle of prewar Scotch against a licorice stick that the vast majority agree with me.

FRANK STANTON, Architect  
Seattle, Wash.

Forum:

A letter of truly archaeological dreariness appeared over an old archaeological New England name. In the purest Salem spirit of Cotton Mather, this latter-day Alan (not to be confused with the other Allen) takes a very grouchy line toward our own Roger (again not to be confused with Roger Williams, who ran afoul of the earlier Mather's attitude toward humor).

Perhaps Alan has given us something to ponder. Does the contemporary attack upon a problem rule out the fun of architecture? Must it be accomplished grimly and with a tense set of the jaw? Are we not permitted to enjoy the whimsies of the 1940's at least as much as we do those of the twenties? I have a suspicion that the

(Continued on page 24)



# BLUEPRINT

## FOR

### Better Heating

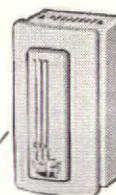


**K**ey points in comfort and home-owner satisfaction are these White-Rodgers automatic temperature controls.

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See that the heating plants you install are equipped with White-Rodgers automatic controls.



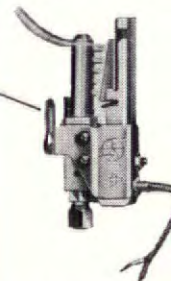
#### ROOM THERMOSTAT

Modern in design, attractively finished in ivory and chrome, the Series 120 Room Thermostat harmonizes with any decorative scheme.



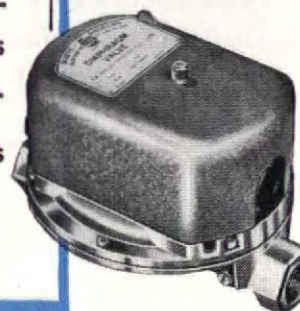
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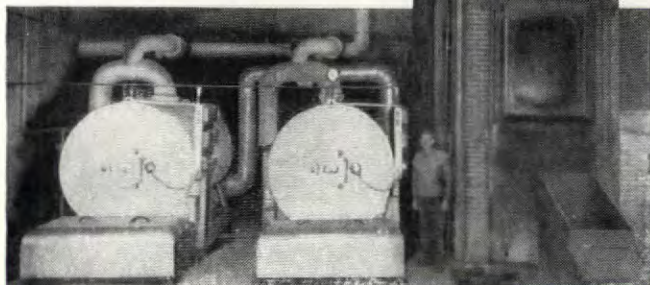
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architects of the year 2012 will wonder from time to time just what we did that might be more important than doing it pleasantly.

Joviality and a merry sense of the convivial have long been a tradition in the profession and I, for one, do not ever want to get so contemporary that even the tradition of good humor be interred with d'Espouy's Fragments and Ashar Benjamine. It will take a bit of doing to catch the atmosphere of the operating clinic—or even a Salem pulpit—and inject it into the drafting room.

It is one thing to knock off a Corinthian cornice but quite a more serious matter to knock off Roger Allen and his happy familiarity with the affairs of the profession. There are too many of us who have known the household in which we serve these many years and love its quaint and silly aspects with the laughing kind of an integrity which Roger Allen personifies . . .

Surely there is both room and a need for a tolerant kind of intelligence amid all the zeal to present the world with "The Architectural Message." Even firemen answering the clarion call find time for whimsy and a bit of a laugh with an affable colleague.

VINCENT F. FAGAN, Architect  
South Bend, Ind.

Forum:

I thought perhaps you would like to see the Roger Allen Christmas picture which we ran last December 25.



Allen celebrates the yule

The picture proved to be a hit, although there were some doubts about it. An interesting sidelight is that one or two of our subscribers protested that it was inappropriate for the day. But, as you well know, you can't please everybody.

B. G. BROWN, City Editor  
The Grand Rapids Press  
Grand Rapids, Mich.

## PENTAGONAL FIRETRAP

Forum:

The design of the "Pentagonal Apartment Building" illustrated in the January

issue of the FORUM is, of course, an ingenious one. However, what would happen in case of a serious conflagration? Do you and the architects believe that families could escape through the central core without other means of exit? Have not the recent tragedies in Chicago and Atlanta taught us any lessons? Or is it possible that the designers are content to say "It can't happen here?"

You may argue that the requirements of the fire code have been met. Personally, I would hate to live on the upper floors of such a building in case of a serious and devastating fire. Perhaps the plan will yield handsome returns for the owners' investment and families can be housed fairly economically. But are considerations of humanity less important than financial ones?

P. M. TORRACA, Architect  
Virginia Polytechnic Institute  
Blacksburg, Va.

Fire prevention in the pentagonal apartment building is achieved by many precautions, only a few of which were shown in FORUM's floor plan. Each apartment is equipped with a spring-hinged fireproof front door and steel windows; elevators are completely enclosed; each flight of stairs (and there are two per floor) is designed to accommodate the entire population of a floor; stairwells use no wood, have fireproof doors and steel handrails and extend only to the first floor rather than to the basement where fires ordinarily start. If all buildings were designed with such attention to fire prevention there would be fewer tragedies.—Ed.

## ADVANCE MONEY

Forum:

I have just read with astonishment the amazing inaccuracies in the letter entitled "G.I. Money" in the January FORUM. It is obvious that Mr. McCann is unfamiliar both with the regulations of the loan section of the G.I. Bill and with general bank-lending policies.

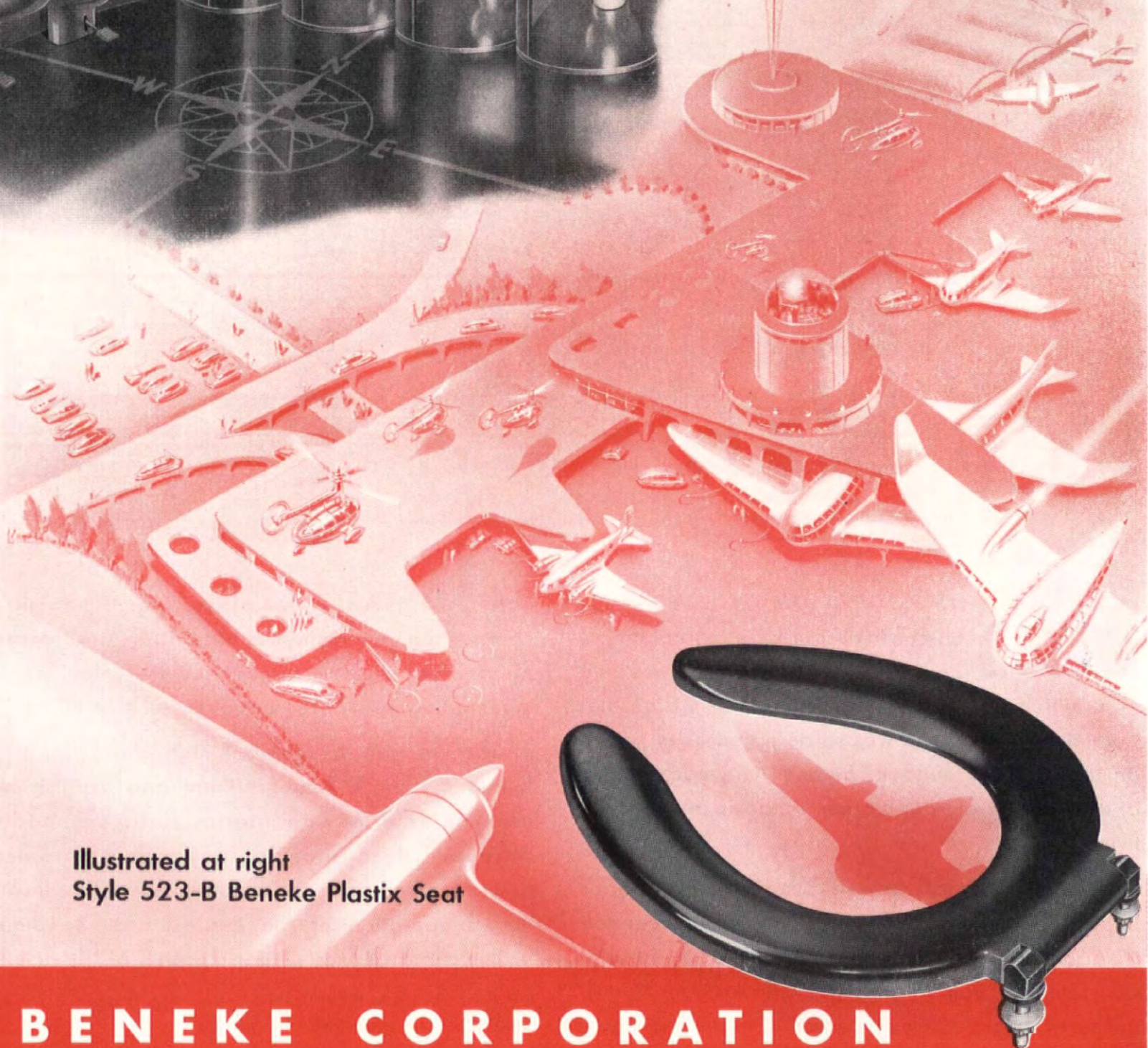
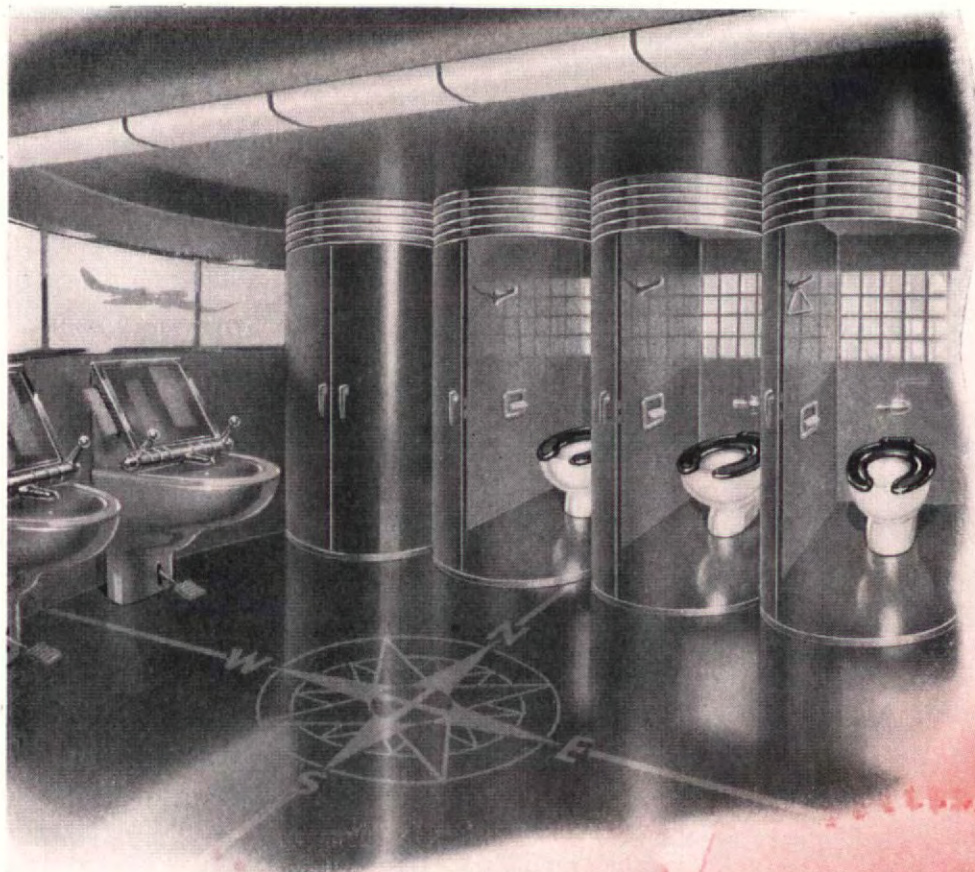
Banks most certainly can, are willing to, and do make construction loans to veterans on houses which they "can't see yet." Any veteran who comes into our bank or any active lending institution with adequate plans and specifications, and with a firm price bid from a reliable contractor, or even with merely his own estimate if he can prove a reasonable amount of experience in building, can get a construction loan up to 100 per cent of the total cost of land and building. In thousands of cases, G.I. construction loans include four, five and even six payments before the house is completed. Moreover, under the G.I. regulations banks can and do advance money for the purchase of lots, even before the batten boards are up. Mr. McCann certainly cannot ask for anything better than that.

(Continued on page 28)



*In Tune with  
the Times—*

**BENEKE  
PLASTIX**

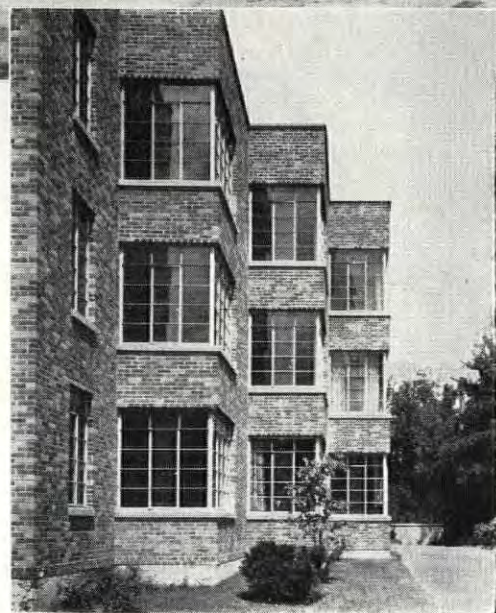
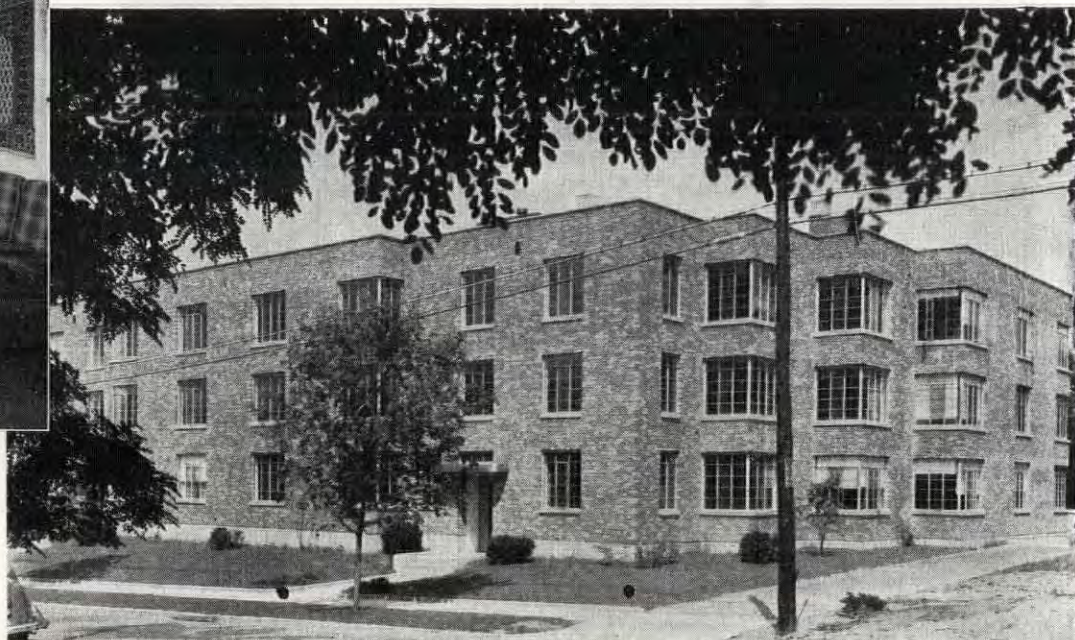


Illustrated at right  
Style 523-B Beneke Plastix Seat

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**T**HIS 60-unit apartment building, unique in design, both as to planning and method of construction, was built on a hilltop, overlooking the Cascadilla Gorge and Cornell University, and was so designed as to permit an unobstructed outlook. Setbacks on each corner of the building provide corner windows in 42 of the living rooms.

The structure consists of reinforced concrete interior bearing partitions and flat floor slabs, surrounded with cinder block and brick walls around the outside. Concrete was poured into specially-designed forms, giving walls and ceilings a smooth finish, and elimi-

nating the necessity for plastering. Economies in construction, maintenance, operation and depreciation were effected through careful planning and making the most of the advantages of a hilltop site.

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## LETTERS

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gardens

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In the case of pre-cut or prefabricated homes, definite commitments can be made directly from the bank to the manufacturer with the proper authorization...

Please, FORUM, do not let your readers get the idea that banks have put obstructions in the path of veterans' housing. Whenever a veteran is getting a square deal in buying or building a house, every lending institution in the country is ready, able and willing to help him.

FREDERICK C. OBER  
Springfield Five Cents Savings Bank  
Springfield, Mass.

Banker Ober is dead right about construction loans except in a few rural areas where year-long foreclosures make banks less eager to lend construction money. Ex-G.I. McCann is undoubtedly the victim of such unusual local circumstances.—Ed.

### PRE-ATOMIC OAK

Forum:

Further to ours of the 6th Dec. reference (FORUM, Feb. '47) in which we revealed our plan to dispose of an Oak Hall for £2,000, we now have pleasure in forwarding to you photographs of this Oak. The photographs are, of course, recent and the Oak has not been polished for over five years. All furniture is also removed and the conservatory is devoid of plants. The under-



View of the conservatory

signed would be prepared to redesign this exquisite Tufa Rock Conservatory in imitation of the original.

D. F. SANDERS  
Sanders (St. Albans) Ltd.  
St. Albans, Herts., England

(Continued on page 32)

## Girard Trust Carries on Fine Tradition



Girard Trust Company, Philadelphia, one of the first trust companies in America, organized in 1836 and never merged with any other bank. Left to right: Morris Building, Girard Trust Co. Building, Girard Trust Office Building.

Carefully conservative in the Girard tradition is the management of the three Girard Trust properties in downtown Philadelphia. Their use of Webster Steam Heating Equipment... back to 1910... has kept these properties at the peak in comfort and economy in heating.

The 28-story Girard Trust Office Building, the 18-story Morris Building, and the picturesque domed Girard Trust Company Building are today heated from one central boiler plant, with most of the installation under Webster Moderator Control.

In 1910, the first installation of Webster Heating Equipment was made in the Morris Building.

Webster Heating Equipment has been purchased at intervals for 35 years. The most recent improvement was the selection of a Webster Moderator System as part of a modernization program begun in 1945 involving a tailor-made orificing job — equipping 734 Radiator Supply Valves with properly sized Webster Metering Orifices.

We are ready to work with you just as we have worked with the Girard Trust Company.

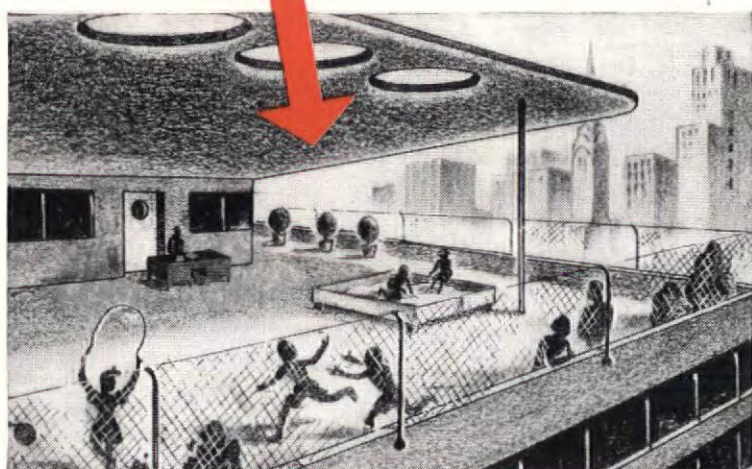
WARREN WEBSTER & CO., Camden, N. J.  
Representatives in principal U. S. Cities: Est. 1888  
In Canada, Darling Brothers, Limited, Montreal

**Webster**  
HEATING SYSTEMS





PHOTO BY FAIRCHILD AERIAL SURVEYS



## "ROOFS OF THE FUTURE" —AVAILABLE TODAY!

Up in the fresh air and sunshine, far above dangerous traffic—this school playground is one of the many new roof developments that Ruberoid specifications now make available for immediate planning.

**N**O WAITING for some time in the dim future—full utilization of those valuable roof areas is possible and practicable today! Now you can plan hospitals with outdoor decks for convalescents, apartment houses with garden roofs, department stores with recreational roofs for employees, and factory roofs with husky concrete surfaces for traffic and storage.

The old hampering difficulties that prevented ideal use of roof space need no longer stand in the way. Specifications for these new developments are available to you *now*. As worked out by

Ruberoid engineers, these new roof developments are tested and thoroughly feasible. For full details get in touch with your local Ruberoid Approved Roofer—there's one located in every part of the country. Backed by Ruberoid's years of experience and complete line of materials he can give practical, unbiased help on your roof problems!

## The RUBEROID Co.

Executive Offices: 500 Fifth Ave., N. Y. 18, N. Y.  
Asphalt and Asbestos Building Materials

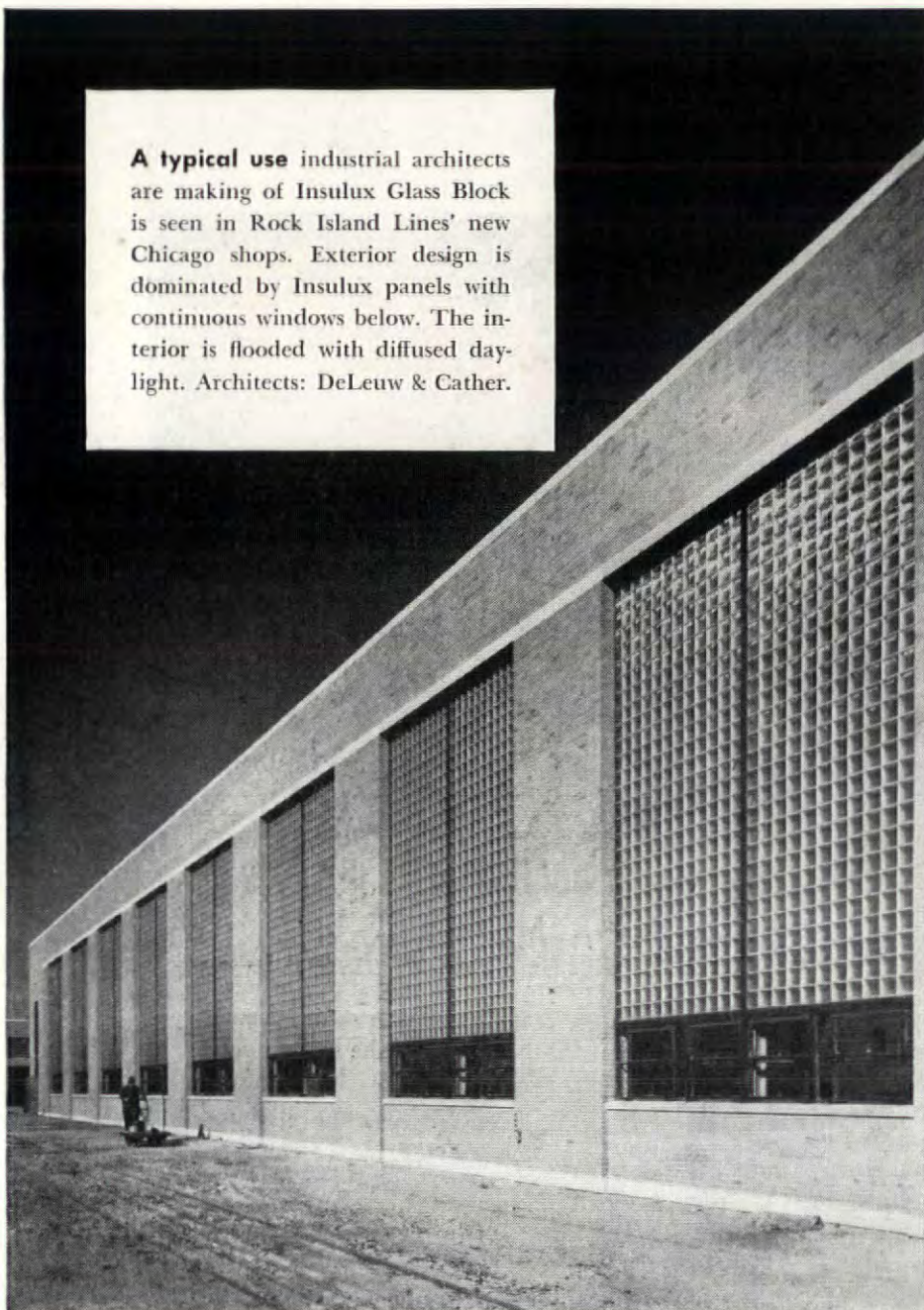
*The RIGHT roof for any job—from one source!*



Remember that Ruberoid makes every type of built-up roof—Smooth Surfaced Asbestos, Coal Tar Pitch with gravel or slag surfacing, or smooth or gravel-and-slag surfaced Asphalt—in specifications to meet any need. Hence a Ruberoid Approved Roofer is not prejudiced in favor of any one type. His services assure you of one source for all materials, centralized responsibility, smoother operation, uniform quality!



**A typical use** industrial architects are making of Insulux Glass Block is seen in Rock Island Lines' new Chicago shops. Exterior design is dominated by Insulux panels with continuous windows below. The interior is flooded with diffused daylight. Architects: DeLeuw & Cather.



**Ceiling-high** Insulux panels distribute daylight across broad work areas, cut off distracting views. Clear windows furnish ventilation and vision out. Insulux Glass Block has proven advantages in all classes of construction.

## How an architectural material works for industry

**I**MPROVED working conditions and low maintenance costs come automatically with Insulux Glass Block—a material of recognized architectural merit.

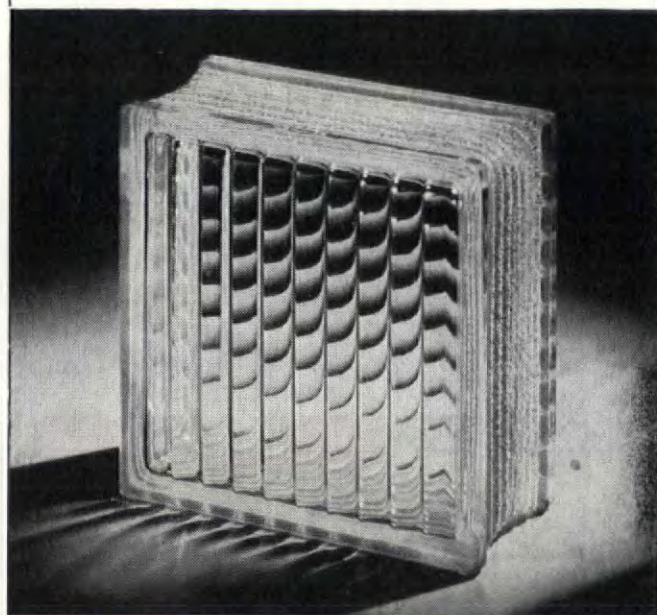
In key with contemporary architectural thinking for industrial buildings, Insulux has also won enthusiastic industrial approval. Management favors the prevention of rot, rust and corrosion—elimination of painting—the ease of cleaning. High insulating value makes possible *economical* air conditioning of wide areas. Heat loss in winter and heat gain in summer are materially reduced.

For the many practical uses of Insulux Glass Block in industrial, commercial and residential construction, consult the "Glass" section of Sweet's Architectural Catalog. You will find technical data, specifications and installation details. Or write Dept. D-15, Owens-Illinois Glass Company, Insulux Products Division, Toledo 1, Ohio.

**OWENS - ILLINOIS**

**INSULUX**

**GLASS BLOCK**



*Insulux Glass Block is a functional building material—not merely a decoration. It is designed to do many things other materials cannot do. Investigate!*



**Order KOOLSHADE<sup>®</sup> SUN SCREEN *Now***  
**TO ASSURE INSTALLATION THIS SPRING!**



**This actual photo shows the complete visibility through KOOLSHADE**

**For Cooler Comfort All Summer Long, No Shading Device Known Matches KoolShade's Efficiency**

KoolShade Sun Screen makes sun-exposed rooms as much as 15° cooler . . . even on the hottest days! Here's how it works: KoolShade blocks and radiates up to 90% of sun heat rays *outside the window!* Yet vision from inside is clear, and every elusive breeze drifts through.

Where air conditioning systems are used, KoolShade reduces operating costs. On new installations an excellent cooling job can be accomplished with less refrigeration equipment when KoolShade is used on all sun-exposed windows.

KoolShade installs like ordinary insect screen . . . requires no maintenance . . . will never rot, rust or rattle . . . insect proof, too! Order now to assure installation before hot weather sets in!

**NOTE THESE VALUABLE FEATURES**

- Permanently set at 17° angle for greatest shading efficiency.
- Prevents the fading of valuable drapes and furnishings.
- Easy and inexpensive to install—will not rot, rust or rattle.
- Fits neatly and smoothly into modern architectural design.
- Durable bronze KoolShade also effective as insect screen.

**MAIL THIS COUPON TODAY FOR COOLER COMFORT ALL SUMMER! →**



PRODUCT OF  
**BORG-WARNER**

**Ingersoll**  
**KOOLSHADE<sup>®</sup> SUN SCREEN**

\* Trade Mark Property of **INGERSOLL STEEL DIVISION • BORG-WARNER CORPORATION**

**Partial Installations Can Be Completed If You Act NOW!**

Our many customers for whom we made test installations prior to the war, and those who accomplished only a partial installation, can now secure KoolShade for their remaining sun-exposed windows. But we urge you to *act now*—for the supply is limited.

Ingersoll Steel Division  
 Borg-Warner Corp., Dept. F3  
 310 South Michigan Ave., Chicago 4, Ill.

Please send free sample and literature, also the name of my nearest KoolShade distributor.

Name.....

Company.....

Address.....

City..... State.....



## LETTERS

### BOHN BONER

Forum:

Somebody from your office sent me a tear sheet of the news story "Housing Officials in Cleveland" (FORUM, Nov. '46). This I presume is the usual courtesy because my picture appeared in your valued journal.

I am afraid, however, that you are facing a libel suit to be brought by Lee Johnson. My name appears under the handsome visage of Johnson while his name is ascribed to the picture of your humble servant.

ERNEST J. BOHN

Cleveland, Ohio

We think you both win.—Ed.

### AMERICANA

Forum:

Your excellent article, "Houses U.S.A.," appearing in the January FORUM, has been brought to my attention. It parallels exactly the material I have been covering in my course in American Art, and it occurs to me that this article, together with its subsequent installments, could be of important use in my teaching...

E. MAURICE BLOCH

University of Minnesota

Minneapolis, Minn.

A copy of the traveling exhibition on which this series is based is available through LIFE's Department of Photographic Exhibitions.—Ed.

### DISUNITED NATIONS

Forum:

In connection with the Rockefeller family's donation of a site for UN headquarters in New York City, popular reaction has probably been favorable due to the naivete of most of us.

Has it occurred to anyone that this gift is one of the greatest affronts to public dignity that has been attempted in our times?

Many of us have thought of the UN as an expression of humanity which should be beyond the need of alms. Why, why should this vast public organization, with the resources of all the world, accept any sort of gift from anyone, even a formal government gift?

Can't we see that this gift is another step in the program of a family which needs the cloak of philanthropy to continue its public relations?

Grant that Mr. Rockefeller might have been momentarily swept into doing this for humanity—isn't it very possible that the practicality of world-wide benevolent publicity was the deciding factor?

Why didn't someone in the UN have the honest courage to say openly that the UN is

(Continued on page 36)



Kitchen cabinetry with the warmth of wood and the simplicity and distinction of modern Flo-line design—that's Kitchen Maid with new *Appliance Styling*.

Factory-built in standard units, and factory-finished, it meets all requirements of architect, builder and housewife.

*Composite Construction* of wood, metal and latest compositions, assures strength, flexibility, easy acting doors and drawers—lasting beauty. Numerous convenience features help minimize kitchen work.

See latest Sweet's Catalog or write for folder "Kitchens That Sing". The Kitchen Maid Corporation, 103 Snowden Street, Andrews, Indiana.

The increased demand for Kitchen Maid still exceeds production, but that condition is expected to change in 1947.

# KITCHEN MAID

## CABINETS

Appliance Styling • Composite Construction

Don't let anyone  
kid you!



women want:  
**ELECTRIC  
WATER  
HEATERS**

Surveys\* show that women want Electric Water Heaters because of the following advantages: (1) **SAFE** (fumeless, flameless); (2) **CLEAN**

(smokeless, sootless); (3) **ADAPTABLE** (short hot water lines; no flue or vent); (4) **TROUBLE FREE** (as electric light); (5) **ECONOMICAL** (plenty of hot water all the time at low cost).

That's why you should plan to install a modern Electric Water Heater in every house you build!

\*1944 NEMA survey revealed 3 times as many women preferring Electric Water Heaters as owned them at that time!

Electric Water Heater Section  
NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION  
155 E. 44th Street, New York 17, N. Y.

B & F • CLARK • ELECTROMATIC • FOWLER •  
FRIGIDAIRE • GENERAL ELECTRIC • HOTPOINT •  
HOTSTREAM • JUD WHITEHEAD • KELVINATOR •  
MONARCH • NORGE • PEMCO • REX • RHEEM •  
SEIDELHUBER • SELECTRIC • SMITHWAY •  
THERMO-GRAY • THERMO-WATT • UNIVERSAL •  
WESTINGHOUSE

A HOUSE WIRED FOR  
AN ELECTRIC RANGE IS . . .

already wired for an

**Electric  
WATER HEATER!**





**Will you be the GOAT**

**—ten years from now?**

Why *should* you be the goat, and risk your present and future reputation, when it's a demonstrated fact that unless new homes are wired for **ELECTRIC RANGES** they're not modern now and will be even farther behind the times ten years from now. Survey after survey proves that!

Protect your reputation by building houses that are truly modern. Avoid kick-backs by including wiring for an Electric Range.

An Electric Range requires only: 3-wire service from point of cut-in to the distribution panel; a minimum of two No. 6 wires and one No. 8 wire; a 60-amp. switch with overload protection and a 3-wire circuit from the distribution panel to the range outlet in the kitchen. Make this your minimum wiring specification.

Electric Range Section **NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION**  
155 E. 44th Street, New York 17, N. Y.



A-B STOVES • ADMIRAL • CROSLEY • ESTATE  
HEATROLA • FRIGIDAIRE • GENERAL ELECTRIC  
GIBSON • HOTPOINT • KELVINATOR • LEDO  
MONARCH • NORGE • QUALITY • UNIVERSAL  
WESTINGHOUSE



**TO KEEP THEM MODERN . . .**

**wire your houses**  
**FOR ELECTRIC RANGES**



TRANE ENGINEERS KNOW  
THAT AIR MOVEMENT  
IS VITAL TO COMFORT,  
So...

THEY MEASURE A BREEZE  
TOO GENTLE  
TO  
FEEL

HOW THE TRANE SUPERSENSITIVE THERMO-ELECTRIC  
ANEMOMETER HELPS PRODUCE BETTER  
*Weather Magic*

Air movement is vital to human comfort. To study and measure the delicate differences between too much and too little air in motion—and apply that knowledge to Trane products—Trane laboratory engineers had to go beyond the ordinary devices for determining air velocity.

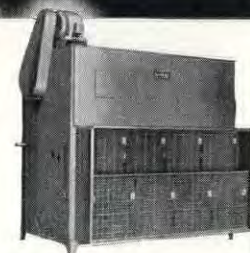
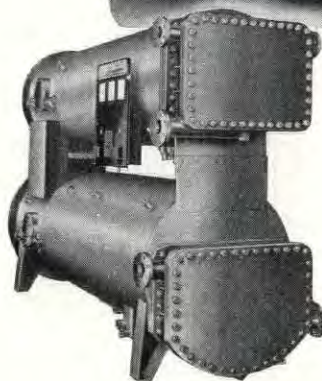
To achieve the precision in measuring very slight air currents they needed, Trane engineers developed a Supersensitive Thermo-Electric Anemometer, a device so responsive that a man's normal breath registers like a small hurricane on its dial. With this amazing instrument, Trane laboratory engineers are able to establish and

maintain *exactly* the amount of air in motion most conducive to human comfort.

Developing this Supersensitive Thermo-Electric Anemometer (sorry, but it's not for sale) is one more example of the ingenuity of the men who engineer and produce the complete line of Trane matched products—products that are designed and built together for use together.

More than 200 Trane Field Engineers in principal cities all over the country co-operate with architects, engineers, and contractors in the application of Trane products and systems—the utilization of Trane Weather Magic.

## ONLY TRANE AIR CONDITIONING PRODUCTS CAN PRODUCE *Weather Magic*



Above: The Trane Vertical Climate Changer

Left: The Trane Turbovacuum Compressor

Right: A Trane Cooling Coil

The adaptability and versatility of Trane products make them ideal for any comfort or process air conditioning application.

The Trane Turbovacuum Compressor is a self-contained centrifugal compressor. Virtually an entire equipment room is housed within this quiet, almost vibrationless machine.

Trane Climate Changers perform every function of true air conditioning in any combination—heating, cooling, humidification, dehumidification, filtering, and circulation.

The heart of any Trane air conditioning system is the famed Trane tube and fin cooling coil. There are Trane Cooling Coil types for clean or sedimented chilled water and for direct expansion refrigerants.

**THE TRANE COMPANY**  
*The House of Weather Magic*  
LA CROSSE • WISCONSIN  
TRANE COMPANY OF CANADA, LTD., TORONTO  
MANUFACTURING ENGINEERS OF HEATING AND AIR CONDITIONING EQUIPMENT

SELF-CONTAINED AIR CONDITIONERS

CONVECTORS/RADIATORS

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EVAPORATIVE CONDENSERS

CLIMATE CHANGERS

UNIT HEATERS

HEATING COILS

HOT WATER PRODUCTS

STEAM HEATING SPECIALTIES

SHELL AND TUBE HEAT EXCHANGERS

CENTRIFUGAL FANS



[illegible]

Look...

## ALUMINUM SHINGLES

ALUMINUM CLAPBOARD

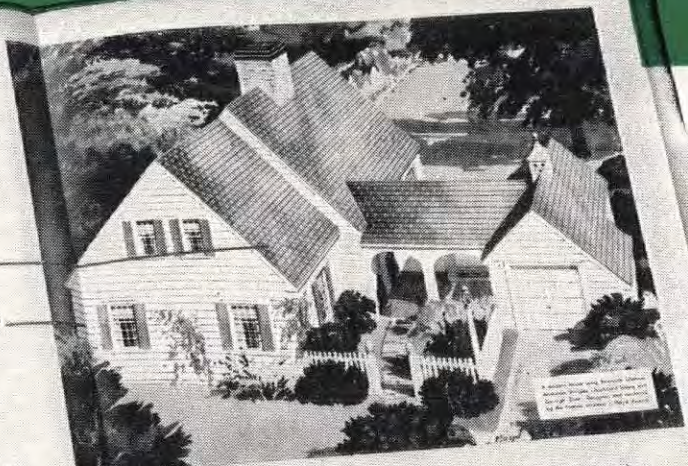
Made by the Reynolds Metals Company  
... in mass production and available now!

Face-proof, Bag-  
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 Year-round in  
 Rockwell Wood

... But  
... pre-  
... by  
... Reflections"

Your answer will be: "Right, but Reynolds... who met America's wartime need with a great new source of aluminum and of aluminum engineering. He knows that the lightness, strength and thermal bonds of aluminum will give us a way to the most modern design. Tell him you're coming."

Reproduced above is the initial full-color center spread in The Saturday Evening Post ...beginning a full schedule of 4-color pages in The S E P, Better Homes & Gardens, House Beautiful and The American Home.



Reynolds Lifespan Aluminum Building Products

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REYNOLDS METALS COMPANY • BUILDING PRODUCTS DIVISION  
ALUMINUM SIDING • CORRUGATED ALUMINUM • BRICK, STONE AND STUCCO • FLOORS • WALLS • ROOFING • INSULATION • WINDOW SILLING

WE'RE telling *your* clients about the advantages of aluminum building materials . . . fire-proof, rust-proof, rot-proof, vermin-proof . . . giving better appearance, greater comfort, more *lasting value* for the 1947 building dollar.

You'll find new scope for architectural design in these modern materials. Choose between the traditional effect of clap-board siding, with either individual shingles or the handsome, low-cost, big-sheet "Snap-Seal" roofing. The aluminum weathers to a beautiful dull-gray to blend with any architectural style. Or it takes paint well when desired.

Another big architectural point is the *insulation* value! Aluminum reflects up

to 95% of all radiant heat. Keeps an interior amazingly cooler in summer—and warmer in winter, with less fuel.

Be prepared for this national advertising...which will have your clients asking *you* all about Reynolds Lifetime Aluminum Building Products. Write now for your A.I.A. Files. Reynolds Metals Company, Building Products Division, Louisville 1, Kentucky.

*Available now in any quantity!*



"SNAP-SEAL" ROOFING gives the economy of big-sheet installation plus handsome weathertight interlock which covers all nails. Suitable for finest buildings — home, farm, commercial, industrial.



WEATHERBOARD SIDING gives economical big-sheet coverage in a handsome four-inch clapboard effect. Special corner posts for neat finishing.

Aluminum Corrugated and 5-V Crimp Roofing and Siding, Studs, Trusses, Window Frames, Garage Doors, Reflective Insulation, Complete Aluminum Houses

Hundreds of millions of square feet already produced and delivered



## Now!

Modulated Heat for  
homes of every price class...



with *Low Cost*  
Taco's new <sup>^</sup>Taco-Matic Valve  
for forced hot water heating

*Taco  
Scoops  
the Field*

### TACO-MATIC

1- Modulates heating system temperatures to meet changing outdoor weather conditions.

2- Gives *protected* Tankless Heater performance.

At last the home owner in every price range can have de luxe modulated heat at unbelievably low cost with Taco's new TACO-MATIC valve.

TACO-MATIC thermostatically permits a *gradual* buildup of water temperature in the radiators with intermittent circulator operation.

**Prevents Overheating**  
**Spreads Heat Evenly**  
**Throughout Home**

Since radiator water temperatures are increased gradually, no radiators have extremely high temperature water to give off heat in mild weather long after the thermostat is satisfied. This gradual buildup of temperature in the system makes possible a longer circulator operation which in turn distributes the heat more evenly through system, even to the farthest radiators.

### Protected Tankless Heater Operation

Since TACO-MATIC closes tightly at approximately 180°F., boiler water is kept in the boiler when it drops below 180°F. and thus an ample supply of Tankless hot water is assured.

Write for new folder on this unbelievably low cost key to modulated heat.

**Better Heating — Better with Taco**



TACO HEATERS, INC.

342 Madison Ave., New York 17

In Canada:

Taco Heaters of Canada, Ltd. • 24 Adelaide St., W., Toronto

above financial charity, that it must maintain impartiality in its task of leading all of us to better world conditions?

CARL JOHN STERNER

Los Angeles, Calif.

Forum:

Here is the first sensible article (*Boston Daily Globe*, Dec. 16, '46) I've seen on the tragedy of the UN site business:

**"STEAM ROLLER TACTICS USED TO LOCATE U.N. IN NEW YORK**

by Carlyle Holt

"The rawest action put over during the session of the General Assembly of the United Nations just concluded here was the decision to house the permanent quarters in 18 acres of Manhattan on the East River between 43rd and 48th Streets.

"The United States must bear full responsibility for a choice that conforms to few of the expressed preferences and criteria drawn up to guide a choice of a site and is in direct contradiction to most of the more important requirements.

"But for Americans the chief concern in this matter should be the methods, reminiscent of the less commendable tactics of ward politics, by which the decision was forced on a reluctant assembly by the United States. The strong arm tactics and steam roller methods used to put over the choice were American.

"In London last winter the Assembly voted that the minimum requirement of space for their permanent headquarters should be two square miles, or 1,280 acres. They have now settled for 18 acres. The Assembly also voted to keep their capital outside urban surroundings, so that it might develop as a community of its own; so that its permanent employees might have good living conditions in a pleasant environment. The employees will have none of these conditions along the East River, but will be lost in the throngs who commute into and out of New York daily.

### Political Methods Used

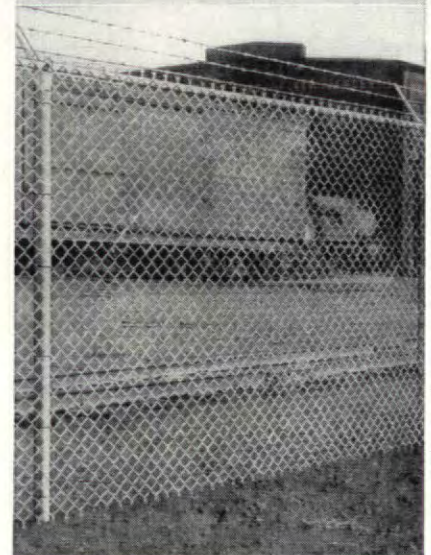
"A quick resume of the sequence of events is sufficient to indicate the political methods used by the chief United States delegate, Warren R. Austin of Vermont, to ram the Manhattan project through the Assembly. This sequence began Friday evening, December 6, at a meeting of the headquarters committee.

"At that meeting Senator Austin obtained an adjournment of the committee until the following Monday 'out of courtesy' to the committee chairman, Dr. Zuleta Angel of Colombia, who was ill...

"On Monday, December 9, Dr. Angel, apparently much refreshed, took his place

(Continued on page 40)

## How to SOLVE YOUR CLIENTS' FENCE PROBLEMS!



There are a lot of points to be checked in specifying fence—and Anchor Chain Link Fence's *four exclusive features* hold the answer to all of them. Here's why an Anchor Fence will insure your clients' maximum protection for long years of service:

1. *Deep-Driven Anchors* hold the fence permanently erect and in line, in any soil or weather, yet permit easy relocation where necessary.
2. *Square Frame Gates* are amazingly free from warping and sagging.
3. *U-Bar Line Posts* are self-draining, rust-free and rigid.
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SEND FOR YOUR FREE COPY OF OUR BOOK, "Anchor Protective Fences," for your A.I.A. File 14-K. It's both a catalog and specification manual. Shows many types and uses of Anchor Chain Link Fence... pictures installations for many prominent companies and institutions... contains structural diagrams and specification tables. Just ask for Book No. 110. Address: ANCHOR POST FENCE DIV., Anchor Post Products, Inc., 6635 Eastern Ave., Baltimore 24, Maryland.

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Nation-wide Sales and Erecting Service

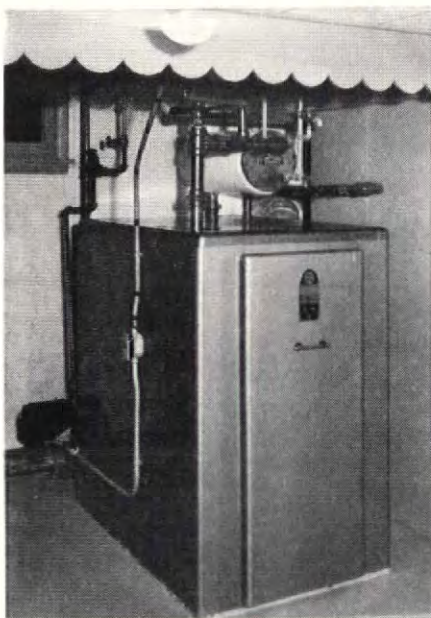


FOR CONVECTOR  
HEATING AT ITS BEST



## COMFORTABLE—NEAT—ECONOMICAL

... OR, IN OTHER WORDS, A B & G HYDRO-FLO HEATING SYSTEM



This B & G *Hydro-Flo* Heating installation with convectors is a credit to the installing contractor for his good workmanship and to the builder for his good judgment. Just as for all other kinds of radiation, *convectors are best served by forced hot water!*

B & G *Hydro-Flo* Heating provides smooth, positive control of heating medium temperatures . . . automatically adjusting the heat supply to meet changes in the weather. With simple, dependable equipment, indoor temperature is maintained uniformly at whatever degree is desired.

This system is really versatile! Note the unit heater in the recreation room—it serves to quickly dry those articles of clothing every woman prefers to launder herself. Note, too, the space-saving neatness of the *single main Monoflo piping* . . . the compact boiler hook-up.

If you haven't complete information on B & G *Hydro-Flo* Heating Systems, write today,



*B & G Hydro-Flo Heat is the preferred system for homes, apartments and industrial buildings. Its time-tested equipment can be installed on any hot water heating boiler.*

### PLENTY OF HOT WATER, TOO

The cost of hot water for personal and household cleanliness is an important consideration for today's home owner. Remember that modern labor-saving devices, such as dish and clothes washers need plenty of hot water for satisfactory operation. The B & G *Hydro-Flo* Water Heater provides it—all around the clock and calendar—at so low a cost that it can be used unsparingly.



# ***Hydro-Flo*\* HEAT**

BELL & GOSSETT COMPANY

Dept. X-10, Morton Grove, Illinois

\*REG. U. S. PAT. OFF.



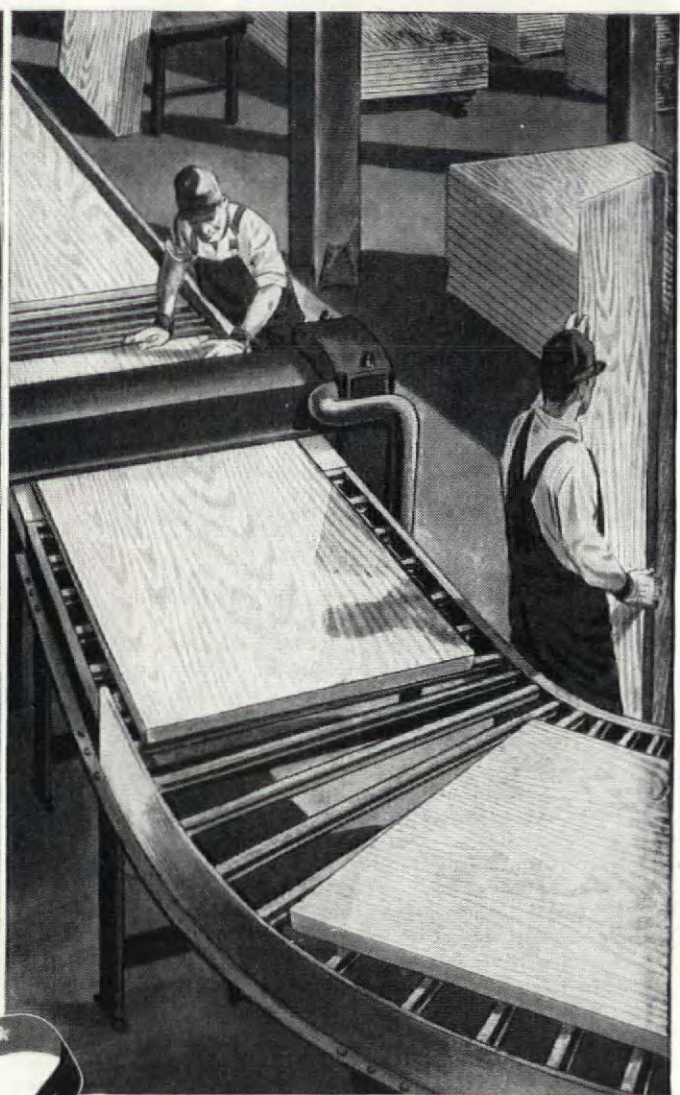


## Stock Sizes Mean *Door and Plywood* Dividends for Our Customers—

Percentage-wise, it's quite a dividend. By concentrating all our production on stock size doors and plywood, production can be increased a minimum of one-third.

For instance, the man-hours required to cut three lights, will produce a complete stock door. Odd sizes and other special details further limit production

by added labor and material demands. The elimination today of all special doors — and concentration of our manpower and machines on stock sizes is a policy dictated by our customers' needs. It means more Roddiscraft Doors and Plywood for everybody — plus stocks in the warehouses for delivery where and when you want them.



**Roddiscraft**  
*Roddis Lumber & Veneer Co.*  
MARSHFIELD, WISCONSIN

### Roddiscraft WAREHOUSES

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DALLAS 10, TEXAS .... 2800 Madill Street  
DETROIT, MICH. .... 11855 E. Jefferson Ave.  
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LOUISVILLE 10, KENTUCKY .... 1201-5 S. 15th Street  
LONG ISLAND CITY, N. Y. .... Review & Greenpoint Ave.  
MARSHFIELD, WIS. .... 115 S. Palmetto Street  
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NEW YORK CITY, N. Y. .... 920 E. 149th Street  
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DEALERS IN ALL PRINCIPAL CITIES





*For any home  
...with any fuel*

## **Mueller Climatrol gives your clients the True Indoor Comfort of "Climate Control"**

**Climatrol delivers the essential comfort factors by conditioning and handling the air in the home**

Every client wants comfort for his home—comfort up to today's higher standards. Mueller Climatrol is your satisfactory answer to this requirement—to the general demand for comfort at its best, and to individual needs.

You can recommend the size and type of Climatrol unit that's right for every job. Each model is designed specifically for economical and efficient operation with any one of the three popular fuels your client may prefer—gas, oil, or coal.

Most important of all, Climatrol gives your clients a system basically designed to condition and handle air in the home, and easily adapted to future air-conditioning developments.

Every Climatrol is backed by Mueller's 90-year performance record as a specialist in supplying home comfort. For certain satisfaction on every job, recommend Mueller Climatrol.

*Write for bulletins.*

**L. J. Mueller Furnace Co.**

2001 W. Oklahoma Ave. • Milwaukee 7, Wisconsin



**MUELLER**  
*Climatrol*

Reg. U. S. Pat. Off.

B-34





## *Cabot's Stains give Natural Beauty* TO ANY DESIGN IN ANY SITE

The rich, penetrating colors of Cabot's Stains bring out all the natural beauty of the wood. A wide color range from brilliant hues to weathering browns and greys, enables you to pick exactly the right stain for any design in any setting.

### *Long Lasting Protection*

Cabot's Stains contain a high proportion (60% to 90%) of undiluted creosote oil, the best wood preservative known. This ensures long lasting protection for all exterior woodwork.

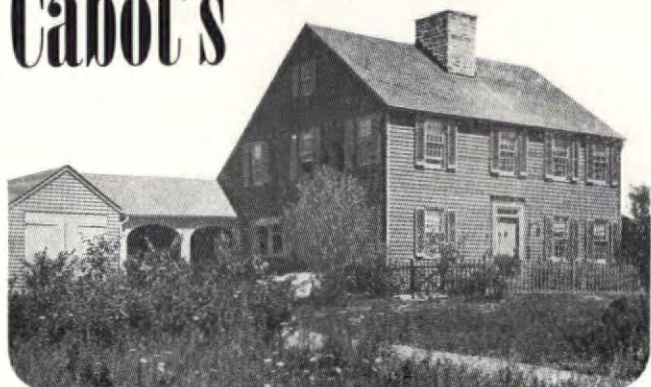
### *Economy*

Cabot's Stains cost less than half as much as good paint. They are quick and easy to apply . . . do not peel or blister, even on green lumber.

FREE BOOKLET "Stained Houses" contains complete information and illustrations. Samuel Cabot, Inc., 1301 Oliver Bldg., Boston 9, Mass.

### *Creosote Shingle Stains*

# Cabot's



at the head of the table. On that evening Mr. Austin introduced a resolution to postpone the entire decision until the next General Assembly, pleading that time was required, that a sound decision was more necessary than a prompt decision. Thereby Mr. Austin ate the words he had spoken at an early plenary session urging the great need for reaching a decision at this session lest the public gain the impression that the United Nations was unable to make up its mind on a subject it had had under consideration for more than a year.

"Mr. Austin's action irritated many delegates. Strong objections were raised to further postponement. But in the end the delegates were compelled to agree, because Mr. Austin departed early leaving in his place a minor staff member of the American delegation, and escaped the need for answering many embarrassing questions.

"So the headquarters committee, again with reluctance, accepted a postponement. It should be remembered that ever since Friday night the committee had been ready to vote as between Philadelphia, San Francisco and New York, with the first two cities way out in front for preference.

"Having voted a 24-hour postponement, the committee then found itself confronted by Asst. Secretary General Adrian Pelt of the Netherlands. Mr. Pelt was awfully sorry but he did not see how the secretariat could find accommodations and personnel for the committee to meet on the following day . . . The earliest date he could give the headquarters committee with any confidence was Wednesday. So the committee had to take . . . another two-day postponement.

"Wednesday Mr. Austin produced the Rockefeller offer of \$8,500,000 and went into ecstatic paeans of praise for its unparalleled generosity. The Pennsylvania guarantee of a free site and \$20,000,000 of improvements on the site had never been mentioned nor has Senator Austin ever mentioned the Boston offers.

"Mr. Austin urged the committee to appoint a subcommittee to inspect the new site. Again with obvious reluctance the committee acceded to his wishes. The committee was appointed, to report Thursday, the following day. Thursday evening, December 12, at 7:30 the subcommittee report was before the full headquarters committee.

### Report Less Enthusiastic

"This report was less than enthusiastic about the site. The subcommittee stated, with commendable restraint, that the East River site 'would be excellent for the construction of a vertical type of urban headquarters for the United Nations in Man-

(Continued on page 44)

# A SAFE FOOTING



*Alberene Stone Treads and Landings, Woodrow Wilson High School, Washington, D. C., Nathan Wyeth, Architect.*

## ALBERENE STONE TREADS

For more than 40 years Alberene Stone has been the choice for treads, platforms and floors subject to severe daily use in schools, hospitals and public buildings. Its natural highly-toothed surface is safe, wet or dry. The selected, extremely hard Tread Stock meets every requirement of durability, upkeep and appearance.

The regular grade Alberene Stone is equally popular for toilet and shower compartments. Tongue-and-groove interlocking construction produces liquid-tight joints. Its light, blue-gray color is harmonious and the stone is close-grained and practically non-absorbent and non-staining. For complete data and samples please address Alberene Stone Corporation of Virginia, 419-4th Ave., New York 16, N. Y. Quarries and Mills at Schuyler, Virginia. Sales Offices in principal cities.

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Modern in design with beautiful chrome finish.



IT'S BUILT FOR

**Duty**

All working parts are of heat-resistant non-corrosive bronze.



...AND IT'S "tops" IN

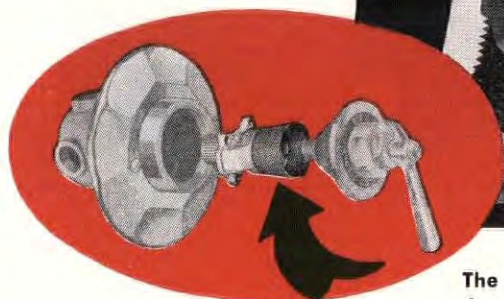
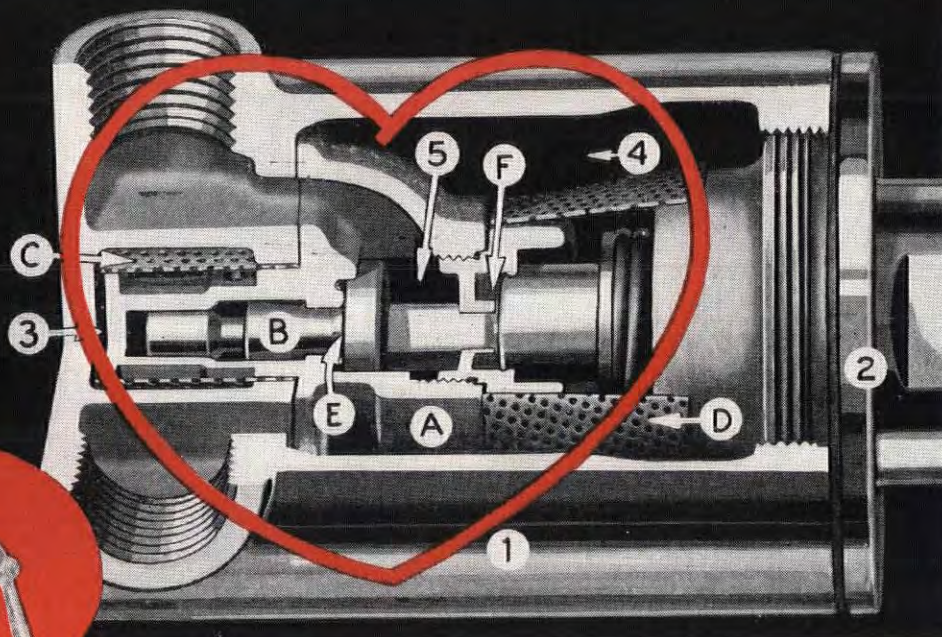
**Shower Protection**

No accidental scalding; hot water shuts off when cold water fails.



# **Josam** scald-preventing **MODERATOR SHOWER MIXING VALVE** WITH *exclusive* **HEART-OF-VALVE** CONSTRUCTION

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  2. Removable bronze bonnet
  3. Cold water chamber
  4. Hot water chamber
  5. Mixing chamber
- "Heart-of-Valve" consisting of:
- A. Cage carrying operating mechanism
  - B. Hydraulic-type shuttle valve
  - C. Bronze screen protecting cold water port
  - D. Bronze screen protecting hot water port
  - E. Neoprene cold water valve seat
  - F. Neoprene hot water valve seat



Maintenance is simple and easy. All working parts are combined in the "heart of valve" unit easily accessible by removing valve bonnet. Old unit can be removed and new unit installed in a jiffy. "Heart of valve" renewal units are available in individual packages.

The Josam Moderator Mixing Valve assures *lasting* shower bathing pleasure through simplicity of construction. A single moving part—the hydraulically operated shuttle valve—keeps hot and cold water "in balance" at the selected temperature and prevents accidental scalding. This shuttle valve is enclosed in the "heart of the valve"—a unit in which all working parts are combined. Even after years of wear or rough usage, there is no need of expensive replacement. All you do is replace the old "heart of valve" with a new one...and the valve is as good as new! The Josam Moderator Mixing Valve is ideal for residences, apartments, schools, colleges, hotels, clubs, institutions, factories, or wherever shower bathing is a regular routine. Fits readily into all standard shower installations. Send coupon below for complete details today!

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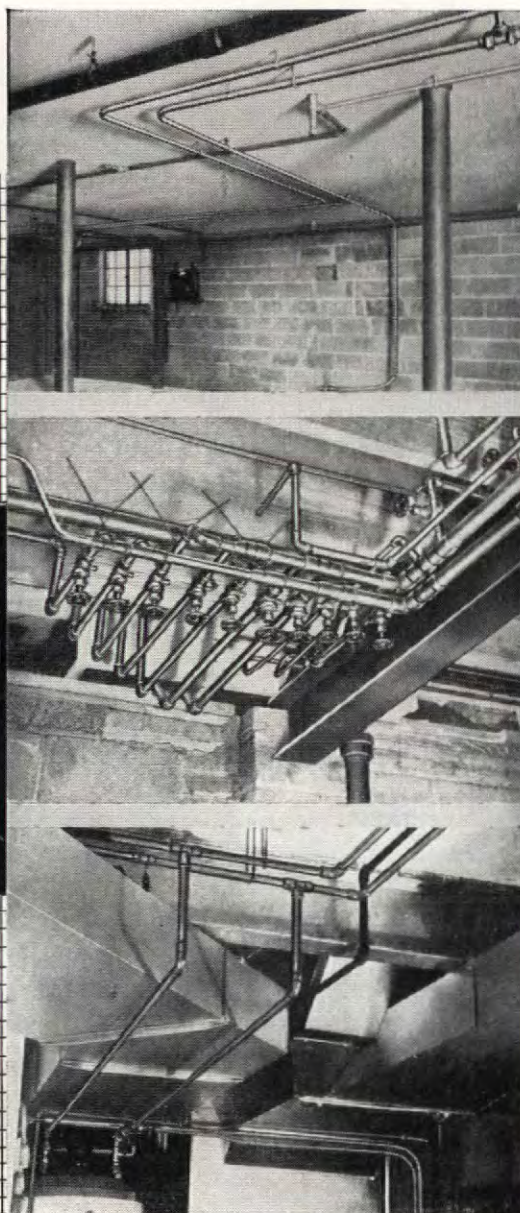
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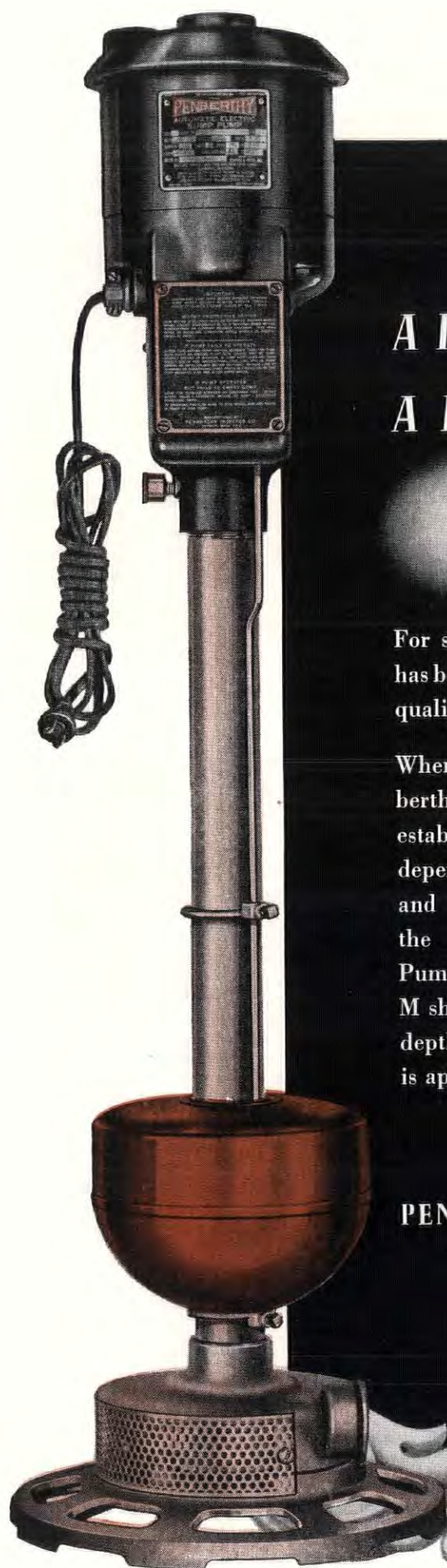
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*Paint*

hattan.' Since the General Assembly was on record as opposed to an urban location and had clearly not previously been impressed by the desirability of a vertical headquarters, the report could not be considered as unqualified endorsement of the Turtle Bay area . . .

"However, Mr. Austin on this fateful Thursday evening, easily swallowing his argument of three days previously for delay and due and deliberate consideration of all factors, introduced a resolution for immediate acceptance of the Manhattan site that evening . . .

"The headquarters committee was a pathetic sight as it succumbed to American pressure. One by one, delegates arose, apologized for their votes but declared they must abide by instructions and therefore would vote for Mr. Austin's motion . . .

"Only the representatives of Australia, N.J.O. Makin, and a few of the Arabian states spoke in opposition. But, after all, few of the delegates wanted to oppose the host country on a matter like this. So the motion was duly adopted, and Mr. Austin's Manhattan skyscraper was put over amid no applause at all.

### No Consideration of Cost

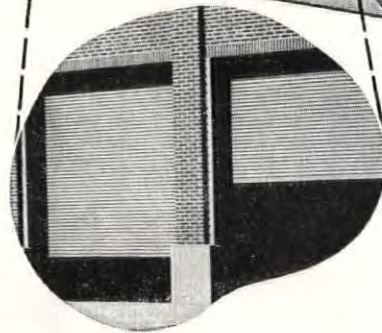
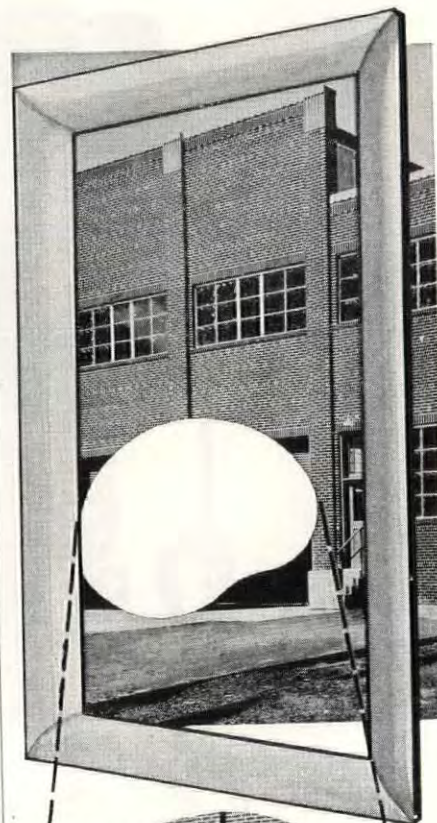
"No debate as to the merits of the respective sites, no comparisons, no consideration as to costs, were permitted. Thus the Assembly, after deliberating for nearly a year, after spending many thousands of dollars for research and investigation, and after writing several long reports, finally chose a site that had been offered 24 hours previously and did so without any significant debate . . .

"Mr. Austin bore down on his acceptance of Turtle Bay and on the necessity of seizing the opportunity at once.

"On whose authority the American decision was made has not been revealed. The reasons underlying the American decision are likewise obscure.

"The clear fact about the choice of site is that, in the end, the selection was dictated without any regard for criteria and preferences previously adopted by the Assembly. Foreign diplomatic representatives are probably too polite to demand the reasons for the American decision, but there seems no sound reason why anybody else should be so restrained. After all, it was not merely the United Nations that was had, it was also the people of San Francisco, Philadelphia and Boston, among others, who had deluded themselves that this question of site would be decided impartially and on its merits."

WILLIAM W. WURSTER, Dean  
Massachusetts Institute of Technology  
Cambridge, Mass.



## Kinnear Rolling Doors Complete the Picture

You can be sure of fullest efficiency at every doorway when you install Kinnear Rolling Doors. Their coiling upward action saves floor and wall space. The doors remain out of the way and safe from damage when opened. All-steel construction brings extra protection and longer life. For added speed and convenience, motor operation may be incorporated, with any number of extra control stations at remote points. Write for details on Kinnear Rolling Doors.

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Responds to a finger touch—yet supports a "heavyweight" with ease

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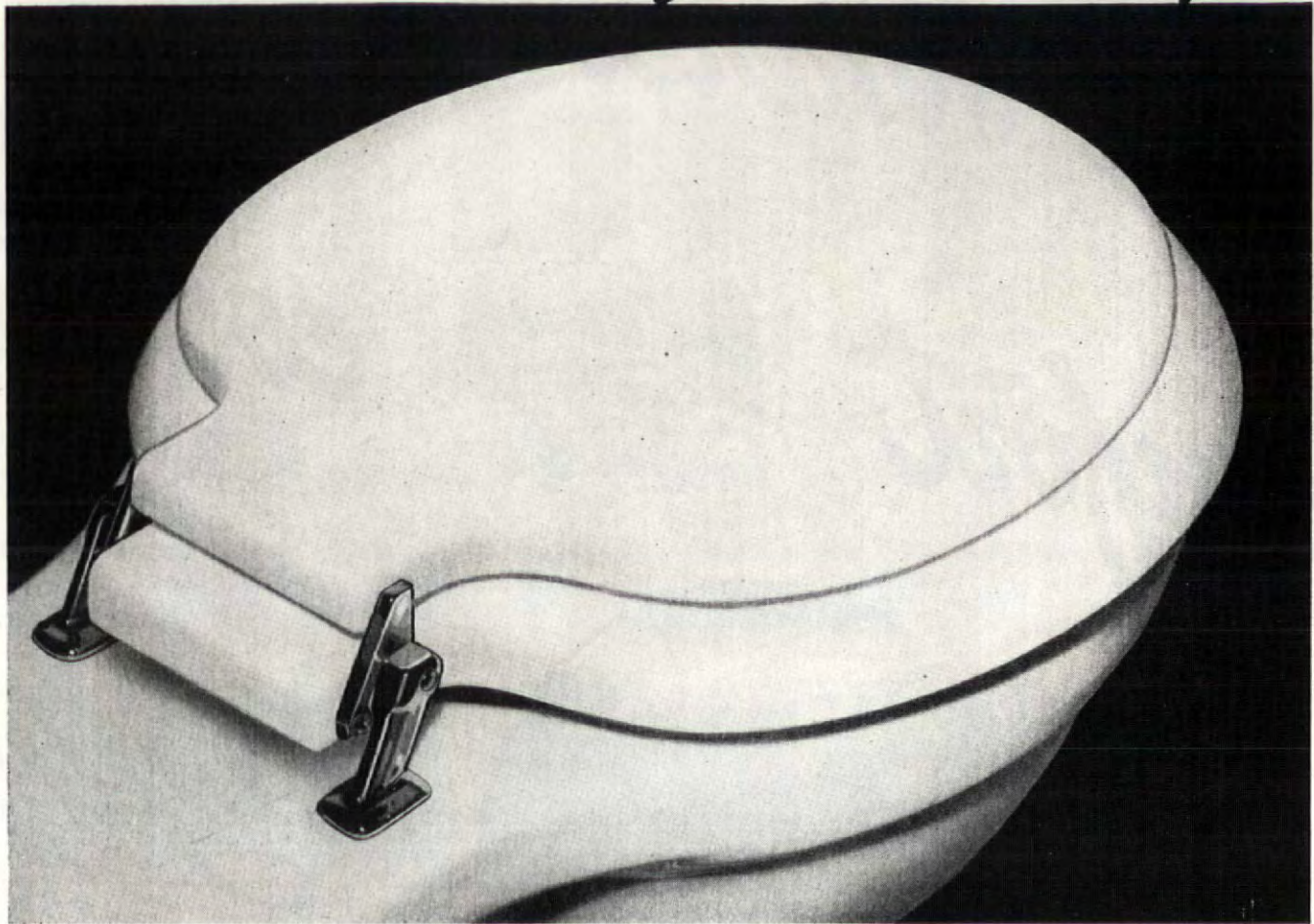


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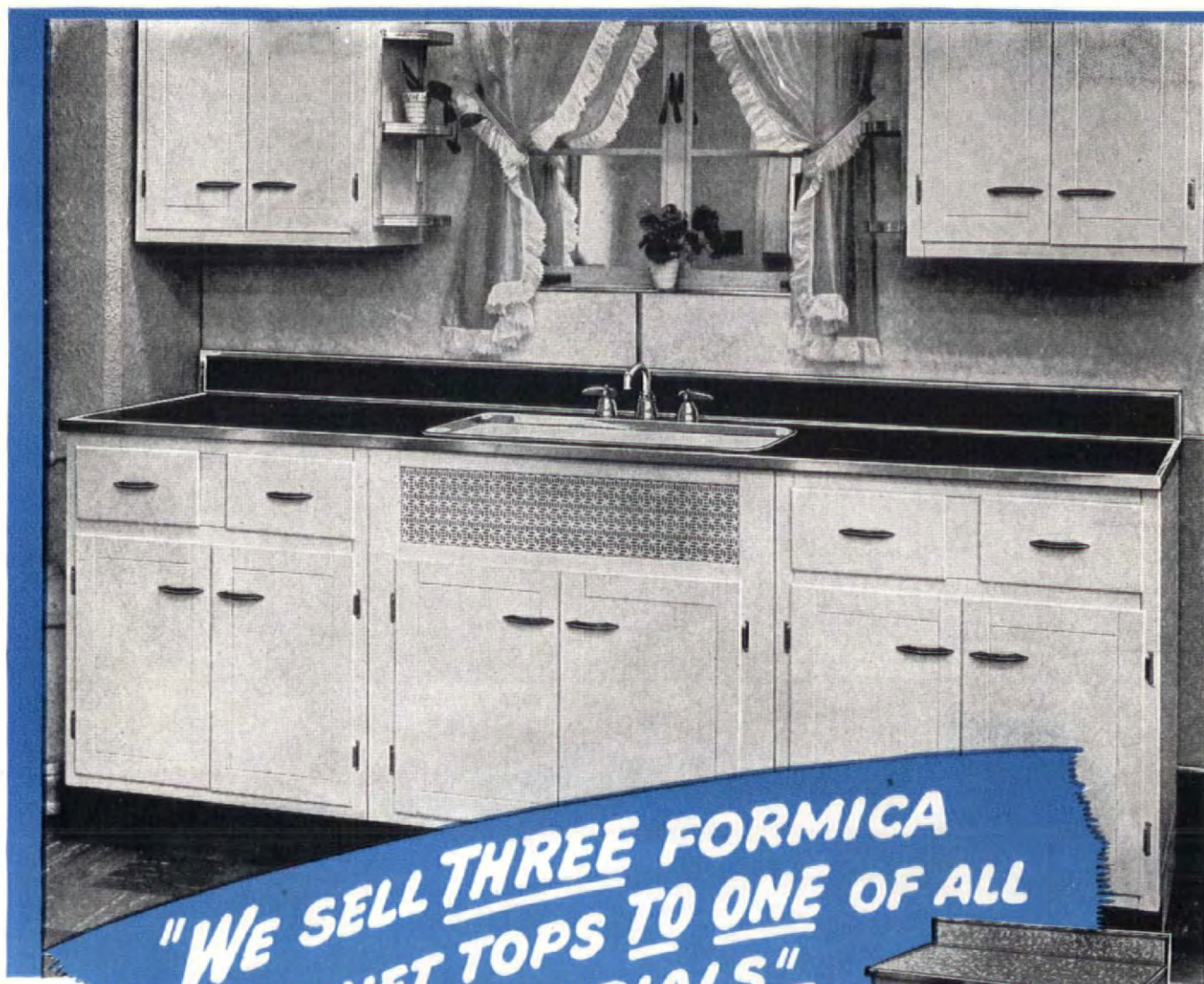
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**"THE BEST SEAT IN THE HOUSE"**

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Formica supplies one-sixteenth sheet in black, or attractive colored patterns to producers of tops and they assemble the tops in accordance with their own or Formica specifications to water resistant plywood, by the use of water resistant glue, and trim the tops with metal moldings.

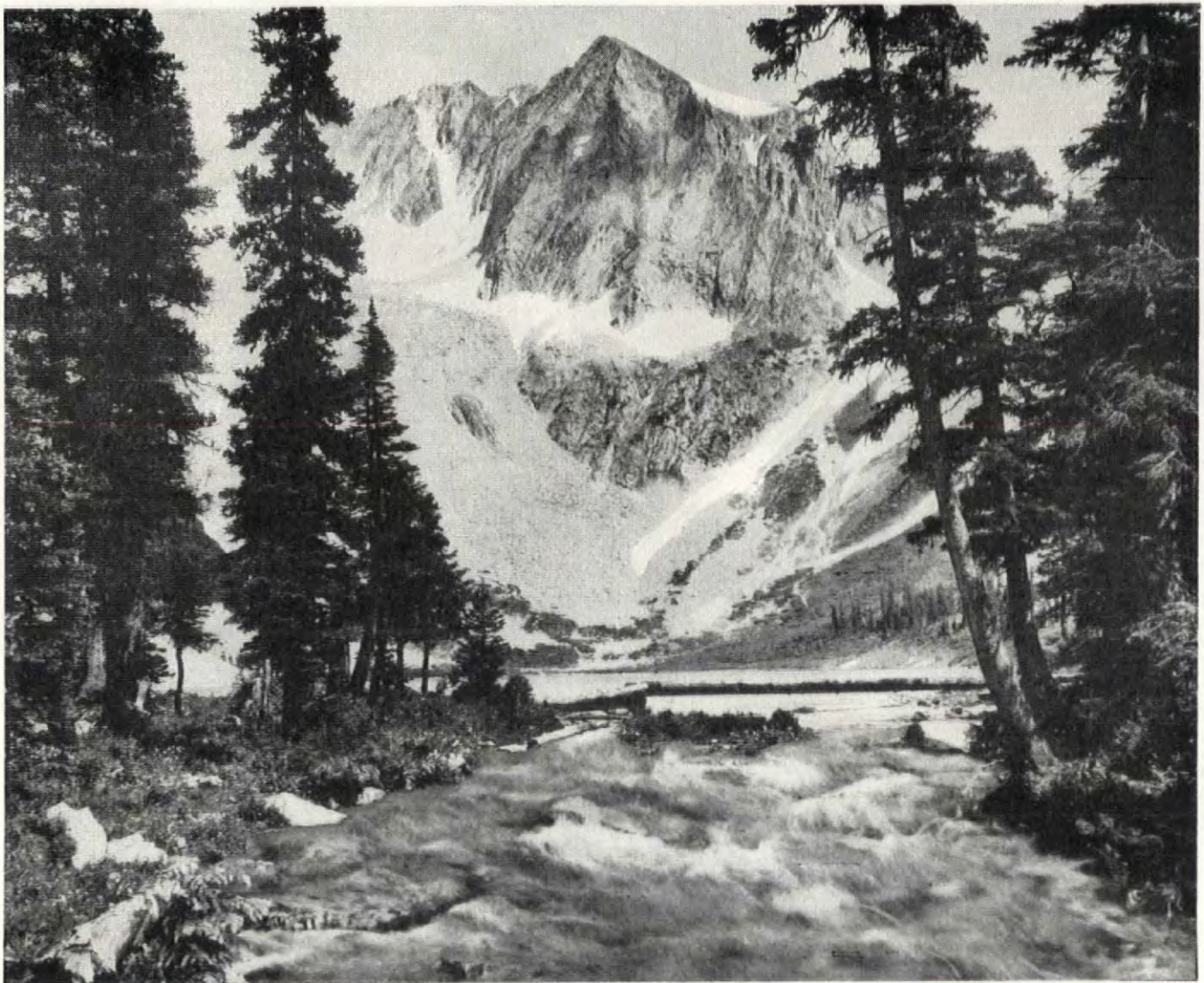
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America, above all lands, is blessed with Nature's lavish gifts.

And since it was given to *man* to have "dominion over all the earth," it is fortunate for *mankind* that Americans are custodians of so great a store of the world's natural resources . . . modern-day giants in the earth. For Americans are not a race but a *melt* of peoples, combining the wisdom, strength, ingenuity and idealism of many. A people whose blended characteristics act to stimulate the development of natural resources for the uses of all humanity.

So it is that America has become the cornucopia of the world!

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No single development has contributed more than the plentiful production of durable, reliable *steel pipe*. Pipe to make the great resource of pure water the available servant of the people, pipe to distribute natural gas, to carry compressed air to quarry hammers, to expel mine water, for use in extracting valuable minerals . . . pipe for a thousand-and-one jobs that multiply and accelerate the utili-

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Just as in other phases of modern American life, the development of natural resources has paralleled the development of steel pipe so that it becomes a truism to say *steel pipe makes it possible!*

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# Windowalls...

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This WINDOWALL, in a New York home, is made by a mullion installation of Andersen Complete Wood Horizontal Gliding Window Units. The WINDOWALL is completely weatherstripped, equipped with double glazing panels, and screen.

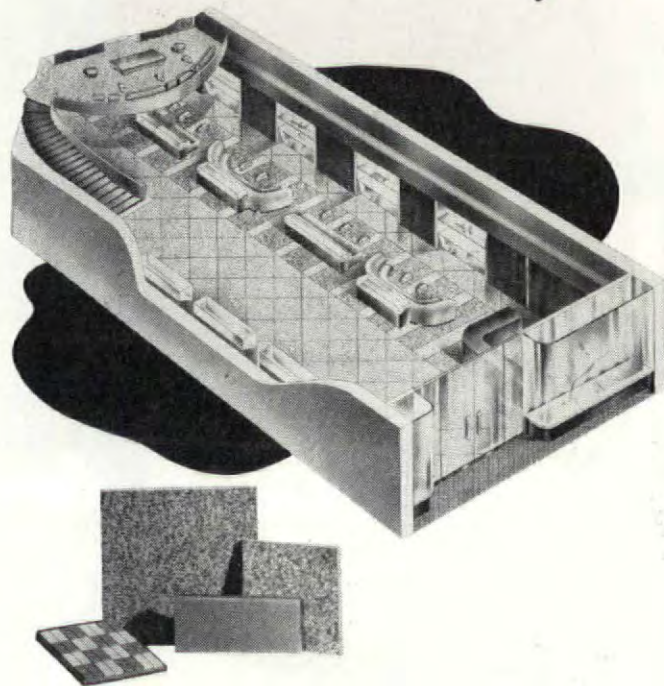
For complete details, consult Sweet's Catalog, or write directly to Andersen.

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## An important feature in a shoe store of Distinction **NORTON** non-slip **ALUNDUM FLOORS**

Safety in walking is an important feature in any building where it is desirable to have a wear-resistant surface that is permanently non-slip even when wet. Non-slip flooring is a "natural" for a shoe store. The shoe store illustrated above has been designed to have ALUNDUM aggregate mixed with marble to make the terrazzo flooring in the entry way, on the main floor and on the stairs and mezzanine safe from slipping hazards. Combine beauty with safety and add years of wear-resistant service by using Norton non-slip ALUNDUM floor products: aggregate, stair tile, ceramic mosaic tile. For free color samples and our latest catalog write to:

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See our catalog in Sweet's.

FORUM

Behind the scenes with FORUM contributors



**GARDNER DAILEY**, 51-year-old San Francisco architect, has become a nationally famous master of the uneven site with his hill-hugging, handsomely executed California homes (p. 77). Less publicized is his recent experimentation with prefabrication which he believes to be the housing answer for middle and lower income groups. He still finds time for such lavish projects as the Royal Hawaiian Hotel, which has him currently island-hopping to Honolulu.



**ELIOT F. NOYES**, a Boston, Phillips Academy and Harvard product, took time to excavate the ruins of Persepolis before completing his M.A. in architecture. After graduation in 1938, he went from the office of Gropius and Breuer to a Wheelwright Fellowship, the Museum of Modern Art, the Army Air Corps and Norman Bel Geddes' office, where he is now a design director. The house in Dover, Mass. (p. 80) was completed during his brief Museum period.



**WILLIAM F. DEKNATEL**, born at Hull House, Chicago, topped four architectural years at Princeton with seven at France's Ecole des Beaux Arts, plus an interlude as a charter fellow at Taliesin and study with Andre Lurcat in Paris. His most famous house is that of Walter J. Kohler, Jr. in Wisconsin (FORUM, July '39). Three-and-a-half years' military service ended a year ago with his return to house designing in and around the windy city (one of his latest, p. 84).



**RAYMOND LOEWY**, founder of the industrial design firm bearing his name, came to this country from France in 1919. His spectacular career as face-lifter of ships and Eversharps, locomotives and toothpaste tubes grew out of the strange combination of training as an engineer and work as a fashion illustrator. His designs for nearly \$900 million worth of manufacturer products include also jobs like the Matson Lines ticket office (p. 87).



**NATHANIEL OWINGS**, chief designer for Skidmore, Owings & Merrill's TWA ticket office (p. 90), became a partner ten years ago, has since been involved with such projects as atomic Oak Ridge, Toledo's neuro-psychiatric veteran's hospital and currently, the U. N. Manhattan headquarters. He took academic training at Cornell University, apprenticeship with York & Sawyer, and a year of research for a book in Japan, China, India and Egypt.



**EATON W. TARBELL**, born a down-Easter, still lives in his native Maine. He comes to the architectural profession via Deerfield Academy, Bowdoin College and the Harvard School of Design. After sojourns with Stone & Webster in Boston and as Assistant Superintendent of Army Housing, Tarbell formed his own firm in 1944. To date, he has completed 86 jobs, or parts thereof, from office buildings to prison camps, with side excursions into house design (p. 94).



**HENRY J. KAISER**, can-do boy of war and peace, and Fritz Burns, ball-of-fire homebuilder, have teamed up for Kaiser Community Homes, (p. 105). Burns began his career distributing circulars for a Minneapolis real estate firm. Kaiser printed snapshots of visitors at Lake Placid, later switched to highway construction. Both men have since put the Horatio Alger legend to shame—Burns with scores of developments, Kaiser with 819 Liberty ships.



**H. E. LANDSBERG**, who "designs climate" (p. 114), was born and educated in Germany, worked as assistant director of Taunus Observatory, Frankfurt, came to America in the thirties. Here he has taught meteorology and geophysics at Pennsylvania State College and the University of Chicago. During the war he was Operations Analyst for the 20th Air Force; since demobilization has been chief of U. S. Weather Bureau's industrial climatology.





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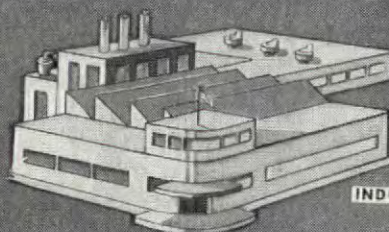
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*For the latest in vertical transportation call Otis today.*

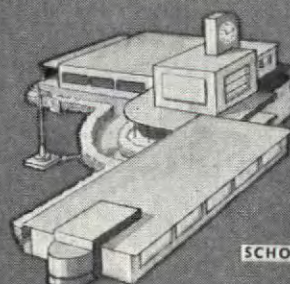




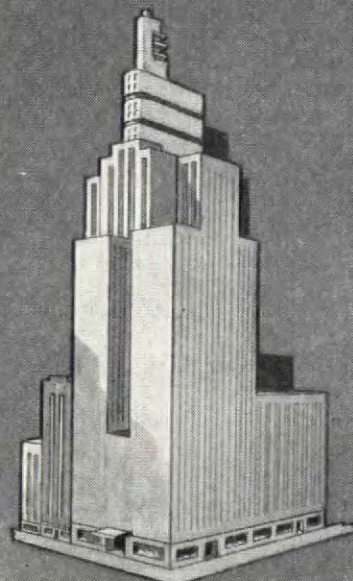
HOMES



INDUSTRY



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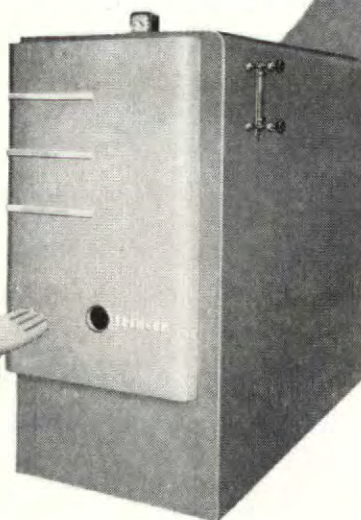
APARTMENTS

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Today's building plans are filled with ideas of modern design and construction. A deserving compliment to modern engineering is a precision-built Spencer Heating Unit.

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*Jacketed type "C" boiler for medium-size homes, apartment houses, garages, etc. Eight available sizes—from 700 to 3,000 sq. ft.—Other Spencer units with capacities up to 42,500 sq. ft.*



# SPENCER HEATER

Division—The Aviation Corporation,  
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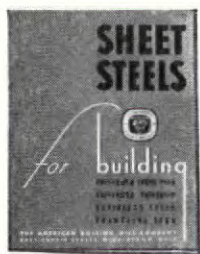


**M**ore and more, designers of theaters, store fronts and other buildings are recognizing the importance of a colorful, alluring finish. There is no better way to get it than with clean, bright porcelain enamel. This versatile finish lends any structure an inviting beauty that draws customers.

It's time now to consider the possibilities of this distinctive facing material. As soon as building materials are more generally available, you'll want to take full advantage of its rich, fresh colors and interesting variety of surface textures. Its compelling beauty can often be enhanced with striking contrasts of ARMCO Stainless Steel trim.

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**ARMCO Stainless Steel**

## DRAWING PLANS TO DRAW CUSTOMERS



*The glistening, colorful appeal of the Dearborn Theater, Dearborn, Mich., is achieved with structural porcelain enamel. The name of the theater, in porcelain enamel, is outlined with Neon lights. The architect was Charles N. Agree.*



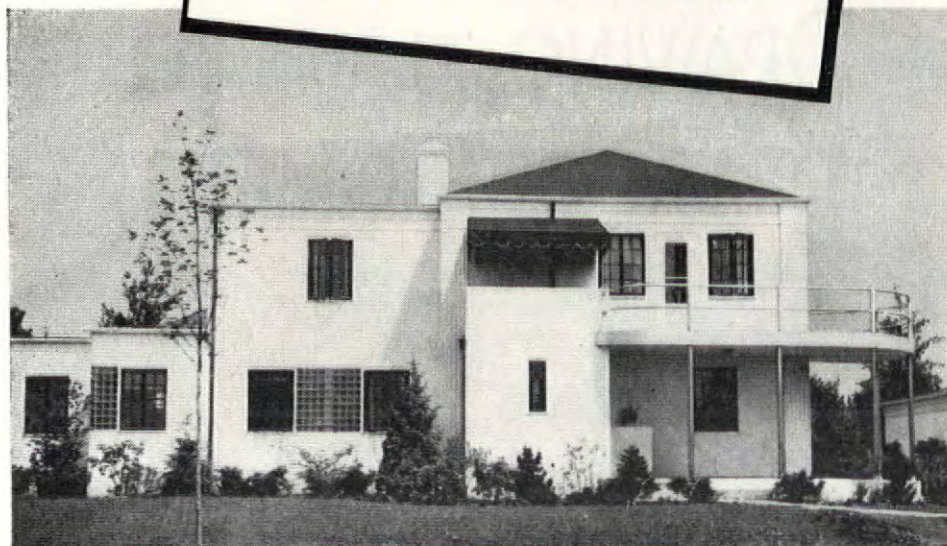
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- SPECIAL-PURPOSE SHEET STEELS
- STAINLESS STEEL SHEETS, STRIP, BARS AND WIRE



## ANNOUNCEMENTS

### A Guide To FINER STUCCO



**C**EMENT has an important job in stucco—more than just holding aggregate together. That job is to reproduce the architect's exact desires in color and texture—easily, lastingly, and at low cost.

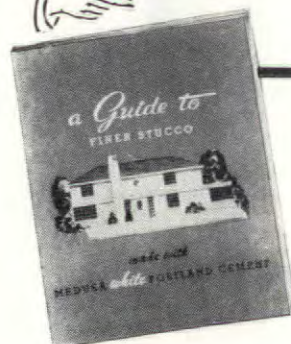
Pure non-staining Medusa White—the original true white portland cement—fulfills these requirements. It gives you almost unlimited flexibility of design, color and texture.

Mixed with mineral oxide or special aggregates, Medusa White makes stucco in a great variety of surface treatments and colors. And, because it is a true portland cement, Medusa White meets the requirements of ordinary gray cements (A.S.T.M.)

Medusa Stucco, when made with Medusa Waterproofed White Portland Cement, offers high resistance to moisture penetration and has unusual non-staining properties. Water-borne dirt is washed off instead of being absorbed. This means stucco has longer lasting beauty—is free of stains and discolorations.

For specifications, textures and complete information, write for "A Guide To Finer Stucco". It helps you plan for beauty.

"FIFTY-FIVE YEARS OF CONCRETE PROGRESS"



#### MEDUSA PORTLAND CEMENT COMPANY

1013 Midland Building • Dept. "A" • Cleveland 15, Ohio

Gentlemen: Please send me a copy of the book "A Guide To Finer Stucco".

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Address .....

City ..... State .....

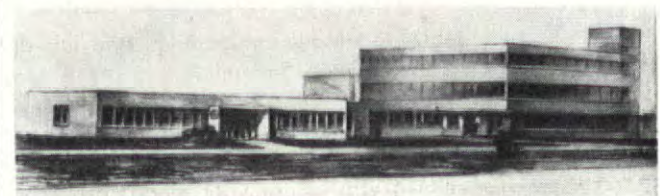
Also made by Medusa Products Co., of Canada, Ltd., Paris, Ontario

CHARLES ABRAMS and HENRY CHURCHILL, well-known housing experts, are conducting a series of 15 lectures on "Planning for our Communities" to be held on Tuesday evenings at the New School of Social Research, New York City. A number of prominent city planners will take part in the series, including Homer Hoyt, Leslie Williams, Hugh Pomeroy, Thomas Creighton, Jose Sert and Robert Mitchell.

A PRACTICAL COURSE FOR HOME BUILDERS, a series of 10 lectures to be given at Columbia University, New York, by Frederick Woodbridge and Harold Sleeper [on Thursday evenings beginning February 6] will cover the basic financial, real estate and technical problems which face anyone building or planning to build his own home today.

THE HOMEBUILDERS COUNCIL OF NEW YORK, NEW JERSEY AND CONNECTICUT has scheduled a Metropolitan Home Show to be held in the Grand Central Palace, New York City, during the week of April 19th.

#### BUILDING PREVIEWS



ARMSTRONG CORK COMPANY announces the construction of 3 new plants. The Asphalt Tile Plant at Kankakee, Ill. (above) is expected to go into operation this spring. Of reinforced concrete and structural steel base with brick facing, this factory building will be 380 ft. x 125 ft. A separate one-story office building will stand in front of the plant. At Jackson, Miss. a second Asphalt Tile Plant will be located; while a \$4,400,000 Fiberboard plant is now under construction at Macon, Ga.

AN INTERNATIONAL TRADE MART for New Orleans, La., providing sales and exhibition space for 200 firms will be housed in the Baldwin Bldg. The structure, after a million dollar renovation job, will be completely air-conditioned, and its white concrete exterior will feature glass brick strips instead of windows. Present plans indicate that the building will be ready for occupancy within a year.



TWO MORE VETERANS HOSPITAL have been approved by Army Engineers and the Veterans Administration. The 250-bed general medical and surgical hospital, sketched above, will be built at Fresno, Calif. Extreme hot weather in the vicinity will cause this to be the only completely air-conditioned hospital in the Veteran program. Need for a minimum run of air conditioning ducts stressed compactness and simplicity of overall shape. "Double corridor" design of the wings places serving rooms in the center and leaves all outside room-space for patients. It also (Continued on page 56)





Part of the attractive, four-family apartment project built in Columbus, Ohio, by CAPITOL PROPERTIES, INC.

## Ohio builder chooses KIMSUL\* Insulation above all others for all types of construction

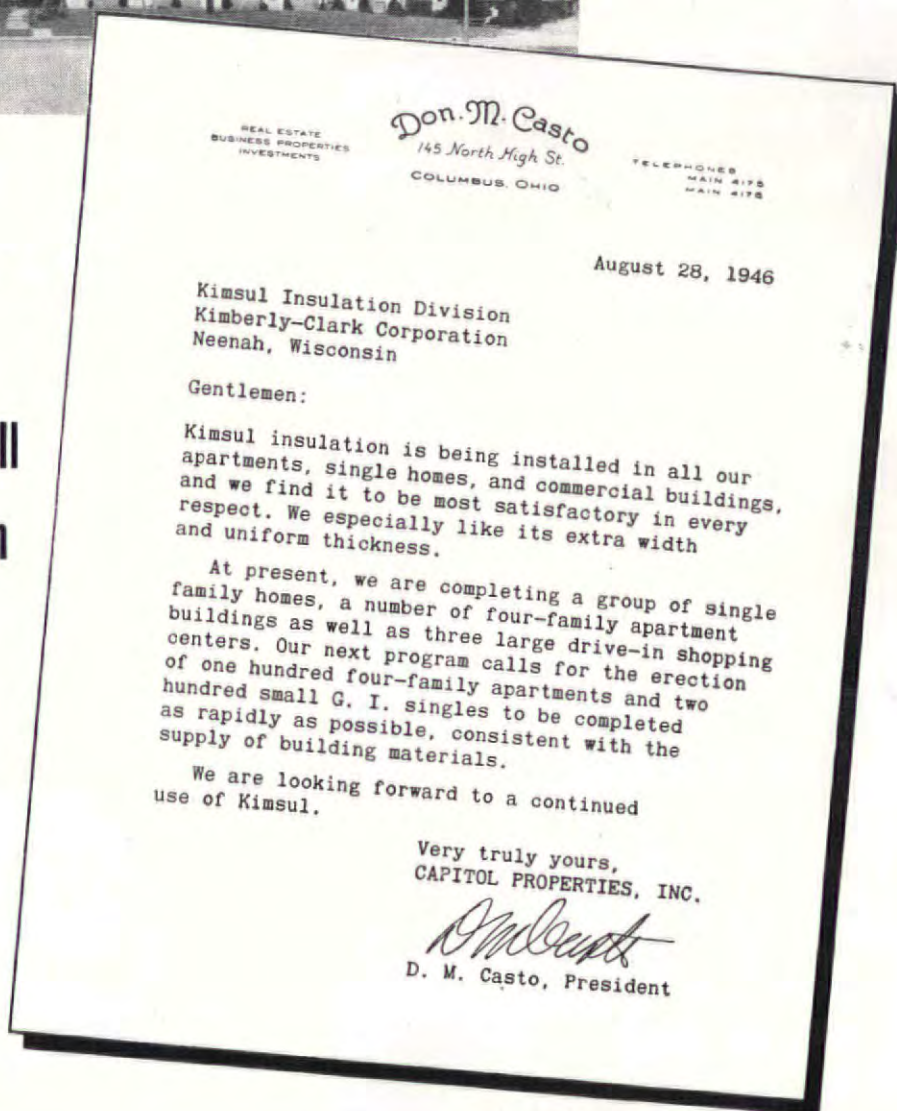


Installing light, flexible KIMSUL\* in a CAPITOL PROPERTIES, INC. home. It is easy—just cut KIMSUL to desired length, expand it, and staple to ceiling joists.

Like Don M. Casto, important builders, architects, and contractors everywhere are specifying KIMSUL Insulation. With a "k" factor of 0.27, KIMSUL is one of the most efficient insulations ever developed for insuring home comfort. Designed on the scientific principle of many-layer construction, KIMSUL automatically provides uniform insulation coverage. Prefabricated and pre-stitched, it's easy to install. It's pleasant to handle because it's so clean—no dust, no

irritating after-effects to skin of workmen. And KIMSUL is resistant to fire, moisture, fungus; it is termite-proof... won't sag, sift, or settle.

These qualities—and many more—account for the outstanding performance of KIMSUL in all types of construction. They are the reasons why it is wise for you to include KIMSUL in any building specification. For complete information, write Kimberly-Clark Corporation, KIMSUL DIVISION, Neenah, Wis.



We are producing all the KIMSUL Insulation we possibly can, but due to the great demand, distributors may have some difficulty in supplying KIMSUL dealers as promptly as usual.



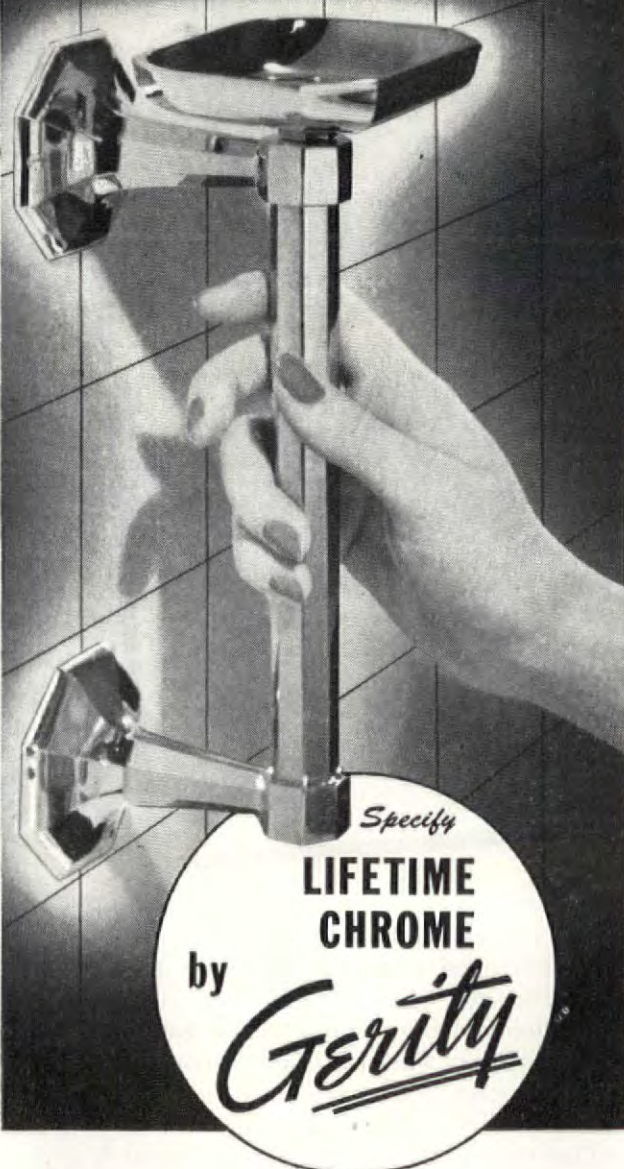
\*KIMSUL (trademark) means Kimberly-Clark Insulation



## ANNOUNCEMENTS

*Strikingly  
Smart*

**FOR ANY BATHROOM PLAN  
OR COLOR SCHEME!**



Gerity mirror-bright fine chrome accessories for baths and kitchens are smart with *any* color scheme. Extremely durable—won't break, crack, peel, check or tarnish. Write for catalog. Gerity-Michigan Die Casting Co., Adrian, Mich.



cuts distance between serving and sick rooms. The top floor of this 7-story structural steel, concrete shell hospital will house a psychiatric unit. Masten & Hurd, Huber & Knapik, San Francisco, were architect-engineers on the project.

Preliminary plans for a 450-bed general Medical and Surgical hospital to be erected at Shreveport, La. have been approved. Neild & Somdal, Shreveport architect-engineers, are at work on detailed drawings.



OHIO STATE UNIVERSITY announces plans for a 600-bed hospital and a 5-story dentistry building to form the central units in its new medical health center. This \$5,000,000 project will include a mental receiving hospital and widely expanded facilities for the university's College of Medicine and for state health and welfare agencies. Site plans for the center were designed by Skidmore, Owings & Merrill, architects, with Edwin Salmon as hospital consultant.

PRINCETON UNIVERSITY'S \$4,000,000 LIBRARY, the Harvey Firestone Memorial, is scheduled for completion in June 1948. Designed Gothically to harmonize with campus tradition, the building will have a book capacity of 1,800,000 books, and seating accommodations for about 1,875 students. In interior plan, it will be an "open stack" library (Continued on page 58)

**LUX-RIGHT  
AREAWALLS**

**THE ORIGINAL,  
SELF-FLANGE, ONE-PIECE  
CORRUGATED STEEL WALL  
HAND-DIP GALVANIZED  
AFTER IT IS FORMED**

**Builders! Attention!**

Put this superior product into your plans for modern homes and structures of all kinds. Weigh its many sturdy advantages over other methods of manufacture:

This is the original \*LUX-RIGHT Areawall, time-tested and approved by Architects, Builders and Home-owners throughout the land.

Each unit is heavily galvanized by hand-dipping in molten zinc **AFTER FORMING**. This permanently protects all edges from rust.

No painting needed. Install "as is".

Full top bead gives great rigidity; important safety factor too.

Quick setting means saving in time-labor costs. Masonry nail and screw holes pre-punched.

Folder Free. See dealer or write. See *Sweet's Arch. & Bldrs. Editions*

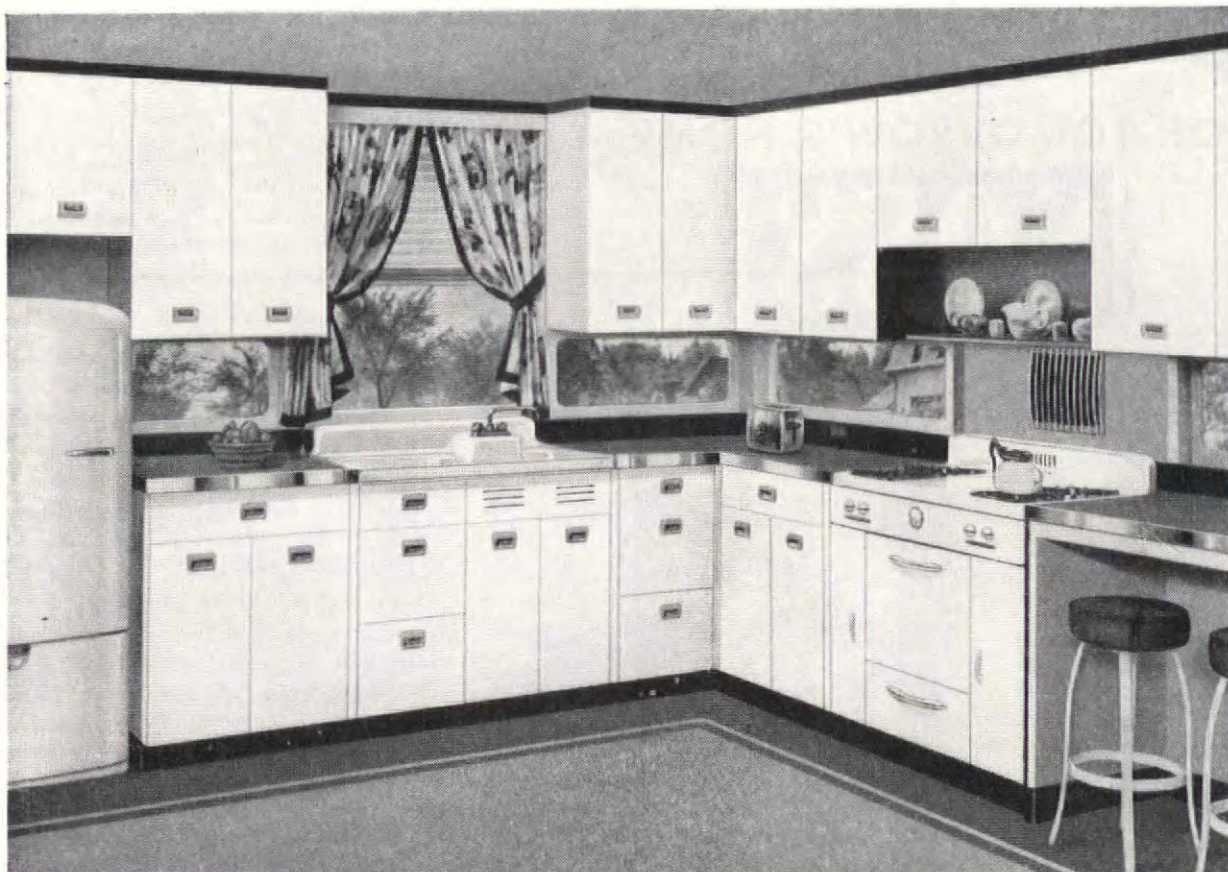
\*TM Reg. U.S. Pat. Off.

**SAINT PAUL CORRUGATING CO.**

Manufacturers of Sheet Metal Products since 1885

South End Wabasha Bridge AF2 Saint Paul 1, Minn.





*Second of a Series: The Crane Stewardess Kitchen*

## **CRANE PLUMBING and HEATING ... for the homes you are building**

Home buyers exclaim with delight when the plumbing in their new house is Crane. The modern beauty, the efficiency and high quality of Crane equipment add sales appeal and increased value in the eyes of its future owners.

The 1947 line of Crane plumbing includes kitchen sinks, bathroom groups, laundry tubs in a size and style to suit every building plan—a price to meet every budget. This line is the finest Crane has ever produced, and every item in it is designed to suit today's taste.

In heating, too, Crane offers the builder a complete range of boilers and furnaces to meet every fuel requirement, coal or coke—oil or gas. This line also includes radiators and convectors, controls and water specialties, pipe, valves and fittings—everything for every heating system.

Your Crane Branch will discuss your needs and give you an approximate delivery date. They also have available illustrations of the Crane 1947 line photographed in color in actual room settings. Check your requirements with them.



Approx. Size: 13' 11" x 10' 3"

Shown at the left is a floor plan of the kitchen illustrated above. The Crane Stewardess Sink can, of course, be used in smaller kitchens as suggested in the two layouts at the right.



Approx. Size:

11' 0" x 7' 4"



Approx. Size:

10' 10" x 6' 11"

# CRANE

NATION-WIDE SERVICE THROUGH BRANCHES, WHOLESALERS, PLUMBING AND HEATING CONTRACTORS

CRANE CO., GENERAL OFFICES:  
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VALVES • FITTINGS • PIPE  
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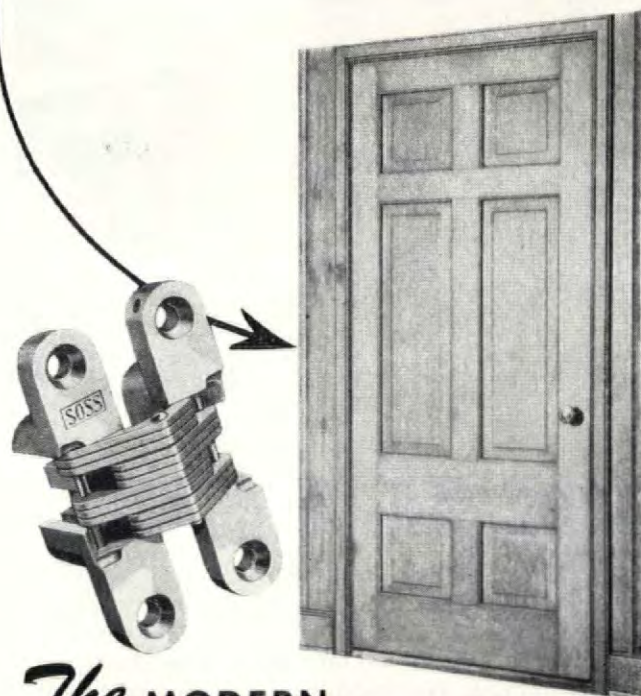


## ANNOUNCEMENTS

*The Hallmark*  
OF TOMORROW'S HOME

**SOSS**

INVISIBLE **HINGES**



*The* MODERN . . .  
DIFFERENT "out of sight" HINGE

"This house has personality! There is something different and distinctive about it!" Many times people make just such remarks when looking at a home equipped with SOSS INVISIBLE HINGES—for these hinges when installed are completely concealed.

It is obvious why SOSS hinges impart a distinguished personality to any home. For one thing they permit the use of flush surfaces for doors, panels and cupboards which are a feature of modern streamlined design. Furthermore they eliminate surfaces marred by unsightly protruding butts. Your clients will commend you for suggesting these modern hinges.

Write for SOSS "Blue-Print Catalog" giving full details of the many applications of this modern hinge. Free on request.

**SOSS MANUFACTURING COMPANY**

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with no barriers between books and users. Robert O'Connor and Walter Kilham Jr. of New York are architects; Turner Construction Co., builders.

### AWARD

HOWARD GREENLEY, architect, has been awarded the President's Medal by the Architectural League of New York (the 11th time this award has been made in 67 years). The medal was presented on the 25th Anniversary of Mr. Greenley's election as President of the League.

### COMPETITIONS

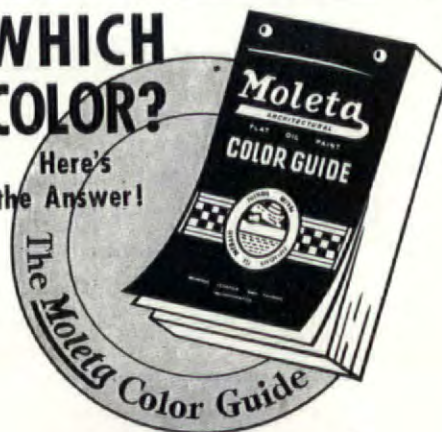
PRIZES OF \$1,000, \$350 and \$250 each are offered in an architectural contest for a firesafe, masonry home (open only to architects and designers living or practicing in Connecticut). Dextone Co., Wm. M. Hotchkiss Co. and Plasticrete Co., all of Connecticut, have sponsored the competition. Further information may be obtained from Harold Hauf, AIA, Professional Adviser for the competition, at the Department of Architecture, Weir Hall, Yale University, New Haven 7, Conn.

TO INTEREST U. S. ARCHITECTURAL STUDENTS in producing good church design, the Interdenominational Bureau of Architecture is offering prizes of \$100, \$75, \$50, \$35 and several of \$25 each for the best church plans submitted by students before December 20, 1947. The designs will be displayed at the North American Conference on Church Architecture in New York next January. Copies of the program may be obtained from Elbert Conover, Interdenominational Bureau of Architecture, 297 Fourth Ave., New York 10, N. Y.

MEMBERS OF THE REAL ESTATE BOARD OF BROOKLYN, N. Y. are eligible for a \$1,000 prize to be given for the most ingenious real estate transaction negotiated (Continued on page 60)

**WHICH  
COLOR?**

Here's  
the Answer!



**A** "find" for the ARCHITECT!

When your clients ask "What color will be best?" you'll have a quick answer in the handsome Moletg COLOR GUIDE.

150 beautiful colors are displayed . . . Blues, Greens, Yellows, Grays, Browns . . . every tint from the palest to the darkest!

Formulas are given on the reverse of each color sheet (9" x 15") to show how the shade can be quickly made. Price, \$5.00 . . . delivered anywhere in the U.S.A. Write for your copy.

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ARCHITECTURAL

FLAT  
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## A house, too, can be “painted into a corner!”

● No architect or builder needs to be told that, of all home-heating fuels, Bituminous Coal is the most economical and most dependable.

So, even when a client of yours *insists* on some other fuel for his new home, it's wise to give him the chance to change his mind at some time in the future—and turn to coal!

Otherwise, he's apt to find his house “painted into a corner” when stoker developments, local coal services and cost differentials dictate the use of coal.

Just be sure that the house plan provides: (1) A chimney with sufficient flue capacity to burn coal efficiently; (2) Sufficient space adjacent to the heating unit for eventual coal storage and stoker installation.

Such sensible precautions involve but trifling cost—and they may add greatly to the future value of a house.

Coal supplies uniform, *steady* warmth throughout every portion of each room. For there's always a fire in the furnace—no “pop on and pop off” periods that permit accumulated heat to rise to the ceilings and leave floor areas dangerously cold. That, plus its low cost, is why more than 4 out of every 7 homes in the United States now heat with coal!

**BETTER AND BETTER THINGS ARE COMING FROM COAL!**



As you undoubtedly know, the modern research facilities of the Bituminous Coal industry are hard at work not only to make coal a still better fuel, but also to devise new, low-cost *automatic* equipment that will make coal-heating even cleaner, more comfortable, more convenient and more economical. This makes it all the more important that every new home built today be planned to permit the eventual burning of coal — no matter what fuel may initially be selected.

## **BITUMINOUS COAL**

**BITUMINOUS COAL INSTITUTE**  
Washington, D. C.

**Affiliate of NATIONAL COAL ASSOCIATION**



## ANNOUNCEMENTS

*When TIME and BUDGETS  
Are Determining Factors*

**STEEL**  
*Craft*

### **PERMANENT PREFABRICATED METAL HOMES**

**T**HESE ARE NOT makeshift dwellings for temporary housing . . . they are PERMANENT, PRACTICAL, ENDURING . . . PREFABRICATED to save time in erection . . . to save costs because of the advantages of MASS PRODUCTION.

STEELCRAFT IS A PIONEER IN METAL HOME PREFABRICATION . . . YEARS OF RESEARCH, TECHNICAL IMPROVEMENT AND DEVELOPMENT ENABLE STEELCRAFT TO OFFER THESE HOMES AS A MODERN INTERPRETATION OF TODAY'S HOUSING NEEDS.



THE ROSELAWN model combines functional design with the most advanced methods of permanent metal prefabrication.

WRITE FOR FULL DETAILS

*Desirable territories still available for qualified dealers.*

**The STEELCRAFT Manufacturing Co.**  
"Pioneers in Metal Prefabrication"  
ROSSMOYNE (Cincinnati) OHIO

in that county during 1947. The Inter-County Title Guaranty and Mortgage Co. has donated the award.

### **SCHOLARSHIPS**

THE UNIVERSITY OF PENNSYLVANIA is offering these Architectural Fellowships and Scholarships for 1947-8:

Two \$1,000 Chandler Fellowships for graduates of approved architectural schools not over 27 years of age on July 1;

Two University Graduate tuition scholarships;

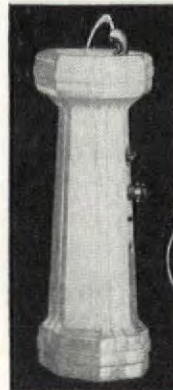
A \$250 Albert Kahn undergraduate scholarship in Industrial Architecture towards tuition of a student who has had 4 years training in an approved architectural school. Applications should be made by letter to the Dean of the School of Fine Arts before May 17 with 3 letters of recommendation from practicing architects or teachers of architecture;

An Albert Kahn Scholarship in Architecture is also being offered to provide a maximum of \$1,100 towards graduate study. Applications for this scholarship should be made to Dr. Arnold Henry, Dean of Student Affairs at the University.

HARVARD UNIVERSITY DEPARTMENT OF REGIONAL PLANNING offers 2 or 3 fellowships for advanced study in city or regional planning, the stipends not to exceed \$1,500 each. Applications (to be made before April 1) should list training and experience as well as outline the program of study or research desired. Further information on these fellowships as well as on a number of tuition scholarships may be obtained from the Chairman of the Department of Regional Planning, Hunt Hall, Harvard University, Cambridge 38, Mass.

PENNSYLVANIA STATE COLLEGE SCHOOL OF ENGINEERING announces 10 graduate fellowships stipends ranging from \$750 to \$1,800 in the fields of  
(Continued on page 62)

*...the logical specification*



In office buildings in major cities throughout the country, in the nation's important hospitals, in public and parochial schools from coast to coast . . . and in thousands of industrial plants, too . . . you'll find Halsey Taylor Drinking Fountains the logical installations.

Patented health-promoting, trouble-proof features make them easily the most hygienic fountains you can specify! Get our latest catalog.

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*Halsey-Taylor*  
**DRINKING FOUNTAINS**



# What keeps the lobster laughing can keep your clients happy, too!



The Lobster laughs in crustacean glee at the dangers of life in the briny deep. Nature provided him not only with fierce, offensive claws but also with *armored protection*.

The Barrett Specification\* Roof, with its armored wearing surface of gravel or slag, provides comparable protection for building structures. It's so tough and long-wearing it can be bonded against repairs and maintenance expense for as long as 20 years.

**Over 90 years of successful roofing experience has demonstrated the sound value of the gravel or slag wearing surface of a Barrett Specification Roof:**



**1.** It holds in place the heavy-poured (not mopped) top coat of coal-tar pitch—providing a doubly thick waterproof covering.



**2.** It provides protection against the sun's actinic rays which otherwise dry out the valuable oils in roofing bitumens.



**3.** It protects the roof against mechanical damage, hail and wind, wear and tear.



**4.** It interposes a surface of fireproof rock between the building and flying embers—makes a roof that carries Fire Underwriters' Class A Rating.

Built up of alternate layers of coal-tar pitch and felt, topped by a thick *pouring* of pitch to anchor the gravel or slag wearing surface, it is the toughest, longest-lasting built-up roof made. It is waterproof, fire-safe, sun-resistant, and armored against mechanical damage. Provide the best for the buildings you design. Include Barrett Specification Roofs in your building specifications. The Atomic Bomb Plant at Oak Ridge, Tenn., the Chrysler and R.C.A. buildings in New York, the Field Building in Chicago and many other famous American buildings—all Barrett-roofed—will confirm the soundness of your choice.



## THE BARRETT DIVISION

Allied Chemical & Dye Corporation  
40 Rector Street, New York 6, N. Y.  
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## Another Advantage of **CHROMEDGE\***

### **Matched Sets** in metal trims for all floor and wall materials



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\* CHROM-  
EDGE extruded  
aluminum alloy  
and stainless  
steel trims are  
made solely by  
The B & T Metals  
Company.

CHROMEDGE Metal Trims offer both *extruded aluminum alloy* and *stainless steel* moldings in a complete range of matched sets. Sizes for all materials, from lightweight enameled coverings to wall-board and plywood thicknesses. The matched set shown above is for use with 1/8-inch materials. Extruded sections may be had in bright or satin finish, or in the rich, velvet-like luster of B & T's remarkably durable Chromalite finish—which will not rub off black.

*Distributed through authorized wholesalers only.*

**The B & T Metals Company**  
Columbus 16, Ohio

aeronautical, electrical and mechanical engineering open to graduates in engineering or physics. The School is also offering 10 departmental graduate assistantships (\$1,000 each) and a number of full-time research assistantships. Further information may be obtained from H. P. Hammond, Dean, School of Engineering, State College, Pa.

THE JOHN STEWARDSON MEMORIAL SCHOLARSHIP IN ARCHITECTURE, open to U. S. citizens between the ages of 22 and 32 who have spent the past year—or a year previous to military service—studying or practicing architecture in Pennsylvania, offers \$1,000 to be spent on the study of architecture here or abroad. Application blanks are obtained from Morton Keast, Secretary, 1108 Commonwealth Building, 1201 Chestnut St., Philadelphia 7, Pa.

THE UNIVERSITY OF MICHIGAN COLLEGE OF ARCHITECTURE AND DESIGN announces that the George G. Booth Travelling Fellowship in Architecture will be offered again this year. The competition in design will be conducted during the two weeks beginning April 5, 1947. Only graduates of the school who have not reached their thirtieth birthday on that date are eligible. Those interested in entering the competition should write to the College of Architecture and Design University of Michigan, Ann Arbor for further details.

#### APPOINTMENTS

ARTHUR SCHWARZ, JR. is now a member of Mauran, Russell, Crowell & Mullgardt, architects, St. Louis 1, Mo.

THE AMERICAN DESIGNERS' INSTITUTE, New York, announces 1947 national officers: Alexander Kostellow, President; Ruth Gerth and Stewart Pike, Vice-Presidents; Lionel Algoren, Treasurer; and Ann Franke, Secretary. (Continued on page 64)

## As MASTIPAVE PRODUCTION INCREASES MORE FLOOR PROBLEMS will be solved!

"So they Mastipaved the floor" is more than a sales slogan. It is a fact proved by 23 years of MASTIPAVE success in solving floor problems. Amazingly rugged and adaptable to most commercial, industrial and institutional floors, this low-cost, long-life floor covering is well worth waiting for!

**PABCO**  
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The Low Cost, Long Life  
FLOOR COVERING

Also Grip-Tread  
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Wet or Dry

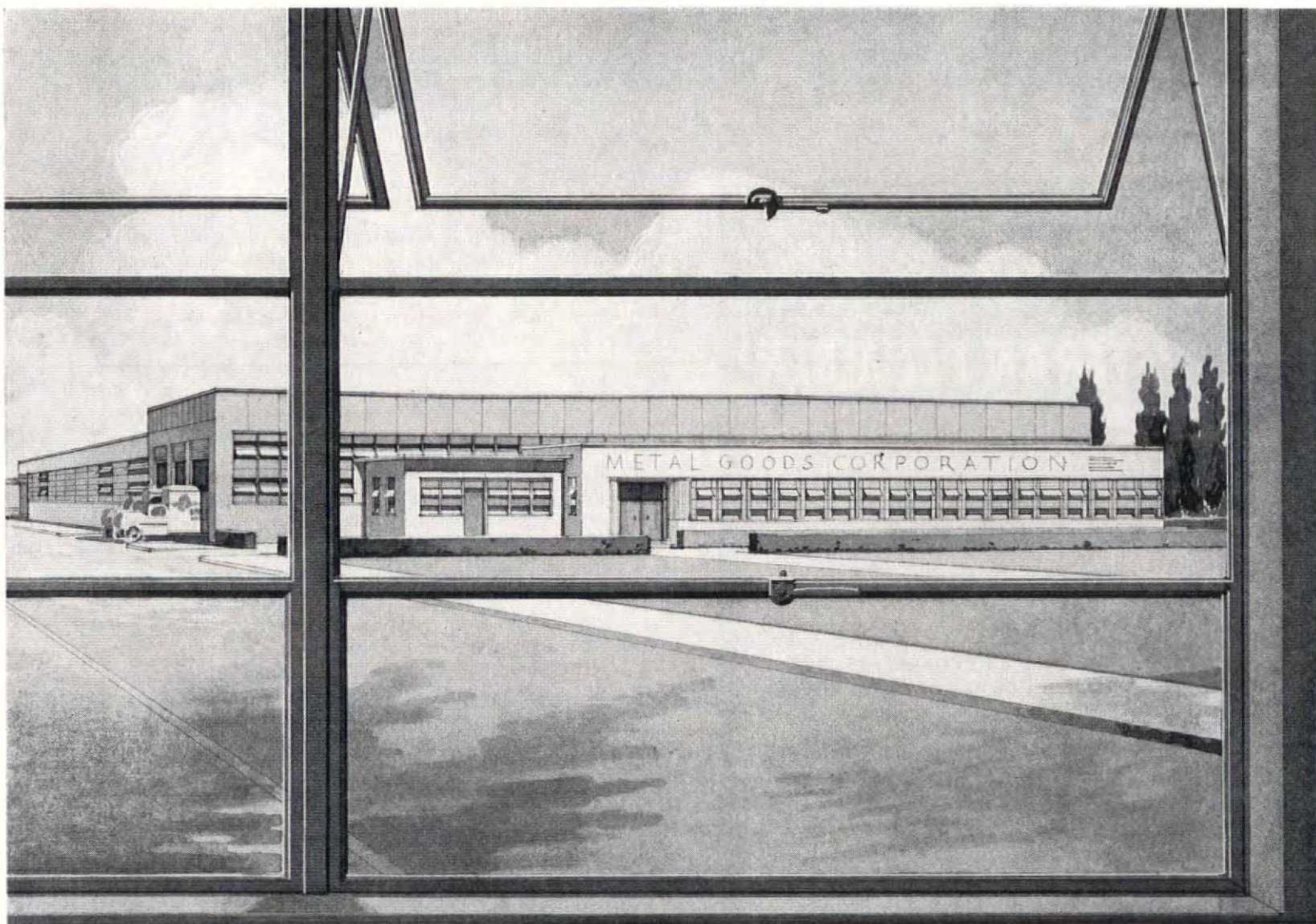
23-Year Record  
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RUGGEDNESS!



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Makers, also, of Pabco Linoleums, Grip-Dek and Sani-Grip Floor Coverings; Pabco Paint, Roofing and Building Materials





Factory-Office Building of the Metal Goods Corporation, Dallas, Texas. Factory equipped with Lupton Pivoted Windows. Office equipped with Lupton Architectural Projected Windows. Architect: Frank Cann. Engineers and Contractors: Frasier-Davis, St. Louis, Mo.

Streamlined industrial production depends on many things . . . proper daylighting; healthful, well-ventilated atmosphere; pleasant working surroundings. At the Metal Goods Corporation, Lupton Metal Windows promote efficiency by supplying these ideal conditions. In the factory section, Lupton Pivoted Windows, mechanically operated, provide a constant, well regulated, supply of fresh air. Modern appearance is secured for the office section with Lupton Architectural Projected Windows. There is a Lupton Metal Window for every type of building. Write for the new 1947 Catalog or see our Catalog in Sweet's.

MICHAEL FLYNN MANUFACTURING CO.  
700 East Godfrey Avenue, Philadelphia 24, Penna.  
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# LUPTON

## METAL WINDOWS



## ANNOUNCEMENTS

### "Does a Fine Job" —SAYS VETERAN PLUMBER

He's speaking about the Wade Sealed Air Chamber. But let's hear directly from Chas. E. Gawne, prominent Chicago plumbing contractor... "We installed a  $\frac{3}{4}$ " water line to a high pressure pump used for truck washing operations at the Midwest Transfer Company, Chicago. The 150 lbs. discharge pressure at the spray nozzle backed up in fluctuating pressure surges past the pump into the city water line. This created a dangerous vibration of the entire piping system—so much so that the pipe was torn loose from its hangers. We installed your No. 134 Sealed Air Chamber on this water line and it stopped all vibration. THIS WADE SEALED AIR CHAMBER REALLY DOES A FINE JOB."

More and more plumbers, engineers and architects are learning how the Wade Sealed Air Chamber effectively solves water hammer problems. They cushion the shock created by high surge pressures to prevent stretching and straining of pipes, valves and fittings.

Take a tip from Mr. Gawne and learn more about this modern effective answer to destructive water hammer. Send today for our new Sealed Air Chamber booklet which includes Selector Tables to determine the correct size Air Chamber for each job.

*Photo shows the Wade No. 134 Sealed Air Chamber, installed on a  $\frac{3}{4}$ " pipe at the Midwest Transfer Company, Chicago. It "stopped all vibration."*



#### WADE DRAINS

Wade, makers of the HydraFilter grease interceptor and the Sealed Air Chamber manufactures a complete line of floor and shower drains, roof drains, backwater valves and swimming pool equipment. Consult your nearest Wade representative or write direct to us for further information.



W-1100

**WADE**  
MANUFACTURING COMPANY

E. W. SMITH of the Philip Carey Manufacturing Co. was reelected chairman of the Asphalt Roofing Industry Bureau.

D. PARRY FORST, president of Robertson Manufacturing Co., has been elected 1947 Chairman of the Tile Council of America.

L. R. BOULWARE has been named General Manager of a new Affiliated Manufacturing Companies Department of General Electric [including Carboly Co., Inc.; General Electric X-Ray Corp.; Hotpoint, Inc.; Lock Insulator Corp.; Monowatt Electric Corp.; Telechron, Inc.; and Trumbull Electric Manufacturing Co.].

#### NEW OFFICES

ERIC MENDELSON AIA and ALBERT HILL (both formerly of Mendelson, Dinwiddie & Hill) are now associated in practice at 627 Commercial St., San Francisco, Calif. JOHN DINWIDDIE AIA will continue his practice at 233 Sansome St., San Francisco.

ALEXANDER GIRARD offers complete architectural and design services for home, office and industrial fields in his new headquarters at 379 Fisher Road, Grosse Pointe 30, Mich.

ROBERT MURPHY, architect and industrial designer, is established in practice at 672 N. Orange Ave, Orlando, Fla.

R. MARSHALL CHRISTENSEN has opened an architectural office at 925 Madison Ave., New York, N. Y.

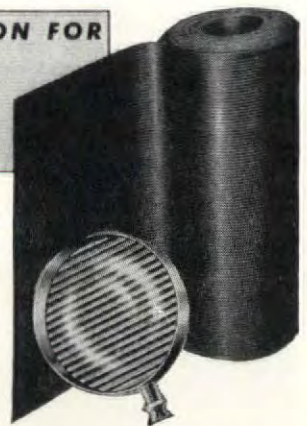
ALBERT KIRSCHENBAUM announces the opening of offices at 53 W. Jackson Blvd., Chicago 4, Ill.

KENNETH KASSLER ASSOCIATES, architects (formerly Kassler, Alexander & Bowers) will continue practice at 18 Nassau St., Princeton, N. J. Raymond Bowers will remain in association with the firm on certain projects. (Continued on page 66)

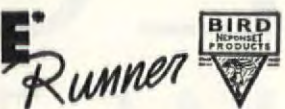
### LOW-COST PROTECTION FOR HEAVY TRAFFIC FLOORS!

COSTS LESS THAN **6¢** PER SQUARE FT.

Here's hard-to-beat economy! *Rubberlike*, the modern composition floor runner with rugged corrugations, protects all heavy traffic areas for less than 6¢ per square foot! Widely used in factories, offices, schools, hotels, cafes, institutions, it quiets footsteps — makes slippery floors safe. Skidproof even when wet. Easy to clean, *Rubberlike* runner needs no special upkeep, can be put down without cementing. Won't curl at edges. Amazingly durable — and doubly desirable because of its "petty-cash" cost! In rolls, 27 in. by 100 ft. or 36 in. by 75 ft. Order from supply house or write for sample. Bird & Son, inc., 161 Washington Street, East Walpole, Mass.



**RUBBERLIKE**  
PATENTED NON-RUBBER  
CONSTRUCTION



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BIRD & SON, inc., EAST WALPOLE, MASS.

NEW YORK

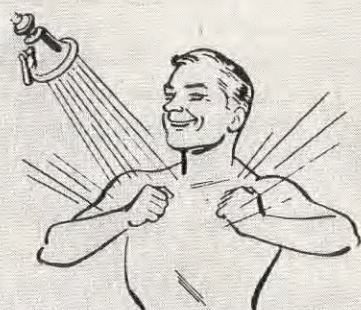
SHREVEPORT, LA.

CHICAGO



# MORE THAN JUST ANOTHER SHOWER HEAD

## *It's an Anystream!*



**A TURN OF THE LEVER GIVES . . .**  
Needle spray for stimulation!



Flood spray  
for no-splash rinse.

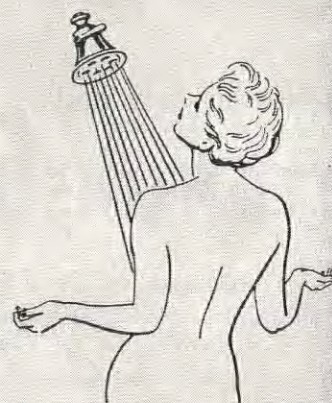
- The Speakman Self-Cleaning Anystream assures you a full-flowing, evenly distributed shower instantly adjustable to any degree of spray you desire.

- Rugged in construction . . . beautifully designed and machined . . . the Anystream is a model of engineering skill. It can be counted on to give long, dependable service.

- Unlike ordinary showerheads, the Anystream is self-cleaning . . . a feature which keeps it from clogging. In the flood position, foreign matter is instantly flushed away.

- The Anystream saves up to 58% on the consumption of hot water . . . welcome news to those who find the supply or cost of hot water a major problem.

- The Anystream is easily installed. No special fittings are required. And when . . . after long service . . . normal wear occurs, repairs can be made quickly and inexpensively.



Normal spray  
for relaxation!



Never this!—  
The Anystream  
is self-cleaning.



The Speakman Self-Cleaning Anystream is distributed nationally through plumbing wholesale supply dealers and plumbing contractors. It can be depended on to rejuvenate any shower bath . . . modernize the newest installation . . . and give long, satisfactory service.

Established 1869  
**SPEAKMAN**  
SHOWERS AND FIXTURES

SPEAKMAN COMPANY, WILMINGTON 99, DELAWARE



**A**  
**12 Billion Dollar**  
**Customer deserves**  
**the Best...**

**Lo-K**

## *flameproofed* **COTTON INSULATION**

Twelve billion dollars is a lot of money. Yet, that is a conservative estimate of the amount that will be spent by Americans for the more than one and a half million new homes to be built during the next three years.

Folks with that much money to spend are good customers. And as good customers, deserve the best the industry has to offer. In insulation, that means Lo-"K".

### *... Because Cotton* *Out-Insulates All Others!*

Check these seven important facts about Lo-"K". Then mail the coupon below for the complete story of America's No. 1 insulation.

Lo-"K" gives greater insulating efficiency—thermal conductivity rate, only 0.24.

Lo-"K" is lighter in weight, only .875 lbs. per cubic inch.

Lo-"K" is easy to handle. Blanket roll cuts installation time and costs, fits snugly.

Lo-"K" is completely non-irritating to the skin.

Lo-"K" is economical. Pays for itself through greater fuel savings.

Lo-"K" is flameproofed. Resists blowtorch temperature of 1800° F.

Lo-"K" lasts indefinitely. Highly resistant to moisture, rot and vermin.



**Lo-K**

*flameproofed*

**COTTON**  
**INSULATION**

Lockport Cotton Batting Co.  
Dept. AF-3, Lockport, New York  
Gentlemen:  
Please send full details on Lo-"K"  
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T. KIRK ALMROTH ASSOCIATES, specialists in product styling, packaging design, sales and industrial displays, models and mockups have opened an office and work-shop at 14215 Oxnard St., Van Nuys, Calif.

KENNETH WISCHMEYER and CHARLES LORENZ have formed an architectural partnership at 911 Locust St., St. Louis 1, Mo.

ALFRED RINAUDOT and C. WAYNE MEAD, registered architects, announce their association as Rinaudot & Mead, Housing Guild Bldg., 7240 Wisconsin Ave., Bethesda 14, Md.

HARRY AARENS, architect, announces the reopening of his office at 6428½ Selma Ave., Hollywood 28, Calif.

ONNIE MANKKI AIA has opened an industrial design and architectural office at 7113 Euclid Ave., Cleveland 3, Ohio.

FRANK GATES AIA and RAYMOND BIRCHETT AIA have become associated as Gates & Birchett, architects and engineers, with offices in Jackson and Vicksburg, Miss.

GEORGE CARR and CLARK WRIGHT announce the formation of Carr & Wright, Inc., architects and engineers, with offices at 333 N. Michigan Ave., Chicago 1, Ill.

JONATHAN BUTLER AIA and FRANCIS ROGERS AIA will continue the architectural practice of Jas. Gamble Rogers under the name Rogers & Butler, 70 E. 45th St., New York 17, N. Y.

FRANK WEHRLE RA now practicing in Sewickley, Pa. is opening a second office at 210 Grant St., Pittsburgh, Pa.

SAMUEL KURTZ AIA (formerly associated with York & Sawyer) has opened an office for general practice at 101 Park Ave., New York 17, N. Y.

DONALD THOMPSON offers a specialized service to bridge the gap between architect and production engineer. Without offering construction service, he will (Continued on page 70)

## *For Greater* *FIREPLACE EFFICIENCY*

### **Majestic** **FORMED STEEL\*** **Dampers**

#### **\*FORMED STEEL**

The heavy-gauge formed steel units developed by Majestic to meet war-vital needs proved the advantages of this advanced construction—which is now featured on the regular Majestic line, including Circulator Fireplace Units, Underground Garbage Receivers, Home Incinerators.

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With Majestic Formed Steel Dampers the proper ratio of throat area to fireplace opening is constant. Correct height of throat and other dimensions are assured. Built to get highest efficiency from every fireplace, these dampers also withstand years of exposure to rust, smoke, soot, and heat without impairment. Valve closes tightly against frame. Operates easily with an ingeniously simplified poker control. The Majestic built-on lintel simplifies installation—no angle iron required. No fitting necessary. Damper rests flat on rough masonry. For safe draft control and permanent, smoke-free satisfaction, specify Majestic Formed Steel Dampers.

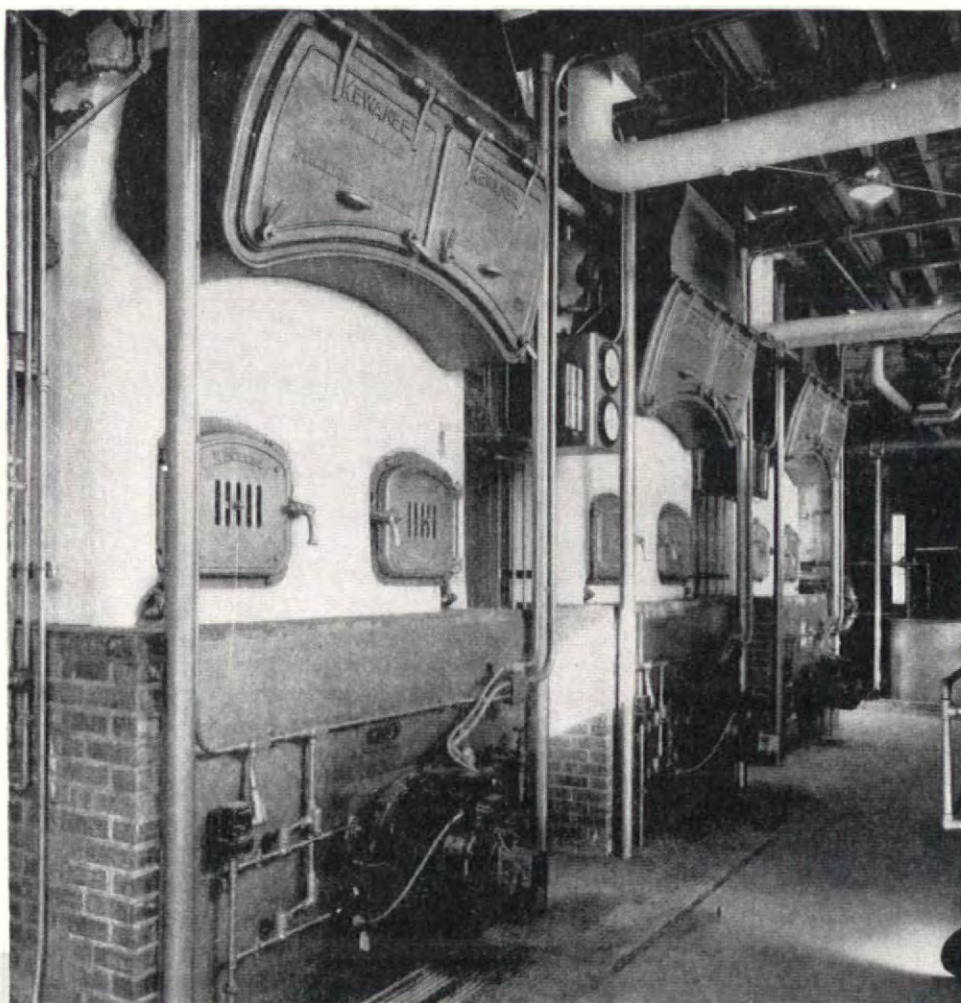
**The**  
**Majestic Co.**  
**833 ERIE STREET**  
**HUNTINGTON, IND.**

Nationally Known and Advertised for 40 years



**Oil Fired,  
Heavy Duty  
KEWANEE**

Typical set-up of a Kewanee Oil Fired, Heavy Duty Firebox Boiler as used by the U.S. Army and Navy for numerous installations.



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## HEAVY DUTY STEEL BOILERS

Under the strain of extra strenuous service this Kewanee Series . . . whether used for power, process steam or heating . . . remains on the job many additional years delivering steam at minimum costs.

For mechanical firing with Oil, Gas and Coal, or for hand firing, Heavy Duty Kewanees are made in sizes to produce from 10 to 304 Horse Power at steam working pressures of 100, 125 and 150 pounds.



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**OVER  
75 YEARS  
BOILERMAKERS**

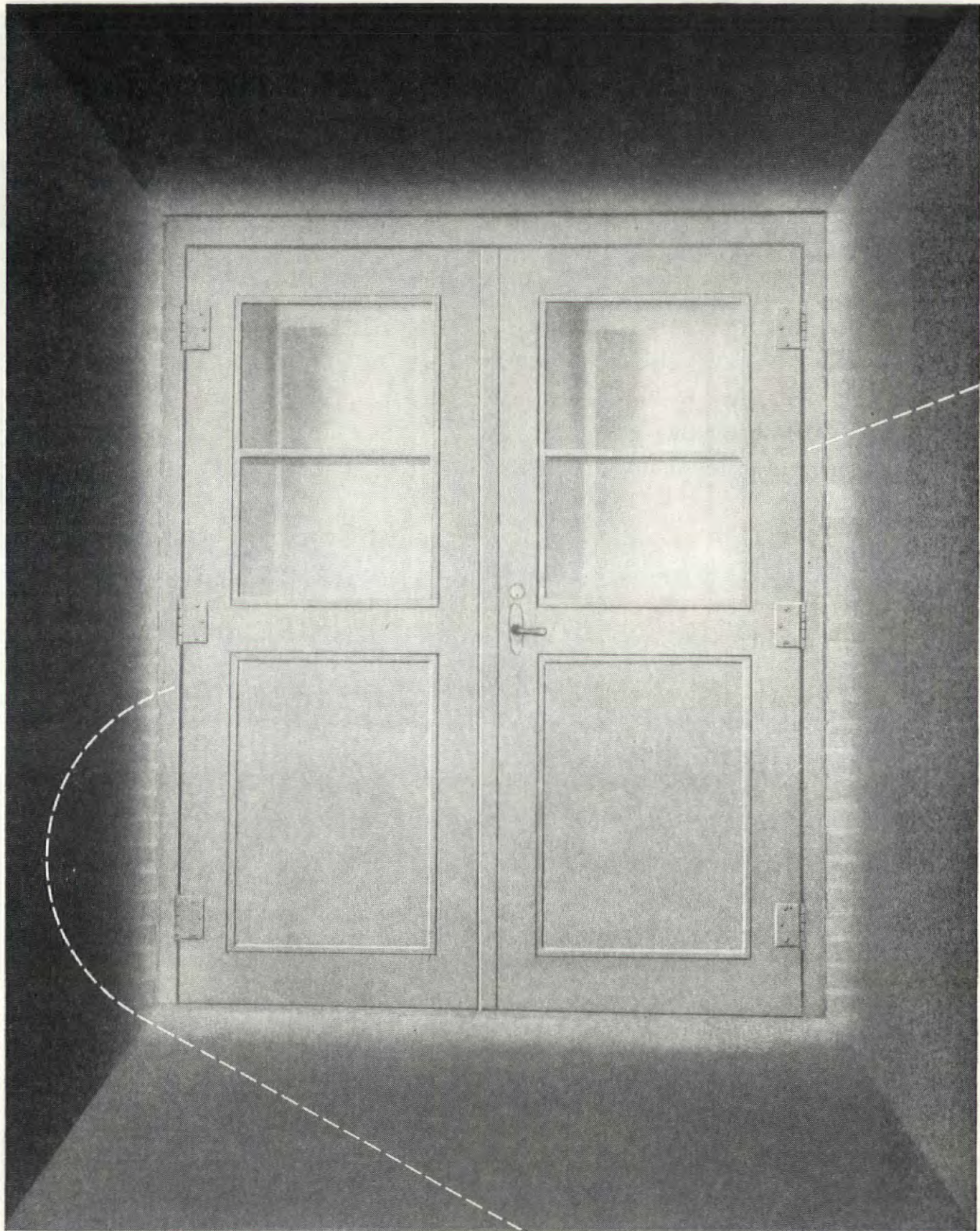
**KEWANEE BOILER CORPORATION**  
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*In construction products* **CECO ENGINEERING**



# Why Industrial Steel Doors?

In any commercial, industrial, or public building, maintenance costs are a problem. One way to reduce such costs is to use industrial steel doors. That is because the initial cost is the final cost when steel doors are used. You can say "goodbye" to costly repairs. They are built to last and last. Just put the door in place and forget it. Here is another important advantage—steel doors are fire resistive. They are adaptable for service entrances, also suited for fire escapes, factory, office and penthouse entrances.

## WHY SPECIFY CECO?

- 1** Accurately constructed of steel for hard usage as "working" doorways.
- 2** Glazing angles and stops hold glass solidly in place with screws.
- 3** Bottom panels spot-welded to stiles—no rattling.
- 4** Stiles and rails formed square. Corners mitred and solidly welded.
- 5** Accurately machined for easy installation of hardware.

## WHY CECO HARDWARE IS BETTER . .

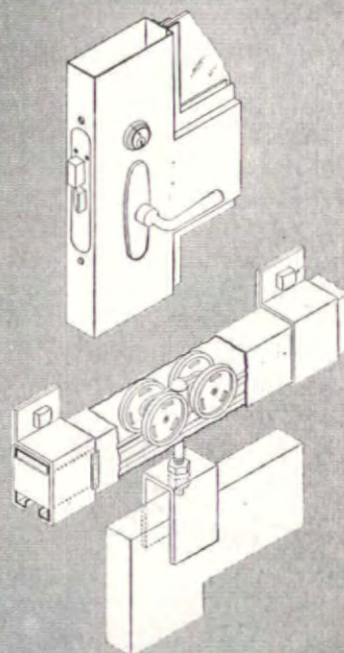
Ceco gives you the finest industrial steel door hardware—specially designed for easy application and strong attachment to the door. All hardware is attached by through-bolting or by use of screws in reinforced tapped holes. No self-tapping screws are used. What is more, CECO uses the best non-ferrous locks—designed to prevent vandalism. There are no lock set screws on the outside.

**CECO STEEL PRODUCTS CORPORATION**  
GENERAL OFFICES: 5701 West 26th Street, Chicago 50, Illinois  
Offices, warehouses and fabricating plants in principal cities

**CECO  
STEEL**

*makes the big difference*

Swing door cylinder lock.



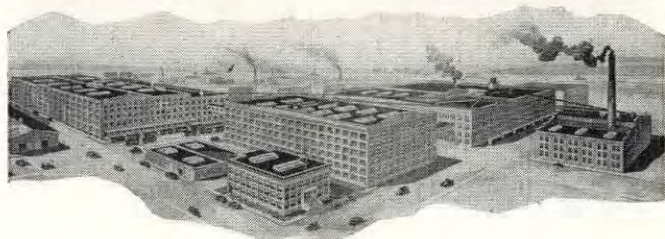
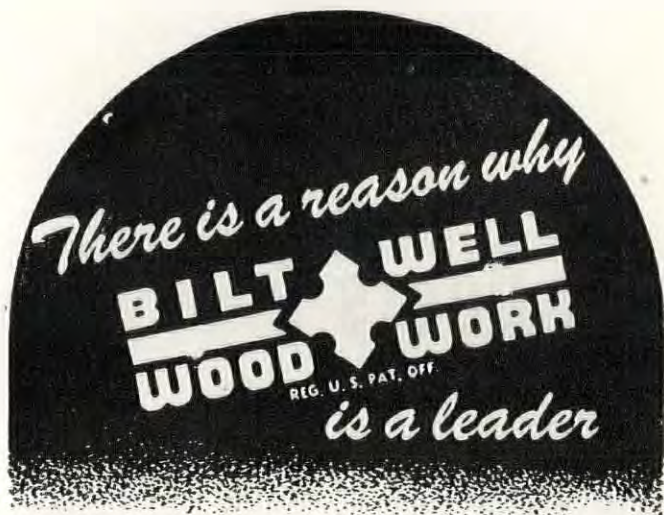
Slide door trolleys with lubricated roller bearings

### Partial list of Ceco Products:

METAL WINDOWS • ALUMINUM FRAME  
STORM PANEL FOR METAL CASEMENTS  
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STEEL • METAL FRAME SCREENS • METAL  
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LATH AND ACCESSORIES



## ANNOUNCEMENTS



**T**HIS is the modern plant where Bilt-Well Woodwork is groomed for its eventual role in the building programs being formulated today.

This is the modern plant where master craftsmen, research engineers, and industrial designers pool their ideas in the scientific development of building products.

This is the modern plant where unlimited facilities make it possible to produce a high standard of quality . . . where scientific methods are extended toward the maximum achievements in the production of Bilt-Well Woodwork.

This is the modern plant where woodworkers, generation after generation, have taken unusual pride in their work . . . where ingenuity and initiative are reflected in the outstanding craftsmanship of Bilt-Well Woodwork.

**CARR, ADAMS & COLLIER CO.**  
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### BILT-WELL WOODWORK PRODUCTS

#### CABINETS

China, Corner  
Ironing Board  
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#### DOORS

Combination  
Exterior  
Garage  
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Screen

#### ENTRANCES

Large  
Small

#### GABLE SASH

#### LOUVERS

#### MANTELS

#### BREAKFAST HOOKS

#### SCREENS

Door  
Window

#### SHUTTERS

#### STAIR PARTS

#### STORM SASH

#### WINDOWS

Barn  
Basement  
Casement  
Double-Hung  
Garage

prepare preliminary plans for size, character, equipment arrangement and handling of buildings; his office is at 608 Atlas Bldg., Charleston, W. Va.

ELWYN SEELYE, ALBERT STEVENSON and BURNSIDE VALUE have formed the partnership, Seelye, Stevenson & Value, Consulting Engineers, 101 Park Ave., N. Y.

A new division of BALDWIN and MERMEY, headed by Alfred Stern, offers a service for planning and staging industrial and product exhibits at 205 E 42nd St., New York 17, N. Y.

RAY-SHIELD PRODUCTS, designers, fabricators and constructors of X-ray protection and light-proofing products, have established an office at 200 W. 34th St., New York, N. Y.

#### CHANGES OF ADDRESS

MACKIE and KAMRATH, architects, are now located at 2713 Ferndale Place, Houston 6, Texas.

LEON FAGNANI AIA has moved his office to the Pennsylvania Railroad Bldg., Wilmington, Del.

HOLMES & NARVER, engineers, have moved to 824 S. Figueroa St., Los Angeles 14, Calif.

H. K. FERGUSON Co. has moved its Cleveland office to the Ferguson Bldg., E. 11th St. and Walnut, Cleveland 14, O.

ARTHUR ROWE & ASSOCIATES, architectural and structural consulting engineers, are at their new address 1743 E 25th St., Cleveland 14, O.

WILLIAM PAHLMANN ASSOCIATES announce that they are now located at 218 E 58th St., New York 22, N. Y.

BARUCH CORPORATION has moved to 5655 Wilshire at Hauser, Los Angeles 36, Calif.

FREDERICK LAWRENCE announces that his address is now Gifford St., Falmouth, Mass.

## Stainless Steel SINKS AND CABINET TOPS



### CUSTOM BUILT to YOUR SPECIFICATIONS

Custom fabrication is an original policy of Just Manufacturing Company and we have maintained that policy throughout the years. The needs of our custom-built trade have always had preference and always will. You design the cabinets . . . we build the sinks and cabinet tops to fit your design . . . any size . . . any shape, and they will always have that incomparable . . .

## Radiuluxe QUALITY

which gives you two important exclusive features:

**IN-BUILT ANTI-SPLASH RIM ON  
BOWLS, DOUBLE-PITCH DRAIN-  
BOARDS** with no channels to clean, no  
grooves to endanger fine glassware.

ALL WELDED, seamless construction polished to a beautiful satin finish . . . radius corners in bowls, vertically and horizontally . . . fully sound deadened and many other quality features.

Other JUST LINE products are Cabineteer "Package Unit" Stainless Steel Sinks, Stainless Steel Scullery Sinks, and Galvanized Scullery Sinks that are hot-dip galvanized after fabrication.

Write today for bulletins and details.

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4610-20 W. 21st Street, Chicago 50, Illinois



EXT. - D.F.P.A.

# Quality



PLYFORM D.F.P.A.

## These "Grade Trade-Marks" Identify Every Panel of Genuine Douglas Fir Plywood

Every type and grade of Douglas fir plywood is readily identified by one of these "grade trade-marks". Such a mark on a plywood panel is your assurance that rigid standards of quality have been met throughout the manufacturing process — and that the panel has been made especially to meet the particular use for which the grade was originated.

# Performance

In Countless Applications — in Peace and in War  
— Douglas Fir Plywood Has Proved Itself

### More Fir Plywood Soon Will Be Available for All Uses

The unusual demands of today's home building program have made the supply of Douglas fir plywood temporarily critical. But more plywood is being manufactured today than in pre-war years, and as controls are lifted an ever-increasing supply will flow into normal trade channels. Keep in touch with your regular source of supply!

Builders and specifiers have learned to turn to Douglas fir plywood whenever the need is for a material which is durable yet easy to work, light yet strong and rigid, economical yet dependable. This modern "miracle wood" is made in many grades, each engineered for particular jobs. Each is thoroughly tested in the Douglas Fir Plywood Association laboratory and proved in actual use conditions. Douglas fir plywood has served with exceptional performance in home building, in general construction, in industry, in marine work . . . for outdoor

sign work, as an all-purpose farm material, and for many types of railroad applications. Choose the type and grade for your particular need—and use it with the knowledge that it has been thoroughly proved through years of use.



DOUGLAS FIR PLYWOOD ASSOCIATION  
Tacoma 2, Washington



# Draperies of Fiberglas\*

set a fashion in  
**SAFETY**



## Fires can't start or spread in noncombustible decorative hangings

Serious fires usually result from the rapid spread of flames through materials that *can* burn.

Now, replace an inflammable material with one that *can't* burn—and you eliminate a fire hazard.

Decorative hangings woven from Fiberglas yarns can't burn. They're *glass*. They're *originally* and *permanently noncombustible*. Furthermore, in the midst of fire or searing hot blasts, these fabrics of Fiberglas will not contribute to the further depletion of oxygen, will not give off suffocating smoke and fumes.

In hundreds of places of public assembly from

coast to coast—in hotels, restaurants, clubs, schools, hospitals, auditoriums—architects, decorators and owners are designing for safety, including in their plans these decorative, noncombustible fabrics of Fiberglas.

Many attractive weaves and colorful patterns are available—and expert fabric service shops located in principal cities are ready to fashion and hang the draperies you select for your decorative scheme . . . write Owens-Corning Fiberglas Corporation, Dept. 830, Toledo 1, O.

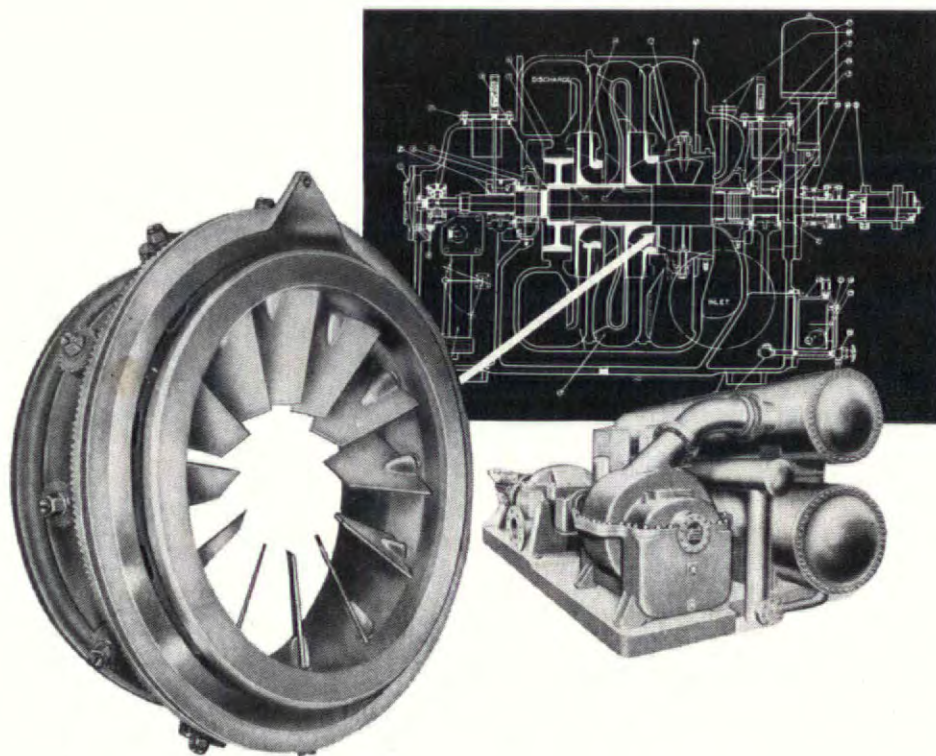
*In Canada: Fiberglas Canada Ltd., Toronto, Ontario.*

OWENS-CORNING  
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"Noncombustible Fabric".



**This is important to the man about to select refrigeration or air conditioning equipment:**



**90 percent Flexibility  
with Pre-Rotation Vane Control  
...exclusive with  
York Allis-Chalmers Turbo Compressor**

The Pre-Rotation Vanes illustrated are an exclusive design feature, and provide extreme operating flexibility to meet varying load demands down to as little as 10 percent of full load. Adjustment of the vanes varies the angle at which the refrigerant gas enters the impeller wheel, and imparts a "pre-rotation" to the gas, thus changing the performance char-

acteristics of the compressor resulting in stabilized performance over this extreme capacity range. In effect, each position of the vanes puts a different compressor "on the line."

This is but one of the many features of the complete York line of refrigeration and air conditioning products.

York Corporation, York, Penna.

***This TOO is  
important to the  
man about to select  
refrigeration or  
air conditioning  
equipment***

York experience and York engineering assistance are available *where you are*, to complement York mechanical design advancements and the complete range of York equipment.

In the New York Area, for example, District Manager Christensen has a corps of seventeen sales engineers assigned to service York customers in this district. Their practical and technical assistance is available to you, whether you are planning, purchasing, installing or operating refrigeration and air conditioning installations.



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**YORK** *Refrigeration and  
Air Conditioning*



HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885



# Now! Even Hard-to-Heat Homes Can Be Heated with *Base-Ray\* Radiant Baseboards*



The greater heat output of Hy-Power BASE-RAY is achieved through the use of vertical fins on the back of the unit, with air inlets at the bottom and outlets at the top. This type of BASE-RAY radiant baseboard is recommended for rooms or homes requiring extra heat and for rooms where baseboard space is at a minimum.

With Standard and Hy-Power BASE-RAY the architect is in a position to solve a great variety of heating problems with Radiant Baseboard units. Both types are simple to install. Neither requires any structural change, in old or new dwellings. Both can be used with any hot water, two-pipe steam or vapor system.

Aside from the obvious design advantages of Burnham BASE-RAY heating, these cast-iron baseboard units offer modern *Radiant Heating* in its best and simplest form. National advertising is continuously informing your clients of the unique advantages of BASE-RAY radiant heating. It will pay you to get all the facts. Won't you mail the coupon TODAY?

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### MAIL COUPON BELOW FOR BOOKLET GIVING COMPLETE INFORMATION ON BASE-RAY RADIANT BASEBOARDS

It gives ratings and installation data which will bring you up-to-date on this new and simple form of RADIANT heating.



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Please send me copy of "Ratings and Installation  
Guide on BASE-RAY Radiant Baseboards".

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This front of L·O·F Polished Plate Glass says "welcome" in clear, bright tones. The view of the interior creates an impression of pleasant efficiency.



**TWA**

**URNS AN OPEN FACE  
TO ITS PUBLIC**

Count on this modern business to use up-to-date architectural treatment in its new Chicago ticket office.

Designed by Architects Skidmore, Owings & Merrill of Chicago for Trans World Airline, this beautiful "store" uses glass to let people see in—to invite them in. Its pleasant atmosphere owes much to intelligent use of glass. It is another example of a Visual Front—the "open" type front that puts more appeal, more zest and more selling power into business places. Libbey-Owens-Ford Glass Co., 6437 Nicholas Bldg., Toledo 3, Ohio.



**A** This stairway is smart in more than appearance. The transparent panels of glass are L·O·F Tuf-flex\*—plate glass that is tempered for greater resistance to impact.

**B** Light from the "egg crate" ceiling streams through diffusing panels of Flutex Patterned Glass. Note how the fixtures extend through the front to provide a lighted marquee.

\*Reg. U.S. Pat. Off.

VISUAL



**LIBBEY·OWENS·FORD**  
*a Great Name in* **GLASS**



Beauty is  
a Matter of  
Perfection



The perfect Venetian Blind is made of —

• Here is the new, durable, fireproof Venetian Blind that will render your clients a lifetime of satisfaction and beauty. Made of light, precision-formed flexible aluminum alloy...  $\frac{1}{3}$  the weight of ordinary blinds... Flexalum is the modern approach to window beauty. Flexalum's satin-smooth plastic finish blends with every decorative setting, resists weather stains and cleans with the flick of a brush. Flexalum is rust-proof, warp-proof, will not crack, chip or peel. The *perfection* of Flexalum makes it first choice for homes, offices and institutions.

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*Ask your manufacturer of custom-made Venetian Blinds  
to give you complete specifications for Flexalum.*

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The Architectural

# FORUM

Magazine of Building



A PLATE GLASS PANEL  
BETWEEN OPPOSED  
ROOF ANGLES LIGHTS  
THIS HANDSOME FOYER

*Maynard L. Parker, photo*



# Hilltop house has a living room roof built like an airplane wing

HOUSE IN ROSS, CALIF.

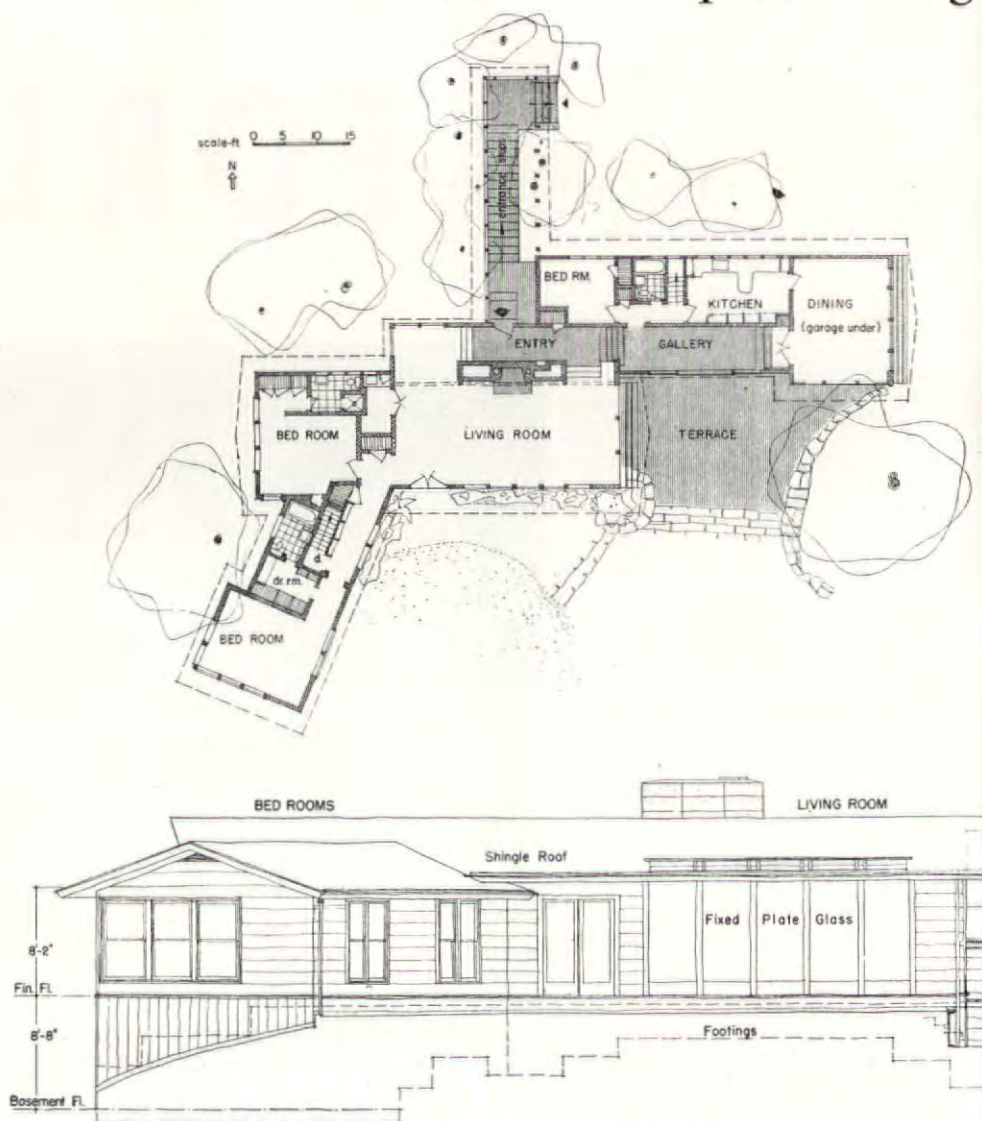
MR. & MRS. L. E. DAVID, Owners

GARDNER A. DAILEY, Architect

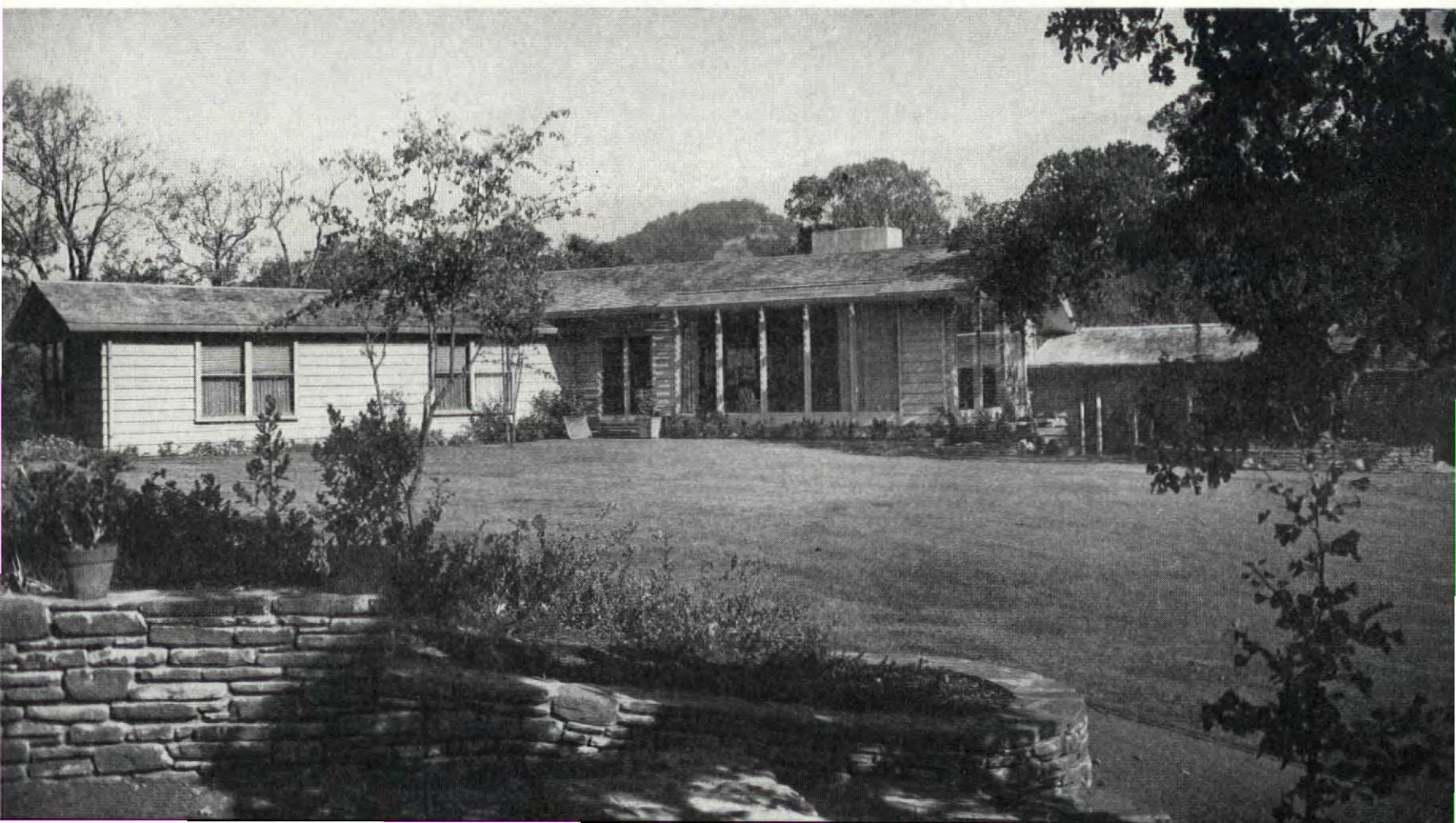
Gardner Dailey is probably the leading designer in his area of those easy, handsome, indoor-outdoor dwellings that lie so gracefully on California's sunny hills. On these and the following pages are two examples of diverse types he has designed: a low, rambling residence on a wooded slope, contrasted with a slim, compact apartment house on a city hill.

This house is in wooded Marin County, on the north side of San Francisco Bay. In order to preserve the trees, very little grading has been done; thus, the house not only climbs, but floor levels rise and fall to suit the grade. The inaccessibility of the site made it impossible to reach the top of the hill by car, so the garage is on the lower level. From there brick garden steps, covered with a long sloping roof and protected by glass on one side against prevailing winds, lead upward to the house, where the brick garden walk continues on into a sunny porch. The changes of level create an interesting interlacing roof-line that keeps step with the hill—a feature often found in early California mining towns.

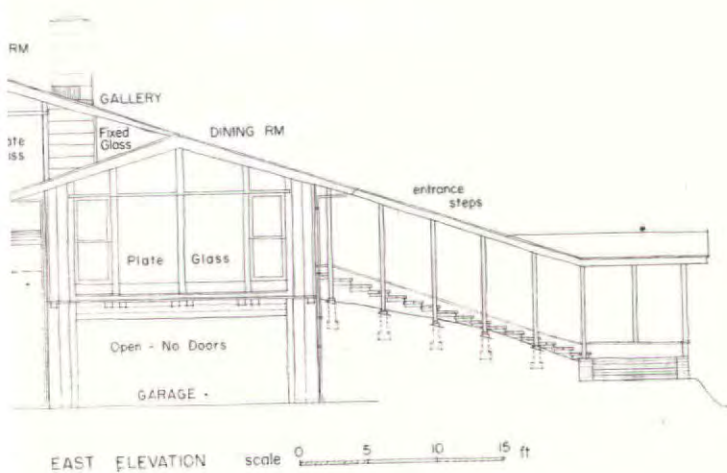
The roof over the living room is one of the first "internally braced" roofs used in a residence, and is based on the same construction principle as an airplane wing, eliminating cross ties. It is tapered at the end in the same way as an airfoil. This principle has since been developed by the architect in a "skin-stressed" panel roof construction.



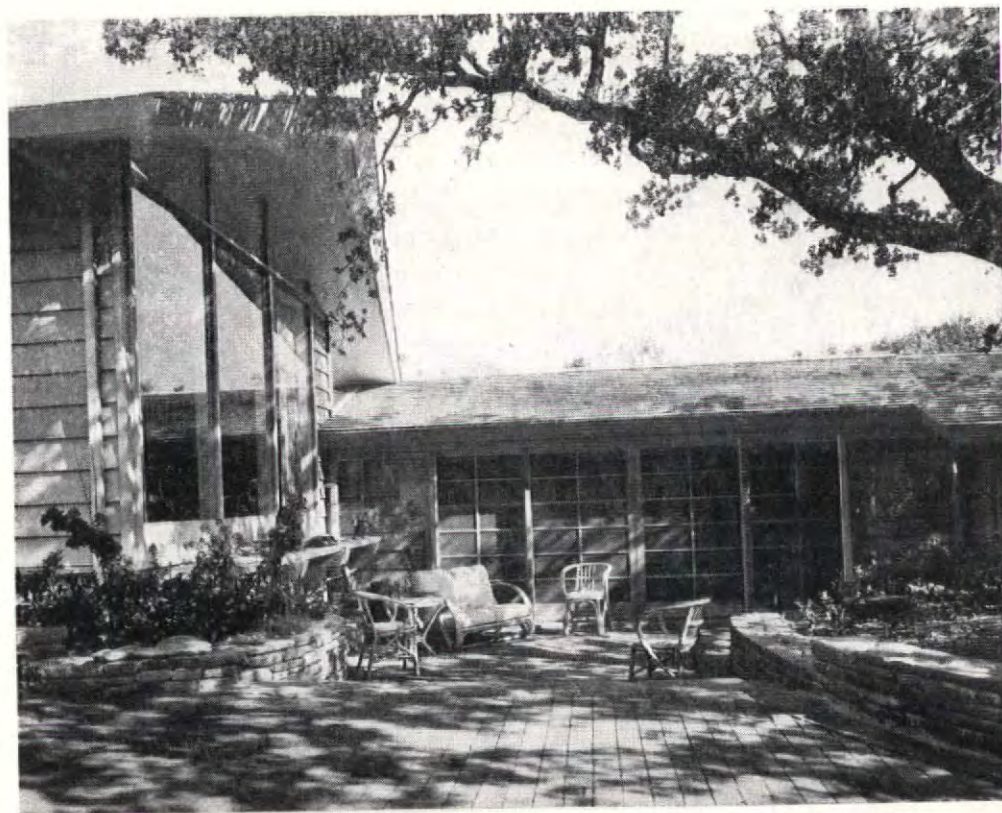
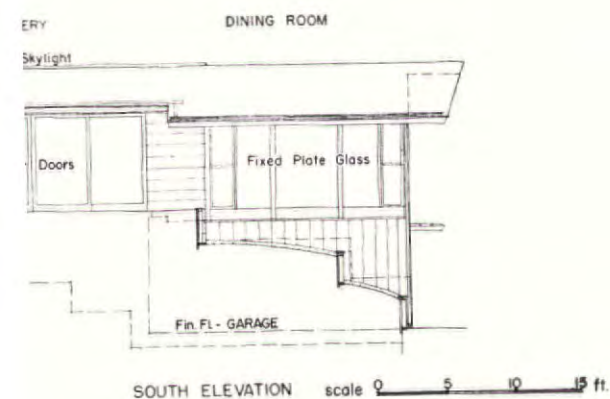
ASHLAR RETAINING WALLS AND NEAT LEVEL LAWN AREA RESTRAIN THE NOTORIOUSLY EBULLIENT CALIFORNIA LANDSCAPE







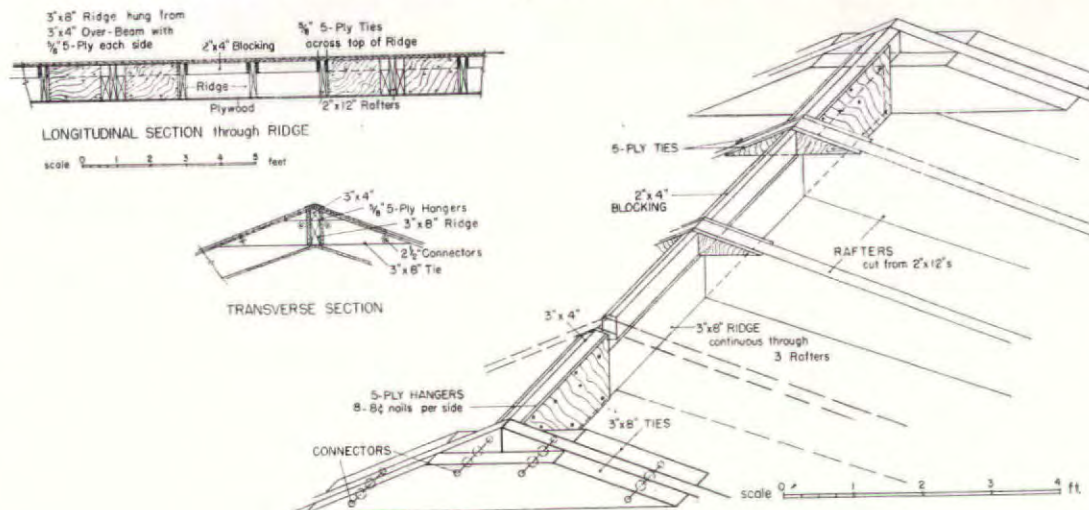
LIVING ROOM HAS BIRDS EYE VIEW OF TERRACE AND DINING ROOM



OPEN TERRACE ADJOINS GLASSED-IN GALLERY AREA ON LOWER LEVEL

# CONSTRUCTION OUTLINE

FOUNDATIONS—reinforced concrete. STRUCTURE: Exterior walls—California redwood. ROOF—redwood shingles. FIREPLACE—concrete blocks. SHEET METAL WORK—16 oz. soft copper. WINDOWS: Sash—sugar pine. Glass—double strength, Pittsburgh Plate Glass Co. Weatherstripping—Chamberlain Metal Weather Strip Co. FLOORS: Main rooms—oak. Kitchen and bathrooms—linoleum, Armstrong Cork Co. WALL COVERINGS: Living room—white pine plywood; remainder—plaster. PAINTS—W. P. Fuller & Co. HARDWARE—Sargent & Co. ELECTRICAL INSTALLATION: Wiring—knob and tube. Switches—tumbler. KITCHEN EQUIPMENT: Range—General Electric Co. Dishwasher—Hot Point, Edison General Electric Appliance Co., Inc. BATHROOM EQUIPMENT—Kohler Co. PLUMBING: Soil pipes—cast iron. Vent pipes—wrought iron. Branch lines—galvanized iron. HEATING—forced warm air, Customair, Nelson Air Device Corp.





# Telegraph Hill apartment is angled for the view

APARTMENT IN SAN FRANCISCO, CALIF.

GARDNER A. DAILEY, Architect

MOORE & MADSEN, General Contractors

The windows of this small apartment building project to catch the view of San Francisco Bay. Crammed into an inside 25 ft. lot, the building was limited to three floors for living purposes by local ordinance. The architect says, "In size, it is in the 'Parlor-Bedroom-and-Sink' class although the term 'Studio' seems to describe it more elegantly."

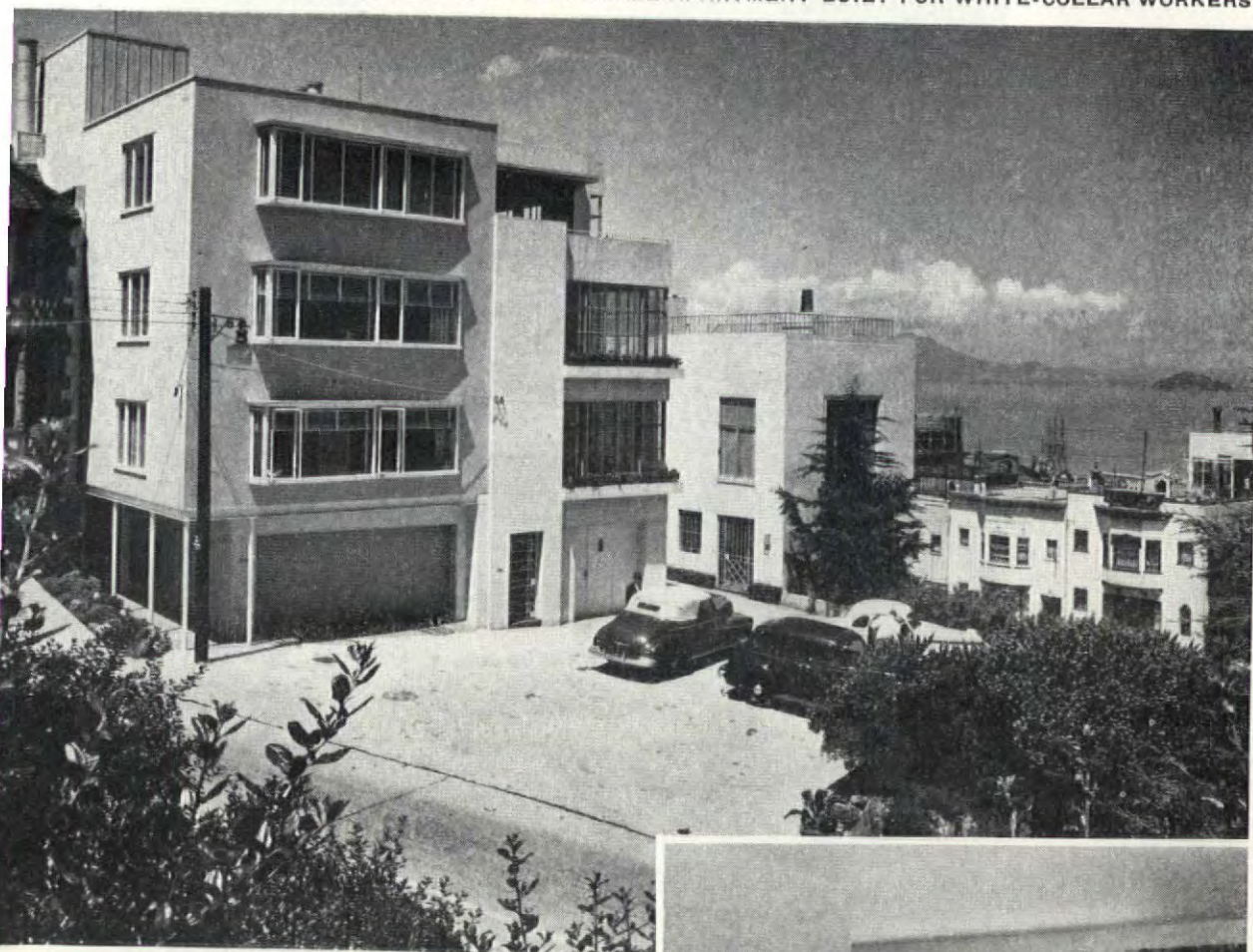
There are six complete apartments, two on each floor. All waste space has been eliminated, and the living room and bedroom areas are one, with a folding screen for privacy in the sleeping end. A metal kitchen unit is recessed into the wall, and each tenant has his own furnace and water heater.

A feature of the design is the exposed concrete wall of the garage on the ground floor and the structural steel of the first floor support, also exposed, revealing the structure of the building. Upper walls are sheathed in redwood.

Roger Sturtevant,  
photos

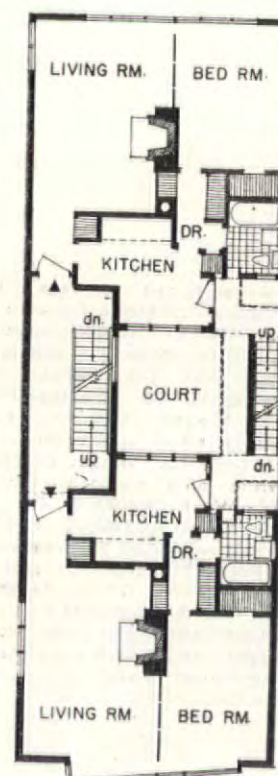
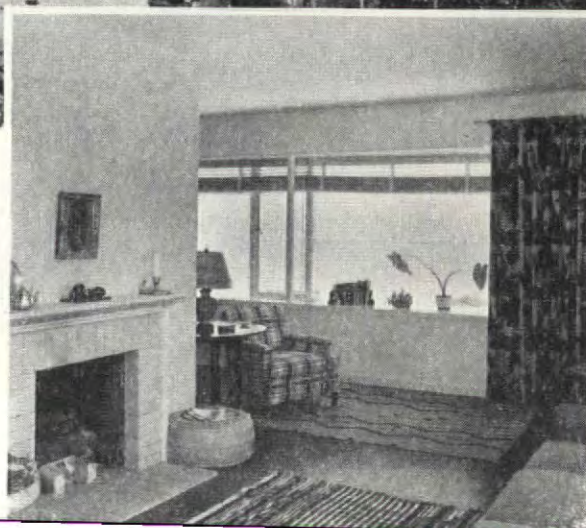


EVERY INCH OF SPACE COUNTS IN THIS SMALL APARTMENT BUILT FOR WHITE-COLLAR WORKERS



## CONSTRUCTION OUTLINE

**STRUCTURE:** Exterior walls—redwood over Douglas fir sheathing. **WINDOWS:** Sash—steel, Soule Co. **FLOOR COVERINGS:** Kitchen—linoleum, Congoleum-Nairn, Inc., baths—tile. **FURNISHINGS:** Kitchen unit—Acme Metal Products Corp. **PLUMBING:** Fixtures—Kohler Co. **HEATING:** Gas fired forced warm air, Dustomair, Nelson Air Device Corp. Regulator—Minneapolis-Honeywell Regulator Co. Water heater—Pittsburgh Water Heater Co.



0 5 10 15 20 25  
SCALE

TYPICAL FLOOR PLAN



# New England house is modern counterpart of colonial neighbors

*Eara Stoller photos*

HOUSE IN DOVER, MASS.

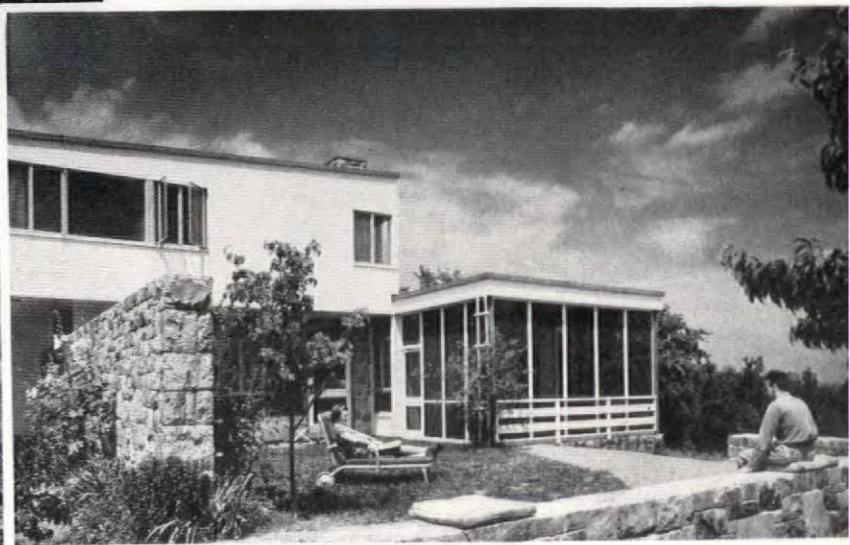
MR. & MRS. CHARLES JACKSON JR., Owners  
ELIOT F. NOYES, Architect  
G. HOLMES PERKINS, Supervising Architect  
ELEANOR HAMMOND, Landscape Architect  
HORN BROTHERS, General Contractors

In the early days, New England tradition produced many a trim, boxlike white house with central field-stone chimney, around which there followed an evolutionary growth of the house, wing by wing. This early architectural tradition had much in common with the classic simplicity of the modern international style. The house shown here is a natural combination of the two trends.

The owners describe the qualities they have discovered in their house: "One has claustrophobia in ordinary houses after living in a modern one. We wouldn't change any of the basic features: We think that the exterior of the house (our relatives to the contrary notwithstanding) is well proportioned and fits into the hillside and background of trees. The view to the east is a continued joy through the large windows. To the north we look out on woods and hillside at closer range and the picture changes with the seasons. The large windows let in light and allow one to enjoy a snowstorm from a cozy spot beside the fire. The sun warms up the house very quickly through the large expanse of glass.

"The simplicity of the walls, with their large plain surfaces, shows our antique furniture to great advantage. Lack of molding and paneling makes the house easy to keep clean. The arrangement of kitchen, pantry and dining room is compact and allows the least possible waste of steps and effort."

"THE HOUSE IS WELL-SUITED TO THE LOCATION . . .  
. . . WITH VIEW OF TOWN AND COUNTRY TO THE EAST."







"FAMILY HEIRLOOMS FROM DARK CORNERS . . .

. . . NOW STAND OUT IN ALL THEIR TRUE VALUE WHERE ONE CAN REALLY SEE AND ENJOY THEM."

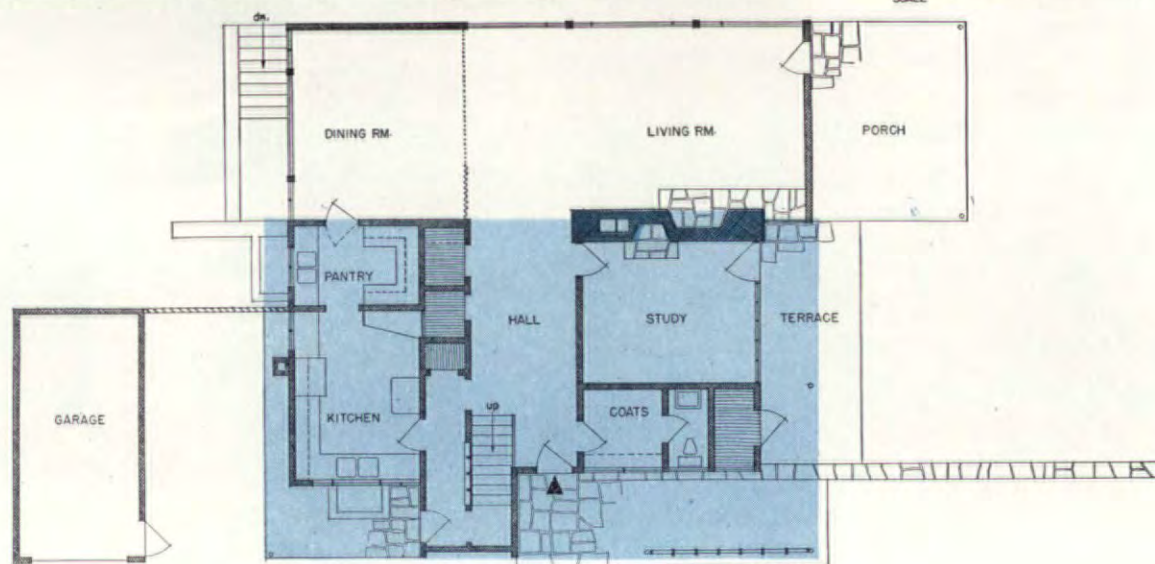
As in so many of the house's earlier prototypes, the central core of stone holds several fireplaces: two on the ground floor, one in the main second-floor bedroom, one in the basement playroom. The well-designed stonework forms a considerable portion of the wall surface in these rooms; and is repeated outside in a projecting wall sheltering the south terrace.

The house was designed to provide for expansion to the north on either or both floors. An extension is already being developed for a laundry and maid's quarters on the first floor, additional bedrooms on the second floor.

*Ezra Stoller photos*



0 5 10 15 20 feet  
SCALE



FIRST FLOOR





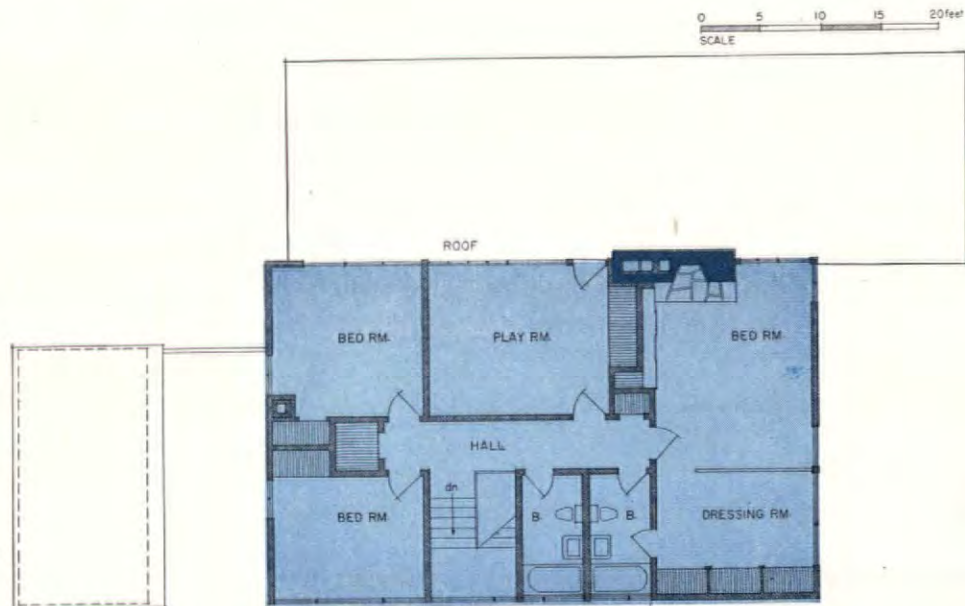
"WE LIKE THE PLYWOOD WALLS, PARTICULARLY THE UNPAINTED ONES."

"THE SELECTION AND ARRANGEMENT OF  
THE STONework HAS BEEN VERY GOOD."



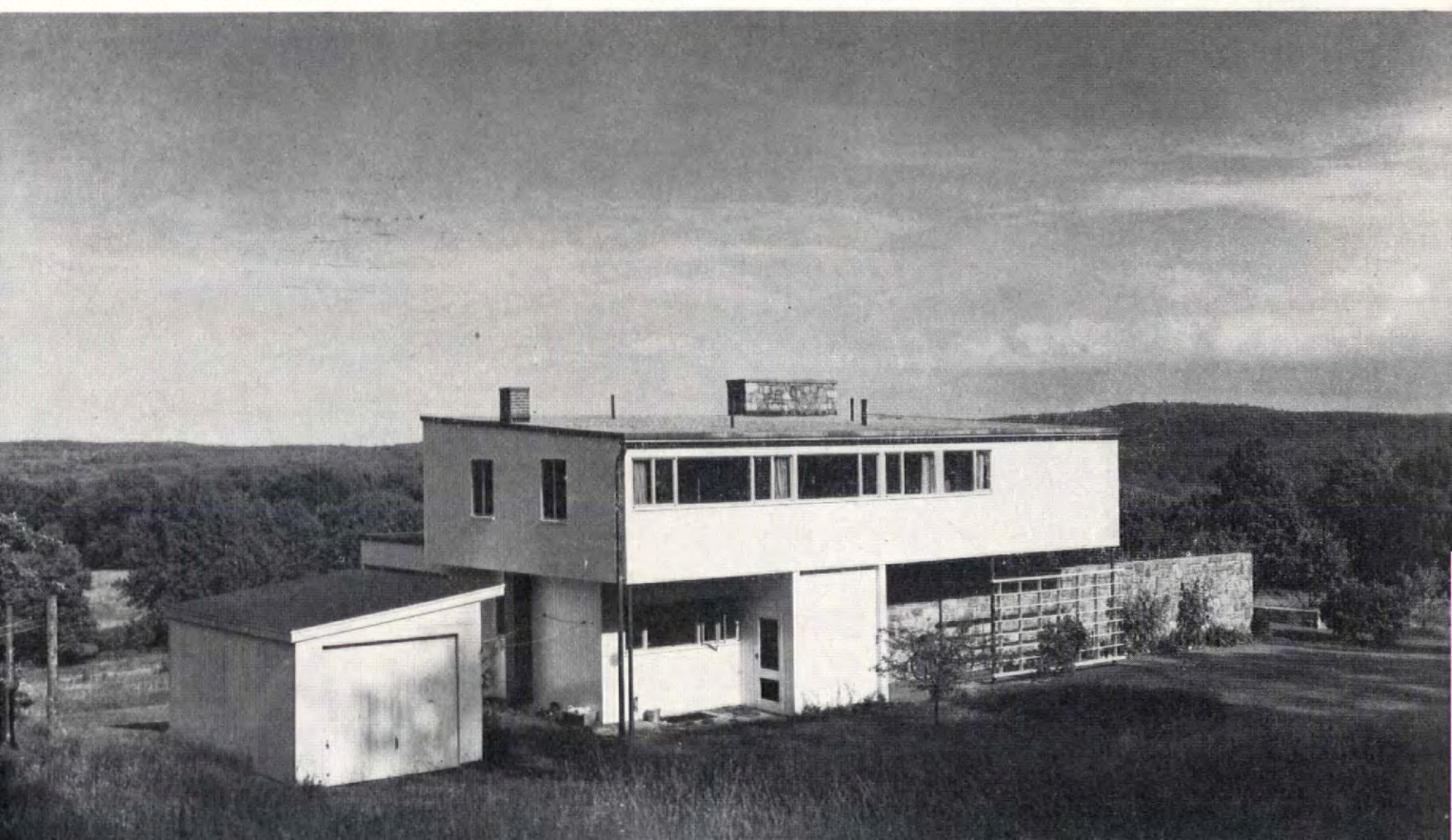
## CONSTRUCTION OUTLINE

FOUNDATION—concrete. STRUCTURE: Walls—plywood, vertical siding, sheathing, studs and insulation. Ceiling finish—plywood, painted. INSULATION—Red Top insulating wool, U. S. Gypsum Co. Roof insulation—Johns-Manville. FIREPLACE: Damper—H. W. Covert Co. WINDOWS: Sash—steel, Hope's Windows, Inc. Glass—Penn-vernion, Pittsburgh Plate Glass Co. STAIRS: Treads and stringers—oak. Risers—white pine. FLOOR COVERINGS: Main rooms—oak. Kitchen—linoleum. Bathrooms—cork. ELECTRICAL INSTALLATION: Wiring system—AC. Switches—General Electric Co. KITCHEN EQUIPMENT: Range—AGA—. LAUNDRY EQUIPMENT: Washing machine—Bendix Home Appliances, Inc. BATHROOM EQUIPMENT—Kohler Co. HEATING—hot water system.



SECOND FLOOR

"THE FACT THAT THE BEDROOMS ARE NOT OVER THE LIVING ROOM EFFECTIVELY ISOLATES ONE FROM THE OTHER."





# Professor's house features separate-access study for student

HOUSE IN EVANSTON, ILL.

LAMBERT H. ENNIS, Owner

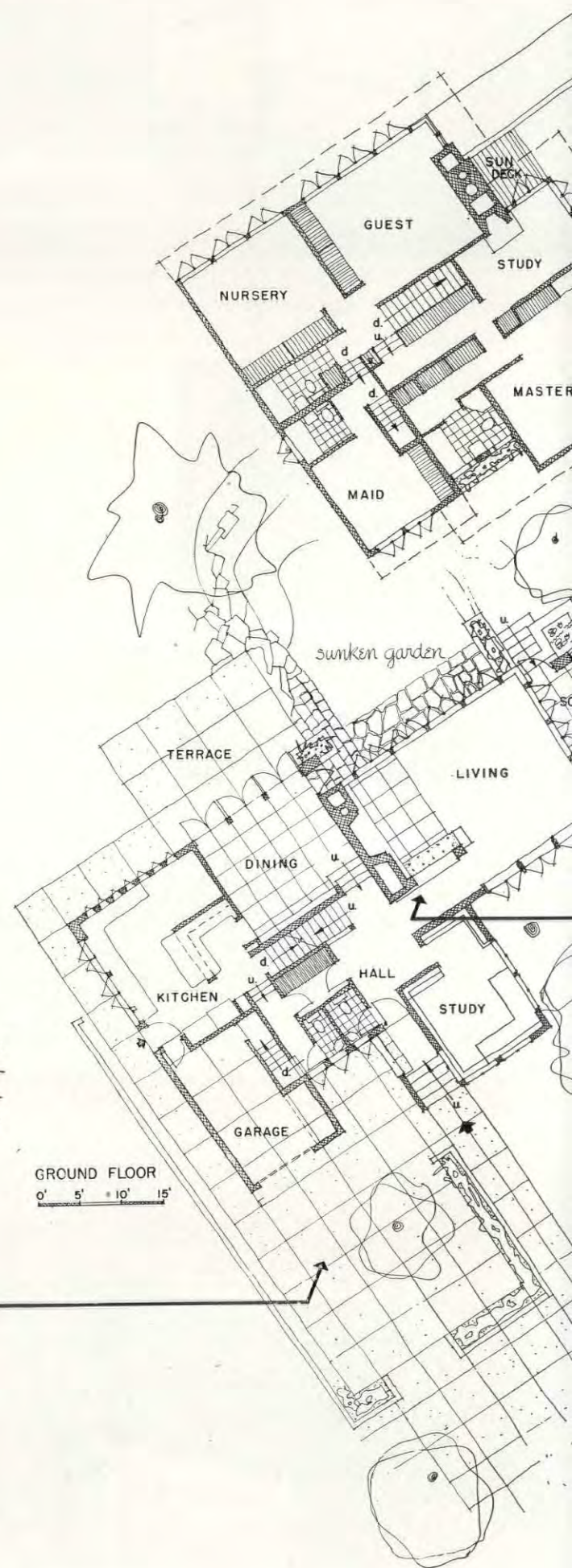
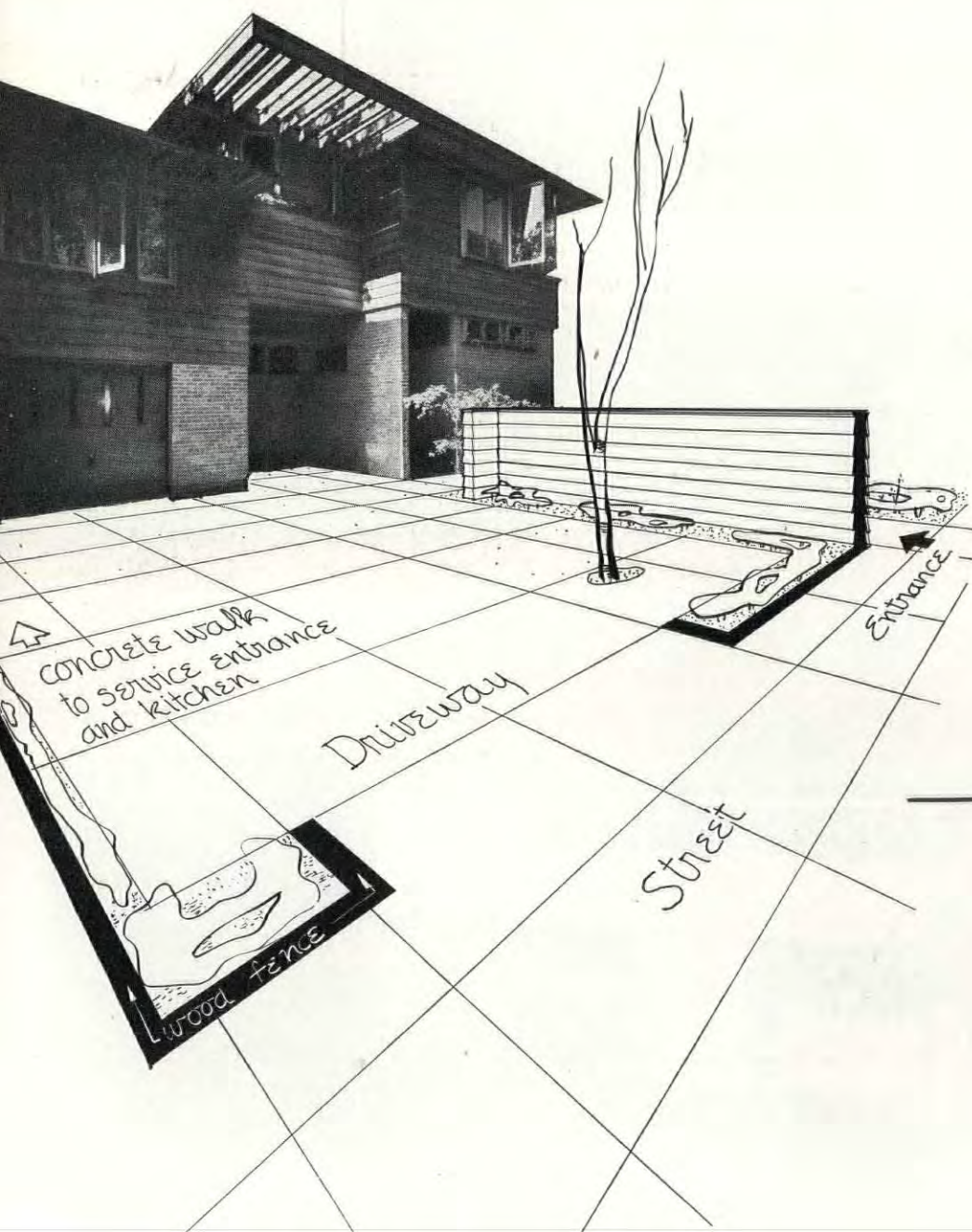
WILLIAM F. DEKNATEL, Architect

SAMUEL R. LEWIS, Consulting Engineer (heating)

Another regional tradition of U. S. architecture, quite different from the New England trend seen on the preceding pages, is followed in this large residence. Appropriately enough, it is located in the Chicago suburb near Oak Park where Wright built his first house.

Extremely restricted property somewhat influenced the design, as the house had to be planned within a rectangle 50 by 75 ft., located 6 ft. from the east property line and 27 ft. from the sidewalk. The lot is in a small subdivision of the estate of the late Daniel H. Burnham; due to stipulations in the deed, the street side of the house is treated as the rear and the orientation is actually south and west. Further restrictions of the Evanston building code determined ceiling heights and type of construction. Another was the professor-client's requirements for a study accessible to students without their intrusion into the normal life of the house. Also a study for his wife's writing, plus the usual living space for themselves and their one child.

Numerous substitutions of material were made to avoid critical items: a semi-mill type of construction was used rather than the originally planned steel beams, with each window mullion carrying a wood beam and the 5 ft. 4 in. space between spanned with 2 in. mill flooring. The radiant heating system is in the ceiling.







SECOND FLOOR



Hedrich-Blessing photos



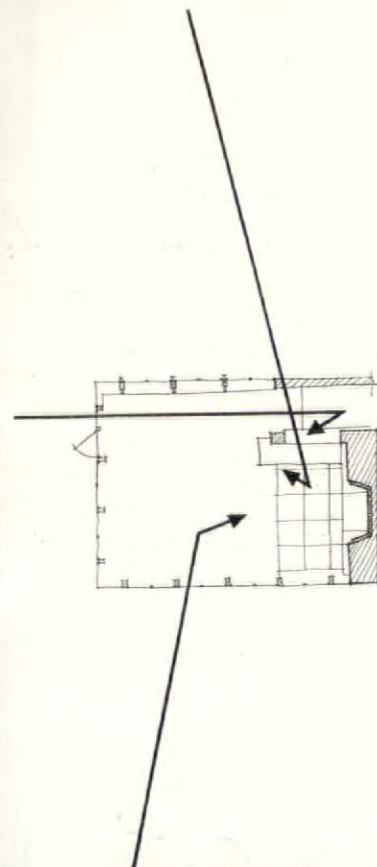
RIBBON WINDOWS ARE OUTSWINGING CASEMENT TYPE  
WITH GLAZED SECTIONS LAID AGAINST FRAMES OUTSIDE  
RATHER THAN SET INTO AND BETWEEN FRAMES





ENTRANCEWAY INTO LARGE LIVING ROOM  
IS SET OFF BY A LOW BUILT-IN SEAT

FORMING A MORE INTIMATE FIRESIDE CONVERSATION CORNER AT ONE END OF THE OPEN ROOM



#### CONSTRUCTION OUTLINE

FOUNDATION—concrete. Waterproofing—Minwax Co. STRUCTURE: Exterior walls—brick cavity walls, face brick finish inside and outside; part of second story cypress beveled siding; Vaporseal insulating sheeting, Celotex Corp., studs, Rocklath, U. S. Gypsum Co. and plaster. Floors—concrete or yellow pine. ROOF—tar and gravel. Deck—cypress planking. SHEET METAL WORK: Flashing—copper. Roof drains—Josam Mfg. Co. WINDOWS: Sash—casement. Weatherstripping—bronze, Reese Metal Weather Strip Co. Glass—plate or quality A, double strength. FLOOR COVERINGS—carpet, rubber tile or linoleum. DOORS—Roddie Lumber & Veneer Co. HARDWARE—Yale & Towne Mfg. Co. BATHROOM FIXTURES—Kohler Co. Shower—Henry Weis Mfg. Co., Inc. HEATING—radiant system. Boiler—Kohler Co. Regulator—Hoffman Specialty Co. Water heater—Bell & Gossett Co.







Julius Shulman, photos

## TICKET OFFICE

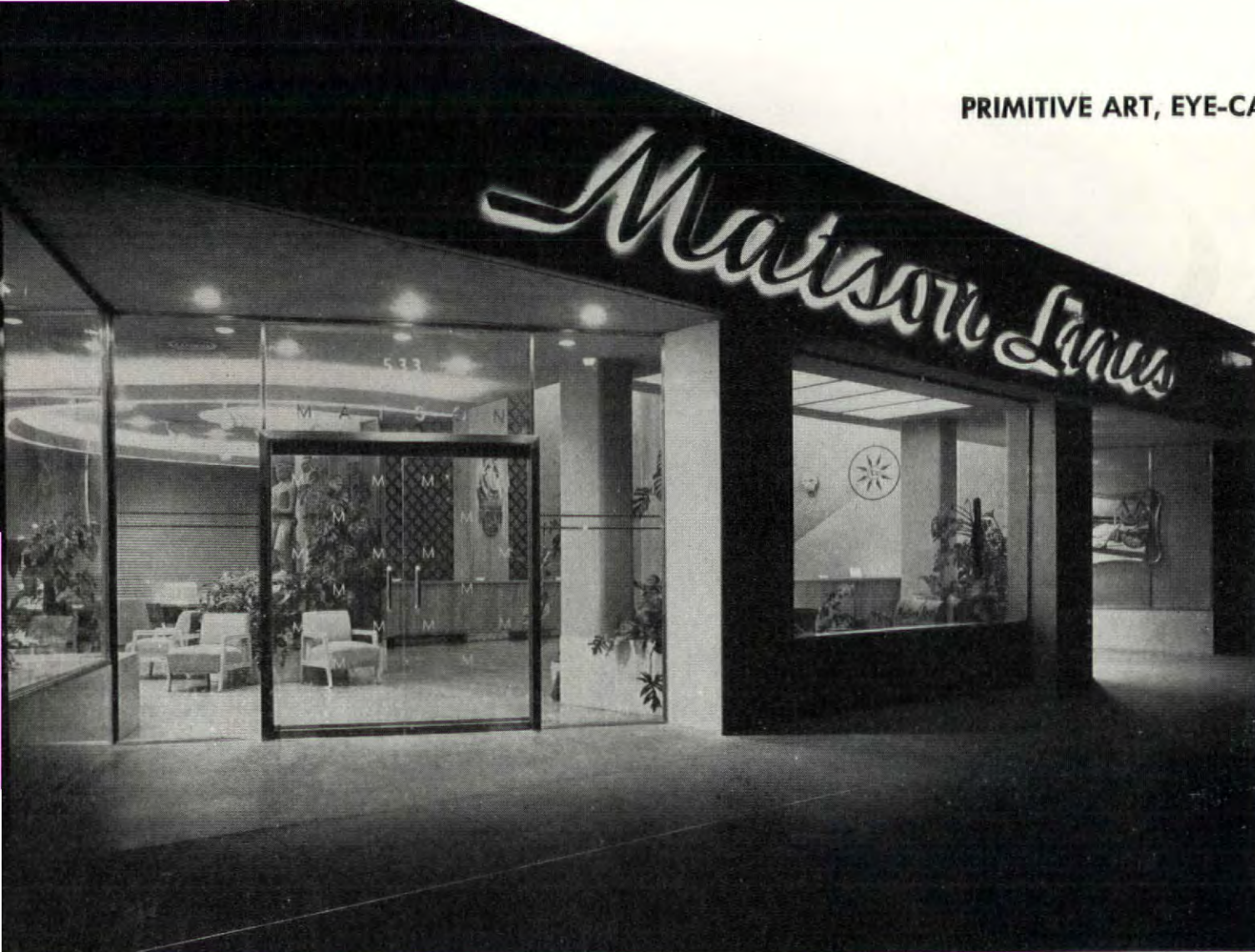


RAYMOND LOEWY ASSOCIATES, Designers  
 CHARLES STICKNEY, Structural Engineer  
 C. L. HESS, General Contractor  
 MATSON NAVIGATION COMPANY, Owners

One of the most competitive fields in a world to which peace is gradually returning is that of civilian travel. With the airlines challenging both steamship and railroad, a general renovation of equipment, facilities and service is everywhere afoot. The handsome new ticket office of the Matson Line in Los Angeles is an expression of this trend. It is a part of Matson's reconversion program and parallels the complete redesign of three of its liners—the Lurline, Monterey and Mariposa—which is also being done by the Loewy office.

Occupying a strategic position on Los Angeles' "Transportation Row," Matson's new office has a pleasant sales space, clearly visible from the street. This was an important design factor. One quarter of Matson passengers travel on business; although the tourist trade is fairly large, the company hopes to expand it—hence, the corner location and open front design. And because the Matson routes lie exclusively in the South Pacific (see map, p. 89), with tourist advertising geared to this fact, the company wanted a decor reminiscent of the South Seas. This, too, the Loewy office has artfully managed—without resorting to the ubiquitous palm leaf, coconut shell or grass skirt.





Julius Shulman, photos

OPEN FRONT, BROKEN ONLY BY PIERS OF BUILDING ABOVE, INVITES TOURIST DAYDREAMING ABOUT "THE ISLANDS"

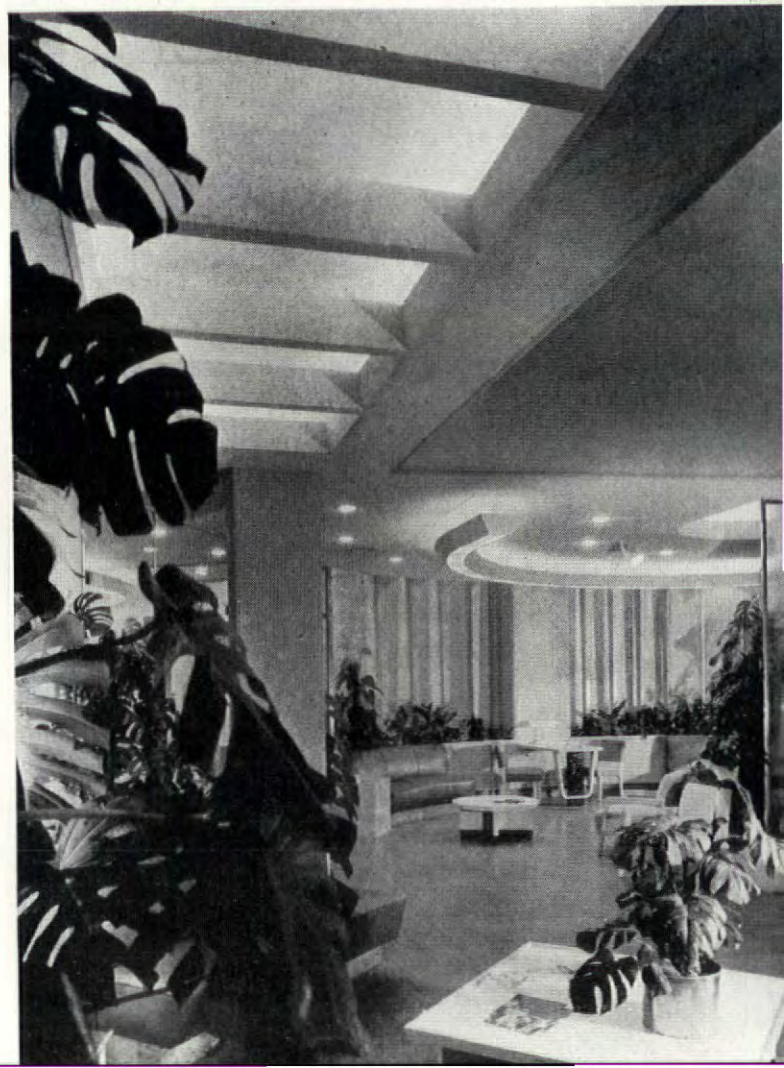
Located in an area of Los Angeles where airline, railroad, steamship and travel agencies predominate, the Matson office faces stiff visual competition. To meet this, the designers wisely chose to make the public lounge a display in itself, eliminating signs, placards and the whole paraphernalia of show-window design. Plywood, marble and flat color offer an effective foil for masks and sculpture by Janis Pette.

In addition to this public space—which by simple means manages to achieve quite a bit of atmosphere—the new Matson office provides space for handling passenger traffic, a separate freight department which opens on the side street, and administrative and general operations offices on the second story, including a mezzanine over the entrance.

#### FINISHES AND EQUIPMENT

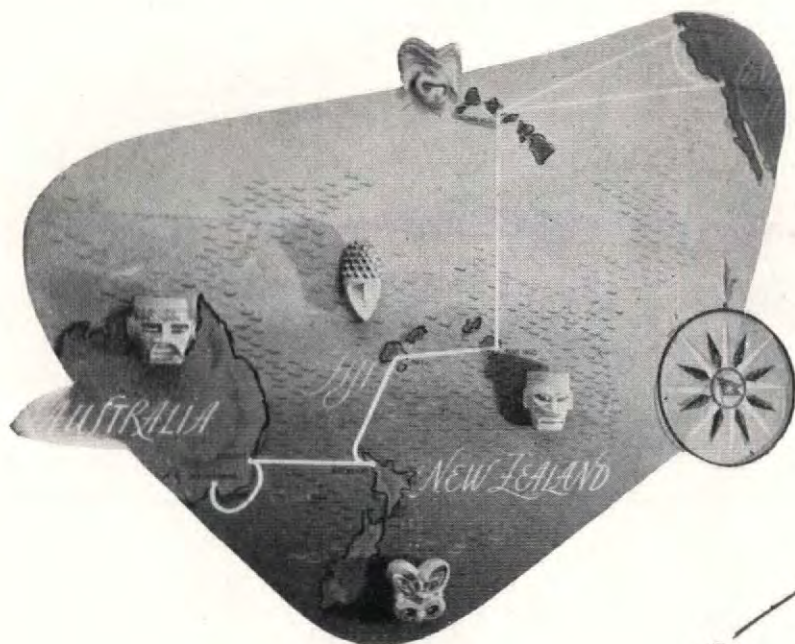
INTERIOR PARTITIONS—4 in. pressed metal studs, metal lath and plaster. SOUND INSULATION: Ceilings—acoustical plaster, Blue Diamond Corp. WINDOWS: Glass—Pittsburgh Plate Glass Co. FLOOR COVERINGS—asphalt tile, Armstrong Cork Co. WALL COVERINGS: Flexwood, U. S. Plywood Co., and bleached Honduras mahogany. Medallions—cast plastic hardened plaster. Exterior wall facing, column base and sign background—marble, Edward Lohr Co. FURNISHINGS: Counter and desk tops—Formica, Formica Insulation Co. METAL TRIM—Cochran Izant Co. and The Kawner Co. HARDWARE—Schlage Lock Co. and Beverly Hardware Co. ELECTRICAL INSULATION: Wiring system—steel tube rigid conduit. Fixtures—Claude Seaman Co. PLUMBING FIXTURES—American Radiator-Standard Sanitary Corp. HEATING AND AIR CONDITIONING: Steam heating system. Air conditioning—Western Air & Refrigeration Co., refrigeration units by Westinghouse Electric & Mfg. Co. Regulators—Barber-Colman Co. NEON SIGN—Q.R.S. Neon Co.

BAYED END OF SALES SPACE SUGGESTS A SHIP'S LOUNGE

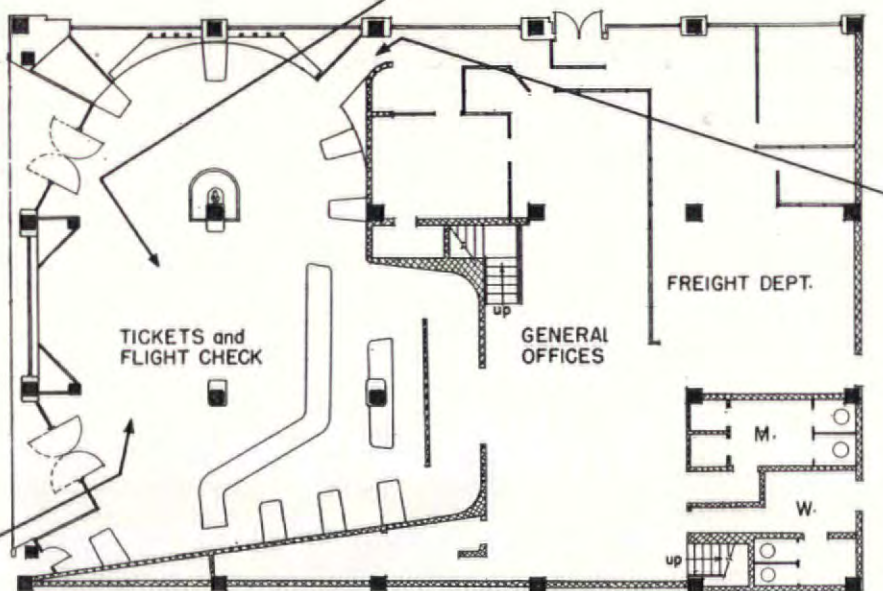




TROPICAL PLANTING are used by Matson Lines to sell passersby the idea of a South Seas cruise



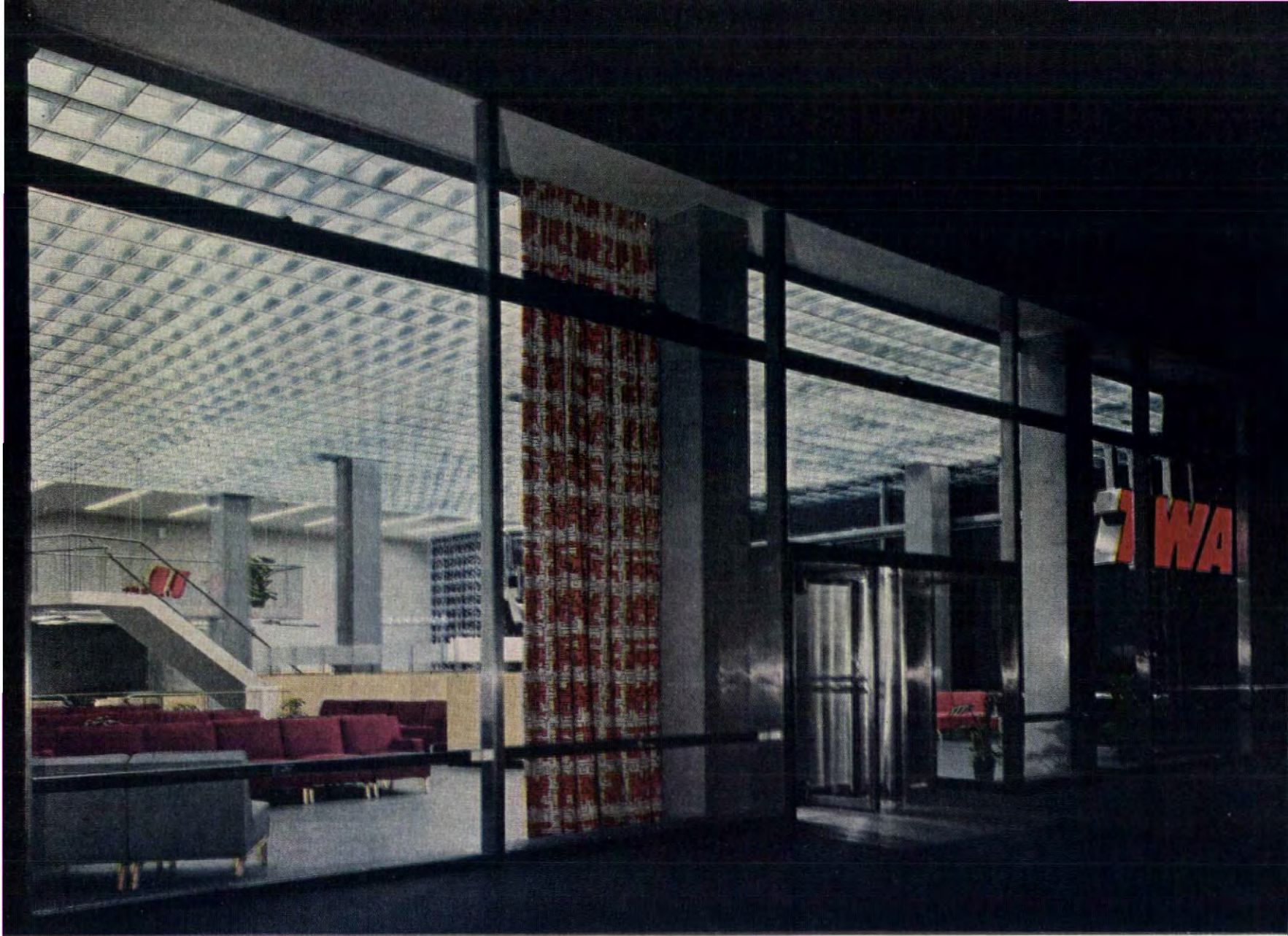
SCREEN BEHIND SALES DESK (ABOVE) CONCEALS RECORD FILE OF EVERY PASSAGE EVER BOOKED, PERMITS QUICK CHECK OF CUSTOMER PREFERENCES, RATES, TRIPS, ETC.



0 5 10 15 20 25 ft.  
SCALE







*Hedrich-Blessing*

# TWA TICKET OFFICE

SKIDMORE, OWINGS & MERRILL, Architects

THORVALD NIELSEN, CO., Contractor

TRANS WORLD AIRLINE, Owner

This crossroads air terminal in Chicago's busy loop was built as a combination travel bureau, passenger station and advertising feature, and will also serve as the basic design for TWA offices throughout the country. Its unusual service facilities, inviting lounge and strategic corner location make it an excellent example of the fusion of architecture and display techniques so important in modern commercial design. Most obvious feature is the illuminated eggcrate ceiling which extends throughout the main lobby and, on the south side, beyond the glass wall to provide exterior illumination. A number of devices are used to provide variety of form and texture. At rear, a delicate, glass-railed balcony breaks the smooth wall surface. A huge "map mural" enlivens the side wall and colorful draperies add interest to glazed areas.

CEILING PROJECTS BEYOND BUILDING LINE AT SOUTH



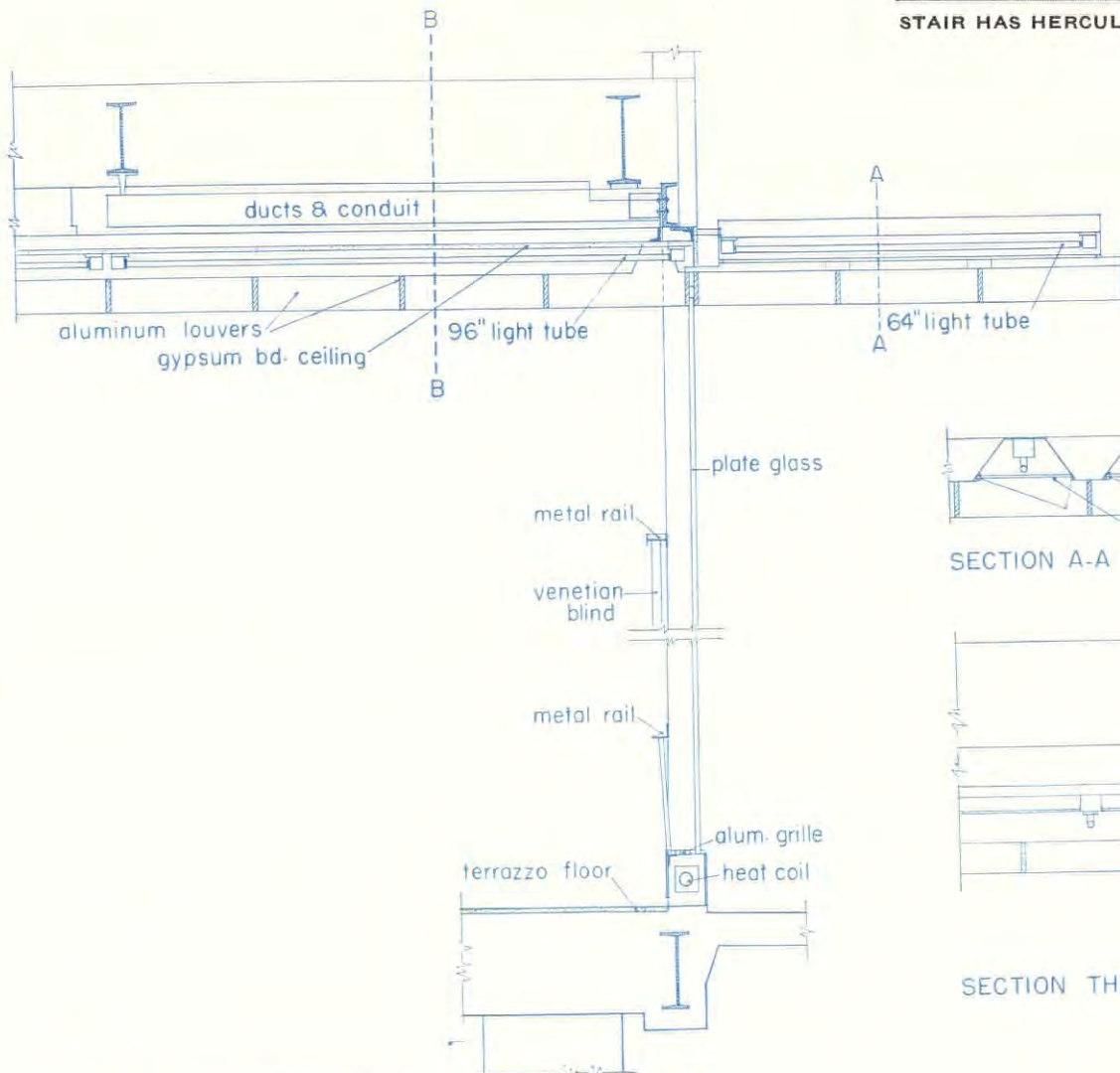


## LIGHTING

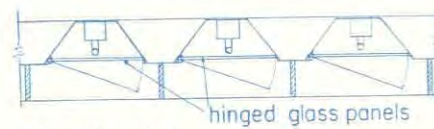
Except above the balcony where a dropped panel creates a variation in plane, the eggcrate ceiling forms a continuous pattern throughout the lounge of the air terminal. Louvers are solid aluminum bars with carefully machined key-type joints to allow for thermal contraction and expansion and with a brushed finish to reduce surface brightness. Fluorescent tubing, installed above the louvers, is attached to a continuous metal wireway set flush with a top panel of gypsum board. Sockets are attached to the wireway which also contains ballasts and circuit wiring. Below the lamps are hinged glass panels for diffusing direct light. Operated at 100 m.a., the tubes provide 35 ft. candles of light 36 in. above floor level in the center of the office, and 41 ft. candles at a height of 14 ft. above the floor. At the ticket counter, with a working angle of 30°, they provide 23 ft. candles.



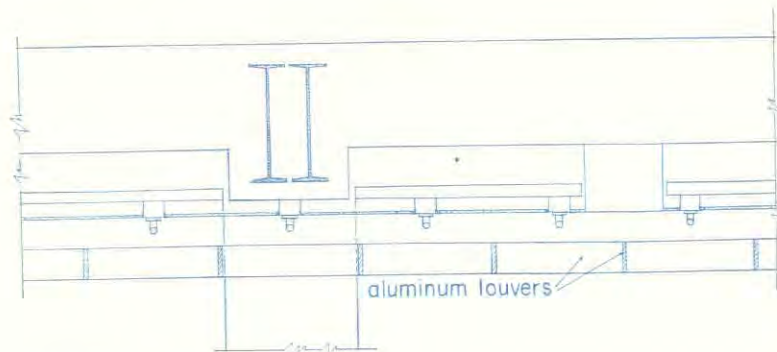
STAIR HAS HERCULITE RAILING TOPPED BY ALUMINUM HANDRAIL



SECTION THRU EXTENDED CEILING & SHOW WINDOW



SECTION A-A



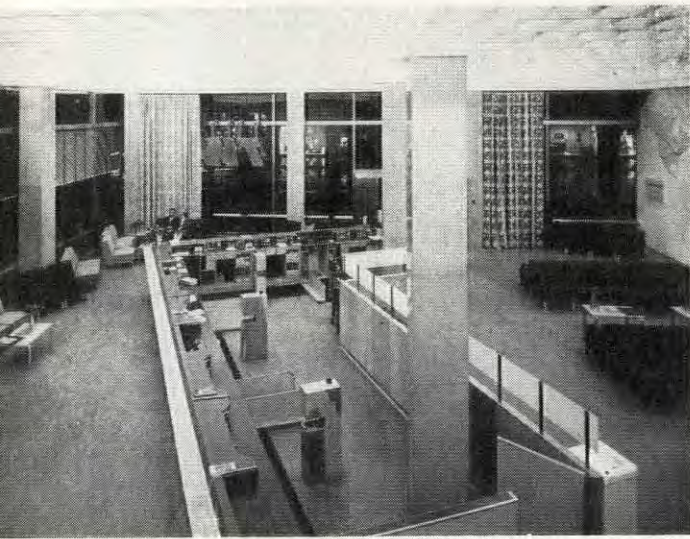
SECTION THRU GIRDER B-B





# Scientific routing of passengers and baggage eliminates rush and confusion, helps make travel a pleasure

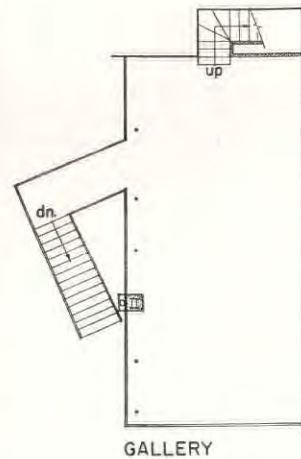
CHECK-IN COUNTERS (BELOW) COMPRISE FREE-STANDING UNIT ACCESSIBLE FROM ALL SIDES. WAITING SPACE (RIGHT) HAS HOMELIKE SOFAS, MAGAZINE TABLES



Vories Fisher



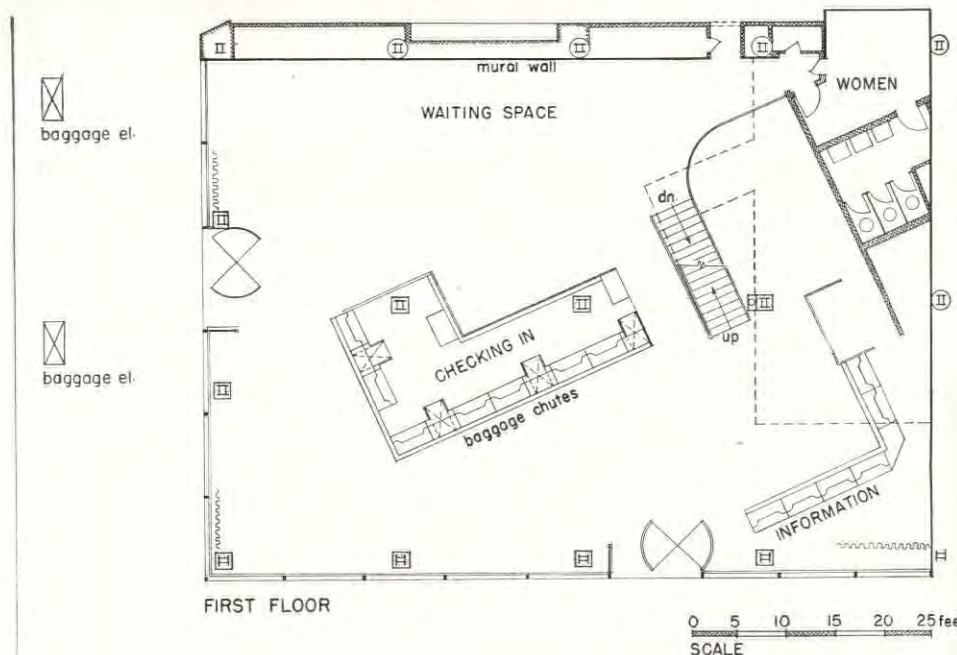
Hedrich-Blessing



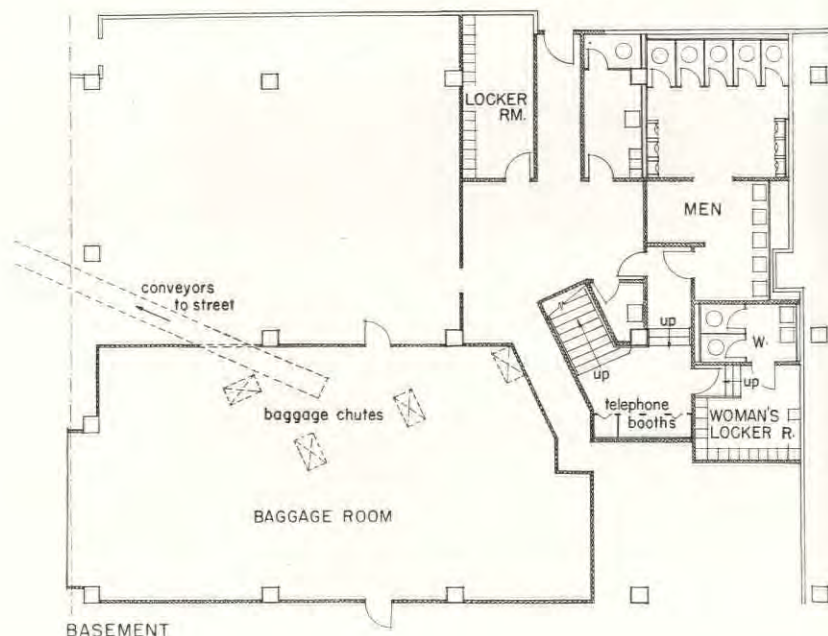
One of the terminal's best features is its simplified system of passenger and baggage service. To eliminate confusion at the ordinary all-in-one ticket counter, different operations have been separated and space allotted each according to need. Two units are included exclusively for handling reservations, two for information and nine for checking passengers in and out. Because traffic flow was an important consideration, these check-in stations have been placed at the lobby side nearest the limousine parking area. They are equipped with a conveyor system which carries baggage quickly to the lower level. Here it is stored until time to load the limousine, then brought up through a sidewalk opening next to the loading curb.

## FINISHES AND EQUIPMENT

**EXTERIOR WALLS**—polished plate glass, Libbey-Owens-Ford Glass Co. **FLOORS**—terrazzo. **FURNISHINGS**: Counter tops—Goodrich Tire & Rubber Co. Furniture—Artek-Pascoe and H. G. Knoll Associates. Draperies—Angelo Testa. Mural—Rainey Bennett. **ELECTRICAL FIXTURES**—General Electric Co. **PLUMBING FIXTURES**—American Radiator-Standard Sanitary Corp., U. S. Sanitary Specialties Corp. and Crane Co. **HEATING AND AIR CONDITIONING**—warm air system with filtering, humidification and cooling. Air supply and exhaust units—Clarage Fan Co. Grilles—Waterloo Register Co. Regulators—Johnson Service Co. **VENETIAN BLINDS**—Wright Venetian Blind Co. **CALL SYSTEM**—Illinois Bell Telephone Co.



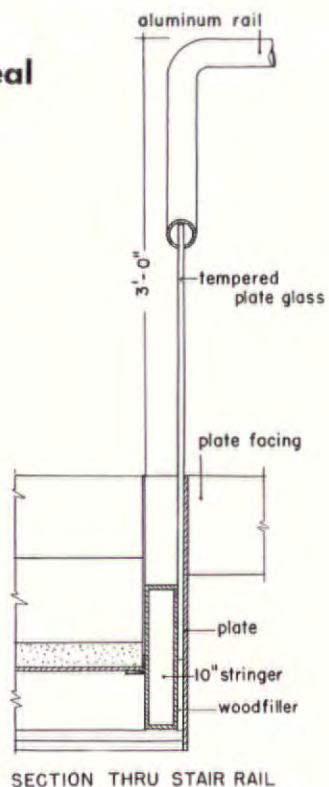
FIRST FLOOR



BASEMENT



rather than an ordeal



STAIRS LEAD UP TO BALCONY, DOWN TO POWDER AND LOCKER ROOMS

*Hedrich-Blessing photos*

USE OF SPACED TROFFERS IN BALCONY CEILING EQUATES LIGHT INTENSITY TO LOWER LOBBY, ILLUMINATED BY MASS OF FIXTURES





# MILL GUEST HOUSE A friendly addition to an industrial plant proves a real asset.

EATON W. TARBELL

& ASSOCIATES, Architects

T. W. CUNNINGHAM, INC.,

Contractor

Since midsummer 1946, the Eastern Corporation, maker of writing papers in South Brewer, Maine, has had more than 200 enthusiastic three-day guests in this efficient house, and a total of 1,200 visitors are expected in 1947. The corporation decided to construct such a building to assure its visitors fine accommodations and meals, to save time in commuting from hotels in Bangor and to coordinate the many activities required by a short stay. In addition, the building serves occasional plant conferences and parties.

When the corporation approached Architect Eaton W. Tarbell for designs, the usual Maine log cabin seemed the only possible conception. But Tarbell convinced the owners that the warmth of the log cabin could be combined with the efficiency of modern design to

make a house far more adaptable to extremes of climate and the needs of the corporation. The president of the Eastern Corporation says, "We find the building extremely satisfactory, and look forward to its successful operation as a powerful instrument of service and good will over future years."

The guest house is placed at the top of a hill above the picturesque Penobscot River, and oriented so that the windows of the living-dining area open to the southwest toward a pleasant view of the paper mill. Station wagons bearing guests from plane or train are driven directly into a garage below the main floor of the house, where they can alight in shelter and ascend by an interior stair. Mill personnel enter by the door off the terrace, near a small parking area.

*P. A. Dearborn, photos*



HIGH SHED ROOF OF LIVING-DINING AREA IS FLANKED BY FLAT ROOFS OF BEDROOM WINGS. BROAD CHIMNEY SUGGESTS HOSPITALITY

MILL BY RIVER DOMINATES VIEW BOTH WINTER . . .



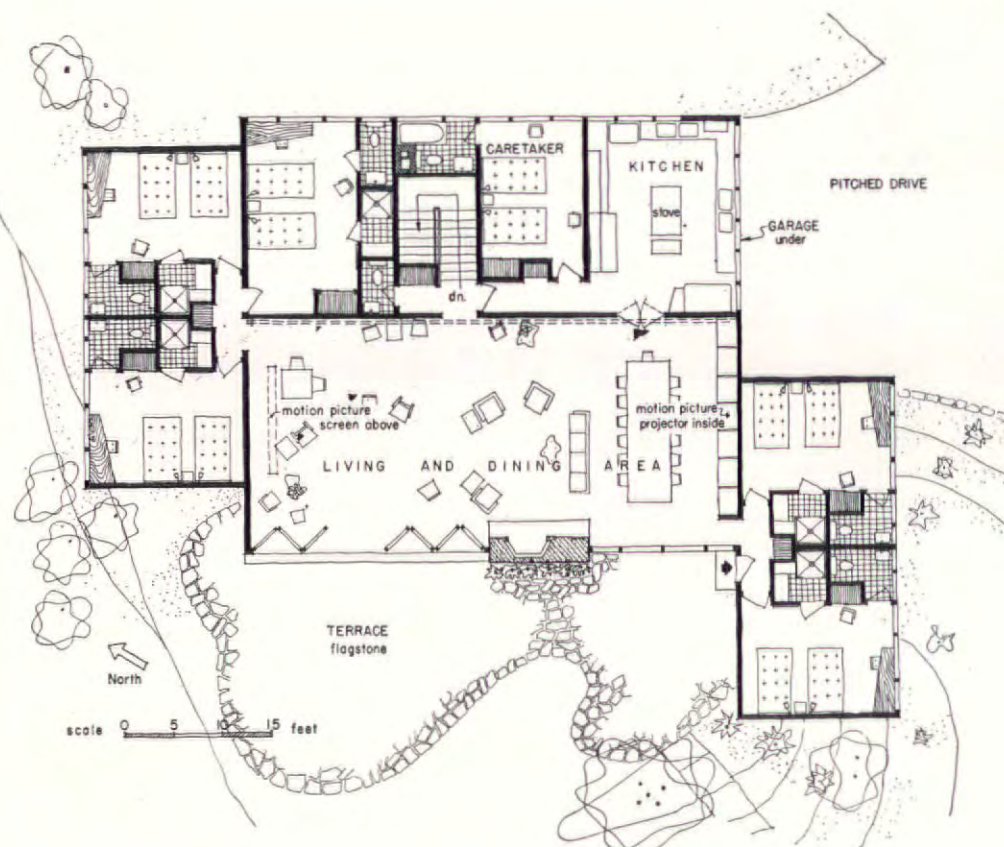
. . . AND SUMMER, WHEN GLASS DOORS FOLD BACK







INTERIOR OF LIVING-DINING AREA CAN BE REARRANGED FOR VARIOUS FUNCTIONS, FROM QUIET EVENING ABOUT FIRE TO BIG RECEPTIONS



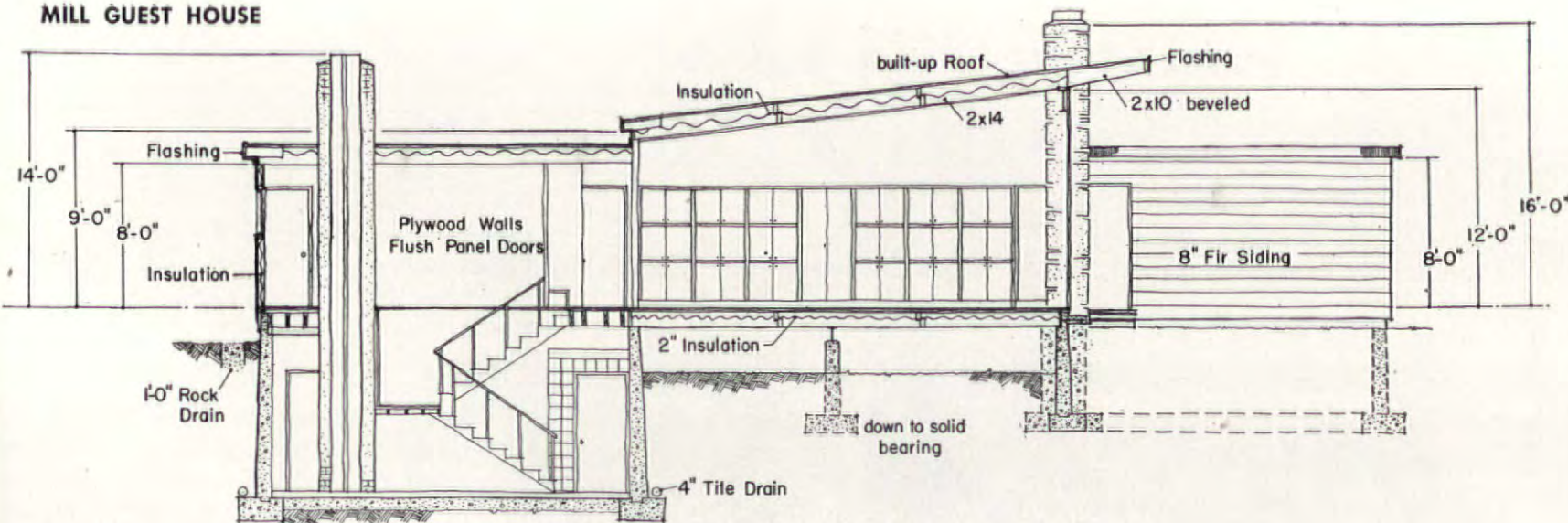
A large central room is adaptable to the many types of entertainment required. Opening off this room, near the end usually used for dining, is the kitchen, equipped with deep-freeze units and adjacent to the caretaker's suite. Guests are accommodated in two wings of two double bedrooms each. As bedrooms often may have to be shared by strangers, toilet and lavatory facilities are placed in a separate room from the shower, to provide privacy and double use.

EACH GUEST ROOM HAS A SEPARATE SHOWER





## MILL GUEST HOUSE



WALL CABINETS AT END HOUSE DISHES AND A MOVIE PROJECTOR



THREE TYPES OF WINDOWS USED IN BUILDING FLANK FIREPLACE



The structure of the guest house consists of reinforced concrete foundations supporting balloon framing in spruce, covered on the exterior by pine sheathing, building paper and fir siding, and on the interior by plywood, gypsum board or plaster. Lally columns and steel beams are used only on the longer structural spans. All ceilings are composed of asbestos acoustical units, while the main floors are of cork tiles.

Most of the chairs and other furniture are by Hans Knoll Associates. Architect Tarbell designed the large dining table and the built-in combination desk and chest-of-drawers in the bedrooms. A feature is made of table settings in pottery from the Powantrees Kiln, Blue Hill, Maine, in yellow, oyster white, and duckshead colors.

### CONSTRUCTION OUTLINE

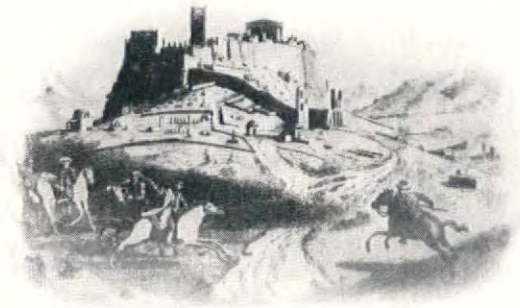
**STRUCTURE:** Exterior walls—fir, 15 lb. paper, pine sheathing, spruce framing; interior—plywood or recessed edged gypsum board or plaster. **ROOF:** Flexstone built-up, Johns-Manville. **SHEET METAL WORK:** lead coated copper flashing. **INSULATION:** Walls and ceiling—insulating wool, U. S. Gypsum Co. Ground floor—Balsam wool, Wood Conversion Co. Sound insulation—Johns-Manville. **WINDOWS:** Sash—wood. Glass—double strength. Glass blocks—Pittsburgh-Corning Corp. **FLOOR COVERINGS:** cork tile, ceramic tile or Kentile, David E. Kennedy. **FURNISHINGS:** Chairs and tables—H. G. Knoll Associates; Built-in—by architects. **DOORS:** Roddis Lumber & Veneer Co. Garage door—The Kawneer Co. **HARDWARE:** Richards-Wilcox Mfg. Co. **PAINTS:** L. Sonneborn Co. **ELECTRICAL FIXTURES:** Moe Bridges, Holophane Co. and Swivelier Co. **HEATING:** forced warm air, Johnston Service Corp.



# HOUSES USA

A brief review of the development of domestic architecture in America.

## Part II, 1820-1946, the Revivals and Eclecticism



### GREEK REVIVAL, 1820-1860 A NATION-WIDE STYLE

If the architectural forms of the Roman republic had seemed to Jefferson and Washington the ideal expression for the new country in 1790, the more serene Greek orders seemed even more appropriate to builders a scant generation later. The Greek Revival in the United States was a manifestation of the romantic enthusiasm for all things Greek which was sweeping the western world at the time. Architects and laymen alike were fired with sympathy for the contemporary Greek struggle for independence. The architectural forms of ancient Greece, which were available to them through the beautifully engraved measured drawings of the English archaeologists Stuart and Revett, took on symbolic as well as esthetic importance.

Starting in the northeastern cities, the movement achieved extraordinary breadth and vitality. All over the expanding country, in newly founded towns (which often were given Greek names), wooden temples rose beside the pioneers' first log cabins. Books on architecture, some published in America, spread far and wide not only the archaeologically correct Greek orders, but details which had been freely and creatively interpreted for contemporary use in wood. And local builders made their own reinterpretations. The temple form in houses was comparatively rare; more often, Greek porticos and decorative details appeared on houses which took the form traditional in the region or were planned with a new freedom to serve the particular needs of the family.

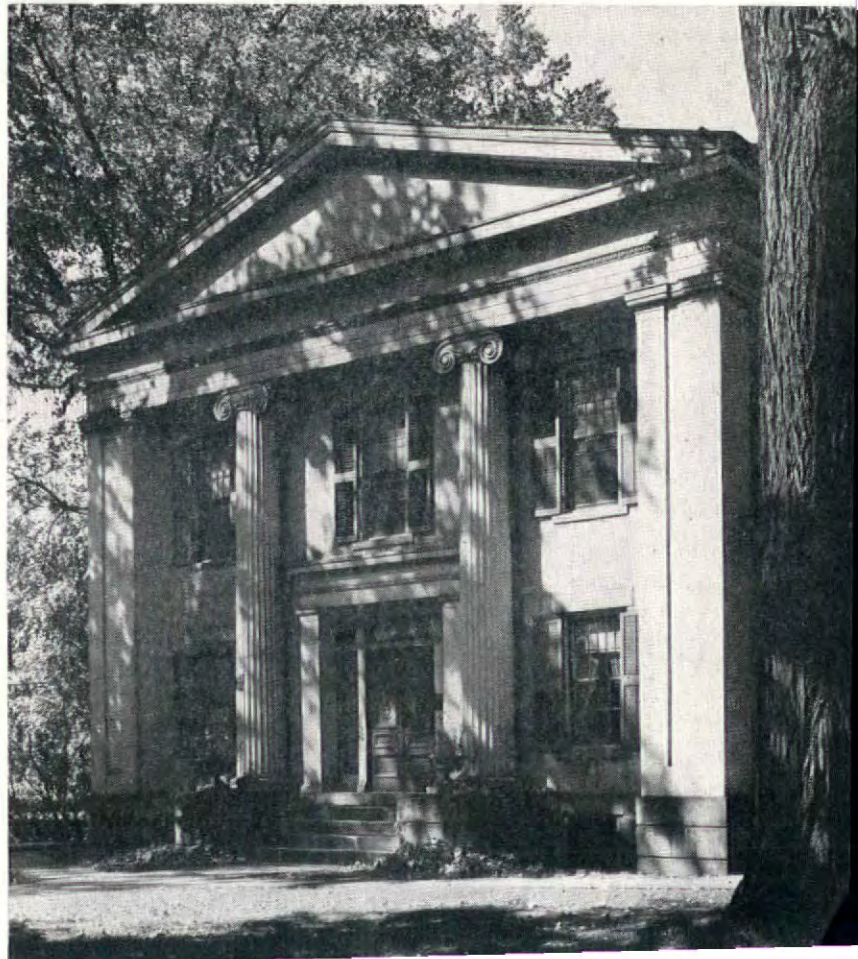
1.

A. L. Diment



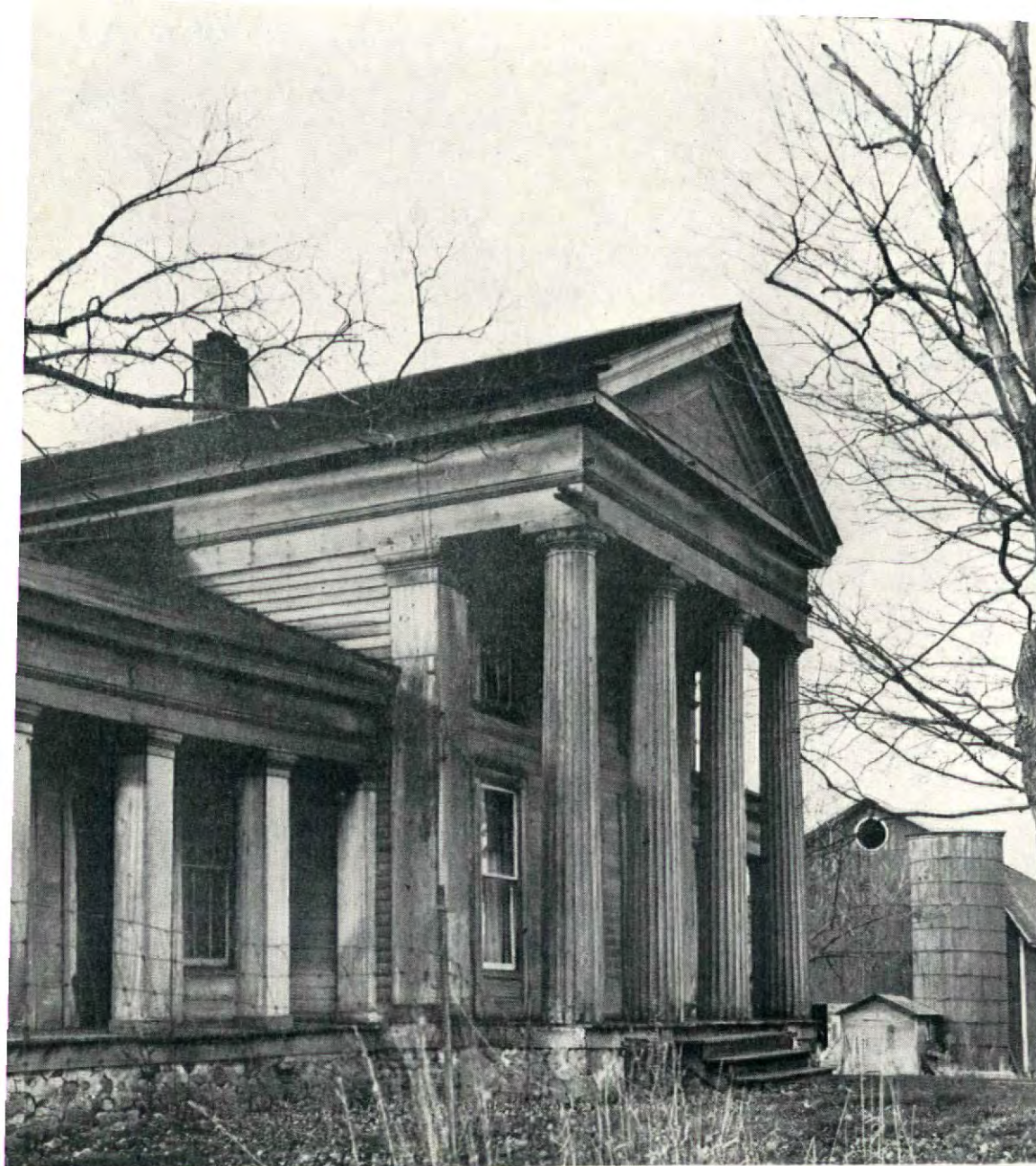
2.

I. T. Frary



*In the South, the shadows caused by an archaeologically correct portico, such as the Doric one at Berry Hill Plantation (1), Virginia, 1835-1840, were welcomed in the hot summers. But often in the cooler East and Midwest, more light was obtained by placing the house wall directly behind the columns in the manner of this girls' school (2) built in Norwalk, Ohio in 1848.*





Kosti Ruohoma

3.

The same carpenters who built this prosperous Michigan farmer's barns in 1840 made use of drawings in an architects' guide published in New York in 1833 to give his house (3) the prevailing Greek character. A freer interpretation and adaptation is seen in Dunlieth (6), Natchez, Mississippi, 1850, where a colonnade in the "American Order" is carried entirely about the house to support a second-floor gallery. Smaller houses, too, sought the dignity of Greece; the builders of traditional frame houses often turned the gable end to the street and added a portico, as houses in Lowell, Massachusetts (4), and Marshall, Michigan (5), demonstrate.

4.

M. Noyes

5.

T. Hamlin

6.

Kosti Ruohoma







7.

M. Noyes



8.

B. Abbott, Museum of City of New York

*City houses of masonry were given a restrained dignity with Greek Revival detail, either as a free-standing mansion like the one (7) in Lowell, Massachusetts, 1843, or as a standardized row like those (8) in Washington Square, New York City. Cast iron fashioned in handsome classical patterns became a decorative adjunct of the style.*

9.

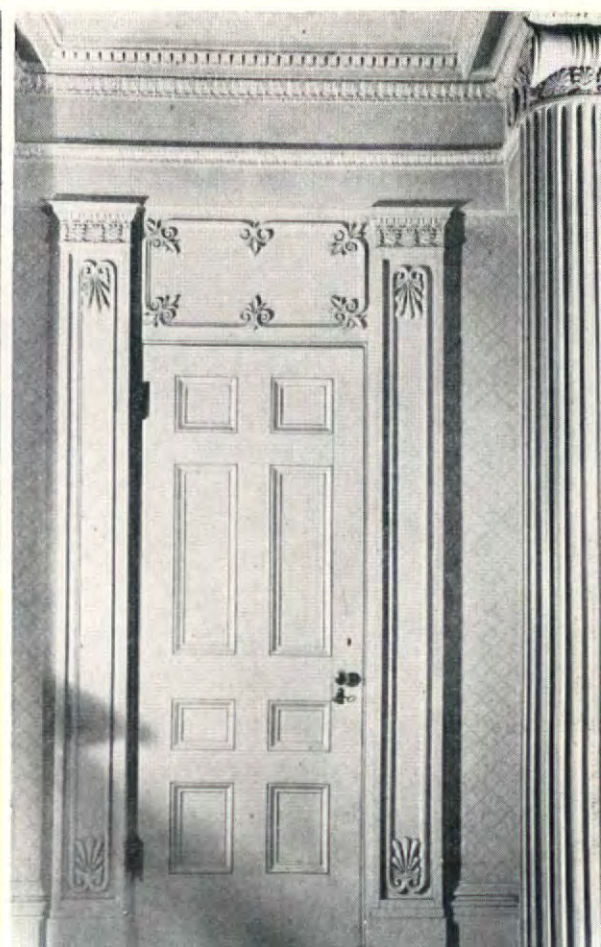
Walter Sanders

10.

N.Y. Hist. Soc.

11.

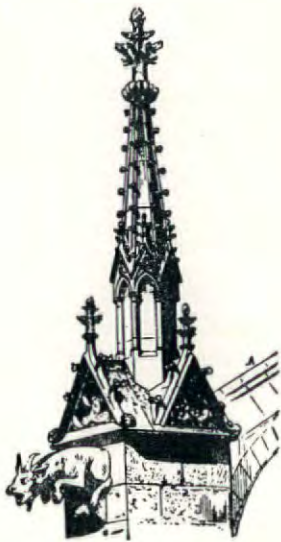
Kosti Ruohoma



*Interiors, too, attempted to recreate the ancient world. Sometimes, as at the Hermitage (9), Andrew Jackson's home in Nashville, Tennessee, 1835, the result was a quaint blending of native ideas and published suggestions, while, in some cases, careful studies (10) by a professional designer like A. J. Davis resulted in interior detail (11) of surprising freshness.*



## GOTHIC REVIVAL, 1830-1860



While Greek forms were becoming increasingly popular, another romantic movement, the Gothic Revival, began to affect the architectural scene. Starting in eighteenth century England under the patronage of Horace Walpole, the imitation of Gothic forms was a frankly literary, emotional and non-structural movement, seeking above all to be picturesque. As it was later introduced to the United States, it became even more superficial. Only in church architecture was there any real pretension to archaeological correctness and even there it was considered as decoration, unrelated to structure. The Gothic style, however, has continued to be considered suitable for American churches and colleges ever since.

In domestic architecture, few attempts were made even to imitate stone. Gothic detail was freely translated into the ubiquitous wood, sometimes with charm equalled only by its naiveté. Based on English prototypes, Gothic villas and cottages took "picturesque" forms, topped by high pitched roofs, their gables decorated with intricately carved openwork bargeboards. Or the newly fashionable ornament was applied to traditional rectangular house forms, somewhat in the manner of a slipcover.

1.

Kosti Ruohoma



2.

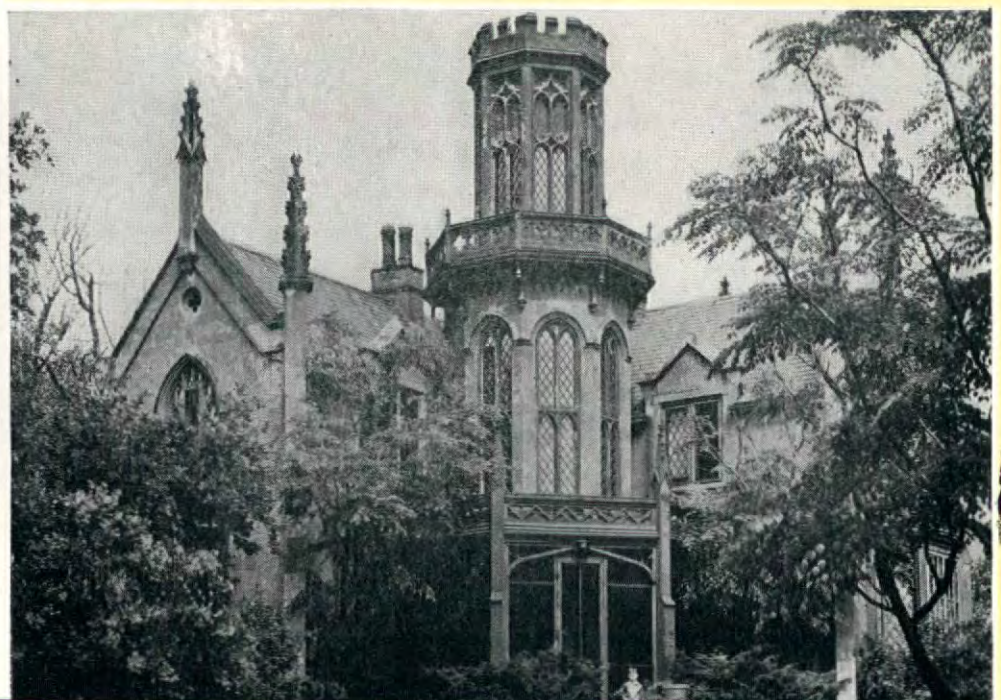
Kosti Ruohoma



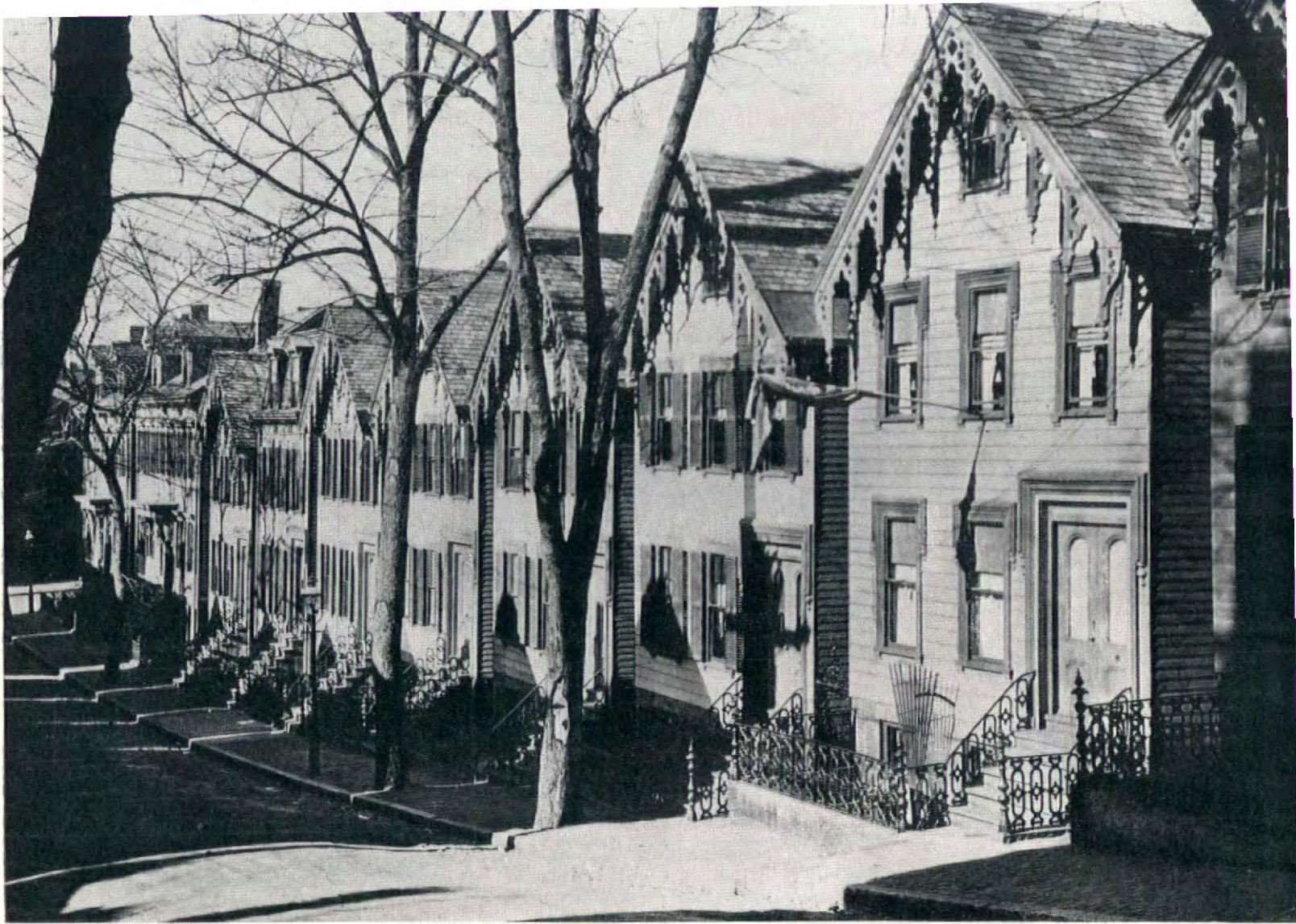
The house in Bridgeport, Connecticut, shown at the left (1) and (2), was designed in 1846 by A. J. Davis, whose drawing for a Greek Revival interior of about the same date appeared on the previous page. Davis, like most of the architects of his time, worked in several historic styles with equal facility. The Gothic detail on Wardhaven Hall (3) in Watervleit, New York, is comparatively correct for the 1840's.

3.

M. Bourke-White







4. Walker Evans

*In the cities, the coming of the power band-saw did much to cover whole blocks with repetitious, vaguely Gothic ornament, such as the bargeboards on these wooden houses (4) in Boston. In the smaller towns, carpenters copied by hand the designs suggested in "builders' guides," as typified by the villa at right (5) built on the banks of the Hudson in 1844. A sea captain's Colonial house (6) was given a fashionable Gothic icing in 1840, perhaps inspired by engravings, which the owner is known to have possessed, of Milan Cathedral.*

Kosti Ruohoma

5.



6.



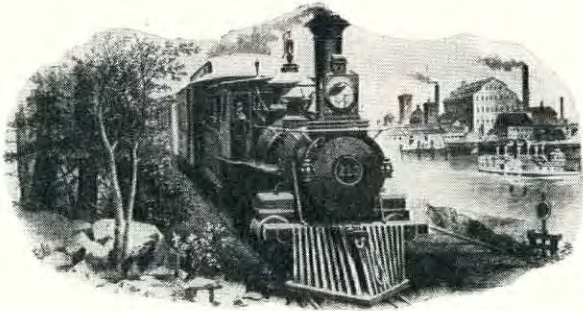
Maine Development Comm.



## ECLECTICISM, 1850-1946 — THE PARADE OF STYLES

The same archaeological studies and the same romantic longing for ancient or exotic things which had been responsible for the Greek and Gothic revivals lead inevitably to wider selections from past glories. The study of older artistic monuments did not stop with Greece and Rome. With the development of the camera, actual photographs were added to the earlier engravings as sources of information about distant places. Trains and steamships had made travel both feasible and fashionable.

New towns and new fortunes sprouted, rootless, overnight in the violent industrial expansion. While slums increased, the newly rich demanded solidly imposing structures. Their architects, most of whom had studied or traveled abroad, drew sterile copies of ancient monuments or decorated buildings with meaningless "correct" details. Fashion followed or intermixed with fashion. Even today, most Americans live in houses which, however full of ingenious modern conveniences, masquerade as Colonial or Regency or Tudor or Spanish.



Kosti Ruohoma



1.

Following close on the heels of the Gothic Revival came what was called the "Italian" style, wanly imitating the villa designs of a more vigorous age in Italy. Here (1) Architect Robert Sikes tried to bring Milanese warmth to Springfield, Massachusetts in 1850. Typical of the disintegration of taste are these before-and-after drawings (2), issued in 1878 to show how a Greek Revival house might be remodeled to obtain "a little variety and piquancy." In the 1880's, French Romanesque served as the inspiration of talented H. H. Richardson, whose work was imitated in turn by lesser designers executing such things as the row of "Richardson Romanesque" houses (3) shown below. (The far more important relation of Richardson to modern architecture will be discussed in Part III of this review.)

3.

Lee—FSA



2.







4.



6.

Kosti Ruohoma



5.

In 1882, fashionable architects McKim, Mead & White built Southside mansion (4) in swank Newport, Rhode Island, using a popular mode of the day, a mixture labeled "Queen Anne," based vaguely on English country houses but having little connection with the fertile queen. At the same time, wealthy clients in Chicago commissioned Cudell & Blumenthal to do this house (5) in the more ostentatious Second Empire, or Mansard, style, typified by decorative motifs of the Louis XIV and XV periods in a coarse scale.

7.

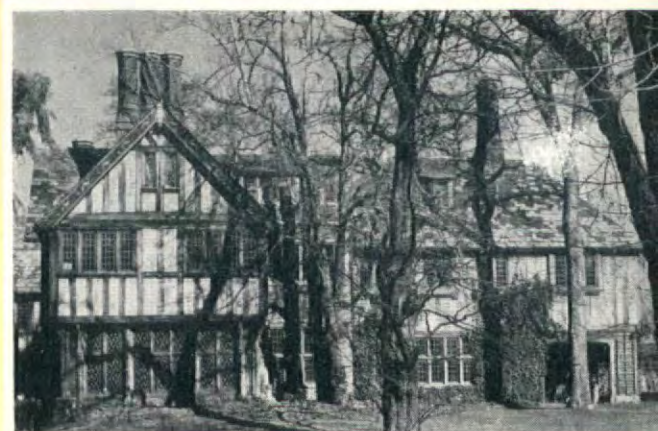
B. Hoffman



Richard Morris Hunt used his French training to design this fairy tale chateau (6) in the manner of Francis I for George Vanderbilt near Asheville, North Carolina, 1890-95. McKim, Mead & White again were at work in Newport, Rhode Island, in 1902, this time doing Rosecliff (7) in the monumental classicism popularized by the Chicago World's Fair of 1893. By 1917, wealthy preference had shifted to the Elizabethan manor house, well illustrated by this example (8) in Tarrytown, New York, by John Russell Pope.

8.

Kosti Ruohoma





9.



While the great mansions were leading the Parade of Styles in the late 19th and early 20th centuries, most American streets looked like the one at the left (9)—rows of houses with porches, all comparatively non-stylistic but with consistently classic detail. Though big houses were built less and less as the 20th century advanced, a great many homes of medium scale appeared, each copied from some former style, such as this Spanish adaptation (10) of about 1930 in California.

10.



11.

But by far the most popular of the later eclectic styles in America has been the "Colonial," more or less inspired by nostalgia for the simple dignity of the 18th century. This house (11), built by D. J. Baum in 1922 in Syracuse, New York, is typical.

Kosti Ruohoma



12.

The Colonial vogue included restoration of actual 18th century structures, such as the house (12) at the left, with "authentic" additions of 1930 to a basically old central mass. Recent speculative building has dramatically shown the shallowness of eclectic design by placing false fronts in varying styles on row houses of identical plans. A good example is this group (13) in San Francisco, California, of about 1940. Take your choice, left to right, of Georgian, Elizabethan, Spanish, California ranch or Regency.

13.

Roger Sturtevant



14.

And in 1946, with every effort being made to reduce the huge postwar housing shortage by building rapidly and efficiently, eclecticism still held sway. This prefabricated house (14), supposedly designed for mass production, disguises its modern panel construction in order to resemble as closely as possible an 18th century Cape Cod cottage.





# GREATEST HOUSE-BUILDING SHOW ON EARTH

runs with the precise timing of a four-ring circus, features 10,000 houses a year in a score of West Coast subdivisions.

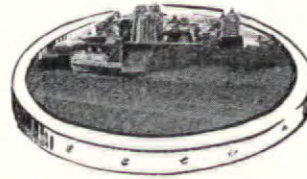
Kaiser and Burns prefabricate a standard house chassis, finish it in the field with myriad variations, sell it with brassy fanfare.

Because Kaiser Community Homes can produce only 10,000 small houses this year against a national need for millions, Board Chairman Henry J. Kaiser tartly labels the operation a "pitiful" show. But 10,000 units a year by all other yardsticks makes Kaiser's house-building show the world's biggest. Several new companies are predicting larger annual production records, but they are still tooling up, still have many ifs and buts between their hopes and houses. KCH has been turning out 20 houses a day for months and is ready to double the output when material supplies permit. Even today, KCH is receiving lumber by the trainload—and trains carrying KCH's precut, prefinished lumber pack 45,000 bd. ft. per car. Plywood, too, is delivered by the trainload—more than 40,000 sq. ft. per day are fed into the six assembly lines. Last month's purchase of 50,000 sq. yds. of carpet was a whopper for the seller, but it kept KCH in floor finishes for less than a week.

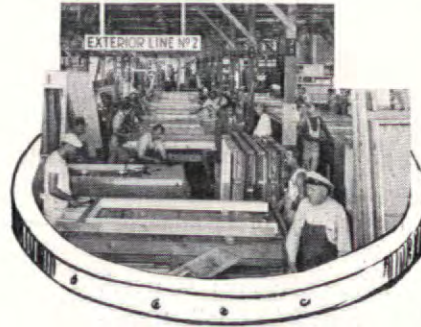
Kaiser Community Homes concept of housing varies from the usual pattern, offers many of the industry's neophytes lessons worth learning. In the first place, its end-product is a part of a community rather than just a house. And KCH—guided by its admittedly cautious estimate of public taste—builds its communities with houses of conventional appearance, houses which meet the public's prime requisite of individuality and avoid its fear of "a prefabricated look." The entire KCH operation is based on volume sales through an avoidance of all possible causes of sales resistance, and product design and production are affected accordingly.

Since KCH's biggest raw material is land and since its one completely standardized house chassis is disguised with infinite variations, production is roughly a 50-50 factory-field operation. One other reason for KCH's middle-of-the-road house-building technique is the background of the men who head it. President Fritz B. Burns had long been building conventionally in communities of standardized but varied houses—prototypes of the KCH developments. In 1945 Industrialist Henry Kaiser listened with interest to descriptions of these communities by Burns' enthusiastic public relations and research director, Joseph H. Schulte, then visited the latest group of Burns' 7,000 houses. Results: 1) a corporation capitalized at \$6 million with stock split equally between Kaiser and Burns; 2) a goal of 100,000 houses a year through national collaboration with big local builders; 3) completion of plant No. 1 in September at a cost of \$750,000; 4) delivery to date of 2,000 houses to KCH projects within overnight trucking distance; and 5) conventional construction of hundreds more in more distant projects.

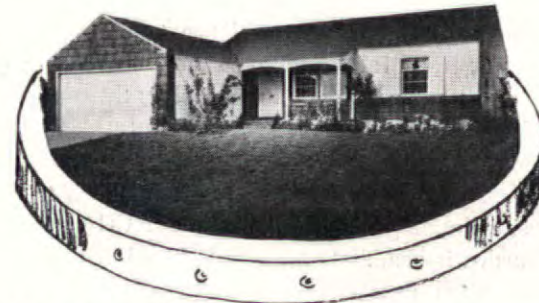
If the flow of materials improves as much as experts predict, Kaiser Community Homes should easily reach its goal of 10,000 units this year. (Otherwise, production will be closer to 6,000.) It has the necessary land, the production facilities and know-how, a product designed to sell, an eager market, and, if this market should soften, a merchandising technique to stiffen it. With one foot to the left, the other to the right of house-building's center line, KCH stands ready to give extremists on either side a real run for their money.



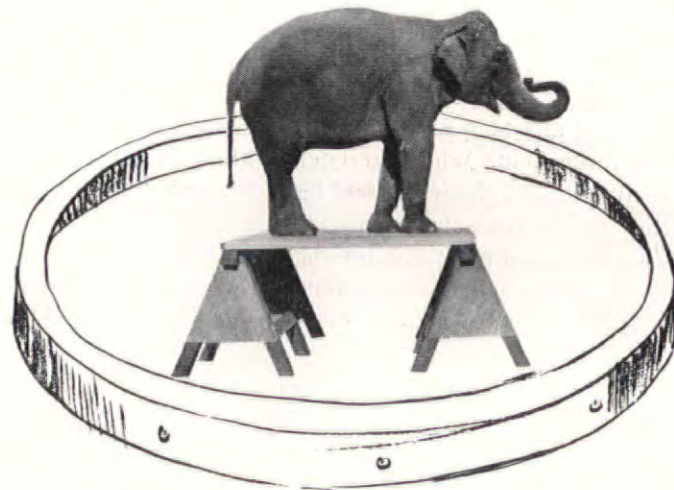
**LAND**—A huge inventory makes room for mass production.



**PRODUCTION**—Consumer preference is met by combination factory-field operation.



**PRODUCT DESIGN**—Variable wrappings disguise completely standardized chassis.



**MERCHANDISING**—Showmanship bolsters the self-selling design.



# LAND, expertly picked in big parcels well in advance, is the foundation of the Kaiser-Burns operation—a \$4 million

Fabricating a house the KCH way is a matter of hours; completing it is a matter of one or two months; but, despite the use of high-powered buying and earth-moving machinery, acquiring and developing the land takes the best part of a year. And, as outlined in the time table to the right, there appears to be no means for short-cutting this operation. Land is basic to the entire program, for, unlike most prefabricators who limit their interest to house parts, KCH builds complete houses in complete communities. To make room for the production of 20-40 houses a day, Burns, as head of the land procurement division, must buy an average of about 120 acres a month—1,440 a year. For this year's 10,000 houses he has already invested about \$4 million in raw West Coast land.

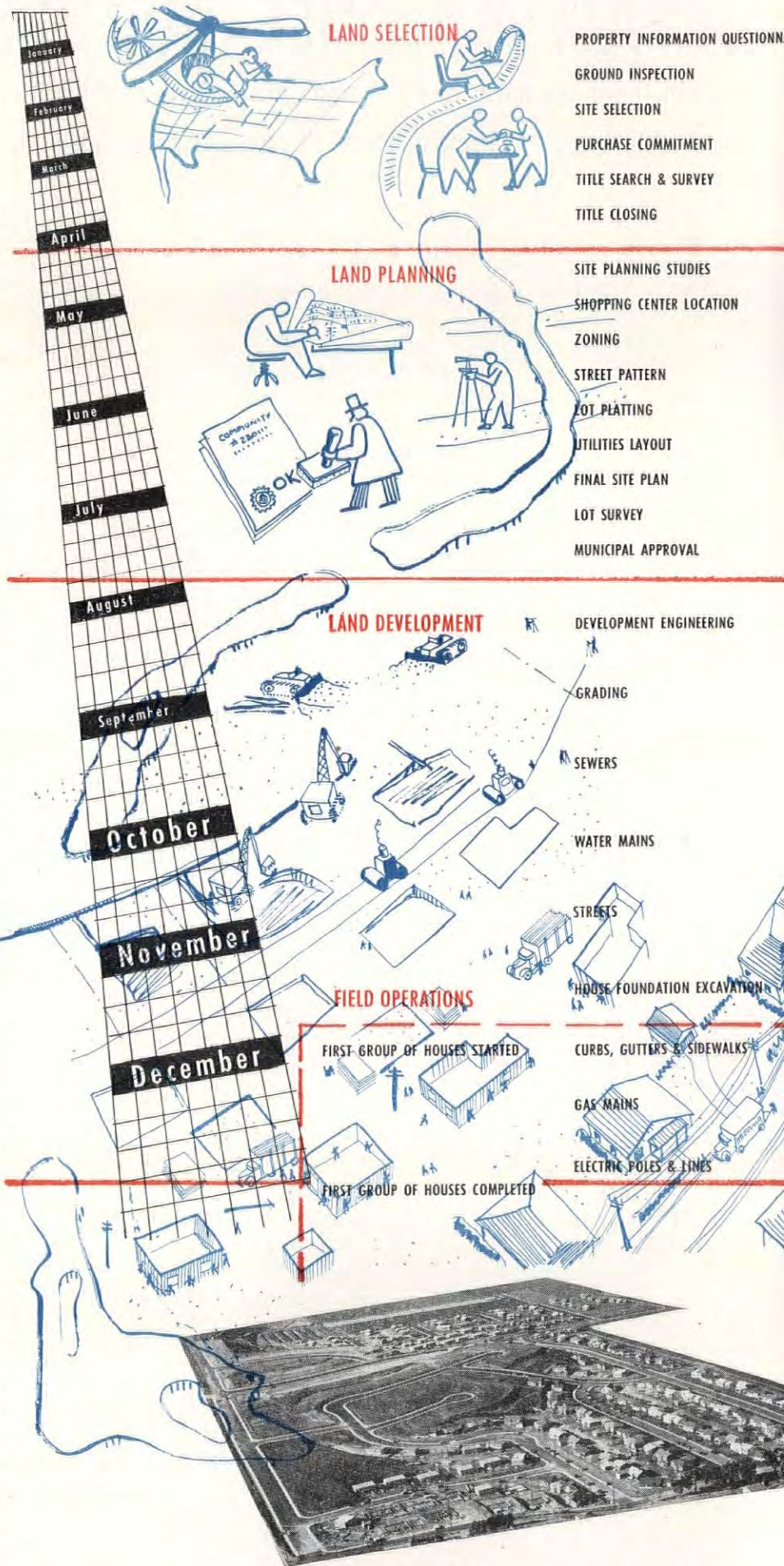
To the owners of suitable land, Burns sends an 11-page form, whose 500-odd blanks make a piker of most government questionnaires. From this information, he can tell whether the tract merits ground reconnaissance. If so, he looks primarily for these two favorable characteristics: proximity to existing suburban development ("distance is judged by the amount of intervening vacant territory") and indications of spontaneous activity—a few new houses being built by individuals ("I do not like to be the only one who thinks the area is worth while."). He also looks only at big parcels. The smallest project to date accommodates 182 lots; the largest, 4,407; the average, about 900.

Unless limited by existing plats or streets, subdivision of the tracts is generally imaginative, has little resemblance to the traditional gridiron pattern. Streets follow contours and focus the traffic flow on the shopping center, location of which is the first step in land planning (see shopping center supplement, p. 154). To give motorists more room at corners and to broaden the front of wedge-shaped lots, street curves are made extra wide, a sensible site-planning trick which some KCH wag has nicknamed the "arthritis bend." Lots average 60 x 100 ft., the largest size which KCH feels can be properly maintained and improved by its average purchaser.

Actual site development begins two or three months before the first foundation is scheduled and continues until the first group of houses is completed. Following a "mass diagram" which shows the disposition of each cubic yard of cutting and filling, graders prepare the site. All fills are laid down in 6 in. layers, watered and tamped, thus permitting use of normal foundations throughout. When streets are laid out in valleys, a level shelf is cut into both adjacent banks about 6½ ft. above the curb to receive these standardized foundations.

If site development goes according to schedule, all grading and excavation and the installation of sewers and water mains are completed by the time the first group of foundations are poured. The other utilities are installed as the houses go up. Particularly noteworthy, the 4-ft. sidewalks are at the street, separated by a slope-faced curb. This combination facilitates construction, eliminates cutting the curb for driveways, gives the houses bigger front yards, gives the street a wider appearance and in damp weather permits motorists to park and step out of their cars anywhere without getting their feet wet.

Land development alone costs KCH as much as \$800 per lot—a figure which prompts F. W. Marlow, head of KCH's land development division, to complain of the high standards and rigid requirements for street improvements as one of the major stumbling blocks in the way of low cost housing.

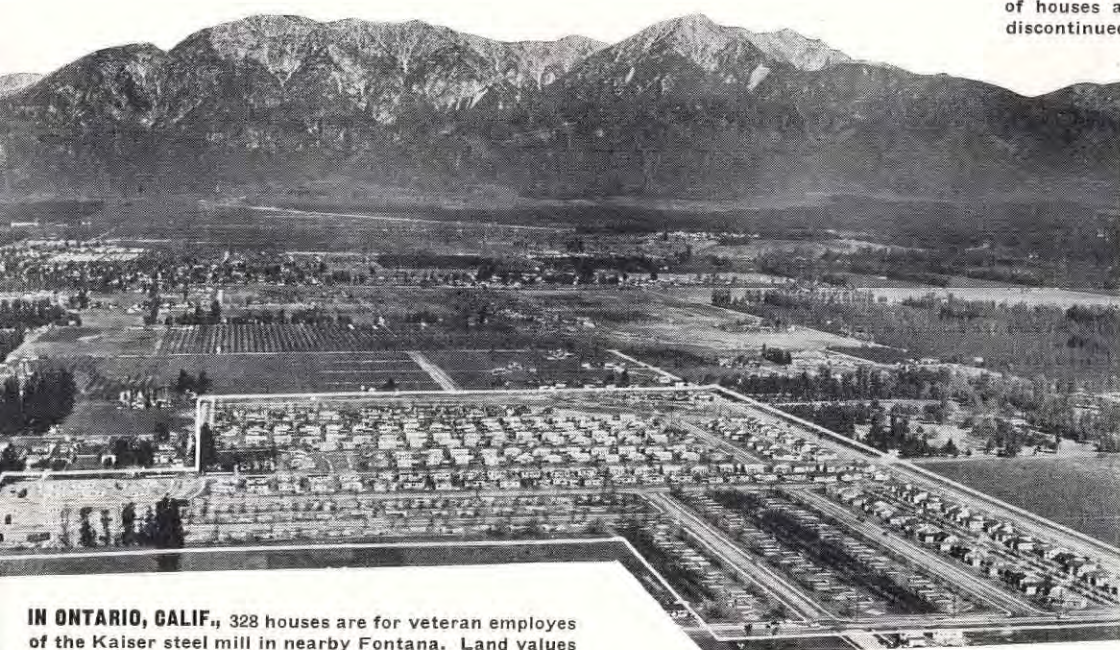




backlog keeps their land planners and developers well ahead of house production.



**ONE OF MANY LOS ANGELES PROJECTS.** Westchester is the biggest. Its 607 completed houses will be followed by 3,800 more, but will barely dent the County's 100,000 unit housing shortage. Note pole lines at rear of houses and paved driveways. Small two-bedroom house has been discontinued; only one in ten wanted it.



**IN ONTARIO, CALIF.,** 328 houses are for veteran employees of the Kaiser steel mill in nearby Fontana. Land values in a new area are often set by selling a small portion of the subdivision lot by lot to private builders.



**IN A SAN JOSE ORCHARD** are 173 houses under construction, room for 627 more. These houses are completely site-fabricated but are otherwise the same as the factory-made units. Note staggered building line.



# PRODUCTION, a rationalization of industrial and handicraft techniques, is divided between factory

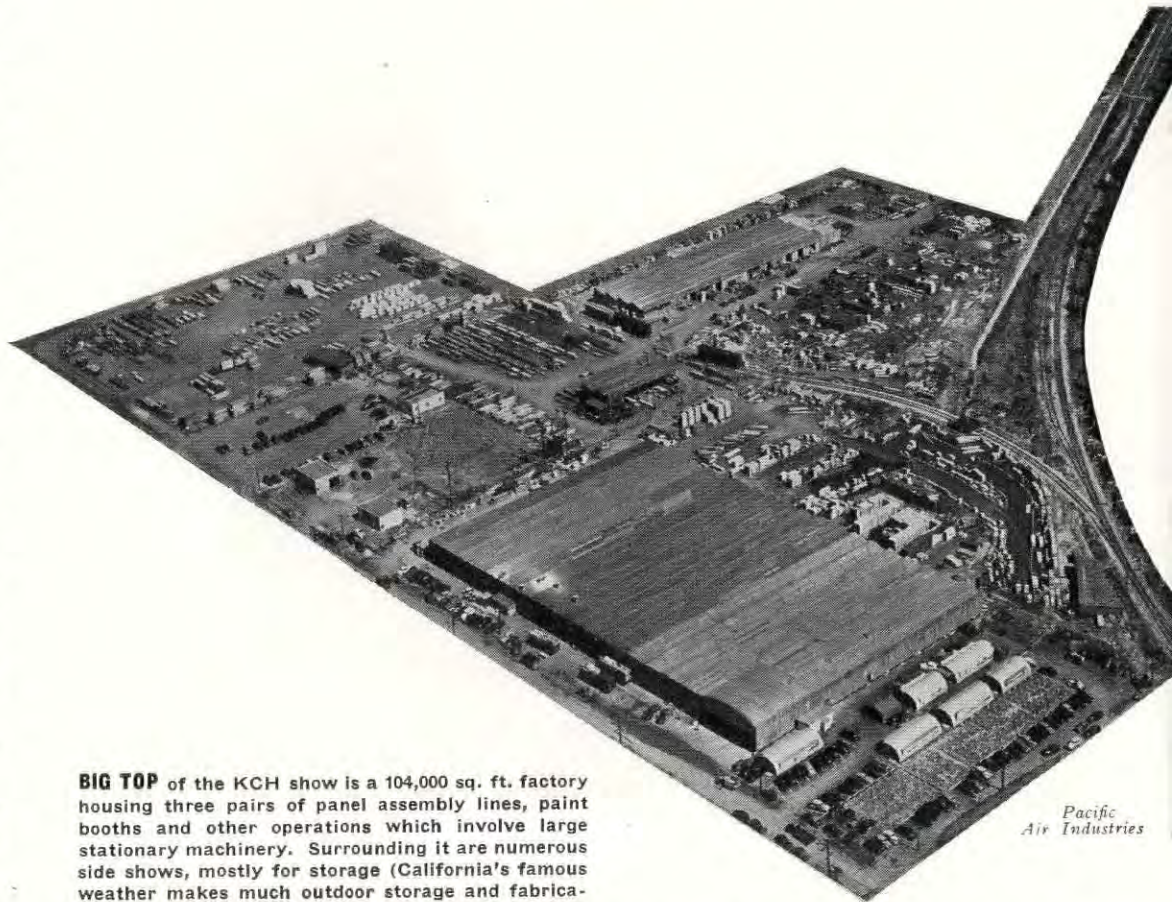
Far from the Buck Rogers conception of total house prefabrication, KCH production is divided about 45-55 between factory and field. This labor breakdown results from a cold analysis of the cost and efficiency of producing standardized houses which look neither alike nor prefabricated.

Nub of the production line is the Los Angeles plant whose towering stockpiles and 16½ acres illustrate a Kaiser maxim: "The secret of fast production is plenty of materials, plenty of space." But the long production line actually starts in the suppliers' mills in the Pacific Northwest, which prepare every piece of lumber, except plywood, rafters and trim, which goes into the KCH houses. The 850 differently shaped pieces arrive precut, numbered and completely finished, rabbeted and bored. Numerous advantages result: 1) Shipping costs are reduced because precut pieces, the smallest of which is 2 x 3 x 2¾ in., can be nested together in predetermined quantities until 42,000-45,000 bd. ft. are squeezed into a rail-road car—compared with an average of 27,000 bd. ft. of random-cut lumber. 2) Loading and unloading costs are minimized because many precut lengths are bundled and easier to handle—with the aid of finger-lifts, a car is unloaded in 35-45 minutes as against the usual five to seven hours. 3) Material control is improved—waste runs only about 2 per cent vs. the usual 17 per cent. 4) Suppliers also profit, for they upgrade the precut, prefinished material and utilize small pieces ordinarily burned.

Shop fabrication follows the familiar pattern of finishing sub-assemblies in easily handled sizes with the aid of steel jig tables and then feeding them to moving assembly lines. For example, once the precut 2 x 4 in. framing members of the wall panel (8 ft. high x random length) have been aligned and nailed in the jig, the sub-assembly goes to the line. At the end of the line, the panel is hooked to an overhead monorail and conveyed to the storage area where an inventory of assemblies for about 30 houses is normally maintained. Wall panels are finished one side with plywood; the 2 x 3 in. framework of partition panels, both sides.

Floor panels (8 x 12 ft.) are similarly fabricated of 2 x 4's 12 in. on center covered with 5-ply sheets. They are bonded between joists with plywood back battens. Ceiling panels of the same size are comprised of ¼ in. plywood with 2 x 4's 16 in. on center. Other assemblies include kitchen cabinets, storage partitions and closets, roof trusses, gable ends, overhead-type double garage doors, and the plumbing "trees".

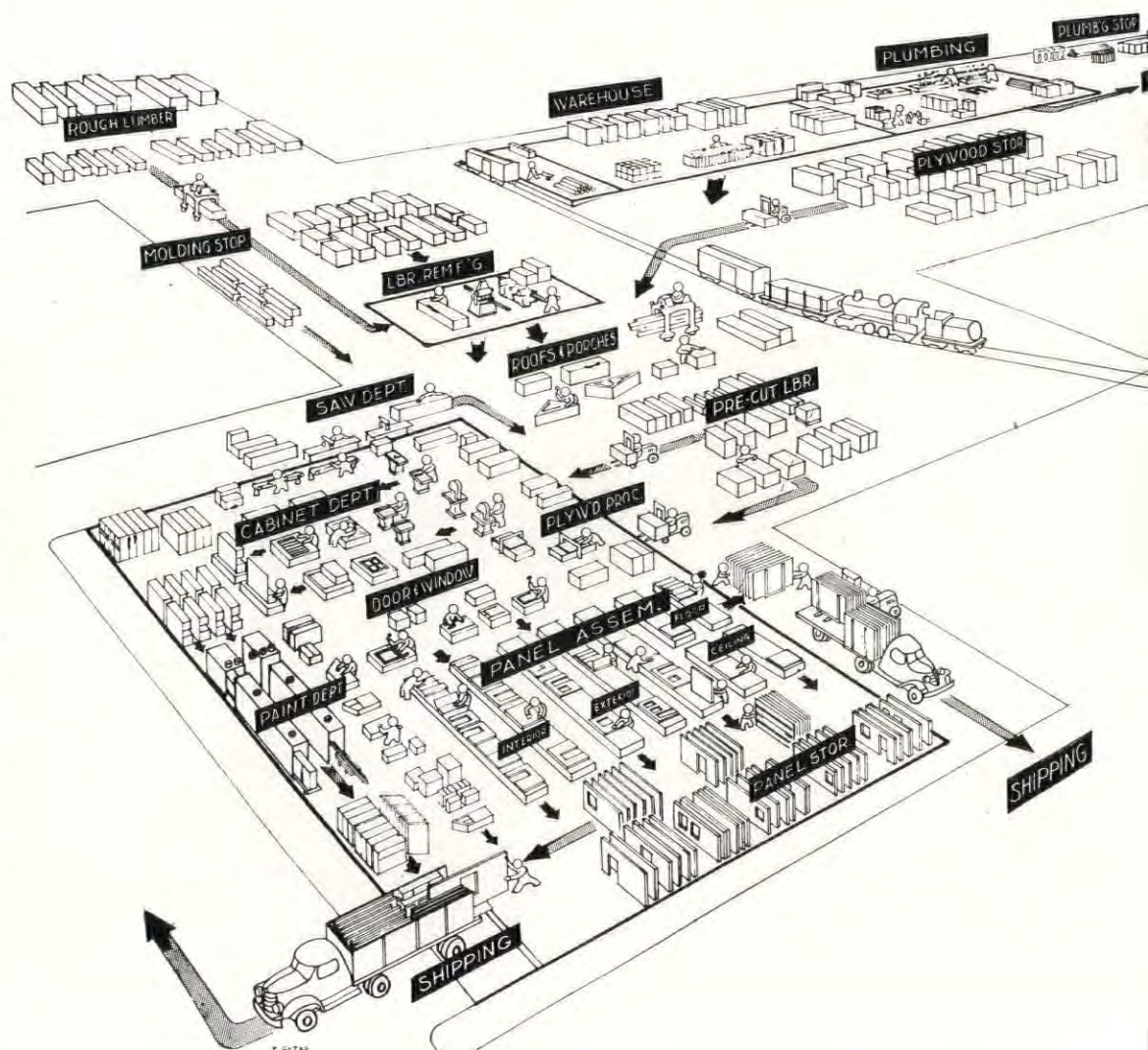
At the site, walls, partitions, cabinets and ceilings—the chassis—are assembled in about four hours. Under pressure, the house can be completed in four days, but the job normally requires 30 to 60 days.



**BIG TOP** of the KCH show is a 104,000 sq. ft. factory housing three pairs of panel assembly lines, paint booths and other operations which involve large stationary machinery. Surrounding it are numerous side shows, mostly for storage (California's famous weather makes much outdoor storage and fabrication feasible). Most of the shop work is done by the carpenters trade which operates under a union agreement. A separate agreement covers the painters. Materials are received from a 10-car rail siding; house assemblies are shipped to the field from three plant exits: floor and ceiling sections

Pacific  
Air Industries

from one; walls, partitions and cabinets from a second; plumbing from the third. Remodeled Quonset huts house the KCH offices. Plant manager is Donald W. Lowman, construction chief is D. C. Slipper—both are veteran prefabricators.



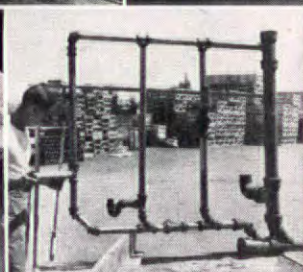


abrication of the basic chassis and field application of finishes.

## FACTORY



**PRECUTTING** is done at suppliers' mills (left picture shows a few days' supply curing in the sun) and in a small KCH shop where one multiple saw cuts long boards into three predetermined lengths. Roof members are bundled for each house.



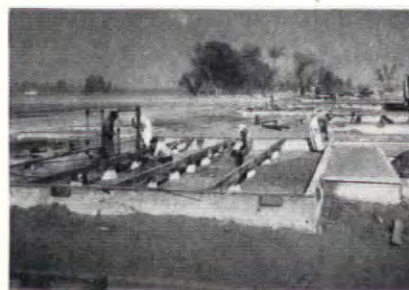
**PREFABRICATION** of wall and partition panels, complete with windows and doors, is done on six horizontal chain conveyor lines, while kitchen cabinets and storage partitions move down other lines on dollies. Like panel frames, gable ends are assembled in steel jigs to assure minimum tolerances. Since bathroom, kitchen and laundry back up on one another, all 43 pieces of waste and vent piping may be assembled in one piece.



**PREPAINTING** of all items which will be exposed inside or out is done in the factory—in spray booths or by hand. Finish coat is field-applied.

Photos by: Fred R. Dapprich, International News (Dave Cicero);  
Dick Whittington, Spence Air Photos.

## FIELD



**PLATFORM** consists of poured walls with a bolted wood sill, concrete piers topped with three girders, and a concrete floor for the service porch. Floor panels are secured to the girders with metal straps, then covered with waterproof paper for protection during the balance of construction.



**CHASSIS**, including plywood ceiling panels, is assembled in four hours. Heaviest panel weighs only 450 lbs.; heaviest assembly, the kitchen cabinet unit, 600 lbs.



**SKIN** of the house is conventionally site-applied. Exterior walls are covered with 15-lb. felt paper and finished with wire and stucco in combination with other materials. Roofs are shingled or built up. Interior finishes include pre-coated craft paper on walls and ceilings, linoleum on kitchen and bathroom floors and, in about half the houses, wall-to-wall carpeting in other rooms.

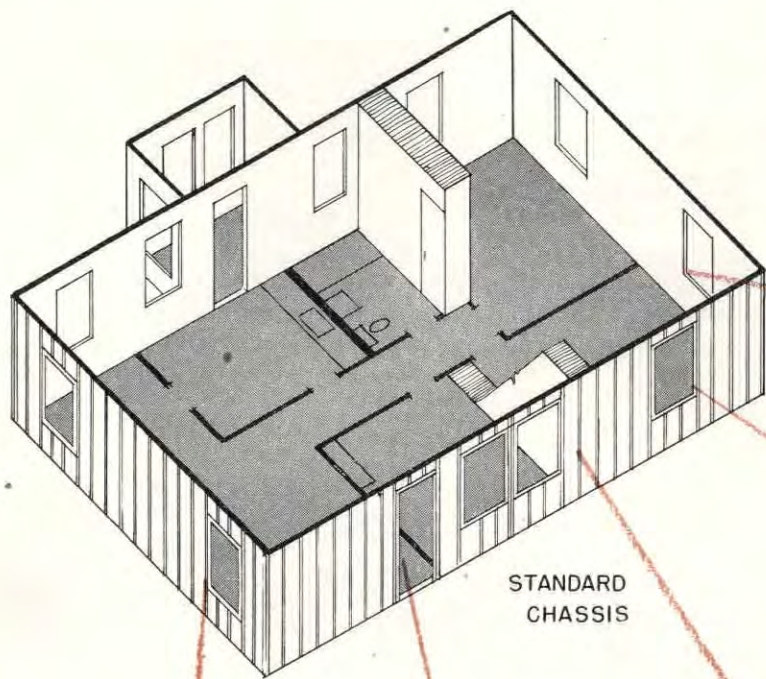
All stages of field work, from street and pole line construction to trimming and landscaping, are conducted simultaneously.





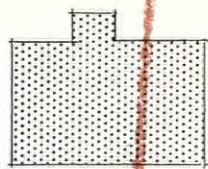
# PRODUCT DESIGN

disguises the standard chassis to meet consumer likes, wrapping it a thousand

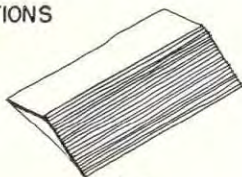


STANDARD  
CHASSIS

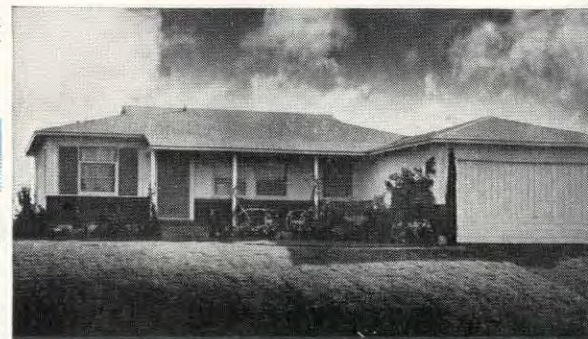
GARAGE LOCATIONS



ROOF VARIATIONS



TYPICAL GROUPING



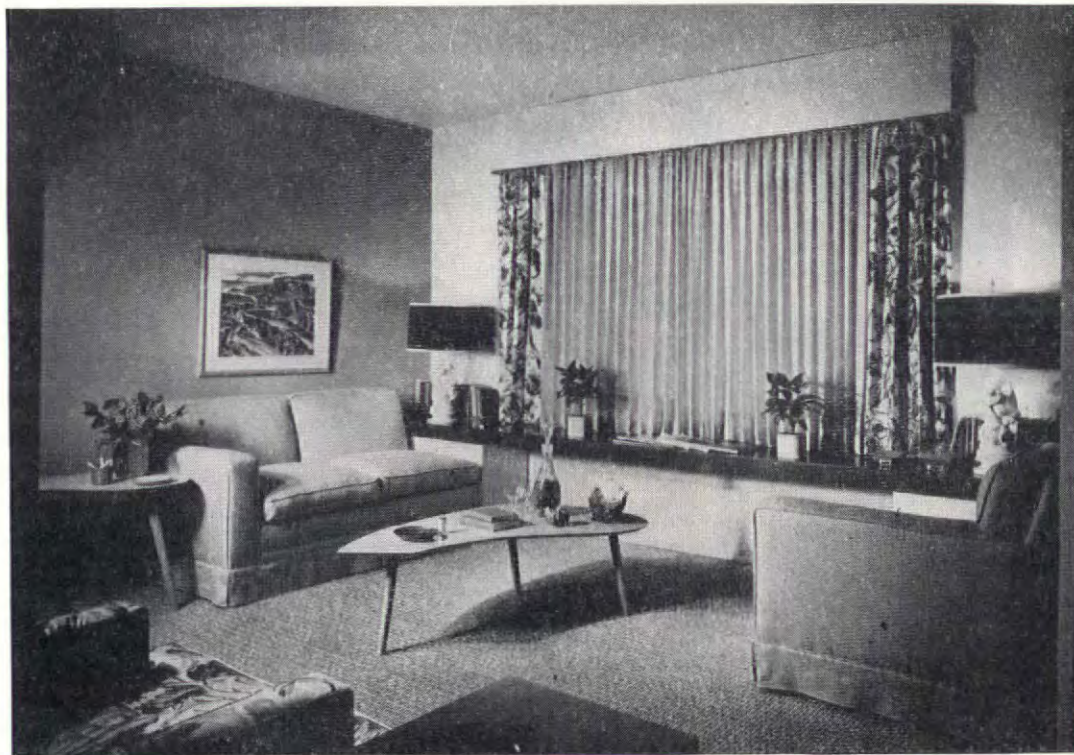


different ways with variable garage locations, roofs, porches and finishes, inside and out.

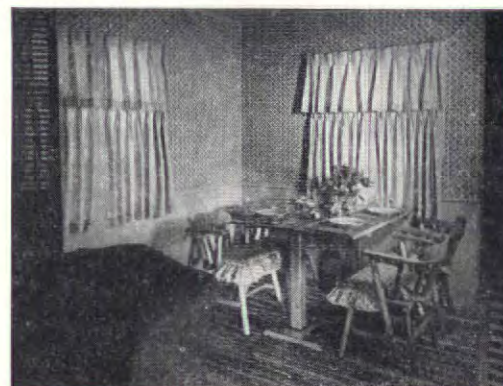
To achieve maximum production speed and economy, all KCH houses are identical in plan and construction. And, the field assembly of parts is uncomplicated by even the common practice of turning and reversing the plan on the lot. To the casual observer, however, the finished products appear quite different and unprefabricated. KCH's Architect Marshall obtains this effect by finishing the standard chassis with varying combinations of so-called "fundamental variables."

Most important variable is the two-car garage which may be located in six different basic positions (including complete detachment) and then opened in any of two or three different directions. Structural variations also include the roof, which comes in four basic shapes, and the multi-sized front porch. Among finishing materials are asphalt shingles and tar and gravel for the roofs and stucco, wood shingles and lap siding for the walls—and all of these may be varied in color and set against different landscaping. Simple multiplication indicates the fantastic number of different houses which combinations of these variables can produce. (For instance: 6 garage locations times 2 garage orientations times 4 roofs times 6 porches times 2 roof finishes times 3 side wall finishes times merely 3 colors equals 5,184 different exterior appearances.) However, KCH achieves the desired effect with only a small fraction of this number.

Like the exterior design of the houses, floor planning is average or better by traditional standards. Rooms within the 24 x 38½ ft. rectangle are of average size (see dimensioned plan, p. 110), but, being separated by plywood storage partitions and 2 x 3 in. stud partitions, take up less space than in a conventionally built house. KCH estimates that the total 956 sq. ft. area (6748 cu.ft.) offers the same usable space as a 1,038 sq. ft. conventional house. The garage adds 360 sq. ft. (2,880 cu. ft.). Thus, at \$8,650, the whole package with lot, sells for \$6.57 per sq. ft.



LIVING-DINING ROOM



KITCHEN



BEDROOM



TYPICAL EXTERIORS demonstrate the effectiveness of KCH's "fundamental variables," show three different roof shapes, garage locations and porch forms, several combinations of roof and wall finish and such trimming as shutters, lattice work and trick planting. Left to right, the three (of six) basic models are called "Suburban," "Palm Springs" and "New Englander."

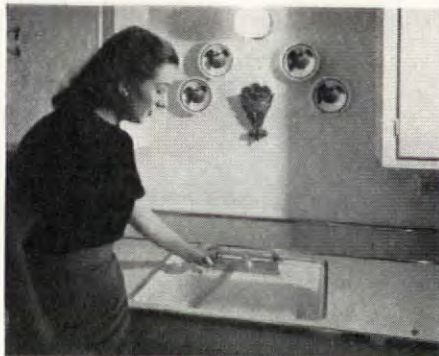
Maynard L. Parker, photos



**MERCHANDISING** is based on well-publicized sales features, furnished model houses, a continuing



**SERVICE PORCH** contains broom closet, shelves, water heater and laundry tray.



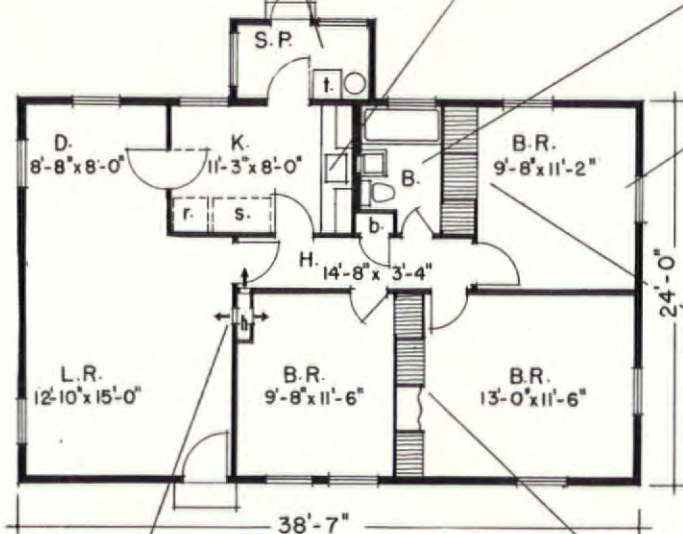
**KITCHEN SINK** of pressed steel with integral soap dish is set in stain- and burn-proof counter top.



**BATHROOM** features wainscoting of porcelain enameled steel.



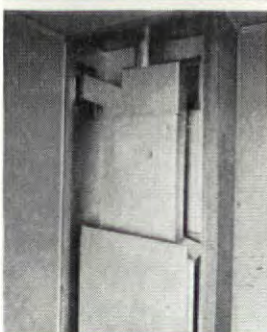
**WINDOW** is awning type; lower two-thirds swing out; inside screen slides up.



**GRAVITY HEATER** of vertical design is gas-fired, requires less space than an average closet. Cold air vent at floor and warm air ejection at ceiling create forced air action.



**STORAGE PARTITIONS** provide six closets with overhead cabinets plus a dressing table.





interest in the purchaser and the community, and expert showmanship.

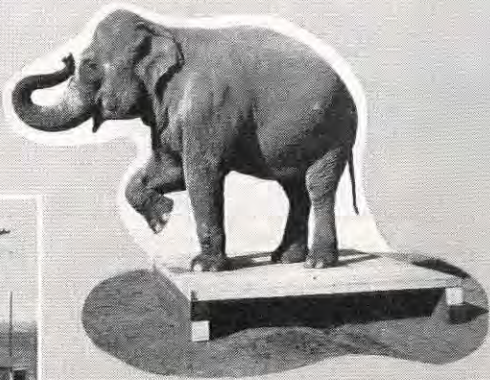
Last in order, merchandising is actually the first and biggest ring in the KCH show, for all other aspects of the huge operation are based on Kaiser-Burns' sales philosophy and technique. While other industrialized house builders streamline their designs to fit the machinery of mass production and count on the housing shortage and missionary work to offset sales resistance, KCH reverses the procedure, adjusts its production facilities to houses of accepted appearance and counts on easy sales to keep the machinery spinning.

Headed by 401 cu. ft. of storage space, a few of the built-in sales features are pictured to the left. Others: washable wall coverings, copper water tubing, bronze screens, a dozen double electrical outlets in the living and sleeping areas, carpeted floors, a built-in ironing board, a work light over the kitchen sink, a built-in dressing table, a door knocker, a letter slot and a two-car garage.

Many of these coveted accessories were tested in Burns' "Post War House" (FORUM, Mar. '46, p. 97), a \$150,000 showcase of new house-building developments. Besides telling Burns what the public wants, it is a spectacular publicity stunt which is still paying spectacular dividends. By year-end, 300,000 potential customers had been ushered through the display house—the first 100,000 at \$1 a head, the balance at 35 cents each.

Such showmanship characterizes the whole KCH operation. Model houses are displayed with furniture scaled to the various room sizes. Personable hostesses whose knowledge of building and selling is not left to chance, receive and inform the public. No shrinking violet, KCH creates a headline-making scene at every opportunity: to demonstrate the strength of a glued plywood panel to the dubious prospect an elephant is used as the weight, and, when a row of houses is finished and sold, moving vans in a carefully rehearsed parade move in a whole neighborhood at once. Finally, KCH takes good care of its buyers with post-sales services and helps them beautify their properties with "psychological equities" (see supplement, page 152).

In a sellers' market, this well-aimed publicity sold 600 houses last year and has built up the waiting list to 3,500—all veterans and all attracted without a word of paid advertising. When a new batch of houses is ready, KCH's chief salesman, Fred Bauerfield, deals a corresponding number of cards off the top of the waiting list, writes them that "the Kaiser Community Home you have so patiently waited for is ready for your inspection and selection." The letter also says to bring discharge papers and \$615 in cash. Balance of the \$8,650 cost is raised with a 4 per cent, 24-year mortgage written by Allied Building Credits, Inc., or Bank of America. Monthly payments total \$55, including \$11.50 for insurance, taxes and other incidentals in excess of the \$43.50 for interest and amortization.



**JUMBO**, at 5,000 lbs., dramatizes the strength of a prefabricated partition.



**MODEL HOUSE**, expertly furnished, attracts big crowds even on weekdays.



**FORTY VANS**  
simultaneously  
move 40 veterans  
into 40 new houses  
on a single block.



**GOLDEN KEY** is presented first KCH owner by Kaiser and Burns.

**"PSYCHOLOGICAL EQUITY."** Landscaping by the owner is encouraged to improve the property, the mortgage risk and the community.





# PRODUCTS AND PRACTICE

**MICROCLIMATOLOGY** is a big word for the study of small-size weather. Aided by Meteorologist Helmut Landsberg, **FORUM** presents some provocative facts for architects, realtors and city planners on climatic conditions at the "breathing line."

Architects are well aware that the climate of Detroit is quite different from that of Monterey, Calif. But they seldom realize that the climate of their own home town often varies sharply in a distance of less than a mile or a change in elevation of a few feet. Everyone knows that grass makes a more pleasant entourage for a building than asphalt. But few building professionals have actual data at their fingertips as to precisely why or how it gets that way. Hence, they would probably be surprised to learn that, on a summer's day, surface temperatures of a grass plot might easily be 25 or 30 degrees lower than those of an adjoining sheet of asphalt. Every city dweller is aware that in the summer it is cooler in the country, but few stop to ask why this is so, or what can be done about it.

In other words, although everyone is acutely aware of the general climate of his locality, no one knows much about the climate of his own backyard. Yet modern meteorology indicates that there may be a whale of a difference between the two. This study of the small size climate at a large scale is what the weather men mean when they speak of the "microclimate". The "micro" refers to the scope of

the area studied, not the size of the differences.

There are many reasons for this blind spot in the popular mind—the first of which is, ironically, the Weather Bureau itself. Most people forget that the Bureau collects information on atmospheric conditions mainly for the purpose of weather forecasting, especially for the aviation industry. For this purpose, the weather man prefers to make his readings in what he calls "undisturbed conditions." These are found away from the surface of the earth and away from the congested areas of big cities and lead naturally to weather stations atop tall buildings or at airports.

The information obtained in this fashion is not immediately applicable to the zone of normal occupancy. We live close to the ground in a disturbed thin skin of the atmosphere which is studded with microclimatic differences. The most profound fluctuations in this microclimate are due to variations in local topography, to the presence or absence of water bodies, to forest and park areas, to the structure and cover of the soil. To a lesser extent, the microclimate is influenced by hedges, walls and buildings.

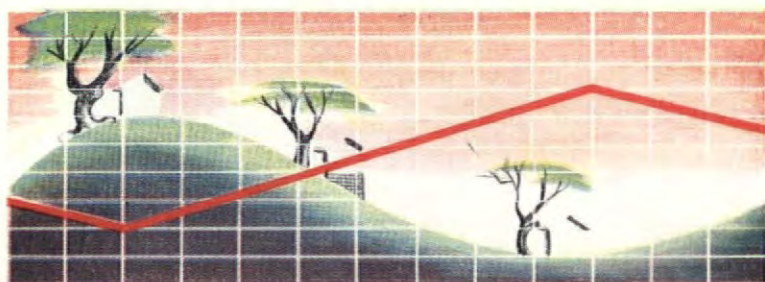
While the general climatic conditions of a

given locality are beyond control, the climate of a specific portion can be readily influenced. This will be especially true if the area is intensively built up. Usually—because of lack of understanding of the factors involved—the intensive development of a given plot will depreciate its microclimate. Yet there is ample evidence that important economies in the heating, cooling, lighting and cleaning of buildings can be gained by use of microclimatic factors in siting, designing and landscaping.

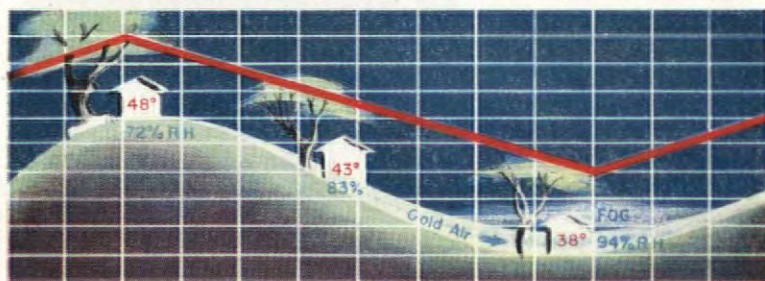
When considering buying a house today, most people are aware of the importance of "getting out of the smoke," many of them want a good outlook or view, a few may even demand a southern exposure. Most house hunters however, are apt to be more influenced by whether or not the site is in a good neighborhood. The microclimate is seldom taken into account in site selection—despite its considerable effect on the living environment.

For the most part, microclimatic variations are caused by local topographic differences. Even a small change in elevation can cause large changes in free air temperature.\* This is most marked on a clear, calm night, when a few feet of change in elevation can be equiva-

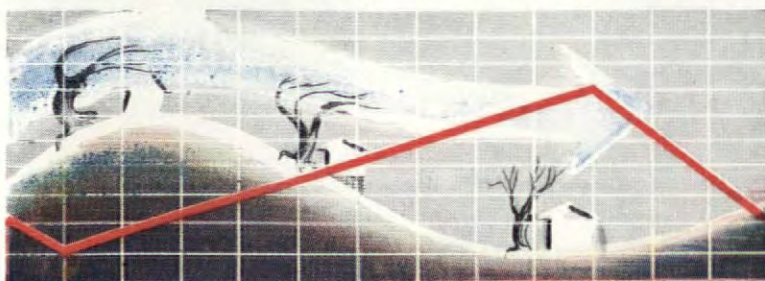
## HOW TOPOGRAPHY AFFECTS MICROCLIMATE



Your heating bill will be less if you move your house uphill



But cold winds at crest may offset higher temperatures there



Thus best location is apt to be halfway up a southern slope.

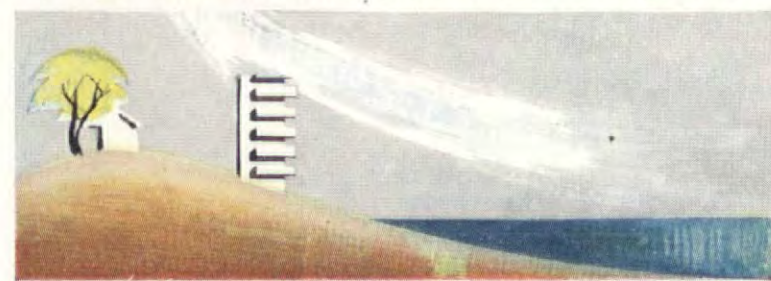
## HOW WATER BODIES MODIFY MICROCLIMATE



In daytime, an offshore breeze may cool air by as much as 10° F.



At night, breeze is reversed but still has a cooling effect



Yet force of breeze is limited. Tall buildings may block it.



lent to over a hundred miles change in latitude. Troughs and valleys in the topography cause remarkable differences. The extent of such variations is illustrated by the concrete example in Fig. 2—a small trough, only 400 ft. wide with a difference of 25 ft. in elevation between bottom and crest. On a clear night with little wind, the lowest point shows a temperature 11 degrees colder than that of the crest, its relative humidity is 20 per cent higher. Because at night the heavy cold air drains to the lowest point of this valley, a farmer would call this exposure a “frost hole” and on many a morning a thin sheet of fog will form here. In terms of heating costs or comfort, this would be a far from negligible differential. In daytime—and especially in summer—conditions are reversed. The hole will be four or five degrees warmer, the humidity 10 per cent lower, than that of the slopes. (Fig. 1) Thus a trough accentuates extremes.

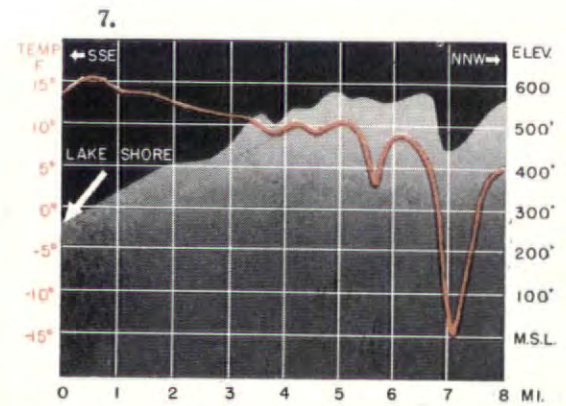
It does not follow, however, that the microclimate of the crest is always more favorable than that of the valley. On cloudy and windy days, temperature conditions are apt to be more uniform. Then too, it is obvious that the crests are a good deal more exposed to the wind than the bottom of even a slight depression. Hence, in winter, a house on the crest on windy days will require considerably more heat than one in the trough below—and this may become a marked factor if we deal with a

\* So pronounced is the effect of elevation on temperature that in fruit zones like the citrus belt in Florida, daily weather forecasts are given in “feet above sea level.”

difference in elevation of as much as 100 or 200 ft. Thus, exposure to wind may offset the temperature advantages of the crests; for a house on the hilltop may lose three times as much heat as a similar one on a valley floor.

Much will depend on the direction of exposure. On the lee side of a hill just below the crest, the wind effect is mitigated, but on the windward slope it is comparable to, or even worse than, that on the crest. In the north-eastern United States, generally, cold winds blow from the northwest and prevailing summer winds from the opposite direction, the southeast. If to this we add the fact that a southern exposure permits the best exploitation of solar radiation, then it is clear that, in undulating terrain, the most favorable building sites would lie on southeast slopes about midway between the bottom and top. (Fig. 3)

After topography, proximity to water bodies is next in importance. Areas along the lee side of water bodies have a less extreme climate than those on the windward side. In winter, unless completely frozen over, they raise the lowest temperature, in summer they lower the highest temperatures. (They always raise humidity in their immediate vicinity.) Naturally, the larger the water body, the more extensive is its microclimate effect. In the warm season, the shores of the ocean and all larger lakes benefit by a daytime breeze from the water body inland. This lake breeze under-runs the prevailing winds on many days when the land is overheated by sunshine and thus benefits even the windward shores. (Figs. 4, 5)

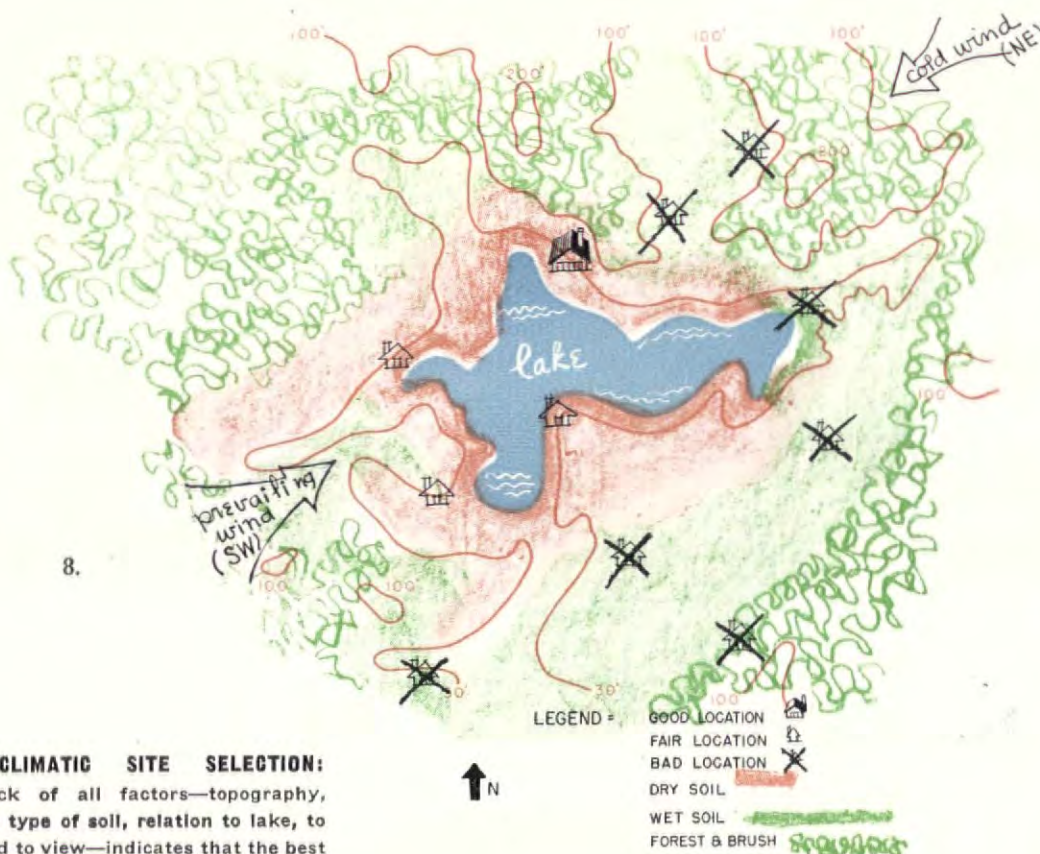


IT IS 30° WARMER along Toronto's lake shore on a cold winter night than it is on the valley floor several miles inland. The city plan ignores this important microclimatic effect.

The stabilizing effect of water bodies on temperature is, however, a phenomenon of small dimensions—even on large lakes. Along the shore of Lake Michigan at Chicago, the off-shore breeze on many hot days will lower the maximum temperature by 10 degrees and gives welcome relief. But it rarely reaches more than  $\frac{3}{4}$  of a mile inland and is practically imperceptible half a mile from the lake. On the shores of the ocean, the sea breeze has more penetrating force and is felt rather regularly several miles inland. Since, in most urban areas, the waterfront is densely built up, the offshore breeze there is further reduced.

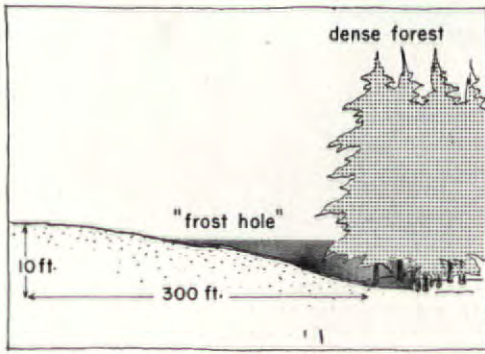
At times, water bodies and topography both enter into the microclimate. A classic example, where measurements have been made, is that of Toronto, Ontario. Fig. 7 shows a topographic profile and a temperature profile across the city on a clear winter night. Two features are noteworthy: One is the gradual decrease of temperature as one moves away from the lake. The second is the remarkable temperature “low” in the valley seven miles distant from the lake. The differential between this point and that of the lake-shore is around 30 degrees! Had information like this been available to the men who originally laid out the city, the configuration of Toronto would undoubtedly be different today. To these factors of topography, prevailing winds and water bodies another can be added: soil conditions. The construction of the soil will have a definite microclimatic effect: in the same general environment, dry soils (sand and gravels) cause higher temperatures and lower humidities; wet soils (loams, marshes) lower temperatures and higher humidities.

The synthetic effect of all these factors on the microclimate is demonstrated in Fig. 8. Weighing them one against another leads to a selection of one site as, microclimatically, the most desirable for building. Obviously, few laymen and not many architects will have either the time or the equipment to make all the measurements indicated in this example. Often, plain commonsense analysis will substitute admirably. In many cases, nature itself provides as good information as any number of thermometers. For instance, plants are very sensitive to their microclimate. Much can be learned by watching the time of budding and blooming in the spring. In a favorable microclimate, this will occur many days ahead of unfavorable exposures in the same locality.

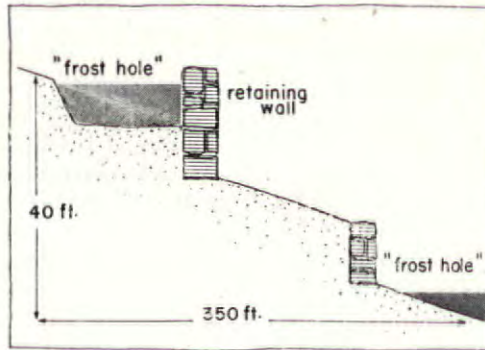


**MICROCLIMATIC SITE SELECTION:** a check of all factors—topography, winds, type of soil, relation to lake, to sun and to view—indicates that the best site for a house will be at the center of the north shore. Here the microclimate will show the smallest extremes.

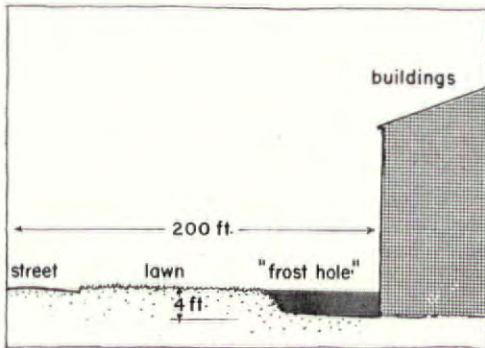




**COLD AIR FLOWS DOWNHILL**, like water: hence, any obstruction on the slope can create conditions undesirable for both house and garden.



**EVEN SMALL CHANGES** in the landscape can create surprising changes in the microclimate. In one case, a retaining wall along a desirable hillside exposure dammed up cold air, led to a frost hole as bad as that on valley floor.



**DEPRESSIONS** around buildings often become cold air traps, creating a microclimate quite different from an exposure a few feet higher.

**ON A SUMMER NOON**, it will make a great deal of difference whether a house is surrounded by pavement or grass, exposed to sun or shaded by trees. Although seldom measured, the differences are often quite large at the "breathing line".

The sun is, of course, the most important factor in the climate; except for diurnal and seasonal variations, it is also the most constant. But the effect of the sun on a given site will, to a very large degree, be determined by the size, relation and textures of the various surfaces on which it falls. Every type of natural ground cover—grass, shrubbery, trees; each square yard of pavement; every wall and roof—will have a small but perceptible effect on the microclimate of the lot. In urban sections, the cumulative effect of replacing natural surfaces with man-made ones will often be severe.

The natural cover of the land tends to stabilize temperatures and decrease extremes. Man-made surfaces, on the other hand, tend almost without exception to exaggerate them. Generally, plant life acts as an absorbent material in the landscape, blotting up heat, light and sound. Because leaves suspirate—i.e., give off moisture—they actually destroy a large portion of the heat which falls upon them. Thus, they reradiate far less than inorganic materials. Hence, in addition to their shading effect, plants have a definite cooling effect and are of great importance in ameliorating the microclimate, especially during the summer.

In this connection, it is worth noting that seemingly unimportant changes produced by building and landscaping can cause a marked unfavorable change in the microclimate. Small obstacles—a wall, a hedge, a row of trees—will act as a dam, behind which on many nights a small lake of cold air will stagnate. Three examples are shown in Figs. 9, 10 and 11.

In flat open country, on the other hand, hedges and windbreakers often offer excellent microclimatic protection. Temperatures behind the hedge may be from 3 to 5 degrees higher than on the windward side, wind velocities reduced by as much as 20 per cent and fuel bills of houses so protected will be correspondingly reduced. This effect of windbreaks can be distinctly noted in the growth of the plants on the sheltered side. (Fig. 23)

Unfortunately, there has been no systematic

study of the temperature fluctuations found in any sunlit microclimate. But some observations are available which show that such fluctuations are comparatively great. On a very hot day, when the air temperature in a meteorological shelter read 98° F., asphalt pavement nearby reached a temperature of 124° F. The air layer between 1 and 4 ft. above the asphalt—i.e., the zone in which human beings would walk—had a temperature of 108° F. The air temperature under a roof was thus 10° lower than over a dark paved surface. In the same instance, a concrete surface was 14° cooler than the asphalt.

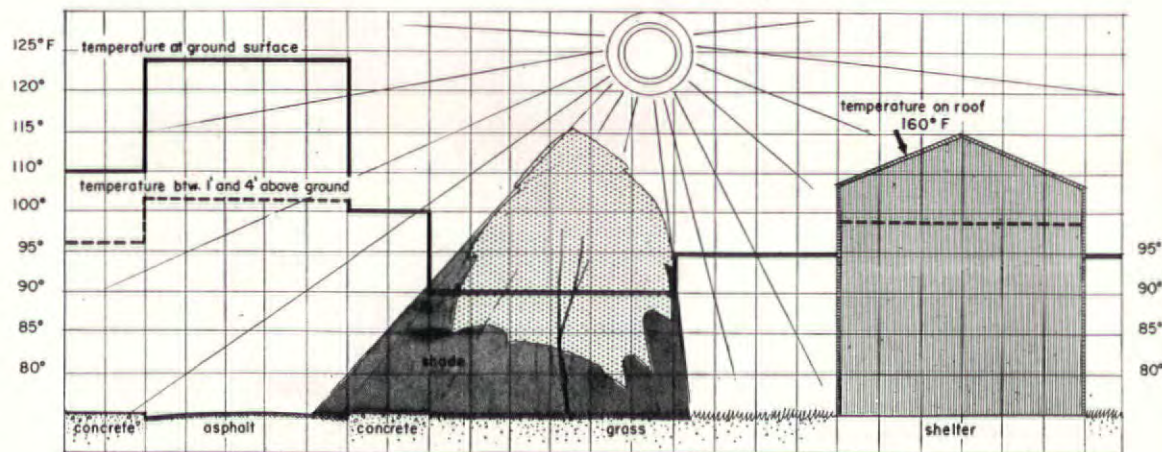
One of the cases for which measurements of radiant temperatures are available was made in Arizona on a day when the air temperature in the shelter was 108° F. The temperature of the ground surface at that time, in the early afternoon, reached in some spots 160° F. Within the zone in which human beings would walk, radiant temperatures of between 114° to 120° F. were measured. The physiological effects of such high radiant temperatures are approximately the same as those of a corresponding air temperature. (Fig. 12)

It is generally found that air temperatures about 1 ft. above the soil on sunny summer days are about 8 to 10° lower than the soil surface itself. The difference between exposed soil (depending somewhat on its color) and grass surfaces is between 10 to 14°—the grass, of course, being the cooler surface. Between grass and paved surfaces, the temperature differential may be much greater.

On a bright day, the amount of light reflected from concrete or similar light surfaces will range from 25 to 35 per cent of the incident light, while grass surfaces reflect only about 10 to 15 per cent of the light.

As everyone is aware, large shade trees afford considerable protection from both air and radiant temperatures. But how much? At midday, 1 to 6 ft. above the ground, the air under a tree is around 5° F. lower than that in an unshaded environment. There are no data available on the actual amount of radiant

12.





ich tend to minimize climatic extremes.

t which can be diverted from a house by  
made tree. But measurements of illumina-  
; i.e., the visible part of the spectrum,  
icate that under a fully leaved tree only  
30 per cent as much light will be received  
a horizontal surface as in an unshaded area.  
e soil in a deciduous forest receives only  
10 per cent of the illumination found out-  
e of the forest.

it is when we consider groups of buildings,  
ever, that a knowledge of the microclimate  
comes very important. For small changes in  
landscape, if endlessly repeated, add up to  
ous alterations to the microclimate. So far,  
one has measured all the environmental  
erences between the tree-shaded, lawn-  
dded open blocks which characterize the  
urbs of many smaller towns (Fig. 13) and  
densely built up areas of our larger cities  
(g. 14). But no climatologist is necessary  
rove that the change must be great—and  
the worse.

That such planning is not necessary, even  
the crassest grounds of economy, was  
onstrated a decade ago by Henry Wright,  
a study for the Pierce Foundation (Fig. 15).  
s study indicated that, even with a gridiron  
tern of small houses on small rectangular  
s, it was possible to place them so that—in  
ms of sunlight, view, prevailing winds and  
vacy—they produced an incomparably more  
satisfactory microclimate than the barracks-  
e plan shown in Fig. 14.

Because it is a hypothetical study of solar  
iation, primarily concerned with winter heat  
n, the Wright scheme is not complete. It  
s not take into account either topography  
plant life. But it is apparent that as a  
nciple it could be adapted to any type of  
rain. And a landscape design which made  
elligent use of ground cover, shrubbery and  
ciduous vines and trees could easily yield  
maximum of summertime protection.

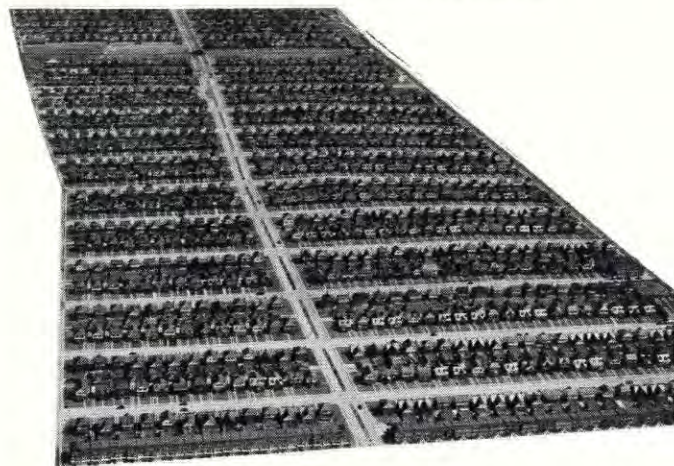


13.

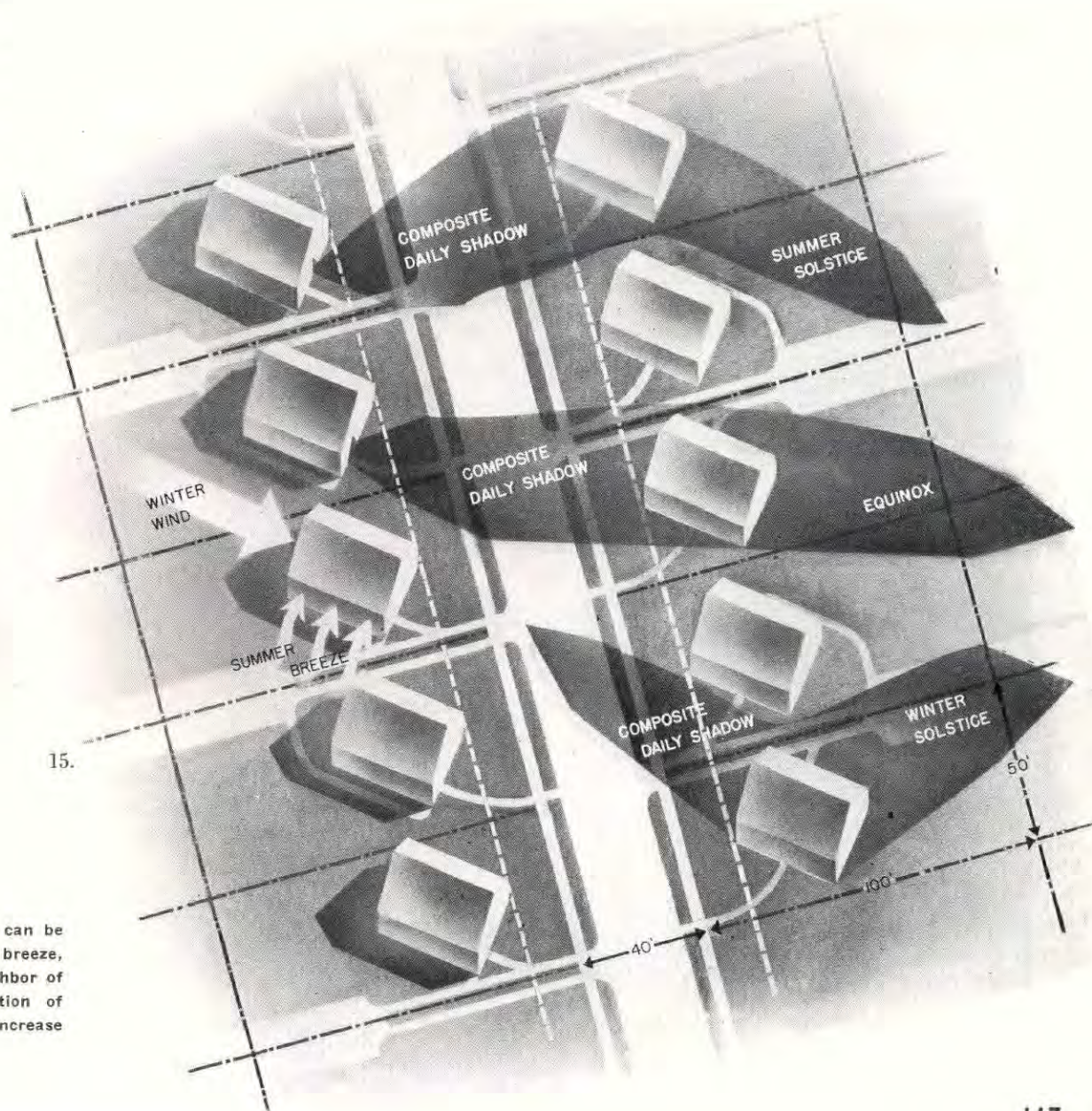
**WITH ALL ITS ABSORPTIVE SURFACES**  
of trees and grass, an open residential  
area like that at left is certain to have a  
more tolerable microclimate in summer  
than . . .

*Fairchild Aerial Surveys, Inc.*

. . . **A DENSELY BUILT, SHADELESS** area  
like this. Consciously or otherwise, such  
developments violate every climatic prin-  
ciple, produce a microclimate much like  
that of the desert.



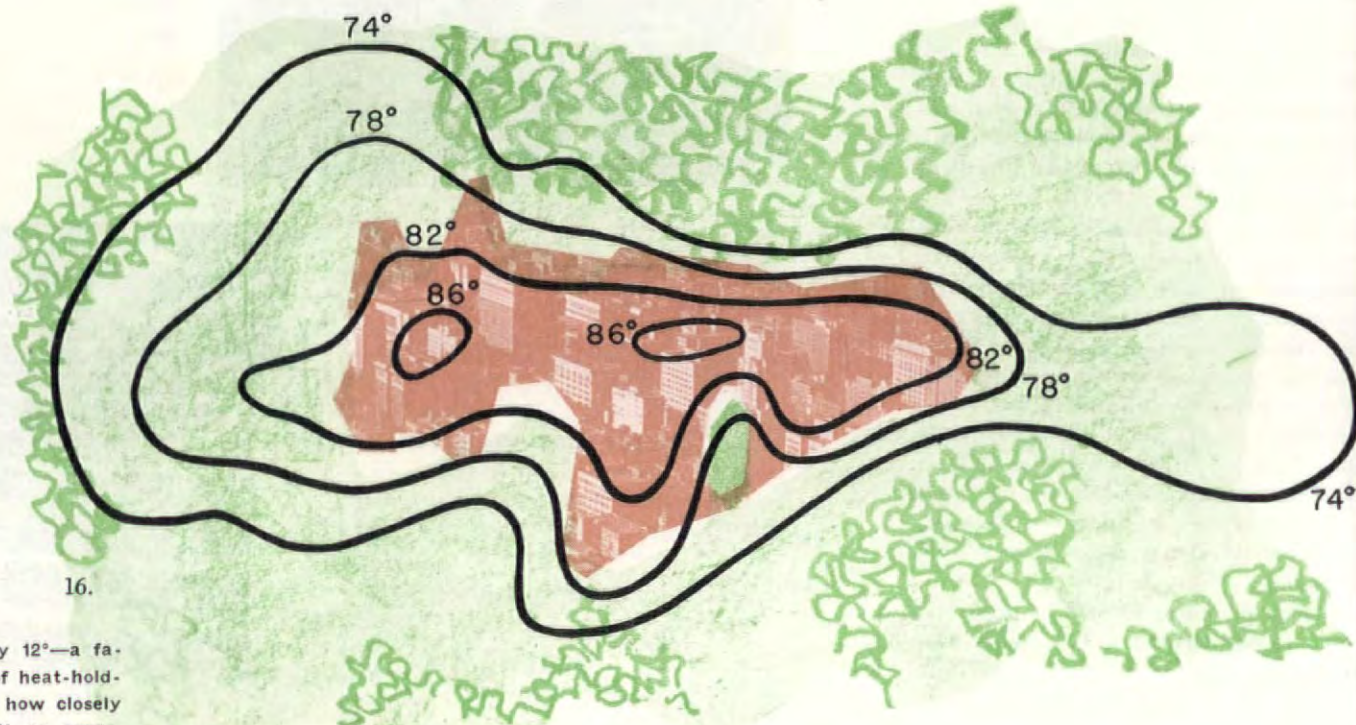
14.



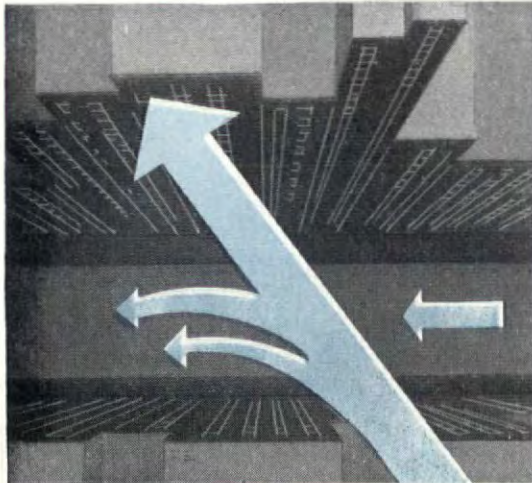
15.

**EVEN SMALL LOTS AND GRIDIRON STREETS** can be  
laid out so that each house gets sunlight, breeze,  
privacy and outlook. No house robs its neighbor of  
winter sunshine; while intelligent exploitation of  
topography and plant material can greatly increase  
their livability, winter and summer.



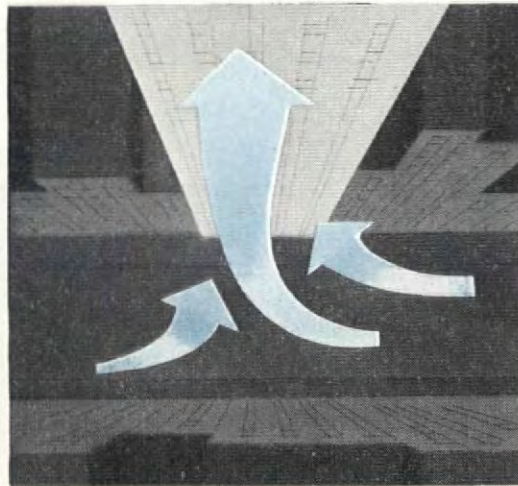


**COOLER IN THE SUBURBS** by 12°—a familiar effect of dense areas of heat-holding masonry surfaces. Note how closely temperature lines follow built up areas.



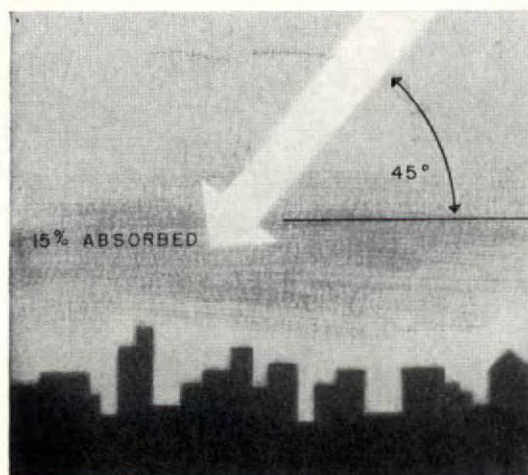
17.

**CANYON STREETS** can convert mild breezes into winds of gale-like proportions along sidewalks.



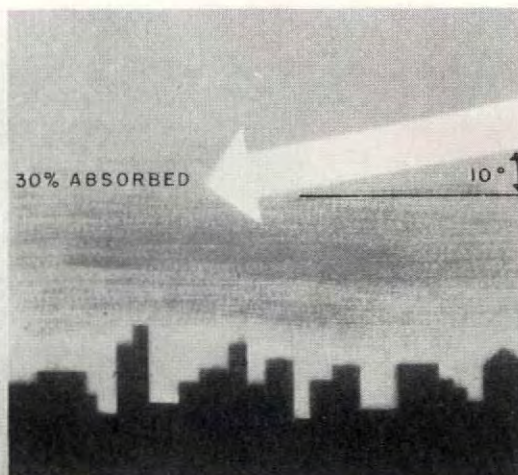
19.

**HEATING EFFECT** of sun on large buildings will further complicate air currents on streets.



18.

**A SMOKE PALL** over a city reduces visible solar radiation by as much as 30 per cent, invisible



20.

ultraviolet up to 50 per cent. Pall of dust and smoke makes cities hotter, more humid in summer.

The proof of how profoundly we can modify the microclimate is most evident in our cities. These generally show a remarkable difference of climate compared to their relatively undisturbed surroundings. Almost without exception, this change has been brought about accidentally. Very few cities in the world have a "planned" climate\*. In most cases, with the passing of the years, development has taken a haphazard course. The changes have been subtle and have thus gone generally unremarked. The simplest illustration is, of course, that of smoke. Until our cities are completely powered by hydro-electric or atomic energy, the first concern should be to plan the city in harmony with the prevailing wind direction. Residential districts should be built on the windward side of the area, smoke-producing factory districts and traffic centers toward the lee. The simple insertion of tree belts between industrial and residential areas will often act as a quite effective barrier to dust (Fig. 21).

Dust and smoke are among the most important factors affecting the urban microclimate. They cause the frequent, often very stubborn "smogs," which seriously hamper many cities during the cold season. These cut down the intensity of solar radiation, especially in the biologically important ultraviolet wave lengths, which may be reduced by 50 per cent during the heating season. (Figs. 18, 20). In sum-

\* The Russians took the lead when they formulated the plans for the new cities of Magnitogorsk and Stalingrad: topography, prevailing winds and solar orientation were controlling factors in their designs.



## count microclimatic factors of topography, prevailing winds, path of sun.

A tree belt can be an effective barrier against . . .

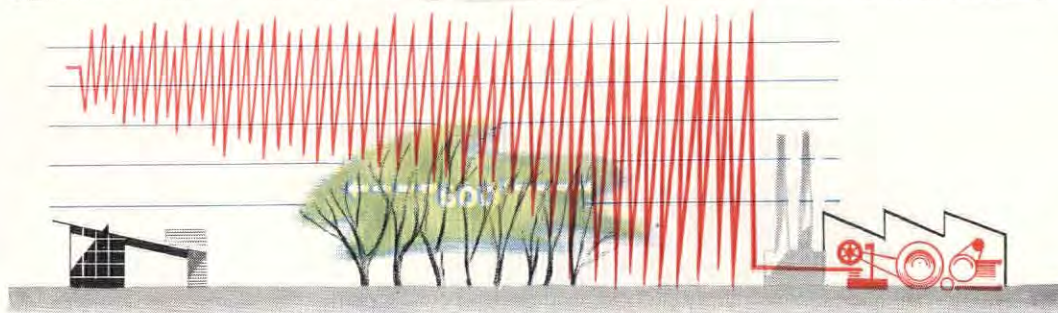
21.

**SMOKE AND DUST.** Actual measurements indicate that a 600 ft. wide belt of planting can reduce dust count by as much as 75 per cent. Even lawns act as dust filters.



22.

**AIRBORNE SOUND.** Densely-planted belts of trees, edged with lower shrubbery, are acoustically effective, especially in summer when doors, windows are open.



23.

**WIND.** Even bare deciduous trees reduce wind velocities, raise temperatures in lee. Since prevailing winds come from opposite compass points, summer and winter, tree belts need not cut off summer breeze.



merit time this absorption of solar energy by a smoky atmosphere raises the air temperature decidedly and this—together with a parallel increase in humidity—contributes materially to summer discomfort.

Because it is climatically ill-planned, the typical American city produces a special microclimate which closely resembles that of a stony desert. The rapid runoff of all precipitation deprives it, especially in summer, of beneficial cooling by evaporation—a loss amounting to about 1,500 BTU per square foot of area per season. Add to this the heat absorbed by the dust pall and the result is an air temperature considerably higher than the surrounding countryside (Fig. 16). In certain areas along solidly built-up streets, the temperature of paving, walls and roofs will, of course, be much higher. Here an egg may literally be fried to a crisp on naked man-made surfaces exposed to the sun. There may be some small advantage in the winter to the heat-holding masonry fabric of our cities; but in summer it causes greater discomfort.

In the context of most American cities, every scrap of lawn, every clump of bushes, every row of trees can thus be justified on the very practical grounds of increased summer comfort alone. The more of them it has, the more tolerable the city is apt to be; and if the disposition of such areas is planned in conjunction with all other microclimatic factors—topography, water bodies, prevailing winds, path of sun—the city would have less need of both furnace and cooling coil.

However, in the northern zones of the United States, summer heat is secondary to

the desire for winter sunshine and its exploitation for heating and illumination in individual buildings. Obviously, the ratio of street width to building height regulates this. For example, on a surface behind a top-floor window, we can expect to get 50 per cent of the illumination received outdoors. At a height below the roof line equal to half the width of the street this value has been reduced to 35 per cent; at one street width below the roof, to 25 per cent; at two street widths, to 15 per cent; and at four street widths below the roof we get only 8 per cent of the outdoor illumination.

Sunshine, however, is not an unmixed blessing. In summer it can be a real nuisance. The surface which it strikes make a marked difference in the microclimate. A tar paper roof in summer, for example, can reach temperatures of 190° F.; on glass skylights, temperatures of 127° F. have been measured. Wooden floors directly exposed to the sun through glass windows can get as hot at 120° F. Glass, in general, is a one-way street for sunshine. It acts as a radiation trap and only "sunbreaks," shades or awnings *outside* of the window can prevent this heating. Light-colored exterior surfaces are advantageous because they reflect a considerable portion of the radiation and show temperatures from 30 to 50° F. below dark surfaces in the same exposure. Conversely, however, light walls are hard on the eyes of passersby, as anyone familiar with Florida cities can testify. Here again is an argument for wide use of the natural shade of trees and vines.

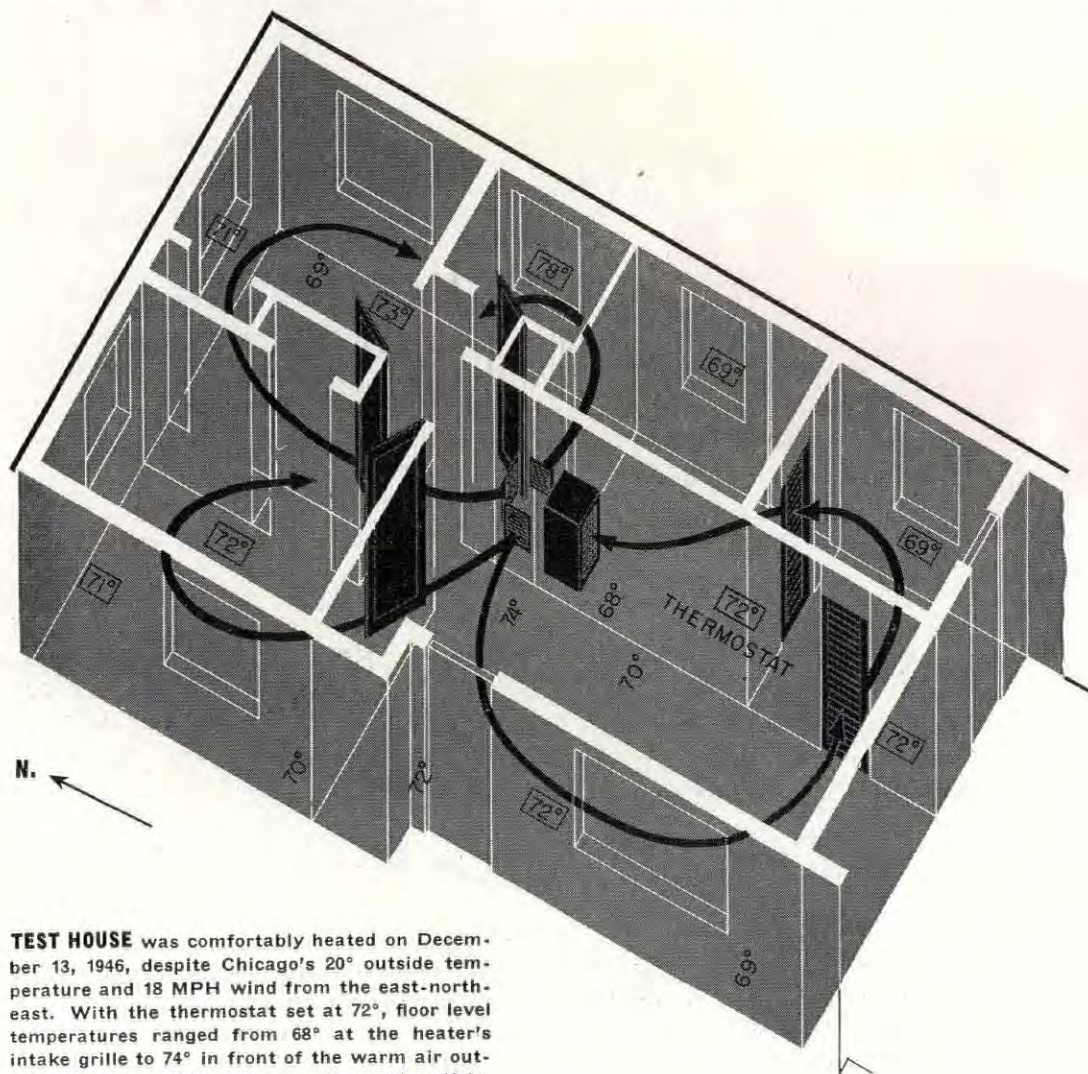
Of all the factors affecting the microclimate of the city, least is known about what built-up

areas do to prevailing winds passing over them. As a rough generalization, it can be stated that such areas cut the wind velocity to about two-thirds of the values observed over free terrain. Yet in our canyon-like streets a great number of freakish effects can be noted. The most obvious one is the so-called funnel effect, whereby the velocity of the wind may easily be doubled—from 20 mph. to 40 mph. Other measurements show that if wind hits a built-up street at an angle of about 45°, currents of quite high velocity will move down the windward side, while slower currents will move in the opposite direction along the leeward side (Fig. 17). These currents will be further complicated locally by the presence of tall buildings, whose sunheated surfaces can set off convective currents of gale-like proportions. (Fig. 19). This suggests that, if enough were known about the factors involved, buildings could be so designed and grouped that these man-made winds could be largely controlled.

One of the surest ways of improving the performance of individual buildings and whole cities would be to incorporate microclimatic knowledge into their design. Cooperation between architects and climatologists will yield designs better adapted to their natural environment. Buildings should blend harmoniously with the visible landscape; but they should also recognize the invisible, but important, configuration of their microclimate. If, in addition, the landscaping respects the microclimatic principles already described, there can be little doubt that cities would be much more comfortable, winter and summer.



# **SMALL HOUSE HEATING SYSTEM** employs doors and rooms as valves and ducts for efficient circulation of warm air.

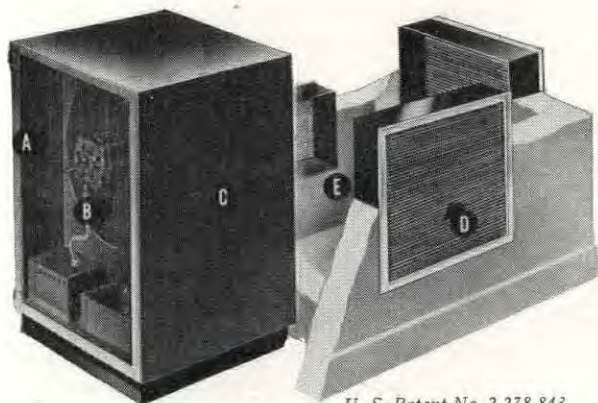


**TEST HOUSE** was comfortably heated on December 13, 1946, despite Chicago's 20° outside temperature and 18 MPH wind from the east-northeast. With the thermostat set at 72°, floor level temperatures ranged from 68° at the heater's intake grille to 74° in front of the warm air outlet. At the breathing level (readings taken 42 in. above the floor and shown in rectangles above) temperatures ranged from 69° near windows to 78° in the superheated bathroom. Maximum floor-to-breathing-level gradient in any room was only 4°—in the sunless, windward, northeast bedroom. Comparison of these temperature readings with those obtained in a test by the Pierce Foundation of a comparable house heated by a gravity warm-air floor furnace indicates that the forced circulation of air and its downward deflection produce a more evenly heated floor and about half the temperature gradient between floor and breathing level. A basementless structure veneered with brick over insulating sheathing, the test house was insulated with 2 in. of rockwool in the ceiling and a paper-on-felt barrier in the double wood floors, had no weatherstripping nor storm windows.

*Hedrich Blessing*



**SPACE-SAVING EQUIPMENT** includes (A) fan guard and filter screen, (B) large propeller-type fan, (C) metal casing enclosing heat exchanger and burner, (D) directional grilles and (E) small plenum, which goes under the hall linen closet as shown in the above view of a typical installation.



U. S. Patent No. 2,278,843

Spurred by the fact that many small houses are heated either with modified versions of large-house heating systems, or supplied only with space heaters of doubtful efficiency, Mechanical Home Systems, Inc. of Chicago has developed a simple but carefully engineered system specifically for the minimum house. It capitalizes on the fact that most small houses are similar in floor plan. In essence, it consists of a strategically located heater and plenum chamber with three outlet grilles. As installed, it uses various interior doors and spaces as valves and ducts for the planned circulation of warm air.

Several hundred installations of the so-called "mechani-core" were made immediately prior to the war and, with resumption of their activities, the sponsors have recently sounded out the users on the unit's performance and made temperature tests of a typical installation. Both surveys produced encouraging results. Homeowners commented favorably on the system's comfort and economy; tests showed an efficient distribution of heat throughout the house and a maximum gradient of only 5 degrees between floor and breathing level. Both check-ups were made in notoriously cold Chicago.

Although easily adaptable to houses with basements and second floors, the "mechani-core" system usually serves the one-story house whose rooms are compactly arranged as in the test house shown to the left. A cubical plenum chamber is centrally located in the lower half of a small hall closet which backs up on the heat exchanger in the utility room (or kitchen). This gas-fired unit has an output of 68,000 BTU's per hour (reducible by 30 per cent) and is equipped with a 1/20 HP motor, propeller-type fan and air filter. Heated air at a velocity of 250-300 ft. per minute is directed through a small louvered outlet into the bathroom and through larger outlets toward the open bedroom doors and into the living room. Both of the larger outlets discharge the air with a fixed 20 degree downward deflection and are equipped with sideward deflecting vanes which properly "aim" the airstream. A proportioning damper within the chamber or "heat director" divides the air (800 cu. ft. per minute) between the various outlets.

Air delivered to the bath and bedrooms loses its heat as it travels through these spaces, escapes through the open doors into the hall and out through the opening into the living room. Here this cooler air is mixed with and entrained by the heated airstream from the living room grille. After circulating around the walls of the living room, the air passes through louvered doors into the kitchen and utility room, motivated by the suction of the heater fan. To obtain optimum heat distribution in the kitchen and

(Continued on page 122)



for the OTHER "FRONT DOOR"  
*Specify*  
**Rō-Way** OVERHEAD TYPE DOOR



With today's garage being built "Up Front" as an integral part of the modern home, the appearance of the car entrance becomes almost as important as the front door.

When you specify RO-WAY Overhead Type Doors, you're selecting a door designed for "good looks," as well as for extra durability and easy operation. Your clients will like the smooth way these doors "float up" and "glide down" . . . without sticking or sagging.

RO-WAY OVERHEAD TYPE DOORS are easy to operate in any kind of weather and give lasting satisfaction and service because they have these FIVE exclusive improvements—

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2. "DOUBLE-THICK TREAD" TRACK ROLLERS
3. "TAILOR-MADE" POWER SPRINGS
4. "CROW'S FOOT" OUTER BEARING SUPPORT
5. RUSTPROOF HARDWARE

*Dependable RO-WAY sales and installation service is available all over America. Write for free catalog. See our catalog in Sweet's.*

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*There's a Ro-Way for every Doorway!*



## That's\*for Me!



*decides*  
**Mrs. Doakes**

Trust a good housekeeper  
to know what's what in  
smooth-working window  
hardware . . .

And 134,456,000 magazine  
readers agree with her  
Forceful advertising in leading home  
service magazines is now carrying the  
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of convenience-conscious home-planners  
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\*She  
means the

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*Invisible*  
**SASH BALANCE**

### The dependable spiral sash balance

Quickest and easiest of all  
balances to install—three screws  
do the trick. Performance-tested  
in the laboratory and in windows  
of thousands of pre-war homes.  
Perfect for large volume building  
operations because of speed  
and economy in installation.  
Simple adjustment without re-  
moving sash. Same size balance  
fits upper and lower sash. 10  
standard sizes meet 95% of all  
your residential installations.



#### Complete data on specifications and installation

Write today for fully-illustrated, complete information on planning,  
sizes, installations, etc. for Grand Rapids Invisible Sash Balance.

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#### Grand Rapids Sash Pulleys

"The recognized standard of quality for  
a half century"

No. 103 face plate, cone bearing type and Nos.  
175, 109, 110 sawtooth drive type sash pulleys  
cover 95% of all sash pulley requirements.



### HEATING SYSTEM cont'd

utility room, the two kitchen doors must  
be widely separated and the louvered door  
to the utility room must be diagonally  
opposite the heater.

Working hand-in-hand with the design  
of the house, the heating equipment pro-  
duces notable conveniences and comforts:  
▶ Served directly by the plenum chamber,  
the bathroom is the warmest room of the  
house—as it should be.

▶ At the other end of the cycle, the kitchen  
and utility room receive the least heat—  
also as it should be. They are work rooms  
which require less heat, contain heat-pro-  
ducing equipment of their own.

▶ Bedroom heat is "turned off" at night  
by merely closing the doors. Conversely,  
bedrooms warm up quickly when doors  
are opened in the morning.

▶ Discharge of the heated air at a low  
level and downward helps warm the  
floors, minimizes stratification.

▶ The system's simplicity cuts initial, op-  
erating and maintenance costs to the bone.

Since the "mechani-core" system relies  
about equally on architecture and heating  
equipment, it is not surprising that its  
inventor and patent holder is a man  
trained in both fields. President Rogers  
Follansbee was trained in architecture at



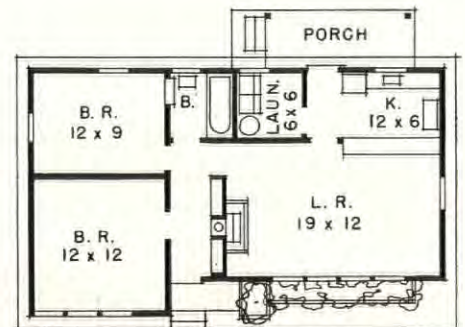
**TYPICAL INSTALLATION** in utility room.

Harvard, in heating and air conditioning  
at Trane Co. His proving grounds have  
been the Chicago sub-divisions of Opera-  
tive Builders Arthur T. McIntosh & Co.  
and Smith & Dawson. The test house was  
built last fall by Smith & Dawson (from  
plans by Architect W. H. Kapple) at a cost  
of \$7,500, exclusive of lot. The heating con-  
tract was only \$275.

### AUSTRALIAN PREFAB resembles American counterpart in design, fab- rication and erection techniques.

Australia, with an acute housing shortage  
of her own, has begun to eye the prefab as  
a possible solution. One of the new models  
is the "Sectionit," manufactured by Van-  
dyke Brothers Ltd. of Sydney. Resembling  
American prefabs in design, fabrication and  
erection techniques, the Vandyke house em-  
ploys wood and plywood panels, 3 ft. wide  
by 9 ft. high, tongue-and-grooved for easy,  
fast erection. Panels are fastened to a floor  
plate with special clips, while a plate fixed

(Continued on page 124)





# WOMEN WANT A LAUNDRY PLANNED TO THEIR WASHDAY WORK

*Here's the work sequence of laundering...*

**1. PREPARATION**—Mending, Sorting, Stain-Removal. Work table space needed. Clothes chute and single laundry tray or deep sink should be near this point.

**2. WASHING**—Soaking, Rinsing, Damp-Drying. All these jobs done in 4-square feet with the Bendix automatic Washer.

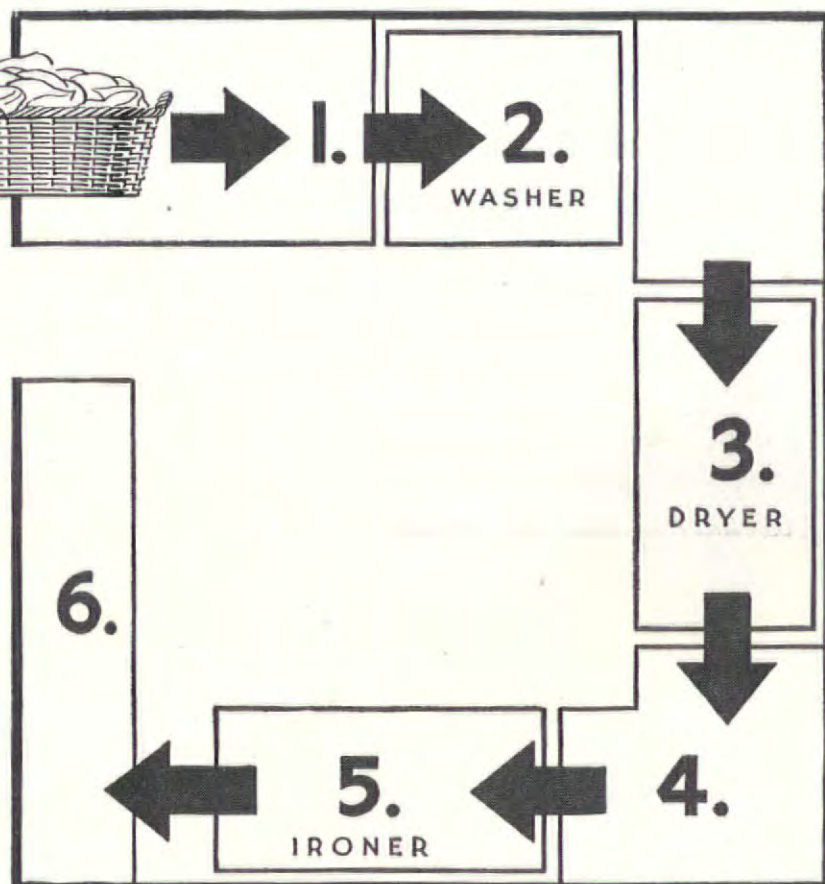
**3. DRYING**—Done right in the laundry, 365 days a year, with the Bendix automatic Dryer (gas or electric), requiring only 5.6 square feet.

**4. SPRINKLING**—The before-ironing sprinkling must have space and accommodation in the well-planned laundry.

**5. IRONING**—An adequate circuit for the automatic Ironer must be provided in the modern planned laundry.

**6. STORAGE**—Women will appreciate a location for the Bendix automatic Ironer near some shelf space and close to the entrance. These are the things a woman *does* in your laundry on washday—and this is the order in which they have to be done.

**BENDIX HOME APPLIANCES, INC., SOUTH BEND 24, INDIANA**



She demands labor-saving equipment: an automatic Washer that needs no attention, that doesn't have to be trundled about, that never slops the floor. She needs an automatic Dryer that frees her from waiting for weather and dries fast. She hails with delight the Ironer that means a new ease and speed in doing the ironing job.

And surveys continue to show that she knows Bendix automatic Home Laundry Appliances give her all this.

But she demands too that this equipment be arranged to the pattern of the washday job, so that the six steps come in sensible sequence and not in haphazard confusion.

That means your arrangement of space, lighting, outlets, gas lines, water-lines, and drain must follow the Six Steps of laundering sequence.

And your client will appreciate the thoughtfulness that inspired your planning.

**BENDIX**  
automatic  
**Home Laundry**

BENDIX WASHER ...



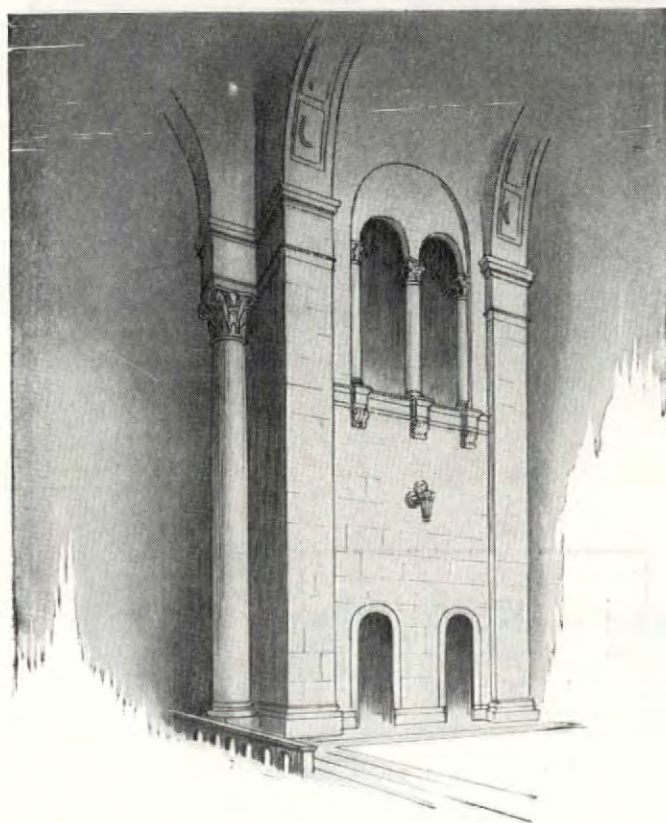
DRYER ...



IRONER







## for Enduring Beauty

Architects, Craftsmen and Dealers who specify, apply and sell the original Ohio White Finish and its famous twin, Hawk Spread, know that the quality of these brands help to insure their reputation.

Both brands are scientifically processed from rock quarried from the heart of the world's purest deposit of dolomitic limestone . . . Both are always packed in distinctively striped Red Zig Zag Bags . . . the mark of enduring beauty for plastered walls and ceilings.



### AUSTRALIAN PREFAB cont'd

along the top ties them into a solid wall. Door and window sections are delivered complete with doors hung and sash glazed. Special sections are made for flush switches, power points, bathroom cabinets, gas or electric water heaters and bathroom heaters. The ventilated roof comes in six sections. These units are insulated with fibre board; exterior covering is corrugated galvanized iron. Pictured herewith is the erection sequence which resembles typical American practice; note that ceiling and roof is installed as one unit.



**WINDOW PANEL**, complete with glazed sash and hardware, is positioned by two men (upper right). Door sections are also delivered complete with doors hung. After floor sections are placed, six men can erect conventional type wall panels (3 ft. wide x 9 ft. high), cupboard and roof sections in one day.



**FACTORY-MADE** kitchen cupboard being unloaded (upper right) is used as an integral part of the wall which divides kitchen and laundry. View of kitchen (above) shows cupboards and sink counter in place. Last of six roof sections is being positioned (right). A four-inch fascia is then fixed along front and back and roof is ready for corrugated iron.





# EXCLUSIVE!.....

## NUTONE DOOR CHIMES "MERIT SPECIFIED" IN ALL CASE STUDY HOUSES!

● Here's the NUTONE Chime in Case Study House No. 16—one of a series sponsored by the West Coast magazine, *Arts & Architecture*. It's a combination NUTONE 2-door Chime and *Telechron* Clock—in a single compact unit that's easy to plan for, easy to install. Nine inches square; white enamel with chromium crystal case. Note the large, easy-to-read dial. Suggestions for wiring this NUTONE Door Chime and Clock and helpful planning material on other NUTONE Chimes are yours for the asking. Write or phone your nearest NUTONE office.

RODNEY A. WALKER, prominent West Coast architect, designed and built Case Study House No. 16, using a time-saving modular system he originated several years ago. Plates are drilled every three feet—each dimension being a multiple of thirty-six inches. Studs are drilled at both ends. Hardwood dowels inserted into the holes permit the framework to be assembled "Tinker-Toy" fashion.



(Above) NUTONE Door Chime and Clock (list, \$14.95) in kitchen of Case Study House No. 16



CASE STUDY HOUSE NO. 16 is only one of the homes being built for public demonstration in southern California by the magazine, *Arts & Architecture*. Object of the program is to show results of the best thinking both by designers and by manufacturers of the equipment and accessories that complete a modern home. Specification of products, from building materials to bottle openers, was based on merit alone.

NUTONE IS THE  
WORLD'S LARGEST  
MAKER OF  
DOOR CHIMES



*...better living means better listening, too!*

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200 FIFTH AVE., NEW YORK 10; 931 EAST 31st ST., LOS ANGELES 11, TERMINAL SALES BLDG., SEATTLE 1



**WILL YOUR CLIENTS**  
*get all steamed up?*



**Provide for controlled air changes in rooms that develop circulation overloads**

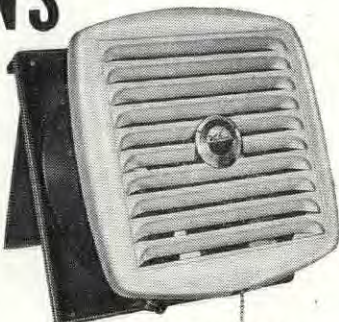
● Normally calculated changes of air will not be adequate for certain rooms. Bathrooms and kitchens develop ventilating overloads at specific times during the day—bathrooms especially need



## VENTILATING FANS

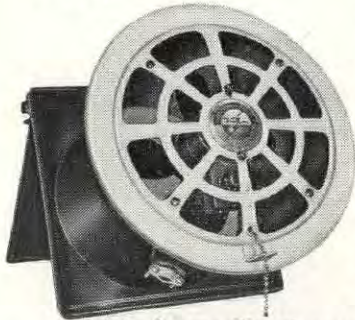
provide controlled change of air . . . preventing "bath-room fog" which steams up mirrors, causes wall condensation, and makes towels and curtains soggy. In kitchens, a controlled change of air prevents greasy smoke and cooking odors from drifting to other parts of the house.

A Victron Ventilating Fan in these or other hard-to-ventilate rooms will change the air in a matter of minutes . . . keep rooms fresh and airy at all times.



**There's a VICTRON model for every requirement . . .**

Associate Victron Ventilating Fans with bathrooms, kitchens, recreation rooms and laundries. There's a Victron model for every requirement . . . for palatial home or modest bungalow. Provide 550 to 700 cubic feet of free air movement per minute. Designs are attractive yet unobtrusive. Installed in wall or ceiling—in new or re-modeled houses.



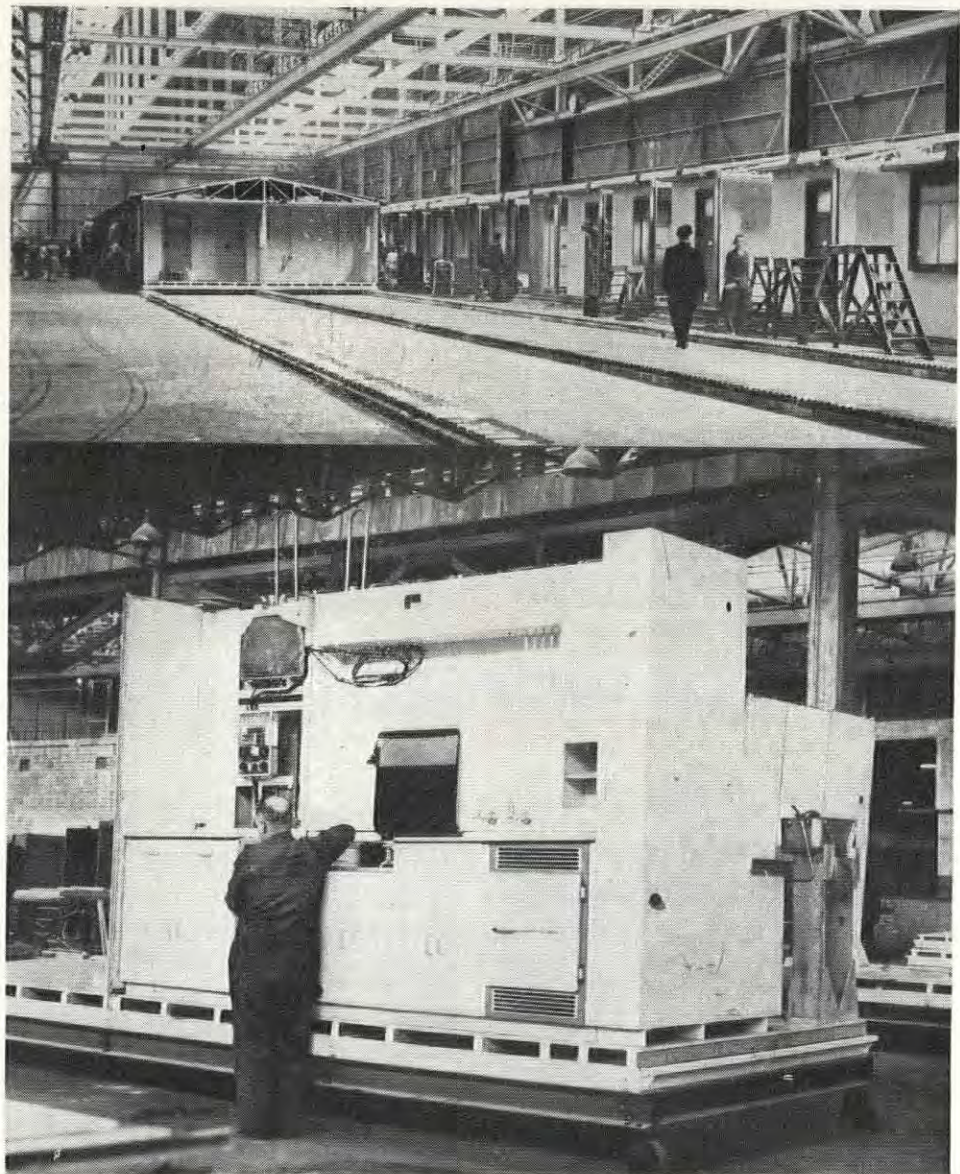
**Write for specifications on all models or refer to 1947 Sweets Architectural File 29B 14**

**VICTOR**  
PRODUCTS  
2950 Robertson Ave.



**ELECTRIC**  
INCORPORATED  
Cincinnati 9, Ohio

**ALL - ALUMINUM PREFAB** is sectional, has integral kitchen-bath-utility unit.



British Combine Photos

The converted Hawkesley Aircraft factory at Gloucester, England, is now turning out this aluminum prefab at the rate of 250 per week. Like the TVA's famous sectional house in this country, the four-room Airoh house is trucked to the site in three bays. When bolted together on the concrete foundations, these yield a complete, ready-to-move-into house. One section (right) contains kitchen and bath equipment, house and hot water heater and electrical system, powered by either gas or electricity. This utility core, also of aluminum, resembles several post-war units of similar design in this country. Although Airoh is restricted to one model, the structural system has the advantages of economy in both factory and site labor. The plant can produce a complete house in two hours, while a gang of six men with a light crane can erect it complete (except for foundations) in three hours.



**UTILITY CORE** is trucked to site (above) and lowered onto its foundation by crane (below).







**For Radiant Heating, long lengths of**  
*Copper Tube* \* **are easily handled**

**I**N radiant heating, the light weight of Chase Copper Tube is an outstanding installation advantage—particularly for ceiling mounting.

Coils up to 100 feet long can be held in position by a single workman, while a second bends the tube and fastens it in place. Or the coil may simply be slung over a nearby wall hook.

Use of these long coils—combined with copper tube's ease of bending—cuts down to a mini-

mum the number of joints necessary. And where joints *are* needed, they are quickly made with solder-type fittings.

The demand for Chase Copper Tube—result of its many advantages—is so great that we cannot meet it at all times. Information on radiant heating, however, is available for your use now to aid in your future planning.

For copies of our radiant heating literature, write on company letterhead, to Dept. AF37.

**7 Reasons**  
**WHY CHASE COPPER TUBE**  
**FOR RADIANT HEATING**

1. EASY TO BEND
- \* 2. LIGHT IN WEIGHT
3. SOLDERED FITTINGS
4. SMALL DIAMETERS
- \* 5. LONG LENGTHS
6. LOW COST
7. LONG LIFE



**Chase**  
**BRASS & COPPER CO.**

Waterbury 91, Connecticut  
 SUBSIDIARY OF KENECOTT COPPER CORPORATION

*This is the Chase Network—handiest way to buy brass*

INCORPORATED

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 MINNEAPOLIS NEWARK NEW ORLEANS NEW YORK PHILADELPHIA PITTSBURGH PROVIDENCE ROCHESTER† SAN FRANCISCO SEATTLE ST. LOUIS WASHINGTON† (†Indicates Sales Office Only)



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## **SPEED** PLUS **ECONOMY** WITH **LABOR-SAVING** **ATLAS SPEED FORMS**

### Some More Users

The Austin Company  
Brown & Matthews  
V. Barletta  
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Corporation  
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ing Company  
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WHEN LEADING Architects, Engineers and Builders everywhere use and recommend the Atlas process of Concrete Form Construction again and again on job after job you can be sure of this—it is doing a better job at a worthwhile saving in time, material and money compared with the forms previously used. Savings of 25 to 50% are not unusual with Atlas SPEED Forms.

A Designed Steel Form with strength built in—good for re-use indefinitely without repair. Easy to assemble with non-clog wedge bolts—only a hammer is needed . . . a particular advantage where skilled labor is scarce, for semi-skilled or unskilled labor can set, move and strip these new forms easily and rapidly.

Forms line up straight and true. No studs needed in wall forms, no joists in slab forms. Adjustable to suit any condition.

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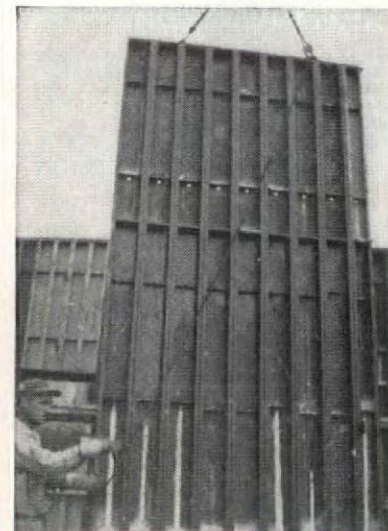
### Irvington Form & Tank Corp.

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Forms are set and moved most economically in large panels by using a crane, but can be easily set, stripped and moved in smaller units by hand. Weight per unit only 45 lbs.

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**AVOID**

"peas-in-a-pod" monotony



## INDIVIDUALIZE homes with **BONDEX** colors!

Give a man a house that expresses his own ideas and he's satisfied. That's why "exterior decoration" with Bondex is indicated in so many low-cost housing projects.

For "mellowing" concrete block, for adding distinction to stucco, brick and masonry, color-style with Bondex, the patented cement paint which bonds with the wall surface to seal out dampness.

## **BONDEX** beautifies basements, too

To make the most of every inch of space, show basement areas to best advantage by painting the walls with attractive Bondex colors. This treatment converts an otherwise drab area into an attractive, dry work-or-playroom which the whole family will appreciate.

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*Bondex is a patented formula so unique that it outsells all other cement paints combined*



THE *Patented*  
CEMENT PAINT

### 12 SHADES AVAILABLE IN **NEW** COLOR CHART

Dutch White	Tropical Coral
Old Spanish White	Spanish Buff
Oyster Shell	Monastery Gray
Antique Ivory	Grotto Blue
Carthage Cream	Ivy Green
Adobe	Brick Red

Also, Pure White



### SEND FOR THESE FOLDERS

These Bondex folders dealing particularly with color should be in your hands. Write to nearest Reardon Company office.





John Henry Belter . . .



. . . made these chairs.



Hartford grandparents . . .

. . . liked frills and gadgets . . .



. . . and birds in cages.

## VICTORIAN ARTIFACTS

Among the more revolutionary modern architects, there are those who insist that all museums should be abolished. There is much to be said for this point of view, considering how unfortunately many people follow the past, copying all of its vices of design as well as its virtues just because their ancestors designed that way. Considering how much of the atrocious is preserved to be dutifully copied, it would seem easier to wipe out all museums than to fine-comb them for such pieces from the past as are worthy of note.

But sometimes the good and the bad are so irrevocably mixed that such a sweeping-out cannot be achieved. In repudiating a piece for bad design, one might also repudiate an interesting bit of experimental technique; or in rejecting a piece for bad craftsmanship, one might also reject an original new concept of design that would be worth preserving and developing. So long as museums are subject to a spirit of enquiry and whimsicality, as is the Wadsworth Atheneum of Hartford, Conn. in its recent exhibition "This Was Hartford: Victorian Silks and Settings," they contribute to the growth and development of new ideas, not just to a worship of the past for its own sake.

In a series of Victorian rooms installed at the Atheneum, there are a few ideas of interest to our own generation: two chairs, for instance, attributed to the New York cabinet-maker, John Henry Belter, who was active from 1840 to 1860. Belter was an experimenter of exceptional ability who, in his use of laminated wood, anticipated modern furniture construction. He has used bent wood and paper-thin rosewood veneer for the backs of his chairs. These laminated chairbacks have been carved in open patterns of leaves, scrolls, garlands, etc., in the elaborate ornamentation beloved by our grandparents (see cuts).

Another interesting technique has been used in the collapsible folding iron bed, with iron ribs for a voluminous concealing canopy. (The canopy seen in the cut, stitched by some of the modern pro-Victorian enthusiasts who prepared this exhibit, contains nearly 70 yards of ruffles and blue satin bows.) The bed can be folded up into a compact and easily transportable package.—E. B.

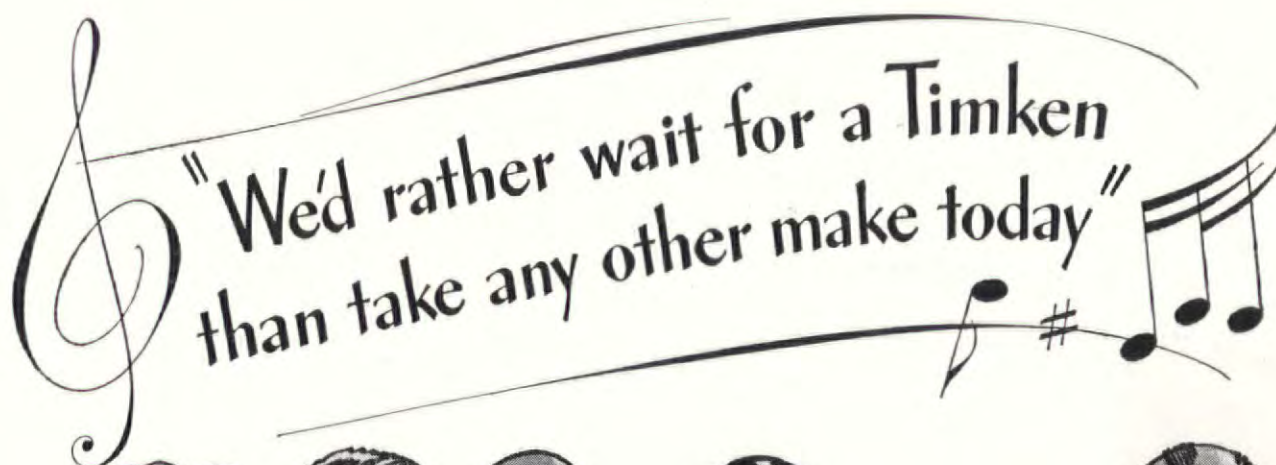
## POSTWAR GLASS

"GEMMEAUX" is the name Jean Crotti of France has given to his new art form recently exhibited at the Office of the Cultural Attache of the French Embassy in New York City. Gemmeaux is a combination of glass and plastic (or "chemical glue", as Crotti calls it) that creates an effect like the fusing of gems and enamels. The new method, frankly experimental, should stimulate artists and architects with its many possibilities.

Between a sandwich of two sheets of plate glass, Crotti has mingled many bits of broken or cut glass in myriads of colors, overlapping and intermingling and holding them in place by a translucent gluelike medium. He has worked with these glass bits as an artist works with pigment, building up his final painting so that it gives the effect of a new type of stained glass, three-dimensional in quality and hence glowing and shifting in color with changes in the point-of-view. In the exhibition the glass panels were mounted in place like stained

(Continued on page 132)





## In Babylon, N. Y., buyers all sang the same song!

It's plain as day to Frank Swanson, president of Swanson, Inc., Timken dealers in Babylon, N. Y.—*Buyers prefer to wait for Timken Oil Heat, rather than accept immediate delivery of any other make.*

Here's Timkeneer Swanson's experience:

Six homeowners in one city block had placed orders for Timken Wall-Flame Oil Burners. Naturally, all of them wanted installation *at once*.

Timkeneer Swanson was installing Timken Wall-Flame Oil Burners as rapidly as received, and in sequence of orders. But to help these six homeowners, special arrangements were made for installation of a few pressure burners of a well-known make.

And what happened when Frank Swanson suggested this scheme? He got a flat "NO" for an answer. Every one of the six said, "No thanks! I'd rather wait for a Timken."

Exceptional? No, not at all! It's a story that has been repeated time and time again across the

country. Timken Dealers find cancellations as scarce as the proverbial hens' teeth. *The more burners Timken Dealers receive (and they're receiving them at a record rate), the longer their waiting lists grow!*

There's one simple reason: *Homeowners are convinced that Timken quality is the best possible buy.*

Brand preference for Timken grows more marked every day, and that's a song architects and builders enjoy!

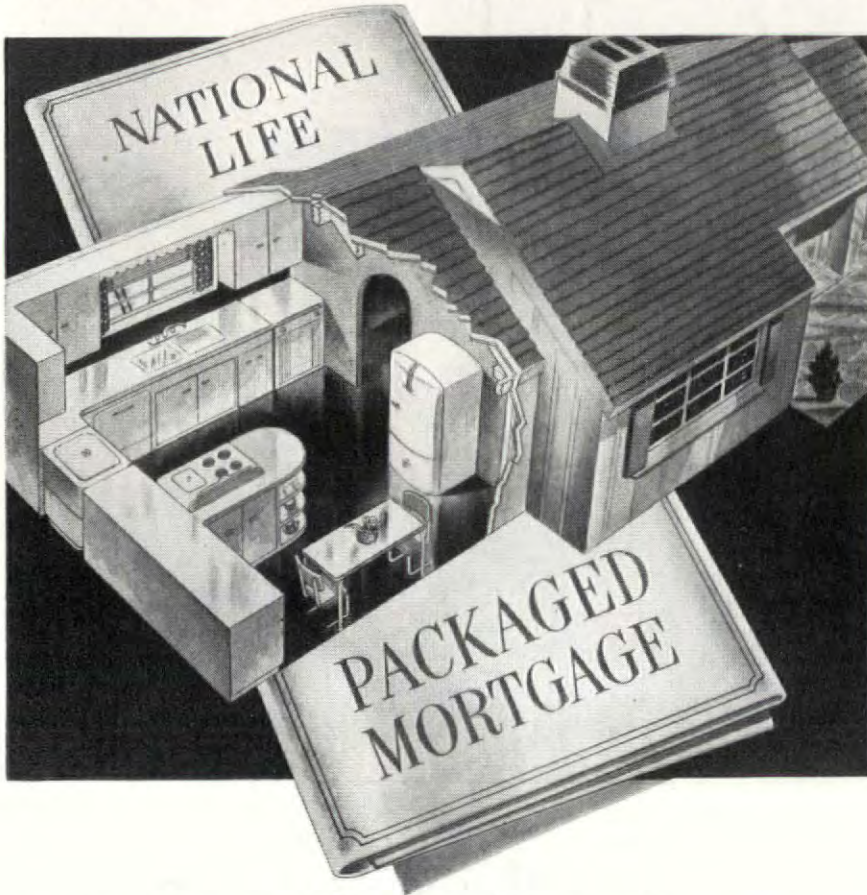
**TIMKEN**  
*Silent Automatic*  
**HEAT**

TIMKEN SILENT AUTOMATIC DIVISION  
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## What's A Home Without A Kitchen?



### *Modern Plan includes Appliances as Real Estate*

Now your clients and prospects can include the cost of their major new household appliances in one convenient mortgage contract, along with house and land. Ranges, refrigerators, home freezers, dishwashers, garbage-disposing sinks, and home laundry equipment all come under the lien of National Life's "Packaged Mortgage." Home-buyers deal with only one lender, have no extra bills right at the start, actually save money over conventional installment financing. Get the facts on this new plan that makes houses easier to buy . . . easier to sell. Send coupon below now.

## NATIONAL LIFE INSURANCE COMPANY

HOME OFFICE — VERMONT  
MONTPELIER,

*A Mutual Company, founded in 1850, "Solid as the granite hills of Vermont"*

CLIP AND MAIL THIS COUPON NOW

NATIONAL LIFE INSURANCE CO., DEPT. M-7, MONTPELIER, VT.

Please send me full information on your new, low-cost, all-inclusive plan for home-financing, and address of your nearest loan correspondent.

Name .....

Business or Home Address .....



glass windows, and lighted from behind to bring out their patterns.

Mr. Crotti, a painter for many years, became interested in this new technique shortly before the war interrupted his work in Paris. His first exhibition of the completed "gemmeaux" was held in Paris about a year ago, and although so far none of his work has been installed architecturally, he now has a commission for windows to be incorporated in a church in France. He has tested the new medium for heat, cold, and weathering, and believes that it can be used not only for interiors but will withstand exterior-interior temperature differences.

The method whereby Mr. Crotti and his assistants make up their panels is to use a horizontal sheet of glass as a base, applying the liquid cement and the bits of glass in a design copied from a sketch in outline form and from a painting in full color. He has improvised freely: some of the glass bits are finely ground, others coarse; some are cut symmetrically others are jagged and roughly broken; some are applied in single layers, others superimposed and intermingled tier on tier. For most of his panels he has copied well-known works of painters such as Roualt (whose paintings follow so closely the traditional composition of stained glass); Picasso; Braque; Matisse. When the complete reproduction in glass-and-glue has been built up, an upper layer of plate glass is laid over the work to seal up the painting and hold it in place. In this way, lead borders between the design elements are not needed, and there is a clear flowing and intermingling of colors. In some cases he has accentuated the design with bits or strips of dark glass having the effect of lead, but usually he has created an effect more like painting with no sharp divisions.

Not only is the medium itself an interesting experiment, but Mr. Crotti has tried many variations and developments of the material: working sometimes to give an effect like the pointillist paintings of Seurat; at other times to give the effect of mosaics laid regularly; occasionally incorporating glass bits that have a pre-stamped pattern. Mr. Crotti did not indulge the secret of his "chemical glue," but some of the plastics readily available in this country could probably be used in the same way. Some years ago Charles Connick of Boston experimented in a very small way with the idea of embedding stained glass pieces in transparent plastic, but he never conceived anything as richly variable as these French panels.—E. B.

## BOOKS

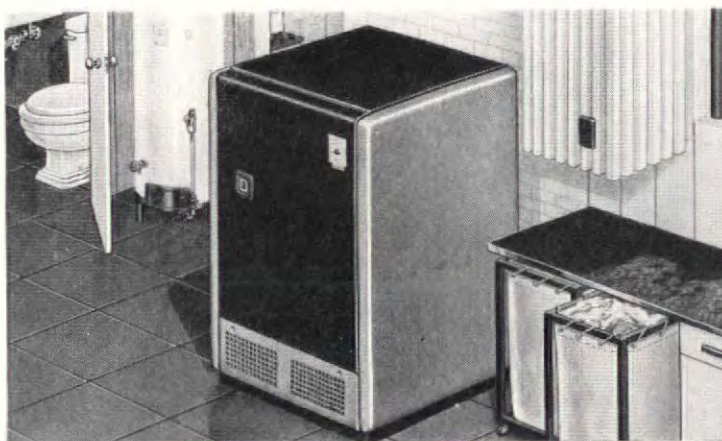
**EFFECT OF THE CORPORATE INCOME TAX ON INVESTMENT IN RENTAL HOUSING.** Randolph Paul and Miles Colean. 24 pp., \$1. National Committee on Housing, Inc., 1 Madison Ave. New York City.

One reason why the industrial revolution skipped house-building—and left one-third of the world's richest nation permanently ill-housed and the other two-thirds victim of recurring housing shortages—is that large capital resources never have been attracted to this kind of production. House-building, its sheer bulk and its strategic relation to the total economy, is very Big Business indeed, but it still relies for financing on a mortgage system dating back, in all its main points, to the 15th century. Like the antiquated mortgage system, the real estate tax dates back to a time when the ownership of real property was a fair measure of total

*(Continued on page 134)*

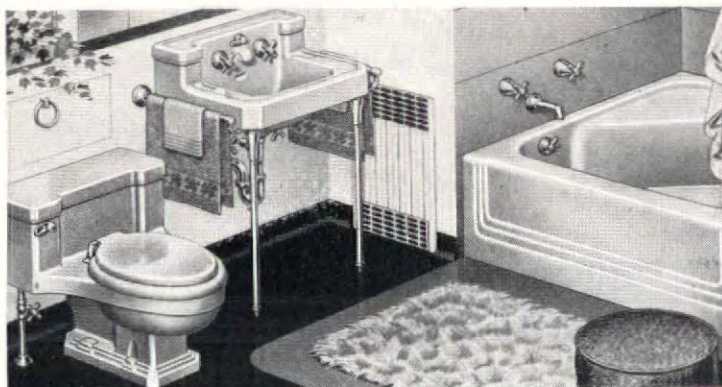


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wealth, and real estate owners still bear practically the whole cost of local government.

As if these handicaps were not enough to insure that housebuilding would forever be the stepchild of the industrial revolution, the federal government, while benevolently handing out housing subsidies with one hand, has reached out with the other to discourage even the small number of investors attracted to the rental housebuilding field. This it has done, as Randolph Paul and Miles Colean show in their careful study, by means of the corporate income tax.

Everyone agrees that what the housing-pinched U. S. needs is an adequate supply of rental housing. But rental housebuilding, considered as an investment opportunity, gets it in the neck both ways. On the one hand, it is taxed by local governments as if it were still the primary source of wealth which real estate represented in a much simpler economy. On the other, it is taxed by the federal government as if it were in exactly the same position as the manufacturing and financing enterprises that the corporate income tax was designed to fit. How far this is from the case is strikingly demonstrated by government statistics, cited in the Paul-Colean study: on real estate, the average rate of return on total invested capital in 1942 was 2.55 per cent—compared with 13.38 per cent for all industrial groups, 17.1 per cent for all corporations engaged in trade and 21.84 per cent for all manufacturing corporations.

Randolph Paul, former general counsel to the Secretary of the Treasury, and Miles L. Colean, well-known housing economist and former assistant administrator of the Federal Housing Administration, are well qualified to discuss elimination of the corporate income tax on rental housing. They present five detailed case studies of various methods of financing rental housing, which are worth the careful attention of anybody concerned with such investment.

Few will argue their conclusion: "Because of the relatively narrow margin of income on the typical real property investment, a corporate tax that absorbs any considerable amount of that return reduces the margin to a point where there is little incentive to take on the uncertainties and responsibilities peculiar to real estate investment." Thus, the investor prepared to put up a real equity will consider only the kind of development that can produce a high rental income.

Paul and Colean also show how the federal tax operates to encourage speculation in rental building, as opposed to "an actual cash outlay for the purpose of obtaining a steady, long-term yield." The largest number of investors in this generally unpromising field are, therefore, those "with a nominal, or even nonexistent, capital stake, who will seek to recover in the early years before the corporate income tax becomes hazardous in its effect."

The tax is a poor revenue producer, these researchers point out, averaging only \$30.5 millions per year in the 1938-42 period. Short of elimination of the tax on corporations investing in rental housing, they suggest giving such corporations an option to consider themselves partnerships for income tax purposes.

The Paul-Colean study makes its case convincingly while underlining the need for a consistent real estate tax policy—local, state and federal. It also underlines the need for a consistent national housing policy—that is, some real thinking through of the various stick-and-carrot gestures the government has made in this direction. The current housing

(Continued on page 136)



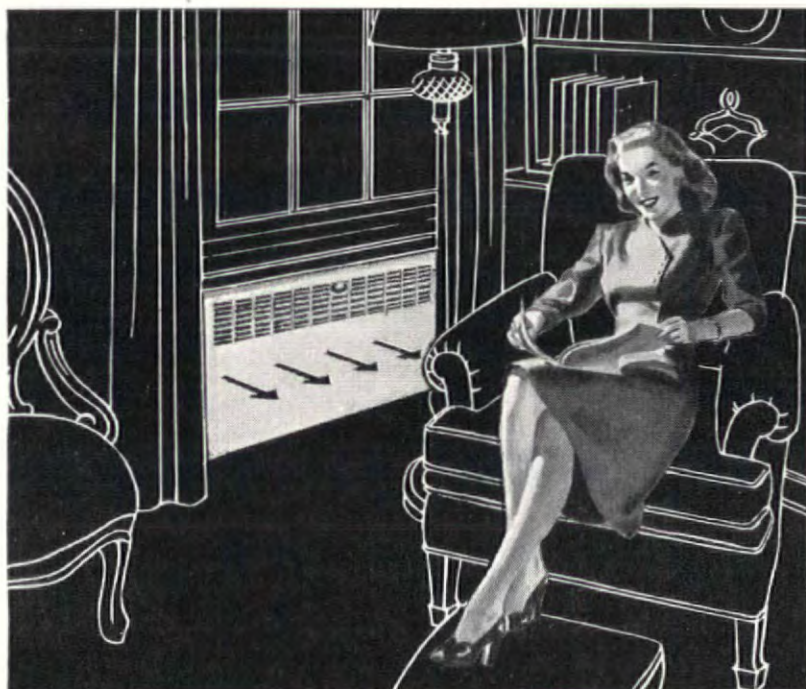
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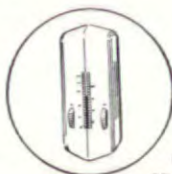
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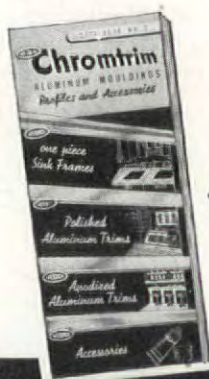
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crisis and the recent frantic and futile endeavors in Washington to do something about it bring the whole housing problem into dramatic focus.

The worst of it is that the government seems to be busy extending the carrot and then quickly snatching it away. The Federal Housing Administration has been holding meetings all over the country and offering many small carrots to lure building enterprise into rental housing. The Wagner-Ellender-Taft bill proposed yield insurance as the biggest carrot anybody could think of. But no Congressman or acting government official has yet thought far enough into the whole housing problem to suggest the simple step of eliminating the corporate income tax for rental housing corporations. As Paul and Colean dryly put it: "The solution of our difficulties may as often lie in the removal of long-standing restraints as in the creation of new forms of stimulus and direction."—L. C.

**SUNSET WESTERN RANCH HOUSES** by the Editorial Staff of Sunset Magazine in collaboration with Cliff May. 158 pp. Illustrated. Lane Publishing Co., San Francisco, Calif. \$3.

Avoiding a hazardous attempt to define the infinitely variable ranch house, this book sets out to illustrate the many ways in which the ranch type of house "has prevailed in Western homes in the past, and how it may be built into them now." The authors stress a basic need for site-planning in conjunction with house design in order to safeguard the prime advantage of the ranch plan—free movement on a single level and informal indoor-outdoor living. Illustrating their points generously with sketches and floor plans, they present a variety of

(Continued on page 138)



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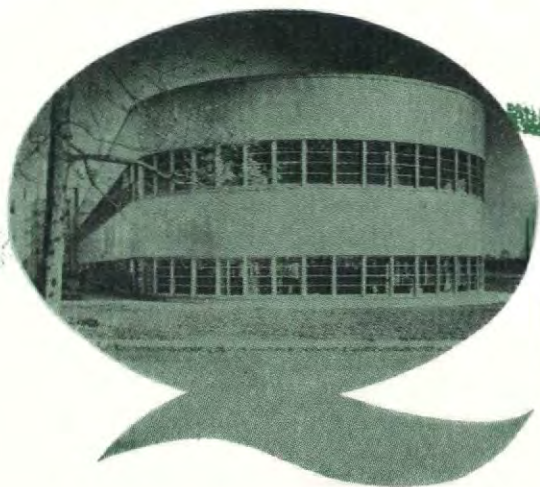
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## Sunset WESTERN RANCH HOUSES

means for achieving these aims, most important of which are: sufficient privacy and protection for the outdoor portions and easy accessibility to indoor living space.

The breadth of its material and commonsense planning advice insure the book's value for anyone intending to build a house of this type. Well-illustrated is ranch-house ability to absorb mechanical improvements and to adapt itself to a variety of native materials without losing its individual character. However, the organization of chapters in the book is at times haphazard. Some duplicate. ("It can be spacious and fit the budget" might certainly be incorporated with "More living space for less money.") The photographic presentation is attractive but it hardly covers the field as a whole, and it is disappointing that, with the exception of three fine houses by William Wurster, none is captioned as to its architect.—S. K.

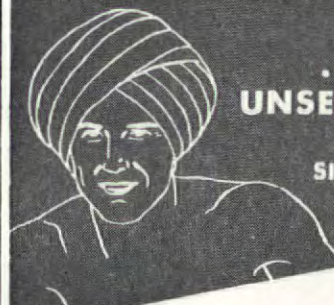
**HOSPITALS—INTEGRATED DESIGN** by Isadore Rosenfield. Reinhold Publishing Corp., New York. 308 pp. Illustrated. 9 x 12 in. \$10.75.

With today's tremendously increased demand for hospital construction, it is gratifying that Mr. Rosenfield has taken time out to prepare this much-needed book from his exceptional background of hospital design experience.

(Continued on page 140)

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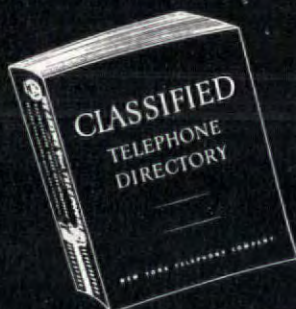


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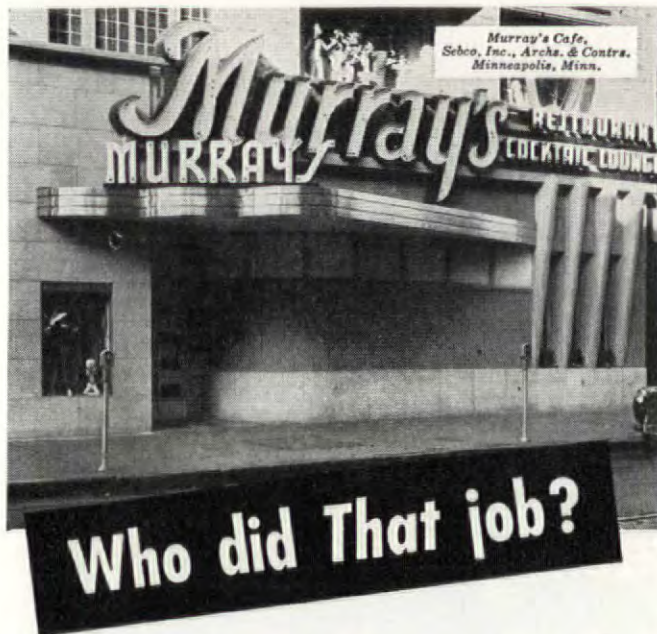


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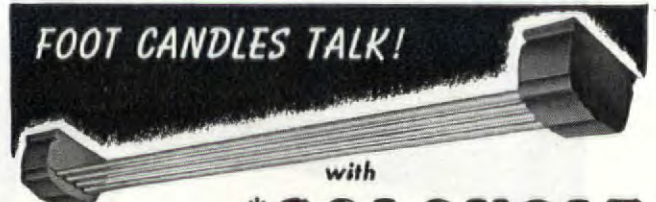


Socially integrated planning of hospitals to care for the needs of the one-half to three-quarters of the people who cannot afford to pay for hospitalization is outlined in the introductory chapters. There should be better coordination, Mr. Rosenfield believes, of hospital facilities, from the big-city medical center of 1,000 beds with research and teaching adjuncts, on down to small hos-

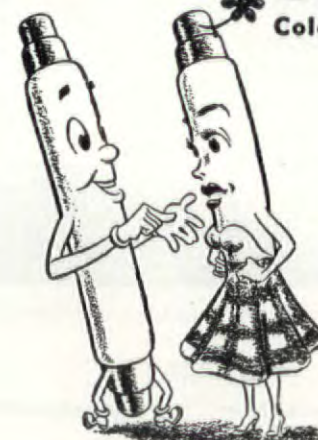
pitals of under 100 beds serving a Health Service Area—the ideally economical unit being the larger hospital. Most of the book consists of a thorough and detailed analysis of the specific units in hospital design: the nursing unit; diagnostic and therapeutic facilities; x-ray and radiation therapy; laboratories; necropsy (the morgue); operating department; maternity and pediatrics; service departments; outpatient department. There is discussion of special hospitals such as contagious, tuberculosis, cancer, psychiatric, etc.; the small hospital; housing and training facilities; specific problems of daylighting and artificial illumination; mechanical plant; construction and costs (already somewhat outdated). With each chapter there are many examples illustrated with floor plans, photographs, statistical tables, of various types of existing hospital layout.

A sound book, well designed—although some plans are so much reduced they are hard to read, and a few typographical errors have crept in.—E. B. (Continued on page 142)

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**YOUR CITY TOMORROW** by Guy Greer. The Macmillan Company, New York. 210 pp. Illustrated. \$2.50.



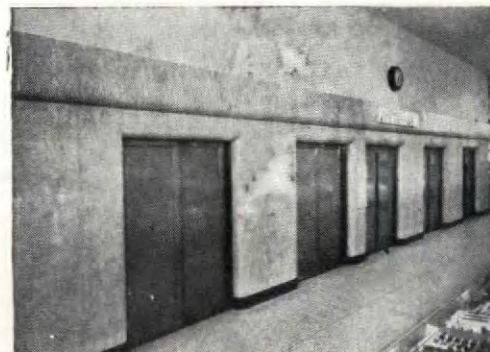
"The average citizen rather than the professional planner is the fellow to whom the book is addressed," says Mr. Greer. But in addition to a simple introductory outline of city planning for the layman, a brief description of the headaches of attempting to replan Syracuse, a final plug for the competition recently conducted in Boston for a comprehensive city re-plan, there are some intermediary chapters that it might be well for our professional planners to read. One such chapter is a lucid explanation of public housing under USHA which, despite its present bogging-down, was "with all its trial and error, a start toward dealing with the problems of adequate housing for low-income families. It eliminated a few of the worst of the slums, and, apart from the expense of acquiring slum property, it provided a few samples of excellent new housing at moderate cost . . . Virtually every shortcoming of the program could be corrected by changes in the law and a clearer understanding of the duties and responsibilities of administration."

Further clear analysis is given to the legal, administrative and financial methods for coming to grips with the master-planning problem in cities—particularly the legislative steps toward public land acquisition of slum areas, and the need for revising our tax revenue distribution between city and

(Continued on page 144)



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November 15, '46

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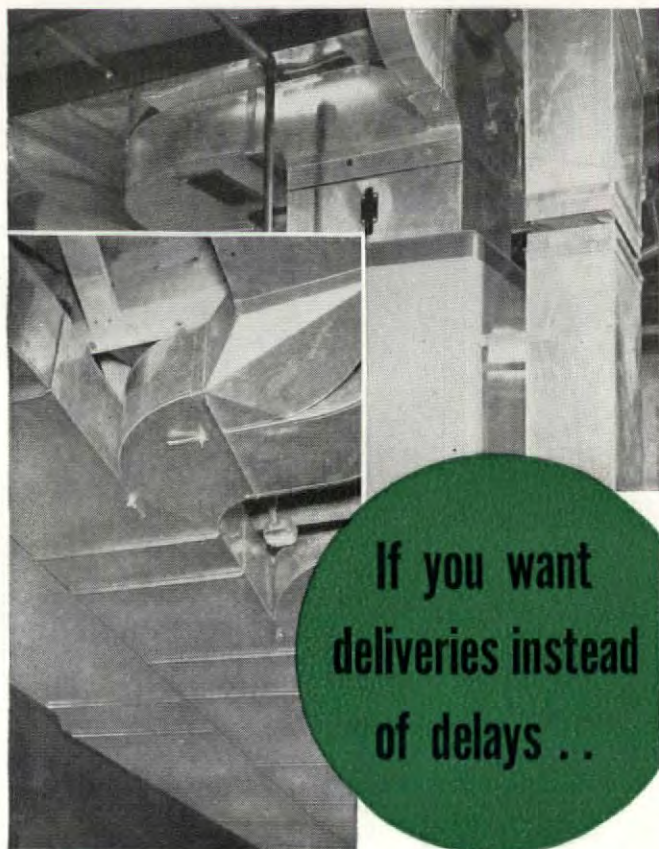
I knew that if I could get at the outside of the basement walls it would be a simple matter to apply waterproofing and stop the leaks. But that would be difficult and expensive. This year I thought I would experiment with Aquella on the inside of the walls. We have just had the worst rainstorm of the season. The rain came down in torrents for several days. But our application of Aquella to the inside of the walls stopped the leaks. Our basement is as dry as a bone. I am therefore glad to recommend Aquella as an unusually effective waterproofing compound.

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state. On land acquisition, Mr. Greer takes a middle-of-the-way stand between "housers" like Nathan Straus, who object to government land acquisition which protects or "bails out" existing profiteering slum owners, and those reactionaries who believe that private enterprise alone can handle everything. As he points out to the latter, "there are, of course, methods of attacking the blight problem far more radical than anything discussed in this book. In Great Britain, for example, measures are being taken that stop short of the nationalization of the land. . . . But Britain's problems—more dramatic though no more urgent fundamentally—are on a much smaller scale than ours."—E. B.

**TOMORROW'S HOUSES.** New Building Methods, Structures and Materials. Edited by John Madge. Pilot Press Limited, London. 336 pp. Illustrated. 6 x 8 $\frac{3}{4}$  in. 18s.



Not nearly as handsome a book as its American counterpart of similar title (*Tomorrow's House*, by George Nelson and Henry Wright), this English survey of recent wartime developments applicable to house construction is, however, a good technical study of methods and materials that may help Britain out of a dire housing predicament. As Mr. Madge, the editor of *Tomorrow's Houses*, points out in an excellent introduction,

house-building in England during the war did not benefit by the tremendous strides in reorganizing and re-equipping some other wartime industries. So the series of articles he has assembled endeavors to guide the way to

(Continued on page 146)

*All of these shares having been sold, this announcement appears as a matter of record only.*

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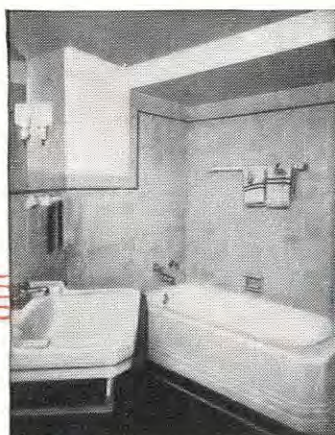
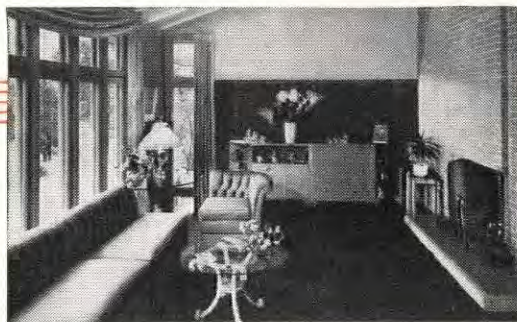


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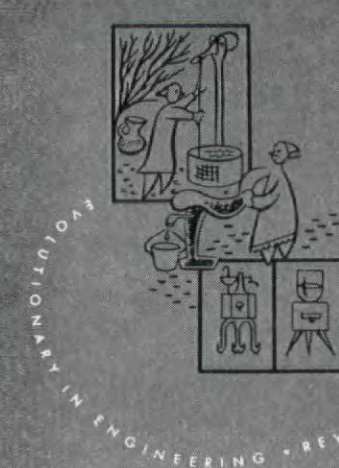
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wards less wastefulness in rebuilding. "For at least five years there is likely to be an insatiable demand for every house that can be provided. . . . It is clear that the orthodox building industry, relying on well-tried methods, will without augmentation be incapable of supplying the need. The question still to be decided is the form of augmentation to encourage. . . . And yet there has been very little scientific analysis of the expenditure, particularly on finishings, which is economically justifiable and desirable. British practice is unsystematic enough in this respect in all fields, as compared with that adopted in, for example, the United States. . . . Official agencies have authorized an improvement in minimum standards over those obtaining at the outbreak of the war. . . . The economies of modern technique often only begin to assert themselves when quantity production can be organized. . . . It is honest to recognise the fact that many of the ancient crafts are being undermined by the substitution of scientific design and mechanical processing."


The thirteen sections, by various contributors, commence with an article on "Aluminium and Its Alloys" by E. G. West. This chapter follows an outline used in most of the sections: the possibilities of recently increased production for housing the properties of aluminum, with technical details on thermal and mechanical properties, greater resistance to corrosion, building methods and applications, etc. The second section is on plastics, with complete discussion of the various types, processes for molding and fabrication, combination with older materials (such as wood), shortcomings, architectural uses, etc. Each section is illustrated with cuts: for example, one of the photographs in this section shows the use of plastic-faced strips in terrazzo flooring. The timber section is

(Continued on page 148)



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an attempt to steer English readers toward the use of less traditional building materials—e.g., unknown woods from the British colonies, etc.

The outline of prefabrication, prepared by Dex Harrison, explains the difference in the attitude toward prefabrication in the U. S. "where it is now regarded as a normal part of the progressing economy," and in England "where it is an exceptional stop-gap." He gives an entire history of prefabrication, with a few early European examples (such as a British cast-iron prefabricated tollhouse of 1830, predating the well-known Crystal Palace) not so well-known here; and a great many American examples that are somewhat old hat to us. This chapter, however, is an interesting survey of the earlier techniques of prefabrication and is well illustrated with thumbnail sketches of various panel methods.

The chapter on the steel-framed house is introduced because of the ready adaptability of this type of construction due to wartime developments. Although the chapter on the use of lightweight concrete for housing is divergent from some of the theories expressed elsewhere (in the chapter on prefabrication, for instance), there is much laboratory data on various aggregates, methods (sometimes curiously influenced by England's tradition of brickwork), and a more than usually complete bibliography. Sections VII and VIII illustrate specific English prefabs developed in the war years, many of which are already familiar to FORUM readers—e.g., the A.I.R.O.H. house (of the Aircraft Industries); the B.I.S.F. house by Frederic Gibberd; the Braithwaite house by F.R.S. Yorke; Jicwood house, etc. The last sections are more specifically related to British Codes of Practice than the foregoing general chapters and are of less interest to American readers.—E. B.

An authoritative study of general and design aspects

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- The Mean Radiant Temperature
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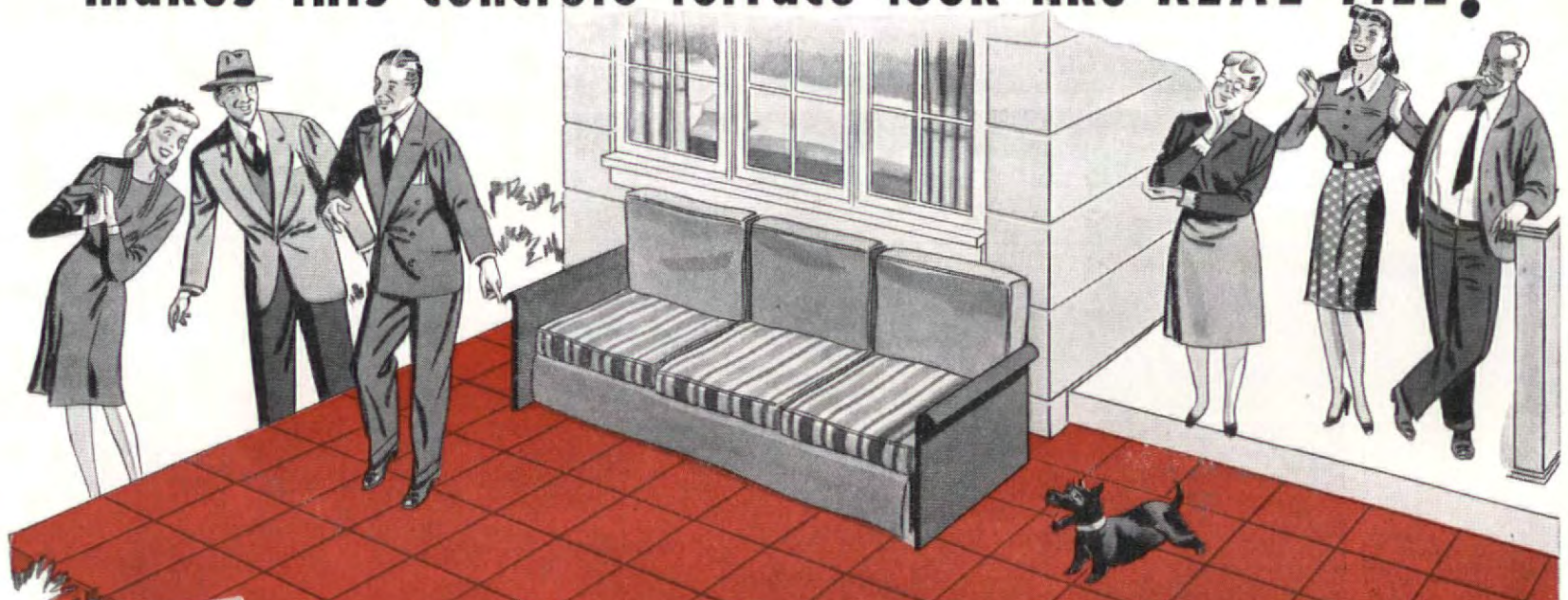
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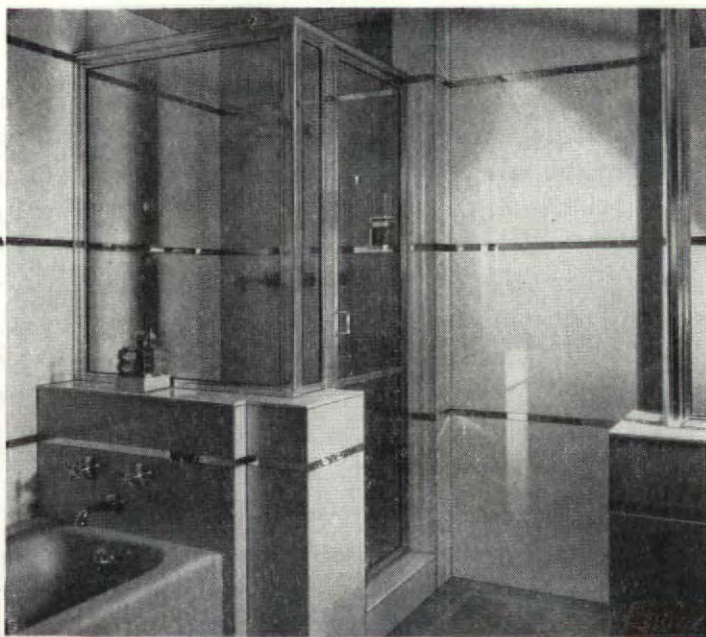
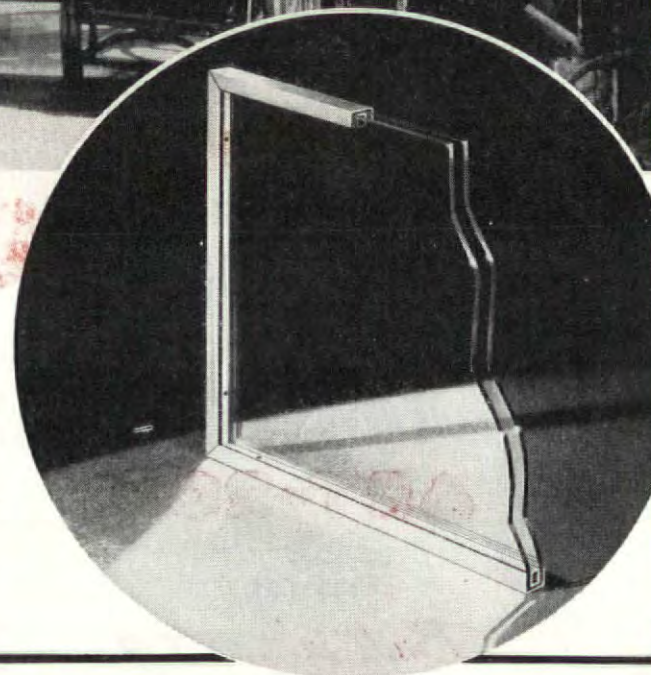
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# Practical applications of Glass



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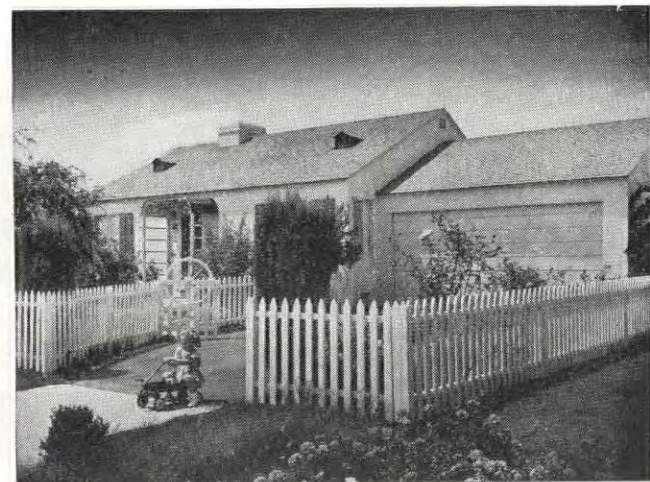
## POST-SALES SERVICES include maintenance and the encouragement of "psychological equities."

Since it is building communities as well as houses, Kaiser Community Homes cannot afford to abandon its customers once the house keys are delivered. It maintains a genuine and continuing interest in the home owner, his property and the community. This is more than smart public relations; besides creating satisfied customers, valuable word-of-mouth advertising and widespread good will—all vitally necessary for a business which depends on mass production and mass sales—KCH's post-sales services protect its interests in the community (shopping centers) and the mortgagees'.

A separate service division of KCH, set up in each community, corrects the common house faults which irritate buyers—doors that jam, windows that stick, floors that creak, etc.—and performs all kinds of maintenance and repair. Faults definitely attributable to the builders are remedied free of charge during the first year; thereafter, the division's services are available at moderate cost. Ultimate plan is to write annual maintenance and repair contracts (like insurance policies), whose cost will be low through group participation.

Other services which benefit home owner and developer alike are called "psychological equities," KCH-encouraged investments by owners in various forms of property improvement. They tend to attach the owner more firmly to his new property, thus reduce the likelihood of foreclosures and up the character and appearance of the community. Home-made landscaping is the most popular of the psychological equities. KCH nurseries offer shrubbery at bargain prices to encourage this equity investment and, incidentally, to add still more variation to its standardized houses. KCH last Christmas gave each customer a potted Camellia, hoped that it would be transplanted to the garden. Now under consideration by KCH is a home owners' night school in landscape gardening to assure that these psychological equity investments pay maximum dividends in property and community betterment.

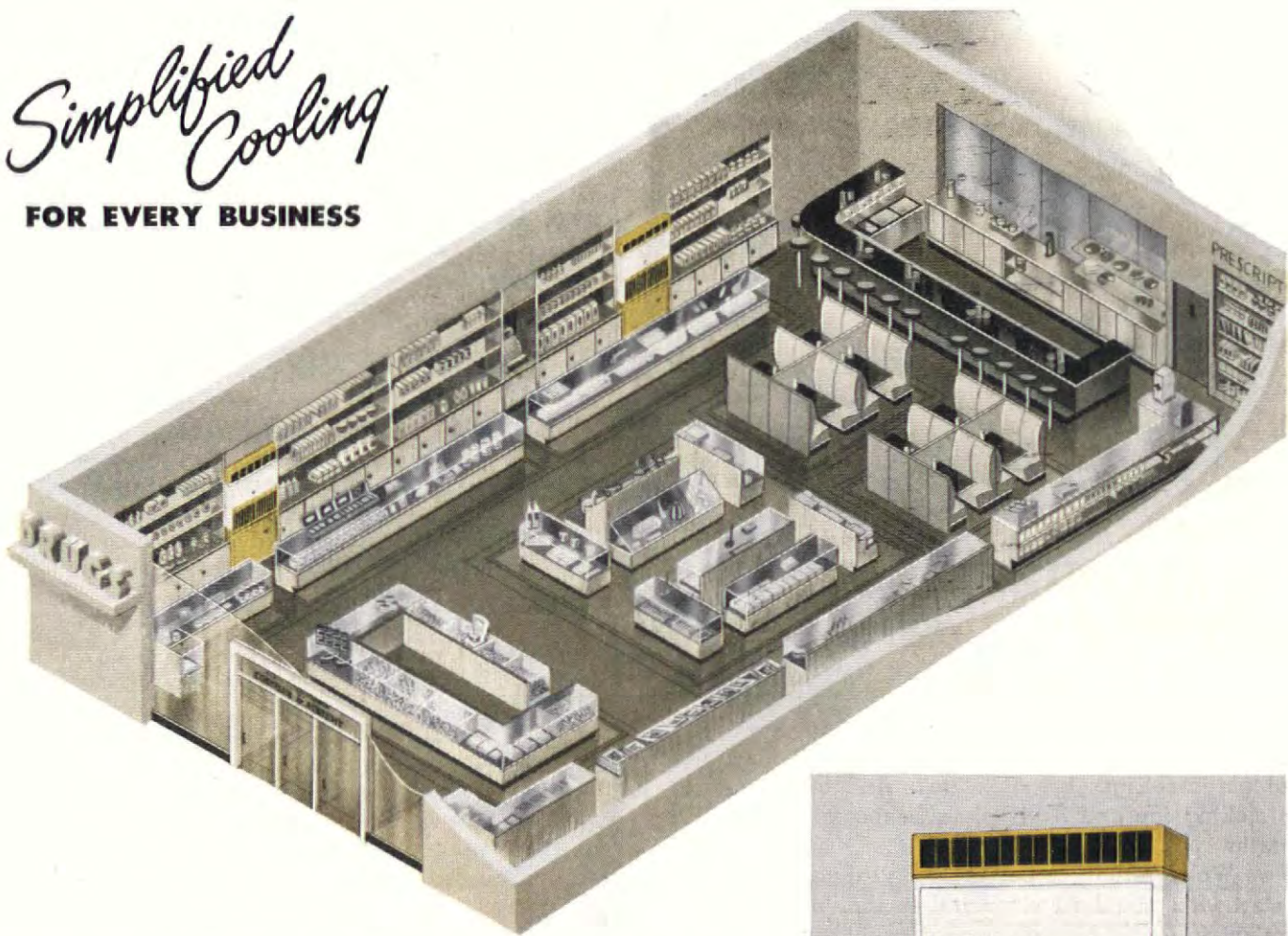
Another type of KCH service much needed by all small house buyers is offered in conjunction with Bullocks, Los Angeles' leading department store. Experienced in furnishing all KCH model homes, Bullocks now offers stock furniture scaled to the various room sizes, and stock-size draperies for trimming the windows—both at substantial savings to KCH customers. In the offing is another KCH instruction course: home furnishing and decoration. (Continued on page 154)



**PSYCHOLOGICAL EQUITIES** practically conceal one of Burns' pre-war houses, represent much owner work.



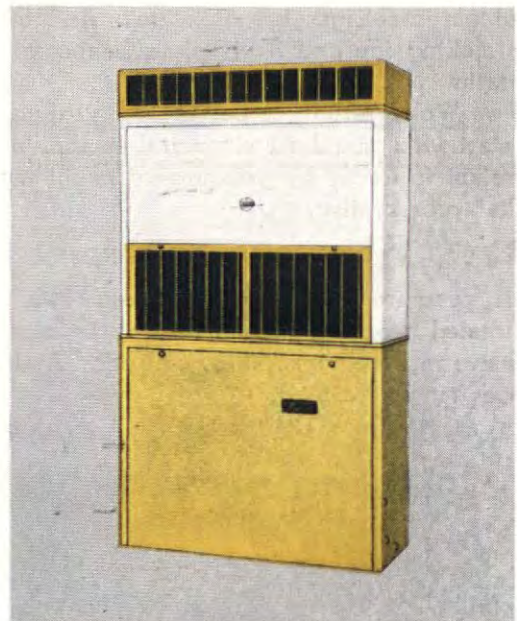
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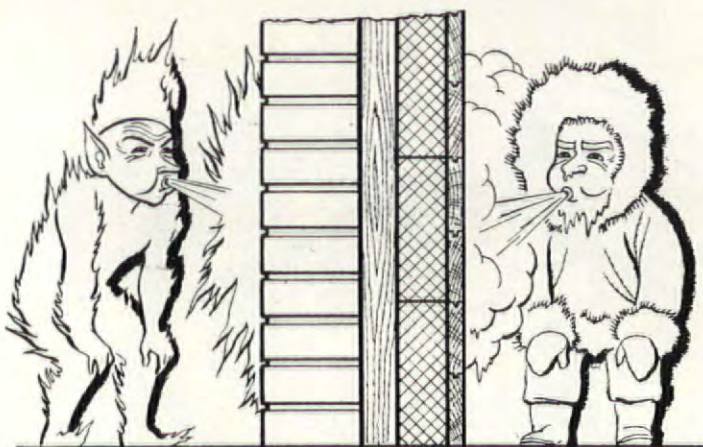
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**wind up all bigger subdivisions, give the sponsors a continuing return on their housing enterprises.**

Because "successful business centers are attractive plums for the land developer and community builder," Fritz Burns provides for one in most of the larger KCH communities. The provision is made in the early stages of land planning, although construction of the center is not begun until residential building is near completion. As head of KCH's Community Center Division, Burns first decides on the size of the commercial center (it is vitally important that it be no bigger than the community can easily sustain), then doubles the floor area to obtain the size of the adjacent off-street parking area. With the acreage thus determined, the center is strategically located on the site plan with reference to through traffic arteries (if any) and tightly zoned for its intended purpose. The center's location influences the residential street pattern, for traffic flow must be encouraged in that direction. It may also affect the zoning of the immediately surrounding residential area, for Burns frequently circles his community centers with a buffer zone for schools, churches and rental housing.

Through long experience, Burns has learned that a new community of at least 800 houses is required to justify and support even a modest business center—one comprised of a grocery store, butcher shop (or a combination supermarket), a drug store (with soda fountain and, possibly, a lunch counter), a dry goods and notions store (or its popular equivalent, the "five and dime") and an auto service station which need not be immediately contiguous. Such a group is considered a "reciprocative nucleus" which can serve the basic wants of the community and, by a mutual exchange of customers, can serve itself more successfully than if the various shops were individually established on isolated corners. If, by virtue of location, the community will naturally focus its buying attention on the local business center rather than dissipate it through heavy downtown shopping and if the center is connected with surrounding residential areas by major traffic arteries, a greater variety of shop and services is indicated.

Experience has also taught Burns that shopping center results cannot be accurately predetermined by their sponsors. While a big background of houses and a heavily trafficked network of access roads are prerequisites, the determining factors are aggressive, business-minded merchants, high quality merchandise, attractive store design and airtight zoning.

Once a new subdivision is well under way, Burns attracts top-notch merchants to its business center with a brochure full of facts, figures and pictures documenting the principal advantages of doing business in a Kaiser-Burns community:

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- ▶ Adequate and convenient off-street parking areas.
- ▶ A defined shopping area with a definite schedule of the types of business establishments which will occupy it.
- ▶ Assurance that all buildings will meet high standards of design and construction.
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- ▶ Accurate estimates of the population and purchasing power.

Some merchants are permitted to build their own buildings; others buy or rent buildings constructed by KCH. Chain store organizations are considered particularly desirable tenants because of their established reputations, their drawing power and their volume business. Since leases are on a percentage-of-gross basis, volume business means volume profits for Kaiser Community Homes.

*(Continued on page 156)*

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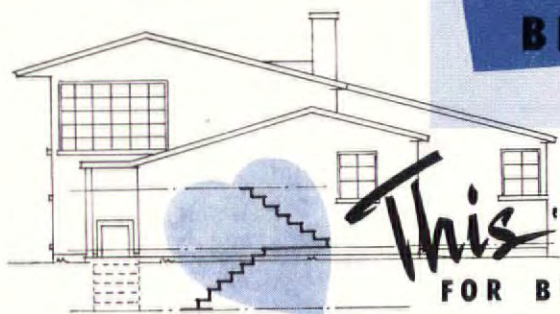
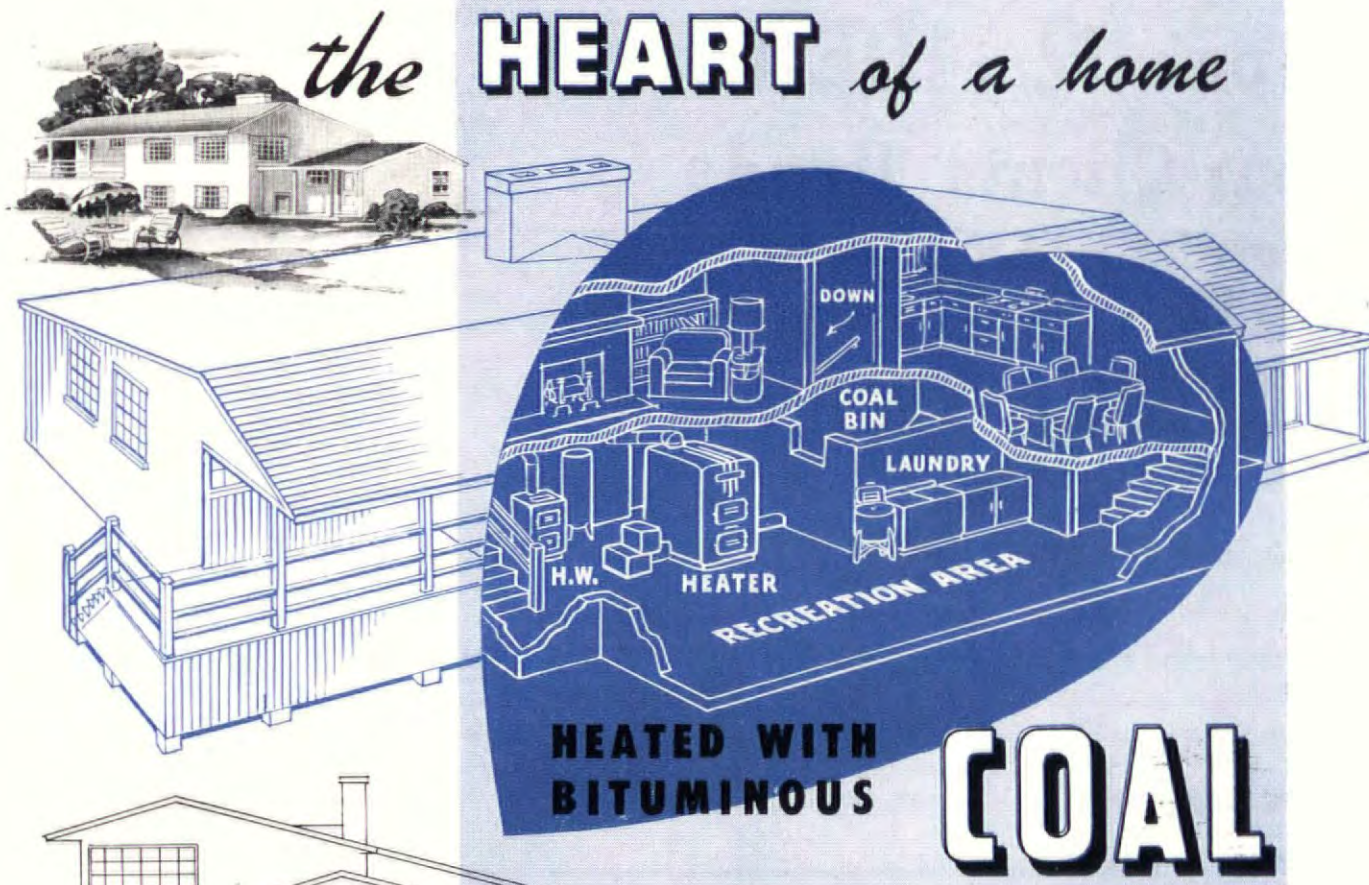
WOLMANIZING

FLAMEPROOFING

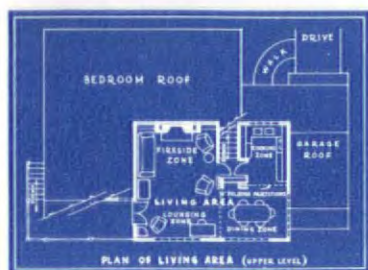
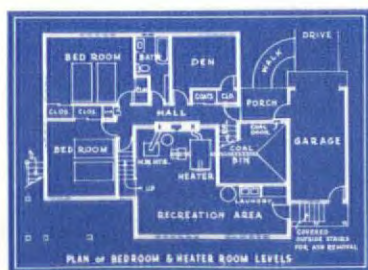
CREOSOTING

1647 McCORMICK BUILDING, CHICAGO 4, ILLINOIS





*This* "HALF-A-FLIGHT HOUSE" IS DESIGNED  
FOR BUILDING AND MAINTENANCE ECONOMY . . .



Living in the "Half-a-Flight" house is made easier by reduction in the number of steps from basement to outside, and by the covered ash disposal area. Note also the convenient coal delivery trap in the garage floor.

Economy means systematic planning for maximum results. In a home it means planning for living.

The "Half-a-Flight" house is designed to make living easier. The basement literally has been lifted "out of the hole", cutting excavation costs . . . doubling light and view . . . reducing possibility of dampness.

The home planner who favors single-floor plans, yet realizes the advantages of two floors, especially will endorse the "Half-a-Flight" house — because this dwelling combines single-floor living ease with the increased view and privacy found in two floors. Perfect living economy.

Planning for living includes planning for heating. Play safe — design for bituminous coal storage space, chimneys adequate for any fuel. A design for bituminous coal is a design for buyer satisfaction. Bituminous coal heat is economical, safe, clean, quiet . . . and there is an abundance of supply.

**Norfolk and Western**  
**RAILWAY**

CARRIER OF FUEL SATISFACTION



# We've put **2** IDEAS in your Clients' Heads ...for **BETTER LIVING**

**Idea  
1**

## KITCHEN VENTILATION

No longer need Mrs. Housewife swelter in a stuffy kitchen! She's convinced that Emerson-Electric is tops in kitchen ventilating equipment.



**Idea  
2**

## HOME COOLING

No more sleepless summer nights! Mr. Home-owner now knows a house can be cooled after sundown by pushing the hot air OUT!



## YOUR CLIENT-JOB *Made Easier!*

Your clients are sold on greater home conveniences. They've already "bought" the idea of greater comfort through Emerson-Electric kitchen ventilation and Emerson-Electric home cooling. They look to you to build the house that goes with them.

Again this year, Emerson-Electric is selling these two ideas in more than a score of popular magazines reaching thousands of present and prospective home owners. And again you'll find your plans more acceptable and your houses more saleable when you specify and install Emerson-Electric Kitchen Ventilating Fans and Home Cooler Fans.

For detailed specifications and complete information, write for free illustrated catalog No. 201 today.

THE EMERSON ELECTRIC MANUFACTURING CO.

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Branches: New York • Chicago  
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**EMERSON**  **ELECTRIC**  
MOTORS • FANS APPLIANCES

## BUILDER BURNS STATES HIS CASE, outlines KCH's ambitions and accomplishments.

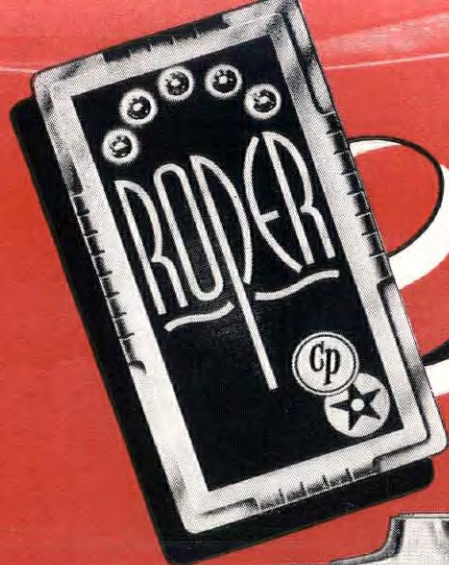
"When the smoke has cleared away from the so-called housing mess, it will be discovered that a better house, brand new, is being delivered for a lesser cut of the wage earner's dollar than ever before. What other industry can make that claim? Expert housers know this, that's why public housing is making a last desperate stand. They know that with a surplus of brand new livable houses available at \$50 per month (and I mean available in quantity—possibly a surplus within the next year by reason of keyed-up production), the inexorable law of supply and demand will find the houses ten years old available for \$40 a month. Houses that are 20 years old, available for \$30 a month (maybe less) which, under prevailing wage rates, will make housing an easier buy and within the reach of more people than any of the other necessities of life. If slum clearance programs do not get on their horse quickly and eliminate from our metropolitan areas buildings and houses no longer fit for habitation in order to make room for the avalanche of new housing that is forthcoming, we will soon have a surplus of housing in many cities.

"It is the simple ambition of Mr. Kaiser and myself to make progress in housing. When we think of housing, we must think of people. The two are inseparable. Therefore, progress in housing must not go beyond the people's choice either costwise or ideawise. People know a lot about houses because they live in them. Laboratory tests of new materials and new structural engineering are given sober consideration by the prospective home owner. But if his conclusions are to be in the affirmative, substance must be added by an adequate answer to what has been the case history of such a material or engineering principle under actual living conditions.

"To keep the public with us (and we are lost without it) we must keep one foot on solid ground as we cautiously extend the other into the realm of advancement. Many an adventurous soul in this business has been disappointed by apparent public reluctance to follow. But we must remember that a home is a long-term item. That which has been tried and proven for the past 25 years will be safe to try again for the next 25 years. That which has had purely wind-tunnel experience must be approached more cautiously.

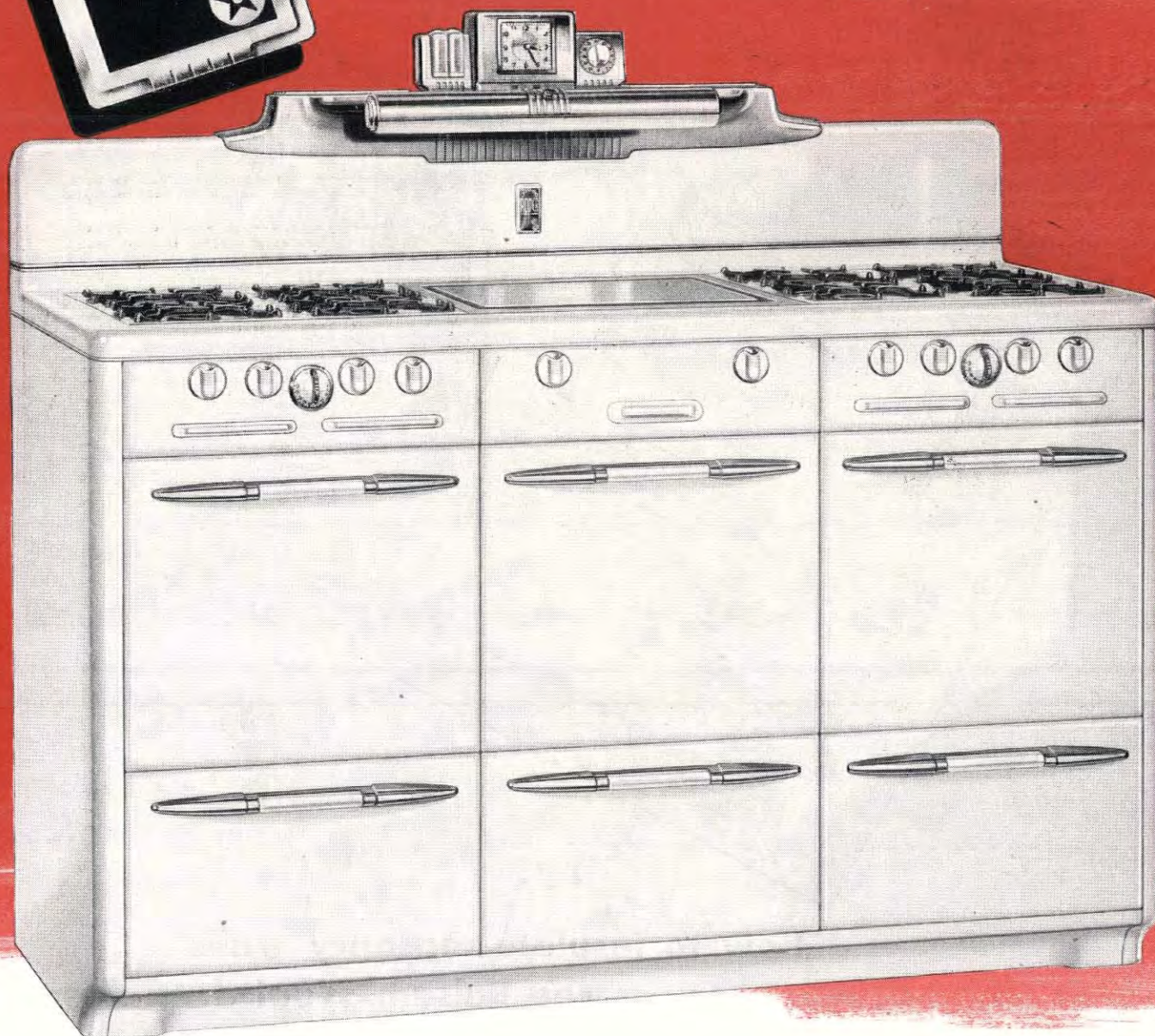
"Advancement in any one particular item or material in a house may not be too great at once. Maybe such advancement is almost microscopic, but let us remember that there are almost 1,000 different items in a house. A ring-shafted nail that holds more firmly, a tighter window which at the same time works more easily, a copper tube that brings up water a little more quickly, a wall that damages a little less easily, an insulation with a slightly higher K-factor, a furnace a little more efficient and inexpensive, a sink countertop a little more sanitary, durable and resilient, a plaster that is a little more resistant to cracks, a more efficient use of materials to give a little more strength for a little less weight, a stronger adhesive material to bond the house together—all these things combined can make, are making and will make to a tremendous degree the progress in housing to which we have all looked forward. And such progress is in keeping with public thinking. Builders properly fortified with technical advice and prepared to do some missionary and educational work will find a public that is openminded and not too reluctant to follow wholesome and well-balanced progress. These are the objectives of Kaiser Community Homes, this is the field that we look forward to with such anticipation. This is the progress to which we have sincerely dedicated our efforts."





# Town and Country

"America's Finest Gas Range"



## Jewels of Cooking Performance

- "INSTA-MATIC" CLOCK CONTROL
- EXTRA-CAPACITY "GLO" BROILER
- HANDY SNACK BROILER
- SPECIAL COFFEE BURNER
- TOASTING COMPARTMENT
- NOVEL CRISPING BIN
- ALUMINUM GRIDDLE

## ROPER'S "THOUSAND DOLLAR BEAUTY"

pre-viewed at the A. G. A. convention in Atlantic City

Truly the toast of the industry, the glamorous new extra-capacity,

ROPER "Town and Country" now "Automatically Yours" . . .

it's in production. Sell it with pride. Order as 47-9310.

ULT TO  STANDARDS

GEO. D. ROPER CORPORATION • ROCKFORD, ILLINOIS



**Balsam-Wool APPLICATION DATA SHEET** SEC. A No. 4

**THERMAL RESISTANCE VALUES OF BUILDING MATERIALS**

The thermal resistance values of various building materials in the table below are taken from the Guide of the American Society of Heating and Ventilating Engineers. These resistances may be used to calculate heat transmission coefficients, as described in Data Sheet No. 3. The values listed in the "Per one inch thickness" column are for building materials as normally used in buildings.

**INSULATING MASONRY WALLS**

**MASONRY** walls by themselves have low heat resistance. Therefore they should be insulated to conserve heat, to minimize the possibility of condensation occurring on the wall, and to effect warmer wall surfaces for greater comfort. The coefficient of heat transmission, "U," of a plastered 12" solid brick wall for instance, is .34—the "U" of a standard frame wall is .25.

Application of 1" x 2" furring strips to the 12" brick wall with 1/2" Nu-Wood Insulating Lath and plaster interior, as illustrated in "A" above, lowers the "U" factor to .14. The insulating efficiency may be further increased by applying Standard Balsam-Wool between the 1" x 2" furring strips attached to the wall. This wall has a "U" factor of .07, which represents a saving of 67.6% of the heat which would otherwise be lost through the uninsulated plastered 12" brick wall.

Insulation of other types of masonry construction in similar heat savings as may be noted in the table at right. Here "U" factors are listed for typical 12" masonry walls uninsulated and insulated, as shown in "A" and "B" above. With 1/2" masonry walls when insulated as in "B" and about .03 to .03 higher when insulated as in "A".

Masonry walls may also be insulated with Masonry Balsam-Wool, a special shatter insulation which is available from lumber dealers in certain localities. For application between 1" x 2" furring strips, special fibre channels are furnished for stepping and fastening the ends of the blanket.

Type of wall	U Factor	Per cent of heat lost	Per sq. ft. of wall
Uninsulated 12" masonry wall	.34	100	1.00
Insulated 12" masonry wall (Type A)	.14	41	.47
Insulated 12" masonry wall (Type B)	.07	20	.24

**WOOD CONVERSION COMPANY**  
First National Bank Building  
St. Paul, Minnesota  
Balsam-Wool Products of Weyerhaeuser • NU-WOOD

**Balsam-Wool APPLICATION DATA SHEET** SEC. C No. 1

**BALSAM-WOOL APPLICATION AROUND WINDOWS AND AIR DUCTS**

**WHEN** a wall is framed for windows or doors, narrow spaces usually result on one or both sides. To insulate these irregular spaces, Standard Balsam-Wool Blanket is cut lengthwise with a saw or tin shears, approximately 2 inches wider than the space. A portion of the insulating fibre mat is removed along the cut edge so the warm and cold side liners may be brought together and folded over the edge of the stud and stapled to the stud face. The fibre which is removed may be used to caulk around window and door frames, as suggested in the drawing. Vapor barrier paper should be applied over sash weight pocket to prevent moisture vapor condensing on sheathing causing paint failure at window frame, casing and siding around window.

Cold air return ducts located in outside walls, if uninsulated, provide a means for a tremendous amount of heat to escape from a house. This loss may be easily reduced by installing Standard Balsam-Wool between the framing in the duct space directly against the outside sheathing, as illustrated. A galvanized sheet metal back is usually placed over the blanket and nailed to the sides of the studs.

Where electric outlets, switches, etc. occur in outside walls, Balsam-Wool should be carefully cut to fit tightly around these fixtures, otherwise moisture vapor may be free to pass into the outer wall space where it may contribute to condensation trouble.

**WOOD CONVERSION COMPANY**  
First National Bank Building  
St. Paul, Minnesota  
Balsam-Wool Products of Weyerhaeuser • NU-WOOD

- High Thermal Efficiency
- Built for Permanence
- Non-Settling
- Flame-Proof
- Wood-Proof
- Moisture-Proof

## how to insulate masonry walls

### ...see Balsam-Wool data sheets!

Insulating masonry walls is only one of the many insulation subjects covered by Balsam-Wool Data Sheets. These handy sheets represent years of research in gathering vital facts on insulation application—solving tough insulation problems. The whole set of Balsam-Wool Data Sheets—containing 32 sheets in all—is yours for the asking. Just mail the coupon—no cost or obligation!

# Balsam-Wool

SEALED INSULATION

BALSAM-WOOL • Products of Weyerhaeuser • NU-WOOD

#### WOOD CONVERSION COMPANY

Dept. 147-3, First National Bank Building, St. Paul 1, Minnesota

Please send me set of Balsam-Wool Application Data Sheets.

Name .....

Address .....

City ..... State .....

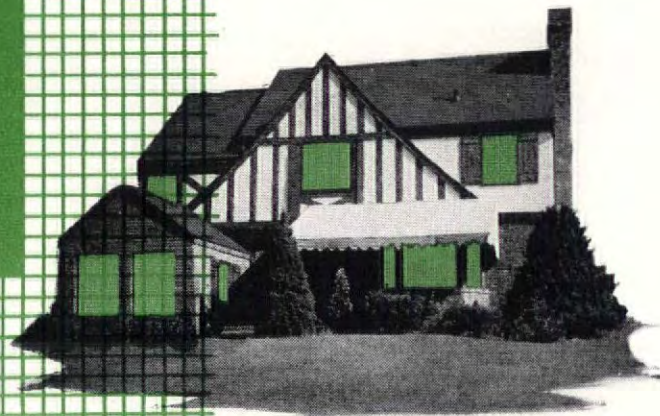
158 The Architectural FORUM March 1947



Specify the screening that can't rust!

8 ADVANTAGES OVER  
METAL SCREENS

- Permanent — can't rust.
- No upkeep — never needs painting.
- Cannot "bleed" and stain house.
- Easier installation — handles like cloth, cuts with scissors.
- Safer installation — no jagged edges or sharp splinters.
- Six times impact strength of metal.
- Tinted for smarter appearance.
- One-fifth weight of metal.



Firestone

*Velon*\*

TINTED SCREENING

All metals oxidize, some more rapidly than others. When used in fine strands for screening, any metal will disintegrate before the combined attack of moisture, wind, salts and acids present in every atmosphere.

*Velon* screens can't corrode, can't rust. Yet *Velon* costs no more than good metal screening.

And *Velon* gives you these other advantages over metal screening: no upkeep, never needs painting . . . cannot "bleed" and stain building . . . easier installation: handles like cloth, cuts with scissors . . . safer installation: no jagged edges or sharp splinters . . . six times the impact strength of metal . . . one-fifth the weight of metal.

Specify *Velon* . . . now available in standard widths and gauges. For full-color booklet on *Velon*, and free samples, write Firestone, Akron.



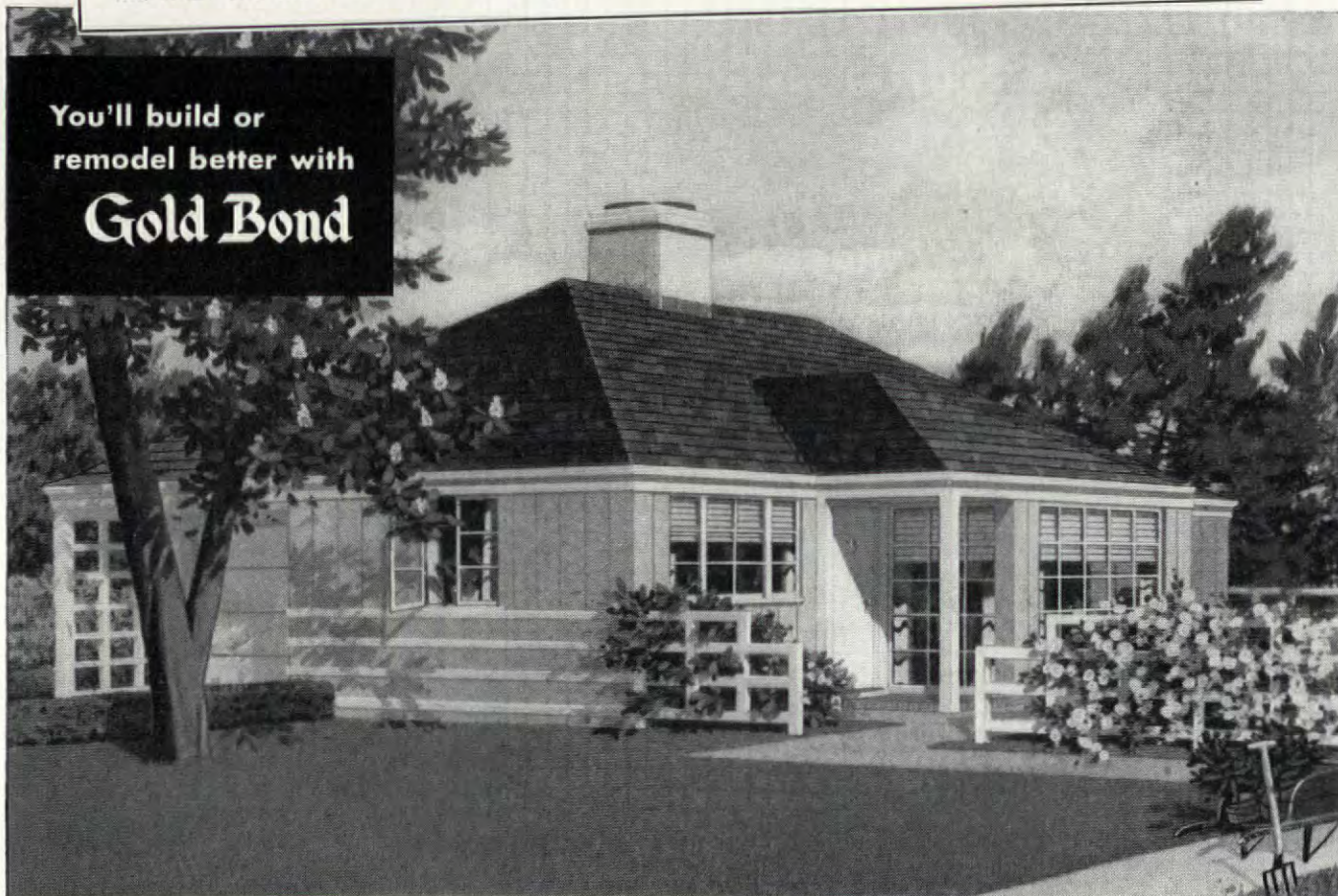
Listen to the Voice of Firestone Monday Evenings over NBC

\*TRADE MARK



*Here's a suggestion for a low-cost house with a wide awake, down-to-earth look about it! This ad appears in full color in the Saturday Evening Post and is another in the Gold Bond series, now in its second year. Stresses the use of Gold Bond Building Materials, sure, but it also plays up the Pride of Home Ownership angle and really does a job for the whole building industry. Thousands of folks will write us for plans of this home and the answer will be, "See your local architect!" National Gypsum Co., Buffalo 2, N. Y.*

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



You can start building sooner if you start planning now. See your local Gold Bond Dealer!

## Wonder how many Post readers feel the way I do?

*"Someday we're going to have our house, Bill and I. With grass around it, and the blue bowl of the sky over it, and a tree of our own to carve a couple of hearts on if we want to. We're saving, and planning, and each day brings us closer to moving in!"*

The house you will build will be a "wonder house" too. For, since Dad built, modern science has taken a hand in new construction materials and methods. Outer walls, for example, now add greater strength and fireproofing when Gold Bond storm sealed gypsum sheathing supplies the base for outside finish. Inside walls and ceilings will give years of trouble-free service when they're made

of Gold Bond fireproof gypsum lath and plaster.

Heating costs are reduced as much as 40% in new and old homes with fireproof high-efficiency Gold Bond Rock Wool insulation. And summer comfort is doubled.

You can plan on these scientific building improvements and many more to give you a house that is better in every respect than any that has ever been built before. A house that will serve for many long and happy years with the least amount of repair and upkeep expense.

There are over 150 research produced Gold Bond products that cost no more to specify and use than

ordinary building materials. Each of them is engineered to do a specific job better. If you want Gold Bond results, be sure to speak to your architect and builder about using Gold Bond products!

Today our entire production can't keep up with demand. But just the same our more than 10,000 Gold Bond lumber and building material dealers are doing their best, helping veterans to get housed, helping their customers in every way they can. See your Gold Bond dealer first whether you plan to build or remodel. He can help you get what you want, and get it better. Not always right away but tomorrow sure! National Gypsum Co., Buffalo 2, N. Y.

Over 150 tested Gold Bond Building Products for new construction or remodeling add greater permanency, beauty and fire protection. These include wallboard, lath, plaster, lime, sheathing, wall paint, insulation, metal and sound control products.

**DEMAND  
THESE SIX  
GOLD BOND  
FEATURES  
IN YOUR  
NEW HOUSE**

**GOLD BOND FIREPROOF  
GYPSUM SHEATHING**



Big, weatherproofed panels of Gold Bond Storm Sealed Gypsum Sheathing add structural strength and built-in fire protection. Costless than old-style sheathing.

**GOLD BOND FIREPROOF  
GYPSUM LATH**



Gold Bond Gypsum Lath is the perfect plaster base. Can't warp, expand or contract. Adds fire protection and structural strength for better wall and ceiling construction.

**GOLD BOND FIREPROOF  
GYPSUM PLASTER**



Gold Bond Gypsum Plaster is especially processed to bond perfectly with gypsum lath. Builds fireproof, rock-like walls and ceilings with greater durability and beauty.

**GOLD BOND FIREPROOF  
FINISH LIME**



Over the plaster, goes a coat of Gold Bond Finish Lime. This is the smooth white finish that you see in a new house before the wallpaper or paint is applied.

**GOLD BOND FIREPROOF  
ROCK WOOL INSULATION**



Builds a fireproof blanket of insulation around the house for greater year-round comfort, family health, and fuel savings up to 40%. Available for new or old homes.

**GOLD BOND SUNFLEX  
1-HOUR WALL PAINTS**

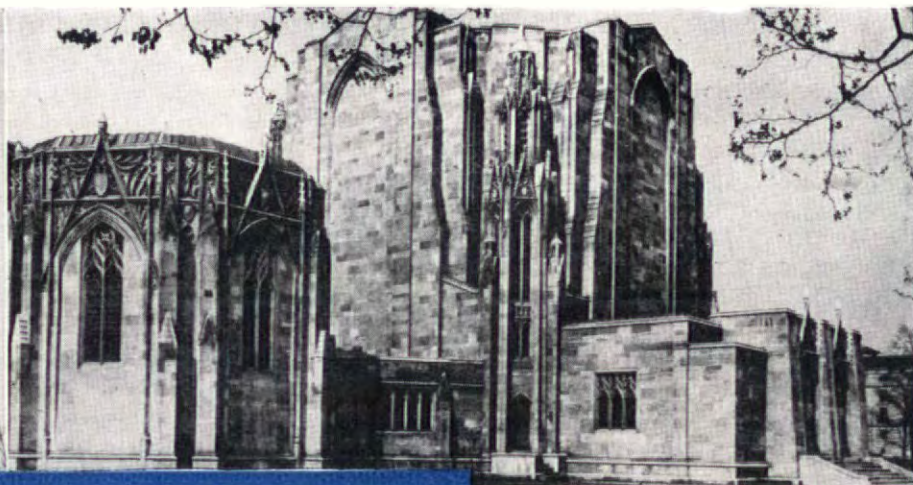


Dries in one hour with no objectional painty, after-odor. Easier to apply. This modern decoration is now available at your dealer's in a full range of colorful tones.



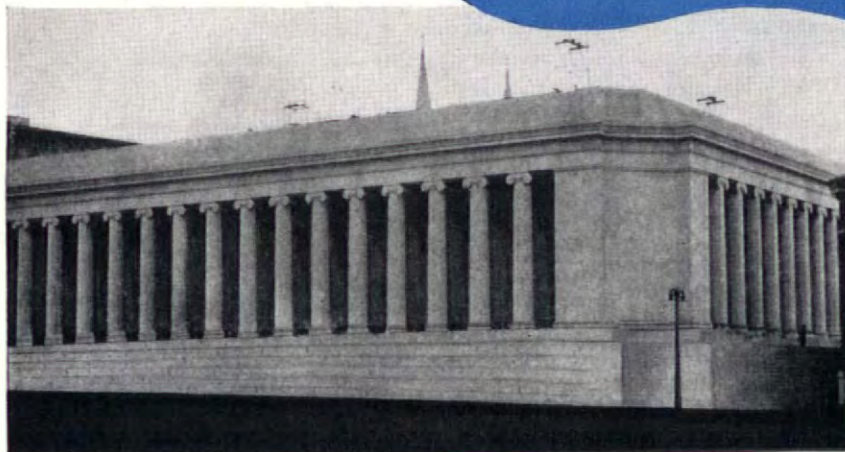


Heinz Memorial Chapel

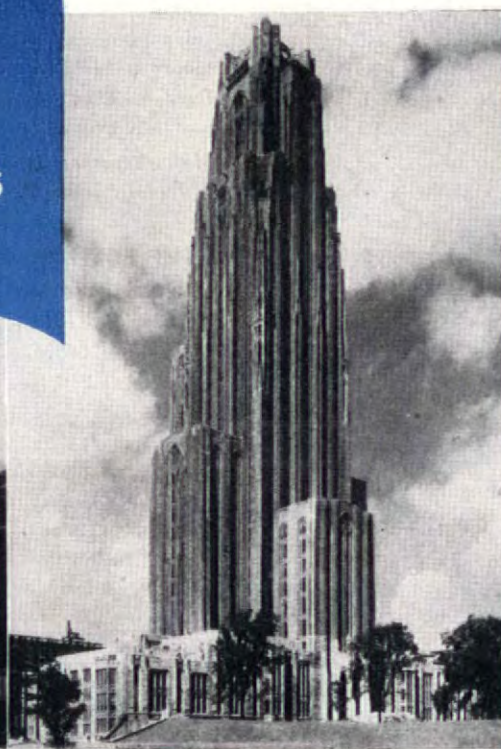


Stephen Foster Memorial

HANDSOME IS  
as  
HANDSOME DOES



Mellon Institute



Cathedral of Learning

**District Heating simplifies building design, provides more usable space at lower operating and maintenance costs**

No ugly stacks mar the beauty of this group of buildings at the University of Pittsburgh. Unhampered by the necessity of allotting space for heating units, fuel delivery and storage, and ash removal, designers enjoyed full freedom of line for beauty, while providing maximum utility for every foot of space in these fully functional structures.

District heating made it possible. Distribution is currently being extended to include a large

group of hospital buildings. The system also effects savings in fuel consumption, reduction in required maintenance personnel, and greater protection from fire and explosion. Because it eliminates the production of smoke and soot in the area, cleanliness and lasting beauty are assured for every building in the group.

In this instance, as in hundreds of other major central heating systems, Ric-wil conduit provides efficient, economical heat distribution.

**RIC-WIL**

**INSULATED PIPE CONDUIT SYSTEMS**  
**THE RIC-WIL COMPANY • CLEVELAND, OHIO**

AGENTS IN PRINCIPAL CITIES



## **FROZEN FOOD CABINET designed for urban homes, farms, institutions.**

This 23 cu. ft. capacity Quick Freeze and Zero-hold Cabinet is designed to provide maximum inventory convenience, operate with minimum power consumption and perform with the least possible servicing. An upright model, its 16 sq. ft. of horizontal contact freeze plates may be used to sharp freeze ( $-20^{\circ}$  F.) over 300 lbs. of beef at once. Or, its entire capacity can be used to store over 900 lbs. of frozen foodstuffs. Interior is divided into 4 roomy shelves which offer inventory convenience. Chain-stopped, drop-doors on all compartments act as coldspill stops. The cabinet, finished in white enamel and equipped with Naval Bronze hardware is constructed of Marine plywood. It has 6 in. glass wool insulation packed between aluminum foil lined, non-conductor, sweatproof and vapor sealed walls. Shipped in 3 sections for easy handling, the unit can be moved through a 24 in. doorway, requires about 12 sq. ft. of floor area and 7 ft. head room. It has a self contained, securely mounted  $\frac{1}{3}$  h.p. compressor,  $\frac{1}{2}$  h.p. motor and is wired for 110v. current. According to the manufacturer, cost of operation at  $0^{\circ}$  F. runs about \$1.80 per month at average rate of 4¢ per kwh.

*Manufacturer:* Freeze Service Corp., 7900 Germantown Ave., Philadelphia 18, Pa.

## **HOME FREEZER of average family capacity, features all aluminum construction.**

Reynold's all aluminum, 6 cu. ft. Eskimo Freeze, measuring 40 in. long, 36 in. high and 28 in. wide, has an average food capacity of 210 lbs. Of sufficient size for the average family, its compact chest type design allows convenient use in the kitchen. The table-height, flat top can serve as additional work space, or if necessary, can replace the ordinary kitchen work table. A full length cover provides ready access to the entire food compartment. All aluminum, it can be easily lifted and is equipped with a stop to prevent opening past a  $95^{\circ}$  angle. Because of horizontal opening, cold does not run out of the unit when lid is open. Interior of the freezer is one large compartment finished in natural, stain-proof, rust-proof aluminum. There are no shelves or partitions. Temperature is maintained at 0 to  $5^{\circ}$  below zero F. by an automatic, factory set thermostat which, according to the manufacturer, is low enough to freeze any fresh food in 12 hours. Cover and body of the chest are thoroughly insulated with a 4 in. blanket and in case of power failure a red signal indicator warns of the condition. In the lower section of the cabinet is the condensing unit, powered by a  $\frac{1}{5}$  h.p. motor. Compressor and motor are hermetically sealed as a single unit. The freezer is finished in white baked enamel, total weight is 185 lbs.

*Manufacturer:* Reynolds Metals Co., 2500 S. Third St., Louisville, Ky.

## **SMOKELESS COAL HEATER meets rigorous smoke prevention ordinances.**

The Moore smokeless coal heater, embodying a new principle by which all fuel gases are consumed, meets the smoke prevention ordinances of various cities. Developed in collaboration with the Battelle Institute and the Bituminous Coal Research Institute, the average use of coal in the new design is said to be 70-80% efficient as compared to 30-45% in conventional up-draft designs. Operating cost is said to be cut in half. In conventional coal heaters fuel is burned by an up-draft from below the grates. This not only wastes heat up the chimney but also removes gases before they are ignited

and consumed, thus causing objectionable smoking. In the new Moore heater, a cross draft principle has been introduced. Both primary and secondary air is brought in at a single air intake above the grates. Part of the air is carried up through the primary air duct and then diverted down onto the top of the whole fuel bed to aid combustion and to prevent coking. These down currents also carry volatiles down for combustion in the burning coal. Secondary air is carried through a cross-wise duct and diverted downward to virtually the top of the grate. A third portion of the air, which is diverted downward at the intake, meets the other two completing the process of full combustion. Volatile gases and smoke are forced through flame, ensuring use of their heating value and eliminating the possibility of their being dissipated through the chimney. The new heater burns 16 hrs. on high firing with only one loading, and 72 hrs. on low fire, or banked. Coal consumption rate is said to be 4 to 10 lbs. hourly, depending upon heater size. Three model heaters will be produced, with production scheduled for March.

*Manufacturer:* Moore Corp., Joliet, Ill.

## **FORCED WARM AIR FURNACE designed for small home or individual apartment heating.**

Mor-Sun Utility Model U-4-G Furnace, rated at 72,500 BTU input and 58,000 BTU bonnet output, is designed for forced warm air heating of small homes or individual apartments. A gas-fired, completely assembled, packaged unit, it can be

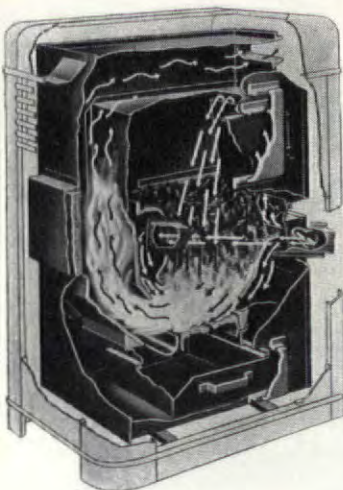
used in basement, utility room, alcove or closet installations. Burner and control access door, blower and motor access door, filters, and vent flue are placed on the front of the unit, which makes possible, closet installation in new or remodeled homes or apartments. Its centrifugal type blower, which can be operated in summer to circulate air through the house, is rubber mounted. Burner is a

fixed orifice, ventura tubular design, producing a semi-luminous, full floating convex flame. There are no baffles, reverse flue travel, dirt or condensation traps. All parts of the unit including casing are die pressed steel, and the furnace features rugged one-piece welded construction. Four supporting legs carry firebox weight and a stiff, ribbed upper tray separates the one-piece welded firebox and blower compartment. Model U-4-G is supplied with automatic controls and complies with AGA requirements. It requires but 22 in. x 25 in. of floor space and is 58 $\frac{3}{4}$  in. high.

*Manufacturer:* Morrison Steel Products, Inc., 601 Amherst St., Buffalo 7, N. Y.

## **OIL BURNING FURNACE for basement installation in average five room house.**

Model 377-G is a completely automatic, gravity-circulation, oil-burning furnace with a bonnet capacity of 70,000 BTU per hr. and a gross output of 74,000 BTU per hr. Designed for basement installation and suitable for heating an average five room house, its compact steel cabinet frees basement area for recreational and other activities. A sheet of asbestos insulation between cabinet panel and (Continued on page 164)





# *There is no substitute for* **TRUE CHURCH TONE**

**or for strict conformity to the specifications  
of The American Guild of Organists**

## **PARTIAL LIST OF AMERICAN GUILD OF ORGANISTS SPECIFICATIONS TO WHICH THE WURLITZER ORGAN CONFORMS:**

### **PEDAL CLAVIER**

Compass: 32-note, CCC to G  
Radiation: 8'-6" radius  
Concavity: 8'-6" radius  
Vertical: 29½" between  
playing surfaces of middle  
E natural pedal key and  
the playing surfaces of the  
natural keys of the Great  
manual.

### **PEDAL ACCESSORIES**

Swell and Crescendo Pedals:  
Heel end of playing surface  
of shoes overhang sharp  
keys of pedal clavier within  
the 1¼" maximum forward  
position, and the ¾" max-  
imum distance back of them.  
Swell Pedal located directly  
in the center of middle E-  
F gap on pedal clavier.

### **SWELL AND GREAT MANUALS**

Compass: CC to c<sup>4</sup>, 61 notes.

Keys overhang a distance of  
4" from the front edge of  
the Swell manual to a per-  
pendicular line touching the  
front edge of the Great man-  
ual keys.

Surface-to-surface: Swell  
manual is 2½" above Great  
manual.

### **ORDER OF STOPS**

Divisions of stop tablets  
have the following sequence  
from left to right on console:  
Pedal, Swell and Great.

The order of stops within  
these divisions are:  
16'-8'-4'-2⅓'-2' and mix-  
tures. Stops assume their  
normal position according  
to pitch in the Major Bass,  
Diapason, Flute, and String  
divisions. Loudest to softest  
is the order within pitch-  
groups. Reeds follow the  
highest pitch stops of the  
above groupings.

Organists who complain, quite naturally, that electronic organs have been unfamiliar and inconvenient will find that the new Wurlitzer Organ completely dispels this objection. All essential playing dimensions specified for modern two-manual *pipe* organs are faithfully adhered to in the design of this superb new instrument.

Pastors and laymen who might not be equally interested in such technical details will, however, be equally enthusiastic about the Wurlitzer's tonal structure. By utilizing the almost infinite variety of electrical impulses produced by free reeds, the Wurlitzer Organ provides a rich family of reverent tones comparable only to the pipe organ itself.

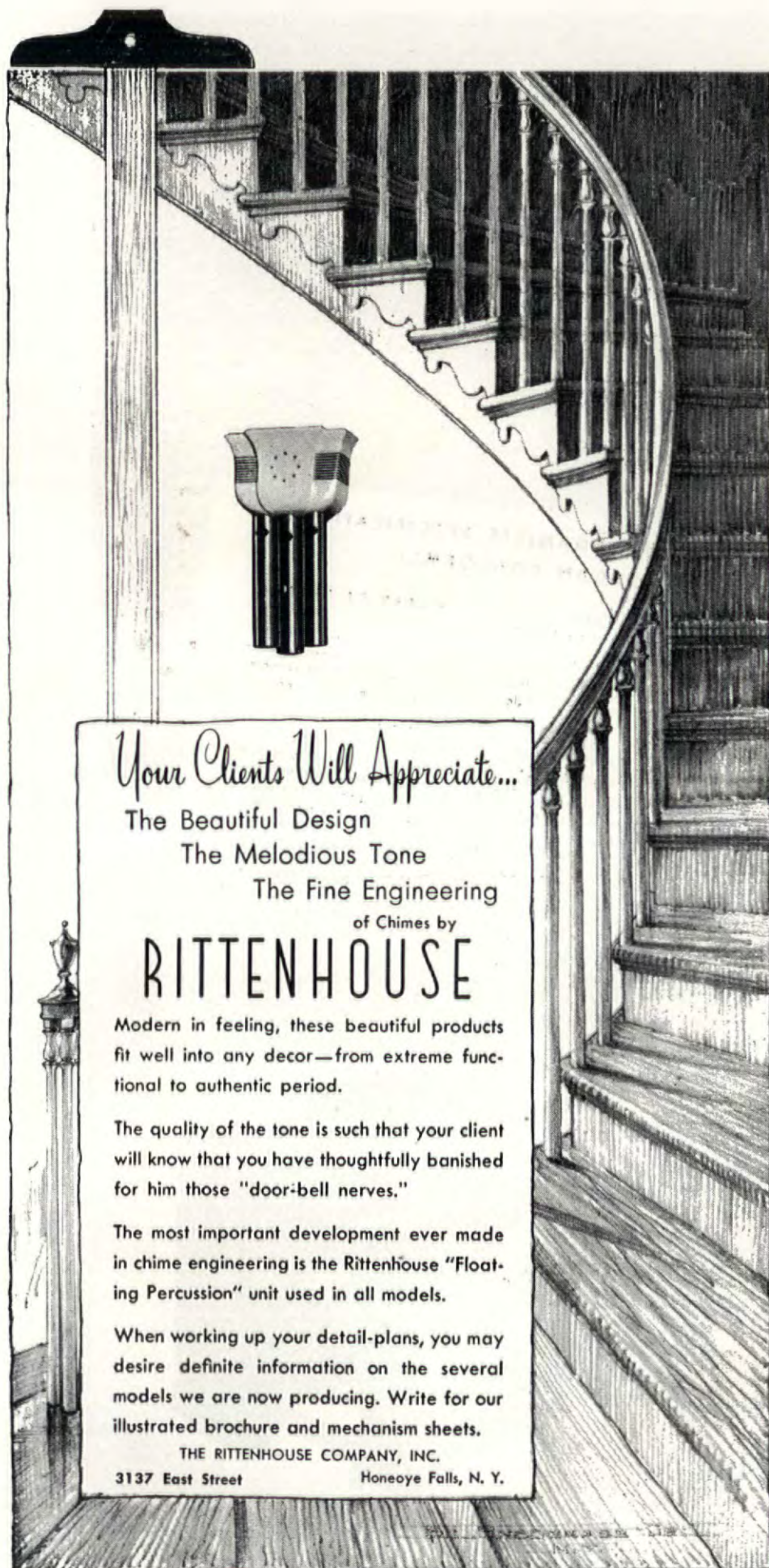
The result is perfection of church music, coupled with amazing economy of space. Your further inquiry is suggested; write Dept. FO-3, Organ Division, The Rudolph Wurlitzer Co., N. Tonawanda, N. Y.



*The* **WURLITZER ORGAN**

**Series 20 Two-Manual**





*Your Clients Will Appreciate...*

The Beautiful Design  
The Melodious Tone  
The Fine Engineering  
of Chimes by

**RITTENHOUSE**

Modern in feeling, these beautiful products fit well into any decor—from extreme functional to authentic period.

The quality of the tone is such that your client will know that you have thoughtfully banished for him those "door-bell nerves."

The most important development ever made in chime engineering is the Rittenhouse "Floating Percussion" unit used in all models.

When working up your detail-plans, you may desire definite information on the several models we are now producing. Write for our illustrated brochure and mechanism sheets.

THE RITTENHOUSE COMPANY, INC.

3137 East Street

Honeoye Falls, N. Y.

interior baffles insure minimum heat loss, and a front access door permits easy inspection and maintenance. The furnace is equipped with an injection jet vaporizing pot type burner and a large capacity steel combustion chamber with built-in flame baffle to increase flame travel and insure maximum operating economy. Low fire and pilot fire are controlled by an electrically operated switch. Low and high fire rings are removable for easy maintenance. A 6 in. automatic draft regulator, bonnet limit switch, thermostat, constant level safety float valve, fuel limit control and built-in transformer are supplied with the unit. Model 377-G meets Underwriters Laboratories Standards, comes knocked down in two packages for shipment.

**Manufacturer:** Heating & Appliance Div., Evans Products Co., 15310 Fullerton St., Detroit, Mich.

## **SUSPENDED UNIT HEATER with improved features; ROOM COOLER adjustable to window size.**

The Palmer Manufacturing Corp. has announced production of an AGA approved, redesigned, Palmaire suspended unit heater and a modern styled, window model Sno-Breze evaporative cooler. The heater, a fan type unit with 100,000 BTU rated output, has a streamlined, one-piece welded steel cabinet. Other features include improved adjustable air deflectors and a sliding, drawer type assembly for controls and burner which provides easy inspection and cleaning. Palmaire hangs from the ceiling to permit full use of store or factory floor area and may be equipped with thermostatic control to provide automatic temperature regulation. No central heating plant or duct system are required. The modern styled window model Sno-Breze evaporative room cooler has metal fill-ins which make it adjustable to windows from 24 to 34½ in. wide. Easily installed, adjustable directional louvres, motor and water switches on front of the cooler provide complete control of operation. Other features include: recessed fan orifice to prevent all air loss or recirculation; Sno-Fluf cooling pad of pure, odorless aspen, quiet efficient 16 in. fan powered by a 1/25 h.p. motor and a 22 gauge, rust resistant steel cabinet.

**Manufacturer:** Palmer Manufacturing Corp., West Jefferson & 7th Ave., Phoenix, Arizona.



## **PORTABLE ELECTRIC HEATER provides adequate heat for small rooms or supplementary heat for larger areas.**

The 1,250 w. Westinghouse portable electric heater, weighing less than 5½ lbs., is usable wherever a conventional 110-120 v. convenience outlet is available. It provides adequate heat for small areas such as bathrooms and breakfast nooks, or may be used for supplementary heating of larger rooms. In operation cool air enters the bottom of the heater and flows upward over the surfaces of a vertical semi-cylindrical heating element consisting of nickel-chrome wire supported on the outside of a ceramic post. Scientific design of both the unit proper



(Continued on page 166)



# Orchids to... Ferro-Therm

**Ferro-Therm**  
STEEL INSULATION

Fully Protected By U. S. and Foreign Patents Issued and Pending

Bus. Telephone 203

"Say It With Flowers"  
**EDGAR KLUG**  
ELITE POINT, N. Y.

Res. Telepho

December 10, 1946

American Flange & Manufacturing Co., Inc.  
30 Rockefeller Plaza  
New York 20, N.Y.

Gentlemen:

This will confirm the facts given to you regarding the performance of your product, Ferro-Therm Steel Insulation, in the fire of November 7 in one of our buildings.

The Ferro-Therm installation consists of a walk-in refrigerated room. The walls, floor, and ceiling of this room are insulated with 4 sheets of #38 U.S.S.ga. Ferro-Therm.

This room is located in the boiler house of our building. On the morning of November 7, fire broke out and completely gutted the interior of the boiler house. The fire was freely blazing by the time it was discovered, and it is probable that 4 or 5 hours elapsed from the outbreak of the fire to the time it was completely extinguished.

The fire burned freely around the Ferro-Therm insulated room and charred the wood sheathed refrigerator door of the room. However, after the fire was extinguished and we opened the refrigerated room, we found that the temperature had risen no more than 2° above normal operating temperature of the room, and no smoke had entered the room. In consequence, our cut flowers stored in this refrigerated room were entirely undamaged.

These facts are given to you with the understanding that they may be reproduced in your Ferro-Therm data as they provide to interested parties pertinent information regarding the insulation value and fire protection of your product.

Very truly yours,

*Edgar Klug*

AMERICAN FLANGE & MANUFACTURING CO., INC.  
Ferro-Therm Division, Dept. A.F.  
30 Rockefeller Plaza, New York 20, N. Y.

Please send me, without obligation, complete information on Ferro-Therm Steel Insulation.

Name .....

Firm .....

Street .....

City .....

Zone .....

State .....

AMERICAN FLANGE &  
MANUFACTURING CO., INC.,  
30 ROCKEFELLER PLAZA,  
NEW YORK 20, N. Y.



and its heating element augment air circulation. The heater, finished in satin aluminum and equipped with carrying handle, measures 15¼ in. high, 10⅜ in. wide and 9⅛ in. deep. It is approved by the Underwriters Laboratories, Inc.

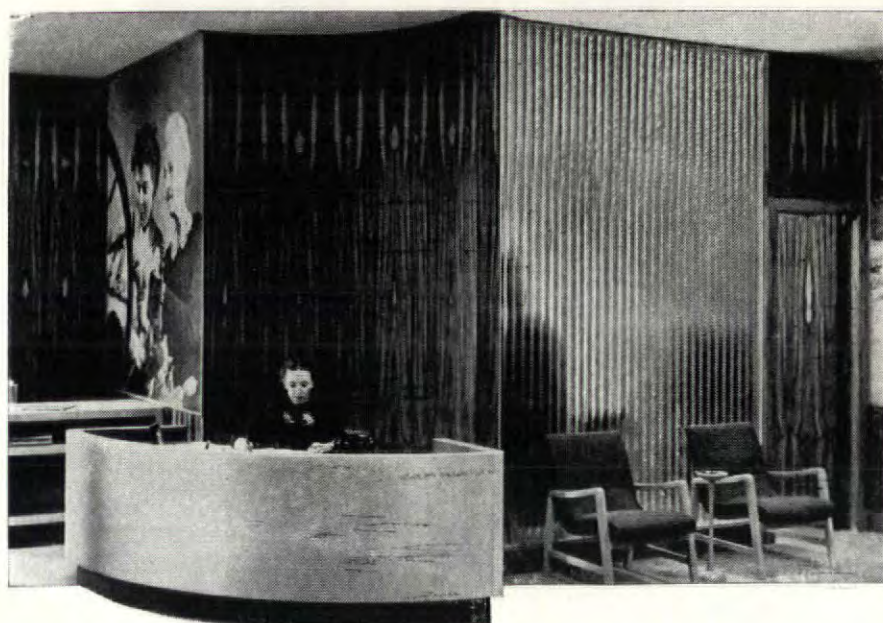
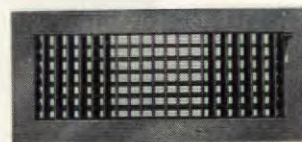
*Manufacturer:* Westinghouse Electric Corp., 306 Fourth Ave., Box 1017, Pittsburgh, Pa.

## GRILLES AND REGISTERS for commercial, industrial and institutional air distribution.

Tri-Flex Grilles and Registers provide complete and efficient control of air delivery in three ways: control of direction, throw and air drop. Tri-Flex Registers with multi-shutter damper also afford positive volume control. The line is made up of various combinations of three flexible units: Tri-Flex Grille with individual adjustable vertical face bars, hori-

zontal deflector blades and positive control multi-shutter damper. The vertical face bars of the Grille are pivoted at the front for perfect alignment regardless of setting and the individually adjustable horizontal deflector blades are designed with an overlap feature that permits complete closing of any portion of the grille. Tri-Flex T 60 Grille provides the simple grille with vertical face bars. Tri-Flex T 64 Double Deflection Grille combines grille and deflector blades. Tri-Flex T 62 Multi-Shutter Register combines grille and multi-shutter damper. Tri-Flex T 642 Double Deflection Multi-Shutter Register, an all purpose unit affording maximum flexibility for both directional and volume control, combines grille, horizontal deflector blades and multi-shutter damper. These grilles and registers are being offered in 26 standard sizes, which according to the manufacturer means lower prices per unit.

*Manufacturer:* Tuttle & Bailey, Inc., New Britain, Conn.



## How to Make a Good Impression

*Look Magazine* does it with a reception room finished in strikingly grained Goncalo Alves Flexwood, set off by panels of corrugated glass.

You can do it every time you specify Flexwood for interiors.

Here is *genuine* wood veneer made pliable by a patented process and mounted to strong fabric backing . . . a versatile, durable, decorative material. Flexwood gives you all the warmth and beauty of the world's finest woods . . . in a form that's ideally suited for quick and easy application either to old plaster walls or for new construction.

Flexwood lends itself to any decor . . . from sheer hung treatments of modern curved surfaces to traditional paneled effects.

We'll be glad to send you full information on the wide variety of fine woods available. Write today.

### UNITED STATES PLYWOOD CORPORATION

Dept. F, 55 West 44th Street, New York 18, N. Y.

**FLEXGLASS** — the Glass that Bends. Genuine glass rectangles mounted on flexible fabric backing. Readily cemented to flat or curved surfaces. Mirrors, dewdrops and opals . . . in many different colors.

Flexwood and Flexglass are manufactured and marketed jointly by United States Plywood Corporation and The Mengel Company.



—Genuine wood made pliable

## MULTI-LOUVRE DAMPER provides uniform control, quiet operation.

Featuring effective, uniform air control, quiet operation and a tamperproof locking mechanism, the new Aerofuse Multi-Louvre Damper offers many advantages. The multi-louvre construction divides the air supply stream, resulting in uniform distribution and more minute adjustment of the air volume. Because the effective area of the damper in the open position is greater than that of the corresponding size diffuser, volume adjustment can be accomplished without affecting the capacity of the diffuser. As air turbulence passing the louvres is minimized, a decreased noise factor is assured. The damper can be completely closed, opened or left in any position by turning the handle in the center of the unit. Louvres can be locked in position, and if desired, operating handle and rod may be removed.

*Manufacturer:* Tuttle & Bailey, Inc., New Britain, Conn.



## STEEL UTILITY WINDOW has ventilating section adjustable for up or down draft.

Copco all steel Utility Window is constructed with a fixed lower section and an upper ventilation section that opens inward to allow free passage of air into the room. Easy action side arms permit opening to any angle and makes possible adjustment to an up or down draft position. A spring locking device with convenient wire pull-rail attachment simplifies opening and insures weather-tite closing. Easily installed in both masonry and frame buildings, the 4-light unit is suitable for use in garages, small commercial and general utility buildings. It is also recommended for basement installations where greater light is desired. The new window measures 3 ft. 6⅝ in. x 2 ft. 8⅞ in. Glass sizes in upper vent lights are 15 x 20 in. and in lower lights 15⅝ x 20 in.

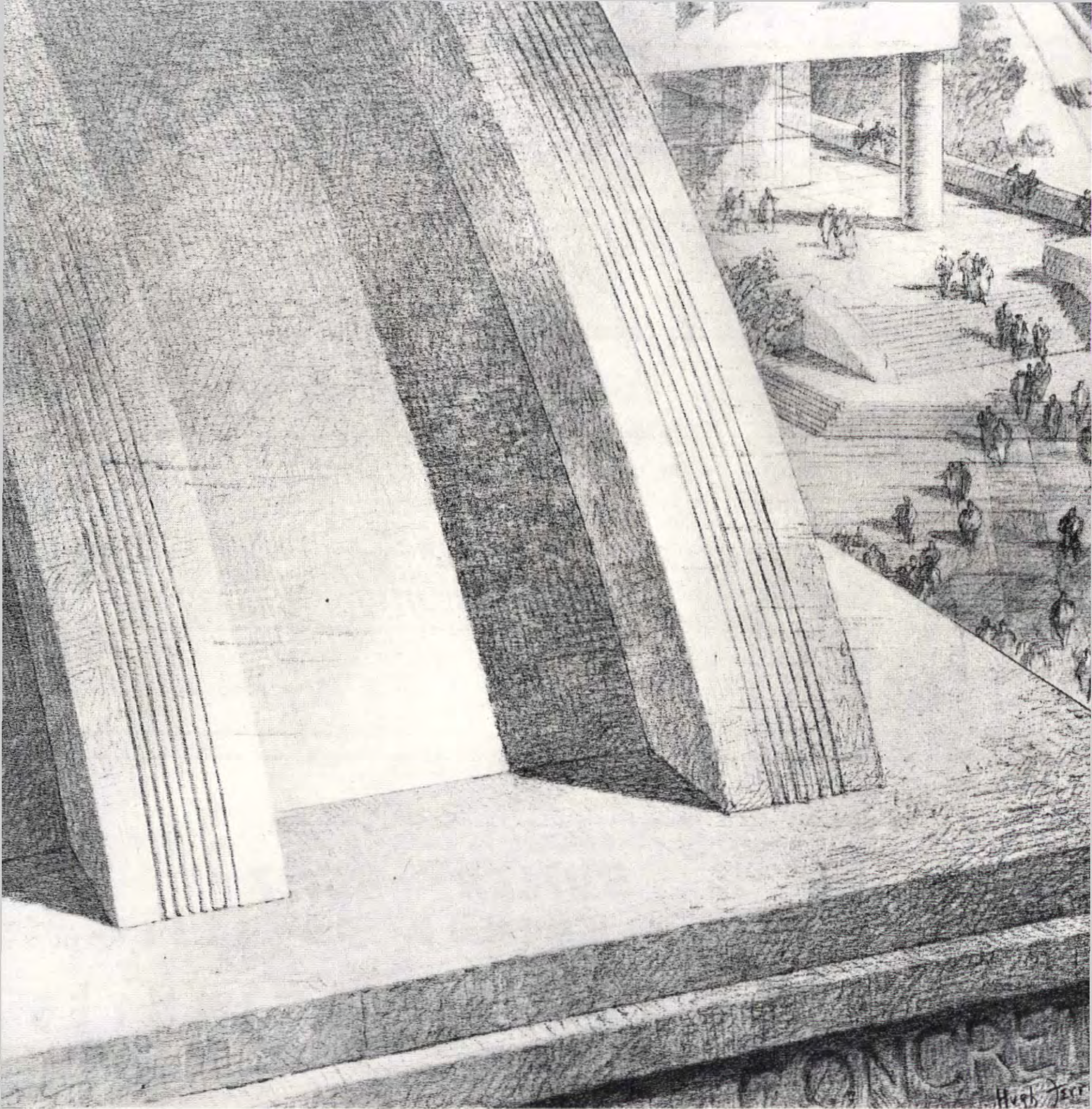
*Manufacturer:* Copco Steel and Engineering Co., 14035 Grand River Ave., Detroit 27, Mich.

## PLASTIC GLAZING MATERIAL for use where light is desired and weather barrier a necessity.

Made by laminating a lightweight cord net between two sheets of cellulose acetate, Richglaze admits over 60% of the sun's ultra violet rays. Transparent, flexible, waterproof, and shatterproof, it is said to have long

(Continued on page 170)





## **ARCHITECTURAL CONCRETE**

The architectural vigor of these concrete arches for long span roofs is revealed in this drawing by Hugh Ferriss. It is fifth in a series of delineations showing the economy and adaptability of Architectural Concrete for firesafe construction of apartments, hotels, hospitals, schools, industrial and commercial buildings.

### **PORTLAND CEMENT ASSOCIATION**

DEPT. A3-7, 33 WEST GRAND AVENUE, CHICAGO 10, ILLINOIS

A national organization to improve and extend the uses of concrete...through scientific research and engineering field work



# HOME BUILDING CONTRACTORS

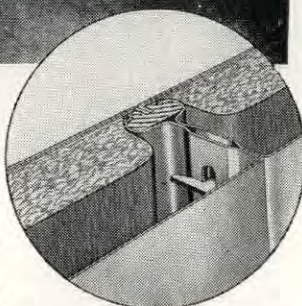
# NOW



## Insulating Efficiency Equal to 12" Brick Wall

Tests by F. B. Rowley (Prof. of M. E., Univ. of Minn.), Midwest Research Institute and National Housing Authority. The easily applied blanket insulation, coupled with the reflective insulation of aluminum makes the Butler Boulevard an all climate home—cool in warm countries and warm in cold regions.

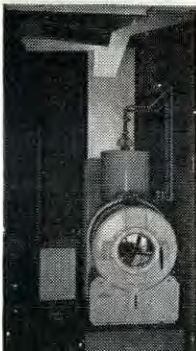
Home building contractors are invited to visit and inspect exhibition homes—at Kansas City, Galesburg and Minneapolis.



## You Can Finish The Interior In Metal Or Any Conventional Material Such As Lath and Plaster, Plywood, Composition Board, Etc.

Note the wood furring strip above. It's locked into the jaws of the metal stud. It's grooved to receive and hold inside walls of metal. Or, to it may be attached plywood, sheetrock, composition board, or lath for plastering. Customers choice of interior decorative wall finishes may be applied. EXTERIOR WALLS ARE TREATED FOR CONVENTIONAL PAINTING WITH PLAIN, SAND FINISH OR STUCCO TEXTURE. From every standpoint Butler Built Boulevard Homes are arrangeable to present varying customer appeal.

At left, compact utility room.

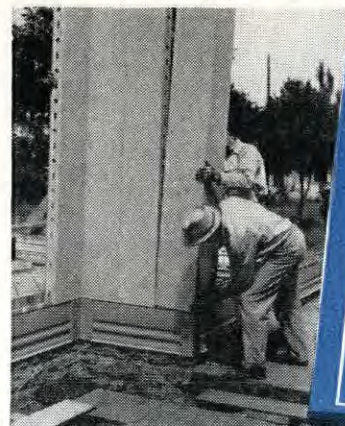


## A Packaged Home Which You Can Construct in 20 Modern, Yet Traditionally Styled Arrangements To Fit Customer Personalities.

People are living in Butler Built Aluminum Houses—enjoying a new high in safety and comfort—a new low in economy of ownership and maintenance. At Butler plants production is going up fast. Deliveries are being made. Home building contractors are constructing others to suit individual tastes from precision parts delivered on the site in packages. No waiting. All materials of uniformly high quality. No need to resort to inferior materials or substitutes. From foundation to finished home is a matter of about 3 weeks. Think what that means to your turnover. Here is a combination of factory and on-the-site construction which brings the modernity of metal to home building as surely and soundly as it came to motor cars, planes, trains and ships.

## Studded Metal Panels Key-lock Together To Form One of Strongest of Structural Systems.

The Key to speedy, high strength home construction is an entirely new patented system of structural members integrally formed into panel sections of skin stressed aluminum. Placing a panel and key-locking it into position is a matter of minutes. It is a simple operation comparable to setting studs and attaching sheeting and siding in conventional construction. Framework, walls, partitions, ceilings and steel rafters can be constructed in 3 or 4 days. Throughout, the construction is such as to facilitate window and door hanging, wiring, plumbing and other finishing operations.



# Boulevard Homes

## BUTLER BUILT

## OF ALUMINUM OR STEEL

# ONE EVERY 80 MINUTES





# You Can **START** and **FINISH HOMES** In **DAYS** Instead of **MONTHS!**



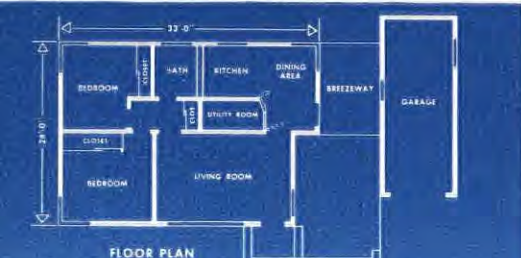
Patents issued—Nos. 2231775 and  
28907 U. S. Patent Office



**BUTLER BUILT BOULEVARD HOMES ON EXHIBITION—KANSAS CITY • GALESBURG • MINNEAPOLIS**

## **Priced to compete with conventional construction.**

Although of Aluminum, the base price of Butler Built Boulevard Homes is such as to permit home building contractors in most areas to finish and sell profitably against conventional construction. Garage, breezeway and extras for altering the styling are nominally priced.



## **Now Being Delivered—Now Being Lived In. Sold Only To Qualified Home Building Contractors.**

Butler Built Boulevard Homes, F.H.A. financed, are being lived in. Deliveries are being made. Production is going up rapidly toward a potential factory capacity of 3 every 4 hours. Home building contractors WHO want to cash in on going production and a growing trend should **SEND FOR FULL DETAILS NOW**, then visit our exhibition homes.

## **BUTLER MANUFACTURING COMPANY**

Factories: Kansas City, Galesburg, Minneapolis

**SEND  
COUPON TO**

7368 E. 13th St., Kansas City 3, Mo. Or  
968 Sixth Ave. S. E., Minneapolis 14, Minn.

We plan to build \_\_\_\_\_ homes. Send full information.

FIRM NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

STATE \_\_\_\_\_



life when exposed to weather. For use wherever light is desired and a weather barrier a necessity, applications include poultry houses, cold frames, and other locations where the admission of ultra violet rays can benefit humans, animals or plants. Other envisioned uses, not usually considered as jobs for glazing materials, include closing in of buildings under construction, closing of outside scaffolding, heat and dust barriers in warehouses, etc. Installation is simple, the material being cut to size with scissors and nailed to frames. Rolls 36 in. wide are furnished in 150 sq. ft. and 450 sq. ft. sizes.

*Manufacturer:* The Richkraft Co., 228 N. LaSalle St., Chicago, Ill.

## ASPHALT SIDING with Fiberglas base offers durability, resistance to moisture and vermin.

To give added durability and resistance to moisture and

other destructive factors, a new type Ford-V-Neer panel siding utilizes Fiberglas as the structural base material. Retaining all the advantages of Ford-V-Neer asphalt sidings developed with the old type organic base, the new material offers many features due to the fact that the Fiberglas base is inorganic. Completely weatherproof, it cannot rot, decay, absorb moisture, shrink or burn. It is proof against termites and all vermin, and combines high insulating qualities with excellent sound absorption. Lightweight and extremely strong, the Fiberglas base permits use of large size panels thus reducing application time. It can be cut easily and accurately fitted around windows and gables. Furnished in panels  $\frac{5}{8}$  in. thick, 24 in. x 36 in., shiplapped on four edges, the new Ford-V-Neer siding is available in either brick or stone pattern in a wide variety of colors.

*Manufacturer:* Ford Roofing Products Co., 111 West Washington St., Chicago, Ill.



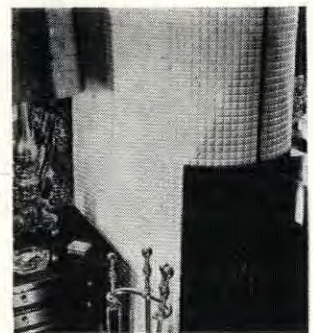
Beautiful kitchen in the home of George Leikert, Detroit, Michigan, illustrates the modern beauty and utility of Marlitz panels and Marsh mouldings.



## PLYWOOD WALL COVERING for flat or curved surfaces.

Checkwood is a decorative wall covering composed of one-inch jewel-cut squares of plywood bonded to a fabric backing. Applicable to flat or curved wall surfaces, molding, furniture trim and accessories, V-cut divisions between each square make seams invisible and permit perfect fit on inside or outside corners. The unselected plywood faces may be easily painted and allow various interesting effects to be obtained in both one and two tones. Checkwood is being produced in 24 in. square sheets by The Mengel Co., Louisville, Ky.

*Merchandiser:* Flexwood Div., United States Plywood Corp., 55 West 44th St., New York, N. Y.



## PLASTIC COATED FABRICS for upholstery, slip-covers, draperies, etc., are stain resistant.

Made of finely woven textiles which are treated with an invisible plastic coating, Gaytex Fabrics combine appearance and utility. They look, drape and feel like regular fine untreated materials, yet can be wiped clean with a damp cloth. They have no tell-tale shine or odor, retain their freshness, are waterproof and stain resistant. Dirt, food, cold cream, ink, etc. may be removed with a damp cloth or, if preferred, the fabric may be washed in soap and water. The Gaytex line offers more than 20 designs done by Marion V. Dorn, in everything from delicate pastels to splashy modern prints—in fine cottons, chambray and rayon faille, with plenty of harmonizing plain colors and bold stripes. Sold by the yard for slip covers, upholstery, drapes, bedspreads, and many other uses, some of the fabrics retail for as low as \$1.50 per yd. Bright colored tablecloths made from Gaytex Fabrics are being merchandised by the company, and other household products made from the material will follow shortly.

*Manufacturer:* Fisher Plastics Corp., 76 Arlington St., Boston, Mass.



... for the "BUILDING OF TOMORROW"



Appealing beauty and economical utility are characteristics of the "Building of Tomorrow," designed for better living.

Versatile Marlitz plastic-finished wall and ceiling panels, adaptable to every type of construction, provide colorful interiors that are at once pleasing and serviceable. Marlitz seals in beauty, seals out dirt and grime, is quickly installed, easy to keep clean. Plan now to make the most of Marlitz, designed for the "Building of Tomorrow." Marsh Wall Products, Inc., 301 Main Street, Dover, Ohio.

*For Creating Beautiful Interiors*

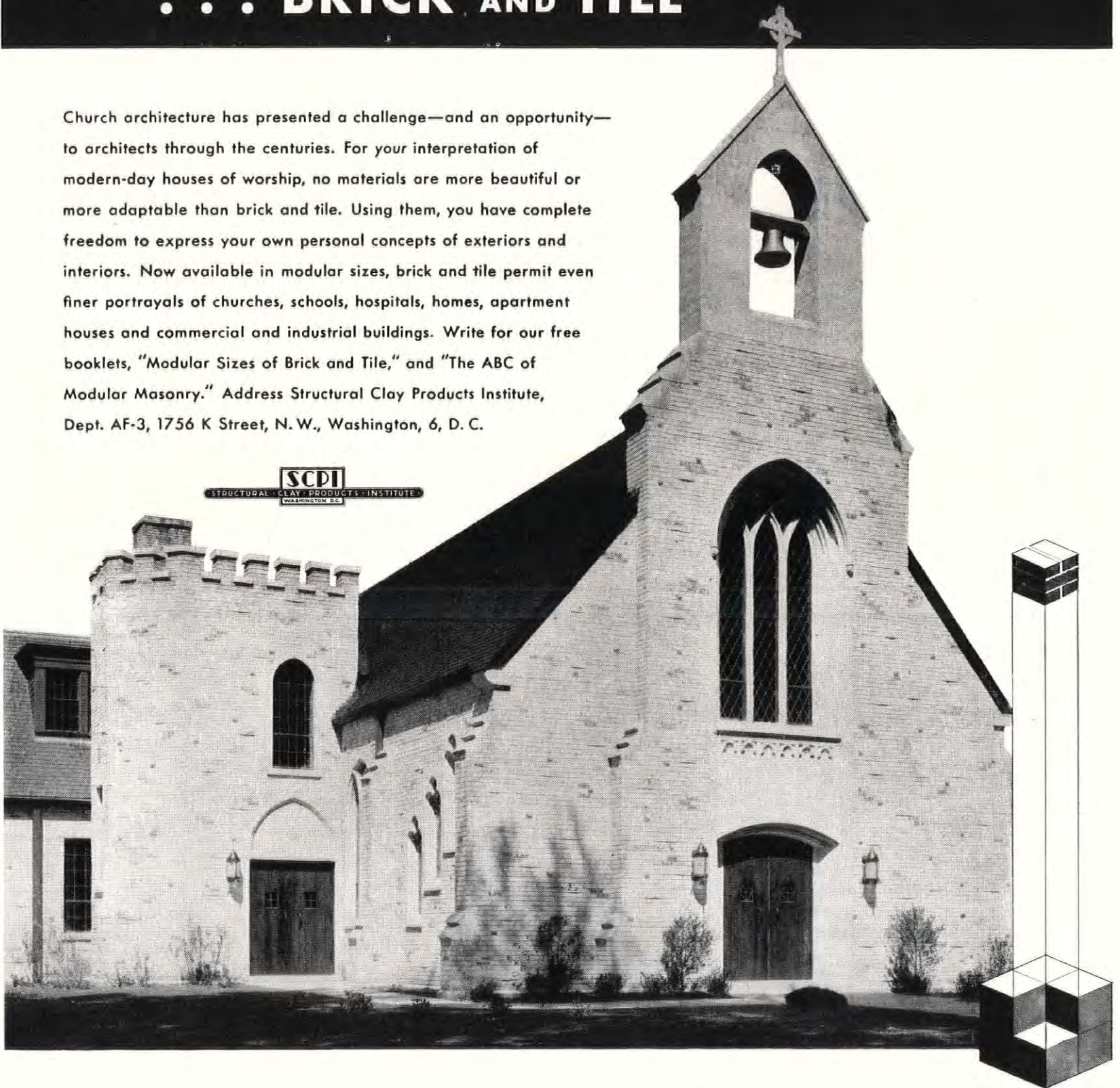


**Marlitz**  
PLASTIC-FINISHED  
WALL PANELS



# *Inspiration* FOR HOUSES OF WORSHIP ... **BRICK AND TILE**

Church architecture has presented a challenge—and an opportunity—to architects through the centuries. For your interpretation of modern-day houses of worship, no materials are more beautiful or more adaptable than brick and tile. Using them, you have complete freedom to express your own personal concepts of exteriors and interiors. Now available in modular sizes, brick and tile permit even finer portrayals of churches, schools, hospitals, homes, apartment houses and commercial and industrial buildings. Write for our free booklets, "Modular Sizes of Brick and Tile," and "The ABC of Modular Masonry." Address Structural Clay Products Institute, Dept. AF-3, 1756 K Street, N. W., Washington, 6, D. C.



NOW IT WILL BE BUILT WITH MODULAR-DESIGNED  
**BRICK AND TILE**





Architect: Robert A. Green

Mr. Hans Stolte's *TIME* subscription will follow him from Forest Hills when this new home is completed for him in Briarcliff, N. Y.

# Presenting THE SHOW-ROOM HOMES *of the Nation*

More and more of the 400,000 homes *TIME*-subscribers plan to buy or build \*are leaving the blueprint stage and becoming wood-and-glass-and-stone actualities.

And by and large, they are the kind of outstanding houses—like this one of Mr. Stolte's—that are admired, talked-about, copied in design and detail by millions of other U. S. families.

When your building products are bought or

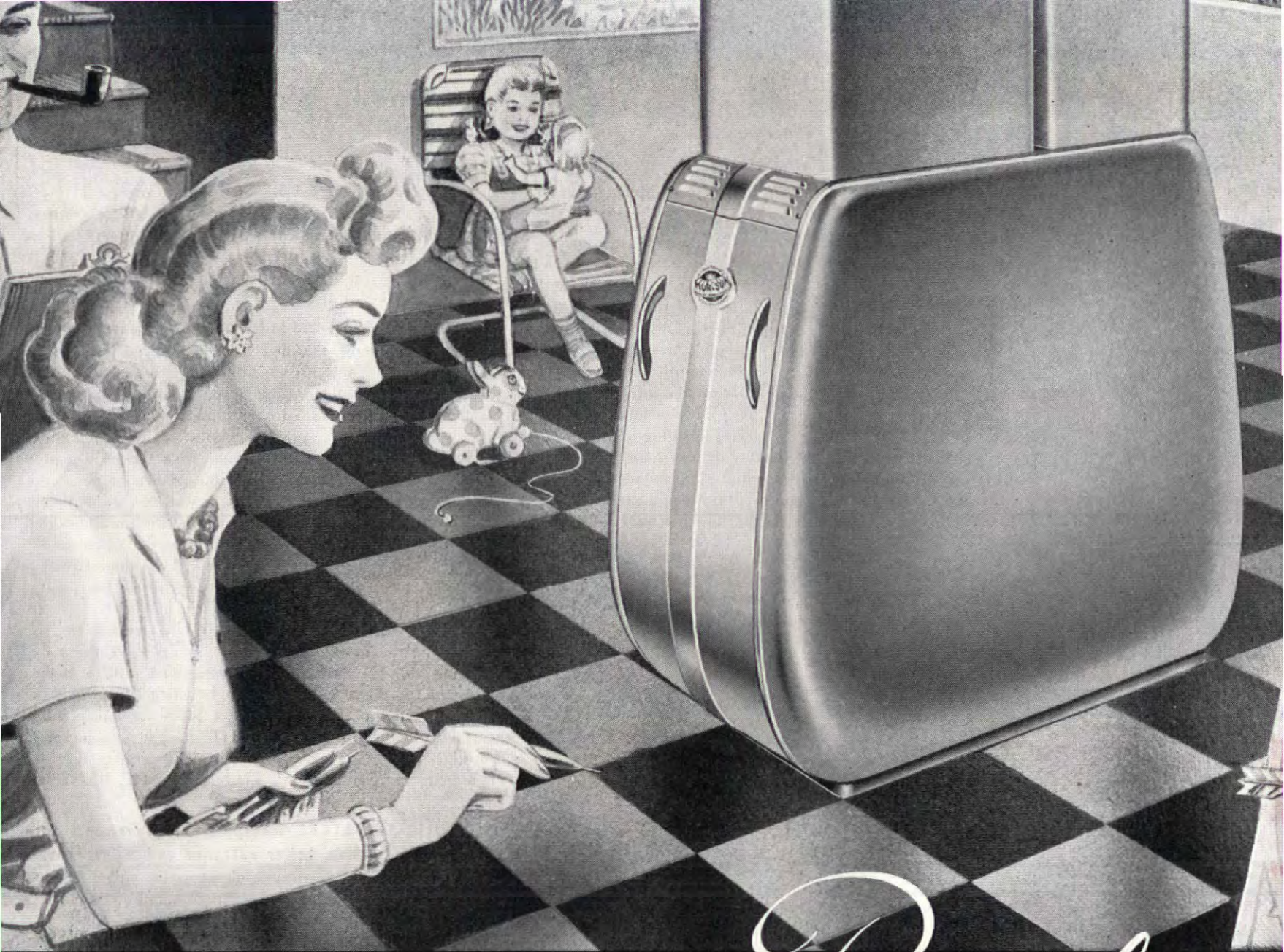
specified by *TIME*-readers (or by the thousands of *TIME*-reading architects), they go on exhibit in looked-up-to "show-room" homes the country over. For with incomes *double* the U. S. average, *TIME*'s 1,500,000 families can afford the kind of homes that set the pace for much of the rest of home-building and home-buying America.

From a recently published survey "The Houses *TIME* Families Live In." If you would like to receive a copy, write David Wallace, Research Director, *TIME*, 9 Rockefeller Plaza, New York, N. Y.



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# The Furnace that brought *Beauty* to the Basement .....



"The Sun Never Sets  
with MOR-SUN!"

Architects must be practical. Dream castles are all right on paper... but Home, Sweet Home needs a heating system... a healthful and automatic heating system.

And there's no law against it being beautiful too. In fact, what with rumpus rooms and basement bars, a thing of beauty in a heating system can be a joy forever!

And that means the MOR-SUN... the winter air-conditioning furnace that gives Beauty as well as BTU's!

MOR-SUN... the pressed steel factory-assembled packaged furnace that heats, conditions, circulates, filters, humidifies and continuously renews the air... and brings beauty to the basement!

**MORRISON STEEL PRODUCTS, Inc., BUFFALO 7, N. Y.**

Morrison's nationwide dealer organization is at your Service. Write us for the address of our representative nearest you.



## QUARTER ROUND STEEL RACEWAY for telephone, buzzer and inter-communication wiring.

Lopo-Trim is a steel quarter-round designed as a baseboard trim, a low potential wiring raceway, or as a quarter-round trim above or beneath installations of the company's Plug-In Strip. For installation purposes, it has integral steel prongs projecting down its back at 3 in. intervals. These push down behind the baseboard or Plug-In Strip and exert a tension which holds the quarter-round in place. Particularly adaptable for residential, store and office application, Lopo-Trim has been approved as a telephone wire raceway and can be used for such other low potential services as



buzzer and inter-communication wiring. It comes in 6 ft. lengths finished in a neutral gray. For rounding external or internal corners, 8 in. x 8 in. two-piece matching elbows are available.

**Manufacturer:** National Electric Products Corp., Chamber of Commerce Bldg., Pittsburgh, Pa.

## SAFETY SWITCH designed to harmonize with surroundings.

Rated at 30 amperes, this newly designed Type D Enclosed Safety Switch is compactly contained in a box only 4½ in. wide, 6⅞ in. long and 3¼ in. deep. A uniquely designed handle gives front operation and its attached triple duty spring takes up any loose tolerance in the switch. This spring also provides a flexible connection to movable contacts, as well as a seal between handle and cover. Design allows the pivoting lever to be padlocked in off position to prevent opening of switch and cover, and provides for plenty of wiring room and easy-to-get-at terminals. Switch mechanism is

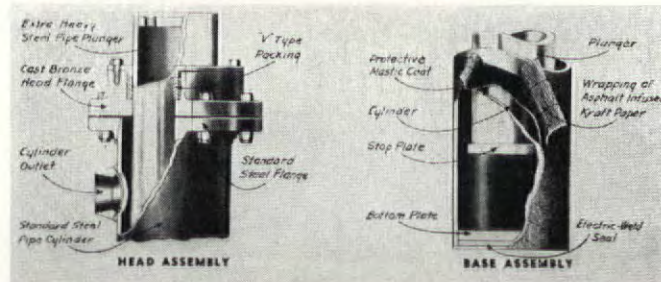


mounted on the back of the box and may be removed by loosening a single screw. Double break and positive make are assured in the new Type D switch, which is available in 2 pole, 125 v.; 3 pole solid neutral, 125/250 v.; 3 pole solid neutral with meter twist-out 125/250 v.; and 3 pole solid neutral, 125/250, 230 v., A. C.

**Manufacturer:** The Trumbull Electric Mfg. Co., Plainville, Conn.

## HYDRAULIC ELEVATORS incorporate improvements for ease of installation, better operation and maintenance.

Montgomery improved hydraulic elevators for either freight or passenger service are being manufactured in standard sizes with travel limited to 36 ft. This standardization, according to the manufacturer, meets most existing requirements



and makes possible early delivery at reduced costs. A feature of the elevator line is improved plunger construction. V-type packing used at the cylinder head conforms to the contour of the plunger, reduces friction and keeps the pit dry without a drip pan. New cylinder protection incorporates a mastic coating to guard against corrosion. A wrapping of heavy-duty asphalt infused sheets of kraft paper, crinkled and reinforced with Nylon cord, is applied over the coating. Casing of the well hole is eliminated except in the most severe conditions.

**Manufacturer:** Montgomery Elevator Co., Moline, Ill.

## LUMINOUS SIGNS for display purposes utilize "blacklight".

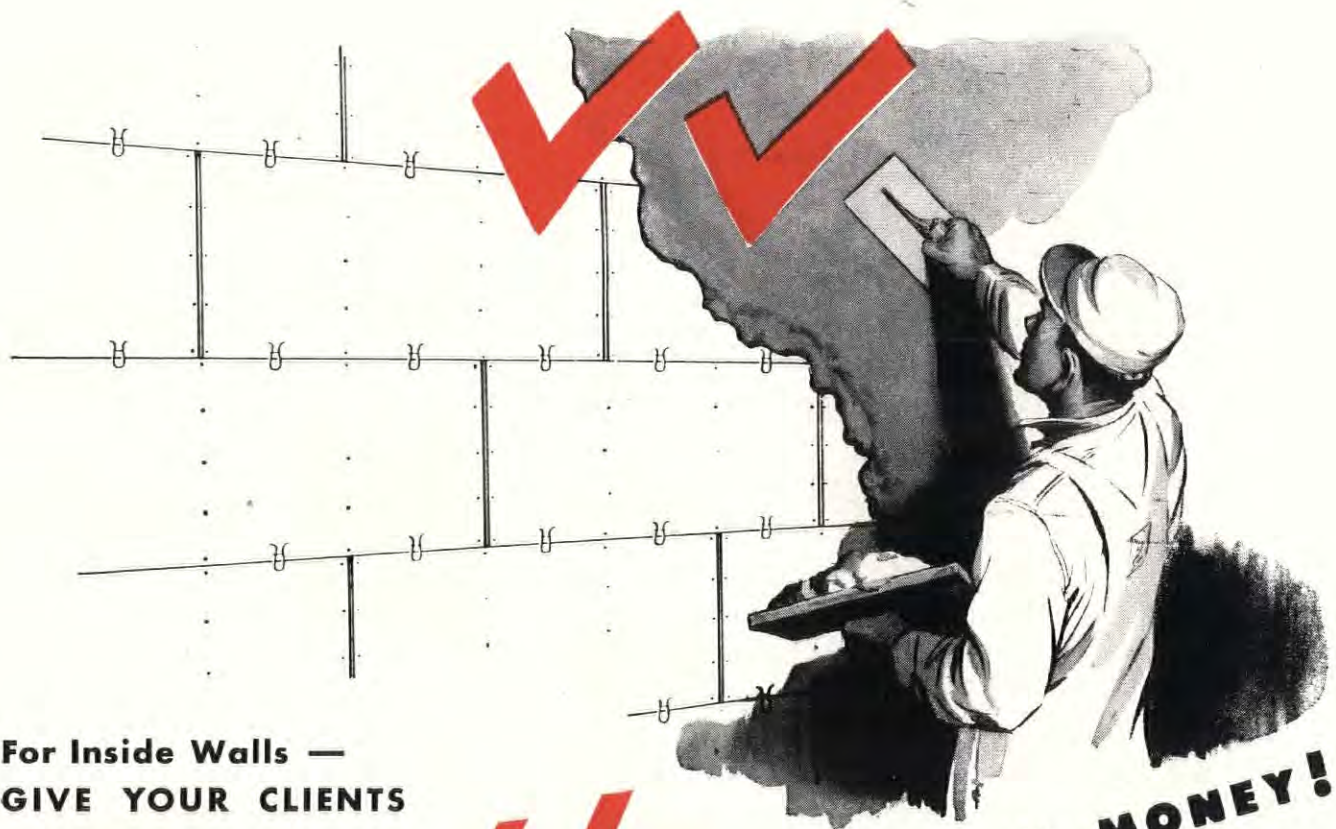
Ready-made Vion luminous plastic signs for interior display offer colorful effects; convenient use; safe, low cost operation. Composed of easily interchangeable, three dimensional, luminous plastic letters; a brass frame which houses the light source and an ordinary electric cord, the signs operate on a standard 110-120 v. circuit. Illumination is provided by a regular size, low wattage

(Continued on page 178)



Layout treatment conceived by Alexander H. Girard





For Inside Walls —  
GIVE YOUR CLIENTS

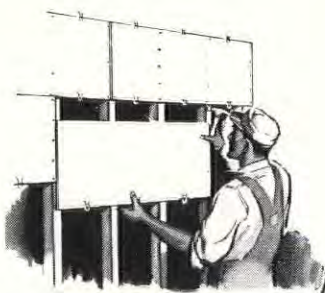
**Double** FOR THEIR MONEY!

Insulite Lok-Joint Lath does double-duty for inside walls:

(1st) Serves as a *plaster base*, (2nd) *Insulates*.

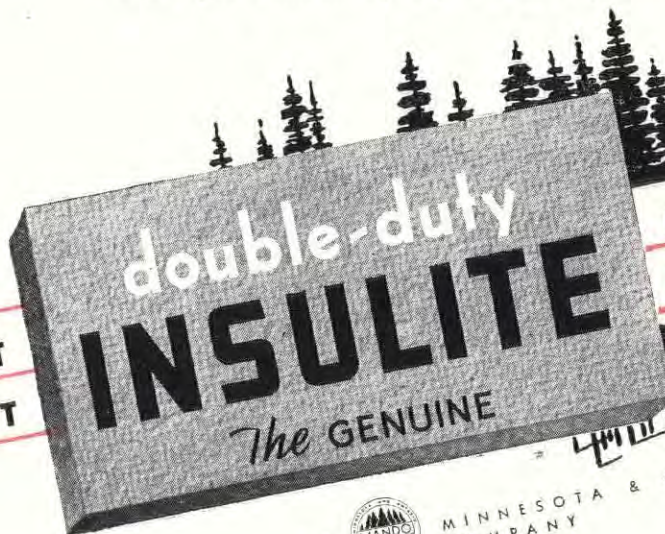
One product — double usage — double service for the money!

Quickly and easily nailed in place. Greater bracing strength. A strong, rigid plaster base . . . PLUS insulation and vapor control. Specify double-duty Insulite Lok-Joint Lath.



ONE MATERIAL  
Double USAGE

INSULATES AS IT  
BUILDS AS IT



Refer to Sweet's File,  
Architectural Section 10 a/9

BUILDS  
INSULATES

"Insulite" is a registered  
trade mark, U.S. Pat. Off.

DIVISION OF  
PAPER



MINNESOTA & ONTARIO  
COMPANY



# Facing tile for Rental Housing

fire-safe...cuts maintenance costs...assures earlier use

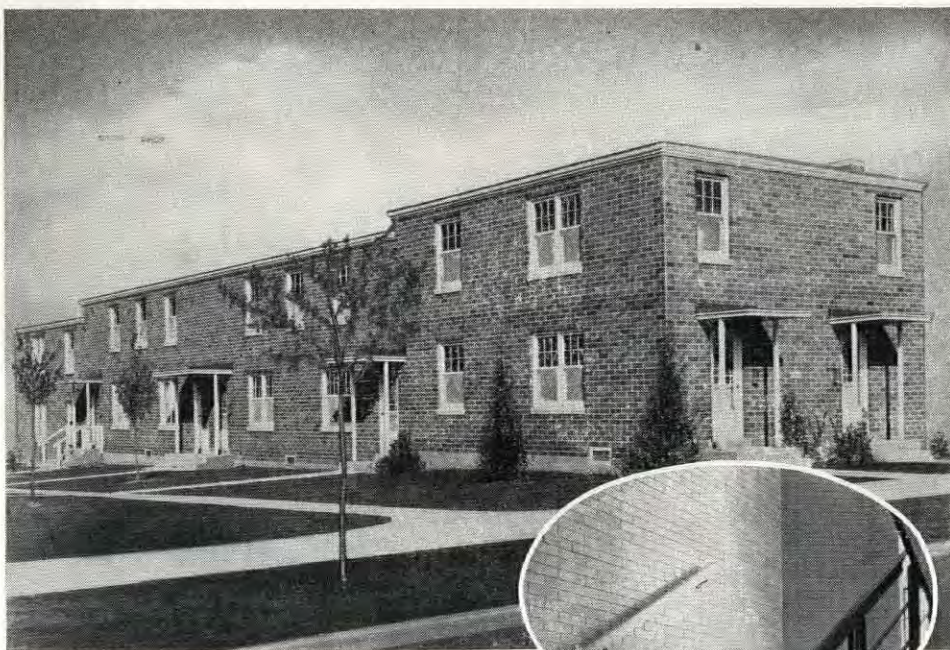
All these very important considerations for the low-cost Rental Housing you design are made possible by Structural Clay Facing Tile.

Unglazed Facing Tile lends itself very well to exteriors. For interiors, either glazed or unglazed is used. Both are *fire-safe*. Both go up fast and help assure *earlier use* of the structure.

Because Facing Tile is strong and durable and stands rough usage, it has become common practice to use it in stairwells and corridors. It does not scratch, crack, mar or decay. Structural Clay Facing Tile is colorful... easily cleaned with soap and water. These advantages help cut maintenance costs.

With a permanent finish and a wall of great strength in one material, Facing Tile means less time and money spent for construction... earlier returns on investment... less financing.

Many of these advantages are made more certain by the present production of Facing Tile in modular sizes. The

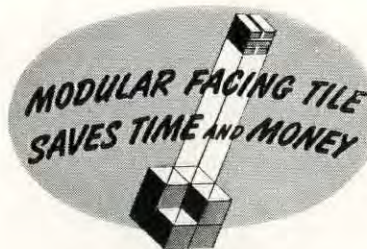


result is perfect fitting with other modular materials... greater flexibility in design... less time for drafting and site supervision... less material waste... better workmanship with reduced labor... earlier occupancy.

Any Institute Member will gladly furnish more information, or write direct to Desk AF-3 of the Institute. See Sweet's 1947 Architectural Catalog for additional data.

## INSTITUTE MEMBERS

Belden Brick Company  
Canton, Ohio  
Continental Clay Products Co.  
Kittanning, Pennsylvania  
Charleston Clay Products Co.  
Charleston 22, West Virginia  
Hanley Company  
New York 17, N. Y.  
Hydraulic Press Brick Co.  
Indianapolis, Indiana



Mapleton Clay Products Co.  
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## FACING TILE INSTITUTE

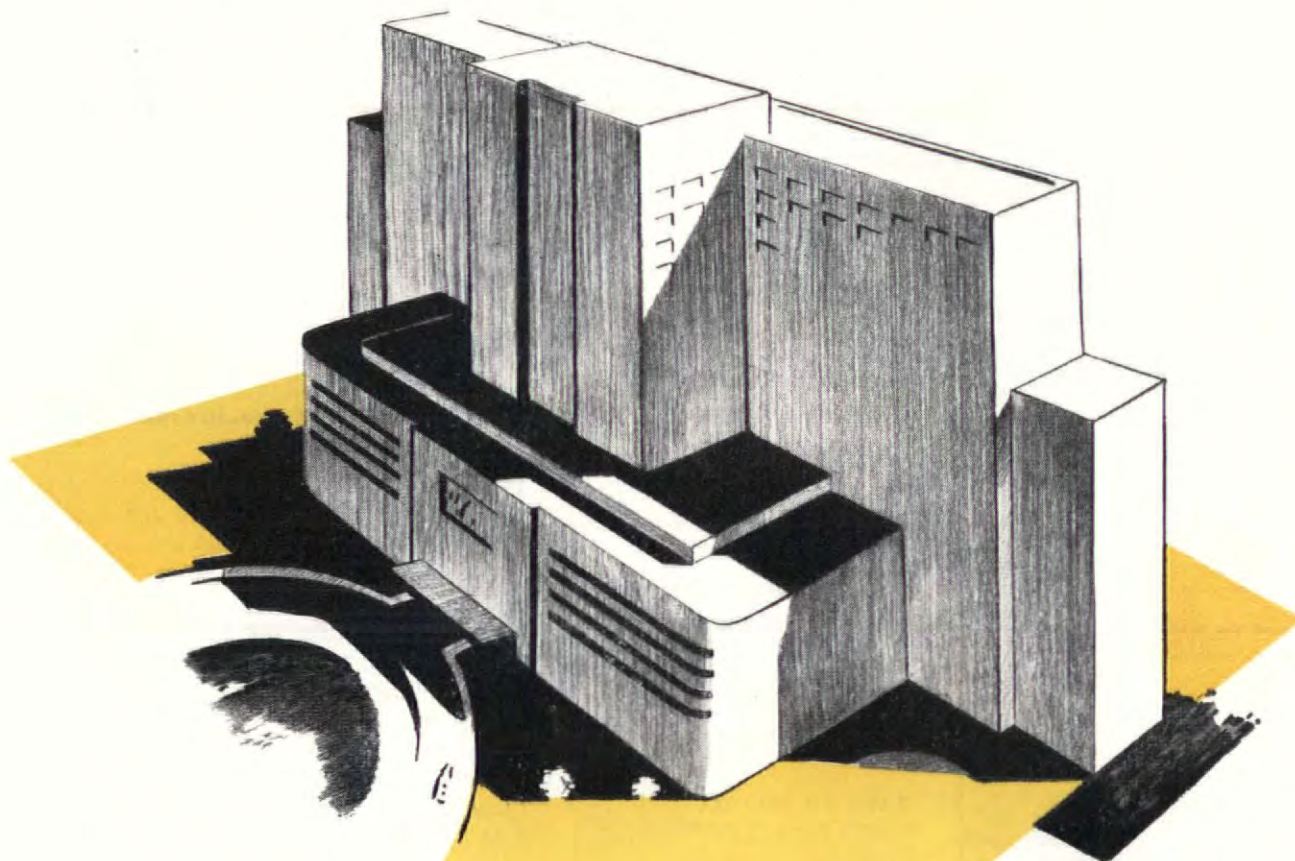
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WASHINGTON 6, D. C.



*a modern building  
is truly modern...*



**when pipe joints are SILBRAZ\***

Silbraz joints are threadless, silver brazed joints that, when properly installed, actually make a "one-piece pipeline" on red brass or copper pipe runs. Silver brazed — not soft soldered — Silbraz joints will not creep or pull apart under any condition which the pipe itself can withstand.

Experience covering hundreds of installations where Silbraz joints were specified by leading architects and builders, proves that this type of pipe connection is permanent, leakproof, and troublefree. Its use has avoided costly maintenance and repairs.

**Walseal\* Valves and Fittings for Making Silbraz Joints**

The Walworth Company, oldest manufacturer of valves and pipe fittings in the United States, produces a complete

line of Walseal Valves, Fittings, and Flanges for making Silbraz Joints — the modern method of joining brass or copper piping. For further information, see your nearest Walworth distributor, or write for Circular 84B.

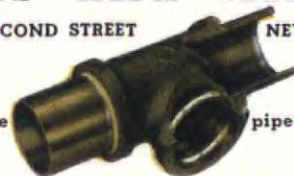
\*Patented — Reg. U. S. Patent Office

**WALWORTH**  
**valves and fittings**

60 EAST FORTY-SECOND STREET

NEW YORK 17, N. Y.

Make it a "one-piece



pipeline" with Walseal

DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD



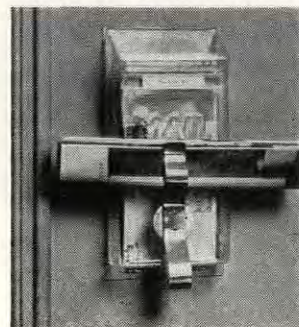
fluorescent lamp which is processed with a specially treated filter. Absorbing visible light, the filter permits the passage of near-ultra violet radiance known as "blacklight". These invisible rays excite the fluorescent letters making them glow brightly. Installation cost is nil, operating and maintenance costs are low. The sign utilizes the Vio-Ray Lamp which has a rated life of 2,500 hrs., remains cool in operation, and burns without flicker or vibration. Lettering is made of non-inflammable, practically unbreakable plastic and is available in orange, green or red. Lettering may be changed in a matter of seconds, and two or three colors can be employed if desired. Vion signs may be used for modern display windows and interiors of food, drug and department stores; display counters; movie theaters, hotel lobbies, bars, showrooms, restaurants, etc. Cost of a standard 15 w. Vion sign, 18 in. wide, complete with nine letters or stock message, 2 $\frac{3}{4}$  in. high, is \$27.50.

Various size letters are available, and unit comes in 9 in., 6 w.; 36 in., 30 w.; and 48 in., 40 w.

Manufacturer: Vion Corp., 1331 First Ave., New York, N. Y.

## TRANSPARENT PLASTIC MAILBOX makes contents visible.

This transparent mailbox, fabricated of durable, colorful Lucite, tells at a glance if any mail is in the box. It has a hinged bottom panel to allow quick removal of letters and a grooved panel over the letter slot for insertion of owners name card. A flexible aluminum strip attached vertically to the front of the box holds magazines and helps keep box tightly closed. The unit, measuring 12 in. long, 5 $\frac{1}{2}$  in. wide, 2 $\frac{1}{2}$  in. deep, comes in colors that harmonize with exterior paint colors—royal blue, ruby red, deep green and colorless transparent. Hinges are rust-proof chrome. Retail price is \$7.95.



Manufacturer: Celomat Corp., 521 West 23rd St., New York 11, N. Y.

## PORTABLE MIXER of 3 cu. ft. capacity, produces up to two batches per minute.

Designed to handle concrete; asphaltic mixes; floor emulsions; paints; insulating, roofing and many other materials, Foote's Kinetic Mixer produces a thoroughly blended, homogeneous batch in 20 to 40 seconds. The complete operating cycle takes 5 seconds for charging from a wheel barrow, 20 to 40 seconds for mixing and 5 seconds for discharging from a hand controlled chute at the top of the machine. Employing a new mixing principle, a revolving drum and three stationary blades accomplish the blending action. Material is held against the inside face of the drum by centrifugal force. An energy converter blade peels a stream of material off the drum face to create an end-over-end mixing action. Two cross-mixing blades produce a side-to-side mixing action. Liquid, where required, is introduced into the drum by a Tri-Rotor pump at a maximum rate of approximately 8 gals. in 6 seconds. The pump is controlled by an automatic timer which closes the hand operated control valve when the desired gallonage has been introduced. The mixer, measuring 58 in. high, 81 in. long, 68 in. wide, is provided with an adjustable truck hitch for transporting. It is powered by a 12 h.p. gasoline engine or can be equipped with an electric motor.



Manufacturer: The Foote Co., Inc., Nunda, N. Y.

## DRAFTING INSTRUMENT incorporates 8 scales on one side.

Vant Rule, a transparent, heavy plastic drafting instrument, includes 8 scales on one face. Calibrated for  $\frac{1}{8}$  in.,  $\frac{1}{4}$  in.,  $\frac{3}{8}$  in.,  $\frac{1}{2}$  in.,  $\frac{3}{4}$  in., 1 in., 1 $\frac{1}{2}$  in., and 3 in. per ft., scales read up to 12 in. Graduations and numerals are in red to facilitate reading. Vant Rule measures 13 $\frac{1}{2}$  in. overall, has beveled edges, comes complete with case. Retail price is \$2.00. Manufacturer: Stewart-Jackson Instrument Co., 215 West 7th St., Los Angeles, 14, Calif. (Technical Literature, page 184)

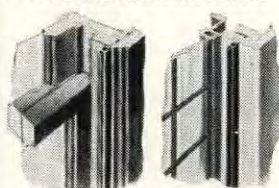
## NOW AVAILABLE

the original inside screens that roll up and down like a window shade

ROLSCREENS in a house are a "trademark" of good planning. They are a year 'round advertisement for the architect who specifies them. They help to keep a house up-to-date and protect its salability over the years. A big part of your business is selling CONVENIENCE. ROLSCREENS help you to do it like no other window accessories.

### EASY TO INSTALL

ON ALL TYPES OLD AND NEW WINDOWS



Double-Hung Application Casement Application

No special mill work, no special fitting or cutting required. Installation made to either of the above windows quickly and easily... thanks to new type guide channels.

**GOOD DELIVERIES** — ROLSCREEN orders are being filled and shipped with reasonable promptness. Materials are back to prewar quality standards. On your next new or remodeling job, include ROLSCREENS. WRITE for interesting FREE literature and planning information — or see ROLSCREEN Data in Sweet's. Write 737 Main Street.

### CONVENIENCE of ROLSCREENS SELLS ON SIGHT

Once in place... always in place. That's Rolscreens! No putting up! No taking down! No storing! No painting! No seasonal repairs! Installed and operated on the inside. Inconspicuous. They preserve the beauty of clear, sparkling glass. For all types of windows—both old and new construction.

### 10 YEAR GUARANTEE

This is your assurance that your clients will be satisfied and enthusiastic about ROLSCREENS over the years.

### DEALERS WANTED

A number of choice territories are open for Building Specialty Dealers with facilities to sell and install ROLSCREEN. If interested, WRITE TODAY for details.

**Pella ROLSCREENS**

ROLSCREEN COMPANY • PELLA, IOWA

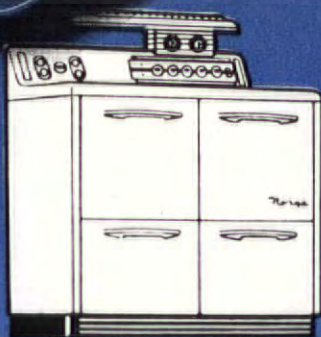
Made by Makers of Famous Pella Venetian Blinds and Casement Windows



*Designed to*

## IMPROVE LIVING CONDITIONS

There's no question about "improved living conditions" when you suggest or select a Norge product . . . the national acceptance of these famous home appliances confirms and compliments your judgment.



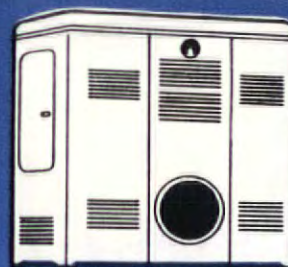
ELECTRIC RANGES



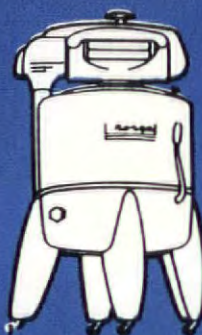
GAS RANGES



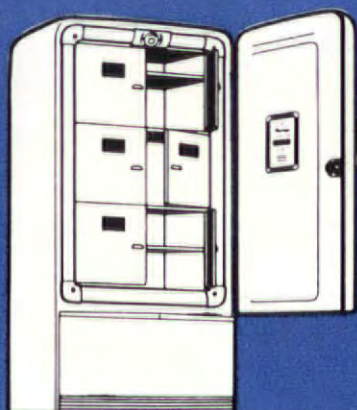
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HOME HEATERS



"RO-TA-TOR" WASHERS



HOME AND FARM FREEZERS

### A BORG-WARNER INDUSTRY

Norge is the trade-mark of Norge Division, Borg-Warner Corporation, Detroit 26, Michigan. In Canada: Addison Industries, Ltd., Toronto, Ontario.

SEE  
**NORGE**  
BEFORE YOU BUY



*And THIS was  
yesterday's "problem child!"*

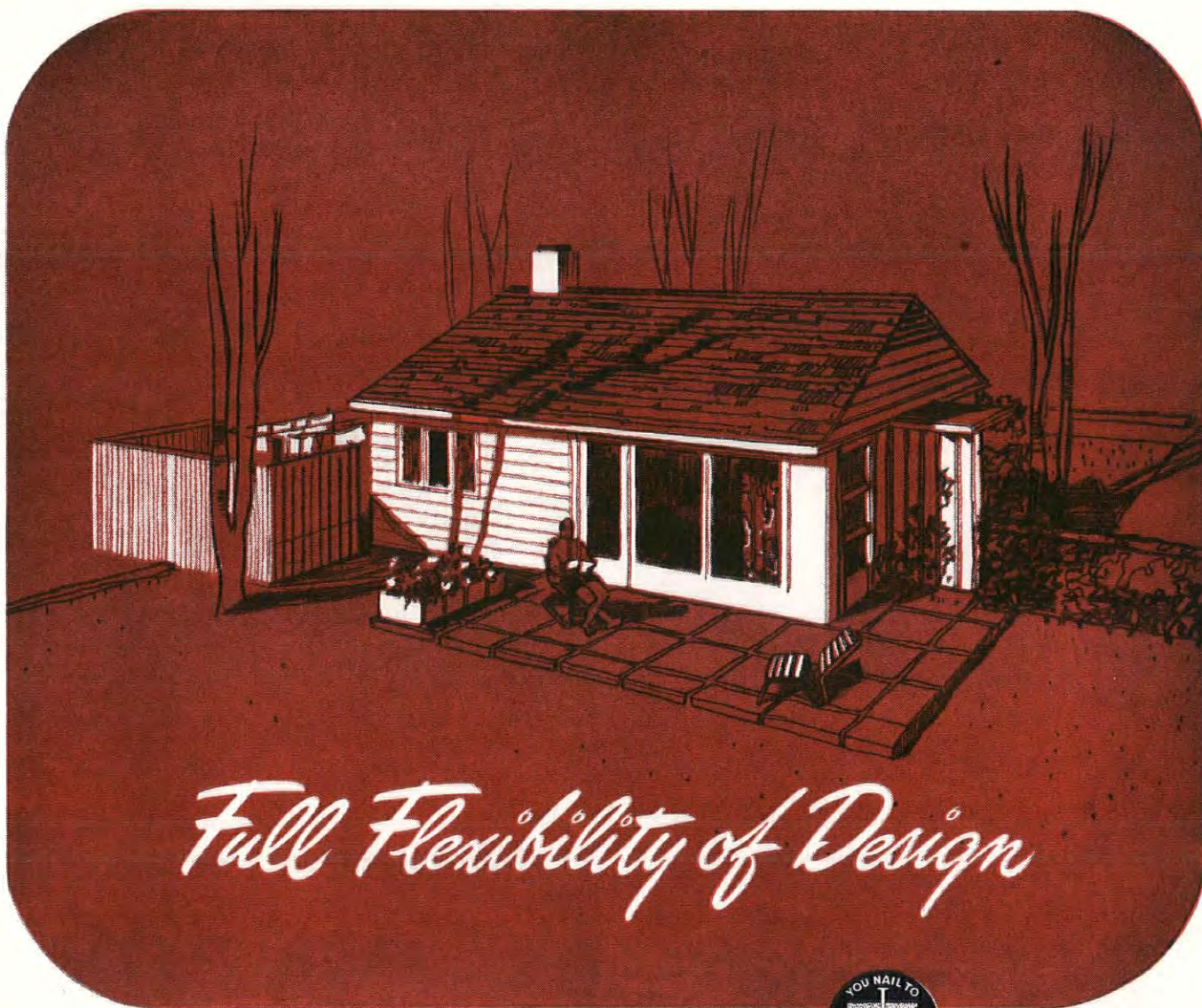


Ingenious use of compactly designed Case vitreous china plumbing fixtures turns "problem" space into a powder room—one of the most convenient rooms in a house and one valued highly by owners and buyers. With its 19" overall height, the one-piece Case T/N\* water closet offers the flexibility of placement required. This is a quiet free-standing fixture with positive *non-overflow*. The Cosmette Lavatory, in overall size as small as 20" x 13½", is a perfect companion to the T/N\*. Wall hung or with chrome legs, it features an extra large basin, handy shelf space and concealed front overflow. Case plumbing fixtures are distributed nationally—see your Classified Telephone Directory or write to W. A. Case & Son Mfg. Co., Buffalo 3, N. Y. Founded 1853.

\* PATENTED

**Case** *Vitreous China Plumbing Fixtures*





Stran-Steel framing is a building product of Great Lakes Steel Corporation



Stran-Steel is versatile. It gives full scope to architectural planning, asks no compromise of beauty, utility or individuality of design. Its great flexibility is mainly the result of three factors:

*The Nailing Groove.* This patented feature, found exclusively in Stran-Steel members, permits collateral materials to be *nailed directly to the frame*. Nails are bent and clenched in a "grip of steel," held 40% more firmly than in wood.

*Assembly Methods.* Practically any type of joint or connection can be accomplished, simply and efficiently, with Stran-Steel. Members are joined directly by self-threading screws or with the aid of specially designed Stran-Steel fittings. On large construction projects, erection can be further speeded by welding.

*Pre-Cut Members.* Stran-Steel members are cut to architect's exact specifications, for fast erection at the building site. Designing is simplified because the Stran-Steel system is simplified, utilizing only a few basic members.

Stran-Steel is especially economical for multiple dwelling units . . . highly practical for all light-load buildings. Fire-resistant, rigid and durable, it protects the building investment. For further information, see Sweet's File, Architectural, Sweet's File for Builders, or the January issue of Building Supply News.



**GREAT LAKES STEEL CORPORATION**

Stran-Steel Division • Dept. 35 • Penobscot Building • Detroit 26, Michigan

UNIT OF NATIONAL STEEL CORPORATION



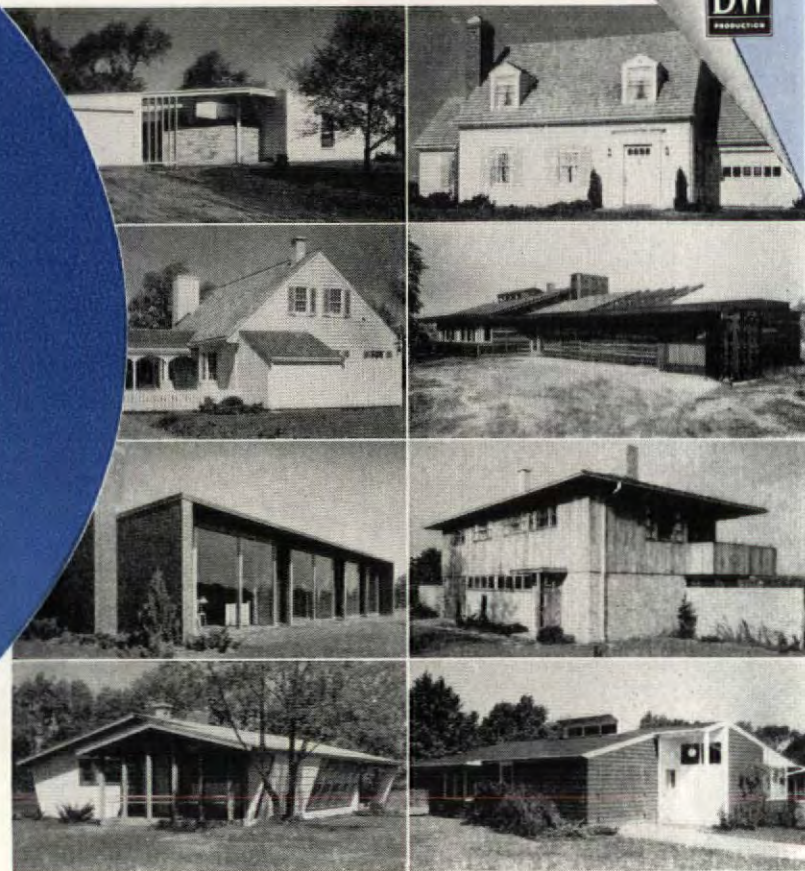
The homes pictured here were designed by the eight well-known architects at lower left, and built on the Ingersoll site at Kalamazoo. Every home contains an Ingersoll Utility Unit.

PRODUCT OF  
**BORG-WARNER**

ENGINEERING  
**BW**  
PRODUCTION



Kitchen, Bath, Heating Plant plus all plumbing and electrical lines are included in the Standard Model Utility Unit. Equipped with all fixtures and appliances.



*Conceived* BY ARCHITECTS...

*Designed* BY ARCHITECTS...

*Job-tested* BY ARCHITECTS!

The Ingersoll Utility Unit was conceived by a well-known architect; it was produced in collaboration with architects; it was thoroughly tested in homes specially planned by the architects shown below. Though these homes differ widely in design, and have been "lived in" for more than a year, the units installed have proved to be practical and efficient.

The architects who designed these homes were particularly impressed with the extra cubage this unit

afforded them. All plumbing, electrical lines, heating and other utilities were covered in *one specification*. And the compactness and simplicity of the Ingersoll Utility Unit enabled them to give these homes (shown above) more living space for less money. You'll want to incorporate the Ingersoll Utility Unit in your plans for small and medium-sized homes or multiple-unit dwelling. An attractive brochure, giving specifications and details, is available. Mail the coupon today.

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Borg-Warner Corp., Chicago

**Ingersoll**  
UTILITY UNIT

TRADE MARK

1. HUGH STUBBINS, Jr.  
Belmont, Mass.
2. ROYAL BARRY WILLS  
Boston, Mass.
3. GEORGE FRED KECK  
Chicago, Ill.
4. ALDEN B. DOW  
Midland, Mich.
5. J. FLETCHER LANKTON  
Peoria, Ill.
6. HARWELL HAMILTON  
HARRIS  
Los Angeles, Cal.
7. EDWARD D. STONE  
Great Neck, L. I.
8. L. MORGAN YOST  
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# *Future Home Buyers...*

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The average home buyer has been educated to look for important basic improvements in home construction. The benefits of steel door frames to the home owner are obvious... Permanency, Beauty and the Wear Resistant qualities of steel.

Equally important are the many advantages to the builder. One piece,

all welded construction means that Aetna Steel Door Frames can be installed in a fraction of the time that it takes to erect multiple unit frames... and at a lower cost.

Hinges come welded to the AETNA FRAME, bronze strike plate is furnished and frames are prime coated at the factory.



Send for this Aetna Steel Door Frame Booklet

### **AETNA STEEL PRODUCTS CORPORATION**

*Manufacturers of Quality Hollow Metal Doors, Trim and Elevator Enclosures*

**EXECUTIVE OFFICES: 61 Broadway, New York 6, N. Y.**





**ALUMINUM ALLOYS and MILL PRODUCTS.** Reynolds Aluminum Alloys and Mill Products Data Book. Reynolds Metals Co., 2500 S. Third St., Louisville, Ky. 248 pp., 6 in. by 9 in. Price \$2.00.

This book, featuring 106 tables of technical data, describes the many different aluminum alloys and aluminum mill products made by Reynolds. Briefly describing the history of aluminum, it then treats alloy tempers and physical properties; presents detailed data on chemical, physical and mechanical properties of high purity aluminum; and includes nominal chemical compositions, typical mechanical properties, coefficients of expansion, thermal and electrical conductivity, annealing and heat-treating cycles for wrought, sandcasting, permanent-mold casting, and die casting alloys. Subsequent chapters take up the various mill products: sheet and plate; extruded shapes; roll formed shapes; tubing and pipe; wire, rod and bar; forging stock; ingot metal and

press forgings. Such subjects as yield and ultimate strength, hardness, range of sizes, tolerances, ordering data, etc., are covered. Wire bound to lay flat, the book incorporates a detailed table of contents and a thorough cross index.

**BUILDING PRODUCTS.** Building Products Directory. The Producers Council Inc., 815 15th St., N.W., Washington, D. C. 28 pp. 8½ in. by 11 in.

A guide to the products and services offered by members of the Producers' Council, this directory lists the manufacturers of more than 400 types of building materials and equipment. Divided into three sections, part one is a classified listing of products and member companies who supply them. Part two gives locations of members' sales representatives equipped to furnish technical and product information. Part three presents Producers' Council members and the products they manufacture.

**ROOFING AND SIDING.** Plasticlad Electrostatically Coated Metal. Reliance Steel Products Co., McKeesport, Pa. 8 pp., 8½ in. x 11 in.

Illustrated folder describes Plasticlad, an alloy-steel, electrostatically coated roofing and siding material. Text discusses its advantages: extraordinary toughness of the copolymer resin coat, immunity to atmospheric corrosion or chemical attack, very high fire resistance and attractive colors incorporated in the plastic coat. Various types of roofing and siding, fasteners, flashings, ventilators, etc., are illustrated and described.

**PORCELAIN ENAMEL.** Porcelain Enamel on Steel in Architecture. Carnegie Illinois Steel Corp., Carnegie Bldg., Pittsburgh, Pa. 32 pp., 8½ in. x 11 in.

This booklet, prepared for the guidance of architects, suggests some of the many uses for porcelain enamel on steel in architecture. Liberally illustrated with sketches and details of many possible uses, it calls attention to the advantages of the material for both exterior and interior applications. Text discusses color, texture, durability, abrasion resistance, versatility, thermal shock resistance, light reflectance, incombustibility, acid resistance and strength. In addition it includes a running story of the manufacture of porcelain enamel and U. S. S. Vitrenamel Steel.

**PAINT. WATERPROOFING.** Horn Construction Data and Hand Book. A. C. Horn Co., 43-36 Tenth St., Long Island City, N. Y. 96 pp. 4 in. by 9 in.

New edition of this reference book provides compact technical data on all Horn products—flooring materials, exterior and interior coatings, roofing materials, waterproofings, damp-proofings and admixtures. Divided into two sections, part one gives descriptions of uses, coverage, color data and specifications. Useful tables, conversion factors, estimating tables, weights and strengths of building materials are included in part two.

**PHOTOMURALS.** Make Blank Walls Live. Kaufmann & Fabry Co., 425 S. Wabash Ave., Chicago, Ill. 14 pp., 10 13/16 in. x 8 3/8 in.

Emphasizing the fact that photomurals can be used in the home, office, restaurant, store or anywhere where blank walls need life, warmth and atmosphere, this booklet describes various types of photomurals and a wide variety of their applications. Their limitless scope, flexible application and other possibilities are discussed and fully illustrated.

(Continued on page 190)

For all

upholstered furniture

requirements — chairs,

office pieces, auditorium

Seats and padded wall sections —

more and more architects and designers



Here's why: Supplied in diversity  
of colors, textures, and grains,

Pantasote Plastics add exciting  
new beauty to every interior.

Even more important, they cut  
"housekeeping" and maintenance  
costs to almost zero. No matter

how dirty they get, a wipe of a  
damp cloth whisks them clean, bright,

and new. They are highly resistant to fire and  
cigarette burns—and impervious to alcohol and acids.

Write today for descriptive folders—yours without obligation.

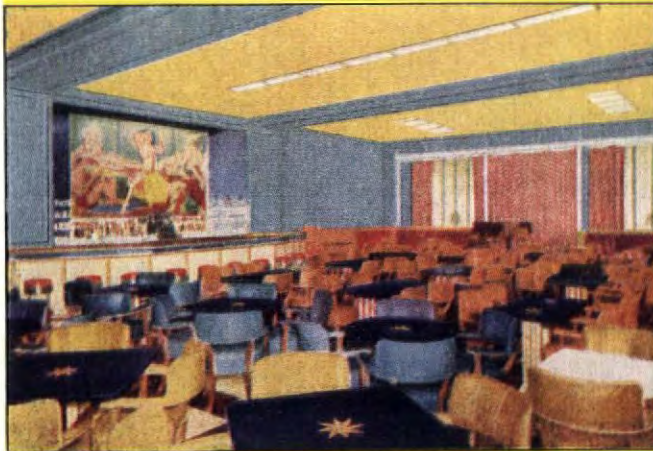
Pantasote's Pantex: Unsupported  
plastic film. Extra soft  
and flexible—minimizes  
tailoring problems.

Pantasote's Wynsote: Plastic  
coated fabric. In beautiful  
grains and smart new colors.

**THE PANTASOTE CORP. OF N. J.**

444 MADISON AVE., NEW YORK 22, N. Y.





● Broad expanses of subdued wall color harmonize strong accent colors on ceiling and furniture of cocktail lounge.

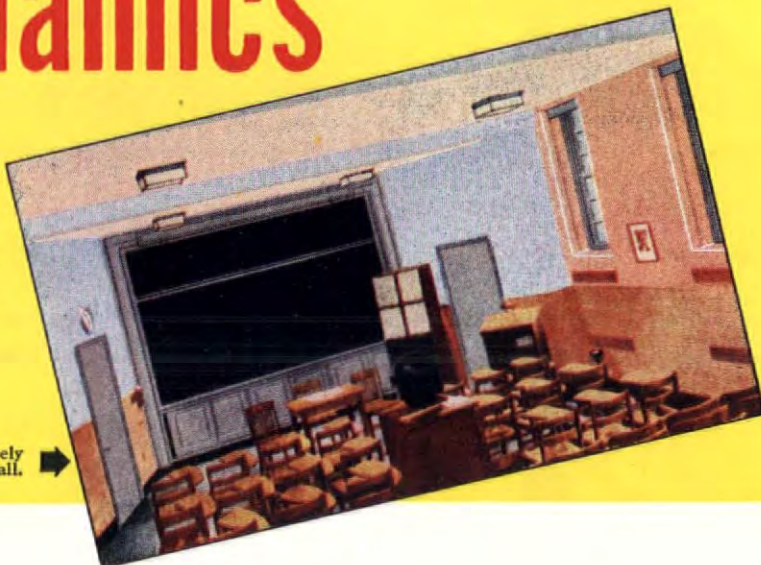


● Buff walls of this private office contrast with cool colors of ceiling, drapes and rugs. Drop ceiling lowers its height.

# Color Dynamics

Pittsburgh's exclusive painting method assures color combinations that promote health, comfort and safety—stimulate energy—increase efficiency—at the same time that they please the eye!

● Eye-rest focal walls of Blue-Green contrast effectively with warm side walls and wainscot of this lecture hall. ➔



**Here's How You Can Put the *ENERGY IN COLOR* to Work  
... with Scientific Accuracy!**

## Paint RIGHT with COLOR DYNAMICS Paint BEST with PITTSBURGH PAINTS!

● The benefits of COLOR DYNAMICS are made more enduring when you use Pittsburgh's long-lasting quality paints. There's a PITTSBURGH PAINT for every need!

**WALLHIDE**—in three types. **PBX**—extra durable finish which can be washed repeatedly without streaking or spotting. **SEMI-GLOSS**—for higher sheen. **FLAT**—velvet-like finish for offices, libraries and dining rooms. These paints are enriched with "Vitolized Oils" for live-paint protection.

**WATERSPAR ENAMEL**—for woodwork, furniture, metal trim—gives a china-like gloss which resists marring and abrasion.

**FLORHIDE**—for floor surfaces. Quick-drying, tough finish which can be scrubbed frequently with soap solutions.

EXPERIENCE has proved that people who work or live in surroundings painted according to Pittsburgh's science of COLOR DYNAMICS benefit in many ways.

Color is a source of power. It can stimulate or relax. It can help people to feel cheerful—or set their nerves "on edge" and cause them to be uncomfortable and depressed.

Properly applied, COLOR DYNAMICS can make your institution inspire trust and confidence by its appearance. It can lessen eye fatigue. It can increase efficiency, improve mo-

rale, promote cheerfulness and well-being. With COLOR DYNAMICS you can also make rooms seem more inviting and spacious, make them appear longer or wider, higher or lower.

You can now apply these principles of color energy with scientific accuracy. What you can do with COLOR DYNAMICS—and why—is told in our revised, profusely illustrated book, "Color Dynamics for Office Buildings, Hotels and Restaurants." Write for your FREE copy. Pittsburgh Plate Glass Co., Paint Div., AF-3, Pittsburgh 22, Pennsylvania.



# PITTSBURGH PAINTS

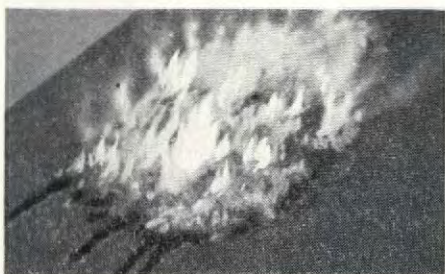
PITTSBURGH PLATE GLASS COMPANY, PITTSBURGH, PA.

PITTSBURGH STANDS FOR QUALITY PAINT AND GLASS



# FLEXSTONE BUILT-UP ROOFS

"Made of asbestos,  
each ply is a flexible  
covering of stone"



**RESISTS FIRE:** Burning embers or brands, blown from neighboring fires, burn out harmlessly on Flexstone Roofs. In spite of the intense heat and flame, the asbestos felts prevent the roof deck from catching fire. Here's further assurance that you get greater fire-safety with Johns-Manville Flexstone Built-Up Roofs.

**B**UILT-UP with asbestos felts which are fireproof, rotproof, and weatherproof, Johns-Manville Flexstone Roofs offer the most enduring and reliable protection for your buildings.

Flexstone Roofs are *smooth-surfaced*, permitting quick and thorough roof drainage. They won't dry out from the sun . . . require no periodic coating. Upkeep expense is minimized, as actual roof can be seen—any damage is easily found and repaired.

All Johns-Manville Flexstone Roofs are engineered to the particular requirements of your building—whether it's new construction or a re-roofing project. To insure skilled application, they are applied by Johns-Manville Approved Roofers.

Three grades are available: *Flexstone Super "A"*, *Flexstone Standard*, and *Flexstone Service*—each the finest that can be specified for its purpose. Write for our brochure BU-51A, Johns-Manville, Box 290, New York 16, N. Y.

Because of unprecedented demand, there may be times when we cannot make immediate delivery of materials. Please anticipate your needs.

**Johns-Manville** **FLEXSTONE BUILT-UP ROOFS**





Specify the water heater  
that provides  
**"Packaged-in-Glass"**  
**Hot Water**

**No Rusting! No Corroding!** Under *any* water condition, the all-modern *Permaglas* Water Heater **CANNOT** rust or corrode! It's ever ready with all the hot water needed, for even the newest homes, pure and clean as the source itself.

*Permaglas*

TRADE MARK REG. U. S. PAT. OFF.

**SMITHway WATER HEATER**

The *Permaglas* Water Heater has the tank of glass-fused-to-steel—mirror-smooth and sparkling blue. Rust that ruins clean laundry . . . and corrosion dirt that stains both water and porcelain . . . *are banished.*

**NOW YOU CAN SPECIFY CLEAN HOT WATER**

Only A. O. Smith makes this truly modern water heater, engineered to match in service and convenience the finest new homes. Its complete protection against rust and corrosion is only one feature of many—including a sleek, beautiful design that has set the new postwar style.

Let us send you all the facts on gas and electric models. Ask the A. O. Smith office nearest you for "The Inside Story of Permaglas."

**HOT WATER "Packaged-in-Glass"**

*Guardian of the Nation's Health*

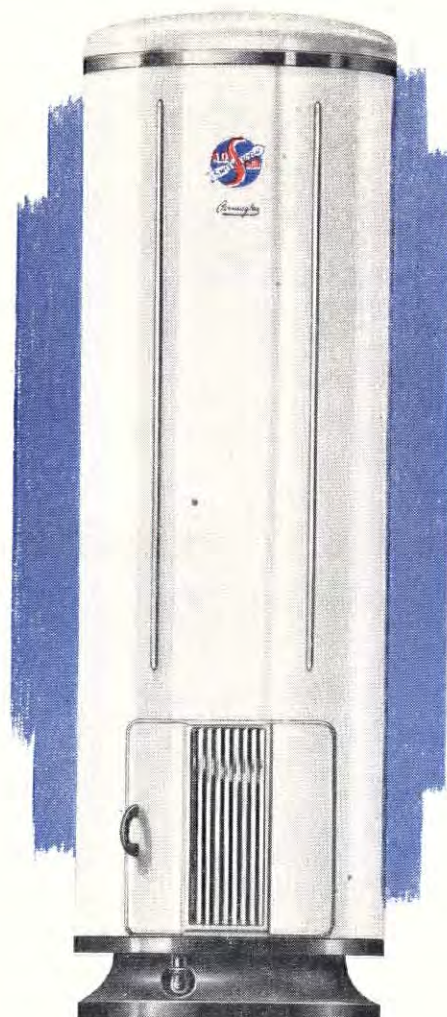


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# FOR YOU

The ad on your right is appearing in The American Home. Other full-color Kentile ads are continually running in The Saturday Evening Post and House Beautiful. These powerful ads will sell Kentile for both home and commercial use—to millions of American home owners and business men. But why should you read these ads? You know this story. You have long preferred Kentile because you knew Kentile's quality. But now we want you to see how we are educating the people you must please—your clients, prospects or buyers! Now, because of this tremendous advertising campaign, they will understand—when you tell them: "Kentile is the quality leader."



Kentile colors: Languedoc (C-257) White (D-132) strips.

## Floor magic for a dramatic entrance

Imagine a floor so glamorous that modern architects choose it for their most exciting rooms—yet so practical that smart builders recommend it for kitchens! That's Kentile—today's floor miracle: set tile by tile (you combine colors or create patterns as you wish)—resilient: extra comfortable and quiet underfoot—durable: proved in supermarkets and giant buildings where millions of scuffing feet never mar it—colors that can't fade or rub off because they go clear through—and the *easiest* floor to keep; it laughs off any kind of scum or dirt, is cleaned by simple mopping or sparkled by swift waxing. Yes, that's Kentile . . . and it costs *less*—an *economy* floor of quality! Made by David E. Kennedy, Inc. fine flooring manufacturers ever since 1899.

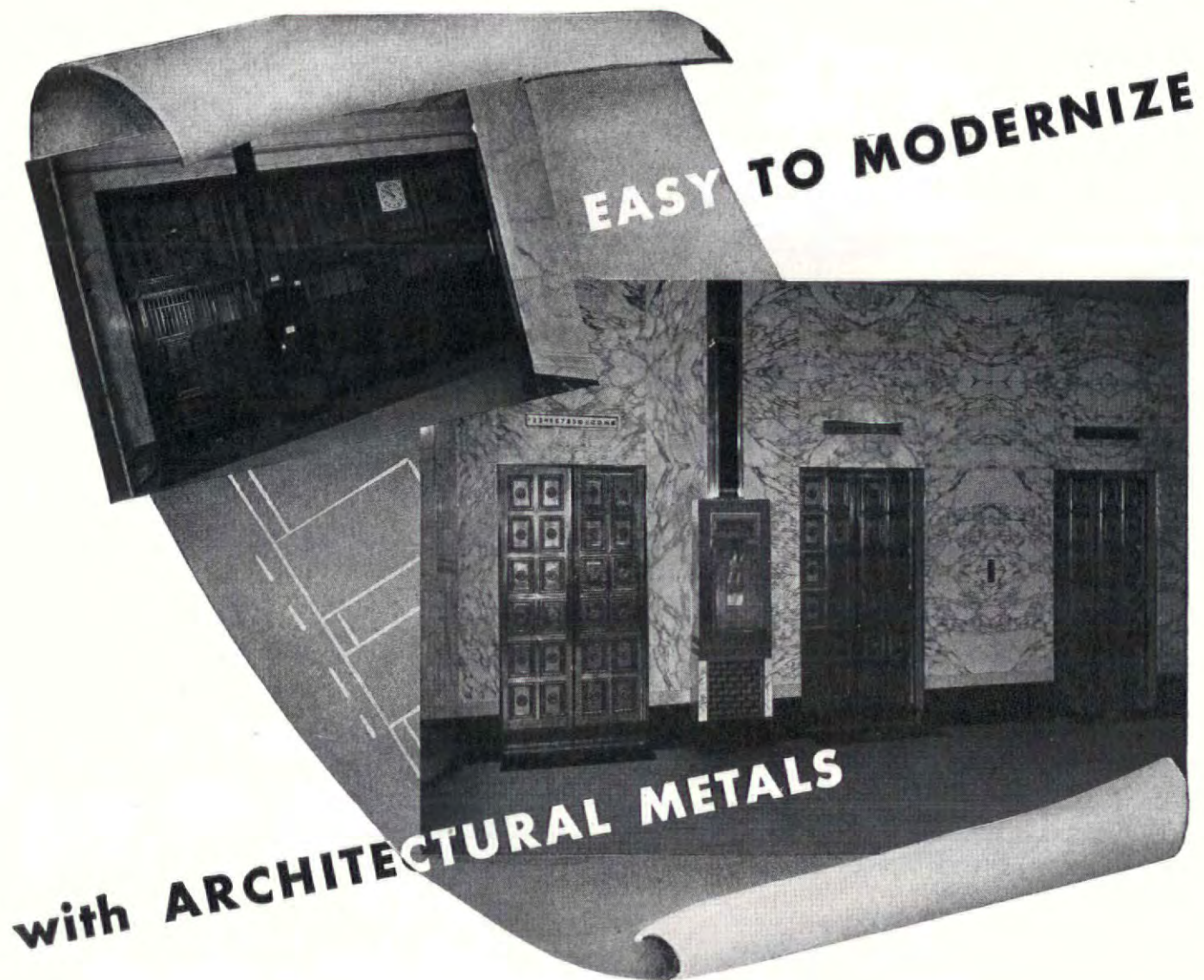


## or double-duty service

Below: Heather Mixture (B-255) Cream (B-140) strips, Comblanchien (C-258) under counter.







Few materials lend themselves as readily to modernization plans as Architectural Metals. They offer you almost unlimited combinations of *form* and *function*. For elevator doors, entrances, stairs, railings, store fronts and many other units, they can be used to good advantage.

You can serve almost any desired purpose with ferrous and non-ferrous architectural metals in a variety of colors, qualities and strength. You can achieve both distinctive, decorative design and strong, safe construction. Under your direction, architectural metals can be used to create results that are both beautiful and practical.

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**NATIONAL ASSOCIATION OF  
ORNAMENTAL METAL MANUFACTURERS**

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# The new plastic armor for plywood... **Kimpreg**\*

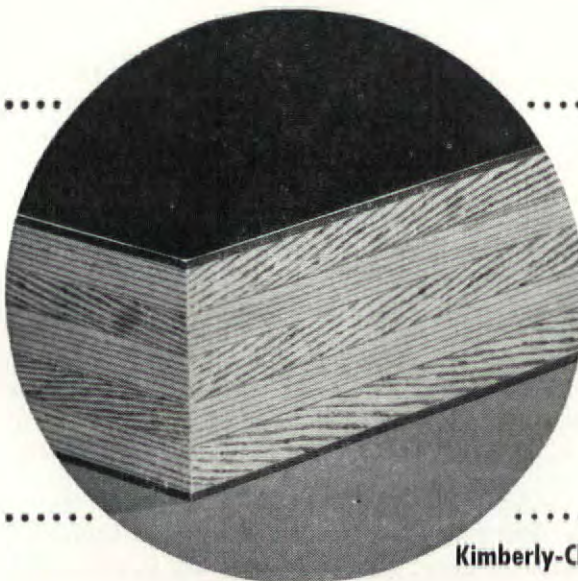


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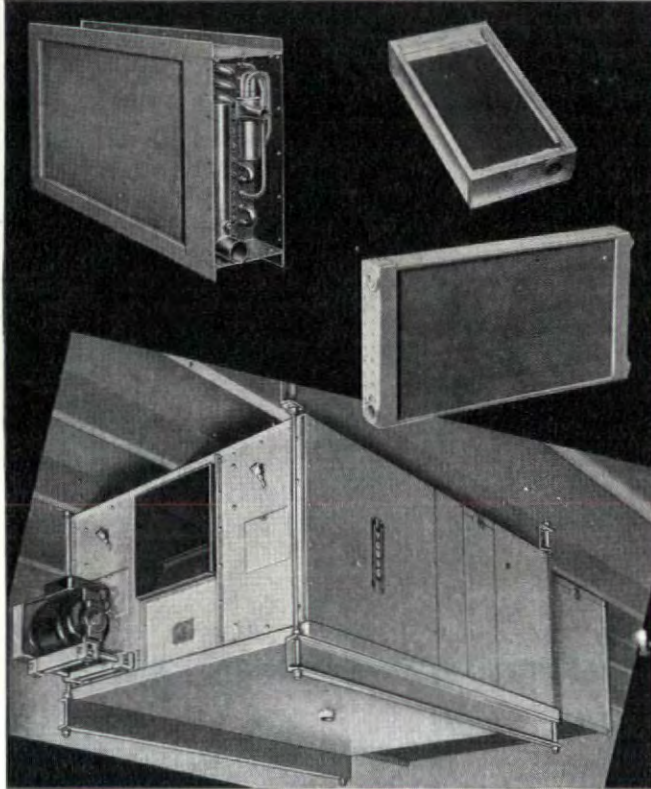
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### REQUESTS FOR LITERATURE

ELLIS F. ALBAUGH & ASSOCIATES, architects-engineers, Watson Building, Brownsville, Texas.

JAMES ATCHESON, architect, 204 Sanford Building, 1009½ Texas Ave., Lubbock, Texas.

ANTHONY GATTOZZI, city architect, 517 City Hall, Cleveland, Ohio.

W. EDWIN GLOSSOP, architect and consultant for industrial or commercial projects, Starks Building, Louisville 2, Ky.

KALAK PTY LTD, builders, P. O. Box 5938, Johannesburg, South Africa.

Z. LUKSIC, Cathedral 1878, Santiago, Chile.

ANDRE MERLE ASSOCIATES, architectural engineers, Southern Building, Washington, D. C.

JULIUS M. MOORE, 15 Weybosset Ave., Hamden 14, Conn.

OTTO INC., store designers and builders, 1165 Southern Blvd., New York, N. Y.

PETTIGREW, WORLEY & CO., 160 Avery St., Dallas, Texas.

POPE & BLAKE, architects, Box 1034, Delray Beach, Fla.

WILLIAM SHAUGHNESSY, 1619 Holland Ave., Utica, N. Y.

GOSTA SJOLIN, architect, 6451 Main St., Houston 5, Texas.

EDWIN SOCHALSKI, 5155 St. Lawrence St., Detroit, Mich.

EDWIN P. STARBUCK, architect, 7784 Montgomery Rd., Cincinnati, Ohio.

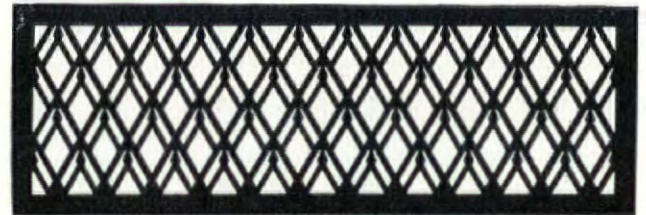
MANGALDASS N. VERMA LTD., constructional engineers and building contractors, Kitab Mahal, Hornby Road, Bombay, India.

DAVID VHAY, architect, Reno, Nevada.

THOS. A. WHAPLES, architect, Hotel Richmond, Richmond, Va.

GEORGE D. WICK, JR., designer, Box 458, Tryon, N. C.

*(Continued on page 196)*



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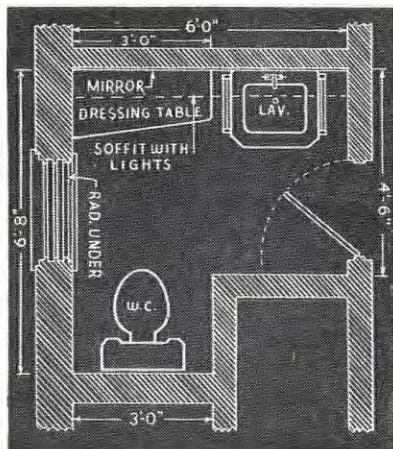


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This compact arrangement of Kohler fixtures shows interesting economy of space. Dimensions of the longest walls are only 6' x 6'-8", yet there is free access to both the fixtures and the convenient, built-in dressing table.



## A KOHLER washroom solves many problems

HOME owners are becoming more aware of the value of added sanitary convenience. The appeal of a Kohler washroom is especially pronounced, for it takes little space, yet it answers many needs—reducing through-the-house traffic, providing convenience for guests, and simplifying child training. Permanent value is added to homes where this practical extra convenience is installed.

There is further practical appeal in the fact that the name "Kohler" stands for first quality at reasonable cost. The high standards of construc-

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The fixtures in the washroom above are the Jamestown vitreous china lavatory, with Centra mixer-type fitting made of durable chromium-plated brass; and the quiet, smooth-functioning Bolton closet. Kohler quality is now a 74-year-old tradition, safeguarded by the fact that Kohler production is centered in one great plant, with unity of supervision. Write for latest information on products available.

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They're your clients if you're an architect . . . your customers if you're a builder . . . your tenants if you're an apartment house owner or manager . . . your boosters if they're enthusiastic about the kitchen equipment you specified, recommended or provided—and that's a benefit to you.

You're sure of this enthusiasm, sure of the resulting benefit to you, when you select Frigidaire Electric Ranges. Even people who have never used a Frigidaire Electric Range expect good things from it, they know the Frigidaire name so well. And architects who have specified them know—

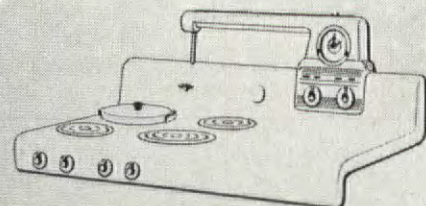
builders and apartment house owners and managers know—that Frigidaire Electric Ranges are engineered to deliver all the advantages—and more—that make people so enthusiastic about modern electric cooking.

See Your Frigidaire Dealer about this new Frigidaire "RJ" series of electric ranges. He'll give you detailed information on all models, advise when delivery can be made. Find name in Classified Telephone Directory. Or write Frigidaire, 867 Amelia St., Dayton 1, Ohio. In Canada, 594 Commercial Rd., Leaside 12, Ontario.

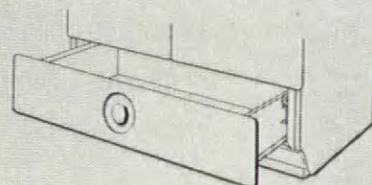
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**Frigidaire** made only by **General Motors**

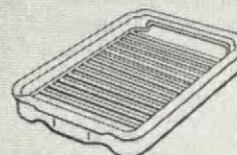
REFRIGERATORS • ELECTRIC RANGES • WATER HEATERS • HOME FREEZERS • KITCHEN CABINETS  
AUTOMATIC WASHERS • COMMERCIAL REFRIGERATION AND AIR CONDITIONING EQUIPMENT



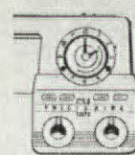
**New Design.** Sturdy-weld construction, porcelain-finished; removable exterior panels. One-piece, stainless, porcelain-finished top with roll-front to give handsome appearance; increased oven insulation; more space between surface cooking units. Bottom edges of side panels shaped into smooth runners for easy moving.



**New Storage Drawer**—full-width; roller-bearing guides.



**New Broiler Pan**—deeper . . . removes fat drippings from heat for smoke-free broiling.



**New Cook-Master Clock Control** for "out-of-the-kitchen" baking, roasting. Large face.

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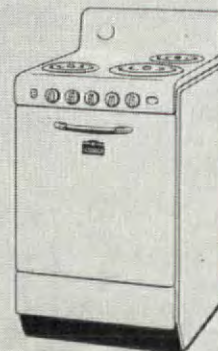
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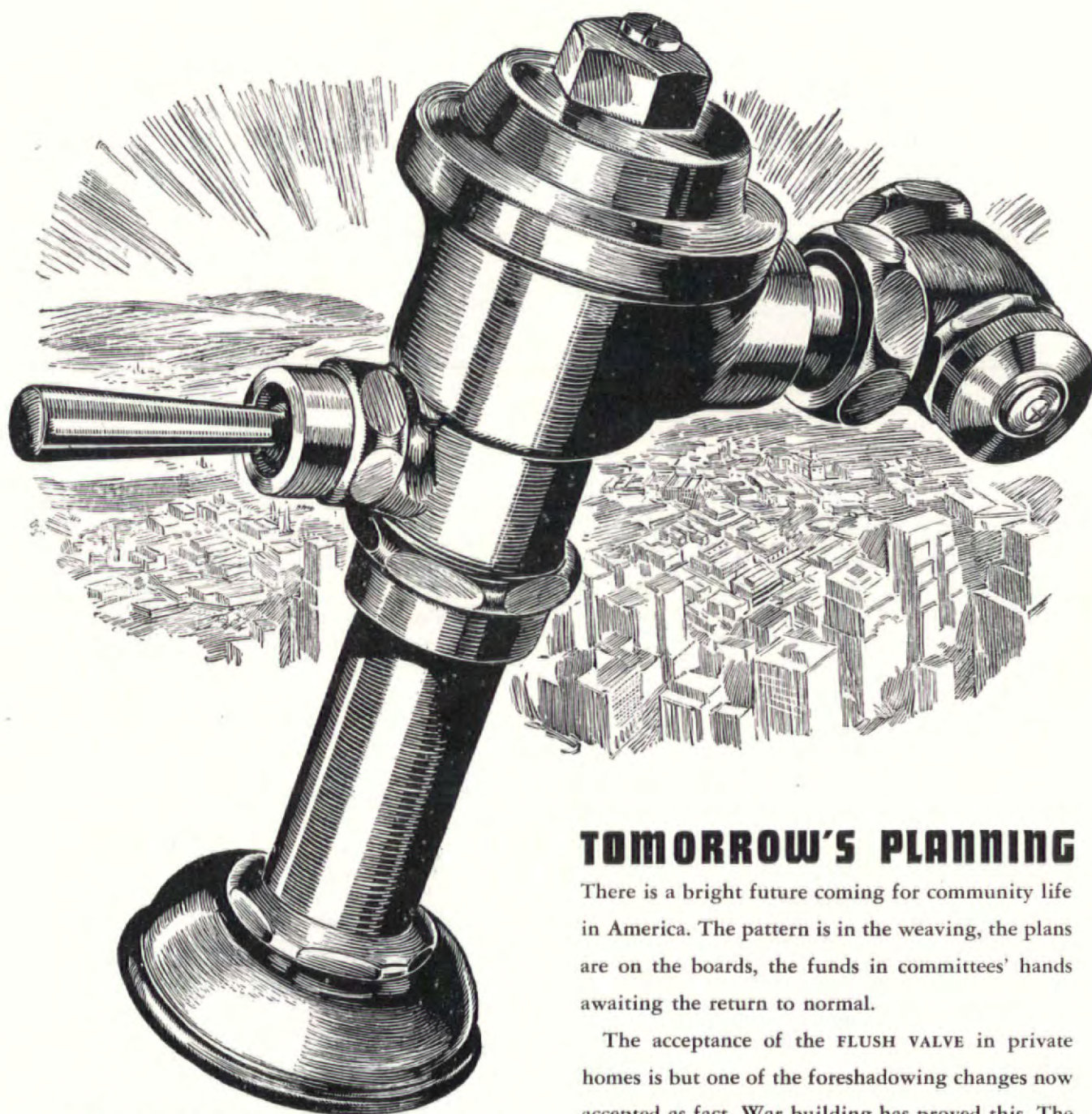
**Time and Temperature Signals**—dependable, easy to use.

**7 Models.** A complete selection from 3- and 4-unit apartment-size models to big two-oven model; from simple models with basic features to de luxe models with every convenience feature.

**Dimensions.** All models designed to match standard sink and kitchen cabinet dimensions: 40" wide (apartment house model 21" wide), 25¼" deep, 36" high.







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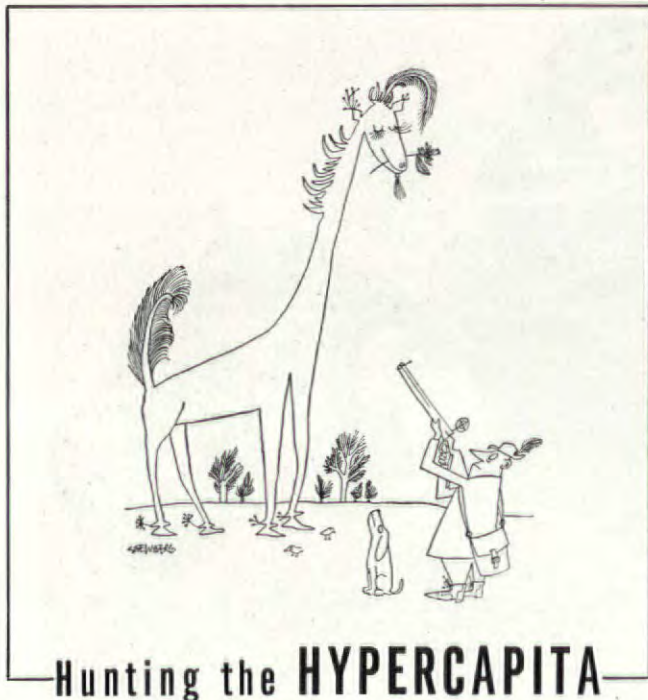
## **TOMORROW'S PLANNING**

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Clothing	1,205	362
Food	1,701	811
Furnishings	264	106
Housing	1,420	528
Personal Care	149	60
Recreation	463	120
Tobacco	99	51
Transportation (other than auto)	380	33

As impressive as this personal spending may seem—it is negligible compared to the spending of the FORTUNE Hypercapita in business. More than 85% are men of management—the nation's *greatest industrial shoppers*.

**FORTUNE**  
The Magazine of Management

### REQUESTS FOR INFORMATION

ASHTON & EVANS, WARE & McCLENAHAN, architects & engineers, 47 South Main St., Salt Lake City, Utah, desire technical data, specifications, etc., on materials and equipment suitable for a Veterans' Administration Neuropsychiatric hospital.

EDWARD BANKS, architect, 25 Grove Wood Hill, Coulsdon, Surrey, England, desires design data, details and information on materials and equipment.

L. BALOG, architect, c/o Administration des Chemin de Fer, Gare de Teheran, Iran, would like to receive information on air conditioning and other equipment for hospitals.

PAUL D. GILBERT, architectural division, Drake Construction Corp., 45 Crosby St., New York, N. Y., requests literature on residential building materials, equipment, and appliances.

W. L. JAEKLE, architect, 310 W. Second St., Dayton, Ohio, desires information on all types of flooring and floor coverings suitable for church installation over wood sub-floor.

T. R. MEHANDRU, 7 The Mall, Lahore, India, desires catalogues on building materials and equipment, including electric and sanitary fittings, insulation materials, glasses, etc.

THE UNIVERSITY OF OKLAHOMA, Att: Richard N. Kuhlman, Chairman, Norman, Oklahoma, desires samples of building materials for large materials display room.

OVERSEAS MERCANTILE Co. LTD., import/export, 94 Main St., P. O. Box 9021, Johannesburg, So. Africa, desires information on new building materials suitable for export.

JOHN D. RYBAKOFF, INC., architectural wood work, 29 West 34th St., New York, N. Y. desires literature pertinent to the design and construction of commercial interiors.

NELS O. SWANSON, 748 Addison St., Chicago, Ill. desires information on residential concrete construction methods for southern climates, stainless steel doors and window sash.

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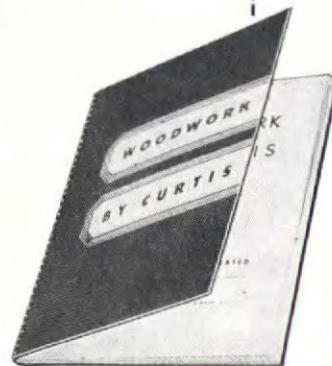


*This new Curtis entrance—Design C-1733—can be used successfully on one or two-story houses of any structural material. H. Roy Kelley, architect.*

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Ask your Curtis dealer to show you the new Curtis Woodwork Style Book—an entirely new and different way of presenting the new Curtis woodwork line. Measuring 15 x 19 inches, this book contains 100 pages of beautiful woodwork styles in natural home settings—many photographs in full color.



*The bowed fascia of this Curtis mantel accentuates its simple charm. One of the many new Curtis designs, it follows the tradition of the 18th Century. Design C-6074, by George W. Stoddard, architect.*

*Beautiful new china closet by Cameron Clark, architect. A formal and dignified design that is best suited to large rooms. Also made with open front. Corner installation only. Design C-6505.*



*Curtis standard stair parts make up this beautiful stairway. These parts allow widest latitude in designing stairways for any size and style home.*

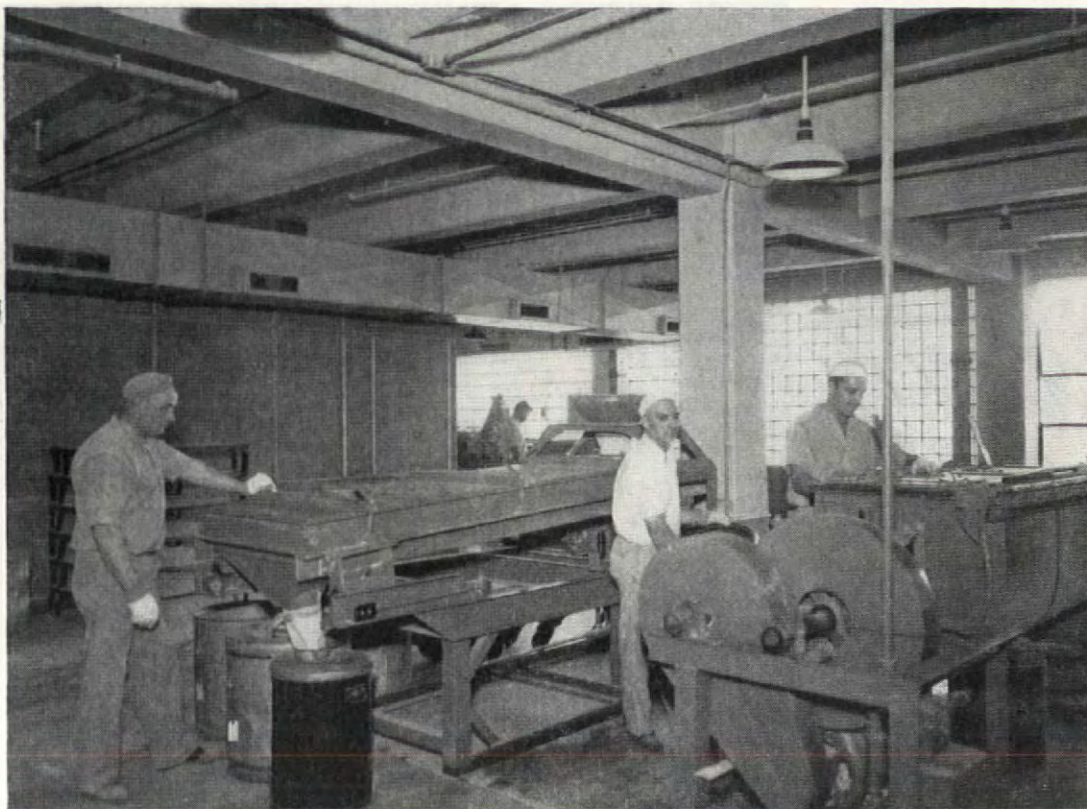


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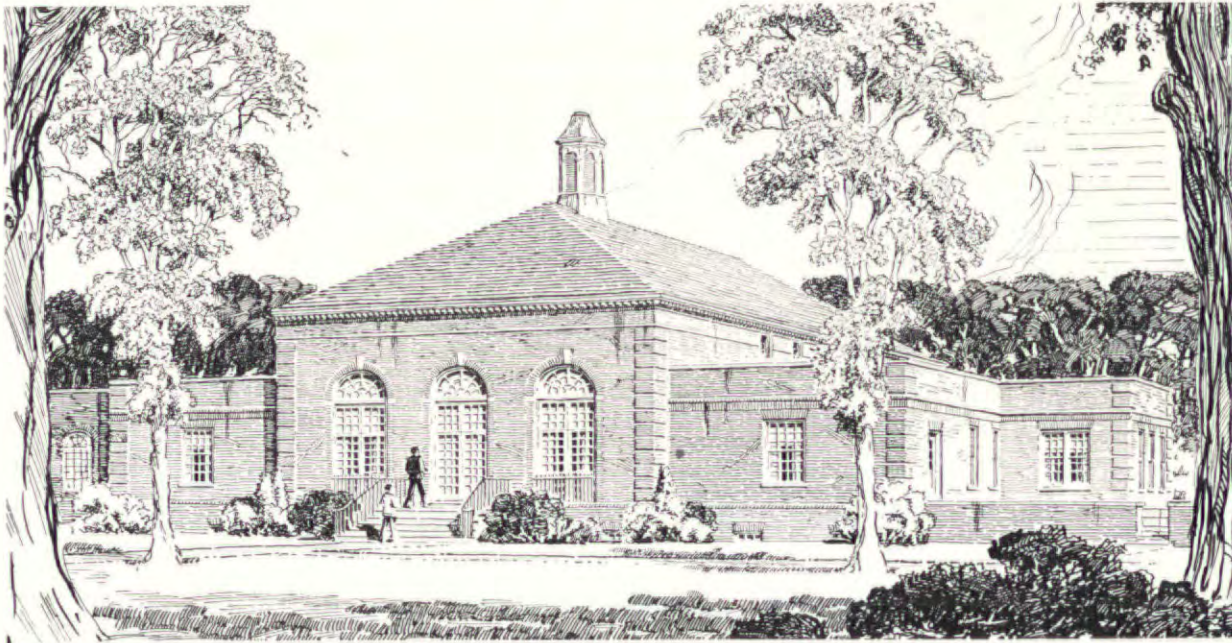
Air conditioning by Carrier reflects over 40 years of leadership in the field. It gives you the extra benefits of Carrier's research and world-wide experience, its "know-how" and manufacturing skill. Carrier Corporation, Syracuse, New York.



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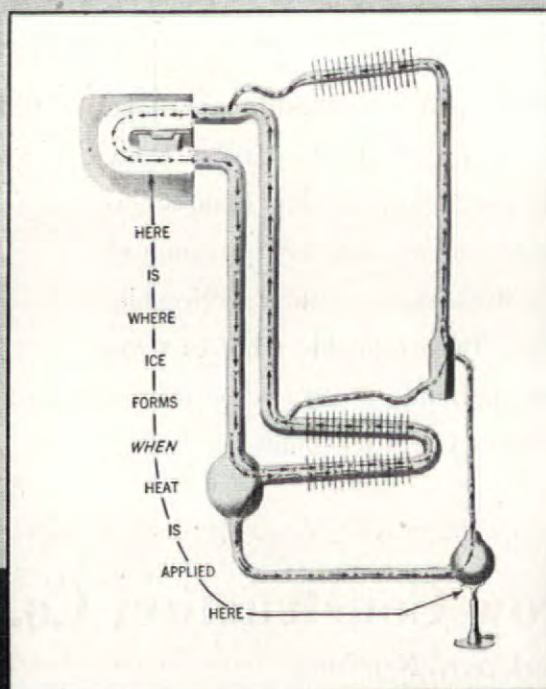
## 1947 Servel Gas Refrigerator brings tenants and owners great new features, plus silence and dependability

Yes, the great new 1947 Servel Gas Refrigerator is even finer than the Servels that have already won the praises of more than 2,000,000 families. The 1947 Servel contains a big Frozen Food Locker that stores up to 60 packages of frozen foods. This famous refrigerator offers moist cold and dry cold for garden vegetables and meats. A specially designed flexible interior provides extra roominess. Plastic Coated shelves are rust- and scratch-resistant. All these new conveniences—plus Servel's permanent silence—are the reasons tenants will say, "There's nothing to match the 1947 Servel!"

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### WHY SERVEL STAYS SILENT, LASTS LONGER

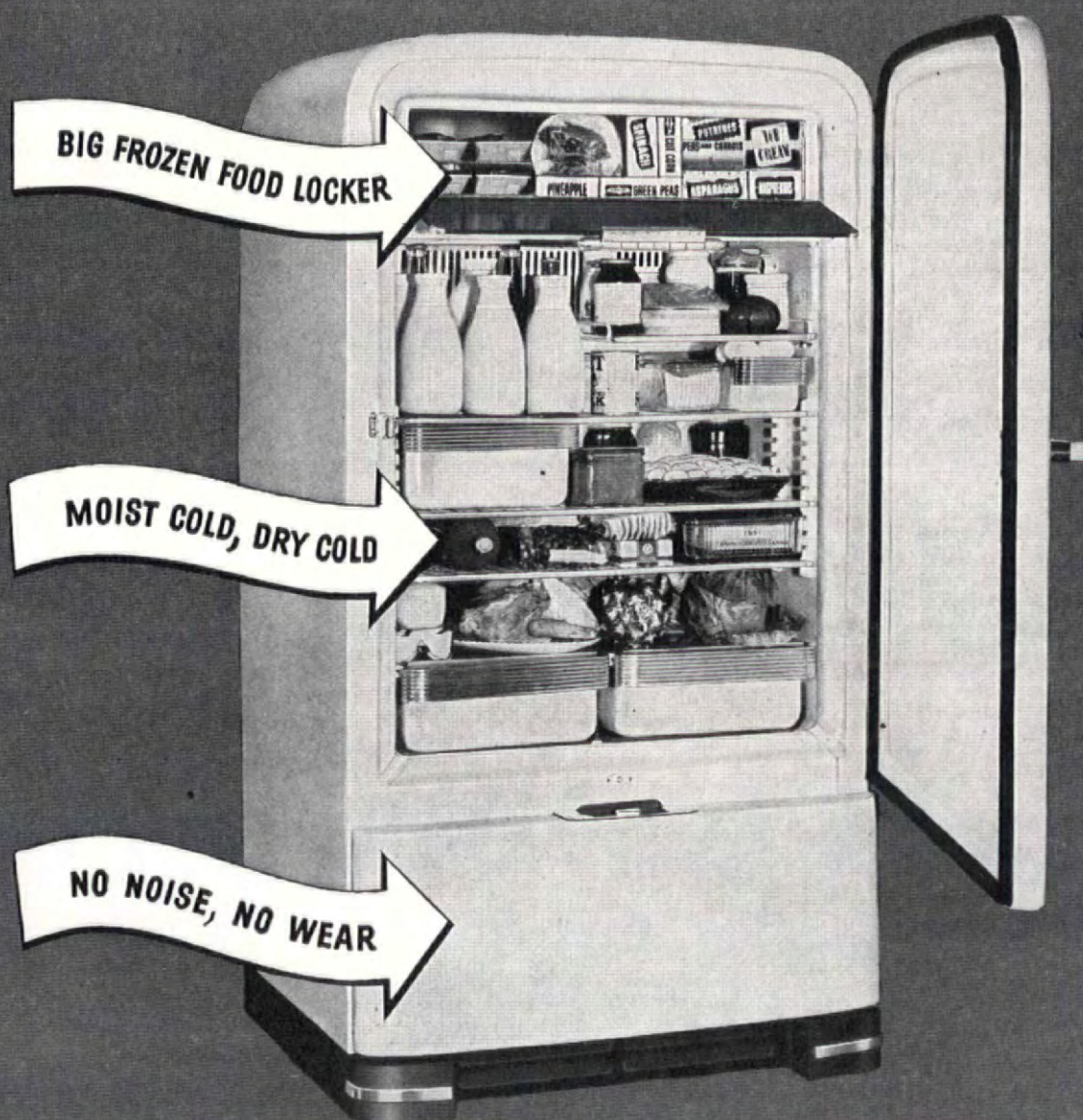
Different from all others, the Servel Gas Refrigerator has no moving parts in its freezing system. It operates on the continuous absorption principle of refrigeration. In a Servel, the refrigerant is hermetically sealed in a set of vessels connected by pipes. A tiny gas flame is applied to the lowest vessel. As a result of the evaporation properties of the refrigerant and the law of gravity, ice forms in an upper vessel. No machinery—motor, valves, pumps and compressors—is needed. That's why Servel has no moving parts to get noisy, none to wear . . . why it stays silent, lasts longer.

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Servel



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Up to 60 packages of frozen meats, poultry, vegetables, fruits, biscuits can be stored in Servel's big convenient Frozen Food Locker. It helps housewives save hours of shopping time, plan new and delightful menus in every season.

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Servel's big dew-action fresheners are ideal for keeping garden vegetables and fruits. Salad greens actually crisp up, perishables stay safe and appetizing. And fresh meats keep tender for days in the Servel meat keeper.

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The 1947 Servel offers an amazingly practical flexible interior. For extra roominess, shelves are adjustable to eleven positions. And they're Plastic Coated for the utmost in rust- and scratch-resistance.

## *The GAS Refrigerator*



The advertising pages of FORUM are the recognized market place for those engaged in building. A house or any building could be built, completely of products advertised in THE FORUM. While it is not possible to certify building products, it is possible to open these pages only to those manufacturers whose reputation merits confidence. This FORUM does.

Adams and Westlake Company, The.....	6
Aetna Steel Products Corporation.....	183
Airtemp (Division of Chrysler Corporation).....	153
Alberene Stone Corp.....	40
Allied Chemical & Dye Corporation (The Barrett Division).....	61
American Central Division (The Aviation Corp.).....	141
American Flange & Manufacturing Co., Inc.....	165
American Lumber & Treating Company.....	154
American Radiator & Standard Sanitary Corporation.....	133
American Rolling Mill Company, The.....	53
American Roof Truss Co.....	196
American Telephone & Telegraph Co.....	19
Anchor Post Products, Inc.....	36
Andersen Corporation.....	49
Aviation Corp., The.....	52, 141, 204
B & T Metals Company, The.....	62
Bar-Brook Mfg. Co., Inc.....	146
Barrett Division, The (Allied Chemical & Dye Corporation).....	61
Bell & Gossett Co.....	37
Bendix Home Appliances, Inc.....	123
Beneke Corporation.....	25
Bigelow-Sanford Carpet Co., Inc.....	4
Bird and Son, Inc.....	64
Bituminous Coal Institute.....	59
Borg-Warner Corporation (Ingersoll Steel Division).....	31, 182
Borg-Warner Corporation (Norge Division).....	179
Burnham Boiler Corporation.....	74
Butler Manufacturing Company.....	168, 169
Cabot, Samuel, Inc.....	40
Cambridge Tile Mfg. Company, The.....	Cover II
Carbide and Carbon Chemicals Corporation (Pyrofax Gas Division).....	148
Carr, Adams & Collier, Inc.....	70
Carrier Corp.....	198
Case, W. A., & Son Mfg. Co.....	180
Ceco Steel Products Corporation.....	68, 69
Celotex Corporation, The.....	2
Chase Brass & Copper Co., Inc.....	127
Chrysler Corporation (Airtemp Division).....	153
Church Mfg. Co., C. F.....	46
Colorado Fuel & Iron Corp., The.....	191
Committee on Steel Pipe Research (Amer. Iron & Steel Institute).....	48
Coolstream Corp., The.....	146
Coyne and Delany Co.....	195
Crane Co.....	57
Crow Construction Co., William L.....	199
Curtis Companies.....	197
Detroit Steel Products Company.....	20, 21
Douglas Fir Plywood Association.....	71
Eagle-Picher Lead Company, The.....	44
Eljer Co.....	Cover III
Elkay Manufacturing Company.....	5
Emerson Electric Manufacturing Co., The.....	156
Facing Tile Institute.....	176
Fiat Metal Manufacturing Company.....	134
Firestone.....	159
Flynn, Michael, Manufacturing Co.....	63
Formica Insulation Company, The.....	47
Fortune Magazine.....	196
Frigidaire Division (General Motors Corp.).....	194
General Electric Company.....	139
General Luminescent Corporation.....	140
General Motors Corp. (Frigidaire Division).....	194
Gerity-Michigan Die Casting Company.....	56
Grand Rapids Hardware Company.....	122
Great Lakes Steel Corporation (Stran-Steel Division).....	181
Hall-Mack Company.....	138
Hendrick Manufacturing Co.....	192
Horton Manufacturing, The (Division—The Aviation Corp.).....	204
Hunter Douglas Corporation.....	76
Ingersoll Steel Division (Borg-Warner Corporation).....	31, 182
Insulite Company, The.....	175
Irvington Form & Tank Corporation.....	128
Johns-Manville.....	186
Josam Mfg. Co.....	41
Just Mfg. Co.....	70
Kelvinator.....	8
Kennedy, David E., Inc.....	188
Kewanee Boiler Corporation.....	67
Kimberly-Clark Corporation.....	55, 190
Kinnear Mfg. Co., The.....	44
Kitchen Maid Corp., The.....	32
Kohler Co.....	193

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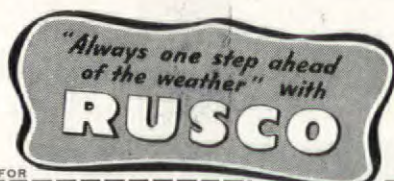
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# BUYING INDEX

Leader Electric Manufacturing Corp.	18
Libbey-Owens-Ford Glass Co.	7, 75
Lockport Cotton Batting Co.	66
Majestic Company, The.	66
Marsh Wall Products, Inc.	170
Medusa Portland Cement Company.	54
Mesker Bros.	147
Minneapolis-Honeywell Regulator Co.	145
Modine Manufacturing Company.	135
Monroe, Lederer & Taussig, Inc.	58
Morrison Steel Products, Inc.	173
Mueller, L. J., Furnace Company.	39
National Association of Ornamental Metal Manufacturers.	189
National Cotton Council of America.	142
National Electrical Manufacturers Association.	32, 33
National Gypsum Company.	160
National Life Insurance Company, The.	132
Norfolk and Western Railway.	155
Norge Division (Borg-Warner Corporation).	179
Norton Company.	50
No Sag Spring Company.	174
NuTone, Inc.	125
Ohio Hydrate & Supply Co., The.	124
Otis Elevator Company.	51
Overhead Door Corporation.	Cover IV
Owens-Corning Fiberglas Corporation.	72
Owens-Illinois Glass Company.	30
Pantasote Corp. of N. J., The.	184
Paraffine Companies, Inc., The.	62
Penberthy Injector Company.	43
Pittsburgh Corning Corporation.	17
Pittsburgh Plate Glass Company.	150, 151, 185
Portland Cement Association.	167
Pratt & Lambert, Inc.	26
Prestile Manufacturing Company.	28
Prima Products.	143
Pyrofax Gas Division (Carbide and Carbon Chemicals Corporation).	148
Reardon Company, The.	129
Revere Copper and Brass, Incorporated.	42
Reynolds Metals Company.	35, 144
Ric-wil Company, The.	161
Rittenhouse Company, Inc., The A. E.	164
Robertson, H. H., Company.	137
Roddis Lumber & Veneer Co.	38
Rolscreen Company.	178
Roper, George D., Corporation.	157
Rowe Manufacturing Co.	121
Ruberoid Co., The.	29
Russell, The F. C., Company.	202
Saint Paul Corrugating Co.	56
Salter Mfg. Co., H. B.	152
Seaporcel Porcelain Metals, Inc.	140
Servel, Inc.	200, 201
Sisalkraft Company, The.	138
Sloan Valve Company.	27
Smith, Barney & Co.	144
Smith Corporation, A. O.	187
Soss Manufacturing Company.	58
Speakman Company.	65
Spencer Heater Division (Aviation Corp.)	52
Steelcraft Manufacturing Co., The.	60
Stensgaard, W. L., and Associates, Inc.	142
Stran-Steel Division (Great Lakes Steel Corporation).	181
Structural Clay Products Institute.	171
Swedish Crucible Steel Company.	136
Taco Heaters, Inc.	36
Taylor, Halsey W., Co., The.	60
Taylor Manufacturing Co.	203
Time.	172
Timken Silent Automatic Division (The Timken-Detroit Axle Co.)	131
Trane Company, The.	34
Truscon Laboratories (Division of Devoe & Reynolds Co., Inc.)	149
Truscon Steel Company.	1
United States Plywood Corporation.	166
United States Rubber Company.	45
Victor Electric Products, Inc.	126
Wade Manufacturing Company.	64
Walworth Company.	177
Webster, Warren, & Co.	28
Werner, R. D., Co., Inc.	136
White-Rodgers Electric Co.	23
Wiley, John & Sons, Inc.	148
Wood Conversion Company.	158
Wurlitzer Co., The Rudolph.	163
York Corporation.	73
York Shipley, Inc.	24
Young Radiator Company.	192

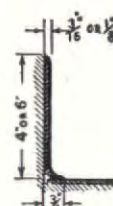


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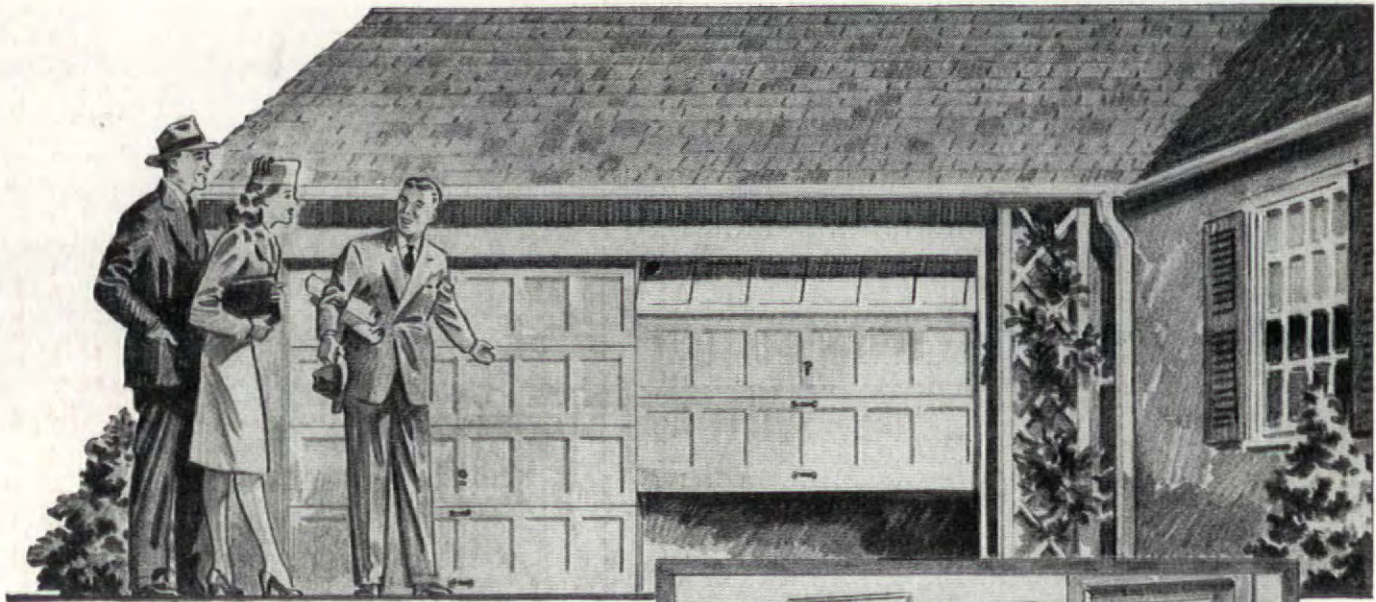
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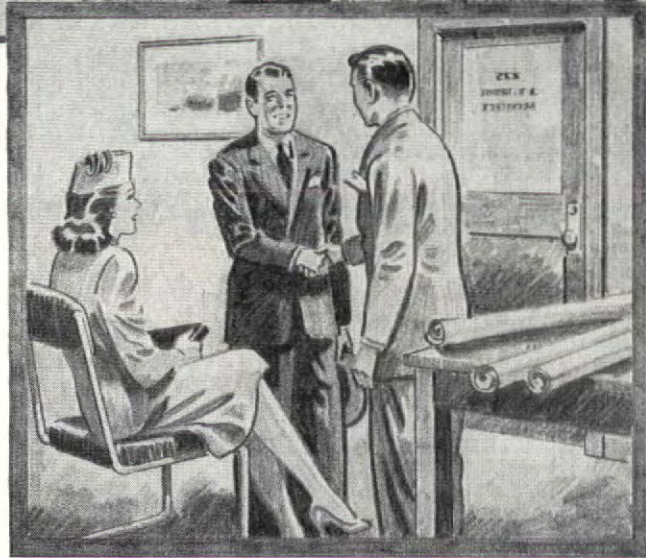
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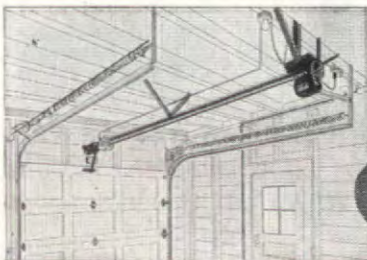
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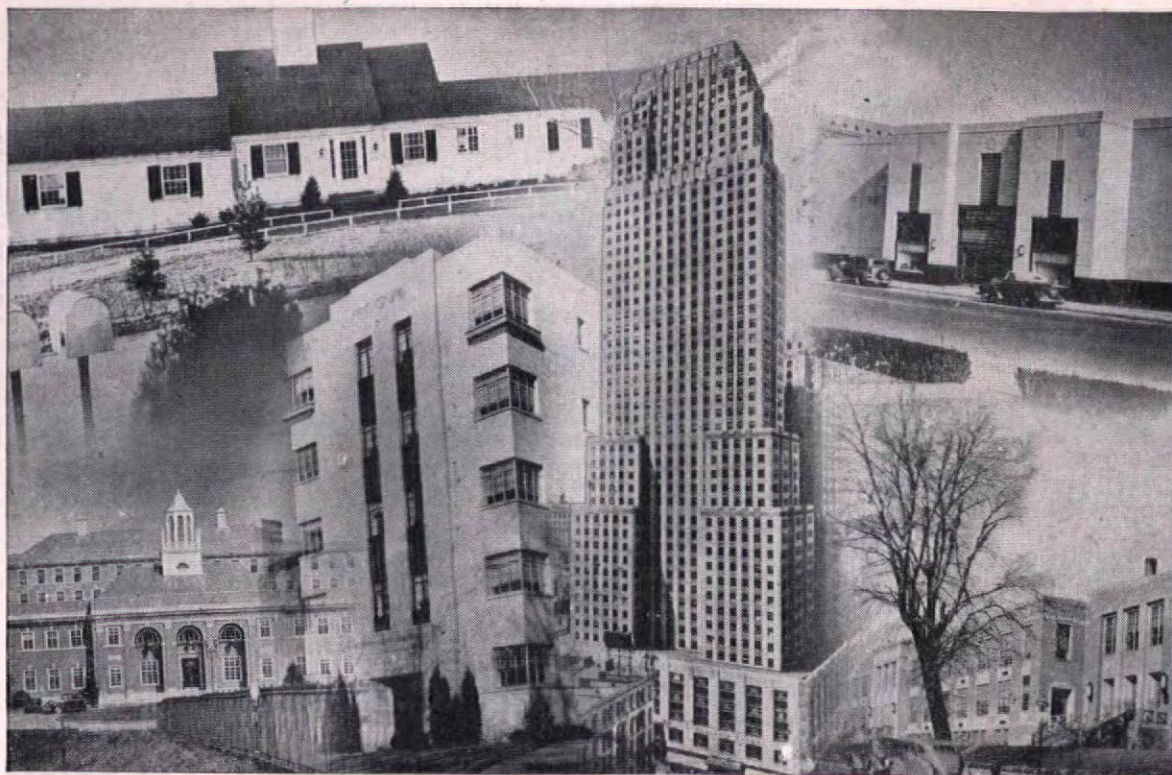
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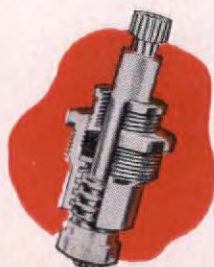
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