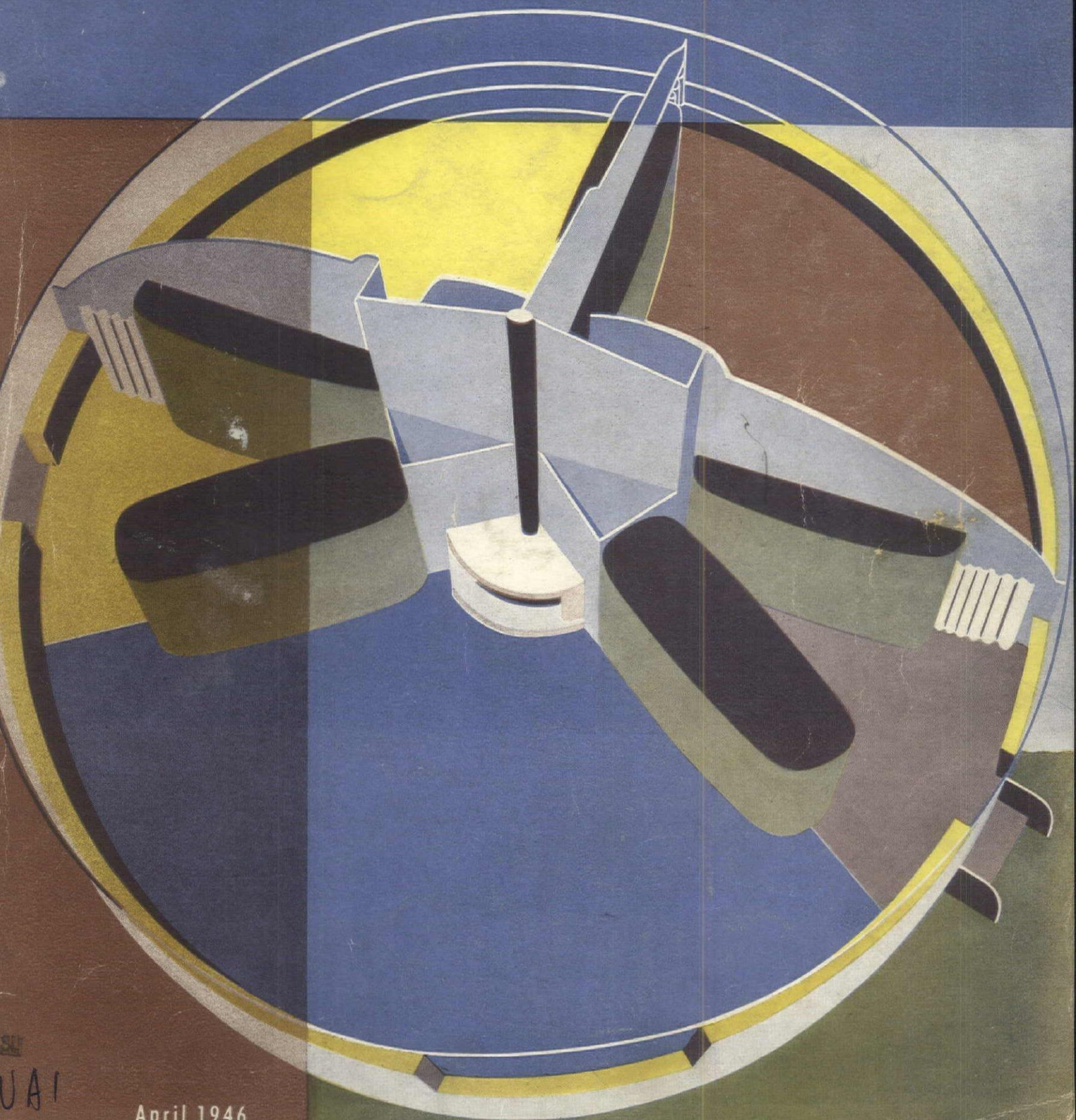


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Magazine of Building



April 1946

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Secret of the success of so many Celotex building products, for example, is the cane fibre at their core.

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All edges and sides sealed against moisture by coating of asphalt.

Extra coating of asphalt on exterior side.

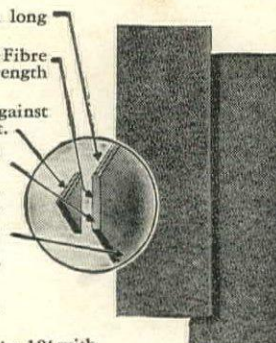
Exterior surface of firmly imbedded mineral granules, providing durable, colorful finish.

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7/8" thickness—2' x 8' with T & G joints on long edges.

7/8" thickness—4' x 8' and 4' x 10' with square edges.



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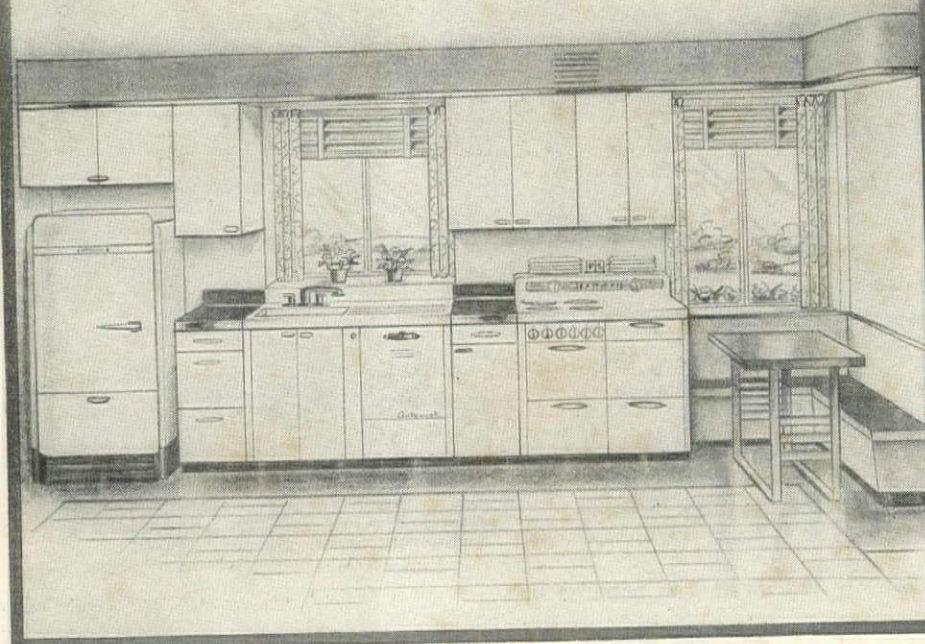
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Cover by Hal Zamboni

TYPICAL HOTPOINT KITCHEN
FOR A \$7,500 HOME



RECOMMENDED EQUIPMENT		
ITEM	QTY	DESCRIPTION
1	1	RANGE 37" WIDE
2	1	REFRIGERATOR 6 CU FT.
3	1	DISHWASHER-SINK 48" WIDE
4	1	DISHWASHER
5	1	DISPOSALL
6	1	CABINET SINK
7	1	SINK CABINET
8	1	
9	1	BASE CABINET 15" WIDE
10	1	" " 18" "
11		
12		
13		
14		COR. BASE CABINET
15		UTILITY CABINET
16	1	WALL CABINET 15" WIDE
17	4	" " 24" WIDE
18	1	" " 30" WIDE
19	1	" " 18" X 36"
20		
21		COR. WALL CABINET
22	1	FILLER 45F 30"

Hotpoint KITCHEN PLANNING SERVICE
COMMERCIAL ENGINEERING DIVISION
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APPROVED *Ray Sandin*
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PLAN KITCHENS FOR THE 77%

"More than seven out of ten modern homes will cost \$3,000 or over," predicts the United States Chamber of Commerce. That means 7 out of 10 builders can afford, and will probably demand, an all-electric kitchen.

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Cabinet Sinks



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\$7,500⁰⁰ in Cash Awards

United Wallpaper, Inc. Announces

THE INTERNATIONAL WALLPAPER DESIGN COMPETITION FOR 1946

Closes August 31, 1946

RULES OF COMPETITION

- 1. Date . . .** Entries must be postmarked not later than midnight of August 31, 1946. Winners will be announced by November 15, 1946.
- 2. Mailing . . .** Address all entries to International Wallpaper Design Competition, 3330 W. Fillmore St., Chicago 24, Illinois, U.S.A. Name and address of contestant must be on outside of package.
- 3. Eligibility . . .** Everyone, everywhere, is eligible except employees of United Wallpaper, Inc., its Advertising Agencies, Judges, and members of their families.
- 4. Judging . . .** Entries will be judged impartially on the basis of originality of thought, appropriateness of design and color, color harmony, and suitability to wallpaper production. Decision of the judges will be final. Duplicate awards in case of ties. Designs not awarded prizes may be offered to sponsor at standard design fee prices. Winning entries become the exclusive property of United Wallpaper, Inc.
- 5. Specifications . . .** Submit designs on illustration board or drawing paper to actual scale. In addition to background color coat, any number of colors up to twelve, may be used.
- 6. Size of Design . . .** Width—must be either 18"—20½"—24"—27½". Height—must be either 15"—18"—21"—24".
- 7. Entries . . .** You may submit as many designs as you desire. Entrant may win any number of prizes offered. Entrant's name and address must appear clearly on back of each design.
- 8. Liability . . .** Entrants agree to submit designs conceived only by them, and to hold sponsor harmless from any liability connected therewith. Entries are submitted at entrant's risk.
- 9. Return of Entries . . .** Sponsor cannot guarantee return of entries; however, sponsor will undertake to return safely, within a reasonable length of time, all entries when return postage and entrant's name and address is enclosed in envelope securely attached to back of each entry.

Purpose of Competition. United Wallpaper, Inc.—world's largest manufacturer of wallpaper and related products—is the sole sponsor of this competition. Its purpose is to stimulate interest in wallpaper design among artists and designers all over the world.

Through this competition, established artists and designers have the opportunity to gain worldwide recognition for their work. And new talent, hitherto unaware of the possibilities in the field of wallpaper design, has an unprecedented opportunity to be discovered and recognized.

Contestants have the opportunity to win awards in *any or all* of the classifications listed below, as well as the \$1,500.00 Grand Award for the design judged best of all.

The Committee of Judges includes Robert B. Griffin, leading wallpaper stylist . . . Helen Koues, prominent authority on Interior Decoration, William B. Burton, head of creative design for United Wallpaper, Inc. . . . Christine Holbrook, Associate Editor of Better Homes and Gardens magazine and Richardson Wright, Editor-in-Chief of House and Garden magazine. Before starting work, please read carefully the RULES OF COMPETITION.

\$7,500⁰⁰ IN CASH AWARDS

GRAND AWARD \$1,500.00
(to be selected from winners below)

LIVING ROOM Wallpaper Design Award . \$1,000.00

DINING ROOM Wallpaper Design Award . \$1,000.00

HALL Wallpaper Design Award \$1,000.00

BEDROOM Wallpaper Design Award \$1,000.00

BATHROOM Wallpaper Design Award \$1,000.00

KITCHEN Wallpaper Design Award \$1,000.00

(in case of ties, duplicate awards will be made)

TRADE MARK
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INC.**

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Photograph of Interior
Designed by Better Homes & Gardens Magazine

How long is your reputation?

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Five years—ten years—or even a lifetime after installation, your clients will still be pointing with pride to Upson walls and ceilings—and remembering your recommendations with gratitude!

For Upson Panels are *crackproof*! And the smooth, richly pebbled surface will take paint beautifully—will make a handsome background that's easy to live with—easy to keep lovely.

Millions on millions of feet of Upson Panels have proved the economy and speed of Upson dry-wall construction under the most rigorous wartime usage. Today, the popularity of this tested interior finish is such that the supply is not yet equal to the demand, but experience shows that it is well worth planning now to use later.

Thousands of people in your area will want the lasting beauty you will soon be able to give them with Upson Panels. Why not get full details and specifications today . . . make plans now to use these reputation-builders when they're again in full supply. The Upson Company, Lockport, New York.

Tornado Leaves Upson Panels Undamaged

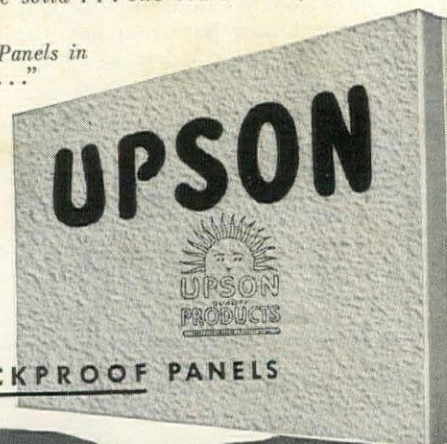
The following excerpt from the letter of an Upson contractor in Louisiana testifies to the unusually high structural strength of Upson Panels.*

"When the tornado struck, the house was blown about twenty-five feet and upon inspection we discovered that the Upson Panels were intact throughout the building. Walls and ceilings were solid . . . one could hardly believe his eyes . . ."

"We have used Upson Panels in over fifty homes to date . . ."

*Name on request

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identified by the famous
Blue-Center



PACEMAKER IN CRACKPROOF PANELS

NEWS

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BUILDING MONTH. The change in the weather and the break-up of ice in the Hudson brought the first easement in New York City's desperate shortage of building materials. Last month barge loads of brick, tile, sand, gravel and cement were floating down the river for the first time since the winter freeze. All over the U. S., Building weather had changed markedly, too. Whether it was a change for the better depended mainly on the kind of business you happened to be in. For low-cost housebuilding for veterans, the Washington weather bureau promised an early thaw. But every other kind of construction faced an unseasonable freeze. The new rules held the threat of unemployment for labor in heavy construction and in some materials producing industries. They also held the threat of at least partial paralysis for big industrial and commercial contractors, who might (as some had done in the last years of the war) shift to large-scale housebuilding.

While the Senate debated the materials subsidy provision of the Wyatt housing program, materials producers hotly campaigned for price ceiling increases. With Senate action at last near on the Wagner-Ellender-Taft bill (long-range housing program), a promising public housing portent came from Yonkers, N. Y. To Goldman Sachs & Co., the Yonkers Housing Authority sold bonds at the lowest interest rate yet obtained—1.2428 per cent.

Although the threat of the black market still hung ominously over the housebuilding industry, the month brought many a promise of volume housebuilding soon to start. Samples: An \$8 million development in suburban Philadelphia announced by Erny and Nolen; an \$11 million Denver apartment project to be developed by architect Temple Buell; 1,000 Miami \$6,000 houses to be built by C. F. Wheeler and John H. McGearry; 1,000 houses in Los Angeles to be built by Paul W. Trousdale and financed by a \$10 million loan from the Bank of America, believed to be the largest ever made to a housebuilder.

WASHINGTON

HEAVY CONSTRUCTION HALTS Unemployment feared as building ban clamps down on U. S.

In booming Miami Beach a March stampede to beat the building ban boosted permits to the highest point on record. The month's total showed more than \$5 million worth of plans filed—which beat the previous peak in July, 1925 by more than 50 per cent. Miamians dolefully figured that the new building restriction order would completely knock out local construction activity—which consists mostly of apartments, hotels, expensive houses.

Milwaukee estimated that the ban would defer \$25 million worth of construction. Questionable items: new bottling houses for Schlitz and Blatz breweries, for which excavations are finished and materials already delivered to the site.

In St. Louis, city fathers mourned the loss (which might be more than temporary) of a \$44 million International Harvester plant at nearby Wood River. Discouraged by the building ban and by current material shortages, International Harvester decided to buy several surplus war plants instead of building new ones for production of its new cub tractor.

Boston said that some \$125 million in public and private construction pro-

grammed for the next year would be affected by the order. Some 15,000 heavy construction workers may lose their jobs, an official of the Greater Boston Building and Construction Trade Council estimated.

In Chicago, architect John Holabird pointed to plans for eight or nine buildings for Northwestern University, the University of Chicago and the University of Illinois. With thousands of veterans now seeking college room, all these buildings would be stopped by the order. Earl J. McMahon, secretary of the Chicago Building Trades Council, predicted substantial unemployment. He figured Cook County's share of the veterans' housing program at 75,000 new houses. These, he said, would "employ not more than 750 of the Council's 6,000 electricians."

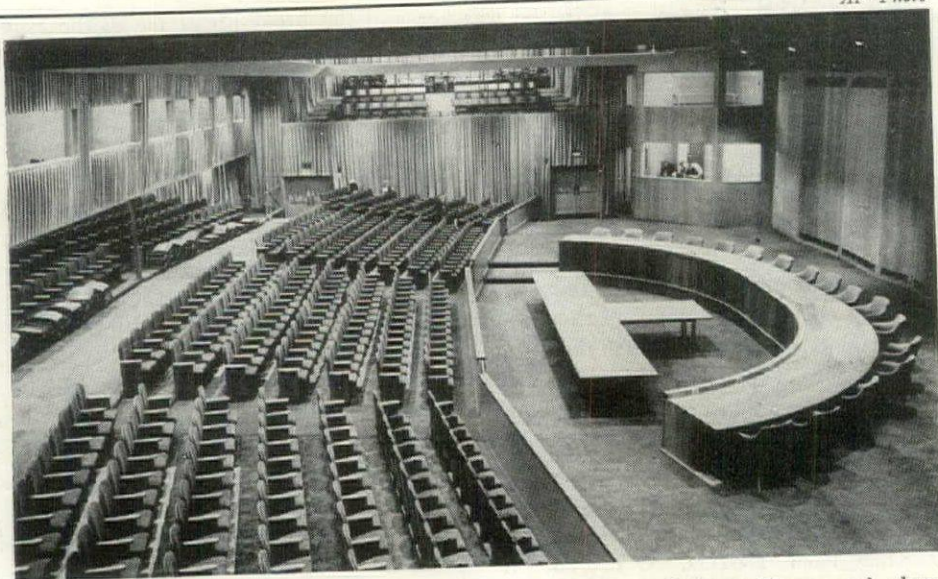
In New York, Building Trades Council president Howard McSpedon agreed: "All the housing planned in this area won't supply enough work for 20 per cent of our 25,000 enrolled members."

Big Building men ominously predicted that the building ban would frighten away investors, generally unbalance the economy. These were among the groans of protest when the federal government clamped down a tighter-than-war lid on the Building industry late in March. Actually, the picture was less gloomy than many a Building man feared.

In the first place, industrial and commercial construction will not come to a 100 per cent halt. Decisions as to what can go ahead will be made on a local basis. Where there is substantial unemployment, factory and business building will be encouraged. Where there is labor shortage, such construction will be held back until housing is provided. In all cases, CPA local offices (now being set up over the country) will be advised by a broadly representative citizens' committee.

Not much of the March rush to file for building permits would actually beat the order, which said that construction may proceed only where materials have been incorporated into structure. This will not, however, apply to the over-\$10,000 houses started in the first spurt of uncontrolled building and now stalled for lack of materials. Only building "being carried on" on the date of the order may go ahead without federal permit. Non-structural public works—streets, sewers, roads, etc.—are not affected. Nor is Army-Navy building.

Issuance of HH priorities for veterans' houses will mean an automatic permit. Per-



UNO IN THE BRONX

When Andrei Gromyko walked out of the United Nations Security Council last month, his decisive footsteps, although they reverberated throughout the world, made no sound at all in the Hunter College gymnasium. This can be chalked up to architects Voorhees, Walker, Foley and Smith, who had foresightedly sheathed the iron rafters of the onetime gym with acoustic tile, glued thick carpeting to the floor planks, hung 3,500 yards of sound-muffling fire-flash fabric over the bare brick walls.

The brisk conversion job was handled

by contractor Robert Glenn and three shifts of 200 skilled tradesmen, who worked round the clock to cut what would normally have been a five-month job down to a bare 15 days. The architects took only 24 hours to prepare a complete plan, only 48 to work out a detailed scheme. Complete working drawings, including electrical and ventilation plans, were ready in a week. Only two weeks were required to set up the five-panel control board, from which intricate lighting, radio, public address systems are operated. Making over the gymnasium for UNO use cost \$200,000, including overtime pay.

sons wishing to build non-veterans housing must apply to the Federal Housing Administration for a permit. Applications for farm building, including farmhouses, must be filed with the County Agricultural Conservation Committee. Applications to start all other types of construction must be made to local CPA offices.

Only exemptions are for small jobs, not exceeding these cost limits:

\$400 for a house occupied by less than five families.

\$1,000 for a hotel or apartment house.

\$1,000 for a commercial or service building.

\$1,000 for a farm, excluding the farm house.

\$1,000 for a church, hospital, school or publicly owned building.

\$15,000 for an industrial structure.

\$200 for a structure not covered by any of these categories.

While the industry tried to figure out what life would be like under the new order, housing boss Wyatt prepared another. Intended to channel bulk of materials into lower-priced housing, the order will set area price levels (based on the bottom third of prices now named in HH applications) and require that 50 per cent of all future applications be within the stipulated price level.

At the month's end, government lawyers found an unexpected loophole in the executive order limiting veterans' housing to \$10,000. Months ago Congress, passing the

routine Independent Offices Appropriation bill, had thoughtfully tacked on an amendment stipulating that veterans must be given priorities to build houses, but naming no price limit. Since this was the law of the land, the federal experts figured there was no legal way to deny a veteran priorities for an over-\$10,000 house if he wants to build one—until re-interpretation or Congressional action plugs up the loophole.

SENATE MAY BACK SUBSIDIES

Support for Wyatt program mounts as Senate vote nears.

Republican Senator Robert Taft sharply cross-questioned housing boss Wilson Wyatt. It wasn't the money, Senator Taft said, but would the scheme work? Senator Homer Capehart (Rep., Ind.) called the plan to give prefabs government purchase contracts the most unbusinesslike proposition he had ever heard. Senator Eugene Millikin (Rep. Colo.), sensitive to veterans' complaints, rushed out of the hearings to collect statistics on the number of veterans which Congressmen have fathered. Dozens of Building men shifted restlessly in the Committee room, waiting to be heard. Prominent among them: Producers Council's Douglas Whitlock, anxious to tell why materials producers are unalterably opposed to subsidies.

After its decisive drubbing in the House, the Wyatt emergency housing program was now up to the Senate. While President Truman and party boss Steve Hannegan

buttonholed recalcitrant partymen, Wilson Wyatt labored to sell the Senators his two main points (both tossed out by the House): subsidies to boost building materials production and price ceilings on older houses and on lots.

Although Hannegan had wired each of the 239 Democrats in the House in a last-minute appeal for backing for the Administration's housing program, the House had voted 161-92 to turn down subsidies and 154-68 against price controls on older houses. There were, however, mounting signs that the Senate was more alert to Hannegan's warning to those Democrats who voted with the solid Republican opposition: "The Democratic party will be held responsible by the country for failure to solve the housing crisis, not the Republicans."

How far the House was out of step with the public temper seemed clear from FORTUNE's recent survey, which showed that most voters want not only subsidies and stiff price controls, but would also back direct government housebuilding (see page 178). But although Administration stalwarts like Representative Mike Monroney (Okla.) tried desperately to save what Wyatt called the heart of his program, most of the House seemed closer in sentiment to Representative Jessie Sumner (Rep., Ill.), who distinguished herself initially by calling prefab houses "glorified garbage cans" and later by showing as the only member of the House to vote against authorization of \$253 million to take care of moving temporary war houses to where they are now needed.

Acme, Life



SUMNER: garbage

MONRONEY: crisis

Vets' Protests. The Tokyo chapter of the American Veterans' Committee had wired: "The national housing shortage is apparent to everyone but Congress". AVC's national housing chairman Franklin D. Roosevelt Jr. had warned that unless Congress reversed its stand disgruntled veterans "will have a march on Washington and I'll be in it." Veterans had already asked him, Roosevelt said, to lead a parade up Fifth Avenue "to forcibly take over brownstone mansions that have been closed up." By the month's end, even the American Legion, conspicuously silent during House action on the Wyatt program had swung over to active support.

The House rejection of subsidies and of additional price controls was almost universally hailed as a rousing victory for what House Majority Leader John McCormack called "the most powerful lobby in my time" (19 years in Congress). In spite of

the awkward defection of the National Association of Home Builders, an effective combine—the National Association of Real Estate Boards, the Producers' Council and the National Retail Lumber Dealers' Association, all veterans on the Washington scene—had been able to convince Representatives that the major Wyatt proposals added up to bureaucracy at its most bungling. The home builders, usually a part of the team, abruptly switched their stand after a day's encounter with Wyatt at their Chicago convention and—to the consternation of the lobbyists hard at work in Washington—endorsed subsidies.

New Bills. While the housebuilding business waited anxiously the fate of the Wyatt housing program, several other Congressional efforts to deal with the veterans' housing emergency appeared. Senator George Murray (Dem., Mont.) introduced a logical measure to complement the Wyatt program, proposed federal aid for extension of public utilities where needed to take care of veterans' housing. Amount of federal aid per veteran would be deducted from the assessments levied against each property. Representatives Peterson (Dem., Fla.) and Hartley (Rep., N. J.) introduced a bill to provide direct federal grants (from \$500 to \$2,500) to veterans for home purchase.

W-E-T BILL OUTLOOK

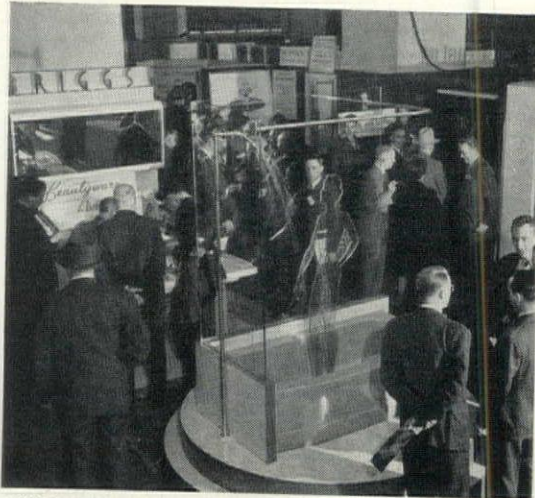
Prevailing wage clause newest hurdle.

About to come before the Senate for a vote, the Wagner-Ellender-Taft general housing bill (S. 1592) faced one more stall in committee. A drafting subcommittee of the Senate Banking and Currency Committee had been quietly at work on the bill for the last month. Their final draft looked generally pleasing to the full Committee, with one exception: a prevailing wage clause had been added, which would require labor on all housebuilding financed with the help of FHA insurance to be paid at the same rate as heavy construction. Outlook was that several powerful members of the Committee would refuse to approve the clause.

Other principal changes in the proposed legislation:

- ▶ Elimination of the builders' warranty provision, which would have made builders liable for defects in materials and workmanship on FHA-insured houses.
- ▶ Modification of the clause permitting lapse of payment on FHA-insured mortgages in case of borrower hardship. New terms merely give the FHA Commissioner the right to authorize such a lapse.
- ▶ Amortization period for 95 per cent mortgage loans on \$5,000 or under houses reduced from 32 years to 25 years—except where the FHA Commission decides the longer term is necessary.
- ▶ Planning advances for mutual ownership or cooperative housing projects amounting to not more than 1 per cent of project cost to be advanced by the Federal National Mortgage Association.

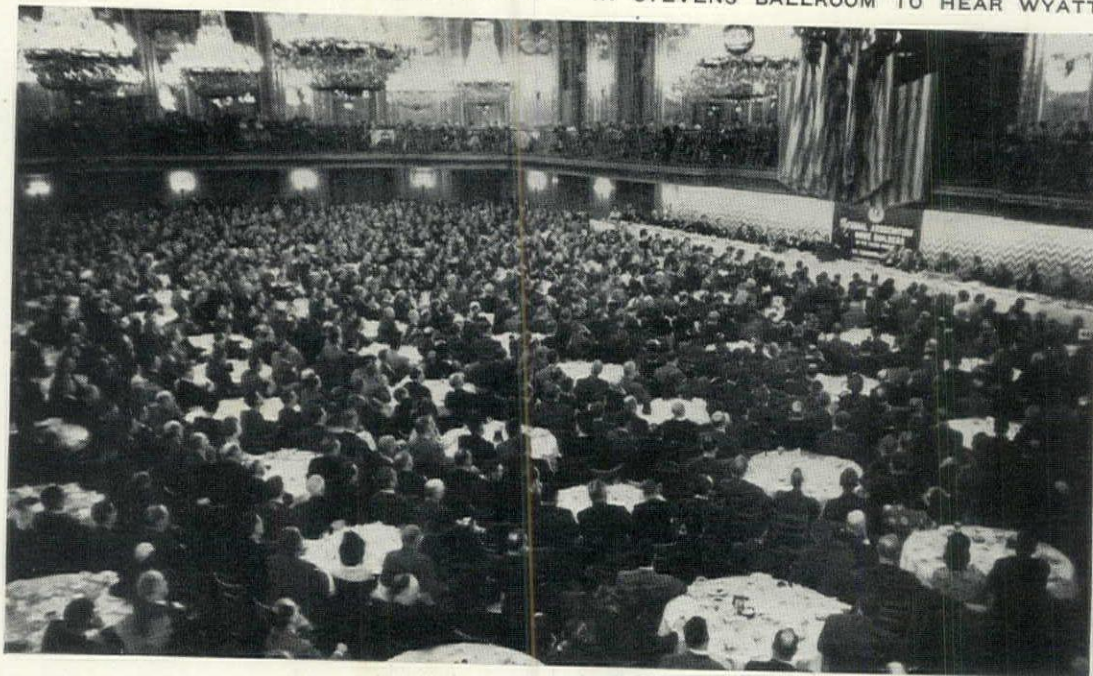
Life Photos



CHICAGO DISPLAYS SHOWED NEW PRODUCTS

Home Builders meet in Chicago

MORE THAN 5,000 HOUSEBUILDERS GATHERED IN STEVENS BALLROOM TO HEAR WYATT



Housers meet in New York

Dave Robbins Photos



FPHA COMMISSIONER Philip Klutznick (right) greets Robert Taylor, chairman, Chicago Housing Authority.



HOUSERS (above) Lee Johnson, Bryn Hovde, William Guste, (below) William Nicholas, William Wurster, Eugene Kieber.

INVESTMENT BANKER ROBERT VEIT SPEAKS AT PANEL



HOUSING BOSS Wyatt spoke at banquet. Flanking him (l. to r.) Mrs. Joseph C. Merriam, retiring president Joseph C. Merriam, Robert Gerholz, Frank Cortright, new president Joseph Meyerhoff.

PEOPLE

MEN FOR THE JOB

Housing boss Wyatt names his key men as action nears on vets' housing.

While Congress debated over what housing boss Wilson Wyatt said must be done to meet the housing crisis, Wyatt himself was busy with an important first step. There was still some doubt about the details of the sweeping program he had outlined, but one thing at least was clear: whether or not the program would work depended in large part on the caliber of the men housing boss Wyatt chose to operate it.

The housing boss had appealed to all parts of the housebuilding industry for a loan of the seasoned men who could make his program tick. By last month he was able to announce an imposing list of top personnel—some newcomers and some old hands.

Carrying on at the top operating level are Leon Keyserling as general counsel, Howard Vickery as director of information and Lyman Moore as assistant administrator in charge of budgeting—all well known to Building men.

New Faces. Neil Dalton, newly appointed deputy expeditor in charge of operations, comes from Wyatt's home town, Louisville. On leave of absence as assistant to the

Reni



Dalton, Moore, Long

president of the *Louisville Courier-Journal*, Dalton was director of the OWI domestic branch during the war.

Norton Long, new assistant administrator in charge of program, has been serving as a special assistant to OPA Administrator Chester Bowles, where his job was to coordinate OPA activities in the housing field.

One of the toughest jobs of all went to Donald A. Campbell, past president of the National Retail Lumber Dealers Association. Campbell becomes a special consultant on lumber problems arising out of the emergency housing program. A lumber dealer in Lebanon, Ky. since he began his business career, Campbell is Mayor of Lebanon and vice-president of the Marion National Bank there. During the war, he served with WPB in charge of production and distribution of lumber. Campbell will work directly with the lumber industry. His tough assignment: breaking bottlenecks in lumber production and distribution, biggest block to construction of 2,700,000 houses.

Howard P. Vermilya, who resigned as FHA technical director to become research

director of the John B. Pierce Foundation, is back again in Washington to lend a hand with the housing job. Appointed to Wyatt's staff as consultant on technical problems, architect Vermilya will be on leave from the Pierce Foundation.

Branch Chiefs. New director of the land and governmental services branch is Commander Frank W. Herring, who served in the Navy's Bureau of Yards and Docks. A one-time member of the National Resources Planning Board, Herring was also executive director of the American Public Works Association. In his new job, he will handle procedures for developing enough improved sites to take care of veterans' housing. He will also work on standards of land use and land planning. If—as is probable—federal aid is given to cities in extending public utilities to new suburban housebuilding sites, Herring will undertake the job of working out such assistance.

Ex-Navy Lieutenant Gunnar Mykland has been appointed NHA director in charge of field operations. Formerly a special assistant to the Commissioner of the Federal Public Housing Authority, Mykland has also had extensive experience in working with local housing authorities.

H. D. Kreager will head NHA's community action branch, which means organizing and working with the local housing committees which Wyatt hopes will carry a big part of the housing job. Kreager was formerly South American representative of the Foreign Economic Administration.

Manuel Lerner, recently assistant to the director of the United States Employment Service, has been appointed director of the labor branch. Thirteen years in government service, Lerner worked for the National Recovery Administration, the Social Security Board, and the War Manpower Commission.

Regional Trouble-shooters. Over the U. S., regional housing expeditors will go to work on housebuilding bottlenecks. Up to them will be a hundred problems of materials supply, ample building sites, community support for price and occupancy controls, recruitment of building labor. Under the new program, the seven regional representatives of NHA take over as regional expeditors.

In Seattle, tall, broad-shouldered George W. Coplen is on the job. Coplen started his career in the mortgage department of the Seattle Trust and Savings Bank, studied real estate law at night school. Formerly chairman of the Seattle Housing Authority, he is also a past officer of the Seattle Real Estate Board. Coplen's special interest is

the housing shortage in Alaska, where he says tents are now at a premium.

In San Francisco it's Preston L. Wright. A onetime math teacher, Wright went into the real estate business in 1913, started a housebuilding and subdividing business after World War I. A former president of the Seattle Real Estate Board, Wright served as state manager of the Home Owners Loan Corp. in 1934. In 1942 he left his own housebuilding business (in South Carolina) to go to work for NHA.

In Dallas, Joseph P. Tufts heads the show. Tufts, who once taught sociology at Dartmouth, started a housing career with the Pittsburgh Housing Association of which he was executive director. During the war he was chief of the housing section of the WPB labor division, later became chief of the War Manpower Commission's housing and community services section.

In Atlanta, Clarence N. Walker said with decision: "We intend to see this housing program through from the cutting of trees for lumber to the final touches on finished houses." Walker started out as a small-town lawyer in Ellijay, Georgia, served in the Army Air Corps in World War I. For many years he was trust officer and director of the Wachovia Bank and Trust Co., handling the bank's real estate interests all over the Southeast. Later he started his own real estate and investment business, was also secretary of the Asheville, N. C. Housing Authority and manager of the Chamber of Commerce.

In Chicago, young (34), friendly Charles J. Horan is housing trouble-shooter. Horan collected an impressive amount of graduate study (in sociology, economics, statistics) before joining the Federal Housing Administration's staff in 1938 as supervisor of operating statistics.

In New York, housing veteran Charles Ascher is regional expeditor. Ascher began his career in the housing field as secretary and general counsel to New York's City Housing Corp. One-time executive director of the National Association of Housing Officials, he has also been a consultant to the National Resources Planning Board.

In Boston, expeditor John M. Dobbs figures that New England's quota in the Wyatt program is 170,000 houses. Dobbs first job was with Ingersoll-Rand, for whom he sold construction machinery. He has also been a real estate broker. Since 1934 when he went to work in the New Jersey state HOLC office, Dobbs has been in government housing service.

OPA Chief. Working closely with the Wyatt set-up will be OPA's newly established

Regional Chiefs:

Walker

Dobbs

Horan

Tufts

Ascher

Wright

Coplen



building and construction price division (formed in part from the old building materials division). Last month OPA persuaded Gordon Rieley to take a leave of absence as vice-president of the Bryant Heater Co. and handle the ticklish job of division director. Of first importance in the whole housebuilding picture, Rieley's job will be to establish price ceilings that will hold down inflation but not hold down production. With Bryant for the last 12 years, Rieley earlier was a market analyst and sales consultant. He is chairman of the house heating division of the Gas Appliance Manufacturers Association and has been active in housing and construction committees of the Cleveland Chamber of Commerce.



RIELEY

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So far, these were the men who would help out with the toughest, quickest job the U. S. housebuilding industry has yet tackled. They could hardly be lumped as "bureaucrats;" some were government career men, but others were as seasoned in private business as anybody likely to pound on their desks.

LABOR

JOHNS-MANVILLE SETTLES

Four-month-old strike comes to end.

Johns-Manville's two biggest plants, strike-bound for the last four months, went back to work late in March. While 4,000 AFL workers struck for a wage increase warehouse supplies of J-M products dropped to zero. Dealers' orders piled up in a back-log which it will take months to meet.

Executives in New York estimated that it will take at least a month to get the two plants back into full production. From three to six months will be required to fill new orders.

Strikers in Manville, N. J. settled for a 13½ cent an hour increase, six paid holidays. Waukegan, Ill. strikers got 14½ cents an hour more, four paid holidays. J-M estimated that this would amount to a \$1 million annual payroll increase for each plant. The new wage agreement will push costs even tighter against already tight price ceilings company officials said, hurrying appeals to Washington.

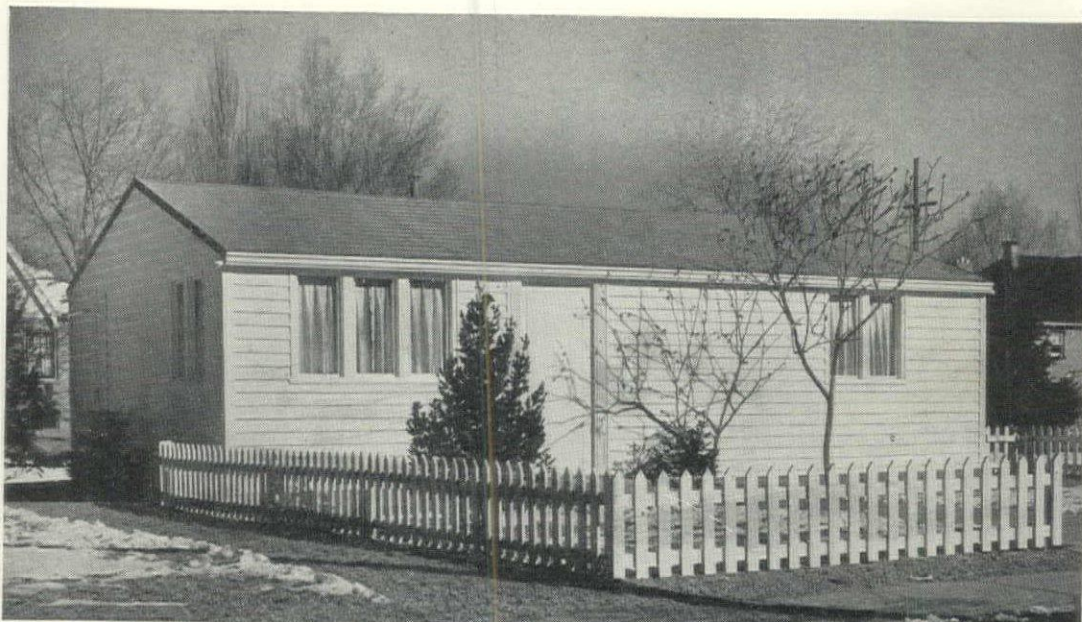
MORE ELECTRICAL APPRENTICES

AFL Electrical Workers relax bars.

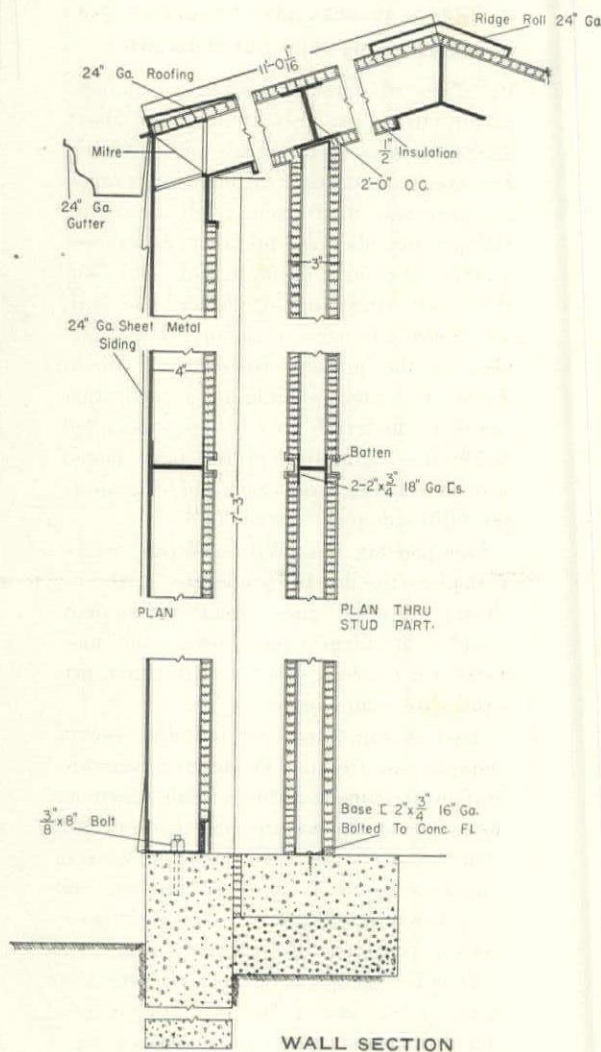
First tangible sign of labor cooperation with the Wyatt emergency housing program came from the AFL Brotherhood of Electrical Workers. Opening the way for training of some 35,000 additional electrician apprentices, the Brotherhood urged its locals over the country to take down the bars on apprentice training.

Meeting in Milwaukee, international rep-

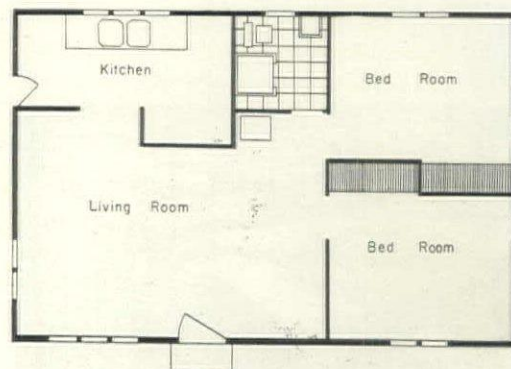
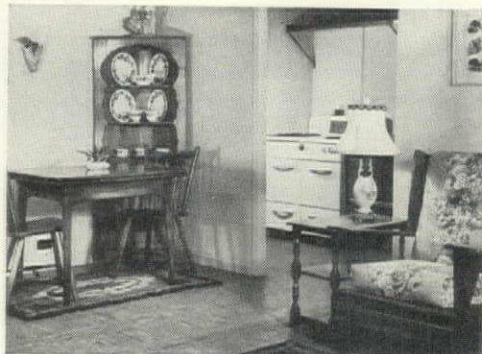
(Continued on page 10)



DENVER STEEL HOUSE SELLS FOR \$4,000. CRIMPED STEEL SIDING GIVES IT CLAPBOARD LOOK



CROWDS FLOCKED TO SEE MODEL HOUSE



STEEL HOUSE

Building code blocks this economical answer to veterans' housing need.

This factory-built steel house is being produced at the rate of 100 a week by an enterprising Denver firm, Convertible Homes, Inc. But the city's homeless veterans won't be able to buy them—unless the board of examiners and appeals changes its mind.

Last month the board ruled that the house does not meet building code requirements. This means that it cannot be erected within the city limits. But the producers said the performance tests show the metal house to be the equivalent or better of the conventional construction specified by the code. This ruling is only a sample of the blockade which new construction methods will face in many cities unless obsolete codes are brought up to date.

Adapted from a technique developed during the war by Army Engineers, the steel house is based on a 17-part steel frame, anchored to a concrete foundation. Sheet metal siding is attached to the frame by a special locking device. Interior walls are composition board, insulated by 4 in. of air space and a heavy building paper lining. The house provides 640 sq. ft. of living space. The firm maintains trained crews of skilled workmen to erect the house, and sells it for under \$4,000, erected on the purchaser's site, complete with plumbing, heating and electricity.

representatives of the Brotherhood and of the National Electrical Contractors' Association agreed to call upon local unions to change their apprentice-journeymen ratios "in line with the needs of their particular areas."

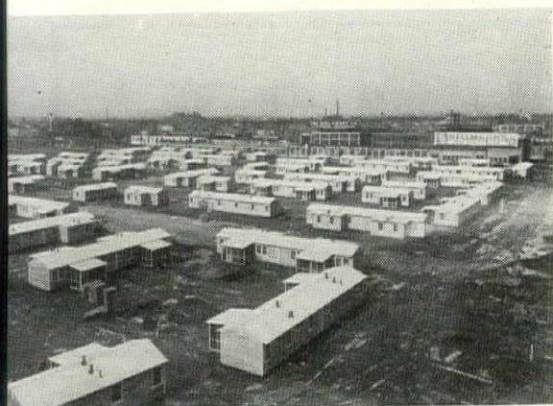
While the Brotherhood did not—and could not—tell each local how wide to open the door, it at least had made it plain that it was time to do so.

PREFABRICATION

PREFAB GOES TO COLLEGE

M. I. T. builds 100 houses in six months to shelter veteran students.

While other colleges throughout the country waited for demobilized war housing to meet their acute housing shortages, Massachusetts Institute of Technology quietly accomplished the impossible by building its own houses for its own student veterans on its



M. I. T. PREFABS are simple clapboard cottages as modest as their cost—\$3,839 for the one-bedroom unit, \$4,399 for the two-bedroom. They rent for \$45 and \$55 a month. To meet students' need for quiet a low density was adhered to. Most are detached dwellings. Double houses are soundproofed by six-inch air space between separating walls. The compact refrigerator-sink-range kitchen unit was supplied by the Parsons Co., Detroit.

own land in a record six months time. Westgate, as the new 100-unit prefabricated community on the Charles River is called, was erected despite current labor and material shortages, strikes, delays and city building code restrictions which have frightened less enterprising institutions into a course of wait-hope-and pray.

M. I. T.'s department of Architecture and Planning headed by Dean William W. Wurster and the Department of Building, Engineering and Construction planned the entire project from heating installations to sewer pipes.

First hurdle in M. I. T.'s obstacle race was a union problem: the contract for prefabricating the units was declined by Hodgson Homes of Dover, Mass. because their union would not allow work on the project without a closed shop. A contract was finally signed with City Lumber Company of Bridgeport, Conn.—which promptly went on strike. After three weeks, the labor front

quieted to a simmer, however, and work got underway.

In quick succession other difficulties piled up. Labor shortages made it necessary to use site workers unskilled in prefabrication techniques. At hearings before the city's Board of Appeals, it was solemnly pointed out that Technology homes would "violate the whole book of building statutes." Classification of the project as a temporary stop-gap to be torn down in five years placated the city administration, gained a go-ahead signal.

Last and most frustrating delay was caused by the lack of a single machine screw vital to installation of the kitchen unit and produced by a supply firm on strike. Because of this last of a long list of shortages, 90 families waited several more weeks for their otherwise completed homes.

PRIORITIES

CPA announces plan to assure prefabers steady supply of materials.

Prefabers, who are expected to step up their output from its present zero to about 250,000 houses by the year's end, got their first major boost under the emergency housing program. Inadvertently left out of the HH priority plan, the prefabers had raised a storm of protest (FORUM, Feb. '46). On their part, conventional builders had jealously eyed any move to channel short materials to the prefab producers. It could mean, the uneasy builders argued, that precious materials would be stockpiled while the big-talking prefab boys fooled around starting production and, even more doubtful, adequate distribution.

But housing boss Wilson Wyatt, undisturbed by the doleful prophecies of the industry oldsters, gave prefab what may stand as its biggest push toward the mass market it has long coveted. After that, priorities were automatic.

Last month, after considerable solemn thought, the Civilian Production Administration announced a fairly elaborate plan intended to 1) assure prefabers of the steady flow of materials which they need to maintain assembly line production, and 2) prevent any possible piling up of materials at the plant. At the same time, CPA told softwood plywood manufacturers to turn 50 per cent of their facilities to production of construction and door plywood.

Under the new prefab order, producers can apply for HH priorities on materials to cover three months' production. But deliveries of the approved quantities of materials may not be made more than 30 days before the prefab is ready to use them. This is intended to prevent any possible stock-piling or delay in use of materials.

Veterans or contractors will apply to FHA offices for HH ratings for purchase of prefab houses, and these will be granted on the same basis as materials priorities for any other type of house. The new order also authorizes priorities for any extra materials needed in on-site erection of a prefab.

DESIGN

SHOCK-PROOF FURNITURE

Eames' molded plywood models are equipped with new rubber joints.

When Charles Eames' furniture went on show at the Museum of Modern Art, press and public gaped at such novelties as the scrambled legs of one of the organically molded chairs. But designers gaped even more audibly: Eames' furniture, born of basic principles which he outlined in 1940 with Eero Saarinen and of war-developed factory techniques, looked like the first real design exploitation of the possibilities of large-scale machine production.

The Museum itself billed Eames' show as the "greatest innovation in chair design since Marcel Breuer



EAMES

startled the furniture world with his metal chair and Alvar Aalto introduced the technique of laminated wood furniture." Like the Eames-Saarinen chair which won the Museum's Organic Design Contest in 1940, the new models show plywood seats and backs molded to fit body contours. But Eames' big new idea is the precision-engineered joint—the first flexible joint ever applied to furniture construction. Borrowing a technique long used in mounting engines, Eames has devised a rubber mount for joining wood chair seats and backs to the metal frame. Unlike the rigid joint of the typical chair, the rubber mount absorbs shocks and distributes stresses.

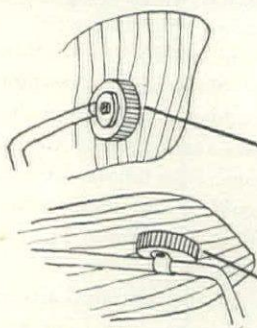
Other new tricks: parts of similar pieces are standardized for complete interchangeability, and nest for shipping or storing. New wood coloring methods are used; deep and permanent stains color the plys without covering the natural surface.

Electronic bonding, which operates with the speed and precision of radio frequency, is basic in production of the furniture. This war-developed technique makes it possible to transmit heat by radio wave directly to the synthetic resin bonds without injuriously heating the wood. It also solves for the first time the problem of a trim connection between upholstery material and wood.

Eames had tried to get some organically molded furniture into production before the war, but manufacturers shied away from the molded plywood process as too expensive. Eames and his wife (whose main interest is abstract painting) went to work on heat-molding methods in their own kitchen. When the oven exploded, they decided to move their experiments to a bakery. About this time, the war started and Eames turned his plywood research toward a new and vital problem: splints and stretchers. His first invention was a molded shell splint made of thin plywood;

(Continued on page 12)

Modern Museum shows Eames furniture

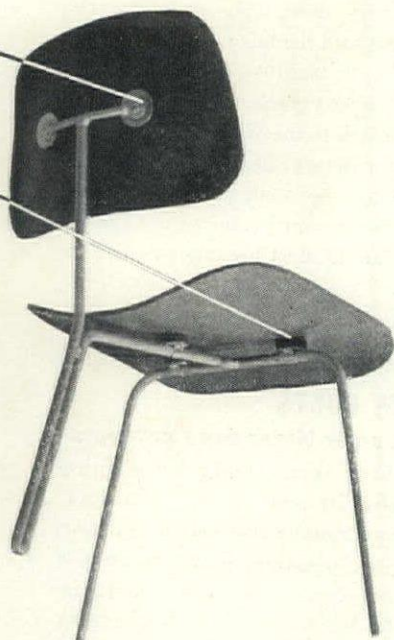
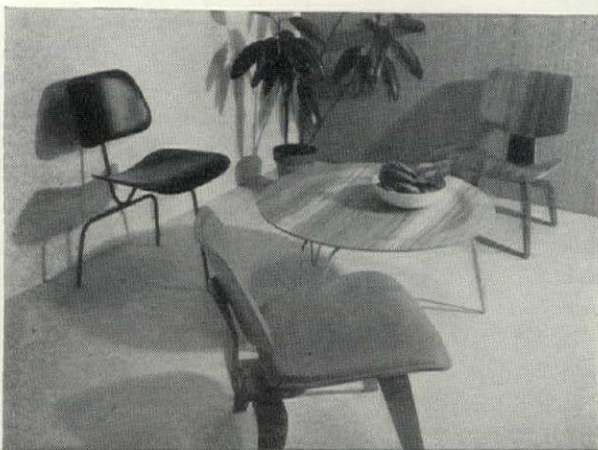


Eames' molded plywood chairs are joined to metal frame by shock-absorbing rubber mount. Used in engine mounting, this rubber joint is first non-rigid connection in furniture design.

Table legs are collapsible, providing for easy household storage and shipment.



Replacing conventional upholstered easy chair, body-molded plywood chair has head support.

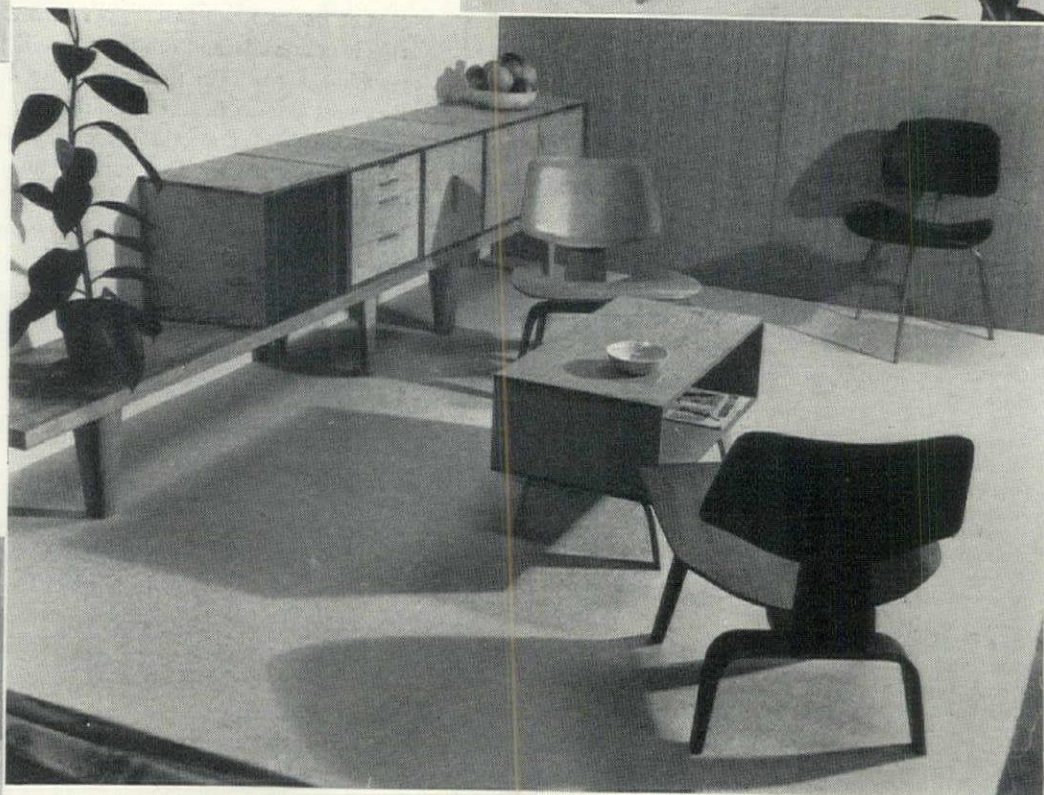
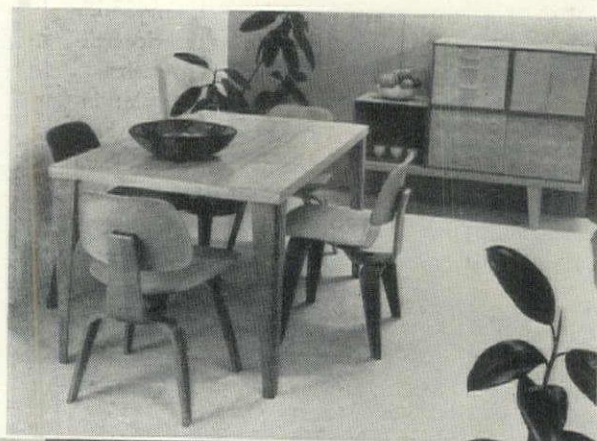


Scrambled legs chair rocks on central bar, with tilting backstop.



Simplified parts are completely standardized for machine production.

All-plywood chairs are joined by rubber mount bonded directly to wood.



Standardized storage boxes lend themselves to many arrangements.

Chair left has foam rubber cushion.

Fabric cover is bonded directly to wood.



GUINEA PIG HOUSE

Detroit builder keeps careful records to show rise in house costs over six years.

Detroit builder George Miller has built more than 7,500 houses over the last 27 years. Never has he seen costs shoot up so fast as they have recently. Since 1940, Miller has kept exact cost records on a standard guinea pig house: a brick veneer bungalow, 24 by 35 ft. plus an 8 by 4 ft. vestibule, with an unfinished attic and a full basement. This year, Miller finds, the cost of this modest 6-room house has climbed by \$3,200 or 63 per cent over 1940. Cost increases are getting steeper and show no sign of leveling off. In the three months between October 1945 and January 1946, Miller says, costs on the house rose \$355.12. He mentioned these reasons: increased price ceilings authorized by OPA on cement block, brick, plumbing material, lumber, hardware, tile; increased labor rates; scarcity of galvanized sheet metal, causing heating contractors to buy at local warehouse prices instead of directly from steel companies; job delays due to material shortages. Here is Miller's comparative cost breakdown:

Item	1940	1946	Increase
Survey	\$ 4.00	\$ 7.50	88%
Permit	5.00	13.00	160
Excavation	100.00	140.00	40
Masonry	935.00	1,525.00	63
Steel	43.54	43.74	..
Plumbing	398.00	560.00	41
Heating	152.00	270.00	78
Lumber	828.41	1,440.00	74
Roofer	101.48	119.52	18
Millwork	19.39	28.25	46
Insulation	35.00	61.00	74
Carpenter: Rough	210.00	400.00	184
Carpenter: Finish	103.00	155.00	50
Floor laying	14.20	24.50	72
Floor sanding	12.00	6.00	50
Sheet metal	28.57	45.00	58
Wiring	87.10	114.52	31
Plastering	245.00	373.50	53
Hardware	72.38	87.83	21
Glazing	15.91	17.50	10
Cement	135.00	198.00	41
Painting	175.00	280.00	60
Tile	145.00	184.00	27
Light fixtures	35.00	50.00	43
Weatherstrip	12.00	19.50	62
Shades	14.00	21.37	53
Linoleum	42.97	69.31	61
Grading	14.00	18.00	29
Cleaning	12.00	18.00	50
Plans	25.00	45.00	80
Miscellaneous	75.00	200.00	177
Commission	249.50	414.50	66
Gas piping	20.00	20.00	..
Sodding	25.00	45.00	80
Comp. Insurance	50.00	100.00	100
Overhead	150.00	330.00	120
TOTAL	\$4,589.45	\$7,444.54	62%
PROFIT	500.55	845.46	69
TOTAL	\$5,090.00	\$8,290.00	63

his next, a radically new kind of stretcher, man-sized and molded to the configuration of the human body.

Eames went into production on these items, with a hastily assembled staff of artists, scenery designers, sculptors, etc. Eventually he sold the business to the Evans Products Co., an aggressive Detroit manufacturer of various machine specialties who bought heavily into the West Coast plywood industry after the war began.

Evans plans large-scale production of the Eames furniture and promises that pieces will be on sale in most big cities before the year's end.

PRICES

PREMIUM COSTS

Banker urges bigger down payments.

How far have skyrocketing house prices leaped above "reasonable normal value?" Many a conscientious real estate appraiser has asked the question, found no answer. Last month one came from mortgage banker John W. Weber of the Bankers National Life Insurance Co., Montclair, N. J. His studied conclusion: the customer who buys a home today is paying about 22 per cent more than he should.

This extra 22 per cent, Weber says, represents "premium" or "unstabilized" cost. He advises buyers to include premium cost in their down payment and avoid trouble later.

Weber reached his conclusion after a careful study of a six-room built in a typical midwestern city. In January 1940 this house cost \$6,026. In October 1945 the same house cost \$9,404. Between the two dates, Weber said, labor costs rose 86 per cent, cost of materials 39 per cent, and overhead, profit and other costs about 56 per cent.

Weber figures that labor will hold 75 per cent of its gain and that 50 per cent of the rise in materials and other costs will be a permanent one. On that basis, the house that cost \$6,026 in 1940 should now cost about \$8,084—or a gain of 34 per cent on a stabilized basis. The current price of \$9,404 adds \$1,320 in "unstabilized" cost, Weber says, "largely the result of demand exceeding supply."

CITIES

LAND WANTED

Many neighborhoods refuse to rub elbows with temporary houses.

All over the crowded U. S. temporary houses were running into site trouble, while the impending housebuilding boom was already provoking shouts of alarm. The reason: property owners feared that erection of temporary houses and a big splurge of haphazard housebuilding would deteriorate property values.

Pittsburgh, for example, badly as it needs the demobilized war houses which the government will ship in, could not make up its mind where to put them. First plans

called for a site in the heart of the Civic Center, where the temporaries would rub elbows with Carnegie Institute and Carnegie Library, the Cathedral of Learning, the Masonic Temple and other imposing neighbors. But property owners' associations rushed to the City Council with protests. Selection of this site, they were sure, would mean depreciation of surrounding values that would be reflected in tax revenues.

Another proposal aroused equally strong opposition: the Lion Club, the Women's North Side Civic Club and the North Side Chamber of Commerce joined forces to keep the temporaries away from genteel West Park. Wrote a Pittsburgh veteran, in a bitter letter-to-the-editor: "I'm sure that if we had realized we could have further inflated real estate holdings, we would have stalled around instead of bringing about such a disturbing abrupt end to the war."

Philadelphia was having the same trouble. Bemused by property owners' protests from all directions, the City Council stalled on choosing sites. One plaintive protest came from a high school principal. The site tentatively earmarked was, he said, the last available place for football practices and baseball games.

New York's Board of Estimates, to the dismay of federal officials anxious to get on with the job, turned down the Bronx site proposed for an emergency housing project. The Bronx borough president had pointed out that the tentatively selected plot was mosquito-ridden, rat-invested, smelly and muddy. The Board agreed that it would be unpleasantly reminiscent of foxhole days.

In Orlando, Fla., the Board of Realtors worried that the impending housebuilding boom might bring another unplanned suburban sprawl. Too much subdividing, the Board reminded, would mean unused streets and utilities, blight the countryside on the edge of the cities for years to come. To head off this possibility, the Orlando Board asked New York planners, Churchill Fulmer Associates, to come and make a regional survey. The Board said it hoped to plan housing developments "in which each home will share the advantages of being a part of modern planned community."

DOWNTOWN SPRUCE-UP

Iowa town plans united remodeling to dress up its shopping center.

Main street in Boone, Iowa, is Story Street, where downtown stretches for four or five blocks of nondescript stores and business buildings. Most of the buildings are 60 or 75 years old; their overhanging cornices, skinny second-story windows, soft-brick facades look much like the downtown face of any small midwestern city.

Boone, in fact, takes pride in calling itself "America's typical midwest city." But last month local merchants were excited about a plan to give the city a new and untypical downtown face.

(Continued on page 16)



Before *Tile-Tex* Asphalt Tile Gets This OK...

... it has to meet Tile-Tex standard quality tests and the requirements of Federal Specification SS-T-306A covering asphalt tile purchased by the United States Government.

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Raw materials are checked to meet the precise requirements of Tile-Tex formulation before any manufacturing commences. During the manufacturing process, periodic tests are carried on to make sure that dimensional accuracy, indentation resistance, impact resistance, and flexure conform to Tile-Tex standards. Before the product is packed for shipment, it must withstand close scrutiny for surface texture, sharpness and trueness of edges, and uniformity of color.

Additional tests on samples taken from each manufacturing batch are made to assure maximum resistance to "curling" and "shrinking" in the presence of excessive moisture—to prevent deterioration of the product in service from attack by capillary

alkalinity on grade installations—and to inhibit Tile-Tex Asphalt Tile against harmful action of strong soaps and cleaning materials.

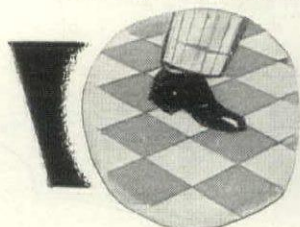
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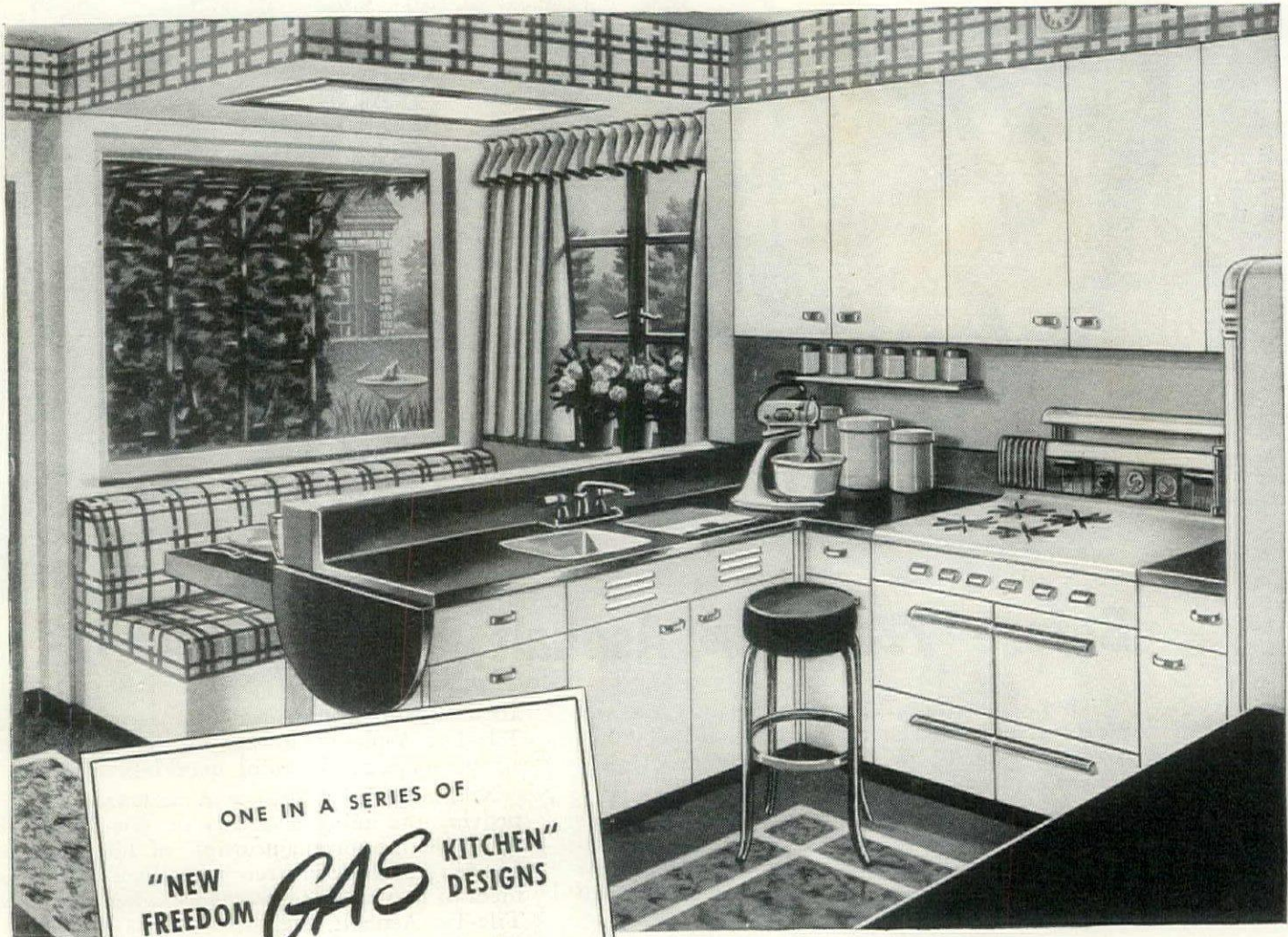
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**LOOK TO *Tile-Tex* IN '46
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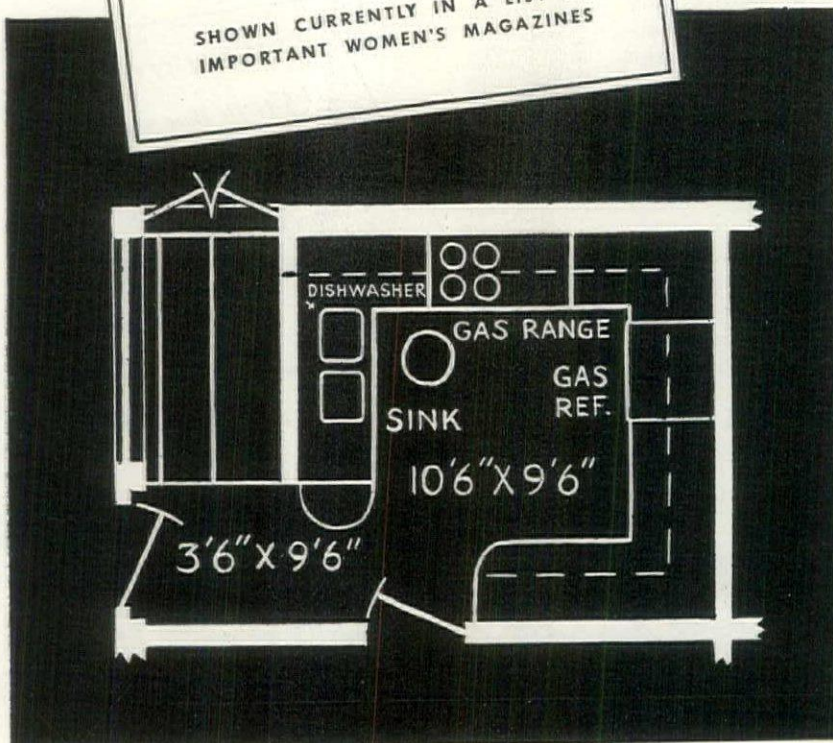


It's the most important room



ONE IN A SERIES OF
"NEW FREEDOM **GAS** KITCHEN" DESIGNS

SHOWN CURRENTLY IN A LIST OF
IMPORTANT WOMEN'S MAGAZINES



in the house—to a woman!

WOMEN spend a larger proportion of their waking hours in the *kitchen* than in any other part of the house. So it's only natural that they should show tremendous interest in the subject of kitchen planning . . . have distinct ideas as to what their "dream kitchen" should look like. Recently, we interviewed a large number of women about the "New Freedom Gas Kitchen" design shown at the left. As architects and builders, you will be interested in their comments.

HERE ARE SOME OF THEIR STATEMENTS:

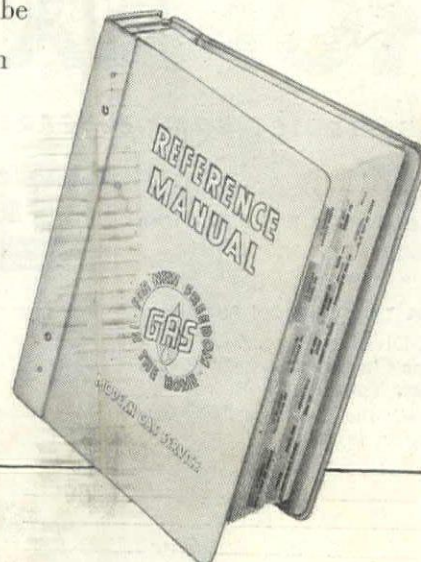
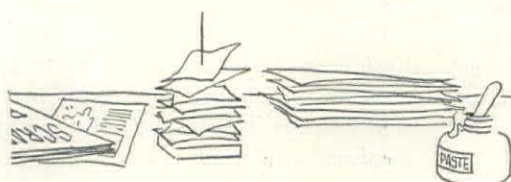
"This is the most compact and workable kitchen I've seen yet."

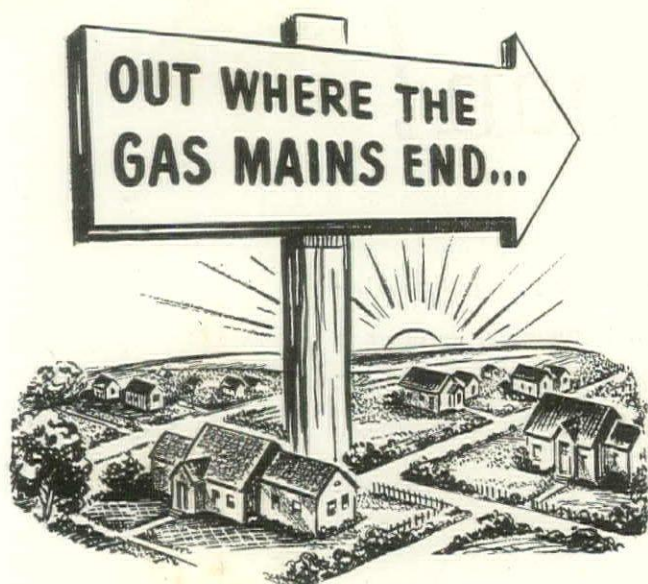
"It's so livable and pleasant." "The dining nook is mighty handy."

"Nothing is out of reach." "I like the sink and dishwasher combination." "The colors are so inviting and cheerful." "You could spend a lot of time in this kitchen and still feel happy."

Best of all—*this kitchen is operated by Gas*—the cooking fuel preferred by more than 20 million urban and suburban homes. Women who have used Gas ranges are sold on the advantages of flame cooking. They praise the speed, flexibility and automatic features of Gas, say it "cooks faster, better, more thriftily" . . . agree that nothing equals the flame for *flavor*. And they like the long-life dependability of Gas refrigerators, too . . . appreciate the fact that there are no moving parts in the freezing unit to wear out or make a noise. Undoubtedly, in the homes you plan and build, you will want to recommend Gas equipment for cooking, refrigeration, water heating, house heating and year 'round air conditioning. Your local Gas Company will be glad to supply you with complete technical details on modern Gas practice. **AMERICAN GAS ASSOCIATION**

NOW READY! For further information on this invaluable builders' and architects' manual, write: American Gas Association, 420 Lexington Ave., New York 17, N. Y.





Specify a NEW FREEDOM "PYROFAX" GAS KITCHEN

• When planning a home to be built beyond the reach of gas mains, be sure to specify a New Freedom "Pyrofax" Gas Kitchen. It's the sure way to client satisfaction. A Magic Chef gas range, a gas water heater, a SERVEL gas refrigerator, and "Pyrofax" Gas Service make a perfect combination. "Pyrofax" gas is real gas, it burns without soot or odor, and compares favorably in cost with other fuels. The modern automatic installation is made quickly and each cylinder contains gas enough to supply the average family for two to three months for cooking. Supply is guaranteed by Carbide and Carbon Chemicals Corporation.

PYROFAX

TRADE-MARK

SUPERIOR GAS SERVICE FOR 25 YEARS



COOKING • WATER HEATING
REFRIGERATION • ROOM HEATING
BEYOND THE GAS MAINS



MAIL THIS COUPON NOW!

"PYROFAX" Gas Division, Dept. A1,
Carbide and Carbon Chemicals Corporation,
30 E. 42nd St., New York 17, N. Y.

Please send me all the facts on "Pyrofax" Gas and
Information Sheets on installation.

Name _____
Firm _____
Street _____
City _____ State _____

The Chamber of Commerce had launched a campaign to persuade downtown store owners to get together on a face-lifting job, commissioned architect Reuben Lantz to redesign two complete blockfronts. These blocks were only the starter. Like the Niles, Mich. plan (FORUM, Oct., '44), the Boone proposal called for coordinated modernization of the whole business district.

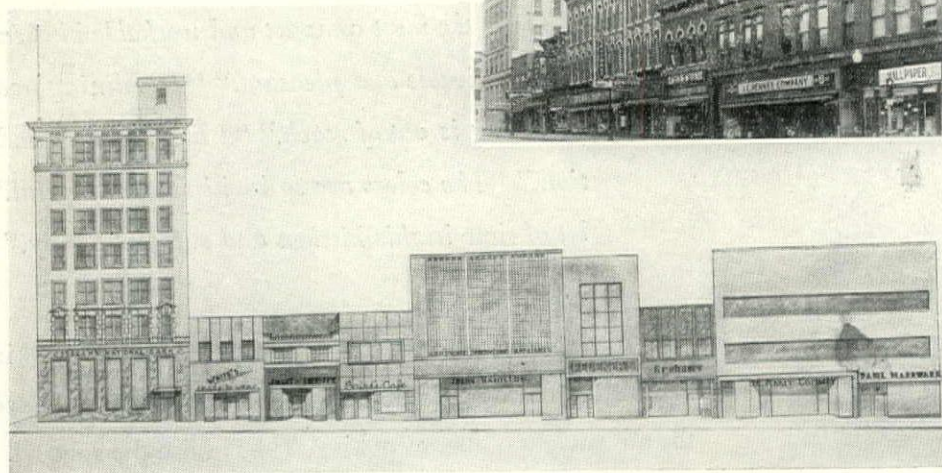
Cost to individual owners, the Chamber figured, would run from \$3,000 to \$8,000. The cost of not modernizing, the Chamber warned, might be considerably more. "Every city that has grown materially has experienced the moving of the business dis-

trict to some other center, where the property owners of the original district have failed to keep up with the times in modernizing their buildings." Boone shoppers, the Chamber pointed out, are already going to the neighboring cities of Des Moines, Ames and even Chicago and Omaha because they find "Boone's shopping facilities inadequate and unattractive."

A good many owners have told the Chamber that they intend to go to work on the Lantz modernizing plan. Since the store front rejuvenation will require materials not commonly used for housebuilding, hope is that the job can soon get started.

Boone News—Republican

BOONE, IOWA plans to remodel its downtown shopping section. Section of architect's plan shows how one main business block would be given a new face.



MATERIAL

TEN YEAR LUMBER SHORTAGE

Senate probes lumbermen's woes.

Lumbermen last month told their troubles—and they had plenty—to a subcommittee of the Senate Agricultural Committee. Most of the lumbermen agreed that price ceilings are at the bottom of their production difficulties. But from Edward C. Crafts, chief of the Department of Agriculture's division of forest economics, came some more basic facts about lumber shortage.

The most unpleasant fact Crafts offered the inquiring Senators: lumber shortage will be around for the next ten years. Unless there is a big drop in employment with an accompanying curtailment of construction activity, there will be an average annual lumber deficit of two to three billion feet throughout the decade.

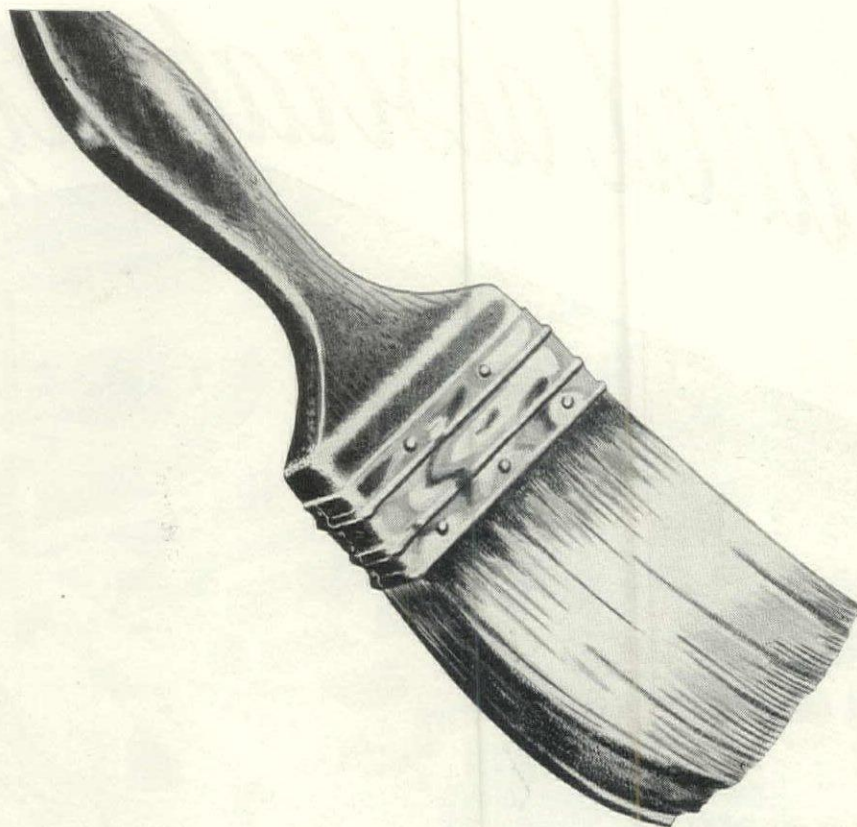
One big reason: "Timber reserves . . . are becoming increasingly limited in all

regions of the U. S." In the Douglas fir region of Oregon and Washington, where about 25 per cent of the national cut is produced, many sawmills are close to the end of their operating life. In the pine areas of the West, few undeveloped timber tracts are left, and many mills have cut into their reserves during the war and will be forced to drop out of production in a few years. Southern lumber production (about 45 per cent of national supply), greatly expanded during the war, may be curtailed by competition with production of pulp, poles, piling, other forest products.

To add to the nation's dwindling lumber supply, Craft thinks cut in the National Forests must be accelerated. To this end, he recommends immediate construction of access roads.

On the hot subject of price ceilings, Craft said calmly: "In the West, profit margins are reported to have declined abruptly during the latter half of 1945 and in Southern pine to have decreased possibly

(Continued on page 20)



THE PAINT-BRUSH THAT TAKES LONG VACATIONS



Once the brush has painted the smooth, friendly surface of an exposed air duct of ARMCO Galvanized PAINTGRIP, its work is done for a good while. Paint doesn't peel or flake off PAINTGRIP as it does with ordinary galvanized sheet steel. Experience proves that paint lasts several times longer when air ducts, gutters and downspouts, furnace casings and other equipment are made of PAINTGRIP.

ARMCO Galvanized PAINTGRIP is

triple-protected. First, the full-weight galvanized coating guards the iron or steel base from rusting. Second, the special mill-Bonderized surface insulates the paint from the raw zinc which all too quickly dries out the essential oils. Third, this neutral surface helps preserve the life and beauty of the paint, giving you that much more additional protection.

It actually costs less to use ARMCO Galvanized PAINTGRIP than it does to

use ordinary galvanized steel and acid-etch before painting. And it contributes to a smoother, better looking job that assures lasting service.

This original Bonderized galvanized sheet can be specified with an ARMCO Ingot Iron, copper steel or open hearth steel base. Use it for all sheet metal work to be painted. The American Rolling Mill Company, 631 Curtis St., Middletown, Ohio. Export: The Armco International Corporation.

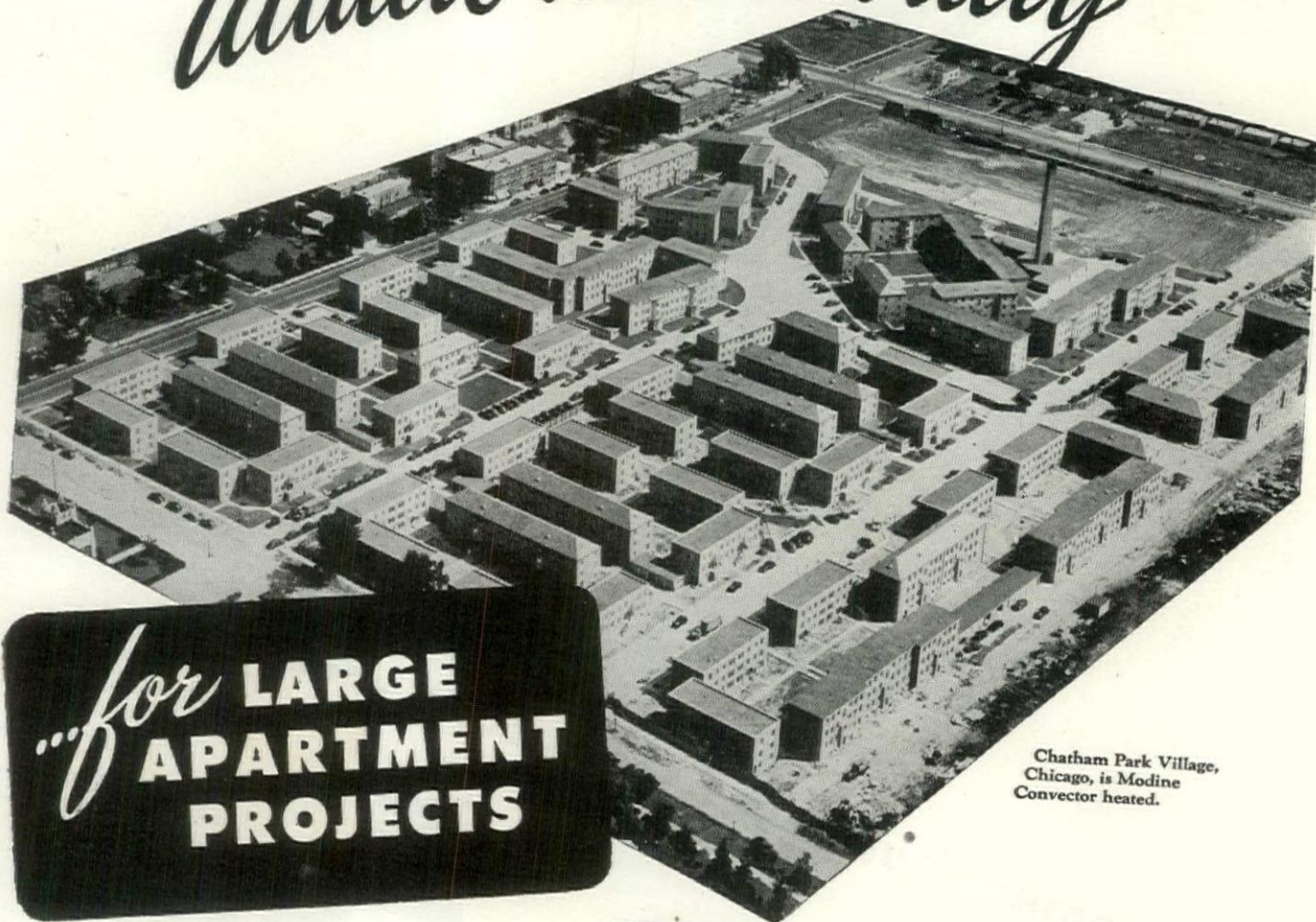
SEE SWEET'S CATALOG for uses, advantages and specifications of these Armco special-purpose sheets:

Galvanized ARMCO Ingot Iron
ARMCO Galvanized PAINTGRIP Steel
 (also available with ARMCO Ingot Iron or copper steel base)
ARMCO Stainless Steel
ARMCO Enameling Iron

THE AMERICAN ROLLING MILL COMPANY
Special-Purpose Sheet Steels



added desirability



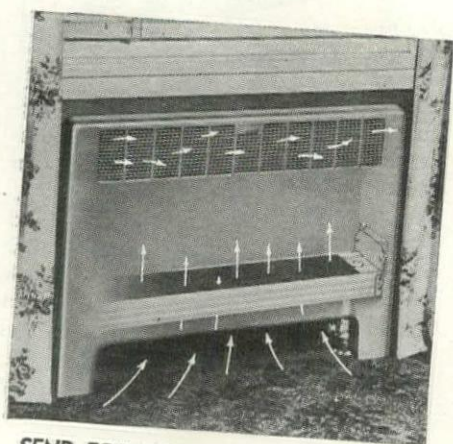
Chatham Park Village, Chicago, is Modine Convactor heated.

...for **LARGE APARTMENT PROJECTS**

Modine

CONVECTOR RADIATION

The more than 550 tenant-families occupying 2245 rooms in the 63 buildings of Chatham Park Village, Chicago, enjoy the continuous even-comfort heating of Modine Convectors. Streamlined simplicity combined with space-saving compactness gracefully adapt Modine Convectors to every room... give the delighted tenants new freedom in arranging furniture and drapes. Equipped with dampers for individual temperature modulation by the tenant... Modine fast-warming *copper* convectors respond almost instantly to modern automatic heat controls. That benefits owners as well as tenants. At Chatham Village, the two-year average cost for both heating and domestic hot water was only 2.7¢ per room per day. Give your clients *all* these recognized benefits of hot water or steam heating... with Modine Convactor Radiation!



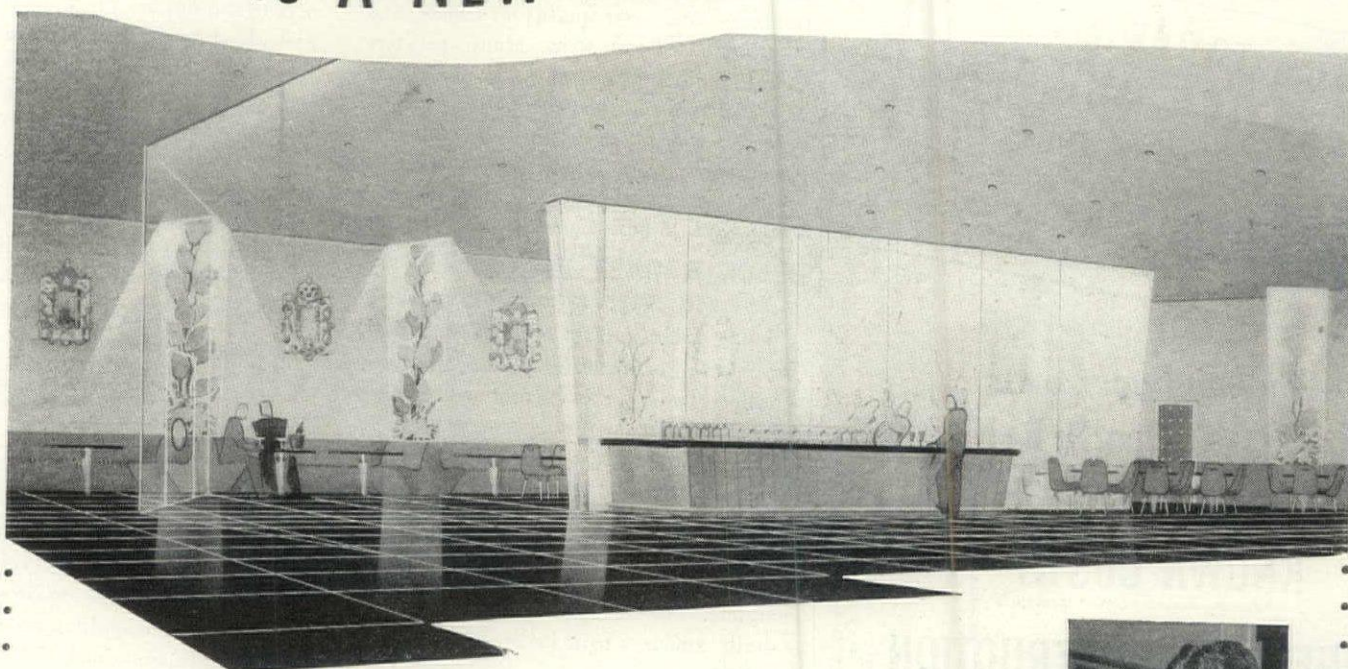
SEND FOR CONVECTOR BULLETINS



Look in your phone book for
Modine representative's name
— "Where to Buy It" section.

MODINE MANUFACTURING COMPANY, 1736 RACINE STREET, RACINE, WISCONSIN

THERE IS A NEW TREND IN STORE DESIGN



Alfred Shaw's conception of a Café Bar...

"The sidewalk cafe and the indoor bar are unified by the triangular shaped Plate Glass partition, through which the decoration carries from the outside to the inside areas. The exterior material is gray Carrara Glass.

"The interior is divided into two spans, and the center partition of mirrors encloses structural columns.

"The unique feature and unusually interesting use of glass in this suggestion is the repeated conservatory design, with large growing plants prominently displayed. The tops of these units, as well as the sides, are of glass, so that light is admitted through triangular openings, giving a brilliant illuminating effect."



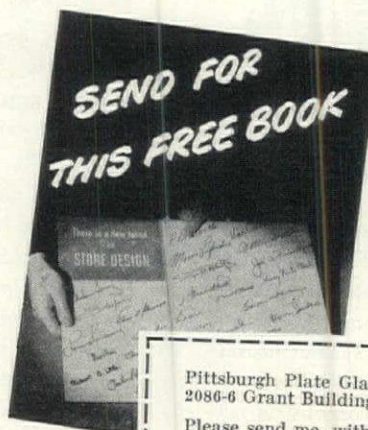
Alfred Shaw

You can safely recommend "Pittsburgh" Products to owners of retail properties. An infinite variety of design is made possible by versatile, adaptable Pittsburgh Glass and Pittco Store Front Metal.

In 21 leading retail magazines, Pittsburgh Plate Glass Company advertising is encouraging merchants to build new sales-pull into store fronts and interiors, and recommends that they consult their architects now about modernizing plans.

A nation-wide system of "Pittsburgh" branches and dealers assures you of prompt and helpful service.

"PITTSBURGH" STORE FRONTS and INTERIORS



It contains 41 designs, submitted by leading architects, for stores, restaurants, service stations, theatres, etc. Every architect, designer and student will want to own this up-to-date reference book of ideas for building or modernizing retail stores. Send the coupon for your free copy of "There is a New Trend in Store Design." It will be sent without obligation.

Pittsburgh Plate Glass Company
2086-6 Grant Building, Pittsburgh 19, Pa.

Please send me, without obligation, a free copy of the book, "There is a New Trend in Store Design."

Name _____

Address _____

City _____ State _____



"PITTSBURGH" stands for Quality Glass and Paint

PITTSBURGH PLATE GLASS COMPANY

TO THE OPERATIVE BUILDER

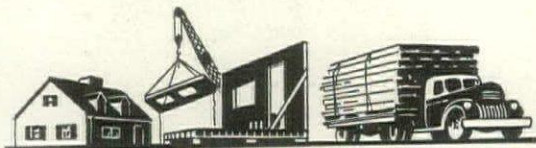


**Why build your own
houses — when P·B·H
can give you**

KNOWN COSTS

**ENGINEERED CONSTRUCTION
UNDIVIDED RESPONSIBILITY**

*plus a saving of two-thirds
in construction time?*



Precision-Built® Construction is the result of ten years of intensive research—at a cost of more than \$400,000. This work—originated by the Housing Division of Homasote Company—is now continued by this corporation. In this time, \$8,000,000 of private homes and \$36,000,000 of Government housing have fully proved the soundness, the economy and the speed of the construction system thus developed. Precision-Building is mass production applied to conventional construction. Your finished houses look just as they would if built conventionally. They can be of any size or design you elect (limited only by current regulations and availability of materials). Write on your letterhead for the full details. Let us show you why this is the practical method of operation for the operative builder.

REG. U. S. PAT. OFF.

PRECISION-BUILT HOMES CORPORATION
TRENTON 3, NEW JERSEY



by half since 1941. To increase output, prices should be sufficient to encourage overtime and night-shift operations and to overcome higher operating costs resulting from increased wages, increased price of stumpage, high logging costs due to inaccessibility and poor quality of timber and other increased cost items. Many operators have limited timber supply and there may be a tendency among such operators to hold back present production in the belief that prices may rise in a year or two; current profits thus must be adequate if their stumpage is to be cut now."

BLACK MARKET DODGES

Two newspapers expose how lumber is being drained from legitimate market.

The *Seattle Post-Intelligencer* explored and headlined two big rackets that are draining lumber away from the legitimate market: the option fraud and the bank loan dodge.

The option racket is a legal way to violate lumber price ceilings. The scheme: a buyer posts earnest money on a mill purchase transaction which he never intends to complete. The forfeited option money thus actually amounts to a bribe, in return for

Detroit Free Press



DETROIT BUILDER examines short ends which are all he can find in current market to use for flooring.

which the mill operator sells the buyer another lot of lumber at ceiling price.

Also within the law are financing deals by which lumber customers buy priority on a mill's output. Sample: a mill operator has a bank loan at 6 per cent interest. An eager customer offers him money to pay off the bank loan, takes preferred stock in the mill to protect his investment. The stock bears a rate of interest much lower than the operator's old bank loan. Such investments, while risky, are legally unchallengeable. Their big advantage: the willing investor gets first choice on the mill's output.

The *Milwaukee Journal* was also interested in the lumber snarl. In a forthright editorial, the *Journal* pointed to these black market practices: "You can buy a mill, maybe at twice the true value, if you want to get lumber. Or you can buy logs, sell

them to a mill at less than ceiling, then buy the lumber from the same logs at ceiling. You have given the mill an extra profit and, in effect, paid over ceiling for the lumber, but its legal..."

"Or you can hire a buyer for \$30,000 a year and not ask questions about what he kicks back to the mill. You're safe, but the transaction between the buyer and the mill is illegal... Another illegal dodge is for a mill to ship one grade and invoice for a higher grade; you pay and keep your mouth shut."

The *Journal* summed up: "All this penalizes the honest dealer and builder and adds to the demand for ending all ceiling prices. It also hikes the price of houses."

BUILDING MONEY

METROPOLITAN'S SITE BILL

Condemnation boosts land cost.

Stuyvesant Town, Metropolitan Life's soon-to-be-started housing development, will occupy 18 city blocks on New York's lower East Side. Metropolitan records show that this big site contained 478 parcels of real estate, which were acquired at a total cost of \$14,500,000—107 per cent of the aggregate assessment. About 40 per cent of the site was acquired through private purchase—the rest by condemnation. Parcels acquired by standard broker methods without benefit of eminent domain brought 79 per cent of assessed value. Parcels acquired by condemnation brought 119 per cent of assessed value plus 6 per cent for fixture awards.

REMODELING BOOST

FHA starts the ball rolling with brisk handbook for lenders and builders.

President Truman himself had appealed to the nation to open its homes to veterans. Making real room for vets means remodeling—the emergency housing program calls for 120,000 new accommodations to be provided by conversion of existing housing.

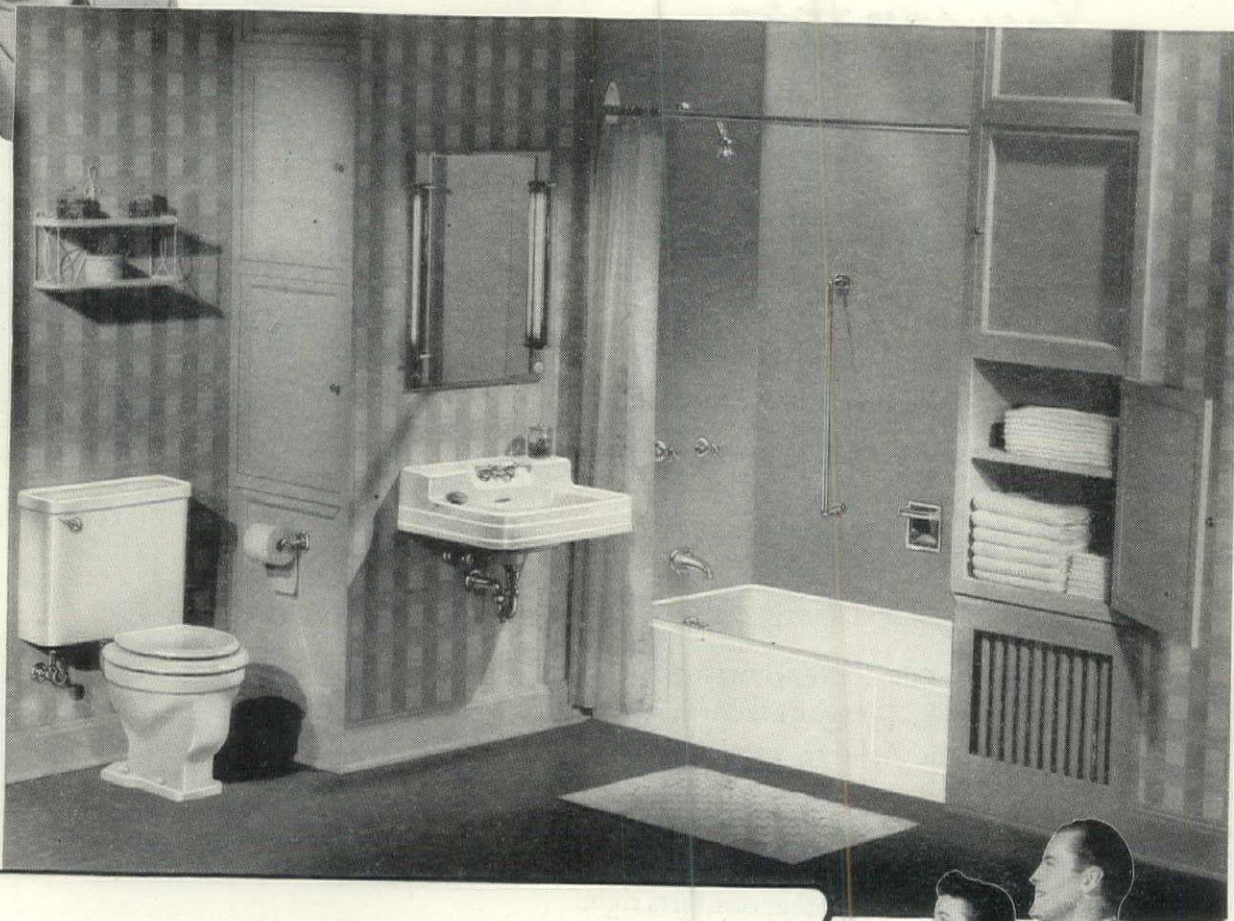
But not all property owners, however willing, are hardy enough to survive all the complex steps necessary to turn some extra space into an apartment-for-rent. Last month the Federal Housing Administration offered a timely handbook pointing out the big present opportunity for selling a one-stop remodeling service.

FHA's briskly-written handbook is intended to show dealers, contractors and lenders exactly how they can make remodeling practically painless for property owners. It describes the newly liberalized financing aid available under Title I (remodeling loans up to \$5,000 where the

(Continued on page 24)



"I LOOK FOR **BEAUTY** AND **QUALITY** IN PLUMBING.
CRANE EQUIPMENT GIVES ME BOTH."



"JUST THINK—REAL **CRANE PLUMBING**
AT A PRICE TO FIT OUR BUDGET."

Whether you are planning homes to meet today's immediate needs or are working on plans for future construction, the new Crane line offers you many advantages.

- The whole line has been freshly styled with fixtures grouped and matched to assure greater harmony.
- Newly developed engineering features mean greater convenience, better operation.
- The breadth of the line permits flexibility in your planning—fixtures designed to suit every taste.

- Throughout, the line is high in quality—backed by Crane reputation for producing the finest in plumbing fixtures.

- And above all, Crane is in production on equipment specifically designed and priced to suit today's building needs.

Your Plumbing Contractor or Crane Branch will gladly work with you on your plans and do everything possible to help provide sanitary equipment when you need it.



CRANE

CRANE CO., GENERAL OFFICES:
836 S. MICHIGAN AVE., CHICAGO 5

PLUMBING • HEATING • PUMPS
VALVES • FITTINGS • PIPE

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

You can take General MacArthur's word for it!

"The Red Cross has done a 100 per cent job in this theatre. Mathematical limitations alone prevent my saying the Red Cross services here have been more than 100 per cent."

—General Douglas MacArthur

SO SPEAKS a distinguished eye-witness of your Red Cross in action. General MacArthur *saw* the Red Cross at your fighting man's side, all through the gruelling months of the Pacific campaign. He saw Red Cross men under fire on D-Day beachheads—sweat it out in foxholes—follow the men with candy, cigarettes and other comforts right up to the firing line.

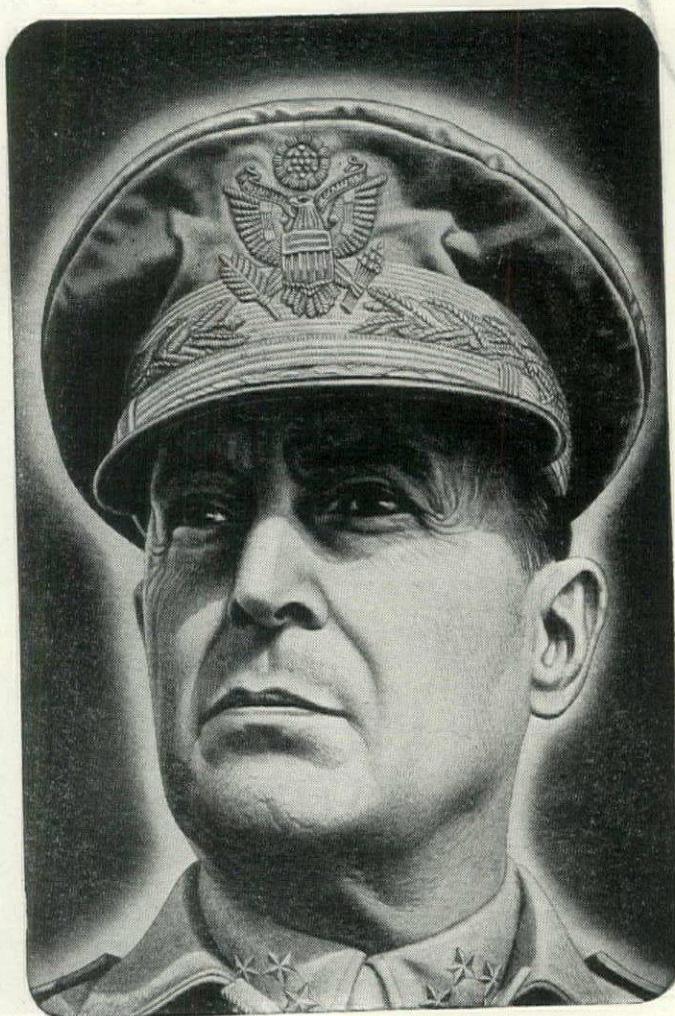
He knows that wherever your fighting man went, your Red Cross went, too—that wherever, whenever he needed respite and recreation, help with a personal problem, or just someone to talk to, the Red Cross was there.

He also knows, as you do, that your Red Cross cannot yet say, "Mission accomplished." It still has an enormous task to do. With your help, it will carry this task to a successful completion.

The War is over . . .

but another battle has begun

Your Red Cross must now fight on three new battlefronts. The thousands of our men still in vet-



erans' hospitals and in faraway lands overseas need its comfort and cheer now, as they did when the bombs were bursting. And as our servicemen return to civilian life, your Red Cross must lend them a helping hand.

And when disaster strikes here at home—fire, flood, tornado—your Red Cross must be ready with aid for the victims. Its war against human misery is never wholly won.

But remember—it is *your* Red Cross. It depends on you for its very existence. So give from your heart. Give generously. Give *today!*

YOUR Red Cross MUST CARRY ON . . . *GIVE!* +

ANOTHER ANGLE ON

Windowalls



THE variations and combinations of Andersen stock-size complete wood window units that can be used to form *Windowalls* are infinitely numerous. In this New England example the architect has placed four operating sash in an attractive angle

bay that provides a spot for a dining room table. Thus a view is opened up... ample ventilation and light supplied... yet the windows perform more than the functions of windows—they insulate and protect the room against extremes of temperature.

TO SPECIFY THIS WINDOWALL, LIST ONE ANDERSEN CASEMENT UNIT NO. 4428 AND TWO UNITS NO. 2418. FURTHER DETAILS IN SWEET'S CATALOG.

Andersen Corporation • BAYPORT • MINNESOTA

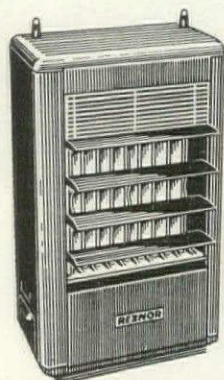
"Yes. Heat where you want it —"



REZNOR

Gas unit heaters

1. Heating... trouble-free
2. Economy... fuel used only when heat is needed
3. Investment... lower
4. Maintenance... lower
5. Floor space... saved
6. Gas fired... clean heat
7. Area... any size



★
Propeller fan and blower types. Nine sizes of each.

REZNOR
MANUFACTURING CO.
Since 1888
MERCER, . . PENNA.

NO BOILERS • NO STEAM LINES
NO FUEL STORAGE • NO FIRE TENDING

new accommodations will be rented to veterans) and outlines every step a dealer or contractor must take in applying for a loan on behalf of the property owner.

"Owners do not generally seek out lending institutions or contractors to offer their properties as subjects for remodeling," FHA says, advising Building men to seek prospects "by active canvassing, by advertising in newspapers, by radio, by direct mail, by telephone solicitation." Appended is sample copy for ads, a bevy of radio spot announcements, text for direct mail efforts. FHA, on its part, seems determined to make tapping this lucrative business opportunity as easy as possible for everybody concerned.

DOWLING IN WASHINGTON

Big New York operator buys Capital's biggest holding, plans to add to it.

To the City Investing Co.'s 40 skyscrapers, office buildings, hotels and theaters, Robert W. Dowling last month added another gilt-edged property. Making his first investment outside of Manhattan, Dowling acquired the \$6 million Westchester apartments, largest private holding in Washington, D. C.

Sellers were a group of French and Dutch capitalists who had bought the property eight years ago from Washington builder Gustave Ring. The sale was a sign that refugee money is on its way back to help out in Europe's rebuilding.

The 2,200-room apartment group is located on a choice crest of land near the Washington Cathedral. Of its 500 tenants, 54 are admirals and generals. Dowling also bought 27 adjoining acres, where he plans to build more apartments.

APARTMENT BUILDING AHEAD

Life insurance money may move into Missouri, but is blocked in Michigan.

Missouri hoped for one big answer to housing shortage as the state legislature opened the way for large-scale investment in rental housing and in urban redevelopment. The Prudential Insurance Co. was reported ready to go to work on a big housing development in St. Louis. Michigan restively probed a constitutional restriction which blocks the several big insurance companies now reported to be eying housing investment opportunities in Detroit. The New York Life Insurance Co. bought 141 acres in Flushing, Queens, where it planned to build a large-scale, garden-type apartment development.

The Missouri bill, reported near passage at month's end, gives redevelopment corporations the right of eminent domain in acquiring land for rebuilding—upon the approval of the Board of Aldermen in the city concerned. It empowers them to accept

(Continued on page 28)

WHILE YOU DREAM ABOUT IT...

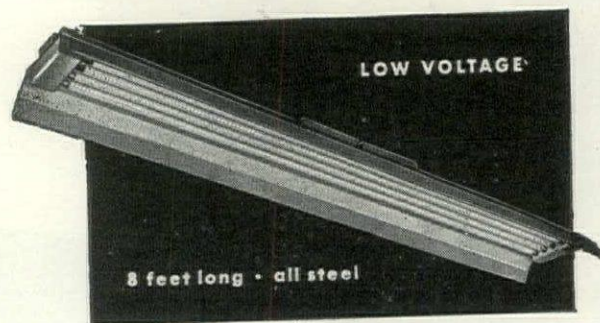
some wide-awake concern
will be arranging to
manufacture

FORD FACTORY BUILT HOMES

for distribution in your
locality . . . Why not let
us tell you how you can
obtain this valuable
franchise for yourself?

FACTORY BUILT HOMES, INC.
McDonough, N. Y.

*COLOVOLT COLD CATHODE INDUSTRIAL FIXTURES



Here is the new Colovolt industrial fixture, one of a complete line of industrial and commercial "packaged" units. Equipped with the standard 93" Colovolt 10,000 hour lamp, Colovolt fixtures may be used singly or in continuous line lighting in multiples of 8 feet. Instantaneous starting, no flickering, guaranteed for 1 year except for failure due to breakage are extra advantages of the Colovolt Cold Cathode low voltage fluorescent lamp. The long life expectancy of Colovolt lamps may be realized even when constantly turned on and off, and pre-scheduled re-lamping, with no loss of production or time, is now possible with Colovolt installations.

Contact your electrical wholesaler or jobber, or write us for full details and prices.

*Trade mark registered U. S. Pat. Off.

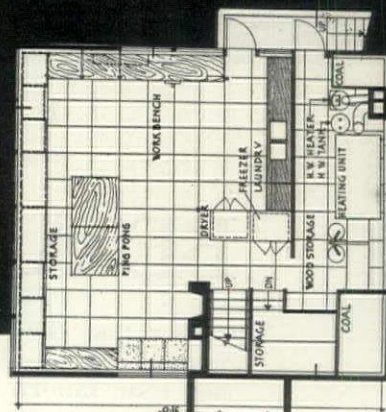
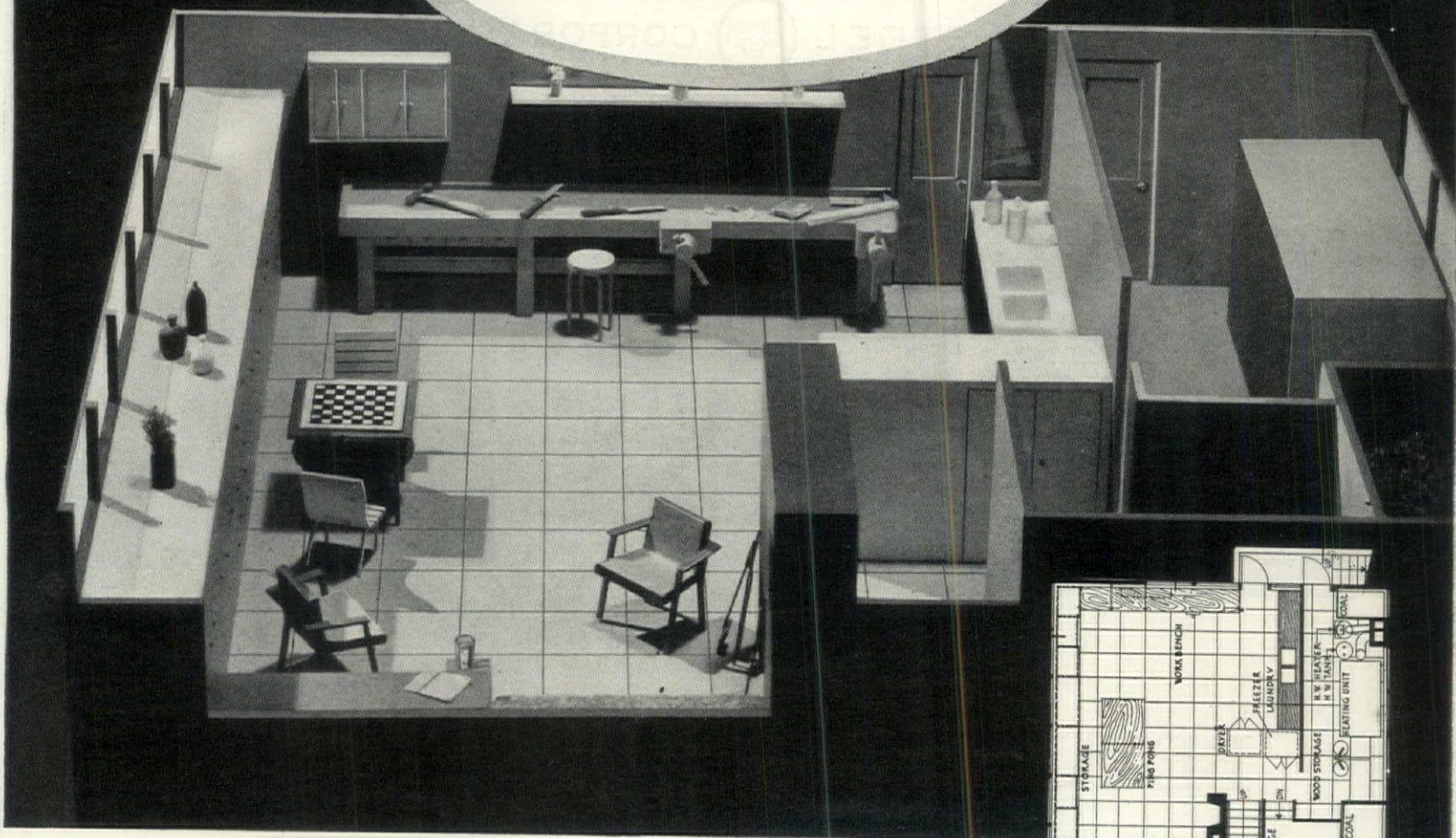


GENERAL LUMINESCENT CORPORATION

428 S. FEDERAL STREET

CHICAGO 3, ILLINOIS

*Don't miss this chance
to have your home include a*
Bonus Basement



ARCHITECT: SIMON SCHMIDERER, NEW YORK, N. Y.

Have you got your heart set on having a real recreation or rumpus room—such as is shown above—when you build or remodel your home?

Well, there's no reason why you *can't* have one in your basement. No reason, that is, if you take this tip: *make plans to heat with Bituminous Coal*. If you do that, not only will you be able to have the kind of basement you want—but you can have a "Bonus Basement"... furnished and paid for in only a few years' time by the savings that come from heating with this most economical and dependable of all home-heating fuels.

Not only that—you'll also find Bituminous Coal gives the steadiest, most

uniform heat. And when you install one of the marvelously efficient new stokers, Bituminous Coal is also an "automatic" fuel—even to the point of ash removal. Clean, quiet, odorless, smokeless!

Let coal solve *your* home-heating problem—just as it has for more than 4 out of every 7 homes in the United States. And, into the bargain, let it buy you a "Bonus Basement."

For further information and suggestions, take advantage of the special offer at the right. Then talk it over with your architect or builder.

BITUMINOUS COAL INSTITUTE
60 East 42nd Street, New York 17, N. Y.

SPECIAL OFFER! The "Bonus Basement" shown above was modeled from one of 20 architects' plans for an ideal basement of a modest home. All 20 designs—showing basement and upper floor plans—have been reproduced in a helpful and informative book. While the edition lasts, we will send you a copy for only 10¢ postpaid. Mail your request to the address printed below.

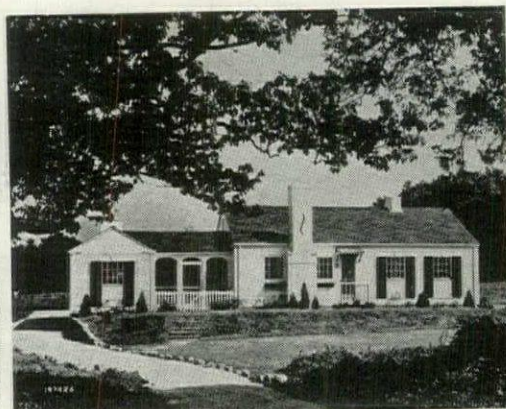
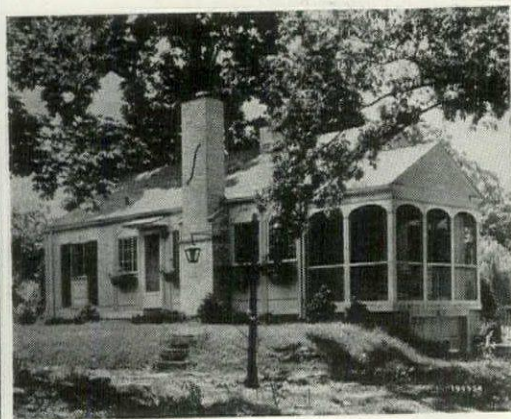
A WORD TO THE WISE! Most houses are now designed to permit the use of Bituminous Coal. Be sure *you* can have the advantages of this low-cost, dependable fuel in your new home. A little care in planning for coal storage and a chimney flue of normal size will assure that you can enjoy the health, comfort, and dependability that only modern coal heat can give you. And it will also assure you of *economical* heating for the life of your house, because this country's 3,000-year coal supply makes certain that shrinking reserves will not force coal prices upward.

FOR ECONOMY, DEPENDABILITY, AND HEALTHFUL HEAT... YOU CAN'T BEAT BITUMINOUS COAL

(This is one of a series of advertisements now appearing in home-makers' magazines)

Gunnison Homes INC.

UNITED STATES STEEL  CORPORATION SUBSIDIARY



Typical of the thousands of Gunnison Homes that are satisfying owners in every climate throughout the United States.

BE A GUNNISON DEALER

Now that the war is over you will want to enter a business that will completely Satisfy Your Ambition. You will want health, happiness, and security—for yourself and your family.

Homes are a basic necessity. Everybody wants to own one. Just as guns, tanks and planes were the instruments of War, so likewise will modern, comfortable homes be the instruments of Peace.

The Babson Chart of the Growth Curve of New Industries shows that Prefabricated Homes will be the next big new industry to enter the period of rapid growth.

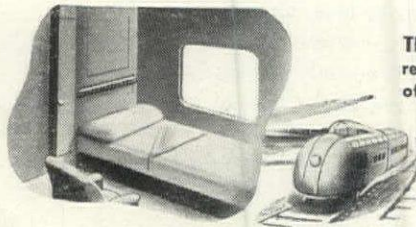
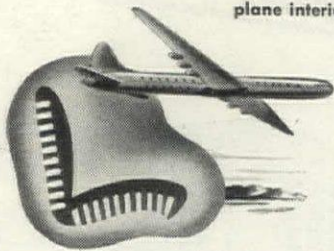
The Gunnison Dealer Organization represents the "cream of the crop." If you are experienced in specialty selling and have a sound business and financial record, you can Satisfy Your Ambition, by becoming a prosperous Gunnison Dealer in your home town.

You will be your own boss and will enjoy healthful, pleasant, easy, profitable, non-confining work. Your success as a leader in your community will be assured by our thorough Dealer Training Courses and the continuous aid and guidance that is provided by our Regional Zone and District Sales Managers. Write to our Dealer Franchise Division No. 5 for complete information.

Gunnison Homes INC.

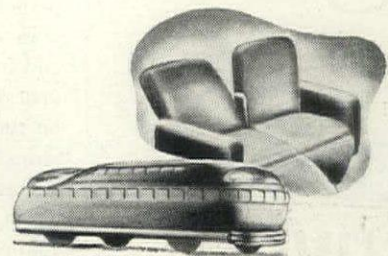
SUBSIDIARY OF
UNITED STATES STEEL CORPORATION
New Albany, Indiana

PLANES: Koylon lightness fits plans for tomorrow's plane interiors.

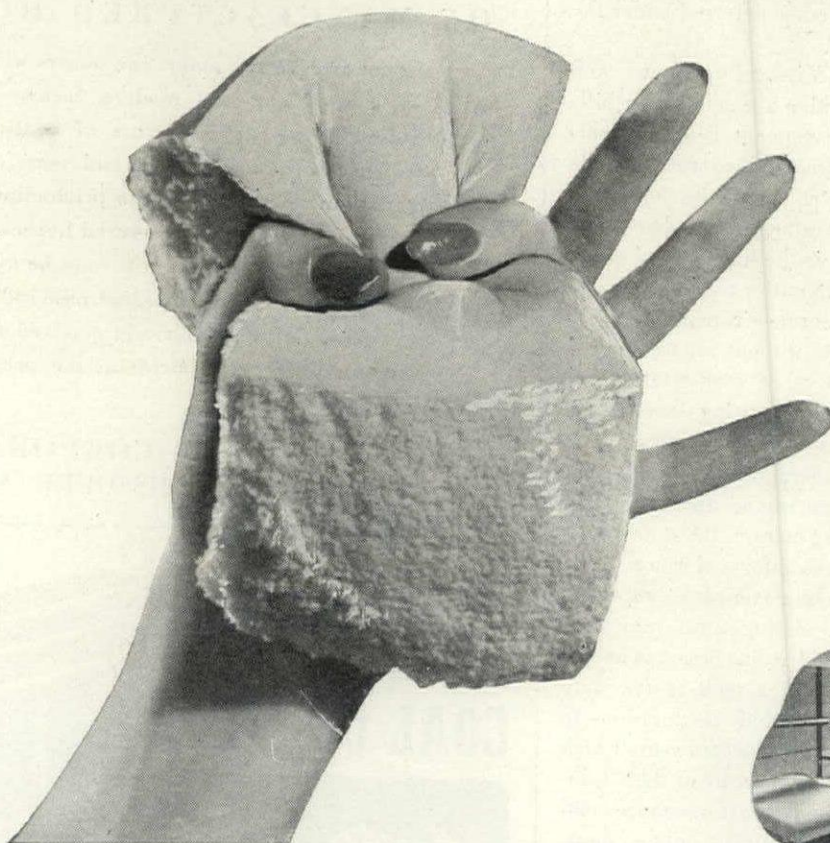


TRAINS: Koylon all-condition restfulness is ideal for the cars of tomorrow's streamliners.

SERVING THROUGH SCIENCE



BUSES & TRUCKS: Koylon clean, durable comfort is perfect for tomorrow's heavy duty business.



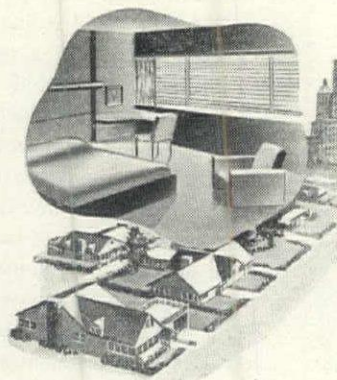
**Build Koylon
comfort into your
decorating
schemes**

WHEN A PRODUCT ushers in a wonderful new era of comfort, it belongs in your plans. That's what Koylon did.

For eleven years, Koylon has proved itself the comfort cushioning of the age. It breathes comfort — the kind that will be appreciated by the user — the kind that means constant good will for you.

At every contact with the body, thousands of tiny Koylon latex cells release air. That's the famous Koylon breathing action — the secret of Koylon's comfort. It's also the secret of Koylon's resilience and natural cleanliness — dust-free, moisture-free, vermin-free.

Light, long-lasting, a single unit free of bothersome parts to wear out and lose shape — Koylon is both simple and amazingly inexpensive to maintain. It has proved its value in the past — and it belongs in the future. Particularly, Koylon belongs in your future plans.



INTERIORS: Koylon adaptability is especially suited for upholsterers and designers of tomorrow's interiors.

Comfort Engineered
"U.S."
Koylon
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FOAM



UNITED STATES RUBBER COMPANY

"U.S." KOYLON FOAM DIVISION • MISHAWAKA, INDIANA



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When the owner wants quick delivery of his new or remodeled building and there's damp plaster to paint—use Luminall. It is a beautiful flat paint that is not damaged by dampness in new plaster. Luminall is a water-mixed paste casein paint. It has a porous film that permits moisture in new plaster to evaporate without damage.

Luminall is made in a wide range of colors—soft, lovely tints. Use wherever a flat paint is desired, from low-priced residences to biggest hotels, hospitals, and office buildings.

You'll like Luminall's speed, too—one coat covers—use a wide brush—dries in 40 minutes. Very economical.

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LUMINALL



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Send for "Painting for Light & Decoration" which gives complete data, information, and specifications on the use of Luminall in non-residential structures.

NATIONAL CHEMICAL & MFG. CO.
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federal grants or loans and provides a limited tax freeze. For the first 10 years taxes would be paid on only the assessed valuation of the land at the time of acquisition and not on the value of the improvements. For the next 15 years tax would be based on 50 per cent of the true value of the land and of the improvements. After this 25-year period, full taxes would be paid.

In exchange for partial tax exemption and for exercise of the public right of eminent domain, redevelopment companies will be required to limit their earnings to not more than 8 per cent a year. Earnings in excess of this must be used to reduce rents or in payment of taxes deferred under the limited exemption.

Approved by Missouri's Senate and awaiting House action are companion bills broadening the investment field of insurance companies. One of them would enable Missouri insurance companies to make either outright investments in urban housing or investments in the securities of urban redevelopment corporations. Another would authorize state insurance companies to retain housing assets without regard for the time limit set on other real estate. The third would legalize housing investments by out-of-state insurance companies.

In Michigan, where New York Life Insurance Co. experts wound up a survey of the Detroit housing market, the state Housing Commission asked for a clarification of the right of insurance companies to invest in rental housing. Michigan Attorney General John Dethmers' ruling was not an encouraging one. After a look at the state constitution, which forbids corporations to own property for more than ten years which they do not use within terms of their franchise, Dethmer decided that insurance companies may invest in housing only as mortgagees or as vendors of land contracts. In case of default, the companies would have a ten-year period to dispose of the property.

With damned-up insurance reserves actively seeking investment and with housing shortage underlining the need for new capital resources in this underfinanced industry, Michigan's legal stumbling block seemed slated for an eventual discard. But a constitutional amendment takes time: concurrent resolutions from both legislative houses and approval by popular referendum are required.

Michigan already has a basic law opening the way for private investment in urban redevelopment. Passed last spring with vigorous backing from the Detroit Construction Industry Council, the law permits municipalities to condemn blighted land for lease or re-sale to private investors at an economic price for redevelopment. If it is

(Continued on page 32)



OF MANUFACTURED HOMES

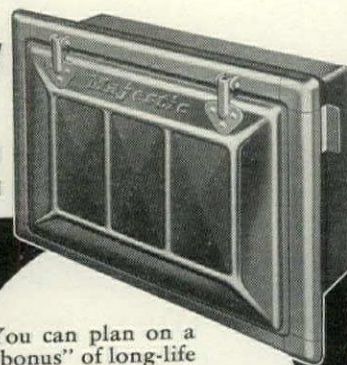
In the near future many fine houses will be coming out of our new modern factory — houses backed by twenty five years of continuous experience in home building and years of experimentation which lead to the production of hundreds of wartime manufactured houses. Though this new Post-war home will soon be available to buyers within a three hundred mile radius of our new plant, demands already received make further commitments difficult at the present time.

HOME BUILDING CORPORATION
SEDALIA, MISSOURI

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COAL CHUTE



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FORMED STEEL
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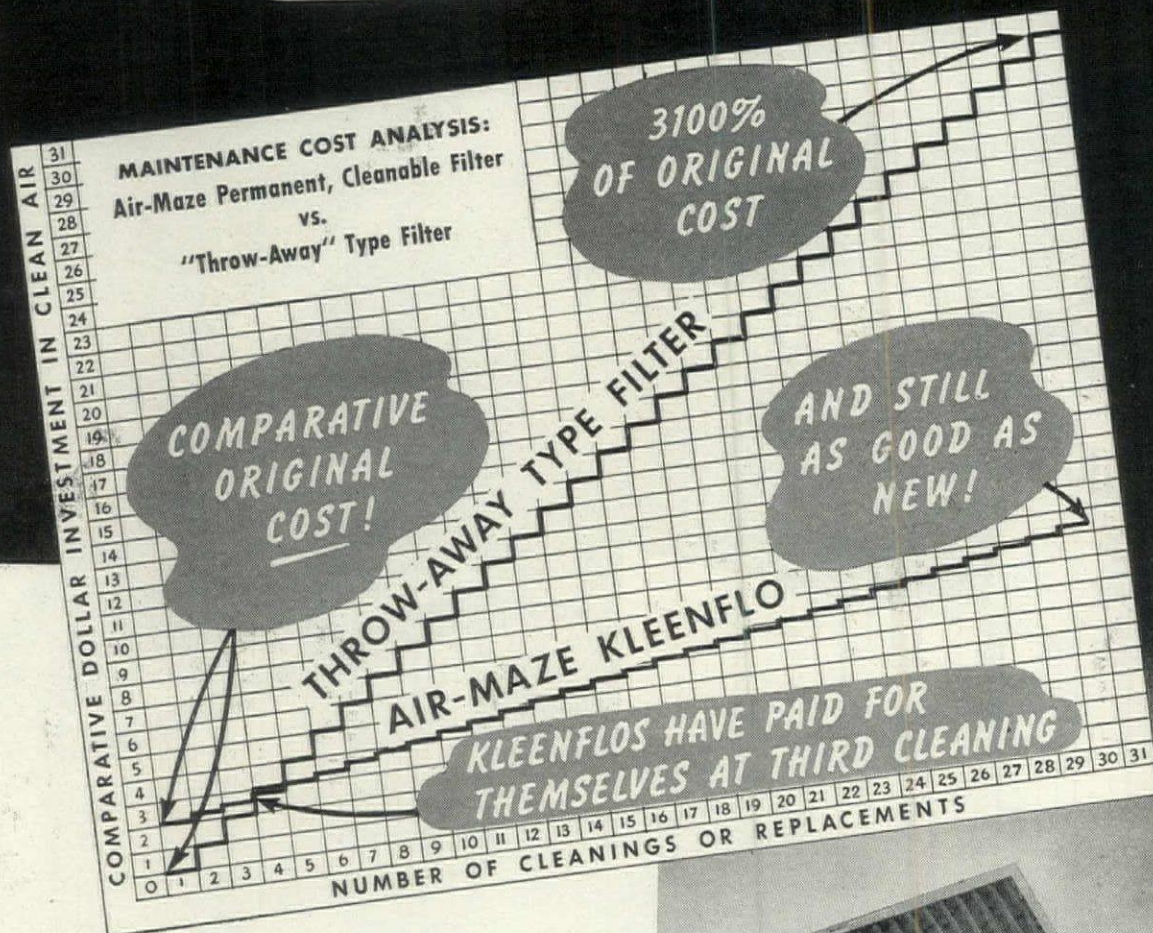
The structural advantages of heavy-gauge formed steel products were proved by the performance of many Majestic-built war needs. These same advantages are now being featured wherever possible in the famous line of Majestic Building Necessities.

You can plan on a "bonus" of long-life and foolproof performance from this rugged, economical Majestic Coal Chute. It is priced to the low-cost, low-rent home-building picture—but built to match the demands for any class of construction. The sturdy door, heavily reinforced with deep ridges, is mounted on heavy-duty hinges permanently welded to the rugged formed steel frame. Sturdy lugs anchor the strong, angle-reinforced body solidly into the masonry. Durable rust-resisting asphaltum finish; full range of sizes for any wall construction. Write for details on the #550 Majestic Coal Chute.

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1069 Erie Street
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Air-Maze air filtration is economical because it offers the right filter for the right job. You have the advantage of getting a filter that is specially engineered for that particular job. This assures top filtering efficiency in every application.

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Representatives in principal cities. In Canada: Williams & Wilson, Ltd., Montreal, Quebec, Toronto, Windsor; Fleck Bros., Ltd., Vancouver, B. C.



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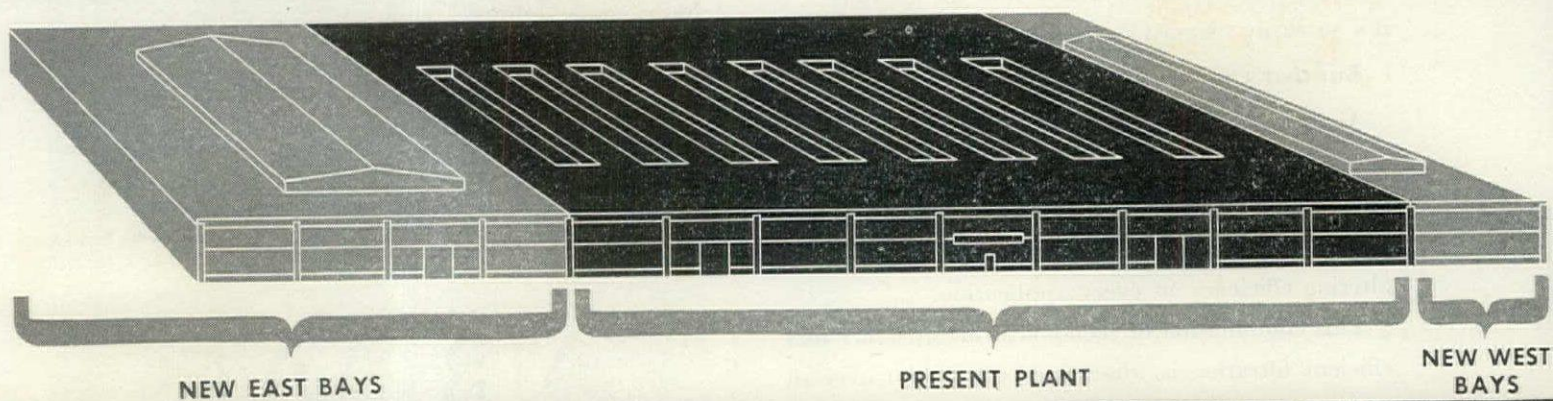
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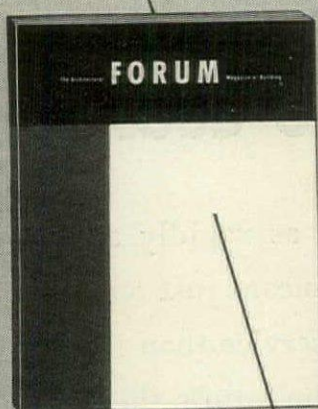
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which will rebuild
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necessary for the city to absorb excess cost to bring the land within the reach of private enterprise, the loss would be expected to be absorbed by the increased tax revenues resulting from the improvement. Before the right of eminent domain may be exercised under this law, 60 per cent ownership consent is required. The Construction Industry Council hopes to secure an amendment removing this ownership consent provision, pointing out that many slum property owners find their investments profitable enough to be unwilling to sell.

DESIGN

KITCHEN RE-DO

More working space in low-cost unit.

"How many shelves in the broom cabinet can you reach?" Exactly 100 per cent of the women queried in a poll of New York's low-rent Vladeck Houses said "none." Most of the Vladeck housewives said it was next to impossible to reach top shelves in other cabinets, that work surface was inadequate, that there was not room to store more than a few days' supply of groceries.

Working from these familiar complaints, Karin Peterfy, director of the Home Planning Workshops of New York's famed Henry Street Settlement House, redesigned

Phyllis Dearborn



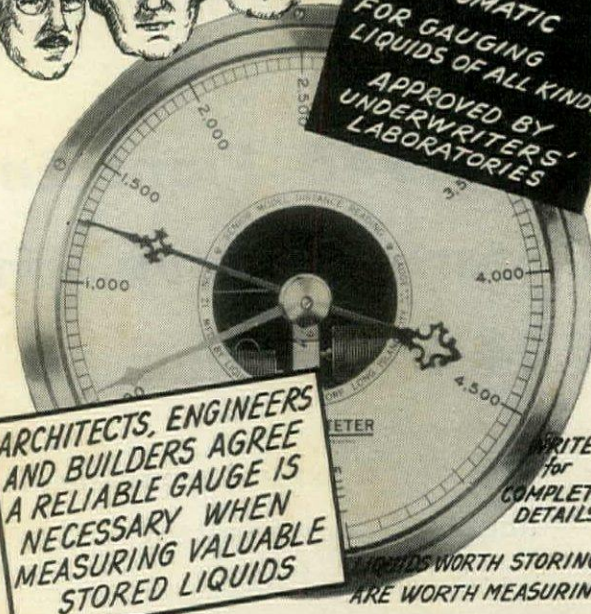
EVERY SHELF can be easily reached.

a standard kitchen. Putting the same amount of equipment into the same floor space (66½ sq. ft.), Mrs. Peterfy increased the housewife's working surface by about 300 per cent. Other dividends: a ventilated bin for storing a week's supply of vegetables, a "broom-vent" where a wet mop can be hung and dried, spacious shelves at shoulder level. Cabinet doors are split and hinged to bend backward when open.

Hope is that designers and builders of low-cost housing will like the Peterfy kitchen plan well enough to adopt it.

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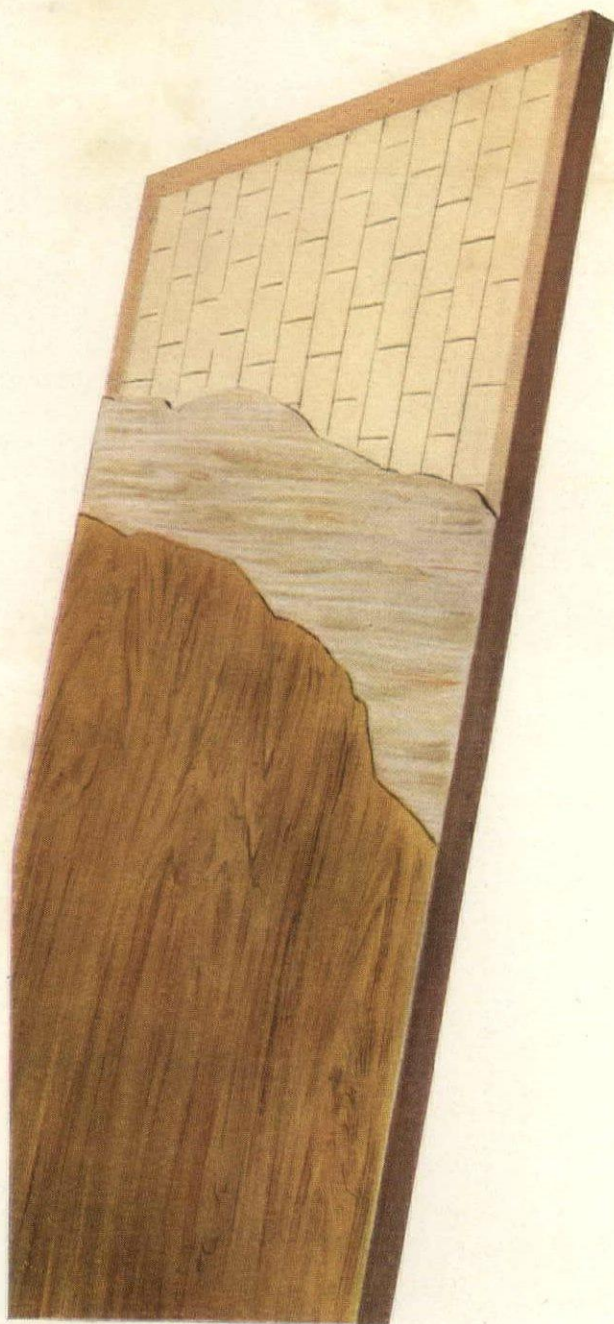
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HARD Michigan Maple faces over RODDISCRAFT cores and crossbanding welded into a solid, waterproof unit, under heat and pressure, by the RODDISCRAFT process, creates a door that will stand up under heavy traffic and harsh treatment.

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Roddis offers the pick of Michigan Maple from its 30,000-acre northern Michigan tract—selected and cut by Roddis woodsmen—matched and finished by Roddis craftsmen. Specify RODDISCRAFT Doors in Michigan Maple to get long life and lasting beauty. Available in selected white, or unselected for painting. Consult your local millwork and fixture manufacturers—and lumber dealers.

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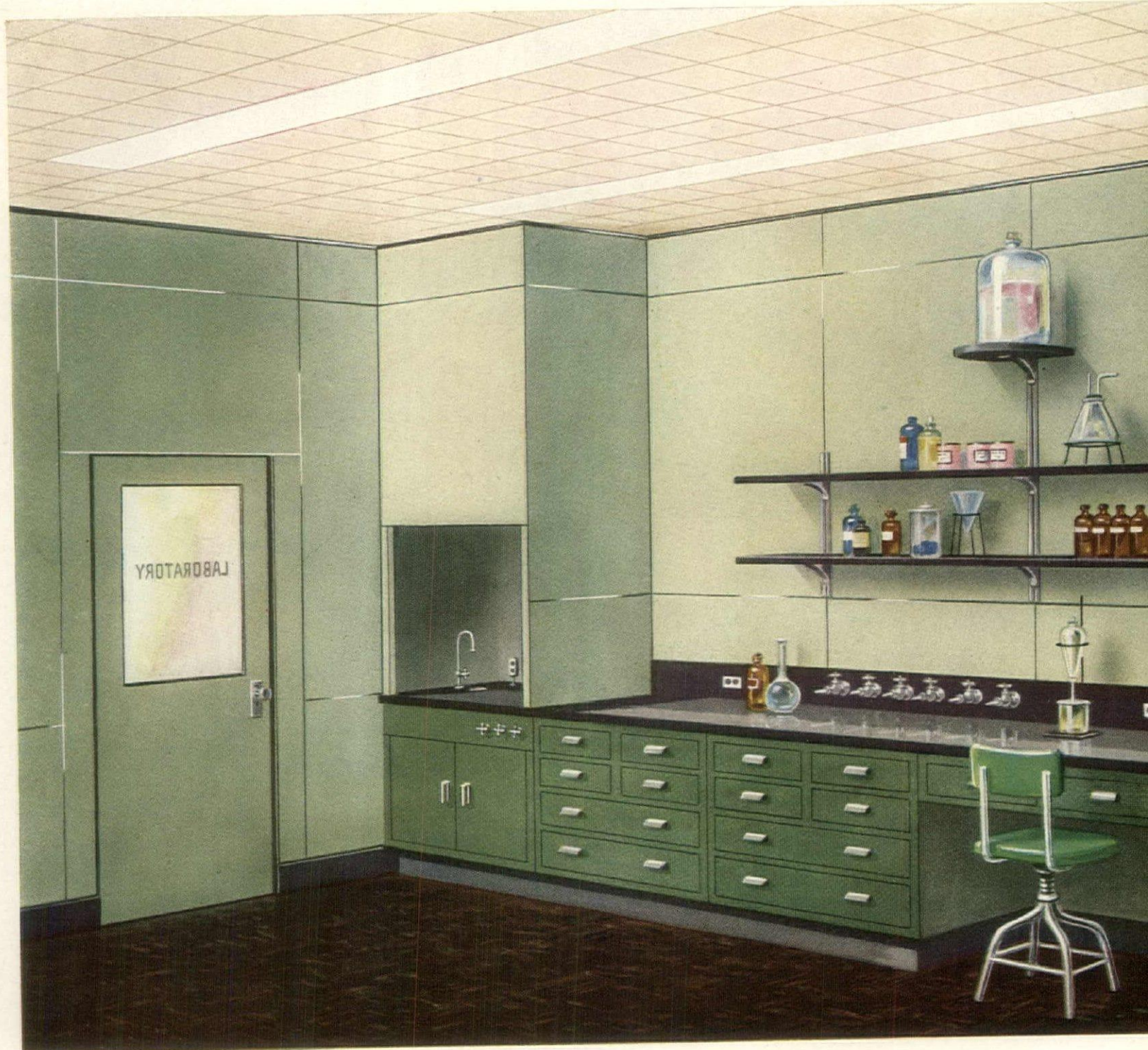
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**Future changes in laboratory layout easily possible with these
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ACOUSTICAL CEILINGS—With high coefficients of sound absorption and light reflection, Johns-Manville Acoustical Ceilings are proved aids to concentration and working efficiency. Demountable units give ready access to wiring, etc., in the furred space, and allow quick relocation of the ceiling if desired. An exclusive Johns-Manville patented construction system permits interchangeability of flush-type fluorescent lighting and acoustical units.



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For Research Laboratories

in the expanding new world of Industrial Science

**Johns-Manville Unit Construction provides flexibility
to meet ever-changing needs . . .**

SINCE industrial progress depends more and more on scientific research, architects today are faced with the problem of developing techniques of laboratory design.

Johns-Manville Unit Construction offers a system of *flexible* construction—walls, ceilings, floors—especially designed to accommodate laboratory needs and facilities.

The system makes possible endless revisions of space-use! Laboratories can be economically rearranged, enlarged, reduced, or even relocated according to the inevitable shifts and changes of future needs.

Three Johns-Manville materials are combined in Unit Construction:

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2. **Acoustical Ceilings . . .** reduce noise. Demountable units can be easily taken down and relocated.

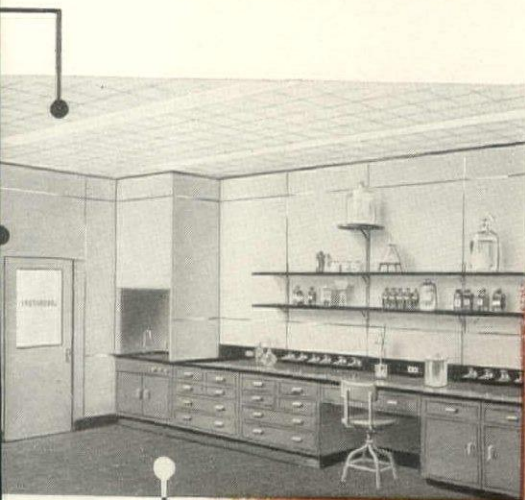
3. **Colorful, Resilient Floors . . .** quiet, long-wearing, comfortable underfoot. Small units permit easy extension or repairs.

These component parts are integrated into a single inclusive system, *Unit Construction*. You write *one* specification . . . place undivided responsibility on *one* manufacturer.

Yes, the finest achievements of Johns-Manville research can now benefit Research Laboratories themselves!

Send for the complete details of this important advance in laboratory design and construction. (Separate brochures also available for each of the three materials in Unit Construction.) Write Johns-Manville, Dept. AF-4, 22 E. 40th St., New York 16, N. Y.

Typical example of J-M Unit Construction—a Research Laboratory with complete structural flexibility, projection-free walls that are easy to clean, special bracket supports, shelves and piping, many other ideal features.



Johns-Manville

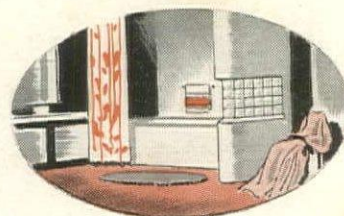
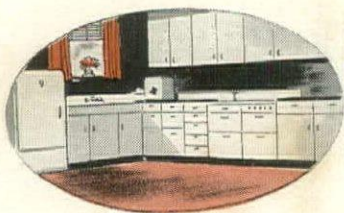
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WALLS • CEILINGS • FLOORS

combining permanence with flexibility

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To match the gleaming efficiency, the modern conveniences of today's modern kitchens...

To complement the beauty, comfort and convenience of today's modern bathrooms...

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Water Heaters deliver hot water as sparkling clean as the source itself!



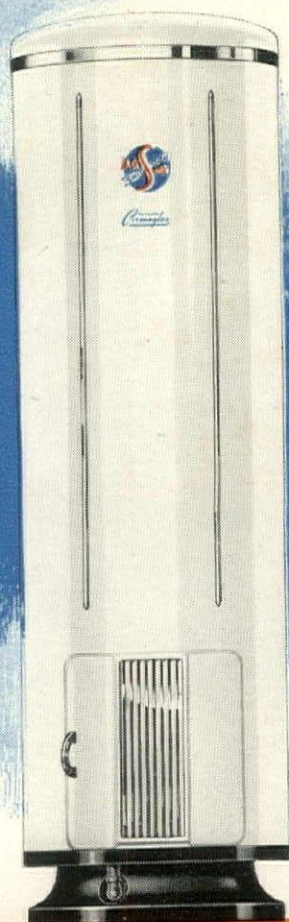
There's Only ONE Permaglas

For the thousands of new homes now being built... for every present home that will be improved and modernized... here is the *one* water heater that meets in every way the new demand for greater convenience, better performance, longer-lasting service.

SMITHway Water Heaters, lined with *Permaglas*—the sparkling blue, mirror-smooth glass-fused-to-steel—resist tank rust and corrosion under *any* water conditions. *Permaglas* CANNOT rust or corrode!

And here, too, is all the clean hot water homeowners *need* for satisfactory operation of the newest automatic kitchen and laundry appliances. Gas or electric, *Permaglas* Water Heaters are made in 30-, 50-, and 80-gallon sizes.

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One of the five Thermopane windows in the "Octagon" skiing lodge on top Mt. Mansfield, Vermont's highest mountain. Photo by J. Norman Richardson.

Picture of *Thermopane* in action

REG. U. S. PAT. OFF.

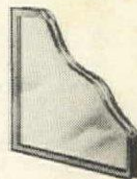
It's hard to believe there's glass between the camera and the outdoors in this picture.

But there is—two panes, in fact, with a sealed-in air space between them. For this window is *Thermopane*—the transparent glass insulating unit.

The outdoor temperature was 19 degrees below zero when this picture was taken. The temperature differential between outdoors and indoors sometimes reaches 100 degrees or more. The clarity of the glass demonstrates how effectively *Thermopane* reduces the possibility of condensation. It points up the fact that when you plan large areas of glass to achieve pleasant interiors

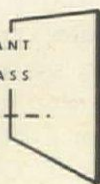
by making the most of exciting views—*Thermopane* is the practical answer.

Will the buildings which you are planning today be up-to-date a few years from now? A lot depends on how you use glass—and whether the window areas are effectively insulated. Write for our illustrated *Thermopane* book, which gives sizes, thickness of glass, insulation values and other pertinent data, before you put your designs on paper. *Thermopane* is also available in Canada. Write to Libbey-Owens-Ford Glass Company, 1646 Nicholas Building, Toledo 3, Ohio.

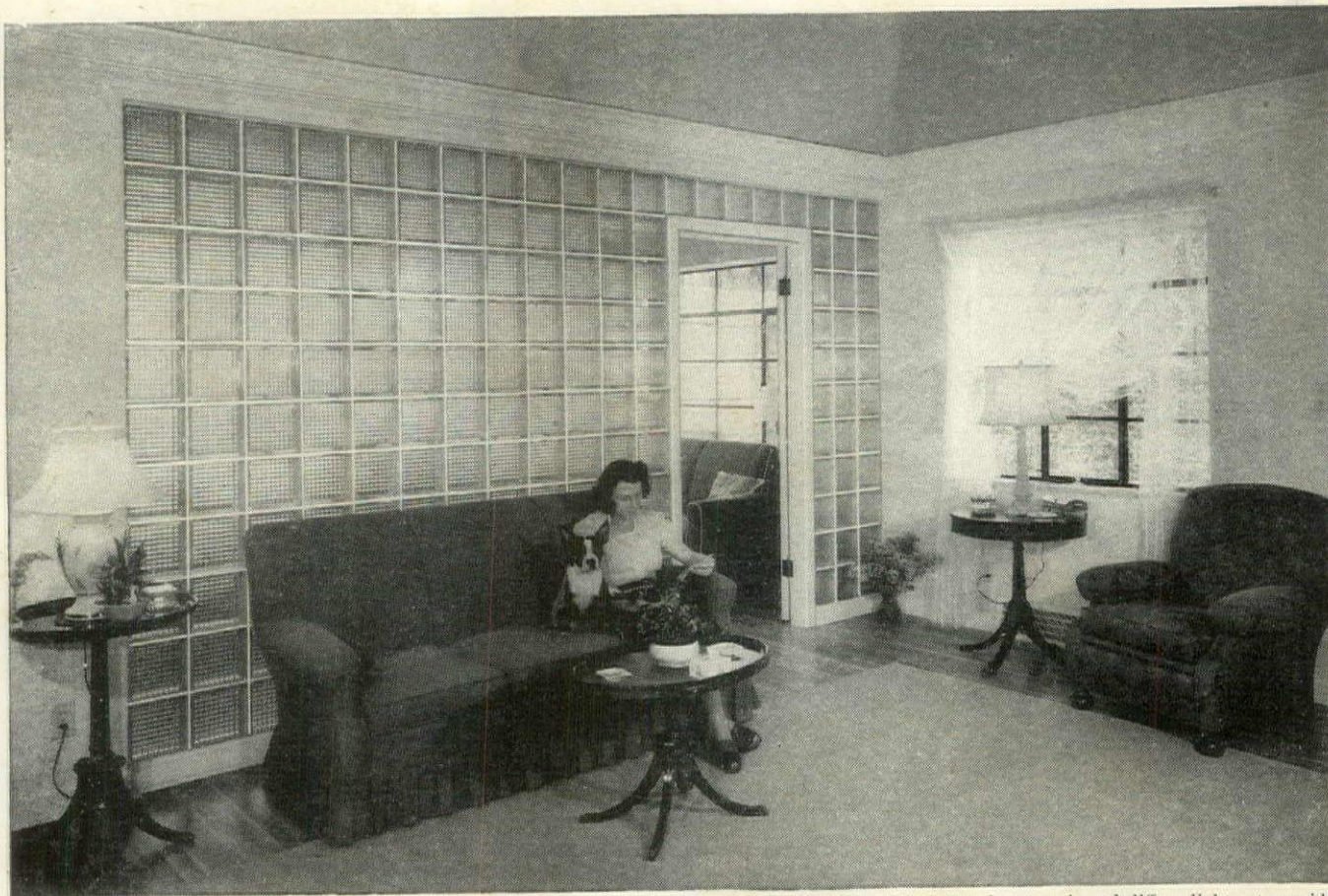


Cutaway view of the *Thermopane* unit.

WHEREVER VISION IS IMPORTANT
USE L-O-F *Polished Plate* GLASS



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



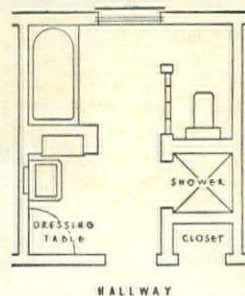
Insulux Glass Block Panels transmit and diffuse light yet provide privacy along with light.

Hints for those who **PLAN TO REMODEL**

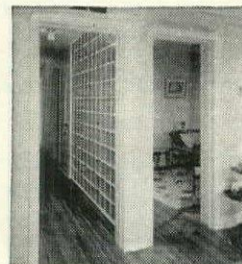
Look at these photographs. They show what can be done to improve a home, when one has a little imagination and some Insulux Glass Block.

- Note the large glass block panel in the living room. This attractive "light wall," which adjoins the summer terrace, provides an abundance of daylight all through the year. And in the winter—it brings considerable fuel savings because of the insulating value of the block.
- Note the departmentalized bathroom. An Insulux partition, and space divided into four distinct sections: toilet, shower, tub, wash stand and dressing room. Think of the advantages!
- Note the glass block partition in the hallway. This is a money-saver, as it borrows needed light from the dining room adjoining.

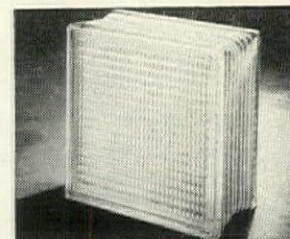
Panels of Insulux Glass Block are being installed in hundreds of buildings throughout America. In homes, stores, schools, hospitals, offices and factories!



Something new—a departmentalized bathroom! Four distinct sections—toilet, shower, tub, wash stand and dressing room—two of them divided by an Insulux partition.



An Insulux panel can be used to carry natural light from room to room for brightening dark corners.



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

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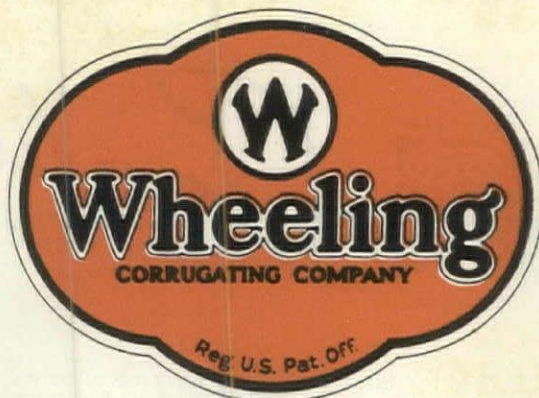
It's light in weight.

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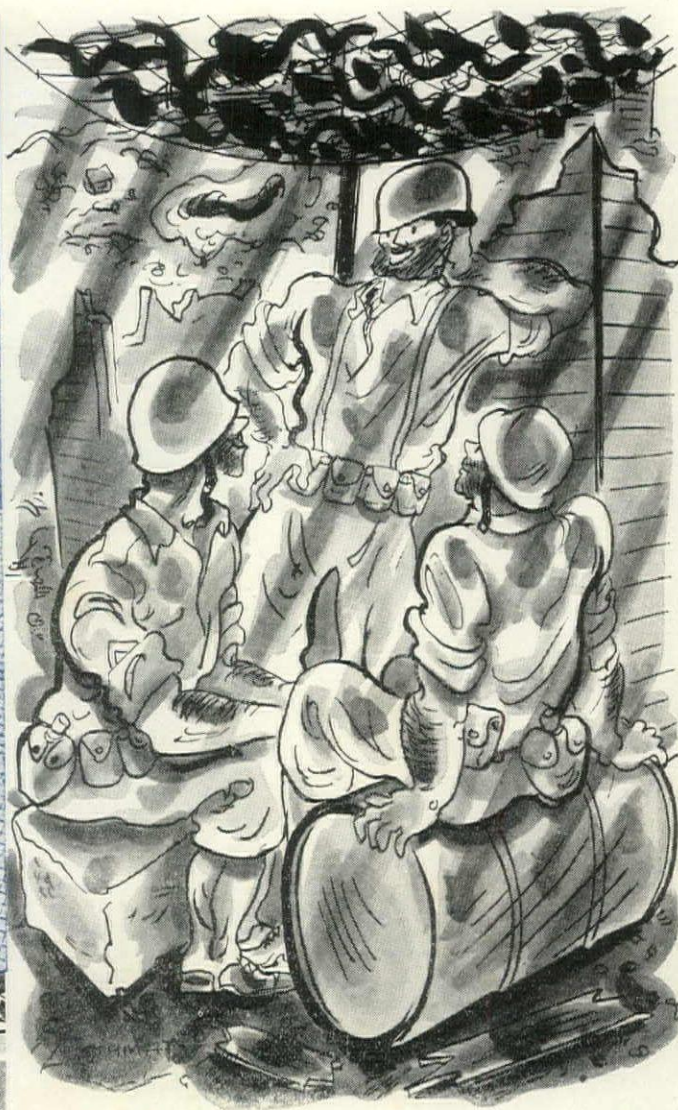
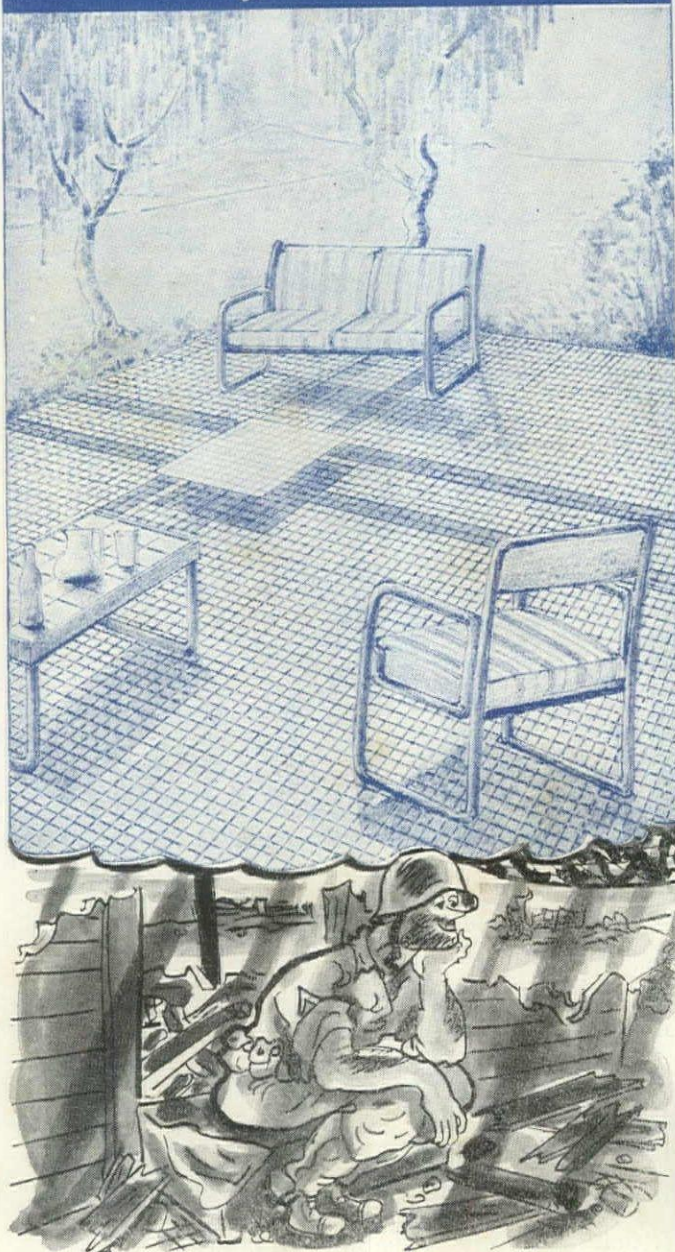
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★ *What they dreamed about*



"How'd you like to be parked on my Suntile porch with a tall, cool one in each hand?"

★ **WHAT THEY SAW...**

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In many different ways Suntile can enhance the desirability of the homes you design. Get acquainted with Suntile today.



Suntile

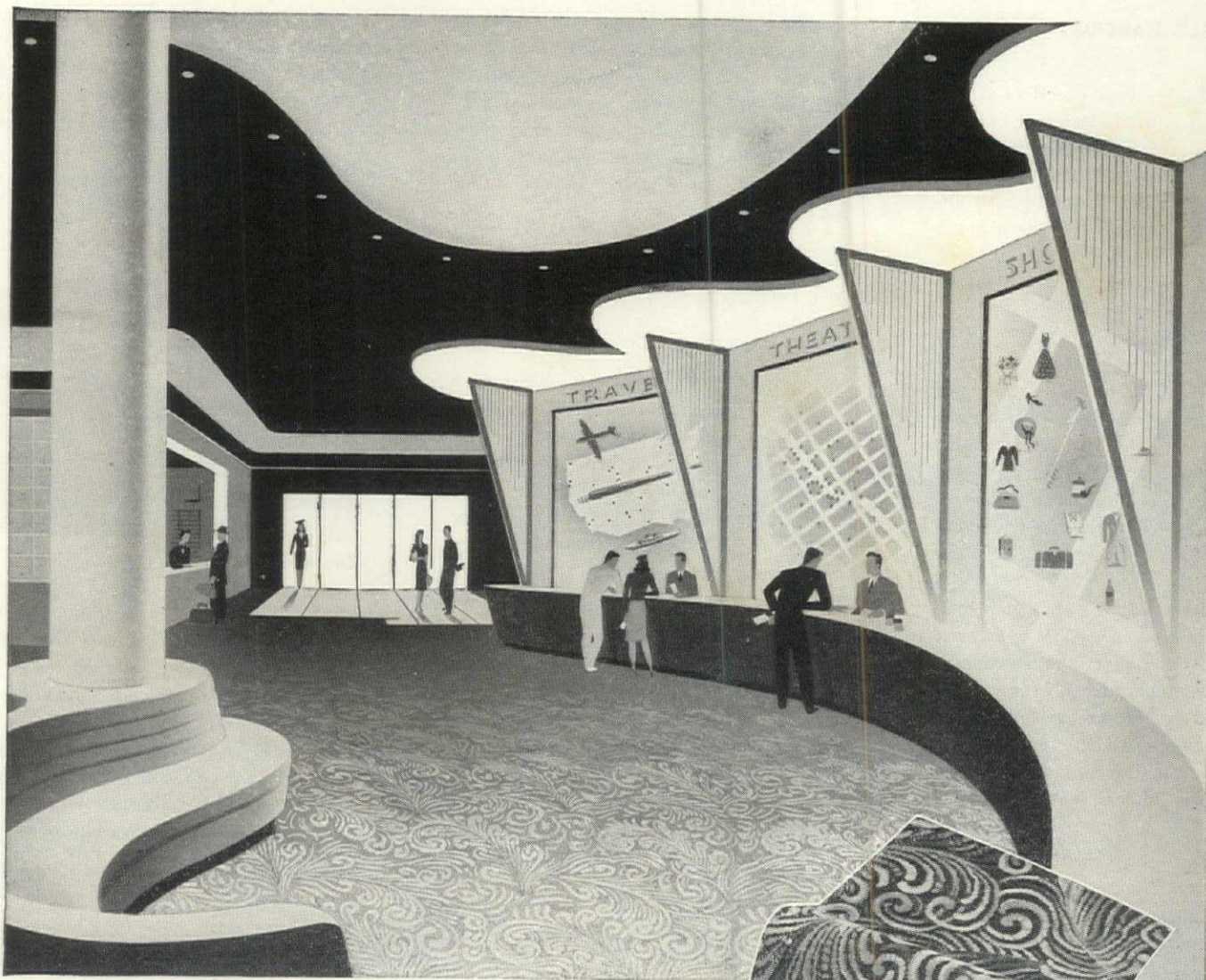
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★ THIS SERIES IS BASED ON AN IDEA SUGGESTED IN LETTERS WRITTEN BY CPL. LOUIS A. PERKOVIC OF THE ARMY ENGINEERS IN THE SOUTH PACIFIC. A REGULAR SERIES OF LETTERS FROM HOME REALLY BOOSTS THE MORALE OF MEN OVERSEAS. SMALL TALK TO YOU IS BIG NEWS TO THEM. SO WRITE OFTEN.

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Dowling's brother talks back . . . Comment on the new FORUM . . . Hidden talents of a fireplace hater . . . In defense of Thomas Ustick Walter . . . Latest swat at 5th Ave. trees . . . Letter from France.

MORE STATELY MANSIONS

Forum:

I enjoyed reading your excellent article about my brother, R. W. Dowling, but feel that the reference to myself is slightly misleading, though factually true. It is true that I prefer being a poet, successful or unsuccessful. My first verses (humorous) appeared in the old *Life* when I was only sixteen. My first volume of poetry appeared in 1924, when I was twenty-one.

I have been, since then, in fifteen countries, climbed mountains, swum in many seas, met many of the leading writers and artists of my time, have appeared in various anthologies, and won high praise from some of the leading critics of English verse and prose. I have, I believe, built towers of song and palaces of thought that are higher than any in Manhattan, and that will last longer.

Like my brother, I am 6 ft. 1 in. in height, but weigh only a hundred and eighty-five pounds; have done plenty of swimming, handball and weight-lifting in my time, and am probably the strongest poet that ever lived, with the possible exception of Sir Richard Burton.

And I frankly confess that, whenever I can, I relax.

ALLAN D. DOWLING

New York, N. Y.

To brawny troubadour Dowling, an envious look from hollow-chested, desk-chained FORUM journalists.—Ed.

BIG AND THICK

Forum:

In planning the new size of your magazine, did you ever think about all of us fellows who save our magazines a few months, then cut them up and file away the pages we want? This new format, while it looks fine lying on the table in the reception room, is going to cut the real value of the FORUM to me at least 50 per cent. Maybe you could print a special edition for us, sort of an "overseas" edition.

JOHN C. RIEDELL, *Architect*

Paris, Ill.

Forum:

. . . As to the new large-sized FORUM—I do not know. It is so big, it is ponderous. This building up of great thick advertising material will go just so far. Then, when it gets to be entirely boring to the reader, some adroit person who believes only in the

art or the science (whether it be architecture, chemistry, engineering, electricity or what-have you) will come along with a really beautiful compact professional publication that will take the play away from you. But this "purist" revolution is probably so far away that it need not bother you . . .

W. F. LEICESTER, *President*
Casein Company of America

New York, N. Y.

Forum:

As you probably know, there has been a rush on the job around here so it was somewhat belatedly that I got a look at the new FORUM. I think you ought to be congratulated . . .

WILSON W. WYATT, *Administrator*
National Housing Agency

Washington, D. C.

Forum:

. . . I have looked over the new format of the magazine and find it most interesting and informative. I believe that the FORUM is performing a fine service in presenting detailed information of the most modern character with respect to developments in the building field.

JAMES M. MEAD

U. S. Senate

Washington, D. C.

Forum:

. . . I am also interested to find in your news of the month a story about the housing bill (S. 1729) which Senator Mitchell and I are sponsoring and which calls for the use of surplus war plants and new materials and new techniques to increase the output of houses for returning war veterans. Your magazine has the distinction of being the first to publicize this bill. Congratulations to your Washington staff for up-to-the-minute news coverage.

H. M. KILGORE

U. S. Senate

Washington, D. C.

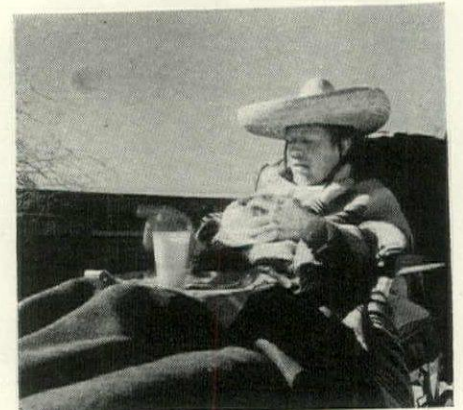
ATOMIC MARE'S MILK?

In the January issue FORUM printed a letter from Dr. Renfreux Kirsche decrying fireplaces as sentimental attachments which "drag us back from the atomic age." Herewith, a peep at the private life of Dr. Kirsche.—Ed.

Forum:

How delighted I was to read of my dear friend, Dr. Renfreux Kirsche. I am enclos-

ing a snapshot I took of this thoroughly original exponent of rammed earth on the continent. It was 1939 and Dr. Kirsche was recuperating at Tlaxclo, Mexico, after suffering much in his adopted country, France.



Kirsche and Concoction

The tall glass contains a drink of his own invention, compounded of mare's milk, Holland gin, and a beaten goose egg.

I had given him up as lost and am hastening to contact him again.

American architecture can profit much with such a great man in its midst. His attitude toward the fireplace as a convention now outmoded is but a hint of his rare gift.

GEORGE COLE

Albany, N. Y.

ANECDOTES AD ABSURDUM

To Mr. Roger Allen, c/o FORUM:

You probably would like to know what your public is worrying about so that you can straighten things out.

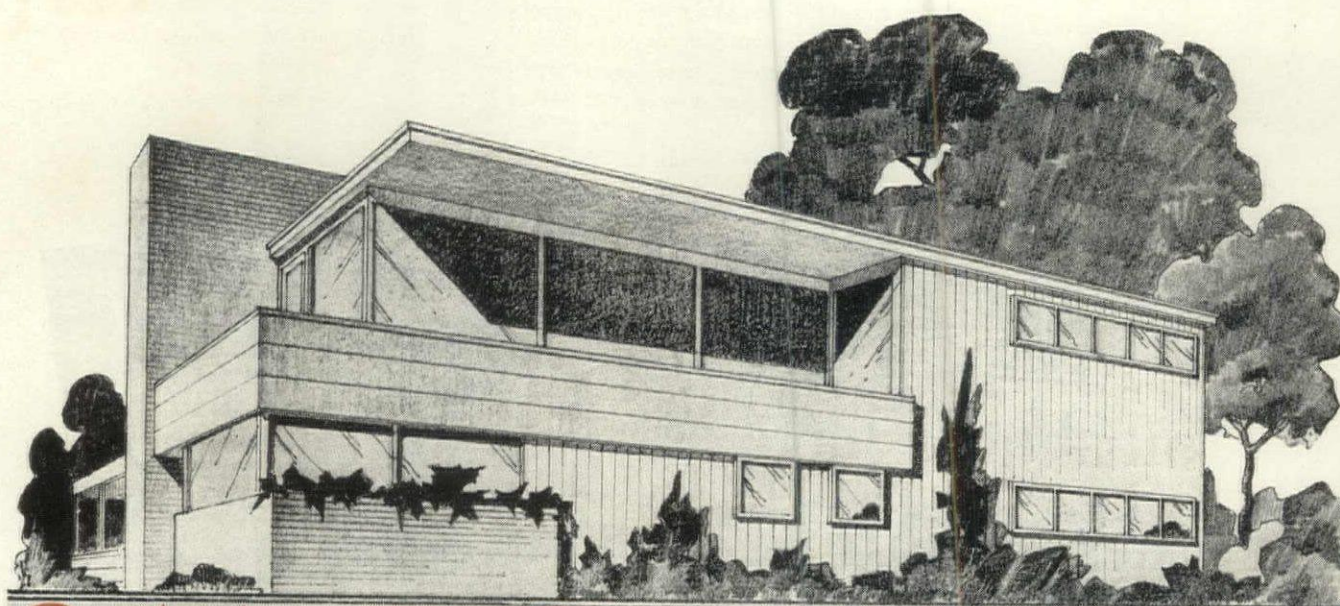
This month's question is—Why aren't there *funny* stories about architects? Personally, I do enjoy little anecdotes about surgeons stitching someone's anatomy together in an embarrassing way, but I don't and no one else does, I am sure, think it funny when they tell that old one about the architect who forgot to put in the stairs. People think it's criminal.

Seriously, I think it's because no one thinks any doctor can make a mistake, and they always tell the architectural accident as if they know someone who knows someone who knows someone who knew the poor guy who did it.

Now I am wondering if you couldn't fabricate some stories about this profession that are so absurd that people know we

(Continued on page 42)

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● JOISTS

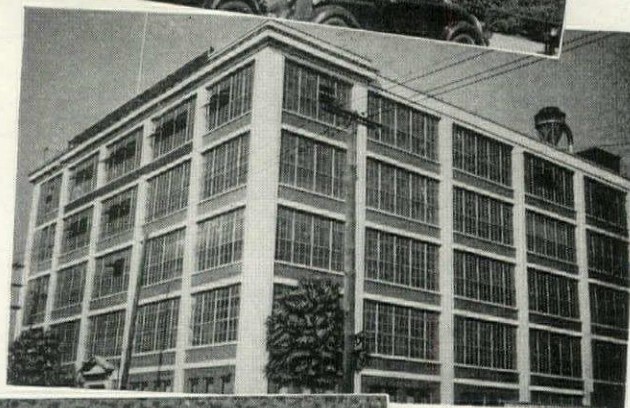
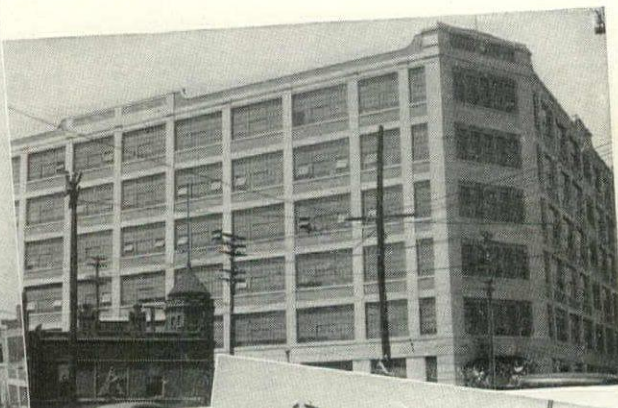
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● TRIM



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seen these buildings
before they got
their
Waterfoil "Raincoats"

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For home loans, go FIRST to your Savings, Building and Loan Association or Co-operative Bank.

*This fact was discovered in a recent survey.

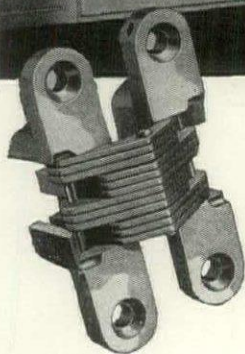
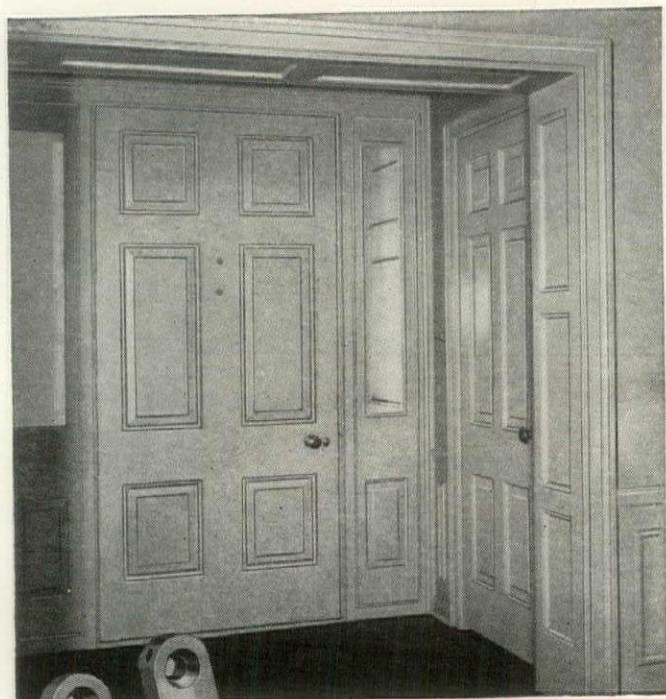


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couldn't have been involved, so that any fatal occurrence will seem a howl.

If this doesn't work what would you think of starting a fund for or interesting a foundation in burying our errors? We can learn so much still from the medical group.

RICHARD BENNETT

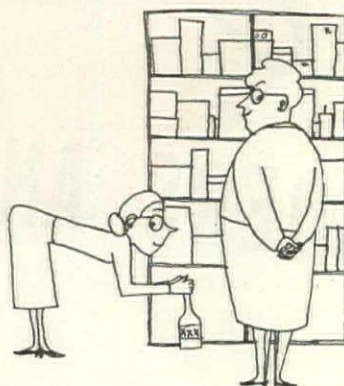
New Haven, Conn.

P.S. Speaking as your recognized public, I must ask you to notice my name is spelled —ett, and even if it was spelled Benét it wouldn't be pronounced in such a fashion as to make you think my first name is John. The rumors I hear of your insisting people call you Fred are, I hope, untrue.

KITCHEN CONTOURS

Forum:

The staid and erudite group in which we move is so fascinated by the cartoon FORUM, Feb. '46, see cut) that we seriously doubt they will ever reach the substance (analysis of kitchen storage) at the end of your periodical.



Caught in the cupboard

We think you deserve to be sued for defamation of character and contour, since McCullough pretends to be a teetotaler and Heiner considers that she is not entirely a Hokinson-Steig! Even so, we agree that it is a greater contribution to your reading public than our photographs could have been. Kind personal greetings from the bottom of the cupboard.

MARY KOLL HEINER
HELEN E. McCULLOUGH,
Research Associates

College of Home Economics
Cornell University
Ithaca, N. Y.

PROTOTYPE DESIGN

Forum:

As a subscriber to the FORUM, a developer who stresses architectural beauty most of all and a grandson of Thomas Ustick Walter, I would like to call your attention to the wording under the picture of the United States Capitol ("The Prototype

Design', FORUM, Jan. '46). You mention Thornton, Latrobe, "Mills and others" which seems to me very unfair to Walter who had entire charge of the Extension of the Capitol and who designed the Wings and the huge Dome. Mills had little or nothing to do with designing any part of the building. The Capitol as it stands today is more the work of Architect Walter than anyone else. He also designed and executed the extension of the Patent Office and the Treasury Building in Washington, Girard College in Philadelphia, the Marine Barracks in Brooklyn, N. Y., and Pensacola, Florida, and many other notable buildings in America. He was also an engineer and designed and executed the Great Breakwater at Laguayra for the Venezuelan government. Walter and Latrobe have been called the "Fathers of American architecture." Walter was honored by the universities of America. Harvard conferred upon him the degree of LL. D. in 1857. Walter's likeness is to be found in the painting over the Dome between the figures of Fulton and Morse. He probably had more to do with the founding of the American Institute of Architects than any other man. He was its second President, which office he held for many years until his death.

WALTER H. COOK

Baltimore, Md.

The point of FORUM's description of the Capitol was to disclose its progeny, not its progenitors. An exact chronology of all architects involved with the Capitol would fit better in an encyclopedia than a six-line caption.—Ed.

TEMPEST IN A TREETOP

Forum:

In accordance with a resolution adopted at the summer meeting of the Connecticut Tree Protective Association in Bridgeport, an official committee went to New York City to investigate the controversy centering around the question of suggested tree planting in front of the new Best & Co. retail store, then in the process of construction on the northeast corner of 5th Ave. and 51st St.

During the summer of 1945, the pros and cons of the suggested tree planting had been widely publicized not only in the press of New York City but throughout the United States, over the radio, in the *New Yorker* magazine, in paid advertisements of Best & Co. and in other media. (FORUM July '45 and Dec. '45). The opinions expressed took the form of poetry and prose. Letters were received by Mr. Le Boutillier (President of Best & Co.) from actors, writers, engineers, soldiers, sailors, children, physicians and persons from every

(Continued on page 46)



Taco Type S Tempering Valve; Factory tested for 125 lbs. Working Pressure. Available in 1/2" and 3/4" sizes.

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Here is one case where exclusive features make a "good mixer". The Type "S" TACO Tempering Valve is the valve the trade likes for residential applications. Operating on the thermostatic principle, it provides positive, dependable action. So, no matter how hot domestic water may be in the heater or tank, it will always flow from the taps at temperatures between 135°-145°F—when a TACO Tempering Valve is installed.

This reliable, simply-constructed tempering valve prevents over-heated water from reaching the taps after long no-draw periods by admitting cold water to mix with the hot water.

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The TACO Tempering Valve, widely used, lowest-priced, will prove a profitable, fast-moving stock item. Place your order now for the tempering valve the trade likes.

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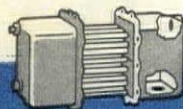
For further information about the TACO Tempering Valve, Type S, see your wholesaler or write Taco Heaters, Inc., today! Larger adjustable tempering valves are available for installations of 3 baths and over. Ask for information on TACO Type "T".

TH-101

Something To Look Into! Taco Heaters, Inc., will occupy booth #518 at the National Oil Heat Exposition.



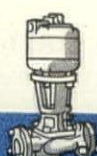
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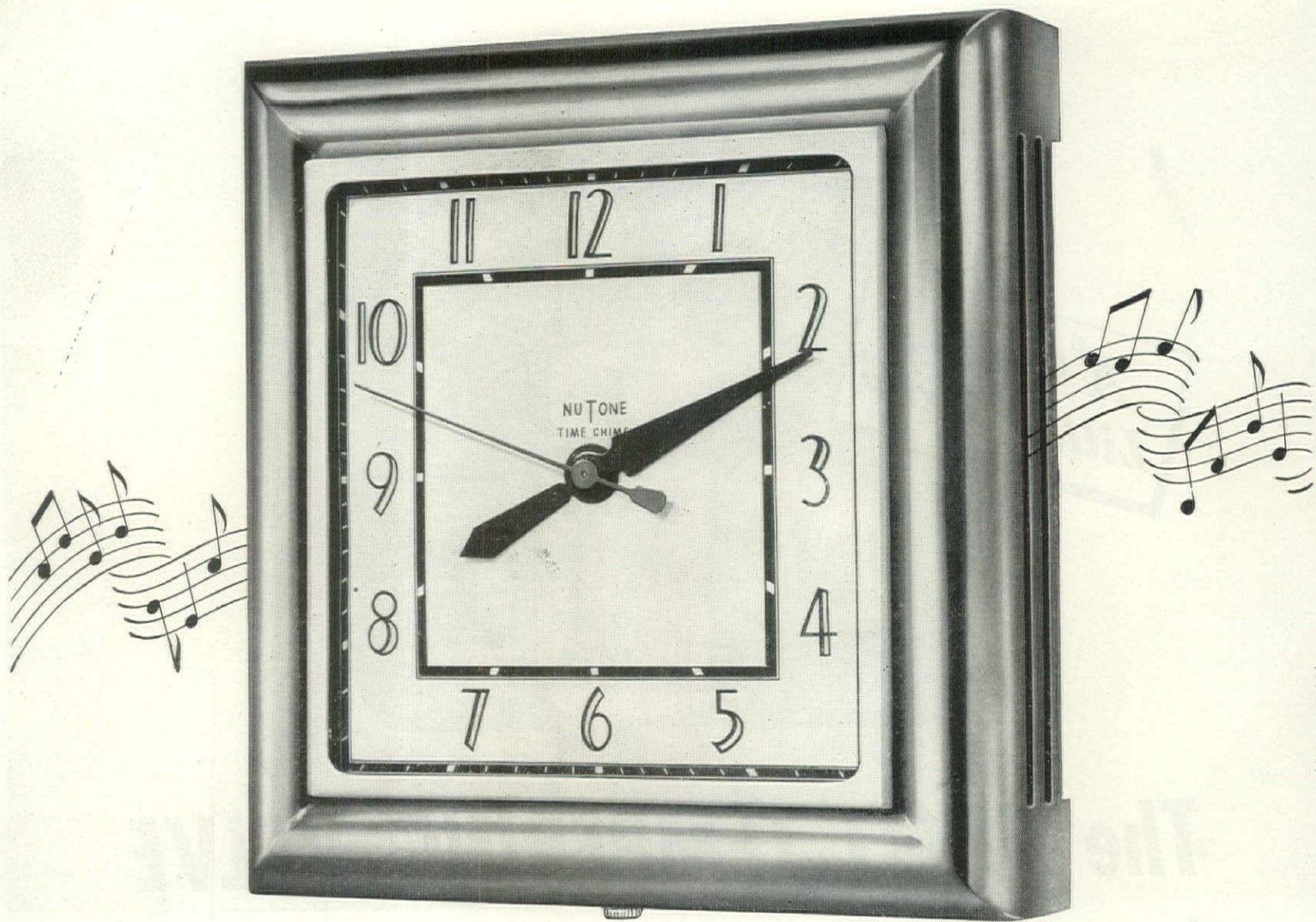


Taco Circulator

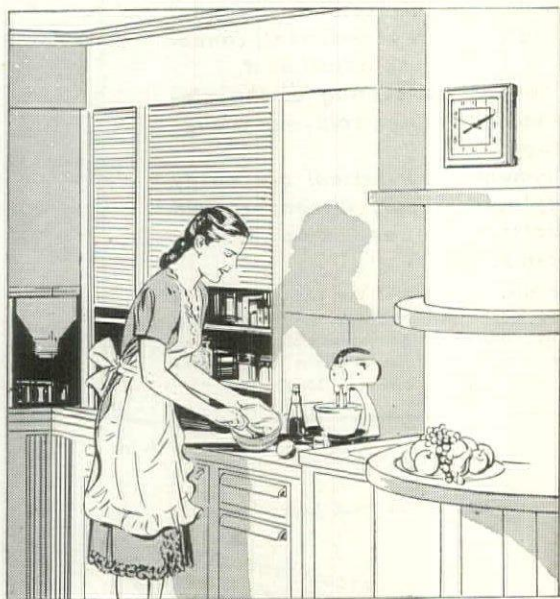


"Taco-One" Venturi Fitting





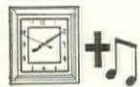
This NuTone Time-Chime can help "sell" your houses!



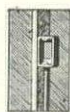
Kitchen plans for several of the larger prewar building developments were standardized on an earlier type NuTone Time-Chime. This newest model offers you even greater advantages.



IT'S TRUE. Most anything that can be built can be sold these days. Yet some houses, some rooms, have more built-in appeal—more "sell"—than others. It's that way with a NuTone Time-Chime in the kitchen. *Telechron* self-starting electric clock and 2-door NuTone Chime—in one.



IT SAVES YOUR TIME—simplifies design. ONE unit to plan for, to wire for. Nine-inch square, all-chrome cover. Large, 6 $\frac{3}{4}$ -inch dial.



EASY TO INSTALL—even easier if kitchen outlet is provided during construction, as in several large prewar building developments that employed an earlier

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It's in the *planning* that decisions are made. "I want *this* kind of kitchen," says the wife. "So-and-so's heating plant looks good to me," says the husband. And all through the plans they go, selecting the type of materials and equipment they will soon be *buying*.

Whose materials? Whose equipment? Where do they get their ideas?

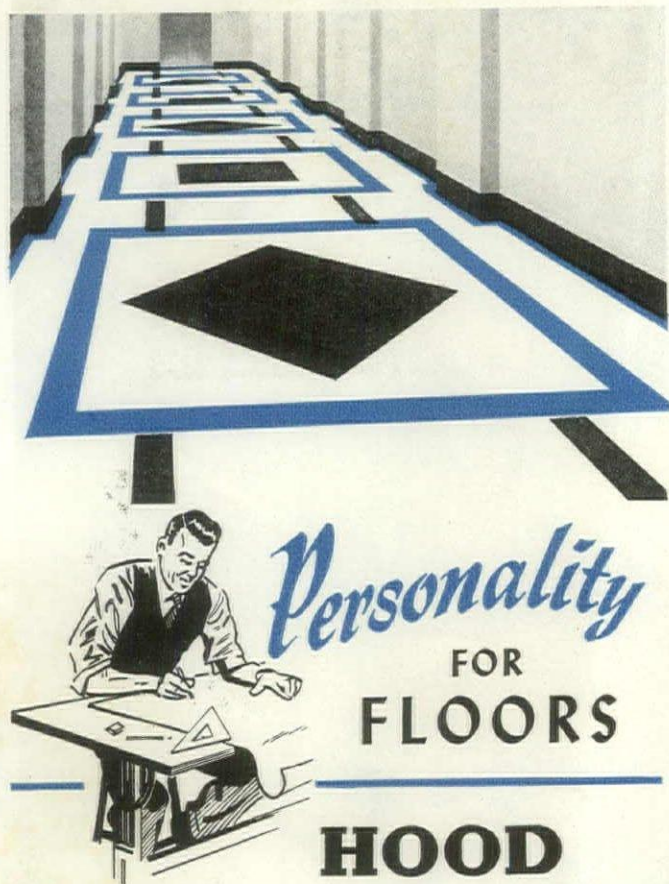
With 2,350,000 of America's best able-to-buy families the answer is The American Home, the home-making magazine they know best and trust most. Today — right now — more than 600,000 of these families are planning new homes . . . and 250,000 have already bought the real estate!

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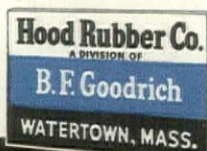


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RUBBER & ASPHALT TILE FLOORING

walk of life and from the four corners of the earth.

On June 11, 1945, a publicity release from the Office of the Borough President of Manhattan, disclosed the answers to a questionnaire covering the tree planting subject received from seventeen prominent landscape architects and artists. . . It is the considered opinion of this committee that the questionnaire was not a fair one and that important facts did not enter into the framing of this questionnaire.

For instance, the question: "Do you believe trees enhance the architecture of city buildings such as exist on 5th Ave. or on similar streets of Manhattan?" could *only* be answered in the general affirmative. The question is purely a rhetorical one—of course healthy, richly-foliaged trees *do* enhance the appearance of *most* city buildings or rural buildings. But the point at issue was not architectural enhancement. The point at issue was whether or not *trees*, from a physiological and environmental point of view can flourish on mid-5th Ave.

. . . The question: "Do you agree with Mr. Le Boutillier that trees should have no place in the Borough of Manhattan?" is totally unfair and an example of the classic fallacy, "begging the question," which is best illustrated by the age-old courtroom question: "Have you stopped beating your wife?"

. . . The trees in front of St. Patrick's cathedral are definitely losing ground. From 30 to 40 per cent of the tops of these trees are dead and dying; the remaining foliage is sallow and chlorotic. . . The soil around these trees is packed hard and tight and it is obvious that the transpiration of water from the foliage is not being compensated for by absorption of water from the soil.

. . . The trees on the south side of West 50th St. between 7th Ave. and Rockefeller Plaza are particularly run down and unattractive. Each of these trees has a "soil box" approximately 4 ft. by 2 ft., hardly sufficient to give even the minimum of soil nourishment.

. . . The sub-surface of the Best & Co. store site at 51st St. and 5th Ave., which we examined thoroughly, is solid rock. We failed to see how trees planted in front of this store—unless they were set into planting boxes of enormous and impractical dimensions below the soil surface—could possibly survive.

SUMMARY AND CONCLUSIONS:

1) As a committee from the original state shade tree association, we are particularly desirous of seeing more and better planting of trees in large cities where conditions

are *moderately favorable to the health and appearance of street trees.*

2) Environmental and physiological facts must be taken into consideration when street tree plantings are contemplated. It is not good scientific judgment to regard *every* city street as ideal for the growing of trees.

3) It is our belief that the causes of shade tree appreciation will be harmed rather than aided by the continuance of indiscriminate tree planting in urban locations where the physiological outlook or future for the tree is practically hopeless.

4) It is our considered judgment that further large tree planting should not be carried out in such unpromising locations as 5th Ave. from the Thirties to the upper Fifties or in locations where no "planting strips" exist between the sidewalk and the street.

EDWARD A. CONNELL, *Chairman*
ALBERT W. MESERVE

Connecticut Tree Protective Association
Hartford, Conn.

Believers in states rights will resent Connecticut intrusion in Manhattan tree controversy. Mind your own nutmegs, Sirs!—Ed.

LETTER FROM FRANCE

Forum:

The two items enclosed I've laboriously translated for my own amusement. My particular interest comes from pleasant months in the offices of Michael Goodman and Gardner Dailey.

"French Reconstruction" is a summary of feverishly taken notes from a Parisian radio broadcast.

The Fernand Léger impressions of the United States comes from an article in the Parisian weekly paper, *Arts*.

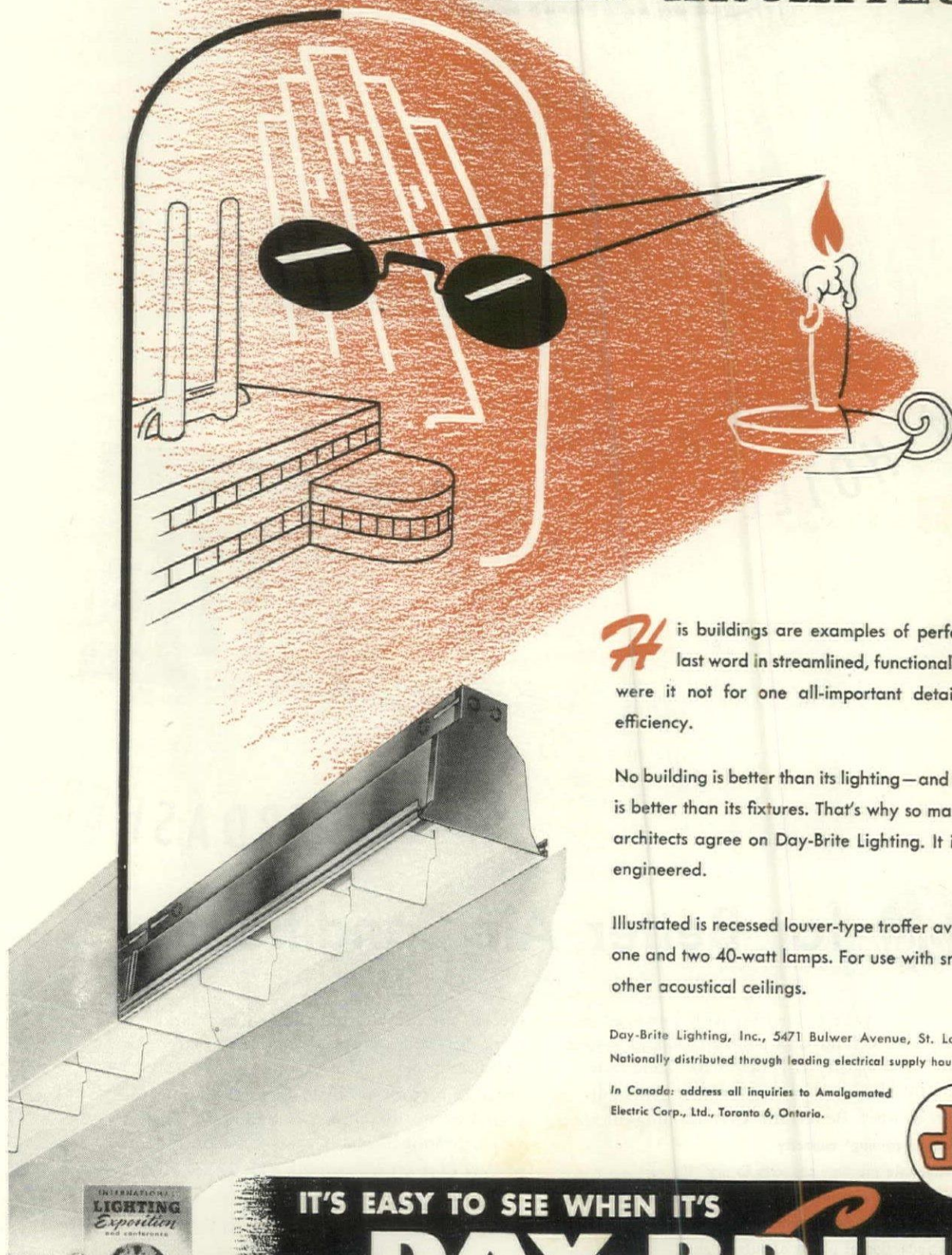
On one of many visits to Paris I had a most interesting conversation with Gertrude Stein, met by chance walking with her white poodle towards Place Vendôme for tea at the Ritz. We discussed Le Corbusier's villa at Garches, designed for her sister-in-law, now in Palo Alto. She had recently been impressed by a young American soldier architect who'd exclaimed, "It would be wonderful to go home and design houses for people who weren't always buying things."

In talking with some Parisian architects in their Porte de Maillot office, I found that aside from their personal antipathy for the theories of Le Corbusier, their chief concern is the lag in actual construction caused in addition to material scarcity by potential clients' waiting for a more stable government to stabilize a fluctuating currency.

Paris remains a city of extreme luxury if only for its space and trees—showing what we could do if the effort were made.

(Continued on page 50)

PORTRAIT OF AN -ALMOST- MODERN ARCHITECT



His buildings are examples of perfection—the last word in streamlined, functional design . . . were it not for one all-important detail: Lighting efficiency.

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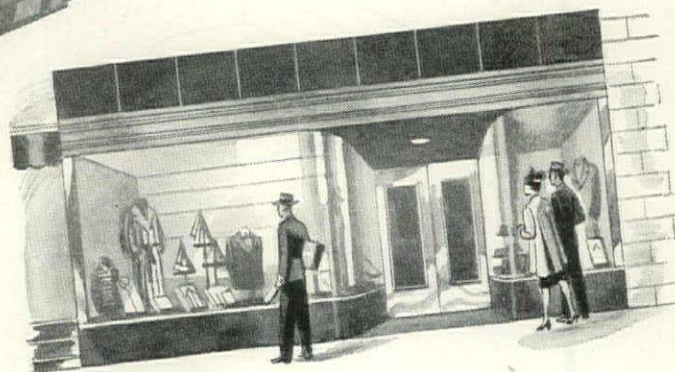
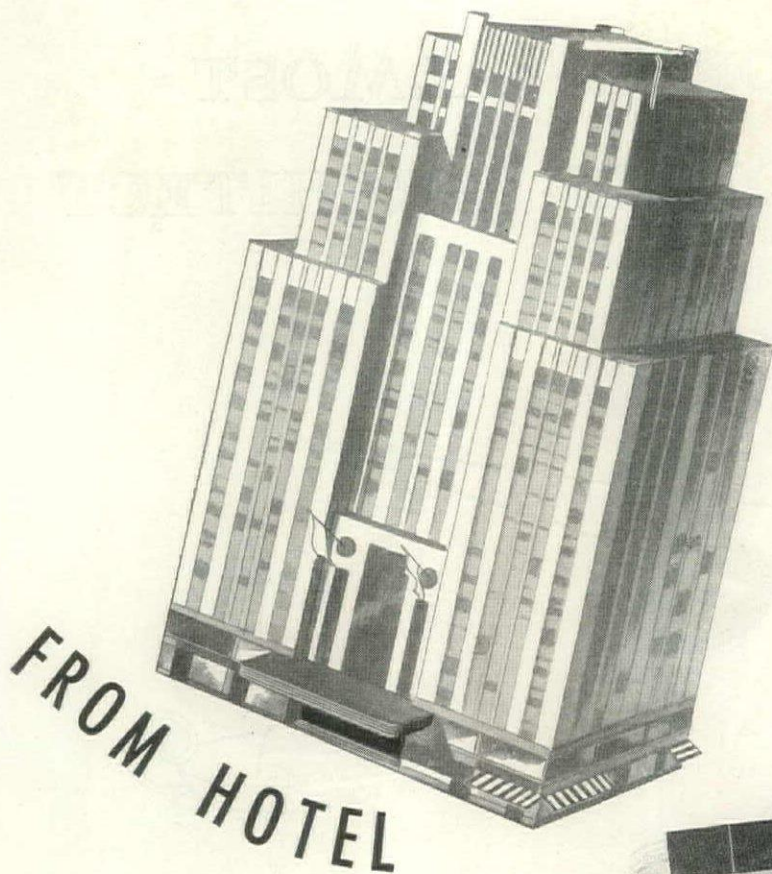
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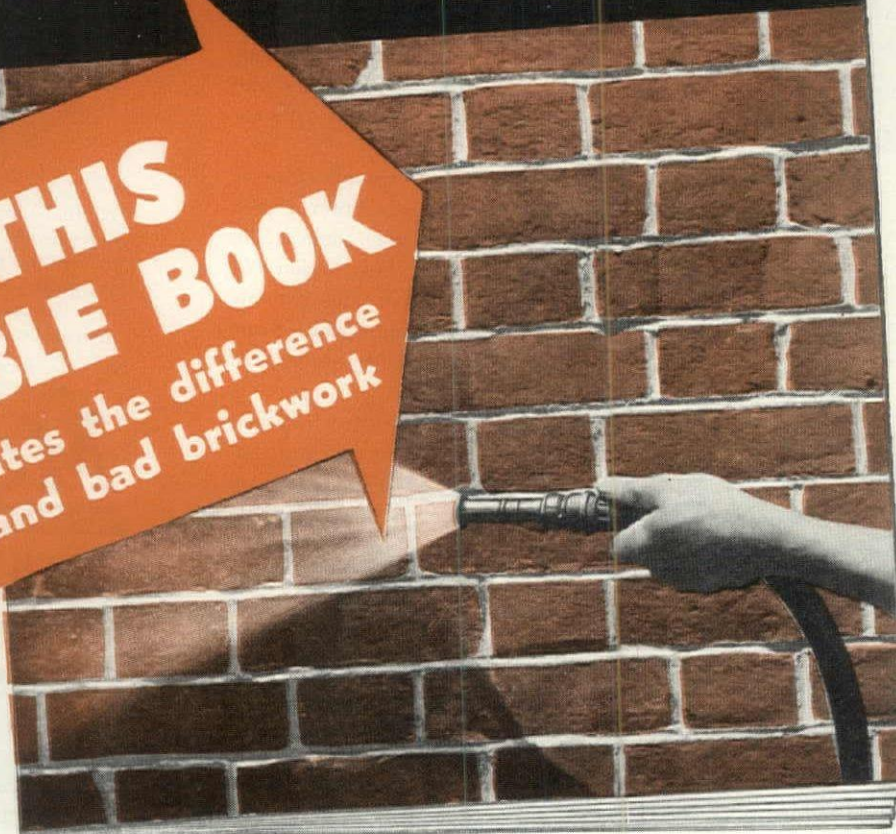
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Complete Air Conditioning

TYPE OF WORKMANSHIP
RECOMMENDED TO SECURE

Dry
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GET THIS
VALUABLE BOOK
—which illustrates the difference
between good and bad brickwork



FOR many years intensive research on the cause and prevention of leaky brick walls has been conducted by various organizations and individuals, and much vital information has been gathered.

Most authorities agree that *workmanship* is the most important thing involved, but until now, no one has attempted to explain and *illustrate* the difference between good and bad workmanship.

"*Type of Workmanship Recommended to Secure Dry Brick Walls*" does just that. In it, a recognized authority on brickwork has compiled 16 pages of proven information —

explanations and recommendations — 96 color illustrations. It is a major contribution to *good building*. It will be sent free to any architect, contractor or dealer who is interested in water-tight masonry.

Use the coupon to secure your copy. No obligation of any sort.

Louisville Cement Co., Incorporated
300 Guthrie Street, Louisville 2, Kentucky

Gentlemen: Without obligation, please send me a copy of "Type of Workmanship Recommended to Secure Dry Brick Walls."

Name _____

Firm _____

Street _____

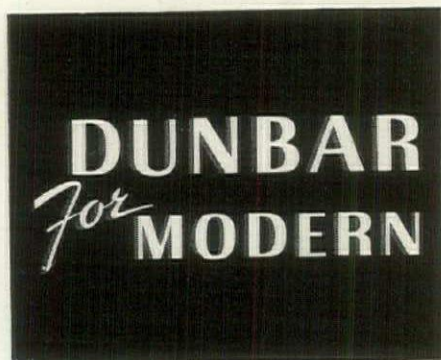
City _____ State _____

LETTERS



EIGHT DRAWER DESK
to be produced in 1946

FEATURES:
SHELF FOR PORTABLE TYPEWRITER
DRAWERS ON BOTH SIDES



DUNBAR FURNITURE MANUFACTURING CO.
BERNE, INDIANA
1638 Merchandise Mart, CHICAGO 54, ILL.
385 Madison Ave., NEW YORK 17, N.Y.

FRENCH RECONSTRUCTION. (*Notes taken from a European broadcast by a French radio station.*)

The French have set up a 7-man architectural board for reconstruction, made up of leading architects from both camps including such advocates of the skyscraper as Le Corbusier, and of the four story limit such as Perret. This board has divided France into sections—probably following provincial boundaries—and has assigned definite areas to certain men. This done in the interest of a fair division of the work and to avoid an advantage by big-name men. One of the seven members of the board assists and counsels the designing architects with their schemes, and the architect and the board member submit the result for the approval of the other six men.

Le Havre is given as an example of a city almost entirely wiped out. From 19,500 buildings, there remain today some 2,500, or about one out of eight. Destruction was heaviest in the port proper and extends about 10 miles along the quai side. Some 650 workers are now assisted by students in cleaning up the debris.

August Perret is the architect charged with presenting a scheme for this most important port city whose artificially constructed foundation has rested on clay and marshes since the days of Francois Premier in 1500. The telephone system of Le Havre is noted for interruptions in service caused by underground wires passing through wet soil. M. Perret proposes a concrete box with a seven foot floor as a floating foundation for the new city. Inside this concrete box, the services for the city could be housed—pipes, railway tracks, garages, warehouses.

Against such charges that it would be difficult to police in case of manhunts, that the city would be at the mercy of an underground breakdown, that atomic bombardments would rule out shelter value, that the city would lack trees, Perret gives the affirmative view by pointing out that policing and electrical problems are matters of technique for which there are solutions, that it would be as strong as piles necessary in other plans, that a layer of soil would allow for trees above, and that the town could spread out more easily.

The Ministry has directed Perret to go ahead with his plan, and there remains only the people to convince. It is admittedly a bold plan, with the problem of the great quantities of steel and concrete left unsolved. The important thing seems to be that it is being planned.

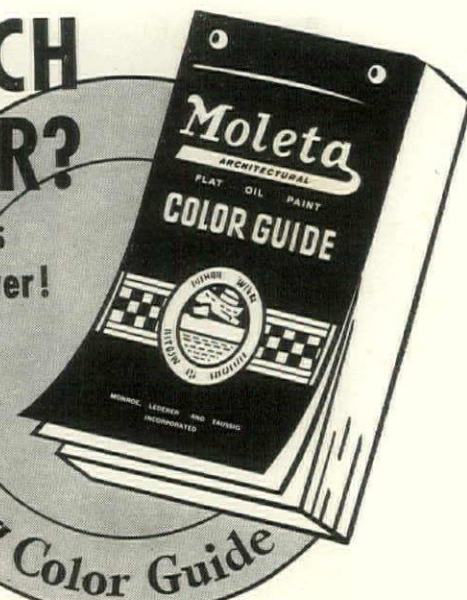
AMERICA ISN'T A COUNTRY—IT'S A WORLD, says Fernand Léger. By André Warnod. Arts, January 4th, 1946, Paris.

(Continued on page 54)

WHICH COLOR?

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The Moletg Color Guide



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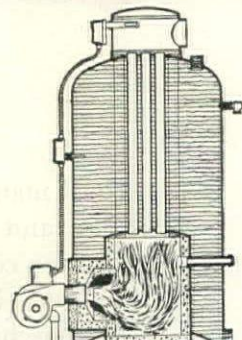
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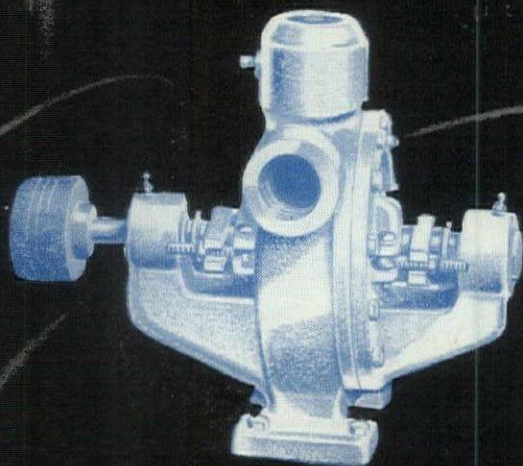
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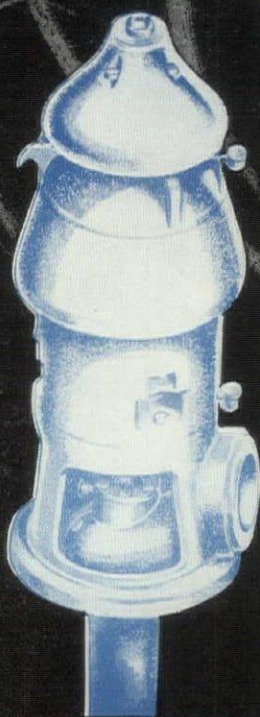
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THE WESTCO LINE of precision-built pumps: unique advantages in long-life and varieties of use for small-capacity pumping of all types of liquids. High heads, low speeds.



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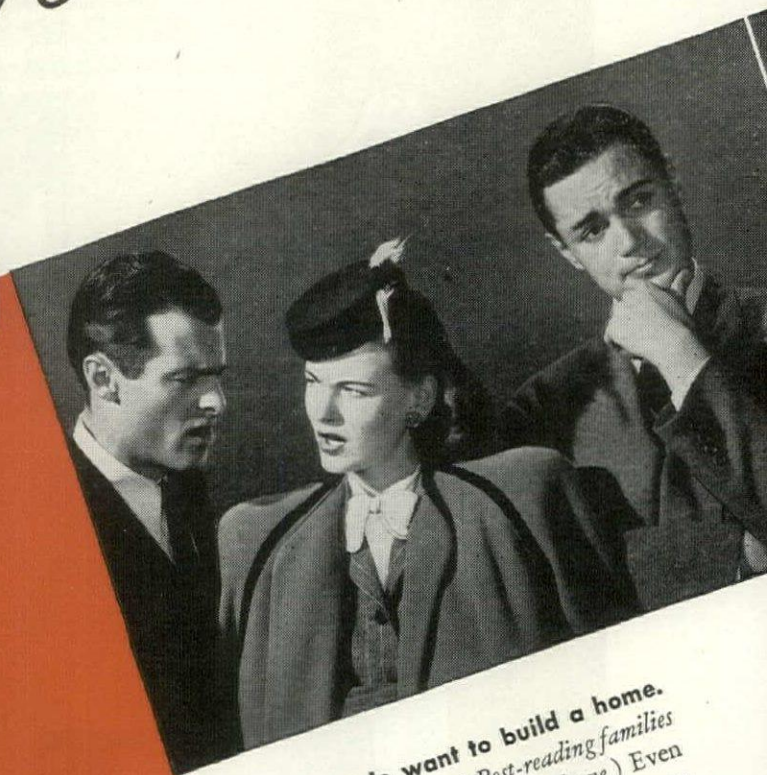
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How to both sides




Couple want to build a home.

(1 out of every 3 Post-reading families plans to buy or build a home.) Even after they've settled their own differences on style and arrangement, they may hold up the deal until they're BOTH sure they're getting their money's worth in living comfort and resale value.



sell of the house



 **Post-reading couples** may not know the fine points of construction, but both husband and wife do know brand names. In issue after issue, they see advertisements for furnaces, wallboard, fixtures, and a host of other things that go into a home. (People **LIKE** to read ads in the Post — far more than in any other magazine.) That means they're presold on the brands they know.



That's why it's wise to feature products advertised in the Post (where advertising reaches **BOTH** sides of the house). When plans call for plenty of familiar, respected Post-advised brands, couple reach agreement quickly...the sale is made. (And it's a profitable sale. Post readers have incomes well above average. They can afford more of the better things in life.)

**IT PAYS TO
HAVE THE POST
PAVE THE WAY**

THE SATURDAY EVENING
POST



LETTERS

ARE YOU DOING IT THE HARD WAY?

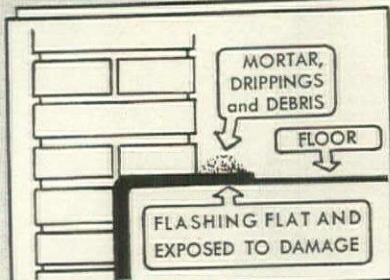


Diagram above shows **HARD WAY** of handling flashing turn-up. Flat on floor during construction, flashing is exposed to damage which impairs its efficiency, and turn-up collects debris and mortar drippings which must be cleaned and pried off. Afterward, flashing still has to be turned up and cemented, all of which is now an inexcusable waste of time, labor and materials because . . .

There's an EASY and BETTER way!

There's a greatly superior, new way of handling the flashing turn-up that not only absolutely protects the flashing from damage and debris, but also obviates later turning up and cementing the flashing, and provides drainage for vapor condensation. Yet in spite of its marked advantages, this new way actually saves time, labor and money! It is fully described in the "Improved Method of Handling the Flashing Turn-up," an ethical file-folder prepared by the Research and Engineering Department of the Wasco Flashing Company as a public spirited service to architects and the building trades.

SEND FOR YOUR COMPLIMENTARY COPY TODAY! And while you're at it, FIND OUT ABOUT WASCO

Wasco is the perfect Copper-fabric Flashing. It's pure electro-sheet copper (available in 2, 3, 5 and 7 oz. copper weight per square foot), insulated and pliacised between two layers of asphalt-impregnated fabric. Wasco bonds perfectly with mortar, is not affected by electrolysis, and is easily shaped and formed. Send for specifications, details and samples.

WASCO FLASHING COMPANY
CAMBRIDGE, MASS.

wasco COPPER FABRIC FLASHING

Fernand Léger has returned from America where he stayed for six years. He has not changed. He's still the strong and healthy one, whom we've always known—broad shoulders, solid, frank, voluble—with rude and flowery speech. He's a Norman fellow of good lineage.

"Now, America?" we asked him.

"It's not a country—it's a world. It's impossible to see the limits. In Europe, each nation is aware of its boundaries—whether it is France, England, Italy, Scandinavia. There, all is without limit. It is only in Russia that I had a similar impression, but it wasn't the same thing. In America you are confronted with a power in movement with force in reserve without end. An unbelievable vitality—a perpetual movement. One has the impression that there is too much of everything.

You must go fast—there is no time to lose. In the restaurants, you eat on the gallop, with people behind waiting their turn. You drink while running. For sentimental matters it's almost the same. The wrist watch regulates everything. It isn't the country of the madrigal nor of refinement—but what you eat is sensible and crimes of passion are rare. This diet produces magnificent physical specimens—superb boys and girls who follow their course without losing themselves in explanations."

"And from the social point of view?"

"No complications either. Only the economic question counts. The dollar is king. The sole preoccupation is to work—to be worth more than the next. Politics doesn't interest the people as it does here. Communism hasn't penetrated very deeply in the masses. If the workers go on strike, it is to protect their job, and the people whose daily life is upset—as in the strike of the elevator operators—do not protest because each of them knows that someday possibly he'll also have to protect his job. There haven't yet been in America ideological revolutions—and it's fortunate, for they would have immediate formidable repercussions. Although the questions of religion are things which interest everybody, the American people are above all, realists. They like force—results—and they scorn failures. As for their thoughts on France—naturally, I don't speak of Washington nor the artists nor the intellectuals, who have a deep sympathy for us, but of the people—the man in the street. After 1940 we were in their eyes a beaten nation and scarcely more, but the day General Eisenhower gave over the radio the message in which he said he'd been greatly aided by our secret army and the resistance forces, we reached an inaccessible summit in their opinion. After we'd been placed too low, we were placed

(Continued on page 58)

Don't Say
Cotton
Insulation
Say —

CELLULITE

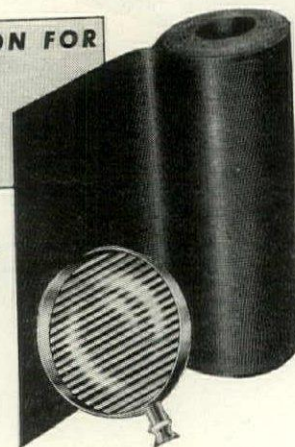
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HEAVY TRAFFIC
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COSTS LESS THAN **6¢** PER SQUARE FT.



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, Rubberlike cushions and quiets footsteps—makes slippery floors safe. Skidproof even when wet. Easy to clean, Rubberlike needs no special maintenance, can be put down without cementing. Won't curl at edges. It's amazingly durable—and doubly desirable because of its "petty-cash" cost! Order from your supply house or write for free sample to Bird & Son, inc., Dept. 154, East Walpole, Mass.

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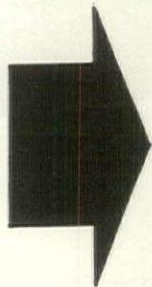


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Why a prominent property-owner writes an ad for KIMSUL* Insulation

Read this letter of appreciation to an insulation contractor from Mr. J. A. Zehntbauer, President of Jantzen Knitting Mills:



KIMSUL-insulated food store at Jantzen Beach, Portland, referred to in Mr. Zehntbauer's letter below.



Home of Mr. J. A. Zehntbauer—maker of famous Jantzen Swim Suits—at 3627 N. E. Couch St., Portland, Oregon, where KIMSUL Insulation provides so much comfort.



Mr. Steward Griffith and Mr. George Barbeau, contractors to whom Mr. Zehntbauer wrote his letter, inspect one of their typical snug KIMSUL installations.

Specifying KIMSUL pays big dividends in home owner satisfaction—and for definite reasons. KIMSUL is a top-quality insulation. It has a high degree of thermal efficiency—"k" factor 0.27. And its scientifically superior construction—many layers stitched together to form a flexible, tough-covered blanket—assures continuous, uniform insulation coverage. For full technical data on KIMSUL, see Sweet's 1946 Architectural and Builders' Catalogs, or write Kimberly-Clark Corporation, Neenah, Wisconsin.

Jantzen

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November 5, 1945

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Well, Mr. Griffith:

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The KIMSUL which you installed in the store building at Jantzen Beach is another good job and is meeting expectations in every respect.

We believe insulation pays for itself and gives added comfort. We believe KIMSUL is unexcelled for insulation and your workmanship tops, and it will be a pleasure to recommend you and your product to anyone needing insulation.

Sincerely,

J. A. Zehntbauer

President
JANTZEN KNITTING MILLS

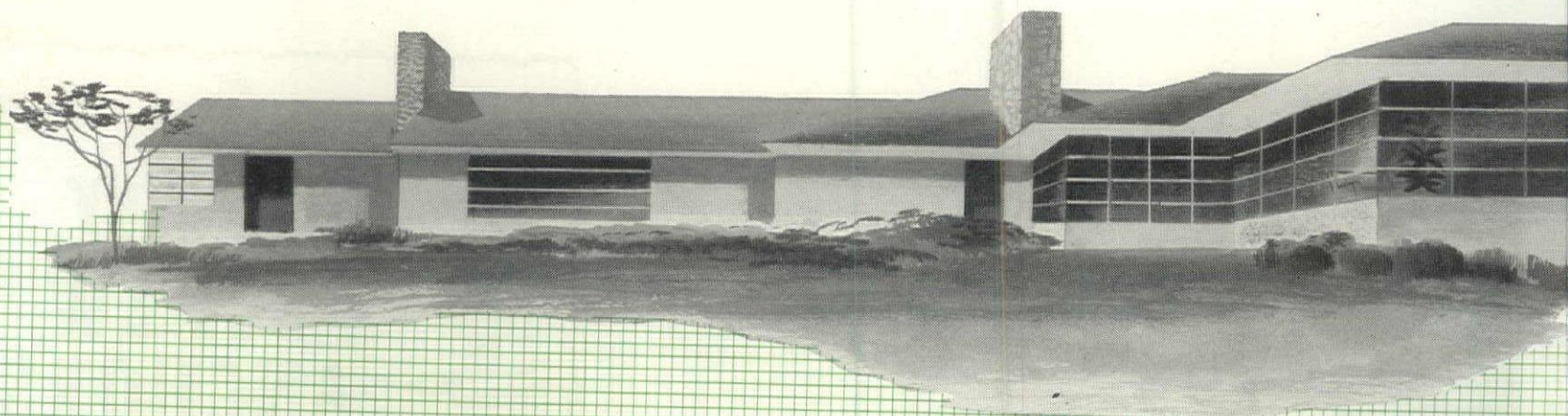
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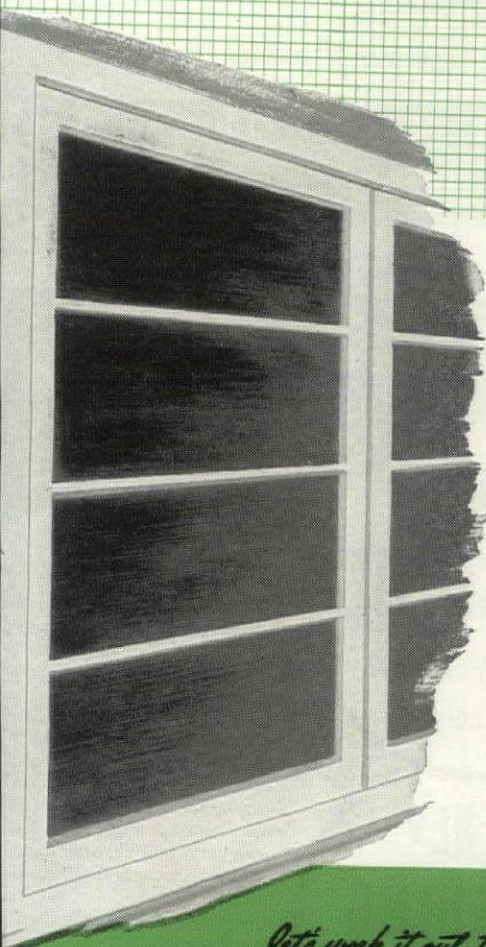
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Ranch house, Georgian, colonial, modern—the architectural success of any home hinges largely upon selection of the most suitable materials for every detail. That's why architects and builders, constantly searching for better materials, have given prompt approval to screen cloth made of Saran, a plastic produced by Dow. Saran screen is architecturally desirable both in function and decoration. It adds pleasing color to homes. It is flexible and therefore easy to install. It resists weather and cannot rust, which eliminates staining and discoloration of painted surfaces. It is extremely serviceable. It is easily kept clean by washing . . . Saran screen is one of many ways that Dow plastics can help build more beautiful, more enjoyable homes. Dow suggests that you look into their further possibilities now.

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Success in plastics is best measured in end products. It calls for the combined efforts of manufacturers, designers, fabricators and raw material producers. Dow is ready to do its part. Save time and money—call on Dow and get the most out of plastics.

PLAN NOW WITH THESE DOW PLASTICS

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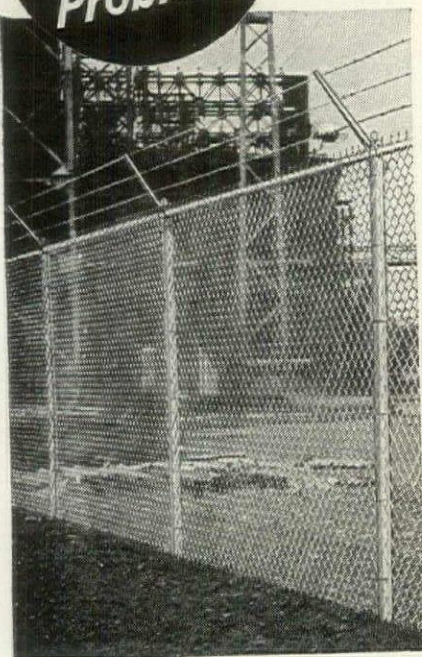
PLASTICS

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LETTERS

If Fence
is one of
Your
Problems



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HELPFUL BOOK
FOR A.I.A.
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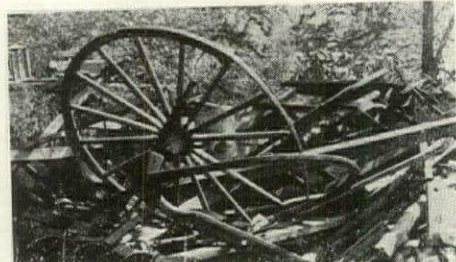
This informative book is yours for the asking. Just write for your free copy to: Anchor Post Fence Co., 6635 Eastern Ave., Baltimore 24, Maryland.

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higher than reason could conceive . . .

In America economy dominates everything and without prejudice. A farmer's plow meets an accident; he abandons it in the field and has another brought out. It isn't repaired, it's replaced. It isn't a matter of waste. The American has figured out that the salary of the repairer, the hours of work he's lost, the complication would cost more than simply buying a new machine. I give you this example because this scrapiron rotting away in the weeds has inspired a group of canvases.

Courtesy, Magazine of Art



Farmer's scrapheap



Scrapheap abstraction, Leger

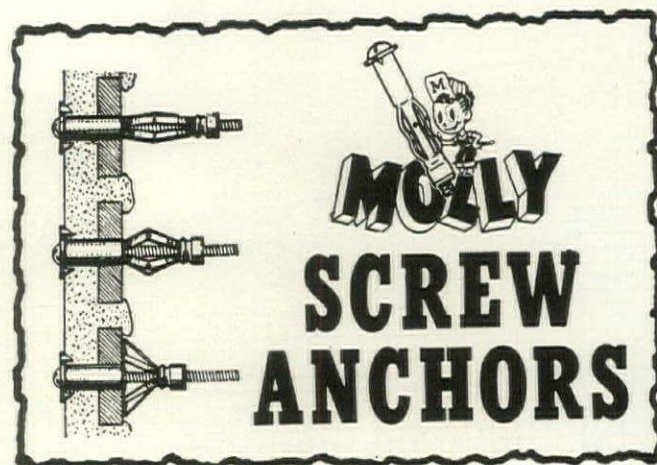
"Yes. Let's get back to painting.

"How can a French artist get along who suddenly finds himself before such an unbridling of brutal force?"

"A young one would perhaps be pulverized, but for a man of my age, in the sixties, solid as I am, it is very different. There I felt very much at ease and I took advantage of it. When one is in a country other than his own—while retaining his potential, he must put himself into the rhythm of the country and take part in it. That had already happened to me in the war of 1914-18. I took advantage of it. It was then that the mechanical epoch of my painting began. In America all is rough and strong, like the climate. The temperature goes from -22° to 122°. Sometimes when leaving an overheated house, I've felt the cold strike me a blow in the face. Only the strong can resist. I've worked much over there.

A few months ago I saw a group of young paintings at Louis Carre's—but they were some old canvases. I'm bringing some very new works. I've also made some large plastic decorations which you already know

(Continued on page 62)



For easy and neat installation of wall fixtures and accessories.

Fastens securely in any type wall from concrete to thin fiber-board.

Anchor will not fall when screw is removed.

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CHENEY INDUSTRIES, Trenton, N. J.

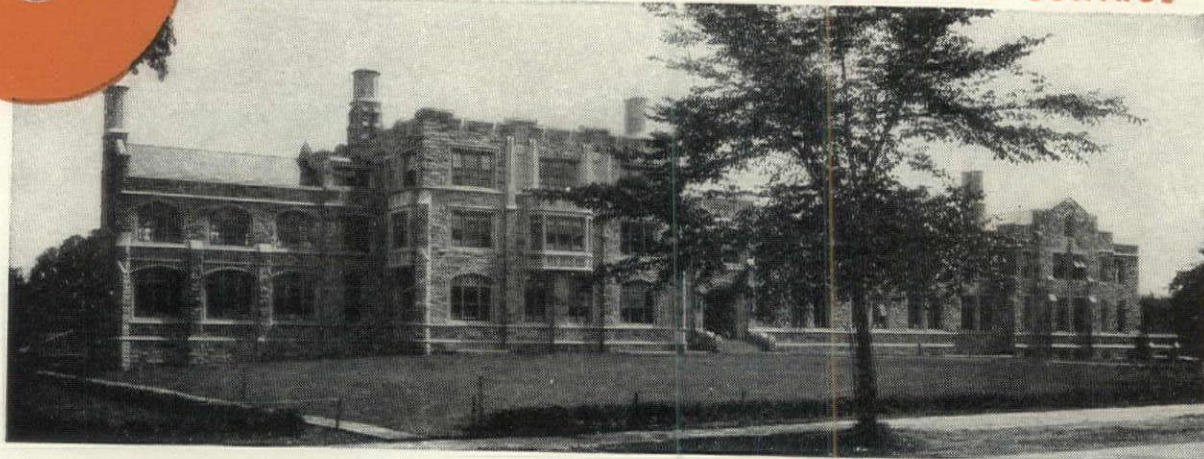
CHENEY FLASHING is again being made by the original inventor who pioneered the art of thru-wall flashing eighteen years ago.

No thru-wall flashing can operate successfully unless it has the two very important features that are found in CHENEY FLASHING—proven weep-hole drainage and the three-way bond, vertical as well as longitudinal and lateral.

Remember, the inferior two-way flashings, crimped copper and membranes, have neither the vertical bond nor do they drain moisture from the wall fast enough. Furthermore, their first cost advantage has disappeared because today Cheney Flashing is no longer a specialty—it's a standard commodity.



ANOTHER EXAMPLE OF
JOHNSON INDIVIDUAL ROOM TEMPERATURE CONTROL



Oneida Community Limited's Kenwood, N. Y., Building. A. L. Brockway, Architect, Kenwood, N. Y., E. P. Bates, Mechanical Contractor, Utica, N. Y.

**PROPER TEMPERATURE CONDITIONS
ENCOURAGE EFFICIENCY OF WORKERS
AND SAVE TONS OF FUEL**

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The uniformity of Johnson performance means

that plant operators enjoy maximum convenience with minimum effort. They are able to turn their attention to other important work. Look into the advantages of Johnson Automatic Control Systems. There is a Johnson engineer near you who will be glad to talk over the desirable features and savings that the Johnson engineered Control will bring to your building . . . regardless of whether or not the building is old or new. Johnson maintains direct branch offices in principal cities. Call or write for a conference at your convenience. Johnson Service Company, Milwaukee 2, Wisconsin.

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Complete Instalment Note and Mortgage
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ALLIED Building Credits, Inc., financial services cover every phase of residential construction, from one structure to 1,000 or more, from land purchase to the final Package Mortgage. We believe the services rendered by ABC are the most complete, comprehensive and economical available to the home builder today. Among them are:

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A POWERFUL, unique sales tool available exclusively through Allied Building Credits, Inc. It protects the homeowner by cancelling payments in the event of sickness or temporary disability. It assures mortgage-free ownership to the buyer in the event of death or permanent, total disability. The mortgage Cancellation Plan overcomes fear of the future—the chief resistance of many otherwise ready to buy.

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For complete information on Simplified Procedure, Modern Rates, Terms and Services, write to Allied Building Credits, Inc., 2519 First National Bank Building, St. Paul 1, Minnesota. Offices in principal cities.

ALLIED BUILDING CREDITS, INC.

2519 First National Bank



Bldg., St. Paul 1, Minnesota

Pre-Sealed! Pre-Fit!

PRE-SEALED

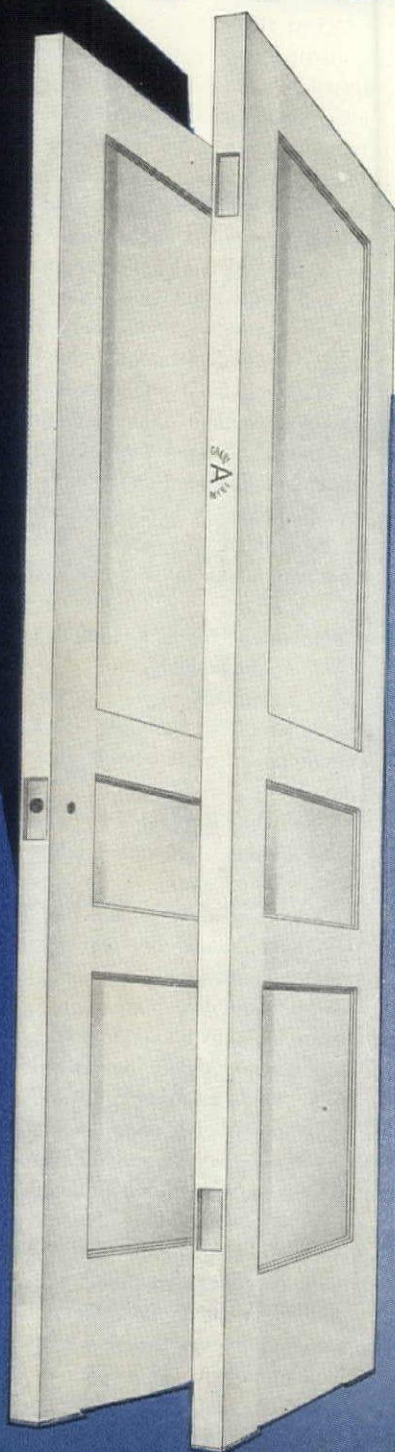
Douglas fir doors are available pre-sealed to save on-the-job finishing time. Eliminates the need for one prime coat, reduces moisture, improves dimensional stability.

PRE-FIT

Douglas fir doors are available pre-fit to exact net book sizes to save on-the-job sawing and fitting and to reduce the danger of marring or "butchering" due to dull or improper tools.

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Douglas fir doors are also available FACTRI-FIT — not only pre-sealed and pre-fit, but completely machined as well: gained for hinges and bored or mortised for locks. The slight additional cost is more than offset by savings on the job.



**Douglas Fir Doors
Assure A Better - Fitting
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Durable, attractive Douglas fir doors—made from sturdy, vertical-grain, old-growth heartwood—are now available pre-sealed and pre-fit. This means a reduction of on-the-job labor and assures a better-fitting, better-looking installation for your client. Write the Fir Door Institute for catalog showing complete line of Douglas Fir Interior Doors, Tru-Fit Entrance Doors, and new specialty items. See your lumber dealer for prices and delivery information.

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DOORS**

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Durable Douglas Fir doors
are made from old-growth
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THE NATIONAL ASSOCIATION
OF FIR DOOR MANUFACTURERS

LETTERS



The WHOLE COUNTRY demands

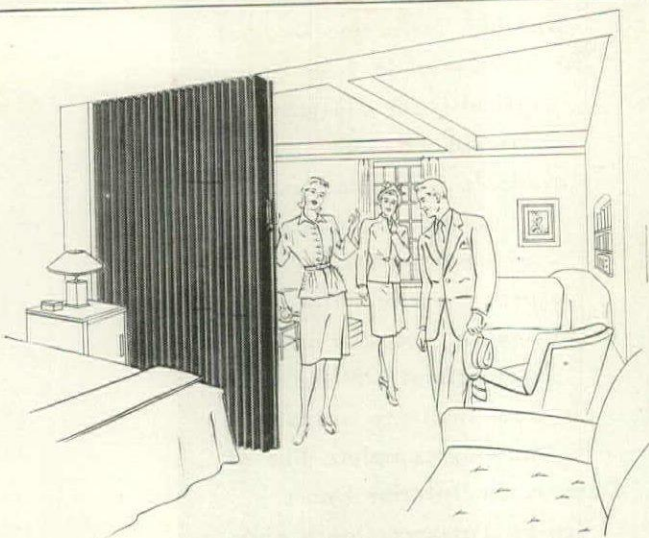
LUX-RIGHT AREAWALLS

- They're ALL steel
- Completely galvanized
- Never crack or crumble
- Hold fast to foundation
- Beautify foundation line
- Ready NOW for your job
- See your dealer, or write us for free folder

HERE is a ONE-PIECE steel Areawall for basement window wells, accepted as standard and essential and good by architects, contractors and homeowners throughout the land. Heavy-gauge steel, unbelievably rigid, hot-dip galvanized AFTER formation. Time and labor-saving. Wherever there's a basement window below ground level, LUX-RIGHT* Areawalls will give years of meritorious service.

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

SAINT PAUL CORRUGATING CO.
South End Wabasha Bridge Dept. AF7 Saint Paul 1, Minn.



IN YOUR BUILDING PLANS ... PLAN FOR CONVERTIBLE ROOMS

Modernfold Doors help you achieve the practicality and efficiency so essential for today's design. These accordion-type doors can be used in any part of the house. For instance, they can be used to make two bedrooms out of one (as illustrated). However, if the entire room is needed... merely fold the doors to the wall. Modernfold means flexible living at its best!

Fabric-covered, metal-framed, Modernfold Doors are beautiful... colorful... blend perfectly with their surroundings. Then, too, they save space... eliminate the door-swing area of ordinary doors. Write for full details on beautiful, practical Modernfold today.



NEW CASTLE PRODUCTS

1613 I Street, New Castle, Indiana

Dealers in all principal cities in the United States and many foreign countries.

about, but it was rather a rest for me. I was struck by the intensity of the contrasts of movement. It's what I've tried to express in painting."

"By what means?"

"I painted—as I've told you—a group of American landscapes, being inspired by the contrast presented by an abandoned machine—become old scrapiron—and the vegetation which devours it. Nature eats it. It has disappeared, under the weeds and wild flowers. The opposition between this pile of twisted metal and the marguerites which decorate it produces a vivid charm."

"So much for the contrast. But the movement?"

"Over there I painted in a much more realistic manner than before. I tried to translate the character of the human body evolving in space without any point of contact with the ground. I achieved it by studying the movements of swimmers diving into the water from very high. This thrilled me—you'll see what I've done with it. To express movement also, I've taken for a theme some cyclists—handsome boys and beautiful girls in red, yellow, green sweaters. I've a gouache here which I'll show you."

"There is in it an intensity of very dynamic movement—and such color."

"I've dissociated the color from the design. I've liberated the color from the form by disposing it over large areas without making it fit the contours of objects. It that way keeps all its force and the design also."

"Have you brought many things?"

"I've about forty canvases—a third of what I painted there. I had an exhibition every year. The galleries follow the general rhythm, you must always show something new."

"Are they interested in painting?"

"Very much. Beautiful pictures are seen. 57th Street is better equipped than the Rue la Boetie. The Americans like that. Collectors haven't sold their canvases during the crisis. There are a lot of people in the museums. One day, leaving an exhibit, I was approached by a taxi driver who wanted an explanation of one of my designs. I tell you—it's an amazing country."

"And still you come back to France—"

"One always returns to Paris—it's a sentimental matter. For a Frenchman or somebody who's lived here, France exercises an irresistible attraction. But I don't want to slander America. Above any faults the Americans may have—there is the deep sense of liberty they have. It is futile to look elsewhere for a spirit as liberal."

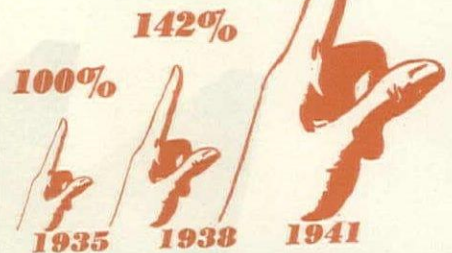
CAPTAIN CHARLES PORTER

c/o Postmaster, New York, N. Y.

(Publisher's Letter, page 66)

Growing Demands

point to **GREATER SALES**



Postwar Sales Will Triple Again

In the 6 prewar years, sales of Electric Water Heaters almost tripled. And a 1944 survey made for NEMA* shows that three times as many women want Electric Water Heaters as now have them! They're "what women want," because they're:

SAFE—Flameless, fumeless

CLEAN—Smokeless, sootless

ADAPTABLE—Permit short hot water lines—Require no flue or vent

TROUBLE-FREE as electric light

ECONOMICAL—The cost is low for plenty of hot water all the time.

Installing Electric Water Heaters in every house you build, means giving women what they want!

Electric Water Heater Section
NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION

ADMIRAL • B & F • CLARK • ELECTROMASTER • FOWLER • FRIGIDAIRE • GENERAL ELECTRIC • HOTPOINT • HOTSTREAM • KELVINATOR • MONARCH • NORGE • PEMCO • REX • RHEEM • SELECTRIC • SMITHWAY • THERMOGRAY • THERMO-WATT • UNIVERSAL • WESTINGHOUSE

A House Wired For An Electric Range Is Already Wired For An

Electric WATER HEATER!

These Magazines know what Women want



WOMAN'S HOME COMPANION survey shows that more women plan to buy an Electric Range than any other type!



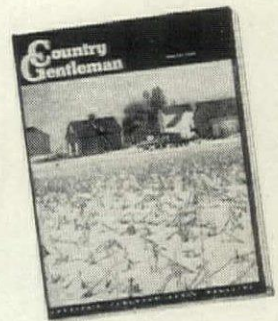
McCALL'S MAGAZINE readers have made the Modern Electric Range their 2-to-1 "must have" choice in a recent contest.



SUCCESSFUL FARMING survey shows that nearly twice as many REA customers will own an Electric Range after the first two postwar years as now have one.

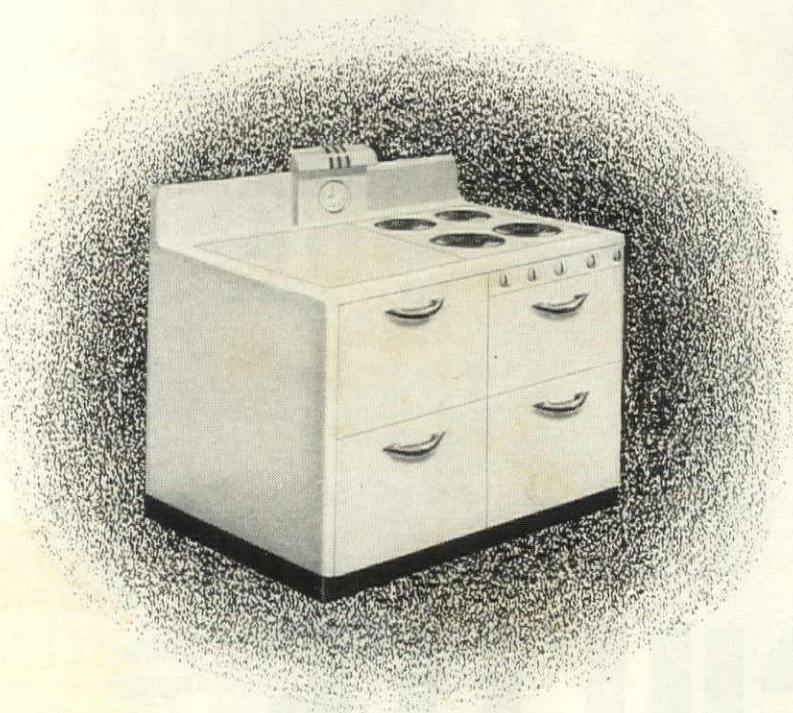


HOUSEHOLD MAGAZINE survey indicates that 3 times as many women want Electric Ranges as "now have" them.



COUNTRY GENTLEMAN survey shows that among the upper two-thirds of white farmers, the Electric Range is the 2-to-1 choice!

Their Surveys show the swing is to



Electric Ranges

Leave it to the magazines to find out what their readers want. Survey after survey shows that women *prefer* the convenience, cleanliness, dependability and economy of modern electric cooking!

Pre-war sales figures add further proof to this trend. Between 1933 and 1941, sales of Electric Ranges increased over 900%!

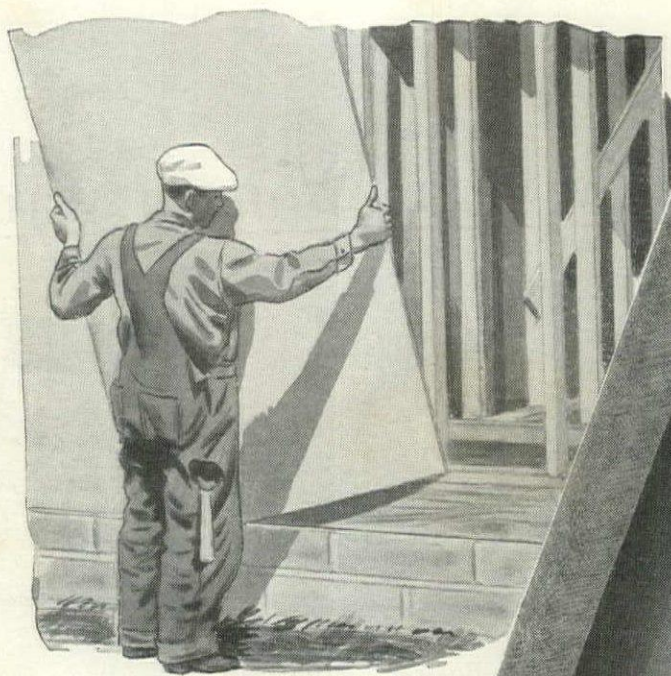
There are no two ways about it—to cash in on this growing demand, you must wire the new homes you build for Electric Ranges. Built-in, the cost of such wiring is negligible, but the selling power is tremendous!

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

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

FOR EASIER SALES
Wire your houses
FOR ELECTRIC RANGES

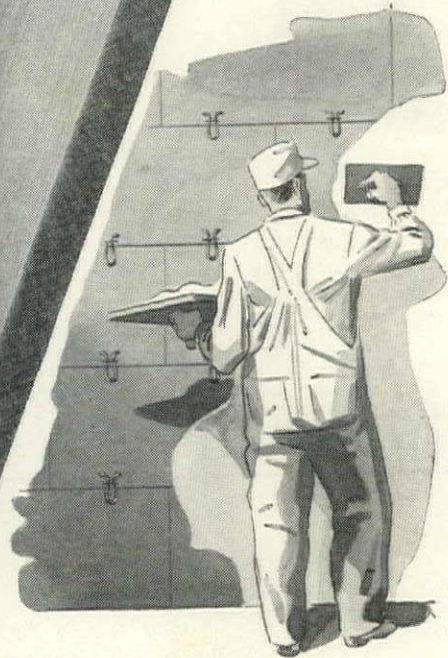




INSULATION

OUTSIDE

On outer-walls, Insulite Bildrite Sheathing, asphalt treated throughout the board, builds a wind-proofed, weather-tight wall of high insulation efficiency, superior bracing strength.



INSULATION

INSIDE

On inner-walls, Insulite Lok-Joint Lath builds a second wall of insulation, a strong, rigid plastering surface.



VAPOR CONTROL

Insulite Lok-Joint Lath, with asphalt barrier against the studs, retards vapor travel. And Insulite sheathing, being permeable to vapor, permits what little vapor that escapes the barrier to pass toward the outside.

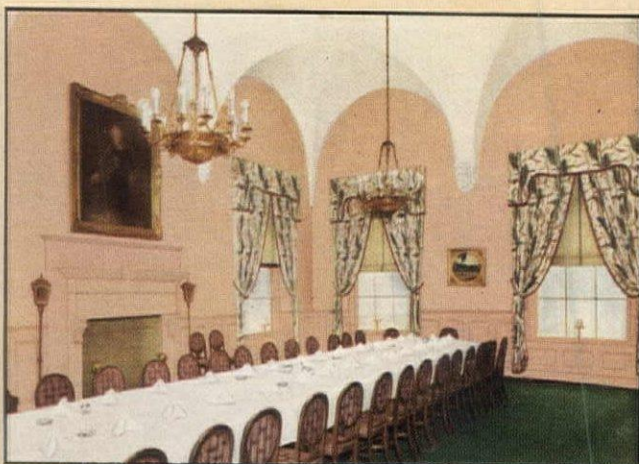
INSULITE



INSULITE
Minneapolis 2
Minnesota

Insulates as you build

The original wood fiber structural Insulating Board...made exclusively from wood



● A color arrangement such as this induces a feeling of well-being which aids the enjoyment of good food, well served.



● Warm glowing colors in this entrance foyer express a feeling of welcome and create a sense of cheerfulness.

Color Dynamics...



Pittsburgh's exclusive painting system helps you to plan color arrangements that are not only pleasing to the eye but also add to the health, comfort and efficiency of your clientele.

● Soft Blue-Green on walls of this private office rests the eyes and draws together colors on furniture and drapes.

**NOW... Get the Benefits from
the ENERGY IN COLOR... 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 "Vitalized 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.

PEOPLE who work or live in public or semi-public buildings appreciate those things which help to keep them going... with greater mental efficiency... with less physical strain... with greater comfort and restfulness.

● Pittsburgh's science of COLOR DYNAMICS enables executives responsible for maintenance to specify *with scientific accuracy* color arrangements that retard fatigue, stimulate energy, improve morale, increase safety and promote well-being. There is no longer any reason for the depressing monotonies found so often in offices, hotels, restaurants and hospitals.

● This new method of painting is based on the influence of the *energy in color* upon normal

human beings. Laboratory tests have proved that color can be used to help people relax, feel more cheerful, inspire trust and confidence, create better feeling among employees.

● With COLOR DYNAMICS you can also make offices or living quarters seem more spacious and attractive. Rooms can be made to appear longer or wider, ceilings higher or lower, halls lighter and wider.

● For a complete explanation of what COLOR DYNAMICS is and how it works, write for a free, profusely illustrated booklet, "COLOR DYNAMICS for Office Buildings, Hotels and Restaurants." Pittsburgh Plate Glass Company, Paint Division, Dept. AF-4, Pittsburgh 22, Pa.



PITTSBURGH PAINTS

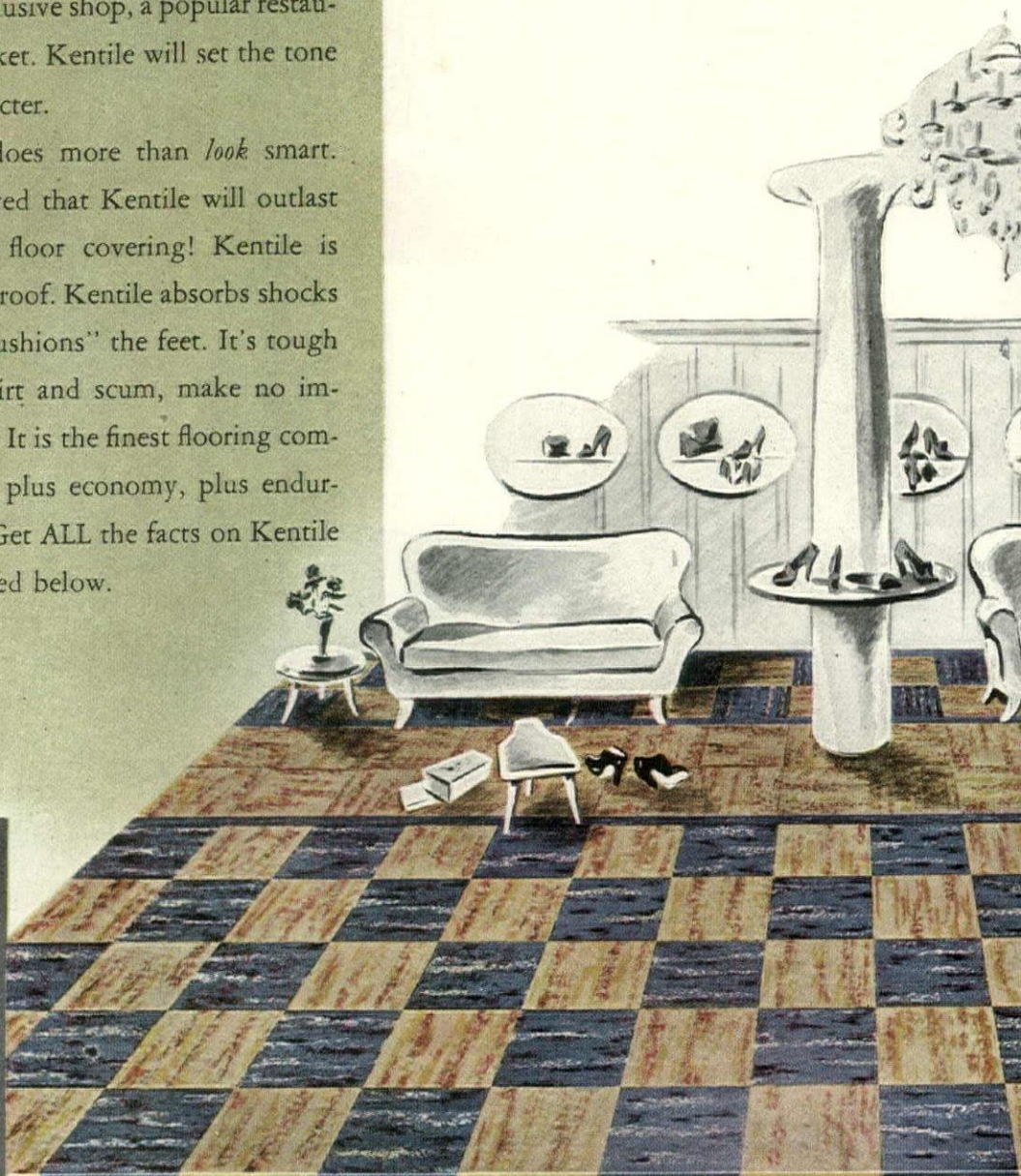
PITTSBURGH PLATE GLASS COMPANY, PITTSBURGH, PA.

PITTSBURGH STANDS FOR QUALITY PAINT AND GLASS

THE BETTER TO SHOW YOUR SHOES, SIR!

Eye-appeal can influence many a sale. And eye-appeal can start with your Kentile floor—anywhere—in an exclusive shop, a popular restaurant, or a super-market. Kentile will set the tone and define the character.

But Kentile does more than *look* smart. Experience has proved that Kentile will outlast any other type of floor covering! Kentile is moisture and stain proof. Kentile absorbs shocks and sounds, and "cushions" the feet. It's tough—stabbing heels, dirt and scum, make no impression on Kentile. It is the finest flooring combination of beauty, plus economy, plus endurance you can find. Get ALL the facts on Kentile in the booklet offered below.



DURABLE! Kentile is virtually unequalled for wear. It shows no mop marks, isn't scarred by scuffing. Never curls or buckles, isn't roughened by friction! Kentile floors, laid 14 years ago in Rockefeller Center, show no signs of traffic wear.

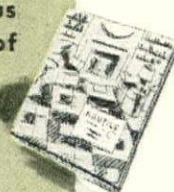
ECONOMICAL! Kentile is the lowest cost type of flooring you could buy. In addition, it wears indefinitely—never loses its colors—and can be laid faster!

VERSATILE! Not only does Kentile permit you to have your own individual color schemes and designs, but alterations in floor planning are simple—the necessary new tiles are the only ones that must be laid.

Altogether, Kentile offers 15 different advantages. They're all told in the new, richly illustrated full-color catalogue that shows all the Kentile colors and some of the countless patterns possible—plus full-color pictures of

Kentile in actual use. Send for your copy today—no obligation.

DAVID E. KENNEDY, Inc.
68 Second Avenue, Brooklyn 15, N. Y.
208 Bona Allen Bldg., Atlanta 3, Ga.
605 Market Street, San Francisco 5, California
30 No. Michigan Ave., Chicago 2, Illinois
452 Statler Bldg., Boston 16, Mass.
614 Olympia Road, Pittsburgh 11, Pa.
1211 National Broadcasting Co. Bldg., Cleveland 14, Ohio



KENTILE
Asphalt Tile
Trade Mark Reg. 



A touch of architectural finesse

A BUILT-IN "PRIVATE DOORMAN"

RIGHT at your fingertips is a "private doorman"—one of the newest, most appreciated of all home conveniences.

The Avco Automatic Door Operator is an electronic device, controlled by any one of three buttons—one is inside your car, another in the garage, a third inside the house. At the touch of any button, garage doors may be opened or closed. Also, at slight extra cost, garage lights and house entrance lights may be turned on or off *automatically*.

Quickly and easily installed on any standard type of garage

door, the Avco Automatic Door Operator is guaranteed to give continuous, carefree, low-cost operation. For full information about this modern convenience, that costs only a few cents a day to operate, wire or write *today*.

AVCO Automatic

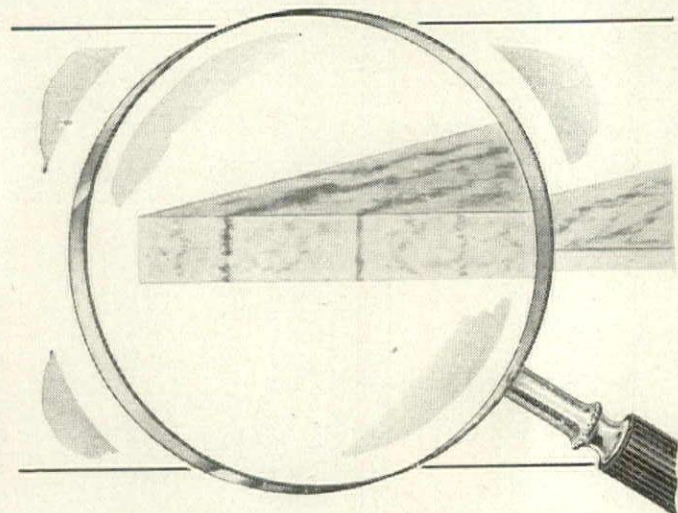
DOOR OPERATOR

THE HORTON MANUFACTURING DIVISION — THE AVIATION CORPORATION

DEPT. A1, CIRCLEVILLE OHIO

WRIGHTFLOR

Colors are Built in

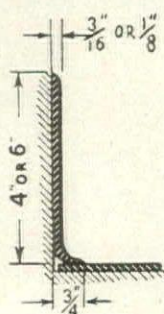


● That's Wright! This tile keeps its color to the end because the colors are not merely on the surface... they go clear through. It is possible to produce this extraordinary tile in the lighter, lovelier shades that lend themselves so well to modern decorating, in addition to the richer, darker shades for floors where practicality is of prime importance.

Wrightflor is compounded from synthetic rubber and other virgin materials... moulded and vulcanized under high temperature and hydraulic pressure... resulting in these outstanding advantages:

1. Smooth, high density surface resists heaviest traffic abuse... won't crack, chip break or dent.
2. Resiliency of Wrightflor makes it easy and quiet to walk on.
3. Impervious to alkalis, ink stains, grease and oil.
4. The numerous attractive mottled colors can be laid in any number of imaginative patterns.
5. Lays smooth over wood or concrete—old or new.
6. Requires no special care... only damp mopping, buffing and occasional waxing.

Where traffic is heavy, where beauty and low maintenance are necessities, Wright Rubber Tile is right. Include Wrightflor in your plans. Color samples with prices and specifications can be obtained by writing to Wright Rubber Products Division, Taylor Manufacturing Company, 3062 W. Meinecke Ave., Milwaukee 10, Wisconsin.



"WRIGHT-ON-TOP" COMPRESSION BASE

Finish your flooring job—rubber tile, linoleum, asphalt, terrazo or wood—with Wright-On-Top Compression Base. Providing a tension when installed, this patented rubber base overlaps floor edge... stays snug despite floor shrinkage... seals against dirt and water... eliminates border scribing. Specify Wright-On-Top Compression Base for every flooring job.

U.S. Patent No. 2300084
Canadian Pat. No. 417,081

WRIGHT RUBBER TILE

Flooring of Distinction.

A LETTER FROM THE PUBLISHER

Marie Hansen



Pir



Paine-FORTUNE **FORUM'S Wright**
which the bride... and which the groom?

Dear Reader:

This issue results largely from a companionate marriage between the Editors of the FORUM and of FORTUNE. While individuals engaging in such a relationship are often considered social outcasts, we trust the April issues of these magazines will be both socially and, more important, intellectually acceptable. Speaking for ourselves, we found the "honeymoon" provocative, exhausting and eh—satisfying.

Research for the issues was pooled, and it was a large pool. We asked Patricia Divver of FORTUNE's Editorial Board to cast a beautiful, dark, appraising eye at the mass and estimate 1) How much it weighed? 2) How many pages of research were garnered? 3) How many words of research were written? Her answers 1) "Oh gosh!" 2) "Gee whiz!" 3) "Great God!"



FORTUNE'S Divver

Provoked by this vague, attractively delivered, un-research-like response, we next visited FORTUNE's librarian, Olga Anderson, custodian of the archives. Obviously, we should have gone to Miss Anderson in the first place. With a pretty shake of her up-swept head, as she whistled one bar of "Do not put bananas in the refrigerator," Miss Anderson gave out... "Not counting oodles, just oodles, of stuff already in the combined FORTUNE-FORUM library, the research collected specially for the Housing numbers weighs 234 pounds!" Our curiosity thoroughly aroused by now, we made a hand count of all FORTUNE and FORUM researchers with the result that we found one young lady who weighed 98 pounds and another who weighed 136

pounds. Our choice was clear; either we could sit with this research on our lap or, at no greater discomfort, with two researchers on our lap. (To be concluded next month.)

* * *

Yesterday the General Motors strike was settled. Today, to ride in a cab from 49th Street straight down Fifth Avenue to 34th Street took 17½ minutes. Said the driver, "This town is going to choke itself to death. Someday businessmen are going to move out where there's some room for themselves and their help!" Department of Urban Rehabilitation please take note.

* * *

The Fourth Estate is heard from again as two more top-flight journalists comment on the new FORUM.

GOOD HOUSEKEEPING



"You have made that wonderful magazine of yours even better than it was before."

HERBERT R. MAYES,
Editor

PARENTS' MAGAZINE



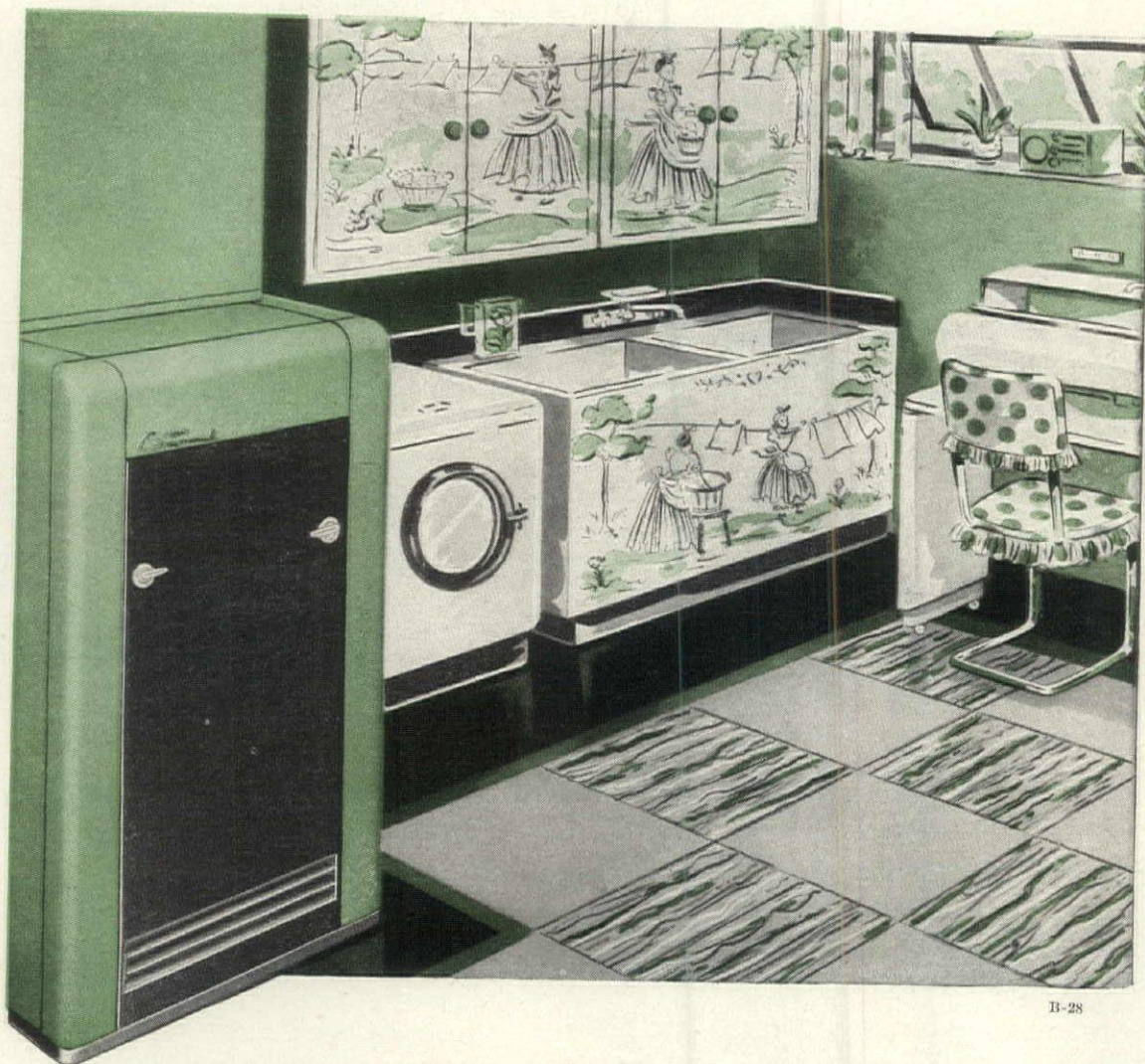
"Congratulations to the editors of the new FORUM! It is an excellent job, and I know it will be received with great enthusiasm among all the building interests. The new features and its increased size should bring even greater success to an exceedingly important publication."

GEORGE J. HECHT, President

* * *

At press time, along with everyone else in the building business, we await official publication of the STOP BUILDING order, expected this week. Rumors and counter-rumors are everywhere. Regardless of the wording of the order, its administration will determine the immediate fate of thousands of projects and those connected with them. It is clear that the Expediter-Administrator intends to get as much housing built as quickly as possible. But it is equally clear that much other construction must proceed. How else maintain our economy, employment and a functioning construction industry ready for the unprecedented general building program the U. S. so badly needs? As he tosses in his sleep these nights, many a building man (veterans included) is heard to pray—"Wyatt, please!"

H.M.



Give your clients Indoor Comfort "De Luxe"

... with

MUELLER
Climatrol

REG. U. S. PAT. OFF.

Climatrol is a system for conditioning and handling air . . . which enables you to deliver "Climate Control"

Climatrol is your assurance of providing home owners with True Indoor Comfort . . . and winning their lasting good will. You not only enable them to enjoy today's higher standards of indoor comfort, but you also put them in a position to take advantage of future developments which can be added to the original Climatrol installation.

Indoor comfort depends upon the condition of the air in the home. When you install a system that is

basically designed to treat and handle air — as a permanent "built-in" feature of the home—you are creating a sound long-range investment for your client.

And when it's a *Climatrol* system, you also know that you can depend on the performance record of a company that has specialized in home comfort for 89 years. Each Climatrol unit is specially designed for efficiency with a specific fuel — gas, oil, or coal, whichever is preferred. There is a Climatrol unit to suit every home, in the complete Climatrol line. Consult your nearest Climatrol "comfort merchant."

Write for bulletins.

L. J. MUELLER FURNACE CO.

2001 WEST OKLAHOMA AVENUE, MILWAUKEE 7, WISCONSIN

PORTLAND *rings up* **7 out of every 10** **Wholesale Dollars** **Spent in Oregon!**



**Portland wholesale distributing firms
 make 71% of all wholesale sales* in the state!**

Portland is Oregon's distributing center for building material. Five key wholesale building supply firms are located here. In addition, practically all nationally-known building material lines are distributed by these wholesalers or through factory branches in Portland.

It is logical that Portland should be the wholesale distributing center for Oregon and southwestern Washington, because Portland does more building than all the rest of the area. In 1945, Portland totaled 63% of the dollar value of building permits issued in this territory.

**Sales Management Survey of
 Buying Power.*

The daily Journal offers advertisers 12,000 more subscribers in the Portland Retail Trading Area than any other daily newspaper. The Journal is today, as it has been for years, Portland's favorite newspaper, offering advertisers the largest circulation in its history, both daily and Sunday.

**Portland's Wholesale
Building Material Distributors
Can Deliver the Goods
for You!**



MASONS SUPPLY COMPANY.....2637 S.E. Twelfth
McCRACKEN-RIPLEY AND COMPANY.....2221 N. Albina
A. McMILLAN AND COMPANY.....220 S.E. Ankeny
PACIFIC BUILDING MATERIALS COMPANY.....400 N. Thompson
JAMES A. C. TAIT & COMPANY.....316 S.E. Madison

**The Journal Does MORE Than Cover The Market . . .
it carries your advertising to the men and women
who distribute and retail your products!**

*Of the 448 Men and Women—Truck Drivers to Executives—
Employed by Portland's Building Material Wholesalers—97%
Read The Journal Regularly.

*Of the 576 Men and Women Employed in Portland's 159 Retail
Building Material Stores—95% *Read The Journal Regularly.*

**The Journal is your trade merchandising medium as well as your
consumer advertising medium in Portland!**

**Figures from an Independent Survey made December, 1945.*

The JOURNAL

PORTLAND, OREGON

Afternoon and Sunday

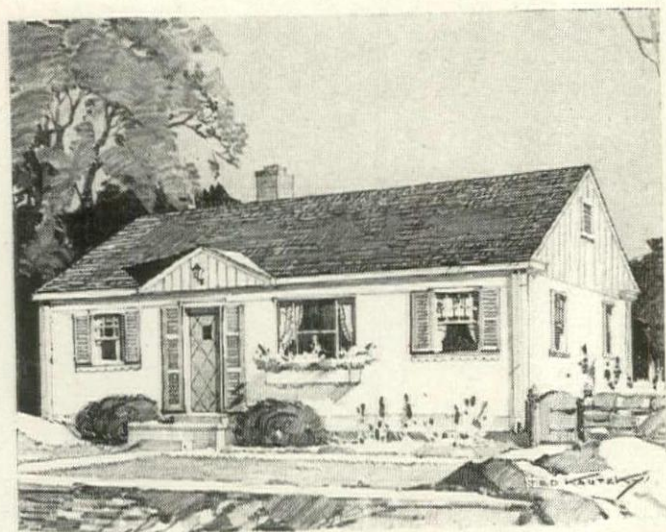
Member Metropolitan and Pacific Parade Groups



Presented by REYNOLDS-FITZGERALD, Inc., New York, Philadelphia, Chicago, Detroit, San Francisco, Los Angeles, Seattle

MASS PRODUCED DWELLINGS

for BETTER LIVING...



National Homes, of superior construction and individualized beauty, are designed to fill the greatest need of the post-war building market—more homes of quality for more people, at lower cost! National Homes have steel columns and beams, steel open-web bar joists, panelized floors, aluminum windows, and insulated exterior walls and ceilings. Three standard sizes available, 24'-6" x 28'-6", 24'-6" x 32'-6", and 24'-6" x 36'-6".

**National
HOMES
CORPORATION**
★
Lafayette, Indiana, U. S. A.



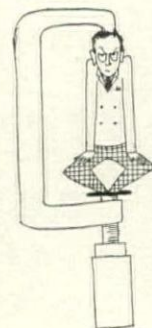
Wilson Wyatt, ebullient new National Housing Administrator who is valiantly trying to pull American homebuilding out of its bottle-neck (p. 96), got his present hectic position in spite of a delayed telephone call. In his former Louisville Mayor's office, Wyatt hush-hushed an excited secretary into holding a Washington phone call until he finished a leisurely ten-minute chat with a friend in New York. Finally picking up the other connection, he was appalled to hear a mild voice say, "This is Harry Truman. Can you come to Washington right away on an important job?" Wyatt's acceptance plunged him into a furious schedule of round-the-clock work sessions often lasting from 8:00 a.m. until 5:00 the next morning, pushed into the dim and dreamy past his less wakeful Louisville days once described by *TIME* magazine under the caption, "Spellbinder." Said *TIME*: "In Louisville, Mayor Wilson Wyatt made an electrically transcribed speech, played the record back to hear how he sounded, fell asleep before he had finished."

Buckminster Fuller, whose original Dymaxion house shocked conventional architects twenty years ago, is at last giving his critics the laugh with a perfected Dymaxion design ready for mass production at Beech Aircraft (p. 129). Prescient inventor, cartographer and mathematician, Bucky has been in revolt against a conservative universe (including a long line of prim New England ancestors) ever since he burst Harvard's austere undergraduate bounds to entertain the entire chorus of a New York musical comedy. Among his more startling inventions are a three-wheeled car, a system of mathematics which he calls "energetic geometry" and a Dymaxion globe of the world made from non-distorting squares and triangles combined into a jagged sphere. World-changer Fuller is intrigued with spheres, is built like one and, to keep up with his whirling brain, has developed the clock-cheating habit of sleeping only two hours in 24.



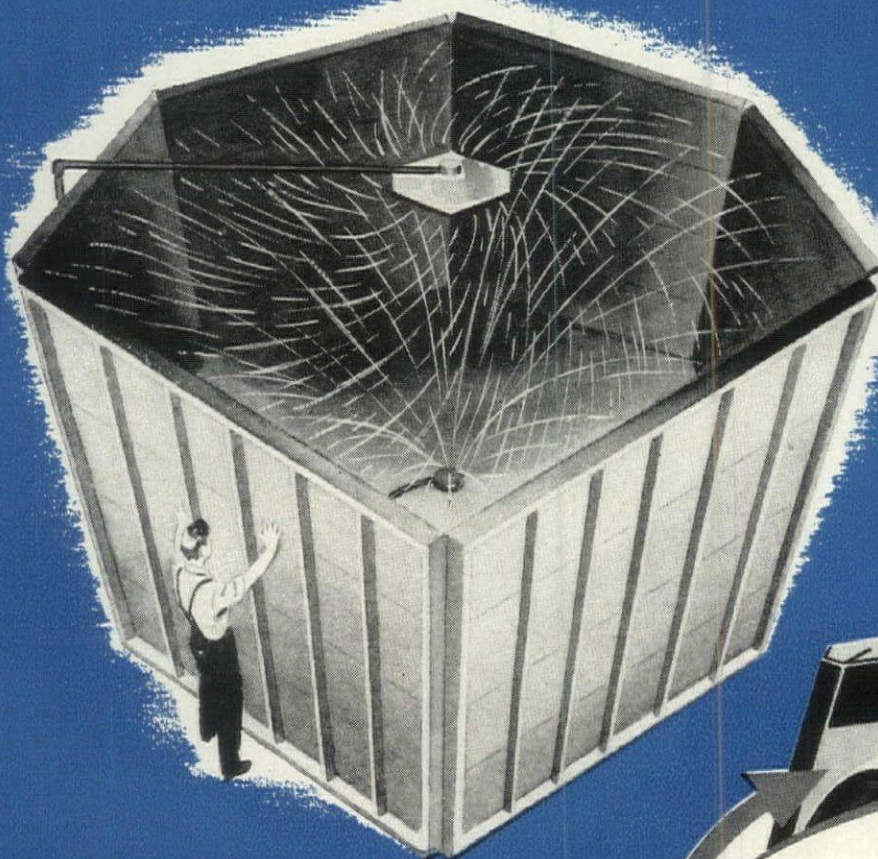
The career of Charles Corwin White who designed the Straus-DuParquet revolving kitchen (p. 149), has been influenced, we suspect, by an innate distaste for work. His technical training was acquired in the school of trial and error rather than the University of Missouri, from which institution he escaped without taking a single course in architecture or engineering. The guiding philosophy of his life, however, was established much earlier. When he was eight years old, his Missouri farmer father gave him the chore of picking hazel nuts and hulling them—a lengthy and tedious operation. Young Charles, bored with his father's insistence on useful tasks, promptly developed a hulling machine which reduced his man hours of labor from 86 (two weeks) to 4 (one rainy afternoon). From such an energetically indolent start White now makes a handsome living saving steps for other languid citizens.

Jim Hansen, President of the newly formed Storgewall Corporation (p. 143), is a man with a passion for precision and a disdain for tolerance (engineering, not socio-political). Against rebellious murmurs from a crew of conventionally trained craftsmen, Hansen reduced the tolerance on his prefabricated cabinets from the usual 1/16 in. to zero, or a perilously close facsimile. This display of micrometer accuracy is only one of many for Mr. Hansen. The legend goes that when Jim was running a railroad through the Tennessee mountains, his two survey parties, starting from different states, shook hands within 1/4 in. of each other.



THIS GIANT "WEATHEROMETER"

Drove 165 inches of "Rainfall" Against U-S-G Sheathing



THE DIFFERENCE
IS IN THE CORE!

New! Different! Sensational!

U-S-G SHEATHING

with the Asphalted-Gypsum Core

Let it rain . . . let it pour! U-S-G Sheathing weathers all weather, stacked on the job, nailed on the studs, stocked in open sheds. That's what the U-S-G Laboratories proved in a recent test. They drenched big panels of U-S-G Sheathing with 165 inches of simulated rainfall in just 15 days . . . more rain than the

average United States locality receives in 5½ years. Absorption was only 3.4% by weight . . . and there was no warping, no buckling, no opening of joints. Now available in limited quantities. For test-it-yourself samples and merchandising helps, ask your U-S-G salesman or write 300 W. Adams, Chicago 6.

As the gypsum core mix is formed, waterproof asphalt is dispersed throughout. Panels have great bracing strength even when wet.



FIREPROOF. The gypsum makes these panels fireproof, helps protect all kinds of frame construction. No building paper needed.



CUTS SHEATHING COSTS ⅓ to ½. One man can handle the ½"x8"x2" panels, cutting and nailing right on the studs. You can use brick, wood, asbestos, stucco or stone siding.



United States Gypsum

For Building • For Industry

Gypsum • Lime • Steel • Insulation • Roofing • Paint



*Sure protection...
Easy installation*
with ANACONDA
THROUGH-WALL
FLASHING

• Grafton, W. Va., High School, equipped with Anaconda Through-Wall Flashing. Carleton Wood, Clarksburg, W. Va., Architect; Fuel City Metal Works, Clarksburg, W. Va., Sheet Metal Contractor.

YOU CAN READILY SEE from this illustration why Anaconda Through-Wall Flashing is known as "the flashing that drains itself dry on a level bed." The die-stamped dam and corrugations provide positive drainage in the desired direction, intercepting and disposing of wind-driven rain and moisture penetrating the masonry.

Equally evident is the fact that this pre-formed flashing is easy to install. Because of the flat selvage, sharp bends for counter flashing, or for locking to adjacent metal, are easily made. And merely by nesting one or two corrugations, Anaconda Through-Wall Flashing is readily locked endwise to form water-tight joints.

The photograph below shows the Grafton, West Virginia, High School, in which this durable, rustproof flashing provides positive protection against seepage, and decreases the risk of heaving by frost.

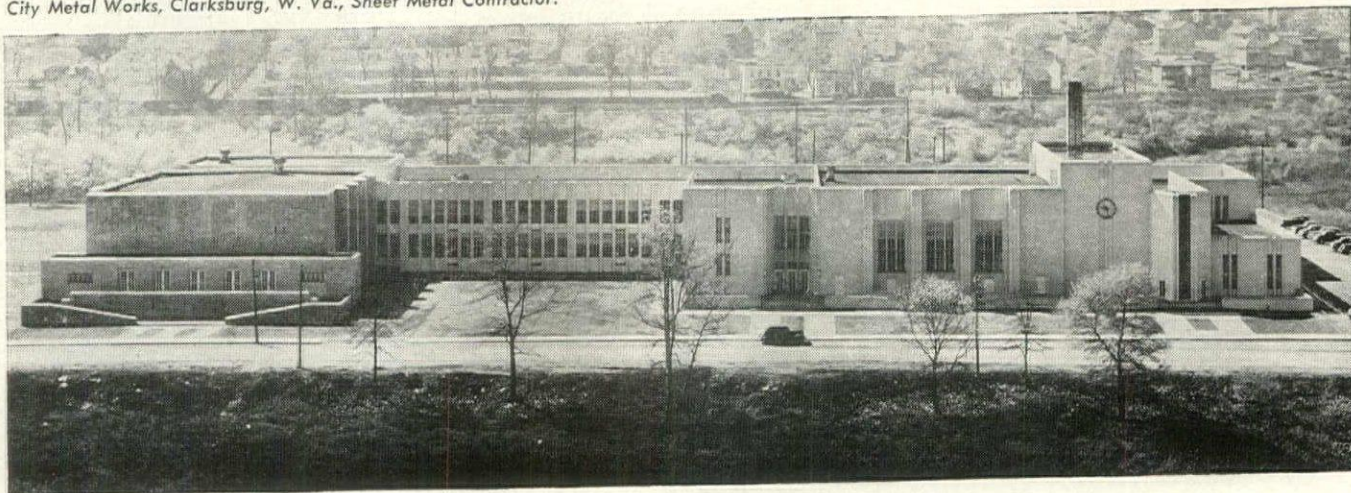
For detailed information on Anaconda Through-Wall Flashing, write for Publication C-28.

4684

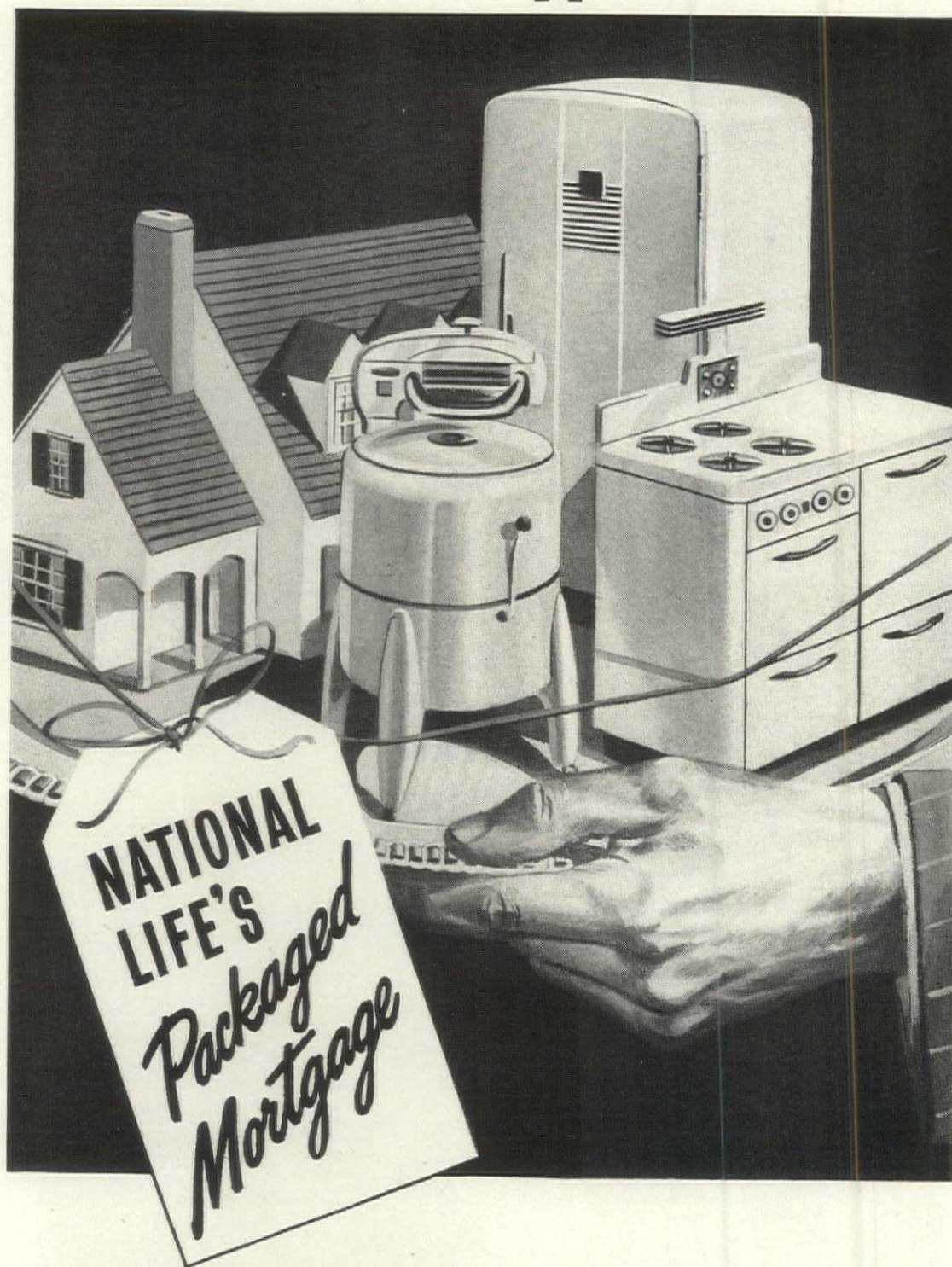


Anaconda
COPPER

THE AMERICAN BRASS COMPANY
General Offices: Waterbury 88, Connecticut
Subsidiary of Anaconda Copper Mining Company
In Canada: ANACONDA AMERICAN BRASS LTD.,
New Toronto, Ont.



Yes... New Kitchen Appliances are Real Estate, too!



By including new kitchen equipment as part of the real estate, National Life's "Packaged Mortgage" brings greater convenience and economy to the financing of new homes.

Refrigerators, ranges, home freezers, home laundries, ironers—all are within the lien of the "Packaged Mortgage."

Payments are easier to meet—uniformly distributed—not heavy during the first few years as in installment buying. The "Packaged Mortgage" eliminates the high costs of ordinary installment financing.

National Life of Vermont, 96-year old Company with \$300,000,000 assets, are pioneers in offering the "Packaged Mortgage".

Full details of this simplified, cost-cutting plan will be sent upon request. Send coupon for folder and name of nearest loan correspondent.

NATIONAL LIFE INSURANCE COMPANY

HOME OFFICE—**VERMONT**
MONTPELIER

*A Mutual Company, founded in 1850,
"as solid as the granite hills of Vermont"*

CLIP AND MAIL THIS COUPON

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Name.....

Business or Home Address.....





For

**FAST and DURABLE
CONCRETE CONSTRUCTION**

It's

**CF&I WELDED WIRE
FABRIC**

The uniformly spaced...
pre-assembled... ready-
to-lay reinforcement.

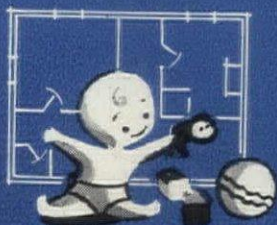


The Colorado Fuel and Iron Corporation

General Offices: Denver, Colorado

Steel Works: Pueblo, Colorado

What Kind Of Homes Do Families With Children Want?



What are the basic needs
in homes planned for
FAMILIES WITH CHILDREN?



Do families with children
want
MODERN OR TRADITIONAL?



Do most of them want
**MORE ROOMS OR
MORE ROOM?**

Hundreds of ques-
tions like these are
answered in the
only home building
survey ever con-
ducted exclusively
among parents
planning to build.

GET THE INSIDE STORY

of what $\frac{2}{3}$ of the market wants

Government surveys show that
of all those planning to build
or buy new homes, two-thirds
are families with children.

In a recent survey among families with children PARENTS' MAGAZINE learned some things that will surprise you. The facts unearthed in this study are accurate because:

- They were obtained in the name of PARENTS' MAGAZINE, a trusted counsellor in American homes where there are children.
- They represent an adequate cross-section of opinion.
- They embody the thinking of parents who definitely plan to build, buy or modernize homes in the near future.

You'll find these facts invaluable... you'll find them in a specially-prepared book just off the press... you'll find the book on your desk within a few days after you write your request on your business letterhead.

SUPPLY IS LIMITED—WRITE TODAY!



FAMILY HOME DEPARTMENT

PARENTS' MAGAZINE

Read by More than 875,000 of America's Families with Children,
Your Biggest Market

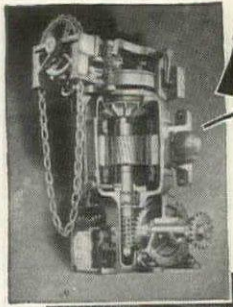
52 Vanderbilt Ave., New York 17, N. Y.

CHICAGO

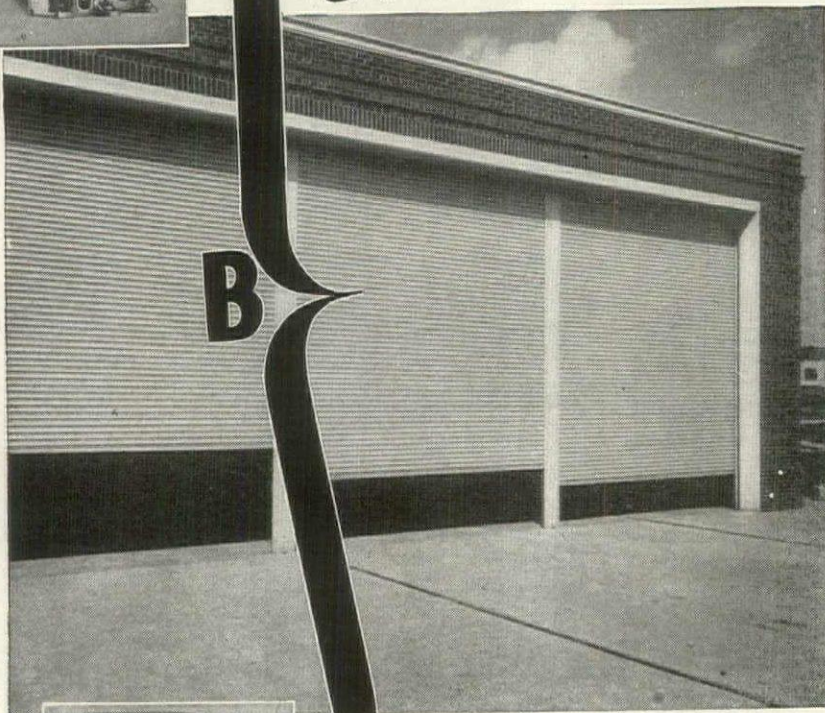
BOSTON

ATLANTA

SAN FRANCISCO



THE ABC'S of DOOR EFFICIENCY



A—The Kinnear Motor Operator saves effort, time, and manpower. It goes into action instantly at the touch of a control button—opening, closing, or stopping the door with smooth speed and efficiency. It's a sturdy, integral unit featuring a specially designed torque-output motor, machine-cut gears, and bronze bushings that assure lasting, trouble-free operation.

B—The same bull-dog ruggedness and high operating efficiency are featured in the sturdy, all-steel, interlocking-slat construction of Kinnear Rolling Doors. Coiling into small space

above the lintel, Kinnear Doors permit full use of *all* floor and ceiling space around doorways, remaining out of the way and safe from damage when open. These and other basic advantages have made Kinnear a first choice for nearly half a century!

C—Remote Control adds still further convenience and economy by permitting more strategic placing of control buttons, or centralized control stations for any number of doors. It helps eliminate doorway "bottlenecks," and cuts heating and air-conditioning costs by encouraging prompt door closure at all times. Remote control assures maximum advantages from the smooth, easy, time-saving action of Kinnear Motor Operated Rolling Doors.

Write today for complete information on the ABC'S of dependable door satisfaction at its best.

THE KINNEAR MANUFACTURING COMPANY

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1742 Yosemite Avenue San Francisco 24, California
Offices and Agents in all Principal Cities

KINNEAR

ROLLING DOORS

*Saving
Ways in
Doorways*

THE URBAN LAND INSTITUTE has organized a council of business leaders from principal U. S. cities, selected geographically to provide an authoritative and representative unit. This group, to be known as the Downtown Business District Council, will act as a clearing house for widespread information and experience on solving the problems of large cities. The council has now under study the questions of transportation, parking, taxation, smoke and noise, zoning, leases and urban redevelopment programs. The results of its studies will later be published in technical bulletins. Members of the Council include: A. J. Stewart, Louisville, Chairman; Paul McCord, Indianapolis; Foster Winter, Detroit; Newton Farr, Chicago; L. J. Sheridan, Chicago; E. W. Bedford, Omaha; L. F. Eppich, Denver; H. J. Tobin, Milwaukee; Hobart Brady, Wichita; Richard Seltzer, Philadelphia; W. H. Ballard, Boston; Walter Schmidt, Cincinnati; Winston Wheeler, Wichita; Henry Miller, Dallas; David Simpson, Portland, Ore.; Clarence Turley, St. Louis; Warren Morris, Cleveland; Alvin Cates, Atlanta; Burrows Johnson, New Orleans; Ward Gifford, Kansas City; Norman Ogilvie, San Francisco; and Leslie Williams, New York.

THE COMMITTEE on Opportunities for Veterans in the Construction Industry has prepared a booklet entitled *Opportunity Unlimited—a Guide for Veterans Interested in the Construction Industry*. This presents a brief but detailed outline of the major professions, skilled trades, apprentice training and business opportunities in the building industry, and should be of interest not only to the veteran but to anyone wishing to enter one of these fields. Copies may be secured (10 cents each) by writing to E. L. Chandler, Sect. of Opportunities for Veterans in the Construction Industry, Room 703 Defense Bldg., 1026 17th Street, NW, Washington 6, D. C.

THE BUILDERS & TRADERS EXCHANGE, Detroit, announces the beginning of the 21st term of its evening school. Echlim M. Kaake, project manager for Albert Kahn Associates, continues as instructor-in-charge and will teach the advanced classes. Raymond Malchie will be in charge of the beginners group.

THE ASSOCIATION OF COLLEGIATE SCHOOLS OF ARCHITECTURE expects that increasing enrollments at schools of architecture may demand additional teachers in the near future. Those qualified and interested in teaching positions should send their personnel records to Prof. Paul Weigel, Sect'y of the Assn. at the Department of Architecture, Kansas State College, Manhattan, Kan.

WILLIAM WURSTER & THEODORE BERNARDI announce the addition of Mr. Donn Emmons as a member of the firm. Mr. Emmons, recently in the U. S. Naval Reserve, has been with the office since 1938. The new firm name will be Wurster, Bernardi and Emmons, architects, San Francisco, Calif.

RALPH S. LAMIE of H. K. Ferguson Co., has been named chemical consultant to the National Resources Commission of the Chinese government. Still retaining his position with the Ferguson Co., Mr. Lamie will go to Formosa to assist in China's reconstruction.

MR. CHARLES KLOPP, architect, has returned from duty in the U. S. Navy to join H. W. Lochner & Co., engineers and architects, Chicago. The practice of the firm in municipal engineering and city planning now includes architectural service.

Appointment of DR. WALDO H. KLIEVER as director of research has been announced by the Minneapolis-Honeywell Regulator Co. Dr. Kliever will (Continued on page 78)

build with..



VIKING

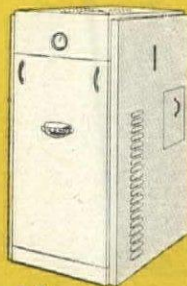
A POTENT NAME IN AIR CONDITIONING
WINTER, SUMMER AND YEAR 'ROUND



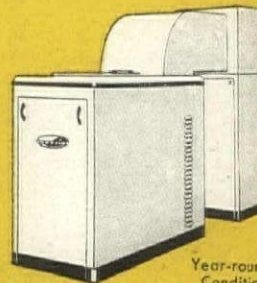
Water Heaters



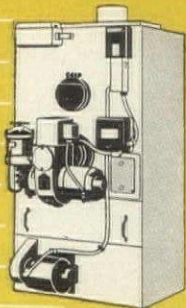
Oil and Gas
Furnaces



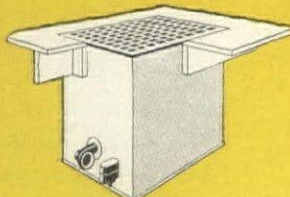
Boilers



Year-round Air
Conditioners



Utility Room
Furnaces



Floor Furnac



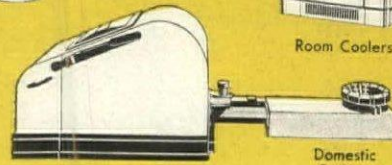
Space Heaters



Conversion
Burners



Room Coolers



Domestic
Stokers

SUB-CONTRACT TO THE VIKING INSTALLING CONTRACTOR

He Installs Good Jobs—VIKING units are good—sound design features, precision manufacture with unexcelled mass production facilities, proven in nationwide use.

He Can Handle Any Job—The VIKING line of heating, cooling and air conditioning is complete—for every fuel—gravity or forced air—basement or utility room.

He Meets Schedules—Every VIKING dealer has the active support of his VIKING distributor who carries an inventory of all the items needed for the bill of materials on your job. Your subcontractor is relieved of purchasing from many sources, unloading cars, delivery, order expediting, shortage and transpor-

tation claims. His entire time is devoted to installing on schedules which fit into those of the other crafts and subcontractors. His distributor assists in financing, engineering and service.

He Protects Your Reputation—Long after you have delivered a house to the owner, the mechanical equipment may need service or adjustment. He expects immediate intelligent help—otherwise he is critical of his builder. The VIKING installing contractor is a permanent local merchant who maintains a year round service department, to help the owner, thus protecting you from criticism. His VIKING distributor assists by maintaining a parts service and a competent service consultant.



LET'S LOOK AT THE VIKING INSTALLING CONTRACTOR

1. Technical ability—To lay out a good job.
2. Mechanical ability and facilities—for good installation.
3. Service facilities—year round department for cooling and heating.
4. A permanent, local Merchant—available to the owner whenever needed.
5. Support of a substantial distributor with inventories, financial, engineering and service assistance.
6. A business man who handles his sub-contracts on a business basis—provides a good job to specifications on schedule and contributes more than his share to satisfying your user.

THE VIKING MFG. CORPORATION

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GEORGIA MARBLE

makes the
Belle Meade Shopping Center

distinctive!



White Georgia Marble facing; suburban theatre and store development in Belle Meade, suburb of Nashville, Tenn., Marr & Holman, Architects.

As suburban communities grow, in direct proportion to the expanding housing program, there will be an increasing demand for modern shopping centers. Georgia Marble is eminently practical for modernizing shops and stores as well as for new construction because it can be supplied in veneers as thin as $\frac{7}{8}$ " and does not require painting on the back. Upkeep is negligible. The stone is readily available.

THE GEORGIA MARBLE COMPANY, Tate, Georgia

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BRIGHTON 35, MASS.

513 Liberty Trust Building
PHILADELPHIA 7, PA.

Bond Building
WASHINGTON 5, D. C.

1570 Hanna Building
CLEVELAND 15, OHIO

"The Marble with the SPARKLING CRYSTAL"

coordinate research activities in all Honeywell divisions in Minneapolis and will instigate new research projects in the field of automatic control devices.

HARRY CUTLER, recently released from the Coast Guard, has been named director of publicity of the Prefabricated Home Manufacturers' Institute, Washington, D. C.

MISS BETH PETERSON, for the past ten years State extension specialist in textiles and clothing at Iowa State College, Ames, Iowa, has been appointed home economics consultant in the Extension Division, Public Relations Dept. of the Du Pont Co.

EXHIBITIONS

The Central Pier Company announces the plans for the Tenth Annual Model Homes Exhibit which opens May 25, 1946 and operates four months to October 1, 1946. The exhibit will be located on Central Pier on the Atlantic City Boardwalk. The plans contemplate an exhibit consisting of five full size houses, completely furnished, equipped and landscaped. Many lines of merchandise are to be represented in the exhibit and in the construction of the houses. Names and addresses of people interested in various products on display are to be taken and will be sent directly to the manufacturer. Floor plans, construction outlines and photographs of the houses may be purchased.

HARVARD UNIVERSITY GRADUATE SCHOOL OF DESIGN offers two or three fellowships (not to exceed \$1,500 each) for advanced study in City or Regional Planning for the academic year 1946-7. Applications should be made before April 15 to the Chairman of the City Planning Department, Robinson Hall, Harvard University, Cambridge, Mass. and should include an account of the applicant's training and experience with an outline of the study or research to be undertaken were he to receive a fellowship. Fellowships are usually open to candidates for the Master's or Doctorate degrees.

THE MUSEUM OF MODERN ART, N. Y., has announced that in addition to its present hours it will remain open every Thursday until 10 P.M., with a film showing at 8:15 P.M. This is due to increased attendance, which in the past six months was 56,000 over the previous six. Since it is impossible at this time to enlarge the Museum physically this is the only way its actual capacity can be expanded.

AWARDS

The 40 finalists in the Fifth Annual Science Talent Search of the Westinghouse Educational Foundation will go to Washington to compete for the \$11,000 in scholarships to be distributed. Four-year scholarships of \$2,400 each will be given to the top boy and girl, along with 8 other prizes of \$400 each. The \$3,000 remaining will be distributed at the discretion of the judges.

COMPETITION

A. F. DAVIS of the Lincoln Electric Co. has donated a fund to present four annual cash prizes totalling \$700 to undergraduate authors and publications printing the two best articles on welding during the preceding year. To the author and publisher of the best article will go \$200 each; to those of the second best, \$150 each. The first awards will be given for papers published between now and July 1, 1946. Presentation of prizes will be in October, 1946.

SCHOLARSHIPS

THE JOHN STEWARDSON MEMORIAL SCHOLARSHIP in architecture offers a prize of the value of \$1,000 to study architecture to citizens of the U. S. with the equivalent of four years training in either college or office (Continued on page 82)

BUILD WITH **STRAN STEEL**

BUILD FOR ECONOMY, PERMANENCE AND FIRE-SAFETY

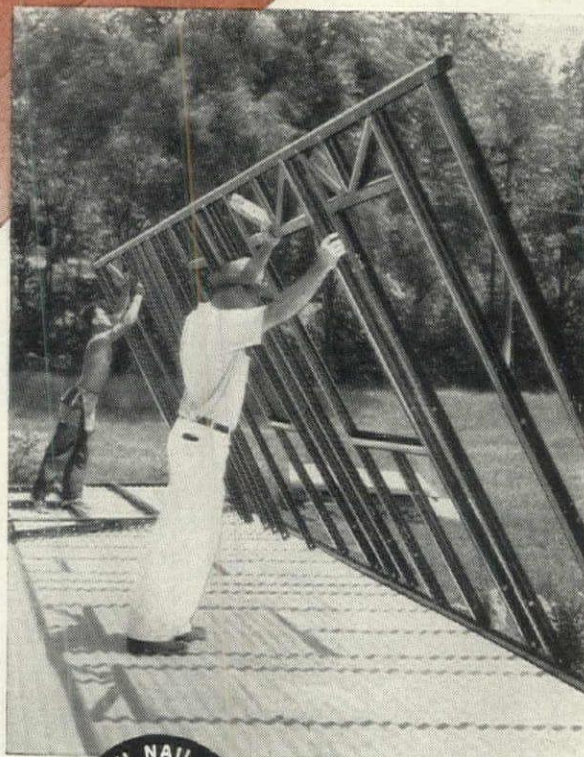
Because they feel that basic improvements begin with the frame, many architects and builders are planning their new buildings around Stran-Steel, the material that makes steel framing practical and economical for light-load structures.

Workmen using ordinary carpenter's tools find Stran-Steel fast and easy to erect. Framing members are assembled with self-threading screws. Studs and joists embody the exclusive Stran-Steel nailing groove, which permits collateral materials to be nailed directly to framing members. The completed frame is durable, fire-safe, sag-proof . . . of uniform quality throughout . . . low in original cost, inexpensive to maintain.

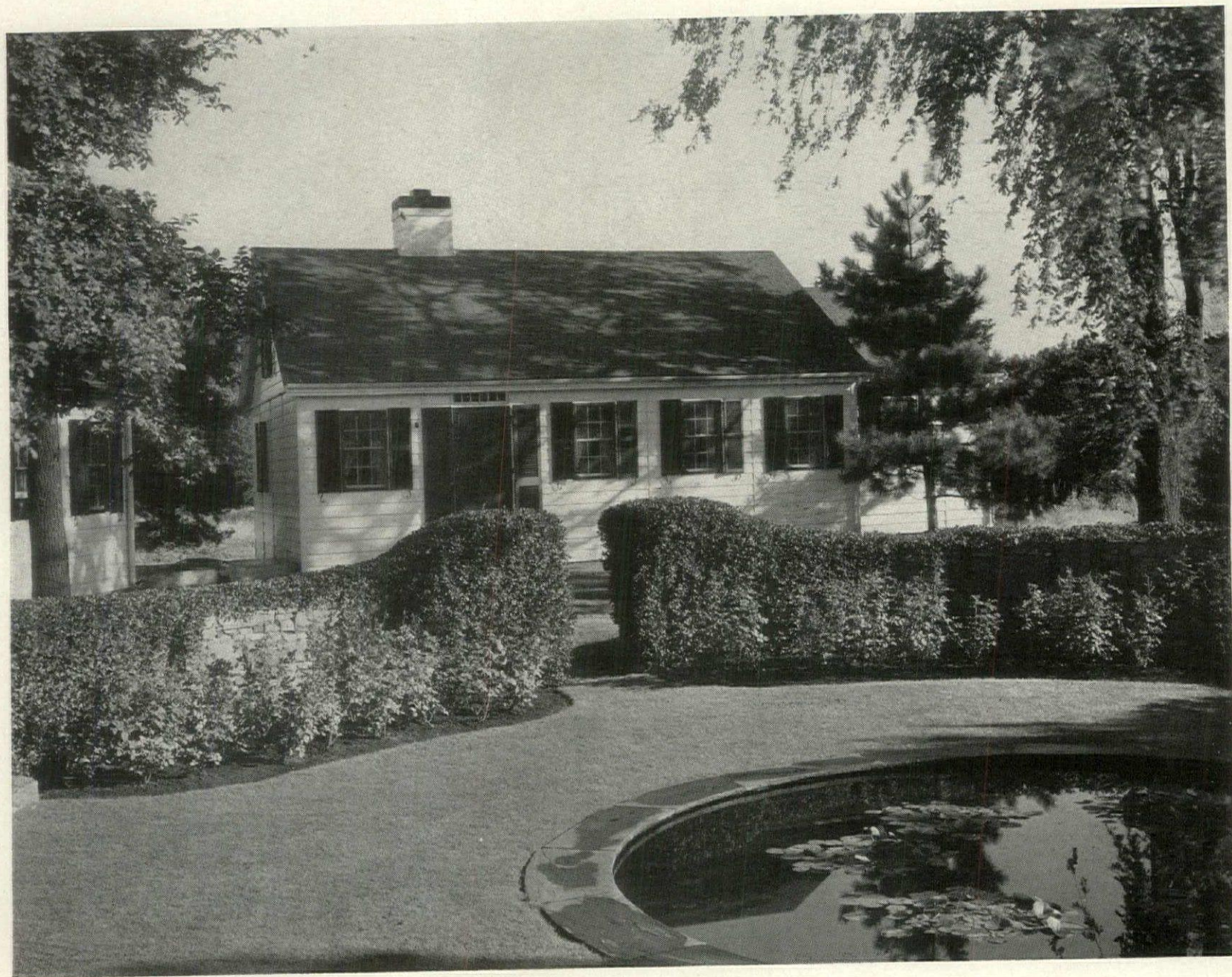
In order to offer greater investment value in an apartment or housing project, single home or store—or in any similar structure—build with Stran-Steel! For further details, see Sweet's File, Architectural, Sweet's File for Builders, or the January issue of Building Supply News.

GREAT LAKES STEEL CORPORATION

STRAN-STEEL DIVISION • PENOBSCOT BUILDING, DETROIT 26, MICHIGAN
UNIT OF NATIONAL STEEL CORPORATION



Whether under the pressure of the emergency program—
—or in the normal process of peacetime building—
*these two companies look forward to serving the public
with quality homes!*



YOUR PREFABRICATED HOME . . .

will have the experience of over a half-century
of New England craftsmanship found in—

E. F. HODGSON CO. HOMES

And will have the thoughtful engineering and latest design in homes built and developed for the war effort by—

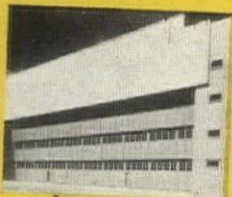
ALLIED HOUSING ASSOCIATES, INC.

CENTRAL OFFICE - 730 Fifth Avenue, New York, N. Y.

You could have specified this door

with...

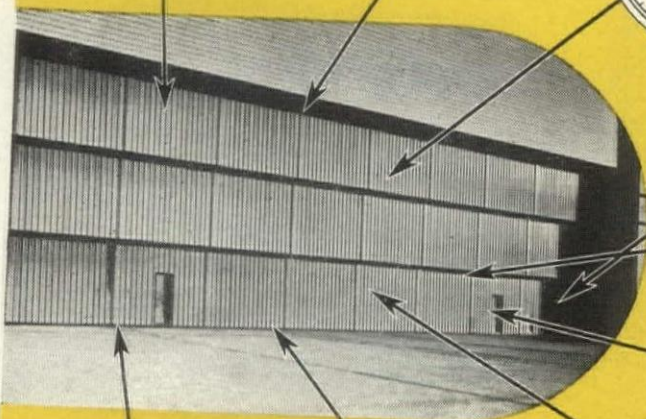
any height and width any skin material, with or without windows



to open completely in ONE MINUTE, if speed is needed



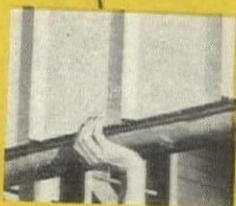
electric or manual operation
—it's fully counterbalanced



all sections reach-
ing peak at same
time, yet able to be
stopped at any point
to save heat



any number of sliding
pilot doors



heat and sound insulation and a safety device
to halt descent if door touches an object



independent doors, but not obstructed by a
dividing member

lowest section conforming to ground slope

Robertson Vertical Lift Door



H. H. ROBERTSON CO.



2403 Farmers Bank Building
Pittsburgh 22, Pa.

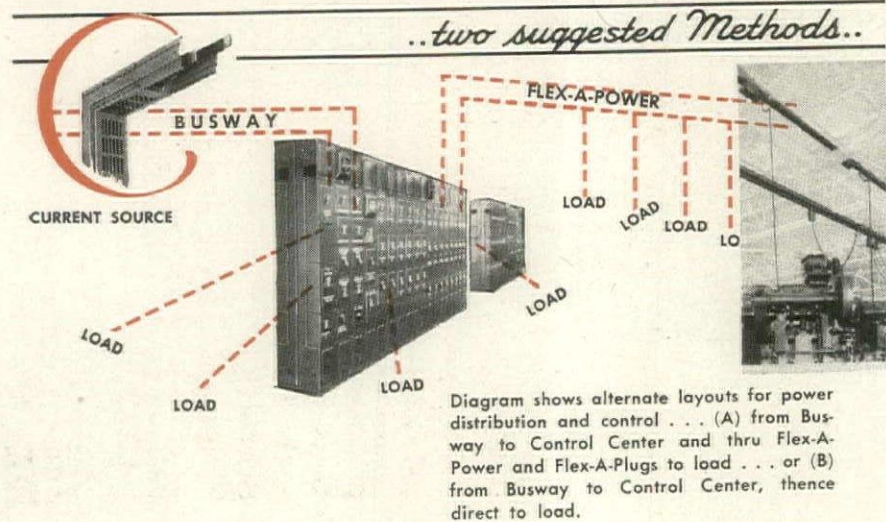
Offices in 50 Principal Cities
World-Wide Building Service

Note that the sections of this Door nest above the opening and in front of the main truss. The Door subtracts nothing from the working area of the building. Ceiling — walls — floor — outside approaches, completely unobstructed. Furthermore, the vagaries of weather which usually play havoc with large doors have no influence on the Vertical Lift. Ground rise, caused by frost, or roof sag, caused by snow, do not buckle and jam the Robertson Door. Snow or sand drifts do not block it.

A Robertson representative will be glad to show you how the sound principle of Vertical Lift can be harmonized with the details of your architectural designs. For Door literature write—

TRUMBULL

INDUSTRIAL POWER DISTRIBUTION



THREE PREFERRED PRODUCTS

TRY as hard as you will in planning an Electrical Distribution System and you'll wind up with three preferred products.

- (1) **BUSWAY** . . . for your heavy duty electrical highways from transformer secondaries . . . or from main to sub-distribution control points . . . also quite frequently as a medium for interconnection of two switchboards thru a bus-tie breaker. Capacities from 600 to 4000 amperes although 2000 ampere feeders (maximum) are desirable from an economical viewpoint.
- (2) **FLEX-A-POWER** . . . for distribution to loads. The 225 ampere size will be your "best buy".
- (3) **CONTROL CENTER** (preferred over conventional distribution panelboards) . . . which receives its power from (1) and then distributes that power thru (2) . . . or, depending upon type of occupancy, direct to load.

These Trumbull Products are now serving many plants whose names read like a veritable roster of Industry's "Who's Who". You can't go wrong in following suit.

THE TRUMBULL ELECTRIC MFG. CO. • PLAINVILLE, CONN.
OTHER FACTORIES AT NORWOOD, O. — SEATTLE — SAN FRANCISCO — LOS ANGELES

experience. Further information may be had from the Secretary, Morton Keast, 1108 Commonwealth Bldg., 1201 Chestnut St., Philadelphia 7, Penn.

THE KATE NEAL KINLEY MEMORIAL FELLOWSHIP is open to college graduates whose major studies have been in music, art or architecture. The Fellowship will be awarded on the basis of unusual promise. Applications should reach the committee not later than May 1st. Requests for application blanks and instructions should be addressed to Dean Rexford Newcomb, College of Fine and Applied Arts, Room 110, Architecture Building, University of Illinois.

CHANGE OF ADDRESS

GEORGE NEMENY, architect, is now at 14 E. 39th St., N. Y.

DANIEL BRYANT, AIA, has reopened his office in Port Huron, Mich., at a new address, 509 1/2 Water St.

MARIO J. CIAMPI announces the removal of his offices to Suite 701, 333 Kearny St., San Francisco, Calif.

NATIONAL ELECTRIC PRODUCTS CORP. is now located in the Chamber of Commerce Bldg., 411 Seventh Ave., Pittsburgh 19, Penna.

JOHN RIEDELL is moving his architectural office to Eads Building, Paris, Ill.

REINHARD & HOFMEISTER, architects, are now at their new address: 145 E. 32nd St., New York 16, N. Y.

KOHLER Co. has closed its branch office on 5th Ave., N. Y. Until further notice it will be located at 36-02 Northern Blvd., Long Island City, N. Y.

NEW OFFICES

SHELGTEN & WHITMAN, architects, announce the removal of their office to 507 Franklin St., Buffalo 2, N. Y.

CARL E. RIEMENSCHNEIDER, architect, announces the establishment of his offices for the practice of architecture and industrial design at 2659 N. 27th St., Milwaukee, Wis.

KENNETH KASSLER announces the reopening of his office for the practice of architecture in association with Louis T. Alexander and Raymond A. Bowers, at 18 Nassau St., Princeton, N. J.

COL. SAMUEL LAPHAM and MAJOR ALBERT SIMONS, members of FAIA, announce the resumption of the practice of architecture with offices at 209-210 Peoples Building, 18 Broad St., Charleston, S. C.

ARTHUR F. HOFFMANN, landscape architect, regional and site planner announces the reopening of his office at 89 Sigourney at Farmington Ave., Hartford 5, Conn.

CHARLES F. NEERGAARD, consultant in hospital planning, organization and management, announces that Dr. Allan Craig and Louis B. McCagg, Jr., architect have become associated with him in his practice. Mr. Neergaard has offices at 41 E. 42nd St., New York 17, N. Y.

MENDELSON, DINWIDDIE AND HILL (Eric Mendelsohn, AIA, John Dinwiddie, AIA and Albert Henry Hill), 233 Sansome Street, San Francisco, Calif., announce that they have formed a partnership for the practice of architecture.

LOUIS HATKOFF, architect, is reopening his office at 356 W. 22nd St., New York, N. Y.

S. HARRISON GURNEE, architectural renderer, recently with the TVA, is opening his office at 16 Florence St., Knoxville, Tenn.

(Continued on page 86)



Showing the essential construction stripped of stacks and partitions. Steel plate floor and structural stack columns are designed, fabricated, and spaced accurately to accommodate the equipment shown in the floor plan.



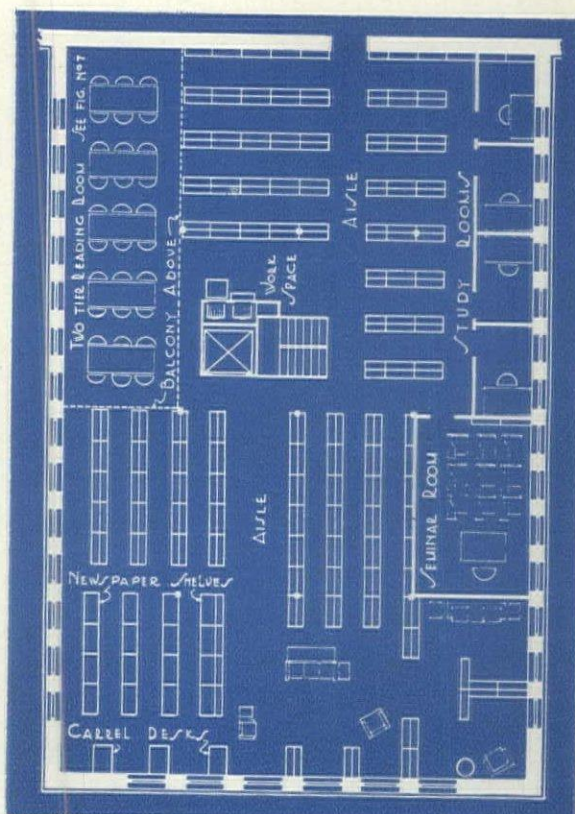
SNEAD STACK SYSTEM

Adaptable for various library requirements

Before the introduction of the Sneed Stack System the layout of a new library was more or less a compromise between immediate requirements and those of the foreseeable future. Once completed, the fixed nature of the stackroom made it impractical to rearrange the layout radically to meet changing conditions.

With the Sneed Stack System complete adaptability of space for any desired rearrangement is available at any time, and changes may be made quickly, easily, and inexpensively. The intermediate stack columns and shelves are removable, allowing the open space to be used for book storage, reading rooms, staff work space, carrels, offices, etc. Sections of the floor consisting of prefabricated steel plates covered with resilient tile may be removed to permit relocation of stairs, or for the formation of a full-height reading room within the stack area. Stacks may be rearranged without leaving marks on the floor or ceiling.

This multiplicity of uses of the stack area permits the cubical contents to be utilized fully as well as efficiently at all times. Send for catalog describing this revolutionary improvement in stack construction today.



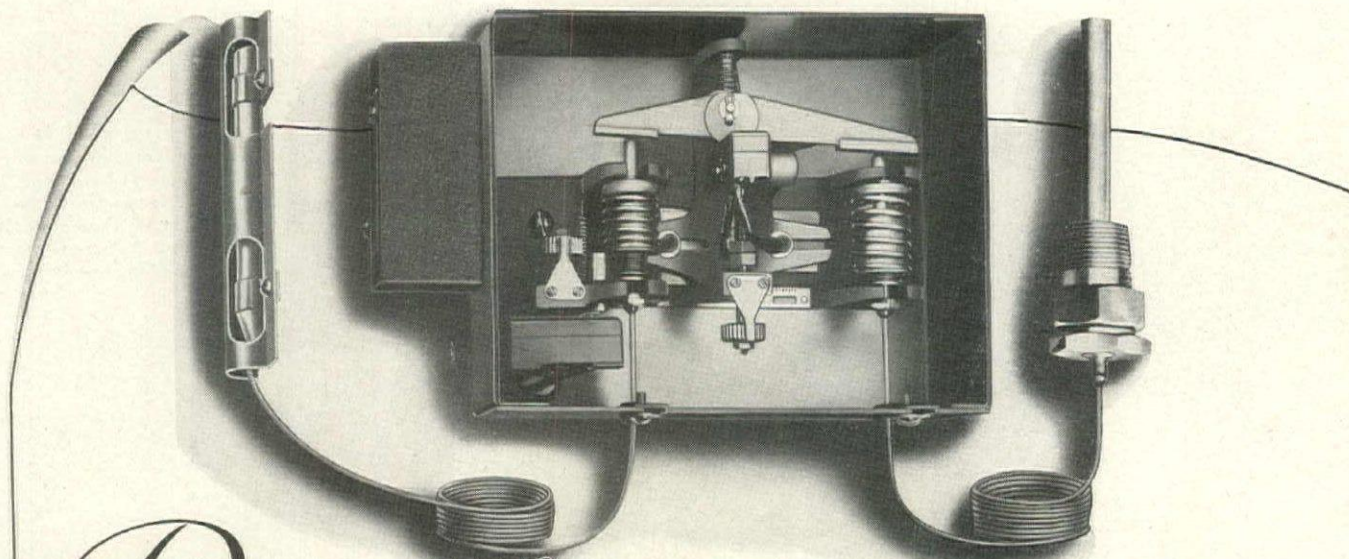
A plan study showing adaptability of Sneed Bookstacks. Structural stack columns are on 12 ft. by 18 ft. centers, and all shelving, study carrels, seminar room partitions, etc., can be removed or rearranged quickly and easily. This permits the stack area to be used interchangeably for book storage, staff work or readers, and makes the stack adaptable to meet the ever-changing demands of a library. Study and seminar rooms are enclosed by Sneed Steel Mobilwalls.

SNEAD & Company . . . FOUNDED 1849

Designers, manufacturers and erectors of library bookstacks and steel partitions

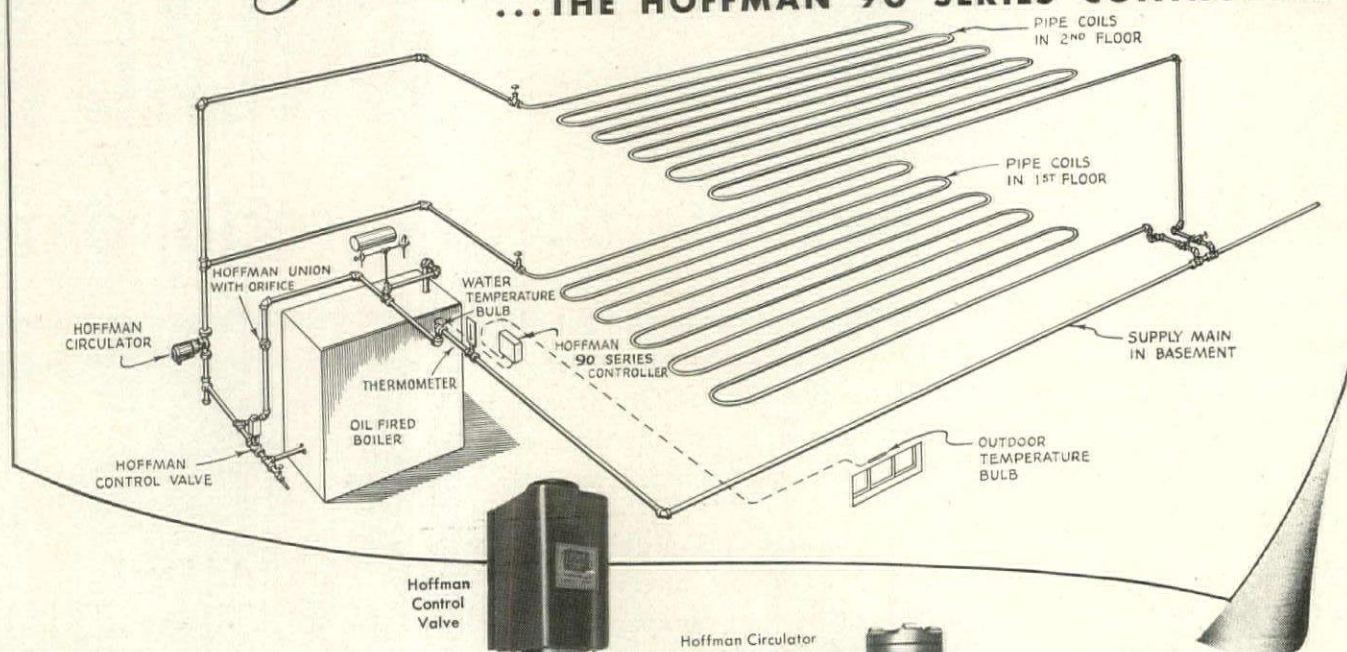
Sales Office: 94 Pine Street, JERSEY CITY 4, N. J.

Main Office and Plant: ORANGE, VA.



Designed ESPECIALLY FOR PANEL HEATING

...THE HOFFMAN 90 SERIES CONTROLLER



The sensational growth of Radiant Panel Heating has made necessary the development of special equipment to best serve its unusual characteristics. Designed with these requirements in mind, the Hoffman 90 Series System precisely controls and maintains the relatively low temperature required by radiant panels. It has proved its merit in thousands of forced hot water heating systems now in operation.

In this system, water is continuously circulated through the panels by the Hoffman Circulator. As long as the heat requirement of the panels is satisfied, the Hoffman Control Valve remains closed, and the circulating stream by-passes the boiler. When the circulating water begins to lose heat, the Control Valve is slowly opened by the Hoffman 90 Series Controller,

permitting hot water from the boiler to enter the system. *Just enough* is admitted to maintain the proper temperature in the panels.

Obviously, the mechanical brain of the system is the Hoffman 90 Series Controller. The coordinated action of its Outdoor and Water Temperature Bulbs automatically selects the water temperature necessary to keep the building at the desired degree of warmth. With delicate precision, this Control smoothly varies the temperature of the continuously circulating water, so that the heat supply is always exactly equalized with the heat loss.

The complete story is too long to tell here—write today for descriptive booklet.

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Hot Water

CONTROLLED HEAT





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BUILT-IN KITCHENS...
Specify Square D
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IN HOMES YOU DESIGN with modern "built-in" kitchens, include a kitchen-installed Square D Multi-breaker to control the electrical "built-in" appliances.*

The Square D Multi-breaker provides the necessary disconnecting means required by the National Electrical Code, in addition to furnishing separate automatic overload protection for the wiring and each major appliance. A Multi-breaker providing this added convenience and protection, installed in the kitchen, costs no more (sometimes less) than the old-fashioned method of running long circuit wires from a remote point.

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**Permanently-built-in electrical appliances now may be included in house-financing plans in many states.*

Protect major appliances
with one Multi-Breaker

Top illustration shows kitchen-located Multi-breaker arranged to protect general lighting and appliance circuits, plus these five major appliances:

- 1 • Range**
- 2 • Garbage Disposal Unit**
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- 4 • Refrigerator**
- 5 • Deep Freezer Unit**



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EWALD R. FROESE and ALBERT C. MAACK, architects, announce their association with Rex L. Becker in a partnership for the practice of architecture under the firm name of Froese, Maack & Becker, architects, at 705 Olive St., St. Louis 1, Mo.

THEODORE L. SOONTUP, AIA, architect, having served with the office of chief surgeon, E.T.O.U.S. Army, announces the re-opening of his offices devoted mainly to the specialized practice of hospital planning, design and construction at 369 Lexington Ave., New York, N. Y.

HOWARD SHARP, consulting illuminating engineer, announces the opening of an office at 82 Smallwood Dr., Snyder 21, N. Y.

EDWIN A. KEEBLE, architect, is reopening his office in the Cotton States Building, Nashville, Tenn.

SIDNEY SHURCLIFF, formerly Lt. Commander USNR, has rejoined his father, Arthur Shurcliff, in the practice of landscape architecture at 14 Beacon St., Boston, Mass. The firm is also opening a branch office in Dedham, Mass.

W. MANCHESTER HUDSON, announces the opening of his office for the practice of architecture at 113½ W. Main Street, Spartanburg, S. C.

ROLLIN WOLF and WILLARD HAHN, registered architects, are forming a partnership under the firm name of Wolf & Hahn with offices at 459 Hamilton Street, Allentown, Pa.

GARRET BECKER, architect, announces the opening of an office in Ridgefield, Conn.

LT. BERNARD HARRISON, JR., USNR, is reopening his office for the practice of architecture at 120 E. 65th St., N. Y. Prior to the war Lt. Harrison had his own practice and was chief zone architect in the northeastern states for FHA.

PAUL WIAIT, AIA and Am. Soc. C. E., Director of the Union Architectural Service in China, is now moving his base center from Foochow to Shanghai while still retaining an office in the former city.

WILLIAM FOX, JR., architect, is opening an office in the Wilma Bldg., Missoula, Mont.

MILDRED MOONEY announces the opening of a studio for the construction of accurate architectural scale models under the firm name of Mooney Miniatures at Rahway, N. J.

ANTHONY THORMIN, AIA, is resuming practice with offices at 672 S. Lafayette Park Place, Los Angeles 5, Calif.

ALBERT ROLLER, architect, San Francisco, announces the opening of a Los Angeles office at Subway Terminal Bldg., 517 S. Hill Street.

JOHN CROSS, AIA, and his son, H. Page Cross, until lately a captain in the Marine Corps, announce that they are forming an architectural firm, Cross & Son, at 730 5th Ave., N. Y.

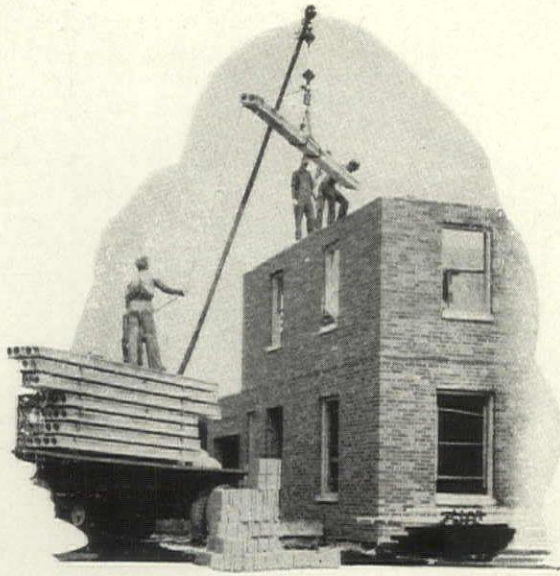
ALFRED BROWNING PARKER, AIA, is opening a workshop for the practice of architecture in Miami, Fla.

CHARLES STROTHOFF, formerly executive director of the City of Richmond Housing Authority, is resuming the practice of architecture at 1855 Market St., San Francisco, Calif.

BRITON MARTIN, having returned from service in the U. S. Army Air Corps, is reopening his office for general architectural practice at 315 S. 15th St., Philadelphia, Pa.

WILLIS L. STEPHENS, architect, has opened his office for the practice of architecture at 1201 Kings Ave., Jacksonville 7, Fla.

HARRY A. BROOKER, architect, has resumed private practice at 706 Crosby St., Akron, O. (Continued on page 90)



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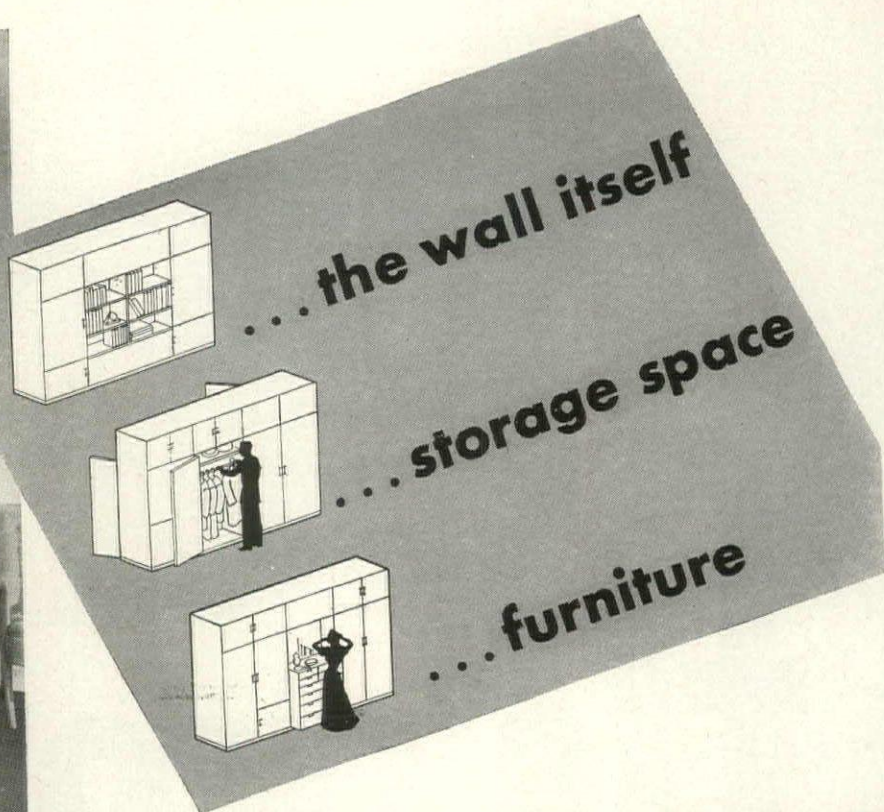
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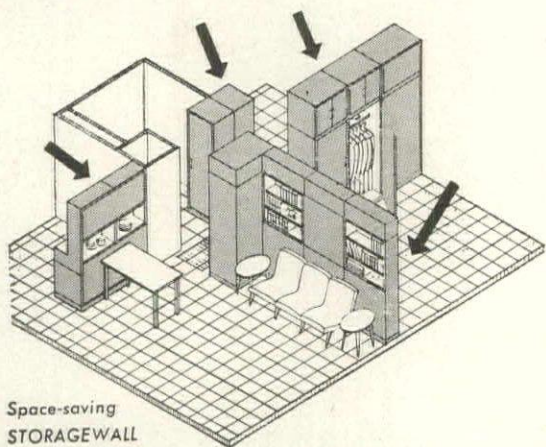
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There isn't room here to tell you the full story of STORAGEWALL. Elsewhere in this magazine is a more complete, illustrated story. To get all the details, write for a free copy of our illustrated leaflet and special order blank.

STORAGEWALL, Inc.

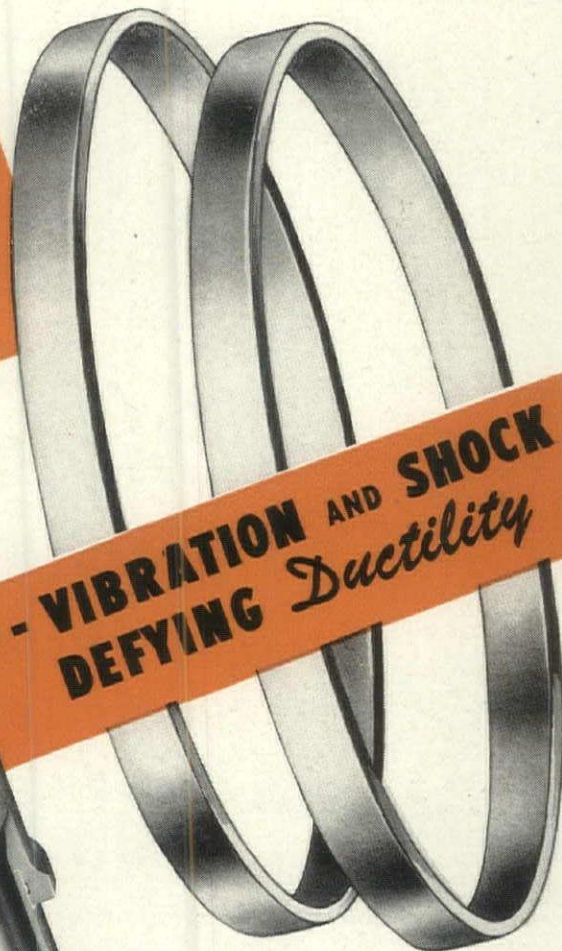
11 West 42nd Street

New York, N. Y.

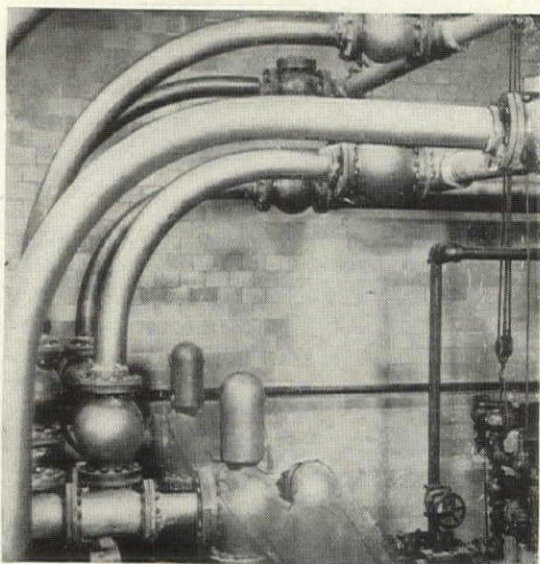
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Silbraz threadless joints are not only as strong as the copper and brass pipe and tubing they join, but also fully as ductile.

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Silbraz joints derive their properties from the rings of SIL-FOS which make them—rings that come as inserts in the bores of fittings, flanges and valves created for threadless installations.

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These properties make Silbraz joined piping the equivalent of a one-piece, leak-proof system—permanently maintenance free.

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Although the Skipper definitely is a low-cost shower designed for small homes with a limited budget, the material used in its construction is of the best quality. Walls are Bonderized Galvanized Steel with baked-on synthetic enamel finish, the same as used in higher priced Fiat showers. The essential qualities of long life construction developed by Fiat over many years of shower cabinet building are incorporated in the Skipper.

One feature of this shower of particular interest to plumbers and builders is the ease and speed of erection on the job. The walls are partly assembled at the factory. Side walls and stiles are made in one piece — tension locking joints for the rear corners are formed as an integral part of the back wall panel — this pre-fabrication gives the erector a shower body complete in three pieces with only two corner tension locking joints to slip into place.

SPECIFICATIONS — SIZE 32 x 32 x 76

WALLS—BONDERIZED, GALVANIZED STEEL. Finished inside and out with white baked-on synthetic enamel.

RECEPTOR — Semi-flat standard type Stonetex; slip-proof, leakproof, non-absorbent. Brass

drain for 2" waste connection cast integral with receptor.

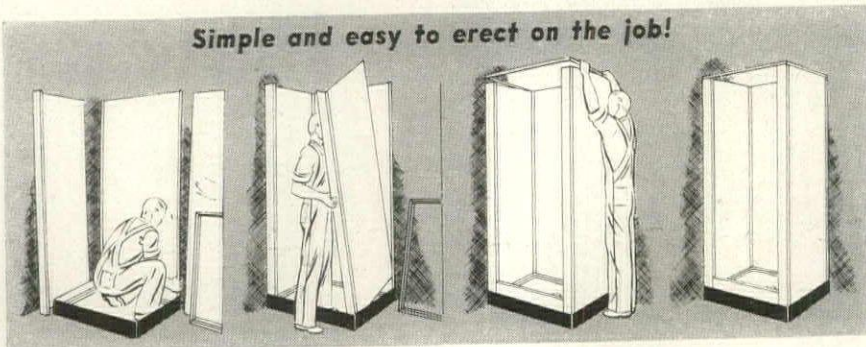
VALVES—Combination hot and cold compression valves with shower head and arm.

ACCESSORIES—Curtain rod and curtain.



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JESSE M. PAGE, JR., AIA, architect, has returned from active duty with the Seabees, and announces the reopening of his office for the practice of architecture at 116½ W. Martin St., Raleigh, N. C.

MARC EIDLITZ & SON, INC., builders, announce the opening of offices in the Grand Central Terminal Bldg., New York, N. Y.

F. HERBERT RADEY and CLARENCE L. MACNELLY, architects and engineers are combining the personnel of both their organizations to render professional service in building research, design and supervision of construction with offices at 101 N 7th St., Camden, N. J.

HART, JERMAN & ASSOCIATES, architects, announce the opening of offices at 247 Park Ave., N. Y.

DANIEL PERRY, AIA, is re-opening his architectural office at 1213 Main Street, Port Jefferson, N. Y.

DANIEL BODIN, AIA, announces that Willard N. Lamberson, AIA, has now become a partner in his architectural firm, which will now be known as Bodin & Lamberson, Atlanta, Ga. Clarence Smith, AIA, is an associate member of the new firm.

S. J. GLABERSON, architect, is now located at 14 E. 39th St., N. Y.

HAROLD WILSON announces the opening of an office for the practice of architecture at 125 Coulter Ave., Ardmore, Pa.

ARCHIE PROTOPAPAS, AIA, is resuming the practice of general architecture at his new office, 441 Lexington Ave., N. Y.

JOSEPH WATTERSON, AIA, is reopening his architectural office in the Dade Bos. Bldg., Old Country Road, Mineola, L. I.

STUART JESTER, engineer, and ADOLPH BRUKIN, architect, announce the merging of their organizations in offices located at 675 3rd Ave., N. Y.

CHARLES BAUER, JR. is opening an office for the practice of architecture at 1180 Raymond Blvd., Newark 2, N. J.

LT. CECIL HENDERSON, USNR, having been released from active duty, will resume the practice of architecture at 253 Worth Avenue, Palm Beach, Fla.

THOMAS NELSON, member of the American Society of Landscape Architects, and formerly a Charles Elliot Fellow in Landscape Architecture from Harvard University, is opening an office at 503 Republic Bldg., Louisville 2, Ky. He offers service in site planning as well as landscape architecture.

OLIVER D. RUSE and DALE E. RUSE announce their association as partners under the firm name Ruse Lumber Co. with offices at 302 W. Fremont St., Stockton, Calif.

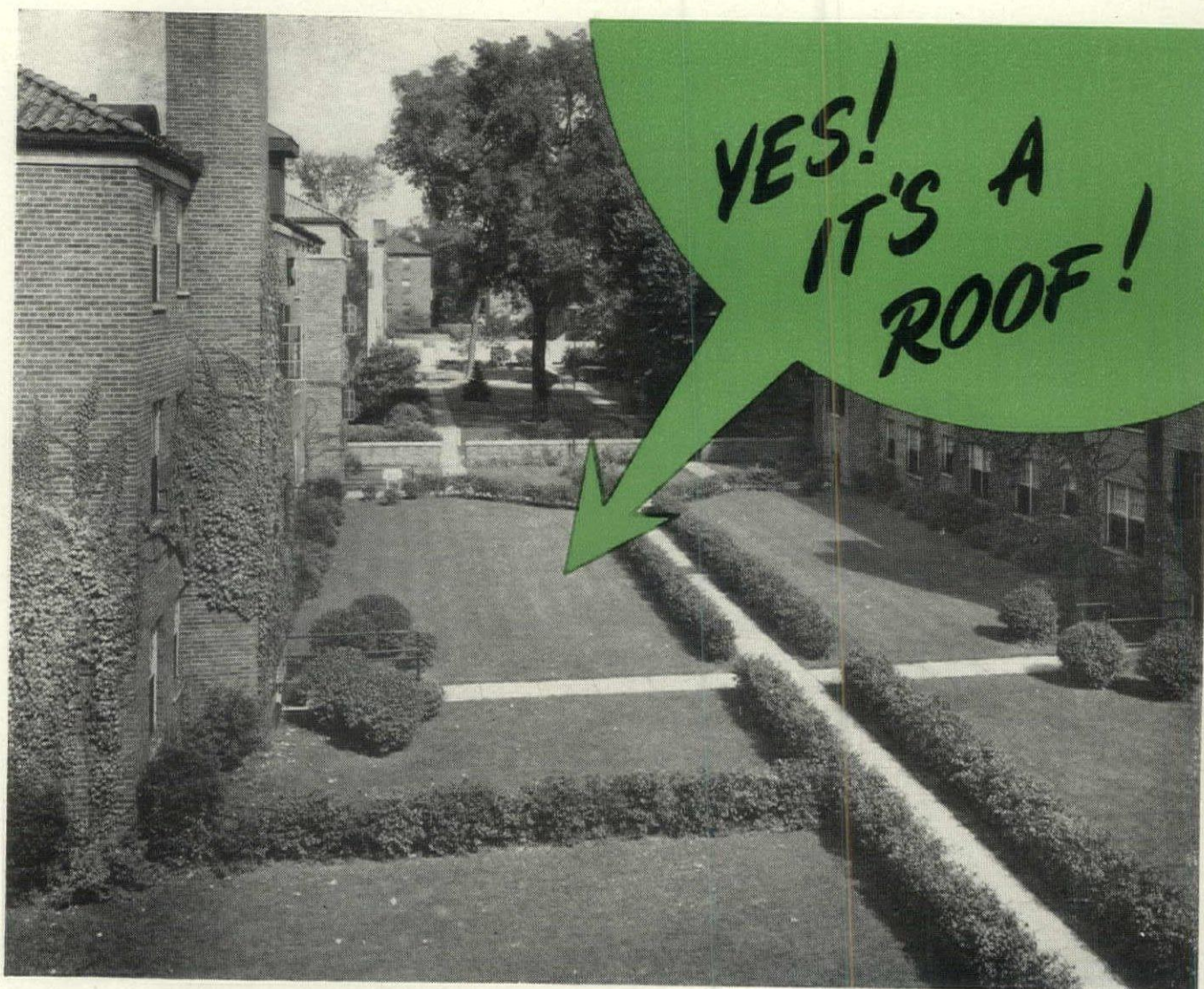
SARCO Co., INC., 475 5th Ave., New York, makers of steam traps, temperature control and heating specialties have opened an office at 1129 Vermont Ave., Washington, D. C.

DIED

HENRY J. OLSCHESKY, prominent Seattle architect. Mr. Olschewsky, a graduate of the University of Washington, had spent his whole building career in the Northwest.

CORRECTION

PROF. CHARLES H. WARNER, JR.'s name was, we regret, omitted from the list of those credited with advising on the Ingersoll Utility Unit. Mr. Warner worked closely with Architect Ralph Gulley in analyzing the twelve house plans, and with the individual architects on ideas contributing to the Unit itself.



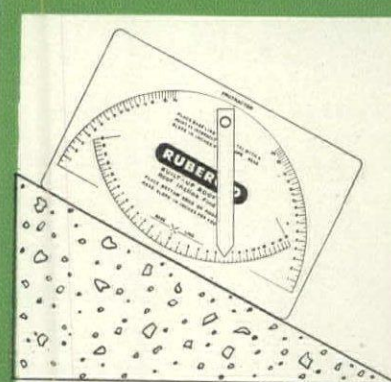
● Hard to believe, but this beautiful lawn is actually the roof of an apartment garage! It's a *modern* roof, covered with luxurious grass and shrubbery. Putting valuable roof space to work is typical of the new architectural trend—not only as garden areas but for practical utility as well. Sunny, safe areas for schools; storage and heavy traffic roofs for factories—yes, even roof parking lots are a practical possibility today, not just something to be hoped for tomorrow!

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gineers—are available now for all these recent roof developments. Ruberoid Approved Roofing Contractors, located in principal cities and towns, are ready to give you assistance in planning and executing them. No matter what type roof you may have in mind—Asbestos Felt and Asphalt, Coal Tar Pitch and Tarred Felt, or Asphalt Felt and Asphalt—call a Ruberoid Approved Roofer. His assistance, based on long experience and backed by a complete line of materials—all from the same source—assures you of the *right* roof for *any* job!

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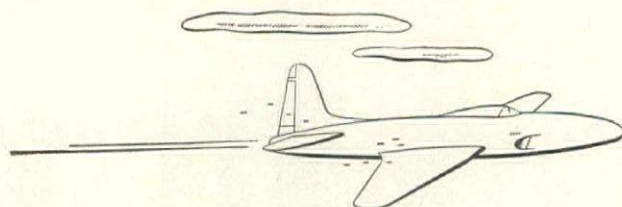
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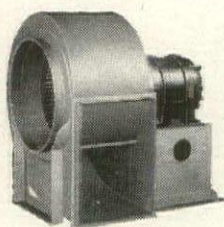


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Housing in Crisis

THE editors of this magazine are unable to recall a time when building was so beset by confusion. Background for this confusion is the Veterans' Emergency Housing Program by Wilson Wyatt. Some of the confusion comes from misunderstanding produced when the government attempted, with only partial success, to jam through Congress a number of legislative proposals which had not been adequately previewed for either the building industry or Congress itself. But that was only where the confusion began. It has now become clear that the housing program has been seized upon as the chief point of attack by those outside of government who wish the immediate removal of controls and the chief point of support by those within government who wish controls maintained, as long as the emergency exists. Thus Building finds itself unhappily cast in the role of hero or villain depending upon which side of the orchestra you sit.

Clear beyond dispute is the fact that an emergency exists, that housing is truly in crisis. Less generally understood is the further and even more important fact that the peak of this crisis is neither passed nor here, but inevitably due some months from now. Meanwhile, what is being lost is time, and in this emergency time is measured at the rate of 3,000 houses a day. Another point which is fogged in confusion is the key point of all, the purpose of this program. That purpose is to provide an adequate supply of housing for veterans at prices they can afford. In appraising the program, whether in its controversial detail or as a whole, it is within the framework of that purpose that everything else must be viewed.

Building greeted the Wyatt program with something less than cheers. That reaction should not be hard for anyone to understand who will recall what Building has been through during the last decade and a half. First, there was the depression, then the depression's aftermath, followed by several short but abortive feints at recovery, and finally came the war which made extraordinary demands of Building accompanied by bedeviling restrictions and regulations.

With this unhappy prelude, Building faced war's end with high confidence born of a vast backlog of building demand, not just for houses but for every known kind of structure. And it faced this fine prospect certain that in place of controls and regulations would stand a government offering the industry nothing more sinister than a friendly pat on the back. Small wonder that Building looks enviously at automobiles and nylons and a host of other industries and wishes that it too might enjoy even a brief respite from something called "the public interest."

Despite the fact that everyone in the industry yearns for the day when controls will go off, at the moment that is merely an unpious hope. Actually, the removal of controls would produce in much exaggerated form the same result that followed the premature lifting of L-41. First viewed as a bonanza, that hasty action is now generally seen as a complete bust. What would happen if controls were completely removed now need not be left to conjecture. Out of the resulting chaos would come even more stringent regulations by government and a better than even chance that a major share of the housing would be assumed by government, in unhappy contrast to the Wyatt program which places 90 per cent of the goal in the hands of private enterprise.

THE WYATT PROGRAM

Premium Payments:

It is unfortunate that the most questionable proposal of the Wyatt program is the one intended to solve the most critical problem — premium payments to step-up production of essential materials and equipment to an eight-fold expansion of 1945 levels. The government's claim is that if industry-wide price increases were used, these increases would multiply as the products pass from the producers through several channels of distribution into the finished house and that the over-all result of a general price-increase policy would add substantially to costs, already beyond the veteran's reach in many cases. It is proposed to substitute for price increases, in some cases, a premium or subsidy payment to selected producers. Those selected would include 1) producers unable to compete with more efficient manufacturers under existing price ceilings, 2) producers needing subsidy to absorb higher costs, such as overtime essential to expanded production, 3) producers needing subsidy for the development of new materials and substitutes for materials in critical supply.

The producing segment of the industry is almost unanimously opposed to premium payments. Reasonable and prompt increases in price ceilings, the producers argue, are all that are needed to produce every last shingle and nail required for the program. This view they support by pointing to innumerable inequalities in OPA prices which in many cases have forced production into more profitable, unnecessary items, thus adding to the shortages of unprofitable essential items. Further, they state that the complex administrative procedure implicit in premium payments would delay production increases for many months, a delay which prompt increases of ceiling prices would eliminate.

This dispute will not yield exclusively to logic. If Congress awards Mr. Wyatt his premium payments appropriation, he will have to depend heavily on his ability to recreate a war attitude on the part of industry. With Congressional action still in doubt, industry is holding fast to the view that ceiling increases will work, premium payments will not.

If the public could be assured that a nominal increase in ceiling prices would not bring in its wake demands from labor for wage increases, necessarily followed by further ceiling increases, and the activation of a rapidly ascending spiral, the course would be clear. At the moment what seems clear is that Congress is more ready to go along with Mr. Wyatt than when the House knocked premium payments out of the legislation a month ago.

Ceilings on Land and Houses:

The other major controversial proposal in the Wyatt program which Congress once rejected, soon will reconsider, is the government's insistence that ceilings be placed on land and on existing houses. Mr. Wyatt argues that it will get nowhere to control successfully the cost of new housing if the ground on which it must be placed is permitted to spiral in value. He points out that real estate prices have already mounted dangerously and demands that this be stopped.

Generally, he argues that it is manifestly unfair to place a ceiling on the price of new houses and to permit unrestrained speculation in existing houses. Therefore, he proposes that existing houses may be sold at whatever price is agreed upon by the buyer and seller and that this price then become the ceiling for subsequent sales during the emergency.

While some adjustment in rents may be necessary to bring them in line with other commodity prices, few will argue that rent control has not been a good thing. Control of land and of prices of existing houses seems to many equally essential.

These proposals and others in the program are meeting expected resistance for expected reasons, but also because the period of emergency has not been spelled out. Here again time is measured not by the calendar but in dwelling units.

Prefabrication:

Also awaiting Congressional reconsideration is the proposal to offer purchase contracts to prefabricators. Some of the original opposition to this feature has subsided as conventional builders came to realize they were given as large a share of the program as they could possibly be expected to handle. However, these builders are still concerned about the diversion of short materials from the conventional market. If the program is to approach this year's target, it will demand not only existing prefabricated capacity, but greatly expanded production. The emergence of the spectacular Fuller house (see p. 129) offers important possibilities for exploring the truly mass-produced house which uses the minimum of conventional building materials.

Building Codes:

Already started under Department of Commerce sponsorship is an organized drive to modernize building codes. Long-overdue sanction on codes which have negated attempts to reduce house cost may prove one of the far reaching permanent benefits of the Wyatt program. The codes are, of course, a matter for local determination, and the government's effort will be to stimulate voluntary action in each community. This will be implemented by development of model codes sufficiently flexible to meet individual community requirements.

Labor:

Mr. Wyatt has received firm assurances of "war-time" cooperation from the all-important AFofL and the less important CIO. Whether this moves from lip service into real hip service depends on these things: 1) quieting down of the intramural squabbles which currently beset both unions; 2) willingness of local union leaders to follow national union policies; 3) willing acceptance by AFofL of the Stone Order, which seems certain to dislocate severely those trades which depend on major construction in metropolitan areas. Again, as with the producers, the question is whether or not Mr. Wyatt can recapture the war-time spirit.

Wagner-Ellender-Taft Bill:

This legislation, which has been in process for many months, is in the main aimed at long-range objectives. It does include an inadequate provision for public housing which has implications in the emergency program. But its chief claim to emergency consideration is its pro-

posed Title IV, which provides 95 per cent FHA loans on houses \$5,000 and under with 4 per cent interest, 32 year term and with firm commitments to the builder. This provision is in some ways comparable to the proposed revival of FHA Title VI, which appears in the Patman Bill. It is probable that the Patman Bill will receive Congressional clearance before consideration of the Wagner-Ellender-Taft Bill. Proponents and opponents of the latter measure are equally vociferous in claiming it will and will not pass. Earlier action on the remaining features of the Wyatt program will furnish a clue to the ultimate fate of the Wagner-Ellender-Taft Bill. Even though this Bill may be less essential than other parts of the Wyatt program, its long-range provisions for urban redevelopment, etc., offer solid reasons for adopting this legislation at an early date so that planning may proceed against the time when normal building will be resumed.

Rental Housing:

Evidence is abundant that the majority of veterans should not undertake home ownership at this time. Nor do they wish to. Many are not yet permanently employed, many have not even decided in what part of the country they wish to seek permanent employment. These circumstances underline the necessity for large-scale rental building—not likely to result from any provisions of the present plan. It is widely believed that additional incentives must be provided by the government to induce the building of rental housing. It is rumored that the Administrator has up his sleeve a plan to permit 10 per cent annual depreciation on rental housing for a period of five years. This would virtually free all rental income of taxes and the houses would be sufficiently devaluated during that period to meet replacement costs when present abnormal prices have stabilized at a somewhat lower level.

Administration:

In whatever form Congress molds the Wyatt program, there is no easy solution to its administrative features. Study of the chart (see p. 97) discloses a highly complex procedure requiring the direct collaboration of no less than 11 government agencies, along with the fullest support of the building industry itself. The difficulty of staffing the program competently, of getting rid of endless red tape and delays is a Herculean job. More than anything else, Mr. Wyatt has to bet on speed. His administration at the national, regional and local levels must set the pace. He has said, we cannot have "building as usual, labor as usual, neither can we have government as usual." The building industry, moved by its universal desire to get rid of controls and get at its normal peace-time job, has every incentive to complete the housing program in record-breaking fashion. The sooner the veterans are housed, the sooner will Building resume normal operation.

Mr. Wyatt has impressed Building with his grasp of the problems, his energy, his frankness and his reasonableness. He is away to a fighting start, and if dynamic leadership can bring the program through successfully, no better man for the job could be found. While the building industry is certain to gripe, and at times gripe loud, it will meet Mr. Wyatt a good deal more than half way. The Administrator, a practiced hand at winning friends and influencing people, knows he is driving on a two-way street.

HIGH SPOTS OF THE WYATT PLAN

The "Veterans' Emergency Housing Program" was presented to the President and by him to the public on February 7.

- ▶ Production of 2.7 million dwelling units by the end of 1947. This year's quota includes 700,000 conventionally constructed units and 250,000 prefabricated permanent units plus 250,000 temporary units to be provided at government expense (\$250 million) by transplanting demobilized war housing. Next year's target is 900,000 conventional units and 600,000 prefabs.
- ▶ Priorities for the construction of housing selling complete with lot for less than \$10,000 or renting for less than \$80. But Wyatt's aim is to limit about half of all the houses to be built in a community to the lowest practicable price (under \$6,000 or \$50 rental if possible) and to let the balance go up as high as \$10,000 if necessary.
- ▶ Increased production of building materials through premium payments, price adjustments, accelerated tax amortization, federal loans for plant conversion and expansion, and the lease or sale of surplus war plants.
- ▶ An advance in on-site and off-site labor from 650,000 to 2,150,000 by mid-1947 by means of a large scale apprentice training program, labor recruiting drives and a boost in abnormally low wages.
- ▶ Reenactment of FHA's Title VI to provide 90 per cent loans direct to builders.
- ▶ Price ceilings on new and existing houses and building lots plus continuation of rent control.
- ▶ A so-called "stop-order" which will curtail non-essential or deferrable residential and non-residential construction (by perhaps as much as 25 to 50 per cent) and thus channel more building materials into small houses.
- ▶ Community committees appointed by mayors to break local bottlenecks, including obsolete building codes, and otherwise to expedite the program.

THESE: APPLY TO: FOR THESE SERVICES:

MATERIALS PRODUCERS

They must increase their output eight-fold between last year and next.

RFC
Reconstruction Finance Corporation

WAA
War Assets Administration

OPA
Office of Price Administration

CPA
Civilian Production Administration

BUREAU OF INTERNAL REVENUE

LOCAL EXPEDITERS AND
COMMUNITY COMMITTEES

HOME BUILDERS

They must erect 700,000 houses of conventional construction by the end of 1946 and 900,000 next year.

FHA
Federal Public Housing Authority

LOCAL EXPEDITERS
AND COMMUNITY COMMITTEES

OTHER BUILDERS

COMMUNITY
COMMITTEES

PREFABRICATORS

They will be called on to supply 250,000 units in 1946, an additional 600,000 the following year.

RFC

CPA
WAA

BUREAU OF INTERNAL
REVENUE

OPA

LOCAL EXPEDITERS AND
COMMUNITY COMMITTEES

COMMUNITY OFFICIALS

From them will come much of the program's impetus and the initiation of many housing projects.

FPHA
Federal Public Housing Authority

FWA
Federal Works Agency

LOCAL EXPEDITERS AND
COMMUNITY COMMITTEES

PREMIUM PAYMENTS FOR INCREASED PRODUCTION Manufacturers of certain building materials in short supply will receive a premium payment or bonus for boosting production beyond the level achieved during a government-specified base period. Payments may vary from locality to locality and from plant to plant. If Wyatt succeeds in getting this portion of his program through Congress, payments will be made through RFC from a \$600 million fund established for the purpose. While most premiums will be paid in cash, it is possible that some will be made in the form of grants of surplus government property. Estimate is that a \$400 million slice of the proposed appropriation will be spent during 1946 and 1947 on the production of more than \$4 billion of conventional materials for housing.

PREMIUM PAYMENTS FOR PRODUCTION OF NEW MATERIALS One-third of the \$600 million fund referred to above will be earmarked for grants to manufacturers to cover risks and research costs involved in the production of new and experimental building materials.

PRODUCTION LOANS Short- and long-term government credit is contemplated to finance industrial plant conversion and expansion where private capital is unobtainable.

LEASE OR PURCHASE OF SURPLUS WAR PLANTS Plants owned by RFC or any other government agency are assigned to WAA as soon as they are declared surplus.

PRICE ACTION ON BUILDING MATERIALS Acting on its own initiative or on CPA recommendations, OPA may grant price increases for deserving materials. These may be in conjunction with or in place of premium payments. OPA will also rule on wage-price adjustments which producers may claim necessary to cover increased production of new building materials. Premium payments granted by RFC are subject to OPA approval.

ALLOCATION OF PRODUCTION CPA will advise producers as to how much of their production must be set aside for the filling of HH priority orders.

PRIORITIES FOR EQUIPMENT Since most industrial plant equipment is still rationed, material producers must obtain priorities for new manufacturing equipment before they can obtain the equipment.

TAX AMORTIZATION OF PLANTS Although enabling legislation must first be provided, the emergency housing program contemplates accelerated tax amortization of new building material production facilities.

ASSISTANCE in trouble-shooting of all kinds, in the recruiting of labor and in the breaking of local bottlenecks holding up deliveries of raw materials and manufacturing equipment.

MATERIAL AND EQUIPMENT PRIORITIES The existing HH priority system will continue to govern the allocation of scarce materials from manufacturers' "set-asides" to housing. Builders will submit to FHA field offices plans of their proposed houses which the program limits to \$6,000 in sales prices and \$50 in monthly rentals (\$10,000 and \$80 in high cost areas). Other requirements: housing must be conspicuously labeled as available for veterans and must be held for veteran purchase for at least 30 days after completion.

TITLE VI FINANCING Builders may obtain mortgages covering 90 per cent of valuation for properties selling up to \$9,000. Title VI permits the builder to be the mortgagor, brings in the advantages of FHA's mortgage insurance before the purchaser of the house is found.

ASSISTANCE in labor recruitment, in obtaining code revisions to permit emergency construction or remodeling, in rezoning of land for subdivisions, in combating black markets, in seeking federal assistance and cooperation in the development of building sites.

ASSISTANCE AND APPROVAL Interpretation of the "stop-order" which will curtail nonessential and deferrable construction rests with CPA field men and local expeditors, with community committees and local officials serving as counsel. They will either veto a proposed project or recommend that exceptions be made to permit its construction. Projects under construction, regardless of their nature, will be permitted to continue to completion.

GOVERNMENT PURCHASE CONTRACTS The program calls upon RFC to guarantee a prefabricator a market for a certain number of units. On the other hand, the prefabricator must prove that his product is sound, according to government standards to be formulated by the National Housing Administration's Technical Division, that it will be sold for about \$3,500 (for a one-bedroom house, F.O.B. plant, including equipment, excluding land and erection cost), that he has an effective distribution plan and that he is prepared to turn out a specified number of units during the life of the government contract. Under the terms of this contract, government will purchase whatever units the prefabricator fails to market. All administrative work in conjunction with the development of standards and the checking of applications will be handled by government. Public cost of this phase of the program is estimated at \$25 to 50 million.

PRIORITIES and allocation of materials.

PLANT FACILITIES The government will make surplus war plants and equipment available to prefabricators.

TAX AMORTIZATION OF PLANTS Although enabling legislation must first be provided, accelerated tax amortization of production facilities is contemplated.

WAGE-PRICE ADJUSTMENTS may be made to cover the cost of experimental and development research in the production of prefabricated houses of new design or construction.

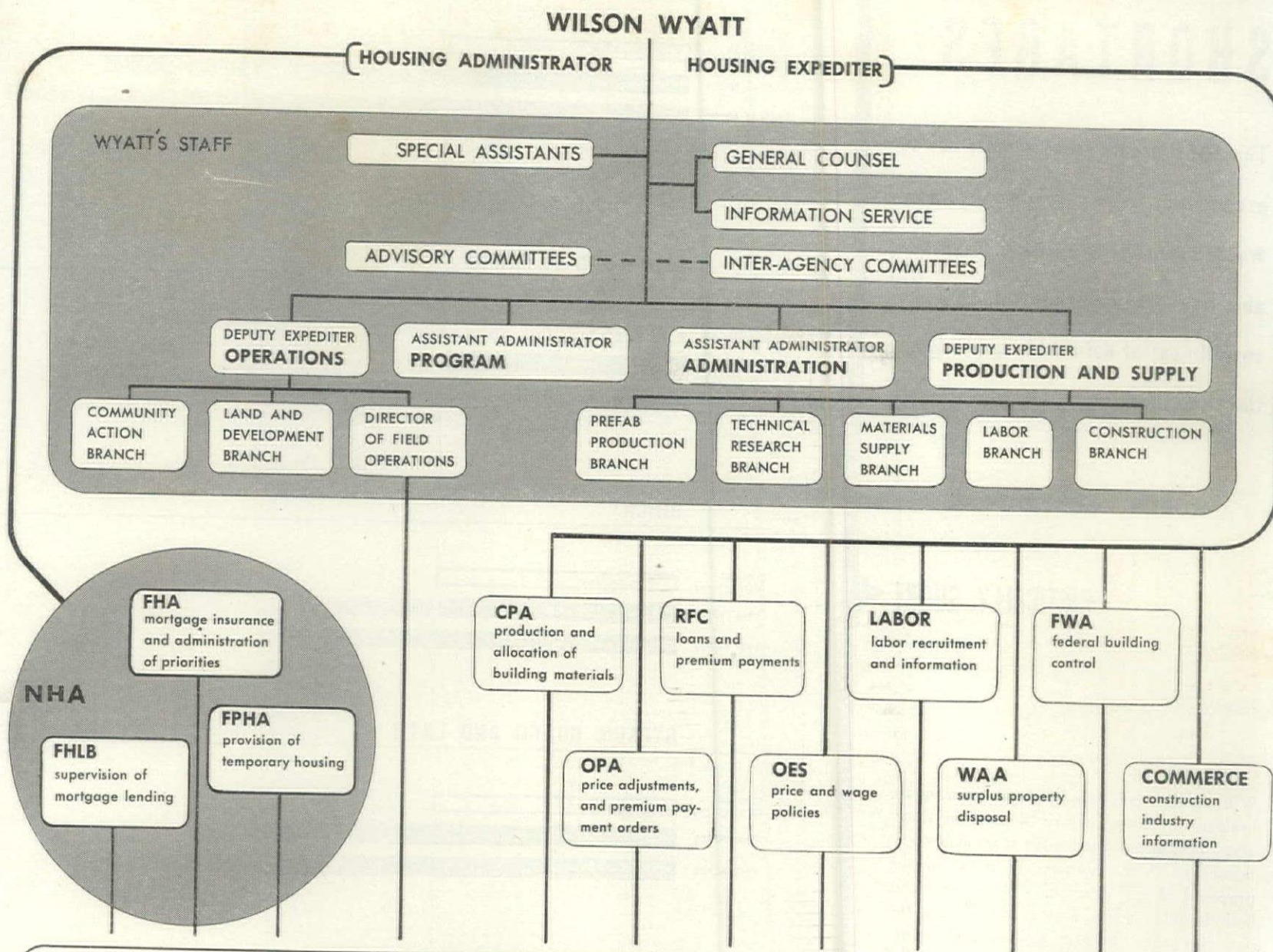
ASSISTANCE in the breaking of local bottlenecks in the supply of labor and materials.

GOVERNMENT HOUSING Temporary government housing will be provided by FPHA to augment permanent construction by private enterprise.

OTHER PUBLIC CONSTRUCTION The construction of federally-aided buildings and utilities may be required in conjunction with the provision of large amounts of housing. FWA will also provide community facilities for government financed temporary housing projects, and may be called upon to assist in preparation of housing sites.

ASSISTANCE in the development of home-sharing programs for veterans, in securing the extension of emergency building codes and the modernization of permanent codes, in the assembly of sites for temporary housing projects, in combating black market activities in labor, materials and rents, in the provision of transportation and services for new residential developments.

...AND THIS IS THE ORGANIZATION TO MAKE WYATT'S HOUSING PLAN WORK



REGIONAL AND LOCAL OFFICES of all government agencies participating in the Wyatt emergency housing program will be the contact points between private industry, which will do the building, and government, which will provide the guidance and the financial assistance. Most important from the home builder's point of view will be the offices of nine regional housing expeditors under Wyatt's Director of Field Operations and the regional offices of the Federal Housing Administration.

Assisting in the local front will be FHA's 72 farflung offices, which among other things will process priority applications, the local housing authorities of the Federal Public Housing Authority and the local representatives of all the other government agencies listed above. As explained in the chart to the left, it is to these offices that the various manufacturers and local representatives of the building industry will take their emergency housing problems.

COMMUNITY COMMITTEES, appointed by mayors and comprised of representatives of local government, labor, veterans, builders, material producers, mortgage lenders, chambers of commerce and other interested groups, are to be the foundation on which Wyatt would build his emergency housing program. Their prime purpose would be to clear away obstacles which might impede progress of local housing efforts. They will: 1) assure veterans of first preference on existing and new housing, 2) develop home sharing programs, 3) secure extension of emergency building codes and modernization of permanent codes, 4) encourage conversion of existing construction to provide additional dwelling units, 5) speed up inspections and issuance of building permits by local authorities, 6) provide sites for federally-financed tempo-

rary housing, 7) discourage black market activities, 8) assist in recruiting and training labor, 9) break local building material bottlenecks, 10) disseminate housing information to veterans, 11) assist in providing adequate transportation and services for new housing developments, and 12) help in the preparation of land and facilities for these projects. The nucleus for such committees already exists in many localities in FPFA's local housing authorities and in unaffiliated citizen's housing committees. Relationship between these community committees and the other factors in the housing field is outlined in the chart to the left. The formation of community committees is a local responsibility.

MATERIAL SHORTAGES

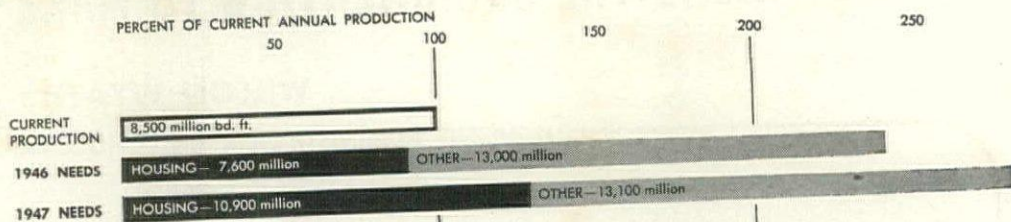
The FORUM puts requirements beside production, shows graphically why Wyatt's housing plan calls for a sizable boost in materials output, some curtailment of deferrable nonresidential construction.

CRITICALLY SHORT

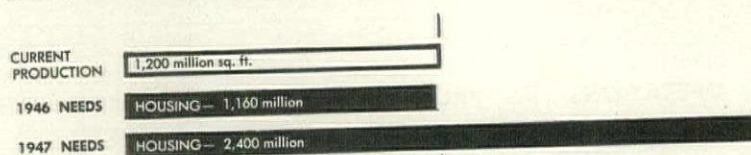
With operations reduced to snail speed, housebuilders are amply aware of material shortages. Less appreciated is the scope and significance of these shortages in terms of the proposed Wyatt program which would put housebuilding under forced draft during the next two years. To point up this significance, the FORUM presents herewith a graphic and factual analysis of each scarce building material, measures the size of the Wyatt program in terms of material requirements, indicates why a curtailment of nonessential construction is necessary to permit housebuilding in quantity and illustrates the need for increased production all down the line.

Based on Civilian Production Administration estimates covering the 2.7 million housing units called for by the Wyatt plan, the charts on these and the following pages show 1946 and 1947 requirements for each material expressed as a percentage of its current annual rate of production. Since each chart shows current production as 100 per cent, the charts for the various materials are comparable, show the relative supply and demand situation in each industry. The bars indicating 1946 and 1947 needs for each material are comprised of two pieces: the first shows housing requirements; the second, requirements for other types of construction which are subject to curtailment by last month's government order freezing non-essential building. The astronomical statistics of material production and requirements on which these charts are based are shown within the bars.

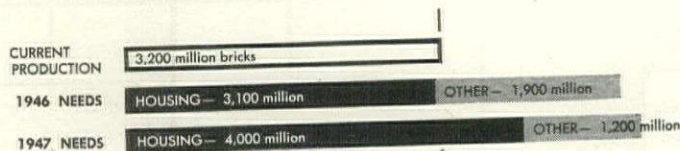
LUMBER



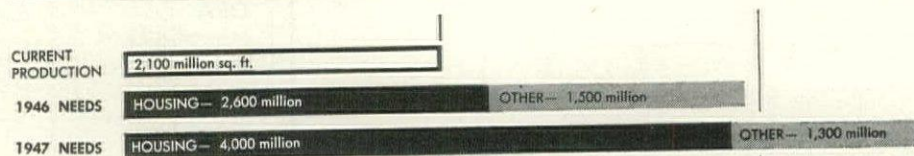
SOFTWOOD PLYWOOD



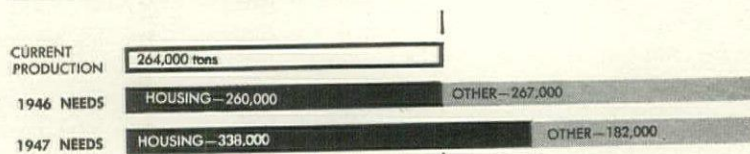
BRICK



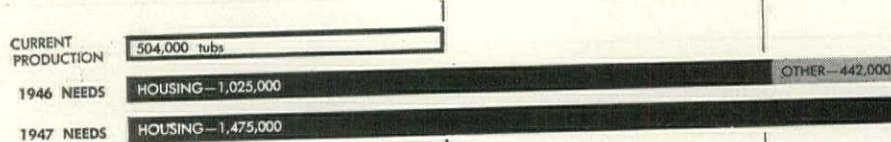
GYPSUM BOARD AND LATH



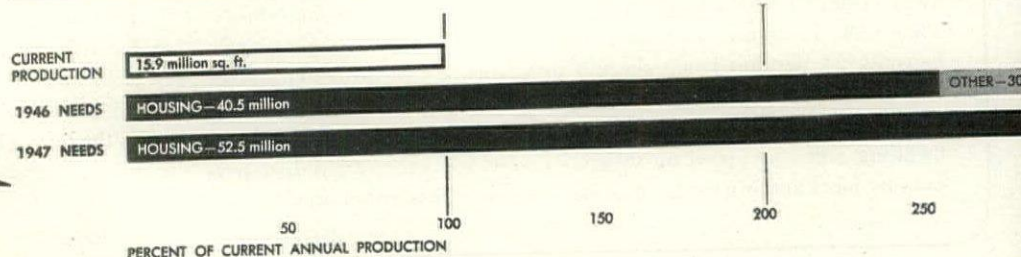
CAST IRON SOIL PIPE



BATHTUBS



CAST IRON RADIATION



As indicated by the chart to the left which covers only that portion of lumber production suitable for building, almost all nonresidential construction would have to cease to make available enough lumber for the houses Mr. Wyatt has called for in 1946. And, at the current production rate, the situation would be even less favorable in 1947. Behind the lumber shortage in the East and South are OPA ceiling prices which have forced 40 per cent of southern pine production capacity to shut down and have diverted much of the balance to exporters and railroads who pay higher prices than builders. On the other side of the country, production of western lumber has been adversely affected by labor shortages, strikes and wage-price difficulties. Recent OPA price increases, demanded by lumbermen to offset wage increases, were limited to logs and shingles, did

not help boost production of the kind of lumber builders need most. According to the National Manufacturers Assn., production of lumber during the first nine weeks of 1946 was running well under that for the comparable 1945 period, but the trend was hopefully upward. Thus, southern pine production by 111 reporting mills was only 84 per cent of the 1945 total during the first nine weeks, but was up to 105 per cent in the last week of the period. Production by 135 western mills ran 74 and 78 per cent, respectively. The only types of lumber being produced in greater quantity than last year are southern cypress and northern hemlock. Production of other types of lumber during the nine-week period varied between 15 and 88 per cent of comparable 1945 totals. Production of California redwood is furthest behind in this respect.

Although the plywood industry has a production capacity of 4 billions sq. ft.—double the prewar figure—only 2.5 billion of it is now in use, and less than half of that is turning out the softwood plywood used by house builders. As shown by the chart, the current rate of production will just barely meet this year's housing needs, will fall far shy of the 1947 housing requirement. And, the chart is based on the assumption that none of this softwood will go into boats, refrigerator cars, machine shop patterns, automobile components, etc., manufacturers of which could use the entire

output. (The use of softwood plywood in nonresidential construction is negligible.) Production is currently far behind demand, but the supply situation is improving. According to the industry, a large increase in production may be expected only if government relaxes its timber conservation policy on the rate at which peeler logs (especially Douglas fir) may be cut or authorizes logging of government land. Subsidies or premium payments might lower the hardwood price to a level competitive with softwood plywood, encourage its use in building.

Still in the critical classification, brick production is improving as it has each month during the past year. The current annual rate of output was set in January when monthly production advanced 14 per cent over December and almost doubled the January 1945 total. However, shipments continue to exceed production and have cut stocks to an all-time low. Current brick production will barely take care of 1946 housing needs, assuming (falsely, of course) that not a single brick goes into non-

residential construction. Adequate production facilities are available to meet the entire needs of the current year (the industry's 1941 production would do it) but during the war 40 per cent of the brick yards closed for lack of manpower, and only a third of them have reopened. The trouble is that the industry offers labor unattractive work at unattractive wages, and producers hesitate to increase wages and, in turn, prices for fear that the higher prices would prompt builders to look for substitutes.

The entire current annual rate of production of these materials is inadequate to meet housing requirements alone. Even the 2.8 billion sq. ft. produced in the industry's peak year (1941) would not do it. Thus, increased production and larger production capacity are indicated, if the projected goal of 2.7 million houses is to be reached in the next two years. Holding back production of lath is the difficulty of obtaining paper liner and the fact that OPA ceiling prices have made other gypsum products more profitable to produce. However, lath production is regaining its

former position among gypsum products: at year-end about 40 per cent of all shipments were lath as compared with the 25 per cent average for the first half of 1945. By combining the entire production of all types of wallboard such as Celotex, Masonite and Homasote (estimated at 2.7 billion sq. ft. for 1946) with that of gypsum products, building would have all the interior wall finish it needs this year. However, even in normal years, only about half of all these non-gypsum wall materials are employed in building construction.

At current production rates (down 55 per cent from 1941 levels) makers of cast iron soil pipe can only take care of half the total 1946 building need. Fortunately, production is increasing—but not as rapidly as orders, and stocks are negligible. Crucially important, the soil pipe industry is small, comprised of only 52 foundries and concentrated in two states (Alabama and Tennessee) which turn out about two-thirds of the total

U. S. production. Although the industry has received three price increases within the last nine months, has boosted wages 10 per cent and hired 25 per cent more employees, a labor shortage is still the major reason for the material shortage—it accounts for the complete shutdown of 11 of the 52 foundries. Production has also been held back by the scarcity of pig iron and its divergence into other types of castings.

Like soil pipe, bathtubs are made primarily of cast iron, are therefore critically short for the same reasons. Capacity of the industry is about 1.5 million tubs per year, enough to take care of all requirements, but production in normal years has amounted to only 1 million, and today it is running about half that. At year-end production amounted

to 40,000 tubs a month. This must be boosted to an average of 90,000 tubs a month to meet the requirements of housing. Now that the steel strike is settled, production of sheet steel tubs, which began on a large scale before the strike, will be resumed and will help relieve the shortage. Showers and earthenware tubs will also pinch-hit for cast iron tubs.

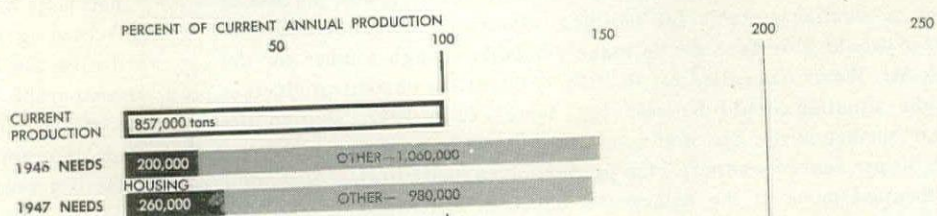
Most critically short of all materials, cast iron radiation at current production levels will fill less than a half of 1946 housing needs, despite the fact that the need is limited to only about one-fifth of the total projected houses. (Most houses are

heated with warm air systems.) Several factors account for the shortage: 1) Comparatively low radiator prices encourage manufacturers to concentrate on more profitable castings of other types. 2) Dirty, dangerous foundry work and low wages are unattractive to labor. 3) Pig iron is short. 4) High freight rates make it uneconomical to ship western pig iron to production centers. Thus, solution to the radiation problem hinges on increased wages, price increases or subsidies and lower shipping rates.

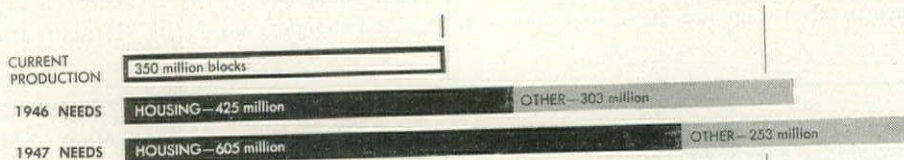
SERIOUSLY SHORT

Although varying local circumstances might indicate otherwise, an over-all examination of supply and demand factors reveals that shortages of these materials, while serious, are less acute than those shown on preceding page.

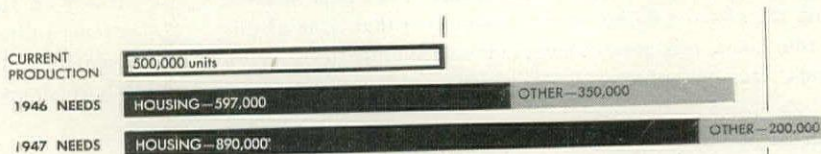
STRUCTURAL CLAY TILE



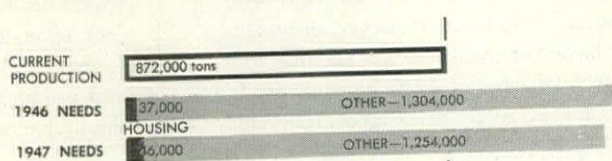
CONCRETE BLOCKS



WARM AIR HEATING SYSTEMS



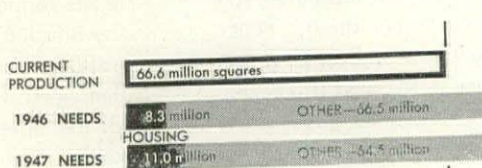
CLAY SEWER PIPE



SHORT

Neither critical nor serious but definitely short is the supply of these two materials. Fortunate for housing is the fact that only a small per cent of their production is required in residential construction.

ASPHALT ROOFING



POSSIBLY SHORT

While these materials are hard to find in many localities, on a nationwide basis their supply and production is relatively satisfactory.

STRUCTURAL STEEL. Shortages of raw materials and skilled workers combine to produce a tight supply of structural shapes. Last year, orders ran more than 40 per cent above shipments, and unfilled orders now equal five months' shipments at the current rate of production.

NAILS. Short in many localities, the supply of nails may improve gradually as a result of the steel strike settlement.

NO SHORTAGE

These materials are the most important among the few which are generally available.

CEMENT. Although production of Portland cement declined at year-end, so did shipments, and there has been a slight increase in stocks which are now considered ample. The industry is localized, and suppliers are plentiful. No difficulty in future supply is anticipated.

PLASTER. The supply situation in plaster is comparable to that of cement—no difficulty is anticipated.

GLASS. Window glass is in a satisfactory position, mainly because producers are numerous.

ELECTRICAL GOODS. Production is steadily increasing and, although subject to some interruptions, should meet requirements. Outlet boxes, fixtures, etc. are generally available; special devices and ornamental fixtures are not. The supply of conductors is also tight. Conduit production is on the up, but unfilled orders are now equivalent to about three months' output at the current production rate.

Although current production of this material is up 16 per cent from last year's output (740,000 tons) and is constantly increasing, supplies are still seriously short of total building requirements. However, as indicated by the chart, all except a relatively small amount of tile production normally goes into nonresidential building. In normal times only a quarter-ton of structural tile goes into the average house, but the current brick

shortage has increased the demand for this material in masonry house construction. Factors affecting tile production are roughly the same as those which control the brick industry—low wages and resultant manpower shortage. In fact, brick and structural clay tile are, in most cases, jointly manufactured. Current production of structural clay tile is about 75% of the 1941 rate.

The concrete block industry is comprised of many local enterprises, is therefore difficult to appraise on a nationwide basis. Most authorities agree, however, that current over-all production falls seriously short of building requirements, is not enough to provide foundations for the 1946-7 housing program. Raw materials are plentiful; the shortage of blocks

results from inadequate plant capacity and lack of manufacturing equipment. Until such equipment is made available to manufacturers through priorities, block production will not improve materially. Ducking the shortage, an increasing number of builders are pouring their basement walls or erecting basementless houses on concrete mats.

Due to scarcities of sheet and strip steel for furnaces and ducts, the production of equipment for warm air heating systems, although well above wartime levels, is still inadequate to meet the needs of housing alone. A production boost of about 20 per cent is required to provide equipment for the eight out of ten houses which are normally heated with air. This

is unlikely, for steel used in this equipment will continue to be the scarcest of all shapes due to demands from the automobile and other consumer-goods industries. The combined shortages of radiation and warm air equipment provide an opening for the development of radiant heating systems and the introduction of electrical heating.

Beset by the same problems facing the brick and clay tile industries, producers of clay sewer pipe are having trouble rounding up enough labor to operate at the necessary production level. While only a small fraction of current production will actually go into houses, a great deal of tile is necessary to connect these houses with municipal sewage systems. Ca-

capacity is ample; in 1942 pipe production was greater than the current total need. To put production back on the 1942 level the industry must hire an additional 5,000 workers. Production is improving but, as in other clay product industries, low wages and primitive working conditions will hold down payrolls, slow down recovery.

Although production of asphalt roofing materials is close to capacity, it falls short of total anticipated building requirements for 1946 and 1947. Capacity production would also be slightly short of demand. However, since most of the materials are used on nonresidential building and for the reroofing of old houses, a small curtailment of this type of work would

satisfy new house requirements. Production will increase only if there is a corresponding increase in the currently short supply of dry felts which are basic in the production of asphalt roofing. Normally accounting for about three-fourths of all roofing in use, asphalt materials may give ground to shingles, slate and even metal squares.

HARDWARE. Although many types of hardware are generally available, the supply of special items and finishes and cast iron items is limited. The 10 per cent price rise granted manufacturers on March 13 should improve the situation.

BRASS AND COPPER GOODS. Although production is steadily increasing, supplies are small due to heavy requirements.

PLUMBING. Materials such as pipe, fittings and fixtures verge on short supply for reasons similar to those presented in the discussion of soil pipe, radiation and bathtubs above.

PAINT. The supply of wartime quality paints is adequate. Good paints are scarce, and their production may be hampered by increasing stringency in raw material supplies—particularly flaxseed and lead.

NON-HOUSING MATERIALS

Practically all important house building materials are in short supply. The brief list of those which are readily available (left) indicates that house builders would do well to substitute cement and plaster for other structural materials and provide more windows in their houses.

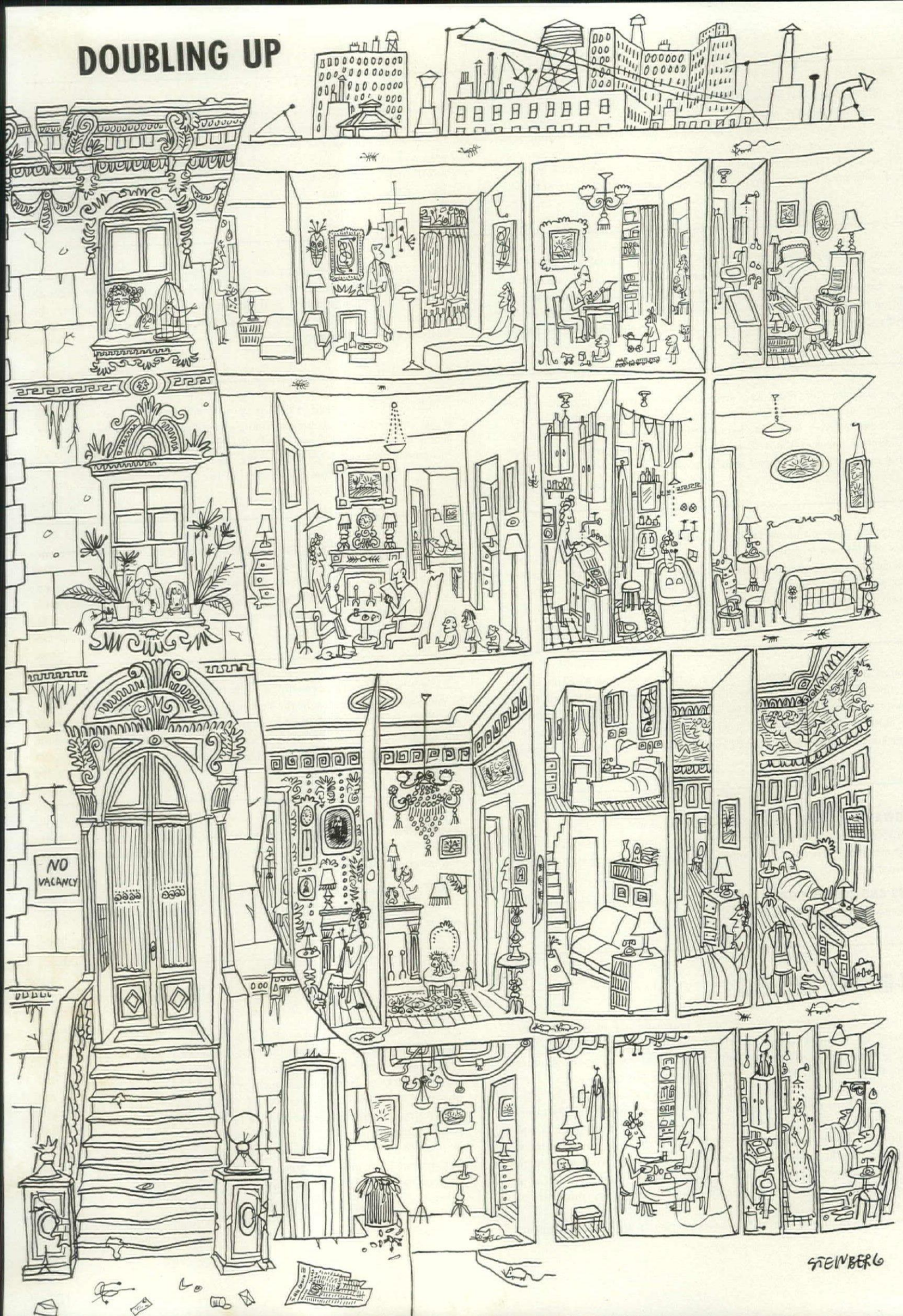
In fact, the FORUM's survey of the house building industry (p. 103) indicates that forward-looking builders have already started in this direction, are using poured concrete to an increasing extent in their walls and foundations. Two-inch plaster partitions, like those used in commercial construction would serve as satisfactory substitutes for wood-stud partitions where authorized by modern building codes. And, the larger a house's glazed area, the fewer critically short materials are required for structural purposes.

If non-residential building and the construction of high-rent apartments

are to be seriously curtailed to save housing materials for housing, certain materials which have been used almost exclusively in these non-essential or deferrable projects should soon be piling up in stock yards while looking for new markets. Not all of these materials lend themselves readily to use in the small house, but some may be worth consideration as emergency substitutes. Following is a list of such materials:

Reinforcing steel	Gypsum blocks	Terrazzo
Wire mesh	Glazed terra cotta	Roofing tile
Gritcrete and bar joists	Structural clay tile	Roofing slag
High temperature face brick	Marble	Hollow metal door bucks
Architectural terra cotta	Limestone	Plate glass
	Granite	Limestone
	Cast stone	

DOUBLING UP



A nationwide look at **THE UNDER-\$10,000 HOUSE** and the mood of those who build it.

FORUM survey reveals that— **today's house**

- ... covers 930 square feet
- ... looks like always
- ... but costs 43 per cent more

today's builder

- ... has plenty of troubles
- ... blames them on Government
- ... but builds despite them

Presented on these pages are the opinions of important and busy builders. Although the FORUM survey is based on reports from builders who will produce only a few houses this year and from some who will not build at all, a mere glance at the size of the average respondent's operations (93 houses a year) indicates that the FORUM survey concentrated on the country's larger operative builders. Their importance in the industry may be further judged by their 1941 production of 13,804 houses, about 4 per cent of all the privately financed single-family dwellings erected in urban areas during that last prewar year. Providing a broad national base for the survey, the 216 respondents represent all parts of the country, hail from 126 cities in 44 states and the District of Columbia.

To these builders the FORUM put several questions concerning their efforts to relieve the nation's housing shortage. Those who had houses under construction were asked to detail their problems or, if construction was progressing satisfactorily, to bare the secrets of their success. Other questions were aimed at determining what can be built for how much in today's inflated market; the under-\$10,000 houses presented on these pages are graphic answers to this question. Finally, builders were requested to air their opinions concerning changes which have taken place in the industry during the past five years and changes they would like to see take place immediately; their quoted opinions, presented as marginalia on pages 105, 107 and 109, answer this question.

After receiving replies to these direct questions, the FORUM obtained background information from its news offices and correspondents in 16 large U. S. cities (see excerpts, p. 192), then personally interviewed members of the National Assn. of Home Builders at their annual convention in Chicago. Thus, the survey presented herein accurately reflects the mood of the Nation's important house builders.

Exasperation of the house-seeking public needs no documentation. Less publicized but just as exasperating is the plight of the people who would build the houses. In front of them is the biggest, most active demand for housing the nation has ever seen; behind them is the smallest supply of labor and materials ever recorded. Caught between these two, house builders today are hardly ecstatic. To analyze their mood and determine its effect on the industry's present and future operations, the FORUM conducted a nationwide survey of the field, gathered and evaluated some enlightening statistics and opinion and concludes that, while house builders are doing a lot of justifiable grouching, they are also doing a lot of building and are planning a lot more for the balance of this critical year.

Two hundred and sixteen of the country's most important house builders participated in the FORUM's survey. Of this number, 172, or about 80 per cent, reported they had houses under construction. More significant than the total number of houses now abuilding (6,245 in this sample group) is the fact that it amounts to a surprising average of 36 per builder. Also significant are the 20,117 under-\$10,000 houses the 216 reporting builders plan to produce during 1946—an average of 93 per builder.

Many another facet of 1946 house building is spotlighted by the FORUM survey:

- ▶ Dispelling fear that most new houses will sell with lots for close to the government-set maximum of \$10,000, builders report that well over half of their houses will be priced below \$7,500.
- ▶ The average under-\$10,000 house will contain 5.2 rooms and bath, provide 930 sq. ft. of floor area.
- ▶ Houses produced today will sell for 43 per cent more than comparable 1941 houses.
- ▶ Although dissatisfied with the supply and efficiency of labor and crying about the scarcity of materials, builders' loudest complaints are leveled at government policies, restrictions and changing requirements.
- ▶ As to the Wyatt program, consensus is that, while subsidies to manufacturers might shake loose a lot of materials and while restrictions on deferrable building will definitely help house builders, the two-year goal of 2.7 million units is optimistic unless builders are given freer reign.

MATERIALS. Dogged by difficulties in obtaining materials, most builders are having a tough

time completing their houses. For instance, at the present rate of soil pipe delivery in Denver, it will take seven and a half years to finish the 1,081 detached houses which were under construction in February. Less than a third of the builders now building say that their construction is progressing satisfactorily. Those who are building have resorted to all kinds of devious methods to obtain materials. Many are employing substitutes for critical items—Gunitite for exterior finish, linoleum for hard wood flooring, plywood for subflooring, tiling for bathtubs. Some are writing mail order houses for small weekly shipments of such hard-to-find items as nails. Many are recutting odd-sized lumber to dimensions required for building—six-by-sixes are sliced twice to produce rafters. Old second-hand lumber is often resurfaced, used again. Likewise, bricks. Poured concrete is replacing blocks, and mat foundations are becoming increasingly popular. Many builders by-pass dealers, go directly to mills to pick up whatever lumber is available, haul it long distances in their own transportation. (A San Antonio builder is buying No. 1 Ponderosa Pine in Old Mexico, trucking it to his building sites and paying \$135 per thousand for it—\$48 per thousand above the local price. One Cleveland builder travelled 194 miles one day in search of nails, came home with only four kegs.) Although he will not admit it publicly, many a house builder is bidding against commercial and industrial buyers in high priced black markets—an anonymous Pittsburgher has paid \$175 per thousand for black market hard wood flooring, \$107 more than the prewar price. Several builders report they have hired "expeditors" who spend all their time shopping for materials.

Those builders who have stood by one material dealer throughout the seller's market of the past few years are having less difficulty now than those who shopped around from dealer to dealer. As never before, getting materials is a matter of who knows who, and for how long. On the other hand, there are builders who, ignoring the shortages, are building as much of as many houses as possible with available materials and will make no effort to finish them until scarce materials appear. They admit this system is neither efficient, nor economical, but claim it keeps them busy and prepares them for the great day when they can get what they want.

The foregoing expedients in any combina-

tion do not solve the builders' current material problems. To wit, the average builder is spending about twice as much time completing his houses as was necessary five years ago. Most of the delay is attributable to shortages of plumbing and fixtures, lumber and mill-work, rock lath, nails, soil pipe and brick—in that order.

LABOR. Another important contributor to construction delay is labor. It is not only difficult to find, but, according to these builders, inefficient when measured by 1941 standards. And, wages have increased in inverse proportion to the quantity and quality of the work performed. Hopeful, however, is opinion expressed by many that the worst is over—at least insofar as labor supply is concerned. Veterans are filling the ranks in increasing numbers, permitting builders to shift slower, older men inside their houses and to fire those who are grossly inefficient.

Although most respondents in the FORUM survey look for an eventual drop in material prices, they are reconciled to continued high labor costs. But they are not reconciled to labor's narrow-minded attitude toward the adoption of labor saving methods of construction and its apparent desire to do as little work as possible.

COSTS. No one anticipates that building costs will ever return to prewar levels. Averaging the opinions of all builders participating in the survey, today's house costs 43 per cent more than a 1941 house of comparable size and construction. Based on 216 builders' experience, this figure is considered accurate for the country as a whole. However, like costs themselves, the rise depends on local circumstances, varies considerably between states.

Increased material costs and labor wages are only partially accountable for the total increase in building costs. A large part stems from the increased difficulty of building which is reflected in the builders' overhead. For instance, one Houston builder who broke down his costs for the FORUM showed his overhead and miscellaneous expenses to have increased 183 per cent since 1941; a builder in Detroit has seen his overhead go up 120 per cent.

GOVERNMENT. Acute though they are, the problems of materials, labor and costs do not give house builders as big a headache as government. Almost unanimously, they blame government for their present trying circumstances. Government, they say, has caused the materials shortage by setting prices on many materials so low that manufacturers, finding that they cannot produce them at a profit, have turned

to production of more favorably priced items for which there is little demand, or they have shut down completely. Most frequently cited in this connection are the gypsum, lumber and clay products industries. Governments policies are blamed 1) for the creation of black markets dealing in what little building materials are available and 2) for not cracking down on the relatively wealthy commercial and industrial buyers who patronize these illegal markets. More blame is heaped on Washington for permitting the export of such scarce materials as lumber, and, although few builders could point definitely to the location of government stock piles, for the Army's and Navy's hoarding of building supplies. Government is further accused of fostering higher cost housing by its lopsided program of boosting wages and, at the same time, limiting prices—in manufacturing industries as well as in Building.

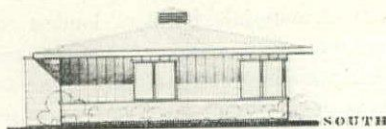
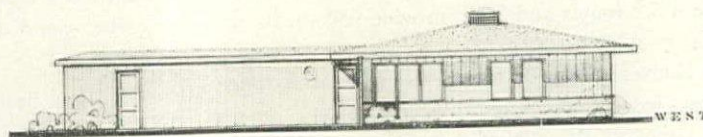
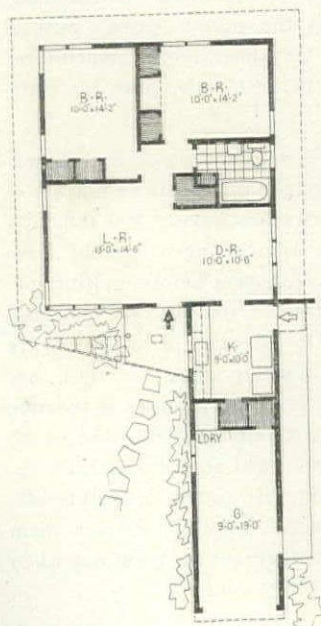
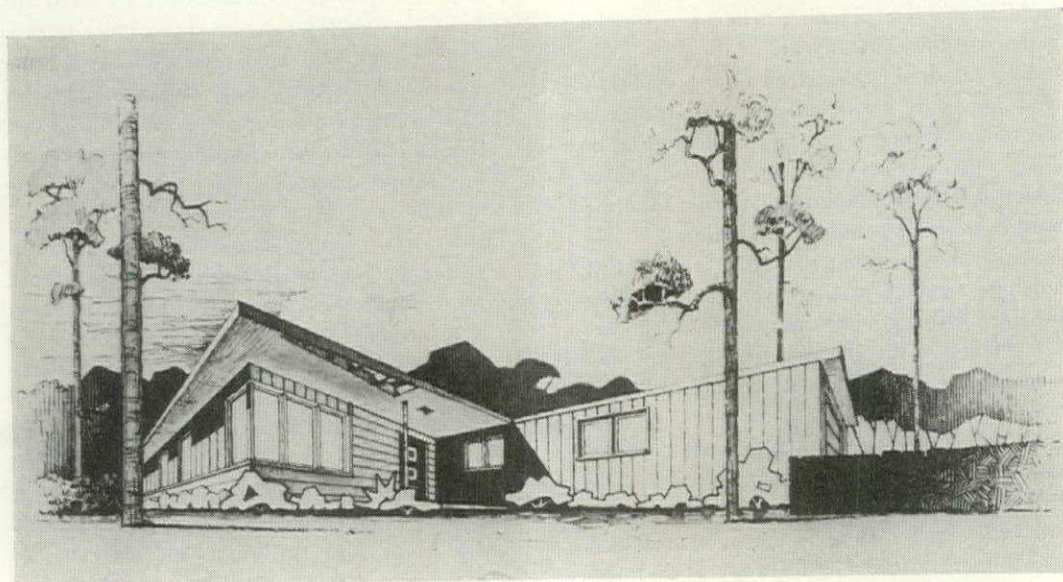
The industry is opposed to inflation, but it is just as strongly opposed to government methods of combatting it. Firm believers in the laws of supply and demand, builders hold that what Washington is trying to do can best be accomplished by complete return to free competitive enterprise. They admit that such a step would be accompanied by a short period of rising prices, but claim that the trend would level off as soon as materials became available in quantity. Then, they argue, prices would move downward as building and competition increased. Although the industry offers no specific plan toward solution of the critical housing problem, it believes that the problem would disappear within two years if industry were completely unshackled. In brief, builders would trade the Wyatt program for a bright green light, and they will bet Mr. Wyatt even money that they would beat him to his goal.

HOUSES. Although opposed to government control, the housebuilding industry will not sulk and remain inactive if and when Congress endorses the Wyatt program. If, as advertised by Mr. Wyatt, the granting of government subsidies to manufacturers will make materials available in quantity, private building will do the rest, let veterans have first whack at a huge volume of houses.

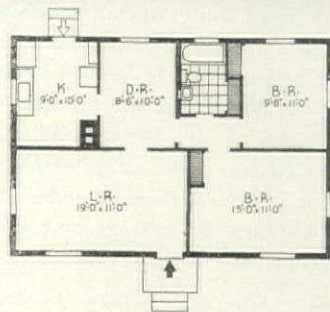
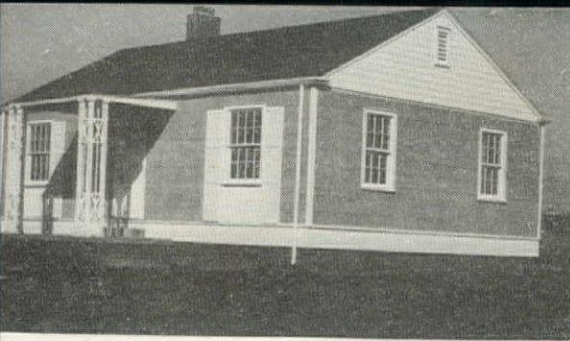
Samples of what they will build are shown on the accompanying pages. Those which are shown in picture are prewar houses which will be duplicated in 1946. Many shown in rendering have just come off the drafting boards, have not yet been built. As is apparent from a brief study of these pictures and renderings, 1946 houses differ little from their predecessors.

Although it is impossible to quote prices until houses are finished, all houses shown on these pages were submitted to the FORUM as examples of the under-\$10,000 property—house and lot. In view of wide local variations in construction costs, the houses presented have not been tagged with individual prices. More significant, pricewise, is the tabulation on page 107 which indicates that, despite today's high costs, houses selling with lots for less than \$5,000 will be built in 23 states, that those selling for less than \$7,500 will be

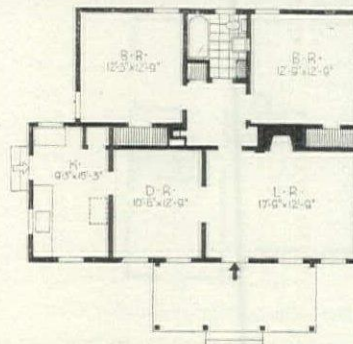
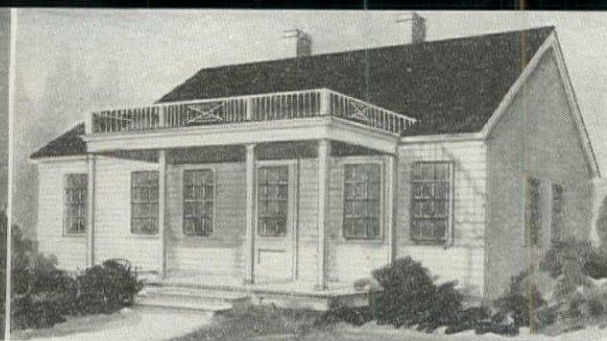
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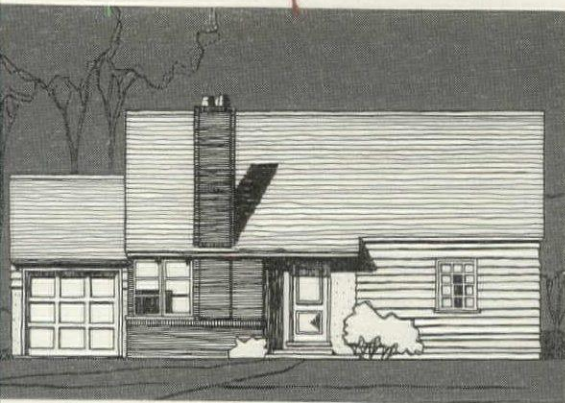
Most up-to-date of the many houses submitted to the FORUM in conjunction with its survey is this five-room unit, one of 176 now being built in Houston, Tex. by Wm. G. Farrington Co. Constructed of precut and site-fabricated assemblies, the houses occupy 50 by 100 ft. lots valued at \$600 each, will sell for \$5,790 complete including all closing costs. Terms are \$300 cash plus monthly payments of \$38.50.



CHARLOTTE, N. C.—Charlotte Lumber & Mfg. Co.



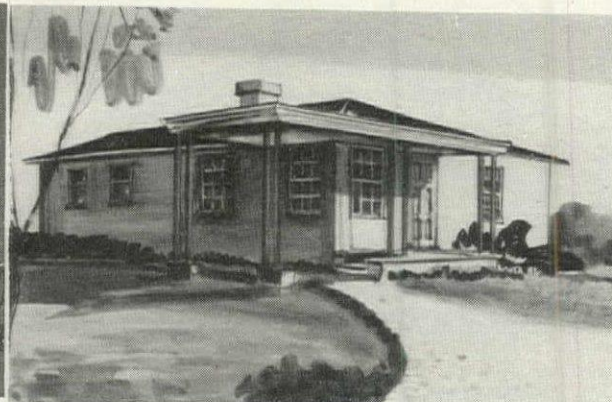
BIRMINGHAM, ALA.—Mayfair Development Co.



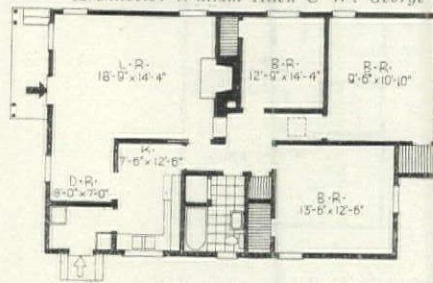
Architect: Thomas, Granger & Thomas



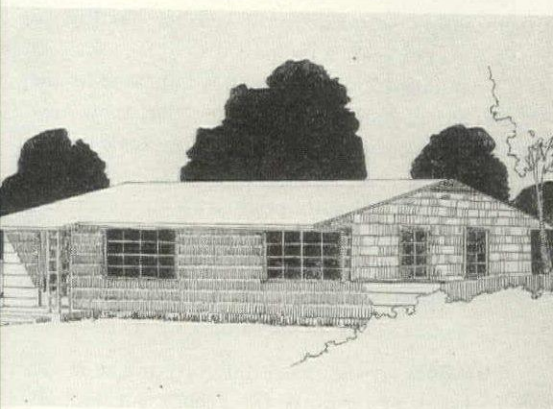
SEATTLE, WASH.—Balch & Setzer



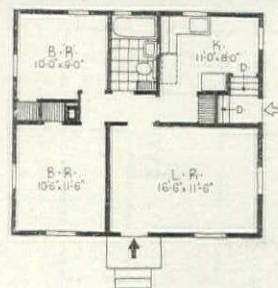
Architects: William Allen & W. George Lutzi



LOS ANGELES, CALIF.—Culver City Housing, Inc.



HOUSTON, TEX.—Frank W. Sharp Constr. Co.



INDIANAPOLIS, IND.—Fred L. Palmer

BUILDERS' COMMENT

CHANGES IN INDUSTRY AND HOUSES

MYERS BROTHERS, Los Angeles, Calif.

For a long time we had concentrated on heavy construction, but during the war we got into home building in a big way. It is something we cannot get out of now. By the end of this year I should see clear my postwar plans and begin building 1,200 homes a year.

JOHN R. WORTHMAN INC., Ft. Wayne, Ind.

In 1941 about 95 per cent of our houses were custom built. In 1946 all of our houses will be sold after they are built—under the merchant builder plan. We are now using site fabrication in group building.

WHATLEY, DAVIN & CO., Jacksonville, Fla.

The house actually being built now is probably inferior to the prewar house, but within two years it should be superior because of improved methods of construction and better and newer materials.

LAKEWOOD HOUSING CORP., Denver, Colo.

Overhead and the cost of assembly of materials are triple today over 1941. Working capital required is four times more.

GOODYEAR & CO., Charlotte, N. C.

We subcontracted before the war; today we do all the work to cut cost.

KIRKPATRICK & PIERSON, Gainesville, Fla.

Bookkeeping is quite a problem, 100 per cent more than formerly. Office overhead is much more, due to difficulty of obtaining materials.

DONEY & LAYTON, Salt Lake City, Utah

We will put into our houses from now on more dishwashers, refrigerators, ranges, etc. than we did before the war.

GEORGE A. PETTIBONE, Cleveland, Ohio

I have developed a new radiant heating system. Our houses will have plenty of glass windows and flat roofs. Flooring will be asphalt tile because of the scarcity and poor quality of oak flooring.

BIG OPERATIONS AND PREFABRICATION

GAMBLE BUILDING CO., Denver, Colo.

Obviously, we must use factory methods of production. Most builders are prepared to do this when volume materials permit.

CHARLOTTE LUMBER CO., Charlotte, N. C.

We have entered the prefab field 100 per cent, believe it is the only solution for the small home shortage.

THE DILLONS, BUILDERS, Cincinnati, Ohio

Our work in postwar will be better organized and wherever possible, machinery will be employed. More wages will have to be paid and more production expected from them than in the past. I look for mass production as it was never dreamed of before.

CAFRTZ CONSTR. CO., Washington, D. C.

Emphasis will be placed on sub-assembly operations to effect economy in construction. Such prefab components will be stairs, roof overhangs, porch roofs, partitions and linen cabinets.

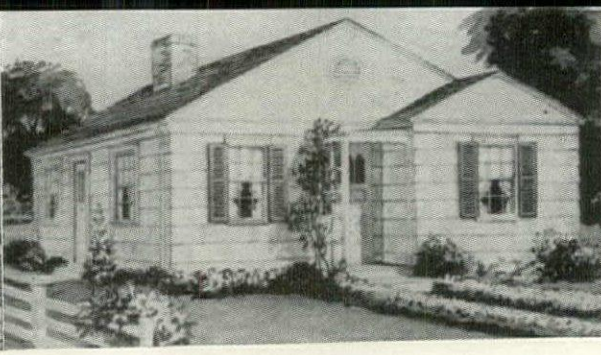
ARCHIE IVERSON & CO., Seattle, Wash.

We do more site prefabrication today than prior to the war. This speeds up the work. We use power equipment on the job, building up a whole section at once.

SANTA ANA HOMES CO., Whittier, Calif.

We have learned mass production—formerly starting 10 at a time, now 40 or 50 or more. We must develop our own land and build in our own developments to build in numbers.

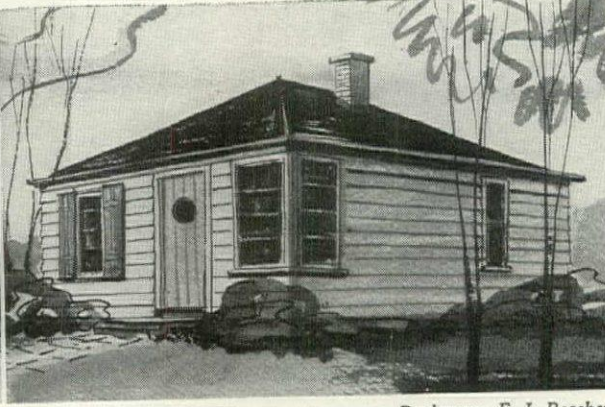
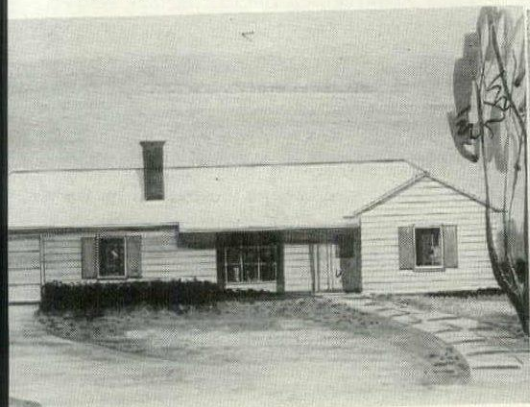
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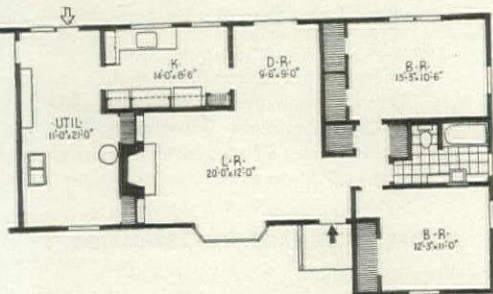
ENGLEWOOD, Calif.—Kimble-Kroft, Inc.



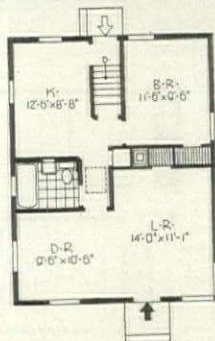
BOISE, IDAHO—Boise Payette Lumber Co.



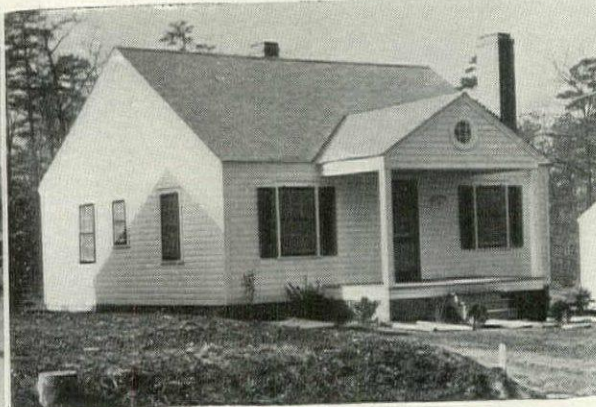
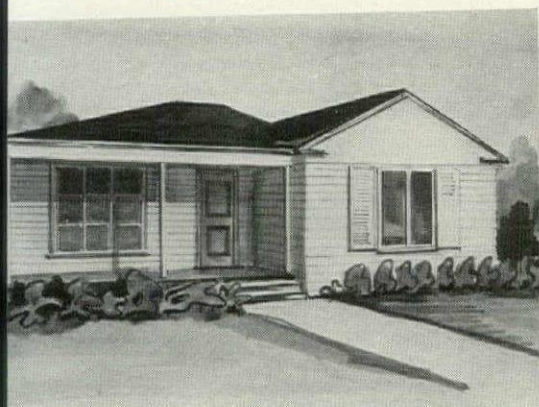
Designer: E. J. Peachey



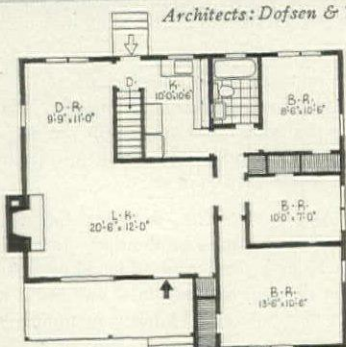
PORTLAND, ORE.—T. B. Winship



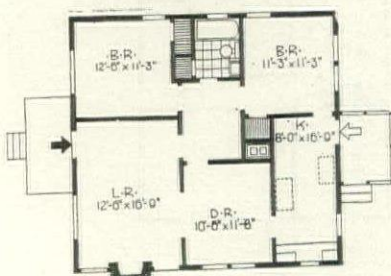
MILWAUKEE, WISC.—The Mollgaard Co.



Architects: Dofsen & Tiffany



SEATTLE, WASH.—Henrikson Const. Co. & R. P. Jones



GREENVILLE, S. C.—R. E. Hughes

produced in 42 of the 44 states surveyed. In fact, although the industry's official spokesmen argue that government's \$6,000-\$10,000 ceilings on selling prices are too low, 63 per cent of the houses proposed for production this year by respondents in the FORUM survey are scheduled to sell with lot for less than \$7,500, and 15 per cent will be below \$5,000.

These proposed houses are not unduly small. The average under-\$5,000 house will have four rooms and bath, 680 sq. ft. of floor space. In the \$5,000-\$7,500 bracket the average is five rooms and 885 sq. ft. Between \$7,500 and \$10,000 the average is five to six rooms covering 1,090 sq. ft. Considering all under \$10,000 houses as a group, the average unit will contain 5.2 rooms and bath, provide 930 sq. ft.

EQUIPMENT. Although today's houses are smaller, and more costly than prewar houses, they contain a greater amount of kitchen equipment—one trend the public will eye with favor. As shown in the table on page 107, 28 per cent of all under-\$10,000 houses to be built by participants in the FORUM survey will include a range in the selling price. Seventeen per cent will also provide a refrigerator, and about 5 per cent will include such deluxe items as washing machines, garbage disposal units and dish washers. Although these items will increase the houses' sales prices, the buyers' monthly costs will be lowered by their inclusion, for the equipment will be covered by the house's long-term mortgage instead of purchased on the costly installment plan.

PRODUCTION. Just as they have affected the house, war and its aftermath have wrought several changes in the house builder's methods of doing business. Smaller operators are becoming big; big operators are becoming bigger. Wartime building taught many of them the tricks and economies of large scale operations, and they are carrying this newly acquired know-how over into their peacetime programs. Of the several builders who complained to the FORUM that times were too tough to permit any house building, all were small operators who had built only a handful of houses per year in the past.

Another significant trend is indicated by the numerous builders who stated that they were combining the economies of large scale operations with prefabrication (on-site as well as in-factory). Despite publicity to the contrary, many of them see prefabrication as low cost housing's white hope and plan to prefabricate or use prefabricated house parts to an increasing extent in future operations.

OUTLOOK. If the house building industry can be taken at its word, the FORUM survey indicates that the veteran will not have to wait long for his house once the cork is pulled from the material bottleneck. Builders are ready to produce houses at top speed and in quantities never before attempted. They have the land, the financing and the know-how; they are gradually corraling the labor. They lack only materials. When and however the materials are made available—a decision which rests mostly with government and the producers—private enterprise will put them to good use.

HOUSE SIZE BY STATES AND PRICE CLASS

State	Number of		Total Houses	Under \$5,000			\$5,000—\$7,500			\$7,500—\$10,000		
	Cities	Bldrs.		Houses	Rooms	Sq. Ft.	Houses	Rooms	Sq. Ft.	Houses	Rooms	Sq. Ft.
ALA.	2	5	755	200	3½	750	480	5	960	75	5½	1,100
ARIZ.	1	2	230				150	5	975	80	6	1,300
ARK.	1	2	52	10	4	700	20	5	900	22	6½	1,200
CALIF.	5	5	1,305	100	5	800	1,000	5½	1,085	205	6½	1,330
COLO.	3	17	1,604	776	4	650	555	4½	740	273	5½	920
D. C.	1	4	750				200	4½	800	550	5½	1,050
FLA.	4	5	885	550	5½	720	280	6	960	55	6	1,100
GA.	1	1	210	55	4½	820	85	5	950	70	6	1,120
IDA.	2	2	43				15	5	1,200	28	7	1,800
ILL.	6	11	1,392				180	5	970	1,212	5½	1,030
IND.	5	9	308	67	4	750	126	5	930	115	6	970
IOWA	3	3	195	50	4	720	120	4½	790	25	6½	1,400
KAN.	3	5	330				295	5	930	35	6	1,300
KY.	1	1	350				350	5	900			
LA.	1	2	32							32	5	1,125
ME.	2	2	270				155	5	850	115	6½	1,325
MD.	2	3	375	50	4	675	300	5½	910	25	6	1,500
MASS.	1	1	10							10	6	
MICH.	3	4	485				255	5½	720	230	6	1,000
MINN.	6	13	835	50	3	600	535	4½	810	250	6	1,120
MISS.	1	1	100				50	5	900	50	5½	1,300
MO.	3	5	249				70	4	710	179	5	1,000
NEB.	4	5	220				140	5½	825	80	6	1,000
NEV.	2	3	300				150	6	850	150	6½	1,020
N. H.	1	1	4							4	5½	1,350
N. J.	7	7	355				20	4	700	355	5	1,040
N. M.	3	6	173	1	4	600	95	5	920	77	6	1,150
N. Y.	7	9	880				225	4½	800	655	5½	1,080
N. C.	1	2	375	100	4	700	275	5½	1,025			
OHIO	6	11	691				120	4½	810	571	5½	890
OKLA.	2	3	165	85	4½	750	70	5	875	10	6	1,300
ORE.	2	13	354	22	4½	760	176	4½	920	156	6	1,170
PENN.	2	3	530	50	4	615	100	5½	1,025	380	6½	1,040
R. I.	1	1	50				10	4	720	40	5	1,200
S. C.	1	1	200				200	5½	1,000			
S. D.	2	2	65	30	4	800	32	5½	1,000	13	7	1,200
TENN.	3	4	496	75	4	770	381	4	845	40	5	1,030
TEX.	7	12	1,117	110	4½	725	792	5	920	215	6	1,190
UTAH	4	9	222	22	4	750	106	4½	880	94	5	1,110
VT.	1	1	6				3	6	1,000	3	8	1,800
VA.	2	3	358	100	4½	700	200	5	800	58	5½	1,020
WASH.	3	5	773	255	4½	840	168	5½	950	350	6	1,040
W. VA.	3	3	110	20	4	600	70	5½	715	20	6½	900
WIS.	4	5	434	5	4	480	389	4½	860	40	6	1,100
WYO.	1	1	9				9	5	900			

BUILDERS' COMMENT (Con't.)

FIGURE BROS., *Syracuse, N. Y.*

We believe that the average builder through war housing projects has gained a considerable amount of knowledge and experience that will be put to good use in postwar housing—mass buying, mass production and on-site machine cutting and fabrication.

KNECHT LUMBER CO., *Rapid City, S. D.*

Most of the housing will be in the lower bracket. We intend to do most of this using prefabricated units. However, houses costing over \$5,000 will be of conventional construction and better quality.

GRAHAM-HENDRICKSON CO., *Wichita, Kans.*

The greatest opportunity in housing is mass production.

LABOR SUPPLY, EFFICIENCY AND WAGES

ARVID E. CARLSON, *Minneapolis, Minn.*

The only solution to the shortage of homes in the country today is production of materials in adequate quantities and a consciousness on the part of labor of the absolute necessity of getting down to work.

MODERN HOUSING CORP., *River Edge, N. J.*

We pay labor \$16 per day (foreman \$18 steady pay) and yet it only produces about 75 per cent of what it did in 1941 when wages were \$8 per day.

STEENBERG CONSTR. CO., *St. Paul, Minn.*

We find that, due to shortage of materials and lack of individual production, the mechanical trades are running from 75 to 300 per cent above those of 1940. Total labor cost on general construction has increased 50 per cent, 20 per cent of this representing the wage increase and the balance representing loss of efficiency.

O. & O. NOVELLY CO., INC., *Reno, Nev.*

Majority of the carpenters, painters, masons, etc. do not have the experience to do first class work. There are too many warborn mechanics. The average mechanic produces 20 per cent less than in 1941.

HAROLD D. COOK, *Portland, Ore.*

Restrictive labor union practices add 10 per cent to the cost of a house.

GOVERNMENT POLICIES

TORRESDALE CORP., *Philadelphia, Pa.*

Priorities retard small house production by keeping out the multitude of small builders unwilling to build under a ceiling price due to uncertain price fluctuation.

BARONE REALTY SERVICE CO., *Holidays Cove, W. Va.*

The recent regulation to allocate 50 per cent of all materials to GI's will bring about a tendency toward black market. It will swamp the builder even more with technicalities and form-filling.

J. T. NEWMAN & SON, *Cicero, Tex.*

Remove all priority and price regulations. No lumberman has to be made to give a GI preference—he will do that. Prices may go up a little but production will stop that.

RALPH A. WOODMAN, *Denver, Colo.*

An increase in the price of materials not to exceed 10 per cent would solve most of the shortages, and this increase would not have to be added to the sales price because most builders could cut their overhead if they had material to get their jobs completed sooner.

W. E. CLARK CONSTR. CO., *Glendale Calif. and Omaha, Neb.*

Price control is very essential and should be made flexible enough to keep production

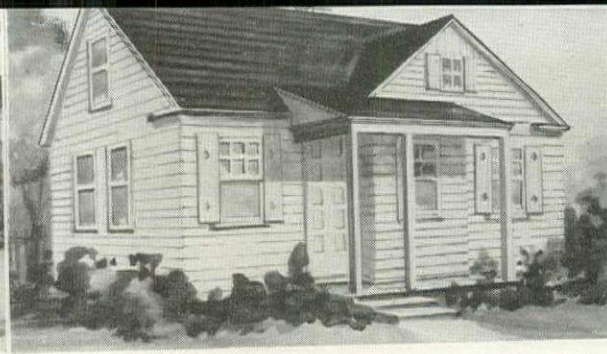
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KITCHEN EQUIPMENT IN 1946 HOUSES BY PRICE CLASS

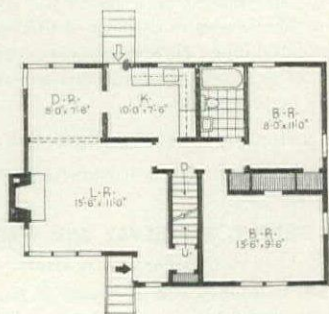
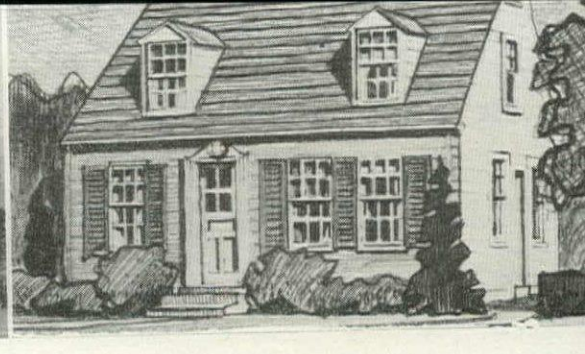
Equipment	Under \$5,000		\$5,000—\$7,500		\$7,500—\$10,000		Total Under \$10,000	
	Houses	% of Total	Houses	% of Total	Houses	% of Total	Houses	% of Total
Total houses in price class	2,833	100	9,610	100	7,674	100	20,117	100
Range	897	32	2,155	23	2,478	32	5,530	28
Refrigerator	797	28	1,410	15	1,118	15	3,325	17
Washing machine	72	3	575	6	402	5	1,049	5
Freezer	0	0	50	1	44	1	94	1
Garbage disposer	104	5	554	6	527	7	1,185	6
Dish washer	0	0	585	6	527	7	1,112	6



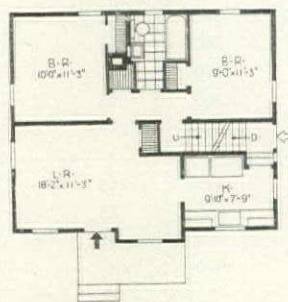
Architect: Charles A. Lawrence, Jr.



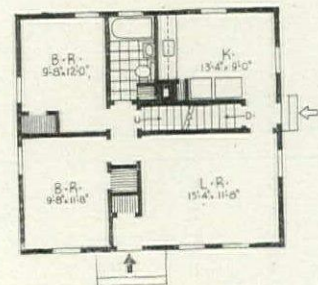
Architect: Chas. Horner & Son



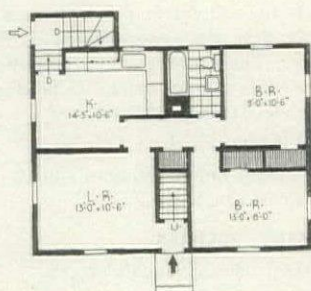
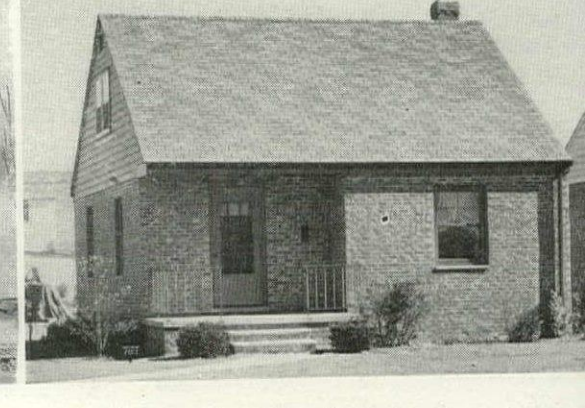
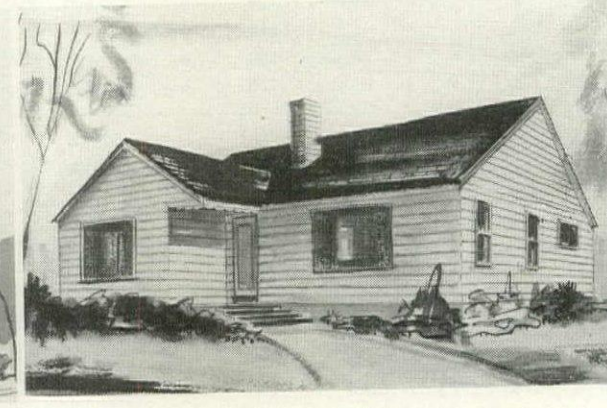
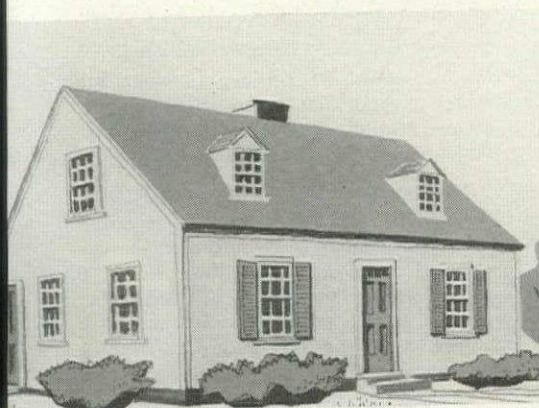
SEATTLE, WASH.—Archie E. Iverson



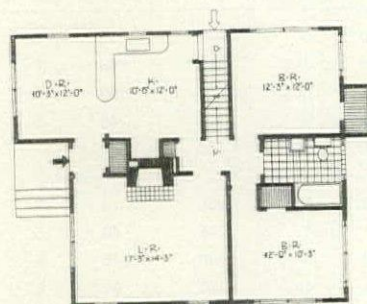
DETROIT, MICH.—Holtzman & Silverman



MILWAUKEE, WISC.—Sid Dwyer & Assoc.



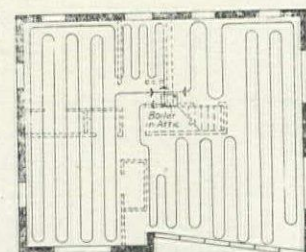
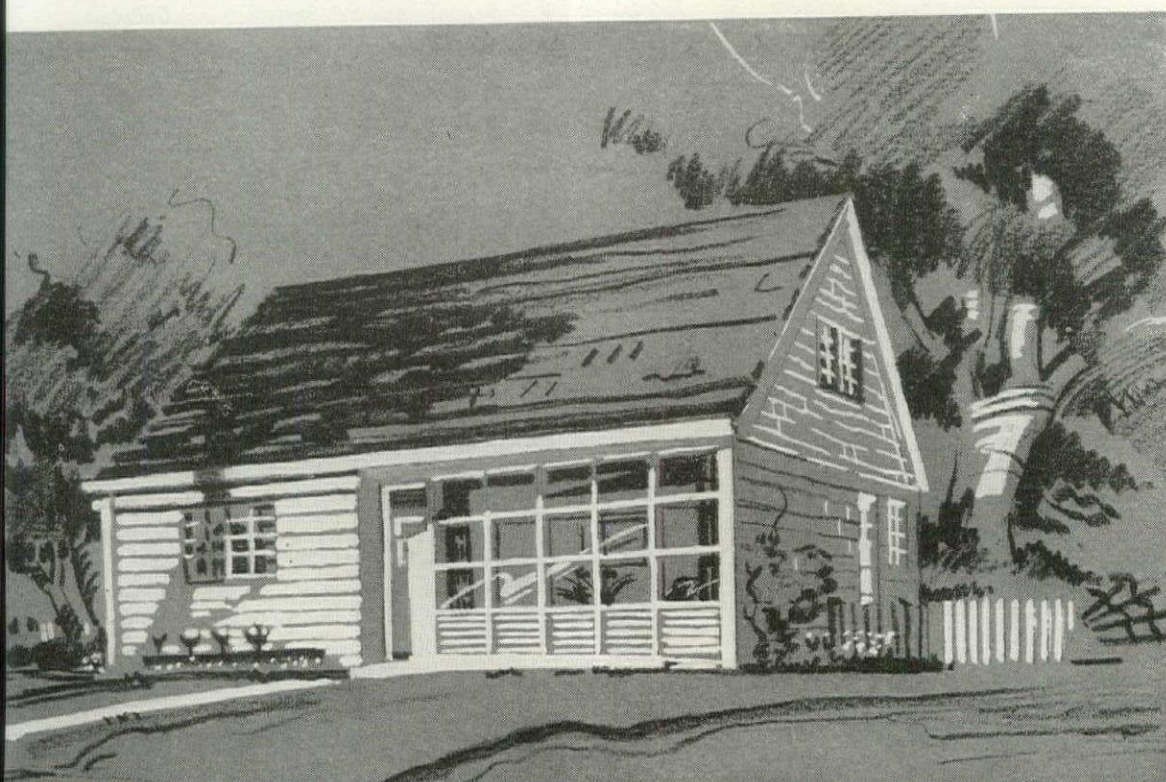
S. BERWICK, ME.—Parent Homes, Inc.



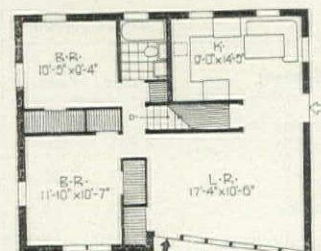
PORTLAND, ORE.—David Oakes Co.



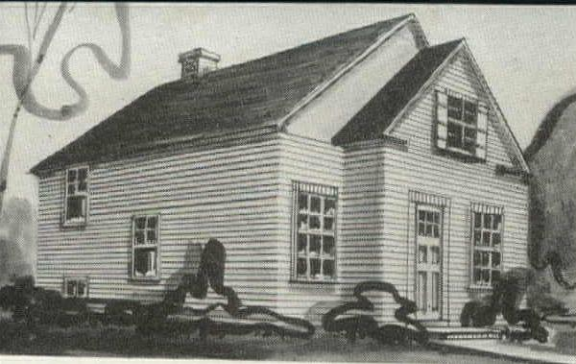
EUCLID, OHIO—Benton Building Co.



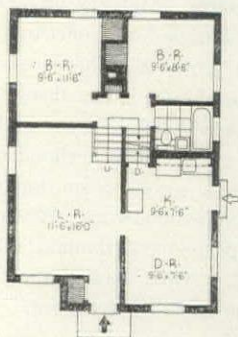
Heating coils in ceiling



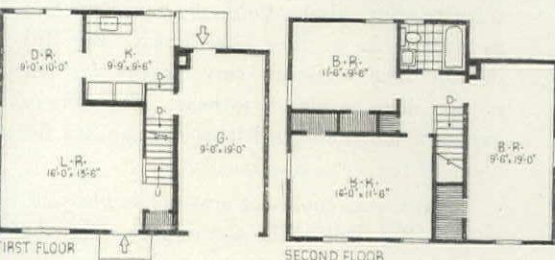
WASHINGTON, D. C.—Standard Properties
Architect: Daniel, Daniel & Daniel



Architect: Harold E. Anderson



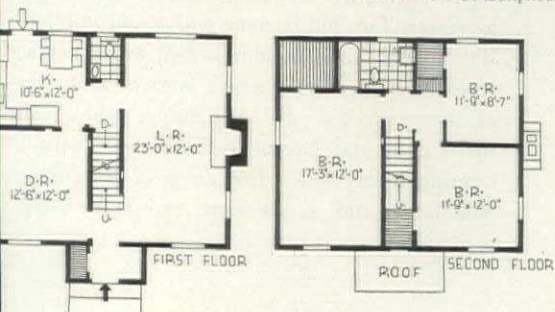
CHICAGO, ILL.—J. E. Merriam & Co.



EUCLID, OHIO—Benton Building Co.



Architect: N. G. Lanphear



BUFFALO, N. Y.—Fred P. Tosch, Inc.

BUILDERS' COMMENT (Con't.)

rolling and eliminate black market prices and practices.

CHURCHILL CONSTR. CO., Los Angeles, Calif.

The bottleneck of the entire building industry lies in Washington in the OPA. Unless prices are allowed to reach a proper level for profit to the manufacturers, there will not be enough material produced to meet the demand. The OPA must assume a more realistic attitude.

KINGSLEY HOMES, INC., Union, N. J.

If all Government controls were removed, competition would soon reduce profiteering to a minimum and so likewise prevent any danger of great inflation.

JOHN J. LA PORTE, Portland, Ore.

If the strikes are not settled soon and the OPA does not grant some price raises for certain products, we are going to miss the boat. The delay caused is draining reserves of prospective buyers as well as causing unemployment.

EDMUND J. SULLIVAN, Chicago, Ill.

The only way to put building on a sound basis is to eliminate all threats of controls such as the Patman bill threatens to shoulder on the business. While I am no more in favor of run-away inflation than anyone else, I believe that good old American brand of free enterprise and competition will more quickly put this business on a sound economical basis than all the rules OPA or others could think up.

HOPE AND OPTIMISM

F. L. PALMER REALTY CO., Indianapolis, Ind.

I have been building houses for 40 years. Prior to 1942 I built what I could sell most readily in a competitive market . . . Today, with all the restrictions, many of which are too restrictive, the best way is to conform to rules and regulations with as little griping and crying as healthful and build as many houses as possible, as that is the only way to permanently relieve the housing shortage. Too many are talking; too few are building.

THE DAVID OAKES, Portland, Ore.

Building today is more interesting, and a better value can be built into the house through use of many new products.

ROCKY MOUNTAIN HOMES, INC., Denver, Colo.

If materials bottlenecks can be broken, builders will be much better off than ever before, for they have become more enterprising during the past few years and have learned new and better methods.

ARTHUR T. MCINTOSH & CO., Chicago, Ill.

We believe in going ahead. We intend to operate just as if we were sure of getting what we need. We hope we shall get it. But, we will build anyway. If we only get the brick walls up, we will have that much more done and be ready to proceed when we can.

WILLIAM C. WARMINGTON CONSTR. CO., Los Angeles, Calif.

I am not a crackpot democrat, but I like the way the administration has handled us. We would be in a "helluva" fix without government regulation. The housing situation out here has been in a fit of hysteria. Thank God we have had some control. If some of our construction men had played ball and quit their crying, they could have made, as I did, a fair profit. But they got panicky instead of getting busy.

KAISER COMMUNITY HOMES, Los Angeles, Calif.

It is not generally known that it takes

longer to prepare the land for building than to build the houses. Six months are required, on the average, to complete the engineering and install the improvements. When it is remembered that wartime restrictions were lifted only a few months ago, it will be seen that considerable progress has been made.

DISPAIR AND PESSIMISM

M. C. BOGUE & CO., Denver, Colo.

If it were not for the tremendous demand for houses and, consequently, the eager acceptance of anything at any price or terms by the buyers, I would definitely not attempt to build any houses.

C. B. JONES, Baltimore, Md.

We are finding material markets so tight and Government rules and regulations so troublesome that unless there is a marked improvement we intend to abandon our program for 200 houses this year.

HOLLAND LUMBER CO., Panama City, Fla.

Lack of materials, labor inefficiency and indifference have caused us to abandon any plans for building at this time.

FARMER & DURAN, Tulsa, Okla.

We are not doing any building and do not contemplate any. The situation is much too complicated to justify construction of any kind of a house.

ROBERT W. GILLETTE, Nashua, N. H.

As an extremely small builder who could be wrong, I believe that the building business as I have known it is done.

MCKEON CONSTR. CO., San Francisco, Calif.

At our wits' end.

MISCELLANEOUS SUBJECTS

MADISON LUMBER AND MILL CO., Moscow, Idaho

We ask that the exportation of critical materials be stopped so as to give our GI's homes and jobs. We are really obligated to our boys.

DAVID B. RATZLAFF, Reno, Nev.

My biggest complaint is that speculators and real estate men are making the large profits out of old and new houses. My only suggestion is that we should be better organized and work together.

GEORGE BUILDING CO., Newark, N. J.

Everybody feels that, "why worry, the fore-closer of the house will eventually pay." This is wrong and bad for the industry. I am only interested in building houses of good quality with as much speed as possible at the lowest possible price.

JOHN C. GROSS CONSTR. CO., Clayton, Mo.

We feel it is going to be the job of the individual developer and builder to absorb some of the increased cost of his houses or finished products by means of increased efficiency in operation from his point of view and from the labor trades' point of view.

HAROLD D. COOK, Portland, Ore.

I am building houses today that very few GI's can afford to own or buy. Not one young couple in ten will pay out on a \$5,000 house in normal times. The need is for more apartments for rent . . . We are forcing people to buy houses who should be renting.

PARENT HOMES INC., S. Berwick, Me.

What I feel is most needed is a longer term mortgage for financing these homes. A 33 or 35 year plan would allow builders to put these homes on the market for rent which is the greatest demand today.

BIG BILL HUTCHESON

rules the carpenters and the carpenters rule the show.

This article is reprinted from the April, 1945 issue of FORTUNE



Photos: Fenno Jacobs—Fortune

William Levi Hutcheson, seventy-two, is best remembered as the man whom John L. Lewis smacked on the jaw at the 1935 convention of the American Federation of Labor in Atlantic City. Indeed it would not be stretching the truth to say that Big Bill Hutcheson literally goaded Lewis into starting the C.I.O. It would not please Hutcheson to be tagged as the inspiration of the C.I.O.; Hutcheson's lifelong addictions are Methodism, Masonry, and the Republican party. And among his peers his reputation is founded on something far firmer than physical combat. The most significant fact about Hutcheson is his absolute dictatorship of the United Brotherhood of Carpenters and Joiners, and the Brotherhood controls all who work with wood—from logging to the most exquisite cabinetwork. It was the vastness of the carpenters' domain that sparked the old crack: "God created the forests and He gave them to Bill Hutcheson."

Big Bill has been an almost irresistible target for attack throughout the thirty years he has been president of the powerful Brotherhood and the fifteen years he has been the dominant personality in the even more powerful Building Trades Department of the American Federation of Labor. Hutcheson has been called more names from more differing points of view than has any other American labor leader save John Lewis. He has been derided, in his own union and from the left, as a reactionary, a strikebreaker, a stooge for the employers, and a complacent friend of racketeers. He has been assailed from the right as a dictatorial operator of a labor monopoly that conspires to restrain trade and ruin free enterprise. Both kinds of obloquy have done him as little harm as they have Lewis. Big Bill doesn't take criticism very graciously, but neither does he take it to heart. He seems to expect it and to regard it as nothing but the wails of the weak and frustrated.

Today things could not possibly be pleasanter for Big Bill. His sovereignty over the Brotherhood is complete and uncontested. He rules twice as many union members as before the war (claimed: 722,000). The union's treasury has over \$9 million in cash and government bonds (it had less than \$1 million prewar). When, in a few weeks, the Brotherhood holds its first convention since 1940, he is sure to be nominated for another four-year presidential term, probably unanimously. And so far as human foresight can discern, his son, Maurice, will move without opposition from the first vice presidency into his father's place whenever Big Bill is willing to retire.

Yet these are only half his blessings. His huge frame (six feet one and a half inches) is free from infirmities and far from flabby—his weight of 220 hasn't varied more than twenty pounds either way since early manhood. True, he is quite bald, and his once handsome face has become pudgy and jowled. But his quick, suspicious brown eyes peer as intently and perceive men's motives as surely as they ever did. He still hunts, fishes, and plays golf, and has provided himself with a hunting lodge and a few acres of Wisconsin woodland, and a pleasant two-story house

overlooking Lake Hollingsworth at Lakeland, Florida, in addition to his home in Indianapolis, where the United Brotherhood maintains its headquarters in a building of its own. He is utterly without self-doubt and has managed to retain, practically untainted, what Santayana called animal faith. Millions may be concerned about the housing shortage or the general plight of the world but not Big Bill Hutcheson. The few pragmatic rules by which he has lived seem to him to be adequate for any possible future and he does not propose to dally with change.

This fact has very great importance in the present building crisis. It means that the carpenters—and the other building-trades unions over which Hutcheson has influence—will defend, with strikes if necessary, the same restrictive working rules and jurisdictional decisions (and lack of decisions) that have afflicted the building industry in the past.

Hutcheson is not very sympathetic with the hue and cry over working rules. He thinks their restrictive aspects have been vastly distorted. Most builders agree with him, though they will complain about some specific example of feather-bedding whenever a working rule hits them at a critical place. Nor does he fear a shortage of skilled labor in the building trades. He insists there will be enough carpenters (though maybe not enough lumberjacks) for any amount of building this country can do, and his doubled membership is corroborating evidence.

The importance of jurisdictional disputes, at least, Hutcheson does not try to brush aside. On this subject he will not, indeed he cannot, budge. Preserving work for the carpenter is one of the most vital things the Brotherhood does for the individual dues payer, and Hutcheson knows that his own job and power depend on the militancy with which he fights any union that claims jurisdiction over work that carpenters have always done. "Once wood, it is always the right of the carpenter to install it, no matter what the new material is," he has said. Frank Duffy, the Brotherhood's secretary and historian, goes even further. Duffy complained recently that when he coined the slogan, "If there's carpenter work to be done on land or sea it belongs to the Brotherhood," he was guilty of laxity. "I should have said," he now contends, "if it's on land or sea or in the air or under the sea."

Labor history is littered with the jurisdictional rows resulting from this policy. For thirty years the carpenters have been fighting the machinists over who can install machinery in a factory, and the International Machinists Union has just withdrawn from the A. F. of L. (it did so several times before) because the A. F. of L. won't back up its own decision (made in 1914), which gave the machinists jurisdiction. The famous Anheuser-Busch case, which had the effect of exempting unions from antitrust actions, was over this issue; the Supreme Court finally decided the Brotherhood and Hutcheson were not conspiring to restrain trade, even though their fight with the machinists kept the brewery from completing a new plant. The carpenters have battled

the metalworkers for nineteen years over who shall install trim that is now metal but was once wood. The carpenters have even fought the plumbers—over who shall install metal medicine cabinets. Big Bill Hutcheson says jurisdictional disputes are bad, but as inevitable as death and taxes. "Even men in the Brotherhood say to me, 'Bill, why don't you settle them?' I say, 'How? Tell me how? There's one way to settle them and only one—give up work carpenters have always done and are entitled to. Is that what the carpenters want?'"

Hutcheson offers absolutely no hope of ridding the building industry of jurisdictional disputes. He is almost as hopeless about graft and racketeering in the building trades. He says that employers are often more to blame, and when he was asked what he would do to officials of his own union who had succumbed, he said that if it was too flagrant he would tell the erring brother to lay off, not to be too susceptible.

OUT OF THE MICHIGAN WOODS

Hutcheson's ancestry is Scotch-Irish. His father was a ship carpenter in Bay County, Michigan, where a magnificent stand of white pine was being lumbered and a little boat-building to serve the Great Lakes had begun. He married Elizabeth Culver, of a Pennsylvania Dutch family that had migrated to Michigan. They had five children—two girls, William Levi (born on February 7, 1874), and two more boys. One was a carpenter and is dead. The other boy, christened simply Bud, is now fifty-six and works in the power plant at the home for aged carpenters that the Brotherhood maintains at Lakeland, Florida, and that figures so largely in Big Bill's career.

Hutcheson looks back upon his Michigan farm boyhood with affection. He thinks he learned from it everything that is important to a man, to a real man, to a real American. He had only a few years of country schooling, and got that in the fall, after the potatoes were dug, by walking a mile and a half each way. He had to pass through a settlement of German Lutheran immigrants, whose children lay in wait for him. "I learned that it is better to fight than to turn tail," Hutcheson says, "and I've never forgotten it."

He began earning his own living when he was sixteen—helping to erect barns, carpentering in the mines, and working on whatever he could find in the rural areas outside Bay City and Saginaw. At nineteen he married Bessie King, who bore him Maurice (in 1897), two daughters, and a boy who died in childhood. They were divorced in 1928. In 1902 he went to work as a carpenter, at 20 cents an hour, for the Dow Chemical Co. in Midland, and joined the union.

THE ETERNAL CARPENTERS

In 1902 the United Brotherhood of Carpenters and Joiners was the most powerful component of the American Federation of Labor, which the Brotherhood had helped to create soon after its own birth in 1881. The Brotherhood instigated and led, in 1890, the American

(Continued on page 166)

Hutcheson Jr. speaks

(Whenever 72-year-old Big Bill Hutcheson steps out of the rough-and-tumble of union politics for a rocking chair at the Carpenters' sumptuous Lakeland, Fla. home, Maurice Hutcheson, now first vice-president, will become top man in the powerful Brotherhood. Already Maurice relieves his father of many administrative responsibilities, including that of speaking to the press—a chore which old-line union leaders, notoriously close-mouthed, like to avoid as much as possible.)

Do you think that the CIO, as has been charged, will use Wyatt's emergency program as an excuse to launch a big organizing drive in the building field?

They might. Personally I don't think so. But they might. They've tried it before, but they never got any place.

Does the Brotherhood plan any special effort to organize prefab plants?

Whenever a plant opens, we try to organize it. No special new effort will be made, because our field men are already at work organizing new plants as they open. Some of the new plants are already organized because the companies were already established and are just branching into prefab.

Do you think prefab will be very important in total housebuilding volume?

If the prefabricated postwar house is like the one built during the war, they won't be very acceptable. They will mean increasing the slums instead of decreasing them.

Do you foresee any jurisdictional problems in connection with prefab and the new materials which Wyatt expects to introduce in housebuilding?

No.

Do you agree with Wyatt that housebuilding labor must be tripled to start 2,700,000 houses by 1947?

I don't know where Wyatt has drawn his conclusions regarding that. If other forms of building are eliminated, already existent labor would be devoted to the housebuilding program. The building trades were big enough during the war to handle the big emergency program and I think that they are big enough now. Remember that we have a lot of veterans—carpenters union men—coming back, plus the increase in apprentices.

How many carpenter's apprentices are now in training over the country?

I can't say. With 2,600 local unions throughout the country, no effort has been made to compile such statistics.

Do you think that the impending stop-order on all but veterans' housebuilding will mean substantial unemployment in some building trades?

I don't think so. But if certain materials are not utilized, there will be some drops in such trades as ironworkers, stonemasons and bricklayers.

TEN PRIZE-WINNING HOUSES

in Chicago Tribune contest tackle the problems presented by narrow lots.

To encourage design of houses to suit average families and fit average lots, and to give its Sunday Edition a timely topic to talk about, the *Chicago Tribune* last September launched its "Chicagoland Prize Homes Competition". Last month the winners were announced (FORUM, Mar. '46, p. 84). This month, the FORUM presents its selection of the ten best low cost houses among the 24 prize designs.

Keynote of the *Tribune* competition was practicality. Its purpose was "to create designs . . . worthy of recommendation to families . . . of the Middle West as embodying sound and practical principles of construction and design." The *Tribune* further warned contestants that "practicality" was to be the major consideration of the jury of practical men (five architects, three builders) in their judgment of entries. Finally, it was stated that prizes would go only to "the best designs of dwellings which are marketable to the public and attractive as investments to builders and lending agencies."

With such emphasis on practicality, it is significant that, in picking winners, the jury decided that houses of contemporary design best met the requirements. All examples of traditional architecture were among the 1,943 entries which also ran. Commented Architect Boyd Hill, professional adviser of the competition, "The contemporary trend of architecture was followed by more than half of the competent entries . . . In general, they seemed inclined to move away from the formal type of design which we have been accustomed to look for in home architecture". Looking at all entries, the jury noted these specific design trends: 1) provision of space for relaxation and open air living, 2) position of garage at the front of the house, 3) inclusion of more than one bathroom and 4) location of laundry facilities on the ground floor.

Featured for five weeks on the cover of its Sunday Color Graphic section and displayed a month at Chicago's Art Institute, the *Tribune* houses were enthusiastically received by the public—so much so that Sunday Editor Ardis M. Kennedy revised his original plan to limit publication to prize winners, will feature honorably-mentioned houses throughout the year.

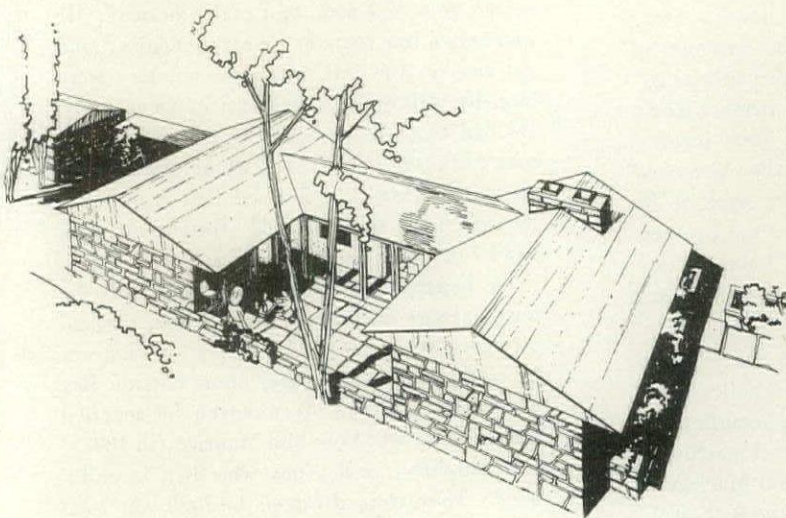
The houses presented herewith are divided into two groups: on this and the next two pages are six solutions to Problem No. 1; on the following two pages are four solutions to Problem No. 2. The problems' limitations:

	PROBLEM 1	PROBLEM 2
Lot size	30 ft. by 150 ft.	50 ft. by 150 ft.
House width	24 ft.	37 ft.
Floor area	1,100 sq. ft.	1,400 sq. ft.
Children	Son (6)	Son (12 and Daughter 8)



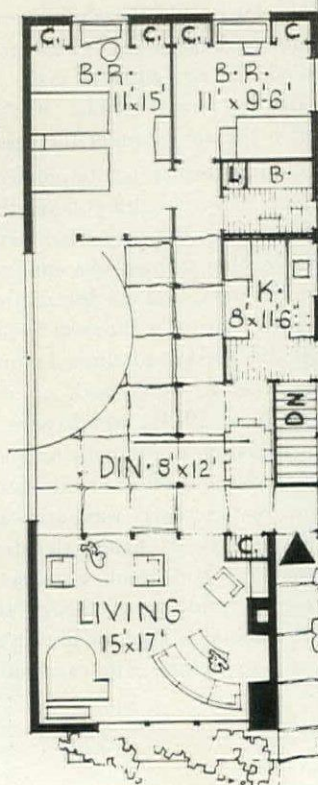
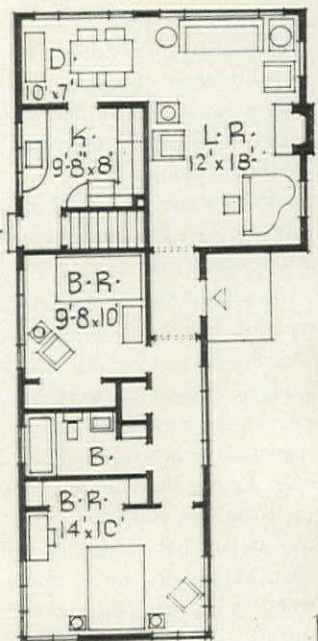
ARTHUR SACKVILLE-WEST, Colorado Springs, Colo., designer.

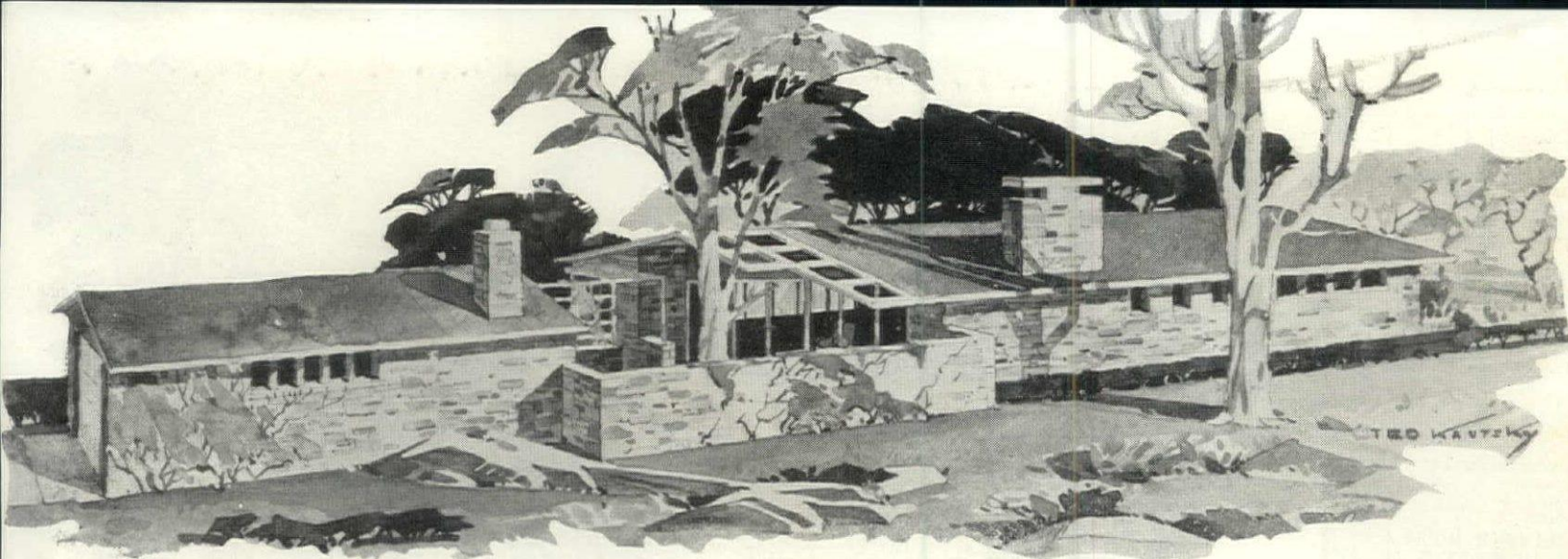
Of the four homes shown on this spread, each designed for a long, narrow lot (30 by 150 ft.), this pleasingly simple house would be the least costly to build. By following the common practice of placing the house in the center of the lot with separate garage in rear, available garden spaces are unfortunately broken up. Though the main entrance is well located between sleeping and living areas, the kitchen is difficult to reach both from the interior and exterior. Living and dining spaces open on the private rear lot area, but direct access by at least one door would facilitate outdoor activities.



RAY STUERMER, Chicago, Ill., designer.

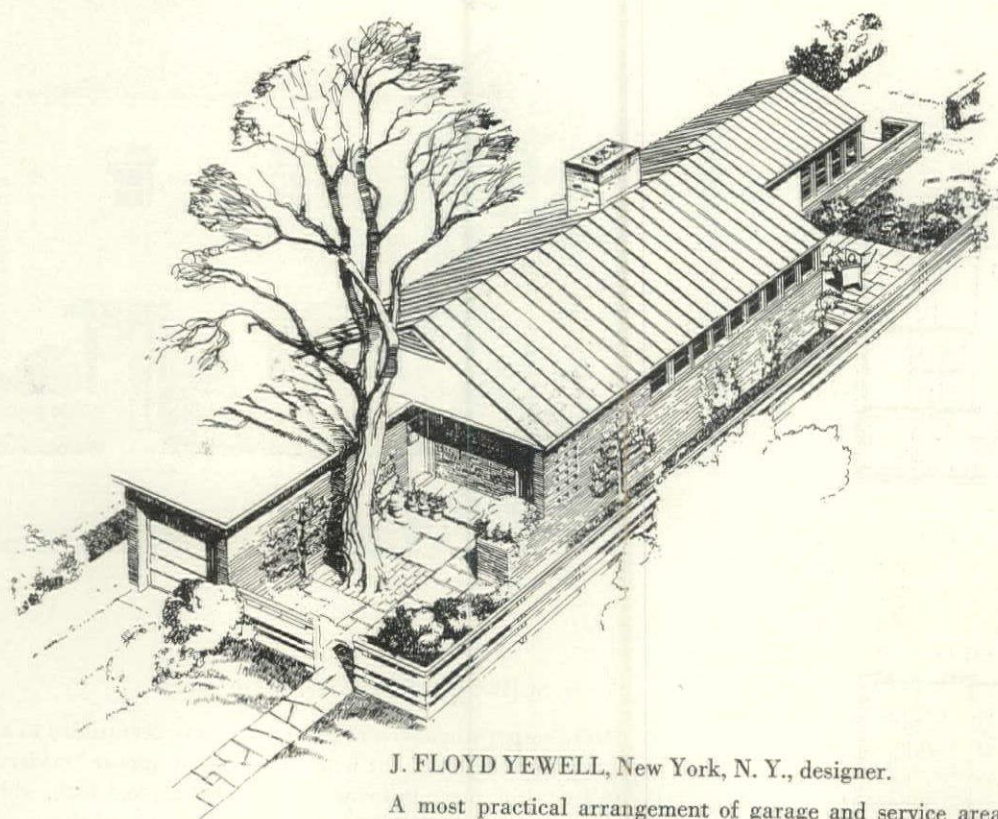
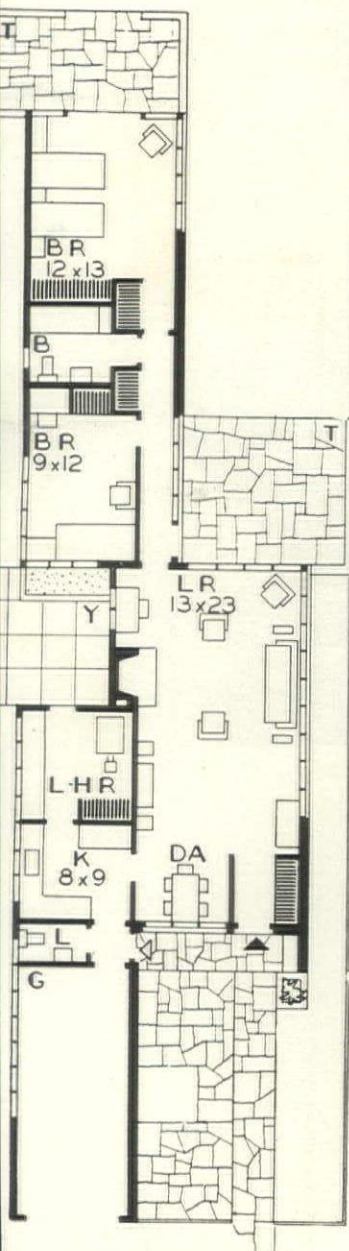
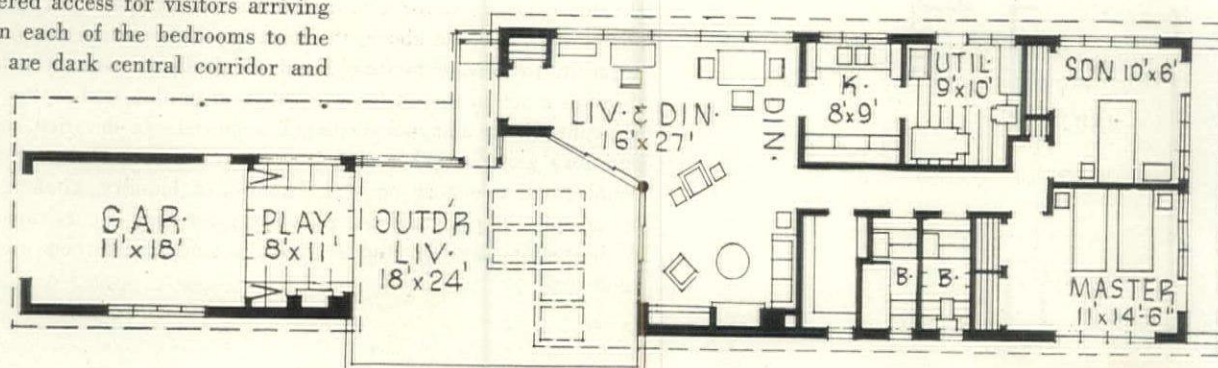
Here another designer places his house in the center of the lot with separate garage in rear, with consequent loss of garden area. Privacy for living room is reduced by the street front location, though the sheltered court compensates somewhat (if the neighbors on the next lot 6 ft. away are not too nosy). The bedrooms look out on the rear garden, but force a long, unsheltered trip from garage to kitchen side door. Most inconvenient feature is dining area, placed directly in main circulation of entire house—a feature that only eat-and-run commuters will appreciate.





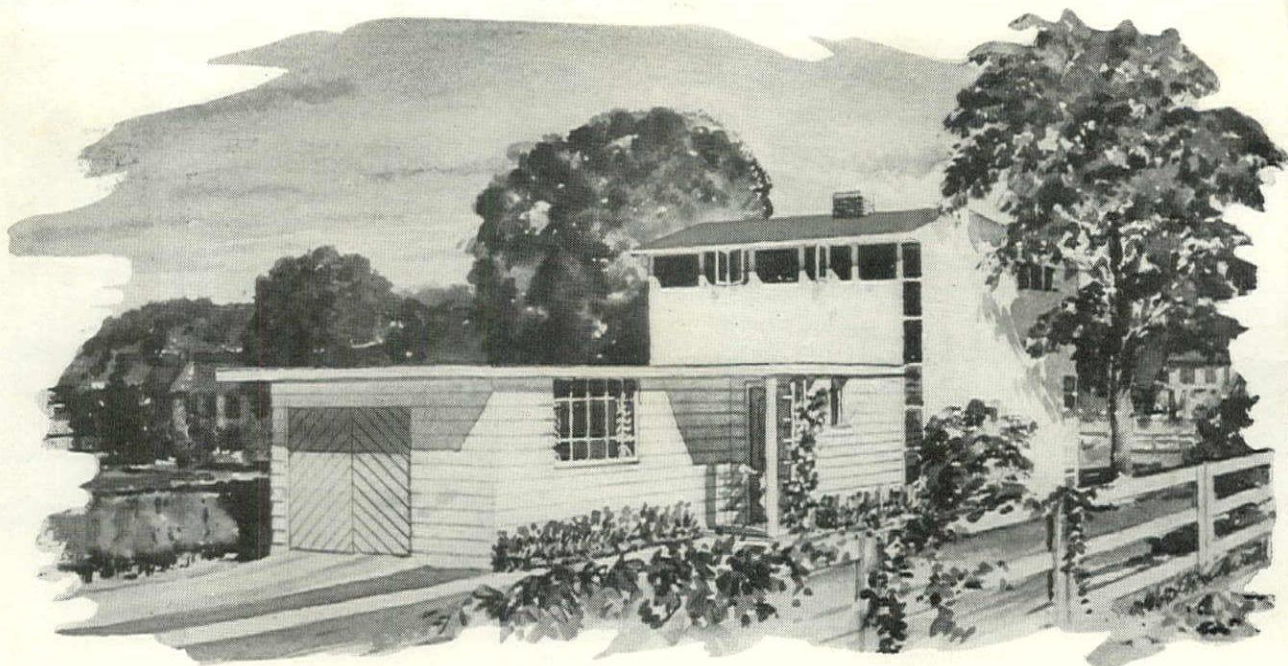
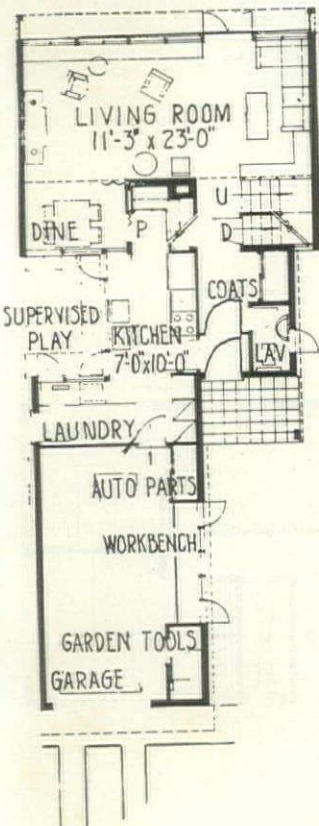
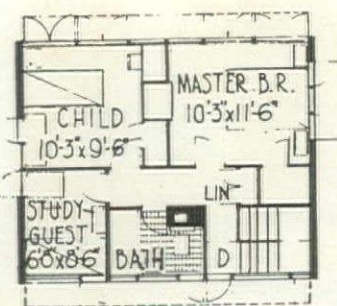
D. CODER TAYLOR, Evanston, Ill., designer.

This house offers an unusual amount of privacy within the confines of a typical city lot. An outdoor living area is sheltered from the street by the garage, whose rear forms a covered play space. Privacy from neighbors on adjacent lots is provided by a high wall on one side of the outdoor living area and the living room itself shelters the rest. A projection of the garage roof along one side furnishes covered access for visitors arriving on foot. Wide windows and a door open each of the bedrooms to the pleasant rear garden. Chief plan faults are dark central corridor and awkward duplicate baths.



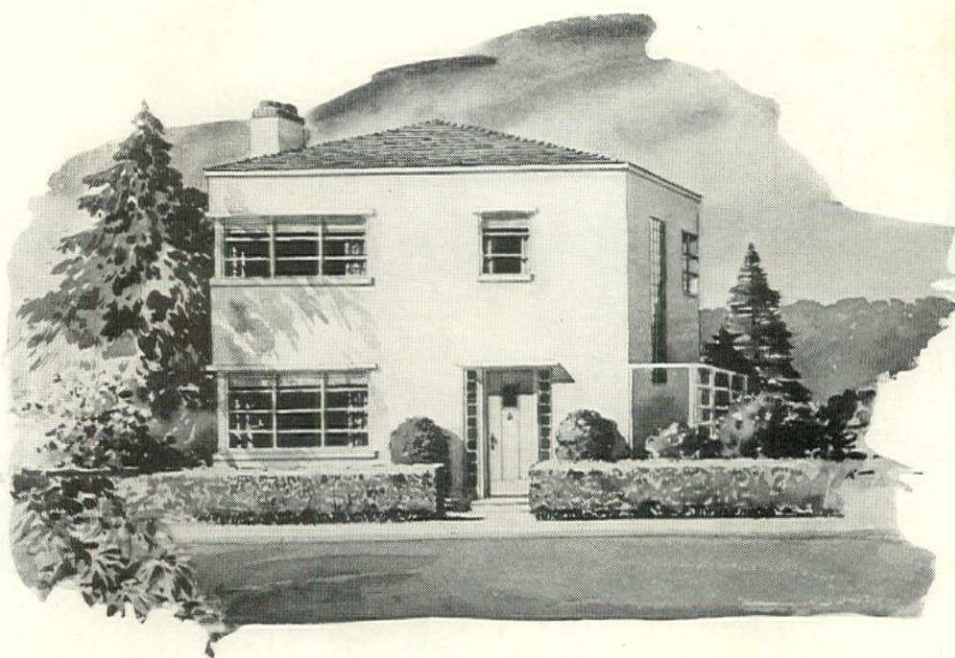
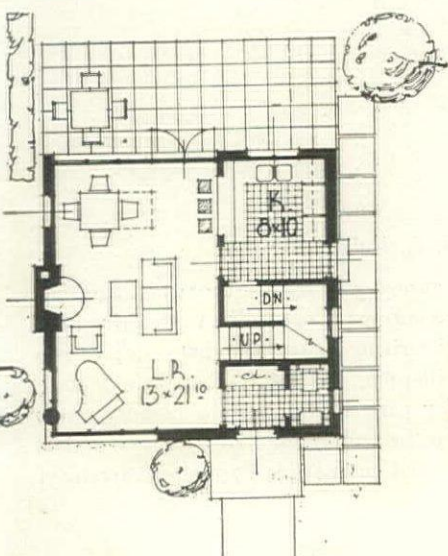
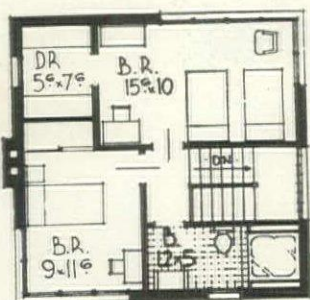
J. FLOYD YEWELL, New York, N. Y., designer.

A most practical arrangement of garage and service areas distinguishes this design. Both main and service entrances open off an attractive forecourt, while members of the family arriving by car have but a step or two to reach the kitchen with the usual shopping bundles. A thoughtful feature is the small drying and child's play yard adjacent to the laundry room. Windows from floor to ceiling open the end of the living room to a view of the terrace and rear garden, flanked on one side by the well-arranged bedroom wing.



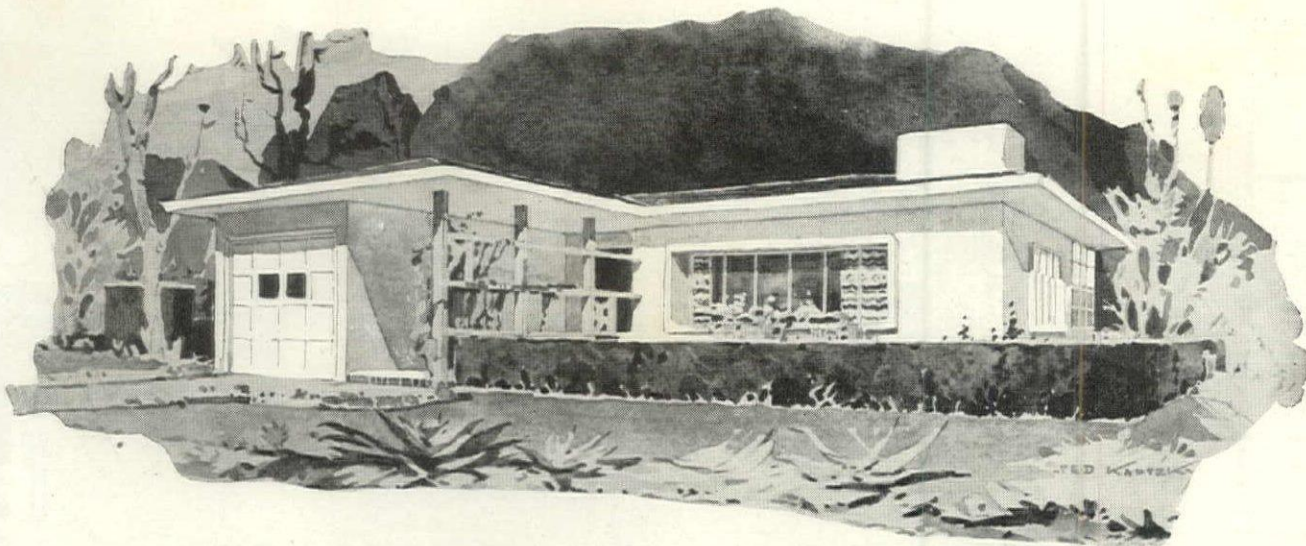
C. S. WOOLFORD, JR., South Orange, N. J., and R. D. PETERSON, JR., New York, N. Y. designers.

On this page are shown two homes for a 30 by 150 ft. lot using two-story plans. In the house above, the location of the garage on the street side adjacent to service facilities, and the bedrooms over the living room, reserves much of the lot for a private rear garden, and a plan of outstanding convenience and spaciousness is achieved. In elevation, the projecting one-story garage-service wing breaks up the cube-like preciseness of the usual small two-story house. Windows of laundry, kitchen, and dining areas open into a sheltered play court for easy supervision of children. A downstairs lavatory and an upstairs study-guest room are added conveniences.



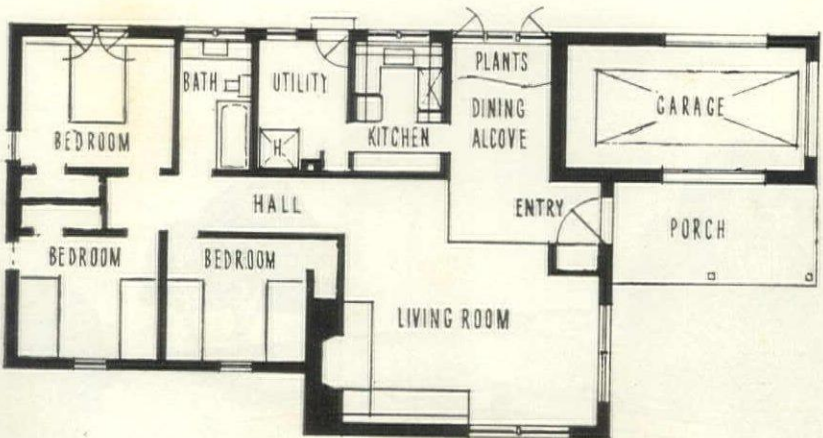
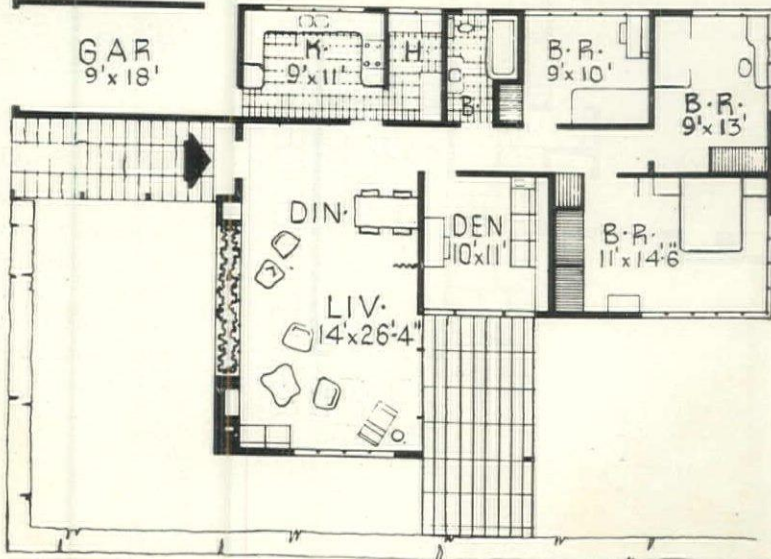
C. W. SCHROEDER, Chicago, Ill., designer.

Here corner windows and glass brick have been added to a stripped down traditional house in the hope of making it appear "modern." The plan is wasteful of space in living room, bedrooms and bath, while omitting the conveniences of laundry, pantry and garage workshop; and the stairway opening directly into the living room is particularly awkward. Privacy from the street and from neighbors has been given little consideration. A rear garage breaks up the garden area, and forces the usual unsheltered dash in bad weather. The simplicity of mass would lower construction costs and is the best feature of the elevation.



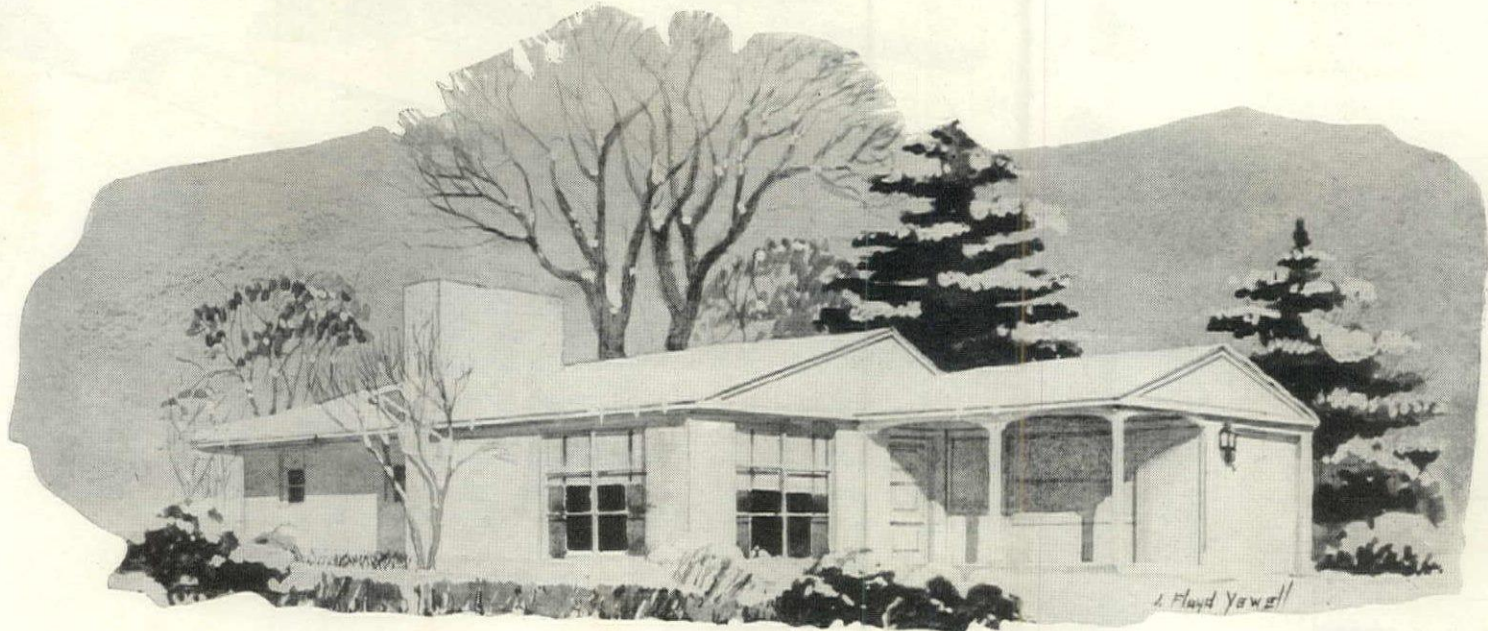
MRS. LUCILE MCKIRAHAN, Stuttgart, Ark., designer.

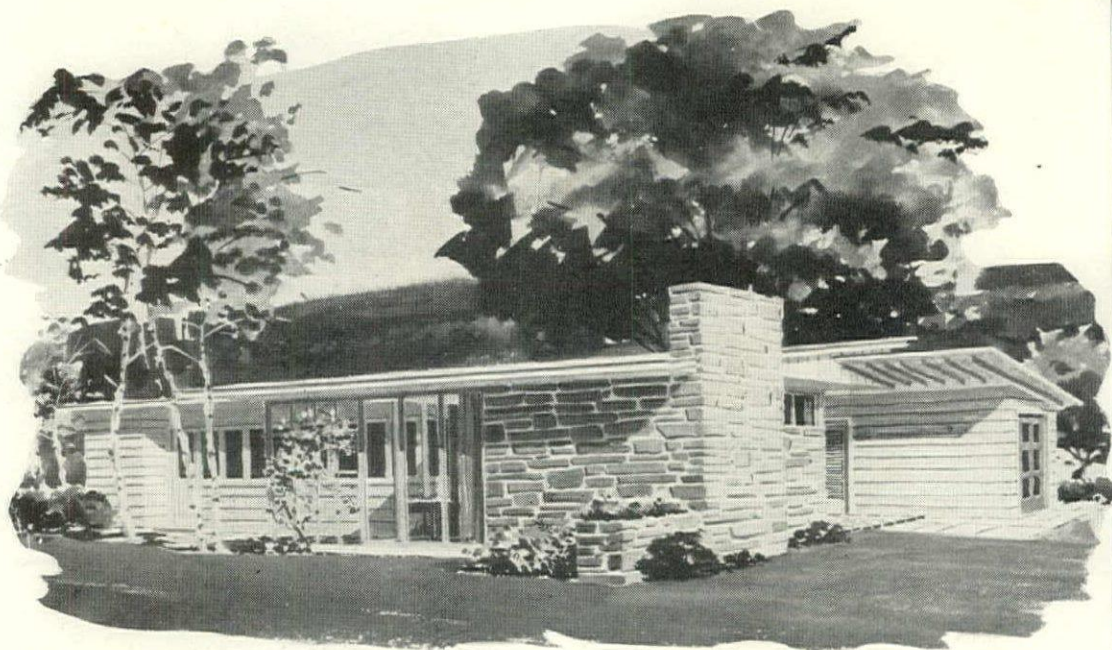
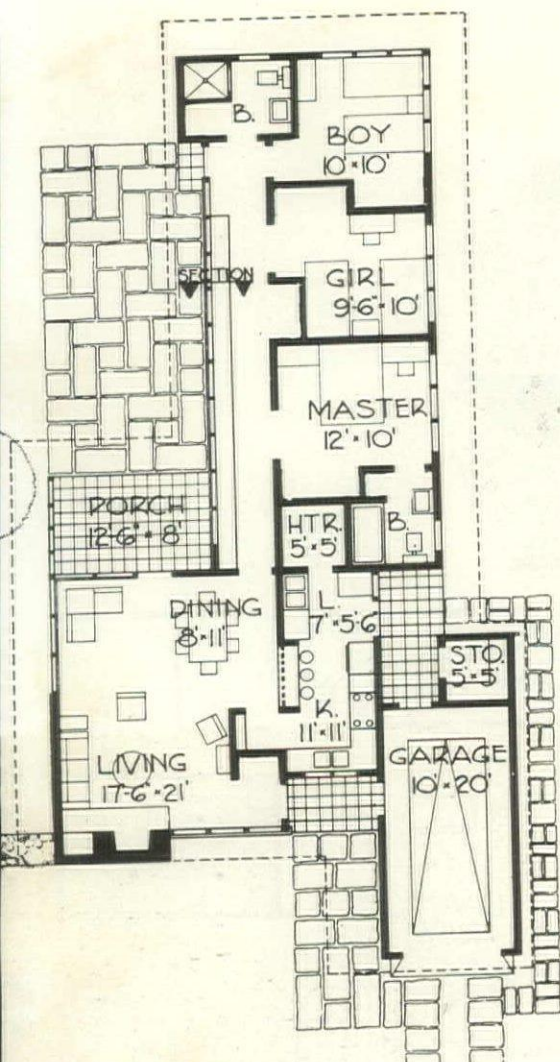
The houses on this and the following page are designed for a lot 50 by 150 ft. and a family of four, but the additional lot width seems to have given little added inspiration. Though generally undistinguished, this house does possess orderliness, as seen in the arrangement of kitchen, heater and bath rooms in a single line for economical plumbing, and the compact organization of the bedroom wing. A projection of the garage roof protects the approach to the main door, and a spacious porch shared by both the living room and den opens toward the rear garden.



ERIC WENSTRAND, Chicago, Ill., designer.

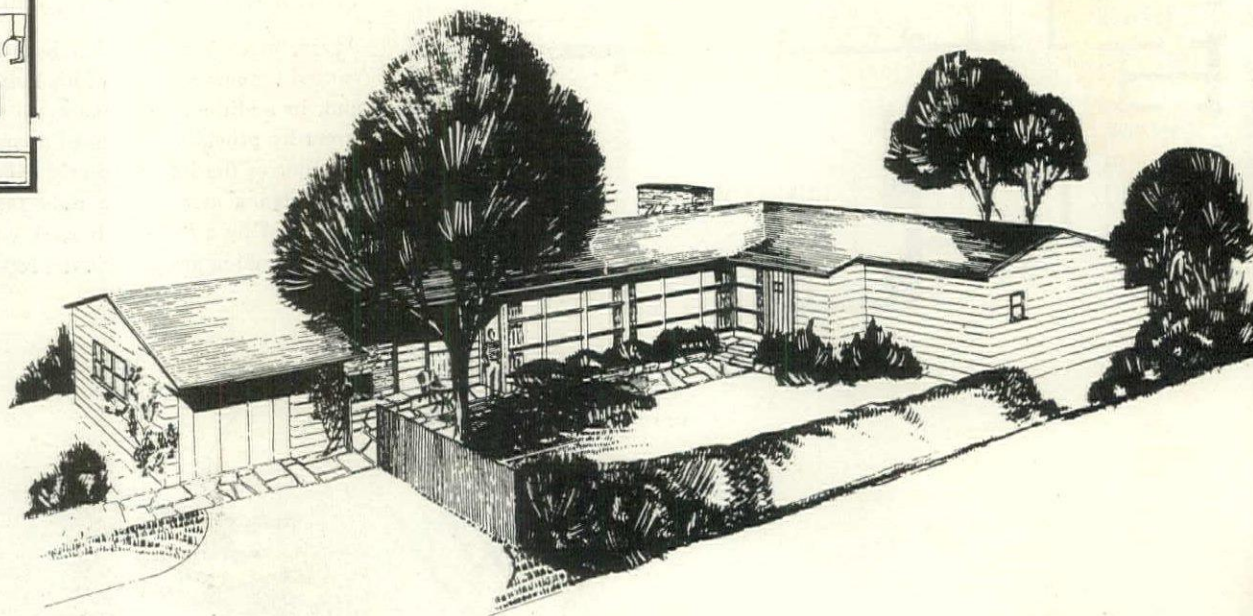
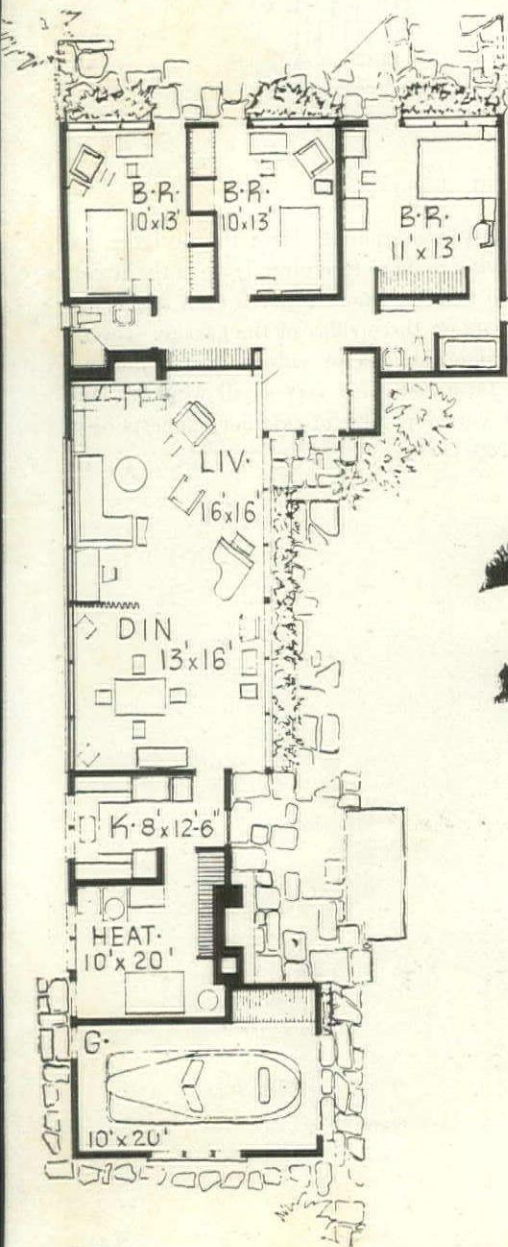
Again, privacy and garden beauty are ignored. Here the designer has caused the few windows of his living room to face directly upon the street; and, in addition, he proposes to make a summer porch even nearer the street by providing overhead doors on three sides of the garage. The remainder of the lot apparently has nothing to do with the house, the bedrooms being arranged in tight formation with very small windows, and connected by a completely dark corridor. Size of chimney suggests open hearth cooking practised in the 18th century.





HEIDT ASSOCIATES, Orange, Tex., designers.

These two houses take full advantage of their lots. The living room here is placed to view the length of the rear garden, flanked by the bedroom wing. Chief criticism of the plan is its unnecessary complexity. For instance, a visitor on foot would have some difficulty locating the main door, and the circulation to bedroom wing must always detour about the dining table. The large southern terrace is a fine feature, but the orientation of all bedrooms to the north is questionable.



W. R. BURNS, Harrisburg, Pa., designer.

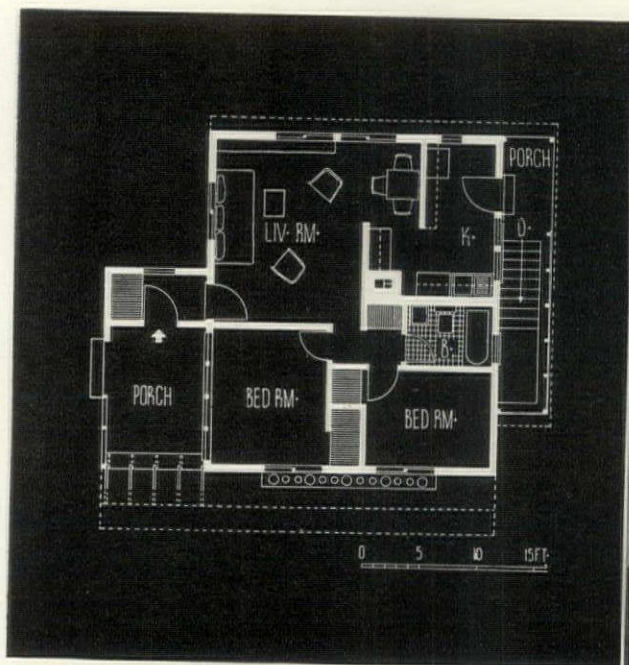
Though the problem of the too dominant garage has been solved here by turning it at a right angle to the approach, the visitor might well be confused as to where to enter this informal house, whose main doorway seems to be at the far end of its garden terrace. But, once oriented, he should find the house extremely livable, with its generous living-dining room intimately connected with the sheltered court garden, and its bedrooms opening to a private garden in the rear. The outdoor fireplace near the kitchen makes terrace dining a convenient feature.

LOW COST HOUSES

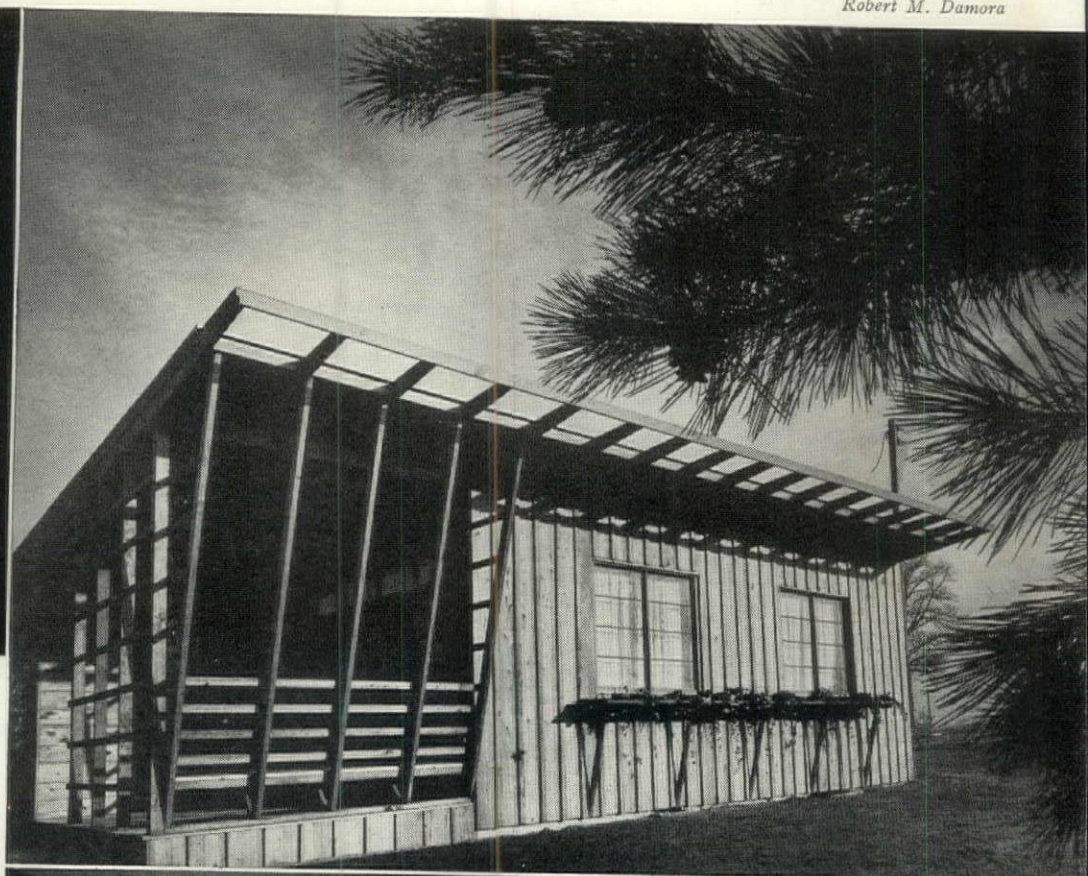
A portfolio of homes coming within the cost limitations of the Wyatt Program.

Soon the demand for low cost houses, liberated by the government program, will burst over the nation. The building world is busy planning houses. To prove again that low cost of house need not mean low standards of design, the FORUM presents a group of well-planned, inexpensive houses published during the past ten years. Though new materials and techniques born of war experiences will be incorporated in many structures, the best small houses of the past decade offer use-tested pointers to today's designers and builders.

Robert M. Damora



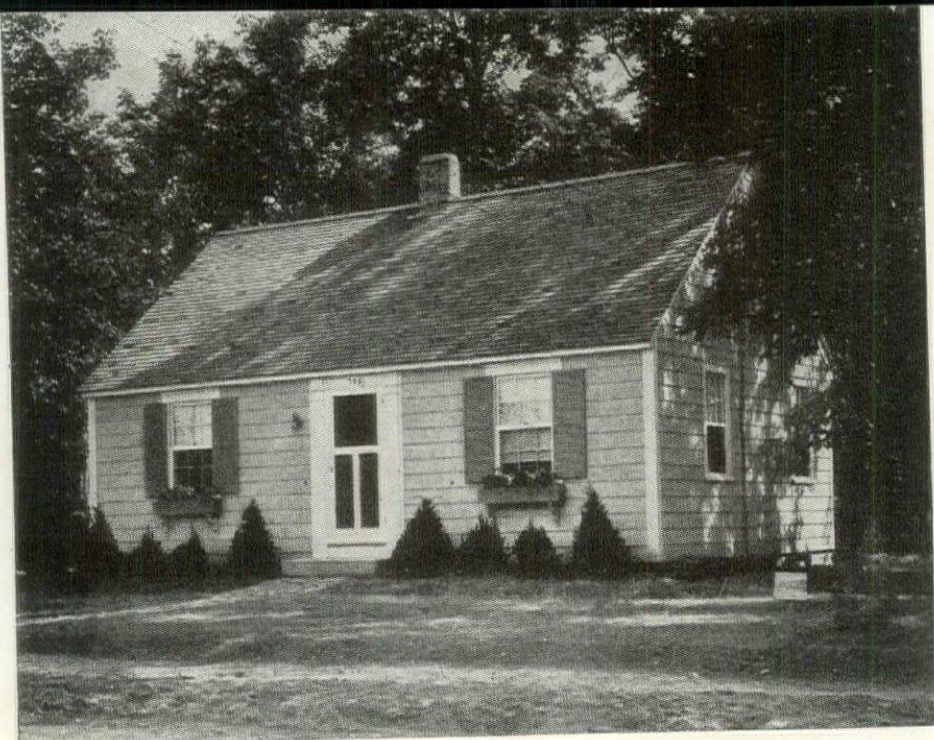
Architectural Forum, June, 1944



VICTORINE and SAMUEL HOMSEY, architects.

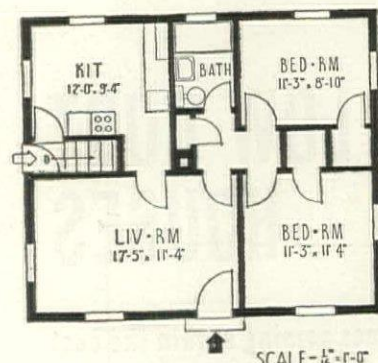
The usual box shape associated with low cost homes is here relieved by inexpensive trellis porches at front and back. Additional character is given by projecting and exposing the rafters of the flat roof. The interior is notable for its ample closets and spacious appearance created by the offset arrangement of kitchen, dining section and living room. Appropriate furnishing sets an example too seldom seen in low cost houses.





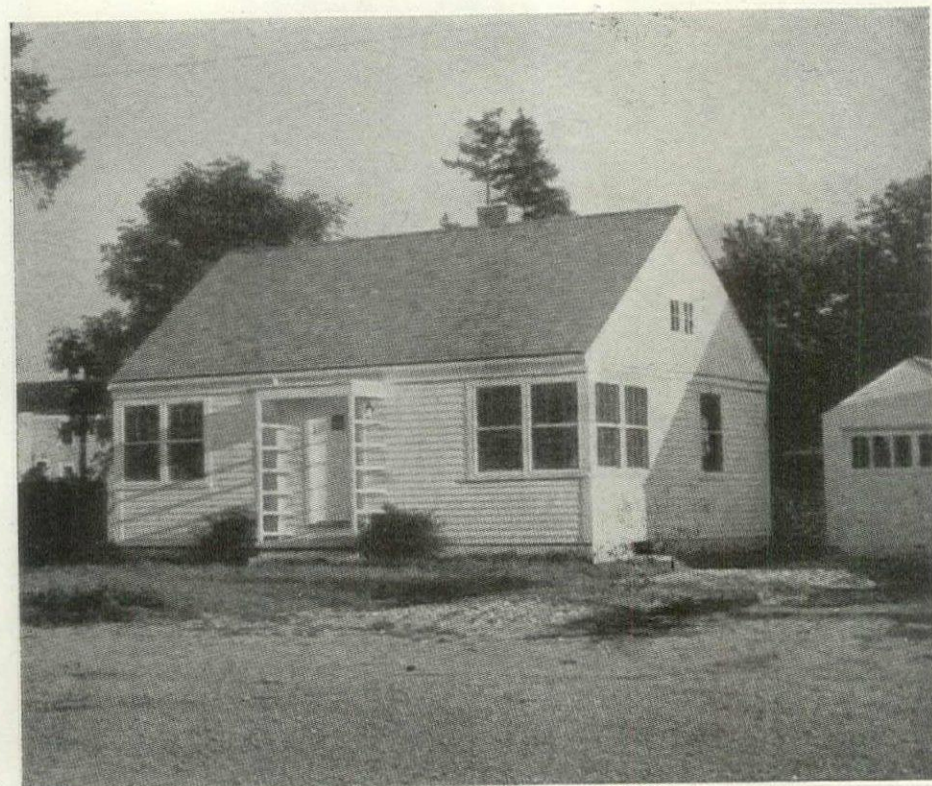
Architectural Forum, April, 1939

Scale for all plans $\frac{1}{4}" = 1'-0"$

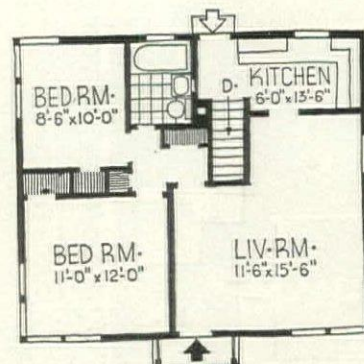


JAMES J. FITZSIMMONS, architect.

Where stock elements of traditional pattern are to be used, this house furnishes a simple, economical pattern. Kitchen and bath plumbing are placed back to back; bedrooms have needed privacy; and hall space is kept to a minimum. With slight rearrangement, an interior stairway to the attic can be provided.

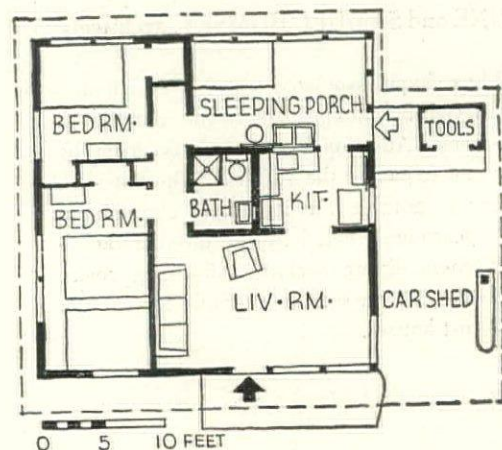
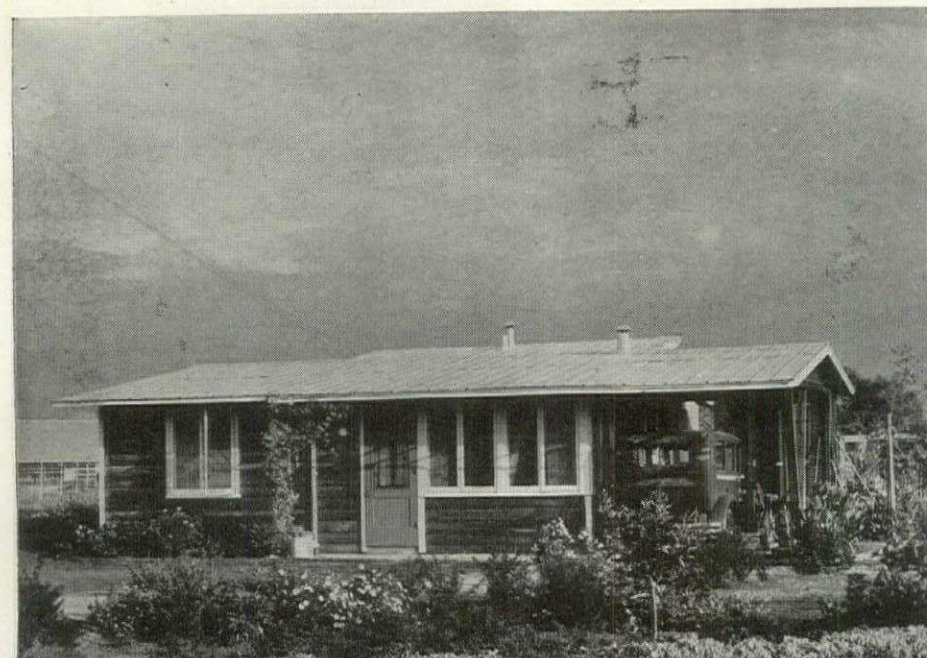


Architectural Forum, April, 1941



EVANS, MOORE and WOODBRIDGE, architects.

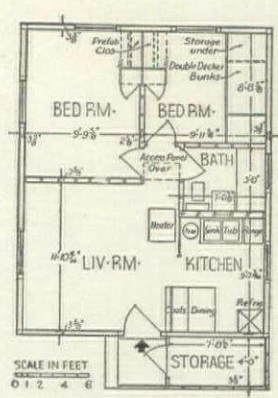
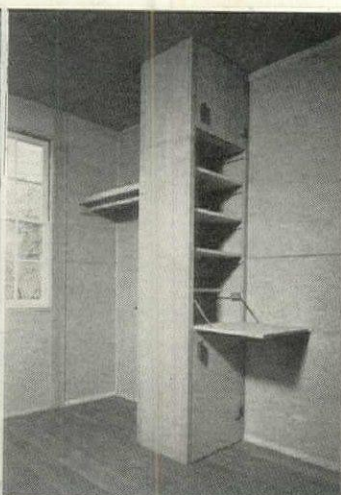
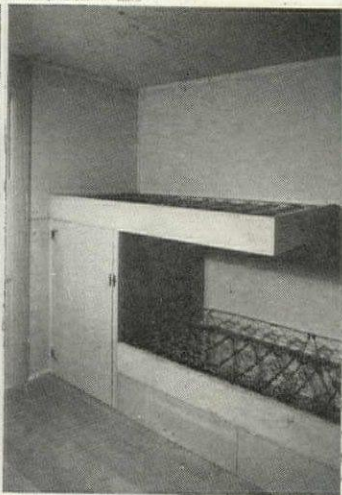
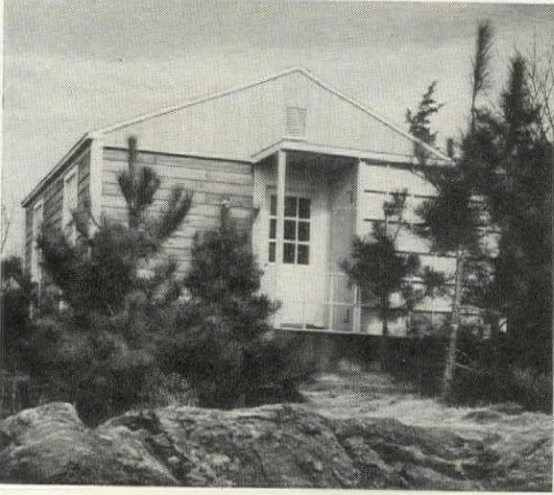
Here is another variation on the minimum box plan in a modified traditional form. Corner windows bring more light into the interior, and the arrangement of entrance, kitchen and living areas makes for better circulation and furniture arrangement than in the house immediately above. A floor level heater unit can be substituted for basement stair if desired.



FARM SECURITY ADMINISTRATION, architects.

In this ranch house developed and built by the FSA in California, the high pitch of the more traditional roofs shown above has been modified, and a roof extension creates a car shed. To provide a sleeping porch, bath and kitchen are placed in center of plan, lighted and ventilated by a clerestory formed by a projection of one plane of the roof.

Architectural Forum, January, 1941



Architectural Forum, March, 1942

HOLDEN, McLAUGHLIN and Associates, architects.

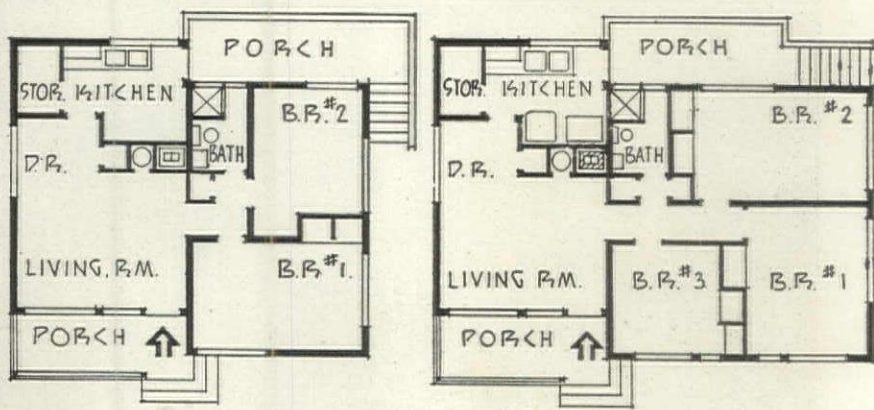
A still-interesting suggestion is this demountable house built experimentally by American Houses, Inc., to prove that 1942 defense housing standards were wastefully high. The design shown here has 28 per cent less area, three less windows, and one less exterior door than required by government standards. Though the living room is questionably small, the space-saving conveniences of bunked beds, and combined hanging, shelf and desk units should not be overlooked.

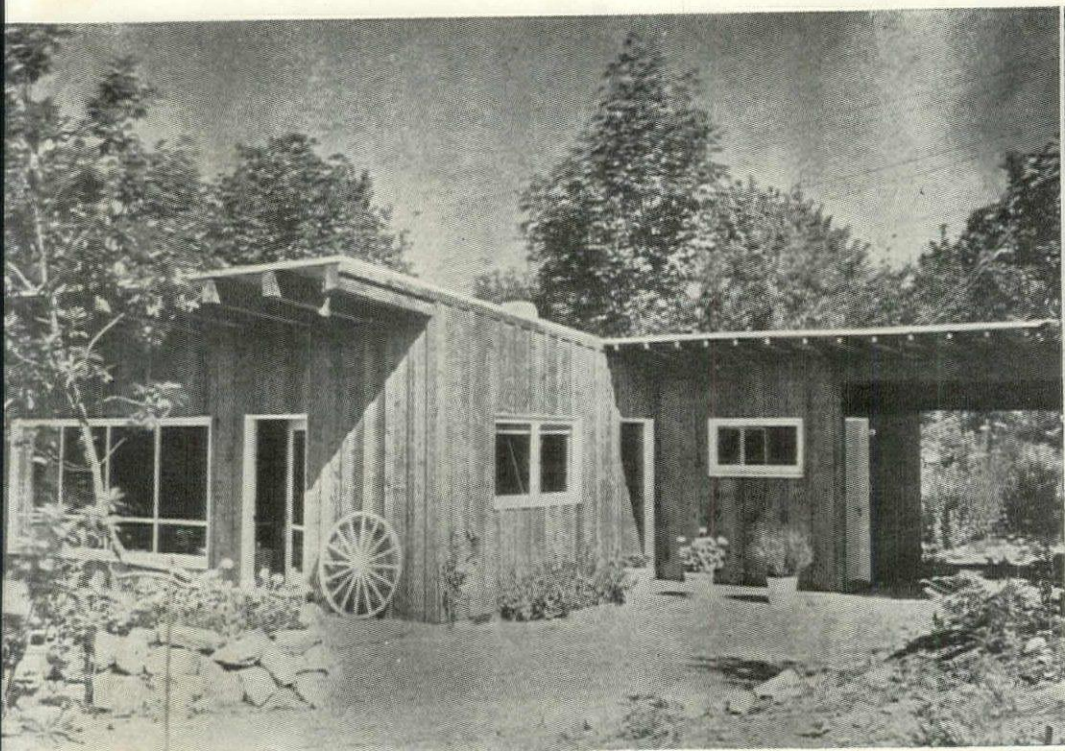
TENNESSEE VALLEY AUTHORITY, architects.

Built on the site with conventional materials and methods, these attractive frame houses were made demountable by a few simple expedients, to permit subsequent removal and reuse. Twenty houses have been in successful operation since 1944 at Smith Creek Village, Tenn. The well-planned living-dining and kitchen unit may have either two or three bedrooms, to form a house of unusual charm.



Pencil Points, March 1944



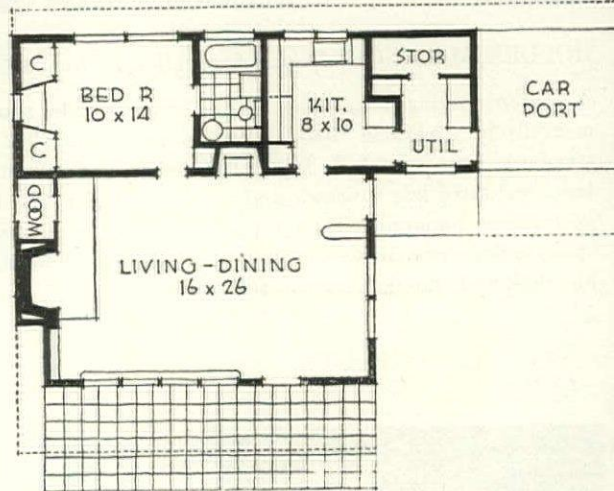
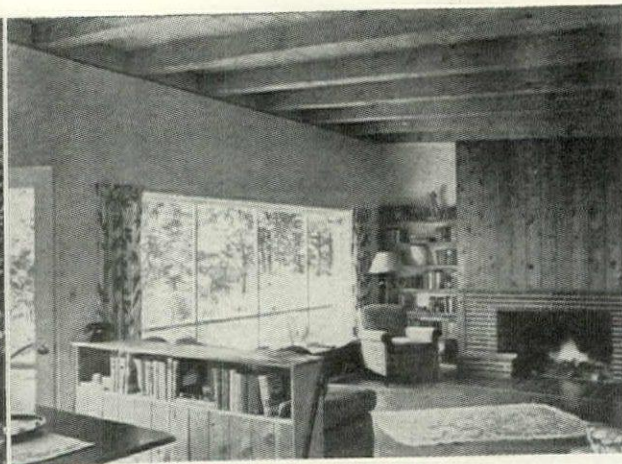
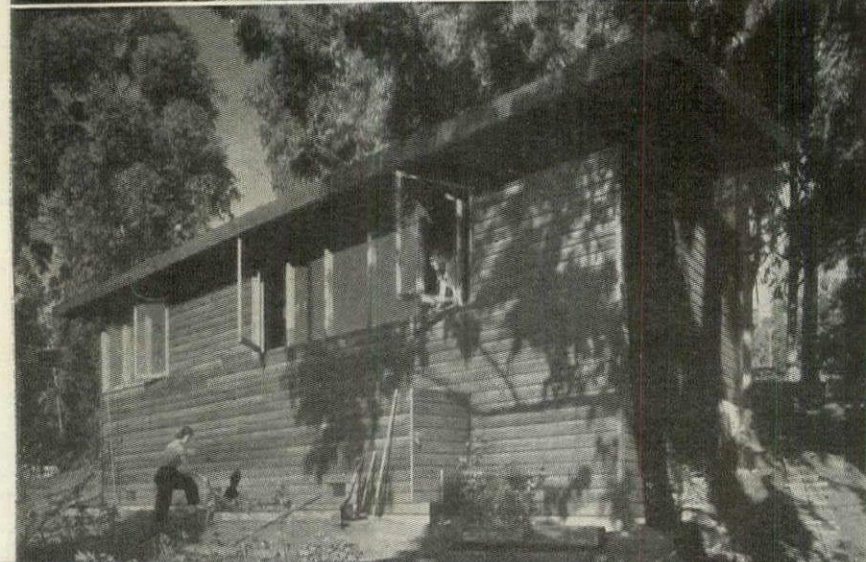
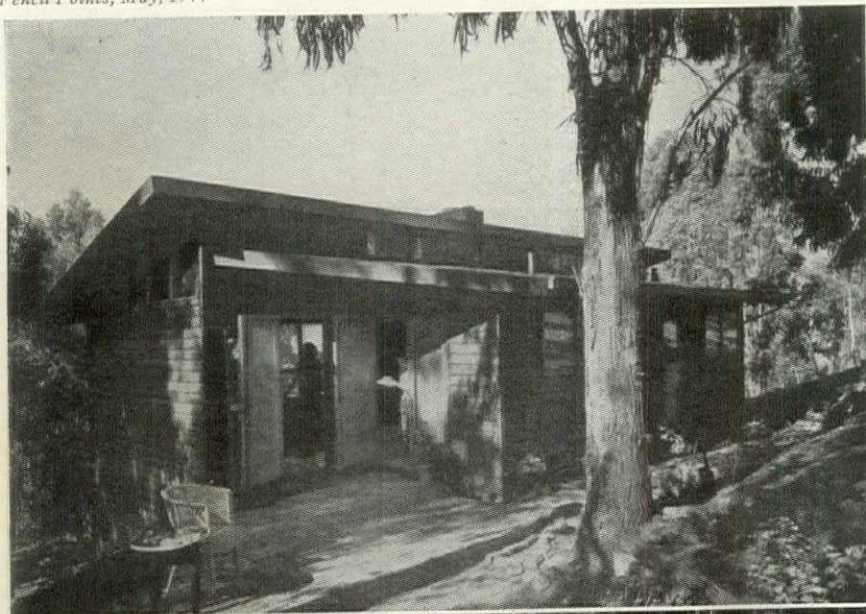


Architectural Record, November, 1942

DONALD DWIGHT WILLIAMS, architect.

This minimum house for a young couple with a limited budget clearly illustrates that small size need be no deterrent to good design. Within the limits of three basic rooms—living, sleeping and work areas—the architect has worked out a convenient and deceptively spacious plan. The bedroom and compact kitchen-utility-storage unit are grouped toward the road, thus insuring privacy for the rear living room and adjoining outdoor terrace. Worst feature of an otherwise good solution is that the bathroom can be reached only through the bedroom.

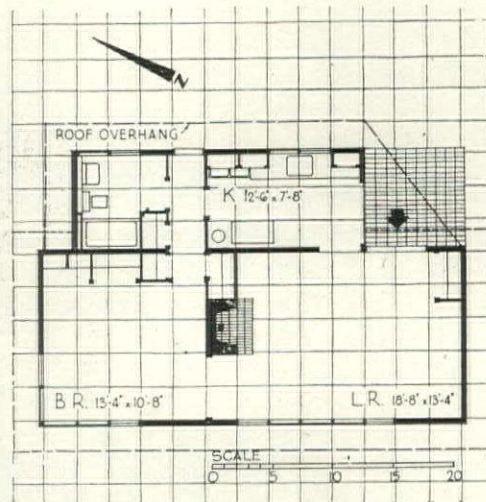
Pencil Points, May, 1944

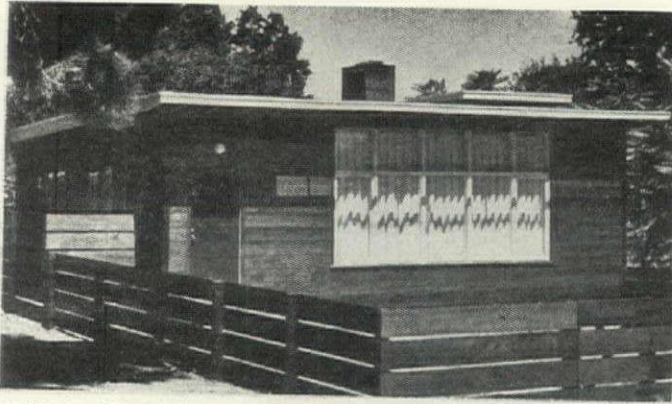


Scale for all plans $\frac{1}{8}'' = 1'-0''$

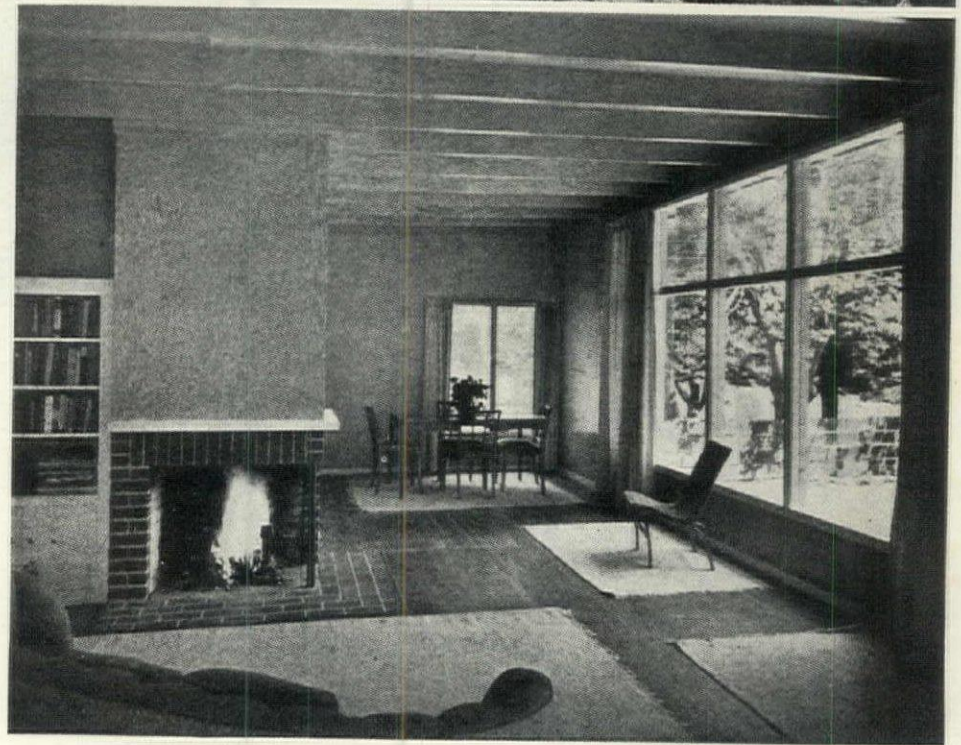
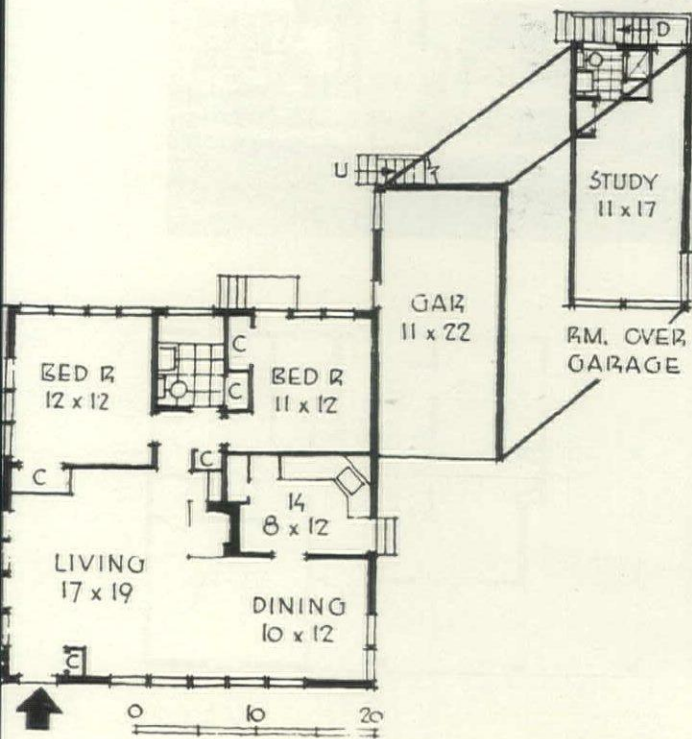
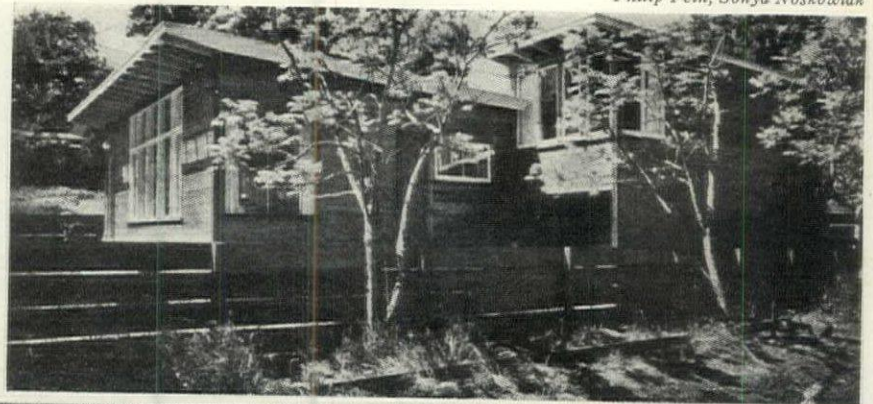
F. J. McCARTHY, architect.

The house shown at left was built for a woman who combines work with keeping house for a college-age daughter and who enjoys informal entertaining. Ease of maintenance was therefore one of its most important requirements. A maximum pre-war price of \$2,000 was also a determining factor in its extreme simplicity. Although the rooms are few they are comparatively large and the kitchen includes space for dining as well as cooking. Living room and bedroom are oriented toward the south, but receive an extra dose of sun from clerestory windows at the north.





Architectural Record, January, 1942



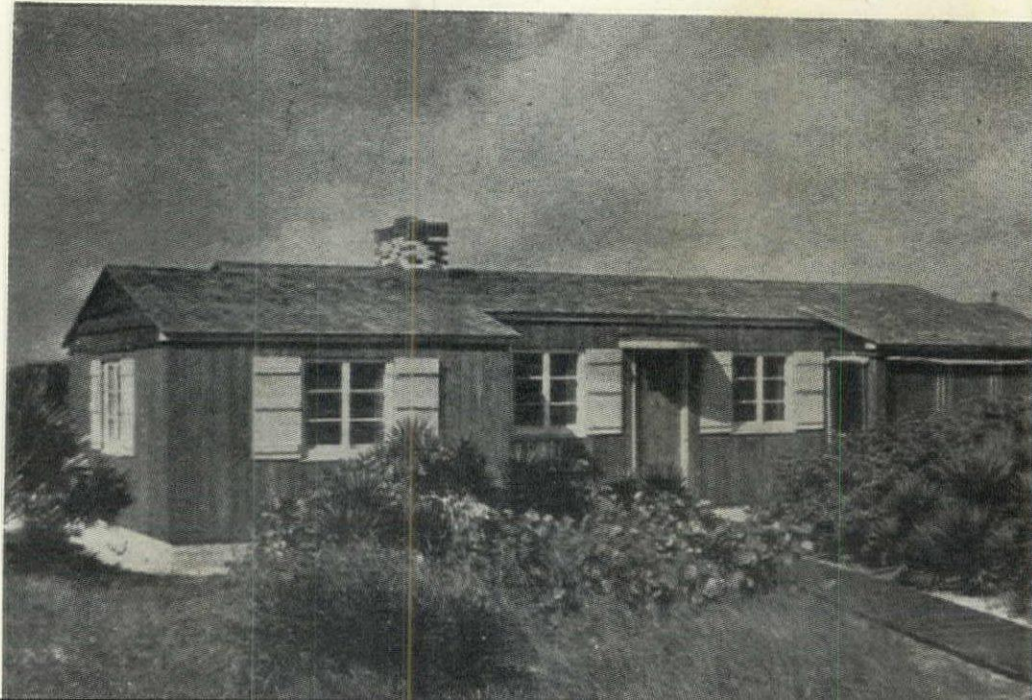
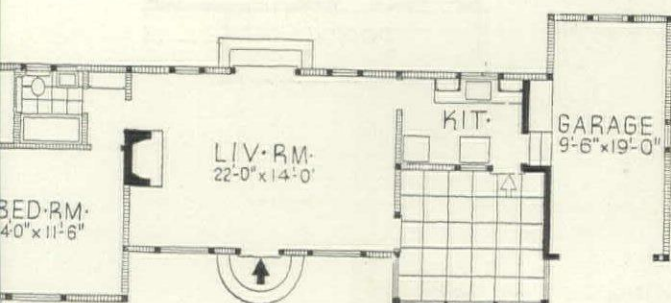
MARIO CORBETT, architect.

This straightforward house was built for a prewar cost of only \$4,300 including both architect's and landscaping fees. Such a low price for a home which includes two bedrooms, garage and a mezzanine study, is the result of a simple rectangular plan plus the use of inexpensive yet durable woods in its construction. The study above the garage can be used either as a den or an extra bedroom and a separate entrance stairway makes it practical as a rental unit. The living room has a large window of fixed glass; other windows are out-opening casements hung on the studs.

COURTNEY STEWART & ROBERT HANSEN, architects.

This informal bungalow was designed as a bachelor's winter quarters in South Florida. Because of its site, only 200 ft. from the ocean, an elongated plan proved to be the best solution to both view and ventilation. Although there is only one bedroom, built-in bunks on the porch and in the living room provide overflow accommodations. The kitchen, although small, contains 70 cu. ft. of storage space. Prewar cost at 29¢ a cu. ft. was only \$3,450.

Architectural Forum, April, 1937

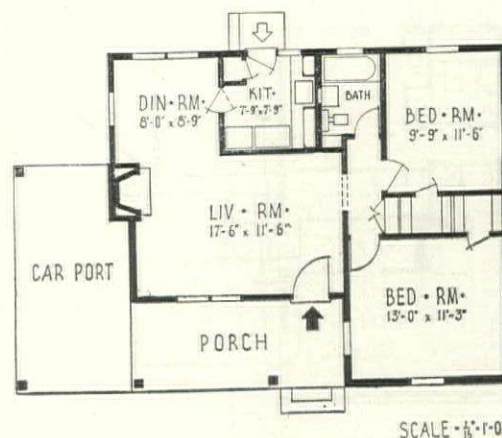




Architectural Forum, April, 1939

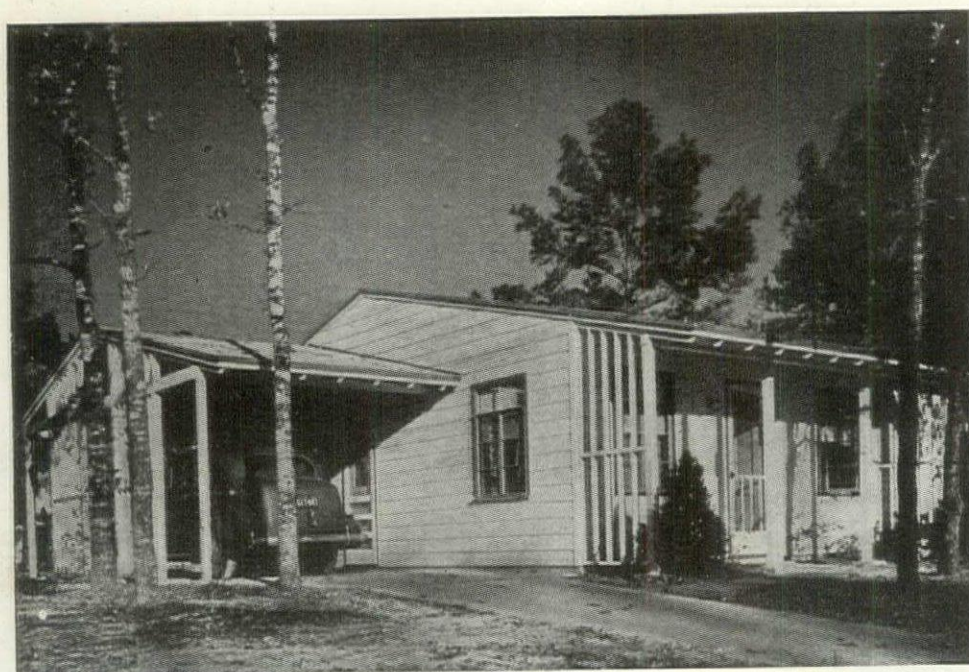
ROBERT M. LITTLE, architect.

Part of a 40 unit development in Fort Lauderdale, Fla., this house illustrates the part standardization can play in reducing price. All of the homes have the same floor plan, but vary in respect to rooflines, carport treatment and exterior details, thus avoiding the monotony of exact repetition. The prewar price of \$3,560 (including land cost of \$500) provides two bedrooms, generous closets and an excellent arrangement of the dining alcove seldom found in one-story houses of this price class.

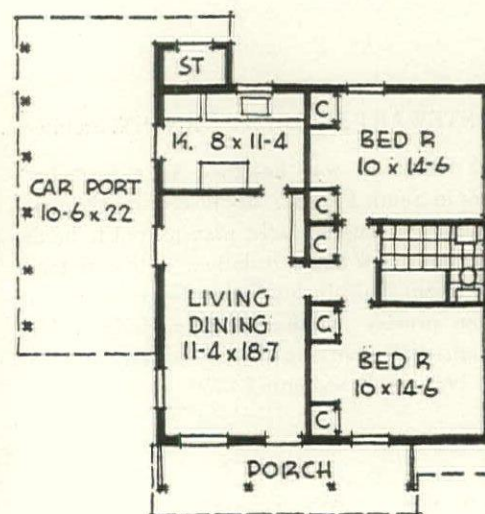


B. W. CRAIN, JR., architect.

The house shown below, built as part of the Garden Oaks development in Houston, Tex., is another example of how standardization can be made to count. Although minimum family units sold at \$3,195, each house gains individuality by the use of inexpensive but imaginative exterior detailing. An interesting feature of the interior plan is the recess between closets in the bedrooms, designed to accommodate a dressing table or chest out of the path of circulation, increasing free area in the rooms.



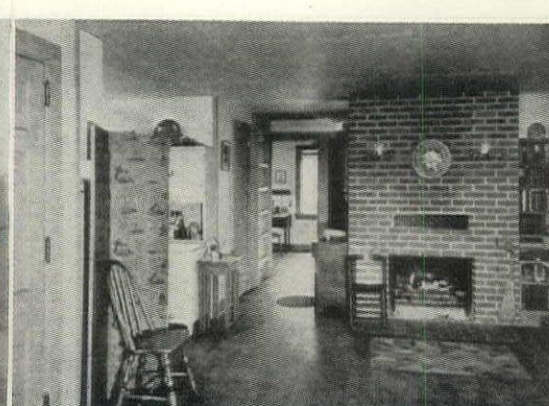
Scale for all plans $\frac{1}{8}'' = 1'-0''$



Architectural Record, June, 1942

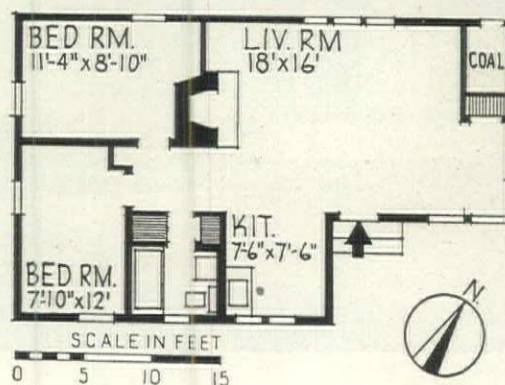


Architectural Forum, April, 1942



ANTHONY LORD, architect.

This example represents a laudable effort to arrive at a minimum-cost house. Materials and fittings, such as the two-light double-hung windows, were the cheapest available. An interior partition was saved by making the kitchen an alcove off the living room. A coal burning fireplace of the circulating warm air type provides heat. Access to storage space in the attic is provided by a built-in ladder visible in the interior view at right. Prewar cost: \$2,500. Cubage: 10,013.



Esra Stoller

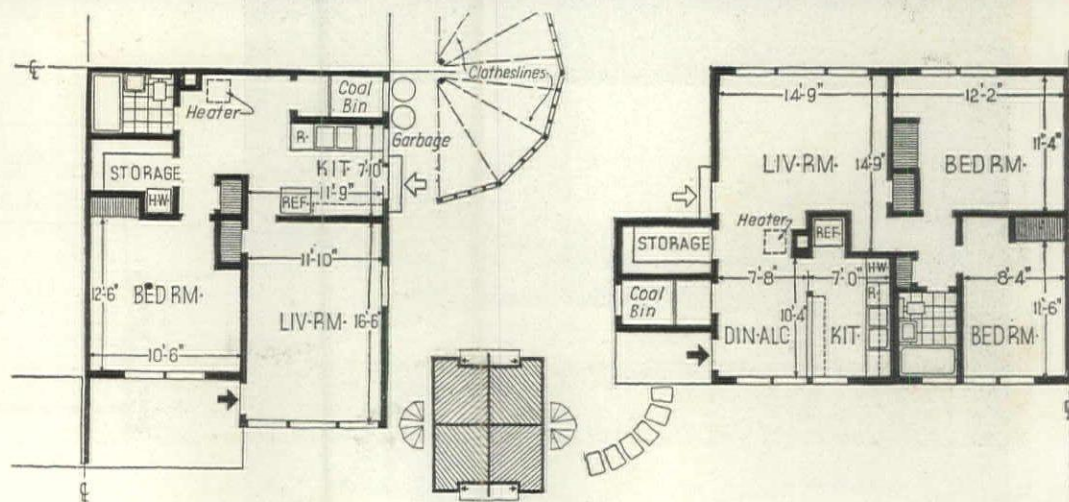


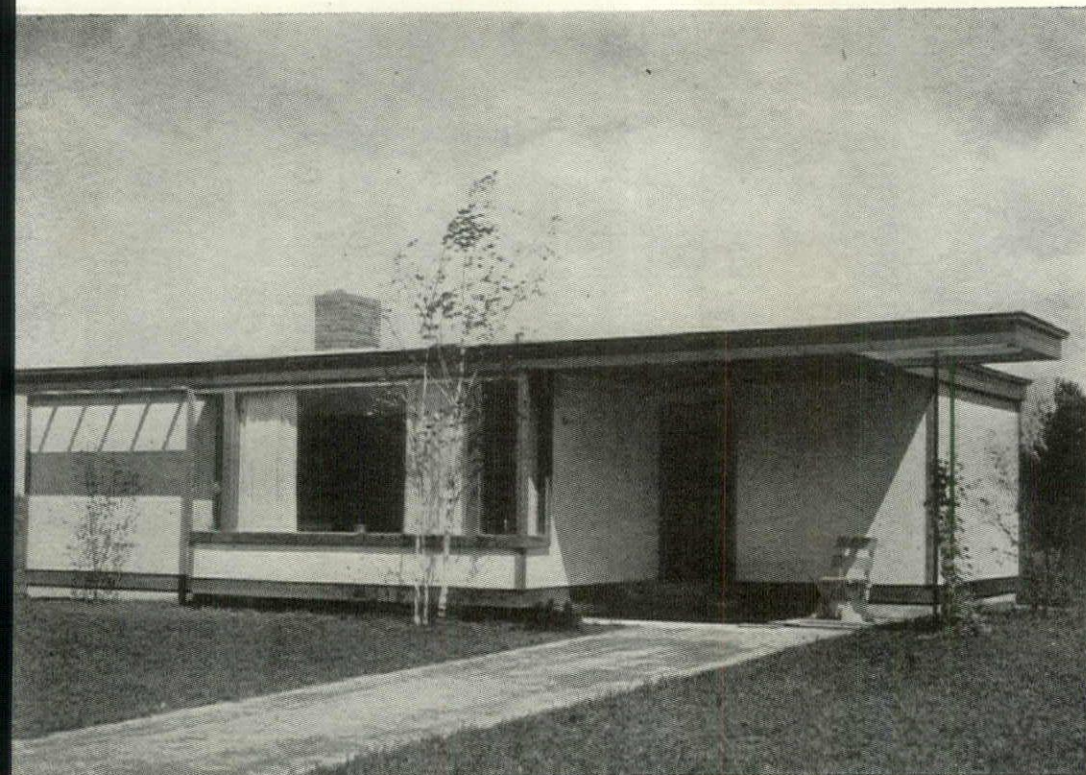
Architectural Forum, November, 1943



JOHN J. ROWLAND and EDWARD D. STONE, architects.

Cherry Point Homes in North Carolina was one of the best solutions to low-cost emergency housing to come out of the war. The house above is perhaps the handsomest of the four types developed, all of which have low-pitched shed roofs with broad overhangs to shade the windows. Open planning and dwarf partitions are used throughout to increase the apparent size of rooms. Both one and two bedroom plans are shown at right, each having the typical trellis-screened service and drying yards.

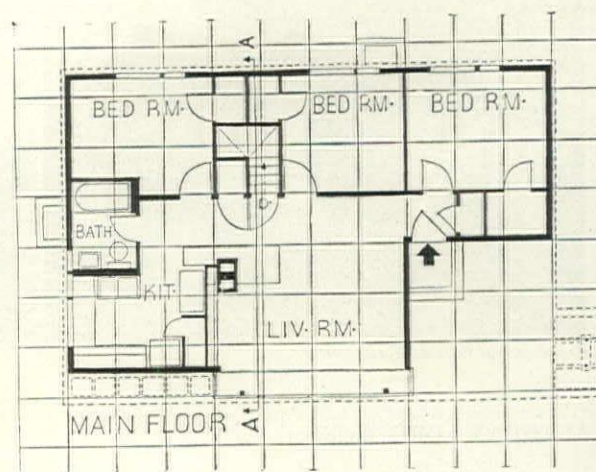




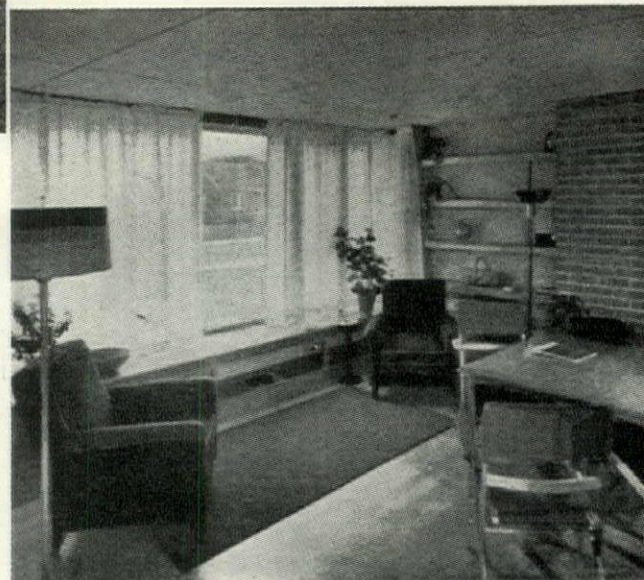
Architectural Forum, April, 1939

ALDEN B. DOW, architect.

One of many low-cost designs submitted to remedy the war housing shortage in Midland, Mich., the modest price of this home (\$4,551.46 including land) is a direct result of its technical excellence. Of conventional frame construction, the design was worked out on a modular system and sheet materials used throughout for exterior and interior finishes. The bay window did not add to the foundation cost since it was cantilevered out from the wall. This window employs combined fixed and movable sash, another practical economy measure. Three bedrooms and a generous kitchen with space for dining put this house in the category of "a lot for a little."

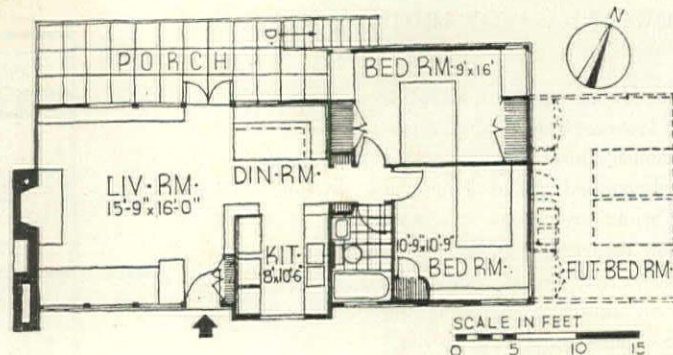


Scale for all plans $\frac{1}{8}" = 1'$

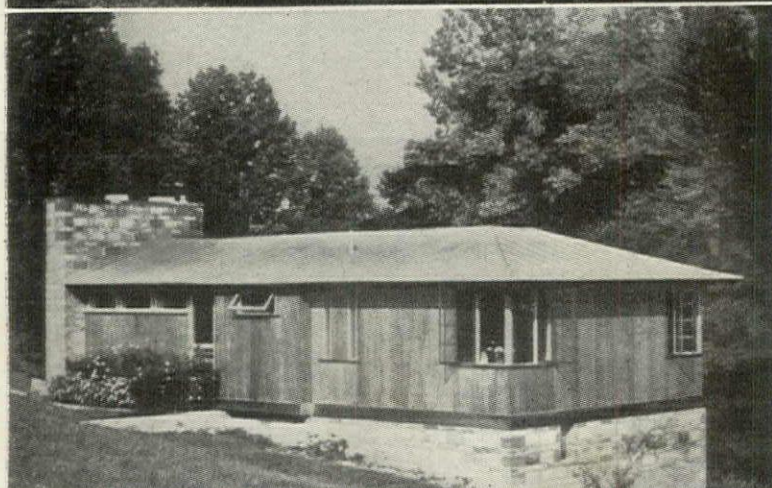


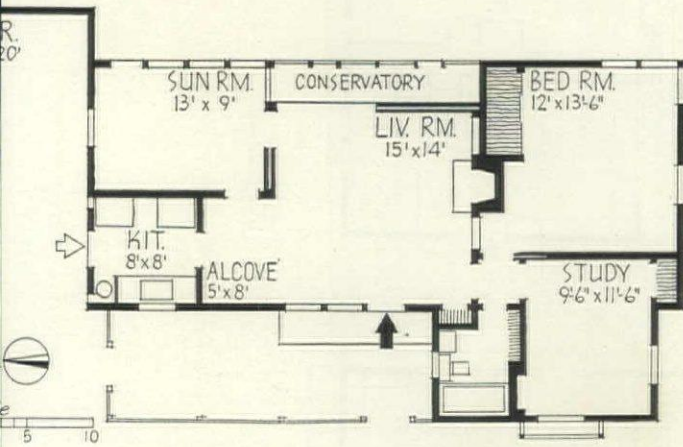
DONALD THOMPSON, architect.

This is an example of the kind of house which could be had prewar for \$3,100 plus a goodly amount of sweat and tears. The owner, who was also the designer and builder, evolved a simple structural system of 4 by 8 plywood panels which he made in the basement of a nearby house and subsequently assembled on the job. The hip roof and floor framing is conventional. Both plan and exterior are straightforward without being austere and the clean lines are enhanced by an attractive use of simple materials. The time put in by the owner only partially accounts for two bedrooms and a dining alcove at a small price.



Architectural Forum, May, 1941



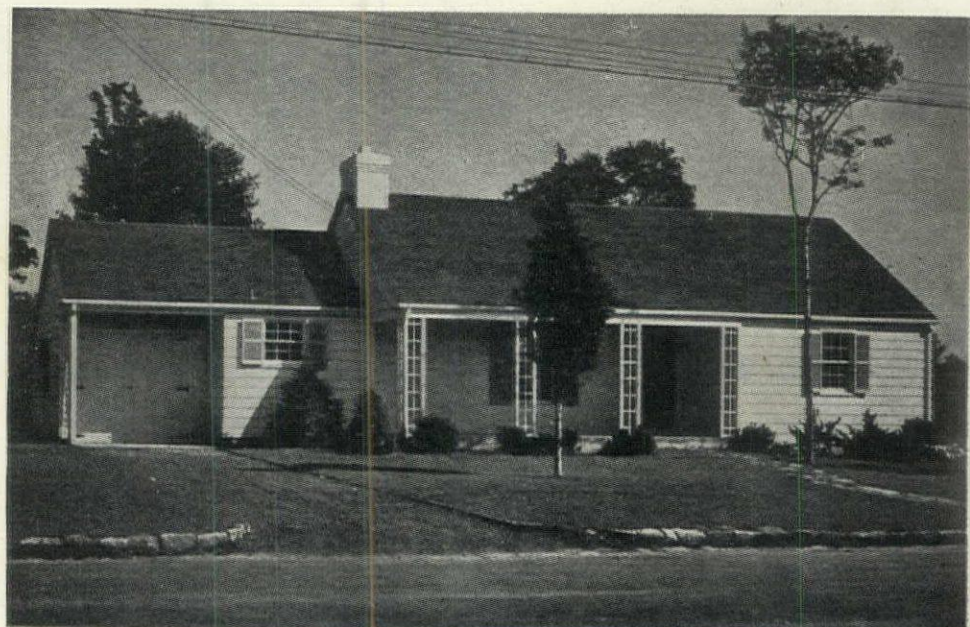
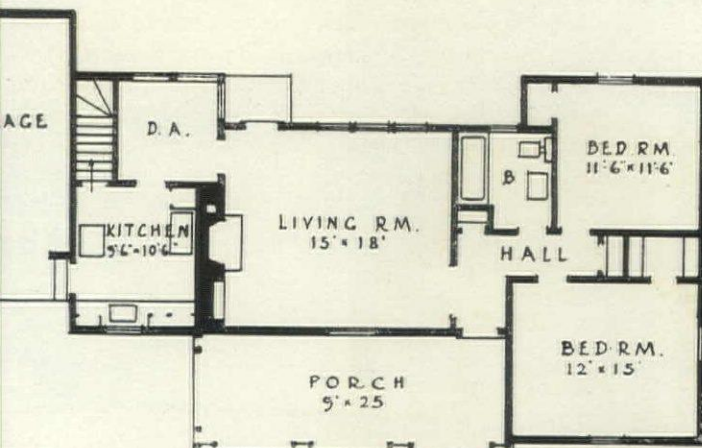


ATLEE B. & ROBERT M. AYRES, architects.

An interesting variation of the low-cost, one-bedroom design which rises above mediocrity is the handsome ranch-type house above. Its elongated plan is one of the best tricks for making a small house appear much larger. The projecting study at the right breaks the possible monotony of a strictly inline scheme. There is an excellent treatment of the living area, with an unusual window-conservatory separated from the living room by a glazed sliding panel. Such a feature is usually found only in homes much more expensive than \$3,500, the cost of this house before the war.

RANDOLPH EVANS, architect.

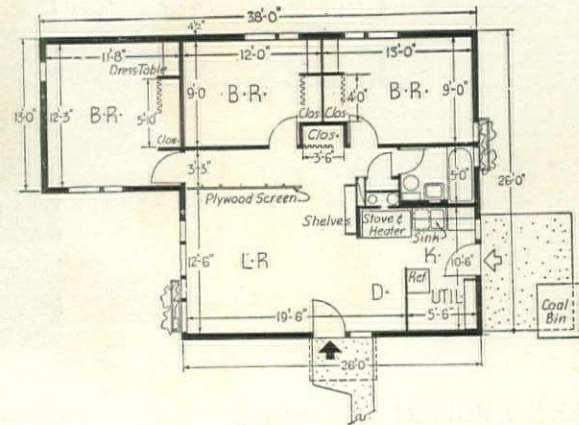
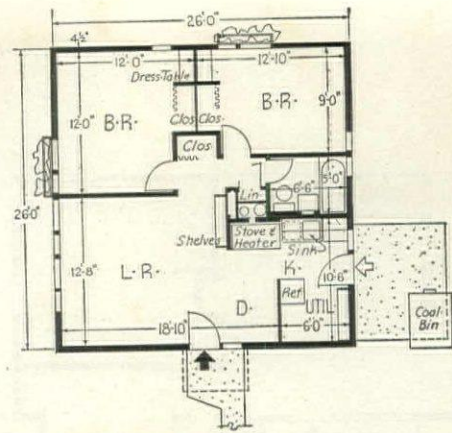
The designer terms this small home "the least common denominator in housing." Its two bedrooms, large living room and dining alcove provide plenty of space for a small family. These requirements are met in their simplest form, making it economical throughout. In use, the house has been found to have added advantages of low taxes and low heating costs. Its traditional exterior is made less stereotyped by a recessed porch with unusual lattice details, and the conventional white finish can be spruced up at intervals with ten dollars worth of paint and a few weekends of brushwork by the owner.



Pencil Points, April, 1937

HUGH STUBBINS, architect.

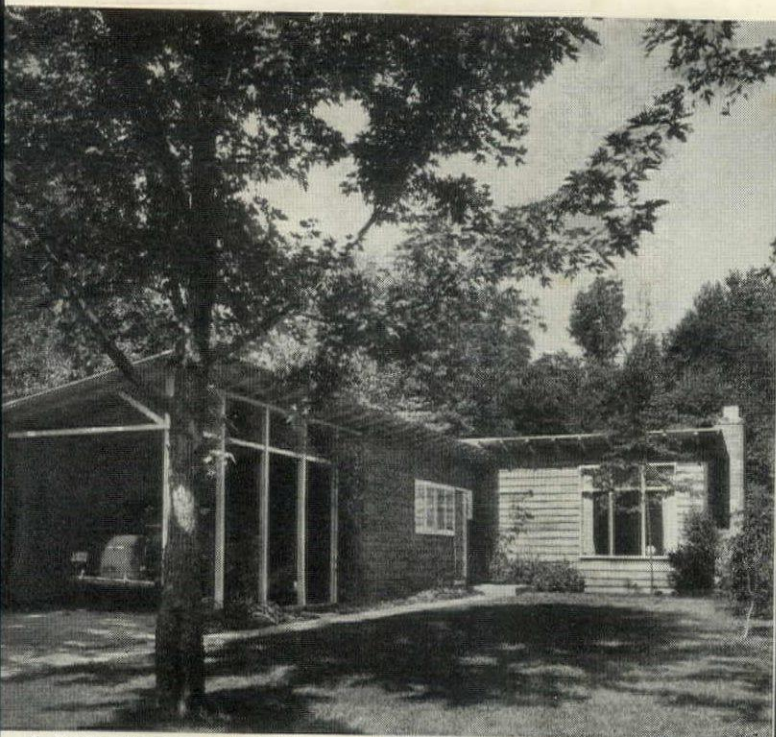
Built in 1942 by the Division of Defense Housing as rental units for personnel of the new air base at Windsor Locks, Conn., these houses are a model of honest efficiency. Quick access to the coal used for heating, cooking, and hot water is provided by a side entrance to a small service yard. The heating unit is located next to the stove near the center of the house, and hot air is supplied through ducts in the attic space. In the plan with three bedrooms, a plywood screen creates a hallway for greater privacy. Note sunshield for attachment above larger windows facing south.



Architectural Forum, May, 1942



1942 Davis



Architectural Forum, July, 1945

W. D. RIDDLE, architect.

A low cost home with an admirable quality of spaciousness is this house cleverly adapted to a typical 40 ft. by 150 ft. city lot. By placing the garage toward the street, the entire rear of the lot becomes a private garden upon which open the living-dining room and kitchen. Note that the living-dining and kitchen areas are really one continuous space—a feature the owner-architect has found most satisfactory. Water heater, washer and furnace are grouped together between bath and nursery, and concealed behind flush doors.

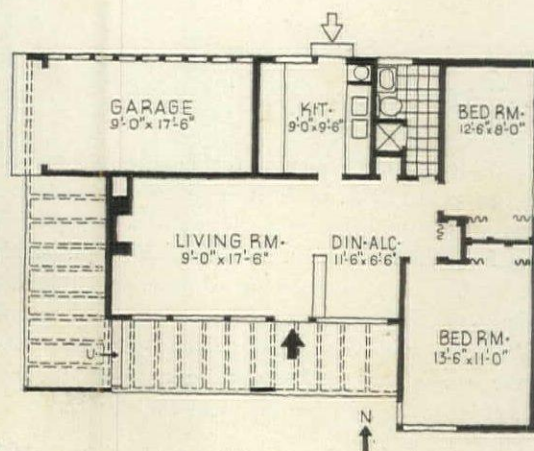
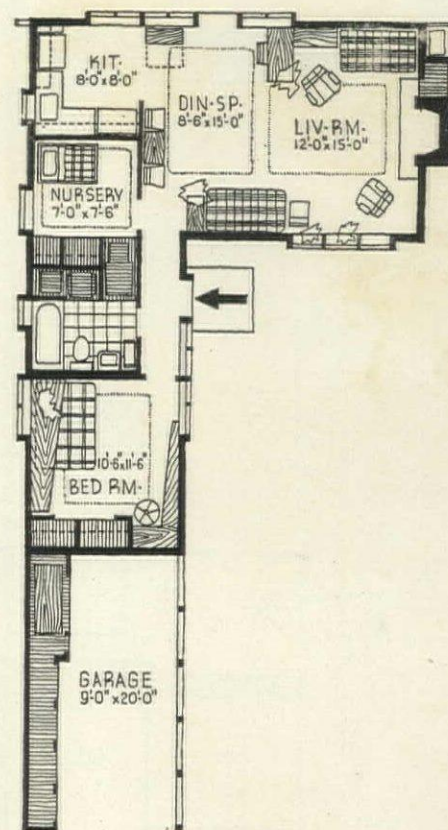
ROYAL BARRY WILLS, architect; HUGH A. STUBBINS, associate.

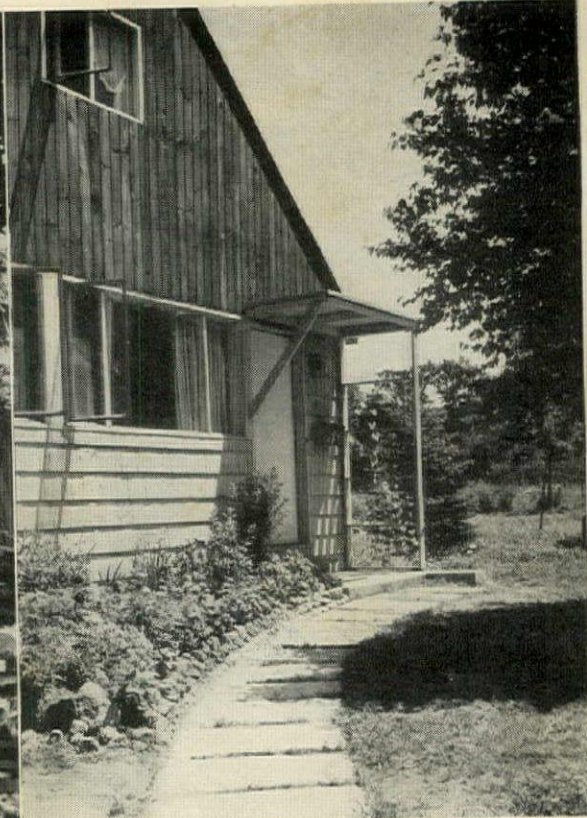
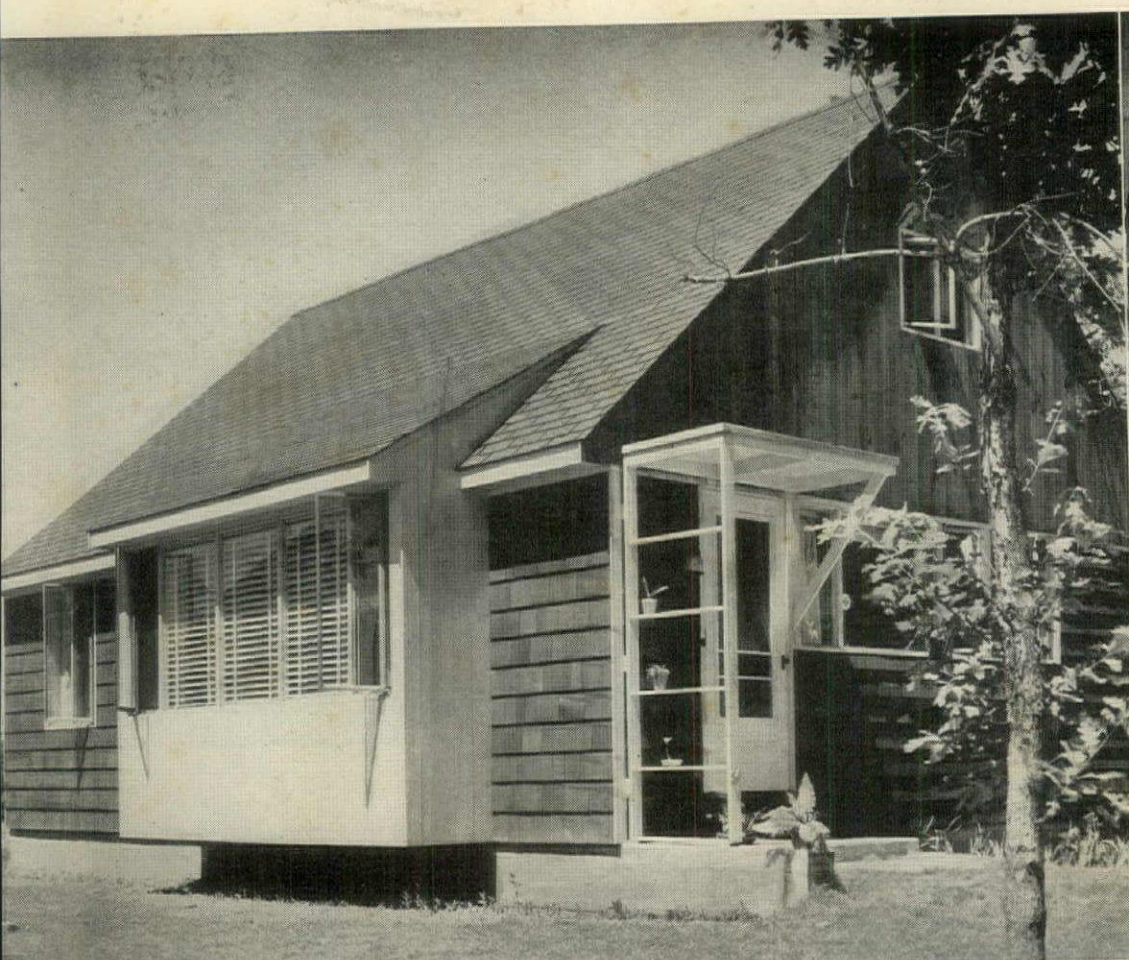
A pleasant small house designed to be comparable in size and convenience to a small apartment, with building and maintenance costs to equal the rent of an apartment. Windows of living-dining room are oriented to south, and two outdoor areas protected from winds are provided. Plumbing is economically placed back to back. Here, as in other houses in this portfolio, storage closet openings are supplied with curtains rather than doors to save cost.

Architectural Forum, April, 1937

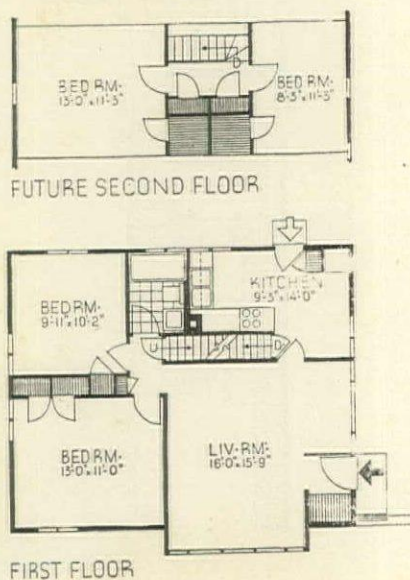


Haskell





Architectural Forum, January, 1944



SAMUEL GLASER, architect.

This war housing unit has achieved great popularity, and is a fine improvement on the standard 24 ft. by 30 ft., four room, one story house. Added space is gained for the living room by use of a large bay window, cantilevered out from the foundation. A dining alcove pleasantly placed by a window is created by a plywood panel projecting from one side of the entrance doorway. Stairway from upstairs bedrooms descends conveniently just outside bathroom door. An unusual amount of glass has been concentrated in the living-dining-kitchen work areas, where it is most needed. A full basement is provided for heating plant and storage.

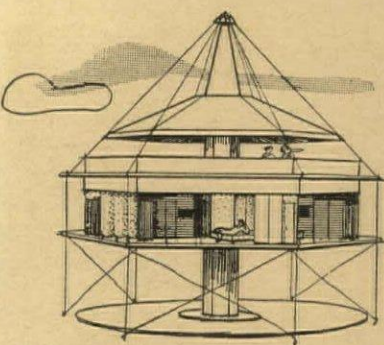
THE 8,000 LB. HOUSE

Fuller's four room, two bath unit is made of plane materials by plane mechanics, contains 12,000 luxurious cu. ft. of air conditioned space, tagged at \$6,500 erected. Of course, it's round.

According to Richard Buckminster Fuller's raciest prediction, it would have taken two decades to see his industrialized house in production. But back in 1927 he could not foresee the war, its technological progress, and its aftermath. Today, the first full size house stands finished in Wichita, Kan.

Literally and figuratively, Fuller's house has come down to earth. Instead of being suspended a full story in the air, the present version is only a few inches above ground. From the original hexagon has evolved a highly integrated and refined hemispherical shape. Many remember Fuller's lecture campaigns during the late twenties and early thirties when, armed with a demountable scale model, he harangued saucer-eyed audiences everywhere from Marshall Field's department store to Harvard's cloistered halls. In those days his idea seemed unworldly and few people saw its full implication.

Inevitably, refinement brought simplification. Whereas the bulky mast of Dymaxion I enclosed an elevator, a three-minute laundry and all utility services, the first two have been omitted, the column slenderized. All the best features of the original house have been retained. Added, is the Dymaxion bathroom, a simple four-element monocoque designed during that period when the house was being held in abeyance pending the will of Fuller and God, and the development of suitable materials.



Fuller forebear 1927 . . . plenty new has been added

From the beginning the most ardent Fuller followers were haunted by a feeling that the industrially produced house would be too bizarre and mechanistic to achieve popular acceptance. But even those who are shocked by the circular exterior are won over once they get inside. The interior is amazingly light and spacious, the mild curve of the outer wall conveys far less severity than the conventional rectangular room. The quality and craftsmanship of the materials used contribute a feeling of real luxury. People from all over the U. S. have been shown through the prototype and among housewives the reaction is usually one of rapture.

If vision, courage and conviction in the face of crushing opposition are marks of greatness, there are not enough laurels for the Fuller crown. To fulfillment he has made only one known concession—relinquishment of the term Dymaxion. Time and again, just as people came to the secure conclusion that both the engineer and his weird house had faded into oblivion, up they popped in another spot with renewed vigor and several improvements. Through thick and thin Fuller has plugged his basic idea that provision of good shelter within the price range of the masses comes only with industrial production in huge quantity. Mass manufacture cannot be effected without mobility of both the raw materials and the end product. Weight, that ball and chain of the building industry, blocks mobility. By substituting aluminum, stainless steel and plastic for bricks and lumber, the Fuller house quits the stone age. Tension, rather than compression, is the basic structural principle.

With the end of the war in sight Fuller decided that the time had come to act on behalf of his house. For support he turned not to big industry but to two bright energetic young men; Herman Wolf and Gregory Bardacke. Both had been in government work in Washington. With Cynthia Lacey, Fuller's 23 year old assistant while he was with FEA, they set up the Dymaxion company. Since Wolf and Bardacke had both worked in trade unions it is not surprising that the first step of the campaign was to secure the interest of labor. Because the house is a fully engineered product and, technically, most closely allied to the aircraft industry, the International Association of Machinists was the logical union to approach. Fuller's house was a welcome idea. Keeping plane factories going was a problem of great importance to the union. Bardacke sold the union council the idea of recommending a plant for the Fuller house and taking more or less official interest in its manufacture. The IAM, in considering which of its plants had the best labor relations, named Beech Aircraft at Wichita. The "company" promptly moved to Kansas. Unconventional tactics on Fuller's part were required to convince John Gaty, general manager of Beech, that the proposal was not for the manufacture of a "prefabricated house." This accomplished, Gaty's enthusiasm for its production possibilities soared. The final contract gave Beech a two year option on 1,000 of the company's 15,500 shares of stock, (a right which they exercised six months before it was due), first refusal rights on manufacture. In return, Fuller houses were granted Beech labor and materials and the use of the needed plant machinery. The Fuller company holds all rights to the house, can license other qualifying companies.

Beech plans to produce Fuller houses alongside their regular civilian plane production which now runs about two a day. Of enormous importance is the fact that little space is needed since the house is made and shipped in pieces, entirely assembled at the site. A shipping box will be run on a conveyor along the assembly line, house parts tossed in as they come off the machines. At the end of the line, a top nailed on the box will ready it for shipment. It is estimated that 1947 production at the Beech plant alone could run from 50 to 60 thousand units.

Under the limited production schedule of the moment, the cost of the house will be about \$6,500 erected but exclusive of land and utility lines. On the basis of nation-wide manufacture Fuller states that this figure could be drastically cut. Kitchen and laundry equipment for the house will not be manufactured by aircraft companies but by conventional manufacturers.

Fuller's house is a revolution. As in most revolutions odds favor defenders of the status quo. But recently the status quo has been taking quite a beating from the technicians. Be it said there are no more enthusiastic boosters for Fuller's house than these same technicians. And then there is another fact which may throw the odds in Fuller's favor—the unparalleled veteran's emergency housing program with a potfull of aid for housing innovators. Certainly the people who pushed Beech Aircraft stock from a 1946 low of 14 $\frac{7}{8}$ to 26 $\frac{5}{8}$ three months later, as we go to press, were not all technicians. Among them was a goodly number of canny investors who were betting hard dollars that Fuller's earth would turn to gold.

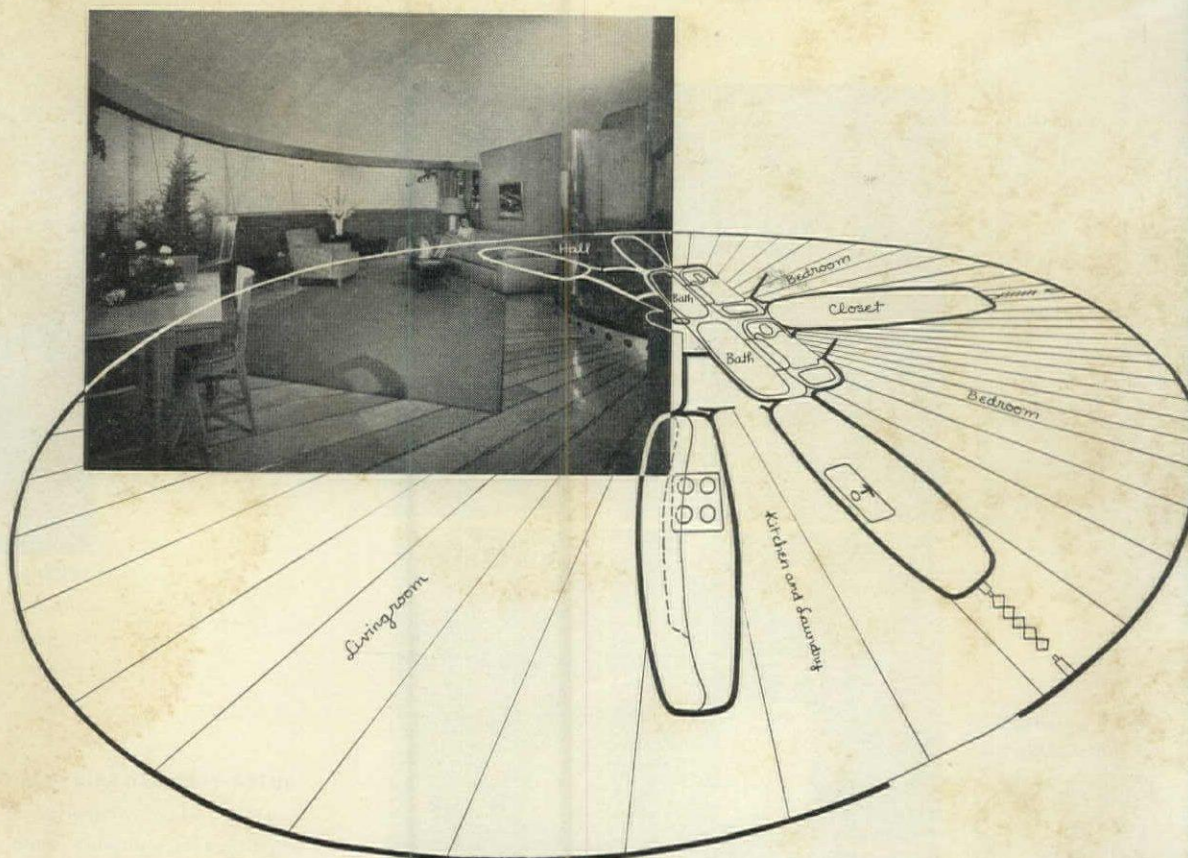


Designed from the inside out, the form of the Fuller house is the logical solution for an engineering problem demanding highest performance per pound of material. Every teenager knows that a circle offers more area in relation to the linear measurement of enclosure than any other form, but the sense of space this house achieves is spectacular. Naturally in a hemisphere the same law acts in three dimensions. While the gently domed ceiling, rising to a height of sixteen ft. at the center, contributes greatly, more important is the panoramic effect of the sweeping, curved Plexiglas window. Another 200 sq. ft. of floor space can be gained by adding a balcony across the top of the living room partitions.

The stiffness of flat sheet metal is negligible without corrugation or reinforcement. Curved in an arc or cylinder, as in the Fuller house, it acquires tremendous strength since the outer surface is thrown into tension while the inner surface is compressed. The same principle applies to the Plexiglas. All structural materials used are non-combustible and non-corrosive.

Based on the engineering formula of supporting weight by tension, the body of the all-metal Fuller house hangs, or floats, from a central mast. To facilitate manufacture and shipment, this is made up of seven stainless steel pipes. The mast represents the sole compression element of the structure. From it hang three circular rings connected by tension cables. The rings provide rigidity and act as a framework for the metal skin of the roof. Cables, triangulated from the mast, weave through the successive rings, are then brought down to support the floor. Cable ends terminate in steel anchor rods placed at intervals around the house. Since the floor is actually suspended, neither walls nor partitions have any load to bear, the entire weight of the structure being transferred to the central mast. The flat sling pitch of the roof permits tension cables to be concealed in the air space between it and the ceiling. Arched roof carlings, grooved in section, rest directly on the compression rings. Supporting the butt of two roof petals, they act as inside gutters and expansion joints. Between the outer skin and cable network is one or more layers of aluminum insulating foil. Roof carlings lead to a circular gutter which runs around the house inside the walls at the edge of the roof. From this gutter rainwater drains through interior downspouts to a second circular gutter near the bottom of the house from which it is discharged.

Astounding is the fact that the entire house (except for kitchen equipment), can be shipped in a container like the one at the right which measures 16 ft., in length and 4½ ft., in diameter.



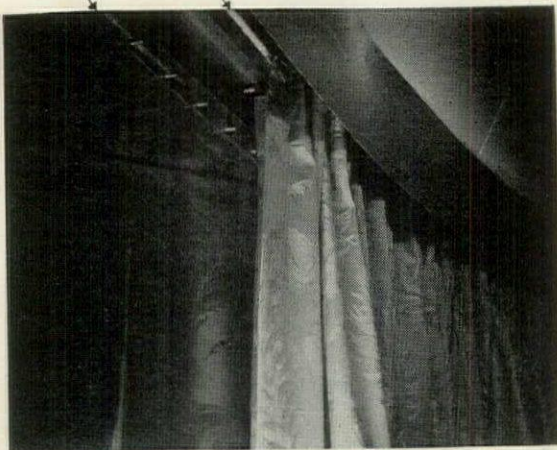
Keyed to the plan, black and white reduction of color picture at left reveals spaciousness of living room to be more than a photographic illusion. Occupying nearly half a circle 36 ft. in diameter, its floor area is impressive. Interior, executed by a local department store, misses the decorative possibilities of the house but illustrates the adaptability of a circular form to conventional furnishing. The fireplace, a startling Fuller concession to tradition, is optional.

Photos: Victor Keppler



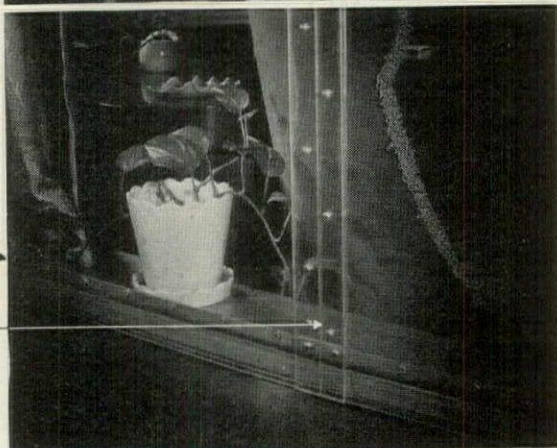
Top of Plexiglas fits inside exterior aluminum sheet

Concealed built-in curtain track



Plexiglas and sill form waterproof joint

Extra strip of Plexiglas splices vertical joint

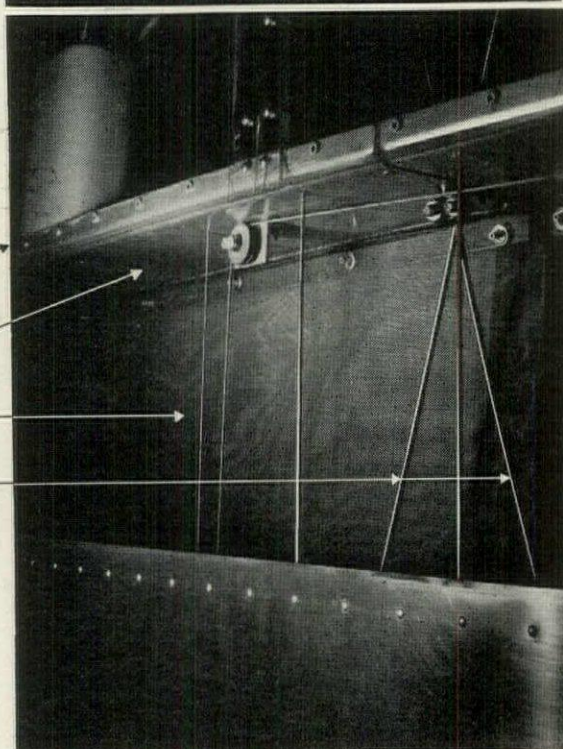


Plexiglas held in place by rivnuts

Underside of window sill

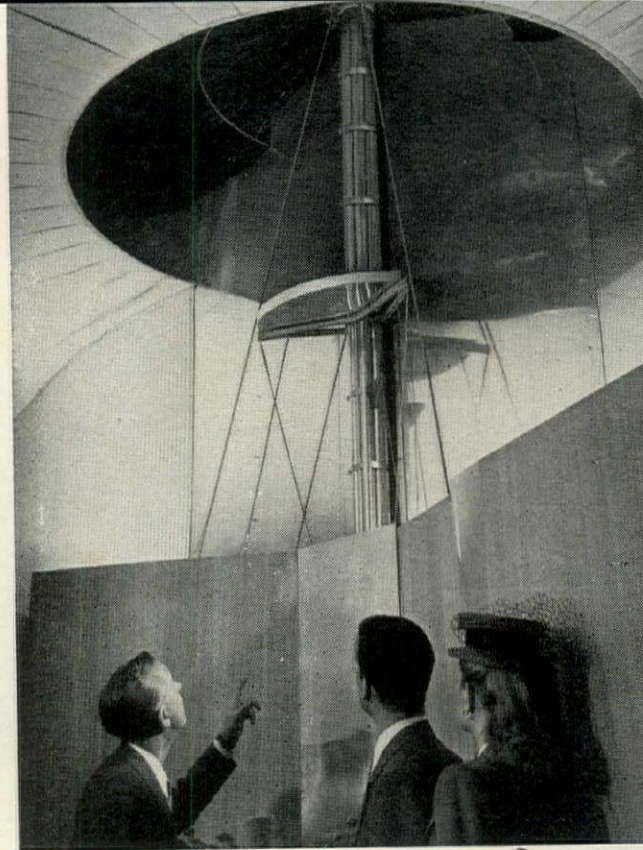
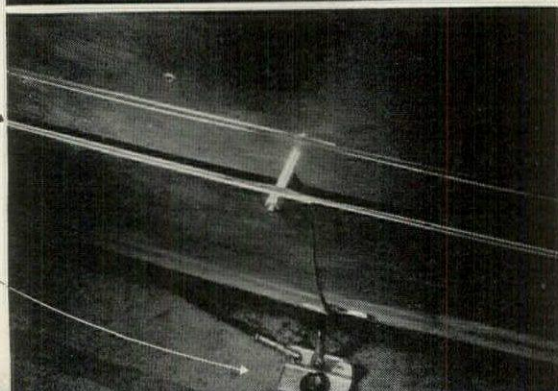
Screen

Crossed cables support cushion floor



Concealed circular gutter for roof water

Inconspicuous cables anchor house to ground



CENTRAL MAST is the structural and service core of the house. To its base, concealed by partitions, are connected all utilities. Through it operate the air conditioning and heating systems. From it concealed light is diffused across curved ceiling, illuminating entire room without glare.

OUTER VERTICAL SKIN is half plastic, half aluminum. Three bands, the upper one a Plexiglas window strip, overlap each other from top to bottom. Sections of the upper aluminum band can be hand lowered to open screened areas for ventilation when air conditioning is not required. Plexiglas window is sealed. When in place, aluminum sections are anchored by cables and hooks that fasten along top of window frame.

Cable and pulley control movable wall section

Plastic curtain raised exposes screen ventilating strip

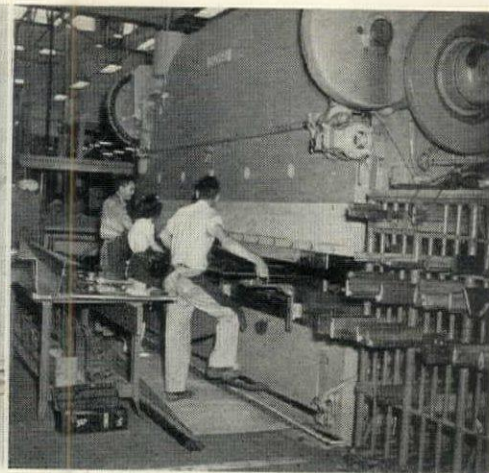
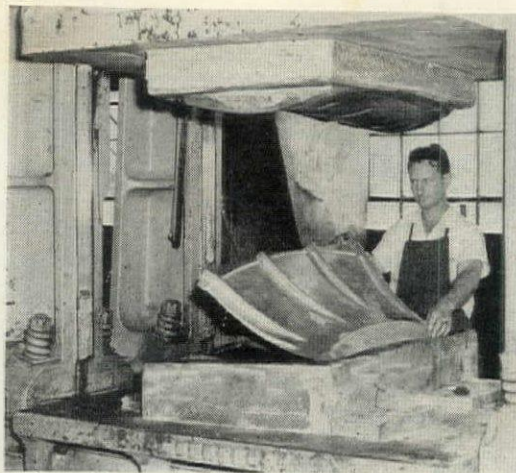
Seen from outside from inside

Section of outer skin lowered

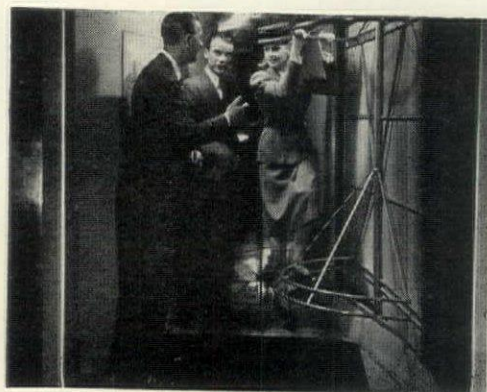
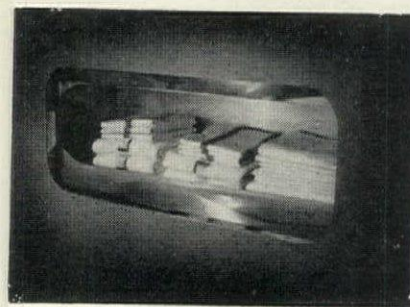
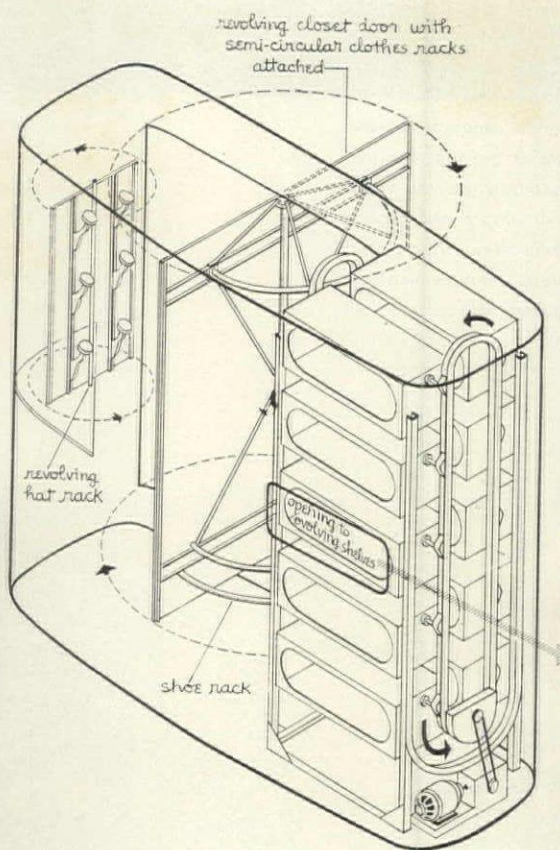


BUILT-IN SCREENS around the house are of rust and mildew-proof plastic, can be cleaned with soap and water. Though they are not as strong as metal screens, cables and overhang of window sill protect them from hard exterior knocks. Partially concealed lower gutter (left) is made of synthetic rubber extrusions. Interior drainage system prevents water from freezing. Vertical and diagonal cable anchorage under house are designed to counteract any torque in the structure.

FABRICATION AND ERECTION are two clearcut operations. Exclusive of service facilities, the house includes only fifty types of parts. Exterior skin is shipped flat, curved to shape on the site. No part weighs more than 30 lbs. Truly industrialized production requires that factory operations be confined to the manufacture and packing of parts, but these include many devices to facilitate site assembly. Holes for the two types of fastenings used, bolts and "blind" rivets, are gang punched at the plant and colored for identification. Parts are crated in reverse order of assembly so that they are removed in proper sequence. Using trained service crews and mechanized equipment, erection is estimated to take 160 man hours—two days work for a ten man crew.



STORAGE space is all contained by the interior partitions which, having no load-bearing function, are hollow. Large closets, one in the entrance hall and one in each bedroom, have doors that pivot on center turning the closet "inside out". Circular dress and shoe racks on the backs of the doors swing into the room for easy access. Corners at rear of closets are occupied by small triangular cupboards with Plexiglas doors intended for hats and accessories.

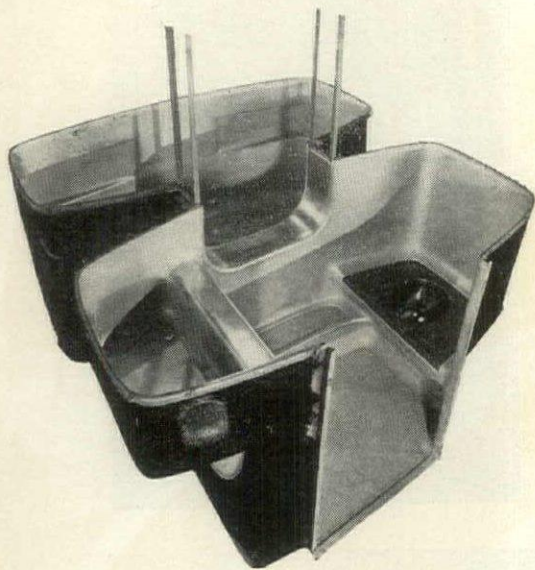


A unique Fuller device, in word and deed, are the "Ovolving shelves", also located in the partitions. Behind a shoulder height slot in the wall are nine metal shelves on a vertical, motor-driven conveyor belt which rotates at the push of a button. Beyond economy of space this has the advantage of utilizing full partition height for storage that necessitates neither reaching up nor bending down.

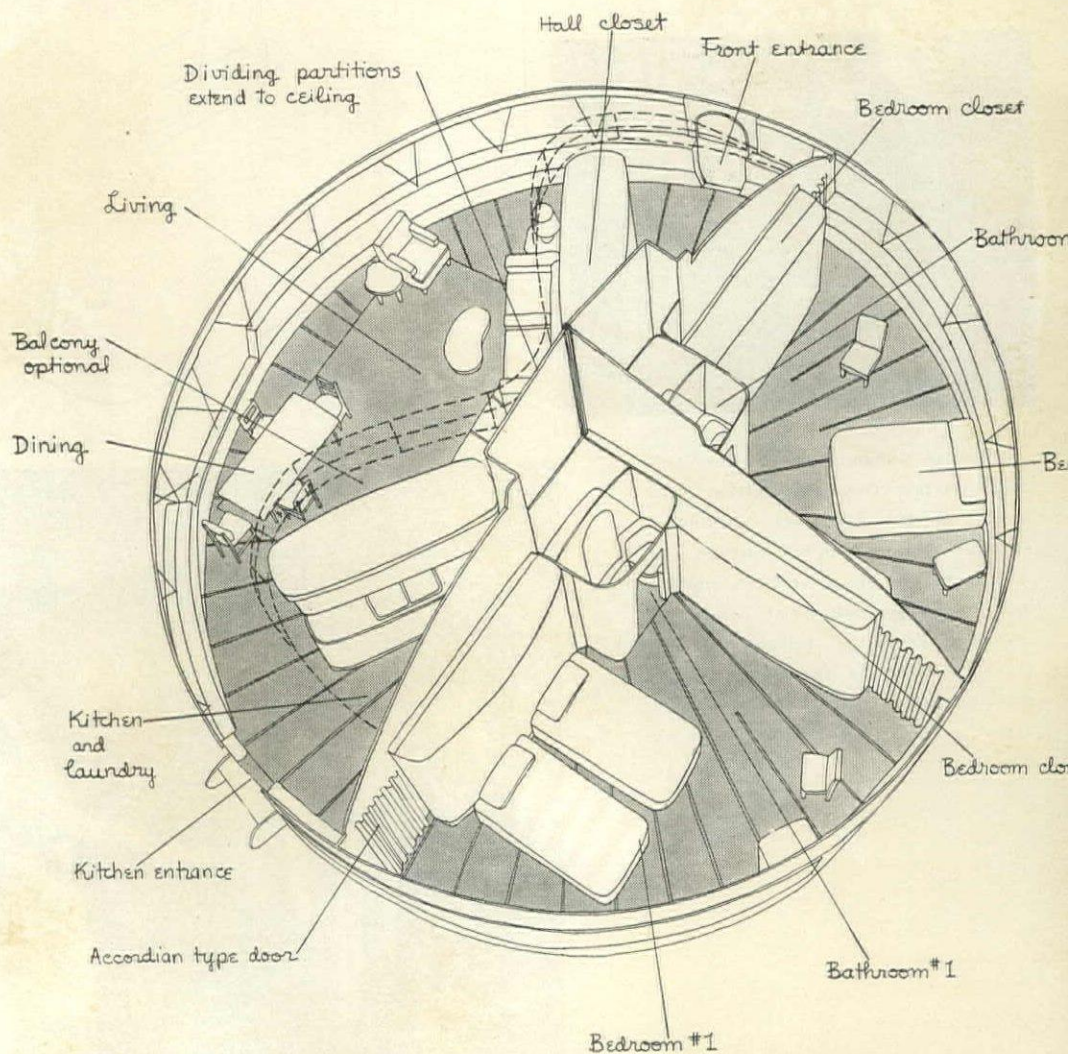


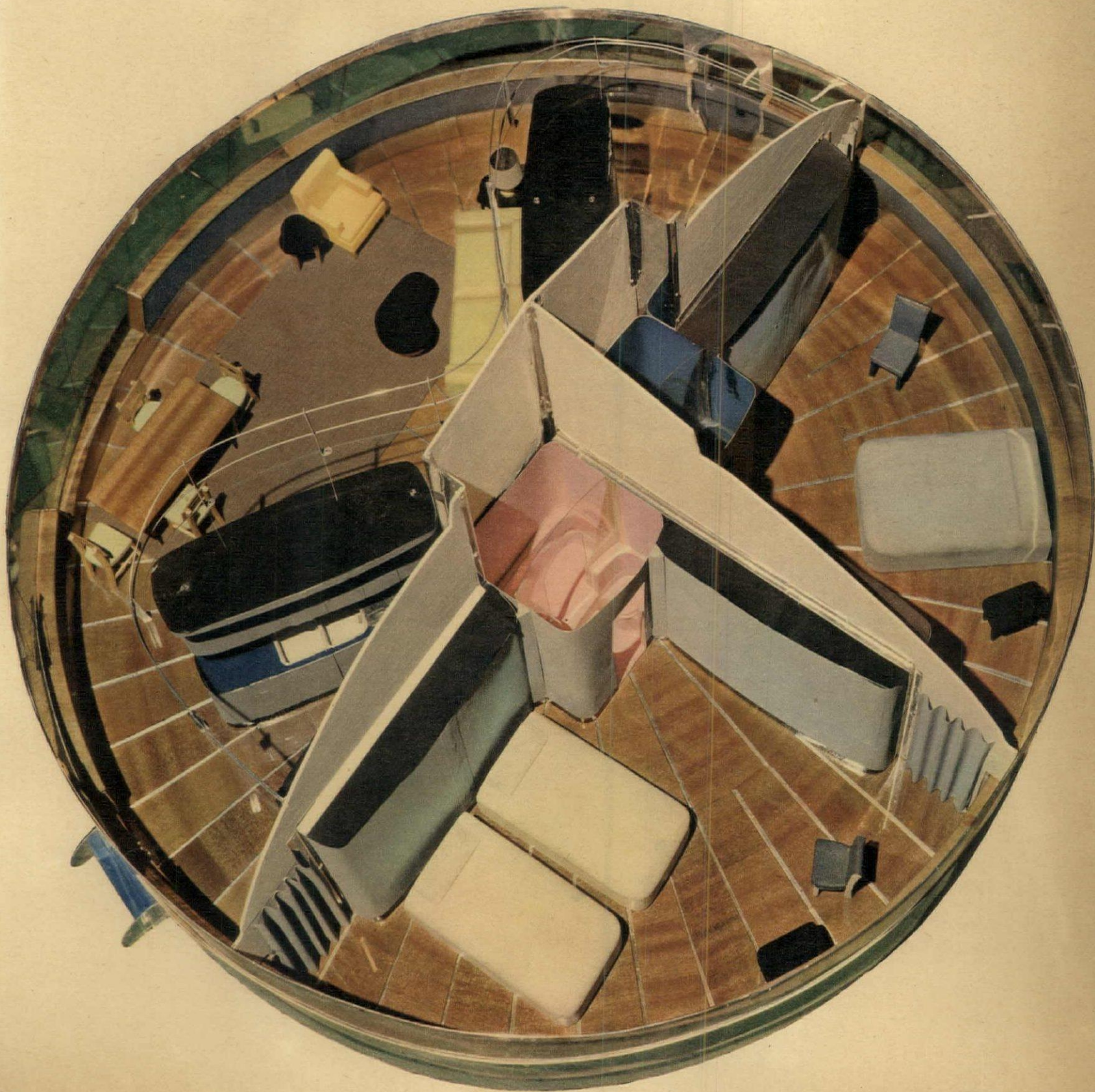


ENTRANCE to Fuller house illustrates adaptability of aircraft production technique. Like doors on planes or ships, this one is rounded at the top, narrows toward the sill. Interior view shows high aluminum baseboard, curved at the bottom to facilitate cleaning. New alloys of this type are more resistant to abrasion than were earlier forms of aluminum. Partitions offer straight wall areas convenient for placing large, rectangular furnishings, though isometric view (right) shows how easily a double bed may be used along the curved wall.



EARLY VERSION of the Dymaxion bathroom (above) has been improved upon in the new Fuller house. From a production viewpoint, however, it remains the same—a completely equipped four-section unit stamped out of aluminum. Partition between bath and lavatory sections is ceiling height. High sill between is actually the side of the tub. Vertical and horizontal corners are rounded for easy cleaning and aluminum can be finished with waterproof plastic paint in any color. One of the bathroom's simplest additions is a recessed medicine cabinet in the right wall over the wash basin. A mirror on the inside of the door necessitates the cabinet's being kept open while mirror is in use, eliminates the maddening, if involuntary, opening and shutting of cabinet door during dressing.





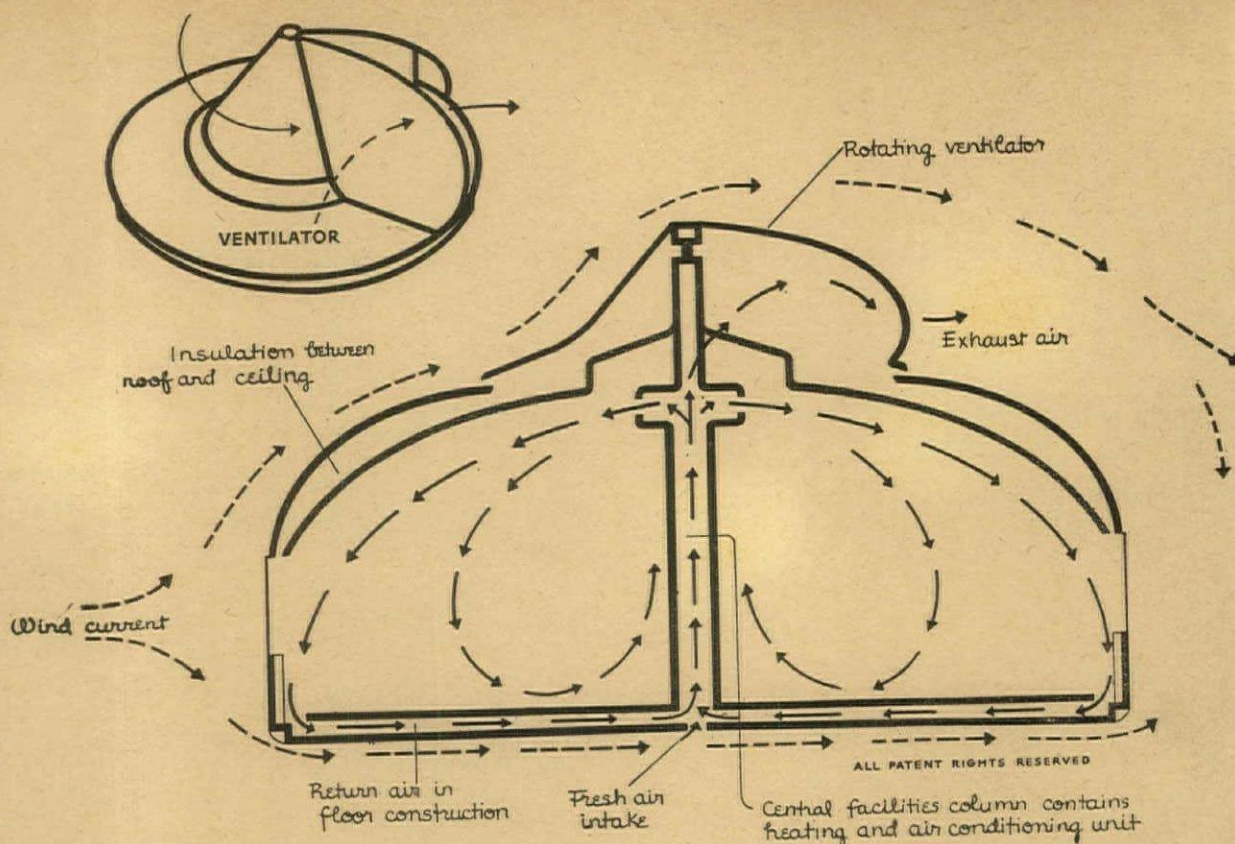
HEATING AND VENTILATING

Not only do the stressed structural system and hemispherical shape of the Fuller house provide minimum weight with maximum space; in combination with the materials used, they produce a structure of high thermal efficiency. Its domed aluminum roof reflects the sun's heat in summer. The same action on the part of the aluminum ceiling retains indoor heat during the winter. Between the two, foil insulation and a carefully calculated air space contribute additional protection.

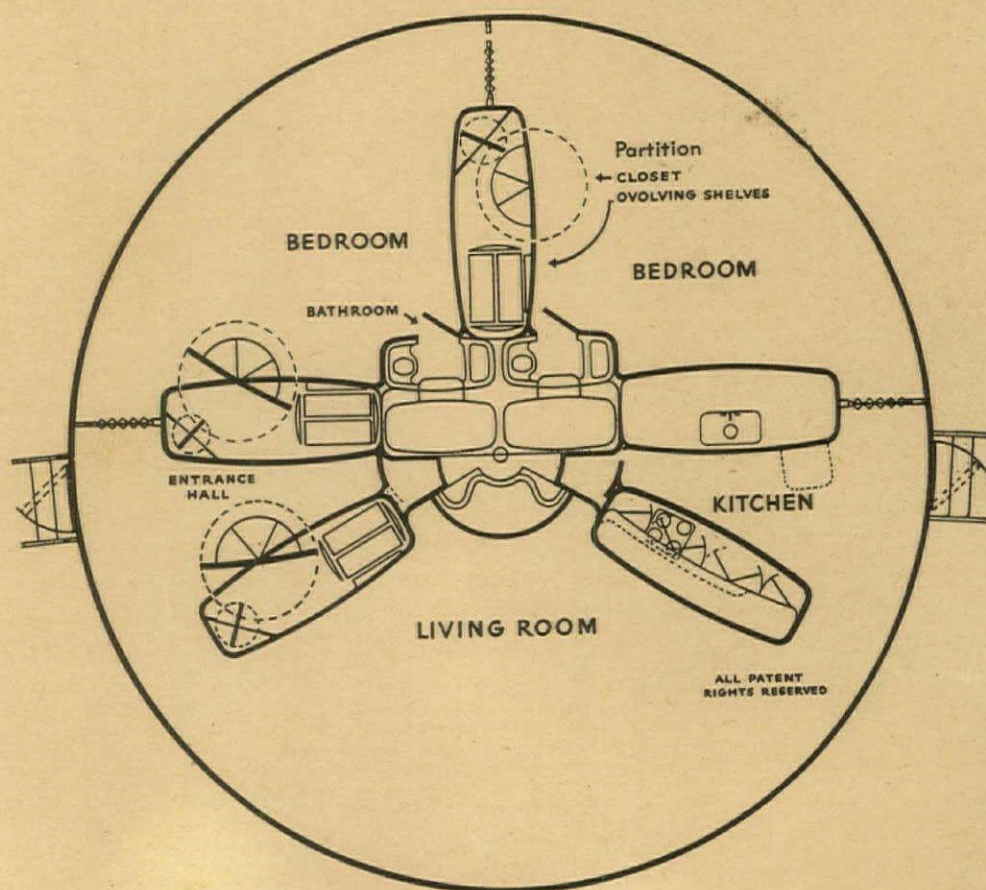
As in a plane, aerodynamics plays a vital part in the Fuller house. It is, in fact, a key element of the ventilating system. The revolving cone on the roof, always facing into the wind, creates a low pressure area in its wake which draws warm exhaust air up and out of the central mast. Intake through ducts in the roof and beneath the house therefore becomes automatic. The size of the cone is large enough (18 feet in diameter) to prevent it jittering in the breeze and to provide adequate drawing power. Along with the heating unit, air filtering, cooling and dehumidifying equipment is designed to operate on gas, oil or electricity. Fuller's research has shown that in the case of a conventional square or rectangular house the low pressure area in its lee is proportionately very large and has the effect of drawing warm, or high pressured air out of the house. Thus valuable heat escapes through innumerable tiny cracks and poorly fitting windows. Materials and precision manufacture of the Fuller house greatly simplify sealing it against heat loss.

Its shape abets natural dynamics. This applies to light, sound and smell as well as heat and air. The structure is engineered to withstand wind velocities up to 180 m.p.h., and is virtually tornado-proof. Under radical conditions the giant ventilating cone is capable of rising two feet on the central mast thus producing immediate equalization of indoor and outdoor air pressures. Mast and cable supports run continuously from the top of the house to the ground creating better-than-average protection against lightning.

OVERALL PLAN of the Fuller house has been worked out with the same effective simplicity as the engineering. All circulation is on the periphery; all space-division is accomplished with prefitted storage equipment; all of the service portions containing mechanical equipment adjoin the central mast. Result is a surprisingly flexible, livable arrangement of three generous rooms plus two baths, entrance hall and kitchen, complete with "front" and "back" doors.



← 36 FEET →



PREFABRICATION

**Mr. Wyatt's estimate of its potential
spotlights the fact
that it is fast reaching a big-business status.**

Pease Woodwork Co.

ASSEMBLY LINE METHODS PRODUCED THESE VARIED HOUSES: PREFABRICATORS ARE PROUD THAT THEY HAVE DISGUISED IT SO WELL

Whatever else it may have accomplished, Wilson Wyatt's housing program has served to focus attention on the central problems facing the industry. It is a sort of check-list of remedies for private housing's ailments. And while many disagree with the remedies, none publicly question the reality of the ailments. Among many significant proposals, Mr. Wyatt's report puts the government on record as believing that—given the wherewithal—the prefabrication industry can produce 850,000 housing units by the end of 1947. The fact that such an assignment was seriously proposed of itself gives new stature to the prefabs. Often interred but never successfully buried, a fifteen-year-old interest in prefabs has flared to a new high.

Prefabricators seriously consider Mr. Wyatt's proposal as both possible and entirely practicable. They have always taken themselves seriously—a fact which often provided amusement for their more skeptical critics. Not until a war record of some 200,000 successfully erected and functioning house units was hung up did tradition-minded housing men admit that there might be something to these disturbing newcomers. And even then, they persisted in believing, prefabrication would be small, restricted to the types which its wartime performance proved it could handle—temporary and emergency units, or less complicated and finicky houses for farmers and vacationers.

Conventional house builders admit that they cannot possibly produce 3 million units by the end of 1947—a figure reached by the experts and not questioned by the house-famished public. There is certainly plenty of room for newcomers in the field. Will prefab fill the bill? To date, the question has scarcely been asked by builders. In spite of common knowledge that U. S. Steel is backing Gunnison's prefab house and that Beech Aircraft is acting as sponsor to Fuller's far more revolutionary product, it was not until the Housing Administrator put actual figures to paper that the full impact of the prefab's potential was felt. Eight hundred and fifty thousand units is approximately a third of the emergency small house program, a slice which may well run to four billion dollars. The prefabricator's

bland acceptance of Mr. Wyatt's assignment may be arrant optimism but far-sighted building men are uncomfortably aware of the prefab's challenge.

Whether because they were confused, critical or merely cautious, the prefabricators themselves were surprisingly quiet in their reactions to the Wyatt proposals. This was all the stranger in view of the flat guarantee he offered them of purchase contracts assuring capacity operation and the premiums on the development of experimental materials and types (FORUM, March '46). Unofficially however, most of them seemed pleased. And well they might, for in addition to the government's commitments, there were these added advantages to their position:

- 1) They could use wartime government-built factories.
- 2) They could use semi-skilled labor from wartime industry.
- 3) They could operate successfully on scattered, improved city lots—no large-scale developments were needed to hold down unit costs.
- 4) They could get adequate financing.

Against this happy augury, they had of course real problems. These fell under four broad headings: the necessity of establishing an effective distribution and merchandising set-up; the nationwide crisis in building materials (since the majority of prefabs are of lumber and plywood, they enjoy no advantage over conventional houses in this respect); the revision of hostile building codes; and a resolution of prefab's difficulties with craft unions.

If successful on a large scale, prefabrication might put idle plants and men to work on a spectacular scale, and thus loom large in post-war economic security plans. Certainly many giant, now-deserted war plants, with their long one-story assembly-lines, are ideal for the mass production of houses. Similarly, prefabrication on such a scale would offer constructive and year-round work for the army of semi-skilled labor from those very plants. In fact, one of its most valuable assets

in the coming building marathon should prove to be precisely that it could operate successfully without the aid of the skilled building trades, already in urgent demand by conventional house builders. The ability of the factory method to absorb untrained labor effectively in mass-production proved itself during the war. Prefabers have long contended that the same technique might well be used to make the peace more livable. "You have to train a mechanic to build a house," says Jacques (HomeOla) Willis, "but you don't have to train a grandmother to build an airplane."

Another factor which might work to prefab advantage is its ability to build profitably on scattered individual lots. This would ensure the fullest use of existing utilities — sewers, water, streets, etc. — before asking municipal aid to provide them in new outlying developments. For the majority of conventional builders, such small, improved lots are impractical. Their cost is higher than the raw land on which the operative builder normally works, yet it must still come out of what is certain to be a government-controlled sales price. Mr. Wyatt, who cautiously called the prefabers' attention to these city lots, was afraid that there might not be enough to go around. But if the National Association of Real Estate Board's estimate is anywhere near correct, there are some 30,000,000 such parcels awaiting the prefab touch.

A long list of producers, a wide range of products.

From all appearances, it looked as if the world was ready for prefabrication; but was prefabrication ready for the world? More and more, the public was looking behind the scenes. What it saw was hardly startling. There was only one Fuller, and scant trace of all the designs which had made the wartime Sunday supplements ring with prophecies. The majority of prefabricators were showing new models which, in appearance, were as much as possible like the old ones. To anyone who questioned this determined conservatism in a field which so many still consider radical, the prefabricators were apt to reply that they were merely offering the public what it wanted.

The public would discover that prefabrication had, for better or worse, taken on the aspects as well as the stature of "big business." There were already some 75 firms in the field (see complete list on p. 190) and daily more were casting their hat in the ring. Prefab already had its roster of "big names" which promised to become as familiar as Ford or Packard: Gunnison, National, Allied, Johnson, Pease, Green, Willis, Precision-Built—these and many others already had their product on the market. And the field was beginning to fill with enterprising newcomers—Fuller, Anchorage, Defoe, Shelter Industries, General Panel, to take a random handful.

The public would be surprised at the wide range of products which the term "prefabrication" nowadays encompasses. Eventually, it will discover that there are many levels at which a company may specialize in house fabrication—panels, walls, complete sections, even the entire house shell. It will see that this specialization applies to a whole spectrum of products which range from Fuller's unfamiliar-looking unit, complete beyond even the best present-day standards (p. 129); through the "key-in-the-lock" house, the "packaged" house and the "basic" house; around to the lumber dealers who keep abreast of the movement—but clear of disputes—by carrying precut lumber.

Most of the house manufacturers are apparently committed to fabricating their product out of conventional lumber and plywood, styled as much like the conventional houses as possible. There are exceptions in this matter of styling: Preco in Portland, Ore., Green's Ready-Built in Illinois, Shelter Industries in New York are all showing models which pay no lip-service to Cape Cod. Fabricators in wood seem, in turn, about evenly divided between those using a stud-and-building-board panel, with an outer veneer of clapboard or shingle, and those preferring a single "stressed-skin" plywood panel employing war-perfected phenolic bonding methods. At least one (Pease) uses the plywood type panel but nails a clapboard sheathing to it on the site. Concrete, because of its availability and low skilled labor demands, seems a promising second (Vacuum Concrete, Tilt-Up,

SOME WELL-KNOWN PREFABRICATORS

NAMES	RANGE OF SELLING PRICES**	NUMBER ROOMS IN MINIMUM HOUSE
ALLIED HOUSING ASSOCIATES INC.	\$4,500 min.- 5,500 max.	2 bedrooms, living room, kitchen, dining room, bath, utility room, 24' x 28' (over-all)
AMERICAN HOUSES INC.		panels only
ANCHORAGE HOMES INC.	\$3,975 min.- 7,500 max.	2 bedrooms, living room, kitchen, dinette, bath, utility room, 24' x 32' (over-all)
CAPITAL PREFABRICATORS INC.	\$5,000 min.- 8,000 max.	2 bedrooms, living room, kitchen, bath
CRAWFORD COMPANY	\$5,000 min.- 8,000 max.	2 bedrooms, living room, kitchen, bath, 27' x 19' (over-all)
DEFOE SHIPBUILDING INC.	\$4,500 min.- 10,000 max.	2 bedrooms, living room, kitchen, bath, 24' x 32' (over-all)
IVON R. FORD LUMBER CO.	\$5,850 min.-	2 bedrooms, living room, dining room, kitchen, bath, 24' x 28' (over-all)
GREEN LUMBER CO.	\$5,849 min.- 6,500 max.	2 bedrooms, living room, kitchen, bath, 24' x 32' (over-all)
GREEN'S READY-BUILT HOMES	\$6,500 min.- 10,000 max.	1 bedroom, living room, kitchen, dining room, utility room, 19'6" x 58'6" (over-all)
GUNNISON HOMES INC.	\$3,500 min.- 10,000 max.	2 bedrooms, living room, kitchen, dining room, bath, utility room, 24' x 28' (over-all)
HARNISCHFEGGER CO.	\$4,000 min.- 8,000 max.	(data not received in time for inclusion)
E. F. HODGSON CO.	\$3,200 min.- 6,000 max.	1 bedroom, living room, kitchen, bath, utility room, 36' x 18' (over-all)
HOUSTON READY-CUT HOUSES	\$5,000 min.-	2 bedrooms, living room, kitchen, bath
JOHN A. JOHNSON CONTRACTING CO.	\$5,500 min.- 15,000 max.	2 bedrooms, living room, kitchen, dinette, utility room, porch, 32' x 20' (over-all)
NATIONAL HOMES CORP.	\$4,750 min.- 6,000 max.	2 bedrooms, living room, kitchen, dinette, bath, basement, 24½' x 28½' (over-all)
PEASE WOODWORK CO.	\$6,000 min.- 7,000 max.	2 bedrooms, living room, kitchen, bath, utility room, 24' x 30' (over-all)
PLAINFIELD LUMBER & SUPPLY CO.	\$4,000 min.	2 bedrooms, living room, kitchen, bath, entry, 24' x 24' (over-all)
PREBUILT CO.	\$3,400 min.	2 bedrooms, living room, kitchen, dinette, bath, 30' x 32' (over-all)
PRECISION-BUILT HOMES CORP.	\$5,500 min.- 10,000 max.	2 bedrooms, living room, kitchen, utility room, 24'4" (over-all)
PREFABRICATION ENGINEERING CO.	\$5,250 min.	2 bedrooms, living room, dining room, kitchen, bath, utility room, 24' x 24' (over-all)
PRODUCTION LINE STRUCTURES	\$1,600 min.	living room-bedroom, kitchen, 16' x 24' (over-all)
SHELTER INDUSTRIES INC.	\$4,997 min.- 5,891 max.	2 bedrooms, living room, kitchen, bath, 28'6" x 20'6" (over-all)
TOVELL CONSTRUCTION CO.	\$3,600 min.- 5,000 max.	2 bedrooms, living room, kitchen, bath, 24' x 24' (over-all)
WILLISWAY & HOMEOLA	\$3,500 min.	2 bedrooms, living room, kitchen, bath, 20' x 24' (over-all)

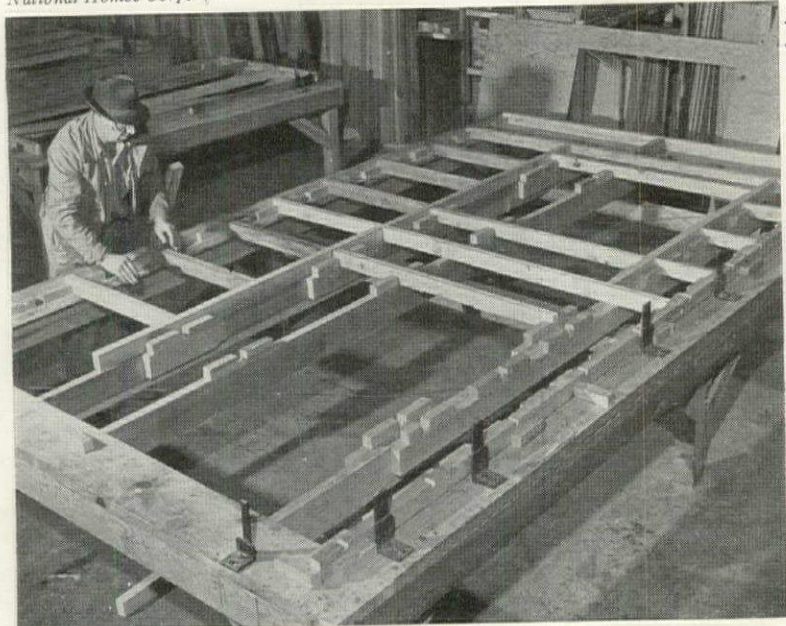
* For a more complete list of prefabers see p. 190.

THE FACTS AND FIGURES ON THEIR HOUSES*

PRINCIPAL CONSTRUCTION MATERIALS	UTILITIES	EQUIPMENT AND SPECIAL FEATURES	DISTRIBUTOR	FINANCING AGENCY	PRESENT AREA OF OPERATION	CAPACITY***		NUMBER BUILT TO DATE
						1946	1947	
plywood panels	wiring, plumbing, heat, foundation	range, refrigerator, hot water heater	authorized dealers	Savings & Loan Assns.	Eastern seaboard	5,850	7,800	over 7,000
wood panels—4' x 8' sum, steel frame			builders and architects		Wash., Tex., N. C., Tenn., Va., Ohio	8,000-10,000	15,000	over 2,000
od siding, int-composition	wiring, plumbing, heat, foundation	hot water heater	dept. stores & various types of dealers	FHA and local finance	250 mile radius Westfield, Mass.	2,500	10,000	about 3,000 (under name Holt, Fairchild)
od siding wood panels	wiring, plumbing, heat		authorized dealers	FHA and local finance	250 mile radius Austin, Texas	1,800	2,400	
od siding position board	wiring, plumbing, heat	hot water heater, garage	special erectors & dealers	FHA	250 mile radius Baton Rouge, La.	1,800	2,500	about 9,000
ze plywood sections	wiring, plumbing, heat, foundation		authorized dealers	arranged by individual dealer	250 mile radius Bay City, Mich.	500	2,000	former ship-builders
od siding -size plywood panels	wiring, plumbing, heat, foundation	hot water heater	arranged by licensed manufacturers	arranged by individual dealer	areas of 6 plants —Fla., Mich., Wash., Ohio, cent. & west N. Y.	5,850	7,800	1,500
od siding position board	wiring, plumbing, heat, foundation		(material not received in time for inclusion)		throughout the South	5,850	7,800	5,000 plus war work
plywood panels d-skin	wiring, plumbing, heat (radiant), foundation	hot water heater, range, refrigerator, complete laundry, water-cooled roof, thermopane glass, built-in furniture, fireplace	real estate dealers & supervisors	Savings & Loan Assns. principally	2-300 mile radius Rockford, Ill.	1,000	2,000	300
d panels 4' x 4' stressed	wiring, plumbing, heat, foundation	hot water heater, range, refrigerator, landscaping, steel window frames	authorized dealers	Savings & Loan Assns.	200 mile radius New Albany, Ind.	2,600	7,500	4,500 plus war work
od siding, int-plywood	(no plumbing, heat, wiring or roof covering)		various dealers; contractors	do not handle	radius of Port Washington, Wisc.	620	2,600	
od siding position board	wiring, plumbing, heat, foundation	range, refrigerator, hot water heater	sales staff & supervisors	FHA & Savings & Loan Assns.	all over world	3,900	5,200	22,000
d panels	wiring, plumbing, heat, foundation	hot water heater	lumber dealers	arranged by individual dealer	350 mile radius of Houston, Tex.	1,950	6,500	24,000
od siding position board	wiring, plumbing, heat, foundation	range, hot water heater	operative builders	through savings banks	areas 4 plants N. J., S. C., Tenn. & Ga.	7,500	10,000	34,000
e plywood panels, joists	wiring, plumbing, heat, cellar	hot water heater, aluminum window frames	realty builders	FHA & Savings & Loan Assns.	200 mile radius of Lafayette, Ind.	3,000	4,000	9,800
d siding size plywood panels	wiring, plumbing, heat, cellar	hot water heater	authorized dealers	FHA	300-mile radius from Hamilton, Ohio	1,000	2,500	2,000
d siding position board	wiring, plumbing, heat, foundation	hot water heater	direct to buyers	Savings & Loan Assns., mortgage companies	15-20 mile radius from Plainsfield, N. J.	1,100	1,560	400
d siding position board	wiring, plumbing, heat, basement	washing machine, range, fireplace	developers & licensed agents	FHA approval individual contractors will arrange	100 mile radius from Boston, Mass.	5,000	8,500	7,850
d siding position board	wiring, plumbing, heat, foundation	hot water heater, range, some landscaping	various agents (dept. stores, builders)	Banks & insurance companies	N. Y., N. J., Fla., Va., N. C., Pa., Wisc., Wash.	20,000	30,000	\$8 million before war—7,000 during war
skin plywood panels whole room sections	wiring, plumbing, heat, foundation	landscape (for add. \$1,000; built-in furniture, refrigerator, washing machine)	thru self-developed subdivisions	FHA and others	radius of Toledo, Ore.	3,120	4,160	2,300
panels, wood framing	wiring, plumbing		contractors	Allied Building Credit	California	3,000	6,000	3,000
skin plywood panels,	wiring, plumbing, heat	hot water heater, range, refrigerator, built-in beds (Borg-Warner Ingersoll unit)	thru manufacturers licensed to use process	individual manufacturers will decide	New York, New Jersey	525	2,400	only models
panel composition board	plumbing, heat (no roof covering, wiring chimney, or paint)	hot water heater, range, refrigerator	dept. stores, dealers	private agencies	east of Mississippi	4,000	13,000	800
plywood panels, nining	plumbing, wiring, heat, foundation	hot water heater	lumber dealers only	individual dealers will decide	all over US	6,000	12,000	9,000 (Willisway)

Tentative prices on firms' cheapest and most expensive models.

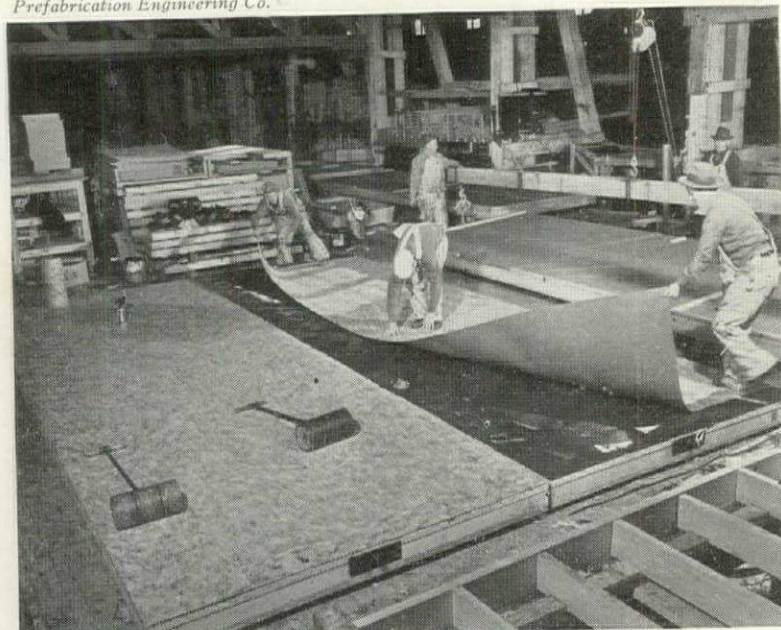
*** Based only on existing plants: 1946 figures cover remaining nine months of year.



Life photo: Harold Carter

JIG-BORN PANELS are the basic element of most current-prefab systems. Some of them are merely the conventional stud wall, minus plaster and fabricated in sections. Others are structurally more advanced. With few exceptions, they are wood, with factory installed windows, doors and trim.

Prefabrication Engineering Co.



FACTORY FINISHES of exterior and interior surfaces are more and more a feature of the prefab, with parquet and linoleum floors, painted and papered walls, etc. The increased care required in handling, shipping and installation is more than offset by savings in labor and materials at the site.

Pease Woodwork Co.



LeTourneau). Metal is least active of all: Fuller's house is, of course, largely of aluminum; and in Denver, Convertible Homes, Inc., is offering locally an all-sheet-metal model, see p. . . . But so far, neither metal nor concrete are statistically important in the picture. This strikes many outsiders as odd, if not indeed risky, for it means that the prefabs are as liable to a lumber famine as are their conventional cousins.

Nor are the prefabs remarkable for their equipment. They have not latched on to the flood of new kitchens, prefab baths and packaged utilities as might have been expected. The reasons for this are many and varied and, from the standpoint of the prefabricator at least, valid. Decisive factors are probably cost and availability. Shelter Industries, Inc., plans to build all its models around the new Ingersoll Utility Unit (FORUM, Feb. '46). Green's Ready-Built boasts such features as radiantly-heated floors and a water-cooled roof. But these are exceptional: most prefabs will be no more completely equipped than houses by the local builder.

Sobriety of design and material may reassure a public as yet uncertain about prefabrication. There still remains the question of price. The prices quoted (tentatively, like everything in today's building) seem to fall within the Wyatt program. But not until after this first testing period is over can prefab's early promise of drastic cost-cuts be confirmed. Fortunately, this does not present an overwhelming obstacle. For example, Anchorage Homes, who will not be ready for production until early summer, have already had over 45,000 requests for their houses. With so great a demand, prefab needs only to produce as good a house as conventional building.

Transportation methods make distribution spotty.

But most prefab manufacturers, even those with a factory full of finished house parts, have not yet faced their most worrisome problems. Most immediate is that of transportation. George Price of National Homes is typical in preferring delivery by truck because he can accurately time its arrival on the lot. Controlling this, he can then have his erection crew on hand to set shell on foundation without any waste of time. However, he estimates that 225 miles is as far as the parts can be economically sent by truck, and so limits his area of operation to within this distance of his plant. Most other prefabers agree with this estimate, although some believe they can cover a radius of as high as 300 or 350 miles around the plant.

Two methods are being proposed to overcome such territorial limitations—and both will soon be seen in actual operation. The first is to set up a chain of plants throughout the country. This has already been done by Ivan Ford, Johnson Contracting Corp. and Precision-Built, with Gunnison and many others planning to follow in their footsteps. The second is to make the house parts light and simple enough to be shipped easily and inexpensively. This plan, which in the long run may prove the more workable, is being adopted by Fuller and Willis. In other words, as the chart indicates, availability of the prefab is still spotty and is likely to remain so until existing firms extend their coverage or new ones appear to fill up the gaps.

Having assumed that he can ship his house cheaply and safely to the site, the manufacturer has still to set up effective machinery to insure its efficient installation on the lot. During the war, prefabricating companies worked directly with the government. There they had few if any site-connected problems: streets, utilities, sidewalks and landscaping were all handled by separate contractors. The individual purchaser, who will in future form the bulk of the prefab market, may not understand this fact: and from lack of understanding, endless headaches may arise. Fear of this possibility underlies Wyatt's insistence that all prefabers who wish government sponsorship must formulate "an effective plan for distribution and erection which will . . . insure that houses will be put up promptly." The prefabricators them-

TRANSPORTATION for most wooden, panel-type prefabs is apt to be by truck within a 200 mile radius of the plant. This enables prefabricator to mesh delivery and erection schedules, choose good weather for installation and reduce idle men and equipment to a minimum.

selves know this. Says a Washington prefab leader: "What the prefabricator must have is integrated producer control. He must oversee everything—land, financing, building permits. Its [prefab's] opportunity is in the market of people who don't know about and don't worry about these things."

The local dealer is the key to prefab's success.

To insure satisfactory provision for all these details the manufacturer must either find or create a personage new to the building scene. Various titles by different companies but most accurately described as a "housedealer" he must combine functions previously allotted to several distinct members of the building fraternity. The prime requisite of this new personage is summed up in a favorite prefab phrase—he must have a "whale of a lot of know-how." For this reason, Harry Steidle of the Prefabricated Home Manufacturers Institute does not see how "the department store angle" will work out in prefab marketing. For in many respects it leaves the purchaser with the worst of the house-building operation still to face: a lot to buy, contracts to let on erection and equipment, utilities to be connected, etc., etc. Even if the store itself assumes responsibility for handling such details, unnecessary cost, confusion and delay are almost certainly implied. For this reason Gunnison, Allied, Pease and a number of others insist on full-time dealers to install their houses. Green's Ready-Built Houses will be sold to local realtors but will have a supervisor to oversee construction. Willis and a number of others whose contacts with lumber dealers have always been very close, will sell through them and train a representative to give assistance on erection problems.

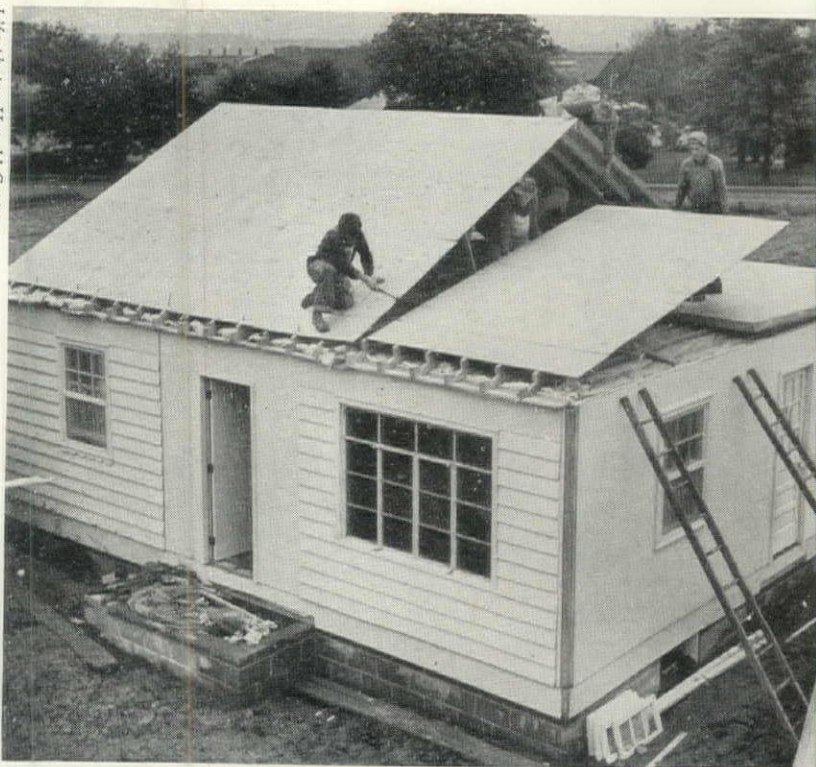
The dealer's position, however, will cover much more than installation. He will be the manufacturer's most important public relations man, for through him primarily the public will learn the facts of prefabrication. It will be his job to explain just what the price of his particular brand of house will cover, show reasons for parts omitted. It is the dealer, also, who will have to point out to the uninitiated layman (at least during the near-future interim before products become more standardized) whether or not the brand and model of house he is buying includes plumbing, wiring, bathroom fixtures, a heating system, interior and exterior finish, range, refrigerator and cabinets; whether the particular lot the buyer has chosen has convenient utility outlets; or what extra cost will be implied if the house is said to cover all facilities "to one foot outside the house."

Through the dealer, many house purchasers will learn for the first time that the prefab price does not include the cost of the lot (usually about \$500 extra). Often the thought of having to find a suitable place to build is more discouraging to the would-be house buyer than the additional charge. The progressive dealer will be careful to minimize this initial discovery by having on hand lists of the lots available in their vicinity. He will also realize the advertising value of siteing his product in as good a neighborhood as possible. Such a policy will make his transactions with the financing agency friendlier, for it acts as good insurance that the buyer (whose payments will be spread over 20 years) will want to keep up his equity in the property. Other important dealer functions will be to provide and supervise laying of foundations, erection of chimneys, installing sewer and water connections. Even grading, walks, driveways, and landscaping may have to be provided by the dealer in order to hold costs down and service up.

Financial backing—also a dealer responsibility and once a doubtful factor in a prefabricator's plans—has turned out to be one of his easier problems. In spite of the protests of opposing (and influential) interests that prefab represents nothing but a fly-by-night idea, the canny dollars and cents men have caught the whiff of profits from the prefab camp. A typical reaction was noted in the conclusion of a report made at a meeting of the Savings and Loan League in Dallas last December, "the prefabricated home industry is destined to play an increasingly important part in the Home Market in which we are

National Homes Corp.

Life photo: Harold Carter



ERECTION of the shell is only one of the local dealer's problems. To hold costs down and service up, he must have "a whale of a lot of know-how" about plumbing, utilities, landscaping and sidewalks.

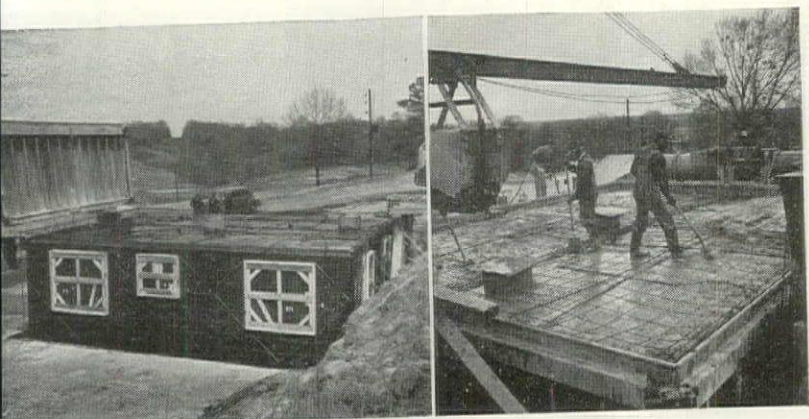
interested. We should gear our operations to meet the needs of the Prefabricated Home Industry, and thus be able to share in the profitable business to be derived from it." These men, like Mr. Wyatt, seemingly have been convinced that prefabrication has a sizable future in the small house field. As for the problem of cutting red tape in the house-buying transaction, Gunnison's plan is a prime example of what speed can be attained by efficient forethought. Within 24 hours of receiving the purchaser's signature, a Gunnison dealer can complete all financing arrangements.

Codes and craft labor: can the prefab by-pass them?

In addition to a carefully thought-out program for dealing with the individual consumer, prefabrication must resolve two difficulties in dealing with the community as a whole. The first concerns the 2,000 building codes which are in effect through various parts of the U. S. These were set up to specify requirements for conventional building methods and materials. They bear little or no relation to the new materials and processes available in industrial production. A code, for instance, is apt to specify that a wall of such-and-such material must be so-and-so thick. Such a clause would bar prefabs (along with many other developments) from its locality. Yet mere thickness is no longer an adequate measure of structural efficiency—the 2 in. stressed-skin panel much used in prefab construction may be stronger than its 6 in. equivalent in stud, plaster and clapboard. Gunnison, for example, claims that his construction can resist winds of up to 200 mph as against 70 mph for conventional frame construction; that his floor panels have a live load limit of 650 lbs. psf against 50 for the ordinary framing. And, under present conditions, such claims can be disputed but not disproved. The pressure for change is so great, however, that most cities are admitting that their building codes must recognize the realities of modern structure. Two of the most influential offenders in this respect, Chicago and Pittsburgh, are already setting a good example by starting immediately on extensive code revisions.

Labor is another unit in the community which has found some of its premises rendered obsolete by the prefab's advance. Here, too, measures designed to protect the worker under traditional site-labor conditions have proved inadequate to cope with the exigencies of factory production. Labor leaders—reassured by the fact that union

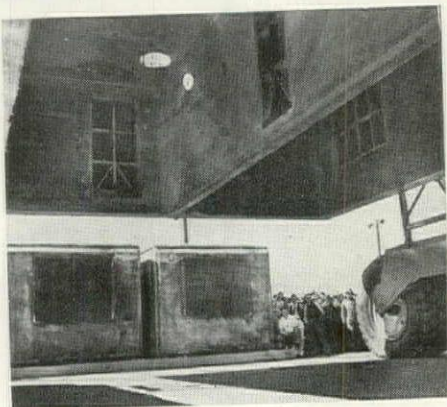
LE TOURNEAU'S "BUNGALOW BIDDY" LAYS A HOUSE A DAY.



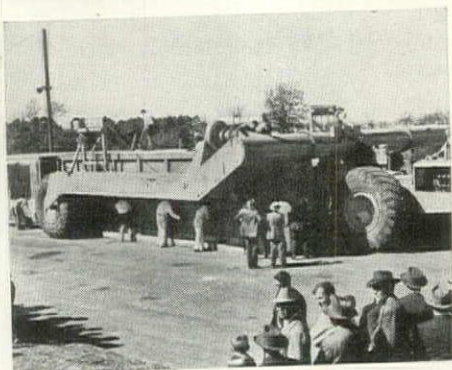
Photos: Yale Joel

INNER FORM, with doors windows and reinforcing in place, is covered by outer form in "Biddy" (above). Concrete is then poured (right, above).

24 HOURS LATER concrete has set. Inner form is retracted, "Biddy" picks up outer form and cast house.



TRANSPORTING house inside outer form to home site, "Biddy" lowers it onto already prepared footings.



RAISING outer form, finished shell is revealed. Radiant heating coils are set, concrete floors poured.



FINISHED HOUSE measured 24 by 30 ft., has 18 ft. living room. Partitions can be placed as desired.



labor will be used in the house factory and that the skilled building trades will find more than enough work in conventional building—have indicated their willingness to modify their regulations. The recent action of New York City's Brotherhood of Electrical Workers in dropping all restrictions on the use of power tools and labor-saving devices seems likely to set a postwar precedent for building labor. (FORUM, Feb. '45). The prefabers guess that if a clash comes, it will not be with the unions as a whole (who after all have their own full quota of homeless veterans) but with powerful local unions in the larger cities.

Neither codes nor craft unions worry the prefabers very much, however. Dazzled by the demand for houses from the unincorporated areas and small towns, they can afford to let the urban market wait. As Ed (Ready-Built) Green put it: "There's so damn much market elsewhere." From this suburban base, they will encircle and infiltrate into the cities proper, dealing with the problems as they arise.

Wide divergence in styling of prefabs.

In all this flood of prefabricational optimism, there is little mention of what has always been the prefab's soundest reason for existence—namely, that industrial production would offer *better* houses for *less* money. And this proposition still remains to be proved in real life. For the present, it may suffice that the prefabs do their part in filling the aching cavity of America's house shortage. But for the long haul that is not enough. Far-sighted prefabers are already aware of this hazard, though they have varying estimates of the danger. Long before the present emergency ends, they hope to have consolidated their position in the public's affection. To win this affection they will have to dry-clean the prefab of negative connotations—many of them based on ignorance or malice, some of them based upon hard facts. They will have to slay once and for all the confusion in the public mind between the prefab and a trailer, a shoddy tourist court, a wartime expedient, a temporary stop-gap, a minimal dwelling. They must convince the public that the prefab can be permanent, good-looking and "homey."

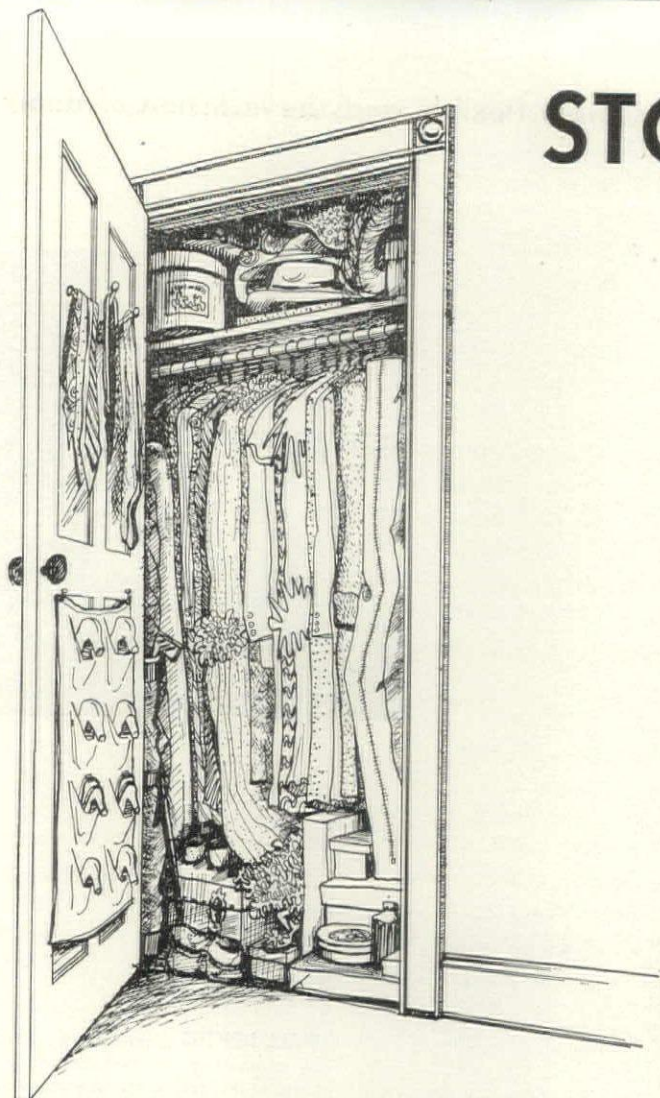
The tactic generally accepted at the moment is that of turning out a prefab which no one can spot—a gabled cottage so perfectly camouflaged as to pass for a conventional house built by conventional means. Is this "protective coloration" the correct approach? There are those who disagree—Buckminster Fuller for one. He has always held that this involved so many compromises with the essential logic of industrial production as to render it meaningless. You either have a house produced industrially, with all the features which only straight-line industrial production can achieve, or you don't. There are no greys in this analysis—it is black or white. Certainly this is evident in the striking model which he and Beech Aircraft introduced last month (see p. 129). Impressed observers, lay and professional, see only one feature reminiscent of the past—the living room has a fireplace. How the public would receive this precedent-shattering house is a matter for speculation, not prophecy. But one thing is certain: Fuller has established the other end of the scale by which the public will measure the prefab.

Closer to Fuller than to Gunnison are designs like those by George Fred Keck for Green Ready-Built or by Donald Deskey Associates for Shelter Industries. These houses are based upon the assumption that American house-buyers—after five years of enforced idleness during which they could do nothing but read up on the subject—are now prepared for modern domestic architecture. They are, according to this analysis, more desirous that a window admit a lot of winter sunshine than that it be shaped like a dormer; more intent that the roof be an effective barrier against heat and cold than that it be pitched at this or that historical angle; more eager that walls be strong than that they be clapboard. These modernists guess that the returned veteran in particular is thinking along these lines. And there is some evidence and a lot of "informed opinion" that firms like Green and Shelter are guessing right.

Time will tell which of these policies will prove correct—which of the prefabers will grow and prosper, which will wither and disappear. Such changes inside a new and expanding field seem inevitable. It also seems inevitable that there will be inside the field a steady movement of individual prefabricators towards genuine factory production of houses. Time will tell: but no more time is needed to see what the prefabers have for a decade been shouting: the prefabrication industry is here to stay.

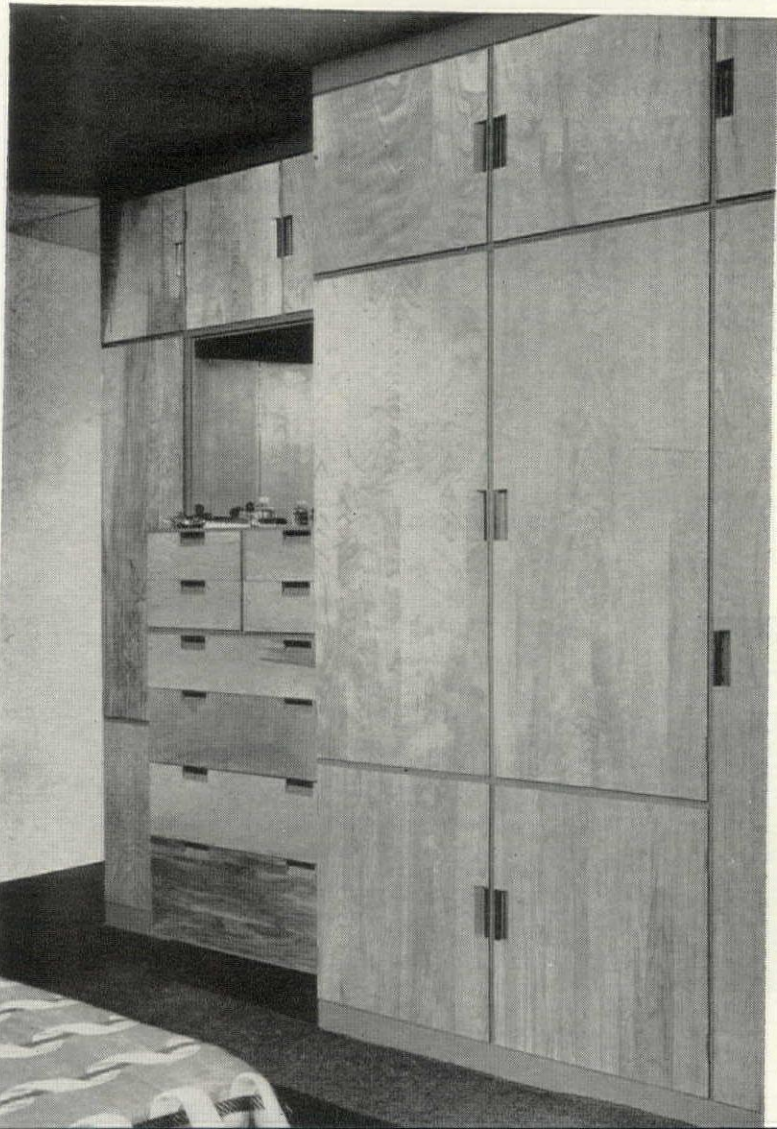
STORAGEWALL Prefabricated units

based on FORUM's original design will soon be available throughout the U. S.



ODD ITEMS IN A HOPELESS JUMBLE OF SIZES AND SHAPES . . .

. . . ARE SEPARATED AND NEATLY STORED IN SPECIAL CABINETS



Over a year ago FORUM editors, seeking a solution to the lack of convenient closet space in the average home, came up with a new conception of organized storage which they christened the StorageWall.* Instead of a regulation closet fitted with gadgetry, the new scheme was a series of shallow cupboard units to be substituted for non-bearing partitions throughout the house. A new company, the StorageWall, Inc., has been formed to prefabricate these units and now, after months of development work, the perfected designs are ready for manufacture. Pilot production is already underway in the New York area and the units will be available throughout the entire country within the year.

This means that, for the first time, a truly flexible solution to the problem of household storage will benefit from the economies of mass production. Heretofore, architects have supplemented closets by means of specially designed wall cabinets, but custom construction placed such units inevitably in the luxury class. Closets and cupboards which actually *are* the wall offer distinct advantages not found in the ordinary "built-in" job.

Perhaps the most important single feature of the StorageWall is its multiplicity of cabinets sized to fit together in innumerable combinations. In addition to closets and cupboards, the selection includes many pieces of actual furniture, all variations on a simple structural design. These basic units, worked out on a 6 in. module, come in 140 different sizes, allowing the homebuilder a wide choice in making up his own individual StorageWall.

The modular system of construction is also an important factor in installation and makes the StorageWall peculiarly adaptable to the remodeling of existing homes. No matter what the dimensions of the space it is intended to span, a combination of units can be worked out which will bring the total length to within 6 in. of the desired dimension. The remaining gap can be closed with a maximum of 3 in. trim at either end. Of equal importance is the simple, yet ingenious base which holds the entire wall in place, contains a leveling device to equalize floor height and provides a secure method of turning corners with the StorageWall.

These flexible construction features allow the architect great freedom when including the pre-built cabinets in his design. Both L-shaped and T-shaped arrangements are possible and the units can also be set as a projecting half-wall between living and dining areas. Doors can be incorporated into a full wall at any point.

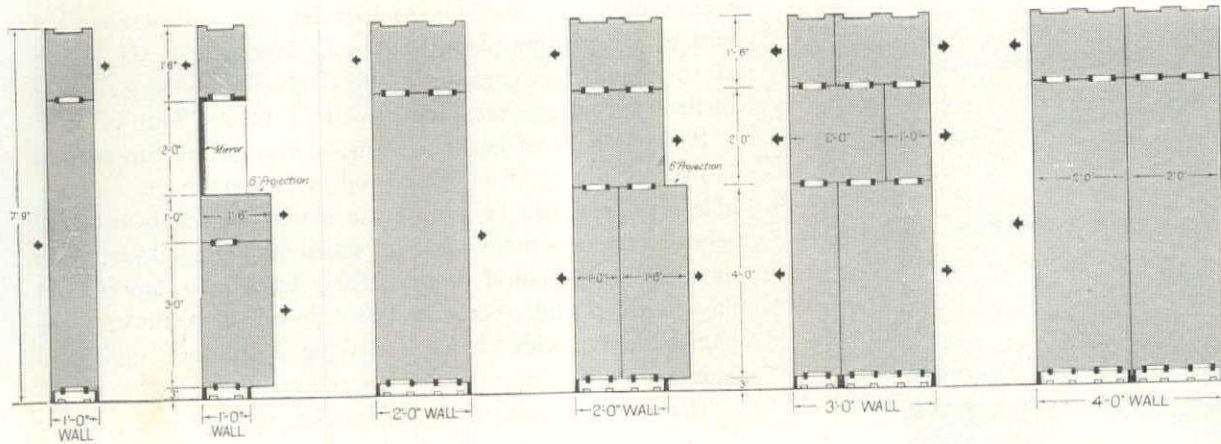
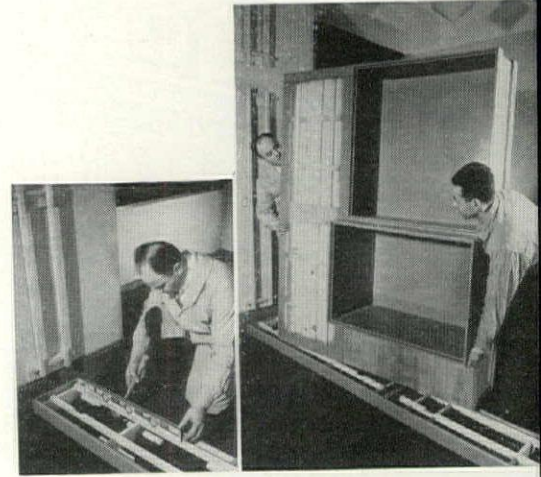
In spite of the great variety of the units offered, the problems of transportation and pre-sales storage is negligible. This results from the standardized construction system. All units are to be shipped unassembled as flat parts, stored in this form and made up to order. Special StorageWall connectors will be supplied which will make assembly of the units a simple operation and sub-assemblies of several units can be completed in the shop before delivery to facilitate installation. Walls are easily demounted and reassembled to meet changing conditions after installation. Examples of assembly and construction are shown on the following pages.

* Copyright 1945, StorageWall Inc.

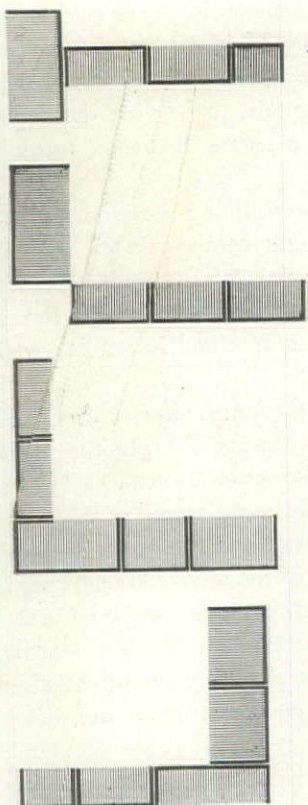
Storagewall's structural system makes installation easy, assembly flexible and the inclusion of doors, plumb

The Storagewall shown at the right was assembled by two workmen in 3 hours. Such ease of installation results from the simple structural system on which all units are based. Sides, tops and bottoms are fabricated from two narrow ribs of hardwood connected by a web of plywood or hardboard on the inner side. Thus, a continuous channel is formed around the outside of each unit deep enough to accommodate narrow strips of wood which act as connectors. When two units are placed together, screws can be inserted from either side into the common connector strip, joining the two securely. The outer ribs conceal this connection and, in addition, act as a trim between units when the wall is assembled. Narrow, lengthwise stringers projecting from the base, fit exactly inside each unit's bottom ribs, firmly aligning all the units in the entire Storagewall. Connector strips fastened to the side wall secure it at either end.

The back of each unit is designed with a similar system of channels to allow attachment of cabinets at right angles or back to back. Exposed backs, sides and tops are covered with finish panels which may extend over one or more units.

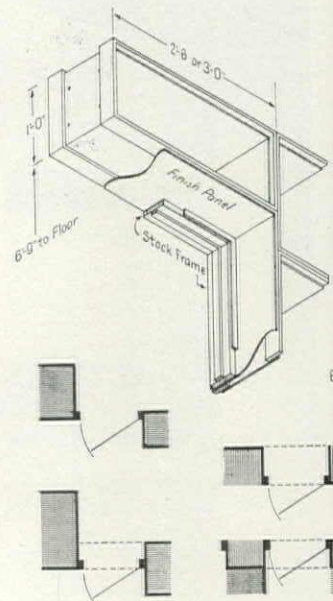
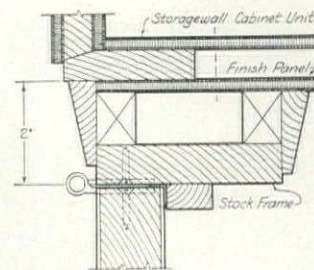
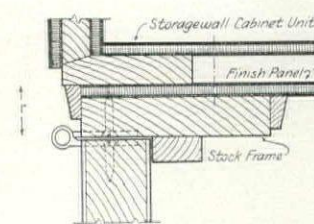
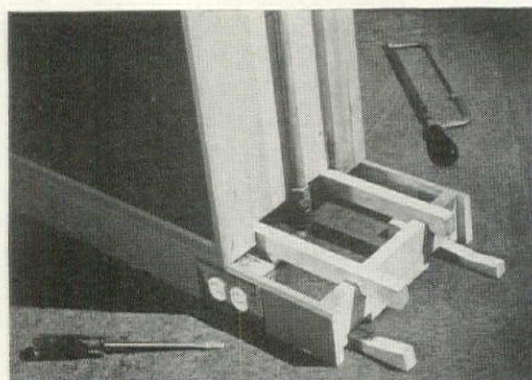


WALL DEPTHS ranging from 1 ft. to 4 ft. are possible by combining the three standard unit sizes of 1 ft. 6 in. and 2 ft. Arrangement of units either single or double; flush or projecting diagrams at left show only a few of the many variations which it is possible to work out with this flexible system.



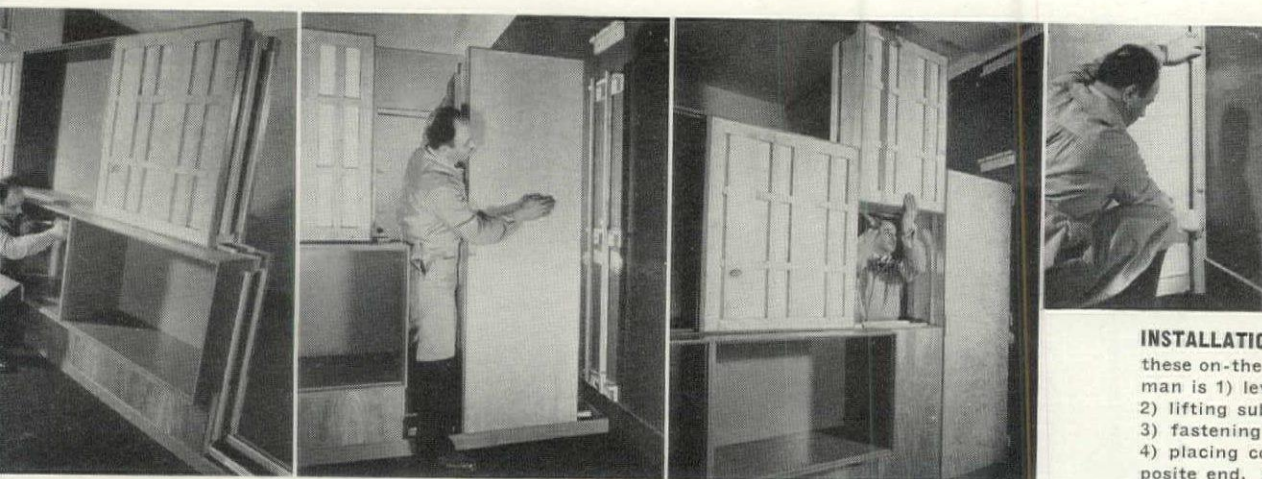
CORNERS can be varied because of Storagewall's flexible design, which permits connection of cabinets in any direction. Diagrams show (top to bottom) a T-shaped arrangement suitable for abutting partitions; an L-shaped scheme minus the corner unit; L-shaped arrangement with a half-front on the corner unit; L-shaped plan with corner unit opening into another room.

ELECTRICAL OUTLETS (below) can easily be installed in the hollow base of the Storagewall. Space between the ribs of box ends is large enough to accommodate conduit and plumbing supply lines.

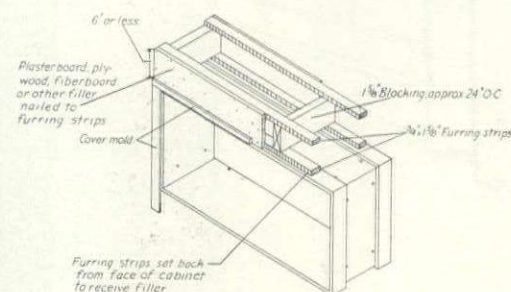
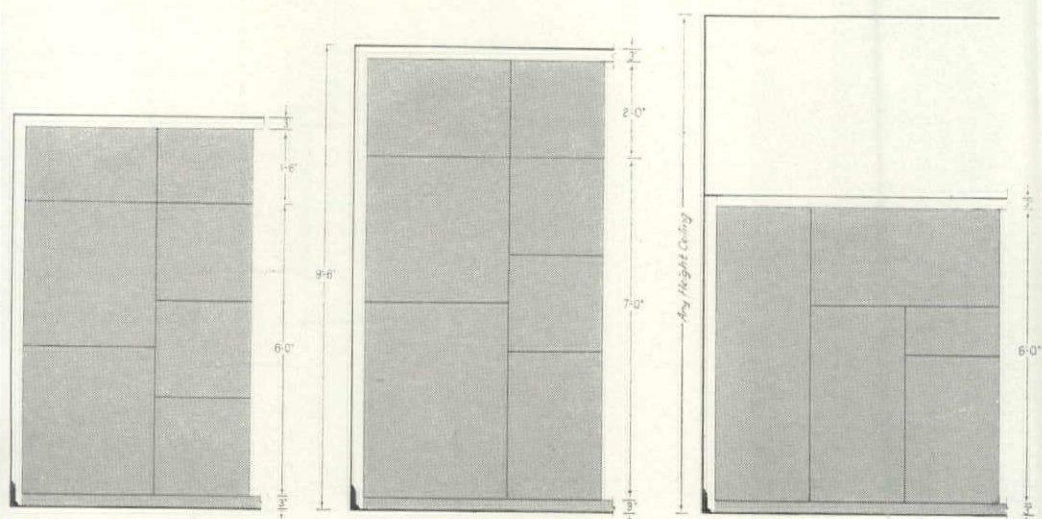


DOORS can be framed at almost any point in the Storagewall, but certain features must be taken into consideration. Although standard sizes of doors are not mandatory, the 2 ft. 6 in. wide cabinet unit is sized to take a regulation 2 ft. 4 in. door with 1 in. trim; the 3 ft. unit accommodates the standard 2 ft. 8 in. door with 2 in. trim. Diagrams at lower right show position of door between a variety of Storagewall arrangements. In each case the door must be set clear of cabinet unit openings.

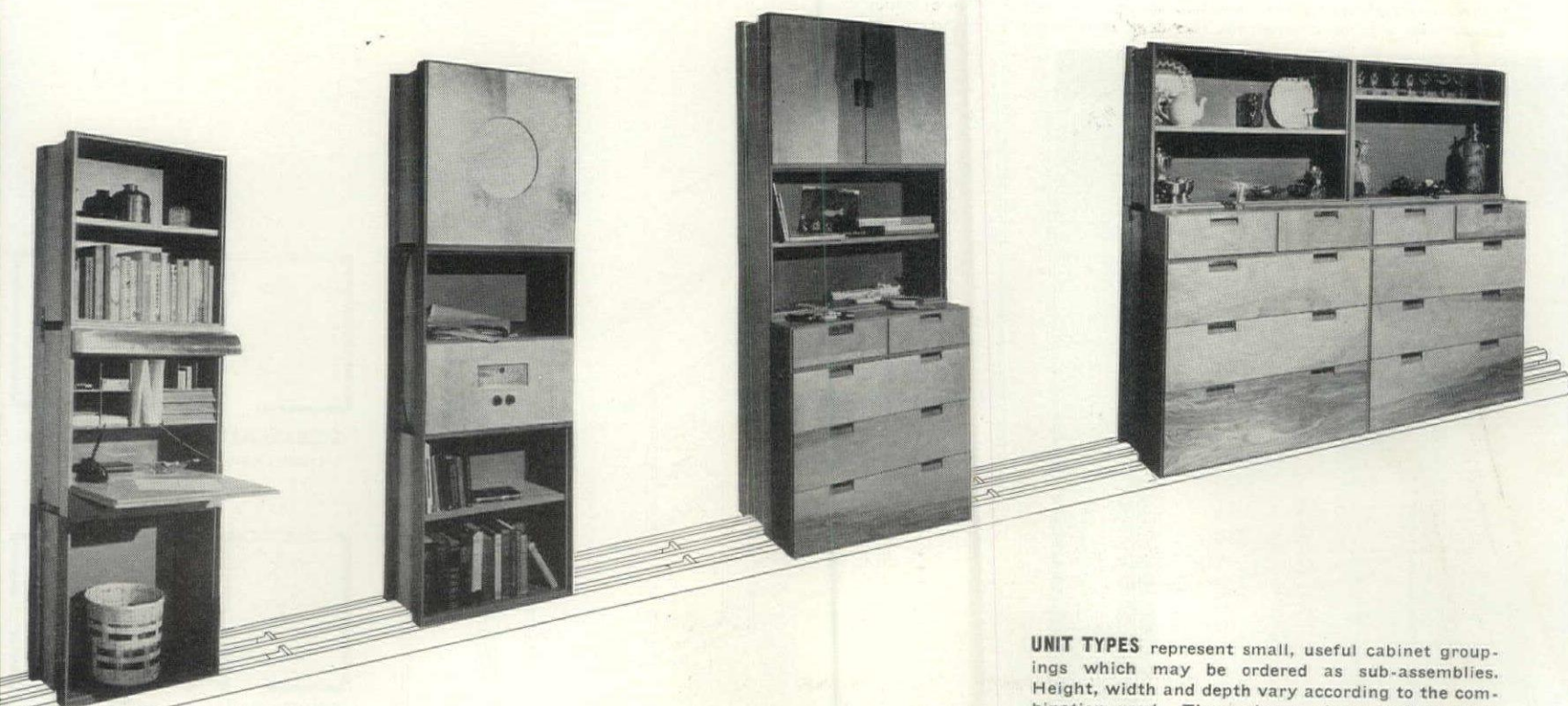
es and electrical wiring a simple matter.



INSTALLATION of the Storagewall is illustrated by these on-the-job photographs. Left to right a workman is 1) leveling base by tapping opposed wedges. 2) lifting sub-assembly of four units onto the base. 3) fastening the second sub-assembly to the first. 4) placing coat closet against wall stringers at opposite end. 5) slipping final unit down from above. 6) applying trim which has been scribed to the irregularities of the wall.

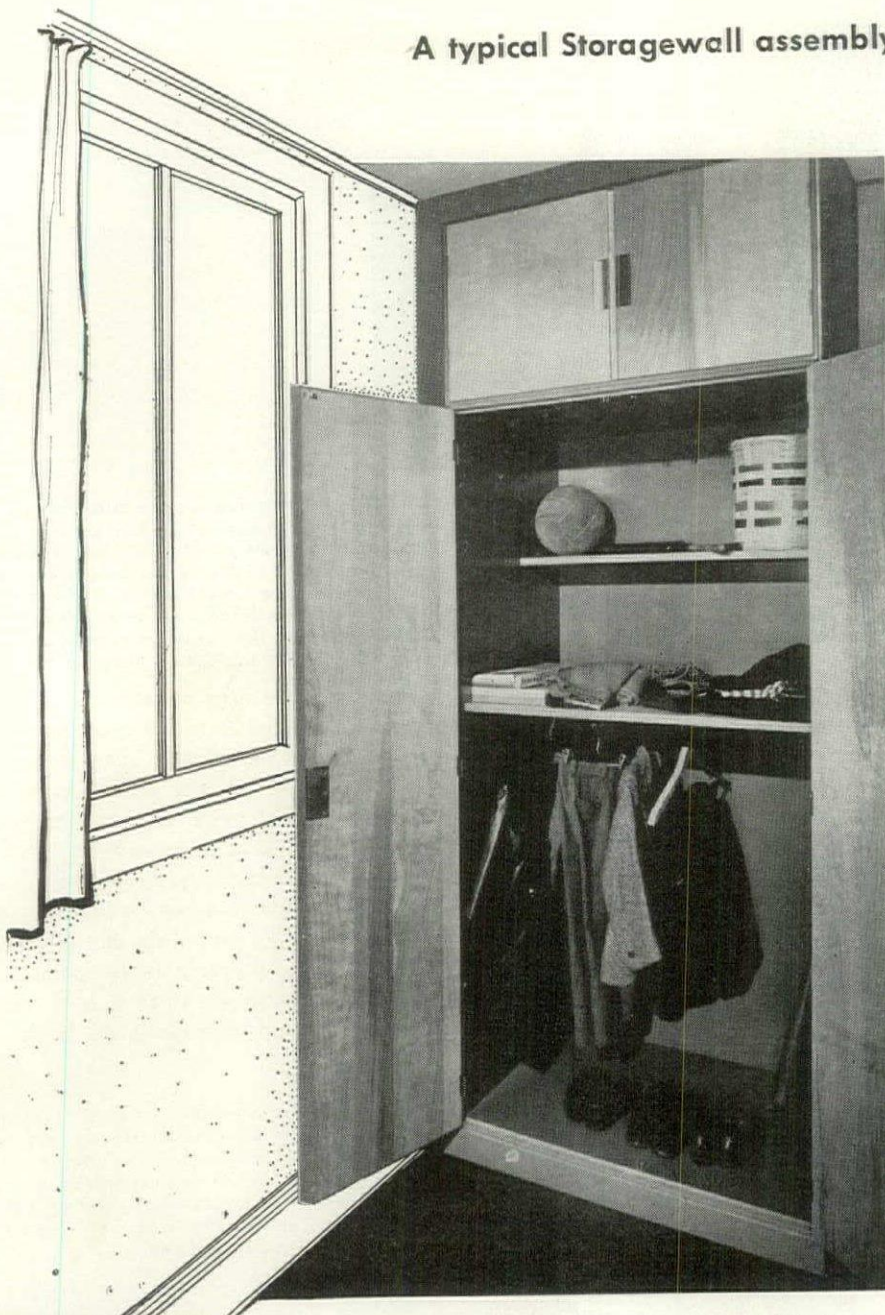


HEIGHT can be built up with the Storagewall system of 6 in. increments to fit any room dimension leaving a maximum of 6 in. at the top for trim or furring. High ceilings make it more practical to fur down, keeping the Storagewall an average height. This method can also be used to fill in space if an unusually low cabinet section is desired.

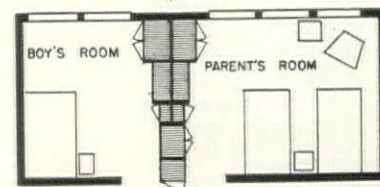
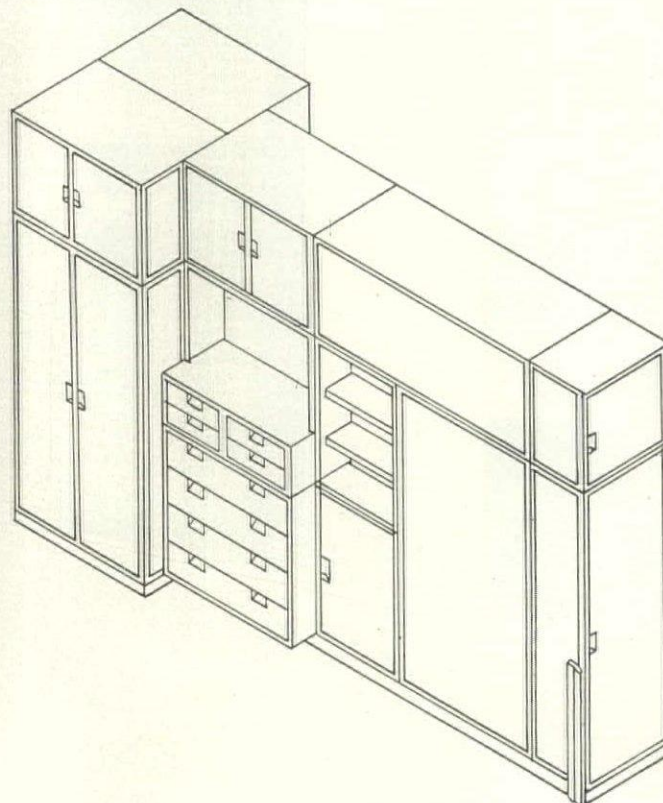
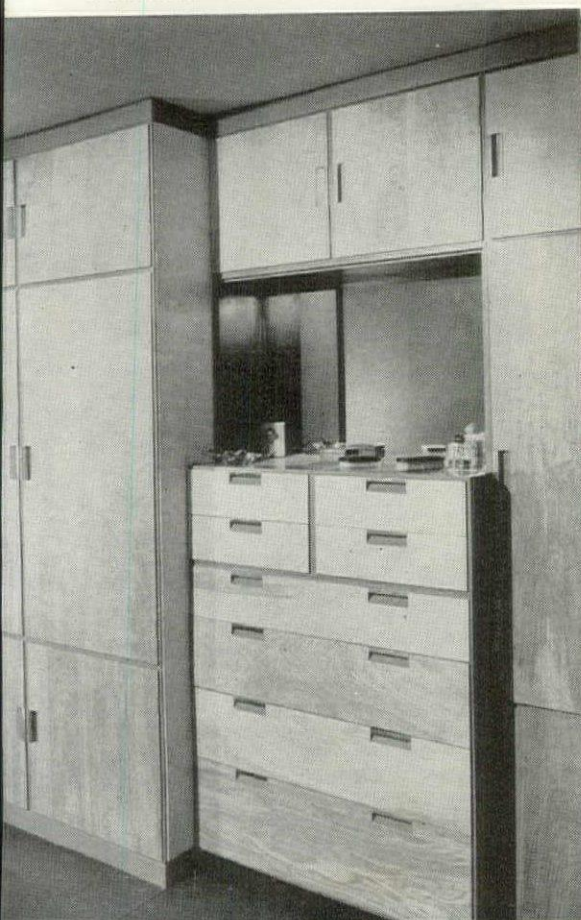
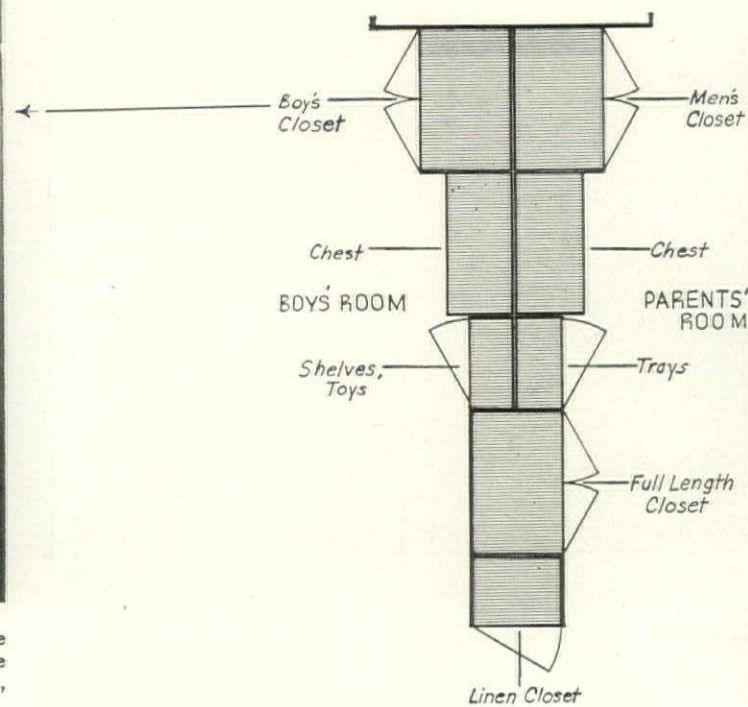


UNIT TYPES represent small, useful cabinet groupings which may be ordered as sub-assemblies. Height, width and depth vary according to the combination used. Those shown above include desk, radio, single and double chest assemblies topped by shelves and cupboard units with hinged doors.

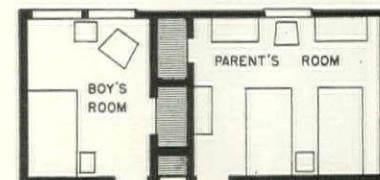
A typical Storagewall assembly solves the problem of adequate storage space for



BOY'S STORAGEWALL includes a large wardrobe with adjustable shelves (above). The clothes rod, attached to the bottom shelf is within easy reach of a small child, can be moved up by changing shelf position as he grows taller. Also provided are a large bureau, a bookcase, a game cabinet and two dead storage units for out-of-season equipment.

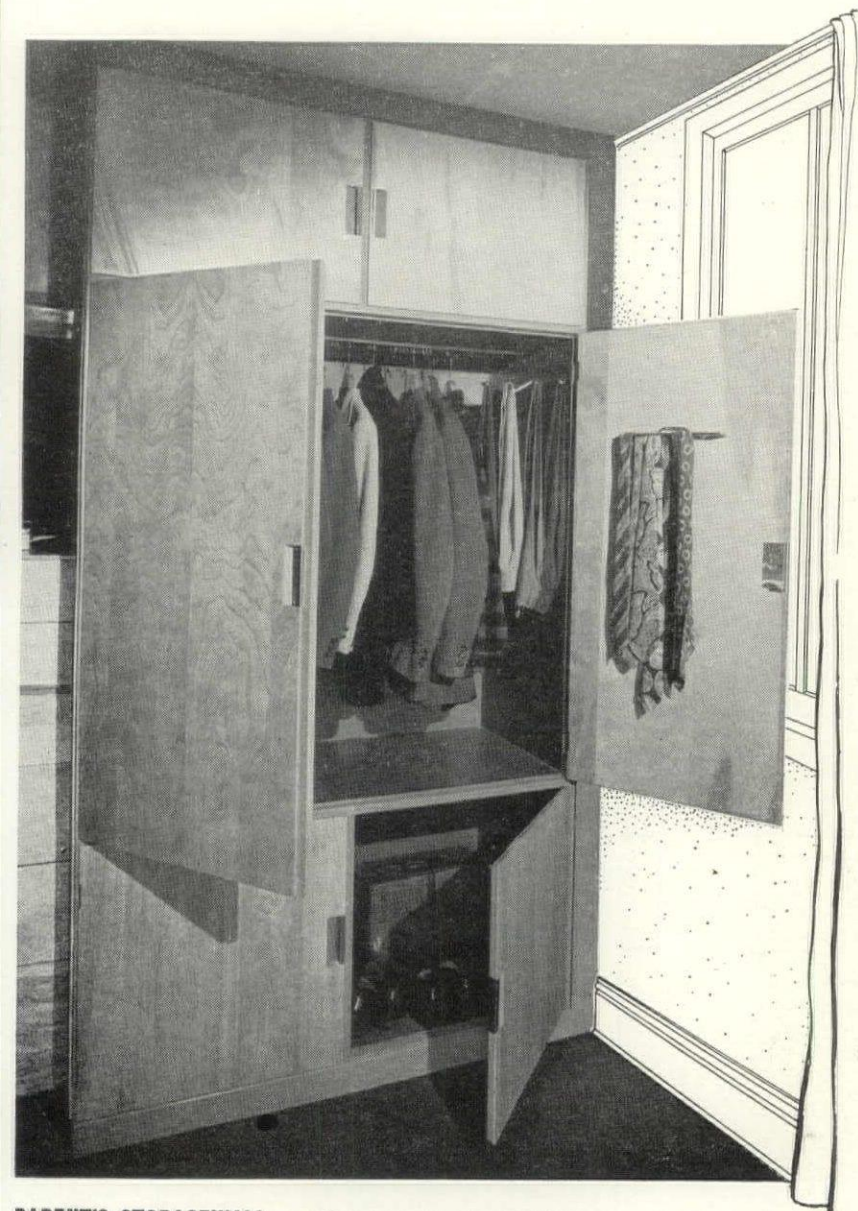


STORAGEWALL takes less space, includes handy built-in cabinets.



CONVENTIONAL CLOSETS provide haphazard storage, make it necessary to crowd rooms with furniture.

...e and a small bedroom in an average home.

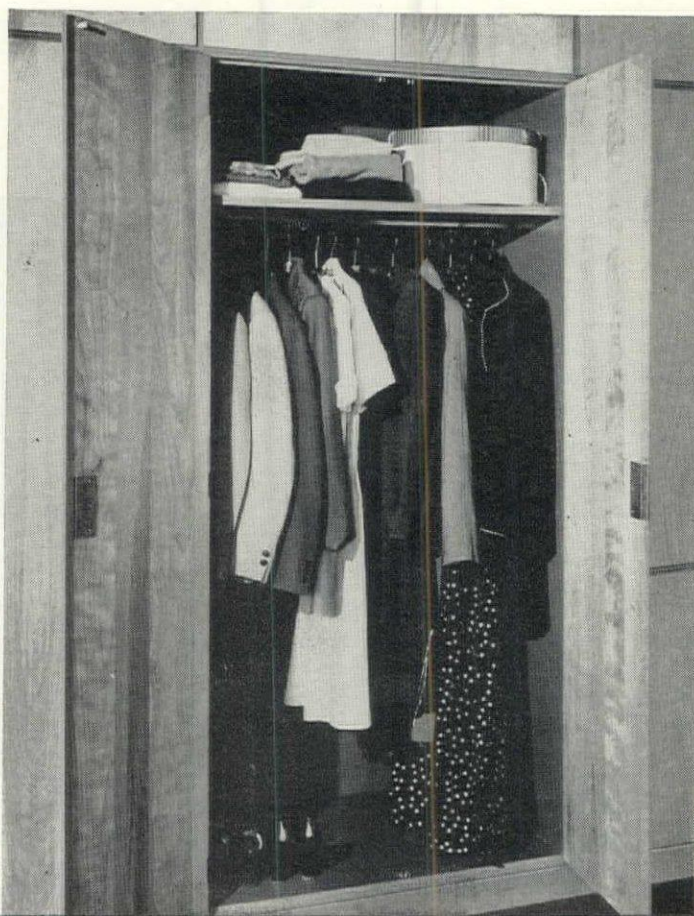
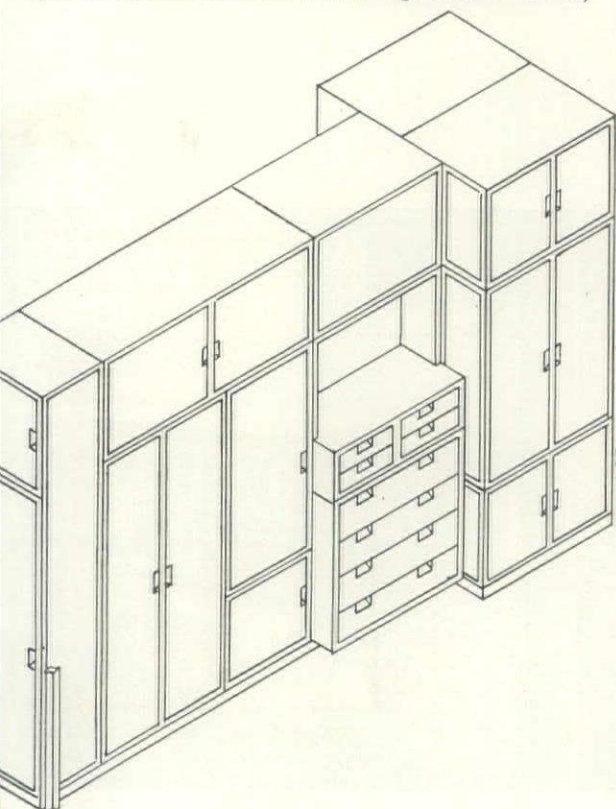


The advantages of Storgewall are best illustrated by a sample assembly planned to answer specific needs. The one shown on these pages solves the problem of storage for a typical two-bedroom arrangement, formerly serviced by central closets between the two rooms. A linen closet opening into the hall from this center partition was also part of the original scheme. Although not a conspicuously inconvenient plan, the disadvantages of this ordinary closet system have become apparent to many families through daily use. Parents are forced to share the one closet in their bedroom, overcrowding it, jumbling male and female belongings, losing small articles in its depths. The child has no suitable space for games and odds and ends which do not logically hang from hangers. To supplement wardrobe storage, chests of drawers are essential, but they clutter the space, making the rooms appear smaller.

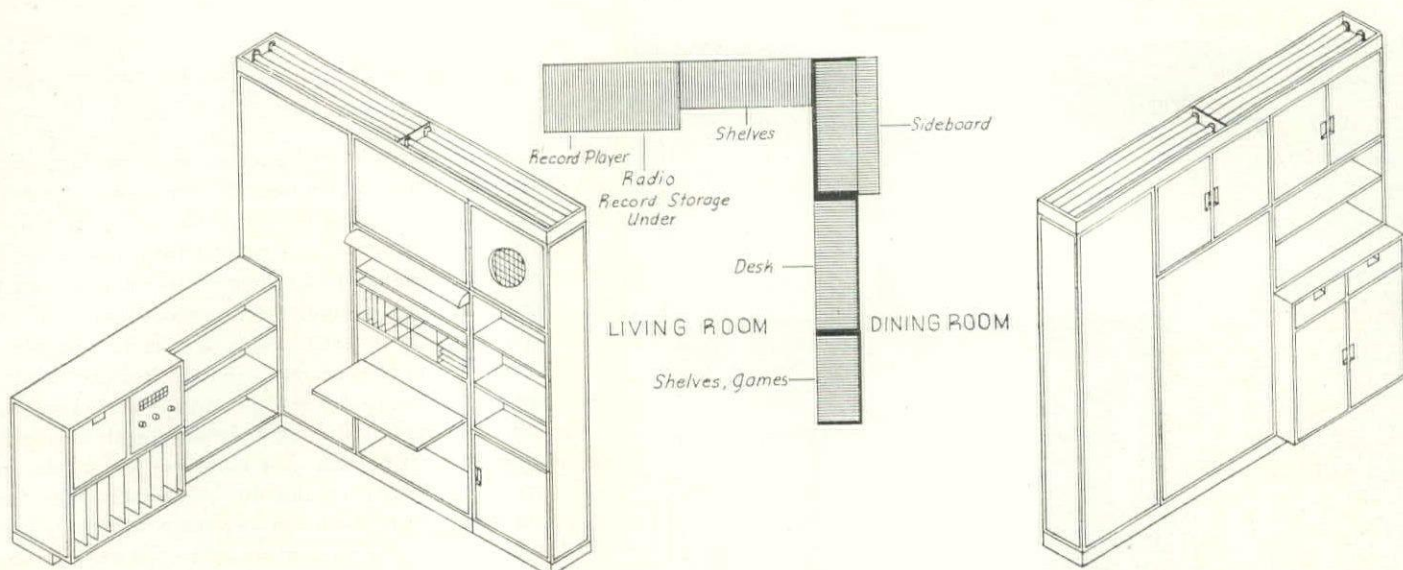
Substitution of the Storgewall for closets actually cuts down the total cubage of storage space, but by using this space to best advantage, greatly increases its total usefulness. The parents' room is given two wardrobes plus shoe cabinets, dead storage, a bureau and concealed tray drawers. The boy's room is equipped with game closet, bookshelves and bureau in addition to the wardrobe. Supplemental furniture which formerly crowded the floor area, is now included in wall storage, giving a more spacious look to the rooms. The hall linen closet is still a part of the new scheme. Although the Storgewall is not cheap, it cannot be compared in cost to either furniture or standard partitions since it is a combination of both, and less expensive than their combined price.

PARENT'S STORAGE WALL provides two ample wardrobes, one full-length for dresses and coats (below), the other short to accommodate jackets and trousers without wasting space (above). Other units are an eight-drawer bureau,

a cupboard with shallow drawers for stockings, lingerie etc., two shoe cabinets and dead storage units for blankets and other bulky household equipment. Note tie rack on door of short closet and adjustable hat shelf at top of long wardrobe.

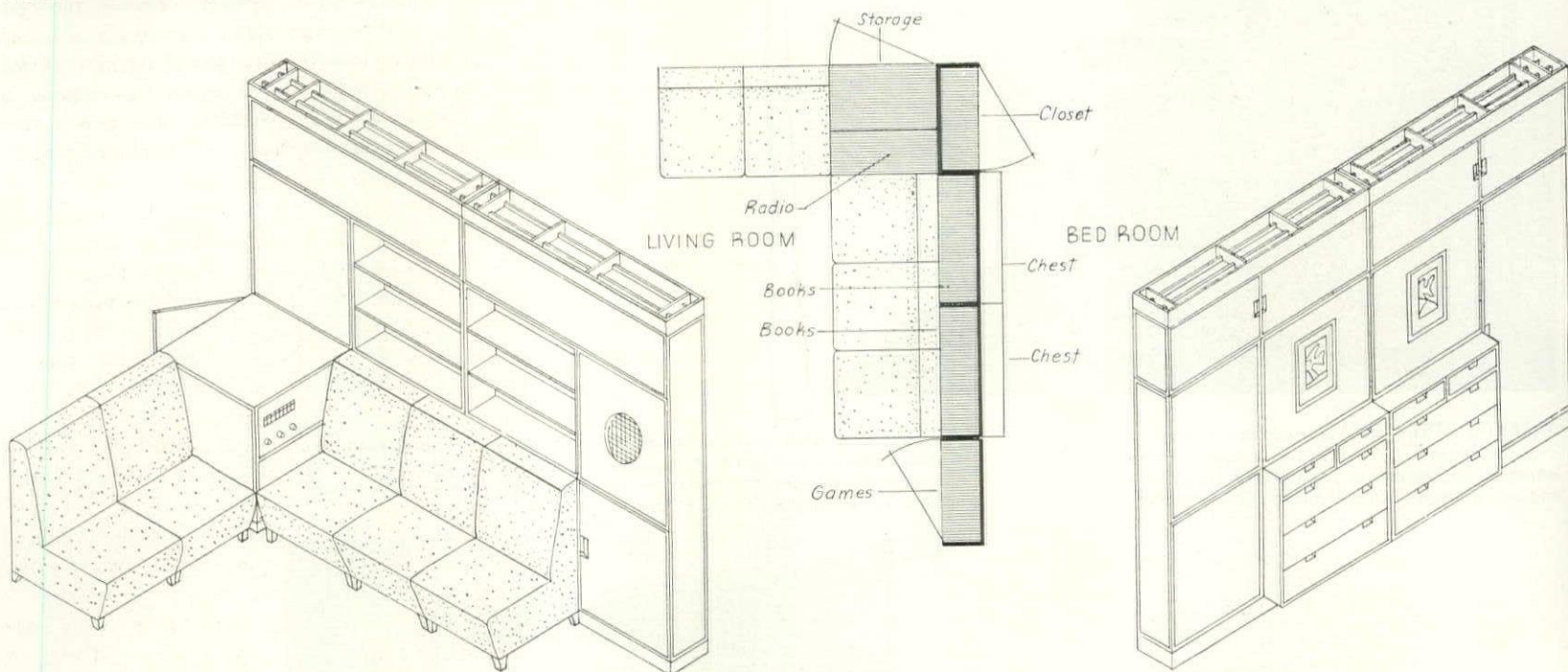


Selected assemblies, planned to meet typical problems, can be ordered as a unit from the distributor.

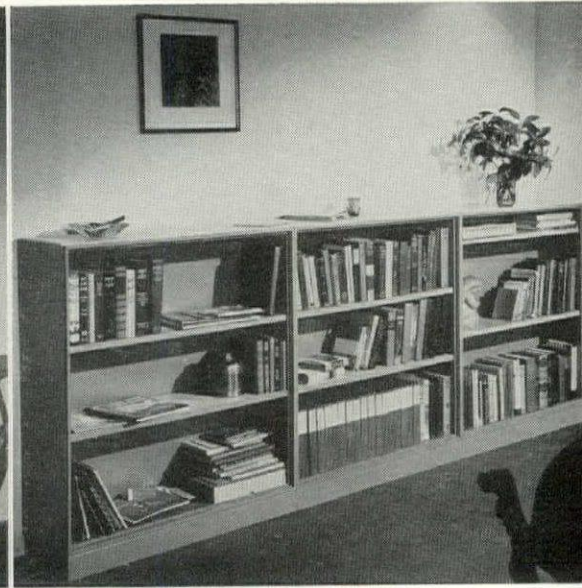
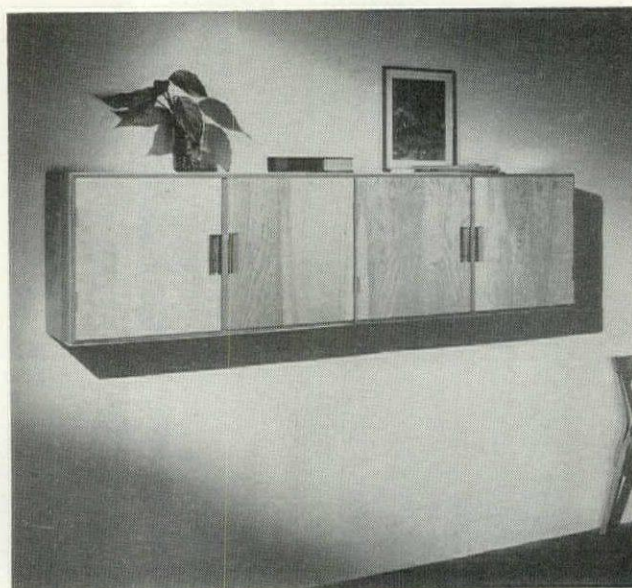


LIVING-DINING Storagewall (above) separates these two areas and creates a quiet corner for relaxation or study. The low wall on the living room side contains a radio, phonograph, space for records and books; the adjoining wall a loudspeaker storage cabinet, shelves and dropleaf desk. A spacious china cupboard topped by drawers for silver is included on the dining side.

LIVING-BEDROOM arrangement (below) illustrates the use of Storagewall in conjunction with other furniture and as a background for paintings. Couches are placed directly against chest units which open toward the bed-room; pictures are hung on back of bookshelves which front toward the living room. Note corner unit with radio.



STORAGEWALL UNITS also make handsome pieces of separate furniture (right), can be used in this manner when an entire new wall is not practical. This is a sensible method of collecting parts of a full Storagewall one piece at a time.



PACKAGED KITCHENS

They fit the plan but not the budget of Mr. Wyatt's homes for veterans.

Complete mechanical core—FORUM, Feb. 1945



Revolving sectional units—page 150

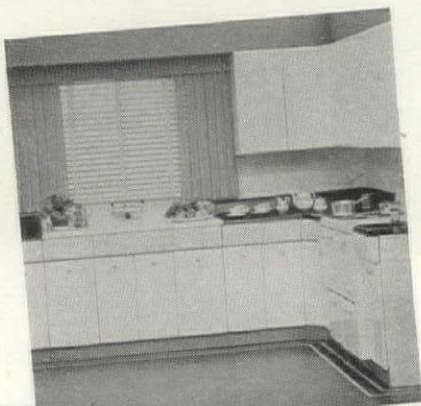


Minimal complete strip—page 154



Free-standing "cast" unit—page 155

New sectional lines—page 156



A short six months ago it might have seemed to even a close observer that, for all the fine talk about "postwar" kitchens, we were actually no closer to a packaged unit than we had been a decade before. Yet already the wind has wheeled to another quarter. Scarcely a week goes by without a new unit appearing—neat and compact, easy to install, easy to use and easy to finance. In the past three months FORUM has reported three such bonafide units and one extensive piece of research on the subject.* In the following pages are shown five more, together with one that is at the drawing board stage. And anyone who thinks the process will stop there should go back to the Cornell kitchen study (FORUM, Feb. and March, '45) or forward to page 214 of this issue. At the laboratory level, the whole field of kitchen design is in a ferment.

Whatever the status of the house as a whole, it looks as though the bottleneck at the kitchen level has been broken wide open.

As might be expected, these units show a wide variety of approaches to a central problem. The manufacturers have different things to sell and different ways to sell them. Their designers, in turn, have varying concepts of what a kitchen should do and what a housewife expects it to look like. Factors like these create a range of distinct types. There is, for example, the so-called "cast" unit where the entire kitchen is fabricated into a single piece, like a chest of drawers. Designer J. J. Little's unit belongs in this category. Some of the new kitchens are sectional; like Raymond Loewy's design, they may be bought and installed by the running foot. Some of them are a cross between these two; thus Guyon Earle's design is essentially "cast" but is fabricated in sections for easier handling and installation. The facilities included in these new kitchens also fluctuate—depending again on what the manufacturer has to sell. For a company which does not make either ranges or refrigerators, Loewy has designed a comparatively simple unit. On the other hand, White's design—for a large and experienced manufacturer of hotel and institutional feeding equipment—includes everything but the salt shaker. Most of the models, for the present at least, tend to be minimal. They emphasize the essential elements of the kitchen—sink, refrigerator and cooking unit, together with a certain amount of counter and storage space. This tendency has obvious merits. On the one hand, it holds down the weight, size and cost of the unit at a time when all three are at a premium. On the other, it permits a certain flexibility in adjusting the unit to individual plans. For a very small house or apartment, the unit can serve as a complete kitchen, while in less crowded plans it can be expanded by the addition of extra storage, counter and shelf space.

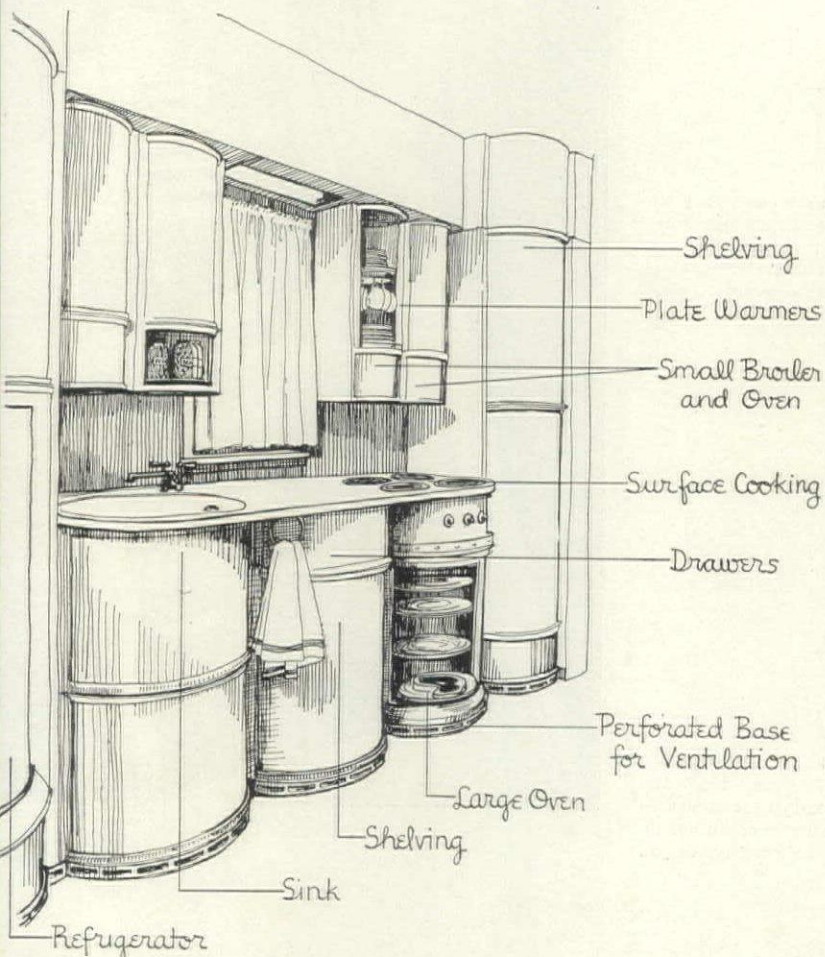
From the standpoint of design, the new units present a somewhat uneven picture. There still persists a tendency to streamline everything, as though aerodynamics were a critical factor in the movement of a door. And the designs still aspire to a sort of monolithic monumentality more appropriate to a tomb than a range. At the same time, they yield those smooth surfaces, rounded corners and minimal joints demanded by the housewife. There is also encouraging evidence that designers are no longer content with merely enclosing so much raw space and calling it storage; instead, they begin to see that the cook needs specialized storage facilities for far more instruments and supplies than a skilled mechanic.

Right now, there is little talk about costs. The industrial parents of all these new kitchens are either unwilling or unable to talk prices. But since most of the companies are newcomers to this field, preparing to tilt lances with well-established manufacturers of plumbing and kitchen equipment, one thing seems certain. The new units must compete in price with the conventionally assembled equivalent. Nor is it too much to predict that, with the keen competition already afoot, they will ultimately cost less.

* In January FORUM readers saw Canada jump the gun with Comstock Co.'s Unitility—kitchen, bath and house heater in a 9 ft. cube. In February came Ingersoll Steel's Utility Unit inspired by the same basic concept but smaller and cannier in design. That same month began a two-part study of the kitchen by two (female) kitchen specialists, some of whose conclusions were at sharp variance with even these postwar designs. And in March they saw the fabulous kitchen of Fritz Burns' showcase house.



CHARLES C. WHITE Kitchen Compact employs a new principle in which everything but the sink revolves on its vertical axis



CONVENTIONAL CABINETS, occupying this 10 ft. wall, would provide about 36 linear ft. of shelf frontage while the revolving shelves of the White Compact expose about 124 linear ft. of immediately visible and accessible storage space. One detail not yet satisfactorily solved is provision of tightly sealed joints in finished assembly.

The perennial problem of what to do with a cabinet door when open has led Charles C. White, New York architect-inventor, to a quite novel solution. By making his cabinets circular instead of square in plan, he has been able to use a revolving door. Hung *inside* the frame of the cabinet proper, this door pivots around and back out of the way when not in use. Such a door forced him to develop a new system for supporting shelves. By a centilevered bracket Mr. White supports each circular shelf at one point—its center. The bracket itself is adjustable—thanks to the way its three prongs snap into the vertical lines of lugs welded to the cabinet wall. The result is a shelf which is removable for washing, adjustable for height and revolvable for easy access and visibility—three very desirable properties for any system of shelving. This principle of revolving doors and shelves has been applied not merely to the cabinets but to the refrigerator and range as well—again with interesting results.

Neat engineering, both from the standpoint of installation and performance, marks the job. The basic units are all cylinders, in five diameters and a variety of heights. Together with the perforated base on which the units sit and the rigid, self-aligning metal frame on which they hang, they constitute a system which can be assembled in short order by one or two mechanics with scarcely more than a wrench. Refrigerator, sink and cooking units are available in different sizes and may be placed where desired in both vertical and horizontal planes. Hence the system is remarkably flexible.

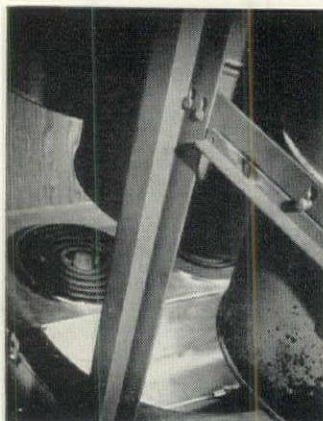
The entire kitchen is of enameled sheet steel except for sink, counter and splashboard—which are stainless steel—and refrigerator and oven interiors—which are of aluminized aluminum. The curved surfaces of the doors lend them stiffness, while their overhead pivoted support gives them fingertip action and eliminates need for handles or catches. The designer has exploited the interstices between the cylinders for purposes of ventilation. Since these are continuous both below and above the counter, he needs only to connect them to a horizontal overhead duct. With the perforated base extending under the entire kitchen, he can thus vent the refrigerator, ovens, and surface cooking units, as well as the room itself.

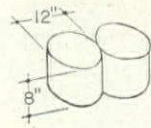
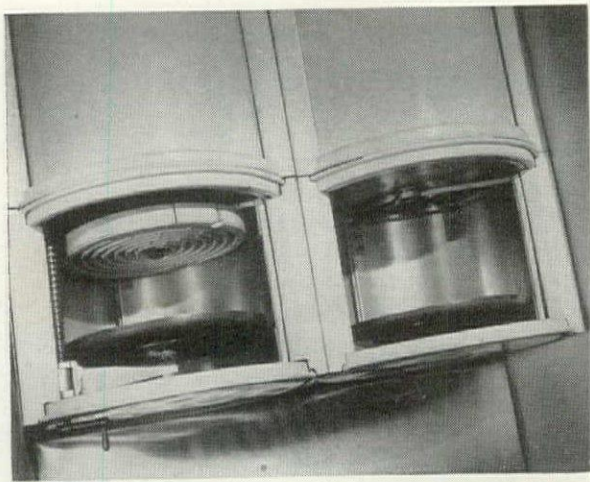
The White Kitchen Compact will be manufactured and distributed by Nathan Strauss-Duparquet, Inc., New York.



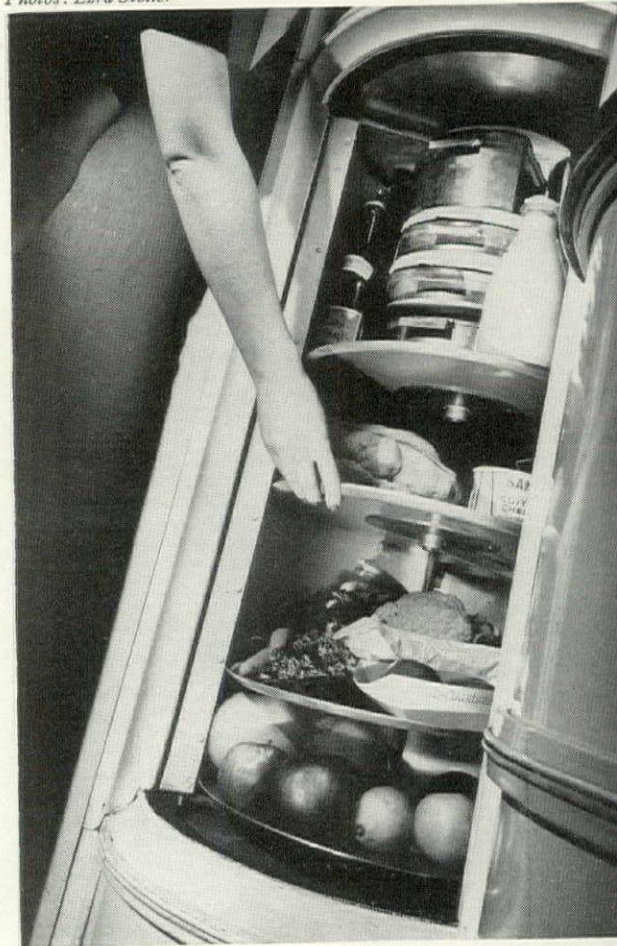
EASY INSTALLATION is one great merit of the White Kitchen Compact. Key to the system is its self-supporting and self-aligning metal frame which is independent of the walls and needs only a level floor to sit on. In this minimal unit for hotel and apartment use, the combined sink-stove unit is placed on its perforated recessed base (1). Next to it is the refrigerator (2), which will be topped by a square stainless steel counter flush with range top. Wall cabinets with individual electric broiler and oven in bottom are then hung (3) by means of lugs which fit snugly into keyhole slots in the frame (4, 5). Last comes the stainless steel splashboard (6).

5.

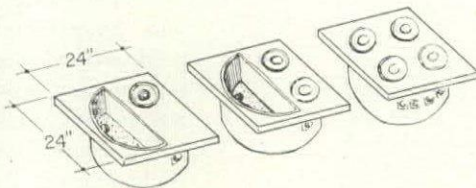




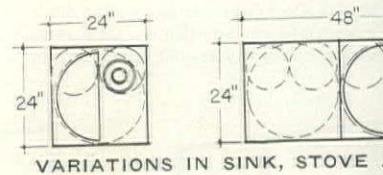
INDIVIDUAL BROILER and oven may be hung anywhere. Broiler has adjustable, ratchet-operated shelf; both units are electric, with insulated doors, revolving and removable. Heat converts cases above into two warming closets.



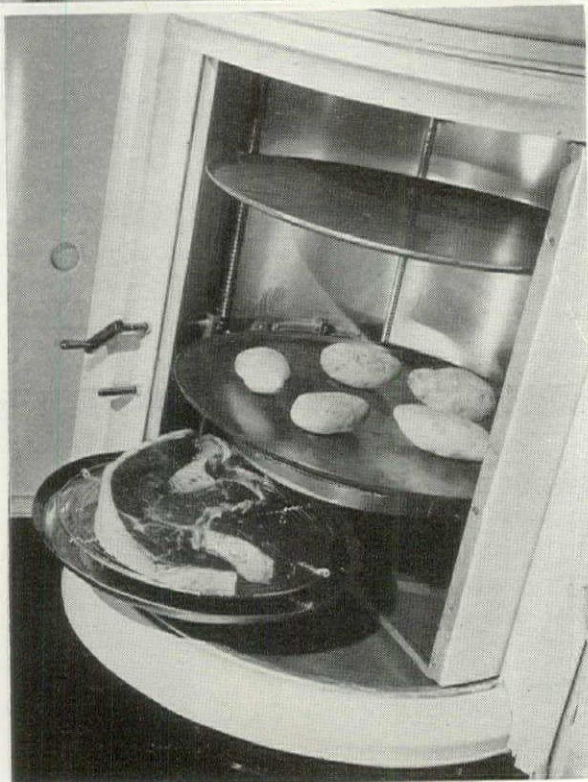
CIRCULAR PRINCIPLE has had a startling effect on the stove. Divorced from the oven, the surface-cooking unit comes in three sizes—two of them in combination with sink—and is available for either gas



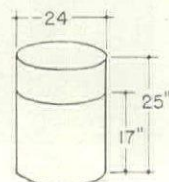
or electricity. The top is vented through the interstices behind the cases which hang above it. Although shown here atop the oven, it can of course be placed anywhere along the counter.



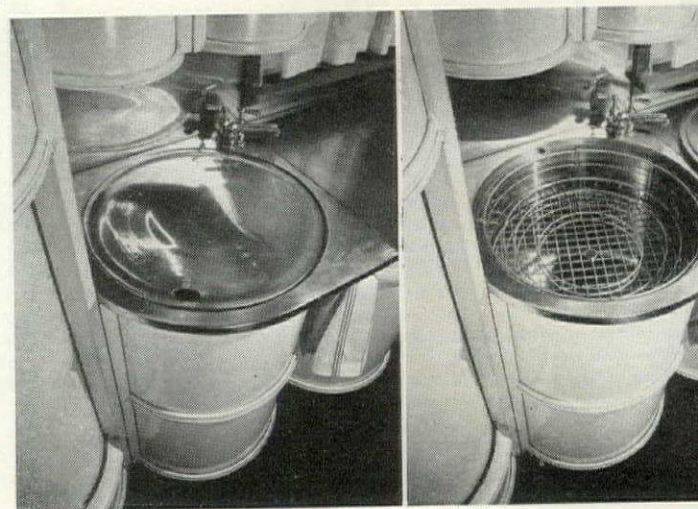
VARIATIONS IN SINK, STOVE



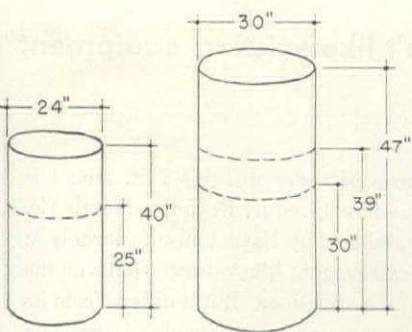
LARGE OVEN heavily insulated, has three revolving shelves. The one in the center is not adjustable, being directly over the heating element. The top and bottom shelves may be adjusted by an outside crank; in addition, the bottom broiling shelf swings out of the oven.



Circular shelves and revolving doors enable

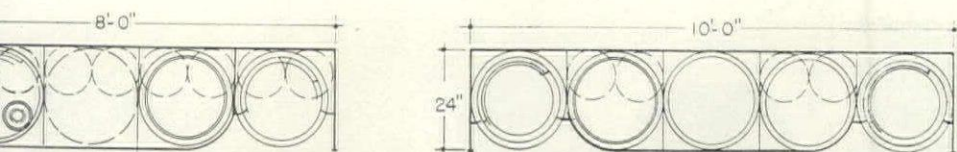
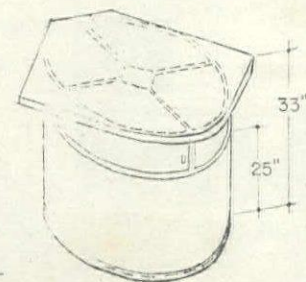
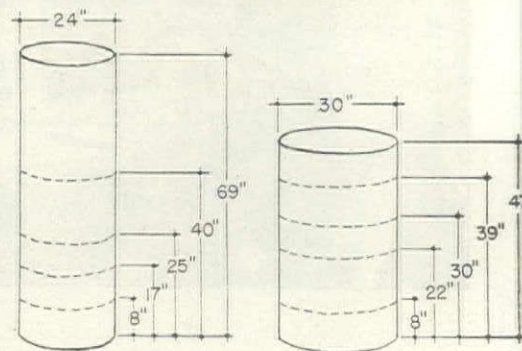
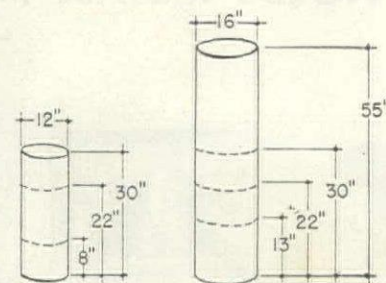


HOW THE SINK WORKS: When not in use (above) steel lid is flush with counter. Removed, circular basket for dishes is disclosed. B

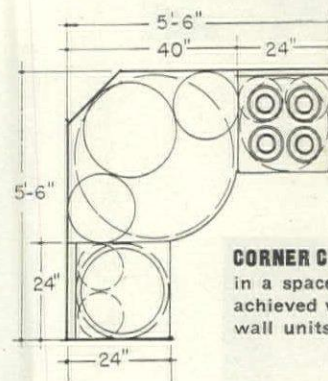


REFRIGERATOR, available in several capacities, revolving, solid shelves and disappearing ice cube compartment is circular and from center of top; around it revolves a which can hold 8 quart milk bottles. Door special lock and gasket which is air-tight closed.

SHELVING, which can carry full load of canned goods without binding at pivot, is adjustable, removable and revolvable. Disappearing doors have finger-tip action, stop at any desired position. Both shelves and brackets can be removed for cleaning enamel interior.

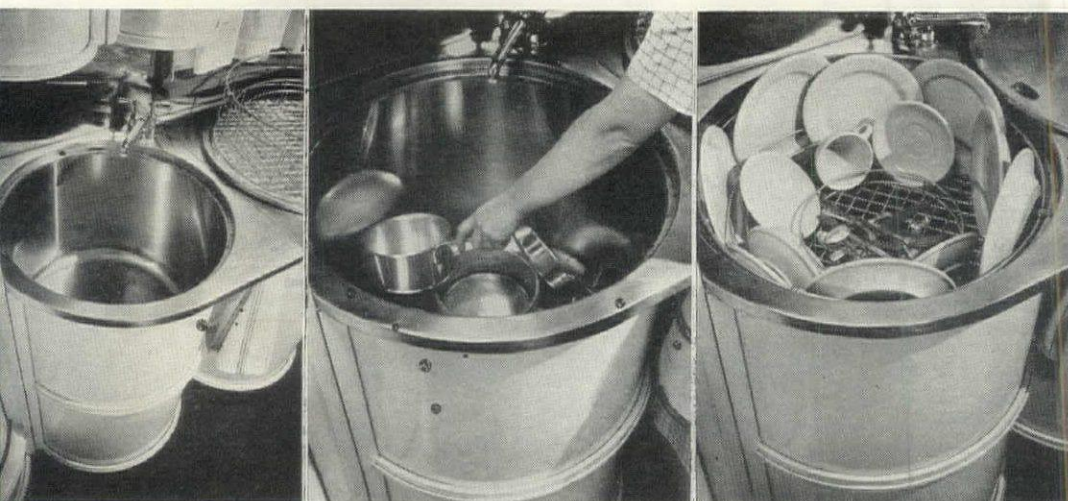


REFRIGERATOR PERMIT COMPLETE KITCHENS IN SPACES OF 2 FT. AND UP

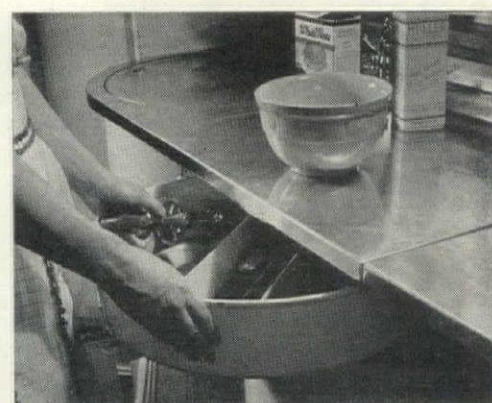


CORNER COMPACT: A complete kitchen in a space 5 ft. 6 in. square is readily achieved with large diameter base and wall units for the interior corner.

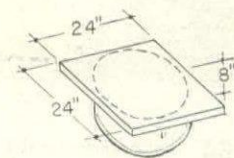
radically to revise design of range, refrigerator, sink



be sprayed on dish tray when replaced will make pan washing easier. Basket is then replaced (above) and dishes sprayed by pistol-type hand nozzle.



DRAWERS slide partially out on rollers and then revolve. It is doubtful, however, whether they offer any advantages over conventional rectangular construction.



REYNOLDS METALS produces a kitchen designed by a builder who didn't like existing equipment



STOVE, with pan storage behind cooking top, is designed for either gas or electricity.

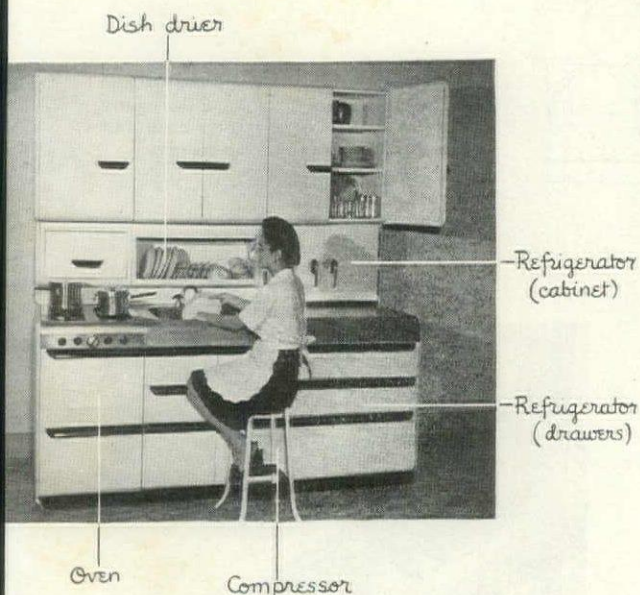


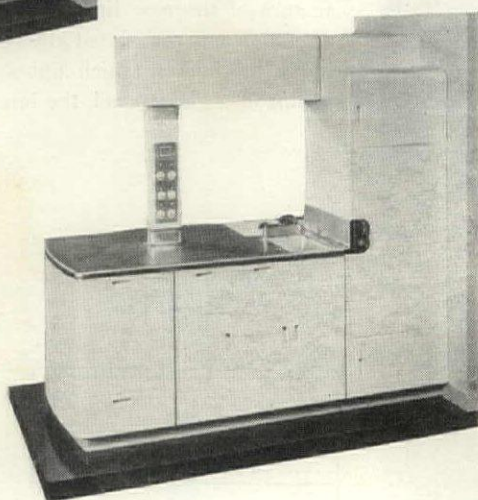
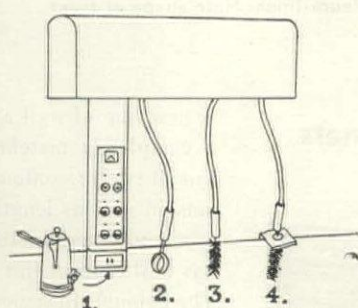
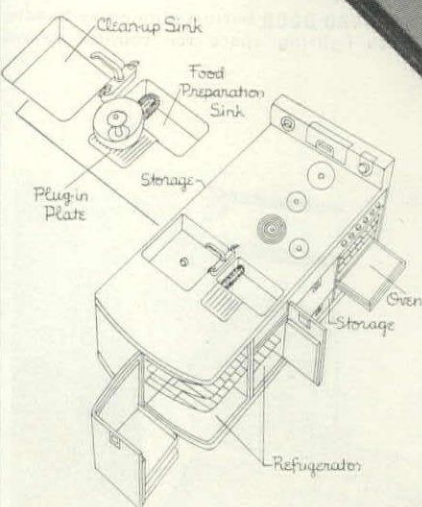
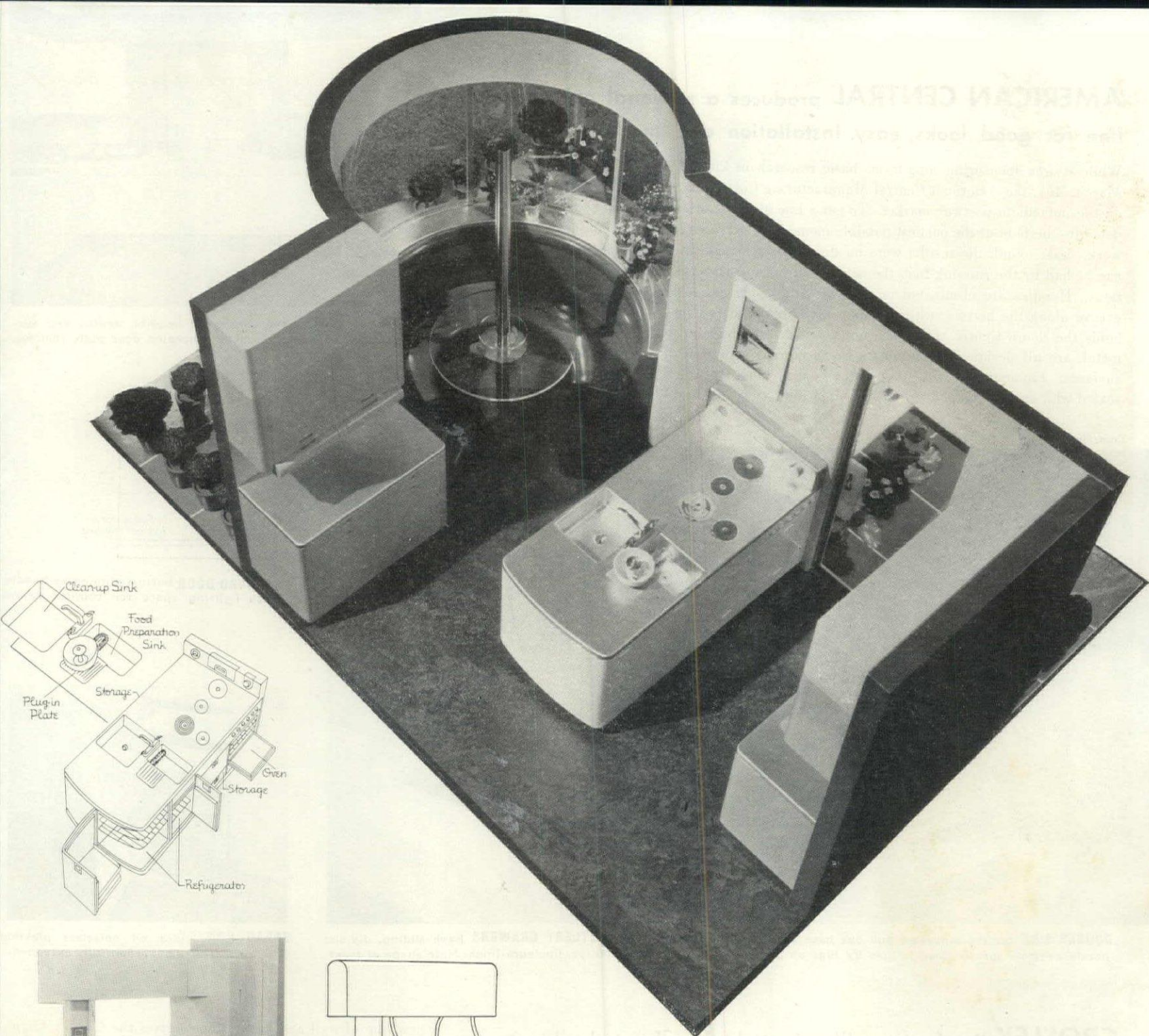
DISH DRYER behind sink, borrows its heat from refrigerator compressor below.

A "strip" kitchen in the strictest sense of the word, this 7 ft. model is designed by Guyon L. C. Earle and manufactured by Reynolds Metals Co. It differs from its pre-war ancestor (produced by Earle himself) largely in Reynolds' restyling—which involved extravagant black drawer pulls on the cabinets and an embossed "mural" on the oven door. But it differs from its competitors in several important respects—not least of which is the fact that it is made entirely of aluminum (except for the stainless steel counter and sink, and the molded plastic liner in the refrigerator.) This refrigerator is a feature of which Mr. Earle, who designed and patented it, is especially proud. L-shaped in silhouette, it consists of a cupboard at counter level and three drawers below. These drawers are designed to minimize heat leakage, close tightly by a special gravity-operated catch when within an inch of the opening. The bottom drawer alone will hold sixteen bottles and has a special meat compartment large enough to take a fifteen lb. turkey. Also included are a freezing unit with a 96 cube capacity, special compartments for frozen food and, according to the manufacturer, more accessible storage space than any 10 cu. ft. box on the market. The compressor is located beneath the counter alongside the drawers and its excess heat is used in dish-drying compartment above sink.

Earle's design makes use of the space immediately above and behind the counter. Since in terms of easy access and visibility, this is one of the most valuable storage areas in the kitchen, the Reynolds unit seems to have stolen the march on some of its contemporaries.

The Reynolds unit will ultimately be available in a smaller (5 ft. 6 in.) model and several larger sizes. For the present, however, production will be confined to one standard model. It will be completely manufactured by Reynolds for either gas or electricity. It will be sold, installed and serviced by local dealers.





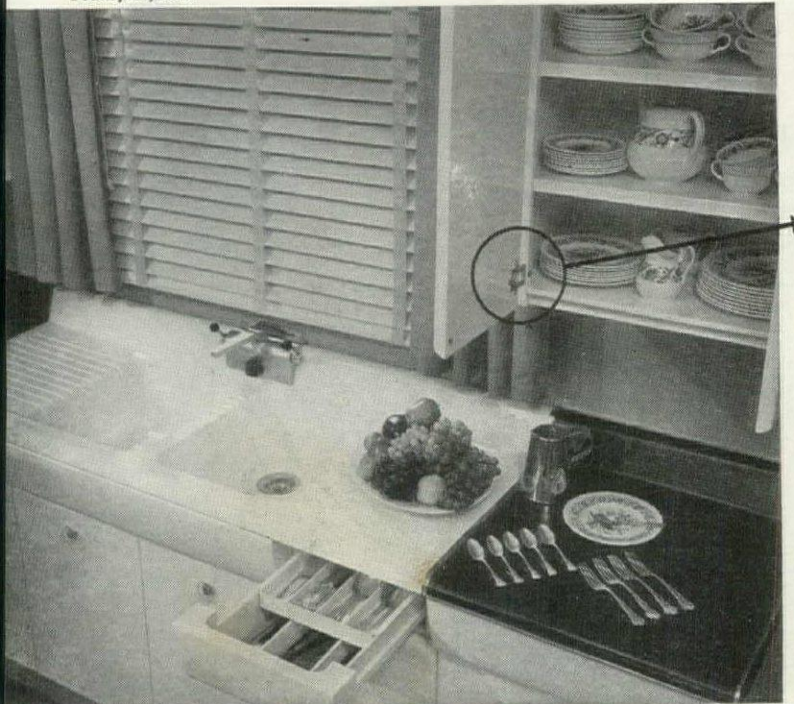
J. J. LITTLE designs this compact unit with powered accessories reminiscent of the dentist's chair

The fact that a kitchen is already on the market does not of course prove that it is per se a better design than one which is still on the drafting boards, awaiting a commercial sponsor. Thus, J. J. Little Associates of Toledo have designed this unit which, for all its gadgets, includes some quite valid contributions to the field. It is a "cast" unit, predicated on a sharp division of kitchen activities into two main operations—meal preparation and clean-up. Instead of providing facilities for these two operations in a strip, L- or U-shape, Little has folded them back-to-back to create a free-standing unit. As in many current designs, both range and refrigerator are broken down into specialized compartments. But Little has gone one step further and provided two sinks—a small one on the cooking side for washing vegetables and a larger one facing it for washing dishes. The range is at the outer end. Little also proposes that a flexible metal shaft like a dentist's be used as a single power-source for all mechanized operations (left, above)—vegetable scrubbing (4), glass washing (3), even stirring food while it is cooking (2). This shaft could be housed in an overhead track (which would also house lighting and stove ventilation, left below); or it could be housed on a spool below the counter and snap back when not in use. Items like percolators plug directly into outlets (1).

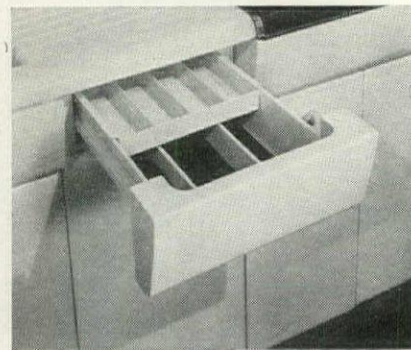
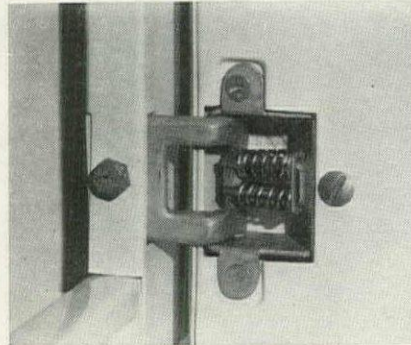
AMERICAN CENTRAL produces a sectional cabinet line for good looks, easy installation and moderate cost

While it was sponsoring long-term, basic research in kitchen design (FORUM, Feb., March, '46), the American Central Manufacturing Corp., was likewise keeping an eye on the immediate postwar market. To get a line of moderately priced sinks and cabinets into the field at the earliest possible moment, it set Raymond Loewy Associates to work. Last month the results were on display in Chicago. A "sectional" line which can be had by the running foot, the new cabinets are marked by many detailed innovations. Handles are eliminated on drawers and upper cabinet doors by a concealed groove along the bottom, while catches have been replaced by a special hinge which holds the doors tightly shut. The units, which are entirely of rust-proofed, enamel metal, are all designed to eliminate sharp corners and provide continuous working surfaces. Linoleum-covered steel counters are bolted together on bottom side and sealed with special compound to insure tight joint.

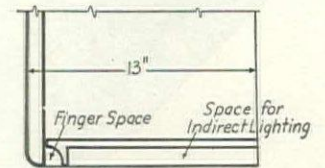
Transfilm, Inc.



DOUBLE SINK boasts concealed pull-out hose and spray. Button on nozzle controls spray. Soap is held by lugs on grooved drain board.



CUTLERY DRAWERS have sliding, divided trays, linoleum-lined. Note shape of front.

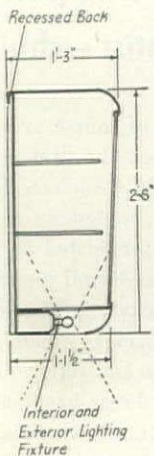


GROOVED DOOR bottom eliminates handle, gives lighting space for counter below.

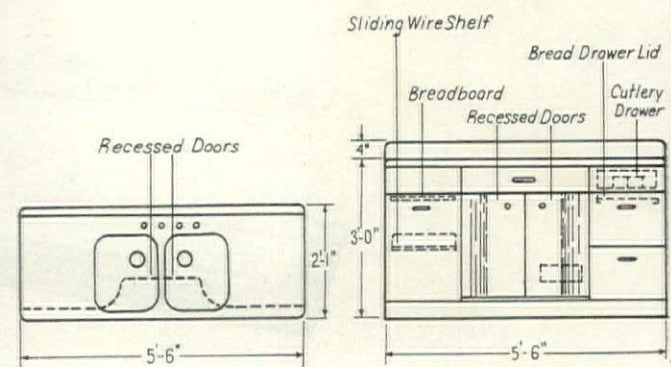


BREAD BOX slides on noiseless plastic bearings. It lifts out when fully extended.

CROSLEY line features illuminated, glass-fronted cabinets



A new line of wall and base cabinets gives the Crosley Corp. a completely matched kitchen. They constitute a standard line of twelve sectional units—six pairs of wall and base cabinets in various lengths and with various sinks. Unlike many sectional lines, however, each unit is finished on both ends (as well as front and top) so that it can be used independently. The cabinets incorporate many new features in design, including such items as a kneehole cabinet sink, specialized storage facilities for bread, silver, garbage can, etc. Most interesting feature of the new line is the wall cupboards. These have sloping fronts with fluted glass sliding doors and strip lighting along the bottom which lights both counters below and, by means of a glass panel, the interior of cupboards above.



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There's a RoWay for every Door way!

NEW KITCHENS

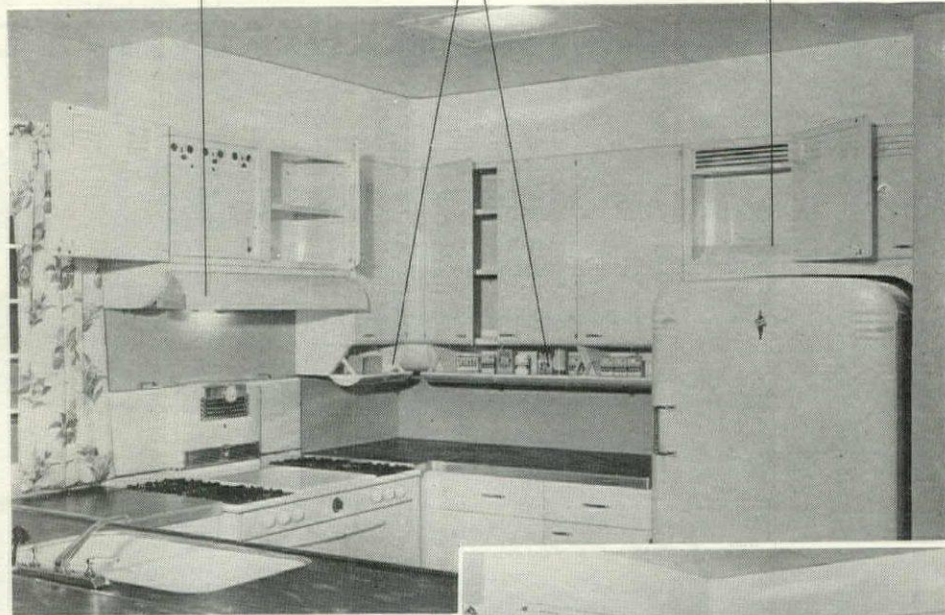
SERVEL, Inc., adds stove vent and warming cabinet to its line

New features of Servel's "Unified Gas Kitchen" include spice boxes along bottom of wall cabinets; a cereal storage and warming closet fitting over the refrigerator and using its waste heat; and a self-contained ventilation system for the stove. Most interesting of the three is the stove vent (below); designed by Servel's own engineers, it consists of an exhaust fan and removable filters incorporated into a metal cabinet which matches other cabinets in size and styling. When the range is in use, the quarter-round hood opens out and up to funnel gases from oven and range top into filters.

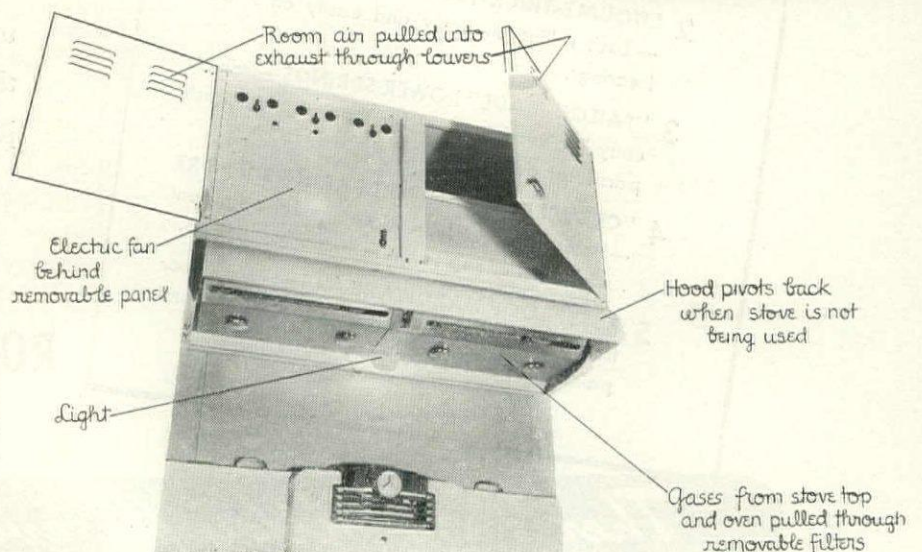
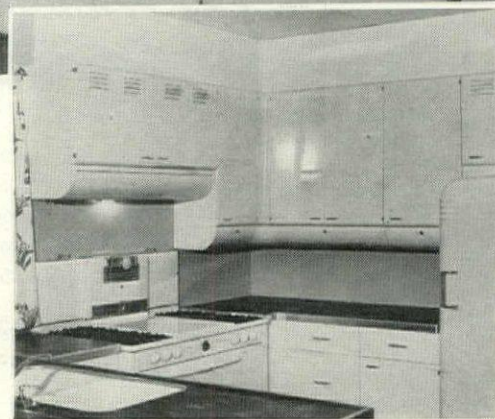
Range top and oven vented through hood

Spice shelves open



Lowered warming case fits over refrigerator




HAND STORAGE SPACE for much used items like spices is provided by a line of shallow cupboards with quarter-round drop-front doors. The stove vent (below) exhausts steam-, grease- and odor-laden gases from stove top and oven. When not in use, the rounded hood pivots back to match doors of spice cabinets.



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problem and to make competent installations. Through their suggestions to us we're able to turn out merchandise tailored to meet the most rigorous demands.

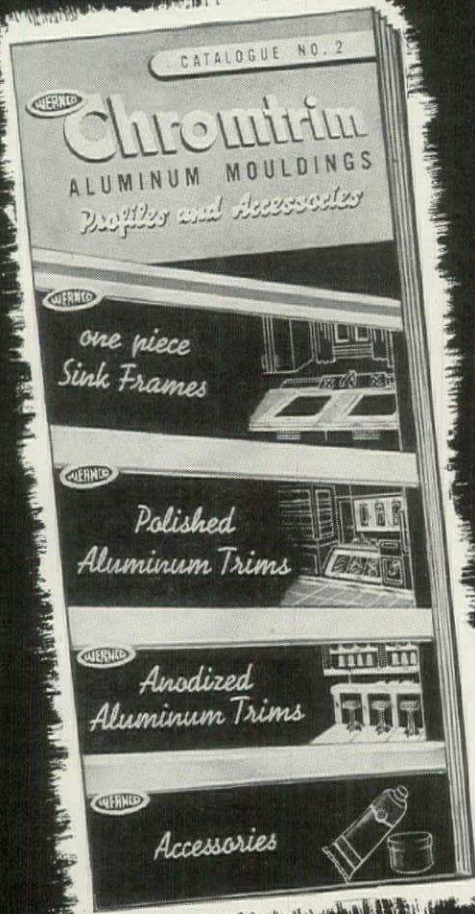
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U. S. farmers today face as extensive a job of building repair, reconstruction and replacement as the City of London. Age and neglect have exacted the price of a blitz. Where buildings are still sound or in need of minor repairs, they are often functionally out of date. House, barn, shed, crop-storage building and livestock housing belong largely and literally to horse and buggy times. Most of the farm buildings of Illinois—a prosperous state, for example—were built before the first year of this century. In cultural terms, the machine-tooled farm has made only a half-turn to the machine age. The tractor sits in a horse barn, a pleasant anachronism if the alleyways were not too small for tractor-driven manure spreaders and loaders and if the hayloft did not require unnecessary lifting and heavy supporting trusses. Yet such buildings represent a capital outlay that few farmers can afford to scrap. Inefficiency is thus often suffered, even in rich, black-earthed Iowa, as a practical matter. But inefficiency is not all.

The farm plant of the U. S. is in a state of emergency. Having declined in total national value since 1920, it fell \$3 billion between the last two censuses: from \$13 to \$10 billion, or 25 per cent in ten years—not to speak of a further precipitous drop presumed to have taken place in the war years. Wear and tear, represented in such cool figures, are outpacing the farmer's ability to reconstruct. The most ambitious programs of the President and Congress will cut down nature's depreciative lead, but they still leave the farmer runner-up. To him, however, the consideration of his building headaches for the first time as a national problem is an omen of better things to come.

The upper third of the farming population, producers of 84 per cent of all marketed farm products is in a good financial position and has already begun to repair and rebuild along the lines of expediency, with the labor, construction talent, materials and prefabricated units available. But in the White House, in Congress, in the agricultural colleges and among thoughtful farmers, the longer and larger view is regarded as a prerequisite to a good job of detailed reconstruction. This includes the building problems of the middle third, producers of 13 per cent of marketed farm products, and the lower third, producers of only 3 per cent. The latter of necessity are viewed from a social rather than a straight production and construction standpoint.

The national farm construction job lacks preeminently an architectural profession devoted to rural problems: architects are almost exclusively concerned with urban building. It has the benefit of the immense

good thought which has been given to its complexities by agriculturists in various regions. They more than anyone, living close to the farmer and articulating his needs, are in possession of wide knowledge of what might be done to house the farmer, his animals, tools and crops, with efficiency and rural beauty. The farm building program will depend in good measure upon their thoughts.

What some of these agricultural experts think has been conveyed to FORTUNE's Farm Column by letter and is here reprinted from that magazine's April issue. Like most scientists they begin with a question mark: what type of buildings and building materials? And their answer is, experiment. The world of industry and skilled labor lies all around the farms of the land; yet the best informed do not want to say at this time how the farmer should delve into these riches. They want first to test materials and methods in operation. And so they recommend first an immediate, rapid and large-scale program of research and experiment, an undisputedly proper action for federal and state governments and agricultural colleges, for the purpose of informing the farmer, the carpenter, the architect and the manufacturer of what farm needs really are and how they can be satisfied.

The major national problems on which they appear generally to agree are these:

▶That present structures must be repaired, remodeled or replaced with the object of translating modern changes in production methods into modern efficient building design and layout. The pick-up hay baler, for example, requires only a simple one-story shed rather than a big, general-purpose barn for storage.

▶The modern farm plant must have a convertible design. Permanent structures must have flexibility, to allow for still newer production methods. It would be folly to assume that the production methods of today are the last word and merely to set the farmer's buildings in another groove.

▶The farm home must have a design peculiar to rural life, including, for example, an efficient medium-sized kitchen layout, a utility room off the kitchen, and a general design that will accommodate, if not at present then at some future date, such utilities as electric light, heat, power, water supply, plumbing, ventilation and an interior bathroom. And since the farm wife, the children and old people spend most of their life in the house, it could well have more comfort and charm than most farm houses have today.

Regional opinion is varied, sometimes pungent.

(Continued on page 162)

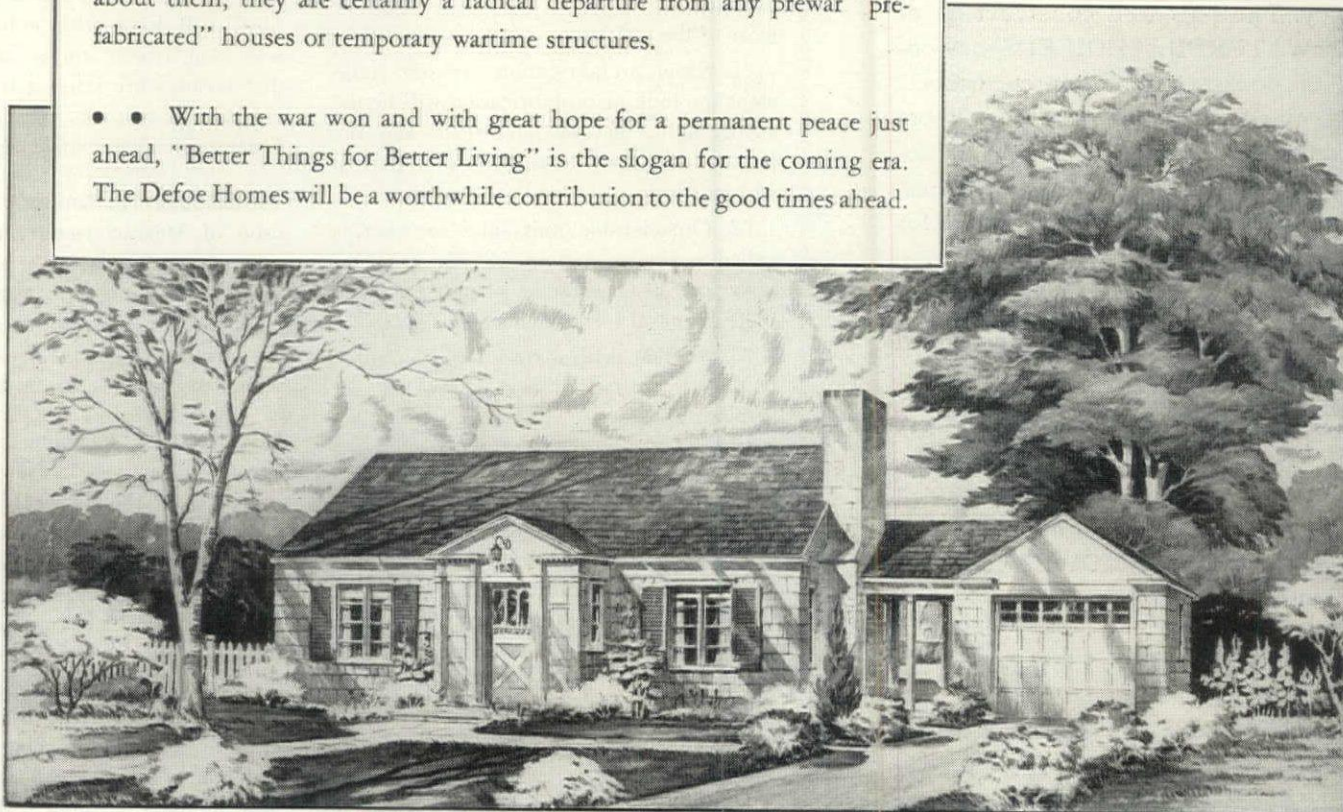
DEFOE HOMES CAN ANSWER YOUR HOUSING PROBLEM

THE Housing Division of the Defoe Shipbuilding Company was developed with a two-fold purpose—to maintain, as closely as possible, the wartime employment level upon which the people of the industrial area in which the plant is located had come to depend and to offer the public a new solution to America's housing problem.

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This attractive Cape Cod home can be erected by the Defoe system. Variations in floor plan and exterior treatment can be made to satisfy individual requirements. This, like all Defoe Homes, can be purchased with or without the breezeway and garage.



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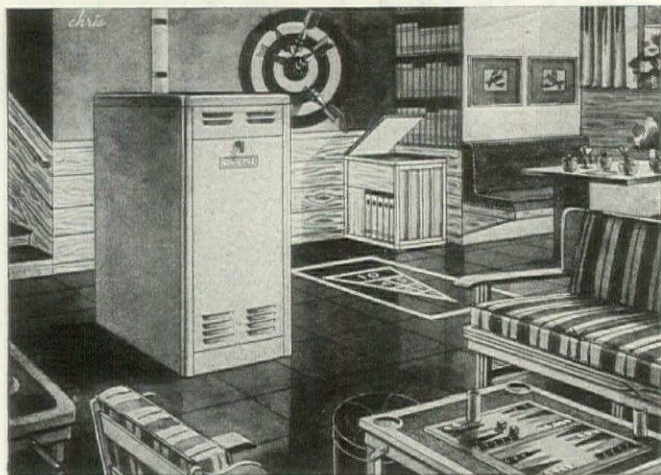
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EVEN ROOM TEMPERATURE THROUGHOUT THE HOUSE

ILLINOIS: "Principal problems of the north central region are conversion of existing barns to modern production, more adequate grain and corn storage, hay and fodder storage, shelters for machinery and equipment, and adequate poultry housing. Specifically, we find that about 25 per cent of existing farm buildings are probably not worth repairing. Only 30 to 40 per cent of the structural parts are in good condition. The average present age of buildings in Illinois: houses forty-three years, general-purpose barns forty, dairy barns thirty-six, other groups from twenty to thirty-five years..."

"Probably less than a fourth of the total number of farm buildings will be replaced with new construction; the major job will be repair or conversion of existing structures."

"With the largest proportion of tenant-operated farms, the responsibility for building improvement lies with the owner, who must give most attention to structures essential to the operation of the farm..."

"We have no reason to doubt that the Producer's Council estimate of \$1.3 billion a year spent on U. S. farm building for ten years will no more than meet the need."

"The efficient economical structures on the farm will come as the result of one or more of the following:

"1. Some prefabrication. In our judgment the bulk of prefabrication will be the small, light, movable structures and the parts or sections of trusses, rafters, panels, and millwork."

"2. Considerable unit sales or what is called packaged selling wherein the supplier and his contractor submit the complete proposal for a finished job."

"3. A great deal of traditional building, on the site, with small service crews and the farmer's assistance..."

—Deane G. Carter, Department of Agricultural Engineering, University of Illinois.

MINNESOTA: "The professional person who is closest to the farmer and to the situation in general is the rural carpenter or builder. He is on the job in 90 per cent of the cases where the building is constructed, and is in the best strategic position to furnish advice. The result is a very ordinary and in most cases inadequate structure. A better-trained builder is needed."

If the farmer could buy a barn or a granary made to definite specifications from a catalogue, much as he buys a tractor or a hay loader, I believe he could exercise pretty fair judgment in selecting an appropriate building to meet his needs..."

—A. J. Schwantes, Agricultural Engineering Division, Department of Agriculture, University of Minnesota.

SOUTH DAKOTA: "Two outstanding problems for this region are (1) the use of low-cost open sheds and windbreaks for the protection of range cattle and sheep in the western half of the state (the range country) during the cold stormy weather (the majority of ranchers provide no artificial shelter for livestock); and (2) more consideration to the design of dwelling houses to fit in with the landscape and terrain..."

—H. H. De Long, Department of Agricultural Engineering, South Dakota State College.

WYOMING: "From the Missouri River west to the Sierras it is usual to see expensive farm machinery standing, rusting, and weathering in the fields where it was last used. It is true that housing for this machinery is expensive, but the absence of it costs the farmers of the region thousands of dollars."

—J. A. Hill, Dean and Director, College of Agriculture, University of Wyoming.

UTAH: "Many of our buildings have not had any paint or repairs since they were built."

—Spencer H. Daines, Department of Agricultural Engineering, Utah State Agricultural College.

IDAHO: "The special problem of our region is to meet the competition that farm structures will have with automobiles, radio, television, frozen storage, and other things that farmers are interested in buying..."

—Hobart Beresford, Department of Agricultural Engineering, University of Idaho.

MASSACHUSETTS: Professor Miner J. Markuson of Massachusetts State College observes that architecture and engineering have been applied to rural construction chiefly in his state, elsewhere hardly at all; the farm world has the need and the wherewithal to use these professions extensively.

NEW JERSEY: "Farming is by and large a specialized activity in New Jersey as compared with the general farming which characterizes many of the other areas. We are, therefore, interested in larger poultry houses, milking barns specifically planned for a dairy herd, packing and storage structures in connection with fruit and vegetable production. We believe that there is great room for improvement in structural design in all of these classes. One of the problems which must be overcome is the tendency for local builders to follow traditional patterns of construction and traditional materials. It will not be easy to win them..."

—W. C. Krueger, Extension Agricultural Engineer, New Jersey State College of Agriculture.

SOUTH CAROLINA: "The special problems in South Carolina are (1) the farm residence (Continued on page 164)

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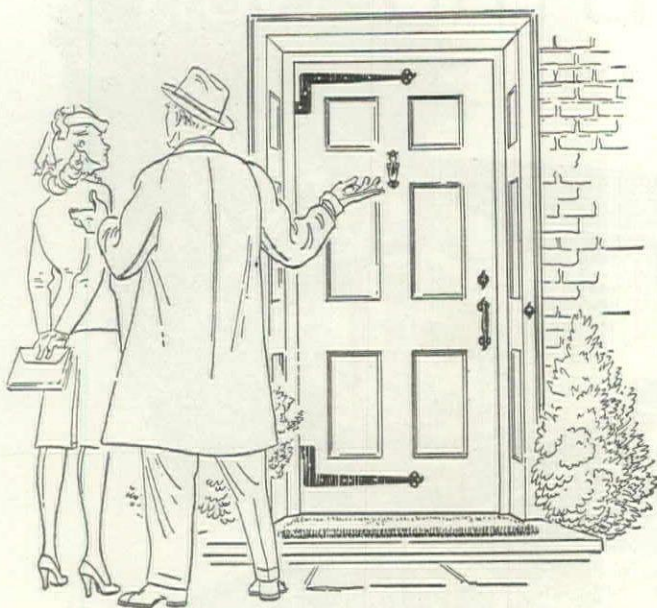
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and (2) adequate buildings for storing feed, particularly corn and small grain. This has not been a major grain-producing region, and our farm structures are not suitable for storing large quantities of grain. In addition we have an insect problem that is much more serious than in other parts of the U. S. . . ."

—George B. Nutt, Department of Agricultural Engineering, Clemson Agricultural College.

ALABAMA: "In this region, agriculture is going through a decided change. The farmers are shifting from a cotton economy to diversified farming in which livestock plays a large part. Under the old system, service buildings were of minor importance. Now we must design service buildings for this new type of farming as it would not be economical to use the same type of service buildings which are used in the North . . ."

—J. H. Neal, Department of Agricultural Engineering, Alabama Polytechnic Institute.

VIRGINIA: "It has been estimated that Virginia farmers alone will spend at least \$200 million on farm buildings in the ten-year postwar period . . ."

—Charles E. Seitz, Extension Agricultural Engineer, Virginia Polytechnic Institute.

WEST VIRGINIA: "Our particular regional problems are better housing conditions for about 75 per cent of our farms, including architectural design, and better sites for both houses and barns, better water supply and sanitation. West Virginia has a wonderful opportunity to locate farm buildings on more desirable sites . . ."

—C. R. Orton, Dean and Director, West Virginia University.

TEXAS: "We feel that the improvement of insulation and ventilation, probably in connection with a newly developed combination cooling-and-heating air system, would be of great help to the comfort not only of the rural people but also those living in villages and small towns. In this connection, we feel that the orientation of the house to get the advantages of the summer breezes and the winter sunlight should be considered in the designing and arranging

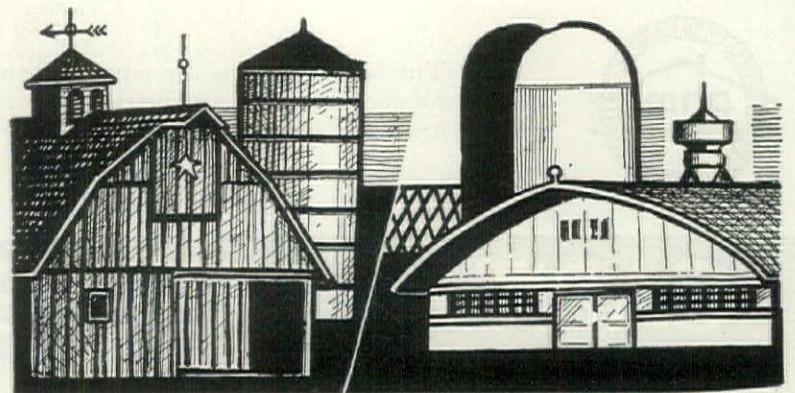
of the farm home, as well as buildings for the livestock. Other special problems of this region are dampness, which causes mildew of paints, and, in the south, termites. . . ."

—H. P. Smith, Division of Agricultural Engineering, Texas Agricultural Experiment Station

OKLAHOMA: "The idea that a farm woman with no training at all, little concept of modern gadgets as applied to daily routine, can direct the building of an improved farm dwelling is trusting to lots of luck; yet that is the way Oklahoma farm homes come into being when they come . . . I am sure convertibility is a large factor in utility; we must be able by simple means to make a shed serve as stable, cotton storage, warehouse, and workshop. This means discarding the hammer and taking up the speed wrench; using bolts and screws in the place of nails and staples. Material must not be destroyed or misshapen with saw and plane, but set in place with the precision of a die-cast bearing, readily demountable again. The old-fashioned scaffolding must be replaced with the hoist in structural work. For the [Oklahoma] tenant there is only one possible program—get what he can and move on. The time may come when enterprising tenants will prefer to have portable houses and take these along on the trek from farm to farm just as they do their mules and farm tools. Usually the tenant sits in his car during a rain because the car leaks less than the roof."

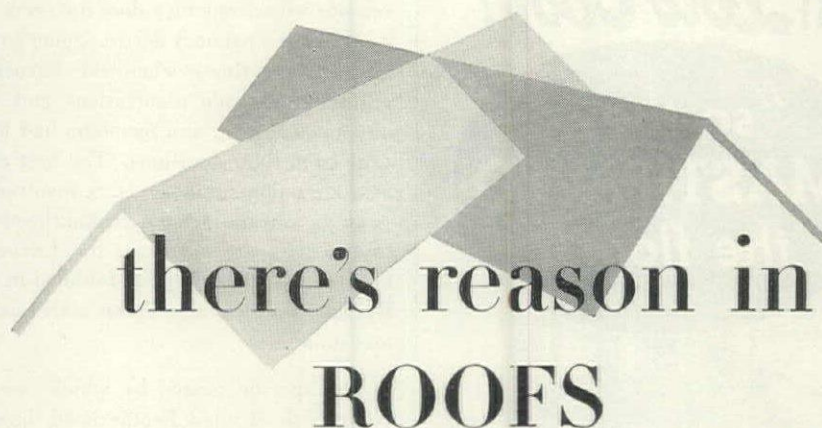
—Leslie E. Hazen, Department of Agricultural Engineering, Oklahoma Agricultural and Mechanical College.

From coast to coast the experts agree that the farm home should have modern design adapted to rural life, including, for example, an efficient medium-sized kitchen layout, a utility room off the kitchen, and a general plan that will accommodate, if not at present at some future date, such utilities as electric light, heat, power, water supply, plumbing, ventilation, and an interior bathroom. Since the farm wife, the children, and the old people spend most of their time in the farmhouse, it should be designed for greater comfort and charm.



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As part of its 1946 editorial program, House & Garden reports each month to its readers on some phase of home-building. April House & Garden discusses roofs — flat or peaked, salt box or lean-to... shows the time and place for shingle, tile, asbestos-cement, metal or built-up materials.

A survey shows that 45 out of 100 House & Garden families plan to build or buy a house; 30 out of 100 have remodeling plans.

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BOSS CARPENTER

(Continued from page 111)

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Federation of Labor's fight for the eight-hour day. Under politically wise President William D. Huber of New York, who held office from 1899 to 1913, the Brotherhood hammered out a mechanism of control from the top that remains to this day. There are reasons why democracy does not seem to be a carpenter's primary desire. Some go back to medieval times when the carpenters' guilds were trade associations and labor unions combined, and members had no appeal from their decisions. The first efforts at trade unionism in the U. S. involved carpenters, and the present Brotherhood likes to trace its descent from the Carpenters Company of Philadelphia, founded in 1724. By 1800 there were a dozen active carpenters' unions.

The specific means by which one man controls the United Brotherhood, however, emerged only after the rise of the business agent. The explosion of the Haymarket bomb was the signal for a widespread anti-labor campaign. In the ensuing struggles the carpenters found it necessary to empower the walking delegate (as the business agent was then called) to call a strike without consulting the membership in order to time strike action most effectively. This power gave business agents an importance on which many have capitalized—hence the rackets that have afflicted building-trades unions, of which the Brotherhood has had its share. Moreover, business agents soon realized that their power depended on keeping their jobs, and union politics became their primary concern. Business agents usually know of job opportunities before ordinary union members, and can dispense such valuable information to men who will vote as the business agent wants. And since business agents are supervised by the international organizers, and the organizers are appointed by the international president, a chain of command is established by which delegates to the convention can be hand-picked and the incumbent officers sure of re-election. The system has worked for Bill Hutcheson for more than thirty years.

Hutcheson became a business agent for his local in Saginaw four years after he became a union member. He now says he did not want the job, and refused it until he got definite assurances of at least a six-month tenure and \$18 a week plus \$1.50 a day for expenses. His physical size and his farm-bred physical strength were very useful to him in his new activities. Stories of his hand-to-hand encounters with three or more scabs at a time are still told in Saginaw. But he was much more than a bruiser. He began to learn that men can be bought

as well as bullied—and that they can also be broken by methods other than violence. Indeed, he learned so fast that he was sent as a delegate to the 1910 convention. Three years later he was elected second vice president of the Brotherhood—at a convention whose presidential votes were fraudulently counted. In those days, he says, he slept only when he had nothing else to do.

In two years Hutcheson was President of the Brotherhood—the result, as even he admits, of two kinds of luck. Soon after Hutcheson's election as second vice president, Arthur Quinn (the first vice president) announced that New Jersey politicians and the possibilities of labor banking in his home town of Perth Amboy were engaging more and more of his time and that since the first vice president was obliged by the constitution to live in Indianapolis he would be very glad indeed to switch vice presidencies with Brother Hutcheson, which he did in 1913. Two years later President James Kirby, dining in Washington, at some bad lobster, developed what was thought to be ptomaine poisoning, and died. It was later said, from a ruptured appendix. Big Bill Hutcheson succeeded, at the age of forty-one.

THE DICTATOR

He had not been in office more than a few months when he arbitrarily suspended sixty-one New York City locals. It was a spectacular announcement to the entire Brotherhood that he was, and intended to be, boss. The Brotherhood's constitution gives its president the power to issue and revoke charters, to suspend locals and district councils and all union officers, to seize a local's books and papers, to decide all points of law and settle all grievances (exclusive of death and disability claims) and to appoint all committees and organizers.

The New York carpenters had won, without a strike, a wage increase of 50 cents a day for 14,000 of their 17,000 members. After several months of negotiation to include the other 3,000 it was decided to strike. Hutcheson forbade it—but gave no reason. The carpenters struck. Hutcheson himself then negotiated independently with the employers and came up with a contract that temporarily made ineffective the 50-cent increase already granted. Hutcheson today insists that the 50-cent increase was retained, though it was in the form of two 25-cent increases spaced over several months. He also says that his primary purpose was to establish a uniform wage scale in all five New York City boroughs and thus get rid of the levies of Manhattan.

(Continued on page 168)

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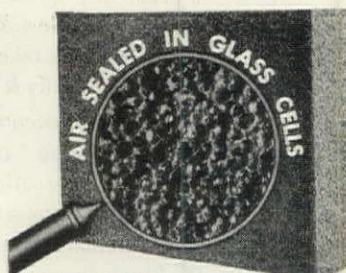
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OF PREFABRICATED
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moderately priced,
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Office and Factory
LAUREL, MISSISSIPPI

locals on Brooklyn brothers who came to Manhattan to get the higher scale.

Hutcheson was not very successful in explaining things to the New York carpenters. They voted 11,745 to 119 against the contract he had made in their name, and refused to work. He himself says his life was threatened on several occasions. The suspended unions appealed to the courts for an injunction restraining Hutcheson from expelling them, and ultimately won. However, Hutcheson did not take them back as they were—he consolidated them into forty fewer units.

The aftermath is one of Hutcheson's most persistent memories. Of the few New York locals he did not suspend one was run by Robert P. Brindell, a Providence, Rhode Island, drugstore clerk who amassed \$2 million in various kinds of rackets involving building contractors and building unions. After the 1920 Lockwood investigation into the high cost of living in New York, he went to Sing Sing. Samuel Untermeyer, one of the investigators, communicated some of the facts to the American Federation of Labor in a telegram that contained this sentence: "The Federation will be exceptionally fortunate if the Carpenters' Union can rid itself of Brindell's crony, Hutcheson, who has been an evil influence."

Although Hutcheson never exposed himself so completely again, seldom a year goes by but some local rebels at what he does. In 1924 the Chicago locals refused to accept a contract Hutcheson made over their heads, which they regarded as equivalent to establishing open-shop conditions. In 1926 he expelled a Communist-led local in New York, and later had the ritual of the Brotherhood changed to exclude Communists. When it was pointed out that the union's constitution guaranteed religious and political liberty, Hutcheson ruled that communism was not a political belief but a subversive farrago concocted for the benefit of Russian foreign policy. Frank Duffy, the venerable secretary of the Brotherhood (he is now eighty-four and has been general secretary for forty-five years), read to the convention excerpts from the *Daily Worker* in a speech that made it plain that the expelled New Yorkers had intended, if they could, to take the union away from Hutcheson, Duffy & Co.

In the late twenties the Baltimore locals were bickering among themselves and asked the international office to appoint a representative to settle the underlying conflicts. Hutcheson sent a man named Henry W. Blumenberg, who reigned in Baltimore until 1943. When the locals finally broke his stranglehold, a quarter-million dollars

(Continued on page 170)

HOUSES AT 50¢ A LB.

• This isn't merely the grimmes housing crisis in history; it's the signal for one of the great industrial adventures of all time. Not since the Tower of Babel has there been a building project of such magnificent aspirations. Because of it, FORTUNE has devoted its entire April issue to the single subject of Housing.

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• Throughout the nation, there are Fullers at work in every industry. Not all, not even most, are men of science. They are simply men and women who recognize in this age the chance for an industrialized civilization that is truly civilized.

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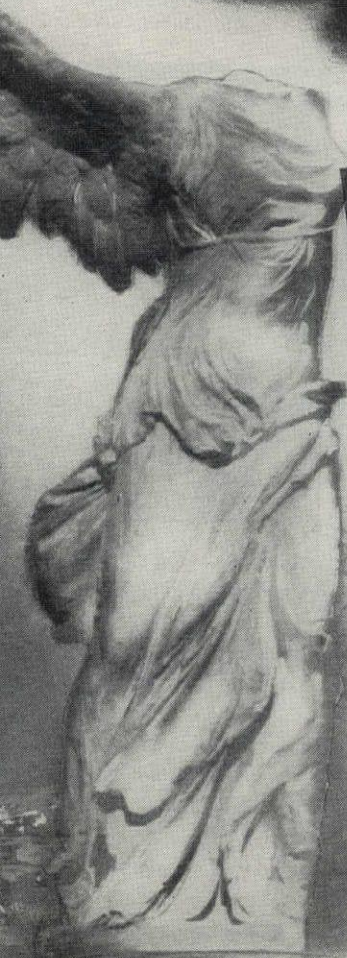
* See "Fuller's House," p. 167, FORTUNE, April, 1946

FORTUNE

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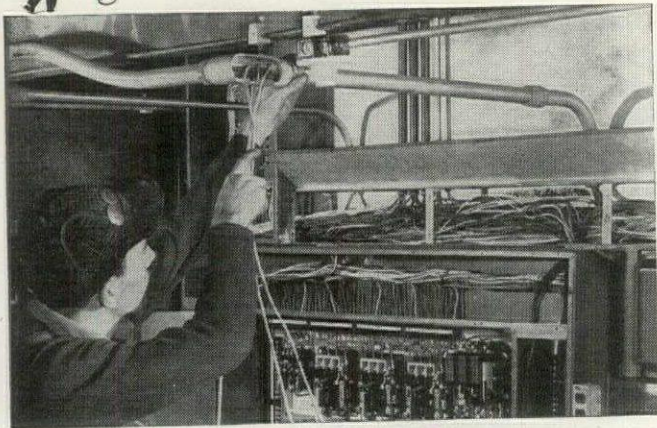
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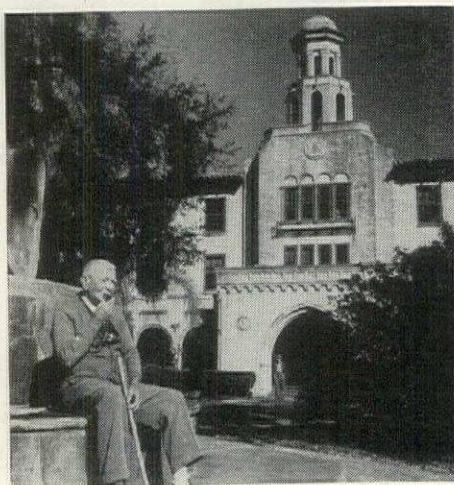
WAREHOUSES* AND SALES OFFICES: *Detroit, Mich.; *Newark, N.J.; Philadelphia, Pa.; Cleveland, Ohio; *Chicago, Ill.; *St. Louis, Mo.; *Kansas City, Mo.; *Atlanta, Ga.; Dallas, Texas; San Francisco, Calif.; *Los Angeles, Calif.; Seattle, Wash.; Washington, D.C.

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and the financial records were missing. The locals filed suit for an accounting against President Hutcheson and the Brotherhood (whose representative Blumenberg had been), and settled when the international treasury refunded \$244,000. Hutcheson has tried to recover something from Blumenberg, but there is a wing in Baltimore that insists Hutcheson is not pressing legal proceedings against his appointee with sufficient zeal, and they want to know why.

WHERE OLD CARPENTERS CAN DIE

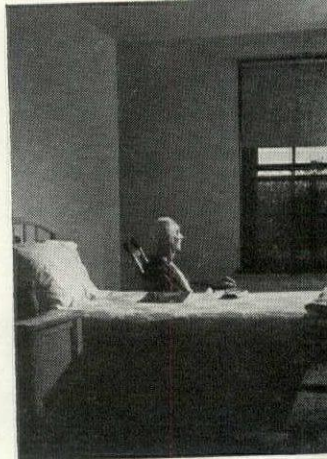
Nothing Hutcheson has ever done has created so much persistent criticism within the Brotherhood as the National Home of the United Brotherhood of Carpenters and Joiners of America at Lakeland, Florida. There, after thirty years of consecutive union membership, and after he has become sixty-five, a single carpenter can live free of all expense. He need pay nothing to enter and will get his food, lodging, clothing and tobacco for the rest of his life. Since the home opened in 1928 there have been 858 occupants, whose stay, before death comes, averages a little better than six years. Half the Brotherhood thinks the home a grandiose mistake and a monument to Big Bill's vanity. Half thinks it has been worth all the time and money it cost. Whichever faction may be right, it is certain that the best energies of the Brotherhood for a decade went into the creation of the home.



The home is a three-story, stucco-concrete edifice of imitation Spanish architecture built on the shore of Lake Gibson in such a way that it resembles a resort hotel. Its patios are filled with azaleas and hibiscus, its lawns are lined with palm trees, and the old carpenters sitting on the front porch can look into as nice a grove of pine, oak, and cypress as has ever been laden with Spanish moss. The sun in winter is warm and comforting; in summer, so the well-disposed occupants of the home say, the heat is not too bad, though the chiggers, gnats, and mosquitoes are. It is impossible to see the home in the distance, glowing in the

winter sunshine, without a certain glow for Big Bill Hutcheson's pride.

Inside, there is a dark and dreary furnished, at a cost of \$30,000, for the locals of Chicago. There, sitting in darkness in ones and twos, are the population of the home, even on the best days. All old people have their own and crochets: aged carpenters suffer being silent and alone. But they are never completely alone, for each room in the home houses two men, and



intendant's most abiding problem is finding congenial roommates. There are twice a week, a pool and card tables, an eighteen-hole golf course. True, most of the aged carpenters play golf, but the course is open to the citizens of Lakeland, the old boys are often themselves watching the players, losing balls, and selling them to the golfers.

The golf course is named for Big Bill Hutcheson, and there have been many members who alleged that he built it for his own amusement and advertisement. Hutcheson says it was the cheapest way to escape such a large area as the home surrounding the home. He also insists that upkeep is no more than the cost of the would have to be spent keeping the bushes and scrub pine from running rampant on land that had been cleared.

The Brotherhood assessed the cost of the home at \$600,000, of which \$680,000 was for the 1,972 acres of land, bought during the Florida boom of the twenties. At the prices the land is worth today, it is worth three times, the original cost. The fifty acres are planted with citrus trees which now produce \$450,000 a year—which is just about what it takes to run the home. In the Brotherhood is complaint about such an expense, but there are only 248 aged carpenters in the home now, and operating expenses

(Continued on page 171)

Why ex-corporal Jones wants more doors



Ex-corporal Jones spent many a long month in an open barracks with dozens of other men. His wife "doubled up" with the in-laws for the duration. No wonder they both want more interior doors in their new home—more ways to guard privacy and comfort!

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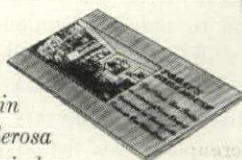
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000 figures out to around \$1,800 per man. Old carpenters who do not go to the home draw a pension of only \$15 a month. And now, with social security and old-age pensions, the home seems more of an anachronism than an advantage. However, it is certainly an advertisement for the Brotherhood and still an inspiration to dues payers. It is also a pleasant place for the executive board to hold its winter meetings. Recently, the conventions of the Brotherhood have also been held there.

BIG BILL VERSUS JOHN L.

Throughout the early thirties, when John L. Lewis was urging the A. F. of L. to undertake the organization of workers in the great mass-production industries of steel, auto, and rubber, Hutcheson assumed command of the old guard within the A. F. of L. opposing Lewis. Although Hutcheson's own membership had been decimated by the depression (it was down to around 150,000), he did not hesitate to devote his energies and his union's money to combating industrial unionism. He declared that unionization on an industrial, instead of a craft, basis was "a wild dream." He insisted that industrial unions would mean the end of the Brotherhood and he threatened, after the A. F. of L. had suspended the ten unions that originally formed the C.I.O., to take his Brotherhood out of the A. F. of L. unless the C.I.O. unions were expelled.

Lewis had always been, by virtue of the size and cohesion of his United Mine Workers, the strongest man in the A. F. of L., and for several years had had hopes that the implacable opposition of the leaders of the building-trades unions could be battered down. At the 1934 convention the answer had not been an unequivocal no, but at the 1935 convention the old guard, led by Hutcheson, succeeded in voting down a proposal that the A. F. of L. organize steel and auto vertically. The Lewis forces did not capitulate even then, and when one of them got the floor and continued the debate, Hutcheson rose and reminded Bill Green, who was presiding, that the brother was out of order.

John Lewis was furious and exclaimed that Hutcheson's parliamentary maneuver was pretty "small potatoes." Hutcheson replied that he had been reared on small potatoes and that that was why "I am so small." Lewis shouted that Hutcheson's opposition to industrial unions was "pretty small stuff." Hutcheson yelled: "We could have made you small and kept you off the executive council, you crazy bastard."

Whereupon Lewis' fist landed on Hutcheson's jaw. Big Bill took a swing at Lewis
 (Continued on page 174)

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of

THE

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CRISIS

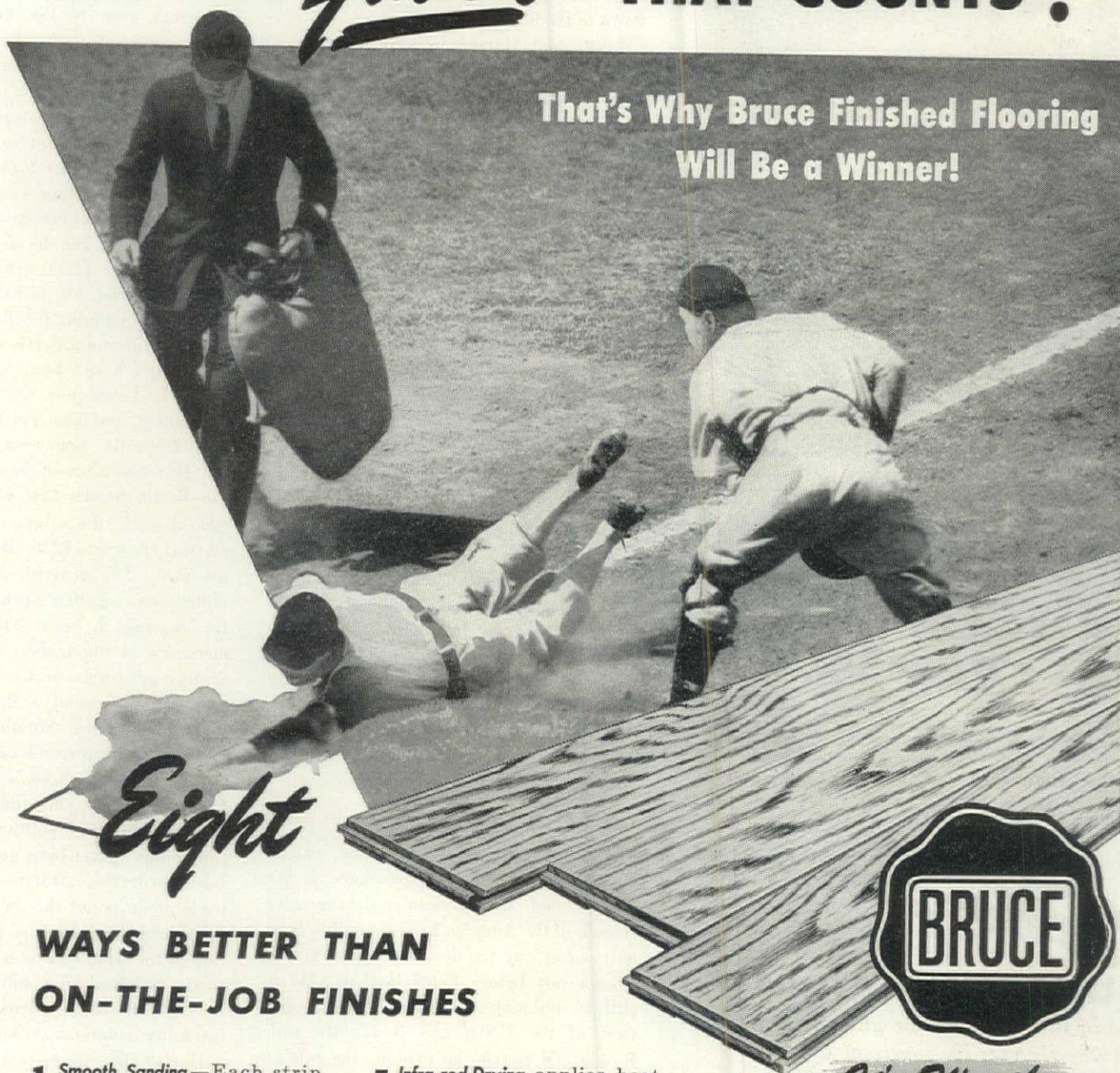
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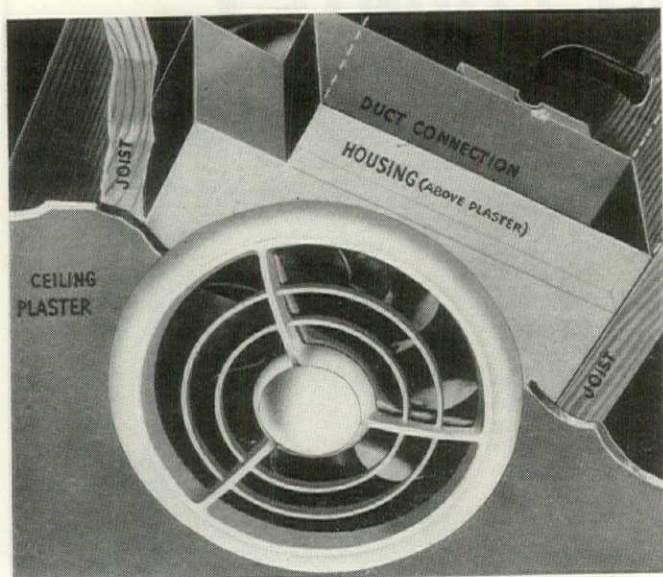
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and went sprawling across a table and down to the floor.

Lewis and Hutcheson have long since been reconciled, and Hutcheson promoted John L.'s recent return to the A. F. of L. Big Bill now says with a smile that he guesses he goaded John too much and that "I've asked John why he ever started the C.I.O. He told me that he did it because he was tired of the coal operators telling him, whenever he tried to raise the wages of his miners, that he was asking for more than the workers in steel, auto, and rubber were getting. I told John that if he had only come to me and explained it that way, things would have been different. I asked him why he hadn't, and he said he wished he had, that it was just one of those things he forgot."

There are many indications that Hutcheson and Lewis intend to get as many C.I.O. industrial unions into the A. F. of L. as they can. Hutcheson says that so far as the carpenters are concerned, there is no objection to the auto workers, for example, coming in "if only they will get to the point where they will have sense enough to let us [*i.e.*, the Brotherhood] put up any new plant the auto industry constructs." Hutcheson says that the more ticklish problem of which union shall have jurisdiction over maintenance carpenters can be adjudicated later.

THE SATISFIED MAN

The war, to Big Bill Hutcheson, chiefly meant an enormous expansion of the Brotherhood. He had been on the executive council of the America First Committee and only came out for lend-lease and aid to Russia just before Pearl Harbor. He is still an isolationist at heart, takes a dim view of the UNO, and is rabidly anti-Russia. Of course, he exploits the role of the Brotherhood in the war effort, and points with professional pride to all the plants, camps, and cantonments his members erected, to the 70,000 carpenters who were in the services, and to the fact that the Brotherhood will admit veterans without an initiation fee.

He thinks the present membership of 722,000 will not diminish—certainly not for some years. For one thing, 100,000 of it represents the loggers and sawmill workers of the Northwest whom he succeeded in getting away from the C.I.O. For another, there will be plenty of work in the immediate future for even the wartime newcomers in the building trades. Hutcheson is even willing to concede that if permanent government projects (no leaf-raking) are spaced right, work can be plentiful for his carpenters indefinitely.

The Brotherhood's international treasury now takes in about \$5 million a year, chiefly

from per-capita dues of 75 cents—of which 35 cents goes to the home-and-pension fund, 5 cents to subsidizing the Brotherhood's magazine, *The Carpenter*, and the remaining 35 cents to the costs of the international office and the death and disability benefits (these amount to about \$600,000 a year, and are in the form of burial donations of up to \$300 for a carpenter and \$75 for his wife, and total-disability payments of \$400 top). The locals collect dues of from \$1.50 to \$2.50 a month. Initiation fees range from \$10 to \$50.

Hutcheson thinks the Brotherhood is "cheaply run union." His salary is \$10,400 a year and hasn't been raised since 1922 (John L. Lewis gets \$25,000 a year from the miners, and Dan Tobin gets \$30,000 a year from the teamsters.) Recently, *bona fide*, Hutcheson raised the salary of his son, the Brotherhood's first vice president, to \$250 a week, the salary of the other four general officers to \$225. But he didn't raise his own. The general officers, including Hutcheson, together spend about \$25,000 for expenses a year. The district board members, of whom there are seven, representing geographical divisions of the U. S. and Canada, spend a little more. They make \$150 a week. Monthly financial statements are sent to each local.

Although Hutcheson's enemies in the C.I.O. delight in ridiculing what they call his economic and political illiteracy, and say he has "never been guilty of backing labor program," Hutcheson does have a trade union policy that he claims has stood the test of time. He says the primary function of the Brotherhood is to safeguard the wages and working conditions of its members. The home, pensions, death-and-disability donations are secondary.

During his thirty-year presidency the average daily wage for an eight-hour day has risen from a little under \$5 to a little over \$12. (Big Bill acknowledges that this was not due to his efforts alone.) The Brotherhood has also been more advanced in its attitude toward apprentices than most other craft unions. Its constitution provides that there can be one apprentice for every two journeymen. But there is one item in the official platform of the Brotherhood that Big Bill would like to forget. It appears on the inside back cover of the booklet containing the Brotherhood's constitution and espouses public ownership of all utilities. When asked about it Hutcheson hastily says "It isn't in the constitution."

A DYNASTY?

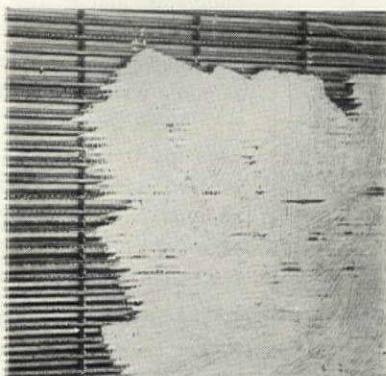
At seventy-two, Big Bill Hutcheson recognizes that there is danger that he may

(Continued on page 176)

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• Below: Note how the back surface of plaster on Milcor Metal Lath becomes permanently "clamped" to the steel.



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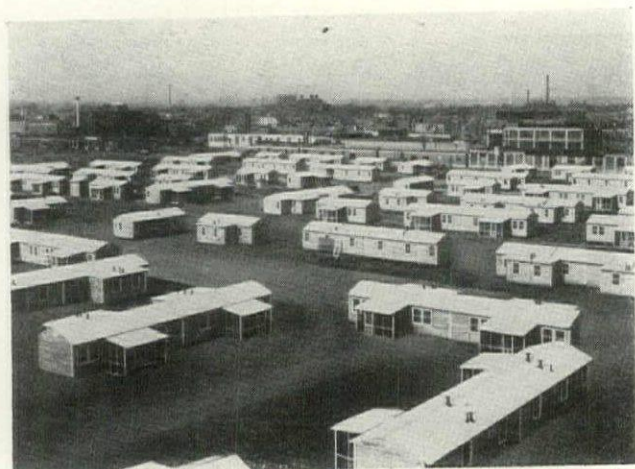
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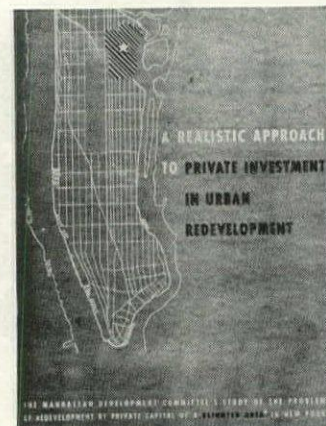
CITY LUMBER Co.
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mellowing. The idea is novel to him, but not altogether distasteful. As he winters in Florida, and summers in Wisconsin, and enjoys the Columbia Club (a kind of Union League) when in Indianapolis, the problems of the future do not strike him as anything but repetitions of the long ago.

He spends very little time in his corner office on the fourth floor of the Brotherhood's yellow-brick building in Indianapolis. Maurice, the venerable Frank Duffy, and the second vice president, John R. Stevenson, handle almost all of the pressing problems that come to the International's office, which consist chiefly of jurisdictional disputes and what, in the Brotherhood, are called "trade movements," i.e., requests of locals and district councils for the International's approval of attempts to change wage rates or working conditions.

Four times a year he attends the executive council meetings of the A. F. of L., which always take him to four different parts of the country. There are quarterly meetings of his executive board, usually at the home in Florida. He does some speech making, and in other years he was active politically on behalf of the Republican Party. He was chairman of Hoover's and Landon's labor committees during their campaigns, and for a brief moment in 1944 was mentioned as a possible vice presidential nominee. But he became disgusted with the way National Chairman Brownell ran things and he now doubts that he will be active in a national campaign again. "Who have the Republicans got as a candidate?" he asks with scarcely concealed disgust. "What have they got to say? What have they ever done for labor?"

Hutcheson's present benignity derives from his satisfaction over the fact that Maurice is at hand to keep things running as they always have. He says no one in the union has a wider acquaintance than Maurice and that if he can't run the Brotherhood "I don't know who can." And it must be admitted that the docile personnel of the general executive board does not appear to furnish a rival for Maurice. Moreover, Hutcheson says Maurice is handling problems that he, Big Bill, knows nothing about, notably prefabrication. On prefabrication Maurice is as sound as his father: the Brotherhood will put up any prefabricated house that its members have made, but not a prefabricated house made by C.I.O. or nonunion labor. Maurice also seems to take an interest in new materials—provided, of course, they do not furnish a pretext to other unions to claim work traditionally done by carpenters. And the traditions of the Carpenters and Joiners are ancient.



"A REALISTIC APPROACH TO PRIVATE INVESTMENT IN URBAN REDEVELOPMENT"

Here is a book that should be read and held for reference by every major institutional investor. Its 92 pages contain the first completely comprehensive analysis of how private investment funds can be profitably used as a means of redeveloping large blighted areas.

This book is the result of over two years of careful research by Architect-Planner Harold Sleeper and members of the Manhattan Development Committee. The Committee is composed of representatives of leading Manhattan banks, insurance companies and architectural, housing and planning associations. Carefully, step-by-step, the study examines every possible phase of the proposed project. More than just a survey of the area involved, with its carefully explained statistical analyses and cost summaries, this report is really a textbook on how to analyze and plan for urban redevelopment.

The report's emphatic conclusion—that such housing redevelopments offer institutional investors a safe return of 6.5%, is carefully documented. Not one, but three, alternate plans for financing such redevelopment projects, are explained in detail. A complete bibliography of the sources consulted is of additional interest to those desirous of exploring this field.

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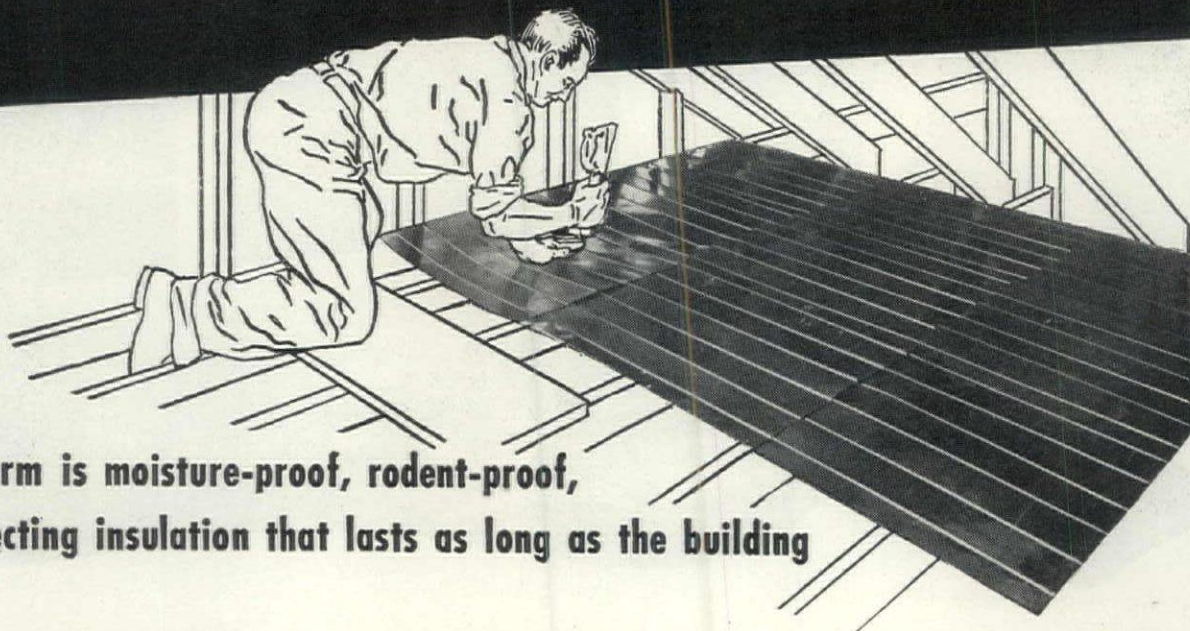
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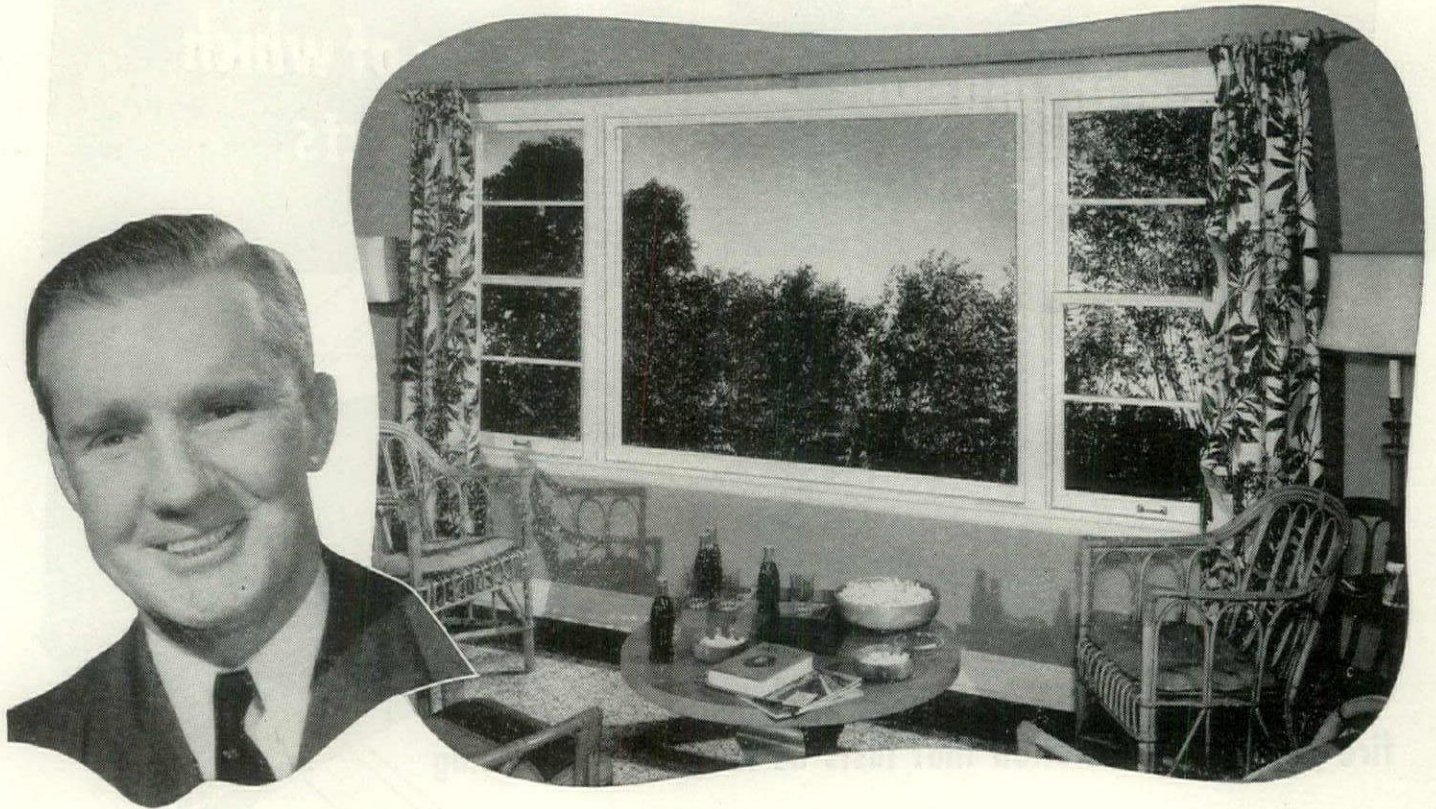
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a basic improvement in window design

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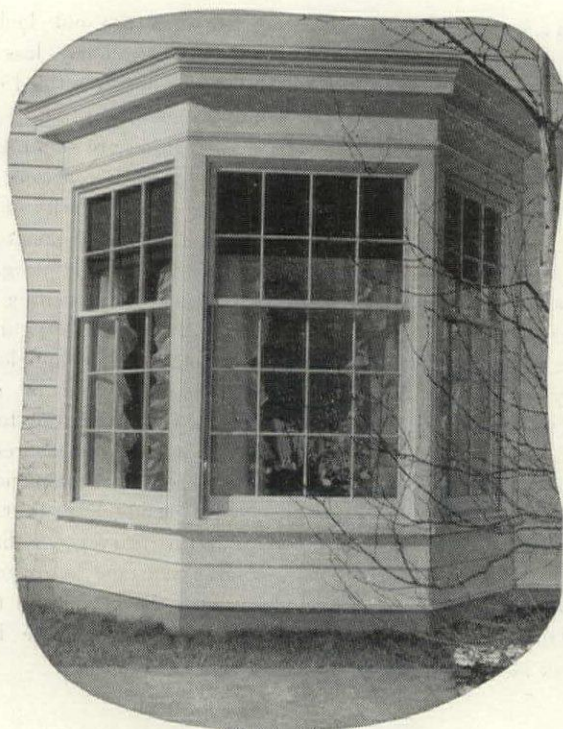
There is something new in the window world today . . . an entirely different and better kind of window, designed on new principles, and offering new advantages to architect, builder and home-owner alike.

It is the new Curtis Silentite Self-fitting Window.

In the original Silentite, Curtis pioneered the pre-fit "Insulated" window. The new Silentite is a *self-fitting* window—and a vastly better window! It represents another basic Curtis improvement in window design, an engineered unit with unique advantages. The many famous features of the original Silentite have been retained—and new ones added.

The new Silentite provides 20% increased weather-tightness which means greater fuel savings—new locking features—new ease of operation—new simplicity of installation which lowers cost! Study the features at the right—then you'll know why the new *self-fitting* Silentite introduces a new era in window utility and satisfaction.





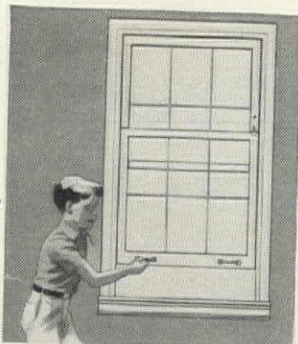
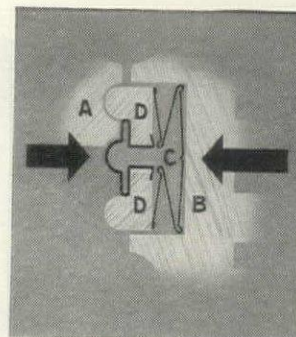
Why This New Curtis Silentite is a Self-fitting Window

Self-fitting

For Greater Weather-tightness

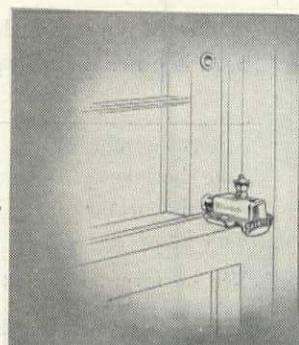
Made of wood—in itself a non-conductor of heat and cold—the new Silentite has “floating” chemically treated wood sliding bars, and these are seated on full-length double Z-type bronze weather-strips. (See diagram.) Sash (A) operates against sliding bead (D), which presses against metal Z-type weather-stripping (C) in frame (B).

The new design of the meeting rail overcomes the problem of weather-stripping between two window sections!



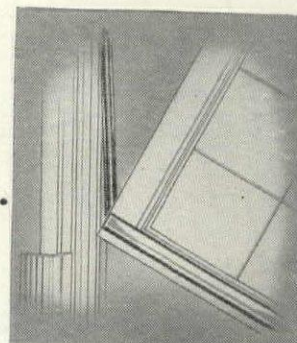
Self-fitting—For Easier Operation

The “floating” weather-stripping forms a wood-to-wood contact with the sash. Easy to operate when new, the self-fitting Silentite continues to work smoothly with use. There can be no sticking, no binding. And the new Silentite uses the famous Silentite spring suspension—no weights, cords or pulleys to get out of order.



Self-fitting—For Locking Safety

The new self-fitting Silentite locks in two positions—automatically! You can leave this window open six inches for ventilation—yet be sure that no intruder can enter, for it locks when open. The new lock also eliminates the damage often done to bars or head jamb with ordinary locks. One sash lock furnished with each unit.



Self-fitting—For Simple Installation

See how easy it is to install a Silentite self-fitting window! The sash is put in with minimum effort—yet, once installed, is firmly in place. Here's a big economy in installation—another reason why we say “Silentite is really a self-fitting window!” Top and bottom sash easily removed from inside by removal of one inside stop only.

Plus these and many other famous Silentite features

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- New style pre-fit combination screen and storm sash eliminates changing and storing. (Separate units available if desired.)
- All parts of units carefully engineered for perfect coordination in the completed job.
- Extreme weather-tightness between frame members, and frame and wall.
- Improved weather-stripping installed with frame and window. No muss or bother later.
- Effective meeting rail weather-strips are applied at the factory—also the new head stop and head weather-strip are installed in the frame at factory.
- Improved sill weather-strip assembled at the factory and quickly installed on the job.
- Windows accurately pre-fitted to the frame at the factory—no fitting required on job.
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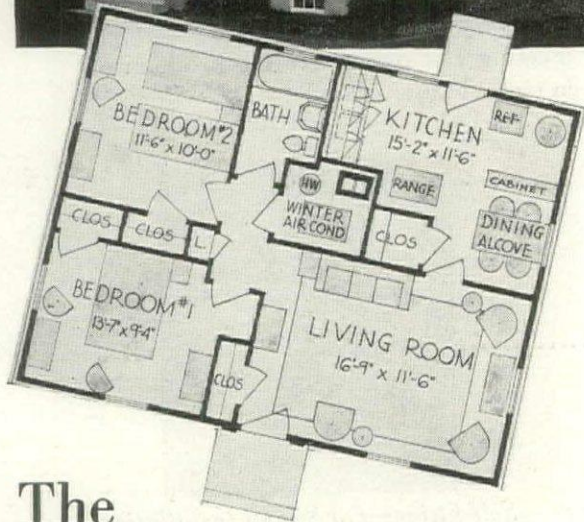
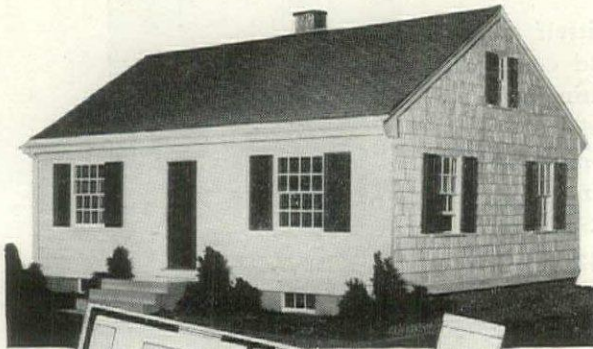
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THE FORTUNE SURVEY

The housing shortage . . . What to do about it . . . The housing market

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- Home seekers, material producers and dealer applicants invited to write.

ANCHORAGE HOMES, INC.
WESTFIELD, MASS.

The U. S. is suffering from a housing shortage, probably its worst since 1607, when John Smith wondered where he would spend his first night in Virginia. Not that the housing problem is in the forefront of everybody's mind. Even when the word "shortage" is mentioned, clothing, butter, and sugar, rather than housing, are the responses most frequently given. When asked which one or two shortages they are noticing most now, only 8.8 per cent of the people say housing as against 40 per cent who say clothing, 25 who say butter, and 23 who say sugar. Among women, four times as many mention stockings as mention housing.

But once the Survey focuses on housing, a sharp sense of shortage immediately becomes apparent. Two-thirds of the people are aware of a serious housing shortage in their own communities. One-fifth say they are doubling up because of lack of homes.

Another one-fifth are out looking for a place to live. Were homes less difficult to find, apparently nearly a third of all families would be house hunting.

The U. S. people are strikingly in favor of positive government action to end the severe shortage. A majority of those with opinions want the government to embark on a large-scale building program. More than three-fifths want ceiling prices on building materials retained; three-quarters want such materials channeled into the low-cost residential field by government action; four-fifths want the line held on rent ceilings. All these measures happen to be fairly close to recommendations announced by Housing Expeditor Wilson W. Wyatt after this Survey was finished (see "Mr. Wyatt's Shortage" on page 100). The people seem to be in a mood to put overwhelming political pressure behind Mr. Wyatt's program.

A. The housing shortage

Q. Would you say there is a serious shortage of housing around here, that there is no real shortage at all?

	Total	Far West	Southeast
Serious shortage	64.4%	77.5%	51.5%
Some shortage	27.3	17.7	34.0
No real shortage	5.2	4.1	11.2
Don't know	3.1	.7	3.3

Even on farms, four out of five people say there is shortage to greater or lesser degree.

Q. We're trying to find out how many people have had to double up because of the housing shortage. Have any doubled up in your home because of the housing shortage?

	Total	No veteran in household	Veteran in household
Yes	18.7%	10.5%	41.8%
No	79.5	88.0	56.7
No answer	1.8	1.5	1.5

Hardship, as reflected by doubling up, is greater in the lower-middle (23.2 per cent) and poor (18.3 per cent) income groups than in the rich or upper-middle groups (approximately 12 per cent each). As might be expected from answers to the

previous question, doubling up is at its highest in the Far West, where over one-quarter are sharing living space. Curiously, in the Southeast where the shortage is least noticed, the proportion doubled up is nearly as high as in the Far West.

Q. Are you looking right now for some place else to live? (If "No") Would you be looking if there were no housing shortage?

Looking for a place to live	19.0%	} 31.8%
Would be looking if no housing shortage	12.8	
Plans to stay in present home for time being	65.4	
No answer	2.8	

The great search is largely a youth movement: among those aged 21 to 34, some 45 per cent either are looking or would be if there were no shortage. Among veterans the figure is 47.1 per cent. The percentage

increases as wealth decreases. The geographic breakdown shows that house hunting is at its height in the North Atlantic states and in the Far West.

B. What to do about it

1. Solution

Q. Do you see the present housing shortage as a problem that industry, if left

pretty much alone, would be able to work out itself, or as a problem that won't get straightened out until the government does a lot more than it has?

	Total	Rich	Upper-middle	Lower-middle	Poor	Veterans
Industry left pretty much alone	38.5%	63.4%	55.5%	38.6%	19.0%	36.3%
Government does a lot more	46.7	28.6	34.6	48.9	57.2	57.1
Don't know	14.8	8.0	9.9	12.5	23.8	6.6

Q. Here are some steps the government might take in the housing shortage which have been favored by some people and not by others. Do you think the government should or should not—?

	Should	Should not	Don't know
Start building homes on a large scale for sale or rent to the public	48.1%	42.1%	9.8%
Take off ceiling prices on building materials	24.7	63.3	12.0
Lend money at very low rates of interest to people who want to build medium-priced homes for their own use	80.0	12.5	7.5
See to it that building materials are used only for low and medium-priced houses until the shortage eases up	75.6	16.1	8.3
Require people who have more rooms than they really need to rent them to people who cannot find homes	33.8	58.9	7.3

Government construction is favored particularly by the young (56.1 per cent), by veterans, by those looking for a place to live, by those living in large cities (all about 60 per cent), and by the poor (63.6 per cent). Among the poor nearly half favor compulsory renting of idle space.

This last step is favored by nearly 40 per cent of traditionally hospitable Southerners but by only slightly more than a quarter of New England and Middle Atlantic Yankees. Forty per cent of those now looking for a place to live also like the idea.

Q. Do you think ceilings on rent should be done away with now, or kept on for awhile?

	Total	Rents apartment	Rents room	Rents house	Owens house
Done away with	10.9%	4.5%	8.3%	7.8%	16.0%
Kept for awhile	81.3	92.4	85.9	83.0	77.4
Don't know	7.8	3.1	5.8	9.2	6.6

Obviously any early attempt to remove rent ceilings would be extremely unpopular. Even among homeowners, who comprise about 45 per cent of the total sample, over

three-quarters want the ceilings maintained. Among veterans and people of ages 21 to 34, approval of ceilings approaches 90 per cent.

2.. Outlook

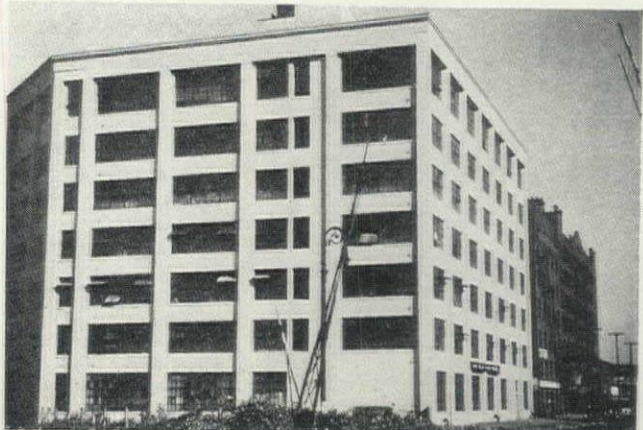
Q. As things look to you now, do you think it is likely or unlikely that:

	Likely	Unlikely	Don't know
The housing shortage will be ended in a reasonable length of time	40.3%	46.0%	13.7%

To compare opinions about the housing shortage with those on other outstanding domestic problems, the Survey also asked whether it is likely or unlikely that (a) much higher prices will be prevented and (b) we will have a widespread depression within a few years. On the first, nearly 60 per cent say "unlikely" to the possibility of holding the price line, which is not ex-

actly a vote of confidence in Chester Bowles. On the second, gloom also prevails: 55 per cent expect a depression in a few years. Plotted against previous soundings of the public economic mood, this figure shows an abrupt reversal of trend. In the summer of 1944, 50 per cent expected a depression within ten years after the end of the war; a year later, and again

(Continued on page 184)



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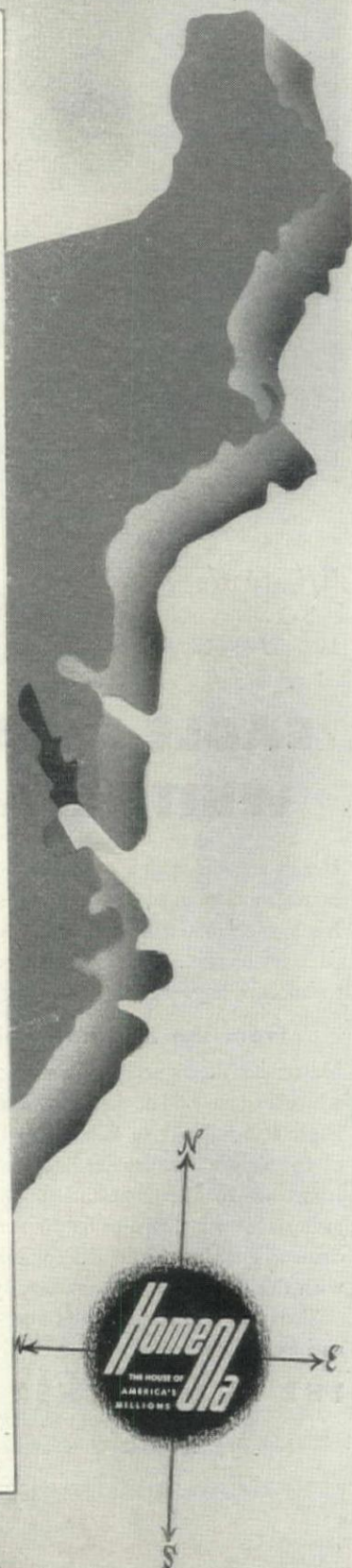
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IN 3 WEEKS OR LESS

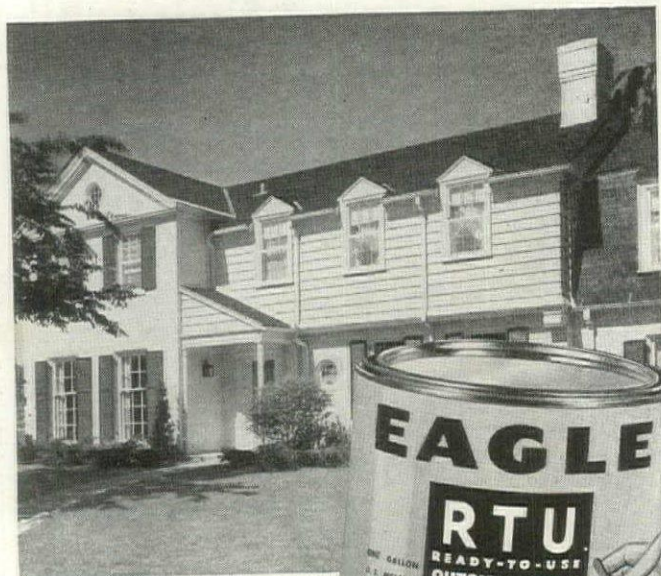
Foundation to Chimney between "Sunrise and Sunset"

- O L A DEALER

IOWA (Cont'd)	MINNESOTA	NEBRASKA (Cont'd)	OHIO	SOUTH DAKOTA (Cont'd)
Hittmore	Brownston	Elm Creek	Akron	Rapid City
ton Lumber Company	Fullerton Lumber Company	Elm Creek Lumber Co.	Horning Lumber Co.	Knecht Lumber Company
KANSAS	Cambridge	Franklin	Alliance	Vermillion
leville	Fullerton Lumber Company	B. J. Hillsbeck Lbr. Co.	Tolerton Lumber Company	Fullerton Lumber Company
Sanborn Lbr. Co.	Duluth	Fremont	Bellevue	Wessington Springs
ffeyville	Fullerton Lumber Company	Fullerton Lumber Company	Logan County Lbr. & Sup. Co.	Fullerton Lumber Company
as Lumber Company	Eveleth	Geneva	Celina	Winner
ncordia	Fullerton Lumber Company	A. Koehler Co.	Celina Lbr. & Sup. Co.	Fullerton Lumber Company
h Lumber Company	Fairfax	Norfolk	Lima	
as Lumber Company	Fullerton Lumber Company	Fullerton Lumber Company	Allen County Lumber & Sup. Company	WISCONSIN
rup Lumber Company	Gaylord	Ogallala	Lisbon	Arcadia
hhattan	Fullerton Lumber Company	J. H. Melville Lumber Co.	Lisbon Lumber Co.	Fullerton Lumber Company
Griffith Coal & Lbr. Co.	Green Isle	Omaha	Marion	Brodhead
athe	Fullerton Lumber Company	Micklin Lumber Co.	The Avenue Lbr. & Sup. Co.	Roderick Lumber Company
Cowley Lbr. Co., Inc.	Paynesville	Palisade	Sidney	Clintonville
hina	Fullerton Lumber Company	Krotter Brothers	The Klipstine Lbr. & Sup. Co.	Fullerton Lumber Company
h & Havens Lbr. Co.	Rochester	Krotter & Wellet	Springfield	Ellsworth
sses	Fullerton Lumber Company	Valentine	The Clark County Lbr. Co.	Fullerton Lumber Company
en Lumber Co.	Rockford	Valley	Troy	Fort Atkinson
ellington	Watertown	Wahoo	Troy Lumber Co.	Hoffman Lumber Company
en Lumber Co.	Fullerton Lumber Company	Wakefield	OKLAHOMA	Glenbeulah
chita	Albany	Wauwata	Aline	W. D. Scott Company
en Lumber Co.	Kansas City	Krotter, Fitzgerald & Stewart	Amsden Lumber Company	Hartford
MARYLAND	Liberty	Wayne	Alva	Fullerton Lumber Company
timore	H. R. Banks Lumber Co.	Fullerton Lumber Company	Amsden Lumber Company	Mattoon
Capitol Lumber Co.	Marble Hill	NEW JERSEY	Blackwell	Mattoon Hardware & Lumber
MASSACHUSETTS	C. F. Hopkins Store No. 2	Fairlawn	Amsden Lumber Company	Menasha
et	Maryville	Glen Rock Lumber & Sup. Co.	Lamont	Valley Lumber & Fuel Co.
Lumber Co.	Fullerton Lumber Company	NEW YORK	Miami	Neillville
MICHIGAN	Sedalia	Batavia	Tri-State Lumber Company	Fullerton Lumber Company
dwater	Home Lumber Company	Genesee Lumber & Coal Co.	Oklahoma City	Oconomowoc
ock & Son	St. Joseph	Bellmore	Barney Stewart, Lumber	Christiansen Lumber & Fuel
ss Lake	South Park Lumber Co.	Meadowbrook Lumber Co.	Ponca City	Oshkosh
Lumber Yard	MONTANA	Carmel	Thompson-Parker Lumber Co.	Oshkosh Building Supply
rson	Baker	Dain & Dill, Inc.	Stillwater	Ripon
ick-Woodfield Co.	Fullerton Lumber Company	Corning	Thompson-Parker Lumber Co.	Fullerton Lumber Company
e Orion	Terry	The Corning Building Co.	PENNSYLVANIA	Superior
etts & Son	Wibaux	Dryden	Fairchance	Fullerton Lumber Company
ing	Fullerton Lumber Company	Baker Lumber Co.	Darby-Humbert Lumber Co.	Wausau
& Cove Lbr. Co.	Fullerton Lumber Company	Elmira	Troy	Fullerton Lumber Company
x	NEBRASKA	Harris, McHenry & Baker Co.	F. P. Case and Sons	West Allis
Priestap Lbr. Co.	Alliance	Farmingdale	SOUTH DAKOTA	Wilbur Lumber Company
e	J. H. Melville Lumber Co.	Meadowbrook Lumber Corp.	Armour	Wisconsin Rapids
son-Baker Lumber Co.	Anselmo	Lake Mahopac	Fullerton Lumber Company	Kellogg Brothers Lumber Co.
quette & Sons	J. H. Melville Lumber Co.	Dain Supply Co., Inc.	Burke	WYOMING
on	Ansley	Peekskill	Colome	Casper
son-Baker Lumber Co.	J. H. Melville Lumber Co.	Creed Bros., Inc.	Corsica	O. L. Walker Lumber Co.
lth	Arlington	Rochester	Emery	Cheyenne
Lumber Yard	Benkelman	Wm. B. Morse Lumber Co.	Fullerton Lumber Company	P. J. Black Lumber Company
regon Heights	Krotter & Sailors	Rome	Kimball	Douglas
ks Lumber Company	Broken Bow	Beach Lumber Co.	Lemmon	Converse Lumber Company
isso	J. H. Melville Lumber Co.	NORTH DAKOTA	Mitchell	Lander
ant & Blood Co.	Carroll	Hettinger	Mt. Vernon	Noble Lumber Company
on	Concord	New England	Platte	Rawlins
Lumber & Supply Co.	Crookston	Rhame	Fullerton Lumber Company	H. Larson
enson Co., Inc.	Fullerton Lumber Company	Fullerton Lumber Company	Fullerton Lumber Company	Riverton
ohns	Fullerton Lumber Company	Fullerton Lumber Company	Fullerton Lumber Company	Noble Lumber Company
ns Lumber Company	Fullerton Lumber Company	Fullerton Lumber Company	Fullerton Lumber Company	Torrington
				Torrington Lbr. & Coal
				Wheatland
				Wheatland Lumber Company



UT CARRIES A BIG "SPEAK"



Ralph Stoetzel, Architect

*"Easy does it"
when you specify*

EAGLE Ready-To-Use WHITE LEAD PAINT

Here's a paint with a new plus—*greater brushability*. It gives better, more even coverage—leaves practically no brush marks. It's a more satisfactory paint for home owners, easier for painters to use. The velvety smoothness of Eagle RTU is a triumph of Eagler-Picher research.

From the original white lead formula

Master architects and builders recognize that for 2000 years white lead has had no equal for durability, beauty and economy. Eagle Ready-To-Use White Lead Paint retains the qualities of the original white lead formula, adds new convenience. It is ready to open, stir and apply. This marvelous paint will give stalwart protection to the surfaces of your buildings. It dries to a whiter white, doesn't crack or scale, but "breathes" with the surface. It ages gracefully by even chalking.

Two forms: Primer Sealer and Outside White. One, two, and five gallon pails.

THE EAGLE-PICHER COMPANY

Cincinnati (1), Ohio

Member of the Lead Industries Association



last January, the figure was approximately 44 per cent.

C. The housing market

Turning to the housing market, the Survey first examines that third of the nation that definitely wants to move. Among this group, houses are in greater demand than apartments, and prospective builders and buyers slightly outnumber prospective rent payers. Would-be builders and buyers claim they are ready to pay an average maximum of approximately \$6,100. More than a fourth of the people think there is a good chance of building or buying a year-

Q. What are you (or would you be) looking for, an apartment or a house? (If "house") Do you prefer to buy, build or rent it?

Buy house	7.6%	} 14.6%
Build house	7.0	
Rent house	6.3	
Rent apartment	7.8	
Undecided	3.1	
	31.8	

In the North Atlantic states close to half of the home seekers want apartments. In the

around house in the next five years. But less than a third of these optimists have taken steps. Judging from the responses of the entire sample, it appears that people will want bigger homes more sensibly arranged, that—except for veterans—the demand for prefabricated houses will be small, and that the sites most sought will be suburban.

I. Immediate Demand

The 31.8 per cent who say they are looking for a place to live or would be were there no shortage were asked:

Far West two out of three want to build or buy.

Q. (If "house" above) What is the most you would be willing to pay?

If buy or build:	Based on those who want to buy or build		Based on Total sample	
Under \$3,000	12.5%	} 45.8%	1.8%	
\$3,000 to \$3,999	11.0		1.6	
\$4,000 to \$4,999	10.4		1.5	
\$5,000 to \$5,999	11.9		1.7	
\$6,000 to \$7,499	15.8		2.3	
\$7,500 to \$9,999	14.9		2.2	
\$10,000 and over	14.7		2.2	
Don't know	8.8		1.3	
	100.0%		14.6%	
If rent:	Based on number who want to rent		Based on Total Sample	
Under \$20 a month	23.3%	} 76.4%	1.5%	
\$20 to \$29.99 a month	21.4		1.3	
\$30 to \$39.99 a month	18.2		1.2	
\$40 to \$49.99 a month	13.6		.9	
\$50 to \$74.99 a month	11.8		.7	
\$75 and over a month	6.8		.4	
Don't know	5.0		.3	
	100.0%		6.3%	

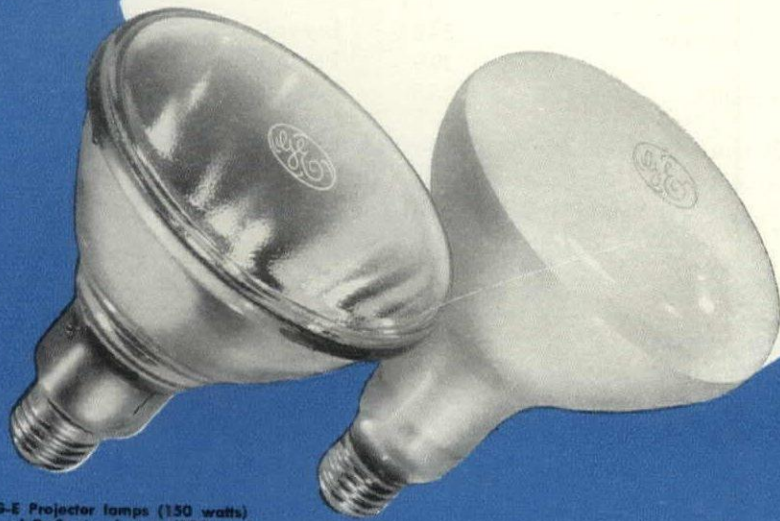
Wilson Wyatt's report to the President said: "... the largest part of residential building materials must be channeled, through priorities and allocations, into homes selling for \$6,000 or less including land, or renting for not more than \$50 a month." The Survey's findings indicate that Mr. Wyatt's recommendations would cover nearly half of the prospective builders or

buyers and over three-quarters of those who want to rent. It has been observed from past Surveys that when answering questions having to do with prices, respondents definitely exaggerate ability to pay. Thus when it comes to actual payments, it may well turn out that more than half of those who wish to build or buy will come under the \$6,000 ceiling.*

(Continued on page 186)

*Solely on the basis of purchasing power, it is estimated that approximately 40 per cent of people cannot afford to pay more than \$4,000 for a house.

Two handy tools for **EMPHASIS** lighting!



G-E Projector lamps (150 watts) and Reflector lamps (150 and 300 watts) combine lamp, lens and reflector in one unit. Both Spot and Flood types are available. Reflector lamps are for inside use only.

G-E Projector Lamps G-E Reflector Lamps

Rugged G-E Projector Lamps can be exposed to rain or snow. Outdoors, they'll light up loading docks, signs, doorways, drives, terraces and walks. Inside, both G-E Projector and Reflector Lamps are great for flood and spotlighting... not only for merchants' show windows and floor displays, but for buildings and offices, too!

They'll fit into adjustable sockets on posts or walls, or can be swivel mounted in overhead fluorescent fixtures.

Wherever your client's plans require the use of more supplementary light for better lighting control, greater protection and more concentration over a spot or an entire area, these G-E lamps offer a practical and inexpensive solution. Be sure to make them a part of your lighting plans for—*emphasis lighting*.

Ask a consultant from one of our lamp offices about *all* of the newer G-E lamps... Projector, Reflector, Fluorescent, Slimline, Circline, Silvered Bowl and many others.

G-E LAMP OFFICES

ATLANTA 3, GA.	187 Spring St., N.W., WALnut 9767
BOSTON 10, MASS.	50 High St., HANcock 1680
BUFFALO 2, N. Y.	901 Genesee Bldg., CLEVELand 3400
CHICAGO 80, ILL.	842 So. Canal St., HARRison 5430
CLEVELAND 14, OHIO	1320 Williamson Bldg., CHerry 1010
DALLAS 2, TEXAS	1801 North Lamar St., Central 7711
DENVER 2, COLO.	1863 Wazee St., MAin 6141
DETROIT 26, MICH.	1400 Book Tower, CHerry 6910
KANSAS CITY 8, MO.	601 West Fifth St., MICHigan 8851
LOS ANGELES 13, CALIF.	500 Stinson Blvd., WICKersham 2-6300
MINNEAPOLIS 13, MINN.	1614 Campbell St., Highgate 7340
NEW YORK 22, N. Y.	1405 Locust St., KINGSley 3336
OAKLAND 7, CALIF.	535 Smithfield St., GRant 3272
PHILADELPHIA 2, PA.	1238 N. W. Glison St., BEacon 2101
PITTSBURGH 22, PA.	710 No. Twelfth Blvd., CHestnut 8920
PORTLAND 9, ORE.	
ST. LOUIS 1, MO.	

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The constant aim of G-E lamp research is to make

G-E LAMPS

Stay Brighter Longer!

GENERAL  ELECTRIC

THE FORTUNE SURVEY



ORANGEBURG the Root-Proof Pipe for:

**HOUSE-TO-SEWER OR
SEPTIC TANK CONNECTIONS**

SEPTIC TANK FILTER BEDS
(perforated type)

FOUNDATION DRAINS
(perforated type)

ORANGEBURG is made in long, lightweight lengths that are easily transported, easily handled, easily installed. The TAPERWELD* COUPLINGS are quickly assembled, stay permanently tight without cement.

ORANGEBURG doesn't corrode or tuberculate—will stay underground indefinitely without deterioration or loss of flow capacity... The PERFORATED type has long been in use for septic tank filter beds, foundation footing drains and subsoil drainage... Both tightline and perforated types are surprisingly low in first cost and installation expense.

Write for interesting descriptive booklet giving mechanical, hydraulic and chemical properties. Dept. (AF-4-46). THE FIBRE CONDUIT COMPANY, ORANGEBURG, N. Y.

*Reg. U.S. Pat. Off.



2. The next five years

Q. Do you want to buy or build a year-around house for yourself within the next five years?

	Yes		Yes
National average	39.0%	Lower-middle	42.6%
Rich	29.9	Poor	38.6
Upper-middle	35.6	Veterans	56.4

Q. Of course no one knows for sure, but do you think the chances are good or not very good that you actually will buy or build a house within the next five years? (If "good") Which will you probably do, buy or build?

	Total who say "good"	Buy	Build	Don't know
National average	26.1%	9.7%	15.3%	1.1%
Rich	23.2	4.0	18.3	.9
Upper-middle	26.5	6.6	18.8	1.1
Lower-middle	29.3	11.4	16.4	1.5
Poor	21.8	11.0	10.2	.6
Veterans	43.2	19.0	22.1	2.1

In the Far West, 38 per cent think that the chances are good as contrasted with the North Atlantic states' 20 per cent. In the Northeast (including East North Central), the prospective buyers just about equal in

number the prospective builders. In the Southeast, builders outnumber buyers by approximately three to one. Elsewhere the ratio is approximately two to one.

3. Likes and dislikes

Q. We'd like to know how you feel about the building industry as a whole—over the last twenty-five years or so, do you feel that the building industry has given people in America good, only fair, or poor value for their money when they build homes?

Good	45.6%
Only fair	25.5
Poor	8.9
Don't know	20.0

In other words, the building industry has a clear vote of confidence from less than half the country. Those who rated it "poor" or "only fair" gave as their principal reasons inferior product (56 per cent), price too high (31 per cent). Yet building is not much less esteemed than the classic automobile industry. Thirty-four per cent think that the automobile industry has given the

public more for its money while 29.4 per cent think the building industry has given more. The remainder either feel that both have given the same value or say they do not know. When asked to compare building with the furniture industry, the vote of those with opinions was better than three to two in favor of building.

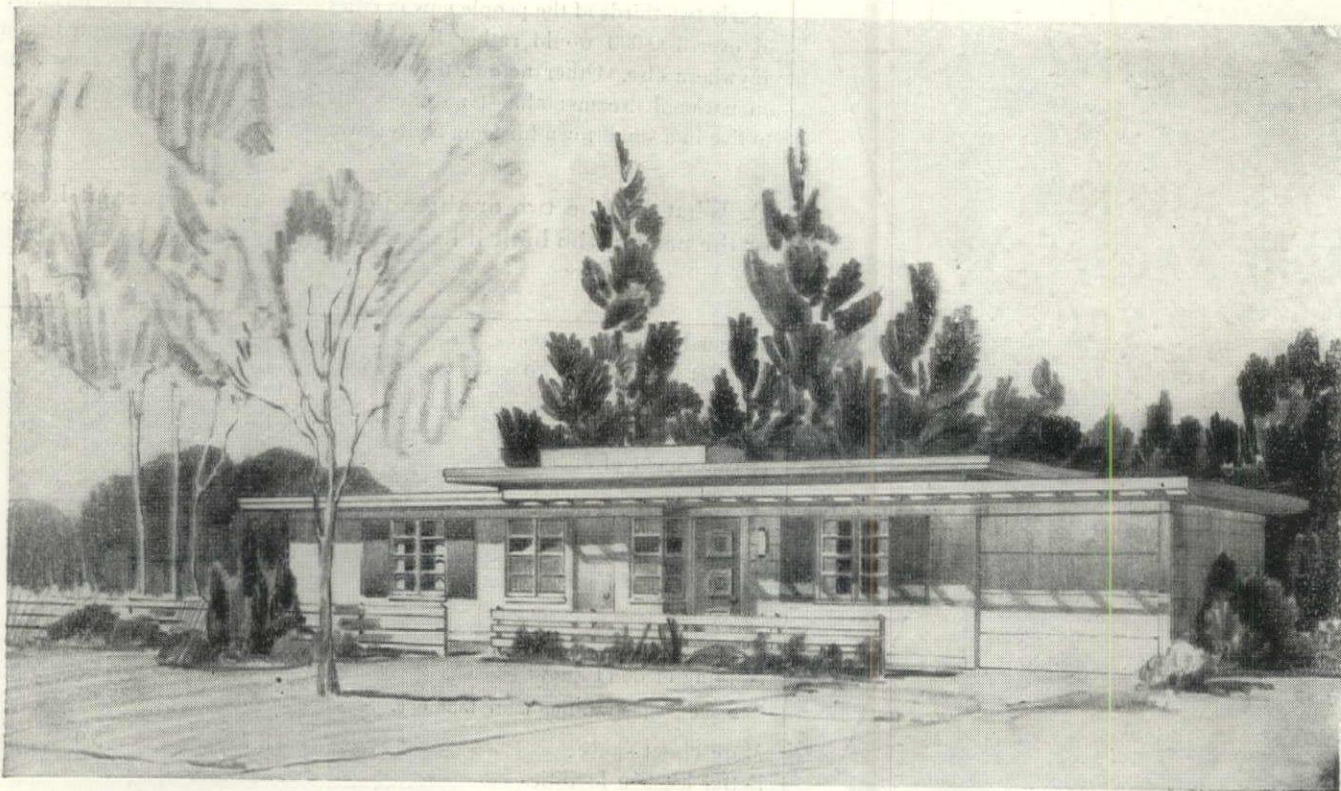
Q. If there were nothing to keep you from living wherever you wanted to, in what kind of location would you choose to live?

Where they now live

Where they would like to live

	A large city	A small city	A small town close to a city	Small town distant from city	Out in the country
Over 100,000	36.2	10.4	36.5	2.8	11.1
25,000 to 100,000	6.8	43.3	26.9	4.4	16.4
2,500 to 25,000	6.9	27.8	46.5	3.2	12.4
Under 2,500 and rural non-farm	6.1	16.4	49.0	6.9	20.5
Rural farm	0.6	6.5	18.1	1.1	71.7
National average	14.7%	17.6%	35.8%	3.5%	26.0%

(Continued on page 188)



Smartly Styled, with all the Economies of PREFABRICATION

This smartly styled, prefabricated two-bedroom house is only one of several houses we plan to place in production as building materials become available. Since prefabrication was much in the limelight during the war years, and made such a record in turning out hutments and emergency housing for war workers, there has been built up in the minds of some prospects that prefabrication means "cracker box" construction. Houses such as the one shown above will do much to disprove that feeling and assure prospects that prefabricated houses can be smartly styled and of permanent construction.

Houses such as this and the others in the Houston Ready-Cut line will pass on to the buyer the many economies of mass production and at the same time give livability, comfort, durability, and the greatest value per dollar invested. They surpass

the rigid standards of the National Bureau of Standards' Commercial Standard CS 125-45.

The recent development of plans to let prefabricators have access to materials for low-cost house mass-production will afford some relief from the critical housing shortage. Our company, and the others who are members of the Prefabricated Home Manufacturers' Institute, are ready to begin production immediately as materials are released.

The established retail dealer selling this and the other prefabricated houses in our line will be able to offer his prospects a known value, a known size, quality and price, and he will be able to close sales more quickly. Initial distribution of our houses will be on a regional basis, insuring speedy relief from the housing shortage close at home, and following the national plan of preference for returned veterans.

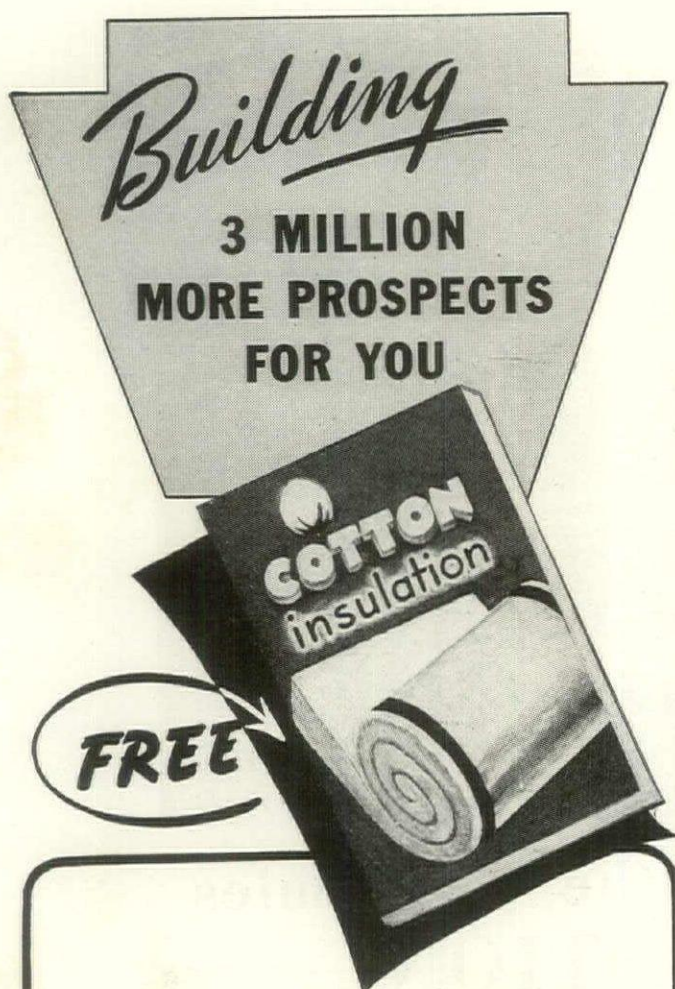
INSIST ON HOUSES MEETING COMMERCIAL STANDARD CS125-45

HOUSTON *Ready-Cut* **HOUSE CO.**
Prefabricators Since 1917

P. O. BOX 124

HOUSTON 1, TEXAS

THE FORTUNE SURVEY



The *Saturday Evening Post* carried this amazing story of Cotton Insulation to its 3½ million readers March 16th. In April, *American Home* and *Small Homes Guide* will carry the same story to 3,000,000 more home owners and prospective builders.

Cotton Insulation is available now, ready for you to sell now. No labor problem—home owners can easily install it themselves. Workmen don't mind handling Cotton Insulation. It doesn't irritate the skin.

The 32-page booklet "Cotton Insulation" contains all the amazing facts that are causing home owners by the thousands to specify this flame proof, lighter weight, more efficient Insulation.

Send the coupon below for your copy now—
IT'S FREE!

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COTTON INSULATION ASSOCIATION**

NATIONAL COTTON COUNCIL
Box 18, Dept. F, Memphis 1, Tennessee

Name _____

Address _____

Frustrated city planners can take comfort. Nearly two-thirds of the people now in cities of over 100,000 would rather live almost anywhere else. Other noteworthy findings on national dreams: almost no one wants to live in a small town far from a city; over

70 per cent of those living on farms want to stay. Except for farmers, who seem to be the least discontented group in the country, the U. S. people show a pronounced yearning for life in the suburbs.

Q. What are the two or three things about your present home you wish you or the person who built it had planned differently?

	Total	Male	Female
Larger house, more rooms	16.1%	12.7%	18.9%
Smaller house, fewer rooms	1.7	1.3	2.1
Larger rooms	10.5	6.6	13.7
Smaller rooms	1.6	2.0	1.3
Arrangement of space	30.9**	23.0**	37.5**
Better heating systems	14.1	14.8	13.5
Installation or improvement of plumbing	7.3	5.7	8.7
Additions and improvements (chiefly porch, basement)	10.2	10.0	10.3
All other	9.1	8.7	9.5
Nothing or don't know	36.0	45.6	28.2
**Some people mention more than one.			
More closet space	8.7	5.9	11.0
Better kitchen facilities (cupboards, storage, etc.)	6.7	3.3	9.4
Arrangement of rooms	12.2	9.7	14.2
Other (windows, height of ceilings, etc.)	9.4	7.4	11.0

** Some people mention more than one.

Contrary to a long-held popular assumption that lack of closet space is the chief complaint among U. S. householders, the Survey finds that a great many more, over 20 per cent, are dissatisfied with their heating and plumbing. Nearly half the men, as contrasted with less than a third of the women, find nothing wrong with the construction of their homes.

4. Prefabrication

Approximately 70 per cent of the people

admit to having heard of prefabricated houses. However, only slightly over 50 per cent seem to know what they are and only 16 per cent say they would be interested in living in one. Advertising and public-relations programs would appear to be in order. (Among veterans, however, 27 per cent are interested in prefabrication. Thirty-three per cent say they would consider a prefabricated house only if they could get nothing else. People in this last group were asked:

Q. What don't you like about prefabricated houses?

	Based on those answering questions	Based on total sample
Unsatisfactory construction***	67.4%	22.2%
Lack individuality	13.4	4.4
Too small	4.6	1.5
All other	18.4	6.1
Don't know	9.6	3.3

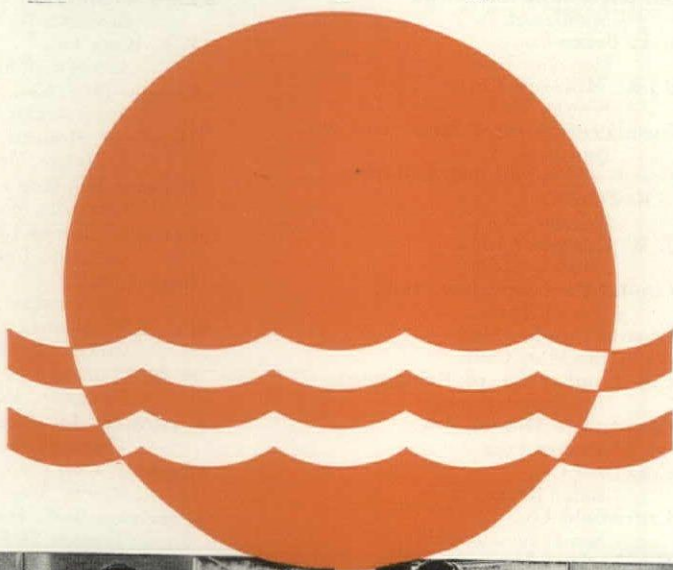
*** This category includes statements like: "Not substantial enough, not strong enough, permanent, not warm enough." Some people gave more than one answer to this question.

FORTUNE Survey's sampling of public opinion is taken from a cross-section of people selected according to U. S. Census data classifications—as to sex, age, income level, race, geographical size of place. A field staff of trained interviewers throughout the country asks carefully framed questions, checks results, which are tabulated by machine. As a fact-finding instrument it has become so accurate that in three national elections it has predicted within 1 per cent the nation's vote. The FORTUNE Survey is conducted by Elmo Roper.

Let this Mark of Merit be your guide

when you *specify* heating and plumbing products

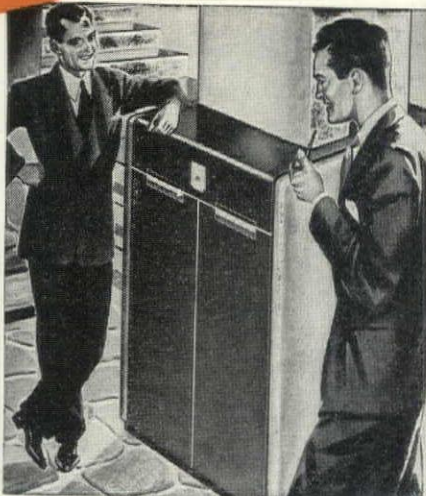
It identifies products that are designed
and engineered to give long, efficient service



Your best guide to health and comfort when you select or specify bathroom fixtures is the American-Standard Mark of Merit. It identifies the finest . . . yet products bearing this Mark of Merit cost no more.



And families pay no more for kitchen sinks and laundry trays that carry this famous Mark of Merit. It says they're designed to make housework lighter—your kitchen brighter.



Be sure you're right when you select or specify winter air conditioners or warm air furnaces. When they bear the American-Standard Mark of Merit you're assured of less worry, less work, less money for operation and upkeep.



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ONE of the most important decisions you have to make is the choice of heating equipment and plumbing fixtures. When you specify, be *sure*. And you are *sure* when you select or recommend products that bear the familiar American-Standard Mark of Merit. You are *sure* of the finest in design, quality and efficiency . . . for American-Standard Products are backed by many millions of dollars spent in research. Time-tested and performance-proved, they have been Serving the Nations' Health and Comfort for more than half a century. Yet they cost no more than others and are available for modernization jobs on our convenient FHA Time Payment Plan.

For information, contact your Heating and Plumbing Contractor. American Radiator & Standard Sanitary Corporation, P. O. Box 1226, Pittsburgh 30, Pa.

AMERICAN-Standard
HEATING  PLUMBING

Serving the Nations' Health and Comfort

THE ALL-WEATHER, ALL-PURPOSE INSULATING AND BUILDING BOARD THAT COMES IN



Here is the building material with outstanding features that mean easy handling, sound economy and speed of operation.

The big sizes—up to 8' x 14'—make it possible to avoid all unsightly batten strips and unnecessary wall joints. Simultaneously they reduce the number of handling and nailing operations.

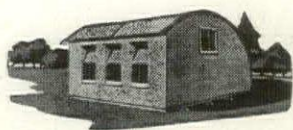


The fact that Homasote is *completely weatherproof* means that it can be used for either exterior or interior finish—or for sheathing. Homasote has stood up under years of service in the coldest climates as it has in the tropics. Moisture-proof in itself, Homasote helps to keep buildings dry and free from mildew.

In one board, you have great *structural strength* combined with high and lasting *insulating efficiency* and important *sound-deadening qualities*.



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Homasote. The book gives physical characteristics, performance charts, specification data and application instructions. Write for your copy today.

HOMASOTE COMPANY, Trenton 3, N. J.

WHO THE PREFABERS ARE Into an always fluid field, the end of the war, and especially the Wyatt program, have introduced genuine turbulence. No one could tell how many companies were planning to build houses in factories, nor of these, how many would actually build them. The following list was compiled about March 10 from the best available sources by Fortune Magazine. It does not include earth-movers like Le Tourneau with his "bungalow biddy" nor shipbuilders turned developers like Kaiser.

- Admiral Homes Co.,
West Newton, Pa.
- ▶Allied Housing Associates, Inc.,
Langhorne, Pa.
- ▶American Houses, Inc.,
New York, N. Y.
- ▶Anchorage Homes, Inc.,
Westfield, Mass.
- Barden & Robeson Corp.,
Middleport, N. Y.
- E. L. Bruce Co.,
Memphis, Tenn.
- Burke Millwork Co.,
Seattle, Wash.
- Bush Prefabricated Structures, Inc.,
New York, N. Y.
- Camden Shipbuilding & Marine
Railway Co.,
Camden, Me.
- J. W. Campbell Inc.,
Palatka, Fla.
- Capital Prefabricators, Inc.,
Austin, Tex.
- Central Lumber Co.,
Stockton, Calif.
- City Lumber Co. of Bridgeport,
Bridgeport, Conn.
- Convertible Homes, Inc.,
Denver, Colo.
- ▶Crawford Co.,
Baton Rouge, La.
- Critchfield Co.,
San Francisco, Calif.
- Cumberland Homes,
Middlesboro, Ky.
- Dade Bros., Inc.,
Mincola, N. Y.
- Defoe Shipbuilding Co.,
Bay City, Mich.
- Dooley's Basin & Drydock, Inc.,
Fort Lauderdale, Fla.
- Drycemble Corp.,
Houston, Tex.
- Economic Portable Housing Co.,
West Chicago, Ill.
- Eddy Shipbuilding Corp.,
Bay City, Mich.
- Field Detroit Co.,
Detroit, Mich.
- Flury & Crouch, Inc.,
West Palm Beach, Fla.
- ▶Ivon R. Ford Lumber Co.,
McDonough, N. Y.
- G B H-Way Homes, Inc.,
Walnut, Ill.
- General Panel Corp.,
New York, N. Y.
- ▶Green Lumber Co.,
Laurel, Miss.
- ▶Green's Ready-Built Homes,
Rockford, Ill.
- ▶Gunnison Homes, Inc.,
New Albany, Ind.
- Hardin & Ramsey,
Atlanta, Ga.
- ▶Harnischfeger Corp.,
Port Washington, N. Y.
- Maurice R. Harrison, Manufacturer,
Hialeah, Fla.
- Hayward Industries
(Prefab Mfg. Co.)
Los Angeles, Calif.
- ▶E. F. Hodgson Co.,
Dover, Mass.
- Home Bldg. Corp.,
Kansas City, Mo.
- Home Corp. of America,
Chicago, Ill.
- ▶Houston Ready-Cut House Co.,
Houston, Tex.
- Hull Housing Co.,
Houston, Tex.
- Illinois Lumber Mfg. Co.,
Cairo, Ill.
- Johnson Co.,
Sharon, Pa.
- ▶John A. Johnson Contracting Corp.,
Brooklyn, N. Y.
- T. C. King Co.,
Anniston, Ala.
- Klinger Mfg. Co.,
San Antonio, Tex.
- Maryland Modern Housing Corp.,
Baltimore, Md.
- Midwest Housing Corp.,
Janesville, Wis.
- ▶National Homes Corp.,
Lafayette, Ind.
- Page & Hill,
Minneapolis, Minn.
- ▶Pease Woodwork Co.,
Cincinnati, Ohio.
- S. M. Pistorio,
Baltimore, Md.
- ▶Plainfield Lumber & Supply Co.,
Plainfield, N. J.
- ▶Prebuilt Co.,
Revere, Mass.
- ▶Precision-Built Homes Corp.,
Trenton, N. J.
- Prefab Industries,
South Bend, Ind.
- Pre-fab Industries Corp.,
Richmond, Va.
- ▶Prefabrication Engineering Co.,
Portland, Ore.
- ▶Production Line Structures,
Los Angeles, Calif.
- Raleigh Prefabricated Homes, Inc.,
Raleigh, N. C.
- Scott Lumber Co.,
Wheeling, W. Va.
- Shappert Engineering Co.,
Belvidere, Ill.
- ▶Shelter Industries, Inc.,
New York, N. Y.
- Southern Lumber Co.,
Houston, Tex.
- Southern Mill & Mfg. Co.,
Tulsa, Okla.
- Stout Houses, Inc.,
Detroit, Mich.
- Strathmoor Co.,
Detroit, Mich.
- Tacoma Lumber Fabricating Co.,
Tacoma, Wash.
- Texas Prefabricated Housing Co.,
Dallas, Tex.
- Timber Structures, Inc.,
New York, N. Y.
- ▶Tovell Construction Co.,
Baltimore, Md.
- U.S. Portable Housing Co.,
Washington, D. C.
- Vacuum Concrete, Inc.,
Philadelphia, Pa.
- Well Built Mfg. Co.,
Somerville, N. J.
- ▶Willisway and Home Ola
Chicago, Ill.
- Wingfoot Homes, Inc.,
Akron, Ohio

▶Product, price and scope of these firms are described in tabulation on page 139.



Draftless air-diffusion—plus illumination—

WITH THE

ANEMO-LIGHT

The ANEMO-LIGHT is a combination of the ANEMO-STAT draftless air-diffuser and a built-in light. It is designed to provide *draftless, even distribution* of air—both heated and cooled—for equalizing temperature and humidity throughout the room . . . as well as to provide scientific lighting.

The section of the ANEMO-LIGHT which serves as the air-diffuser is of special design and dimensions—different than the standard ANEMOSTAT. The largest member has a handsome fluted, polished edge. The inner members are also polished. The complete fixture is of the recessed type, fitting tightly against the ceiling with a minimum projection below the ceiling line. It is spun of aluminum, polished and sprayed with clear lacquer.

The ANEMO-LIGHT is so constructed that, like the standard ANEMOSTAT air-diffuser, it will *draftlessly* and *quietly*

diffuse any volume of air supplied to the device at any velocity. At the different velocities recommended for rooms used for different purposes, the increase in decibel rating by the ANEMO-LIGHT itself is negligible.

The lighting unit is a Holophane Reflector Refractor. Its sparkling, crystal, prismatic glass is pleasing in appearance. When lighted, a portion of the reflected light is thrown on to the flaring cones of the air-distribution section of the device, which effects a luminous quality, lending a fluorescent appearance to the entire fixture.

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Lots of clients need A FLOOR THAT DOESN'T DO A LOT OF THINGS

For instance... that doesn't let cockroaches live happily on it—in fact, they scam away from it.

That's Hubbellite

Or a floor that won't let molds grow on it—that actually retards bacteria growths to the point that it can be considered an aid to sanitation.

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And a floor that doesn't go to pieces in the presence of neutral oils and greases.

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Or a floor that doesn't soften or disintegrate in the presence of kitchen fats; one that withstands the action of foods which ordinarily play havoc with commercial kitchen floor surfaces.

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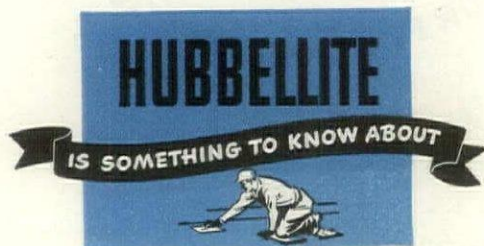
Then in flour mills, in plants that produce or use solvents, and anywhere that conditions are conducive to explosions, you want a floor that doesn't spark but which drains away static electricity.

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And of course, a floor that doesn't sacrifice long wearing qualities for these extra virtues. A floor with the resilience of a fibrous material, but one which will take light wheeled traffic without dusting or cracking.

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We're not claiming the world for Hubbellite. But all these qualities are just as we say. Hubbellite is a cupriferous monolithic surfacing which can be applied over concrete or even over wood, if the supporting structure is in sound condition. We have printed matter giving tests made for the check of fungus growths in showers, of roaches around bakeries and of all other features on diverse installations. Write, stating the particular slant you would like to investigate or ask for complete literature.



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Offices in 50 Principal Cities
World-Wide Building Service

In conjunction with its nationwide survey of the housebuilding industry (p. 103), the FORUM requested its correspondents in 16 of the largest U. S. home building centers to conduct local surveys, report the status of building operations and the attitude of builders. Following are excerpts from their reports.

BALTIMORE

Principal change in the local building picture, as seen by one of the community's most important rowhouse builders, is the emergence of additional large scale builders. Before the war these builders erected from 25 to 30 units. Then they got into war housing in one form or another, and now are branching out into the 200-250-units-per-year class. Labor will be adequate to put to use all the material made available for house construction in this area.

BOSTON

One of the biggest builders in the state is planning a 1,000 house development, is now completing two experimental houses of plywood construction with concrete mat foundations and radiant heating. Through economies in design and construction and mass production, he believes that he can produce a \$5,000 house this year which will be as good as the houses he was building for this price before the war. Another local leader also points to an innovation—a "building expediter" who goes on a "Cook's Tour" every day for building supplies. He is a shopping expert who gets into the markets early every morning, and it is expected that he may be retained in this capacity for a long time to come. Builders, in general, are erecting experimental houses, not for sale as yet—not until they learn something of the prices and costs involved.

CHICAGO

Unions may be persuaded to permit carpenter shop prefabrication of wall panels, such as is done now in one local suburb. Most of the houses planned will come close to the \$10,000 limit. Return of Title VI would treble or quadruple the volume of house construction. Says George F. Nixon, Republican member of Cook County Board of Commissioners and leading home builder for many years: "Home ownership for veterans could be made easier in four ways: 1) By revision of outmoded building codes . . . 2) Manufacturers of home building materials and equipment must cooperate to hold down their prices and simplify their distribution operations to eliminate a multiplicity of middlemen's profits between maker and user. 3) An agreement with labor unions to abolish for the benefit of their brothers-in-arms a goodly portion of the make-work regulations now in vogue

and the acceptance of many labor saving devices. 4) Provide by legislation mortgage terms and interest rates approximating those proposed for farmers and CIO members in the Wagner-Ellender-Taft bill—at least a 90 per cent mortgage with amortization terms up to 40 years and an interest rate of 3 per cent."

CLEVELAND

Nails by mail order—that is how one big house builder is supplementing the kegs he can beg, borrow or buy in northern Ohio hardware stores. He has been receiving 25 lb. packages of nails from a Chicago firm. Says he: "They limit 25 pounds to a order, so I send a new order every day. Labor still is scarce. One builder explains: "Veterans are taking it easy, wanting to be their own bosses for a while. When the novelty wears off and their funds run low they will go back to work." Builders tell of premiums being paid to attract workers—well above union scale of wages—and "rare and unfamiliar" grades of lumber being delivered at prices about double pre-war prices for regular grades. One builder on one occasion drove to Berea, Strongsville, Medina, Mantua, Garrettsville and Chagrin Falls in an effort to get nails. He covered 194 miles and came home with four kegs. Same builder has had to cut up boards to make lap siding.

DENVER

The Denver Assn. of Home Builders has surveyed the field, found that the 81 builders who account for 80 per cent of the home building in the city, have 1,480 houses under construction, 1,081 of which are in detached dwellings. Of the latter number, 928 will cost less than \$10,000 including lot. Exactly 500 of the 1,081 units were at a standstill in February because of the lack of one or several items of material. Another 500 were at a standstill because of the inability of the builders to obtain craftsmen of one sort or another. To complete 1,480 units these builders required these staggering amounts of materials: 4,979,866 bricks, 3,657,734 board feet of dimensional lumber, 3,242,256 board feet of rough lumber, 373,160 board feet of finished lumber, 1,372,067 feet of flooring, 12,281 doors, 9 bathtubs and 28,730 feet of soil pipe. A number of these items are scarce; for instance, while Denver houses require about 45 feet of soil pipe per unit, the city is receiving only about 10 feet per day. (At this rate it would take more than seven and a half years to complete the houses now under construction in Denver—Ed.) Despite current difficulties, Denver builders propose to go on building, indicate that they will build 2,400 detached dwellings and 360 multiple units.

(Continued on page 194)

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Velon is a magic fabric woven of non-absorbent, soil-defying threads. Dirt, grease, grit disappear instantly from *Velon* at the mere wipe of a damp cloth. Wear-defiant *Velon* threads are also homogeneous — snag-proof, scuff-proof and fade-proof too! Firestone will gladly supply yarn samples and technical advice to your regular fabric sources.



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for durable beauty

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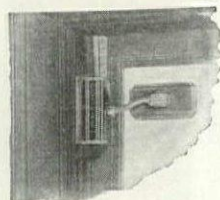
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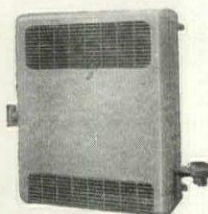
coordinates the functions of all parts of the heating system—with the utmost economy and simplicity; the maximum in heating efficiency. This completely automatic control of temperatures provides *balanced* heating throughout the building. It meets the demand for more or less heat *instantly* as outside temperature conditions alter the need within the building. To get the full story of this more efficient, trouble-free heating system, write for your copy of bulletin Number 632. C. A. Dunham Co., 450 East Ohio St., Chicago 11, Ill.



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in 1946—of the total, 2,750 will sell with lot for less than \$10,000.

DETROIT

The spirits of local builders are at an all-time low. The HH priority program got off to a bad start. Builders claim, the FHA does not deny it, that in nine out of ten cases FHA returns the priority application on grounds that the proposed prices are too high and demands a breakdown of construction costs. The local builders are up in arms at what they believe is a perversion of the HH program into an instrument of price control. One builder who proposed to build 300 veterans' houses states that FHA's estimate of a fair price actually runs as much as \$1,000 under today's actual costs. It is held that OPA is unrealistic in attempting to base current prices on prewar prices. Says Detroit housing Commissioner Charles Edgecomb: "You can not have a 150 billion dollar economy and still buy eggs at 20 cents a dozen." The building trade is in favor of price stabilization—rational planning is impossible until prices are stabilized—but believes that the sights must be raised. Building overhead costs are running approximately double prewar costs. It is stated that a builder today is likely to spend \$50 in labor and time trying to find sufficient rock lath for a five-room house. Because OPA will not permit an adequate price rise, local brick yards are unable to obtain sufficient labor to supply Detroit needs; builders are therefore buying brick in other parts of the country, and the cost of transportation brings the price of the out-of-town brick above that which the local yards need in order to produce on a large scale. The building trades are slowly increasing the number of apprentices, but builders agree that labor efficiency is at an all-time low. They hope to see some improvement eventually when the number of available workers increases and inefficiency can be punished by firing. The local builders advocate a three-point program on the part of government: 1) priorities for house builders, 2) revision of OPA pricing policies for building materials, and 3) revival of FHA's Title VI. With such help and an adequate supply of materials, Detroit builders have pledged 20,000 houses for 1946—all under \$7,000 and, if Title VI is revived, half of them under \$6,000.

HOUSTON

Brightest spot is the return of skilled labor from the wars. Says one builder: "We can now take the older men and put them to work inside, allowing the younger men to do the roofing and other jobs that youth can handle faster and with more safety."

LOS ANGELES

Builders are beginning to hit the stride of the fast and heavy building pace of the late Twenties and early Thirties. Materials are flowing more easily, and while still critically short in some of the crafts, labor is more plentiful than it has been for the past five years. Small homebuilders, generally, are happy with the HH priority system. Chief complaints are the delays caused by the priority routine and the length of time it takes to complete a house—about twice as long as in prewar days. Some heavy construction contractors turned to house building during the war, now plan to stay in the business. Many builders are veering the financing away from FHA toward building and loan associations. Main reason for this is that the associations do not hold up a house as long as do FHA inspections. Often an association will virtually waive examination of a dwelling, provided the builder's reputation is good. Time-conscious builders find this an important consideration.

MIAMI

A local contracting firm has developed a method of using Gunitite for home construction. Gunitite homes are being built slightly under the cost of a similar home of concrete block—the predominate type of construction here. The new process involves shooting the Gunitite against sheet rock rather than wooden frames which heretofore made the process expensive.

NEW ORLEANS

A recent survey reveals that New Orleans expects to spend nearly 150 million dollars in the next seven years for home construction and the purchase and improvement of existing homes. However, at present building is at a virtual standstill because of material and labor shortages and high cost of that available. Little low cost building is underway or being planned in the city. OPA and the government are bitterly sailed for "general muddling-up of the situation." A lumber black market that has blocked almost all attempts at home building is laid at the door of OPA by local builders' association spokesmen. They blame the recent closing of the Tremble Lumber Co. (for the past 10 years the biggest in the state) to uncertainty over government policy and the failure of OPA pricing regulations to permit operation at a profit. The black market, say the spokesmen, channels most supplies into business buildings, for home builders cannot compete with them and are unwilling to patronize the over-price dealers.

NEW YORK CITY

While most builders have large plans for the future, their current operations

(Continued on page 196)

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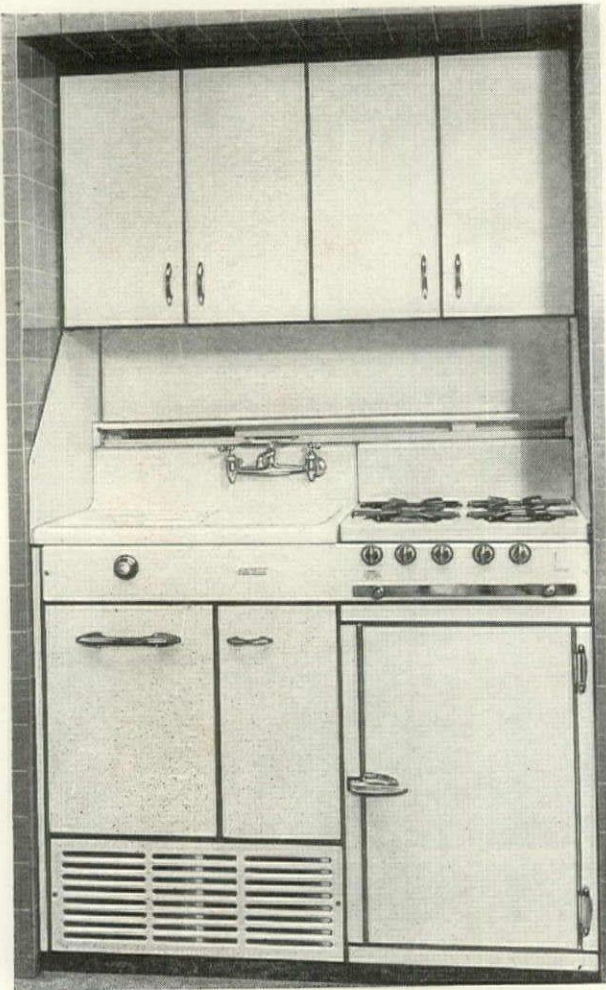
For the best, specify the seat everyone knows — a Church *Sheet Covered*. In either white or color, CHURCH *Sheet Covered* SEATS will not crack, chip, or peel. For the finish is a thick, tough plastic sheet, not paint or lacquer. They are backed by a name that has represented the highest in quality for half a century.

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Engineered for Apartments

Designed to make maximum use of precious inches . . . and thus provide GENUINE kitchen convenience in unbelievably compact space.

MURPHY CABRANETTE KITCHENS

Made for long, tough service without trouble to tenants . . . with negligible upkeep costs for owners.

Ranges (electric or gas) and refrigerators are improved models of those which proved their worth in more than 40,000 prewar installations. Exposed surfaces are genuine vitreous porcelain . . . quickly cleansable with soap and water and forever free from need of repainting.

Write for catalog showing available models and name and location of our nearest representative.

(Model shown is Murphy Cabranette Kitchen No. 480 . . . full kitchen convenience in two by four feet)

DWYER PRODUCTS CORPORATION
Michigan City Indiana

small and progressing slowly. Houses under construction are not sold until completion is near—before then builders do not know at what cost they can be completed. A large proportion of the houses abuilding will sell for more than \$10,000 due, in part, to the high cost of metropolitan land. Despite government threats to stop the flow of materials into expensive houses, many "quality" builders are undertaking the construction of houses which will run in price from \$10,000 to \$20,000—some are going up as high as \$45,000. Volume builders, on the other hand, are concentrating their plans on houses which will come just under the "ceiling price". Most of their activities will remain potential until government policies and regulations have crystallized; material shortages and conflicting official talk and actions concerning priorities, ceiling prices and other government controls have frightened many a local house builder into doing nothing for the time being.

PITTSBURGH

Two outstanding things: 1) all are mad at OPA regulations and want them lifted immediately and 2) any contractor who is doing much building is patronizing black markets. Executive secretary of local home builders' association claims—and so do others—that, if the OPA would grant price increases for scarce materials, the black market would be wiped out and housing boom. He said the Allegheny County builders are planning some 4,200 homes this year, 6,500 if materials become available. One big builder is not having much trouble with materials, but, while he will not say so publicly, he will admit confidentially that he would not be able to finish his houses unless he used black market materials. He says black market prices are from 15 to 20 per cent above ceilings and that, if OPA would grant price increases, he would be able to buy the materials for less than he is now paying through the black market. As an example of black market prices, another builder says he has to pay \$175 a thousand feet for hardwood flooring, while before the war he paid \$68. Home builders are no longer afraid of going into mass production on a big scale. The builder who used to put up about 25 houses a year would quadruple his volume if given the chance.

ST. LOUIS

One progressive builder has switched from concrete blocks to poured concrete for more economic foundations; another notes a trend toward spreading out the houses in width, "We make them more ranch type and give the buyers more ground."

SAN ANTONIO

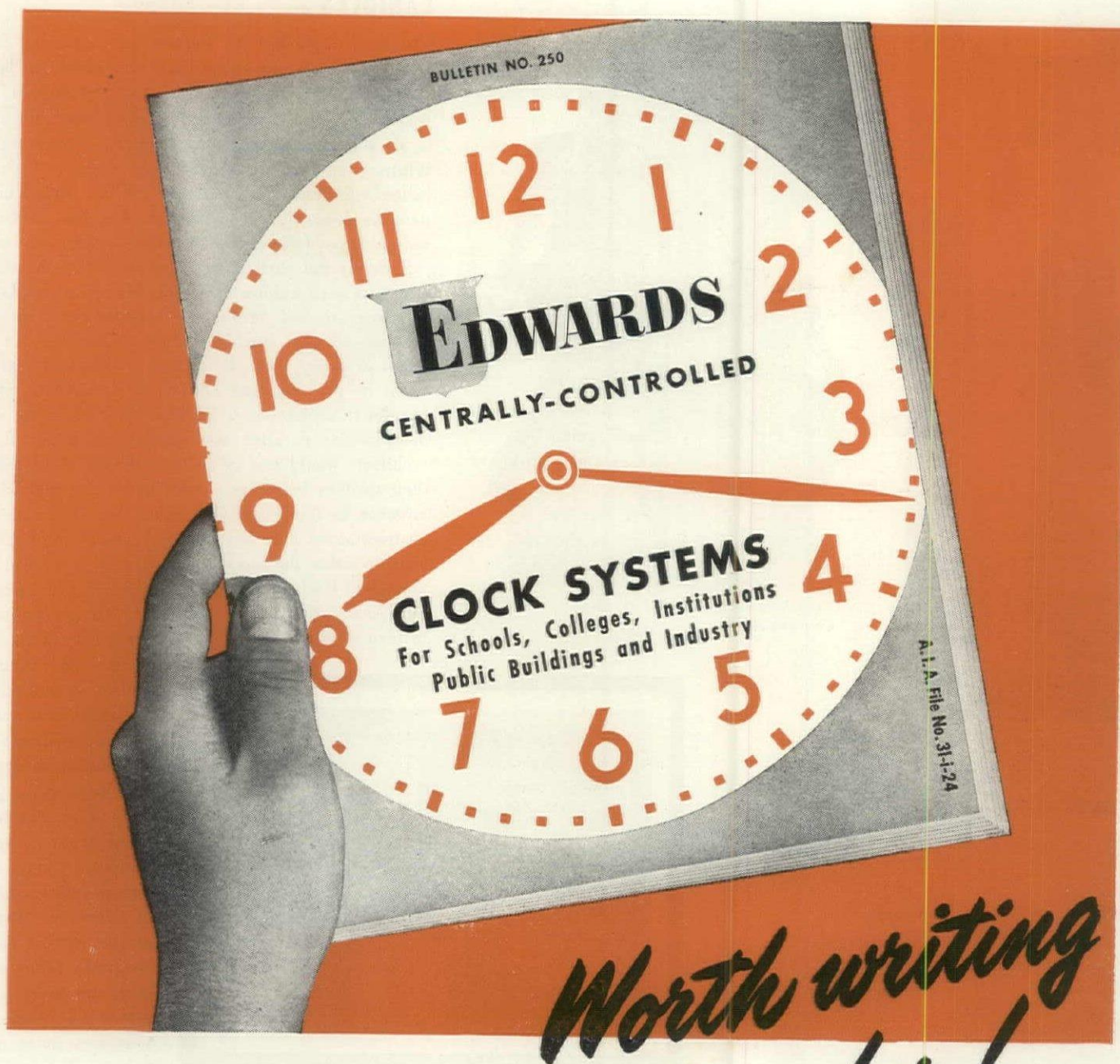
Eighty per cent of local residential building permits are running under \$5,000. It is a case of styling the house for the customers' pocketbook. After comparing notes with a local banker, one builder has estimated that only 10 per cent of the veterans swarming back to San Antonio can afford a home, based on their wages, costing more than \$4,000 for house and lot. Materials are being obtained by sheer persistence and covering every possible source. Lumber even brought up from Old Mexico at a cost of \$135 per thousand ft. for No. 1 Ponderosa Pine of grade inferior to that priced locally at \$87.50. It is almost impossible for an individual to contract for the building of a house. Main reason seems to be the difficulty in satisfying the customer under present conditions and the time involved. One builder volunteered that six out of the 20 houses he was building six months ago were contract jobs and that these six took much more time to handle as all the others put together. A city official predicts that 3,000 to 4,000 houses will be constructed in the city this year—provided, as always, the materials are available.

SAN FRANCISCO

Houses under construction represent only shelter—they have no refinements—but they are the best builders can build under present conditions. Says one, "Anyone who tells you they are building as good a house now as they did before the war is lying." Opinion is that prices will not go down much in the foreseeable future, but materials will get better. Biggest complaint is aimed at government interference. Several builders are for lifting all restrictions on materials. Comments one important builder: "We found materials before the war; we found them during the war; and we will find them now, if the Government would only let us alone."

SEATTLE

Says one leading house builder: "We buy material any place we can get it. For example, we used to buy our lumber from a broker but now we have to buy it direct from the mill. This takes more time and is less efficient, but it is the only way we can get lumber. Labor is not a problem any more. At least one ex-GI, an experienced man, applies for a job every day. If we could get enough lumber we could hire every one of them." Says another, "You cannot get lumber from the lumber yards. You have to buy it direct from the mills because the mills cannot afford to sell to the lumber companies. They get a better price selling direct to the consumer. That makes distribution unequal and it takes endless time. We are hauling our own lumber to the job."



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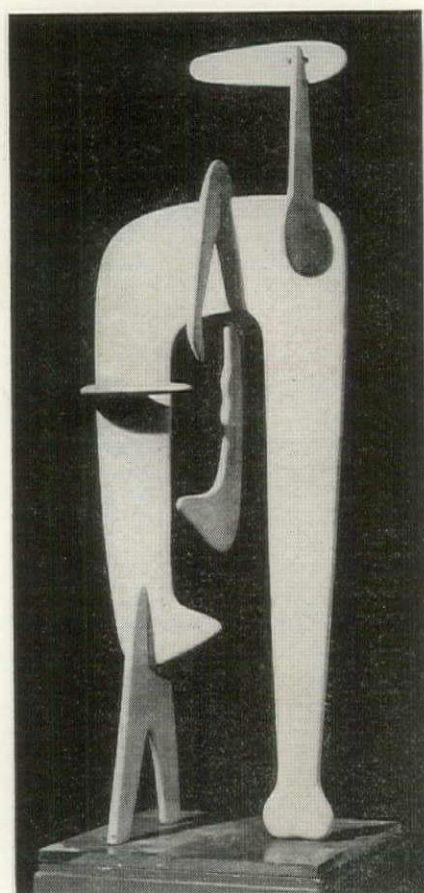
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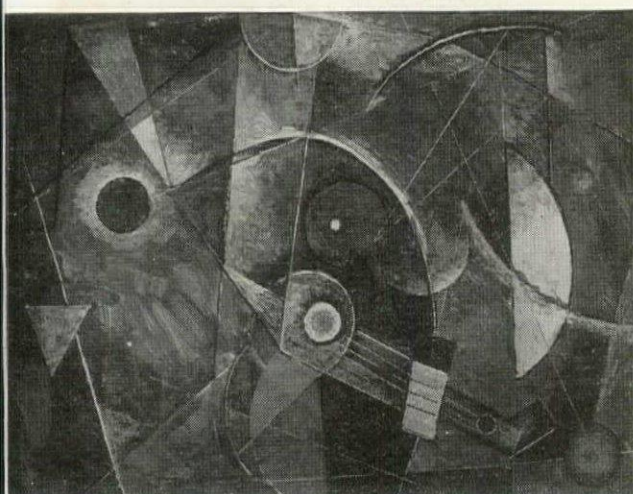
Isamu Noguchi, "Figure"
Marble



John Hovannes, "Laundry Workers"
Cherrywood



John Corbino, "Flight"
Wash and charcoal



John Von Wicht, "Musical Instrument"
Watercolor

EXHIBITS

New York City's Whitney Museum gave abstract art a place of honor and larger space than ever before in last month's Annual Exhibition of Contemporary American Sculpture, Watercolors and Drawings. This prominence for abstract art is all the more remarkable when one remembers that the Whitney has long clung to its own coterie or "school" of so-called American genre painters and has turned many young painters towards realism in art. For this, if for no other reason, the exhibit merits the attention of architects.

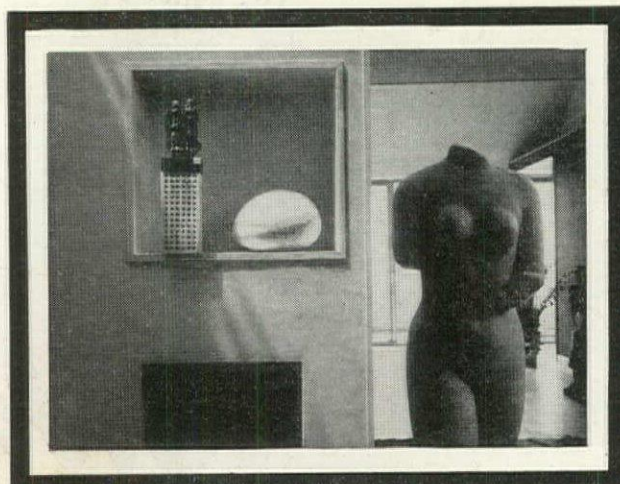
Some of the earliest experimenters and theorizers in abstract art were architects: notably Mondrian and LeCorbusier. It is easy to find an analogy between the main purpose of abstract art and that of modern architecture: a deliberate intent to sweep away the archaic tradition of representation in painting, the clutter of over-ornate unfunctional facades in architecture. Because their bases are similar and development parallel, one might have hoped that modern architects would find in abstract art the thing they need for their modern buildings. One's hopes are somewhat dashed, however, by the Whitney's exhibit. Somehow these American abstractionists have not solved the problem of relating their work to either the room it will exist in or the world in which they live. Each artist here is concerned with sweeping away old idioms. But, having done that, this preoccupation seems to turn even more completely than before to his own self, to

his isolation from the world he lives in and others live in. The result is too often a negation of tradition with no new or substantial symbolism to take its place.

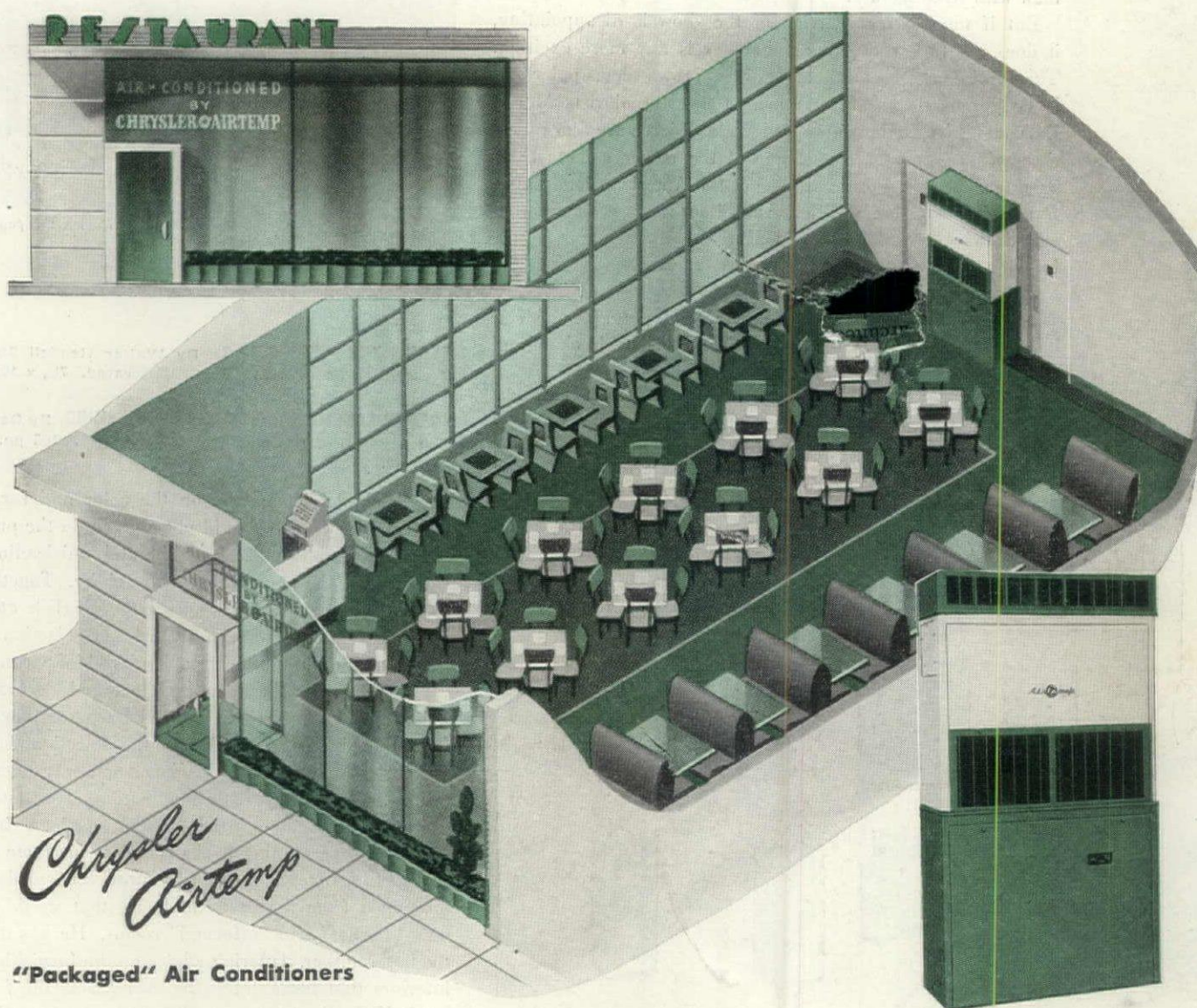
To those architects who think about it, painting and sculpture should have a particular relationship or frame of reference—that a work of art be part of the building. (see cut) Many painters and sculptors seem to have forgotten this relationship, their paintings more often being conceived for frames, and sculpture for pedestals than

for room interiors or for building exteriors. This isolation of the artist or sculptor is not wholly of his own making, of course. Many have long realized that architects, artists, and clients should more often work together on a project, even on the smallest painting—that there should be a modern democratic equivalent of the old feudal system of commissioning works of art. But it seems that one of the happy intimacies which has gone out of the world of art is for an artist to paint a particular picture for a particular person or place or occasion. It is the loss of this relationship which creates a vacuum in which any artist—whether representational, abstract or surrealist—must work in comparative isolation. It is an unfortunate situation for both art and architecture.

Among the abstract watercolors shown at the Whitney, those of Schanker, Baziotes, Mark Tobey, Hans Moller, have a charm and whimsicality often lacking in the more serious abstractionists; John von Wicht (see cut) and Stuart Davis express a more mathematical bent. The sculpture is better than in previous years, but still disappointing when considered in relation to architecture. (Continued on page 200)



LeCorbusier and Jeanneret, Apartment House, Paris



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They're thoroughly dependable — time-tested all over America. Behind them is Chrysler Corporation, with its great reputation for engineering and mass production skill. It will pay you to specify this modern, simplified form of air conditioning. Write Airtemp Division of Chrysler Corporation, Dayton 1, Ohio. In Canada: Therm-O-Rite Products, Ltd., Toronto, Ont.

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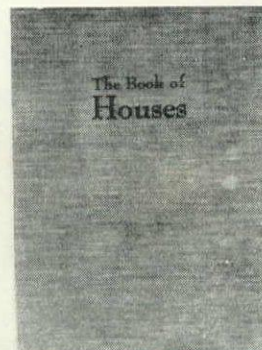
REVIEWS

One finds work of relative newcomers to the Whitney like David Smith and Theodore Roszak. Noguchi (see cut), who has really experimented more than anyone with sculptural forms as part of buildings, turns out a tour de force in marble which might have more properly been done in metal; and Wharton Esherick has been more concerned with Archipenko than with Architecture.

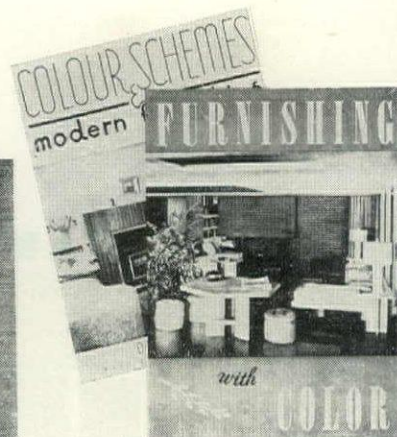
But if the abstract portion of the show is disappointing, it does not follow that the remainder is any more exciting. The old-time representational Whitney crowd seems paler and less vigorous than before: among the watercolorists Marin, Burchfield, Reginald Marsh and Waldo Pierce are dim reflections of their past glory. Some of the newer comers hang brighter, sharper representations of the American landscape: Dong Kingman, Barse Miller, Anne Poor in their watercolors and drawings; Maldarelli and Marion Walton, for example, in their sculpture. Hovannes' piece (see cut, p. 198) is the best adapted to the architecture.

The Whitney is changing, though, and perhaps one can hope that the American artist's place in society is changing, too.—E.B.

BOOKS



Review page 202



Review this page

FURNISHING WITH COLOR. By Walter Rendell Storey. Holme Press, Inc., New York. 96 pp. Illustrated. 7 1/4 x 10 1/4. \$4.50.

COLOUR SCHEMES AND MODERN FURNISHING. By Derek Patmore. The Studio Press, London and New York. 108 pp. Illustrated. 7 1/2 x 10. \$5.

One book, let alone two, on the color and furnishing of a contemporary home should put a gleam in the public eye and unless the public pulse is deliberately misleading, these two volumes will be pounced on with avidity. Together they furnish an eloquent comparison of the English and American versions of interior design. The latter selection is naturally more familiar but unfortunately its chief virtue lies in the contrast revealed between architect and decorator-designed interiors, a characteristic ignored by the author but obvious from the photographs. Due to the selection, however, both categories display self-conscious, arid arrangements. Few examples show any real imagination or spontaneity. Mr. Storey, a graduate of the Julliard Academy in Paris and author of several other books, (*Beauty in Home Furnishings*, *Period Influences in Interior Decoration*) reveals himself still unweaned from a pattern of living that would countenance only "formal" and "informal" rooms. He has no truck with the latter, either. Offering advice on the furnishing of modern interiors that turns out to be as rigid as the formula for a Louis XVI salon, he says: "Too delicate tints (for the living room) are usually ruled out as being inappropriate. A room's colors, it must be remembered, have a relation to the degree of formality of the furnishings; subtle harmonies are best worked out in formal interiors, and more naive contrasts in informal arrangements . . . While a living room should not be too individual, the owner's interests may well be expressed in the furnishings. Shelves for the book lover's volumes or the antiquarian's collections of glass or pottery are easily fitted into the ensemble." This describes as well as anything the tone of the entire book and casts some light—fuzzy though it may be—on the motive of selection.

The British book, *Colour Schemes and Modern Furnishing*, is, by way of contrast, interesting for the alien nature of the interiors it presents. Most have a quaintness unfamiliar to the American eye, some recall the Anglo-sophistication of a Galsworthy novel, others reveal an unfortunate hangover from the modernistic French decor of the twenties. Mr. Patmore takes a far more esthetic approach than Mr. Storey, concerning himself with the subtleties rather than the obvious effects, with accessories, not as a group, but for individual merit and contribution.

Neither book, unfortunately, fills the broad need for a really informative and imaginative work on interior design. Each is, in its own way, specialized and limited. The houses shown are all strictly urban in character and are not particularly recent, at that. A generous assortment of color plates is included in both instances. M.S. (Continued on page 202)



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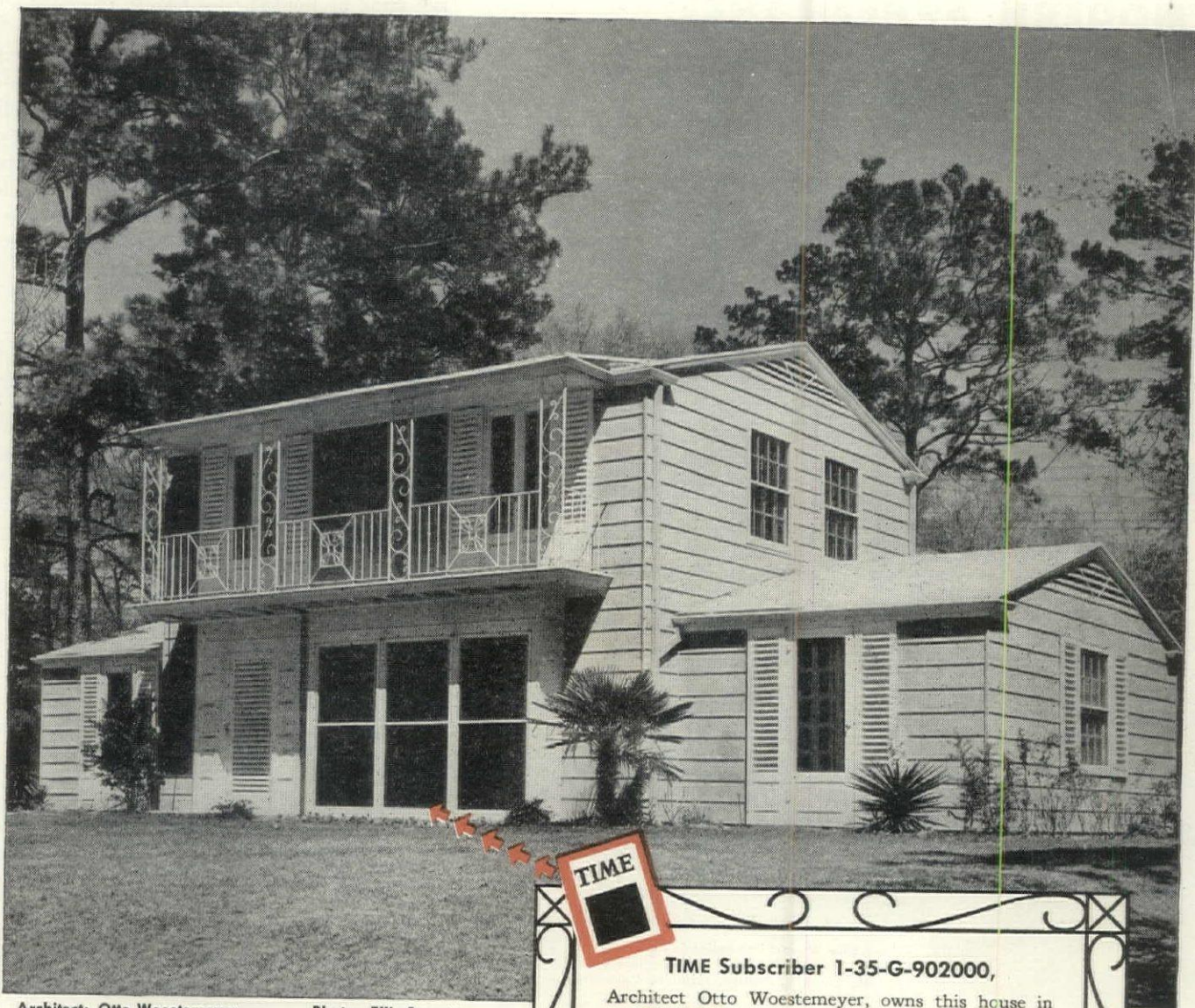
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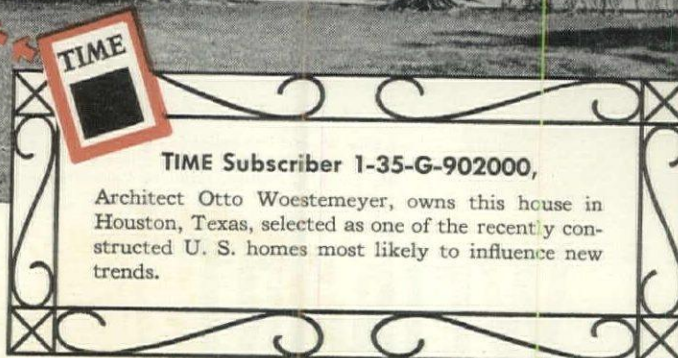
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Photo: Ellis Sweatte



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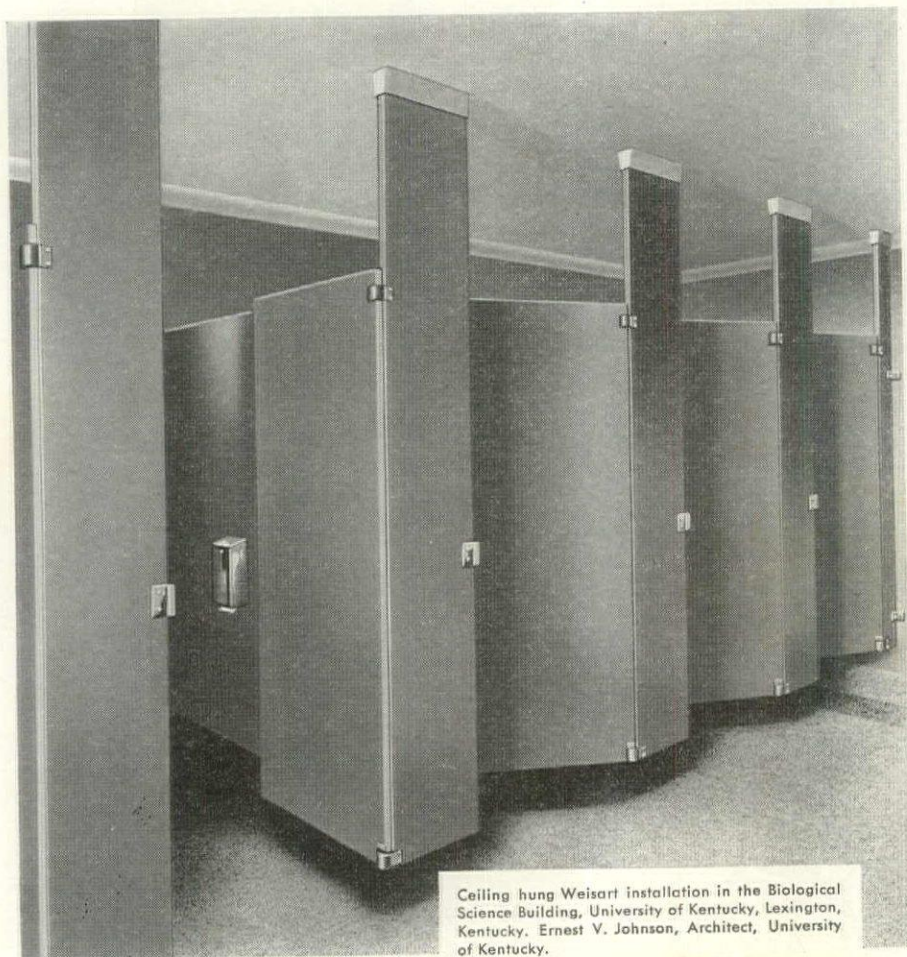
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THE BOOK OF HOUSES. By John P. Dean and Simon Breines. Crown Publishers, New York. 144 pp. Illustrated. 8 1/2 x 11 1/4. \$2.

The potential home owner can become a remarkably well versed fellow if he reads only about one-fourth of the books on house building now flooding the market. This latest addition has in its favor an unusually high content of hard facts and sound thinking. Houses included range from \$5,000 to \$10,000. The authors make little attempt to force a given style on their readers and for this reason will undoubtedly win a good many admirers. Emphasis and much needed enlightenment on the legal and financial aspects of building or buying admirably round out the text. While *The Book of Houses* is neither as snappy nor as glib as *Tomorrow's House*, it is broader in scope, filled with useful information. In the preface the authors explain their stand on design saying; "Most of the structures shown have traditional styles because most of the homes you will find for sale are traditional — Cape Cod, Georgian, Ranch house, what-not — and the chances are you prefer these kinds anyway. The authors believe that in a house designed in the modern functional style you get more for your money. But there is no point in including primarily "modern houses" when the average home buyer won't be able to find more than a few in his locality. Besides, most of the beautiful modern designs (replete with modern furniture) are slanted at the \$20,000 — \$30,000 pocketbook — not yours and ours."

It is unfortunate that the publishers' budget could not permit a more elaborate presentation but the book is, nevertheless, about the best two dollar investment possible. *M.S.*

RECENT CITY PLANNING REPORTS

MIAMI CITY PLANNING. 1945. City Planning Board of the City of Miami. 33 pp. Illustrated. 9 x 11 1/4.

Features plans for a Pan-American Center to be constructed on a city-owned island near Miami. This includes an auditorium, buildings for the various Pan-American nations, a Garden of the Americas and a Tower of Eternal Peace.

EMERGENCY HOUSING STUDY AND RECOMMENDATIONS. Future Springfield, Inc., Springfield, Mass. 20 pp. 9 x 11 1/2.

Interesting because of the city's proposal to use Quonset huts to meet the housing emergency.

A PLAN FOR THE CENTRAL BUSINESS AREA—(A report to the postwar Planning Commission by Arthur C. Holden, Holden, McLaughlin Associates). City of White Plains, N. Y. 50 pp. Illustrated. 8 1/2 x 11 1/2.

An extensive plan for a step by step process of development and replacement of the center of the city which features a spacious central mall.

POSTWAR PATTERN OF CITY GROWTH. American Transit Ass'n. 292 Madison Ave., New York, N. Y. 32 pp. Illustrated. 5 1/2 x 8 1/4.

A good general review of urban growth and development with particular emphasis on the city's transportation systems.

G.I. JOBS

Forum's free placement service for veterans. See page 208.

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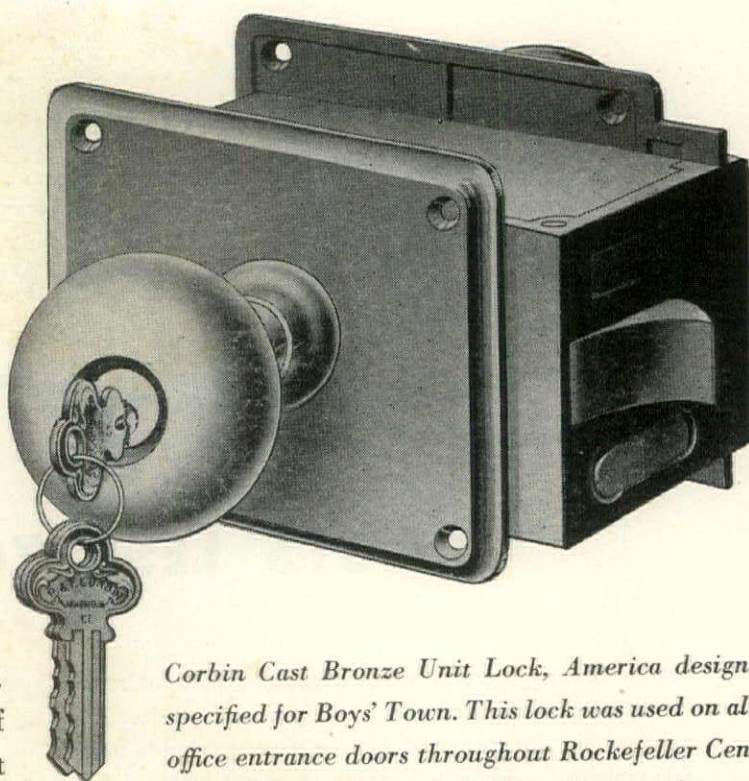
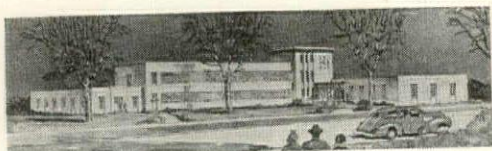


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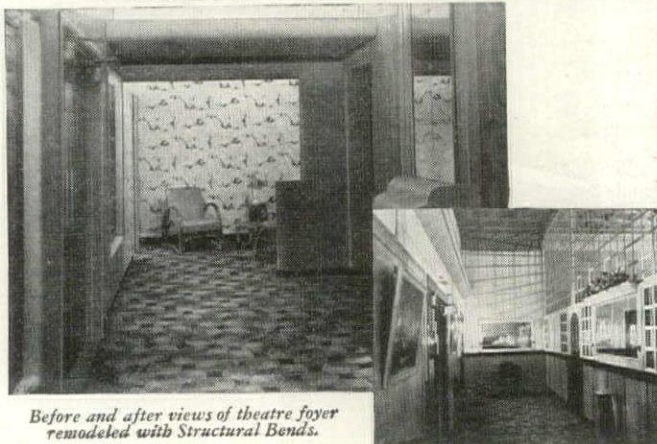
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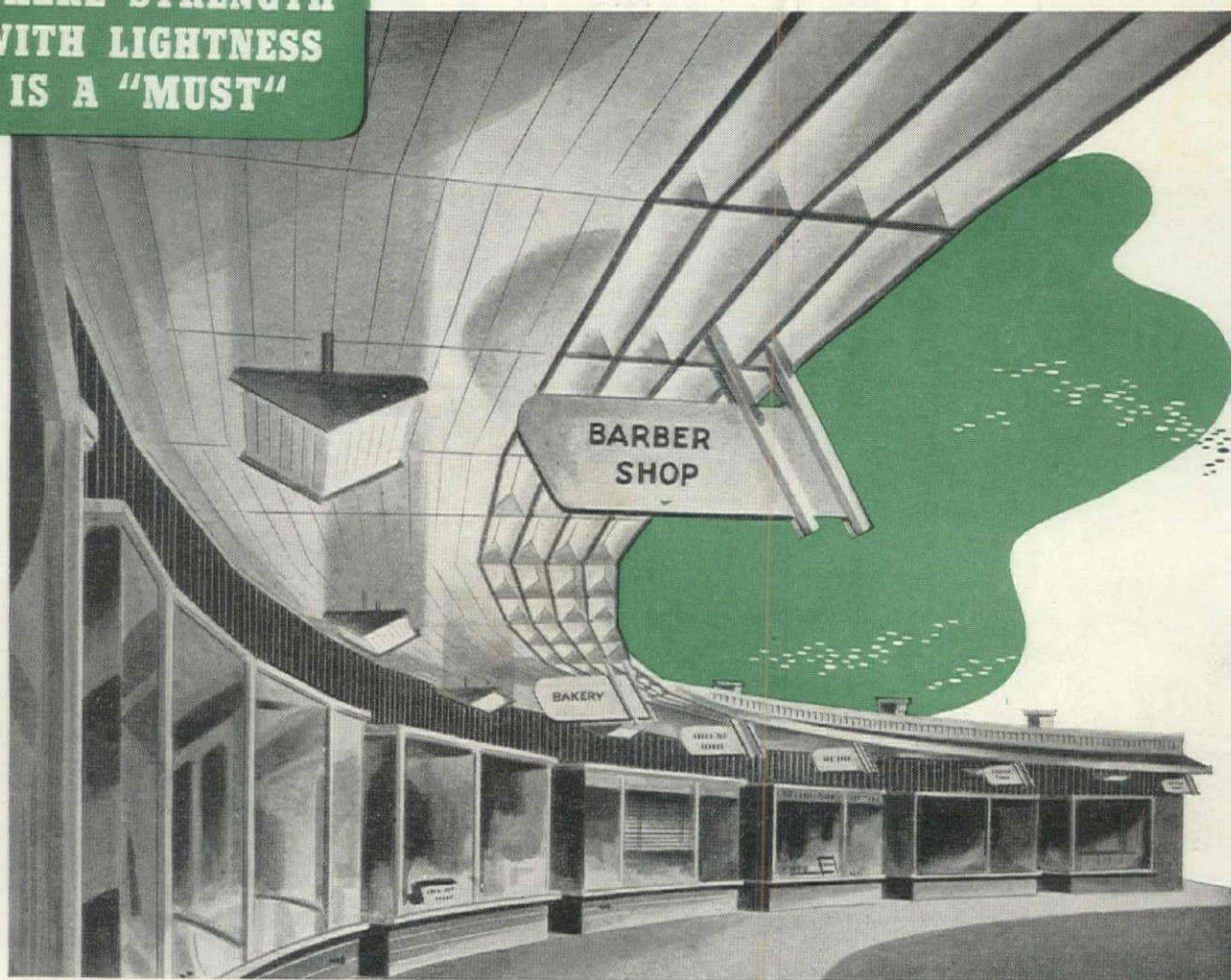


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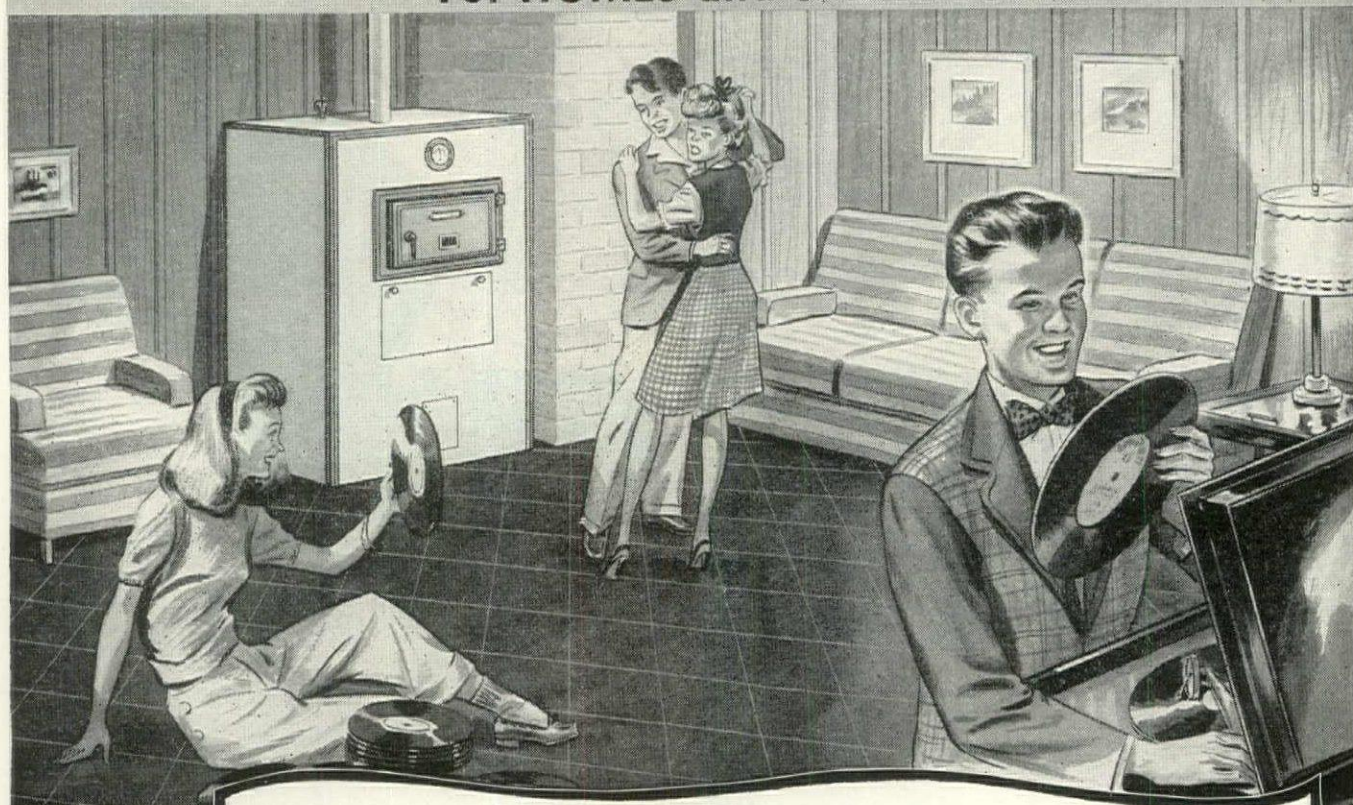
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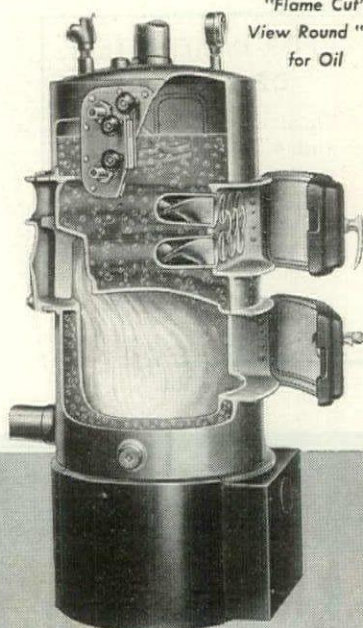
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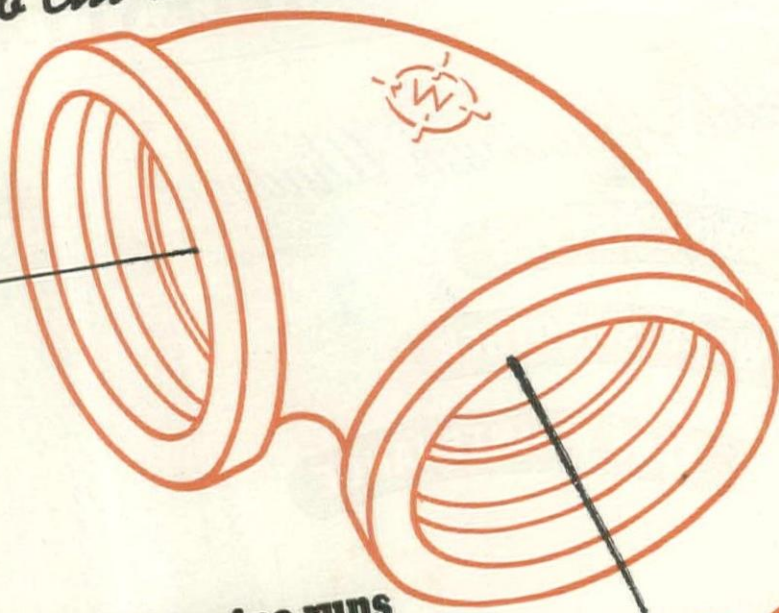
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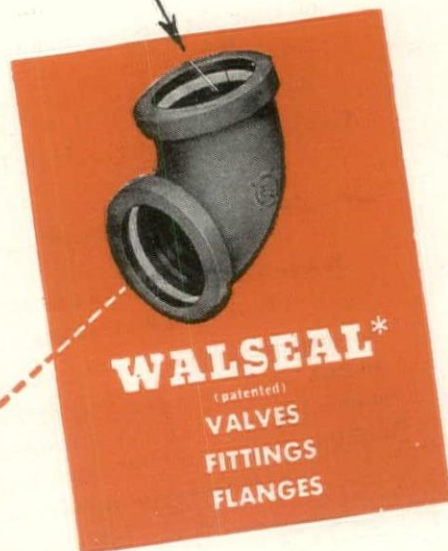
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DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD

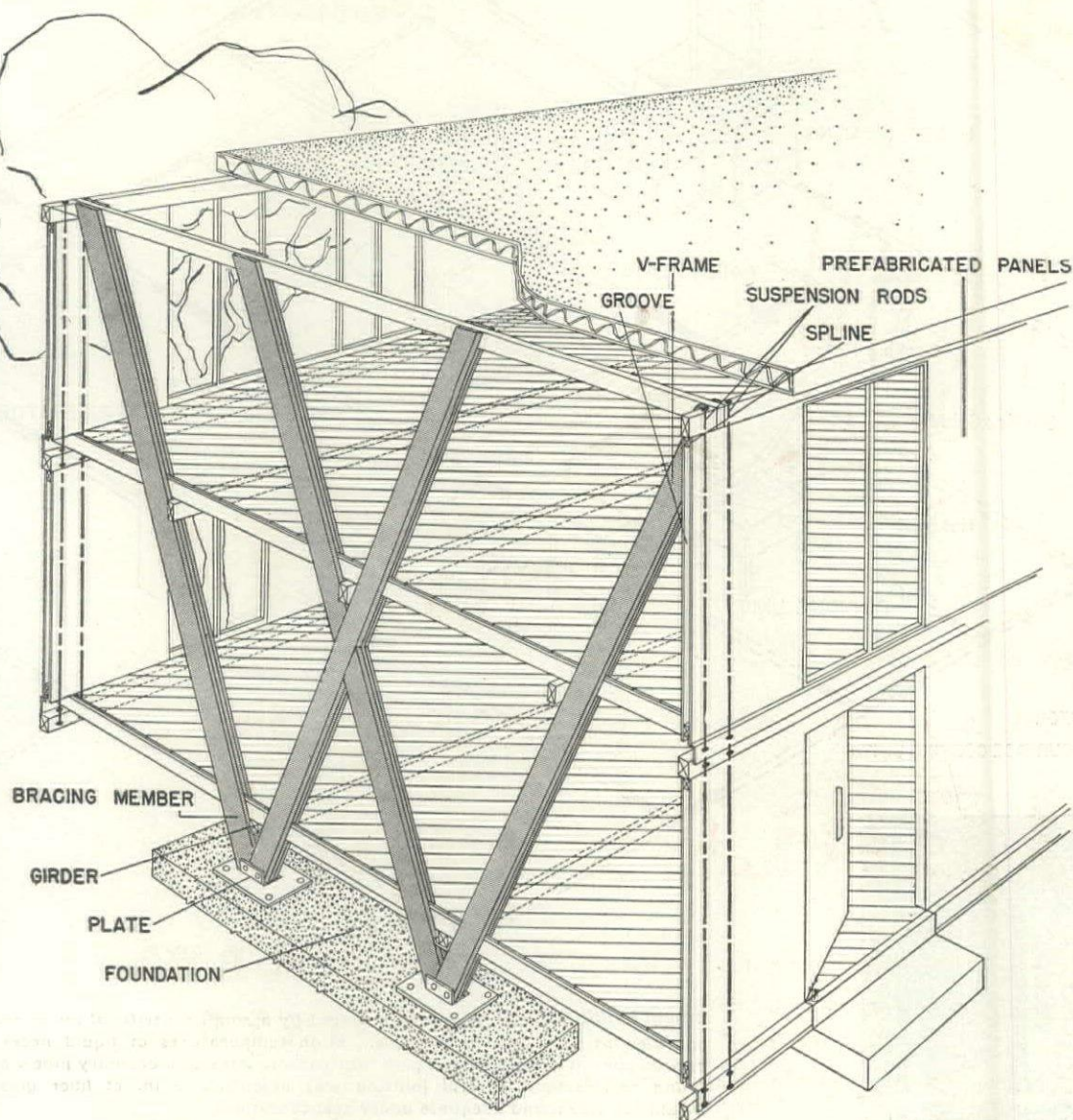


WALSEAL*
(patented)
VALVES
FITTINGS
FLANGES

PRODUCTS AND PRACTICE

NEW FRAMING SYSTEM, adaptable to wood or metal construction, yields maximum stability with minimum material.

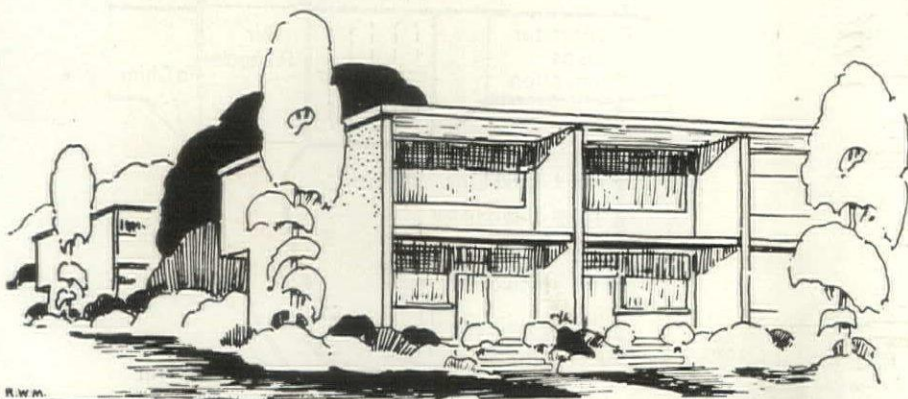
R. W. Marshall, architect.



A novel system of construction which promises real economies in light, one and two story structures has been recently patented by a young Georgia architect, R. William Marshall. Actually more of a structural principle than a system—since it can be executed in wood, metal or concrete with a wide variety of detail—the Marshall method employs a series of two or more V-shaped vertical members which interlock to form a W. They are designed to replace the conventional column or loadbearing wall. When anchored at two or more points to concrete piers, these members achieve stability in a transverse plane. Rigidity in the other direction is achieved by longitudinal joists and curtain walls. To reduce heavy framing to a minimum and to get maximum performance out of his principal W-shaped members, Marshall suspends his exterior walls and the outer edges of his floors. Metal rods in tension carry this load. Prefabricated panels may then be slipped into place along continuous horizontal splines carried by these rods.

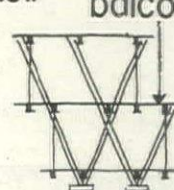
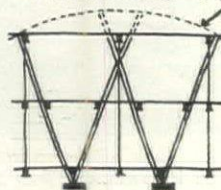
In these days of acute shortages of structural materials, Marshall's system has much to recommend it for row housing. It has considerable flexibility, permitting staggered floors and the creation of cantilevers and balconies without complicated framing. It reduces foundations to a minimum, with a consequent reduction in labor and material. Site preparation—especially on level terrain—is greatly reduced. And in wood or metal, the entire structure is susceptible to a high degree of shop-fabrication.

HEAVY FRAMING MEMBERS are reduced in number by use of interlocking V's instead of columns or loadbearing walls. Application to row housing is demonstrated by architect Marshall's sketch below. Entire structure is free of contact with ground, simplifying grading and foundations, termite and fungus control. Since walls and outer edge of floors can be suspended, system permits overhangs and set-backs with minimum structural complications.

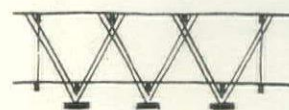


alternate roof const.

balconies etc.

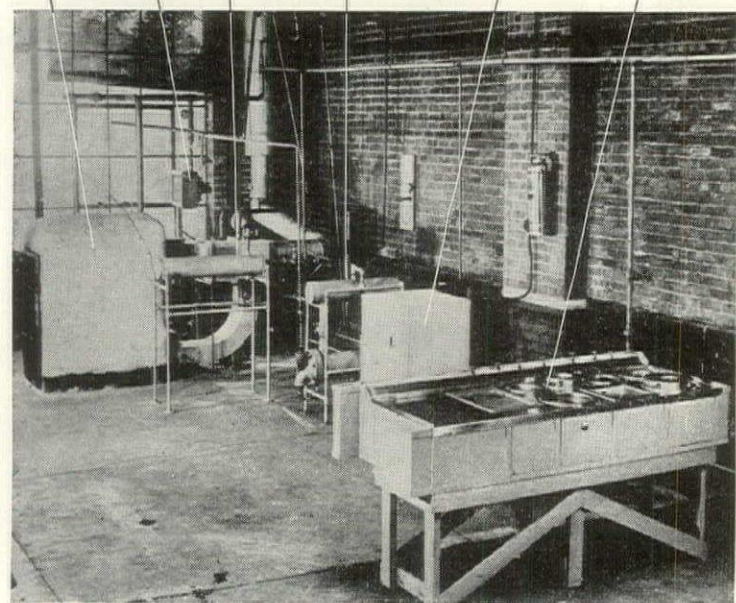
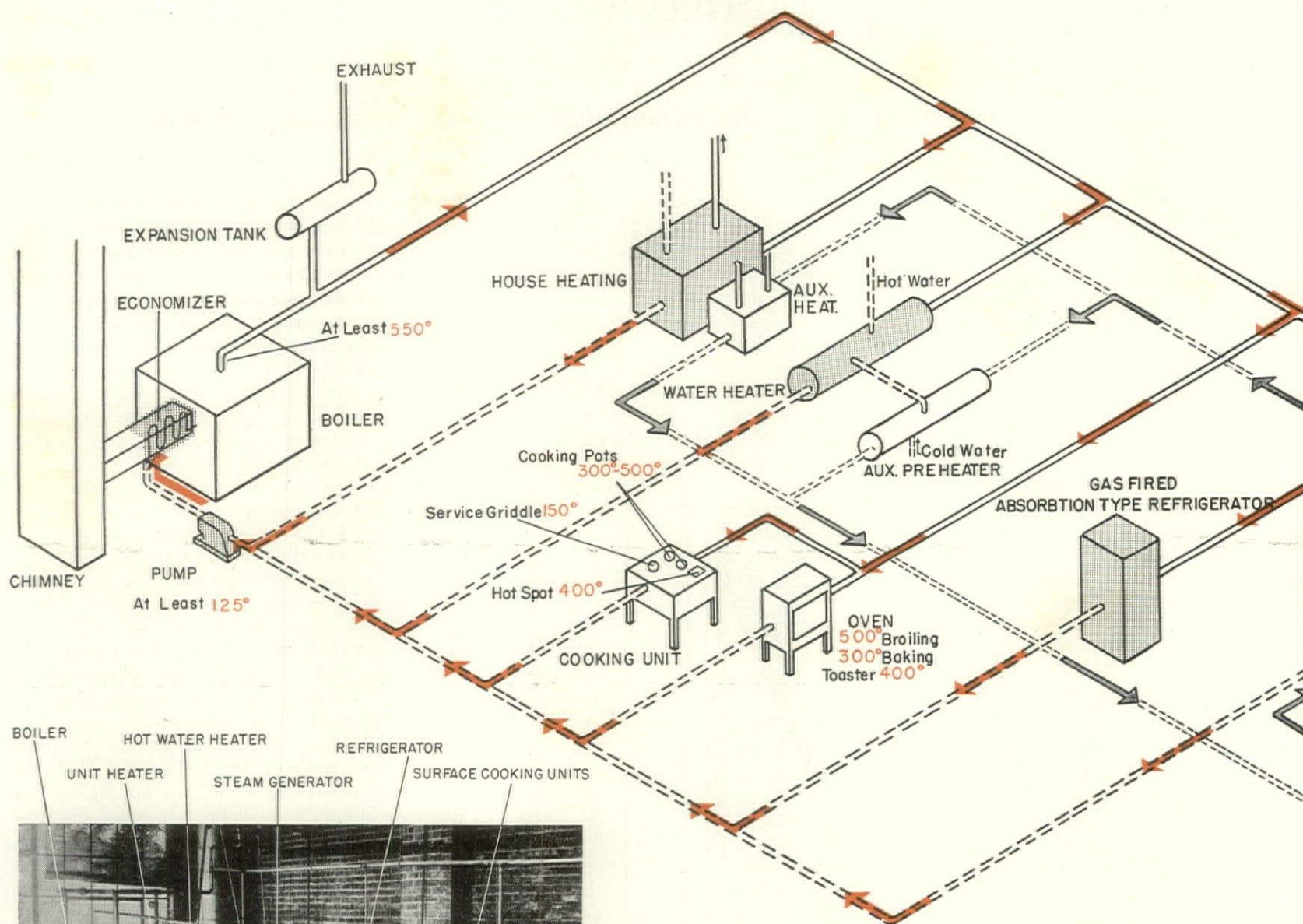


TWO STORY

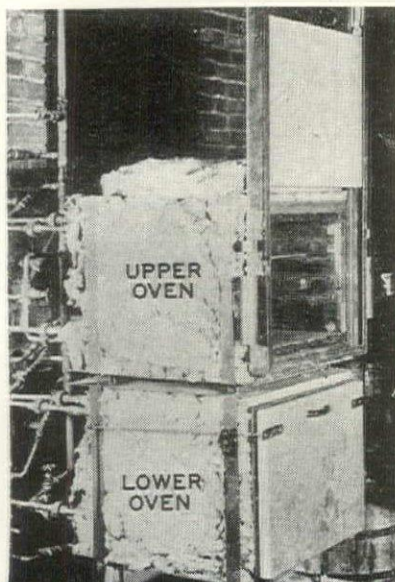


ONE STORY

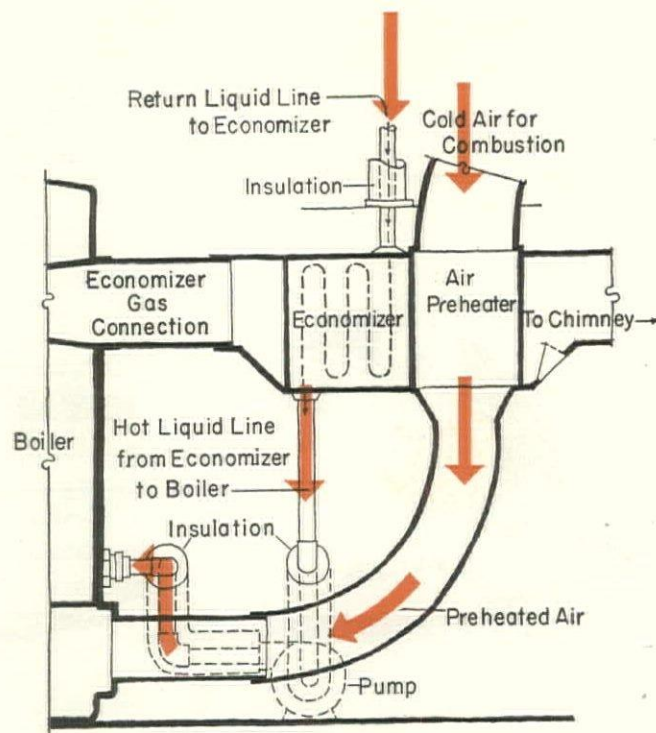
LIQUID HEAT POWERS DOMESTIC UTILITIES. Using a new fluid which does not freeze at -67°F and d



PILOT INSTALLATION at Jersey plant (above). Experimental ovens (left) have no ventilation.

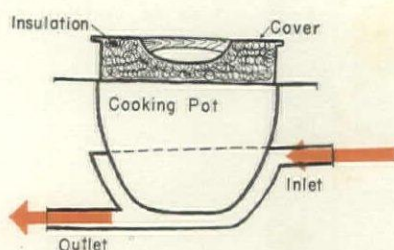


CIRCULATION SYSTEM is simple, powered by a small centrifugal pump and operated at atmospheric pressure. High temperatures of liquid necessitated special insulation and pipe fabrication. Although ordinary pipe was found satisfactory, careful jointing was essential. 2 in. of fiber glass insulation was found adequate under test conditions.

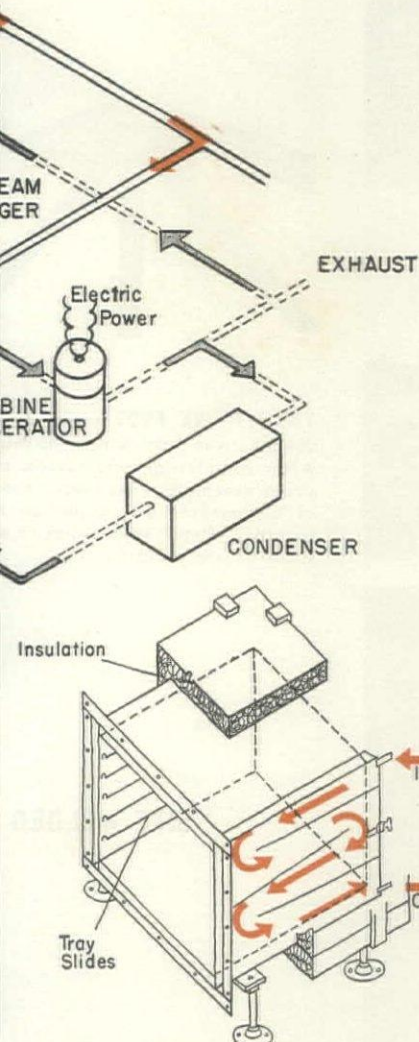


HEAT ECONOMIZER Flue gas temperatures were halved—with consequent increase in efficiency and safety—by by-passing both returning liquid and fresh air for combustion around flue between boiler and chimney.

800° F, the Pierce Foundation proves the practicability of a single energy-source for the house. The system is scheduled for commercial production.



SURFACE COOKING is done in countersunk utensils with insulated tops which fit into double wall depressions. Liquid flowing through this cavity yields quick, even heat.



The idea of using a high boiling point liquid for all domestic heating, cooking and refrigeration is intriguing and not especially new. But until recently, it had not gotten much beyond the realm of speculation. Water turns to steam at 212° F and hence cannot be used to fry an egg, bake a cake or run a gas (absorption type) refrigerator. A fluid into which much more heat could be pumped—say 500° or 600° F—without evaporating would obviously do the trick. But where to find such a fluid?

As long ago as 1935 Orion O. Oaks, Chief Engineer of the John B. Pierce Foundation, had experimented with the idea but had had to abandon it because any available fluid with such a high boiling point had too high a freezing point for practical use. During the war years, the log jam was broken with the perfection of a fluid with the jawbreaking name of tetracresylsilicate and the following remarkable properties:

- 1) Boiling point—817° to 825° F
- 2) Solidifying point—undetermined; though liquid viscous at -65°
- 3) Extremely fluid at temperatures above 100° F
- 4) Viscosity similar to SAE 20° at 70° F
- 5) Specific gravity—1.13
- 6) Specific heat—0.43
- 7) Nonpoisonous
- 8) Noncorrosive
- 9) Nonexplosive
- 10) Nontoxic

With this fluid fully developed,* the Foundation and Mr. Oaks were able to proceed with laboratory tests of an experimental system. The results have now been released—and they indicate that liquid heat can be used to do all the household chores at about 50 per cent less operating cost than conventional utilities.

Mr. Oaks' objective was to design a system which would supply all of the services from a single heat source, employing a liquid as the heat—or energy—transfer medium. This medium would then be used to operate the house heating, domestic hot water supply, cooking, baking, refrigerating, drying, air conditioning, and generating electrical energy for light and power. The liquid would be raised to the desired temperature by burning any type of fuel—coal, gas or oil—in an efficient furnace, and the heat distributed by means of the liquid to the various equipment units. Losses would be limited to those of the boiler and the radiation from the transmission lines and equipment units.

The experimental installation at Raritan, N. J. consists of a hand-fired coal boiler where the liquid is raised to the necessary temperature, unit heater, hot water heater, steam generator, refrigerator, cooking unit and oven. These are connected by a closed system for circulating the hot fluid to all equipment and returning it to the boiler.

* The Foundation controls the patents and plans to license the manufacture of the miracle liquid.

The most remarkable aspect of the entire set-up—the item which really makes it practicable for domestic application—is the individual, automatic temperature control. This control substitutes for the thermostat in conventional systems. It is a completely self-contained apparatus, activated by the heat of the system itself, which can be set at any temperature from "off" to the maximum provided by the system. Under test, this control was successful in maintaining required temperatures within a very narrow margin.

Primary generator in the system is a conventional liquid-tube, liquid-wall boiler. Although it might obviously be stoker-, oil- or gas-fired, in this experiment it was deliberately hand-fired to test the system under the least favorable conditions. (It was found, incidentally, that a maximum lapse of 45 min. intervened between laying the fire and reaching the desired temperature for the fluid.) To reduce flue temperatures and to make the system as economical as possible, flue gasses were used to preheat air entering the combustion chamber and to preheat the liquid returning from the circuit. By this shrewd device, flue gas temperatures were halved and over-all heat conversion efficiency raised to well over 80 per cent.

Since the fluid is circulated at atmospheric pressure, the small pump at the end of the return has merely to correct for whatever head there is in the installation. An expansion tank is connected to high point of circuit.

To develop the maximum ease and efficiency of operation in such a primary generator, Mr. Oaks is now building one of his own design. This generator will be automatically fired and thermostatically controlled, with heat economizing features built into compact case.

House heating unit, at the temperatures easily available in the heated liquid, could be either steam, hot water or hot air; and the liquid could also serve a summer cooling system of the absorption type if desired. But Mr. Oaks relied upon a small unit heater to get an approximate expression of a hot air application. Tests showed the following performance:

Total heating surface 6.76 sq. ft.
 Outlet area 0.905 sq. ft.
 Velocity of leaving air 600 fpm
 Entering air temperature ... 80 F
 Leaving air temperature ... 200 F
 Volume of leaving air 543 cu. ft. pm
 Entering liquid temperature. 550 F
 Leaving liquid temperature. 475 F

From these tests, he concludes that, thanks to higher temperatures and higher air velocities, hot air heating coils can be reduced to one-quarter conventional size.

Hot water heater employs conventional type heat exchanger with submerged hot liquid coils. Although in the test installation it was of the tankless, instantaneous type, it could be used in connection with storage tank.

(Continued on page 214)

INSULATED OVENS have double-walled sides and top with system of internal baffles which guarantees even distribution of liquid heat.

	Btu	gpm
Griddle	11,354	0.237
3 small cooking pots	12,000	0.252
Large cooking pot	8,000	0.168
Hot plate	4,800	0.1005
Hot water supply	20,750	0.435
Refrigerator	3,000	0.063
House heating coil	60,000	1.260
2 ovens	24,000	0.505
1 toaster	1,300	0.0295
	153,204	3.218
Light and power (5,000 watts)	42,500	0.893
	195,704	4.111
Radiation loss 10 per cent (Piping not insulated)	19,570	0.411
	215,274	4.522

PRODUCTS AND PRACTICE

Cooking Unit Here the application of liquid heat required the complete redesign of the conventional stove, with its flame or coil. Mr. Oaks' solution was a heavily-insulated, metal sheathed strip, rather like a cafeteria steam table in appearance. Into this are countersunk double-walled depressions of various sizes and depths. Slipping snugly into these depressions are removable cooking utensils with insulated covers. The unit also has a griddle for surface cooking and a low-temperature service plate, both flush with the top. Each pot and plate has an individual automatic control for any desired temperature. Time required for reaching a working temperature was 30 seconds.

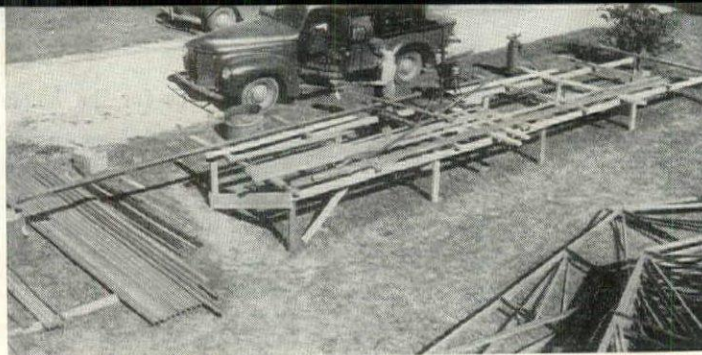
Refrigerator The experimental system used a pre-war unit of the gas-fired, absorption type. Only alteration involved substituting hot liquid for gas flame. Performance over entire test period was satisfactory.

Baking Unit is also of special design. For experimental purposes, it consists of two heavily-insulated, double-walled metal ovens of standard size. One has a door which slides vertically, the other one a door hinged on the side; both proved equally satisfactory. The double walls and top constitute the heat source. Here, by means of staggered baffles, the heated fluid is evenly distributed over the entire surface. As in the other units, the temperature control is individual and automatic. The ovens were not ventilated and "all experiments to date indicate that no ventilation is necessary or desirable." A maximum of two minutes was required to raise ovens to working temperature and cooking times for various dishes were just about cut in half.

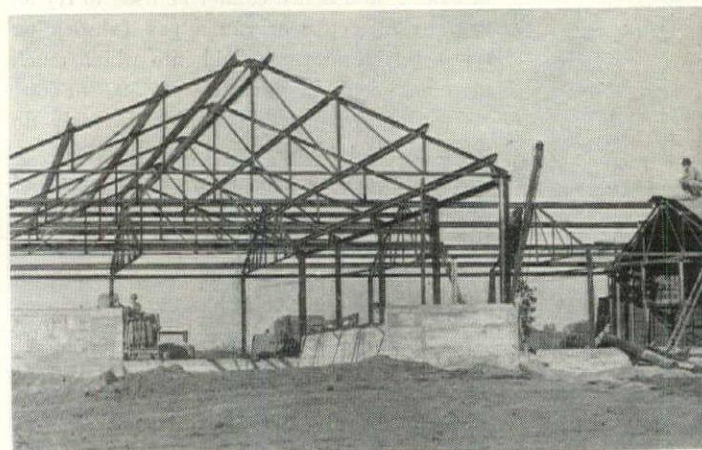
Turbo-Electric Plant As an adjunct to this system, but independent of it, Mr. Oaks has suggested a turbo-electric plant. This addition would produce an entirely autonomous system of domestic utilities and make it very attractive for any house beyond the reach of gas mains, power lines and oil trucks. At the same time it permits an increase in the over-all efficiency of the system. The liquid heat would be used to produce high temperature steam which would in turn operate a turbine. Hooked up with a generator, electrical energy sufficient for ordinary domestic purposes could be produced. Since the turbine would use only a fraction of this energy, however, two further alternatives are added to increase its efficiency. The surplus steam could be used to preheat hot water and supplement house heating; or it could be put through a condenser to create a vacuum to boost the turbine's work.

Convinced that the system has proved its practicality and economy, the Foundation is now in process of licensing both the production of its fluid* and the basic patents covering the system as a whole. It is too early to say who will have it for sale and when, but it is apparent that conventional domestic utilities face strong competition from a new quarter.

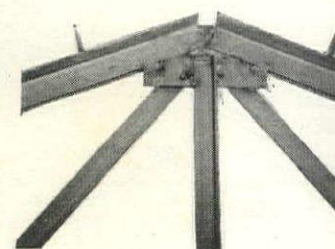
* Ultimately this might cost no more than 50 cents a gallon—and since it is chemically both stable and inert, "refilling" the system might be necessary only at five year intervals.



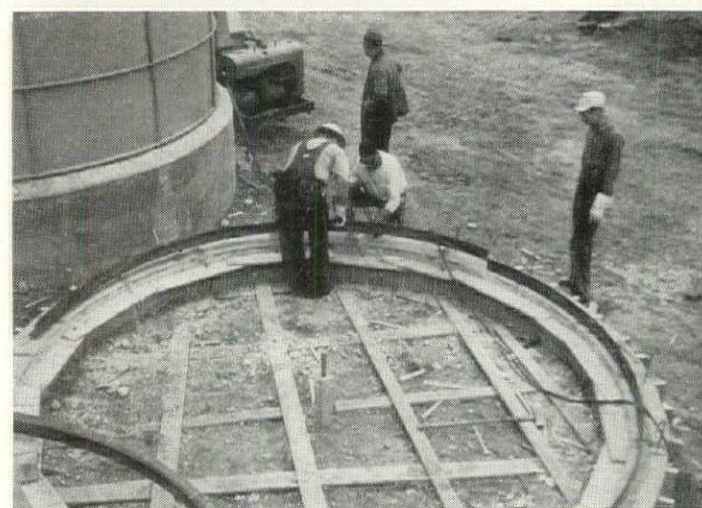
PORTABLE electric welder and cutter were used at the site to fabricate frame from precut structural steel members. Project proved site or local shop cutting of materials may be practical for this type of construction.



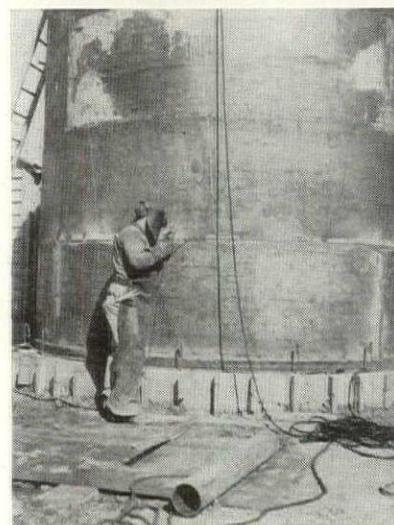
SITE-WELDED framework used bolts except to anchor columns and studs to foundation. Research revealed that a maximum of nine steel members are needed in construction of one-story building having clear spans of 24 ft. to



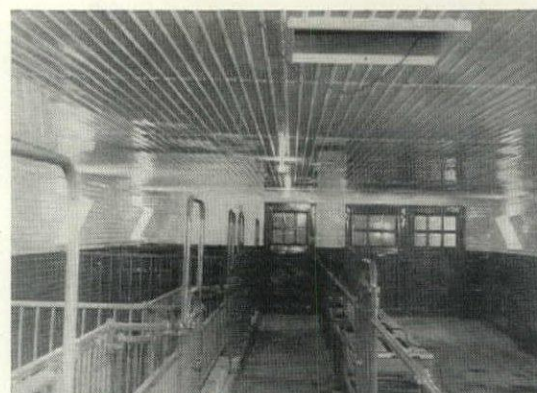
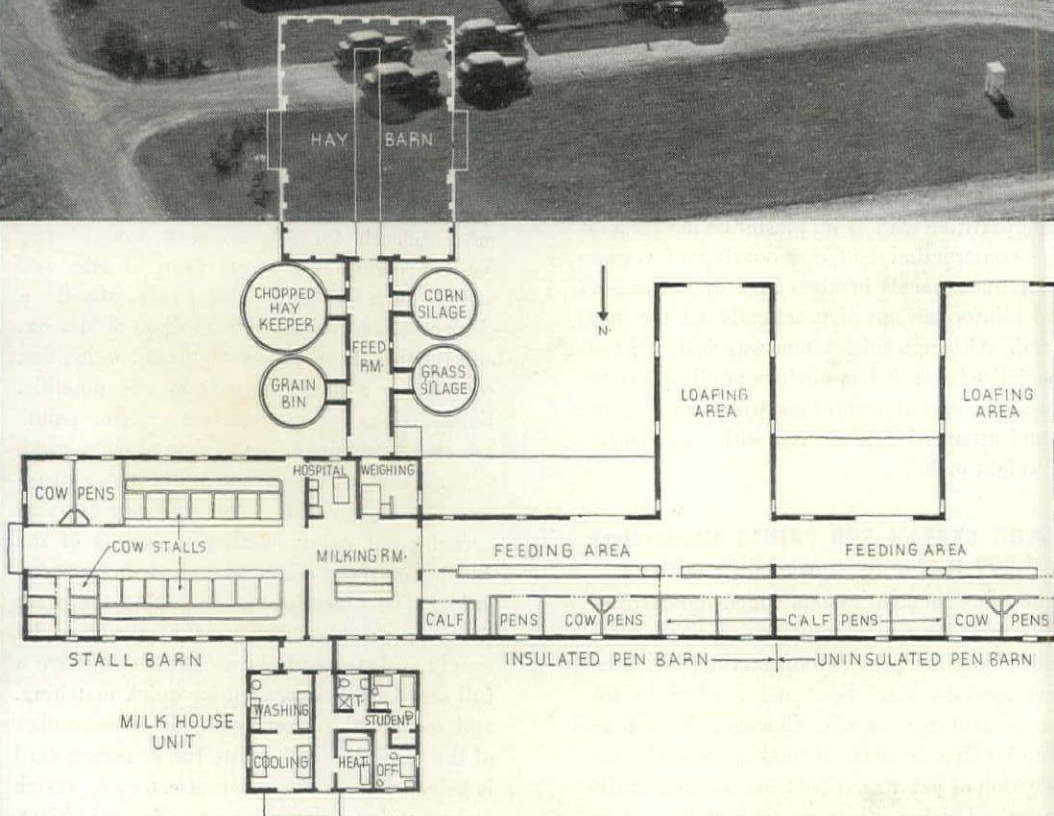
TWENTY-FIVE FOOT truss, weighing 293 lbs., was fabricated in 65 minutes. After completing ten trusses, workers could assemble truss faster than of comparable size could be bolted together. Detail shows apex of truss before painting.



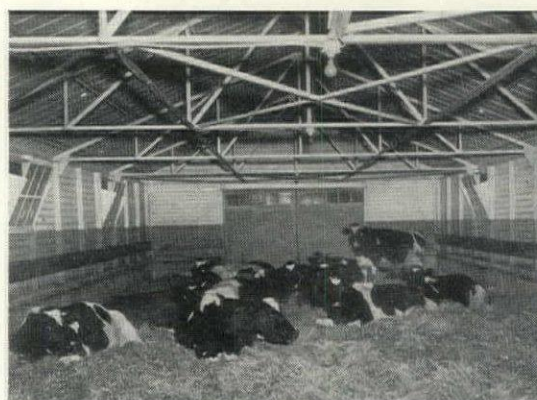
SITE-WELDED



PREFORMED SECTIONS of base ring of silo are welded together and bolted to foundation. (above) Other storage units in the group include a corn silage silo built of galvanized sheet steel sections bolted to metal frame, and a chopped hay storage unit constructed of steel angles and louvered galvanized sheet steel.



FEEDING AREA OF INSULATED PEN BARN



LOAFING AREA OF UNINSULATED PEN BARN

BUILDINGS—employing a minimum number of standard shapes—demonstrate low-cost, superior construction at University of Wisconsin.

One of the nation's most backward classes of buildings—those for the farm—came in for a general overhauling last month when the University of Wisconsin's East Hill Farm at Madison, Wis., was unveiled. In both plan and construction, the new project represents current trends in farm building design and reflects the degree to which agricultural production is being industrialized. At East Hill, the barn has become a plant: and though urban eyebrows may be raised at buildings which provide "milking parlors" and "loafing areas" for dairy cows, the project is the result of deadly-serious research.

Working under a grant established by the Carnegie-Illinois Steel Corporation, Wisconsin's Prof. Stanley A. Witzel has produced a group of specialized buildings without architectural pretensions but incorporating many interesting features. His primary object was

to demonstrate the possibility of low-cost, long-lived, fire-resistant dairy plants. Although no attempt was made to limit materials to steel exclusively, it was largely used for a number of reasons. Developments in portable welding and ready accessibility of such equipment make site-welding practical, even to rural users. Experienced war-trained welders are now available throughout the country. And by designing the structures of a minimum number of standard shapes, local dealers can easily stock all necessary parts.

It was found that in the construction of many one-story buildings having clear spans from 24 ft. to 40 ft., a maximum of nine—and possibly as few as five—sizes of steel members are needed for the framework. At the Wisconsin project, the following stock structural shapes were used: angle roof truss and struts, $1\frac{1}{2}$ by $1\frac{1}{2}$ by $\frac{3}{16}$ in.; angle roof truss and

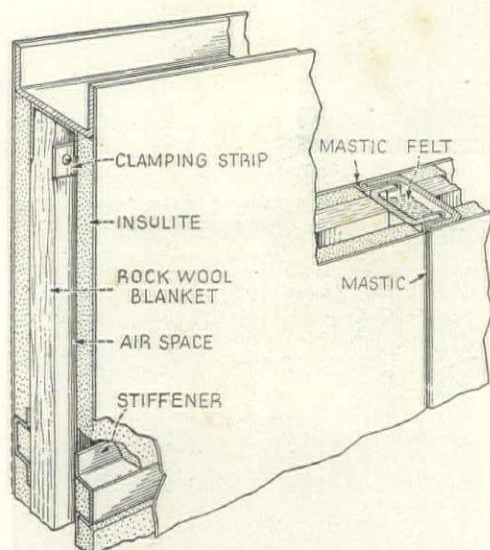
window sill, 2 by $1\frac{1}{2}$ by $\frac{3}{16}$ in.; 4 inch H beam at 10 lbs., column; 5 in. channel at 6.7 lbs., roof purlin for 12 ft. span; $3\frac{1}{2}$ by $2\frac{1}{2}$ by $\frac{1}{4}$ in. angle, eave member; 3 in. channel at 5 lbs. roof purlin for 8 ft. span; and $2\frac{1}{2}$ by $1\frac{1}{2}$ by $\frac{3}{16}$ in. angle roof truss for 40 ft. span.

All surfacing of roofs and exterior and interior walls was in steel sheets, spray-painted after erection. In the heated and insulated portions of the project, wood studs and joists were used to simplify attachment of interior steel walls and ceilings. Elsewhere the superstructure is entirely of steel.

Based on the experience at East Hill Farms, pilot plans and structural details for many different types of farm buildings having clear spans of 24 ft. and upward, will be prepared by the Carnegie-Illinois Steel Corp. These drawings will be available by mid-summer.

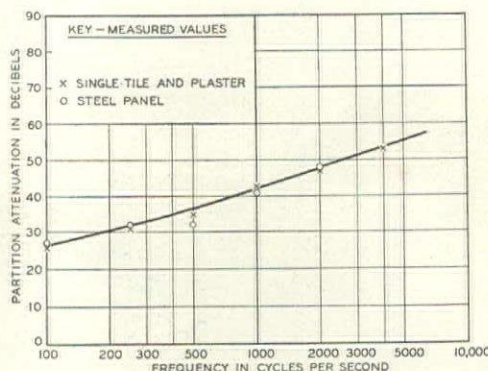
STEEL PANEL CONSTRUCTION for soundproof rooms provides attenuation comparable to hollow tile walls.

Unusual steel panels for constructing light-weight demountable soundproof rooms have been developed by the Bell Telephone Laboratories for use in their new buildings at Murray Hill, N. J. Having an over-all thickness of 3 in., the panels are formed of two composite sheets of steel cemented to composition board with a layer of rock wool attached to the inner face of one of the sheets. This construction elimi-



nates any mechanical coupling of the two components of the panel which might occur if the rock wool had been packed between them. Thus discontinuity is achieved.

For acoustic efficiency and protection against fire, the company previously constructed its soundproof rooms of hollow tile plastered on both sides. These rooms were expensive to construct, noisy and dirty to dismantle, and had practically no salvage value.



The new panel construction (see chart) shows that it is inherently capable of giving substantially the same protection as a single hollow tile wall. The steel panels weigh only 7 lbs. per sq. ft. as compared to 31 lbs. per sq. ft. for a tile partition with $\frac{3}{4}$ in. plaster on both sides. The construction and dismantling of rooms using these panels involves little dirt or noise, and allows salvage of practically all the material. Although this system was designed for specialized use, it has obvious applications to a wide range of conditions where maximum sound attenuation is desired with a minimum of weight or bulk.

COLOR SYSTEM FOR PAINTS standardizes 1,000 shades by prescription mixing.

A new custom color system which standardizes 1,000 interior and exterior paint tints, tones and shades by prescription mixing, has been developed by Carl Foss and Fred Rahr for the Martin Senour Co., Chicago. Known as the Nu-Hue System, it makes possible the selection of paint samples from a scientifically organized color directory to match or harmonize with fabrics or decorating pieces. Each of the 1,000 samples has a rigid standardized formula which can be prescription mixed by the paint dealer in less than 15 minutes. The

Nu-Hue System of standardized paint mixing and color matching guarantees absolute accuracy of paint color without experimentation. It eliminates difficulties of matching wet paint to dry samples and time wasted by painters in trying to blend elusive tints.

Backbone of the Nu-Hue System, which is used only with Nu-Hue paints, are six selected hues of yellow, red, orange, purple, blue and green, plus a neutral gray, three types of white and an extender. Organic in structure, these paints are said to represent advanced scientific development in color manufacture. They are non-gloss, non-dulling, non-fading and have a permanence for both interior and exterior use. The hues used together with the proper white and gray, constitute the method for blending the large number of evenly spaced tints, tones and shades. The most difficult formula consists only of two Nu-Hue colors and simple parts of gray and white. To achieve a deep flat tone, Mix-Ex, a clear extender, is used. By addition of Mix-Ex, and the use of the different types of white, flat, semi-luster and glossy finishes are possible. Formulations for interior and exterior paints are also determined by the type of white used.

The heart of the system is the color directory and color charts. The directory contains actual paint color swatches or cards of the 1,000 different colors arranged in spectral order. The prescription for mixing the exact shade is given on the back of the card by weight, volume and ratio. The charts have a full set of colors arranged for quick matching, and include the prescription or code number of the formula. To operate the system, a card is selected from the color directory to match or harmonize with the carpet or desired object. The exact shade is then mixed by the paint dealer according to the prescription. Color directories and paints are available to decorators, master painters and dealers.

BUILDING REPORTER

OIL-BASE WATER-MIX ENAMEL for walls, ceilings, kitchens and baths is easily applied.

This odorless, oil-base enamel which uses water as a thinner, produces a hard, lustrous, glossy finish which washes like a dish. In appearance and wearing qualities, Spred-Luster is comparable with the best prewar finishes. It is applicable to almost any surface and is exceptionally suitable for kitchens, bathrooms, walls and ceilings. It also gives a full enameled finish to doors, baseboards and moldings. Spred-Luster colors are attractive, matching those of Glidden's Spred, the flat water-mix wall paint, and they can be readily cleaned with soap and water or regular paint cleaners. To use, the painter has only to mix the material with water to desired consistency and start painting. Application is easy and there is no pull under the brush. The manufacturer states that it can be applied in half the time required for applying conventional types of oil base wall paints or woodwork enamels. As thinning is done with water, the material goes further and is less expensive to use. It is a good sealer and two coats will

cover grease spots, plaster patches, etc. It is odorless, thus the room may be used immediately after painting. Any splattering will wipe off with a damp cloth and paint brushes may be washed out in soap and water. A new emulsion process of manufacture, using quality ingredients, is responsible for this water-mix oil enamel which is the first such product developed by the industry.

Manufacturer: The Glidden Co., 11001 Madison Ave., Cleveland, Ohio.

THREE DIMENSIONAL PLASTIC WALL COVERINGS hung like wallpaper.

Two new sculptured wall coverings, of three dimensional plastic on a paper back, are hung like heavy wallpaper. The material, described as a synthetic with basic ingredients similar to those of linoleum, has a similar consistency. One of the sculptured designs, Woodgrain, is a series of uneven vertical ridges. The other design called Matting, looks and feels exactly like its name. (Continued on page 218)



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**the most beautiful, inspiring and practical
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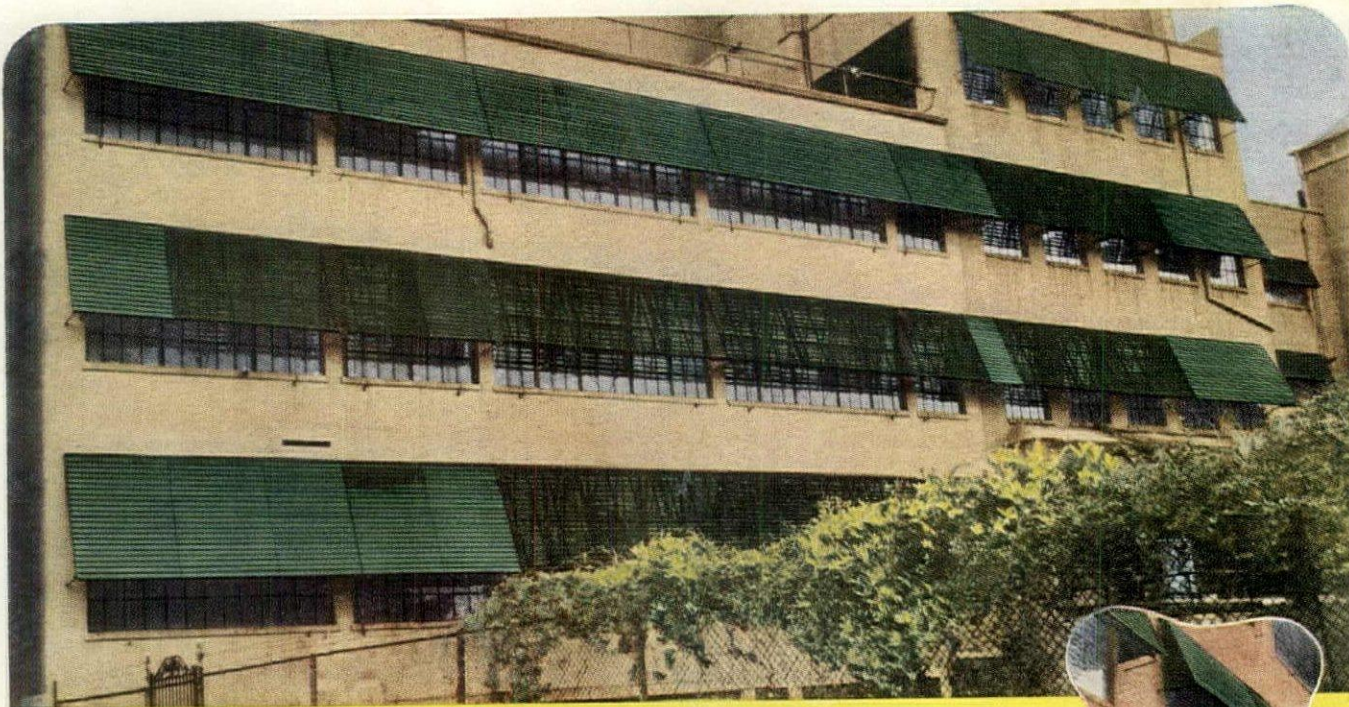
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I N P A R T I T I O N S — — *adaptability* P A Y S



This photograph and close-up picture shows how Rusco Awnings enhance the appearance of the famous Bulova Watch Company's New York factory. The modern, streamlined effect is an effective outer reflection of the company's own product style leadership.

RUSCO All-Metal Venetian Awnings for Permanent, Fireproof, Trouble-Free Service

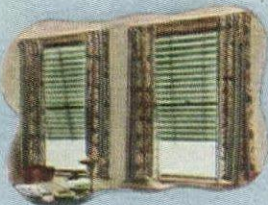
NOTHING TO STORE, REPAIR OR REPLACE

● Rusco Venetian Awnings end awning trouble forever! In one permanent installation these all-metal life-time awnings give you all the best advantages of canvas awnings and venetian blinds . . . with none of the disadvantages.

Rusco Awnings provide year-round sun protection with full ventilation, visibility and light control . . . adjust instantly at the turn of a crank to any degree of light or shade. They keep heat outside the building walls. And they end the costly seasonal maintenance job of repairing, putting up, taking down and storing awnings. Even in winter, users claim Rusco Awnings are indispensable because of the added weather protection and complete light control.

For air conditioned buildings . . . and for every

commercial building where comfort and heat exclusion is a factor . . . Rusco Awnings provide a big value in heat control. At the modern Bulova Watch Company plant in New York, for example, it is estimated that installation of Rusco Awnings will cut the summer cooling load up to 20%! In a ten-day test, the awnings were found to reduce the inside temperature of the glass blocks in Bulova's modern windows from 104° to 82°! Made of rust-resisting galvanized and Bonderized steel, Rusco Awnings are finished with two coats of finest baked-on enamel available in many popular colors. If you plan new building, improvements to present buildings, or want to cut air conditioning costs, ask for the engineering facts on these efficient modern awnings. Write The F. C. Russell Company, 1836-AF Euclid Avenue, Cleveland 15, Ohio.



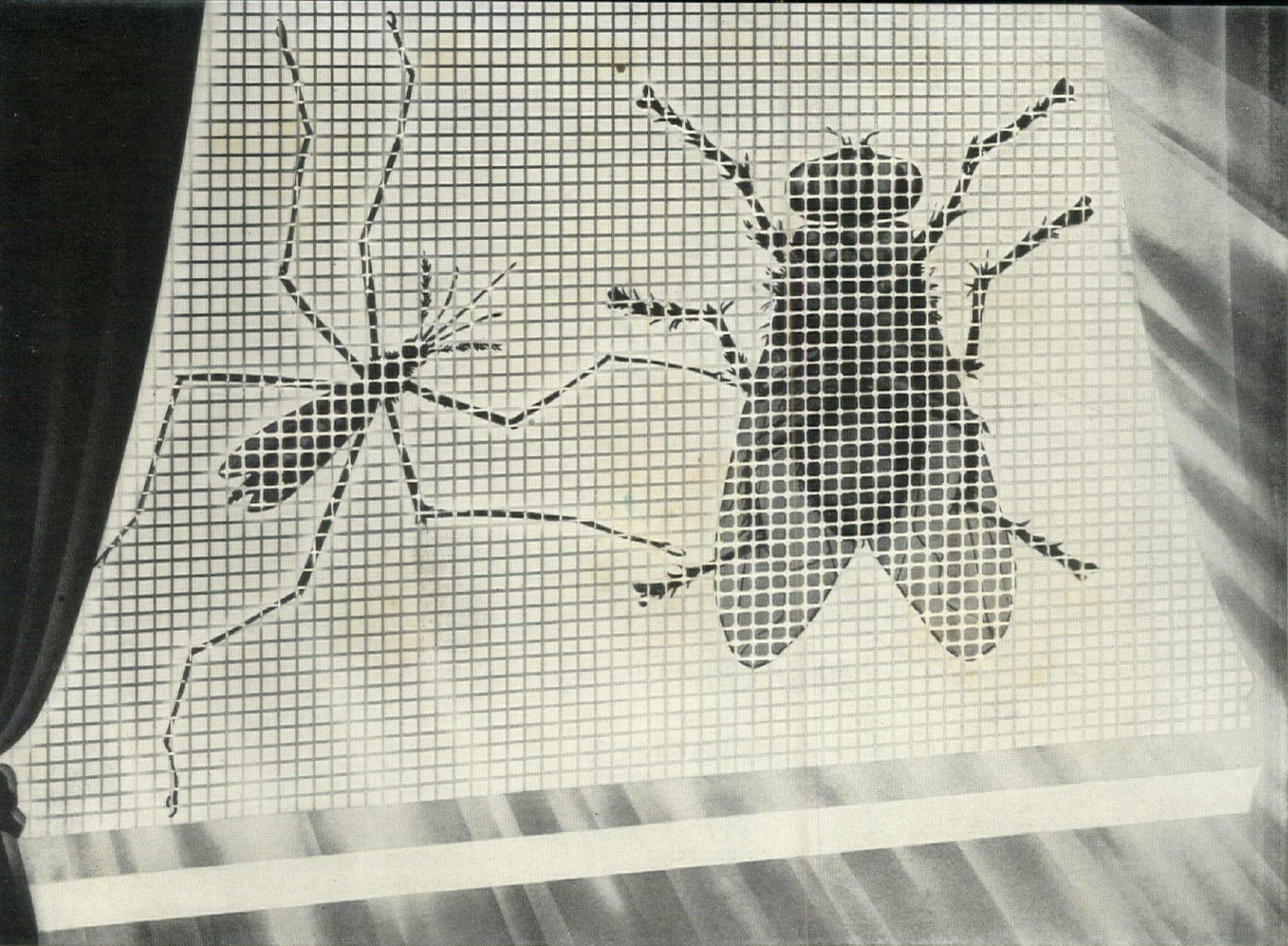
This interior view shows the pleasing inside appearance of Rusco Venetian Awnings. Use of draperies is not affected.

RUSCO ALL-METAL VENETIAN AWNINGS

Product of The F. C. Russell Company
1836-AF Euclid Ave., Cleveland 15, Ohio



A simple inside crank operator permits easy adjustment to any degree of light — full visibility to shade in seconds.



Keep **SCREENING** in mind as you design or build

As you make your plans to meet the unprecedented demands for building of all types—whether you're an architect, merchant builder, pre-fabricator, contractor, or building supply dealer—keep insect screening in mind.

The American people have it on their minds. And 42 out of our 48 states have laws or regulations regarding the use of screening in hotels, restaurants, food, drug, and beverage handling, processing and dispensing establishments. There are laws requiring screening even in tourist and trailer camps.

The New York Wire Cloth Company is headquarters for screening. It is the only company which offers a complete line of insect screening—both metal and plastic. Included in this line are ALDURA aluminum, now made of Alcoa Alclad wire — OPAL, heavy zinc coated — LIBERTY BRONZE—and PLASTISCREEN, the modern miracle plastic screening. There's one for every condition and every pocketbook.

Featured in the three wire screenings is the famous MULTI-STRAND edge which gives extra strength where needed most—in the edge. Printed foot numerals make planning and measuring easy. This edge also speeds installation and stays put.

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NEW YORK WIRE CLOTH COMPANY
offers all four
ALDURA ALUMINUM
OPAL ZINC COATED
LIBERTY BRONZE
PLASTISCREEN**

Ceaseless testing of the finest wire and workmanship assures top quality and uniformity in strength, gauge, weight and body. When you recommend or install these screenings you can feel confident you will be proud of the result.

PLASTISCREEN, made of .015 filament (Dow Chemical Company's Saran), is not new. The first plastic screening ever produced, it appeared on the market in 1942 and then went to war. Here it proved to be a miracle screening under the tests of all climatic conditions. Now it's available again.

Dark antique in color, with a lustrous sheen, PlastiScreen harmonizes with most colors. Its mesh opening lets air through and gives maximum protection against disease carrying insects. It's resilient, rugged and durable—is easy to install. It carries on a proud tradition in screening.

As you design or build, keep ALDURA, OPAL, LIBERTY BRONZE and PLASTISCREEN in mind. They represent the *only complete* line of insect screening available today. You can rely on all four to meet the highest requirements in screening.

New York Wire Cloth Company, 500 Fifth Ave., New York 18, N. Y.

ARCHITECTS AND BUILDERS



... WITH **CONFIDENCE**

AS America's architects and builders plan for the greatest home-building program of all time, Rittenhouse announces a *radically new kind of electric door chime signal.*

► By the use of techniques unknown before the war, Rittenhouse has achieved (1) a clear melodious tone new to door chimes, (2) the elimination of "chime static"—objectionable mechanical noises. And, with other new mechanical triumphs, Rittenhouse Chimes promise beauty and charm that will gloriously enhance the interior loveliness of every home.

► Rittenhouse Electric Door Chimes have been acknowledged leaders for years. Nationally advertised in the most heavily circulated and finest magazines and newspapers—now and for many years past—Rittenhouse Chimes have gained overwhelming public appeal and acceptance for incomparable tone superiority, exceptionally dependable performance and long life.

► Because Rittenhouse Chimes are branded, nationally-known and guarantee the highest standards of chime engineering, architects and builders in every section of the country specify these modern signaling devices with perfect confidence. They assure lasting client and home-owner satisfaction and add prestige to your reputation for good judgment and discrimination.

► Today—more than ever before—millions of present and prospective home owners look forward with enthusiasm to the added musical cheer, refinement and utility of Rittenhouse Electric Door Chimes.

Include these modern, *better* home signals in your specifications

THE A. E. RITTENHOUSE COMPANY, INC.

Honeoye Falls, New York

Rittenhouse

AMERICA'S FINEST CHIME SIGNALS

Both designs come in a stock off-white color and can be painted with any wall paint after hanging. The patterns achieved by the play of light and shadow on the textured surface, may be further emphasized by glazing or antiquing. Preparation of the walls and hanging of sculptured wall coverings is the same as for regular wall-

paper except that the paste is used heavier. The necessity of a finish plaster coat is also eliminated by their use. The surface is washable—paste or dirt can readily be sponged off with soap and water. Available in double rolls, 16 yds. long and 19¾ in. wide trimmed, the retail price is \$15.00 per roll.

Manufacturer: Katzenbach and Warren, Inc., 49 E. 53rd St., New York 22, N. Y.

READY-PASTED CEDAR CLOSET WALLPAPER contains DDT for killing insects.

Moths, ants, flies, mosquitoes, silverfish and many other insects die shortly after coming into contact with this new closet wallpaper which contains 5 per cent of active DDT insecticide in the top coating. It is not hazardous, however, to human beings or domestic animals. Made of genuine cedar wood, a pattern simulating cedar boards and wood grain is achieved with colors containing DDT. The DDT powder applied to the paper is dyed in such a way that it does not show and will not rub off. The paper has a natural cedar odor and is washable. As the paper is ready-pasted, application is made without mess or special tools. It is dipped in water and applied. Ready-Pasted Cedar Closet Wallpaper comes in packages 48 ft. long by 15 in. wide, sells for \$2.98 a package, and is guaranteed effective for a year.

Manufacturer: Trimz Co., Inc., Merchandise Mart, Chicago, Ill.

PACKAGED METAL WINDOW is easily installed.

The new American Home Metal Window comes completely assembled in one package, factory fitted with surround and neat outside trim, glazed, and ready to install. According to the manufacturer, installation can be made in the rough opening in five minutes. Weathertight and fireproof, the units may be used singly or in combination to provide a variety of window arrangements, and is equally adapted to frame, brick or brick veneer construction. Other advantages of this new window include maximum admission of daylight and ventilation up to 100 per cent. The window is easily washed from the inside and provides space for venetian blinds within the reveal. Interchangeable screens, attached to the inside, may be left up all winter, or if taken down, need not be marked. Provision for storm sashing the American Home Window with Mesker's steel or aluminum storm sash is another feature. This specially designed storm sash is attached in such a way as to open and close automatically with the window vent when the operator is turned. The storm sash is easily hung and snapped to the vent fastener, and being interchangeable for the same size windows, they need not be numbered. Slim lines of frame and muntins, flat areas of the outside trim, three choices of inside finishing including standard wood trim, adapt the window to various exterior and interior styles.

Manufacturer: Mesker Bros., St. Louis, Mo.

(Continued on page 222)

and better

THE NEW WAY TO SPECIFY SCREENS

It's a mark of modern design to specify both screens and storm sash in one attractive, permanent, All-Aluminum combination unit.

The 'Orange' All-Weather Window consists of a strong, aluminum frame set permanently into the double-hung window frame. Into this aluminum frame slide an upper sash of glass set in extruded aluminum and, depending on the season, a lower frame of aluminum screening or another aluminum-edged pane of glass (upper screen panel optional).

To make the Spring and Fall change-overs, the owner merely exchanges the bottom panels—a twist-of-the-wrist job so easy it can actually be done *in seconds* from inside. You've solved two of your client's problems in a way he'll appreciate.

Being *all aluminum*, 'Orange' All-Weather Windows can't warp, swell, rust or stain the facade. They need no painting or repairs, and broken glass can be easily replaced when necessary.

Extruded aluminum in the top and sides of the frame and all edges of the removable units gives 'Orange' All-Weather Windows twice the strength in half the thickness, too—reducing the structural areas and increasing light and air. The total width of all the framing members is narrower than the sash frames themselves.

A detailed, descriptive booklet on 'Orange' All-Aluminum All-Weather Windows will be sent on request, and you'll find complete details in section 18a/9 of the 1946 edition of Sweet's Catalogue.

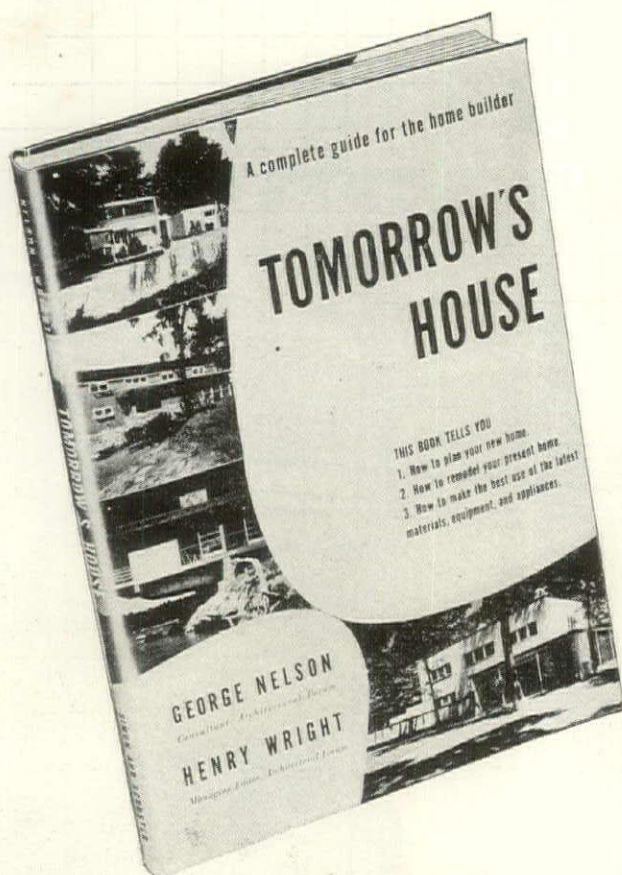


'Orange'

THE ALL-ALUMINUM ALL WEATHER WINDOW

ORANGE SCREEN COMPANY
MAPLEWOOD, N. J.

Patent No. 2156964—other patents pending



Architectural Forum's George Nelson and Henry Wright are the authors of this best-selling guide for the home builder...

FOUR months after publication, this book is selling an average of 3,000 copies a week to laymen and professionals. The fourth edition, now on press, brings total printings to 135,000 copies. *Tomorrow's House* has brought in more comments from readers than any book on any subject that we have published in recent years. The enthusiastic tenor

of most of these comments ("I am overwhelmed at the possibilities for a home" is a typical one) indicates a tremendous growth of interest in the modern house.

Tomorrow's House is illustrated with 232 photographs plus innumerable drawings. Its 18 chapters cover every phase of the modern approach to building private homes.

Building professionals endorse TOMORROW'S HOUSE

William L. Pereira:

"I was terribly pleased with every page of the book. It is the most rational and interesting approach to the problem I have ever seen. In the future, if I do houses, I will most certainly present a potential client with a copy of the book. If he doesn't like it, I'm sure he wouldn't like what I would do for him."

Morris Ketchum, Jr.:

"I have read this book with interest. In my opinion it is a clean-cut, vivid summary of the building problems and opportunities that face those who plan to build their own homes today."

Royal Barry Wills:

"It is a real and vital contribution for the man who is planning to build. Every forward-thinking American should read it."

Ely Jacques Kahn:

"This is a very worth while job. As a statement of modern approach to a house it is clear and convincing and should help many who doubt whether the new approach is agreeable to them."

Robert W. Dowling,

President, City Investing Company:

"For approximately 150 years we have forgotten how to build good homes in America. Enough copies of this book will give us the provocative push to recapture the art."

Gardner A. Dailey:

"This book is very timely and has been excellently put together as only George Nelson and Henry Wright could do it. I know of no two other persons so well qualified, and it is with pleasure that I recommend *Tomorrow's House* to all of my friends and clients."

Richard Marsh Bennett,

Chairman, Department of Architecture, Yale University:

"Let us hope it influences publishers to print more books like it and people to build houses based on the idea liberated by this thought-provoking book. It represents a new approach to the problem of telling people about the problem of real living."

Frank Lloyd Wright:

"*Tomorrow's House* is nearest to something intelligent and helpful that I have seen published on the subject."

Mario Corbett:

"*Tomorrow's House* has been in constant circulation here in the office since its arrival with hearty approval all 'round. It is by far the most important book of its kind."

SIMON AND SCHUSTER, Publishers
Dept. AT4, 1230 Sixth Ave., New York 20

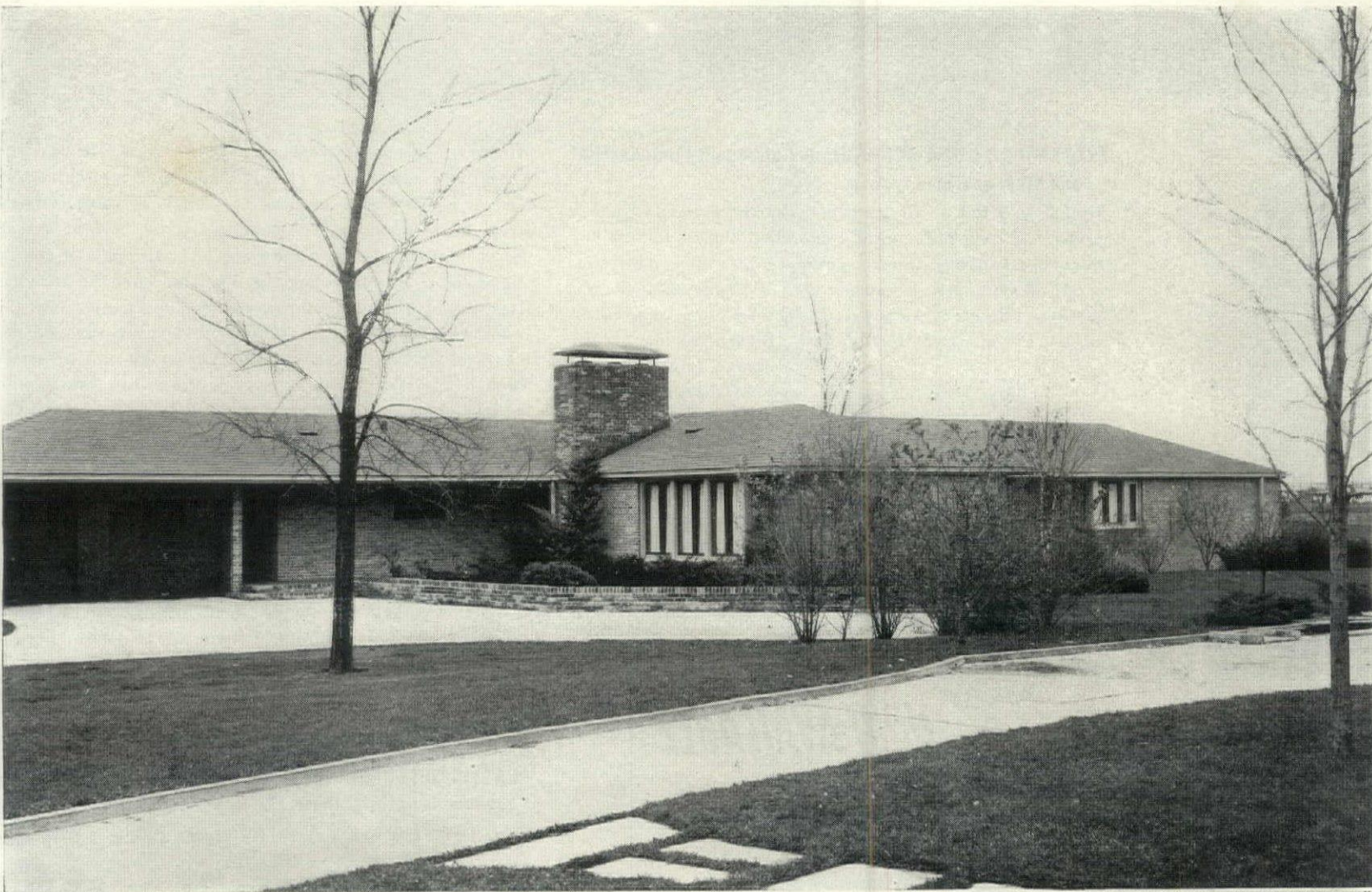
Please send me a copy of *Tomorrow's House*. When the postman delivers it, I will pay him \$3.00, plus postage charges. If this book fails to live up to my expectations, I am to return it within 5 days of receipt for a refund of the \$3.00.

Name.....

Address.....

City..... Zone No. (if any)..... State.....

☐ Check here if you prefer to enclose \$3.00 with this coupon, thus saving postage charges. The same refund privilege will apply.



The Leo B. Grant residence at Midland, Michigan . . . Designed and constructed under the supervision of Alden Dow, architect.

Photos courtesy "Sheet Metal Worker"

4 *points to remember* ABOUT WARM-AIR HEAT

The tremendous increase in public preference for what is generally called "warm-air heat", warrants the attention of architects engaged in new residential designs and modernization of older dwellings.

The reasons for this preference are to be found in the satisfaction of the hundreds of thousands of families whose homes are equipped with forced-warm-air furnaces, forerunner of the even more desirable winter air-conditioners now offered by the industry.

Winter air-conditioning systems provide this exclusive combination of advantages:

1. **WARM AIR**, with room temperatures quickly responding to automatic controls.
2. **CLEAN AIR**—Filtered at the central unit, all heat delivered throughout the warm-air duct system is free of nuisance dusts, lint and most air-borne bacteria. Keeps walls and furnishings cleaner. Lightens burden of housekeeping.
3. **MECHANICALLY CIRCULATED AIR** provides the required number of changes per hour, keeps air fresh and clean.

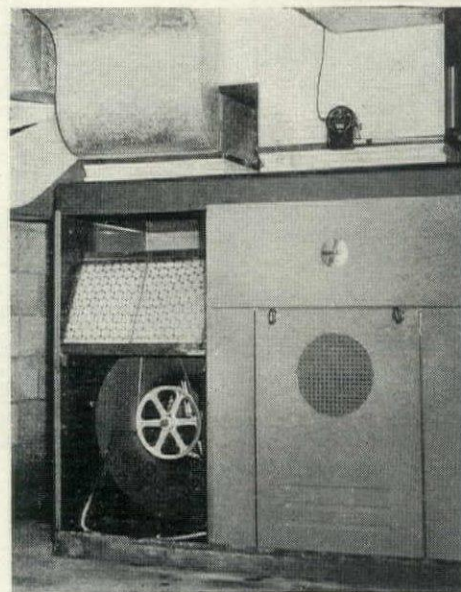
4. **HUMIDIFIED AIR** affords greater physical comfort at lower room temperatures.

Your clients will be pleased with your recommendation of this basic type of system—warm air, filtered through "DUST-STOP*" Air Filters. This Fiberglas product is the outstanding choice of the industry as original equipment because of efficiency, low annual replacement cost and ready availability through dealers from coast to coast.

For complete information on DUST-STOPs, see Sweet's Files, or write: Owens-Corning Fiberglas Corporation, Dept. 1830, Toledo 1, Ohio. Branches in principal cities.

*T. M. REG. U. S. PAT. OFF.

In Canada, Fiberglas Canada Ltd. Oshawa, Ontario.



Two zones of the Grant residence—living quarters and bedroom wing—each is supplied with its own winter air-conditioner . . . (above) Panel removed from one of blower compartments discloses position of DUST-STOP Air Filters in return-air chamber.

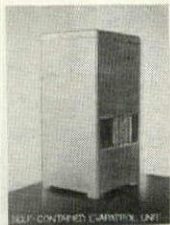
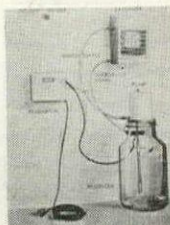
OWENS-CORNING
FIBERGLAS
U.S. REG. U.S. PAT. OFF.



Other Fiberglas Products of interest to the architect: FIBERGLAS Building Insulations . . . FIBERGLAS Pipe Covering and Insulating Blankets . . . FIBERGLAS for Cold Storage and Locker Plants . . . FIBERGLAS Fireproof, Decorative Fabrics for Places of Public Assembly.

SYSTEM FOR ODOR CONTROL and air quality in industrial and other enclosed spaces.

Airkem, a chemical air freshener, can be applied by either mechanical means or natural evaporation, thus is suitable for all enclosed spaces—whether equipped with air conditioning or central ventilating systems or not. According to the manufacturers, Airkem is composed of a complex group of aromatic substances and activated chlorophyll. It vaporizes into the air,



counteracting existing odors, although it is itself not perceptible when diffused. Developed during the war, it was successfully used in solving odor problems in industry, transport, etc. The

Airkem Evapatrol System is a unit which can be engineered into any existing air conditioning or ventilating system. It consists of a reservoir of Airkem, a pump, a regulator and a vaporizer. The vaporizer is cut into the side of the plenum chamber and the reservoir and regulator can be out of sight. By connecting the regulator to an AC-DC electrical outlet, the pump forces Airkem into a nozzle in the vaporizer from where it is sprayed out over a cartridge holding excelsior. As air in the air-conditioning unit by-passes through this cartridge, it evaporates and mixes Airkem with the conditioned air. The regulator can be set to control the pumping impulse, thus governing the amount of Airkem sent through the evaporator according to the needs. The Airkem portable Evapatrol Unit or the 15½ oz. bottle equipped with special wick, serves spaces without mechanical ventilation. The portable unit, made of steel, 14 in. square and 27 in. high, is mounted on casters for easy moving. It differs from the other Evapatrol units in that it uses a motor driven fan to throw the evaporated Airkem into the air. Units require only the refilling of the reservoir at necessary intervals and changing the excelsior cartridge at infrequent intervals.

Manufacturer: W. H. Wheeler, Inc., 7 E. 47th St., New York 17, N. Y.

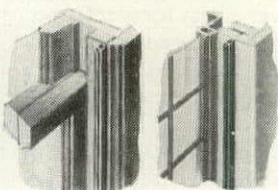
NOW AVAILABLE

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 appurtenance.

EASY TO INSTALL

ON ALL TYPES OLD AND NEW WINDOWS



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 Dealer in Sweet's. Write 746 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.

BUILDING SPECIALTY DEALERS

A number of choice ROLSCREEN territories are open. Write for details if interested.

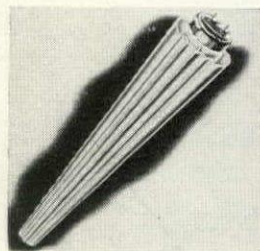
Pella ROLSCREENS
ROLSCREEN COMPANY • PELLA, IOWA

Made by Makers of Famous Pella Venetian Blinds and Casement Windows

PLASTIC DIFFUSER snaps on 4 ft. fluorescent tube to reduce lamp brightness.

Guth PFC-100's are 4 ft. white plastic diffusers that snap easily on or off 40 w. (T 12) fluorescent lamps. They reduce lamp brightness 30 per cent and are more efficient (82 per cent T.F.) than glass diffusing panels. Snug-fitting, their spring-like patented design grips the entire length of the lamp. They can be easily removed for cleaning and relamping.

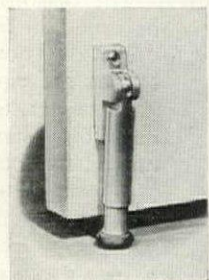
Manufacturer: Edwin F. Guth Co., 2615 Washington Blvd., St. Louis, Mo.



DOORHOLDER holds heavy doors without slipping.

The Doormaster, a patented, spring-loaded doorholder, employs the spring idea in an entirely different way, bringing to bear much greater pressure without slipping. Designed for use in theaters, public buildings, stores, schools, office buildings, homes or wherever a rugged doorholder is needed, the manufacturers claim it will hold the heaviest doors. It is compactly built of aluminum, and has a tough rubber foot firmly mounted to the spring-loaded piston. Closely hugging the door, it eliminates stumbling or tripping, and a bullet-catch holds it firmly up and out of the way when not in use. Two flat head screws mount it to the door. List price is \$1.95.

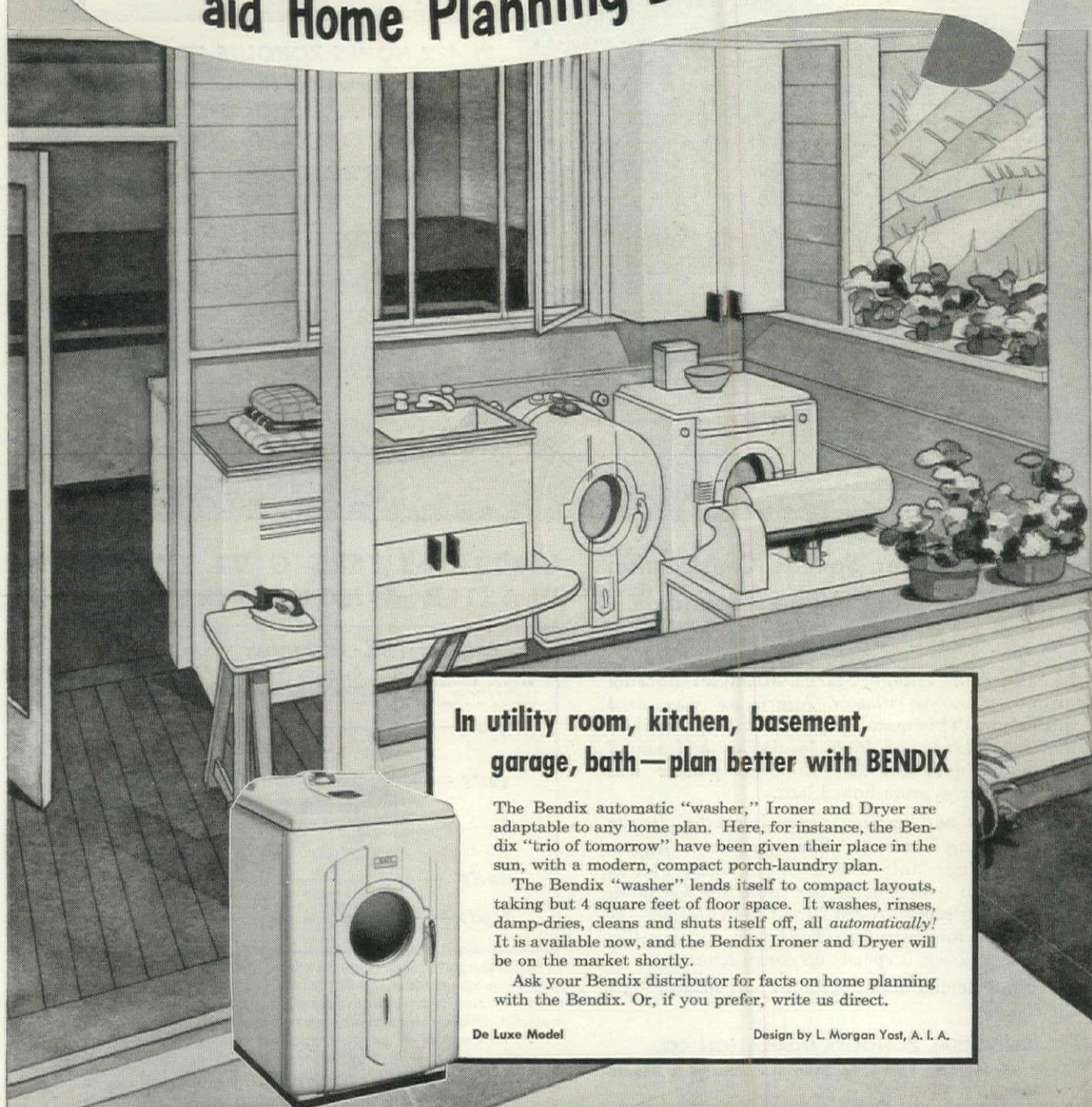
Manufacturer: Swallow Airplane Co., Inc., Wichita 1, Kan.



ROLLING DOOR KITCHEN CABINET provides extra storage space for small items.

Designed to fit under a regular hanging wall cabinet, Youngstown Kitchen's new Rolling Door Cabinet provides extra storage space for small items without interfering with the normal use of the counter. Available in 18 in. and 24 in. widths, it has two shelves for storing spices (Continued on page 226)

... Even a modern "porch" laundry!
BENDIX automatic Home Appliances
 aid Home Planning Everywhere!



**In utility room, kitchen, basement,
garage, bath—plan better with BENDIX**

The Bendix automatic "washer," Ironer and Dryer are adaptable to any home plan. Here, for instance, the Bendix "trio of tomorrow" have been given their place in the sun, with a modern, compact porch-laundry plan.

The Bendix "washer" lends itself to compact layouts, taking but 4 square feet of floor space. It washes, rinses, damp-dries, cleans and shuts itself off, all *automatically*! It is available now, and the Bendix Ironer and Dryer will be on the market shortly.

Ask your Bendix distributor for facts on home planning with the Bendix. Or, if you prefer, write us direct.

De Luxe Model

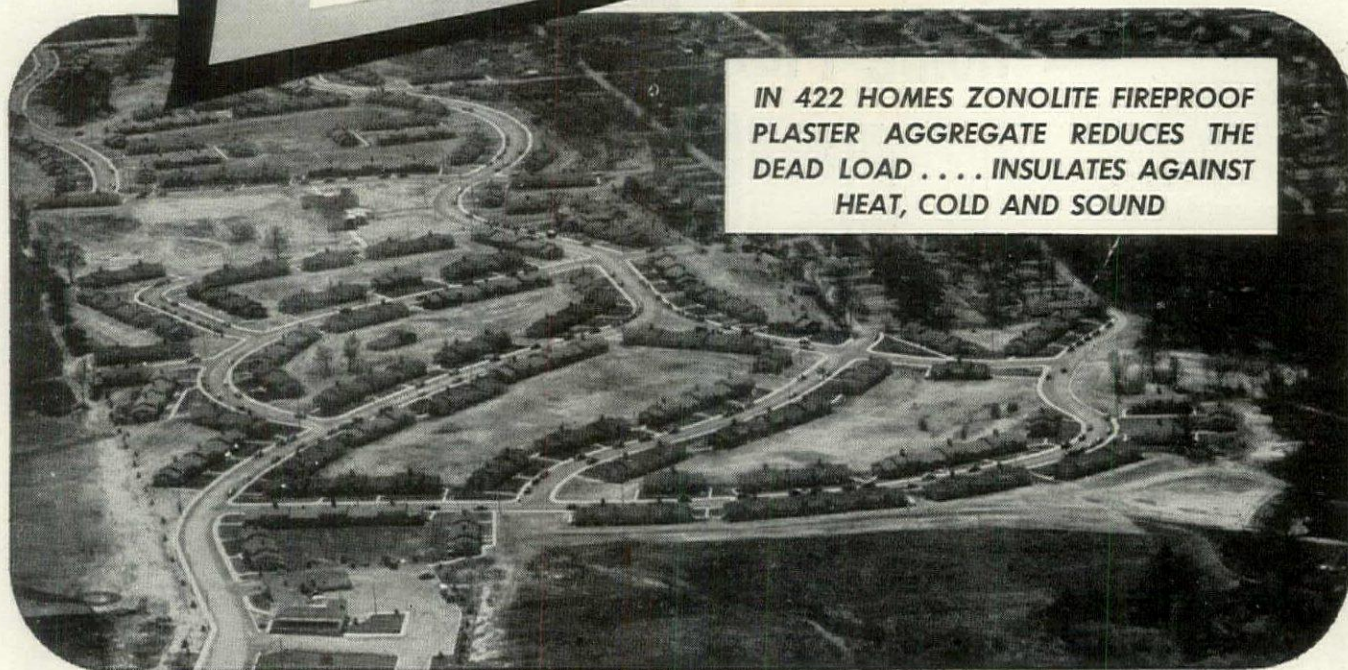
Design by L. Morgan Yost, A. I. A.

BENDIX automatic Home Laundry

BENDIX HOME APPLIANCES, INC., SOUTH BEND, INDIANA • PIONEERS AND PERFECTORS OF THE AUTOMATIC "WASHER"

ZONOLITE FIREPROOF PLASTER USED IN HUGE HOUSING PROJECT

Charles Noble, Architect, Detroit
The Esslinger-Misch Co., Contractors, Detroit



IN 422 HOMES ZONOLITE FIREPROOF
PLASTER AGGREGATE REDUCES THE
DEAD LOAD . . . INSULATES AGAINST
HEAT, COLD AND SOUND

Zonolite Plaster Speeds Construction and Provides Values Found in NO Other Material

In "Pittsfield Village," large Michigan housing project, Zonolite Plaster Aggregate was used throughout. This material provided a lightweight, fireproof plaster of high insulating and sound deadening qualities. The Zonolite plaster was applied over gypsum board lath.

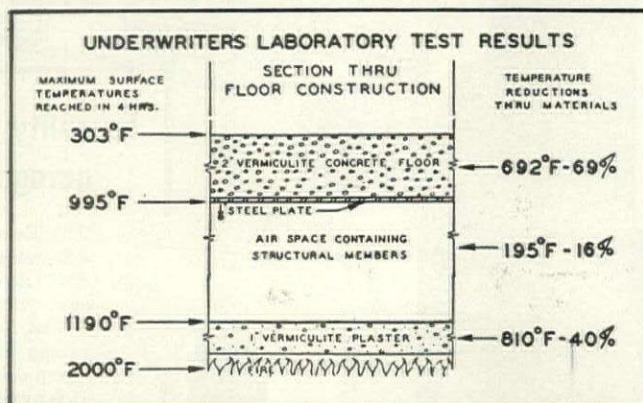
Architects and engineers are interested in the weight saving features of Zonolite Plaster Aggregate. It weighs only 8 pounds per cubic foot as compared to 100 pounds per cubic foot for sand, thus greatly reducing dead load in buildings—as much as five tons in the average house. As it applies faster and easier, it speeds up construction.

For full details about Zonolite, fill in and mail the coupon.

UNIVERSAL ZONOLITE INSULATION CO.

Dept. AF-46 • 135 S. La Salle St., Chicago 3, Illinois

UNDERWRITERS GIVE ZONOLITE PLASTER 4-HOUR FIRE RATING



In recent test by Underwriters' Laboratories, Inc. 1 inch of Vermiculite* Plaster on metal lath used as protection for steel floor and structural members, received 4-hour fire rating, the highest rating awarded any material. Chart shows results and maximum temperatures reached. This construction is the lightest, least expensive and thinnest fire protection ever to withstand this test.

*Vermiculite is generic name for Zonolite.



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Dept. AF-46, 135 S. La Salle St., Chicago 3, Ill.

Gentlemen: Please send me complete details on ☐ Zonolite Plaster,
☐ Acoustical Plastic, ☐ Concrete, ☐ Granular Fill Insulation.

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Address.....

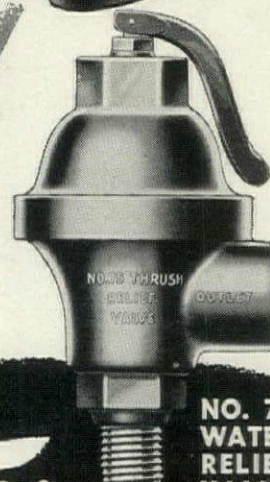
City..... Zone..... State.....

Please check: ☐ Architect ☐ Engineer ☐ Draftsman ☐ Contractor

THRUSH



Made in 16 sizes
for hot water or
steam.



NO. 75
WATER
RELIEF
VALVE

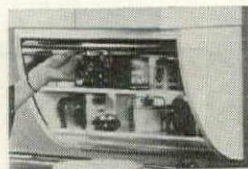
Water Heater

THRUSH Indirect Water Heater is compact, easy to install, with removable heads for convenient cleaning. Straight copper tubes stay clean longer. Ingenious circulation arrangement assures rapid, efficient heat transfer. A better Indirect Water Heater that operates at less cost than other automatic sources of hot water supply. Include a No. 75 Thrush Water Relief Valve for safe pressure relief. For better home heating, install forced circulating Thrush Flow Control Systems. See your wholesaler today or write Dept. H-4.

H. A. THRUSH & COMPANY

PERU, INDIANA

Summer, Winter Hot Water Heat



Manufacturer: Mullins Manufacturing Corp., Warren, Ohio.

DOOR KNOCKER mechanically operates door chimes.

The new Authotone Suburban Chime is a simple, mechanically operated unit that mounts right on the front door and eliminates the expense of wiring, push buttons, transformers, or batteries. It combines a polished brass door knocker on the exterior of the door with a small ivory chime box on the inside. When the knocker is raised, it sounds one tone and a second tone follows when the knocker is released. Notes are

salt, pepper and other cooking ingredients. It is made of white enameled steel and has a roll-away door of burnished steel strips. This slides up and out of sight, and will stay open or closed without catches.

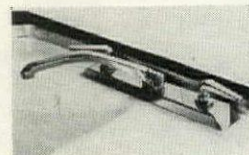
clear and can be heard throughout the average house or apartment. The unit is ruggedly constructed and tamperproof, it cannot be removed from the outside of the door, and will withstand severe abuse. Mounted easily with a hand drill and screw driver, it is applicable to any door from 1/2 in. to 2 in. thick. Special adaptors are available for thicker doors.

Manufacturer: Auth Electrical Specialty Co., 422 E. 53rd St., New York 22, N. Y.

SWINGSPOUT FAUCET is functionally designed.

The first of a line of plumbing fixtures to be manufactured by this company, the Commodore, a ledge type of swingspout faucet, offers functional design and lasting service. Emphasis is placed on ease of cleaning and maximum coverage and working clearance. According to the manufacturer, a new method of fabrication insures a production supply equal to the demand at a minimum cost.

Manufacturer: General Tire & Rubber Co., Pasadena, Calif.



COMBINATION TOASTER-COOKER appliance for the kitchenless apartment or quick breakfast at the table.

The Breakfast is a handy appliance for kitchenless apartments, bachelor quarters or for cooking an off-hour snack or quick breakfast without messing up the kitchen. Providing a quick action toaster and cooker in a single unit, toast is made in a convenient pull-out drawer, while the top plate can be used for cooking, boiling or frying, at the same time. The Breakfast can be used anywhere, plugging into any 110v. AC or DC electric outlet. Its heating element is entirely covered and the toasting compartment can be easily and quickly removed for cleaning. Retail price is \$12.95.

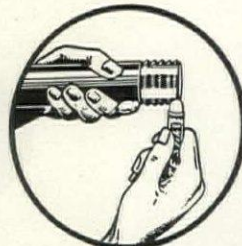
Manufacturer: Calkins Appliance Co., Niles, Mich.



PIPE JOINT COMPOUND in easily usable stick form.

Three or four strokes of Pipetite-Stik, a pipe joint compound in handy stick form, lubricates and completely seals pipe joint threads, nuts, bolts, gaskets, etc. Spreading and filling the threads when turned, it will not flow into or clog even the smallest pipes. It withstands gasoline, oil, butane, propane, Freon, air, water, steam, acid, gas, brine, sulphur dioxide, etc.; it resists vibration, temperature changes, deflection and pressure. Joints sealed with Pipetite-Stik can be easily disconnected months after applying and can be remade without having to clean the threads. The material prevents rusting and contains no lead or injurious ingredients, thus it is applicable to food and refrigeration piping.

Manufacturer: Lake Chemical Co., 607 N. Western Ave., Chicago 12, Ill.

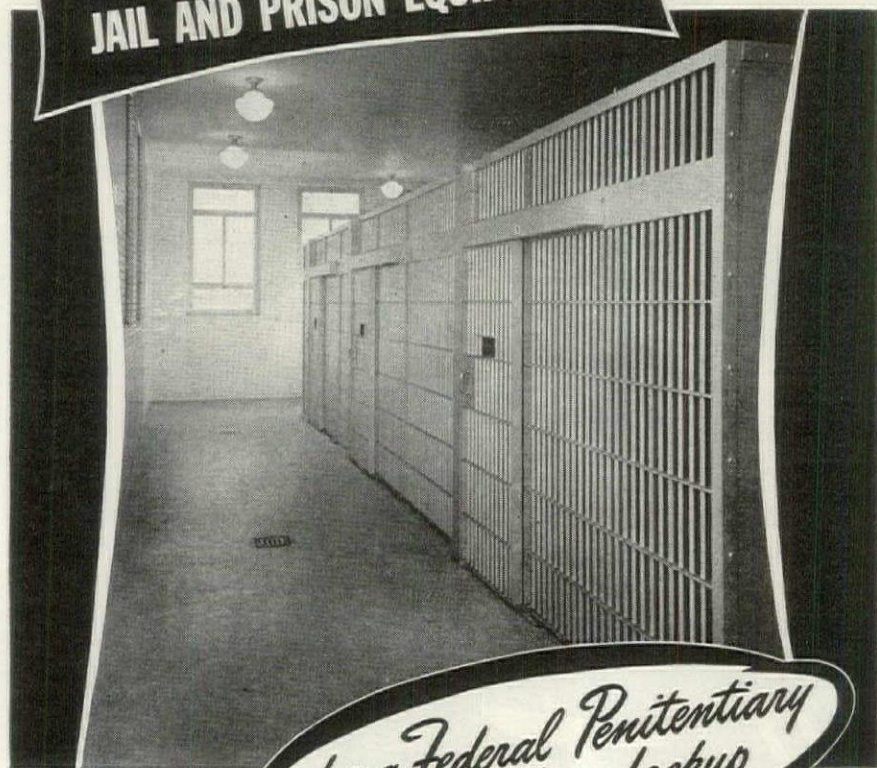


PORTABLE HEATER effects economies for contractors on cold weather jobs.

Experiments using the portable Janitrol heater have resulted in steady and rapid completion of buildings, even in freezing weather. It has proved so

(Continued on page 230)

STEWART DESIGNS AND BUILDS JAIL AND PRISON EQUIPMENT



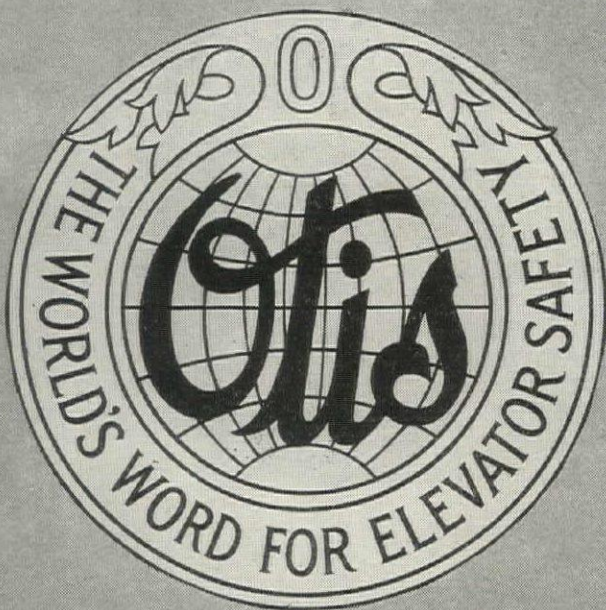
*for a Federal Penitentiary
or a Village Lockup*

TALK over your plans with Stewart engineers. They will be glad to submit, without cost or obligation, layouts, estimates and complete information on grating and plate cells; doors; lock and locking devices; bunks; tables; seats, etc., for new construction or remodeling any size project from a village lockup to a County, State or Federal prison. Stewart Chain Link Wire Fence is used extensively for the protection of jail yards and exercise areas. Complete details on request.

THE STEWART IRON WORKS COMPANY,
INCORPORATED

1365 Stewart Block - Cincinnati 1, Ohio

"Designers and Builders of Jail and Prison Equipment Since 1886"



MAKING AN IDEAL A REALITY

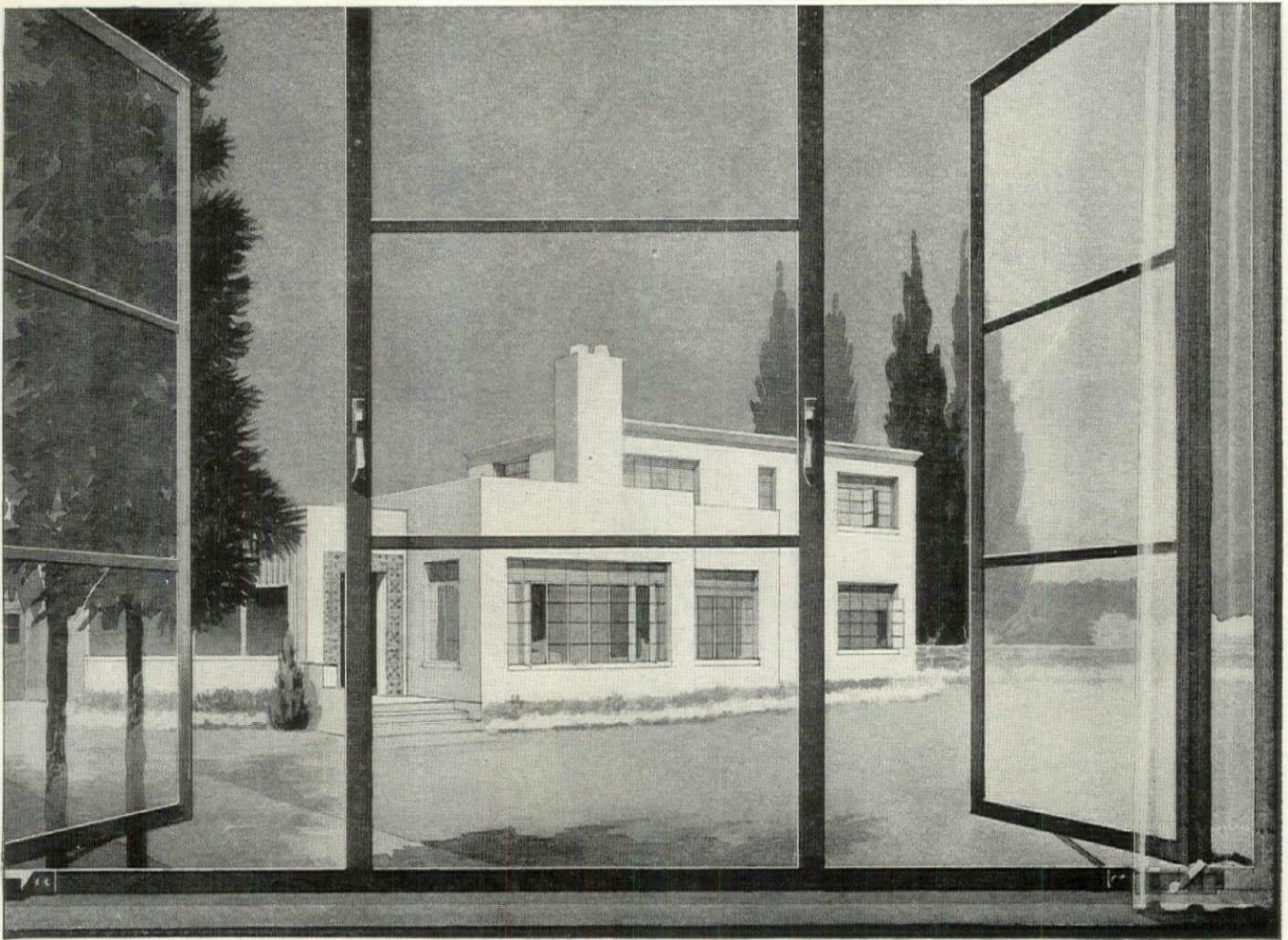
The ideal of The Otis Elevator Company for many years has been to provide the best and safest elevator transportation possible. To insure uniformity and the best results, each piece is manufactured by us under strict supervision; and the complete elevator is then installed by trained Otis mechanics.

Only one thing more has been necessary to make this ideal a reality, and that is a service which undertakes to maintain the completed elevator in the same fine condition in which it was when installed.

It is possible for owners of Otis elevators to contract directly with us, as manufacturer, for complete maintenance, to keep Otis elevators in the best condition, and preserve the elevator investment intact.

OTIS ELEVATOR COMPANY

Offices in all principal cities



Accent on design . . . Here is an example of how Lupton Metal Windows complement architectural design in the distinctive modern residence. The metal casements are planned to accent trim horizontal lines. Rooms can be brighter, better ventilated. Screening is simple, effective and unobtrusive. Tightly fitting metal frame screens are designed in stock sizes to fit every Lupton Casement. Lupton Metal Windows are delivered as complete units, ready for quick installation. There's a Lupton Window for every type of building—residential, commercial, industrial, institutional. Write for catalog.

See our Catalog in Sweet's

MICHAEL FLYNN MANUFACTURING CO.
E. Allegheny Avenue at Tulip Street, Philadelphia 34, Pa.

Member of the Metal Window Institute

LUPTON

METAL WINDOWS



When the Question Is Lighting... the Answer is



GUTH FUTURLITERS in the above photos demonstrate the "Keyed to the Specific Lighting Job" features of GUTH FLUORESCENT. FUTURLITERS are providing the quality and quantity of light required both in office and in store. GUTH Eggcrate Louvres have been added to the FUTURLITERS to provide additional lamp shielding for the more exacting "seeing" job in the office.

"Keyed" to the Specific Lighting Job!

The "Know-How" gained during 44 years in Lighting, is built into GUTH FLUORESCENT in *tangible* quality features, to meet the requirements of any specific lighting job, whether in office, store, factory, school or institution.

The GUTH FLUORESCENT line offers a practical selection of high-performance reflector finishes and reflector types for correct light distribution; proper lamp shielding, built-in, or with louvres or baffles; efficient diffusion, with glass or plastic diffusers. And GUTH FLUORESCENTS are modern-

ly styled in a full range of the newest luminaire developments.

Thus, with GUTH FLUORESCENTS, you have a wide choice of the variables, that control the quantity and quality of light, to assist in the fine engineering required in today's lighting installations.

Data on above Photos: In OFFICE, GUTH FUTURLITERS provide 68 F. C. using 2.3 watts/sq. ft. Mounted in rows spread 8'0" apart on 11'0" ceiling.

In STORE, GUTH FUTURLITERS, deliver 64 to 75 F. C. using 3-40W fluorescent lamps per section. Mounted at 9'0" from 12'0" ceiling in rows 8'0" apart.

In FACTORY, GUTH MAZELITES, afford 30 to 32 F. C. of good working light. Mounted 9'6" high on 7'6" centers in rows 9'6" apart.

Guth FLUORESCENT

LEADERS IN LIGHTING SINCE 1902

THE EDWIN F. GUTH COMPANY • 2615 Washington Ave. • St. Louis 3, Missouri

successful in drying plaster, thawing ground, sand and gravel, removing frost from brick, preventing concrete from freezing and other similar applications, that quantity production is now under way. The manufacturer cites one case where a plaster contractor wanted to begin a job when the temperature



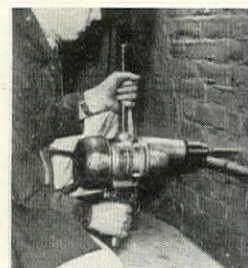
was zero. In forty minutes after starting the portable unit the inside temperature of the house had risen to 80°. The rough and finish plaster job was completed and thoroughly dried in 2½ days, with an estimated saving of \$75 on the contract. The

big portable unit employs the same "whirling flame" heating principle as the tiny Janitrol aircraft heater which solved the heating problem in thousands of military planes. Burning gasoline, kerosene, or light fuel oil, the liquid fuel is intro-

duced into the cylindrical combustion chamber through a spray nozzle. A fan driven by a gasoline engine, or electric motor, supplies the heater with combustion and ventilating air. *Manufacturer:* Surface Combustion Corp., 2375 Dorr St., Toledo, Ohio.

CARBIDE TIPPED DRILL BIT for faster drilling of concrete, brick and other masonry materials.

Cyclone Drill-bits, tipped with carbide, are said to drill holes in masonry materials 50 per cent faster and, at the same time, to last 50 per cent to 75 per cent longer than high speed drills. They are used in ordinary rotary electric drills, and eliminate hammering. Carbide, hardest man-made metal, does not lose its cutting edge when running absolutely hot; it can thus be used as a tip on these bits to drill concrete, cement, brick, tile, marble, and other forms of masonry material. Cyclone Drill-bits are also used by machine shops for drilling chilled iron, and for cored holes in aluminum, cast iron, and other types of non-ferrous materials.



Manufacturer: The New England Carbide Tool Co., 60 Brookline St., Cambridge 39, Mass.

PNEUMATIC SCREW DRIVER aids production.

Model 7000 Midget Pneumatic Screw Driver, 47/8 in. long, 3/4 in. in diameter and weighing 8 oz., is shortening assembly time and improving efficiency on radio, electronic instrument and electrical appliance manufacture. Fully automatic, it drives screws from No. 1 to No. 6, starting when the tool touches the work. It adjusts itself to driving conditions, the operator merely pressing slightly harder to drive heavy screws than for light ones. Simply constructed and foolproof in operation, the machine has a rotary type motor, 4-blade construction, ball bearings throughout, hardened and ground steel rotor and cylinder. Air consumption is negligible and finder and bits are easily interchangeable for different size screws. The tool is also available with adapter socket for nut setting.



Manufacturer: The Aro Equipment Corp., Bryan, Ohio.

PACKING for wallboards and all types of sheeting, protects corners, cuts shipping costs.

A new method of placing two wirebound mats made of 3/16 in. veneer to 3/8 in. resawn lumber on either side of wallboard or sheeting, makes a relatively lightweight but sturdy crate-type package. It is claimed that its use saves 50 per cent in crating time, and 25 per cent saving in container weight, thus cutting the total shipping costs approximately 25 per cent. Adaptable for packing wallboard, tin, enameled sheets, quires of paper and similar articles, the closure can be quickly and securely fastened by one man. The wirebound construction makes possible reinforcement of the crate at points of stress and strain thus eliminating corner breakage, bending, cracking or wrinkling. Mats have been made in lengths ranging from 48 in. to 152 in., but manufacturing procedure makes possible almost any length or width mat suitable for any type of sheeting material.

Manufacturer: Wirebound Box Manufacturers Assn., 105 S. LaSalle St., Chicago 3, Ill.

(Continued on page 234)

Only **CHROMEDGE*** gives you **CHROMALITE** the permanently rub-proof velvet-tone finish

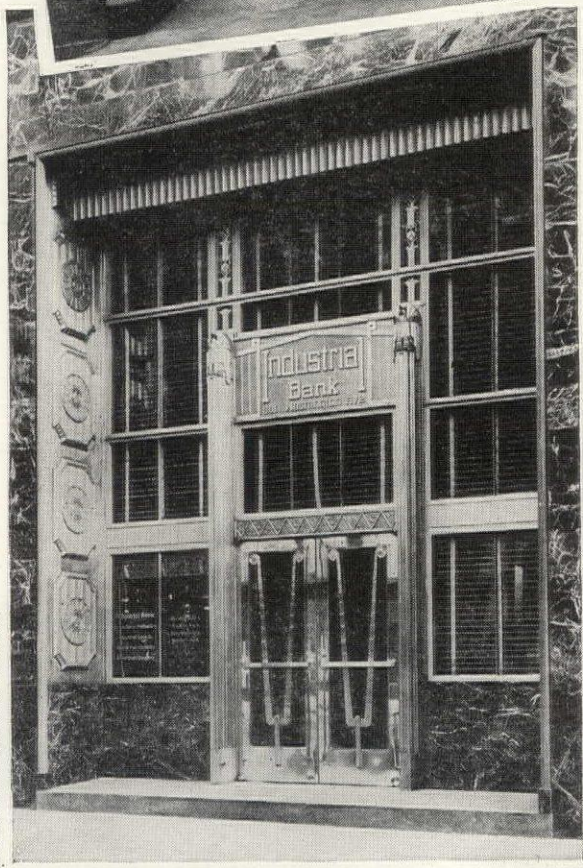
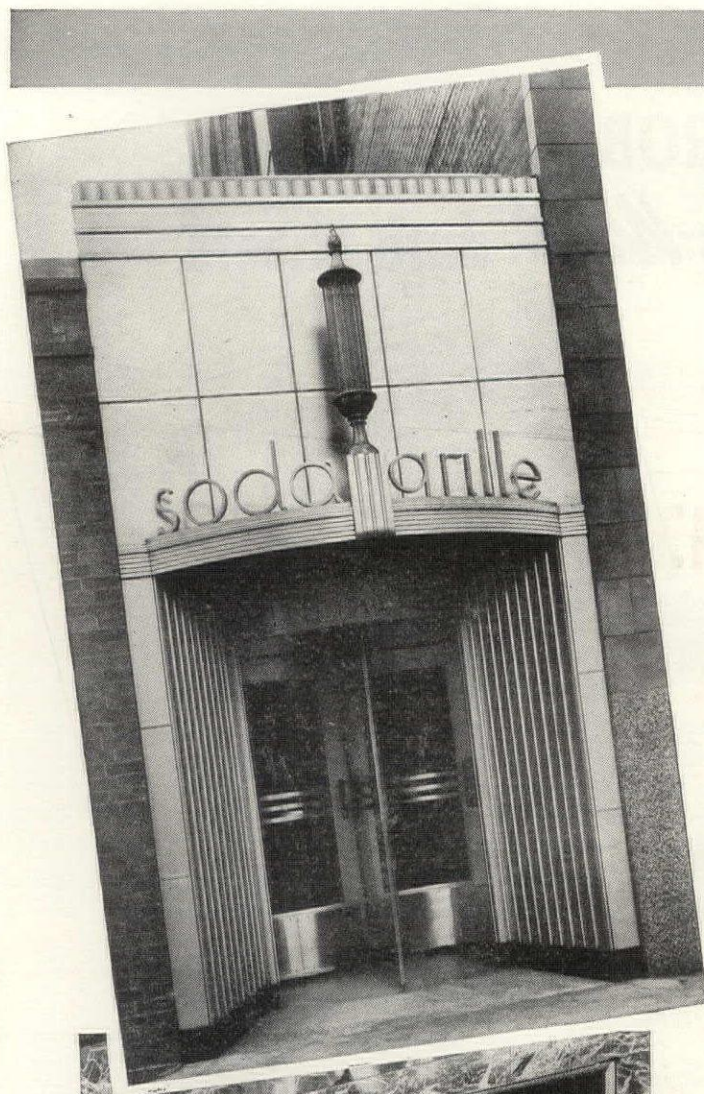
CHROMALITE'S remarkable resistance to moisture, heat, cold, salt-spray, abrasion and long, hard service was thoroughly proved on army and navy equipment during the war.

In **CHROMEDGE** METAL TRIMS, you get the *widest* choice of smartly-styled mouldings for quicker, easier, more durable installation of all types of floor and wall materials. And the soft, rich tones of the exquisite **CHROMALITE** Finish give them *permanently* new-looking beauty! (Standard bright finish available.) For complete details or special information on **CHROMEDGE**—Write!

***CHROMEDGE** extruded aluminum alloy and stainless steel trims are made solely by The B & T Metals Company.

The **B&T** Metals Company

COLUMBUS 16, OHIO



ENTRANCES

that invite

Will the new structures you design say "Welcome"? Will their main entrances be a permanent invitation to "come in," both for their tenants and their customers?

Whether your new buildings are "modern" or "traditional," smartly designed architectural metal work can do much to enhance their whole appearance.

There are many uses for architectural metals in every building. In addition to the entrance you can use them with great effectiveness in stairs, balustrades, grilles, windows, doors and all types of decorations, both interior and exterior.

Architectural metals offer you and your clients many outstanding features. Not only can they be fabricated to fit your own ideas of design but, in both ferrous and non-ferrous metals, they offer a wide range of materials, colors and other characteristics from which to choose.

The manufacturers and fabricators of architectural metals are anxious to work with you, to offer helpful suggestions and to be of assistance in any way they can. Consult them whenever you plan new buildings.

Architects who are interested in obtaining a copy of the new Handbook on Stairs and Railings just published by the Association are invited to contact any of the members. For a Directory containing names and addresses of Leading Fabricators write to Dept. AF-4.

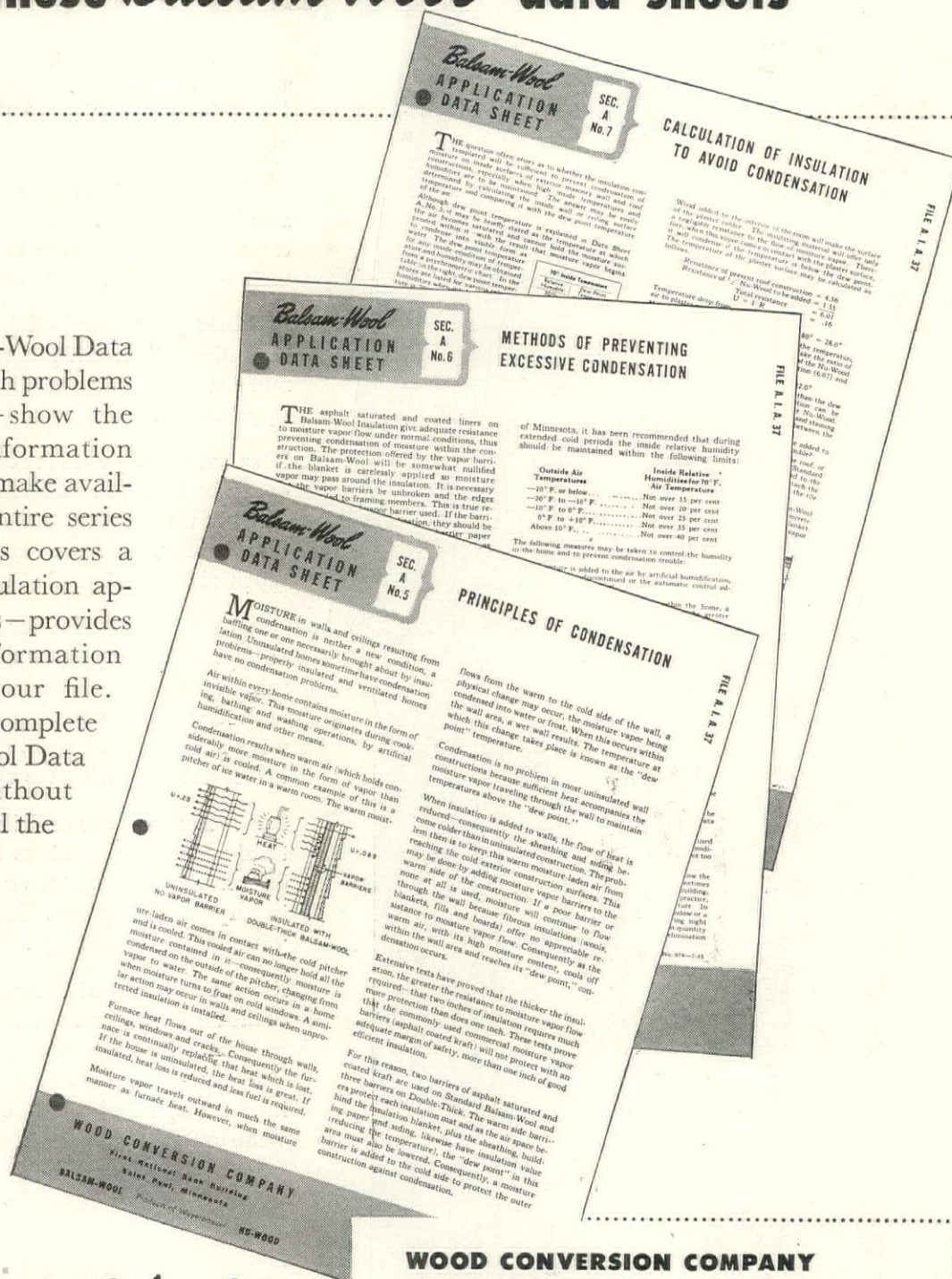
NATIONAL ASSOCIATION OF
**ORNAMENTAL METAL
MANUFACTURERS**

209 CEDAR AVE., TAKOMA PARK WASHINGTON 12, D. C.

CONDENSATION PROBLEMS SOLVED

in these *Balsam-Wool* data sheets

These three Balsam-Wool Data Sheets—dealing with problems on condensation—show the type of special information which these sheets make available to you. The entire series of thirty-two sheets covers a wide variety of insulation application problems—provides authoritative information you'll want for your file. Send today for the complete series of Balsam-Wool Data Sheets—yours without obligation. Just mail the coupon!



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SEALED INSULATION

BALSAM-WOOL • Products of Weyerhaeuser • NU-WOOD

WOOD CONVERSION COMPANY

Dept. 147-4, First National Bank Building
St. Paul 1, Minnesota

Please send me set of Application Data Sheets.

NAME.....
ADDRESS.....
CITY..... STATE.....

Everyone has a pet feature in this bathroom...

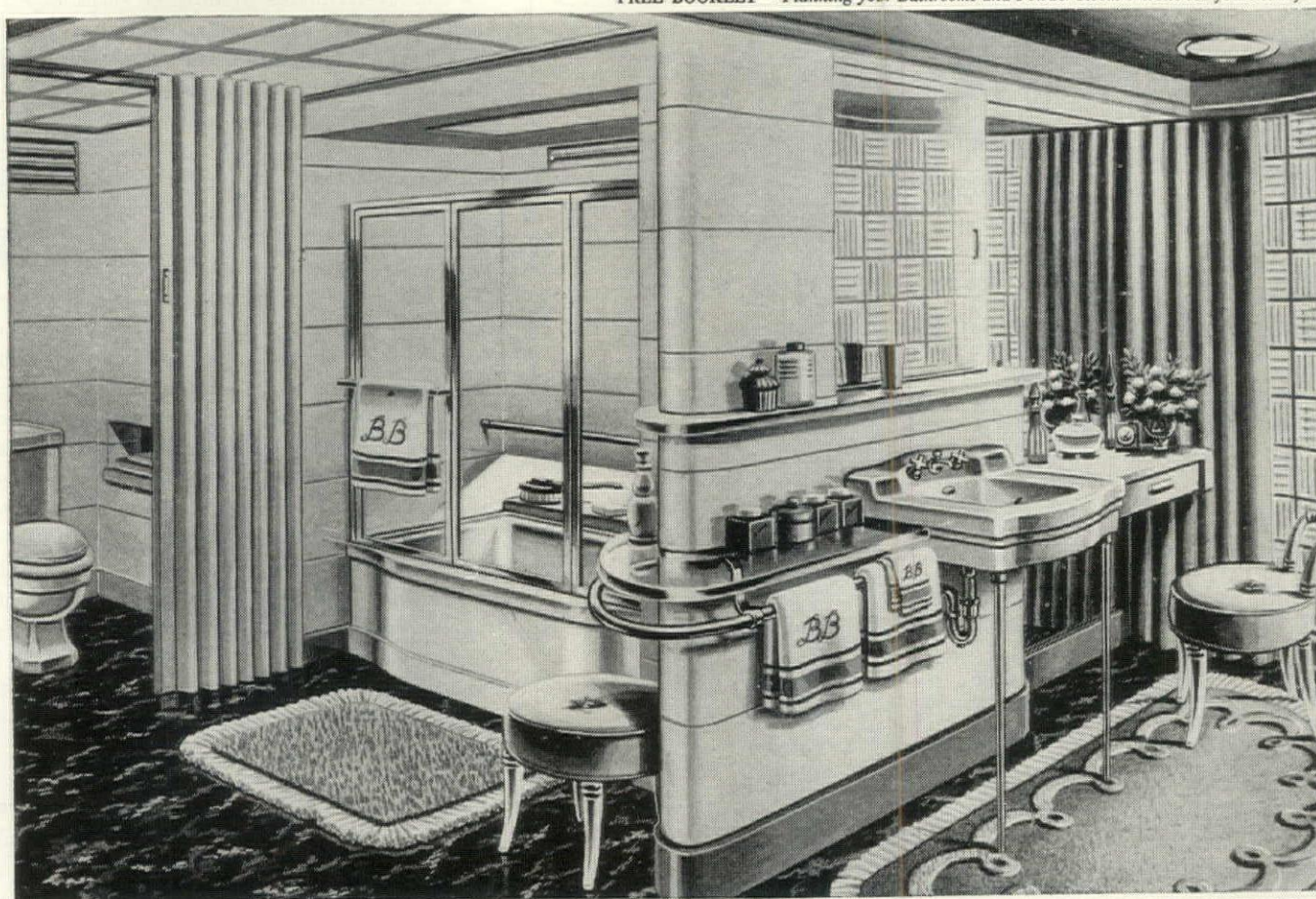


"2-ROOMS-IN-ONE... Now that's a really practical idea, especially for the early morning 'rush hour'. And the smart looking safety-bottom bathtub! All I can say is... somebody at Briggs must have had my harum-scarum kids in mind all the time!"

"THAT ULTRA-MODERN LOOK... Just the thing I've been looking for to transform our old down-at-the-heels bathroom. Maybe we can't manage the glass brick wall... but the indirect lighting—tile partitions—and most of all, the gorgeous Briggs Beautyware would give me a bathroom I'd be proud to show the world!"



FREE BOOKLET—"Planning your Bathrooms and Powder Room". Write for yours today.



DESIGNED BY BRIGGS DESIGN RESEARCH DEPARTMENT

but they all agree on **BRIGGS Beautyware**



"THOSE HEAVENLY COLORS... Particularly in the plumbing fixtures! Who would think that anything so functional could be so pretty. And they tell me that despite their 'rich look'... any one of Briggs decorative designs and colors is reasonable enough for the most modest budget!"

IT WON'T BE LONG NOW... until Briggs Beautyware is back on the market in quantities to suit every need and taste. The first of the completely postwar fixtures are off the production line and on the way to your local plumbing contractor. And when you see Briggs Beautyware you will agree they're the smoothest bathroom fixtures since plumbing became a profession!

BRIGGS MANUFACTURING COMPANY • 3007C MILLER AVENUE • DETROIT 11, MICHIGAN

This advertisement, in full color, appears during 1946, in:
Better Homes & Gardens, March; Saturday Evening Post, April 20; American Home, May

PACKAGED GRAVITY ROLLER CONVEYORS for industrial and commercial use.

These packaged gravity roller conveyors are designed for those who want a limited number of units of simple design for small installations at moderate prices. They have a large number of industrial uses for the handling and transportation of cartons, bales, packages, boxes, crates and many other types of articles. They can also be used in level sections for assembly and packaging operations. Lighter in weight than the prewar conveyor section of similar dimensions, they are available in three straight sections, all 10 ft. long and in three widths, 12 in., 18 in., and 24 in.; three 90° curved sections, 12 in., 18 in., and 24 in. wide; and two trestles 18 in. and 24 in. wide. Each item is a complete unit, and combinations of several arrangements of units in straight runs or curves are possible. Regardless of width, Lyon conveyors are good for safe loads up to

200 lbs. For safety, a small retainer channel under the top flange of the frame rails covers the ends of the roller shafts. Rollers are mounted on full-length shafts to reduce the wear on the shafts and prevent spreading of frame, especially under impact loads. By setting the rollers slightly above the level of the tops of the side rails, the conveyors will accommodate packages wider than the conveyor section. Rollers are spaced on 4 in. centers, and are fitted with high-grade ball bearing engaged in the ends of the tube rollers by adaptors to ensure perfect alignment of the roller shafts.

Manufacturer: Lyon Metal Products, Inc., Aurora, Ill.

SPOT WELDING MACHINE for fabricating metal parts .0005 in. to 1/8 in. round or thick.

The Besco Tweezer Spot Welding Machine is a portable cabinet unit weighing approximately 25 lbs. to which is attached a pair of insulated, forged copper tweezers and a foot switch. It facilitates welding of small objects, fabricating metal parts measuring .0005 in. to 1/8 in. round or thick. For welding parts from .015 in. through 1/8 in. round, an auxiliary booster unit is used with the machine which increases capacity by 300 per cent. With the use of the tweezers, electrodes are applied directly to the elements to be joined. The tweezers probe for the parts, hold and bend them, and weld. Tweezers are safe in the hands since current flows through a only 1/1000 of a second. The 18 in. leads are plastic covered and flexible. Oxidation is eliminated with the use of the tweezers, and the points require touching up only once a day. To weld, the voltmeter is set and two pieces of metal are held with the tweezers. Pressure is applied and the foot switch operated. For welding some types of heavy gauge metal where more pressure is required, the tweezers may be removed and the machine may be connected to a drill press or hand arbor. Copper or copper alloy rods are inserted as electrodes with only the bottom electrode insulated. The Tweezer Spot Welding Machine plugs into 115 v., 60 cycle power supply or can be easily adapted to 220 v. It is listed at \$155 f.o.b. Newark and the auxiliary booster unit is listed at \$45 f.o.b. Newark. Manufacturer: Tweezer-Weld Corp., 280 Plane St., Newark 2, N. J.



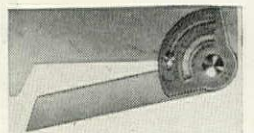
PLASTIC SLIDE RULE offers precision for professionals.

This 10 in., white plastic, Universal slide rule, known as Plas-Ten has sharp easy-to-read graduations. Its precision, smoothness of operation, easy adjustment make it a rule for professionals.

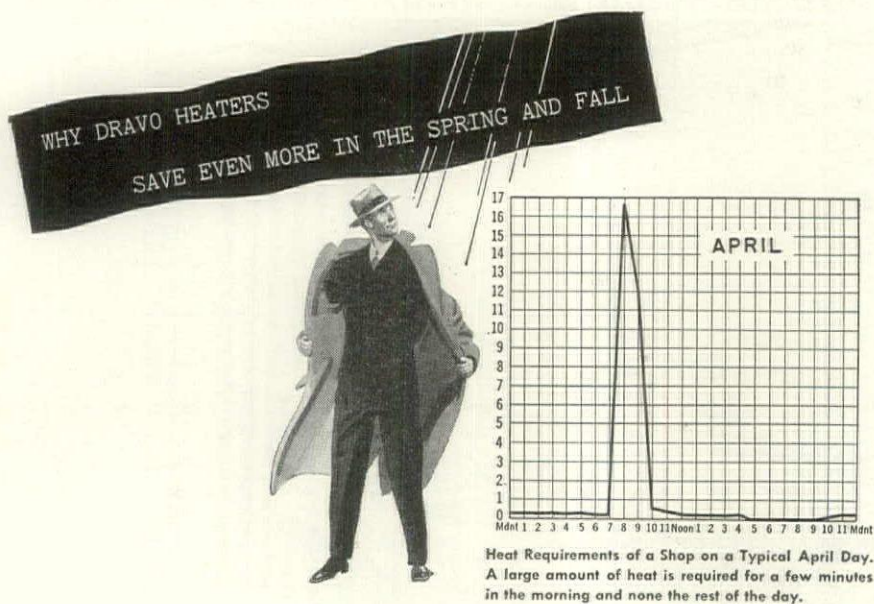
Manufacturer: The Frederick Post Co., Box 803, Chicago, Ill.

DRAFTING INSTRUMENT in adjustable quadrangle form combines many drafting features in one instrument.

Angles from 0° to 90°; pitch scales from 0 to 24/12; percentage slopes from 0 per cent to 100 per cent; sine or cosine functions and tangents may be found with the S & J Adjustable Quadrangle. Rectangular in shape and measuring 4 in. wide and 11 in. long, the instrument has 8 drawing edges. It may also be used as a triangle. Body and arm of the instrument is blank so the draftsman, engineer or architect may add his own most-used symbols and measuring scale. Manufacturer: Stewart-Jackson Instrument Co., A. G. Bartlett Bldg., Los Angeles 14, Calif.



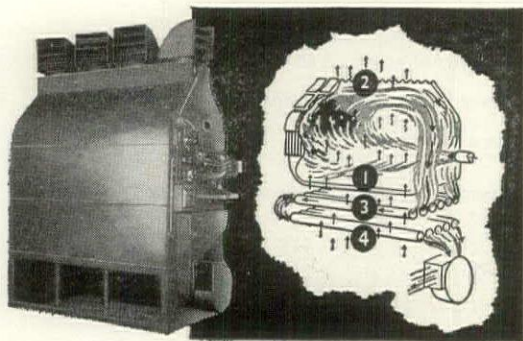
(Technical Literature, page 238)



Because each heater is a self-contained heat producing unit operating on a direct heat transfer through a single thickness of metal, these heaters can be started up and shut down within a few minutes time. That means there is no standby loss in the Spring and Fall when heat requirements frequently exist for only an hour or so each day. The Dravo heater is so flexible in its operation it can be made to follow the temperature curve without standby loss.

There are many other reasons why these heaters are ideal for large space heating. They are shipped com-

plete from the factory with the refractory lining in place, need only to be connected to the fuel line to be ready for operation. They are highly portable and can be moved from plant to plant and spot to spot to meet changing requirements. Efficiencies are high, running 80 to 85%. Maintenance is negligible. No specialized attendance is needed. For the full story of their design and efficiency ask for Bulletin 509-A. Address Dravo Corporation, Heater Department, 300 Penn Avenue, Pittsburgh 22, Pa.



DRAVO FOUR PASS combustion chamber design—Flame and gases of combustion flow internally four times across the path of the high velocity air stream being heated. Fins and deflectors on the outside of the chamber materially increase heat transfer. These features contribute to a high efficiency from the fuel consumed—more usable Btu's per barrel of oil or cubic foot of gas.

300,000 TO 1,650,000 B.T.U. CAPACITY. MULTIPLE UNITS COMBINE FOR ANY OUTPUT

Why it will pay your clients
to modernize their plants with

PC GLASS BLOCKS

THEY can get rid of dark spots in workrooms. Reduce heat losses through lighting areas. Protect precision machinery and goods in process from the effects of excessive condensation, destructive grit and dust infiltration.

They do all of those things—and also save money—by using PC Glass Blocks on new construction and on modernizing projects.

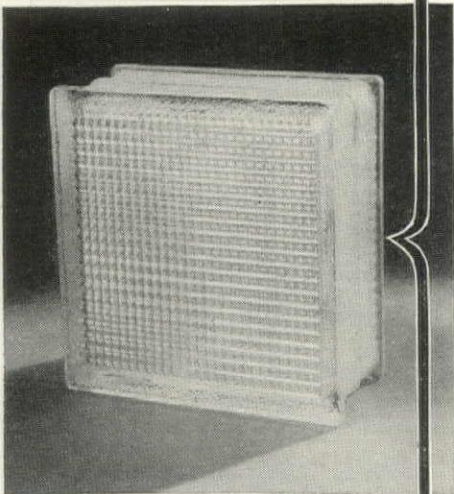
The light-transmission properties of PC Glass Blocks direct ample diffused daylight to areas remote from light openings. So they increase productive floor space, save artificial lighting cost.

The dead air space in PC Glass Blocks gives them definite insulating value, cuts down heat losses, helps to control temperature, humidity, and condensation. So they can save on fuel cost, reduce wear and tear on heating and air-conditioning equipment.

PC Glass Block panels form a solid wall, exclude drafts and dust, dampen distracting sounds. So they save on spoilage and machine repairs, enhance the comfort—hence the production—of workers.

PC Glass Blocks are quickly and easily cleaned. They do not break readily, rarely need repairs or maintenance. They eliminate window sash, which frequently rots, warps, cracks, corrodes and needs repainting. So they save on repair and maintenance costs.

Before your clients' building or remodeling plans take definite shape, you can tell them how plant owners all over the country have brought better lighting, greater efficiency—and *rock-bottom economy*—into their factories and offices, with PC Glass Blocks. Write to Pittsburgh Corning Corporation, Room 315, 632 Duquesne Way, Pittsburgh 22, Pa.

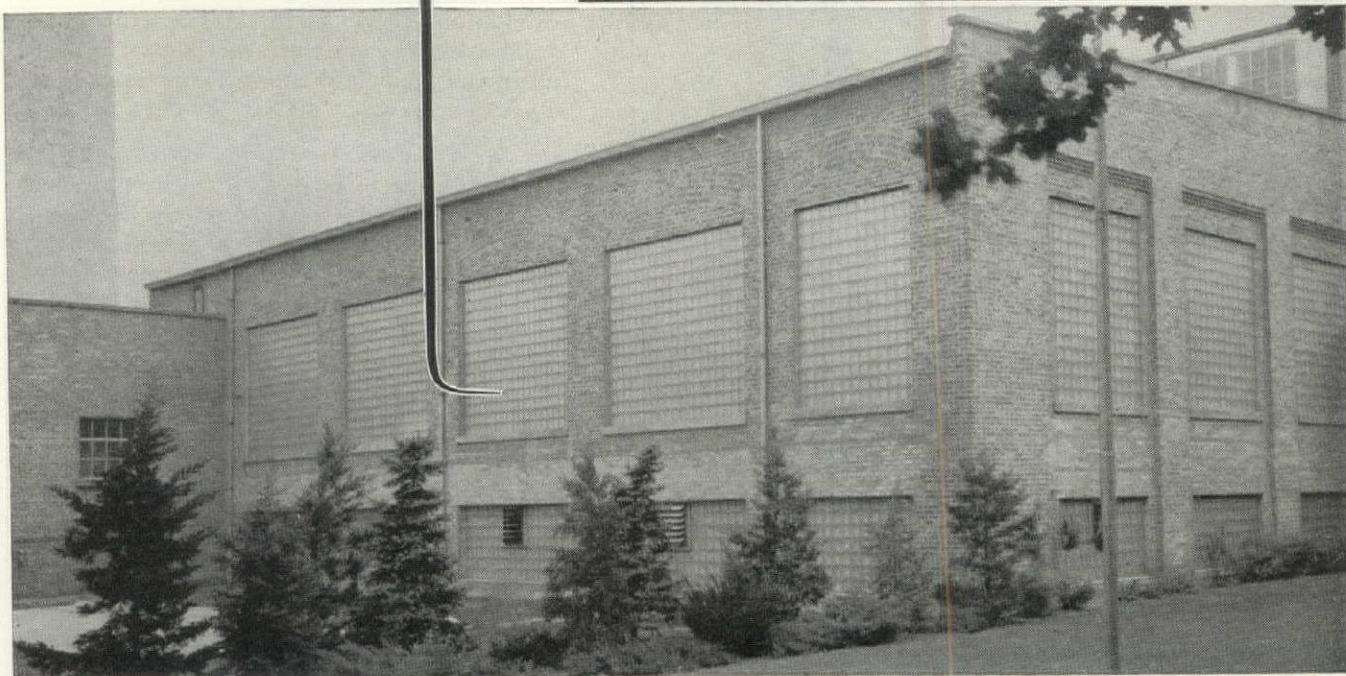


Also makers of PC Foamglas Insulation

GLASS BLOCKS

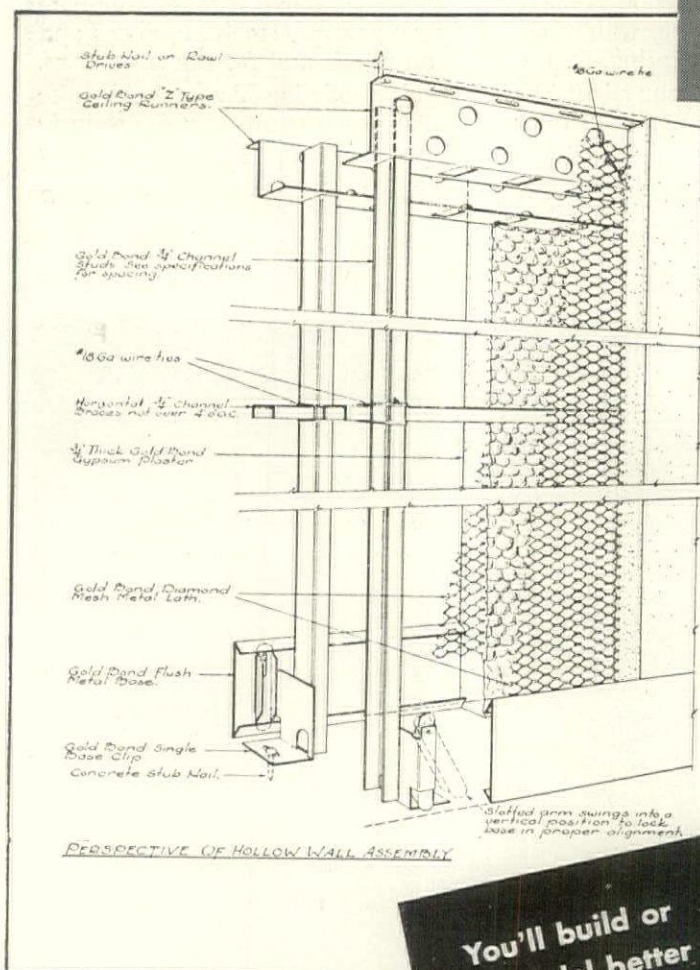
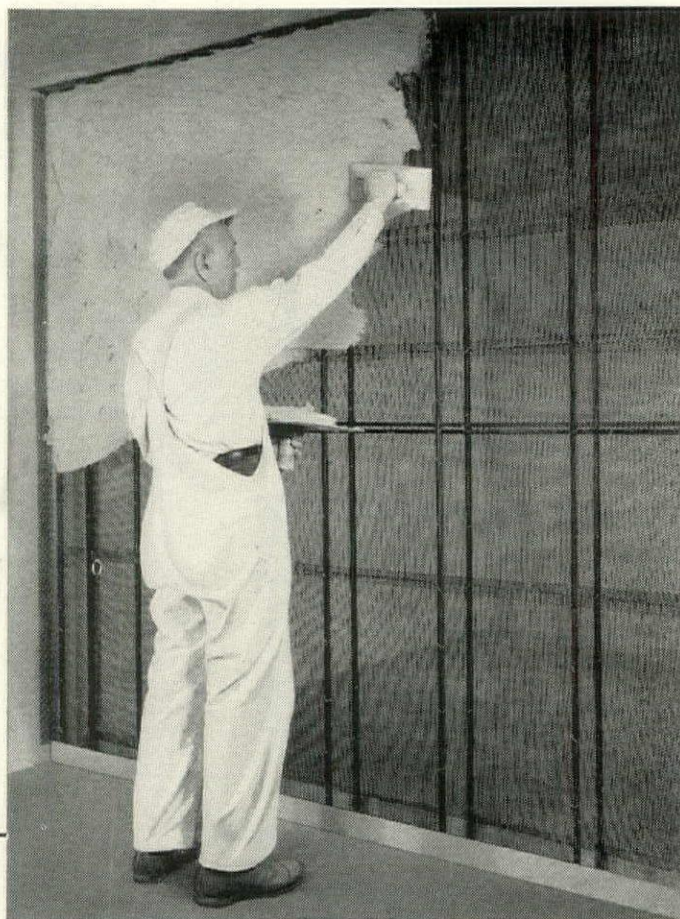
Distributed by

PITTSBURGH PLATE GLASS COMPANY and by W. P. Fuller & Co. on the Pacific Coast



NOW! A HOLLOW WALL THAT IS COMPLETELY HOLLOW!

**GOLD BOND SYSTEM
WITH NEW METAL BASE
INCREASES ADAPTABILITY
AND DECREASES COSTS!**



THIS new Gold Bond Hollow Wall System is highly recommended for fire resistant partitions where service piping and air ducts are to be concealed and where special consideration must be given to sound insulation.

The patented and exclusive Gold Bond Ceiling Runner and Metal Base Clips compensate for irregularities in floor and ceiling construction. This system being completely hollow has no cross ties or obstructions to interfere with installation of service piping. The Gold Bond Hollow Wall offers an underwriter's fire rating of one hour and sound insulation rating of 49.5 decibels.

Another advantage—and this is of vital importance to architects—all materials needed in the construction of this system are Gold Bond Products. Metal lath, channels, runners, metal base, plaster and lime—everything—are furnished by one manufacturer, National Gypsum. The resulting wall is 100% Gold Bond which eliminates that old bugaboo, *divided responsibility*. Available through any Gold Bond Dealer. For full-size details, please write National Gypsum Company, Buffalo 2, New York.

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

LATH • PLASTER • METAL PRODUCTS • WALL PAINT • LIME • INSULATION • SOUND CONTROL • WALLBOARD



**NO DISTURBING NOISES,
NO EMBARRASSMENT
WITH THE SPEAKMAN
SI-FLO FLUSH VALVE**

***Si-Flo Facts
for Architects***

- Quiet in operation.
- Piston made of hydraulically moulded, non-corrosive, tough, long-wearing durez.
- Adjustable connection between valve and stop lowers installation cost.
- Reversible main seat washer.
- Self-cleaning by-pass.
- Quickly and easily repaired.
- Low maintenance cost.
- Thoroughly tried and proven for 15 years.

The Si-Flo Flush Valve will eliminate water hammer, line-throttling and closing noises. In operation, even with supply pressures up to 100 pounds per square inch, it only whispers. Its installation in schools insures no more interrupted classes, in hotels no broken rest or slumber of guests, in hospitals no disturbed or annoyed patients, in apartments no more interrupted conversations or broken sleep, and in the home no more annoyance or embarrassment for the host or guest.

SI-FLO FLUSH VALVE PISTON UNIT

The piston of the Si-Flo Flush Valve contains all the working and wearing parts of the valve except the handle assembly. When, after long service, repair becomes necessary, the replacement of the piston unit constitutes a complete repair.



Even an inexperienced mechanic can do it in five minutes. Furthermore, we will repair any Speakman flush valve piston—the operating unit—at a cost not to exceed 50% of the cost of a single new piston unit. Cost of maintenance therefore is unusually low.

For complete information about Speakman Closet and Urinal Flush Valves, write for Catalog S-4.

SPEAKMAN
SHOWERS AND FIXTURES

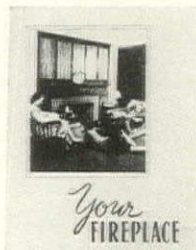
"The best in brass since 1869"

SPEAKMAN COMPANY, WILMINGTON 99, DELAWARE



PLYWOOD. Weldwood Plywood for Commercial Interiors. United States Plywood Corp., 55 W. 44th St., New York, N. Y. 20 pp., 12 in. by 8 5/8 in.

This booklet pictorially presents modern applications of Weldwood plywood for commercial interiors. Photographs of actual installations illustrate Weldwood's adaptability to stores, offices, banks, hotels, institutions, bars and restaurants. Text explains how different effects are secured by the choice of woods and finishes.



LIMESTONE. Indiana Limestone, The Nation's Building Stone. Indiana Limestone Institute, Bedford, Ind. 18 pp., 8 1/2 in. by 10 7/8 in.

Modern methods of quarrying, milling and carving Indiana Limestone are illustrated in this booklet. It describes how the use of electricity has reduced costs, produced better finishes and provided greater adaptability in uses of stone. Many monumental, state and commercial buildings, churches,

schools and homes are pictured to illustrate how limestone used in modern architecture.

WALL COVERINGS. Miracle Walls by Tylac. Tylac Co., Monticello, Ill. 4 pp., 8 1/2 in. by 11 in.

This 1946 color chart illustrates the four basic patterns Tylac—Tylite, Streamline Tylac, Muralac and Tylac—and the 18 colors in which they are available.

ELECTRICAL WIRING. Handbook of Residential Wiring Design for Single Family Dwellings. Industry Committee on Interior Wiring Design, 420 Lexington Ave., New York. 24 pp., 6 in. by 8 7/8 in. Price \$25.

Summarizing the latest authoritative experience of the electrical industry on residential wiring systems, this handbook gives the minimum requirements necessary to provide adequately for present and anticipated needs. It is intended to illustrate how to plan wiring systems and the information contained can be used in planning electrical modernization for existing buildings. Floor plans and text describe modern wiring standards and illustrate how each room in the average house should be wired with the number, type and location of outlets. Practical data on circuit requirements, service entrances and wiring specification forms are also included.

BASEBOARD RADIANT HEAT. Ratings and Installation Guide. Burnham Base-Ray Radiant Baseboard. Burnham Boiler Corp., Irvington, N. Y. 12 pp., 5 1/2 in. by 8 1/2 in.

This concise technical rating and installation guide for the new radiant heating baseboard is fully amplified by illustrations of equipment, placements and completed installations. Tabulated rating guides for both the seven in. Standard Base-Ray and the seven in. Hy-Power model of heating panel are included. The types of heating systems with which the panel may be used—all types of hot water, two pipe steam or vapor jobs, and installation details are discussed. Insulation, expansion, venting, center support, and holdback brackets as well as special features for both new installation and modernization jobs are concisely treated.

DIRECTORY. Heating & Ventilating Buyers' Directory. The Industrial Press, 148 Lafayette St., New York. 292 pp., 5 1/2 in. by 7 1/2 in. Price \$1.00.

The 1946 Buyers' Directory for air conditioning, refrigeration, ventilation, heating and piping products includes several hundred new items. It furnishes buyers and specifiers a guide for locating heating, ventilating, air conditioning, piping or refrigeration equipment manufacturers. It lists the manufacturer of a given product under a trade name, and gives as far as possible the names and addresses of all U. S. heating, ventilating, piping, refrigeration and air conditioning equipment manufacturers.

FIREPLACES. Your Fireplace. The Majestic Co., Huntington, Ind. 30 pp., 8 1/2 in. by 11 in. Price \$25.

This guide, containing up-to-date information on the design and construction of indoor and outdoor fireplaces, is supplemented with photographs and drawings of fireplaces suitable for every type of home. One section is devoted to fireplace planning, such as size of room, location and size of fireplace, etc. Data on how to build the fireplace includes details, and a dimension table of fireplace sizes and equipment. Outdoor fireplace designs and tips on their construction are illustrated and described. Information and installation instructions for Majestic Circulators, Damper and other accessories are also covered.

REFRIGERATORS. Servel Gas Refrigerator, 1946. Servel, Inc., Evansville 20, Ind. 4 pp., 8 3/8 in. by 11 in.

This folder discusses the operation, cabinet construction, finish and equipment of the Servel Gas Refrigerator. It also illustrates and describes the five models in the Servel line and gives data on installation.

(Continued on page 242)

TIP* TO BUSY ARCHITECTS



Plan right...
plan with
Marlite

* on walls and ceilings

WHATEVER the building interior . . . store or theater, hospital or hotel, private dwelling, office or factory . . . you'll find plastic-finished Marlite paneling answers ideally your requirements for a wall and ceiling decorating material. There's a wide range of colors and patterns and an unusual physical flexibility of material which gives full freedom to architectural ingenuity, while factory-finished Marsh Mouldings and the large wall-size panels of Marlite are pre-engineered to *save you time on the drawing board*. Equally adaptable to either new construction or modernization, the long wearing beauty and utility of Marlite win lasting client approval always.

Although Marlite is ordinarily available from our many warehousing points, today's unprecedented demands may delay deliveries. Nevertheless, we are doing everything possible to restore the regular, prompt Marsh service.

KEEP YOUR PLANS FREE OF BLURMITES*



You will with Marlite! This is the modern paneling with the pioneer high-heat-bake finish that repels attacks of dirt, grease, moisture, alkalies and mild acid fumes . . . eliminates redecorating . . . makes cleaning easy.

*Blurmites—destructive agents, harmful to the finish of many wall, ceiling and counter surfaces.



MARSH WALL PRODUCTS, Inc.
41 MAIN ST., DOVER, OHIO

PLASTIC-FINISHED WALL PANELS • FOR CREATING BEAUTIFUL INTERIORS

"conclusive evidence of service..."



STIX, BAER & FULLER
The "Service Leader" Since 1885
Saint Louis (U. S. A.)

November 17, 1945

York Corp.
117 South Eleventh Street
St. Louis, Missouri

Attention of Mr. C. G. Skinner
Gentlemen:

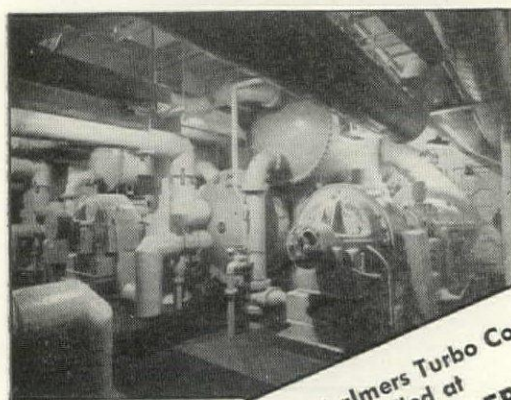
The sixth season of operation of the two 800 ton York centrifugal water cooling systems installed for us in 1940 is just drawing to a close.

Other than a few minor adjustments, we have not had to make any particular repairs on these compressors, and they have given us complete satisfaction in their operation.

The fact that we have just recently placed an order with you for the third compressor of this type is probably the most conclusive evidence of the service that these machines have given us.

Yours very truly

W. O. Bode
W. O. Bode
General Superintendent



The YORK Allis-Chalmers Turbo Compressors
as installed at
STIX, BAER & FULLER CO.
St. Louis, Missouri



OUTSTANDING FEATURES of the YORK ALLIS-CHALMERS TURBO COMPRESSOR

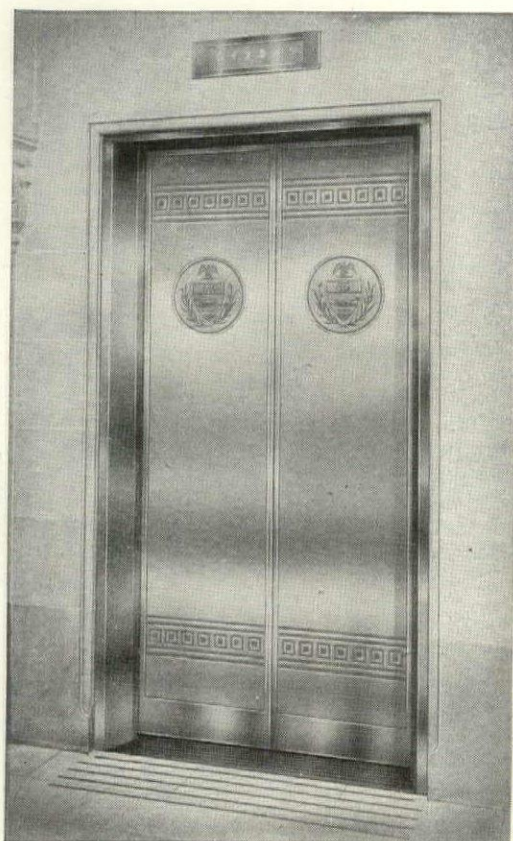
1. Low center of gravity of compressor—permitted by trough type cooler—cuts vibration, provides accessible operation.
2. Stainless steel impeller blades resist erosion and corrosion assuring perfect wheel balance. Blade rivet heads are eliminated to provide unobstructed gas flow.
3. Balance piston to equalize wheel thrust makes necessary only a positioning thrust bearing, and results in less bearing friction losses.
4. Pre-rotation vanes permit greater capacity reduction (down to 10%).
5. Permanently silver-sealed condenser joints.
6. Simplified refrigerant shaft seal.

York Corporation, York, Pennsylvania.

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Illustrated above: Dahlstrom elevator entrances
in the Allegheny County Court House, Pittsburgh, Pa.
Etched bronze in Tampico brush finish.
Bronze splay jambs.

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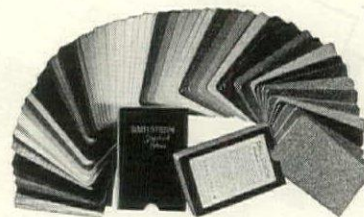
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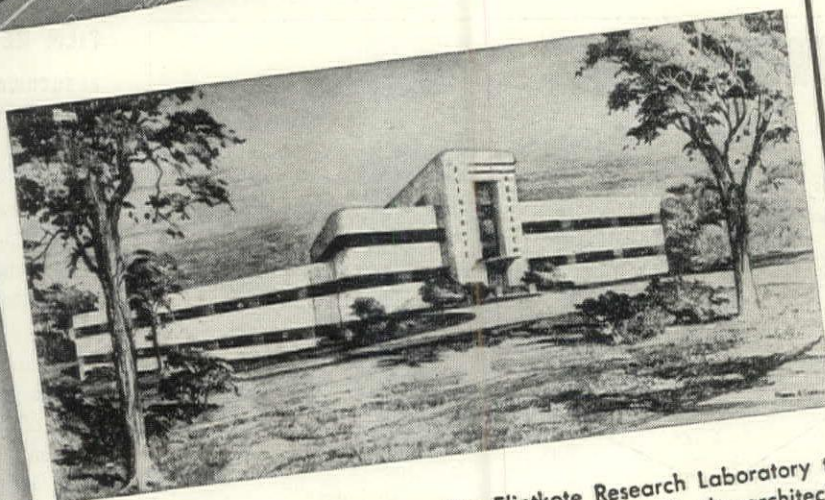
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Research and Plant Expansion: The Flintkote Research Laboratory to be erected at Morristown, New Jersey, pictured above in the architect's rendition, will provide increased facilities to assure new products and continuous improvement of present products. The Company's accelerated program of product research and development and plant expansion and modernization, discussed in the Report of the President, will add substantially to Flintkote's plant facilities and the diversification of its activities

(Reprinted from page two of the 1945 Flintkote
Annual Report released February 28, 1946.)



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AIRPORT PLANNING. Looking Ahead, to the Airport Center of Tomorrow, The Ric-Wil Co., Union Commerce Bldg., Cleveland, Ohio. 18 pp., 11 in. by 8½ in.

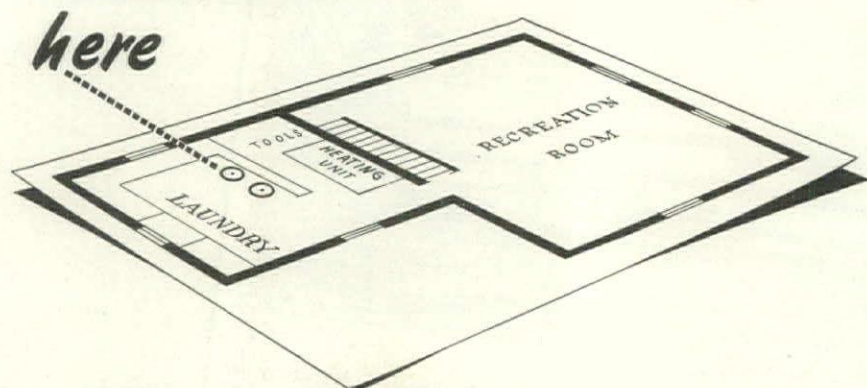
This study presents the case for central heating at a modern airport center and demonstrates how the application of this principle affects the conception of airport design. One of a series of project studies involving central heating, the hypothetical airport considered is situated in an undeveloped area between cities which do not have the population to support an airport of their own. The project develops the possibility of the airport center having hotels, retail stores, manufacturing plants, etc., surrounding the airport. Advantages the community would receive from a centrally located steam heating and refrigerating plant are outlined, and information consisting of drawings, blue prints, costs data, etc. is presented to show that such a project is economically feasible.

LAUNDRY PLANNING. How to Plan a Modern Labor-Saving Home Laundry. Bendix Home Appliances, Inc., South Bend, Ind. 20 pp., 8½ in. by 11 in. Price \$1.10 cents.

This booklet discusses six basic steps for planning a modern home laundry and illustrates seven home laundry layouts with cut-away views and diagrams. The planning considerations outlined are: available space, tasks to be done, convenient working sequence, equipment necessary to do the job, a cheerful and healthful working place, and typical laundry plans by the architect L. Morgan Yost. The colorful renderings and plans illustrate a combination laundry and sewing room, laundry in the utility room, two versions of a laundry in the kitchen, one in a small space, another in an attached garage and one in the basement. Practical laundering hints, services offered by the Bendix Home Laundry Institute and features of the automatic Bendix Washer are also included.

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FILM REVIEW

ELECTRICAL LIVING. Dawn of Better Living. Westinghouse Electric Corp., 306 4th Ave., P. O. Box 1017, Pittsburgh 30, Penn.

The part electricity will play in to-morrow's home is portrayed through the medium of animated cartoons in Westinghouse's new promotional film. Produced by Disney in technicolor, the sound picture gives animation to appliances to inform the home owner how to get the most efficiency from home electrical circuits. The film illustrates how circuits are arranged, and the danger of overloading them. The animated appliances are connected, one by one, to a circuit until it slumps into uselessness due to overloading. Taking up the home of tomorrow theme, the picture then shows the proposed kitchen-laundry combination with all its equipment, the utility room with Precipitron, etc. and the circuits they will need to furnish them the needed electricity. The film is being released for showings through utilities and dealer outlets.

REQUESTS FOR INFORMATION

THE NATIONAL TRADING CORP., S.A., Sursock Building, P.O. Box 11, Beirut, Lebanon, would like to receive literature on electrical and plumbing equipment, air conditioning, oil fired water heaters, glazed tiles, hardware, steel windows and venetian blinds for the home.

RUARK'S REALTY, Tonasket, Washington, would like information and literature on building supplies and prefabricated houses.

RYAN AGENCY LTD., insurance, Union Trust Building, Winnipeg, Manitoba, would like to receive literature on small houses.

ROBERT SWAN, Stephens College, Columbia, Mo., desires information on building materials and electrical, heating and plumbing equipment suitable for remodeling homes into small dormitories, and the construction of faculty housing units.

RONALD WARD, architect, 33 St. George's Drive, London S.W. 1, England, would like to receive information and catalogs on hospitals and hospital equipment.

REQUESTS FOR LITERATURE

GARRETT BECKER, architect, P.O. Box 21, Ridgefield, Conn.

WILLIAM J. FOX, JR., architect, Wilma Building, Missoula, Mont.

CAPT. G. M. HIRSCH, architect, c/o Garrison Engineer, Kangra DN: Yol Camp, Punjab, India.

JOHN C. RIEDELL, architect, Eads Building, Paris, Ill.

JOHN G. SAUERS, designer, 712 E 7th st., St. Paul 6, Minn.

PAUL B. SCHECHTER, architect, 2824 Boulevard, Jersey City 6, N. J.

OCTAVIO A. SEDA, civil engineer & architect, P.O. Box 3209, San Juan 14, Puerto Rico.

W.M.C. INC., general contractors, 264 West Wabasha St., Winona, Minn.

YOUR BUILDING COUNSELOR, radio show, Peoples State Bank Building, Baldwin, N. Y.

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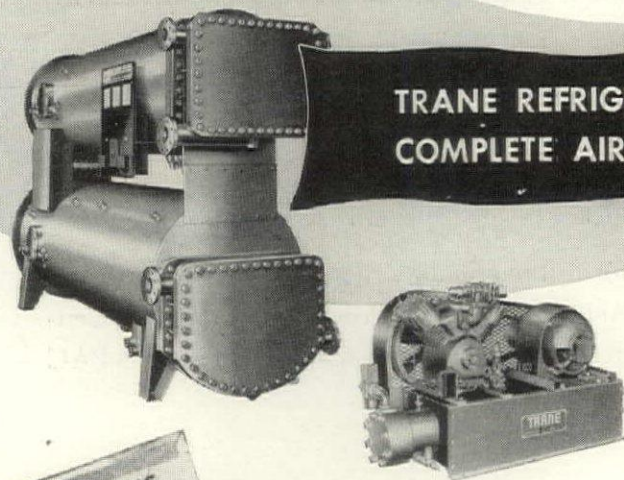
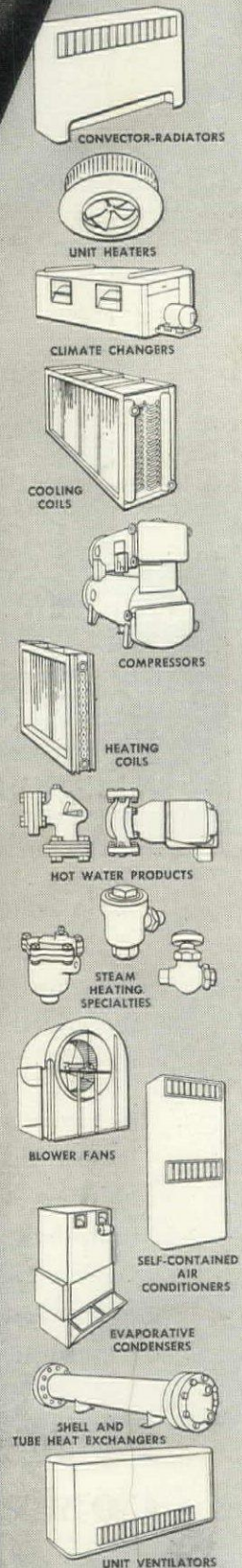
what is equally important, assures that each part in the system is carefully matched to the operating characteristics of all others. Having designed and supervised the production of each component, Trane engineering is able to assist the architect, engineer and contractor select the proper equipment for the job—equipment that functions together as a balanced unit.

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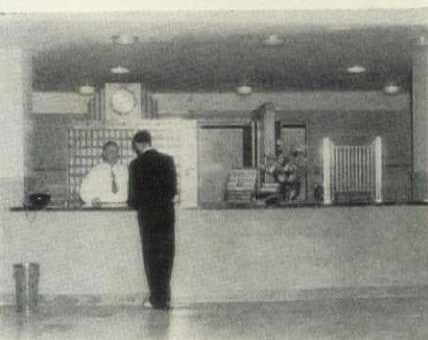
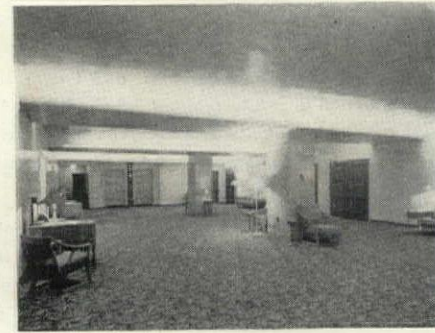
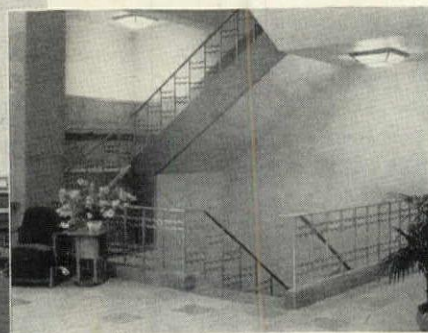
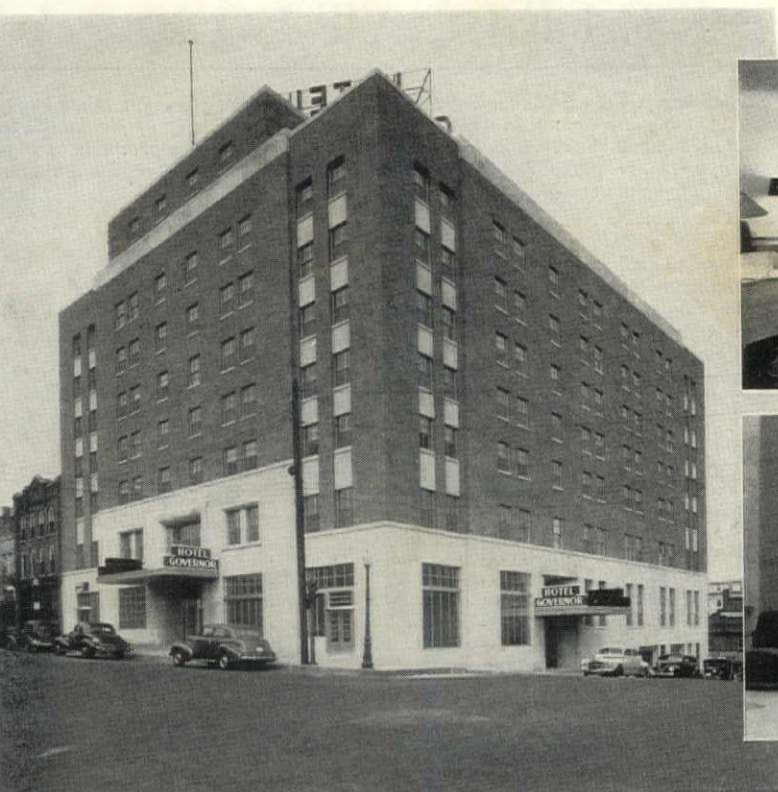
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HOTEL GOVERNOR, JEFFERSON CITY, MISSOURI

SCHMIDT & PAOLINELLI, Architects, St. Louis.

E. A. BRUNSON CONSTRUCTION CO., General Contractors, St. Louis.

Photos from left to right: General exterior view; hotel desk; cigar stand; typical suite; powder room; main stairway; mezzanine lounge; hotel lobby; coffee shop.

Appropriately named Hotel Governor, because of the proximity of the Governor's residence and the State Capitol, this recently-built structure is one of Missouri's finest hotels. Modern throughout, its very atmosphere says "Welcome!" to travelers and guests. Especially interesting are large photo-murals in the coffee shop, showing scenes of local historic events.

Decoration in keeping with the hotel's other fine appointments, was assured through the use of Pratt & Lambert Paint and Varnish, including Lyt-all, the Universal Wall Coating, and "61" Floor Varnish. The P&L Architectural Service Department offers practical aid in color counsel and painting specifications to architects, for any type of structure.

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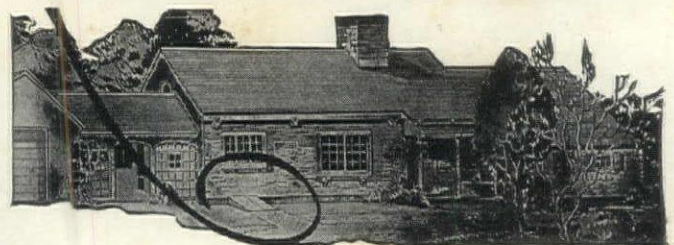
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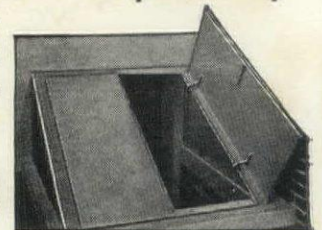
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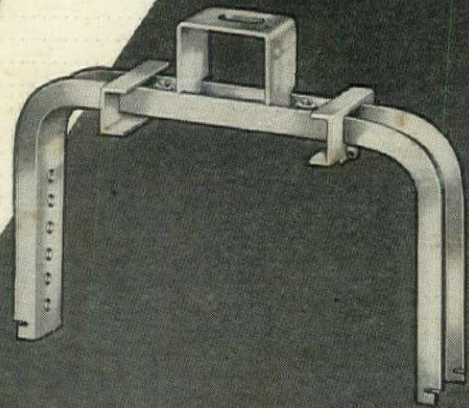
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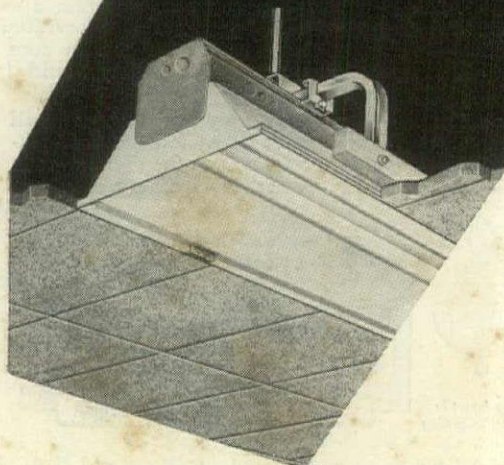
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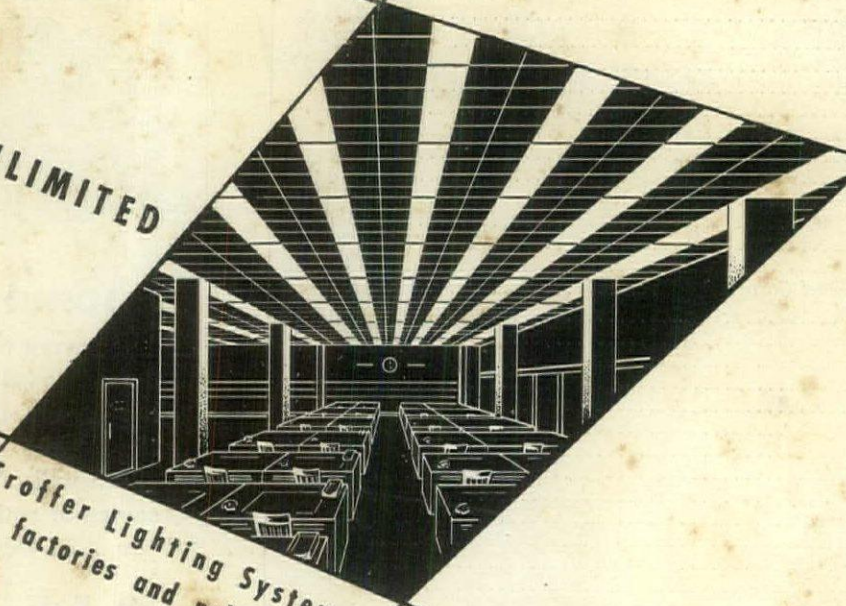


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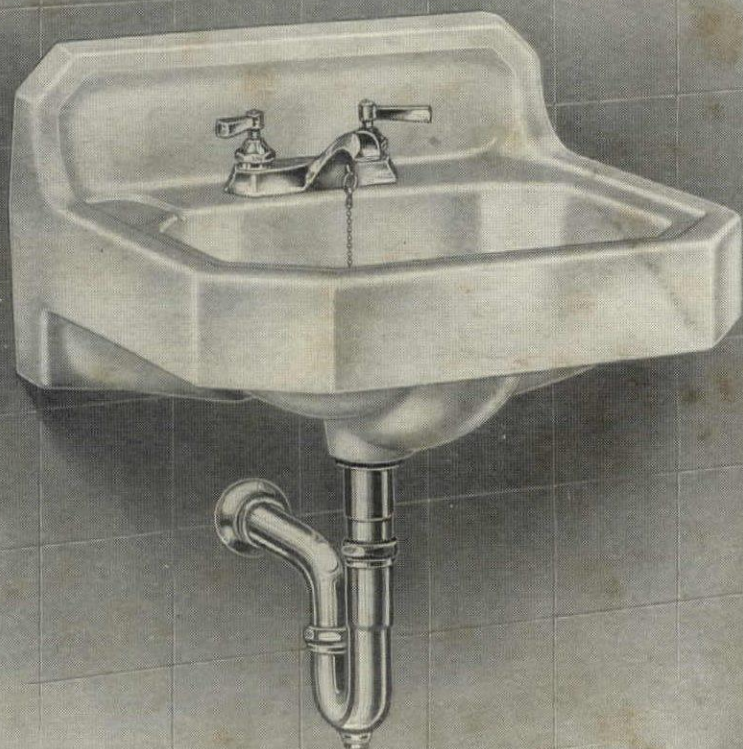


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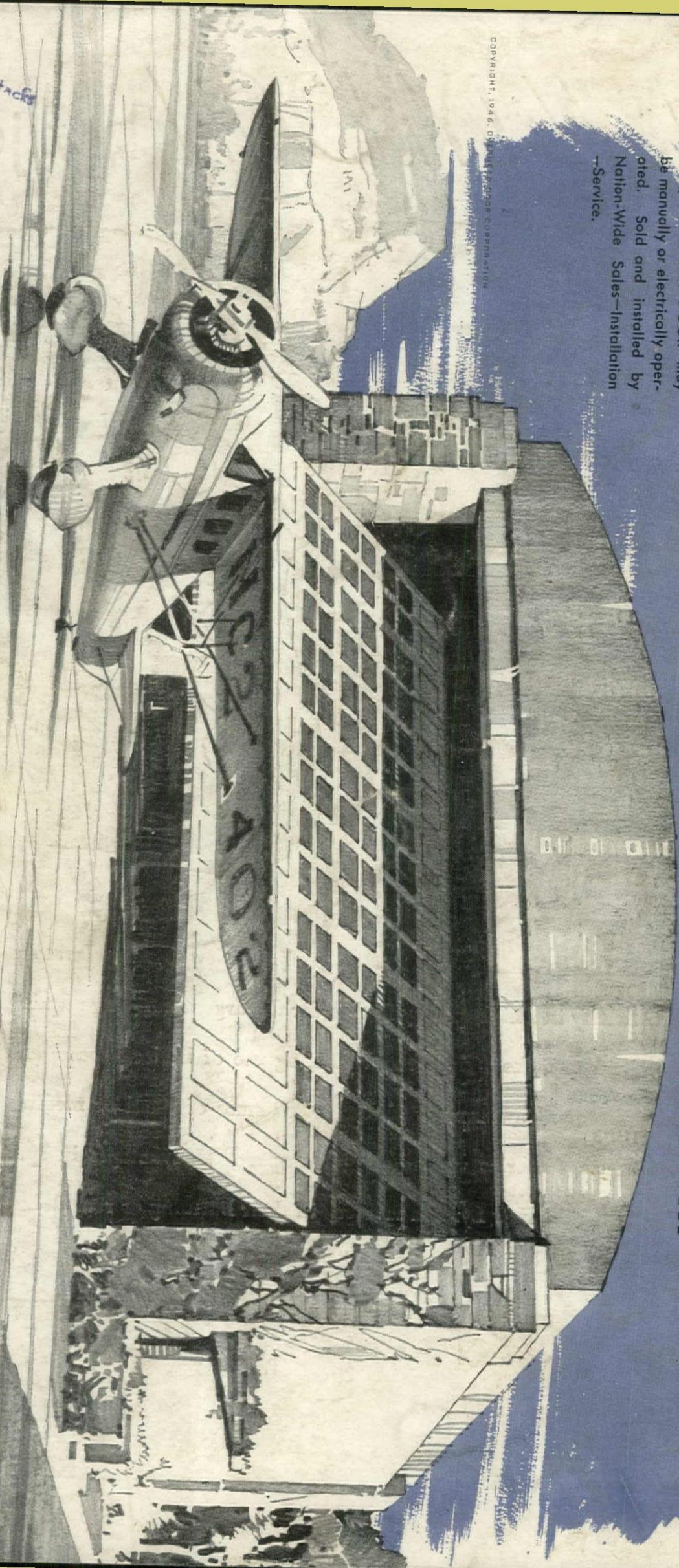
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