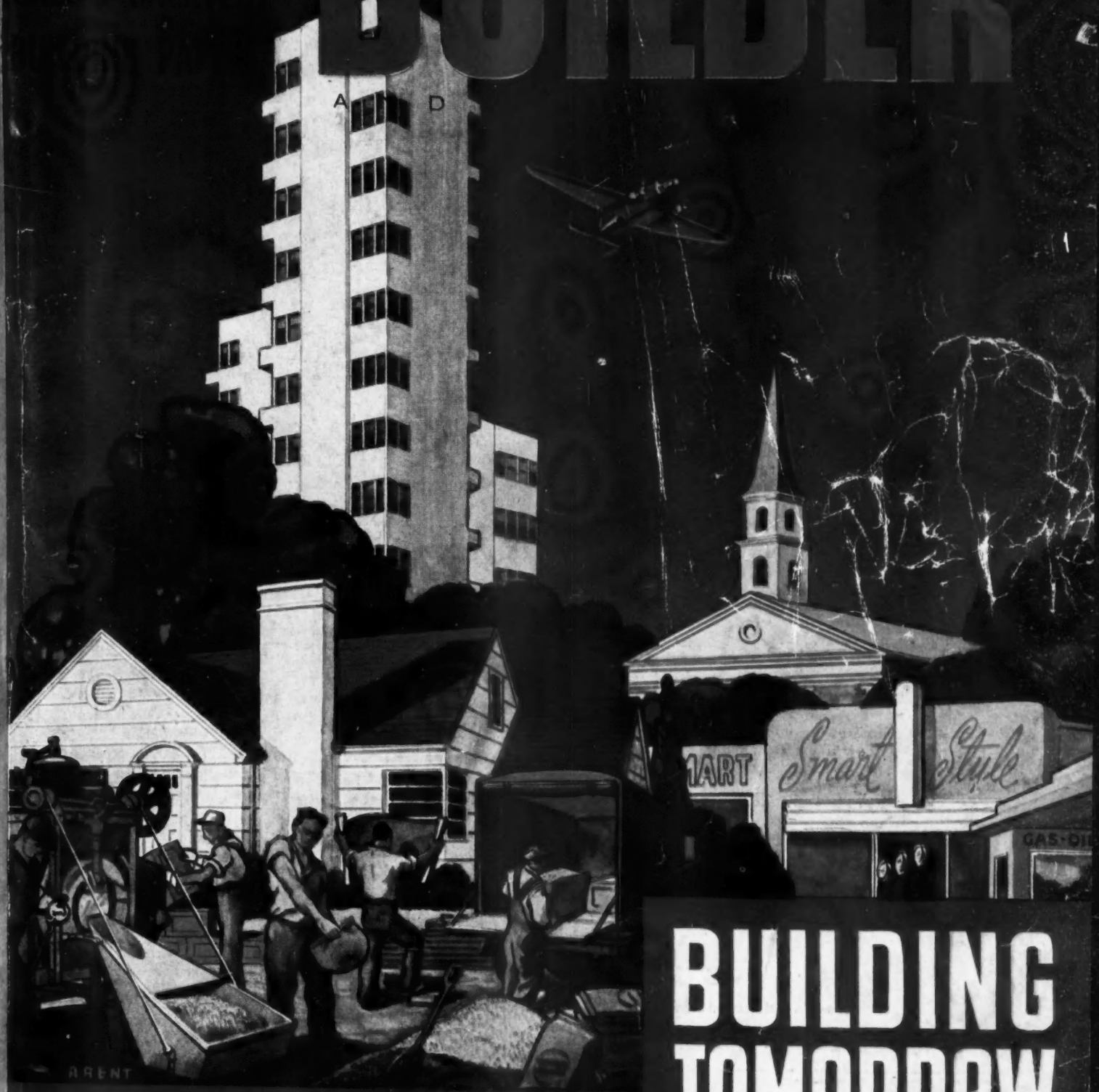


TECHNOLOGY DEPT.

AMERICAN BUILDER



**BUILDING
TOMORROW**

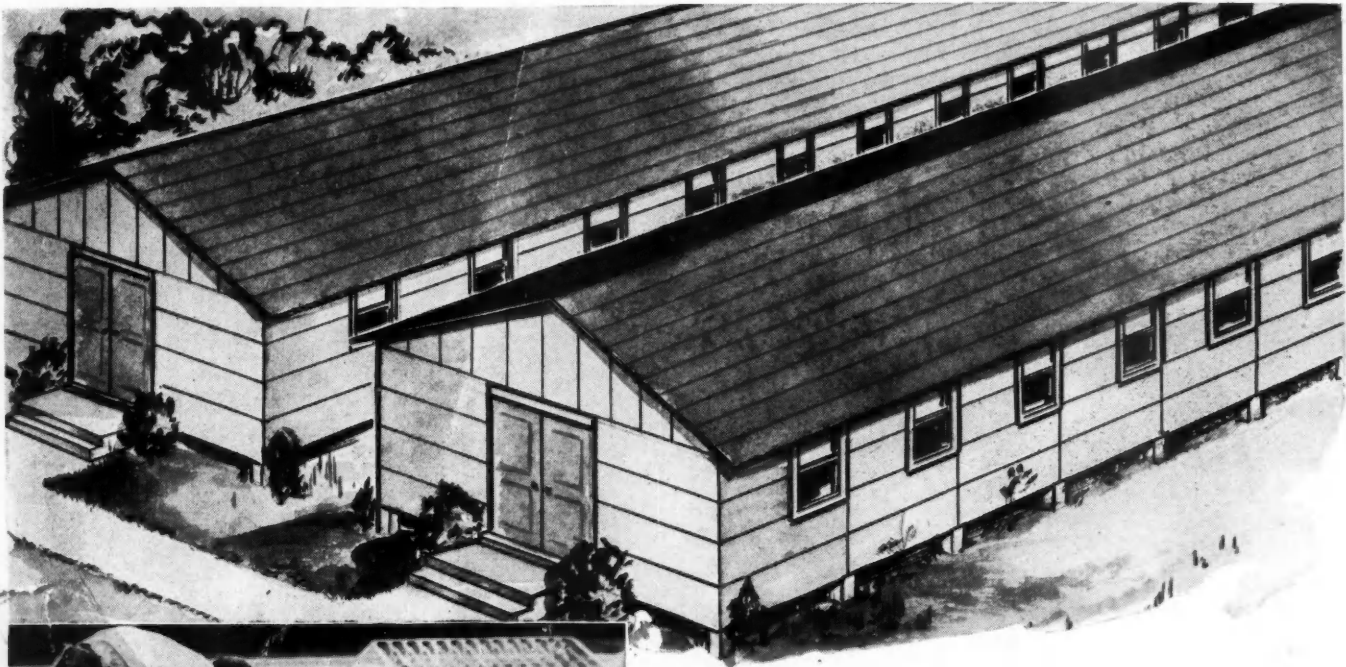
RENT

JOBS TO DO IN 1942

R ✓ v. 65 1943

TWO NEW TRIPLE-PURPOSE PRODUCTS HELP SPEED CONSTRUCTION OF WAR HOUSING AND DORMITORIES

... Now Specified by the Government



Celo-Roof Units Go On Fast . . . Combine Roofing, Decking and Insulation

CELO-ROOF units are made from 3/4" cane board encased in 90 pound mineral surfaced roofing. Heavy butts form deep shadow lines. Interlocking wood nailing strip on under surface of each unit eliminates need for shingle lath or sheathing boards. Size: 7'11 15/16" long by 15 1/2" wide. Exposure 13 inches. Available in red, green, or black.

Celo-Siding and Celo-Roof Combine Strength, Insulation, and Good Appearance!

CELO-SIDING is a granule-surfaced siding made from cane fibre board, coated on all sides with an asphalt compound, then extra-coated on the exterior surface. Crushed mineral granules are then firmly pressed into this exterior surface to form a beautiful, permanent finish in brown, buff, red, or green.

Celo-Siding is 7/8" thick and 2'x8' or 4'x8' in size. 2'x8' size has T&G joints on long edges. 4'x8' size has square edges all around. Each suitable for horizontal or vertical application. All joints can be sealed with a caulking compound. *Thus one material serves for sheathing, siding, exterior finish, and insulation.*

Write for Specification Details and Samples on Both These New Products!

CELOTEX

REG. U. S. PAT. OFF.

BUILDING PRODUCTS

The word Celotex is a brand name identifying a group of products marketed by The Celotex Corporation.

THE CELOTEX CORPORATION • CHICAGO

Published monthly by Simmons-Boardman Publishing Corporation, 105 W. Adams St., Chicago, Ill. Subscription price, United States, Possessions, and Canada 1 year \$2.00; 2 years, \$3.00; foreign countries: 1 year, \$4.00; 2 years, \$7.00. Single copies, 25 cents. Entered as second class-matter Oct. 11, 1930, at the Post Office at Chicago, Illinois, under the act of March 3, 1879, with additional entry as second-class matter at Mount Morris, Illinois. Address communications to 105 W. Adams St., Chicago, Ill.



90 YEARS
1853
CASE
1943
 OF SERVICE



1853

90 YEARS OF SERVICE

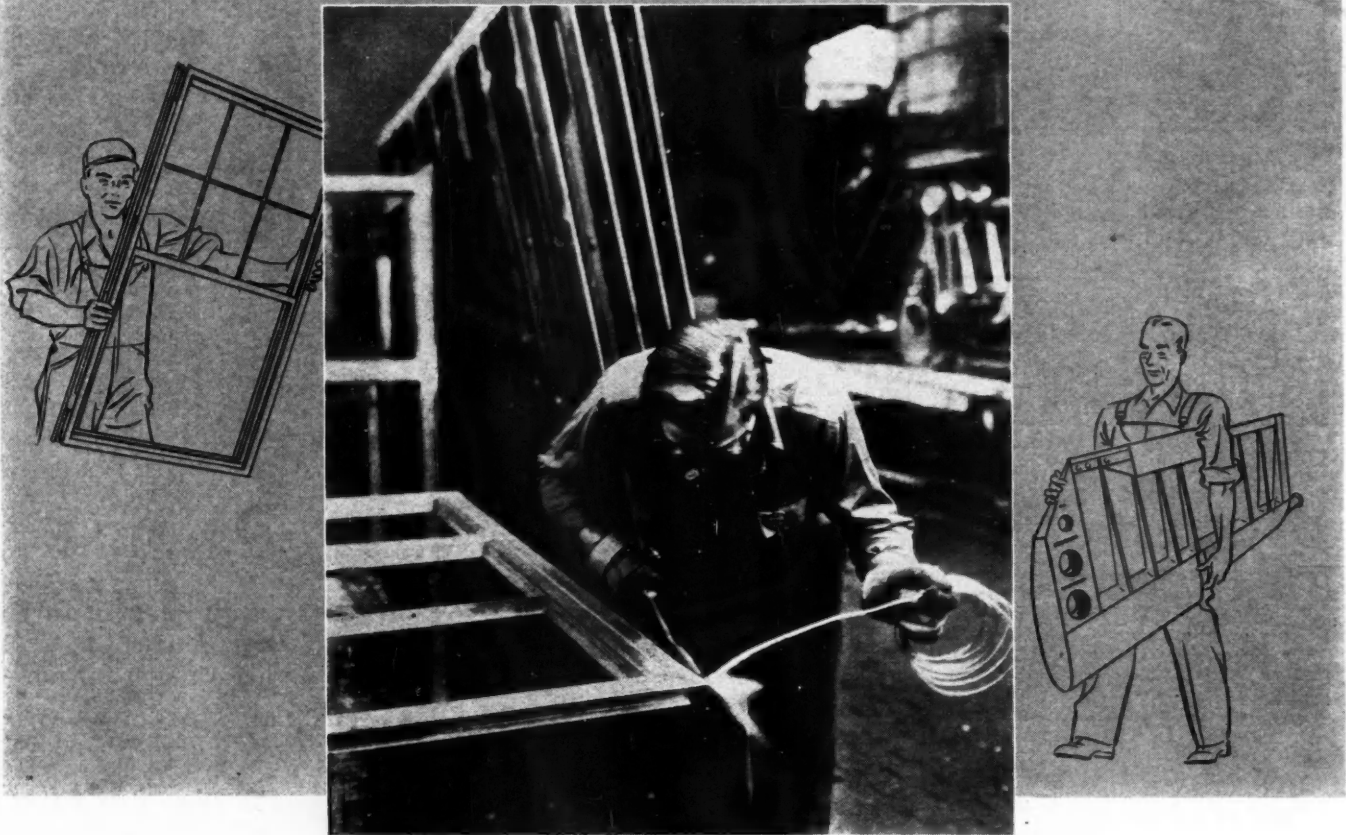
1943

Now there can be only one event to celebrate—the Victory each of us so earnestly desires. Birthdays will occur, however, and so instead of making this, our 90th, the occasion for a celebration, we simply mark it by expressing our sincere appreciation of the confidence that you who design and build for America have placed in us all these years. Without your belief in the worth of fine-quality plumbing and heating products, Case could not have served you and your customers so well in the past, and could not plan to serve so well in the future. W. A. Case & Son Manufacturing Company, Buffalo, N. Y.

CASE

**VITREOUS CHINA PLUMBING FIXTURES
 WELDED METAL PRODUCTS**

**IT GOT THEM READY FOR WAR;
IT'S PREPARING THEM FOR PEACE**



Manufacturers of Aluminum architectural products were readying themselves for this war, unknowingly of course, for years past. The fabricating methods they had developed, the skilled workers they had trained, enabled them to swing over quickly to war production.

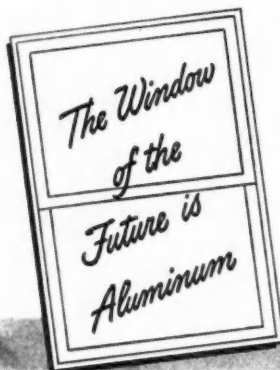
Substitute some part of a combat plane for the Aluminum window frame that's under the welder's torch in the above before-the-war photograph. Now you have a scene today in any one of the plants that were formerly manufacturing Aluminum windows.

The war effort has caused development work to go on at a greatly accelerated pace. New problems are

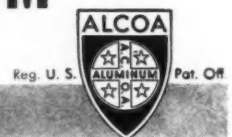
being encountered and solved. Methods of forming and assembling Aluminum parts are being simplified, speeded up, improved. Additional thousands of workers are being trained in these arts.

Vital to the war effort, this fact also has an important bearing on the products you will be offered in the future. The advantages of Aluminum Alloys gained in making materials of war will be the same for the new products at your command; light weight, high strength, fine appearance, resistance to corrosion.

Aluminum windows and sills, storefronts, skylights, coping will be better than ever, lower in cost, readily available from many sources. ALUMINUM COMPANY OF AMERICA, 2120 Gulf Building, Pittsburgh, Pennsylvania.



ALCOA ALUMINUM





**Crane designers are
planning the bathroom
and kitchen of**

tomorrow

WHAT will the bathroom and kitchen of tomorrow be like? Already on the drawing boards of Crane designers are new ideas—startlingly different ideas that promise new beauty—new comfort and new economy for tomorrow's homes.

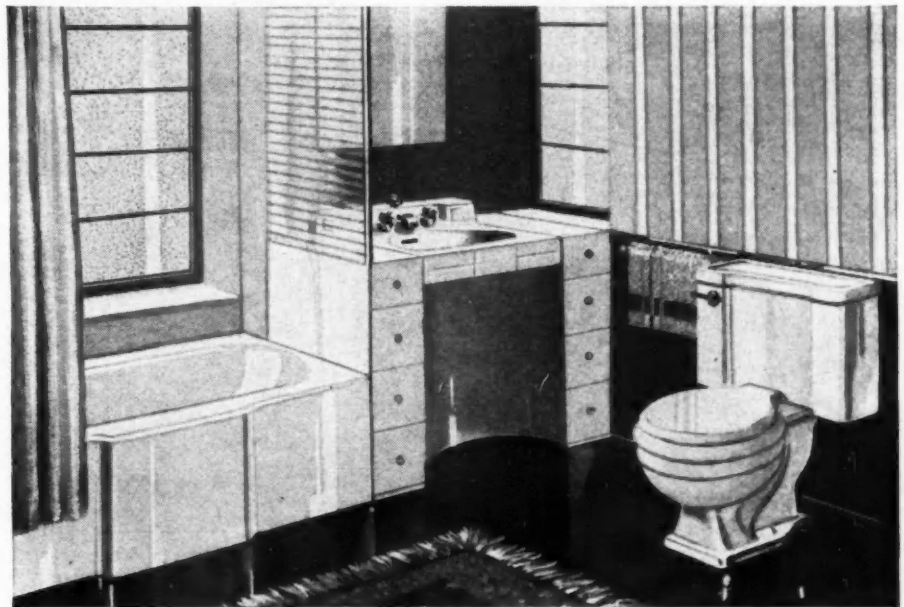
Even now plans are being made to submit these ideas to home owners. The Crane line of the future will be designed to reflect the wishes of those who are planning homes and those who will own the new homes of post-war America.

And when V-Day comes and prospective home owners say "Go Ahead," the Crane line promises a new conception of beauty and efficiency in the bathroom and kitchen.

The Drexel bathroom group shown at right may contain the fixtures many of tomorrow's home owners prefer, and, if it does, it will be included in the Crane line.

But the introduction of new materials—the development of the new ideas on which Crane designers are now at work—may mean a bathroom and kitchen of the future radically different from the bathroom and kitchen of the past.

Whatever fixtures are included in Crane's postwar line, they will embody the years of experience—the technical skill of Crane designers and engineers—the same regard for beauty and style, as well as sanitation, that have always characterized Crane quality equipment.



CRANE

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

CRANE CO., GENERAL OFFICES:
836 S. MICHIGAN AVENUE, CHICAGO

PLUMBING • HEATING • PUMPS
VALVES • FITTINGS • PIPE

EVIDENCE

like this is piling up

Overwhelming evidence from hundreds of builders and engineers proving again that Strong-Bilt Panels for lining walls and ceilings are the best answer to problems of speed construction, lasting quality and lower costs.

Strong-Bilt Panels will benefit *you* in two ways:

1. Add dollar value to the job by providing greater beauty, crackproof construction, efficient insulating value and lower maintenance expense.
2. Cut your costs by reducing application time, reducing number of needed paintings, and permitting earlier completion any month of the year, anywhere, without delay and cost of "drying out."

Let us send you our free booklet which tells how you too can utilize dry-built full wall construction to the best advantage on today's war housing construction and on postwar homes for private owners. Phone, wire or write. The Upson Company, Lockport, New York.

Upson Quality Products are Easily Identified by the Famous Blue-Center

★

STOFFLET & TILLOTSON
BUILDING CONSTRUCTION
2042 EASTBURN AVENUE
PHILADELPHIA, PA.

September 10, 1942.

Re: [redacted] Defense Housing Project
No. Pa 36281 - [redacted] Penna.

The Upson Company,
Lockport, N. Y.

Gentlemen: Attention - Mr. G. G. Ellinwood - Supervising
Engineer, War Housing Projects

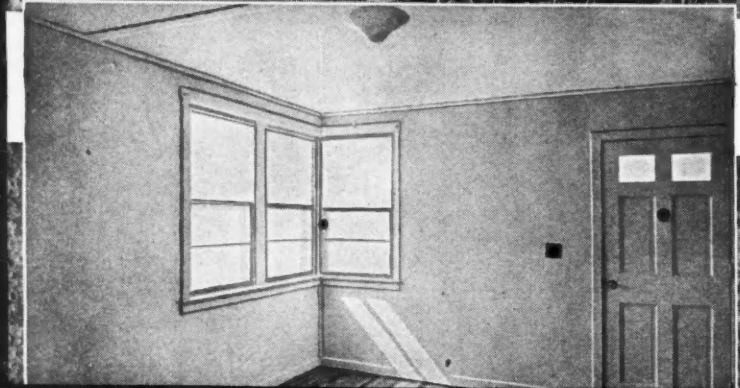
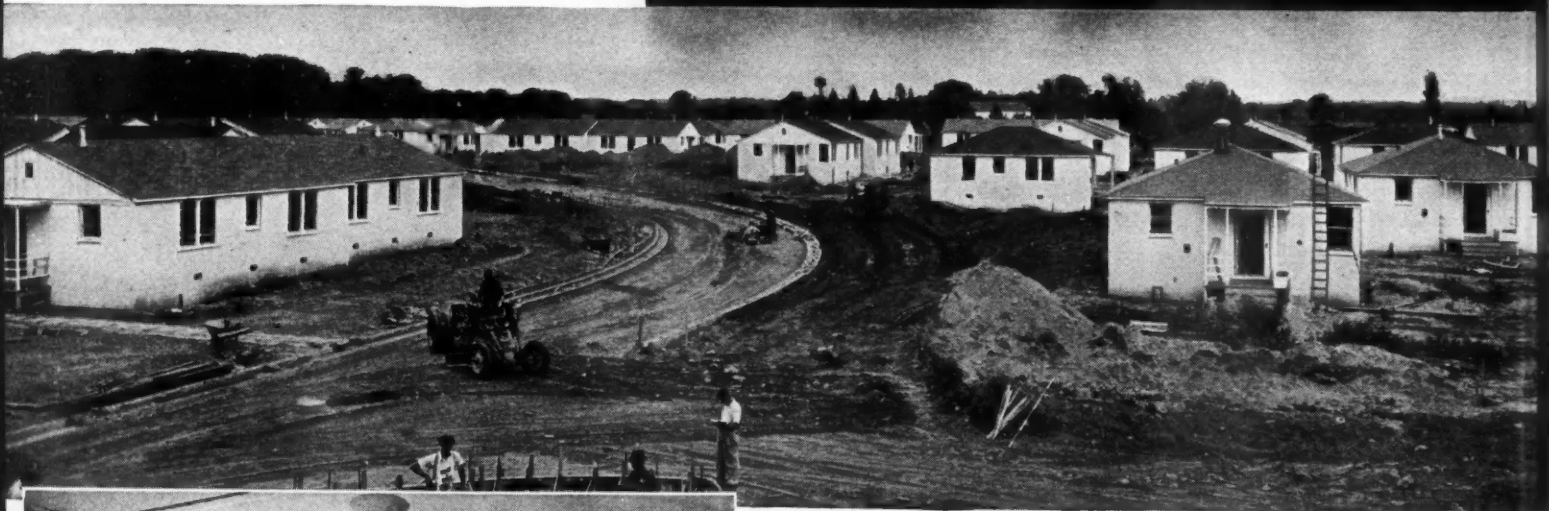
The writer is happy to advise that he was not only pleased with the "Dry Wall" product itself which your company manufactured and furnished for the [redacted] Defense Housing Project at [redacted], Penna., but with the services your company rendered on this job of 200 family units.

We further desire to commend you on the fact that you furnished ample materials with no delays, which, you will recall, was the thing we were most concerned about when placing our order with you. Your representatives furnished all of the working drawings, handled the distribution details in an able manner, relieving us of all of these responsibilities and added materially in our being able to complete the job in record-breaking time.

To the best of our knowledge, this product has proved entirely satisfactory. We have had many comments upon its appearance and it certainly went up fast. You cooperated with us and the forces of the Government to the highest degree and we sincerely trust that we may have the pleasure of working another proposition of this character with you in the near future.

Yours very truly,
STOFFLET & TILLOTSON
By: *G. Stofflet*

hms/mo,



Left: Crackproof full-wall construction completed with Strong-Bilt Panels by Stofflet & Tillotson.

Above: Strong-Bilt Panels for quality, speed and lower costs in the big Stofflet & Tillotson project.



**UPSON
STRONG-BILT
PANELS**

★ ★ ★ ★ ★

AMERICAN AND BUILDING AGE BUILDER

65 YEARS OF CONSTRUCTIVE LEADERSHIP

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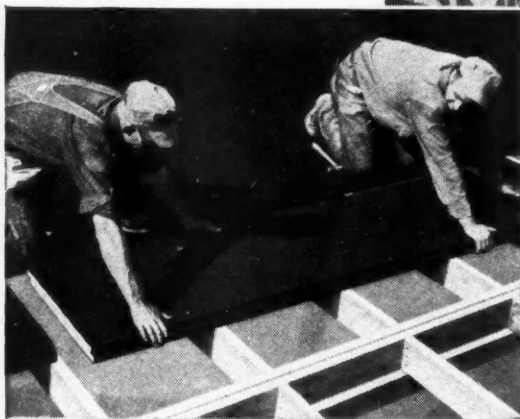
DOLA PARR LYMAN M. FORBES JOE SANDERS L. E. ARENT
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How GOLD BOND can help you HOUSE WAR WORKERS IN A HURRY!

THERE'S some real money ahead for the building business. From all reports, we're over the hump in emergency military and industrial building. The next big job is adequate housing for war workers. Remodeling existing structures is the first step. Unused space in homes will be put to work. Warehouses, idle factories and stores will be made into living quarters.

Profits in this work are made through speedy, efficient methods because cost allowances are low. Gold Bond dealers, with "everything for walls and ceilings," can demonstrate how readily available Gold Bond materials go on faster and do a better job for less money. Here are some Gold Bond materials particularly well suited for wartime housing.

Gold Bond Sunflex Deluxe Wall Paint—dries in one hour with no painty odor. Immediate occupancy the moment the job's finished. Covers any surface, even wallpaper with one coat.



Gold Bond Gypsum Roof Plank—permanent, weather-proof, fireproof roofing for either remodeling or new construction. Quickly applied by any carpenter. Nails directly to wood joists. Perfect base for built-up roofing—1½" and 2" thick, 24" wide and 8', 9' and 10' long.



Gold Bond Exterior Board—is an extra thick gypsum board with a durable overcoat of asphalt roofing. A combination sheathing and siding which comes in large sizes covering up to 20 square feet in one operation—really saving workers' time—sturdy, rigid, permanent finish.



Gold Bond 1" Solid Partition Panels—save lumber—save time—build solid, rigid walls. No nails are used except to hold wooden mouldings, and panels can be completely salvaged when temporary structures are torn down.

CONSULT YOUR
GOLD BOND
DEALER FOR
DETAILS



BUILD BETTER WITH
Gold Bond
Everything—for walls & ceilings

More than 150 different products for
MODERN CONSTRUCTION
AND WAR PRODUCTION

WALLBOARD...LATH...PLASTER...LIME...METAL PRODUCTS...WALL PAINT...INSULATION...SOUND CONTROL

NATIONAL GYPSUM COMPANY . . EXECUTIVE OFFICES, BUFFALO, N. Y.

21 Plants from Canada to the Gulf . . . Sales offices in principal cities

Publisher's Page

Private Enterprise vs. Government Domination

As we enter the new year, government planning is presenting to the people a question their decision on which will largely determine the fate of private business. This question is whether, in the post-war period, a *government* planned economy is more likely to provide adequate employment, production and security for the people than a *private enterprise* economy. As regards the building industry, this question is especially whether a government economy would likely provide more, better and cheaper homes than private enterprise.

Private enterprise must prepare itself *during* the war to meet this issue. For the war may end sooner than many expect. And if then the government planners are ready, in their phrase, to "rebuild America," and private enterprise is not, the government planners may get a dangerous start.

Private enterprise must present its case to the people; but it must also provide itself with a good case to present. Private enterprise was given full opportunity following World War I. After employment and production declined in 1930 to 1932, it had opportunity to adopt definite and positive measures for restoring them. Because it failed to do so, the public welcomed the New Deal; and private enterprise has ever since been fighting for its life.

How, then, provide adequate employment and production? It can be done only by enabling all *groups* of the people to buy all that all groups of them can produce. That the people *are* divided into groups—farmers, wage-earners, "white-collar" workers, business men, professional men—is a vitally important *fact* disregard of which has caused much of our economic ills. For example: Normally 40 per cent of the "gainfully employed" have been in towns of less than 2,500 and on the farms. That large rural group, when farm prices have been depressed as compared with other prices, has been unable to buy its share of what could be produced by the other groups; and this has curtailed the employment, production and incomes of *all the other groups*.

This emphasizes the most vital problem of private enterprise under modern conditions—the problem of so *balancing prices* that *each* group can sell all there is national need for it to produce to *all other groups*. Only by such balancing of prices can there be caused enough *exchange* of all products to provide a *peacetime total market* that will absorb all that can be produced by all who should be employed.

There has never been for long periods this essential balancing of prices excepting when both *prices* and *wages* have been set by *competition*. And all private enterprise, in approaching the post-war period, must squarely confront the fact that during the last two decades many prices have been fixed by monopoly practices in business, and that wages have become largely dictated by labor monopolies.

How meet such conditions and effect the required balancing of prices? This is probably the hardest problem ever presented to private enterprise. But private enterprise in the building and in other industries *must* join in solving it. For unless private enterprise does solve it, and thereby cause each industry to provide its share of employment and production, private enterprise will fail in the post-war period to provide the *total* national employment and production required to defeat the planners of a government-dictated economy.

And it is no more important to win the war and prevent domination from abroad than it is to win the struggle to prevent wholesale dictation by government at home.

Samuel O. Drumm,



ASBESTOS *stands guard day and night*
against ROOF-COMMUNICATED FIRE!

With J-M American Colonial Shingles, you can offer home owners maximum fire protection and permanence . . . at low cost!

Today's wartime economy makes permanence and fire protection doubly important! When re-roofing is necessary you can provide these advantages—and more—with J-M Asbestos Shingles.

A J-M Asbestos Shingle roof provides outstanding long life—not just 5 years, not just 10 years, but 30 years PLUS! We have examined J-M Asbestos Shingles applied 30 years ago and found them in excellent condition.

The new J-M American Colonial Shingle is easy and economical to apply. No special skill is required, and there are fewer pieces to handle. For sidewalls J-M Asbestos Siding Shingles offer the same fire safety and freedom from maintenance expense.

For complete information, with samples and prices, write Johns-Manville, 22 E. 40th St., New York, N.Y.



JOHNS-MANVILLE

Asbestos Shingles

In full production
TO SERVE YOU BETTER



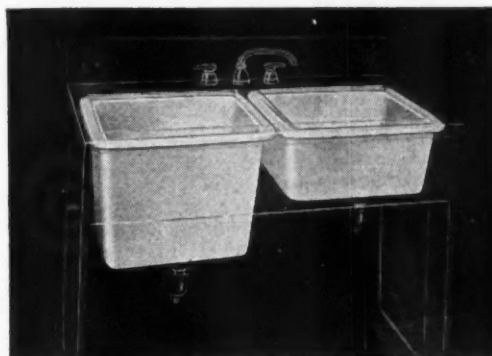
This illustration shows the spraying operation which gives Perma-Gloss sanitary ware its acid proof high lustrous surface.

General Ceramics Perma-Gloss sanitary ware complies 100% with Government restrictions on iron and steel—and today we are producing at peak capacity to meet the greatly increased demand.

Perma-Gloss sanitary ware consists of carefully selected clays molded, sprayed with a layer of vitreous china glaze, and fired at a high temperature. The result is a durable, uniform body that will withstand thermal shock and will not dunt. It is acid proof through and through — not merely acid resistant. In addition, Perma-Gloss sanitary ware has a high lustrous, non-crazing surface that is easy to keep clean—no paint or glaze to peel or chip—no iron to rust.

Write for further detailed information about the many different Perma-Gloss models, all of which meet Federal specifications.

(Perma-Gloss sinks and trays meet Federal specifications E-W WP-5419 — sink XG-20; Tray XT-20. Also specifications for F.P.H.A. and other war housing and dormitories.)



B574 Flat Rim Sink and Flat Rim Tray in combination, consisting of a 20 x 18 sink and 20 x 18 tray. These two items can be set in an under-sink cabinet as a unit.

General Ceramics Co.



SANITARY WARE DIVISION
METUCHEN, NEW JERSEY

On and Off the Record

by Structor

News, Views and Comments

KAISER ON POST-WAR—Henry J. Kaiser boldly expressed what many men in the building industry are thinking in his notable New York speech last month. He said that the way to combat the fanciful theories of a "paternalistic state" is for private enterprise to mobilize its tremendous production capacity; and he especially mentioned housing. "Let us forestall the aimless drift of vague and illusory social politics by aggressive and forceful action for immediate post-war production," he said.

WILL BUILD \$1500 HOUSE—When Henry Kaiser says he expects to build a \$1500 three-room steel prefabricated house to help solve the post-war housing problem, a lot of us may well sit up and take notice. If he could build and sell houses the way he has built ships, he might change the whole course of American building history. There is little doubt that a man like Kaiser could solve the production problems of prefabrication. But selling such houses is a different matter, and not nearly so simple.

SHARP POPULATION SHIFTS—Startling population changes due to war booms have been revealed by recent Census studies, and these have a direct bearing on both present and post-war building. Norfolk, Va., for example, gained 107,000, or 33 per cent, between April 1940 and May 1942. During the same period Wichita, Kans., added 35,000, or 25 per cent; San Diego 97,000, 35 per cent; Mobile, Ala., 47,000, 33 per cent.

Both large and small cities have made astounding gains. Fayetteville, N. C., jumped from 17,000 to 42,000, or 141 per cent; Orange, Tex., from 7,500 to 22,000, or 193 per cent; Sylacauga, Ala., jumped from 6,300 to 16,000. Jacksonville, Fla., increased 23 per cent; Montgomery, Ala., 30 per cent; Washington, D. C., 25 per cent.

Is there any wonder that housing shortages are acute in these areas?

EVOLUTION, NOT REVOLUTION—Throughout this issue, devoted to "Building Tomorrow," the biggest problem of the editors has been to recognize and publish ideas and trends that are forward looking, yet not so far ahead as to be beyond the realm of possibility in the immediate post-war period.

When the decisions were hardest to make, the question was asked, "If the

war were to end tomorrow, what would you start doing?" Usually the answer was that builders would start about where they left off before the war. Change and improvements and new ideas are on the way, but for the most part they are along the lines of evolution, not revolution.

Perhaps Henry Kaiser may knock established traditions into a cocked hat, but we will still lay our bet that it is more likely that Henry Kaiser will apply his tremendous genius along traditional lines, especially where the product to be produced has to be sold to a general public that is pretty fond of the conventional in homes and housing.

325,000 NEXT YEAR—The best estimates for 1943 are that 325,000 houses will be built, about evenly divided between public and private building. The way the war housing standards and regulations have now been set, however, it will be another miracle if builders can get that many houses built.

NEW HOUSING POLICY—The joint declaration of policy issued by Donald Nelson and John Blandford at least gets a completely official statement down in black and white. It does seem it is unnecessarily restrictive, if any housing really is desired. The total amounts of materials involved are so small and the need for housing so great that the policy seems penny wise and pound foolish. It is impossible at this time to say whether builders will function to any great extent under it.

THOSE FLAT ROOFS—The flat-roofed public housing project at Winfield, N. J., exposed in last month's *American Builder* has come in for wide national attention. Publicity has done much to permanently chill off the kind of flat roofed modernism so many inexperienced but radical minded architects have been promoting. A few more public housing jobs like that, and private builders won't have to worry either about flat roofs or government competition—they'll both be laughed out of court.

REMARKABLE TOTALS—The building figures for 1942 are now in, and the final score is: private builders, 301,000; public housing, 172,000; total, 473,000 housing units. In view of the delays, difficulties, shortages and changes in rules, it is a miracle that that many homes were built in 1942. Of course, a large number

of the houses were begun in the early part of the year before WPB started changing the rules daily. At times, it looked as though there wouldn't be any houses at all, yet builders kept plugging on and overcame most obstacles.

PREFAB PROBLEMS—If prefabricators had produced houses in proportion to the publicity they have gotten, they would have flooded the country. The plain truth is that they have failed to produce as they were expected. This does not mean that they may not yet get organized and get going, but post-war competitive conditions in which houses have to be sold to discriminating buyers will prove far different from selling batches of "dog houses" on government contracts.

POST-WAR DESIGN—Many people have been speculating on what the post-war home, if any, will look like. One thing is sure—that it will not resemble the shoebox school of architecture some of the modernistic industrial designers have been promulgating. *The soundest appraisal to date is that a simplified or a modernized version of the Colonial will continue to prevail, only slightly changed from the best of the pre-war work.*

FOREST SERVICE GRAB?—It looks as though the U. S. Forest Service is trying to take the government directly into the lumber business with a hundred million dollar stake to buy logs, timber land, saw mills, planing mills, establish stock piles and buy, sell and distribute lumber.

As an excuse for this new drastic encroachment on private enterprise a lumber shortage for next year is cited which has been set at a fantastically high figure.

An order allocating the \$100,000,000 from the Commodity Credit Corporation to the Department of Agriculture has been written for some time, and at this writing is awaiting the signature of the President. It may have been signed by the time this issue reaches *American Builder* readers.

Certainly such a drastic plan should not be rushed through in this fashion. Even though the lumber shortage may be as great next year as government officials say—and this point is sharply disputed by the lumber industry—it should be apparent that private enterprise can produce better, faster and cheaper than can government, who would have to set up a vast new bureaucracy in this field.



M-H *Miracles* WITH ELECTRONICS



ELECTRONICS bids fair to revolutionize our every day living after the war. When Minneapolis-Honeywell placed its fifty year experience and manufacturing resources at the call of our government, the results of several years of research in electronics were immediately applied to controls and devices for war . . . Extending this peacetime

experience to the techniques of war will bear fruit, when Peace comes, in startling new developments in the electronic control of automatic heating and manufacturing processes. Minneapolis-Honeywell Regulator Co., 2842 Fourth Ave. S., Minneapolis, Minn. In Canada: Toronto, Ontario. In Europe: London, England, and Stockholm, Sweden.

Listen "Alias JOHN FREEDOM" ★ Blue Network Coast to Coast every Wednesday, 10:00 to 10:30 P. M., E. W. T.; or see your local newspaper ★ "The Most Dramatic Show on the Air"

Instruments by **BROWN** *and Controls by*
MINNEAPOLIS HONEYWELL

Some good news about Tin we think you should know

IT'S NO SECRET that the Japs are camped on 80% of the world's tin supply and that America is facing a critical tin shortage.

You have been asked to salvage every single tin can you use—to save every possible ounce of this vital war material. But, today, there is *good* news about the tin you salvage—and we believe you should know that news.

This is it: A new electrical process makes the tin used in tin cans go 3 times farther now than it did before.

Tin plate was formerly made by dipping thin steel sheets in molten tin. It produced a satisfactory coating, but used more tin than was really necessary.

American engineers devised a new method—*electroplating* the steel with pure tin—and the result was a coating that required only *one third as much tin*.

But the new tin plate had disadvantages. It was porous and did not

provide complete protection against the acids in certain kinds of food.

Then Westinghouse stepped in.

Our research men and engineers, in co-operation with engineers of the steel industry, found a way of using *radio waves* to heat the dull, imperfect surface so that the tin fused almost instantly into a smooth protective coating.

And the process is fast. A single machine can turn out enough tin plate in 18 minutes to cover an area the size of a football field!

This new device is a typical example of *electronics at work*—a result of Westinghouse electrical research and “know-how”. Already it is being installed in mills that turn out tin plate for a third of all the nation's food cans.

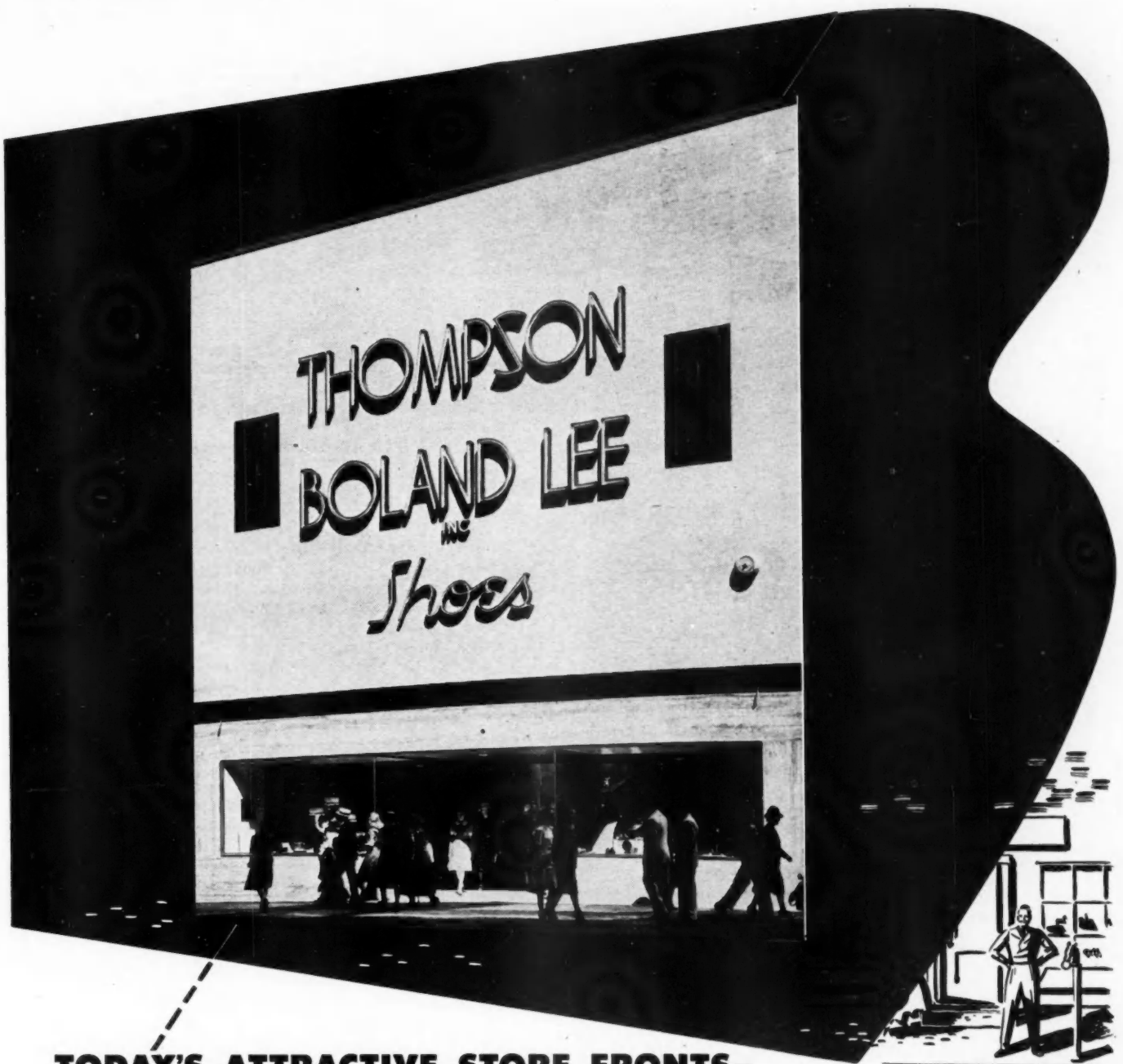
Naturally, this does not mean that there is less need for you to salvage your old tin cans. On the contrary—*more than ever, tin* is needed to protect the food supplied to our fighting men all over the world.

Westinghouse Electric and Manufacturing Company, Pittsburgh, Pa.



Westinghouse

PLANTS IN 25 CITIES — OFFICES EVERYWHERE



TODAY'S ATTRACTIVE STORE FRONTS-
MADE POSSIBLE BY *KAWNEER*

★ Back in 1905, the average store was without show-window display facilities—there was no store-front architecture as such, because no practical method of holding large plates of glass had been worked out. • But what a difference today! Much of the effectiveness of modern retailing is based on the display function of the up-to-date store front. Architects have met this problem, and the country

abounds with splendid examples of their work. • All because the Kawneer Company was founded by a practicing architect who devised the first resilient, rustless metal store front. Although the Kawneer Company is now engaged in war work exclusively, a time will come—and before long—when new and better Kawneer Store Fronts will again be available. The Kawneer Company, Niles, Michigan.

Kawneer

ORIGINATORS OF THE
RUSTLESS METAL STORE FRONT
AND ALL-ALUMINUM RESIDENTIAL WINDOW

Looking Ahead

To The Post-War Home

When America can again build freely, what will the new homes be like?

Kaiser summons private enterprise to do post-war housing job. He plans to build \$1500 three-room prefab homes.



HENRY J. KAISER

"Now is the time to plan for peace. We are summoned either to show the way to a decent standard of living and a self respect for our people or to surrender, perhaps for the last time, to the compulsion and direction of the dictator state."—

H. J. Kaiser.

IN A remarkably stirring and provocative address at the War Congress of American Industry last month, Henry J. Kaiser challenged private American business to forestall a "dictator state" by launching out boldly on a plan to produce housing, transportation and essential medical care.

He also announced, in a newspaper interview, that after the war he is going to go into the home building business. According to the reports, he is said to be planning to produce a three-room prefabricated steel house for \$1,500—one that could be erected by eight men in one day and could be taken apart and moved to a new location.

Whether or not the famous and energetic dam and ship builder will be able to sell such houses remains very definitely to be seen; but the philosophy expressed in his address to America's business men constitutes a ringing challenge to private enterprise.

"There is a grave and compelling demand that preparations for life after the war should begin now," he said.

"Mobilization of the tremendous forces of American production should start now—launching out boldly for housing, transportation, highways, and essential medical care.

"There is no magic source of wealth for the reconstruction period. There is no bounty sufficient to accomplish the task. There is nothing in the philosophy of the handout that can lead to anything but despair for the post-war world.

"We should here and now adopt a plan which would complement the astonishing record of industry in war production; a plan which would put courage, hope and strength in place of all the fanciful theories of distribution which forecast free food, free medicine, free housing and all other similar donations on the part of a paternalistic state.

"Can real estate men organize companies to build modern housing for rent as well as for sale? Do they now dare to put architects to work? Will they, together with banks and savings and loan associations accept bonds as down payments on the homes that are so sorely needed?

"Let the designers and the architects go to work now, and the organizers and the financiers now lay hold on this urgent and immediate prospect. Let us forestall the aimless drift of vague and illusory social politics by aggressive and forceful action for immediate post-war production.

"Have we the courage to organize an effective, self-sustaining or self-liquidating project for every scheme which the proponents of the super state are now planning to make available without effort and without sacrifice?"

HOMASOTE News Letter



THE \$1800 HOUSE

No longer a dream, but a practical possibility is a completely equipped, two-bedroom home that will sell—at peacetime price levels—for \$1800. This will be no standardized box that rolls off the assembly line of some central prefabricating plant—to be shipped a thousand miles away to the site.

The house will be produced by the local builder for the local market. For many of the economies that will make the \$1800 house possible stem from decentralization of prefabricating technique, which reduces transportation costs . . . Decentralization is a basic principle of engineered housing. Engineered housing makes it possible for the local builder to produce better homes at lower initial and operating costs—and insures to the local builder 100% ownership of his housing business; not *part* ownership (with someone shipping him parts of a house which he merely assembles) *but* 100% ownership.

Engineered housing

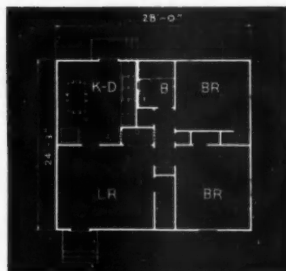
For seven years and at a research outlay of several hundred thousands of dollars, Homasote Company has been studying the application of sound engineering principles to the problem of building a home. Homasote's purpose: to help the builders who use Homasote Building and Insulating Board (and the dealers who distribute it) sell more and better houses.

Result of this exhaustive research is the Homasote Precision-Built

Method of Construction—a system which:

- (1) enables the local builder to achieve *for himself* all the engineering economies of prefabrication.
- (2) is based on the use of Homasote Board and other *standard* materials readily available in the local area.

- (3) eliminates guesswork and the profit hazards of inexact estimating.
- (4) produces a machine-perfect home that gives the builder a real advantage over conventional building.
- (5) permits complete design freedom and thus sets no limit on salability.



PICTURED AT TOP. Low-cost Homasote Home constructed on the Precision-Built Jr. Method . . . LEFT. Basic floor plan of low-cost, two-bedroom home . . . BELOW. Crew assembling walls and partitions at the site.



Proved in \$6,000,000 worth of private housing erected by local builders all over the country and \$24,000,000 worth of government war housing, Homasote Precision-Built Construction will—after the present emergency—open up new markets for builders: low-cost housing projects which builders will be able to construct at a profit for the millions of Americans who have never been able to afford new homes of their own, large realty developments, better homes in all price classes.

For more details, write HOMASOTE COMPANY, Trenton, New Jersey

HOMASOTE

Precision-Built

HOMES

Be sure you receive all of the
FEATURE ISSUES in
AMERICAN BUILDER'S
"PROGRAM OF ACTION FOR 1943"

For February
**THE IMMEDIATE
 WAR HOUSING JOB**

March
PREFABRICATION UP-TO-DATE

A review of the industry's growth. Illustrated biographical sketches of all active prefabricators. Articles on operations of national, regional and local prefabricators. Bibliography on prefabrication. Materials, equipment used.

April
SPRING BUILDING NUMBER

Features 101 ways to keep busy with wartime repair, remodeling and maintenance jobs—types of work which are a mainstay of a large part of the industry today. Reports on Government's program to increase living space in defense areas by remodeling.

May
**LOOKING AHEAD TO THE POST-WAR
 QUALITY HOME**

The best in war and pre-war homes plus wartime developments gives the starting point for post-war home building practice. Presents pre-war plans and pictures of homes built by successful builders, with their views on expected improvements in post-war homes.

June
**SERVICE AND COMMERCIAL
 BUILDING OF TOMORROW**

Feature articles describe the course of post-war construction and reconstruction in gas stations, roadside stands and restaurants, tourist courts, drive-in markets, garages, salesrooms handling autos, radios, electrical appliances, etc.

August
**FARM BUILDINGS—WHY, WHAT,
 WHEN?**

The present WPB building limitation of \$1,000 per farm per year is five times the average annual farm building expenditure. When restrictions are relaxed a great wave of better farm building will develop. Feature articles in this issue present latest design ideas and construction details for farm structures recommended by farm authorities.

October
**NEW PRODUCTS AND RESEARCH IN
 TOMORROW'S HOMES**

Analyzes and describes recent engineering and laboratory developments on products used in home building. Shows how products of research will have practical applications in the building field. Includes pictorial presentation of new materials, products and equipment.

The January "Prospect and Preview" issue, you now have in hand, is the first in a series of special feature issues American Builder will publish for the guidance of building men during the war and for their post-war planning.

FEBRUARY ISSUE
DEVOTED TO IMMEDIATE WAR HOUSING JOB

The February issue of American Builder will offer a detailed survey of war housing to date. It will show just how much of the war housing program has been accomplished, where the effort has been short of minimum requirements and what remains to be done in housing to bring war production to peak efficiency.

You will find illustrations of outstanding war housing operations and descriptions of methods used to turn out good housing in a hurry and most economically in the face of wartime difficulties.

You will see what conversion methods have been used to change old buildings into quarters for war workers and how existing units have been remodeled to allow "two families under one roof."

American Builder's review and analysis of the program of public building to date and present plans, in the February issue, will tell you how well Government housing is providing accommodations for war workers, including the use of dormitories, demountables, trailers, etc.

FOLLOWING ISSUES
DEAL WITH SPECIFIC SUBJECTS IN DETAIL

As you will note in the box at the left, American Builder will take up the subjects and problems of current war and post-war importance, separately, in specific feature issues. Where we make no mention of a feature issue for a particular month, the issue for that month has been set aside as a "Project Issue" in which field reports will be given on current wartime building projects, to be selected later.

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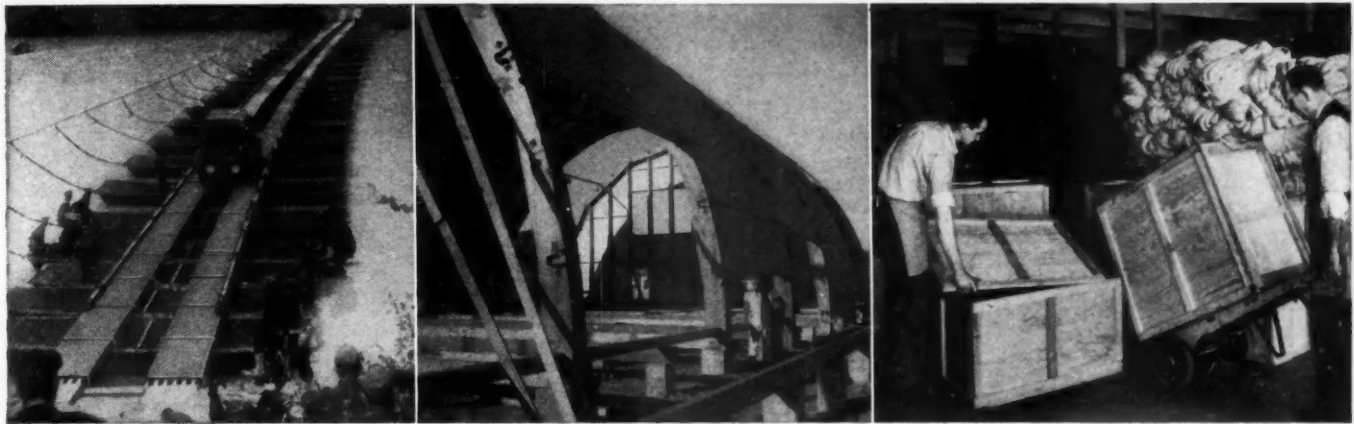
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THE KNOWLEDGE GAINED FROM DOUGLAS FIR PLYWOOD'S MANY WAR USES



...THE RESULTS OF OUR CONTINUING RESEARCH PROGRAM...



...THESE FACTS ARE GOING TO MAKE *Post-War* DOUGLAS FIR PLYWOOD SERVE YOU BETTER AND IN MORE WAYS THAN EVER BEFORE

TO HELP SPEED VICTORY
 the Douglas Fir Plywood Industry is devoting its entire capacity to war production. We know this program has your approval.

Boats and emergency bridges, war housing, boxes and crates . . . these and hundreds of other war jobs are taking the Douglas Fir Plywood industry's entire production. This means that you may not be able to get this engineered lumber now. But the many novel uses for Douglas Fir Plywood resulting from the war — plus the information gained from the expanded research program started last year — are going to make post-war Douglas Fir Plywood serve you better and in ways you wouldn't dream of today. After Victory, Douglas Fir Plywood will be more than ever "*The Modern Miracle in Wood*"! Douglas Fir Plywood Association, Tacoma Building, Tacoma, Washington.

DOUGLAS FIR PLYWOOD

Real Lumber
**MADE LARGER, LIGHTER
 SPLIT-PROOF
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Douglas Fir Plywood is manufactured in strict accordance with a newly revised U. S. Commercial Standard — CS45-42 — in several types and a variety of grades, sizes and thicknesses. Every genuine panel has one of these "grade trade-marks" prominently stamped or branded on it: PLYWALL — wall-board grade; EXT-DFPA — waterproof exterior type; PLY-SCORD — utility sheathing grade; PLYPANEL — cabinet grade; PLYFORM — concrete form grade.

"A PRODUCT OF AMERICA'S ETERNALLY REPLENISHING FORESTS"

Letters

from Readers

Facts, Opinion and Advice
Welcomed for This Dept.

Expects "Open Plan"

Bridgeport, Conn.

To the Editor:

Regarding "Building Tomorrow": house building will be divided into two major classes; one built by merchandising builders and the other for private individuals.

The architect as such in a private practice will have very little to do with the first part but of course will definitely play an important part in the second class.

I believe that the only drastic changes in the second class houses will be definitely in planning and not in exterior appearance. And I believe that planning will be what I call modern. By this I mean "open planning." This will eliminate "central hall Colonial" with a little dining room on one side and a little living room on the other side. The trend will be more to combine these two rooms in an "L" or other shape. There will be more closet space and the shape of the closet will be more functional, that is wide and shallow, of the wardrobe type. There is an obvious trend toward elimination of the basement. However, the moderate price house definitely should have adequate storage space and also laundry and other utility facilities. Therefore I believe that the utility room including the laundry will rise to the ground level where the heating equipment could be installed as well.



Civkin's Post-War Candidate



Heine's Post-War Candidate

The garage will be attached to the house and the attic space, if any, will be used for more than just an open junk space.

Most of all, there will be no question regarding completeness of operating equipment.—VICTOR CIVKIN, Architect.

Like Fighting Stand

Spokane, Wash.

To the Editor:

Thank God there is at least one man who can still write an editorial for a business magazine and say what he thinks and at the same time express what a lot of others are thinking but afraid to speak their minds for fear of some Hi-Hat coming at them with accusation of being unpatriotic for the duration.

I would like to see the editorial ("Freedom Abroad—But Not At Home" in November issue) on every Senator's and Representative's desk. If you have an extra copy, I would like to mail it to our new Republican Congressman from this district.

Your editorials are all good but this one happened to strike right down my alley of thought.—HOME LUMBER CO., by U. R. Kinert, Manager.

Los Angeles, Calif.

To the Editor:

I am happy to be a new subscriber to the *American Builder* just to read such editorials as you wrote in the November issue, "Freedom Abroad—But Not at Home." We need a lot of men of your caliber to save this country for real democracy.—HULL BROS. LUMBER CO., by Warren T. Hull.

Flat Roofs and Warped Minds

West Hartford, Conn.

To the Editor:

I am glad to learn that one of our building publications is taking a sane attitude toward the design of post-war homes. I see no reason why we should come out of the war with warped minds that require flat roofs and distorted rooms.

With the possible exception of one or two, all of the prospective post-war home owners with whom I have talked agree that they prefer homes that are comfortable and more or less in keeping with New England tradition.—KEITH SELLERS HEINE, Architect.

Appreciates Conference Information

Lincoln, Nebr.

To the Editor:

I have just completed perusing the December issue of the *American Builder*, and I want you to know that we greatly appreciate the excellent article on coming War Conferences. While we have always had very good cooperation from the industry publications, I do believe in the past two or three years that it has excelled anything in the past, and it certainly has had a very constructive and cooperative effect.—NEBRASKA LUMBER MERCHANTS' ASSN., by Phil Runion, Secy.

Better See It Through

Dunkirk, N.Y.

To the Editor:

I have a small housing project that is stopped on account of no WPB permits.

Two homes rented and occupied at \$21 per month but permit for city to connect gas and electricity just denied, although houses grouped close.

Two homes built and enclosed (roof on and windows in) but no permit to go further although I have a waiting list of over twenty families that want to rent of me. Deposit paid on one, even.

This area listed in papers as "critical," etc.

I am financing my own work and FHA does not get its \$10-\$15 and \$200 inspection and closing fees.

My location rating is 65 by FHA Land Planning Dept.

A new theatre was permitted to build and get electricity and open here, although the two old ones were never full.

There is an FHA financed project on the other side of town and not occupied on account of \$40-\$45 payments on rent.

Their wire and pipe extensions are five times mine.

Guess I'll join the Navy.—W. F. WOODBURY, The Lumber Store.

"Students, Too"

Worcester, Mass.

To the Editor:

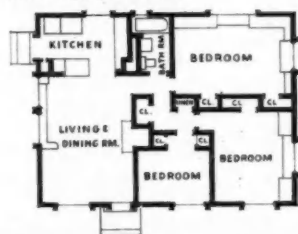
Many magazines are made available to our students, but I doubt that any are looked forward to with more interest, by the young men in the building trades than *American Builder*.—WORCESTER BOYS' TRADE SCHOOL, by Walter B. Dennen, Director.

Every room in your postwar houses should SPARKLE WITH SUNSHINE AND GOOD CHEER



JANUARY'S POSTWAR IDEA FOR BUILDERS

This "Big-Little" house, developed from 16 years' research by the John B. Pierce Foundation, provides an amazing amount of interior room in a small building—actually 5 rooms (including 3 bedrooms) in a house only 24' x 32'. Quickly built at very low cost. Noteworthy features include rows of built-in furniture, and compact plumbing assembly. Large casements, make every square foot of the interior light, cheerful.



Your homeowners will demand the lighter, brighter rooms that result from the use of larger window areas . . . when the depressing years of war have passed.

And they will remember the name "Fenestra," which has always meant "floods of daylight." They'll be looking for new designs and expect such advantages as better ventilation, easy opening, safe washing, convenient screens and economical storm sash. And the New Fenestra Package Windows will save money for you on first cost, and on installation—you'll install a window completely, correctly, quickly. Plan to use the "idea" shown at left.

Warehouse Stocks Still Available

Fenestra's manufacturing facilities are now almost entirely engaged in the production of vital war materials. However, warehouse stocks of New Fenestra

Package Windows and other types of Fenestra Residence Casements are still available now, under proper priorities. Consult nearest Fenestra Branch Office.

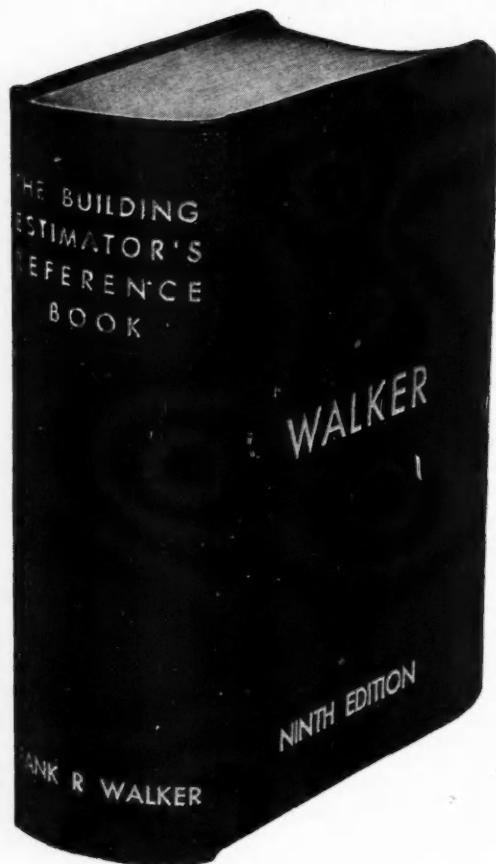
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Fenestra PACKAGE Windows

Ninth Edition . . .

The Building Estimator's Reference Book

By Frank R. Walker



1700 pages, 1000 illus., 1000 tables,
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COVERS

Excavating, Foundations, Reinforced Concrete, Framing, Millwork, Lathing and Plastering, Painting and Decorating, Glass and Glazing, Structural Steel, Masonry, Sheet Metal, Marble and Tile, Heating and Air Conditioning—and many other subjects.

The new Ninth Edition contains latest estimating and cost data on everything that goes into house construction, from foundation to the finishing coat of paint. It can be used in any locality, regardless of local prices or wage scales. *American Builder* "True-Cost" estimates can be used for accurate quantities and the new "Walker" for accurate material prices and labor costs.

For 25 years this book has furnished contractors and estimators the most complete compilation of estimating and cost data available. The new Silver Anniversary Edition has been completely revised and improved throughout. Thousands of items that enter into the making of present-day construction estimates are arranged for ready reference. A cross-index enables the user to locate any item without delay.

HELPS PREPARE BETTER ESTIMATES

A copy of this new edition helps figuring and performing work at minimum costs. New methods of doing various kinds of work and new building materials that have come into the market during the past three years are fully described. With this book at hand there is no need for searching or guessing. The chance of overlooking any item in an estimate is reduced to the minimum.

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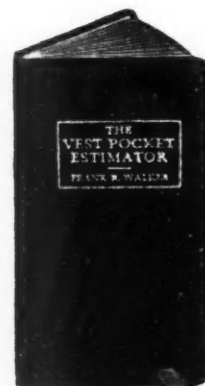
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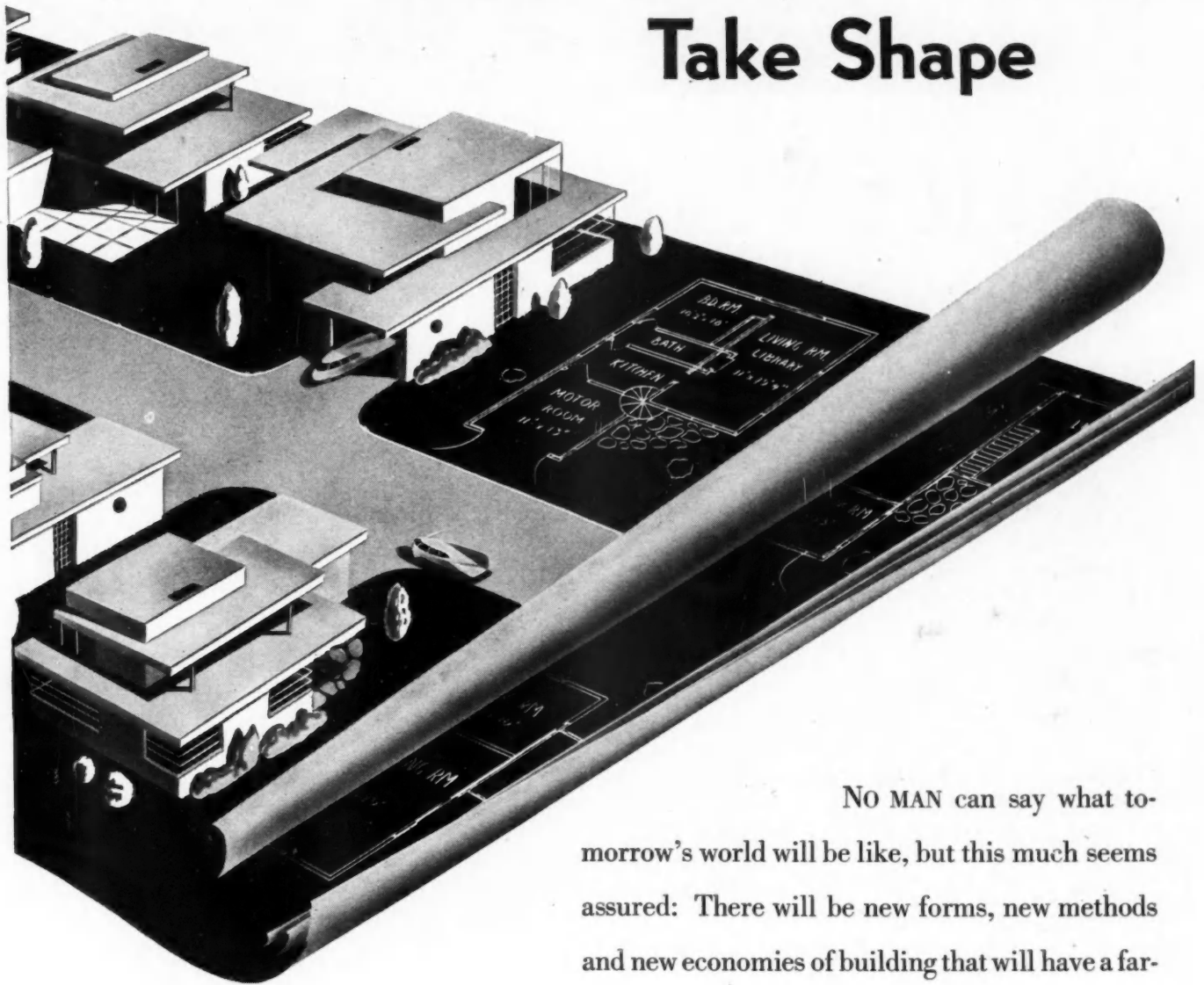
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When Today's Visions Take Shape

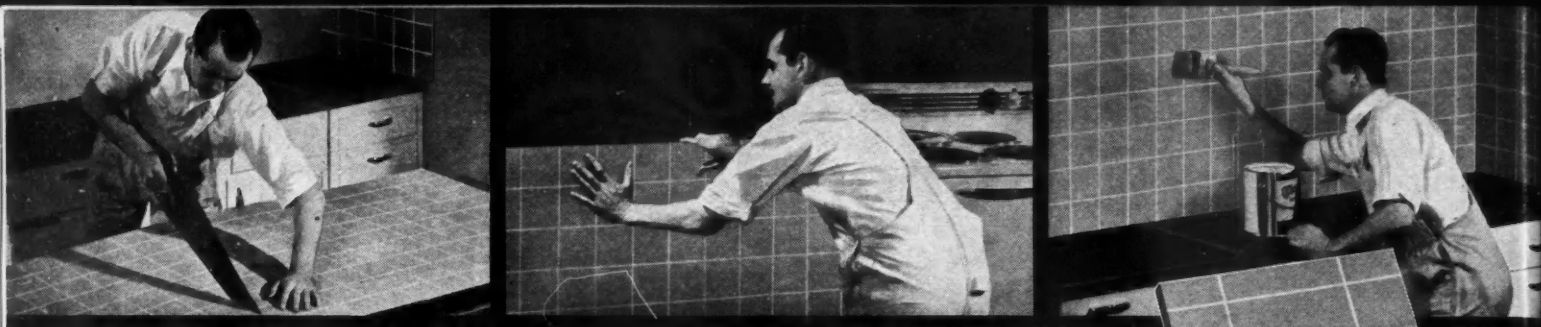


NO MAN can say what tomorrow's world will be like, but this much seems assured: There will be new forms, new methods and new economies of building that will have a far-reaching effect on the way of life in this country.

Today, Stran-Steel is doing things with steel that enlarge its scope and create new fields of usefulness. Traditional limitations of design have been overthrown, old practices revised, and a vast fund of engineering knowledge acquired as a reservoir for peacetime problems. Stran-Steel is a progressive organization, well qualified to serve the men whose visions will shape the future.

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RECOMMEND AND SELL THIS TIME-PROVED NON-CRITICAL MATERIAL

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PUT yourself in a position to sell bigger value for every needed repair and maintenance job where tile-like finish is desirable or essential in homes, business establishments and institutions. You can do it with *Dubl-Thik Fibre-Tile*.

IT'S THICKER, STRONGER, STURDIER: Made of tightly compressed fibres with tile indentations 4" square on a hard-finished glass surface. Neither brittle nor spongy.

IT'S SIMPLE TO INSTALL: Requires no backing. Apply direct to studs in new construction . . . or right over plastered walls without furring, using Upson No. 2 Floating Fasteners. No nails to mar surface. Finish with available molding. Panels 4' wide up to 14' in length.

IT PRODUCES CHARMING BEAUTY: Smooth, non-absorbent surface for enameling in exact color customer wishes. Especially processed to eliminate need for sizing, and provide extremely low painting cost.

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Prepare now to get all available wartime business. Write or send coupon for sample and sales making literature.



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Washington News Summary

WAR HOUSING POLICIES CLARIFIED

Push Repairs During 1943 Make Room for Workers

Private Industry Shows Totalitarians Everywhere How To Produce In '42

Whatever else it may have been, 1942 was the year private American industry smashed the lie of totalitarians everywhere, that independent industry could not meet government owned industry in a production race—and defeat it.

Torn from familiar routines; shackled by forms and formulas; buried beneath tons of orders, regulations, restrictions and requirements that changed the rules with every move, the American business man emerged with the impossible accomplished; totalitarian industry outdistanced, and with the statistical vindication of the American way of life clutched in his hand.

The President asked for 8,000,000 tons of merchant shipping from an industry that had only produced 1,100,000 tons the year before, but ship builders gave him 8,200,000 tons. The President asked for 60,000 airplanes, industry produced 49,000 airplanes, BUT, an increasing proportion are heavy bombers of a type not even considered when the proposal was made. Moreover, these planes have greater striking power and wider ranges. Besides 32,000 tanks and self-propelled artillery, thousands of armored scout cars and other vehicles essential to a mechanized force were produced.

Primary metal production was nearly four times the 1938 figure. Although 65 per cent of the world's magnesium was produced in 1940 in countries now dominated by the Axis, in 1943 the U.S. will produce 8 or 9 times the total expected to be available to the enemy.

In furnishing homes for a migrant population, private home builders started 259,800 dwelling units in the first 9 months of the war and could have easily produced 600,000 had not restrictions prevented it. In the same period 133,900 publicly financed dwellings were started.

1942 is the year free enterprise proved its effectiveness, proved it could out-produce any other known form of economic organization. For the first time in ten years private industry has emerged into a position of prominence; into a leading position in the public eye. Private industry has a chance if it can visualize—not to a return to normalcy—but a better and more abundant future.

Construction for Saving Fuel Rations Freed of L-41 Restrictions 'til 1944

Rehabilitation gets the call. Not only does the NHA-WPB war housing policy place emphasis on conversion of existing living space to war worker accommodations, but FHA's Commissioner Abner H. Ferguson states that in view of restrictions "it is all the more imperative that the present supply of existing homes be kept in sound repair," urging that all essential repairs be given immediate attention, and pointing out that Title I loans are available for this work even in non-war production areas.

Further, WPB has extended until Jan. 1, 1944, permission to undertake without specific authorization construction necessary to the conversion or substitution of heating equipment to permit use of fuel other than oil, electricity or gas, and to install or apply insulation materials, weather-stripping, storm windows and doors.

With the prognostication that by December, 1943, only 180,000 persons will be working on privately financed construction, an early start on rounding up repair and remodeling business may be the salvation of the 272,000 others who are now so employed.

One thing is certain, the population is on the increase and all living quarters created will be needed. NHA is urging rehabilitation for tax stabilizing purposes and to utilize existing utilities; and is offering property owners in war crowded areas an AA-4 priority to obtain critical materials necessary to create space for war workers.

Four Months' Rental Is Required; War Worker Definition Is Broadened

WPB to Allocate Materials By Quarters; Project Completion Is Not Assured

Government policy on war housing was clarified, Dec. 15, by the joint declaration of WPB and NHA. But whether or not the inclusive restrictives of the War Housing Construction Standards; War Housing Critical List; NHA project approval; and WPB material allocations have shackled contractors beyond the possibility of functioning remains to be seen.

Briefly, war housing must be rented to war workers who are defined, not so briefly, as "war workers whose in-migration from beyond the distance of feasible transportation into localities of intensive war production activity is indispensable to augment the local labor supply to the extent necessary for securing maximum practicable war production."

An "indispensable in-migrant" is a civilian worker employed in a plant, or engaged in production, mining, or fabrication of materials essential to the war effort; or engaged in vital transportation, power production, production or repair of equipment needed for the foregoing activities; or an employee of the Navy or War Dept., or specified federal agency; or a civilian worker engaged in services necessary to the health and safety of other civilian war workers in the critical area.

After war housing has been rented to a war worker for four months a war house

(Next page, col. 3)

Gasoline Rations Are Extended Until Jan. 31

According to ODT, field men are being sent to 500 cities and towns to make it easy for commercial motor vehicle operators to seek adjustments in their mileage and fuel allotments. Requests for adjustments in CWN allotments should be made promptly for after Jan. 31 fuel rations will be made only in accordance with allotments provided on the Certificates of War Necessity.

Temporary transport rations for trucks, buses and commercial vehicles, according to OPA can still be obtained up until January 31, 1943. Gasoline rations can be issued where a Certificate of War Necessity clearly does not allow enough gallonage

to take care of the applicant's requirements until January 31.

Salesmen eligible for more than 470 occupational miles a month will be limited to those engaged full time in the sale of necessary productive equipment for farms, factories, mines, oil wells, lumber camps and similar establishments; or of essential food, clothing, shelter, fuel and medical supplies.

That there may be a point in saving gasoline is borne out by the figures recently given by Lt. Gen. Brehon B. Somervell. Tanks of a mechanized division burn more than 10,000 gallons in traveling 100 miles. One heavy bomber, cruising 250 miles in an hour, uses 200 gallons.

Stop Retail Plywood Sales; Extend Price Ceilings to Dealers

All sales, shipments and deliveries of softwood plywood through wholesale and retail channels were prohibited by L-150-a after December 20, 1942, except on orders rated AA-5 or higher. Producers of plywood are exempted. Likewise, effective Dec. 5, ceiling prices on Douglas Fir Plywood were extended to wholesale and retail levels by a revision of MPR-13. Methods for computing prices of plywood in stock and out of stock are included in the regulation.

Western Pine Ceilings Revised to Include Secondary Species

Revision of price regulation MPR-94 (effective Dec. 29, 1942) has extended price ceilings of western pine lumber to include western pine imported from Canada and Mexico, and to include Douglas fir, hemlock, white fir, red cedar, incense cedar, Engelmann spruce, produced in the western pine area—these secondary types are keyed in closely with the primary species.

Builders' Hardware Lines Are Reduced to 3500 Stock Items

Builders' hardware lines have been reduced to approximately 3,500 items from a present total of 27,000 by provisions of L-236 (Schedule I), effective Jan. 15, 1943. Effort has been made to retain any item which may be required by the Army, Navy, other Federal Agencies, or for essential civilian use such as repair maintenance, safety, or farm construction. Some items may be made of plastic, glass, wood or pottery.

1943 Consumption of Lumber Estimated Below Level of 1942

Consumption of lumber is estimated at approximately 31,100,000,000 board feet for 1943. This compares with 40,200,000,000 feet in 1942.

According to a bulletin of the Lumber and Lumber Products Div., WPB, military and essential civilian requirements for construction lumber are estimated at 13 billion feet for 1943 as compared with 22.4 billion feet for 1942. Boxing and crating lumber will rise from 1942's 8.8 billion feet to 11.5 billion feet in 1943.

Aircraft lumber, ship-decking, pontoon lumber, ship and boat timber and structural timbers are expected to increase substantially.

Lumber production goal for 1943 is 32 billion feet. This goal, however, depends upon maintenance of manpower, tractors, trucks, and flow of repair parts to the industry. Due to unseasonable weather con-

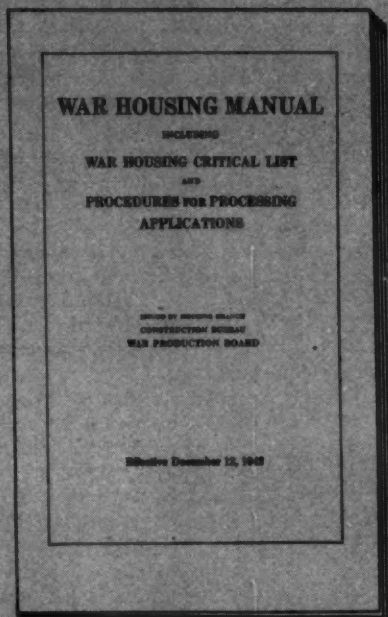
ditions, and shortages of labor, lumber production is expected to decline temporarily during the winter months.

The whisper that lumber might be more available in the next few months is fanned to life by Ben Alexander's recent testimony before the Truman Committee that the Government has 250,000,000 feet of lumber in their stock piles, while yellow pine manufacturers report they are catching up with their Government orders.

New War Housing Manual Is Now Available At All WPB and FHA Offices

Available at all WPB and FHA field offices, and at most financial institutions is a "War Housing Manual" presenting a digest of procedures and requirements governing war housing construction. Object of the controls outlined in the manual is to speed the processing of applications.

The booklet contains an outline of all orders affecting war housing construction;



the War Housing Critical List; Emergency Plumbing Standards; Housing Utility Allowance and the Directive for War Time Construction. This booklet, together with a copy of the Nov. 11 interpretations of the War Housing Construction Standards should provide most builders with adequate texts for proceeding with their work.

Steel Ban Is Lifted on Window Weights, and Wheelbarrows

Amendment to the Iron and Steel Conservation Order, M-126 (December 17) lifts the ban on the use of steel for certain essential civilian items. Among these are wheelbarrows for handling hot ashes, in order to encourage conversion of industrial oil burners to coal. Floor polishing machines and window sash weights were also released.

Hardwood Demand for 1943 Estimated Below 1942's Figure

Estimates of hardwood lumber consumption for 1943 totaling 5,670,000,000 ft. have been presented by the Lumber and Lumber Products Division of WPB to members of the Hardwood Lumber Manufacturers Industry Advisory Committee.

Requirements for 1943 are estimated: Boxing and crating, 2,880,000,000 feet; factory uses, 1,560,000,000 feet; civilian construction (including war housing) 800,000,000 feet; direct military purchases (including Army, Navy, Maritime Commission, and United Kingdom) 430,000,000 feet.

These estimates indicate a decrease from 1942 in all uses except boxing and crating, which is higher by 730,000,000 feet.

Members of the Hardwood Lumber Manufacturers Advisory Committee have advised the Lumber Division that hardwood production is at least 10 per cent below that of the same season last year and may be down 20 to 30 per cent in some regions.

WAR HOUSING POLICIES

(From page 1, col. 3)

can be sold to the worker occupying it. (This rental provision does not effect housing projects begun before Dec. 15.)

Some of the restrictions clarified are:

Only material authorized by WPB can be incorporated in a war housing project. No matter how obtained, other material cannot be used.

A large percentage of the total housing program will be temporary type construction.

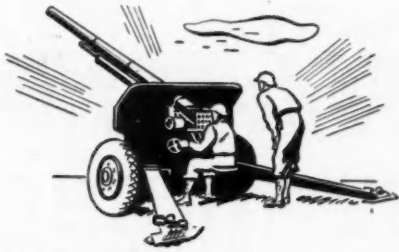
NHA will determine the division of materials (allocated by WPB) between publicly and privately financed housing.

Once war housing programs have been approved, WPB will endeavor to provide materials necessary to carry them to completion, but there is no definite assurance that this will be so, for not only may there be insufficient materials for all projects approved, but WPB will allot materials by calendar quarters.

Heavy emphasis is laid on repair and conversion of existing space to furnish apartments and rooms for war workers by the statement that new war housing construction will not be approved until local repair and conversion possibilities have been virtually exhausted.

Notwithstanding the formidable appearance of this array of hurdles, private construction's way over the course may be smoothed by an unwitting ally. Manpower Boss McNutt has advanced the idea that lack of adequate housing constitutes a valid reason for war workers to quit their jobs.

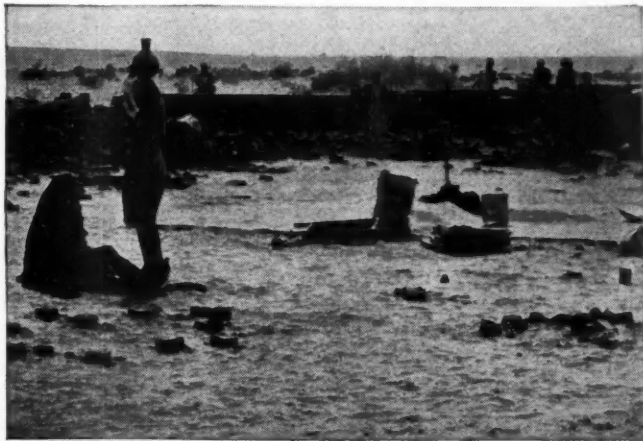
Already, through an interpretation of the War Housing Standards (that no house can be built having less than 220 sq. ft. of floor area), Henry Kaiser is losing miners, and an air school is turning away mechanics needed to maintain planes used by student Army pilots, all because of lack of available housing.



A quick look backward . . . behind the fighting front

Having been at war a year, let's grant ourselves a moment of reminiscence now.

We started from scratch. We had to switch to a war program overnight. To tanks instead of pleasure cars; to guns instead of radios—that sort of thing.



Building an African flying field.

Without forgetting that hard days are still ahead, let's take a brief time-out to appreciate the fine fact that we've done pretty well.

In this progress, new construction has played a part for which there could be no substitute—armament plants, army camps, navy bases, flying fields, emergency housing—with U. S. contractors supplying the vital construction "know-how" with speed and skill.



A fighter plane plant, Eastern U. S.

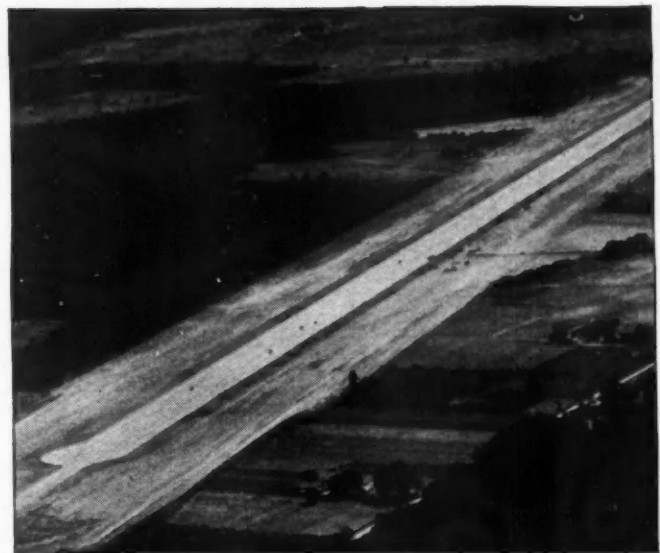
We of Lehigh are glad that, in all this war-born construction Lehigh Cement found a useful place . . . that it needed no time-consuming "conversion"



Naval Training Station expands.

. . . that its concrete was often able to replace critical steel . . . and that, whenever speed was all-important, Lehigh's Early Strength Cement was available to make service-strength concrete in 1/3 to 1/5 the usual time.

Now that winter is here, this latter point becomes more important still. For with Lehigh Early Strength Cement you can get your winter concrete at summer



The country's first emergency landing strip.

speed—with danger of frost damage *lessened*, with heat-protection time and cost *reduced*.

Why not ask the Lehigh Service Department to send you, free, its data on recommended practice for cold weather concreting with Lehigh Early Strength Cement? Any inquiry will be promptly answered.



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FOR VICTORY TODAY AND SOUND BUSINESS TOMORROW



Get This Flag Flying Now!

This War Savings Flag which flies today over companies, large and small, all across the land means *business*. It means, first, that 10% of the company's gross pay roll is being invested in War Bonds by the workers voluntarily.

It also means that the employees of all these companies are doing their part for Victory . . . by helping to buy the guns, tanks, and planes that America and her allies *must* have to win.

It means that billions of dollars are being diverted from "bidding" for the constantly shrinking stock of goods available, thus putting a brake on inflation. And it means that billions of dollars will be held in readiness for post-war readjustment.

Think what 10% of the national income, saved in War Bonds now, month after month, can buy when the war ends!

For Victory today . . . and prosperity *tomorrow*, keep the War Bond Pay-roll Savings Plan rolling in *your* firm. Get that flag flying now! Your State War Savings Staff Administrator will gladly explain how you may do so.

If your firm has not already installed the Pay-roll Savings Plan, *now is the time to do so*. For full details, plus samples of result-getting literature and promotional helps, write or wire: War Savings Staff, Section F, Treasury Department, 709 Twelfth Street NW., Washington, D. C.

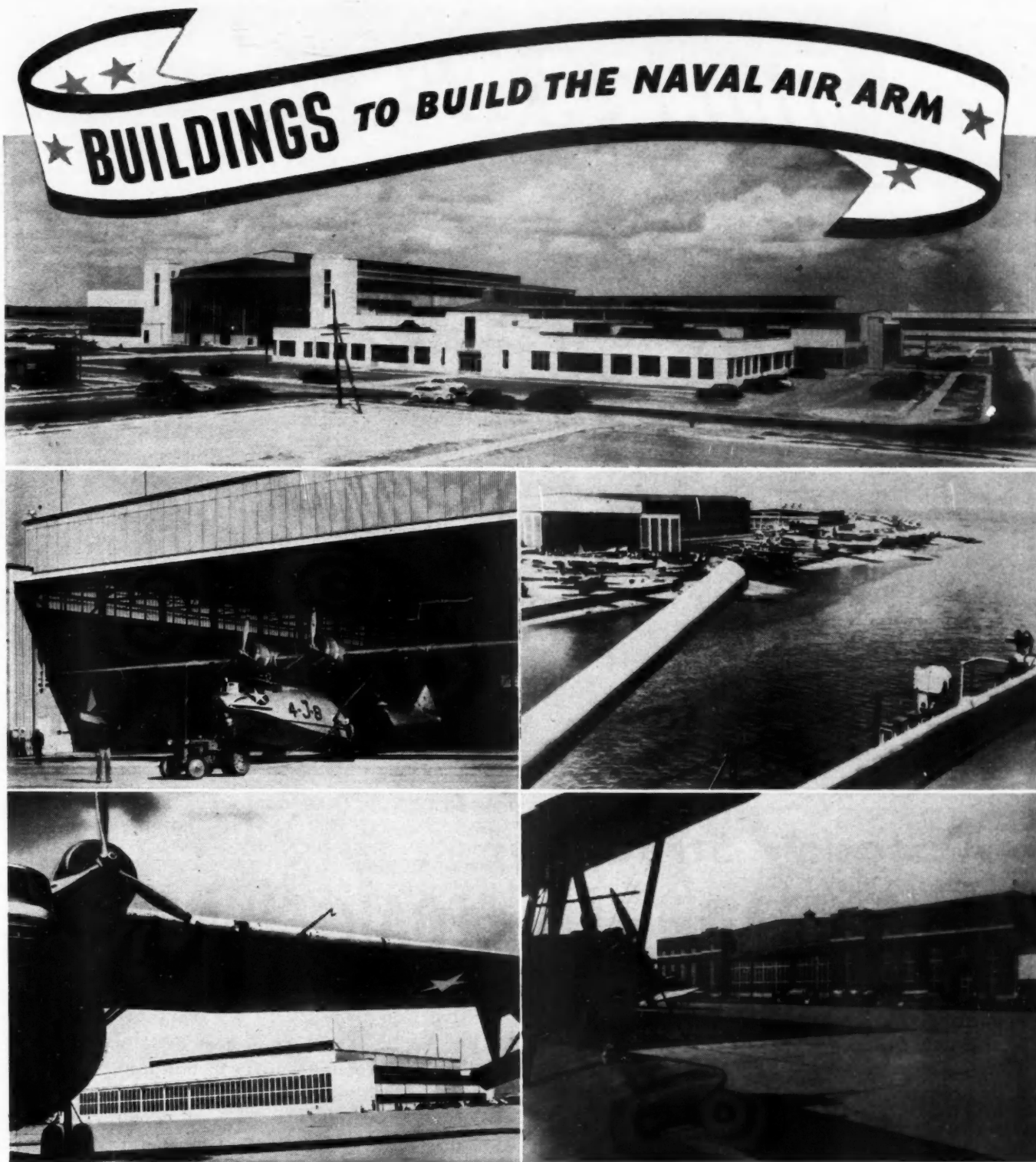


Save With

War Savings Bonds

This Space Is a Contribution to America's All-Out War Program by

AMERICAN BUILDER



The "nests" of our seagoing warbirds are *buildings* . . . vast hangars, assembly and repair shops. You'll find them at scores of naval air bases and training centers. Also included are innumerable administration buildings, barracks, houses, and hospitals for the personnel . . . all being built at remarkable speed.

Many of these air bases rival a small city in size. The amount of hardware required . . . for doors, windows, cabinets . . . is tremendous, and much is being furnished by Stanley.

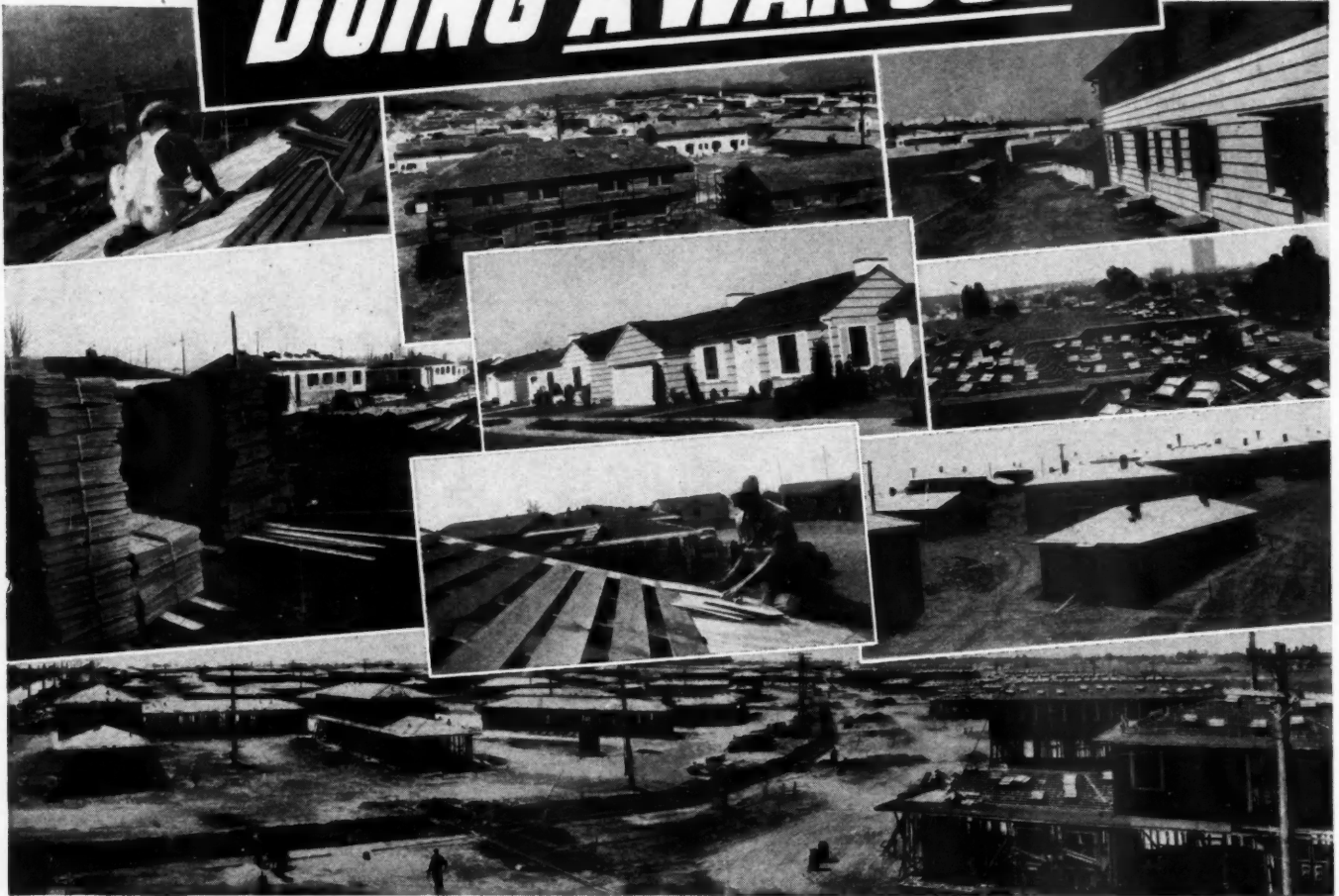
Since this and other branches of the armed forces

have first call on today's production, the supply available for normal use is limited to those projects which have Governmental approval. The Stanley Works, New Britain, Connecticut.



**STANLEY
HARDWARE**

DOING A WAR JOB



A Steady Stream of CERTIGRADE RED CEDAR SHINGLES

—has been flowing to America's tremendous war housing projects. In this particular war-time job Certigrade Shingles have contributed much more than mere protection because every Certigrade roof and sidewall also provides good insulation, long life and substantial appearance.

Builders know these things and have chosen Certigrade Red Cedar Shingles for war housing and other government projects. And there

is a place for Certigrade Shingles in your war construction plans.

For all types of war project dwellings, as well as over-roofing and farm building, non-critical Certigrade Shingles offer an ideal solution.

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Red Cedar SHINGLES

Less Crackpotism Wanted

CRACKPOTISM has lately been doing the building business much harm, and stirring up trouble for tomorrow.

A lunatic fringe of architectural and industrial designers has been predicting weird and fantastic things about the house of the future.

These men picture the post-war home as being queerly different from pre-war. Some of the recent published "dream designs" suggest that the house of the future will be a cross between a modernistic chicken coop and a nightmare on stilts.

\$3,000 equipment in \$3,000 house?

Too often the public is told that it will be able to get \$3,000 worth of kitchen, bathroom and air conditioning equipment in a \$3,000 house. Fabulous new products still in the dream stage are depicted as being ready to be placed on the market.

All this is definitely harmful to the future of the building industry, and a considerable portion of the content of this issue is dedicated to debunking such hokum.

At the same time, no building man in his right mind would deny that important, far-reaching and highly constructive changes are under way.

It is true that the laboratories and research departments of American industry are bursting with new products, materials and equipment; but let's not mislead the public by bragging about them until they are well on the way to production and distribution.

Practical prefabrication O.K.

It is true that prefabrication and partial prefabrication will play an important role in post-war housing, but let's not talk as though the building industry is going to be entirely taken over in a few short years by this or any other new technique.

Evolution, not revolution, is the soundest approach to home building, which is so intimately concerned with the lives and living habits of people.

We deny that a man is automatically "reactionary" if he does not accept every crackpot idea that comes along. The building industry has always had more than its share of the lunatic fringe, and practical building men know from costly experience how dangerous reckless experimentation is.

Ironically enough, one of the most interesting infant developments of our industry—prefabrica-

tion—has suffered most severely from lunatic ideas. Just label any queerly concocted picture "prefabricated house of tomorrow" and newspapers and popular magazines give it headlines. Prefabrication has made sound, and in many respects, startling progress in the last few years, and it does not need the kind of fantastic publicity it has been getting. It tends to make the public as well as the building industry cynical.

Our duty to plan soundly

American Builder believes that it is the duty of those of us not engaged in war activity to take time NOW to plan constructively for the future. The building industry should be one of the greatest sources of productive employment after the war. When the millions of our fighting men, hardened by a vigorous outdoor life, come back from war we must be ready to put them to work—not stand back and wait for the government to do it. *Private enterprise* will solve the post-war housing problem. There has been loose talk about the government taking over the building industry after the war. Even though some Washington bureaucrats might want to, *it can't be done*, and the experience of public housing to date confirms this. The millions of homes that will be needed after the war will not all be built in large cities. As the article by William C. Bober in this issue points out, they will be scattered through thousands of rural and suburban communities and in new areas opened up by war production. Building is too diversified, local and vocal to be taken over by government.

But don't think it will be easy

There will probably be enough competition from government, however, to keep private builders on their toes. They must give more house for less money than ever before. No one in this industry, from manufacturers down through the distribution system to architects, builders and sub-contractors can rest easy. Great forces are at work. New products and new methods are on their way. The men who are alert, progressive and constantly working out new ideas to produce more housing value for less money will be the successful firms of tomorrow. These are the men who will make "building tomorrow" a success.



How America's new **POWER TO PRODUCE** will create greatest building program in history

THE HOME BUILDING WAVE OF THE FUTURE

By W. C. Bober

What Bober Says About Buyers, Babies and the Building Backlog

1. **EACH YEAR** between now and 1955 a new **HUGE "BABY CROP"** is ripening into harvest for post-war home building industry.

2. **RECORD BREAKING NUMBERS** of people are now reaching ages 25 to 44—working up to crescendo in 1955 when the housing wave of the future will ride greatest flood of demand in history.

3. **HOME BUILDING** has never made up deficit of the depression: we entered this war with huge unfilled backlog that will grow greater the longer war lasts.

4. **VAST EXPANSION** in nation's power to produce has doubled capacity of durable goods industry over 1929. Machine tool output now ten times that of 1929.

5. **MANPOWER** "hardened by war" will be plentifully available to use scores of new building products and expanded output of producers. New techniques, new materials will bring lower home costs: thus opening new home markets.

6. **NATIONAL INCOME LEVEL** of \$120 billion a year would add 8 million families to above-\$1,750-a-year class, enabling them to buy \$3,500 homes without subsidies.

7. **SUPER HIGHWAYS AND PLANES** will increase migration of people from city centers to outlying areas, rural building market.

8. **BUILDING OF WAR AND INDUSTRIAL PLANTS** in new and widely dispersed communities will cause great post-war migration of home seekers.

THE outstanding economic fact of today, immeasurably significant not only for our own future but for the destiny of the entire world, is the amazing forward march in the **POWER TO PRODUCE** achieved in the United States since the spring of 1940 when our armament program began. Since that time, a veritable new era has been ushered in.

For a decade after 1929 we despairingly watched production in the United States sink ever lower; then suddenly, in the spring of 1940, under the powerful compulsions of war, the brakes were suddenly lifted. By Oct. 1942 the physical output of our factories had attained a level 70% above 1929, and the output of durable goods (in which category building materials and construction equipment fall) in Sept. reached 99% above 1929.

Early in 1943 we should be producing, easily, 75% more factory output than 1929 and double the volume of durable goods. So great, in fact, has been the rise in productivity since the war stimulus began to operate that a return from the Oct. 1942 output to that of 1929 would actually constitute a far vaster depression than the great tailspin of 1929 to 1932.

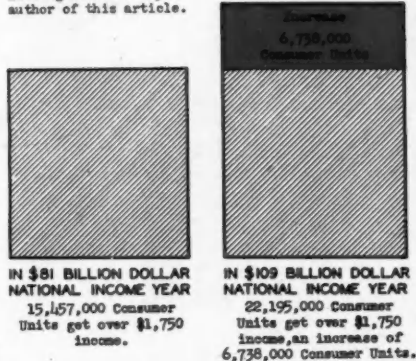
Ultra-Modern Plants

But this is not the full story. The march of technological progress has been so fast that output per man hour has been rising by leaps and bounds. By mid-1941, when a statistical blackout began in this field, we were already producing in our factories almost 50% more per man hour than in 1929—the result of the machines, of course. Even agriculture, far less mechanized than industry, began to keep pace, and this year the output of our farms will probably surpass 1929 by 28% or more. True, this trend towards ever greater capacity to produce has been going on for generations and has merely been accelerated, but vastly so, by the war. In barely over a generation, from 1900 up to 1940, output per man hour had already tripled in the factories, increased 270% in the mines, risen 500% in electric power production, and even increased 65% on the farms.

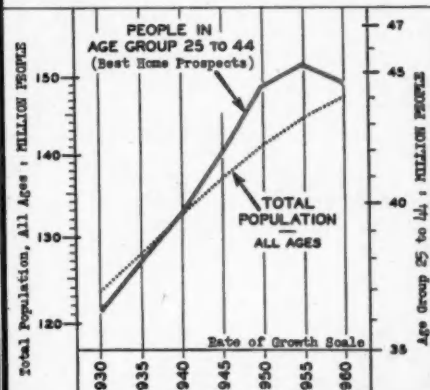
But after spring of 1940, the Construction Industry

WHAT RISING NATIONAL INCOME DOES TO THE HOUSING MARKET

Chart based on data by National Bureau of Economic Research in "Fiscal Planning for Total War". Units mean families and individual earners separated from families. Application of the Bureau's figures to Housing Market is by author of this article.



OUTSTANDING FACT ABOUT HOUSING DEMAND UNTIL 1955



MILLIONS of families earning \$1,750 a year or more will become new prospects.

HIGHER NATIONAL INCOME and a flood tide of families in the best home-prospect ages contribute to post-war market.

gave us an entirely new industrial plant for which we will have spent about \$17 billions before middle of 1943, and this plant is equipped with ultra-modern machinery that is making past records of productivity look like ancient history. This new plant will increase our industrial capacity to produce by at least 50% over 1939, the last pre-war year. And the basis of this immense advance in power-to-produce is an utterly unprecedented expansion of output in our machinery and machine tool industry.

We are already producing this year, in 1½ months, as much machine tools—the machines that make other machines—as in the entire year 1929. This, because we live in and are dominated by the machine age, transcends in importance almost any other economic fact.

Moreover, new materials without number are pouring out of our research laboratories. It is estimated that our chemists are now creating entirely new products at the rate of about 4000 per year. And the paid-out national income of 79 billions in 1929 will soon look small compared to the 120 billions ahead for 1943.

Men and Materials Will Be Plentiful

We should let these figures sink in because they foreshadow the new United States in which we will live after the war. We are in a new age since the pre-war year 1939 and the statistics I have quoted herald the real "wave of the future." Machines are once again opening up a new world, before our very eyes.

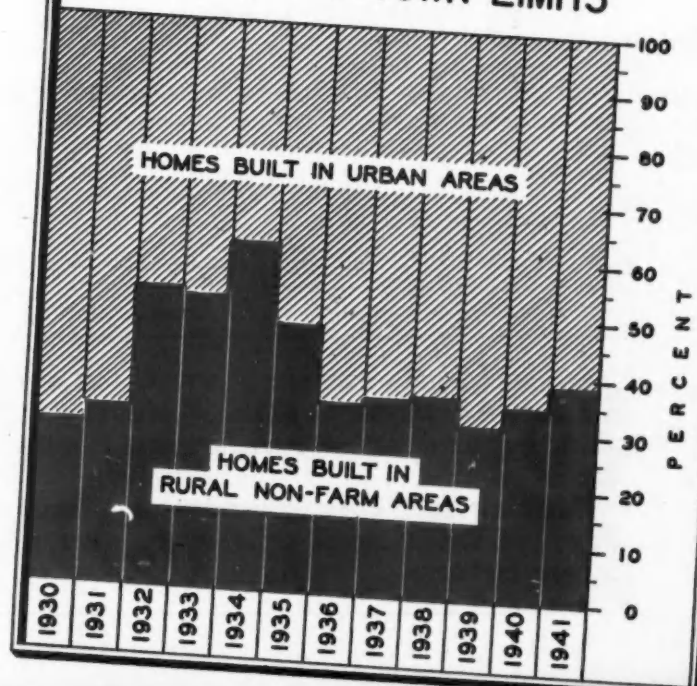
This tremendous forward march on the broadest front by American industry is the dominating fact in determining the outcome of the war, and it will likewise be the dominating fact in determining our future after the war. It has given us the power to accomplish tasks formerly held incredible both in war and in peace.

The immensely expanded machine tool industry with an output soon ten times that of 1929, is not today producing much new machinery to make construction equipment and building materials. But when the sword is finally sheathed, the industry that "produces the machines to make other machines" will stand ready to increase "capacity to build" beyond any previous level, as it is today so vastly increasing the capacity to produce in our factories.

Our building material factories, once the war is over, will be ready to supply materials for the construction industry far beyond the highest peaks of 1929. Great numbers of men, hardened in the armed forces, will be fit

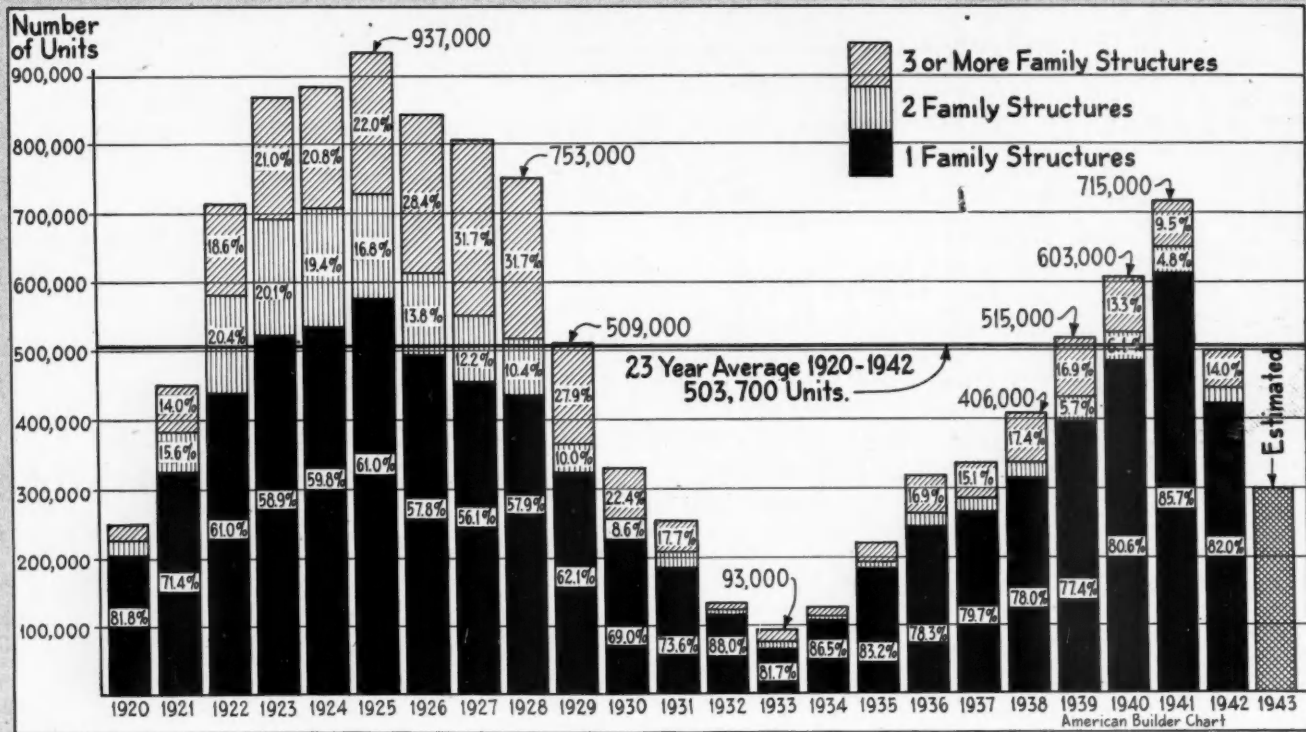


VERY IMPORTANT AMOUNT OF HOME BUILDING IS BEYOND CITY AND TOWN LIMITS



WE ENTERED THE WAR WITH A HOUSING DEFICIT

[Number of U. S. dwelling units (except farms) built annually, by types, since 1920]



Source: U.S. Bureau of Labor Statistics.

THE HOUSING DEFICIT of the depression has never been made up, so that the United States entered the Second World War with a shortage which will grow greater the longer the war lasts. The deficit of the last war was made up in the early Twenties with volume reaching a peak of 937,000 in 1925. The 23-year average from 1920 to 1942 was 503,700 units per year—far below requirements.

for construction work after the war. Hence there is no physical reason why this country cannot expand construction after the war to an extent at least somewhat comparable with the great expansion of industrial output during the war.

We are amply justified in taking hope for tomorrow. Long before this conflict, potential building backlogs were in the making. At no time since 1929 have we had as much PRIVATE new construction as in that year. In 1929, the total was \$8,257,000,000. In 1941, the peak post-depression year, only \$5,261,000,000 was spent on all kinds of private new construction—a decline of 36%. In 1942, it was not much over \$3,000,000,000 or over 60% below 1929. And now the practical cessation of non-war construction, both home building and non-residential, is superimposing new backlogs on old backlogs.

The evidence of the Census, particularly the vacancy figures, points clearly to the fact that the overbuilding of the Twenties was consumed in the depression. This should be further evident if we take the period 1921 to 1940 inclusive, thus averaging the years of over and under building. In those 20 years we averaged just barely 500,000 new homes per year, which is not enough to furnish homes to new families resulting from annual increment

in population and replace demolished structures. Moreover, we must keep in mind that the home building of the first years of the 20's was to a very considerable extent required for making good the backlogs of World War I.

Home Buyers Multiplying

Thus we entered the Second World War with a distinct housing shortage of which the Census vacancy figures are evidence. On top of this, now come the new backlogs resulting from the practical suspension of home construction during the war. And as we are beginning to realize, a new replacement market is opening up on the horizon of the future. For decades and generations, home building in the United States has barely kept pace with population increase. Of systematic replacement of obsolete housing, there was practically none. Year by year, decade by decade, the country's housing plant has aged.

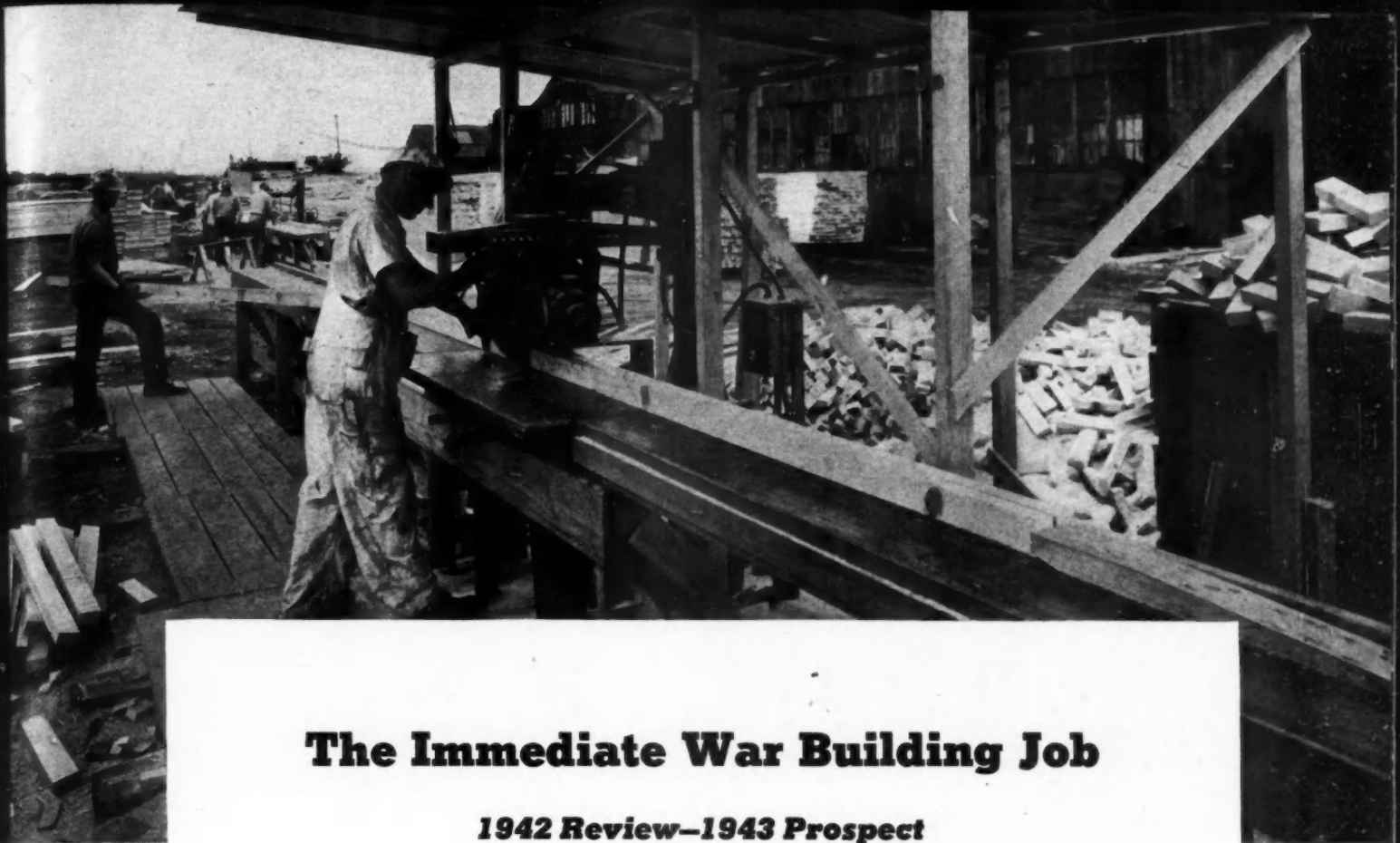
This brings us to the post-war period. What are the prospects for home building once the war restrictions are lifted? The best approach is to look at the fundamentals, and I will deal with three in particular:

Home construction depends on people, that is the first fundamental. It is often thought that because the increase in population of the U.S. has slowed down from 16,548,000 in the decade of the Twenties to only about 8,900,000 in the decade of the Forties, that home building will be immediately affected. That is a mistake. True, this cutting in half of the rate of growth of population poses a very serious problem for the future, the solution for which will be the rising replacement market. But for the home building industry, the problem is not in the near future because a strange paradox is involved, best indicated on one of the charts that accompanies this article.

(Continued to page 79)

The war is causing vast and far-reaching changes in American industry and in the American way of life.

This article analyzes important factors at work and will help you plan your future.



The Immediate War Building Job

1942 Review—1943 Prospect

THE building industry's immediate war housing job is to finish war plants and industrial facilities (at greatly reduced volume), build 325,000 war houses, perform some \$3,000,000,000 worth of maintenance, repair and upkeep work, and provide farm construction needed to accelerate food supplies.

Estimates for 1943 housing are by Herman C. Byer, chief of the construction division of the Bureau of Labor Statistics. The 325,000 housing units next year will be split almost evenly between privately financed and publicly financed jobs.

High spots of the coming year in building are as follows:

Military and war plant construction will drop sharply. Other

types of public construction, with the exception of public housing, will also be cut so that the total of public construction will drop from \$10,600,000,000 to \$5,900,000,000.

Maintenance, repairs and upkeep will continue in 1943 at a fairly high level. No official estimates are made for this type of work, but unofficial studies place the total at close to 3 billion dollars. This includes remodeling of war homes to add extra rooms for war workers; industrial and plant maintenance repairs; upkeep of apartments and stores; home repairs, and small improvement jobs of various types.

Farm building is one of the "white hopes" of lumber dealers and rural builders. Food shortages put money in the pockets of farmers and should accelerate farm repairs, and farm construction of all kinds.

Total private construction, due to war restrictions, is expected to drop from 1941's \$3,425,000,000 to \$1,360,000,000 in 1943.

A TOTAL of 473,000 houses were built in 1942—a decline of 34 per cent from 1941. Private builders erected 301,100 of the total.

**NEW CONSTRUCTION EXPENDITURES IN U.S.
1942 and 1943 (Millions of dollars)**

	1943	1942
TOTAL NEW CONSTRUCTION.....	7,290	14,042
PRIVATE CONSTRUCTION.....	1,360	3,425
Residential (nonfarm).....	680	1,491
Nonresidential (includes privately financed war plants).....	110	529
Farm		
Residential.....	125	251
Service buildings.....	245	406
Public utility.....	200	748
PUBLIC CONSTRUCTION.....	5,930	10,617
Residential (includes war housing).	600	528
Nonresidential (excludes industrial facilities).....	150	134
Industrial facilities.....	1,340	3,521
Military and naval.....	2,890	5,223
Highway.....	500	659
Other public		
Federal.....	200	402
State and local.....	250	150

**NUMBER OF NEW DWELLING UNITS STARTED 1942 AND 1941
(Bureau of Labor Statistics—1942 preliminary)**

City Size	1941			1942		
	Public	Private	Total	Public	Private	Total
500,000 and over...	14,707	88,993	103,700	13,000	40,300	53,300
100,000 to 500,000...	20,117	72,483	92,600	19,000	39,000	58,000
50,000 to 100,000...	6,550	35,750	42,300	9,400	21,700	31,100
25,000 to 50,000...	2,252	41,848	50,100	6,500	20,900	27,400
10,000 to 25,000...	11,971	60,329	72,300	25,000	30,800	55,800
5,000 to 10,000...	4,334	40,766	45,100	5,000	20,600	25,600
2,500 to 5,000.....	4,186	29,314	33,500	2,200	12,200	14,400
Total Urban.....	70,117	369,483	439,600	80,100	185,500	265,600
Rural nonfarm.....	25,623	249,977	275,600	91,800	115,600	207,400
TOTAL NONFARM..	95,740	619,460	715,200	171,900	301,100	473,000



By Randolph Evans

What Kind of a

IF THE war should end tomorrow, what kind of a house would we build? That may be anybody's guess, but let's be practical. It seems logical that the homes we will start building immediately after the war will take up where we left off before the war.

In other words, the best pre-war houses will be the pattern for post-war work. With some mighty important improvements, of course.

Now don't put me down as a conservative. I see fascinating and far-reaching changes, improvements and developments in home building ahead. I expect to have a part in designing the "housing wave of the future."

But I disagree with those who seem to feel that home building will "take off," so to speak, in mid-air after the war and jump into strange new forms that bear no resemblance to what has been done in the past.

We will have *evolution*, not revolution in home design. I don't expect to see many Old English, Spanish, Mediterranean, or stereotype Colonial Period designs in small homes. America has outgrown that sort of thing and in the future will "roll its own" in a creative way.

Different things will happen in different communities. Already the architects and builders of Florida and California have been able to break away from tradition and develop some striking, interesting but pleasantly attractive modern homes. That is probably because they were less bound by long-established tradition.

In the Middle Atlantic region where I have done

Plenty of technical improvements foreseen, but don't expect any sharp breaks with the past, says noted small home architect. The public will always want "sweetness and charm."

most of my work we were designing and building a simplified form of Colonial cottage. This style was popular in many other parts of the country.

My own guess about the post-war small home is that it will be a further development of this simplified or modernized type of Colonial. It will have low horizontal lines, large windows and a living room that opens pleasantly into a garden view away from the street.

Whatever form construction practice or mass production of houses may take, you may rest assured that these houses will have to retain the sweetness and charm of the proven homes of the past. No hard, box-like, queer-looking structures can possibly fight their way against firmly rooted tradition.

It is axiomatic that the home of the future must be a charming, pleasant, homey structure that recalls in

What to Expect

1. **Simplified or modernized Colonial style — open plan — service quarters away from street.**

2. **More standardization of parts and equipment—technical improvements — but evolution, not revolution.**

3. **More houses for rent—more garden type apartments—a post-war FHA Title VI.**

4. **More rural and country homes—more planned communities.**

What NOT to Expect

1. **Sudden or radical changes in design.**

2. **Queer looking architectural forms or modernistic shoe boxes bearing no relation to the past or present.**

3. **That all houses can be mass produced, or built by a handful of operators of any type, or by the government.**

Post-War House?

people's minds the familiar and loved traditions.

I believe that houses retaining this traditional charm can and will be built under new and improved production techniques.

Certainly, we will have a greater standardization of design of plan and of parts. Before the war in one large home project of several hundred homes, I developed 24 exterior variations for one thoroughly standardized plan. To look at the houses you would not know that one standardized plan was used.

By standardizing floor plans we can mass produce such items as staircases, window and door frames, mantels, bay windows and numerous other items. It may be possible to build standardized parts in a local factory so that men can be employed continuously the year round and build up a stock pile during inclement weather.

Standardization also permits the development of specialized crews of men, each one doing a special operation and particularly skilled in that operation.

I believe that prefabrication of some sort may play a part in producing post-war homes. Certain it is that the great national manufacturing firms engaged in producing building materials now have a huge productive capacity that they will want to see put to use in home building. The makers of aluminum, plastics, insulating materials, light-weight metals, and a host of new products and improved old products will be vigorously promoting any new construction methods that will enlarge

(Continued to page 86)



WELL DESIGNED two-story Colonial will be popular.



RENTAL HOUSING of garden type will increase.



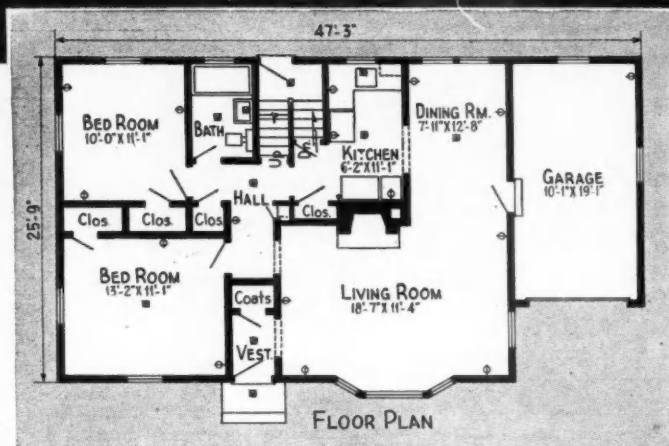
FLORIDA and California modern will "catch on."



BETTER looking prefabs will compete in low cost field.



*The Best Pre-War
Homes Will Be the
Starting Point for
Post-War Building*

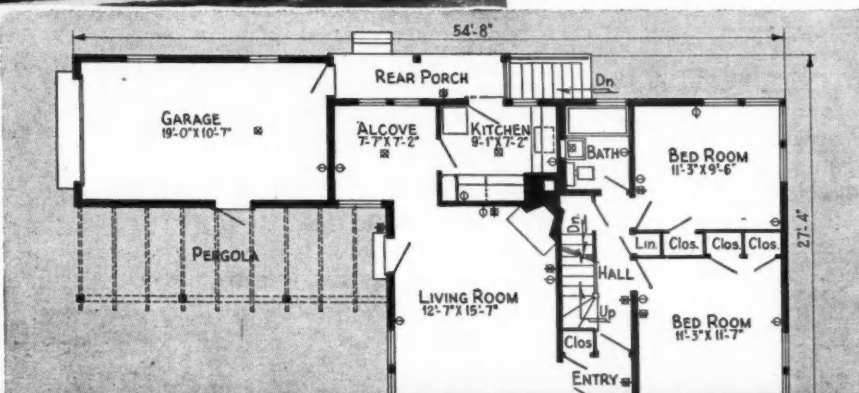


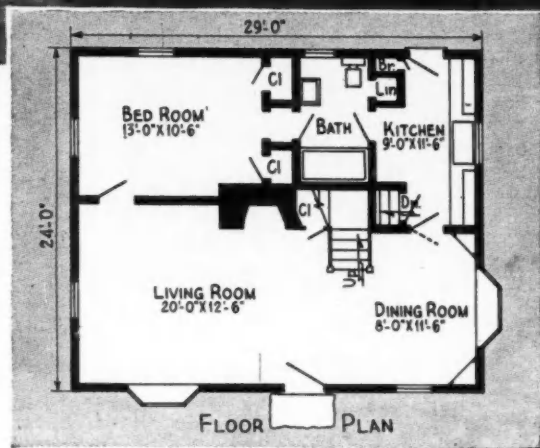
Cape Cod Modern

IT IS CERTAIN that the house of tomorrow will not change too suddenly. This little Cape Cod modern by Evans, Moore & Woodbridge is worth studying. It retains the charm of the Cape Cod design, yet has efficient, open plan. Two bedrooms upstairs.

Toward Tomorrow

ARCHITECT Victor Civkin of Bridgeport, Conn., believes that the above house is the closest pre-war approach to what the public will want in the post-war period. It was one of four built for sale by Builder Harry Richmond. Civkin believes that the only drastic change in moderate priced houses will be in planning — not in exterior appearance. He foresees a more open type of plan.

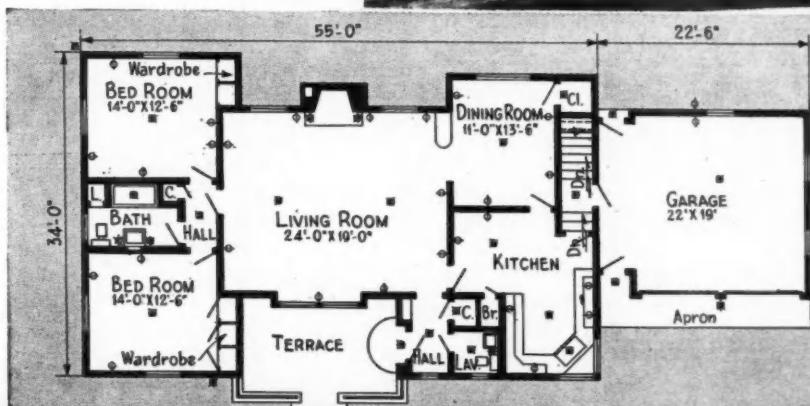




Not Shoe Boxes, Not Houses on Stilts—
 HOUSES on these pages bear no resemblance to the queer looking, modernistic shoe box styles that a lunatic fringe of architectural and industrial designers have been flooding the country with lately. Experienced architects and builders know: *it is axiomatic that the home of the future will be charming, pleasant, homey—recalling to peoples' minds the familiar and loved traditions of the past.*

Tradition Will Always Be With Us

ROYAL BARRY WILLS, Boston's famous architect, designed the New England home above—a pre-war indicator of post-war building. It has a flexible open plan with good exposures and spaciousness. The house preserves the traditional charm which many people in the United States, and particularly New England will most surely continue to value.



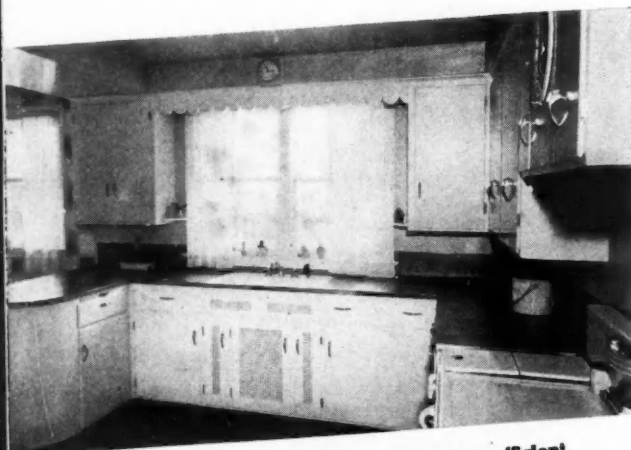
Sensibly Forward Looking

IN LIMA, Ohio, this pre-war home sets an interesting note in modern design while retaining the charm and beauty associated with good traditions of the past. It was designed by E. L. Baker and built by Contractor R. D. Miller of Columbus. The plan has good circulation, spaciousness, and a view toward the garden from three rooms.



Photo by Maynard Parker

THE BEST OF TODAY will set the pattern for tomorrow's home—just as in the above Los Angeles living room; the clean, simple, modern lines suggest future trends.



KITCHENS will be colorful, livable, as well as efficient.



THE TREND in bathroom design is well established today—evolution, not revolution, is to be expected in fixtures.

How to Tell Now What to Expect Tomorrow

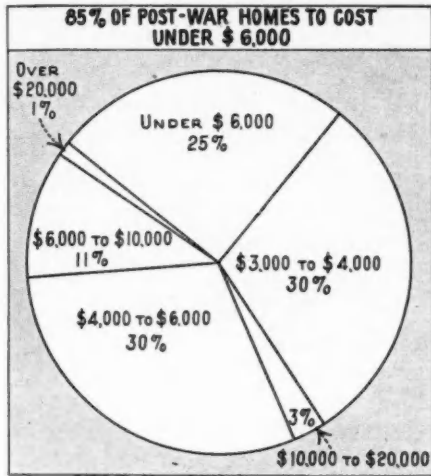
YOU CAN tell what to expect in the post-war home by looking about you. The pattern and the trend are already well established. The best works of prewar architects and builders, plus war developments, will produce the post-war home.

House planning, design and equipment, as well as construction procedure, do not and cannot change overnight. Progress, of course, and moderate change, of course, but home building is not going to take off suddenly from a point ten feet in the air and soar to some new and peculiar looking form of structure which bears no relation to the past, or present.

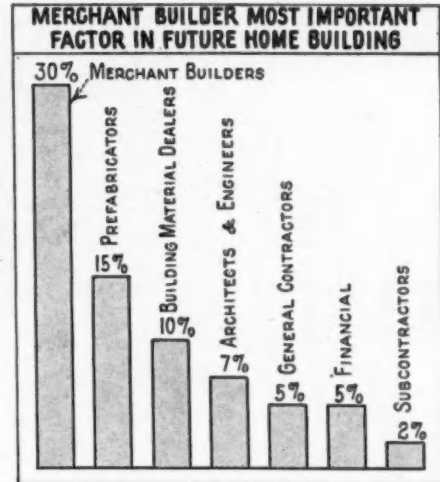
The trend in interiors is definitely toward simple, modern versions of the Colonial. As in the Los Angeles living room above, good design, proportions and good taste will count.

Completely equipped kitchens with cabinets, sink units and counter units, delivered to the job in standardized sections, are to be expected. Yet the kitchen of tomorrow, as that of today, must be colorful, cheerful and pleasant.

A host of new products will contribute to the friendliness, beauty and efficiency of the post-war bathroom. It is possible that the introduction of light-weight metals or plastics will alter the weight and design of fixtures—but such a process would require a period of years, and the immediate post-war bathroom is most likely to continue where construction was stopped by the war.



C. W. STUART, whose post-war market survey is charted on this page.



Merchant Builder Rated Most Important in Post-War Market

BUILDING men who want to plan intelligently for the future will find striking and stimulating opinions expressed in the survey by C. W. Stuart charted here. Stuart is chairman of The Producers' Council Residential Committee, and manager of the General Electric Home Bureau, and through extensive study and research has become an authority on post-war trends. His survey, presented at the recent semi-annual meeting of The Producers' Council, is based on a questionnaire circulated among experts in the various branches of the building industry.

There was naturally a wide divergence of opinion about many of the questions asked. The consensus or cross section of opinions of the experts is summarized by Stuart as follows. The experts expect:

1. That post-war building will be about 50-50 residential and non-residential.
2. That about 900,000 units a year will be built in the first five-year period starting one year after Victory, and 1,000,000 a year in the second five-year period.
3. That about 85% of the houses will be under \$6,000.
4. That the first period will see considerable public-financed housing, but that this trend will be downward in the second five years.

5. That one- and two-family houses will predominate over multi-family units in the ratio of 3 or 4 to 1.

6. That rental units will start off at about one-third of the under \$6,000 group and that this ratio will increase moderately in the second period.

7. That prefabrication will be a considerable factor immediately after the war and that it will be of greater importance in the second five-year period.

8. That the merchant builder will be considerably more important than the consumer in houses under \$10,000, but that factors such as government-financed and large building companies will be of increasing importance.

9. That there will be a sizable automatic market for homes, but that to achieve the volume indicated, aggressive promotion must be undertaken.

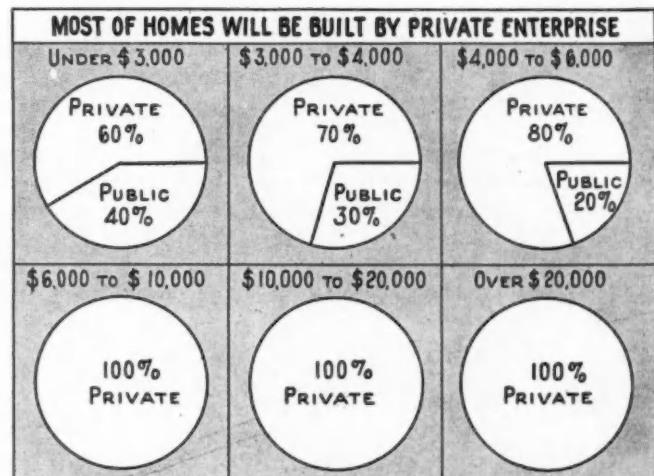
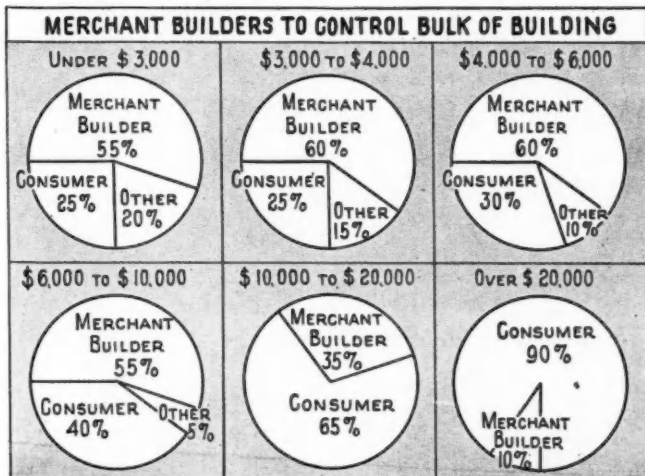
10. That in the residential field, merchant builders, prefabricators, and building material distributors are much more important than architects, general contractors, or any other building professionals.

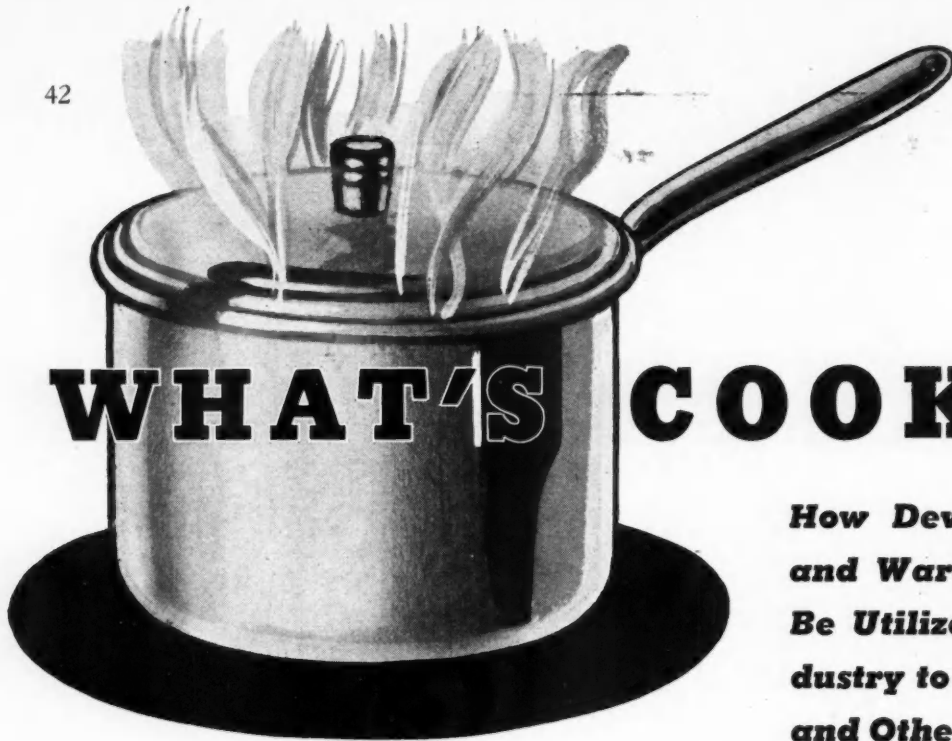
11. That the degree of prefabrication in prefabricated houses will increase.

12. That in prefabrication, as between small panels, large panels, or segments of houses, the trend will be predominantly toward small panels.

13. That in the first five-year period building codes will not be sufficiently standardized to allow easy distribution of prefabricated houses and house parts, but that they will be in the second five years.

14. That building trades unions will actively oppose prefabrication in the first five-year period and that this opposition will be rather effective; but in the second five years this trend will be reversed.





WHAT'S COOKIN'?

How Developments of Science and Wartime Engineering Will Be Utilized by the Building Industry to Produce Better Homes and Other Structures Tomorrow

WARS put nations on their toes industrially. In this country necessities of war have crammed 25 years of industrial progress into a few years. Since our arms program began, 1,500 new materials have been developed. Each may find a thousand new uses.

Little can be said at this time about many new products that are "cookin'" in laboratories of manufacturers who are well known in the building field, and many who are not. After the war their findings will be unfolded before the eyes of a wondering world. At a recent meeting of the Producers' Council, those present who are developing new products were asked to stand. Every manufacturer rose to his feet, and almost simultaneously urged that little be said about new products at this time, lest the public be led to expect too much.

A much more detailed presentation of this subject will appear in a later issue of *American Builder*, which will feature New Products and Research in Tomorrow's Homes.

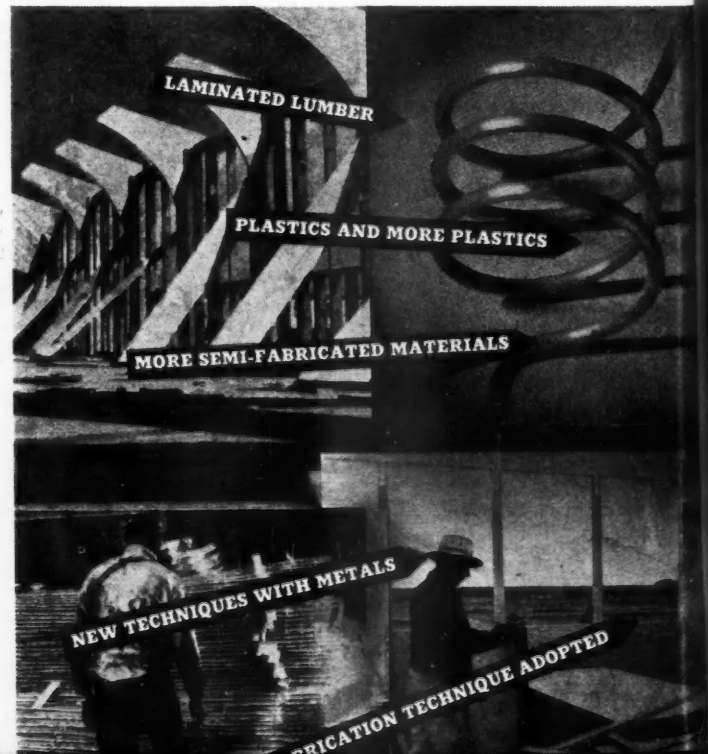
Aluminum and Light-Weight Metals: Huge quantities of low-cost aluminum inevitably will seek new markets after the war. Many of these uses will be in building. Magnesium, another light-weight metal, also has made huge gains and will be bidding for business. Applications of these metals include products that can be cast, rolled, drawn, extruded.

Plastics and Glass: Few materials have so touched imagination of the American public as plastics, and rightfully so. Already the building field has many new plastic products, and there are many more to come. Post-war houses may use one-piece windows, with panes of transparent plastic molded into a colored plastic sash. We may see sinks, drain boards, wash bowls, bath tubs, shingles and interior wall panels of molded plastic. Some contemplate turning out whole wall sections of prefabricated houses in colorful, weather-resistant plastics.

Improved types of glass will find widespread use in post-war houses, to admit light, obscure vision, admit or retain heat. One spectacular development is a glass so adaptable to sudden change that it can be laid on a cake of ice while molten lead is poured on the other face. Such glass should prove useful in kitchens. Another likely application is increased use of solar heating systems, in which radiant heat of the sun supplements the heating plant.

Plywood and Lumber: So many wartime uses have been found for plywood that post-war builders may be amazed at the extent and variety of their own new uses of this familiar material. Advances in structural uses include wood I-beams from 12" to 48" deep, with plywood webs and laminated lumber flanges. Newly developed ability to mold and form plywood around compound curves has interesting possibilities.

The lumber industry has made great progress in rot-proofing, termite-proofing, fireproofing, curing and drying its product. Through use of urea-phenol compounds wood now can be softened, bent and molded into permanent shapes. Combined toxic- and moisture-repellant treatment prevents moisture under paint films and eliminates the cause of many former failures. Thanks to structural glues, laminated lumber beams and trusses, free from knots, checks, or other weaknesses, can be had



in practically any desired size and length. Wood fiber, with lignen removed, is rebonded with plastic and molded into any desired shape.

Glues: Improved structural glues are of three types: 1) non-water resistant, from starch, animal substances, sodium silicate, or dextrans; 2) water-resistant glues from casein, soybean, blood albumen; 3) waterproof glues from synthetic resins, phenol-formaldehyde, urea-formaldehyde, zinc-urea-formaldehyde. Glued structures are advocated as "stronger and better." Laboratories show that two spoonfuls of glue powder are equal in holding power to 120 nails; their engineers describe advantages of "stressed cover" principles when large-area panels are glue-welded to studding or framing members on both sides of a wall. Nearly 100 different glues are available to suit specialized needs of building men.

Metals, Ferrous and Non-Ferrous: Wartime needs for practically all metals interrupted peacetime uses but have stimulated research work in new and improved alloys, rust-resisting iron, stainless steel, and lighter weight, more durable non-ferrous metals. Copper, brass, bronze and nickel-silver already are making a strong bid for post-war markets, in extruded shapes, water pipe and tubing, water tanks, dampproofing, roofing, flashing, wall panels and other uses.

Building Boards, Gypsum and Wall Boards: In addition to their insulating properties, these boards now are fire-retarding or fire resistant, vermin-proof, and provide an effective moisture barrier. Some wall boards now are made in full-wall size, so that a single piece covers the entire wall or ceiling of a room, and can be finished with a single-coat paint. New wall covering materials are made in wide rolls, so that a single piece covers all four walls of a room with but a single lap.

Paints and Finishing Materials: Improvements include a water-soluble, washable paint that covers with a single coat; a deodorized paint; an oil paint that can be applied over day-old plaster and will permit the wall to dry out in normal fashion.

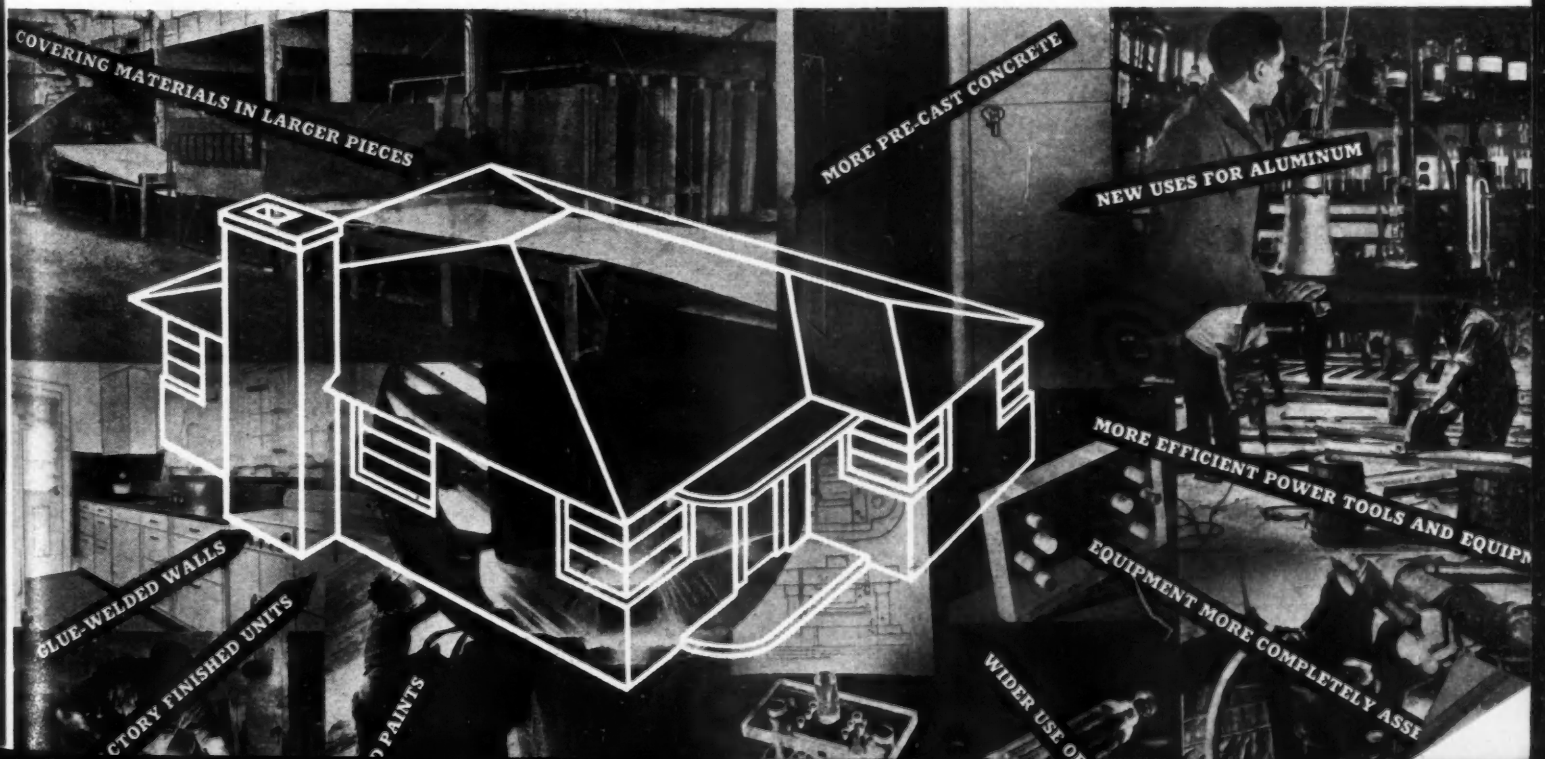
Cement and Concrete: Wartime scarcities of other materials gave concrete many new opportunities to prove its merits, thereby opening the way to additional uses.

Development of insulating concrete (aggregate block) make it a more popular residential structural material, due to reduction in weight and improved insulating properties. Use of pre-cast concrete piers, porch steps, beams and similar items will increase.

Electrical Goods and Appliances: Widespread increases in the use of electrical energy are assured after the war. Spurred on by these attractive prospects, manufacturers of electrical goods and appliances are developing all kinds of new equipment, ranging from wider use of electronics to house heating. More mechanical conveniences will be available for post-war homes than at any time in our nation's history.

Power Tools and Construction Machinery: The production of large-scale war housing projects at high speed would not have been possible without increased use of power tools and construction machinery. As a result of wartime experience, many new economies have been effected, and will continue to be used after the war. Partial application of prefabrication methods in conventional construction is assured, for power equipment is stronger, faster, lighter in weight, making it easy to transport from job to job.

Semi-Fabricated Materials and Equipment: Covering materials will be applied in larger pieces in post-war homes, and more equipment will be factory-assembled. Doors may be factory-finished, hung and delivered to the job in frames, ready to set into rough openings. Combination kitchen cabinet-sinks are a certainty. Standardized, mass-produced kitchen equipment will be assembled in compact units through use of plywood, metals, plastics, or glass, so that the entire kitchen installation will be more attractive, and easily installed. Bathroom equipment, fixtures and trim likewise will be more completely assembled. Plumbing wares, tubs and wash bowls may be available in cast iron, aluminum, plastics, pressed steel, glass, or some now unfamiliar material. In the heating field, completely assembled furnaces will be delivered, ready to connect to prefabricated duct work that is easily assembled on the job. Radiant heating, in which pipes are laid in floors of houses, is expected to increase after the war.





PREFABRICATION

H EADLINES: *Prefab Plant Gets Order for 1,000 Housing Units from FPHA. Builder Speeds Big War Housing Project by Fabricating Structural Units on Site. Dealer Stays in Business by Building and Selling Demountable Farm Buildings. Steel Company Develops Panel Building Unit Adapted to Wide Range of Design.* Such recent news headlines have again brought up the question of what progress prefabrication has made up to date, and what the prospects are for its application to post-war building.

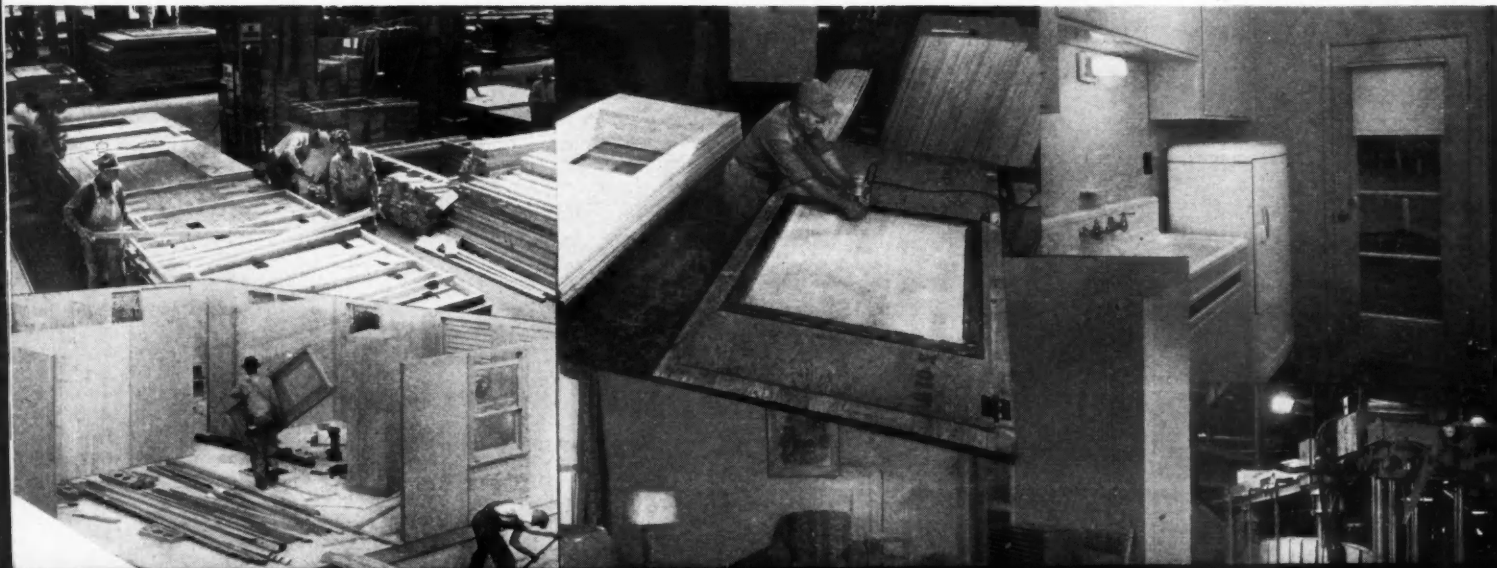
Although prefabrication, as thought of today, really dates back about fifty years to the pioneer in the field, generally speaking this method of pre-building off the site got its start in the depression during the middle thirties. Publicity at that time had the public worked up to fever heat, anticipating store-purchased houses ready to move into the day after the sale was completed. This enthusiasm spread like wildfire, not only through the general public but to many manufacturers in all fields who thought it promised an easy way up out of the financial depths. But before many of them realized all of the practical problems involved in building, merchandis-

ing and delivering prefabricated units, millions of dollars had been spent with little show beyond their experience. There were houses of aluminum, steel, copper, plywood, cork, lumber, brick and concrete, and combinations of these and other materials—only to mention a few.

Most of these systems and companies either returned to the inactive blueprint stage or went out of business. A few of them continued, and in the late thirties, a new adaptation of the shop-building technique came into increasingly greater use. This was partial fabrication in a shop near the job, or fabrication on the site itself. Also during these years, some of the manufacturers who dabbled in prefabrication eventually developed a type of building panel or unit that could be assembled as part of many types of structures, such as warehouses, farm buildings, stores, filling stations and, to some extent, the home.

The changes which have come about in the building industry since the beginning of the defense program, and to a much greater extent since Pearl Harbor, have given prefabrication its greatest lift in recent years. The stumbling block of lowering costs through large volume production was removed, and speed became all-important. As well as the war housing program, there was the vast amount of construction needed for dormitories, barracks, all types of military buildings, many of which were to be used by the armed forces in foreign lands. Demountability and easy assembly for this latter type of structure became a "must," and many of the pioneers of prefabrication who had managed to stay in business got sizable orders. New firms were formed, some of them taking over plants no longer able to produce their pre-war products. Many of the plans which had been developed during peacetime, but were not then economically possible, have

A PANORAMA of prefabrication: Below, plant methods assure accuracy; erection is quicker, valuable war hours saved; power tools speed production; modern houses, clean-cut, livable interiors can result; new methods and materials can be used on many types of construction.



A summary of prefab history. What will war application of these methods mean in the post-war building market?

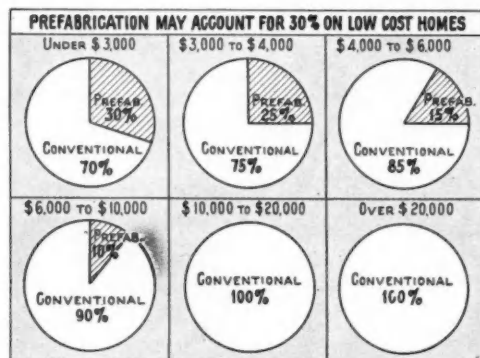
since re-emerged from the blueprint stage. On the other hand, some of the prefabricators who have been using what proved to be critical materials ran into difficulties. So, all in all, the war has just about reversed the field in prefabrication. (See directory on this page.)

At present, however, the principal trends within prefabrication itself have continued and tend to show the possible forms that this method of building might take in the post-war period. For instance, the pre-war spread of site-fabrication has been greatly stepped up, particularly on war housing jobs. Now there are complete plants which have been erected each to turn out the housing for some new war-born community. (On the following three pages, as "Case Study No. 1," this technique as fully developed in Seattle, Wash., is presented, the first of a series on various methods of fabrication.)

Now, to look ahead and explore the possibilities of prefabrication beyond its present place in the war building program. It can be assumed that the methods devised will become considerable factors. The building of homes will unquestionably be a

three-way job: (1) custom-built either to order or for sale; (2) merchant-built to meet the needs of the middle and small house market and (3) factory-built or completely prefabricated for part of the mass market. If prefabrication can step into the large anticipated volume after the war and produce a truly low-cost product, this production should be in excess to what might be termed the normal volume of home building. In other words, it will largely serve an entire newly created field for housing—a field in which the home prospects have previously been forced either to rent or to buy cast-off accommodations. The chart below shows this prospective market

(Continued to page 79)



THE above chart indicates the probable post-war home market for completely prefabricated units. (See page 41 for other data by C. W. Stuart.)

DIRECTORY OF "PREFABRICATORS UP-TO-DATE" AND DATA ON OPERATIONS*

THE ALADDIN CO., Bay City, Mich., O. E. Sovereign, Treas. & Gen. Mgr.; established 1906; capacity, 1000 houses per month; devoted to army and war building.

ALLISON DEAN CO., 208 S. W. Broadway, Portland, Oregon, Allison H. Dean; established 1940; houses, 1 & 2-bedroom size; (operations temporarily suspended.)

ALLSPINE CORP., McGaheysville, Va., F. Bruce Forward, Pres.; established 1938; capacity 300 houses per month; various types, dormitories, rows, etc.

AMERICAN HOUSES, INC., 570 Lexington Ave., New York City, N. Y., John C. Taylor, Jr., Pres.; organized 1932; capacity, 2000 houses per month.

BARRETT & HILP, 918 Harrison St., San Francisco, Calif., J. Frank Barrett & H. H. Hilp, copartners; established 1912; capacity, 900 houses per month; FPHA demountables.

BATES PREFABRICATED STRUCTURES, Tribune Tower, Oakland, Calif., Richard M. Bates, Jr., Pres.; established, 1939; capacity, 300 4-room houses per month; also barracks, dormitories, etc.

BENNETT LUMBER CORP., 190 Oliver St., North Tonawanda, N. Y., F. R. Roginson, Pres.; established 1902; capacity, 100 houses per month; 1, 2 & 3-room size.

E. L. BRUCE CO., Memphis, Tenn., R. G. Bruce, Pres.; established 1913; FPHA war housing.

BURMESTER HOUSING CORP., Middleton, Wis., La Verne Burmester, Pres.; established 1937; capacity, 30 houses per month; own low-cost units and will build to oth-

ers' plans.

BUSH PREFABRICATED STRUCTURES, INC., DIV. OF CLINTON G. BUSH CO., 370 Lexington Ave., New York, N. Y., Clinton G. Bush, Pres.; established 1933; capacity, 1250 houses per month; demountables, barracks, general war use structures.

BUTLER MFG. CO., 13th & Eastern Ave., Kansas City, Mo., E. E. Norquist, Pres.; established 1901; steel buildings; capacity devoted to war work.

CELOTEX CORP., Cemesto Div., 120 S. LaSalle St., Chicago, Illinois, Bror Dahlberg, Pres.; established 1921; capacity, materials for 40 houses per day.

THE CITY LUMBER CO. OF BRIDGEPORT, INC., 75 Third St., Bridgeport, Conn., Isaac Schine, Pres.; Established 1916; capacity 200 houses per month; 1 to 3 bedroom size.

FIELD LUMBER & IMPROVEMENT CO., 651 W. Baltimore, Detroit, Mich., W. L. Field, Prop.; established 1936; capacity, 250 houses per month; 1-story war housing.

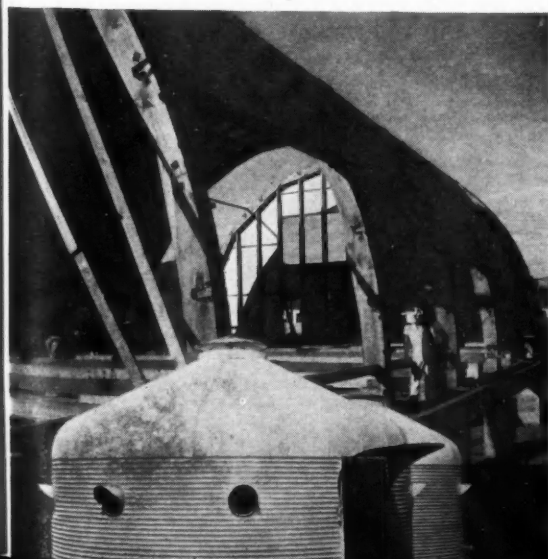
IVON R. FORD LUMBER CO., McDonough, New York, Ivon R. Ford, Owner; established 1935; capacity, 60 houses per month, 1-story; also cottages, garages, small buildings, etc.

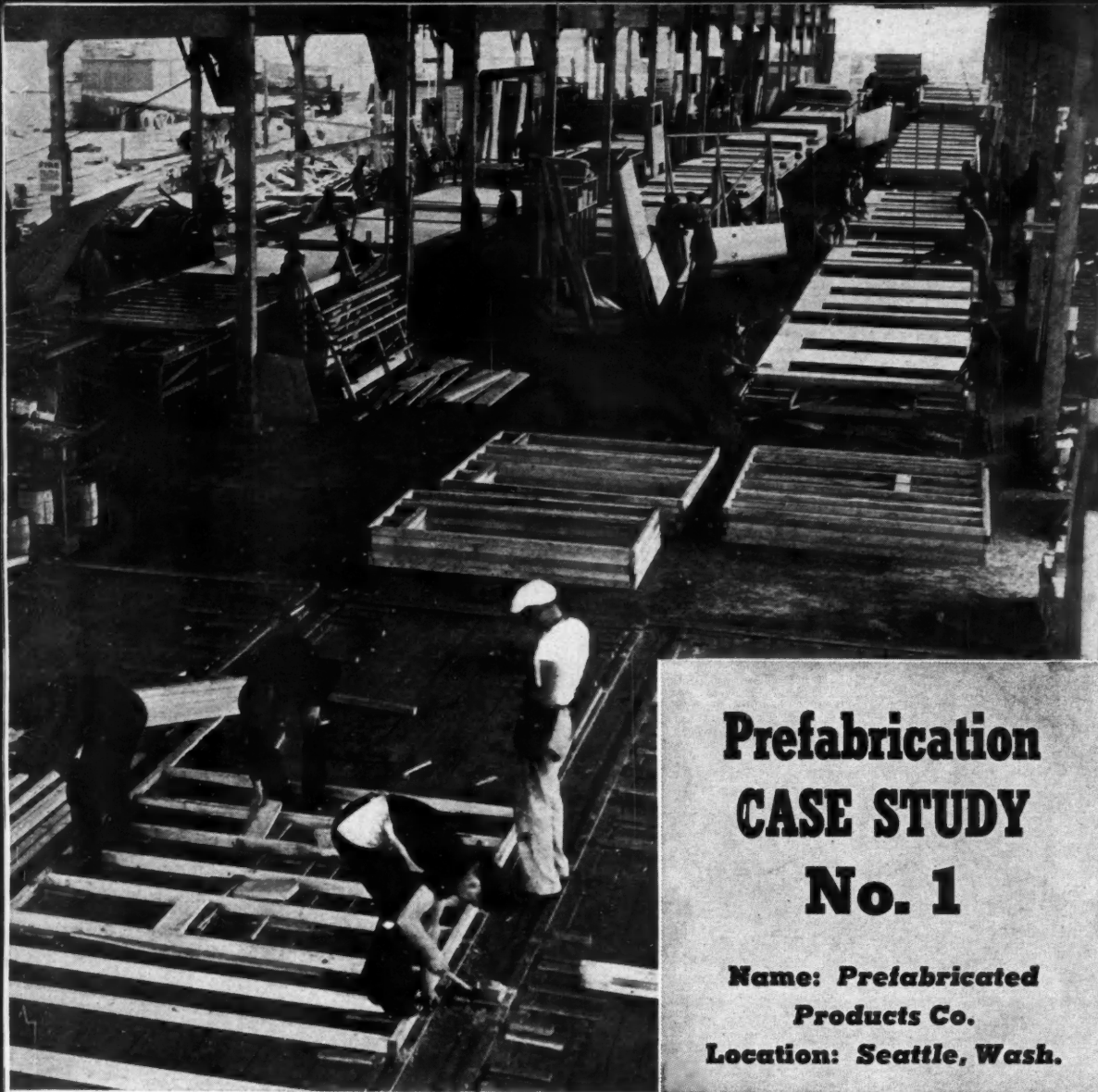
GBH-WAY HOMES, INC., Walnut, Ill., Glenn W. Bass, Pres.; established 1941; capacity, (2 plants) 30-100 houses per month; and farm buildings.

GENERAL FABRICATORS, INC., Attica, Ind., E. C. Nelson, Pres.; established 1940; capacity 120

(Continued to page 77)

*Directory based on recent questionnaires sent to every known prefabricator; list is subject to rapid change due to war conditions.



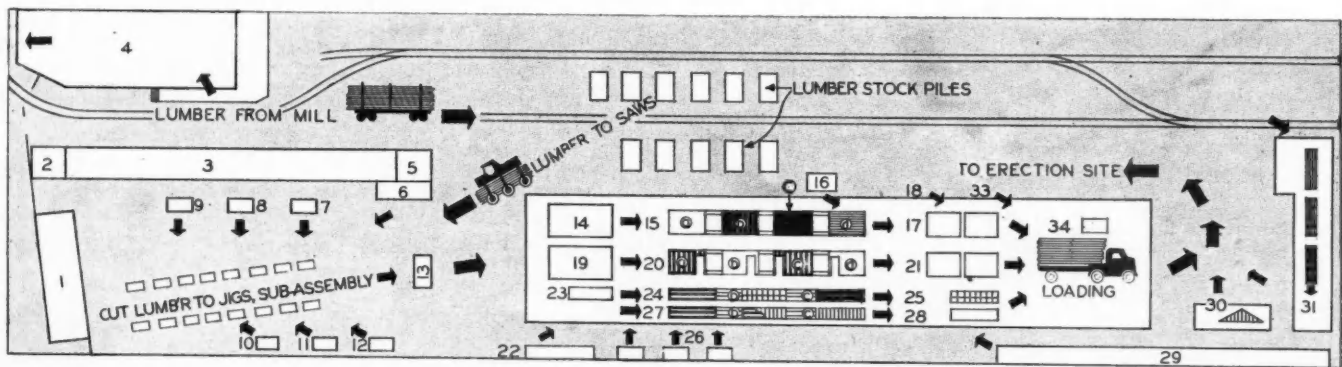


NOTE: On this and the following two pages are presented the facts and data on a typical current prefabrication operation. This covers one of several important methods being widely used on war jobs. Further case studies will appear in future issues, with special emphasis on this subject in the March American Builder.

Prefabrication CASE STUDY No. 1

Name: **Prefabricated
Products Co.**
Location: **Seattle, Wash.**

As reported by
B. L. Johnson
Western Editor



KEY TO SHOP LAYOUT (ABOVE) and flow chart for construction of "Prefabco" houses:

1. General offices and Engineering department. 2. Time, Employment and Receiving departments. 3. Dry storage sheds. 4. Cabinet and Millwork shop. 5. Lunch Room. 6. Rip saw and multiple boring machine. 7 to 12. Crosscut saws. 13. Door and window sub-assembly. 14. Outside wall framing jig. 15. Outside wall assembly line. 16. Crosscut saw. 17. Storage for finished wall panels. 18. Coal bin assembly. 19. Partition panel framing jig. 20. Partition panel assembly line. 21. Storage for completed partition panels. 22. Sticking machine. 23. Scoring of plywood for ceiling panels. 24. Ceiling panel assembly line. 25. Storage for completed ceiling panels. 26. Saws for cutting and notching rafters. 27. Roof panel assembly line. 28. Roof panel storage. 29. Storage shed for cut sizes of Speedwall plywood. 30. Gable panel construction. 31. Floor panel assembly line. 33. Porch roof assembly. 34. Construction of bathroom panels and application of linoleum.

IN THE super-congested Bremerton area across Puget Sound from Seattle, the war-industry population has increased from 15,000 to 30,000 during the past two years, and is still expanding. What it will be after this emergency, no one can predict. As the housing of these workers is strictly a wartime job, calling for "demonstrables" for rent rather than for permanent homes, privately built, it is a logical public housing job.

Three projects have been authorized and the distinction of providing homes for these three housing projects at once goes to Prefabricated Products Co., Seattle, and to its dynamic leader, Fred Dally, one of the Northwest's veteran construction men. He is now in the midst of pre-



THE MAN behind the desk and behind the job: Fred Dally, general manager, Prefabricated Products Co., Seattle.

fabricating and erecting an estimated 1,000 houses for Anderson Cove, Sinclair Heights and Westpark, all FPHA projects in the Bremerton area. Completion is expected in 80 days. Besides fabricating and erecting the houses, Dally's organization also holds contracts to improve the home sites—put in water, sewers, roads, etc.

These three projects are located about a mile from each other, all on hilly terrain. The site planning and laying out of streets was done by Naramore & Brady, architects, Seattle. The house designs used are six standardized units developed by the engineers of the Prefabricated Products Co. Though they are of demountable construction, they reflect careful planning and study as to arrangement and utility. Also much planning went into the inexpensive yet efficient factory or construction yard, with its power saws and jigs for turning out these houses. This is of particular interest to other builders at this time.

"A lot of experience went into our production shop", Dally explained for the benefit of *American Builder* readers, as he conducted this writer up and down through his big, yet simple and business-like, plant in West Seattle. "We have four assembly lines (see accompanying diagram opposite), one for outside walls, one for partitions, one for ceiling panels, and one for roof panels. There is also a fifth assembly line, across the far end of the shop, for constructing floor panels; and special places are equipped for producing the gable-ends, the coal bins, the porch roofs and the bathroom panels. A separate shop is used for turning out the kitchen cabinets, cupboards and closets, and special millwork and mouldings.

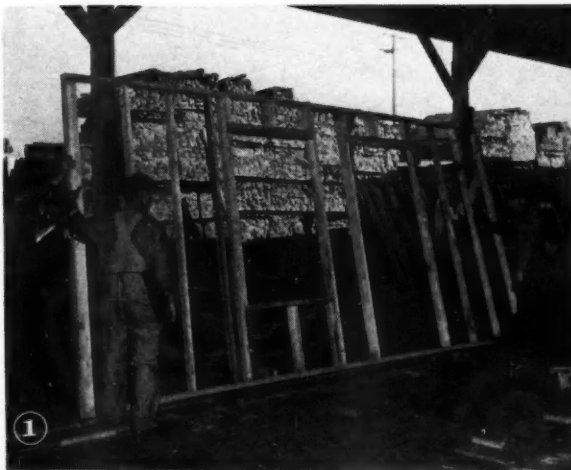
"Each assembly line starts with a simple jig into which the framing is placed and nailed up, all perfectly square and to exact size. These frames, story high and from 10 to 16 feet long, are placed on the assembly line rollers and then move along to receive, in turn, their coverings of plywood, insulation and outside bevel siding.

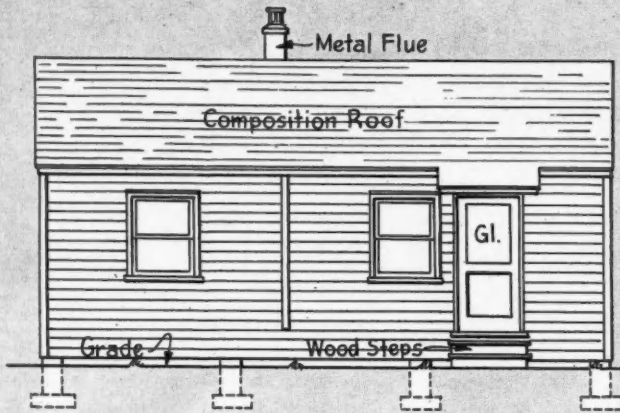
"We are operating a fully union shop; two shifts of 150 men, and turning out 18 houses per day. The lumber comes in on our own switch track at one end of the shop, is worked to lengths by our battery of power saws, goes down the assembly lines and is loaded onto large trucks in complete panel form, one house to a load. The trucks are then ferried across to Bremerton and roll to the sites.

"As is the case in numerous housing projects throughout the country, the majority of the houses in these groups are *duplex*; but unlike similar two-family dwellings, these are duplex *in location only*. Each of these duplexes is composed of two individual houses (plan on next page) erected end to end to save space in the project and to facilitate installation of plumbing, water pipes, etc. When these houses are moved and re-erected after the war, they can be set up as individual units. This type of duplex has the advantage of double walls between living quarters, giving

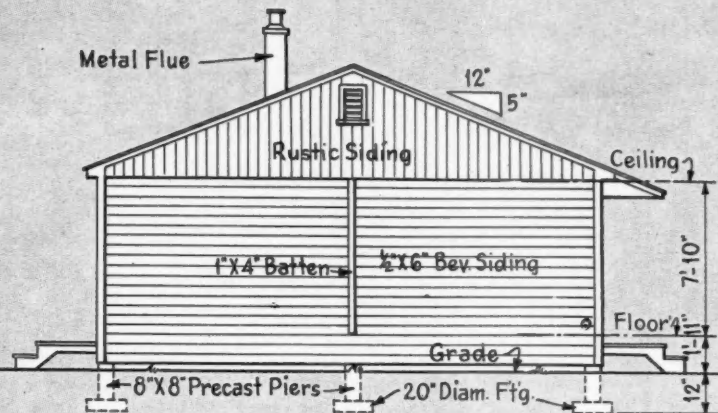
(Continued to page 76)

PREFABCO houses in the making: (1) Frame comes out of jig; (2) insulation in place on ceiling panel, glue being applied; (3) plywood face being put on as panel moves down production line; (4) floor sections ready for the job, finish applied; (5) loading, "a house to a truck"; (6) erecting on site; (construction details and site view on next page).

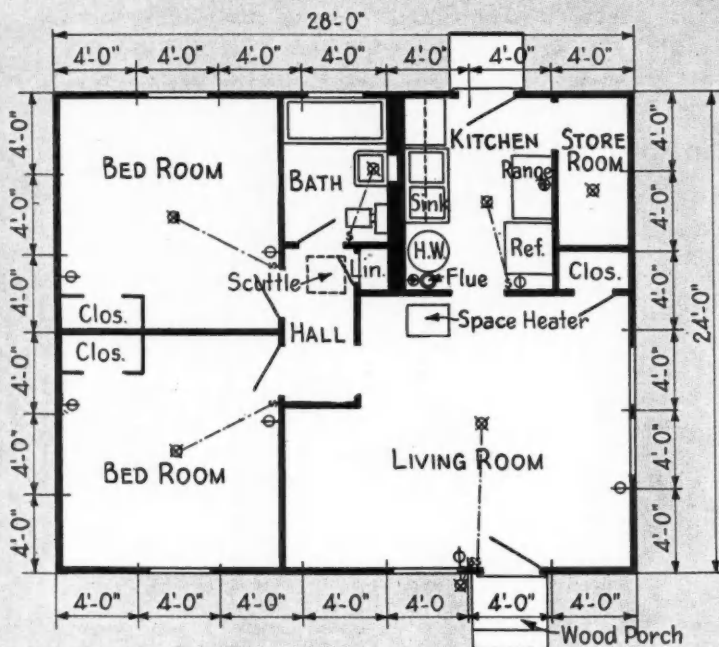




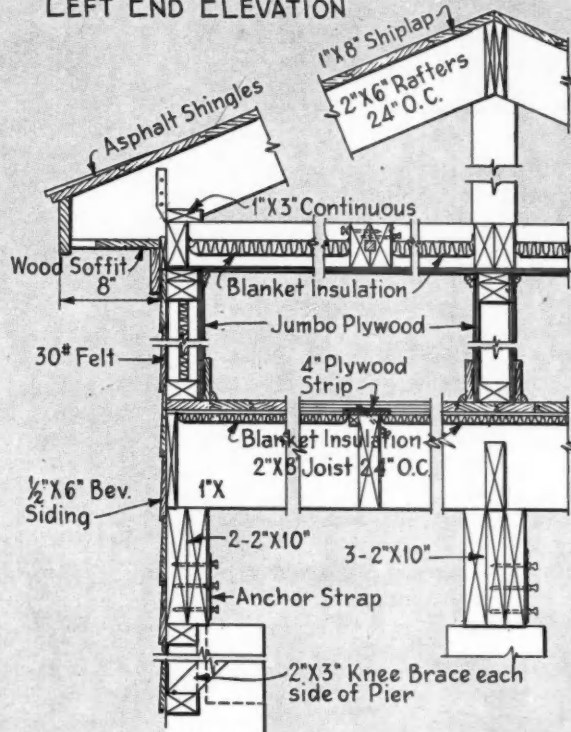
FRONT ELEVATION



LEFT END ELEVATION



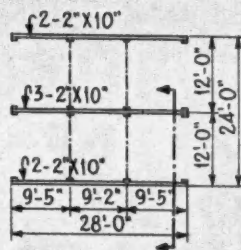
FLOOR PLAN



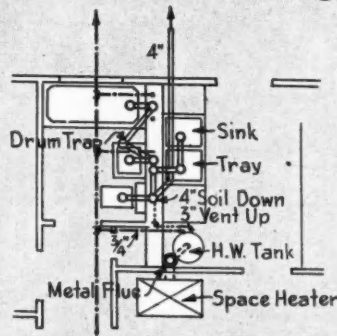
SECTION A-A

DETAILS of two-bedroom de-mountable house by Prefab-ricated Products Co., Seattle, Wash. (Description of produc-tion methods appears on two preceding pages.) Similar floor plan is used in two other size houses: 32- by 24-foot, three-bedroom; 24- by 24-foot, one-bedroom. Below: Erecting these Dally houses in the Bremerton area.

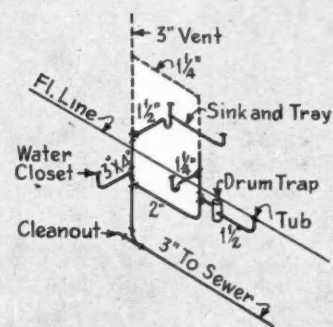
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FRAMING PLAN



PIPING LAYOUT



PLUMBING DIAGRAM



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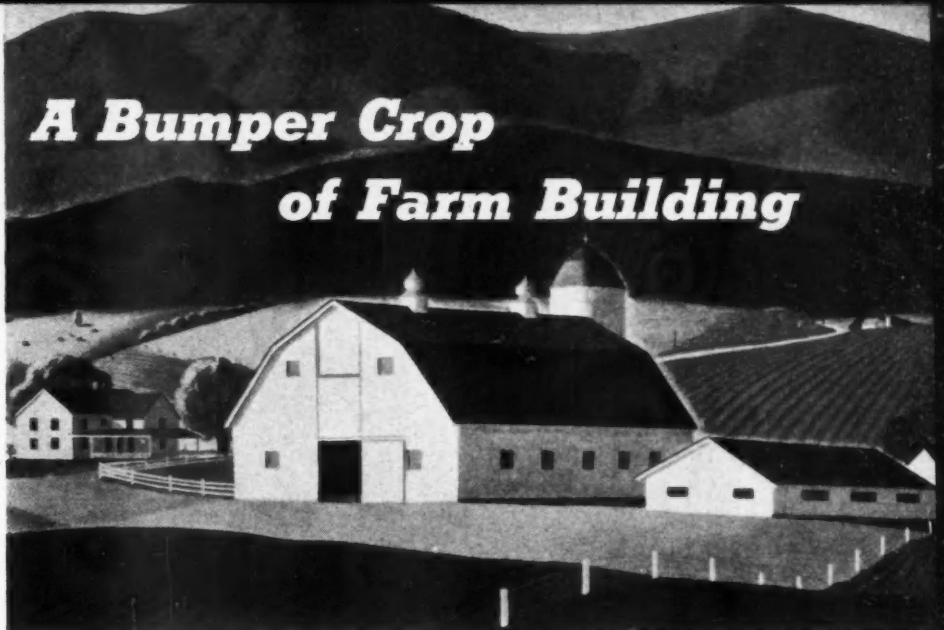
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FORECAST: A Bumper Crop of Farm Building

1. One of the Biggest Post-War Building Jobs Will Be on Farms.

2. Average of \$3,000 per Farm Will Provide \$20,000,000,000 Total Market.

3. Immediate Program Calls for \$600,000,000 of Essential Repairs.



By K. J. T. Ekblaw

Member A.S.A.E.

WHEN you begin to talk about the post-war farm market for building, you have to go into billions first thing. So, let us start with \$20,000,000,000 as a reasonable figure for the size of the farm building market.

How do we arrive at this apparently incredible twenty billion dollar figure?

That's easy! In round numbers, there are 6,500,000 farms in the United States, recognized as such by all authorities. The census figure for the 1940 value of homes and buildings on the farms of the United States, is \$10,405,000,000. In 1930 the figure was almost thirteen billion dollars. That was the estimated *value* of farm buildings: that does not represent the actual *cost* of the buildings. If we had to replace all the buildings on American farms at present costs, it is likely that the total would be not merely twenty billion dollars, but far in excess of that.

At twenty billion dollars, the average would be just a little better than \$3000.00 per farm. Anyone who knows anything about farms and about the building costs can readily see that on a very great number of farms the cost of buildings would be far above \$3000.00; indeed, on many farms the cost of the buildings is ten times \$3000.00, and even more.

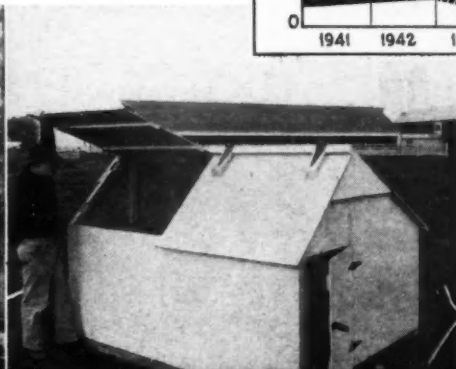
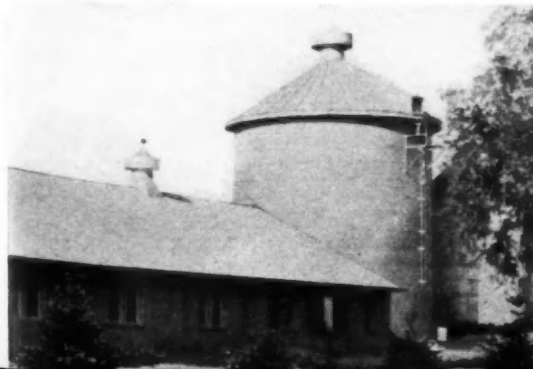
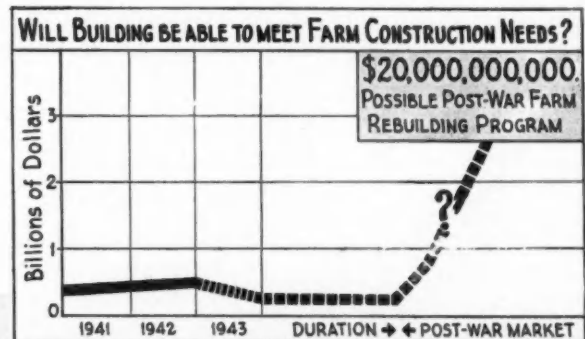
The farm market is one of the biggest future markets for the American building industry. Twenty billion dollars is a tremendous amount of money for any group

to spend; and the problems involved in spending it must necessarily be tremendous.

The farmer is not a building specialist; he must have help in spending his money for buildings so as to get the best values; most of the time he tries to get this help from his dealer in building materials. The situation resolves itself, then, into this: farmers are going to spend \$20,000,000,000 for buildings, and they are going to expect the building industry to give some real help. That puts the problem right up to the building industry; and unless it is fully prepared with satisfactory answers, it is going to miss one of the greatest opportunities it has ever had.

No group of people in America have advanced socially, culturally and educationally, in the last few decades, as have the farmers. Taken as a class they are the equal and possibly the superior, of any other great group. Because they have made such great advances, they are acutely conscious of values; the farmers of today as well as the farmers of the future will demand a standard in living and a standard in building far higher than they have had in the past. These higher standards

PREFABRICATION of such items as new type circular haymows, dealer-built farrowing houses and factory-made brooder houses may have important place in filling needs of huge \$20,000,000,000 post-war farm market.



will naturally be reflected in the greater use of better materials, in higher quality labor-saving equipment, and in more elaborate design to express the sense of beauty which has come with the higher standard of living.

Billions of Dollars in Accumulated Depreciation

Those who are familiar with farming and with structures know that depreciation of the latter has been rampant for a quarter of a century. Expenditures to equalize this depreciation have been far less than necessary. A federal farm housing survey made in 1934 indicated that almost 700,000 farm houses were, in the opinion of their occupants, beyond repair and the only thing to do with them was to replace them. This same survey indicated that new service buildings were needed on more than two million farms. That was almost ten years ago. Since that time more homes and more service buildings have reached the point when they must be replaced, for expenditures for replacements and repairs have been insufficient to prevent marked physical deterioration.

In calling attention to the farm building situation in general, the U. S. Bureau of Agricultural Engineering made the following statement, based upon farm building service in four typical states in 1938:

"Observations over the past few years made by many individuals of different groups interested in the trend of building conditions on the farm, including farmers themselves, engineers, contractors, and extension workers, have generally agreed that repairs, remodeling and new construction are not making up for normal depreciation. Few people realize how bad the farm building situation really is. Many structures must be repaired at once or they will soon be worthless. Many have already deteriorated to such an extent that they are beyond repair. On the majority of farms, buildings have not been properly maintained since the postwar drop in farm prices in 1920."

As was pointed out by two authorities in this field, Messrs. Carpenter and Krewatch, in a presentation before the American Society of Agricultural Engineers in 1941, this is convincing evidence of the extent to which the agricultural, physical plant has deteriorated.

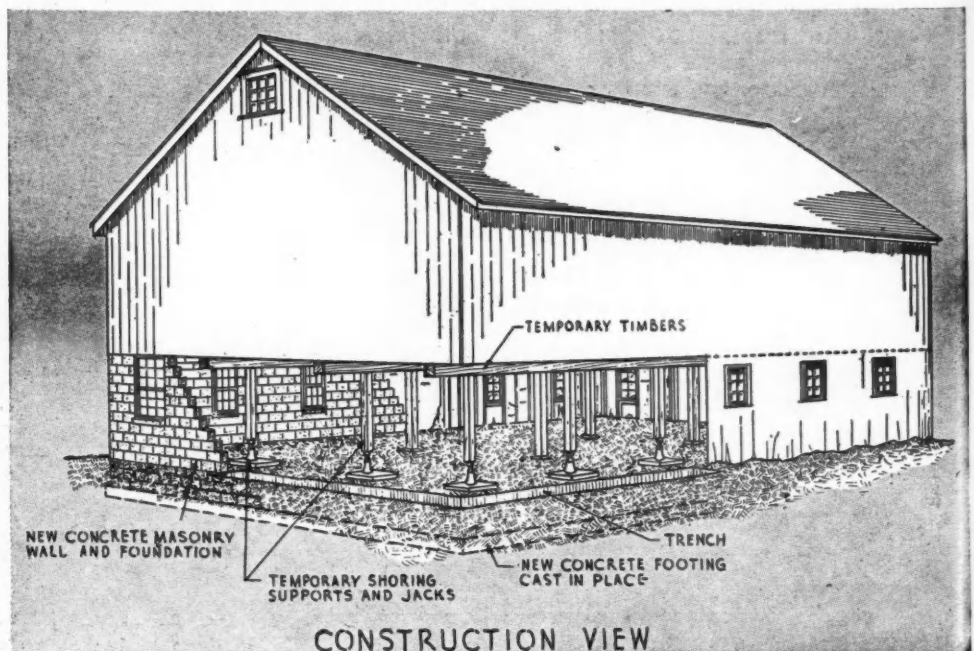
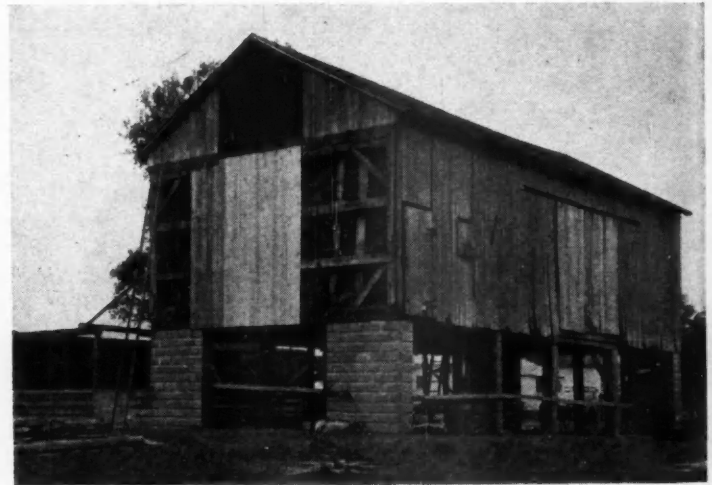
• HOW TO DO IT • HOW TO DO IT • HOW TO DO IT • HOW TO DO IT • HOW TO DO IT • HOW TO DO IT •

An Immediate Farm Job: Rebuilding Old Barns

11 steps in salvaging farm structures with new concrete bases

FARM buildings which were originally set on rocks or posts for foundations and with plank or dirt floors, in many cases have become insanitary and structurally unsound. Rebuilding, as outlined, can often result in a modern building at much less than the cost of new.

1. Remove all inside partitions, plank floors and trash, being careful not to disturb posts which support the superstructure.
2. Remove old framing and siding from not more than half of the structure at a time. Place jacks near each load-bearing post and temporary timbers up against the joists 2 ft. inside wall line, supported by posts set on jacks. Ceiling height can be raised or lowered.
3. Cut off old siding, studs and other vertical members. Measure down from plate line on all members so that, when building is lowered on to the new wall, the plate and sill lines will be straight and level. When a new concrete masonry wall is built up to the second floor cut off all studs flush with the bottom of the second-floor joist. Siding should be cut 3 in. below the bottom of the joist so that when the job is completed siding will lap over masonry.
4. Establish corners for footings and foundation wall with plumb line; excavate to firm soil and below frost; place concrete footings.
5. After concrete hardens lay up the concrete masonry walls, 8 to 12 inches thick according to load. Lightweight concrete masonry is preferred for above grade work for dairy barns and other animal shelters in the colder climates because of its good insulating qualities.



UPPER illustration: 90-year-old Indiana barn in salvage process. Details in lower illustration.

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"Nor is this the whole story," say these authorities. "No one will argue that at any time in the past have farm homes and buildings reached or even approached acceptable or desirable standards. The 1934 federal survey showed that—(1)—only 1 farm home in 3 had either running water or a water pump, (2)—only 1 farm home in 4 had electricity, (3)—only 1 farm in 10 had an indoor toilet, and (4)—only 1 farm home in 10 had central heat."

Farm Buildings Need Modernization

With the farm buildings of America in deplorably bad condition, resulting both from deterioration and obsolescence, it follows that just as soon as possible the whole physical plant of the farmer, so far as his structures are concerned, must be entirely replaced. With a higher standard of living; with the availability of higher quality, labor saving equipment; with the appreciation of the value of newer types of building materials that have been developed in recent years; with the demand for combining beauty and utility in construction—

does anybody think for a moment that it will take less than three thousand dollars per farm, or less than a total of \$20,000,000,000 to satisfy the farm building needs that are apparent now?

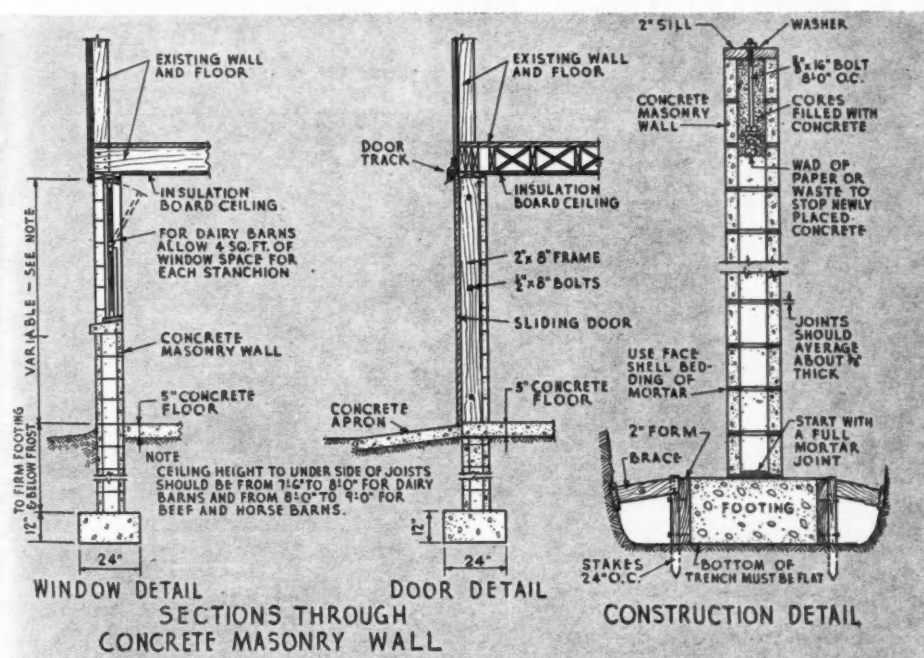
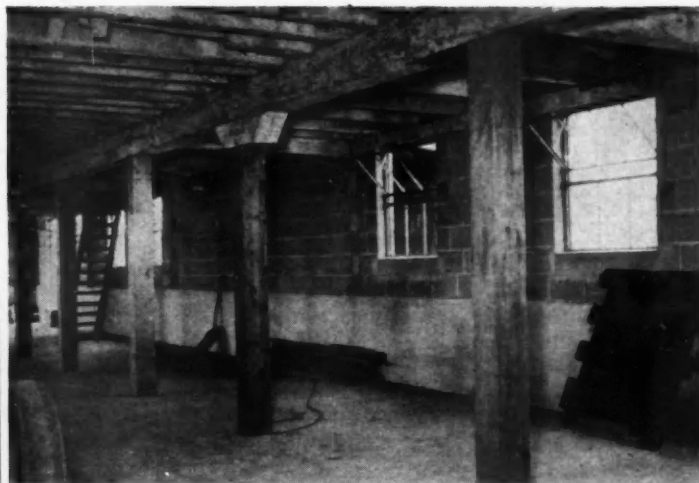
With these facts before us, we can easily see that the figure of twenty billion dollars as representing the sales opportunity for the building industry in the farm field is really conservative. Twenty billion dollars? It will be strange if the figure does not reach forty billion dollars!

Director R. B. Corbett of Maryland Agricultural Experiment Station, in discussing some of the problems facing American agriculture at the present time, further adds to the above comments:

"They pointed out that only one farm home in three had either running water or a water pump; that only one farm home in four had electricity; that only one farm home in ten had an indoor toilet; and that only one farm home in ten had central heat. They pointed out that normal depreciation of the agricultural plant must be offset, that twenty years' accumulated deficiency in

(Continued to page 81)

HOW TO DO IT • HOW TO DO IT • HOW TO DO IT • HOW TO DO IT • HOW TO DO IT •



6. Window and door frames are set in place and the wall built around them. They are temporarily braced in position until enclosed by the wall.

7. Sills are bolted to the top of the wall by means of bolts which are placed in cores of block and filled around with concrete. Bolts should be 1/2 in. in diameter and approximately 16 in. long and spaced 8 ft. apart.

8. Proceed with the other half of the structure in the same manner.

9. After the new wall has been built, lower the old structure on to it, securely fastening joist and vertical members by toenailing the joist to the sill. Remove boards in floor above if necessary for this operation.

10. Construct footings for interior posts which support the structure.

11. Rebuild mangers, stall partitions, feed bins, partitions, etc., to fit the type of livestock, feed or equipment to be housed.

EXTERIOR and interior views of the completed job (above). Construction methods shown in details.

COMMERCIAL BUILDING

PO

Stores, shops and service buildings now closed by war will be restyled and rebuilt. War-born communities, migrations, create new markets



WHEN America goes back on wheels, Mr. and Mrs. John Q. Public are going to indulge in the greatest orgy of motoring and travel that the world has ever seen. And that is going to do strange and wonderful things to the building business.

When that time comes, you builders who have kept in touch with what is going on will cash in. There will be plenty of work and plenty of profit.

In the first place, literally hundreds of thousands of service stations, roadside restaurants, stands, tourist courts, garages, automobile salesrooms and drive-in markets will have to be restyled and rebuilt.

But with the increased volume of motoring, coupled with road building and population movement, there will be need for many thousands more of the type of commercial building that is dependent on commercial trade. Taverns, dance floors, bowling alleys, hot dog stands and numerous other structures will be built—and the trend appears to perfect structures that get away from old and congested regions to new, modern, attractive surroundings with plenty of parking space.

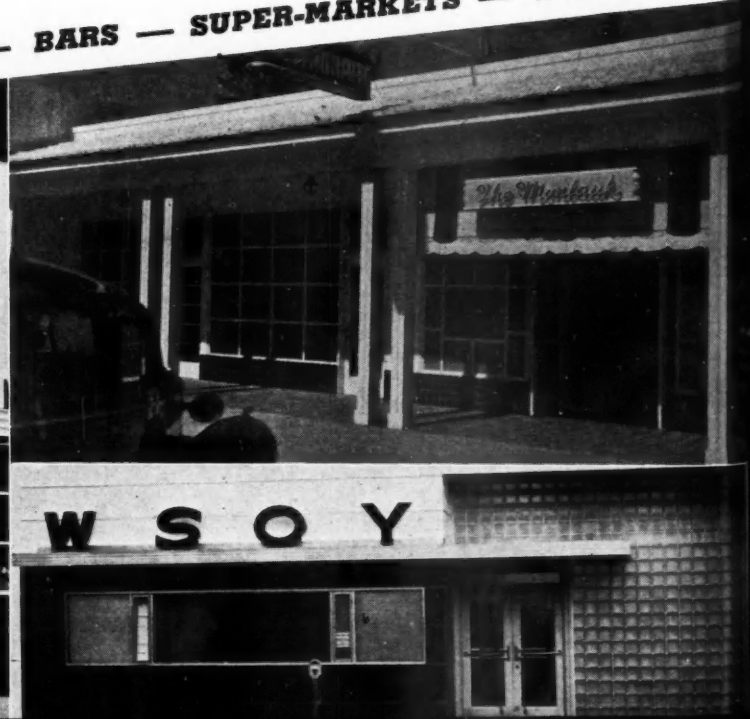
In fact, the trend of the future is definitely toward the edges and outskirts of town where parking is ample

and land values low. As Robert E. Barrett, a prominent Portland, Ore., architect, who has done many commercial structures ranging from Safeway stores to super-markets, told *American Builder*, "Don't build any kind of a commercial building today or in the post-war period unless it has ready access to a parking lot." He cited definite instances of commercial establishments which had showed an increase of business by acquiring adjacent parking space.

A pre-war trend that will be a post-war certainty is the growth of drive-in markets and of community shopping or service centers on the edge of town. Planned shopping communities, arranged so that the buyer can drive right in and park close to the shop, without trouble, are a sure post-war bet. The present gas shortage has taught many people the advantage of shopping close to home.

There will be plenty of other commercial buildings besides those created by the automobile. Thousands of hardware, radio, refrigerator and other equipment stores
(Continued to page 86)

STORES — SHOPS — RESTAURANTS — BARS — SUPER-MARKETS — WAYSIDE



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Poised for Post-War Starting Gun

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YOU WILL PROFIT BY KNOWING:

1. Drive-in stores and community service centers on the edge of town, with ample parking space, will take the spotlight.
2. Gas rationing has taught millions of suburbanites to shop close to home.
3. Filling stations, tourist cabins, wayside stands, restaurants and bars will flourish as never before, when America once more takes to the road.
4. New ideas in lighting, glass, plastics, metals and design will revolutionize store fronts, buildings, create new rebuilding market.

FACTS FROM THE CENSUS

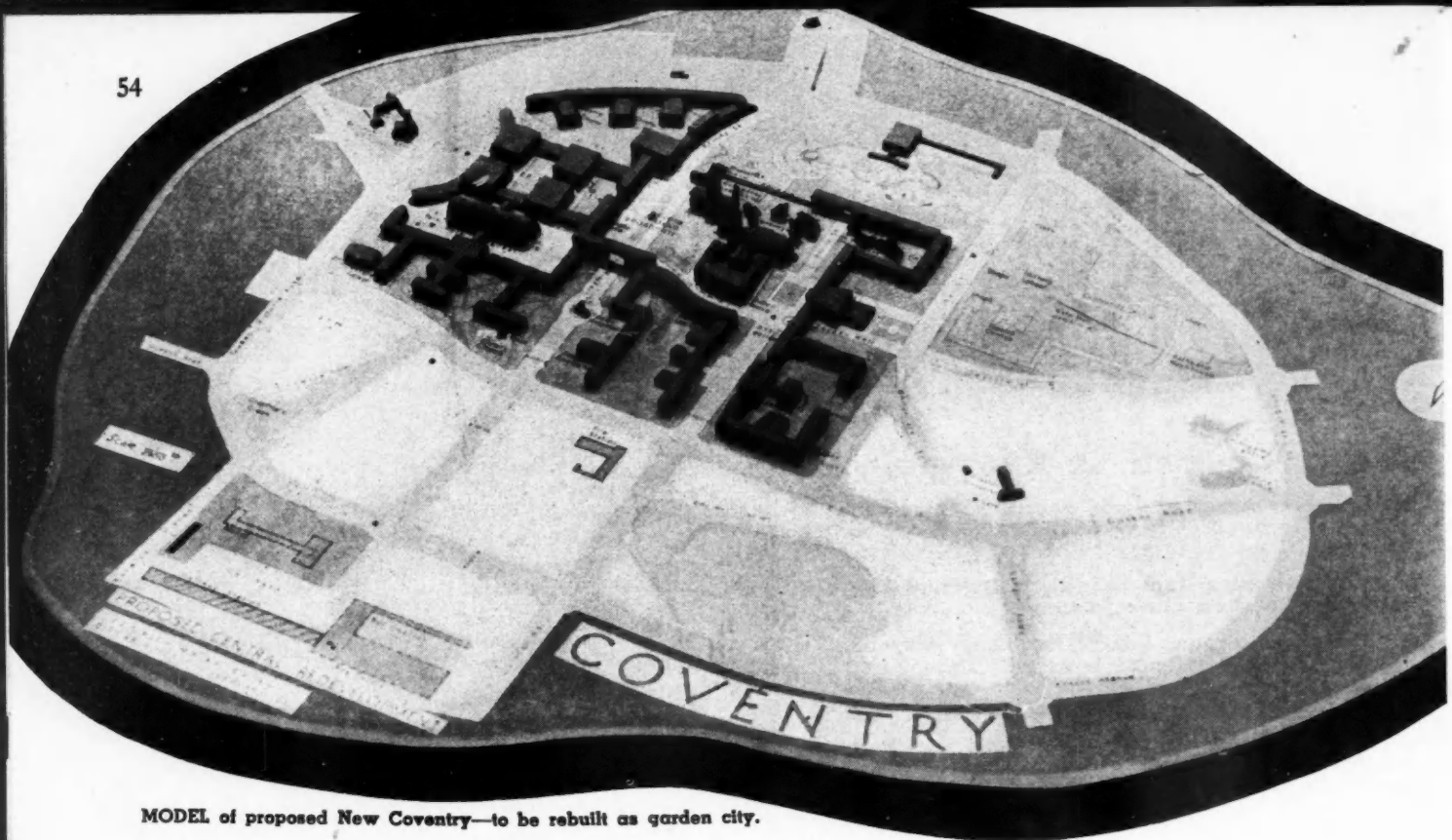
U.S. pre-war totals: 241,858 filling stations; 33,609 auto dealers; 4,821 public garages; 51,827 repair shops; 13,521 tourist courts; 2,951 seasonal hotels; 169,792 eating places; 135,594 drinking places; 19,902 furniture stores; 12,012 home furnishing stores; 20,913 appliance and radio dealers; 387,337 groceries; 27,666 fruit and vegetable markets; 38,337 other food stores.



GAS STATIONS, roadside taverns and tourist structures will be restyled and thousands of new structures built to serve the flourishing post-war motoring public.

STANDS — GARAGES — TOURIST HOMES — DRUG STORES — SHOPPING CENTERS





MODEL of proposed New Coventry—to be rebuilt as garden city.

British Plan Big Post-War Building Program

Four million homes to be built; cities to be replanned with greater decentralization of industry. Coventry sets pace

WHEN the war is won the builders of England, like those of America, will have one of the biggest building programs in history to handle.

Just as in this country plans are being laid for a post-war home building and construction program, the English too are planning on constructing millions of homes—"Homes for Heroes" they might be called, as they were by Lloyd George after the last war.

There are many similarities between the British and American building outlook. The important question as to the part to be played by private and public housing has not been settled. The English have had more experience with public housing than the Americans, but even so, private builders were, up to the outbreak of war, doing the bulk of the construction.

Over 4 million houses were built in England in the 20 years between the two wars, of which 1,100,000 were built directly by government agencies with public money. Another 400,000 were built by private agencies with state loans and grants. The remaining 2½ million, or 62½ per cent, were built by private builders, mostly speculative operators. They were sold on long-term mortgages with down payments as low as 5 per cent.

The war has, of course, brought a halt to building and given a chance for an overhaul of ideas and policies. Under England's War Damage Act, owners will be com-

pensated for destroyed buildings *but they do not have an automatic right to rebuild on the old spot.* It is possible that many of the cities will be rebuilt along entirely new plans with modern garden communities replacing the old highly concentrated sections. A Royal Commission report published just after World War II started (called the Barlow Report) has come out unanimously against further concentration of population in large cities. This report favored a national policy of decentralization into smaller towns, building of new garden cities, and control over location of new industrial plants to insure diversification of industry in all the regions of Britain.

The English have always favored the single-family house, and it is thought that these will continue to predominate but that the houses will be built in green-belt communities. A new department of Physical Reconstruction within the Ministry of Works has been established and is now reviewing the Barlow Report. If the policy of the Barlow Report is upheld it will mean that further construction of new industrial plants in large cities will be reduced. Location of plants in rural or suburban communities will be encouraged.

According to F. J. Osborn, a member of the Ministry of Works panel on post war reconstruction, the building industry is likely to be expanded by at least 25 per cent

1. Royal Commission favors decentralization and smaller towns.

2. Badly bombed areas to be rebuilt along spacious lines. Industries to be moved to country.

3. Private enterprise to be retained for bulk of building, but with greater controls as to land and community planning.

and guaranteed a 10 or 20-year program.

"Priorities as to classes and areas of building and supplies of materials will certainly be controlled for a period," he says.

"I do not think the independent builders will be superseded. But there will certainly be a definite attempt to co-ordinate housing with the policies of industrial and agricultural development and of the control of the size and distribution of towns.

"Great Britain, like the United States, is feeling its way towards a combination of national and regional planning with local and individual execution," Mr. Osborn says. "Private ownership and private enterprise will largely be preserved but will come under more control. Just where the boundaries will be drawn nobody knows."

Summing up the outlook for post-war British building, Mr. Osborn says:

"In this matter of city and country development, therefore, Britain is likely to see the piecemeal purchase by public authorities of blitzed areas; control of the use of land by public planning, with the management remaining largely in private hands; control of the price and allocation of building materials and labor with a continuance of private contracting; public finance of low-cost housing, alongside much house building by the building societies and private enterprise; and control of the location of industry, and the size of cities.



TOP OF PAGE—Blast-proof houses of brick, steel and concrete in Coventry. Each has own garden. **Center:** Workers' homes in Liverpool, laid out in complete self-contained community with playgrounds. **At right:** Miners' cottages in a model English garden home community near Nottingham, built before the present war.



MAINTENANCE WORK

Centers in Basement Service Shops

How Seattle's Metropolitan Building Co. properties are kept in good condition in spite of war-traffic and war-conditions

KEEPING an office building in repair and in good operating order, in wartime and under the present war-board restrictions, is a tough job requiring a lot of resourcefulness, according to R. W. Kidwiler, manager of Service for the Metropolitan Building Co., Seattle.

With War Production Board's Order L-41 limiting alterations or improvements to \$1,000 per building per year, routine maintenance—still freely permitted—has become more than ever important, he declares, adding that, with proper attention to floors, walls, windows and doors, and to all items of hardware and mechanical equipment, repairs can be made promptly and at minimum expense. On the old principle of "a stitch in time saves nine," maintenance repairs, under this system, are made before extensive damage is done. Still, with the hard use which fully occupied and often overcrowded office buildings are subjected to in these hectic war-days, there is an unusual amount of wear and tear resulting; and a considerable force of skilled mechanics has to be constantly employed, and much building material is consumed.

The repair and re-use of all metal items, such as valves, pipe, locks, hinges, etc., have become a war necessity, according to this well-known building manager; and so, special attention, in this maintenance workshop, is paid to salvaging anything and everything that might be useful later. No priorities control the use of second hand materials. Many things are now worked over and put into condition for further service which formerly would have been thrown out.

The building maintenance workshops for the group of office buildings in the central business section of Seattle which Mr. Kidwiler looks

after occupy space in the basement of the White-Henry-Stuart Building and are the service center for that and the ten other adjacent buildings operated by Metropolitan. These shops are well arranged for convenience and are well lighted and well equipped.

The woodworking or carpenter shop is largest, and has most equipment, consisting of power belt sander, band saw, scroll saw, rotary saw table, shaper and glueing equipment. Shelving and cases for office tenants



CARPENTER SHOP (above) is well equipped for sawing, planing, gluing. **Plumbing shop** (below) specializes in salvage and repairs.

are, of course, a large part of the work of this cabinet shop, with many special calls of infinite variety coming in constantly. Quite a stock of lumber is carried, and used trim and other used items are re-worked to serve new needs. Experienced cabinet makers are on the job.

The pipe and plumbing shop is a busy place, with repair experts at work putting additional life into valves and fittings. This room is supplied with bins all along one side, extending to the ceiling for the classification and storage of small parts and fittings. On the opposite side are racks for steel pipe, both salvaged and new, of various sizes. A central work bench of ample size is well supplied with tools.

Alongside the plumbing shop is the electrical shop and supply room. Plenty of old lighting fixtures here, which are "life savers" from time to time; since, by re-working, they can be made to serve nicely in place of new—and now unobtainable—lighting equipment.

Painting and decorating is, by all odds, the most common class of office building maintenance; and the paint headquarters shop in this set-up is especially well arranged and stocked. Service manager Kidwiler has a strong preference for oil paint wall finish as compared with calcimine. As he explained the situation to *American Builder*, a good oil paint job on plaster at the

start gives the maintenance man freedom to "go either way"; he can continue with paint, or if that becomes too hard to get, he can switch temporarily to calcimine.

In these war-restriction times, he reports, it is becoming harder to get good oil paints; and so recourse to water paints is often necessary. In his experience, when forced to switch from oil to water paints, four coats of calcimine can be applied on top of an oil painted plaster surface without peeling.

A little trick, worth remembering, is that if you want to go back to oil paint again, after two coats of calcimine have been put on, it is not necessary to wash off the calcimine; simply go over the surface with linseed oil and then brush on the paint.

In these Seattle buildings the oil painted walls are mostly light buff in color and are given the "orange peel" finish with a roller stipple—which saves much time over brush stippling. These painted office walls are in striking contrast, and a great improvement, to the eye of this writer, over the more common calcimined walls of Chicago and the Middle West, with which he has long been familiar.

On this point, Kidwiler estimates that a good painted wall costs about three times as much as calcimined, but is worth it. He recommends that, to get the best results, the paint should be put on and then the surface washed as needed to maintain its freshness. Using a good soap solution, the paint can be washed three or four times before the surface will need repainting.

"Paint on and wash off" is his formula for keeping a building looking fresh and young. Do not permit new coats of paint to be piled on over the old, he warns. Such a wall becomes chipped and uneven; the paint builds up too thick and the fine lines in the wood trim become filled up. A general look of age and decrepitude results.

Further, it is good management policy, Kidwiler believes, for a building to adopt a standard color scheme for all offices, and then stick by it. Nothing, he feels, will depreciate a building quicker than lack for such a standard for uniformity in color scheme.

Paint departments these days are having difficulty buying brushes, Kidwiler reports. Proper routine care of all brushes now in use is, therefore, extra important. His painters are using a centrifugal brush cleaner, the "Washway." It throws the paint out from between the bristles with a strong whirling motion that does a quicker and

(Continued to page 76)



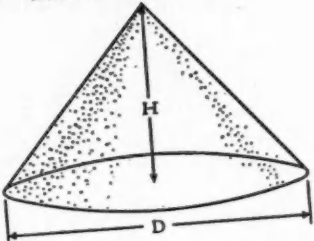
ELECTRIC wiring devices and fixtures old and new (above) keep tenants happy. Shop headquarters (below) for painters, supplies.

American Builder announces

a new, useful service—A HANDYBOOK

HOW TO FIND VOLUME OF A PILE

AMERICAN BUILDER FOR JANUARY 1943

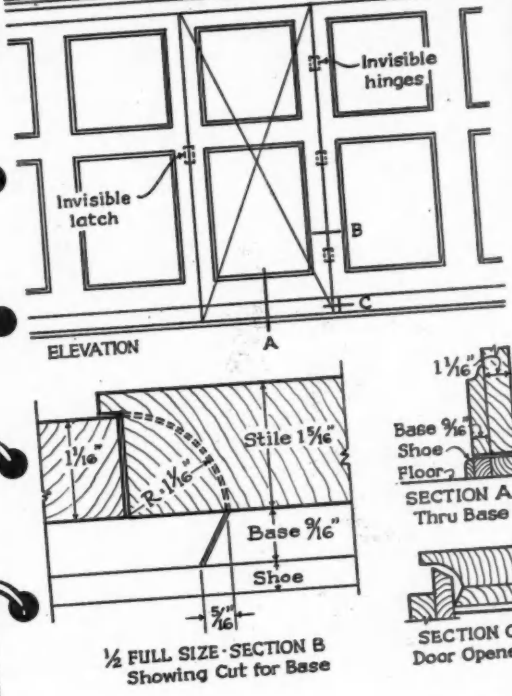


CUBIC YARDS IN CONICAL PILE

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5	1.2	1.7	2.3	3.1	3.9	4.8
6	1.4	2.1	2.8	3.7	4.7	5.8
7	1.7	2.4	3.3	4.3	5.5	6.7
8	1.9	2.8	3.7	4.9	6.2	7.7
9	2.2	3.1	4.2	5.5	7.0	8.7
10	2.4	3.5	4.7	6.1	7.8	9.6

HOW TO MAKE A SECRET DOOR

AMERICAN BUILDER FOR JANUARY 1943



ELEVATION

SECTION A Thru Base

SECTION C Door Opened

1/2 FULL SIZE SECTION B Showing Cut for Base

A secret door in a wood panel wall can be easily made if the projecting moulding, such as base or chair rail, is cut properly to allow for the 90° swing of the door. Invisible latches are tripped by a slight pressure on the door and a quick release on the secret side.

SHORT CUTS—TIME SAVERS—“HOW TO DO IT” UGGI

REALIZING that the need for practical, reliable, time and money saving ideas is greater today than ever before, *American Builder* in this issue inaugurates an important new department.

“The Handy-Book of Practical Job Helps” will con-

sist of 3" x 5" standard notebook pages crammed with the kind of useful information building men want today. The data is compiled from authoritative sources by the unquestioned leader in this field.

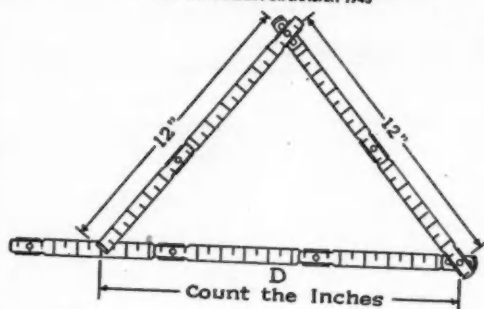
American Builder's new Handy-Book Helps is pub-

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This new...
program to

BOOK OF PRACTICAL JOB HELPS

HOW TO ESTIMATE ROOFING

AMERICAN BUILDER FOR JANUARY 1943



It is simple to get the actual area of a gabled roof using a zigzag carpenter's rule.

Standing about 50 feet from the gabled end, hold the rule as shown so that the two 12-inch slopes of the rule coincide with the profile of the roof.

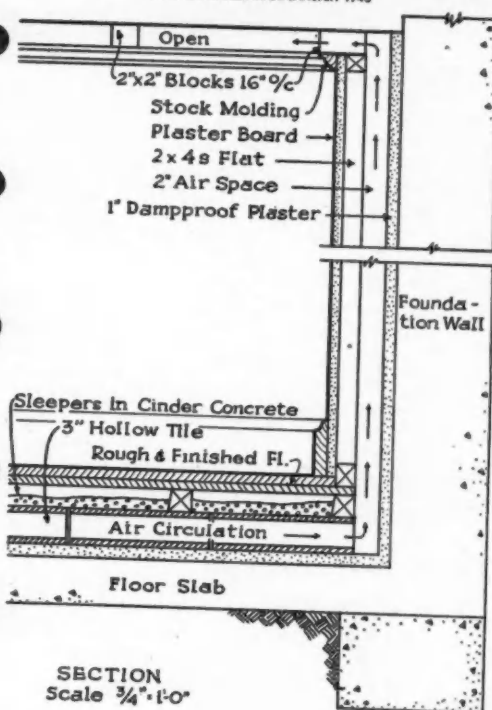
When the rule has been adjusted to coincide with the roof, count the inches across the horizontal base of the triangle.

Then refer to the table below and select the proper factor. Multiply the area of the roof as measured on the ground by this factor to get the area of roofing material required. No allowances made for waste.

If D is →	20	19	18	17	16	15	14	13	12
Multiply Plan Area by Factor	1.20	1.27	1.34	1.42	1.50	1.60	1.70	1.84	2.00

HOW TO FINISH A DAMP CELLAR

AMERICAN BUILDER FOR JANUARY 1943



Basements that have damp walls from sweating or from seepage can be made into useful, dry spaces for recreation or hobbies. If the dampness is due to water pressure from outside, however, the cure is more difficult than indicated here. The secret of the construction shown above is to provide air circulation under the finish floor and back of the wall finish.

ITUGGESTIONS—REPAIR AND MAINTENANCE IDEAS

ished in convenient form for easy reading and reference. It is the kind of data that will be reliable on the job and for everyday use.

This new service is part of *American Builder's* new program to help building men make a living during

the war and prepare them for the biggest post-war building market in the nation's history. The editors will welcome comments or suggestions as to specific subjects and how the readers would like them covered, both in drawings and text.



Gotta
Keep Busy
Somehow!

"Home Front" Homer
Still Right on the Job

HOW TO DO IT

10 Practical Repair and Maintenance Jobs That Will Help You Keep Busy for the Duration

How to Refinish Old Stucco

WHITE portland cement stucco will make an old building look like new. Where the base is sound, apply the new coat right over it; otherwise, patch carefully or repair base.

If original stucco is unsound, old material must be entirely removed and new three-coat job applied.

Where old stucco is not removable, it is necessary to cover the old surface with paper and metal reinforcement and then apply the standard three coats.

To apply the new finish, first wet entire area; then clean with solution of

1 part muriatic acid and 6 parts water.

Wash acid off carefully, allow wall to dry, then moisten just prior to applying new coat.

Rough textured surfaces may be finished with a single coat applied with a trowel. If surface is smooth, apply two coats, dashing on the first to establish bond. Then trowel on the finish coat.

Never apply portland cement stucco directly over lime, gypsum or magnesite stucco. These materials either should be removed entirely or they should be covered first with waterproof paper and metal reinforcement.



• HOW TO DO IT • HOW TO DO IT • HOW TO DO IT • HOW TO DO IT • HOW TO DO IT

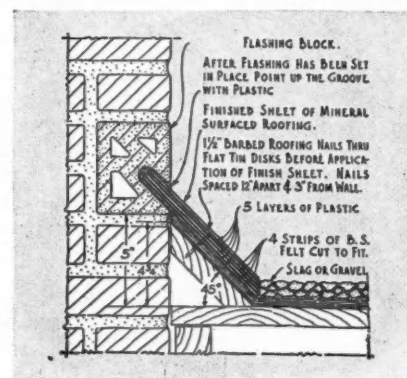
How to Flash Without Metal

EXTEND felt and pitch roofing up face of cant to the wall line and cut off evenly. Cement plies of felt together with pitch, free from wrinkles or buckles.

Next, cover the roofing with heavy uniform layer of plastic extending up into the flashing block groove. Embed one ply of flashing and felt; lap one inch and extend it into full depth of groove. Repeat operation until four layers of plastic and four plies of flashing felt have been applied. Nail the four strips with 1½ inch barbed roofing nails

through flat tin discs spaced every 12 inches.

Over surface of flashing felt spread an even coat of plastic, and into this embed a layer of heavy mineral surface roofing extending into full depth of the groove. Cut the mineral surfaced roofing across the roll so that the end of each strip has a 2-inch selvage. Coat the selvage with plastic and overlap it with the following sheet, thoroughly pressed down. Then point up the groove with plastic. For further data see Barrett Reference Manual.



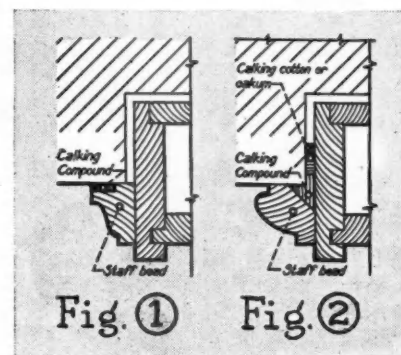
How to Caulk Openings

THERE is profitable business in caulking to prevent leakage of water, air, dust and cold into buildings and prevent loss of heat. Staff beads around window and door frames are sometimes built so that caulking may be applied without removal, as shown in Fig. 1. A rabbet 3/16" to 1/4" wide by 1/2" to 3/4" deep is recommended. Because of the plastic nature of a good caulking compound, it adjusts itself to the movement of materials.

Where the staff beads are removable,

as in Fig. 2, rake the mortar joints behind the frame to a depth of 1/2" to 3/4"; then fill the joints between frame and masonry with plumber's oakum or caulking cotton. After that, fill the space with plastic caulking compound. It is then possible to replace the staff beads, putty the nail holes, and paint.

The most efficient method, on large projects, is power gun caulking, in which compound is forced into joint under pneumatic pressure. On smaller work, hand caulking guns will give good job if care is taken to force compound back into joint.





How to Build Glass Showers

GLASS comes to job mounted on plasterboard, and is nailed to studding. Studs are first buttered with plastic, which is also spread on top of tub where glass rests.

How to Paint Over Paper

IF old wallpaper surface is in reasonably good condition, all that is necessary is to give one coat of the new type synthetic resin paint. Otherwise, patch broken or torn spots, and give a prime coat first. The new resin emulsion paint has high covering qualities, dries quickly, and goes on quickly.



How to Build Out Rats

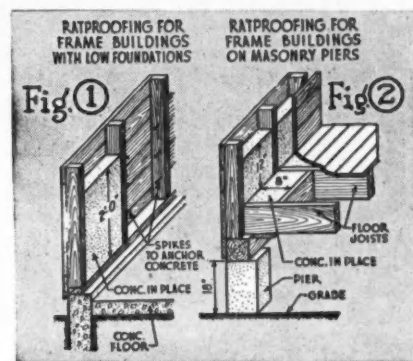
TWO methods of ratproofing old frame buildings are shown at the right, and neither requires any scarce materials. There is plenty of cement. In Fig. 1, the method consists of building a new concrete foundation and floor. Then the space above the sill and between the studs is filled with concrete to a height of two feet. Nails are driven into the studs to anchor the concrete.

Fig. 2 shows how to ratproof a building by supporting it on concrete piers, leaving a clear open height of 18 inches

under the building. In this case concrete is poured between the floor joists for a distance of 8 inches, as well as between the studs.

The usual mix for floors and for the fill-in is 1 part cement, 2 1/4 parts sand to 3 parts gravel or crushed stone. Use not more than 5 gal. of water per sack of cement.

For the foundation, the best mix is 1 part cement to 2 3/4 parts sand to 4 parts gravel or crushed stone, and not more than 5 1/2 gal. of water per sack of cement.



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How to Lay Linoleum

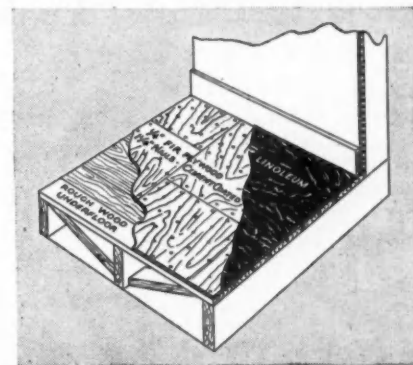
REPAIRING or replacing old floors is another source of possible business open to builders without restrictions. A smoothed floor is highly important. Frequently, the condition can be corrected by machine sanding, using the heavy cutting paper that will take off all ridges, edges, or swelling. It is then desirable to apply a thin coat of shellac or sealer to keep the pores from opening up.

Where the floor is in such bad shape that sanding will not assure a thoroughly smooth surface, it is advisable to lay

plywood or Presdwood or similar type of rigid, hard, smooth board. If it is possible to get the board in sufficient size to cover the entire area without a joint, do so. Otherwise, joint of the overlay should be staggered, as illustrated.

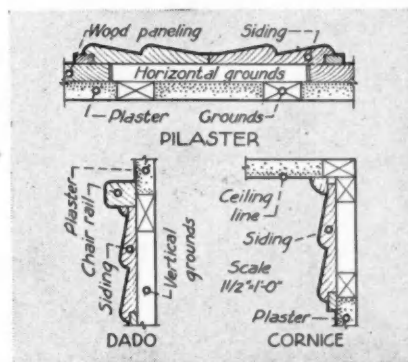
Rosin sized or cement coated nails should be used, spaced on 5 inch centers on all edges and stagger nailed on centers of 8 inches or less.

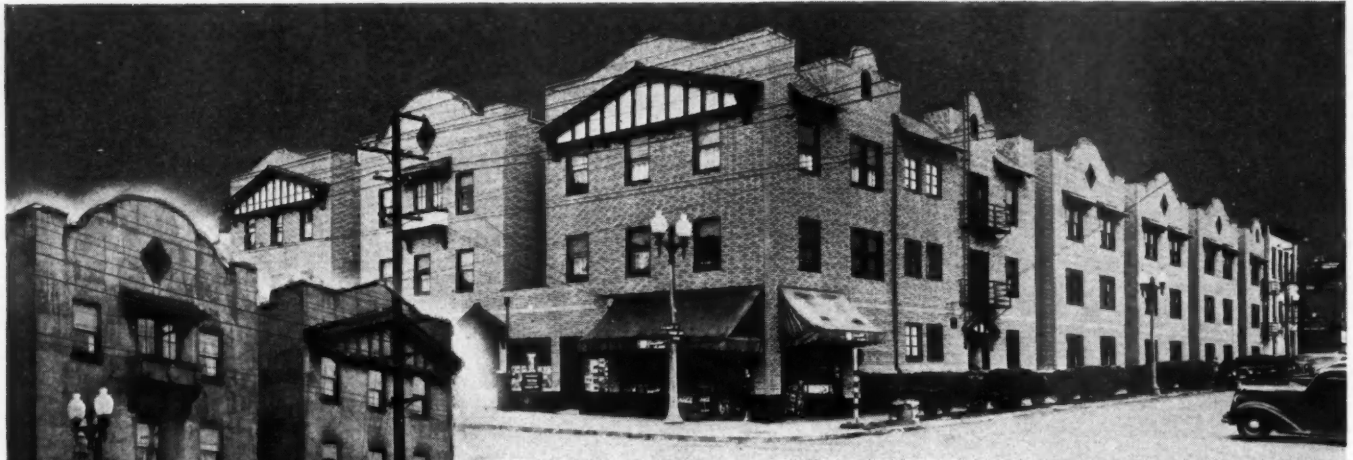
If rosin sized or cement coated nails are not available, use ordinary lath-nails and give them a rosin coating by immersing in a solution of 1 pound of powdered rosin and 1 gallon of benzol.



Decorative Drop Siding

IN THE refinishing of rooms, it is possible to get many new and attractive effects with drop siding—an inexpensive wood that is available practically anywhere. The detail at right shows how some of the ordinary standard designs of drop siding can be used as a decorative material in an attractive and interesting fashion. A further step in the modern trend would be to finish the siding with one of the transparent natural wood finishes that show the natural grain but yet produce a surface that is clean and easy to maintain.





THE old apartment and store building (left) leaked air and looked practically hopeless; overcoating results shown above.

Photo, Jones & Brown, Inselbric.

How to Salvage and Improve Buildings by Applying Insulated Brick Siding

HOW to salvage or increase the usefulness of larger structures is usually more of a problem than what to do with smaller units. In cases where the major job is one of refinishing the exterior to bring it back to a point where at least the building doesn't appear beyond all utility, such work can well be done with insulating sidings. The fact that the appearance is greatly improved has to be a secondary benefit during these war days when beauty is a luxury; present-day demands are for the more

practical purposes—savings in fuel due to the added insulation, savings of maintenance and repair.

Illustrated above are before and after views of an old apartment building with first floor stores. The changes that an overcoating of insulating brick siding have made are obvious. In selling this type of job, opportunities in aiding war plants which have had to utilize old buildings should not be overlooked during the present emergency.

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How to Patch "Foxholes" in Concrete Floors

HOLES in factory floors, in which danger might lurk in the form of industrial accidents, can be quickly and economically repaired as follows: (1) After the hole is cut out with sides more or less perpendicular, using a hammer and chisel, and wire brushed to roughen edges where old surface and new will join, the cleaned out area is wet with water on a broom (upper left photo in illustration below); (2) a commercial dry mix of Floor-

Patch is prepared by adding the proper amount of water (lower left); (3) slush coating is applied by putting a little mixed Floor-Patch into the hole which must still be wet, and sweeping it into all cracks and crevices, adding just a little more water if necessary (upper center); (4) mix Floor-Patch to a stiff consistency, put in prepared hole and pat down with a shovel or pound in with the end of a 2 x 4; (5) after surface is screeded level, it is troweled to a smooth finish, giving a floor patch that can really take it, as shown in the completed job, lower right.

Photos, The Truscon Laboratories.





ONLY A NORTHWOODS TREE

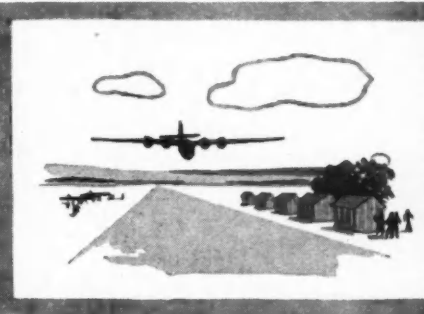
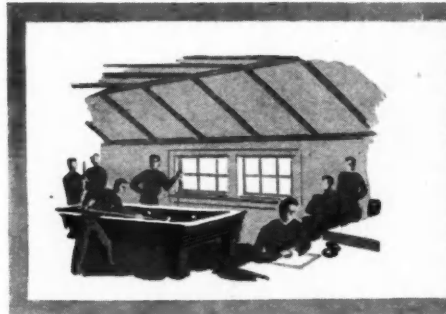
... yet its fibres are the sinews of war as well as one of the comforts of peace ...



● For centuries wood formed shelter for mankind. Used as lumber, wood built homes, factories and workshops. But more than a quarter of a century ago, modern science found that the *fibres* of wood could be transformed into materials of *wider adaptability* than wood as nature made it.

● Big logs were put into specially constructed machines that literally tore them to pieces—leaving only sturdy wood fibres. These fibres, the "heart of the wood," were then treated to resist the elements. Then the fibres were processed by a new method into panels of rigid strength.

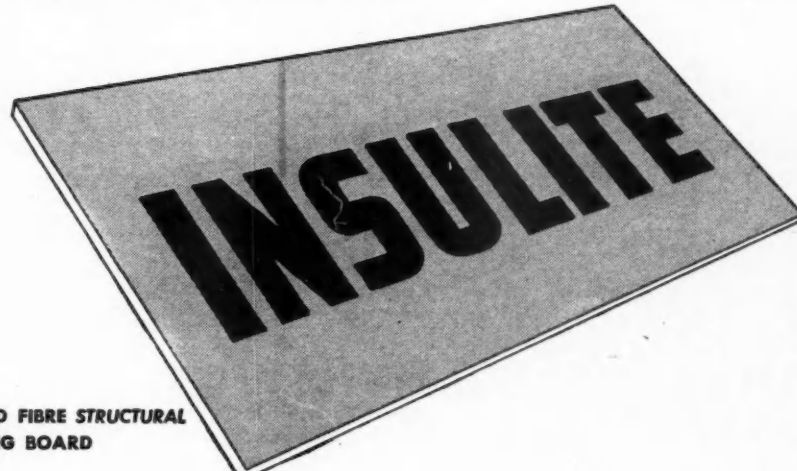
● The finished product—INSULITE. These panels or boards have great structural strength. They have high insulation efficiency, retarding the passage of heat or cold. They are moisture-proofed, wind-proofed, provide sound control, and are protected against termites, rot and fungi.



● Insulite has many *advantages*. Today, speed in construction is important. Large panels of Insulite are quickly applied, quickly nailed into place, thus saving precious man-hours. Many defense projects, cantonments and factories throughout the nation have been built in record time with Insulite.

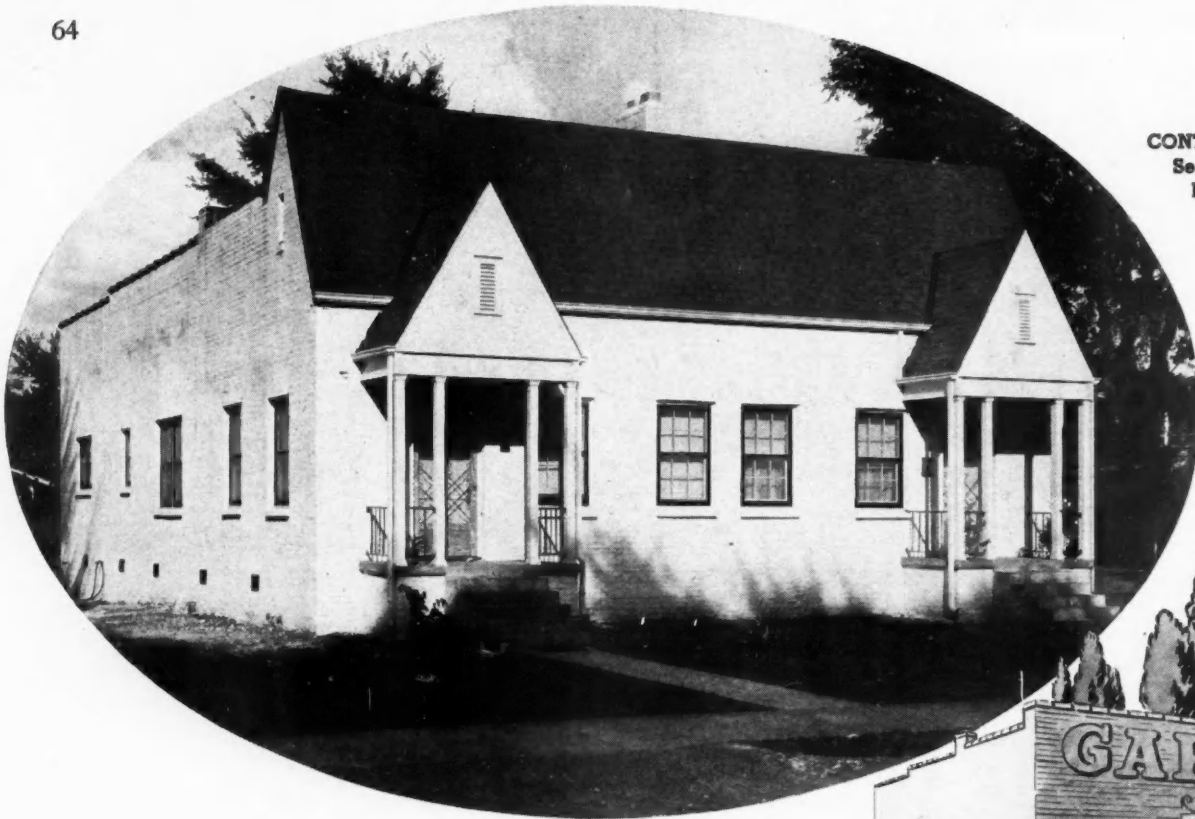
● Insulite has many *uses*. It was used to build the gigantic set for King Arthur's Court on a Hollywood sound stage; it is being used today, throughout the world, to build warm, comfortable shelters for our fighting men, erected on the spot in only 90 minutes time.

● In home construction, Insulite finds its widest use. Walls constructed of Insulite are not only stronger, but they are also weathertight, wind-proofed, and are an effective barrier against extremes of temperature, saving fuel in winter, giving cooler rooms in summer.



*Insulite Division of Minnesota and Ontario Paper Company
Minneapolis, Minnesota*

THE ORIGINAL WOOD FIBRE STRUCTURAL INSULATING BOARD

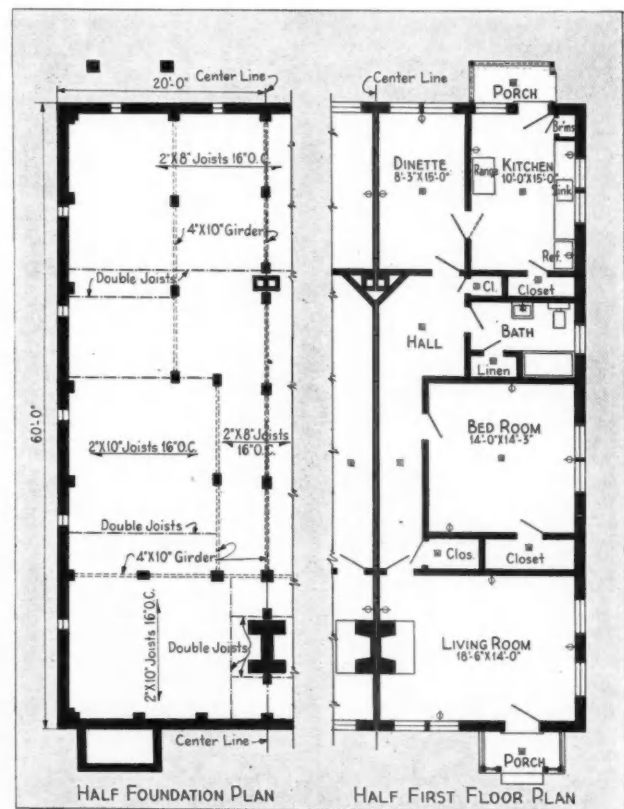
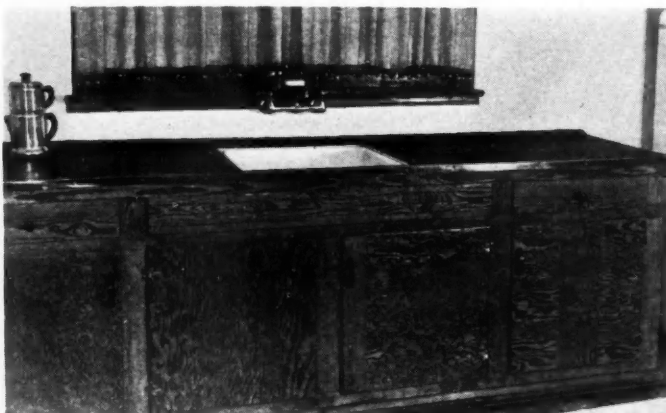


CONTRACTOR A. W. Allen and Seale Lumber Co., Birmingham, Ala., converted a small garage war casualty into the duplex shown at the left. The result: two homes for war workers, \$80 per month rental for property owner.



How Abandoned Garage Was Made Into Duplex For War Workers . . .

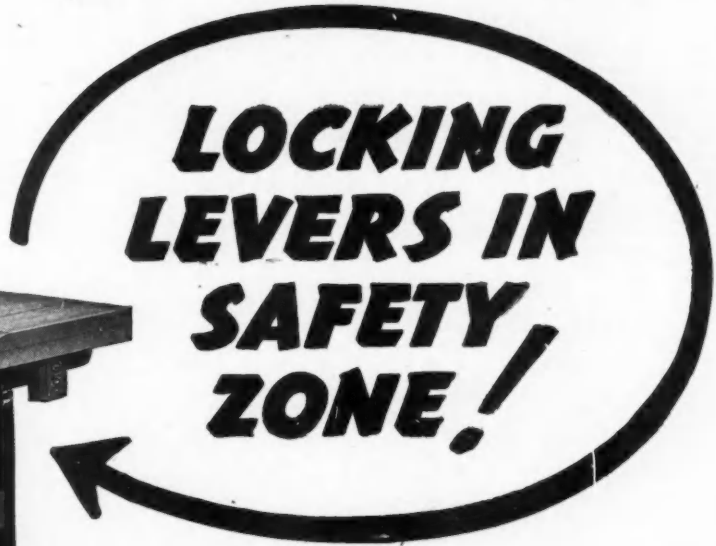
WITH war conditions generally creating an over-supply of small neighborhood garages and service stations, and an under-supply of living quarters, these structures are logical candidates for this conversion. As well as filling a vital necessity, the change is usually profitable; the one shown on this page located in Birmingham, Ala., cost \$5,000, or \$100 a room—well under the limits for this type of work. As a garage, the structure had brick sidewalls, slightly pitched flat roof, concrete floor. Within this, the new accommodations were built by merely removing the few partitions of the corner office and toilet, bricking up garage door, putting in a raised floor on brick piers, lowering the ceiling four feet, partitioning off the rooms, building chimney, and finishing interior. Island and gasoline pumps were removed from in front of the building. A front gable, entrances, and a coat of paint completed the job.



GARAGE to duplex conversion plan shows how 40 by 60 building was remodeled, with minimum amount of structural wall changes. Partition of garage office and toilet were only ones to be removed. Sink and cabinets of new kitchen are shown at left.



SIMPLE FAST SAFE



The MONARCH UNI-POINT RADIAL SAW

Gives operator split-second adjustments with utmost safety. See how locking levers for horizontal, vertical and compound angle adjustments are in safety zone in front of and below the table. So convenient! So very safe! No dangerous reaching back over machine to raise or lower saw. Then, too, the latest type saw guard with adjustable hand knob *in front* and with kick-back preventer, standard equipment, makes MONARCH UNI-POINT still safer.

To this super-safety is added speed, *speed*, SPEED—with marvelous accuracy! The UNI-POINT saw always enters the work at the same point regardless of cross-cut angle. This feature alone quickly pays for the machine in time and labor saved.

Get in step with today's tempo! Install UNI-POINT for faster mass production. Let UNI-POINT help to break your bottlenecks; increase your daily volume; eliminate obsolete machines and methods. Enjoy the unobstructed space above table afforded by the telescoping ram. Enjoy the convenience of the automatic stops,—the elimination of laborious adjustments and of frequent replacement of guide fence!

Discover for yourself the superiority of this machine by installing a UNI-POINT on your next job. Write us for name of nearest dealer and let us send you further details.

We also manufacture modern designed Saw Benches, Band Saws, Jointers, Planers, Lathes, Shapers, Mortisers, Sanders, Swing Saws, and a complete line of Saw Mill Machinery. Send for catalog 60.

UNI-POINT DOES EVERYTHING AND DOES IT ACCURATELY



AMERICAN SAW MILL MACHINERY CO.
HACKETTSTOWN, NEW JERSEY

How to Refinish Interiors with Insulation Board

Wide variety of effects possible by using combinations of plank, tile and panel to cover old plaster

MANY of the home conversion and repair jobs available today call for new interior finish, either to surface new partitions or cover badly damaged walls. For such work, insulation board has found wide application because of the economical three-way job performed—providing additional insulation which most old buildings need, covering defects of old walls or the studding of new ones, and providing a surface finish. The latter feature is possible with many of the boards which are painted or surface treated in manufacture. A typical job is illustrated on this page; insulation board for halls and six rooms cost less than \$300, other materials such as lumber for trim, etc., added not more than \$70.00.

THE top view shows how an attractive living room resulted from applying insulation board over the mess of cracked and broken plaster that served as wall finish in a 90-year old house; battens and mouldings added a neat finishing touch. In the study of the same house, horizontally applied plank on the sidewall gave an effect of increased room size; diamond tile pattern board contrasted nicely on the ceiling. Plain hardboard wainscot, vertical plank on sidewall, and plank in ceiling finished the dining room. Somewhat the same treatment is used in the child's room; ceiling pattern in-cut with a tool. Three views at the right show, respectively, the ease with which board is applied, the hall before remodeling, and same spot after.

• HOW TO DO IT • HOW TO DO IT •

Now it's "All for one"

Yesterday . . . a hundred thousand customers. Today . . . ONE!

How would you like to be faced with such a situation, even though that *one* customer takes virtually your entire production? Well, that's our position, and this astounding thing has happened to us in just the past few months.

That customer is mighty important, though. He's Uncle Sam. Today he has first call on every foot of lumber we can produce.

The lumber industry has reason to be proud that it was able overnight to swing its full productive capacity to the war effort. Think what this has meant to Uncle Sam in time, in materials, in man hours.

Naturally there have been sacrifices on the part of the lumber industry and the building trades in making this radical change. But no one is squawking. This is WAR, and we're all in it—to win it!

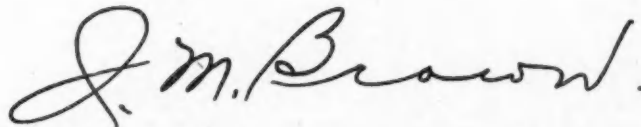
However, our manufacturing group, comprising 150 lumber mills, is not complacent

in its attitude toward its old friends—the retail lumber dealer, the wholesaler, the building contractor, and the industrial buyer. Nor will any Association mill lose its concern for *their* present and future needs.

We want you to know that the timber supply of the Western Pines is not being depleted. Trees are growing and this industry is following a planned program of selective harvesting and forest protection to assure the perpetuation of our great natural resource . . . not for a generation or two, but forever!

Furthermore, in this mighty effort of production for WAR, we are learning many things which can be applied to peacetime building activities. To prepare for that future, our Research Laboratory is constantly at work developing new ways to use our products—new values—new and better manufacturing procedures.

When peace comes, these mills will be prepared to serve you better with Western Pines—Idaho White Pine, Ponderosa Pine, Sugar Pine.



J. M. BROWN, *PRESIDENT*, WESTERN PINE ASSOCIATION
Yeon Building, Portland, Oregon

NHA Home Conversion Program Gets Under Way

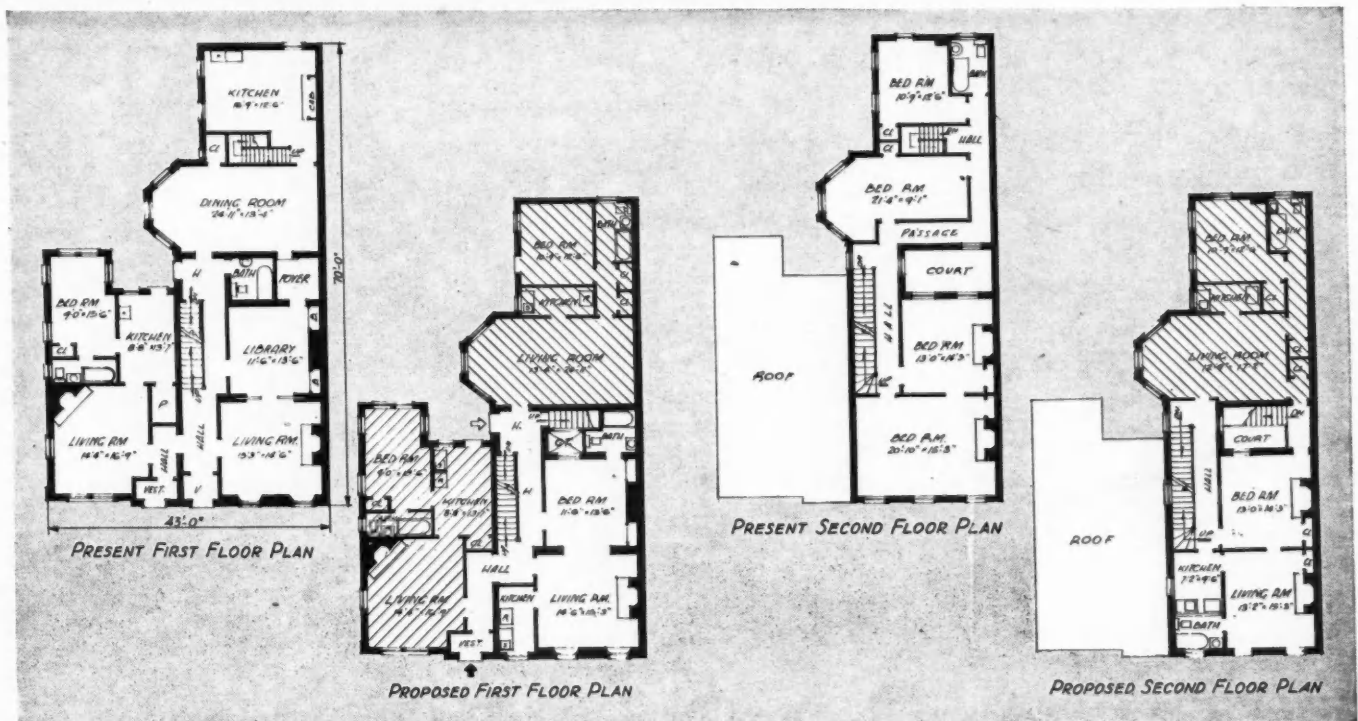
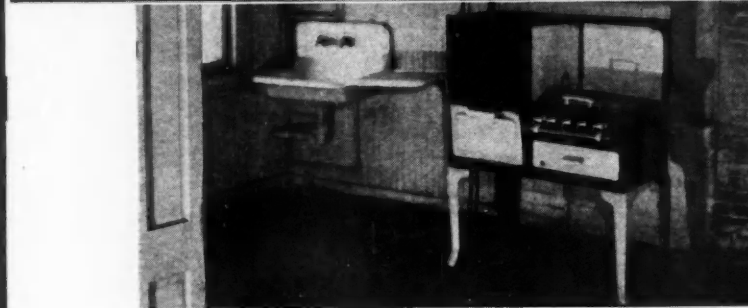
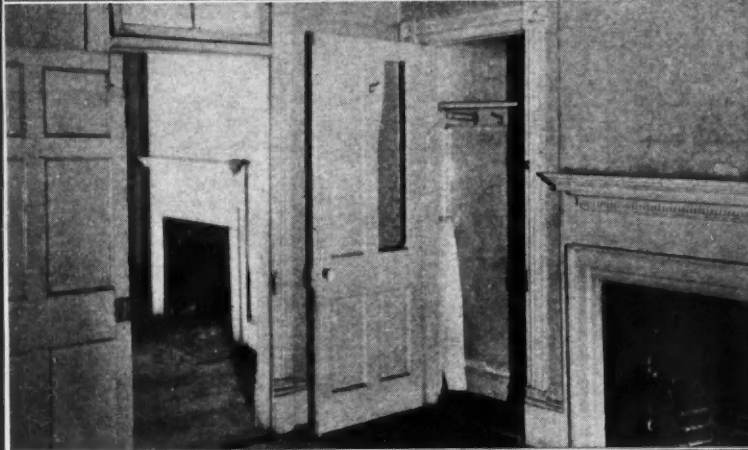
First project for remodeling under Homes Use Service to provide war worker housing started with leasing of Alexandria, Va., residence

AT the left are views of old two-family home in Virginia, the first to be scheduled for conversion into units for war workers under new NHA program. Below, floor plans show extent of changes to be made.

BUILDERS and material dealers in some 86 critical war housing areas in the country may well look for a busy winter and spring now that the National Housing Agency's conversion program has gotten under way. Provision, through a more complete use of existing structures, with and without conversion, must be made by July 1, 1943, for 650,000 of the 1,600,000 war workers that are expected to be called to the manufacturing front.

While Conversion is attracting the greatest attention currently, private building and public housing are very much in the picture. These three, for the next few months, have set their shoulders to the stupendous task of providing places to live for the additional 1,600,000 in-migrant workers, who, by July 1 next, will be making munitions for the armed forces. Private building and public housing are expected to do the lion's share of this—they together are expected to create 670,000 new units while 650,000 units are to be provided through existing structures. It is estimated that 1,320,000 accommodations will house 1,600,000 war workers.

Of the family units produced since the appointment of a Coordinator of Defense Housing in July, 1940, 92 per cent, or



more than 1,157,000 units, were financed by private capital.

Conversion is a doubled-barrelled job. Two of NHA's agencies will participate in this activity—Homes Use Service and the Federal Public Housing Authority. Homes Use Service will deal with creation of dwelling units for families of war workers, regardless of the number of units to be created in a building. FPHA will provide all dormitory space for individual workers in existing buildings, in addition to its regular public housing program.

Any type of improved building may be used for conversion into dwelling units—residences, apartment houses, warehouses, stores, combined business and residential property—anything that will yield one or more additional places for war workers to live.

The Government, through the National Housing Agency, will lease structures suitable for conversion, for seven years or two years after the war emergency, whichever is longer. Conversions will be made under supervision of the Home Owners' Loan Corporation, which, following the construction work, will sublease the dwellings thus created to war workers and manage them through management brokers, as it does in the case of its own properties.

Conversion jobs, whether family dwelling units or dormitories, are done according to the soundest construction standards and practices, commensurate with the current shortage of materials. All work is chartered by qualified architects retained, in the case of residential conversions, by HOLC on behalf of the National Housing Agency. Their plans and specifications, after approval by HOLC and the owner of the property, will be made available to construction contractors for preparation of bids. All construction will be supervised by the HOLC.

An excellent example of residential conversion is seen in plans for remodeling (shown on these pages) the residence in Alexandria, Virginia, owned and leased to the Government for this purpose by Brig. Gen. Duncan K. Major, Jr., U. S. A. This was the first residential property leased in the country under the Conversion program.

The property is a three-story building of 14 rooms and four baths. By skillful use of existing walls and with the addition of a minimum of new ones, this layout has been projected for conversion into six dwelling units of three rooms each, in-

cluding bath for each unit. To give an idea of the amounts of some of the critical materials needed for this conversion, the following are typical: 400 sq. yds. of lath, 17 sets of hardware, 100 lbs. of nails, 400 ft. of non-metallic sheathed electric cable, 15 interior lighting fixtures, 2 bathtubs, 2 lavatories, 2 water closets, 4 sinks, 500 ft. of soil pipe and fittings, 1400 ft. of lumber, and 6 gas ranges.

Arrangements have been made with the War Production Board for the processing of all applications for priorities by the Home Owners' Loan Corporation, and for immediate clearance and granting of priorities certificates by WPB.

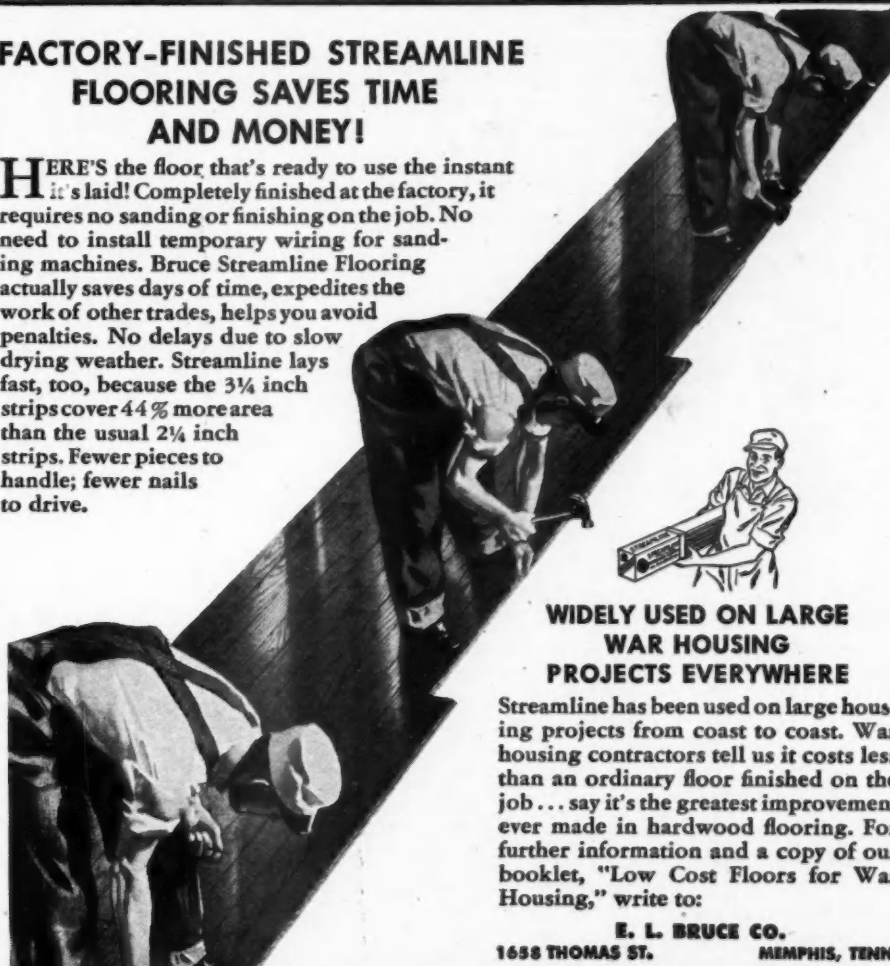
The procedure for obtaining priorities was worked out in connection with the projected conversion of this General Major property in Alexandria. Application was made on WPB Form No. PD-200, accompanied by the material list on Section C detached from WPB Form No. PD-105.

The War Production Board has indicated it will grant AA-4
(Continued to page 87)

LOW COST FLOORS FOR WAR HOUSING!

FACTORY-FINISHED STREAMLINE FLOORING SAVES TIME AND MONEY!

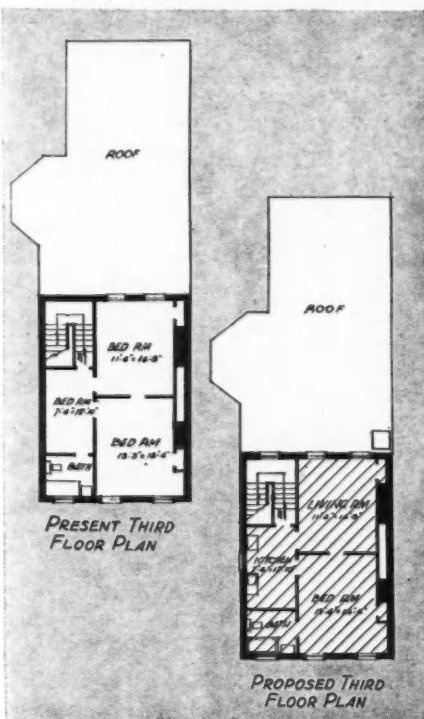
HERE'S the floor that's ready to use the instant it's laid! Completely finished at the factory, it requires no sanding or finishing on the job. No need to install temporary wiring for sanding machines. Bruce Streamline Flooring actually saves days of time, expedites the work of other trades, helps you avoid penalties. No delays due to slow drying weather. Streamline lays fast, too, because the 3 1/4 inch strips cover 44% more area than the usual 2 1/2 inch strips. Fewer pieces to handle; fewer nails to drive.



WIDELY USED ON LARGE WAR HOUSING PROJECTS EVERYWHERE

Streamline has been used on large housing projects from coast to coast. War housing contractors tell us it costs less than an ordinary floor finished on the job... say it's the greatest improvement ever made in hardwood flooring. For further information and a copy of our booklet, "Low Cost Floors for War Housing," write to:

E. L. BRUCE CO.
1658 THOMAS ST. MEMPHIS, TENN.



BRUCE *Factory-Finished* **STREAMLINE** **HARDWOOD FLOORING**

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

A PRODUCT OF E. L. BRUCE CO., MEMPHIS, TENN.

Slab Floors for Basementless House

How to insulate and moistureproof concrete floors laid directly on the ground

THE construction of unreinforced concrete floors in war housing and for other light-duty uses can result in important savings of lumber, nails, paint and reinforcing steel needed for war purposes*, reports the Cement Products Bureau of the Portland Cement Association, Chicago, in a recent bulletin.

The floor slab is generally placed on filled ground and therefore should not rest on either the foundation wall or footings which are usually placed in undisturbed earth. Fills, regardless of how well compacted, may settle which would deprive the slab of support in the middle portions and result in cracking along the edges. The floor level should be at least 6 in. higher than surrounding ground level and the ground should slope away from the house for good drainage.

Waterproofed Concrete Floors

The ground should be leveled off and filled to within 8 in. of the finish floor level. Place a fill of cinders, gravel or crushed stone which after being well tamped will have a depth of 4 in. Over this fill spread a thin coat of 1:4 cement-sand grout to provide a firm, even surface for applying the waterproof membrane. Membrane can be manufactured fabric, closely woven burlap or 30-lb. roofing felt. Two layers of the membrane are recommended. The base and each layer of felt should be well mopped with hot tar or asphaltum. Workmen must be cautioned against puncturing the membrane when depositing or puddling the concrete. The membrane should be carried up the inside of the foundation wall as shown in Figs. 1 and 2.

A 4-in. concrete slab is then placed over the waterproof membrane. Concrete mix should consist of 1 volume portland cement, 2½ volumes of sand and 3 volumes of gravel or crushed stone. Maximum size of

*For floors suitable for industrial and similar use, see *Concrete Floors on Ground—for Industrial and Other Heavy-Duty Uses*. Free in the United States and Canada upon request to Portland Cement Association, Chicago.

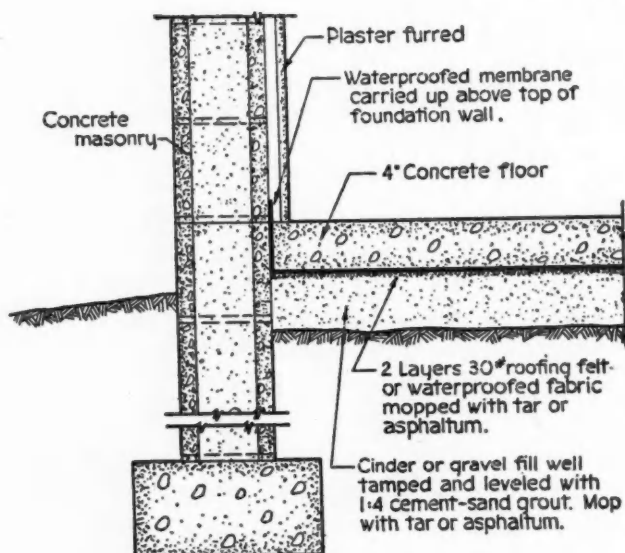


Fig. 1. Waterproofed concrete floor.

coarse aggregate should be 1 in. Use not more than 6 gal. of mixing water per sack of cement including the moisture contained in the aggregate. Sand especially carries moisture and for a damp sand, which is the usual condition, add not more than 5½ gal. water per sack of cement. For wet sands add only 5 gal. and for very wet sands only 4¾ gal. water per sack.

The concrete should be mixed for at least 1 minute and preferably 1½ minutes, after all the materials have been placed in the drum, to a homogeneous mass of uniform color. The mixture should be a sticky, plastic mass which will not show free water when placed and worked. If necessary, the proportion of sand and coarse aggregate should be adjusted to obtain a mix with proper workability.

After the concrete has been placed, it should be struck-off to proper elevation. Use screed boards placed at about 10- to 12-ft. centers for this purpose. Concrete should be wood-floated to a smooth, level surface, care being taken not to work the surface too much. As soon as the water sheen produced by floating has disappeared, the concrete should be given a dense, smooth finish with a steel trowel. Stop troweling if water sheen appears on the surface and do not resume until it has disappeared. The concrete is ready for final troweling when it is stiff enough to produce a ring when struck with the trowel.

The concrete should be kept moist for at least 5 days when normal portland cement is used or at least 2 days when using high early strength portland cement. Moist burlap or canvas or a waterproof concrete curing paper may be used to cover the floor during this curing period. Curing should begin as soon as the concrete has hardened sufficiently to prevent damage, and if burlap or canvas is used, it should be sprinkled at sufficient intervals to keep it wet.

In locations subjected to severe winters or when local

(Continued to page 84)

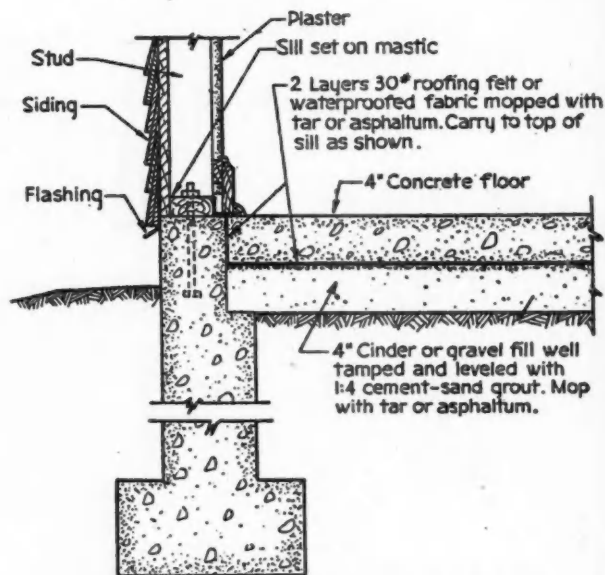


Fig. 2. Waterproofed concrete floor for frame construction.

THE UNWANTED STEPCHILDREN

You've never seen *lignin* . . . no one ever has. Lignin is the binding agent which gives natural wood its great mechanical strength.

But because it cannot be isolated unchanged, lignin has often been regarded as an unwanted stepchild.

Down in Mississippi there's another "stepchild," too . . . thousands of acres of second-growth timber, not commercially marketable as lumber. And yet from these lands come some of the most amazing materials ever produced . . . the *Masonite* Presdwoods.**

You see, Masonite *explodes* these hardwoods and softwoods, neither removing the lignin nor damaging the cellulose fibres of which wood is composed. The result is a mass of fibres of varying degrees of plasticity.

In this Masonite process the fibres are interlaced so as to provide equal strength in all directions. They are then welded together again under varying heats and pressures, using lignin's great bonding power to produce hardboards of different weights and densities.

Masonite Presdwoods—made in this way from ligno-cellulose fibres of varying degrees of plasticity—are suitable for many special purposes and uses.

Right now, the Presdwoods have more than 500 uses in America's war program—saving steel, aluminum, rubber, asbestos and other critical materials.

Naturally, the Masonite Presdwoods are not now readily available for civilian use. When Victory is won, Presdwood will again be ready for the homes you build. Masonite Corporation, 111 W. Washington St., Chicago, Ill.

* TRADE-MARK REG. U. S. PAT. OFF. "MASONITE" IDENTIFIES ALL PRODUCTS MARKETED BY MASONITE CORPORATION. COPYRIGHT 1943, MASONITE CORP.

MASONITE PRESDWOODS



THE LIGNO-CELLULOSE HARDBOARDS

News of the Month

Delta Operates Model Workshop To Test Ideas

HERE'S a craftsman dream come true—a complete home workshop tucked away in the corner of the basement far from prying hands and eyes—equipped with the last word in motor driven tools and a full assortment of accessories—plenty of fascinating projects to work out—and all the time needed to work them out.

But in this case—the basement is in the huge modern plant of The Delta Manufacturing Company, Milwaukee. This is not a "show shop" . . . it is a practical workshop in every way.

There's the smell of sawdust in the air—plenty of shavings on the floor and competent craftsmen in charge.

Delta machines are put through their paces here—to make

certain they offer everything possible in accuracy, convenience and safety. New projects are "shop-tested" here for the "Delta-gram," the company's craft magazine that reaches thousands of machine tool users each month during the winter months. As a matter of fact, the shop is the headquarters for the editorial staff of this publication.

Helpful shop hints and short cuts are tried out in this shop to make certain of their practical worth. New designs and blueprints are developed for the growing Delta project service now available to all home craftsmen. And finally, one of the most comprehensive craftsman's libraries in the country is maintained here for the convenience of Delta engineers and the users of Delta machines.

Chicago Builders Launch Subchaser

APPROXIMATELY 1200 persons witnessed and cheered the colorful launching Saturday afternoon, November 28, of the first submarine chaser built at Holland, Michigan. After Mrs. John Gingrich, wife of a Washington Captain said, "I christen thee"—the Holland American Legion Band played "Anchors Aweigh" and the submarine chaser slid into the waters of Lake Macatawa, on her way to tests that may someday include trial in the fire of war.

Construction of the ship was started June 22, 1942 on the ways of the Victory Shipbuilding Company at Holland, Michigan. This all wood navy vessel had to be put together piece by piece, there was no pre-fabrication, and was built in record time. Mr. Irvin A. Blietz, President, and Mr. R. W. Bramberg, chairman of the



MASS PRODUCTION

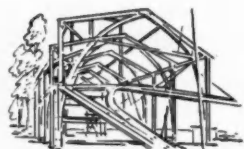
... with WOOD and LAUCKS GLUE!



LAUCKS GLUE FOR PREFABRICATED WARTIME HOUSING



152' "STEEL-STRENGTH" BEAMS OF WOOD AND LAUCKS GLUE



LAUCKS GLUE LAMINATED ARCHES FOR ARMY CHAPEL

TODAY—the building of wartime homes calls for speed, strength and durability.

Prefabricated Products Co. is meeting these needs with wood and Laucks Glues. In a model prefabricating plant using Laucks Glue guns, walls are glued to studding and plywood is end-jointed for a 1000-home project, speedily and economically.

Investigate how Laucks Glues and Resins can save time, money and critical materials on your job—in laminated arches or beams, in prefabricated and all types of dri-built construction with plywood and wallboard, in farm structures, etc.

For information, write Laucks where 20 years' laboratory research and practical experience guarantee the right use of the right glue.

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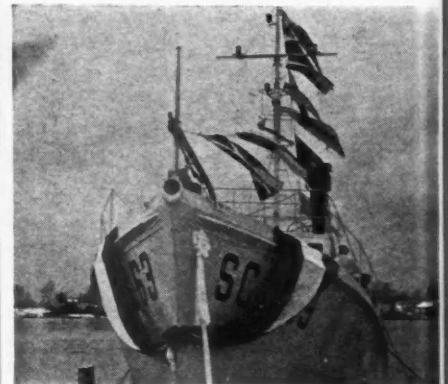
Factories: Seattle, Los Angeles, Portsmouth, Va., Lockport, N.Y.

In Canada Address Inquiries to—
I. F. LAUCKS, LTD., Granville Island, VANCOUVER, B.C.
HERCULES-LAUX-MERRITT, LTD., STANBRIDGE, QUEBEC

★ Don't forget, LAUX REZ, the pioneer resin sealer and primer, protects wood as rust-proofing protects metal.



LAUCKS CONSTRUCTION GLUES
Consult LAUCKS—America's Glue Headquarters



Board of Directors of the Victory Shipbuilding Company addressed the audience preceding the launching. Mr. Blietz and Mr. Bramberg are well known as Chicago suburban deluxe home builders and developers and are now devoting their entire

time to the building of ships for the expansion program of the U. S. Navy.

Top picture shows the ship, decorated with international code flags, sliding down the ways into Lake Macatawa. In the lower picture, President Irvin Blietz (left), Mrs. John Gingrich of Washington, D.C., (center) ship's sponsor, and R. W. (Rudy) Bramberg, chairman of the board of directors, watch the launching of the chaser from an elevated platform after Mrs. Gingrich had christened it.

Air Corps Hutments Built In 40 Minutes

ADVANCED airfield bases in both hemispheres caused the Army Air Corps to seek a prefabricated shelter and workshop that could be transported by air and set up quickly in the field. These insulite-panelled houses filled the bill and now they are with our fighting Army air force from Alaska to Africa. For postwar use they may be utilized for migratory housing, for portable farm buildings such as poultry, hog houses or machine sheds, and they also are ideal for hunting or lake cabins.

These prefabricated, portable 16 by 16 foot hutments are so simply and precisely constructed that they can be erected in 40 minutes in the field with only a hammer, wrench and screw driver.

Weighing 3,000 pounds, complete with a stove burning aviation gasoline, cots and construction kit, longest sections are nine feet, six inches, making them conform with air transport specifications. Walls and ceilings are of panelled, double-thick-



ness insulite board which is painted before being applied to the sections which are factory made ready for erection.

Interiors are painted a special green to reduce eyestrain from snow, ice or sun glare. Panels are mounted on wood frames with floor sections also insulated against either the heat of the desert or the cold of the Alaskan or Siberian arctic.

A single carload of insulite furnishes material for 40 such houses. Each hutment houses six men, or may be used for the protection of motors or other valuable equipment.

Shown above, checking hutment plans are, left to right, Earl Swanson, superintendent, Andersen Corporation; R. H. M. Robinson, president, Minnesota and Ontario Paper Company; M. S. Wunderlich, Insulite sales manager, and J. H. Giles, assistant sales manager of Insulite.

Lead Substitutes for Copper, Tin, Zinc

EVER since the Bureau of Industrial Conservation of the War Production Board several months ago placed lead in the group of materials available in sufficient quantity to be used as a substitute for more critical materials, the WPB, Army and Navy officials, as well as industry, have been searching diligently for uses of lead that would relieve more critical materials. Lead, incidentally, is the only common metal classified in the least critical group. Already considerable progress has been made and more will undoubtedly result as the country becomes more fully aware of the current availability of lead.

Ferrules for Plumbing Installations

Continuing research for means to accomplish durable sanitary plumbing installations with minimum use of critical materials,

(Continued to page 74)



Pull the cord to open the door! It's a good way to save time, effort, and money in moving war material. Barcol OVERdoor with Electric Door Operator.



Want to save Employee Time and Health...?

There are lots of spots for Barcol OVERdoors and Electric Door Operators

Already many of America's most productive war plants are effecting substantial savings by the use of Barcol products. Barcol OVERdoors, made for long life and low maintenance cost, are being used where traffic is constant and delays would be costly. Electric Door Operators speed up the opening and closing of doors, increase the efficiency of moving materials, and improve working conditions by reducing drafts. Look around—see where you can make similar savings! Then check with your Barcol representative on details . . .



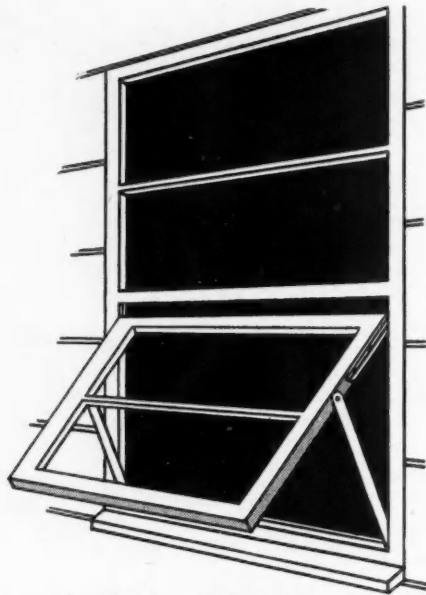
GET THIS BOOK

Includes data on Operators for swinging, sliding, steel rolling, and overhead doors, and swinging and sliding gates. Write for your copy today.

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NEW, LOW-COST "AWNING-TYPE" WINDOWS

FOR STANDARD 2 x 4 FRAME
OR THIN WALL CONSTRUCTION

Use these versatile low-cost windows for barracks, housing projects, factories, temporary schools, dormitories, etc.

They set right in the studding ... require no frames, sash weights or balances.

Pella Windows come completely assembled (except for the lock handle). No fitting is necessary on the job. Sash and frame are of white pine, toxic treated with Woodlife.

Standard sizes include 14 ventilating and fixed units. Units can be side-hinged for casement style. With few exceptions, all can be glazed with standard size lights ... no cutting. "In" or "out" opening. Low-cost frame screens are available.

TO YOUR SPECIFICATIONS
We will gladly re-adapt these Pella units if quantities warrant.

RUSH your request for Free Full Size Details to the Rolscreen Co., Department 313, Pella, Iowa

TABLE OF SIZES				
24" x 12"	24" x 12"	32" x 12"	32" x 12"	40" x 12"
2-11 1/2"	2-3 1/2"	2-11 1/2"	2-11 1/2"	3-7 1/2"
22140	32160	42180	52100	
23140	33160	33161	43180	53100
24140	34160	34161	44180	54100

Pella AWNING-TYPE WINDOWS

Made by makers of Pella Rolcreens
Venetian Blinds . Casement Units

Ferrules for Plumbing Installation

(Continued from page 73)

the Lead Industries Association has developed and tested hard lead calking ferrules.

Of non-critical material, these ferrules can be welded or wiped to lead pipe. They are amply strong and rigid to stand calking into castiron pipe with either lead wool or poured lead. To be made in 2, 3 and 4 inch sizes, they have been tested and found satisfactory at pressures exceeding those encountered in required standard plumbing tests.

Since lead is unrestricted for plumbing uses, these ferrules, together with hard lead closet flanges and drum trap covers which have previously been announced, combined with lead pipe and lead traps and bends, can be the means of conserving large amounts of more critical metals as well as expediting sound construction by avoiding priority delays caused by government restrictions on other types of plumbing equipment.



New Lever-Lock Hack Saw Frame

A CAM-ACTION lever-lock sets up and releases the blade in a new type of hack saw frame manufactured by Clemson Bros., Inc., Middletown, N.Y., makers of Star Hack Saw Blades.

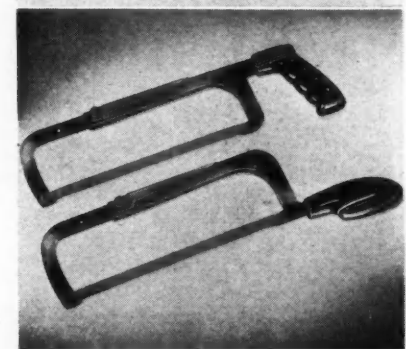
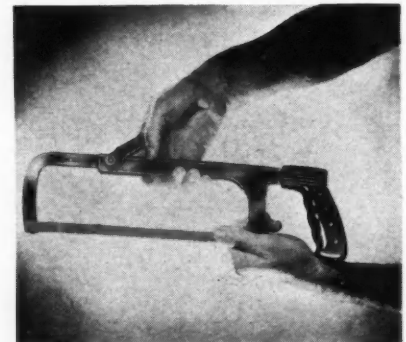
Loose blade studs and threaded tension devices have been completely eliminated with the result that blades can be replaced or repositioned in a fraction of the time required with frames of conventional design.

Straighter cuts and a reduced blade breakage result from the extremely high tension which this new Star frame puts on the blade. This high tension is possible because the frame is made of heat-treated spring steel, making it very rigid. A gun metal finish insures high resistance to rust.

Handle, either straight (Star No. 30) or pistol grip (Star No. 20) is of patented design, molded of rust-free, heat-resistant Tenite—a non-conductor of electricity.

The frame may be adjusted for 8", 10" or 12" blades by pulling out a single pivot pin to its open position, sliding frame forearm in or out to desired length, and snapping pin back into place. Blade may be re-positioned to face in any of four directions by placing it over either of two sets of fixed pins which are integral with frame.

The frame cannot jackknife or come apart accidentally with blade removed and there are no loose parts to fall off accidentally at any time.



ABOVE: Operator replacing blade. Below: Two styles, pistol grip or straight handle.

MAINTENANCE HELPS

Useful Information and Data

1—HOW TO USE AN ELECTRIC DRILL—The correct methods of using portable electric drills, and of obtaining the greatest efficiency and longest life from these important war production tools are presented in a new handbook just published, and entitled "The Portable Electric Drill, Its Proper Use and Care." The booklet covers such points as assembling the drill, the switch control, drill chucks and bits, how to use the drill, and several important points on user maintenance and care.—The Black & Decker Mfg. Co., Towson, Md.

2—HOW WAR HOUSING IS SPEEDED WITH PLYWOOD—This is one of the subjects covered, both in text and pictures, in a new booklet entitled, "Weldwood—the Modern Material of Infinite Application." The use of this type of plywood in marine construction, in the transportation field, and other applications is also described and illustrated.—United States Plywood Corp., 616 W. 46th St., New York City.

3—HOW TO CHOOSE A LEVEL—Six standards are listed as necessary features in choosing a level which will assure getting the highest quality instrument giving the maximum of satisfaction with the minimum of maintenance and repair costs. Several of these features are: It should be a "Wye" level; it should have the full length of the level vial in full view when in the level position; it should have a shifting center. These and the other three features, as well as additional information given on the subject of engineering and surveying instruments, are more fully explained in the Eighth Edition catalog just published by the Warren-Knight Co., 136 North 12th St., Philadelphia, Pa.

4—HOW TO PREPARE WALLS AND CEILINGS FOR WALLBOARD—This is illustrated and described in a new 28-page catalog. The illustrations were made during an actual attic remodeling job, at various stages of its progress, and one is taken through the job, step by step. How to increase living space within the home is shown in colorful photographs.—Fir-Tex Insulating Board Co., Portland, Me.

5—HOW TO MAKE CONCRETE DUSTPROOF—As concrete wears down, dust results, due to improper mix or other conditions. The principle of hardening concrete is to allow the penetration of a concrete preserver into the surface pores, thus giving a hard, wear resisting, dustless surface. How to make concrete acid resistant, as well as oilproof, are among the directions given in a 16-page folder entitled, "Facts and Uses of Evercrete" prepared by Evercrete, 19 W. 44th St., New York City.

SERVICE COUPON—CLIP and MAIL to CHICAGO

Readers Service Department, (January, 1943)
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WITH **MODEL "67" SKILSAWS**
...use several on every job and save steps!

Model "67" SKILSAW trims off sheathing around doors and windows faster . . . trims off floor and roof decking.



A sure, economical way to speed up War Construction is to use Model "67" SKILSAWS on every job. Spotted conveniently around each project, these SKILSAWS not only make countless cuts quicker but save extra time by saving steps—help fewer men get more work done.

Model "67" is LIGHT (only 11 lbs.) for easy one-hand operation on ladders and scaffolding . . . COMPACT for close-quarter sawing anywhere . . . POWERFUL for faster cutting on 1/4 in. lumber and compositions, for quickest light scoring in stone and tile. Keep them right at hand on every job. No other extra equipment offers so much building speed at so low a cost (only \$75.00) and you can get Model "67" SKILSAWS promptly for real time savings on your present war work. Ask for a demonstration.

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SKILSAW TOOLS



★ MAKE AMERICA'S HANDS ★
MORE PRODUCTIVE

Model "67" SKILSAW speeds up cutting of compositions and Celotex (center) . . . quickly saws openings for vents and staircases (left).



Maintenance Work

(Continued from page 57)

more thorough job of brush cleaning. Then the cleaned brushes are *suspended* in their holders, not stood up on the bristles.

Brushes that have worn down to stubs are still useful for rough work and, if so used, save the good brushes for the finer work.

The well kept and fine appearing office floors in these buildings under Metropolitan management are a noticeable feature; and a word on their finish and care might not be amiss. They are of maple and have a wax finish. These floors are never mopped with water, and so do not develop cracks and soft spots. They are maintained in their original rich color and texture by a monthly washing with a soap solution, and then are rewaxed.

The painting and decorating upkeep in these buildings requires a regular force of 12 men constantly employed. They are union workmen employed on a monthly basis. Also, on this maintenance staff in varying numbers are carpenters, plumbers, electricians, masons, plasterers and sheet metal workers. Supplies in quantities are secured from lumber dealers and other local supply houses.

* * *

Prefabrication Case Study No. 1

(Continued from page 47)

better insulation, less noise.

"Our labor force at the three Bremerton job sites totals 300 men, working in two shifts. We have the men organized in various crews—joist crews, form crews, floor crews, roof crews, etc.—who move from house to house, finishing each home in approximately 39 man-hours.

"One of our big time-savers in this prefabrication process is the use of room-size Speedwall Board for interiors of all outside walls and for all inside wall partitions. This board is wall-

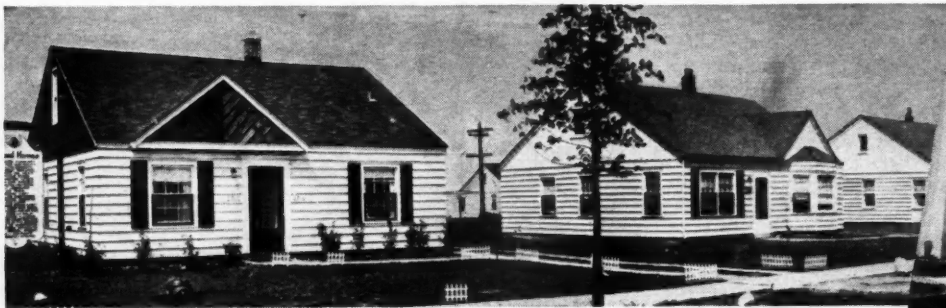
height and cut to exact lengths at the Speedwall factory, saving time of men who would have had to measure and cut the board at the plant. This process also saves the material which would ordinarily be cut out for doors, windows, etc.

"Room-size Speedwall Board is made by The Speedwall Company, Seattle, using Douglas fir plywood and Laucks synthetic resin glue to join together the 8' x 4' cross-grain panels. It is 8' wide and comes off the production line in a continuous roll like newsprint. Saws cut the board to our requirements; and each piece bears an identifying number. For these Bremerton projects, we ordered Speedwall Board in lengths as long as 20 feet and as short as 13½ inches.

"The interior wall partitions are made on the "stressed-cover" principle. That is, the plywood faces are glued, instead of nailed, to the studding (2 x 3's). This gives a much stronger wall, as the weight is distributed evenly and does not hang on the nailed members. We spread the glue on the studding with Laucks Glue Guns; one side of the partition is laid down, then the wall is turned over and the procedure repeated on the other side of the studding. Besides making walls of much stronger construction, the "glued-wall" process saves pounds of metal in nails for more vital defense work. Ceiling panels were made in the same manner, but with only one panel glued to joists and with insulation added.

"To vary the appearance of these homes, we are employing six different floor plans, with different exterior and interior decorations and trim. V-grooved horizontal lines in the ceilings give a modern squared appearance. Interior walls are finished with water-resistant wall-fabric (Sanitas) in figured designs; and the exteriors of the houses are painted various colors.

"We have gotten away from the orthodox construction method of installing floors after the house is up; instead we lay the floors first and erect the house afterwards. Floor panels are prefabricated in the plant; they are of Bruce prefinished hardwood, assembled face down and then cross strips are glued on. Waterproof insulation is applied between these cross strips. The face side is covered with tough Sisalkraft for protection; and this is left on as a walking surface while the house is being assembled and finished.



HALVORSEN'S
Linwood Homes
Chicago, Ill.



*"Tile-Text floors help sell
Defense Homes"*

Says F. H. HALVORSEN
Successful Chicago Real Estate Builder

This experienced builder of defense homes found Tile-Text the answer to the flooring problem in these attractive, low-priced homes. Tile-Text was installed there in attractive colors directly over the concrete slab in contact with the ground. All areas except the heating and storage room were floored with this economical, moisture-resistant, durable flooring.

Tile-Text contains no critical materials. It is available promptly, and is installed by thoroughly experienced, approved contractors located in all principal cities and towns throughout the country. *Specify* Tile-Text for the defense homes you are building; it meets *every* requirement. Write today for the name of your Tile-Text contractor.

THE Tile-Text Company CHICAGO HEIGHTS
ILLINOIS

"All the homes have a living-dining room, kitchen, bath, and have one, two or three bedrooms; the majority are two-bedroom units. Dimensions of the one-bedroom houses are 24' x 24'; two bedroom, 28' x 24'; and three-bedroom, 32' x 24'. All homes have a front and back door."

Fred Dally, general manager of Prefabricated Products Company, is no newcomer to the prefabrication field. He and his company gained world-wide fame as housing experts in 1936 when they prefabricated houses, hospitals and administration buildings for erection along the clipper route to China—on Midway, Wake and Guam. Houses in these projects, as in the Bremerton Units, were constructed of plywood.

* * *

Directory of Prefabricators—

(Continued from page 45)

houses per month; 1, 2 & 3-bedroom size and other structures.

GENERAL HOUSES, INC., 3031 Pine Grove Ave., Chicago, Ill., Howard T. Fisher, Pres., & Archt.; established 1932; capacity, 500 houses per month; 2 to 5-room size; also larger 2 and 3-story houses.

GENERAL HOUSING CO., 401 E. 56th St., Indianapolis, Ind., F. B. McKibbin, Owner; established 1940; houses (operations temporarily suspended).

GORDON VAN TINE COMPANY, Davenport, Ia., H. G. Roberts, Pres.; established 1865; capacity, 100 houses per month; 1, 2 & 3-bedroom size; ready-cut framing and prefab panel types.

THE GREEN LUMBER CO., Laurel, Miss., Charles Green, Pres.; established 1937; capacity, 700 houses per month; 1, 2 & 3-bedroom size; also row houses, barracks, etc.

GUNNISON HOUSING CORP., New Albany, Ind.; Foster Gunnison, Pres.; established 1934; capacity, 1000 houses per month; for war or peace use; timed-flow line production.

E. F. HAUSERMAN CO., 6800 Grant, Cleveland, Ohio, E. F. Hauserman, Pres.; established 1934, steel houses (material not now available).

HAYWARD LBR. & INVESTMENT CO., Prefab. Div., 4085 E. Sheila St., P. O. Box 7029, Los Angeles, Calif., John A. Gorman, Mgr.; established 1942; capacity 500-1,000 houses per month.

E. F. HODGSON CO., 1108 Commonwealth Ave., Boston, Mass., E. F. Hodgson, Pres.; established 1892; oldest prefabricator; camps, cottages, garages, houses, small buildings, etc.

HOLT-FAIRCHILD CO., 7 Court St., Arlington, Mass., W. Warren Rausch, Pres.; established 1908; capacity, 150 houses per month.; 1, 2 & 3-bedroom sizes.

HOMASOTE COMPANY, Trenton, N. J., Basil Outerbridge, Pres., F. Vaux Wilson, Jr., Vice Pres.; established 1942; capacity, 45 houses per month in own plant; also material for other prefabricators.

HOME BUILDING CORP., 4534 Main Street, Kansas City, Mo., E. F. Reyburn, Pres.; established 1912; capacity, 250 houses per month; stressed plywood modules to any plan.

HOUSTON READY-CUT HOUSE CO., 3601 Polk Avenue, Houston, Tex., J. C. Suttles, Pres.; established 1917; capacity, 180 houses per month; wide range of other structures, including war work.

HOUSTON SASH & DOOR CO. Now taken over by Southwest American Houses.

HUMPHREY-HORSLEY CO., INC., 10 Rockefeller Plaza, New York, N. Y., S. Clements Horsley, Pres.; established 1939; house-fabricating service system, and licensor.

HUSSMAN-LIGONIER CO., 2401 N. Leffingwell, St. Louis, Mo., established 1921; 2 plants; capacity, 350 houses per month; 1 to 3 bedroom houses.

ILLINOIS LUMBER MFG. CO., Cairo, Ill., F. K. Wheeler, Pres.; former Sears plant, sold in 1940; capacity, 100 houses per month.

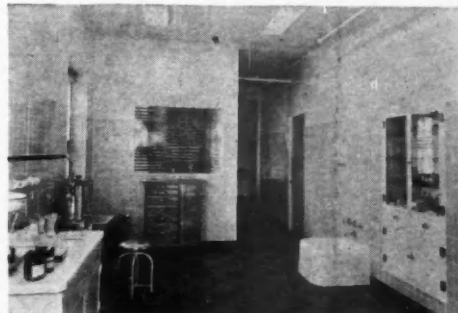
INDIANA DEMOUNTABLE HOUSING, INC. (Div. of the Wilkinson Co., Inc.) 907 E. Michigan St., Indianapolis, Ind., T. R. Black in charge of operations; houses and farm buildings.

JOHNSON HOUSING, INC., 235 Dock Street, Sharon, Pa., Tom Johnson, Pres.; established 1937; capacity, 300 houses per month; 1 to 3 bedroom houses, garages, & cabins.

KEM WEBER SYSTEM (Used by following): Wheeler-Osgood Sales Corp., Tacoma, Wash.; Norman Cruver, Gen.

(Continued to page 78)

wartime
for creating beautiful interiors
You, too, can count on



● Sparkling white, easily-cleaned, sanitary walls for operating rooms, factory first aid stations (left) and clinics are easily achieved with Marlite. . . . Marlite also measures up to the hard usage to which industrial wash-room (below) and shower walls are subjected 24 hours per day.



About Deliveries! Marlite is a non-critical material, the use of which actually conserves critical materials. There may be times before Victory when, due to unavoidable demands on material, there will be delivery delays. However, we expect to be able to continue to supply Marsh Wall products promptly on all priority orders.

WHERE is Marlite used? For war housing and similarly essential building . . . for hospitals and laboratories, cafeterias and corridors, washrooms and showers, recreational centers and executive offices in expanding industrial plants . . . for wall maintenance and repairs in homes and business places.

WHY use Marlite? *Fast*—large, wall-size panels easily cut and fit on the job even by novice carpenter using regular tools; factory prefinishing eliminates painting; delivery from 13 strategically-located warehouses. *Flexible*—over 100 colors and patterns; equally wide variety individual applications. *Durable*—long life proven by thousands of installations. *Easy Maintenance*—high heat bake finish, pioneered by Marlite, reduces maintenance time, cost and manpower; assures permanent beauty.

WHO uses Marlite? Specified for years by leading architects, contractors, builders and discriminating home and commercial users coast to coast.

See Sweet's, or write direct for complete Catalog

MARSH WALL PRODUCTS, INC.

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TOOLS

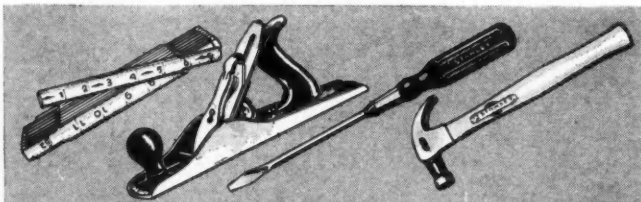
to build Airplanes



Photo—Courtesy Collier's

The swarms of airplanes needed to speed the doom of the Axis could never be built nor serviced without *hand tools*—hammers, screw drivers, planes, breast drills, chisels—the same types of hand tools you use on the job every day. Stanley Tools are being used in tremendous quantities by airplane plants, air bases and training fields, carriers, and by every flying field on the fighting fronts all over the world.

Because of this demand, tools for normal use are necessarily scarce. Buy them only for Essential use. Stanley Tools, Division of  The Stanley Works, New Britain, Conn.



STANLEY TOOLS

"The Tool Box of the World"

DIRECTORY OF PREFABRICATORS—

(Continued from page 77)

Mgr.; Buffelin Lumber & Mfg. Corp., Tacoma, Wash.; Phil Simpson, Gen. Mgr.; Harbor Plywood Corp., Hoquiam, Wash.; E. W. Daniels, Gen. Mgr. Combined plant capacity, 375 houses per month; also row houses, barracks, etc.

M. B. KOLB COMPANY, INC., 250 W. 57th Street, New York, N. Y., Milton B. Kolb, Pres.; established 1910; capacity, 350-400 houses per month; war housing.

LEWIS MANUFACTURING CO., 23rd & Michigan Aves., Bay City, Mich., T. P. Dixon, Pres.; capacity now taken by special work.

LIBBEY-OWENS-FORD GLASS CO., Toledo, Ohio, Richard C. Carr, Mgr.; 1, 2 & 3-bedroom houses, and row houses.

ROBERT McCARTHY CO., 1050 Kirkham St., San Francisco, Calif.; Robert McCarthy, Pres.; established 1917; capacity, 1000 4-room houses per month; war jobs.

MATTERN, GRAFF & PAUL, 10 Rockefeller Plaza, New York City, N. Y., established 1942; house fabricating service system working with fabricator and builder.

METROPOLITAN GREENHOUSE MFG. CORP., 1851 Flushing Ave., Brooklyn, N. Y., Harry Jacobs, Pres.; established 1871; now inactive.

MINTER HOMES CORP., Huntington, W. Va., Bernard Mason, Pres.; established 1918; capacity, 100 houses per month; also schools.

MOORE & MOORE LUMBER CO., 100 East Florida Ave., Youngstown, Ohio, John A. Moore, Owner; established 1932; capacity, 50 houses per month.

NATIONAL HOMES CORP., Lafayette, Ind., D. W. Lowman, Pres.; established 1940; capacity, 750 houses per month; war housing.

NIAGRA REALTY CORP., 105 Court Street, Brooklyn, N. Y., Samuel L. Malkind, Pres.; established 1941; capacity, 150 houses per month; 4-room size.

NORWOOD SASH & DOOR MFG. CO. (Div. of Sears Roebuck & Co.), Norwood (Cincinnati), Ohio, F. W. Holler, Pres.; established 1912; capacity now restricted to 900 temporary dwelling units per month.

PAGE & HILL CO., 1017 Plymouth Bldg., Minneapolis, Minn., Hart Anderson; houses (operations temporarily suspended); grain storage bins.

PALACE TRAVEL COACH CORP., Flint, Mich., D. D. Arehart, Pres.; production now limited to war housing work.

PEASE WOODWORK CO., Inc., Blue Rock & Turrill Sts., Cincinnati, Ohio, James L. Pease, Pres.; established 1934; capacity, 300 houses per month; 1½ and 2-story.

PLYWOOD STRUCTURES, 6307 Wilshire Blvd., Los Angeles, Calif., C. A. Balch & Roy G. Lockhart, partners; established 1940; capacity, 500 houses per month; 1, 2 & 3-bedroom size.

PORETE MFG. COMPANY, North Arlington, N. J., E. Walter, Prop.

THE PREBILT COMPANY, Revere, Mass., John A. Stewart, Gen. Mgr.; houses, cottages, commercial and other buildings.

PREFABRICATED PRODUCTS CO., 4014 Iowa St., Seattle, Wash., C. F. Dally, Gen. Mgr.; established 1935; capacity 400 houses per month, 1, 2 & 3-bedroom size. (See story on p. 46.)

ST. JOHNS PORTABLE BUILDING CO., St. Johns, Mich., Geo. H. Chapman, Prop.; established 1907; present capacity devoted to grain bins for government; barracks, houses, schools, churches, etc.

SOUTHERN MILL & MFG. CO., 525 S. Troost Ave., Tulsa, Oklahoma, Walter H. Ahrens, Pres.; established 1919; capacity, 500 to 600 houses a month.

SOUTHWEST AMERICAN HOUSES, 2005 Canal St., Houston, Tex.

THE SPEEDWALL CO. (Div. of I. F. Laucks, Inc.), 5035 First Avenue, South Seattle, Wash., C. A. McVey, Mgr.; established 1936; has built some war structures, but principal product is wall and ceiling units for other prefabricators.

STANDARD HOUSES, INC., 5th St. Viaduct & Valley Rd., Richmond, Virginia, Stacey K. Beebe, Pres.; established 1936; capacity, 300 houses per month.

STEWART & BENNETT, 810 W. 23rd St., National City,

Calif., W. H. Stewart & M. P. Bennett, partners; established 1940; capacity, 1000 houses per month; 1 to 3 room units, pressure glued.

STRUCTURES, INC., 646 N. Michigan Ave., Chicago, Ill., J. Edwin Quinn, Pres.; established 1935; houses (present capacity unlisted).

TAKAPART PRODUCTS CO., 28 Brooklyn Ave., Freeport, N. Y., Louis L. Levene, Technical Director; established 1932; capacity, 30 houses per month, 3, 4 & 5 room.

TENNESSEE VALLEY AUTHORITY, Knoxville, Tenn., David E. Lilienthal, Chairman; construction system for demountable houses available to private contractors.

TRAVELODGE CORP., Lynchburg, Va., Alsen D. Thomas, Pres.; established 1939; capacity, 840 houses per month; 4-room; now devoted to army barracks, mess halls, recreation buildings, temporary buildings, etc.

WELL BUILT MFG. CO., State Highway No. 29, Somerville, N. J., Edward A. Chandler, Owner; established 1937; capacity, 30 houses per month; also garages and cabins.

PREFABRICATION UP-TO-DATE

(Continued from page 45)

which starts at 30 per cent of the houses under \$3,000, and decreases as the price range moves upward.

Within the price bracket that is now considered the mass market—\$4,000 to \$6,000—what has been termed the merchant-built house will unquestionably benefit from the methods of prefabrication. In and around many of the larger metropolitan areas, larger builders and developers might well set up their own shops to fabricate increasingly larger portions of the house structure. In this bracket as well as in the custom-built bracket above it, many manufacturers have learned to assemble their products in larger units. For instance, flooring, instead of coming by the strip, comes by the panel. Similar developments not yet announced are being planned. So all in all, in the immediate post-war period, many of the lessons of fabrication will be applied throughout the building industry but there is no indication that complete prefabrication will replace the conventional methods as refined through war building. The normal channels will unquestionably remain. If prefabricators can be of service to the ultimate consumer, they will have an opportunity to do so. However, many of the homes now being built under the stress of war and labeled prefabricated are going to be a decided liability because of their general shoddiness and unattractiveness which will increase during the war and stand long after the war builders who erected them have gone out of business.

HOME BUILDING FUTURE

(Continued from page 34)

The number of people in the age group 25 to 44—the best home prospects because it includes those who have had time not only to marry but to save—is still growing faster than at any time in our history and will continue to do so until around 1950 when the increase in this age group will also begin to slow down. But it will not actually decline in numbers till about 1955, or fully 12 years hence. In actual figures, the total population of the country including all age groups will increase only 6.5% from 1940 to 1950, but the best home prospects, aged 25 to 44, will increase 12.0%. This is a demand factor of tremendous significance for the home building industry in the post-war period that lies ahead.

The reason for the above apparent paradox can best be explained by an illustration: Our birthrate just before the war, in 1939, was 17.3 per 1000. In 1895 however—the year in which persons who reached the age 44 in 1939 were born—the birth rate was almost 30.0 per 1000, or almost 80% higher than in 1939. Hence an extraordinarily large number of people in 1939 reached the age of 44, an age still within the category of best prospective home owners.

The same applies to the whole age group of 25 to 44. People who will reach these ages in, say, 1950 will have been born between the years 1906 and 1925 when the number of births per 1000 of population averaged at least 50% higher than they

(Continued to page 80)



Photo by Fred Dapprich

Prompt Efficient Service—as soon as Victory Permits—

Before our productive facilities were needed to turn out military equipment, it was our policy to serve the building industry promptly and, we believe, efficiently.

After Victory, that policy will again be in force—with these additional advantages:

New skills, enlarged and improved manufacturing facilities and broadened engineering experience will produce even finer Bennett products, at greater values, than ever before.

BENNETT FIREPLACE CO.
NORWICH, N. Y.

BENNETT
Guaranteed

FIREPLACE UNITS
FLEXSCREENS
CONSTRUCTION SUPPLIES





Aged in the Wood

• For a quarter century and longer, the building trades have accorded Arkansas Soft Pine priority when buying their requirements in lumber of premium quality.

The extraordinary value in Arkansas Soft Pine that has justified this preference must be attributed to one vital factor which precedes its producers' ability to turn out a well manufactured product. That factor is Nature. She grows into Arkansas Soft Pine timber two individual characteristics:

- No. 1 . . . Extremely low resin content.
- No. 2 . . . Balanced soft texture.

No. 1 perfects No. 2. After kiln-drying, practically no resin exists in Arkansas Soft Pine uppers. That's why *Satin-like Interior Trim*, finish and mouldings of this pedigreed wood take paint, enamel or stain without discoloration, bleeding or raised grain. That's why Arkansas Soft Pine framing lumber is light in weight, of bright color and cuts easily without gumming edge tools. These are the reasons why Arkansas Soft Pine is given priority whenever premium quality is the first consideration.

The manufacturers of Arkansas Soft Pine commend the long-standing good judgment of builders in profiting from this inherent, superior soft texture. They desire to reassure them that, with the passing of the present emergency, normal movement of Arkansas Soft Pine will be resumed through regular trade channels. Pending that happier day, intelligent forest management is safeguarding a sustained timber growth, insuring a continuing supply of this famous soft textured wood.

Write for Handbook,
Specifications and Samples

ARKANSAS SOFT PINE BUREAU
143 BOYLE BLDG., LITTLE ROCK, ARK.

HOME BUILDING FUTURE

(Continued from page 79)

are likely to be in 1950. That is, there was a huge baby crop in the years 1906 to 1925, and time is ripening the crop and making it ready for harvest by the home building industry in the decade or so after the war.

All Time Peak Ahead

Because of the war, there will be reductions, but they cannot be great enough to alter the main picture. Each year, in fact, between now and 1955, a new record-breaking contingent of people will reach the ages 25 to 44, working up to a crescendo until 1955 when the housing "wave of the future" will ride on the very top of the greatest flood of demand in the history of home-building, and the industry can therefore expect to slice the greatest melon in its history—always provided, however, that general prosperity exists to convert theoretical into actual commercial demand.

The present almost complete suspension of normal home building comes just at a time when the *demand factor*, as represented by the number of people normally seeking homes, is beginning to reach out toward the all-time peak.

But the increase in the number of people for the nation as a whole is not the only basis required for estimating the demand factor in housing. Home building in important volume takes place where people move TO, not where they move FROM, or where they stay put. Hence internal migrations are an immensely important factor in estimating housing demand. We can have plenty of vacant homes in certain areas, which will remain empty while a great building boom develops in some other section because that is where people are moving to. The great eras of building in this country have always been the result of vast movements of population—from Europe to America, from farms and small towns to the growing factory and commercial cities, from the East to the West, and from the cold North to the pleasant South, and from the center of cities to the periphery and suburbs as transportation improvements made it possible for people to live at ever increasing distances from their places of work.

Population Shift Important

These vast migrations have given us our building booms in the past. What can we expect from them in the future, after the War? Movements to Florida, California, and the climatically more agreeable sections of the country will continue and grow with the national income. Migration from the city centers to the periphery and beyond will resume with the revival of automobile production and will broaden as new superhighways are driven through the congestion of our roads and traffic bottlenecks overcome. The immense importance of this movement is indicated by an accompanying chart. In 1941, almost 40% of all homes were in "rural non-farm areas" rather than within city or town limits. The number of such homes built in 1941 has been estimated by the U.S. Division of Construction at 275,000—more than the total number of dwellings erected in city and non-city combined in any year between 1930 and 1936.

Who are these people who move in such numbers to the "rural non-farm areas"? They are, by and large, home dwellers who move out of the cities beyond their limits and into villages, very small towns, and open suburban country, but within easy transportation distance of their places of work in the larger cities. This migration is a by-product of the automobile revolution which has far from run its course and is very likely to enter a secondary stage after the war as access from places of work to and beyond the periphery of cities is made easier by the ending of traffic congestion.

Here, also, is where the airplane age may soon take up where the automobile age leaves off. The airplane, especially if helicopters become practicable, will greatly increase the range of commuting between the place of work and the homes. This may be an important post-war development, but for mass-commutation we will still have to rely on the earlier forms of transportation.

Editor's Note: The conclusion of Mr. Bober's projection into the future will appear next month.

Forecast: Bumper Crop of Farm Buildings

(Continued from page 51)

maintenance must be made up, that substandard homes and buildings must be modernized, remodeled, or replaced. The program which they contemplate involves billions of dollars. It is big enough and far-reaching enough to really affect the post-war period. *As they said a year ago, now is the time for us to develop the plans and get everything in readiness so that action will not be delayed too long when labor and materials are both seeking a market.* It has often been said that no one factor so influences employment as does building. This is undoubtedly a correct statement, and in agriculture it is the agricultural engineers who can do most about getting building programs planned and under way. Projects in drainage and soil conservation, new developments in farm machinery and rural electrification should not be overlooked. I hope that those of you who are in educational institutions and those of you who are connected with business institutions, both manufacturing and sales, will take your coats off and see that such programs are planned and made ready for immediate action. This is the kind of thing we must all do. Those of us who remain at home must be big enough to give all-out help to the direct war effort and also to plan solutions to the postwar problems.

Poultry Raisers Need Millions of Buildings for Increased Production

As a specific example of the sales opportunities in the farm field, let us take just one phase of farming—raising poultry. The poultry industry, as most people know, is itself a billion dollar industry. Poultry is raised on 5,500,000 of the farms of this country. According to an analysis prepared in 1938 by a poultry specialist, there are in the United States, 1,500,000 10' x 20' laying houses, 900,000 15' x 20' laying houses, 850,000 20' x 30' laying houses, 300,000 20' x 60' laying houses, and 75,000 larger ones. Then there are 900,000 large brooder houses, 300,000 smaller brooding houses, and nearly 250,000 range shelters.

Now let us take just one part of these poultry buildings, the roof. Let us suppose that on a great many farms the poultry is left to take care of itself, to roost in the trees or on the automobile top, so that on only a million farms is poultry properly housed. All right, building a poultry house of the average size will require about five squares of roofing. Many of the houses will require 50 squares; some of these big three, four and even seven story houses that are being built now, as large as factories, will require several hundred squares. But let us figure just five squares per poultry house. A million houses will then require 5,000,000 squares of roofing—and will any supplier of building materials sneeze at the \$25,000,000 market to be found just in the roofing on poultry houses?

Anybody that wants to can develop astronomical figures for the farm market for building materials, but no matter from what angle he makes the estimate, he will have to come back to the basic fact that the farm market is a whale of a big market! The poultry industry offers only a minor opportunity for selling building materials. The millions of dairy cows must be housed in more or less elaborate barns or milking sheds. Swine husbandry can be practiced only when adequate shelters are provided. Storage is necessary for all kinds of crops: corn, cotton, wheat, potatoes, apples. Modern machinery is so complicated and expensive that no smart farmer will leave it out-of-doors to deteriorate. Tractors, trucks and automobiles must be garaged. All these things mean buildings, buildings and more buildings!

Prepare for Farm Building Avalanche After the War

In order to get down to a practical basis for considering the building opportunities in the farm field, let us look at the prospect from two different standpoints, that are pertinent at the present time: First, the job we have been talking about, the big job of general replacement of the farmer's factory; second, that part of the job that has to be done right now.

Because of the war's restrictions, we shall have to put off until after the war the main job of providing new buildings for all

(Continued to page 82)



GRAND RAPIDS HARDWARE COMPANY REPORTS FOR DUTY!

The manufacturing facilities of the Grand Rapids Hardware Company are now largely devoted to the production of vital war material.

The precision work which characterized Grand Rapids peace time products now enters, under strict specifications, the metal products which are being shipped overseas in ever increasing volume.

In the meantime Grand Rapids Invisible Sash Balances—thousands of sets—are being used in defense housing projects and may still be sold on priority in critical areas. They are not, however, obtainable for general civilian use.

Be sure to furnish necessary priority with your order to facilitate prompt shipment.

And on the Home Front

Grand Rapids Invisible Sash Balance has earned high endorsement for its smooth, dependable performance under varying climatic conditions. It is quickly and easily installed, saves time and cost. Nevertheless, research and experimentation are continuing and progress is being made to the point that long before the Invisible Sash Balance is again available to the public generally it will be a greatly improved product in every respect.

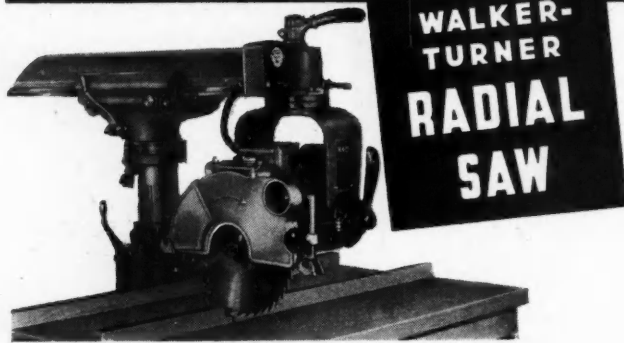
Send for catalog and we will gladly give you full information concerning this product together with complete delivery information.



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GRAND RAPIDS MICHIGAN

CUT DAYS TO HOURS

with this versatile . . .



Step up and Speed up your War Work!

Days of hand labor that would be required to cross-cut, rip, dado, shape, rout and tenon wood—or to cut metals, tile, terra cotta, transite, plastics, etc.—can be reduced to hours on the Walker-Turner Radial Saw. This one machine does them all—with amazing speed, accuracy and savings. If you're on war construction or war sub-contract work, think what this machine can do to increase your production!

The unequalled versatility of the Walker-Turner Radial Saw is made possible by its patented, geared, shockproof motor. This gets the shaft closer to work, thus smaller blades with greater rim force and faster speeds can be used. A few months' savings can repay its low cost of \$354.50. Prompt shipment for war work. Get literature. Walker-Turner Co., Inc., 1013 Berckman St., Plainfield, N. J.



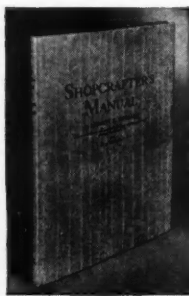
Just Off the Press

SHOPCRAFTER'S MANUAL

By Nelson L. Burbank

Author of *House Construction Details*

and E. M. Mitchell



This new book contains the projects that have appeared in the *Shopcrafter's Corner of American Builder* and *Building Age* within recent years. It also contains projects from *Popular Homecraft* and selected power wood-working booklets. There are some 150 projects ranging from bird houses to garden and indoor furniture of latest design.

All furniture projects have clean lines and balanced proportions and will take the modern light finishes. The variety is large enough to provide a choice for every room in the

house. Commercial woods and veneers obtainable in war-time can be used. Large working drawings show construction details, photographs picture the finished articles and bills of materials are accompanied by step-by-step instructions.

142 pages, 150 projects, 8½ x 11, cloth, \$2.00

Book Department

AMERICAN BUILDER AND BUILDING AGE

30 Church Street

New York, N. Y.

(Continued from page 81)

of the farmers of the U. S. There just simply isn't enough material, nor enough manpower available to take care of this huge undertaking. But even so, it will pay us to look into the future, to estimate the demand that will inevitably come upon the building industry one of these days, and make some sort of a tentative plan to prepare to meet the situation.

Farm income is breaking all records. If materials were available now, farmers would undoubtedly be spending enormous sums for buildings. But since they can't get the materials for building and since the government is gradually making it impossible for them to buy anything but the most pressing necessities, they must perforce save and invest their money.

When the war is over, what a flood of expenditures will pour forth from the farm field! For chief among the farmer's needs, when he again will have the opportunity to satisfy them, will be that for new buildings. Previous to the war, the accumulated depreciation in farm buildings had run into many billions of dollars. Whatever period the war may last, this accumulation will increase.

It seems reasonable to believe that the demands from the farm field alone will swamp the building industry, and since agriculture is one of our most fundamental industries, and many other industries depend upon it, it will be just smart business for the building industry and agriculture to get together and work out ways and means whereby the building demands of agriculture may be satisfied. Authorities who view the situation intelligently, recognize the fact that farm building construction will offer one of the most extensive fields for the absorption of material, capital and labor in the period of readjustment which will follow the war.

If we devote ourselves only to a survey of the second part of the building problem with which we are faced, we will find that it alone is about as big a problem as we want to handle right now.

It is a proper and a patriotic job to put the farm buildings of the country, badly depreciated as they are, into a state of repair that will enable them to go through the war in such a condition that they will safely and adequately shelter the crops, livestock and machinery which are so essential to winning the war.

Program Suggested for Essential Repairs

Let us propose, then, that right now we give serious consideration to a general program of *essential* repair of farm buildings. Let us organize a national program of repair which will insure safe housing for the pigs and chickens which are to supply the extra pork and eggs which are so urgently needed; that will give adequate shelter to the millions of extra tons of foodstuffs that are being raised, to feed our own country and the world; and that will keep the machinery used in this tremendous program of production in good operating condition for the longest period possible.

Here is a typical example of what we are talking about. The farm in question had been abandoned by the tenant, who had taken a very lucrative war plant job. The owner of the farm was not a farmer, and never had been; but he had to do something about the situation. The buildings were in a bad state of repair. The silo which had not been filled for a couple of years, was twisted and leaning. The cowbarn, consisting of a lean-to, built at the side of the barn, had no floor, the sills and baseboards were rotted out and the shingle roof was about gone. The corn crib was racked and leaning; putting another crop of corn into it would have meant its complete collapse. The paper roof of a small granary was completely blown off. The machine shed was braced against falling by two posts and its roof too was blown off.

Now here's what we did with these buildings. First, we straightened the silo and tightened the hoops. We bought enough cement to make a concrete floor for the cowbarn, replaced the sills and obtained enough new shingles to put on a new roof. The corn crib was straightened up and braced with some old two-by-fours found on the place. The machine shed was likewise straightened up and braced against collapse. Sufficient composition roofing was purchased to roof the three smaller buildings.

With an expenditure not exceeding \$300.00 the buildings on this farm were put into good enough shape so they would probably last without further necessary repair for several years, or

as long as the war likely would last. This is the kind of ESSENTIAL repair work that can be done on the vast majority of farms today. There are all kinds of temporary repairs that can be made that will put the buildings into such shape that they will safely and adequately give shelter to crops, livestock and machinery.

Suppose that only \$100 per farm were thus spent in making essential repairs. If the buildings on all American farms were thus put into shape, it would mean an expenditure of \$600,000,000.

Isn't that something to think about? Isn't that a market worth going after?

Indeed, this \$600,000,000 market is immediately and readily available if the building industry will only go after it.

What kind of a program should be set up to win this market?

The answer is found in a similar program which the farm machinery industry, fully alive to its opportunities, organized and put into execution during the past year, just as soon as it became apparent that steel for the production of farm machines and repair parts was going to be severely restricted.

Repair Program

The agencies to be enrolled in the prosecution of such a campaign can be listed as follows:

- (1) Federal agricultural agencies.
- (2) State farm organizations.
- (3) State educational and extension agencies.
- (4) The producers of building materials.
- (5) The processors or fabricators of building materials and equipment.
- (6) State or local organizations of building material groups.
- (7) Building industry magazines and farm periodicals.
- (8) Dealers.

Dealers constitute the final link of the promotion program chain; every effort should be made to lead them to make first-hand contact with the farmers themselves, because the dealers will gain the first and largest benefit from the program.

The farm machinery industry followed an outline of this nature and anyone who is familiar with the operation of the farm machinery repair program during the past year cannot help but marvel at the results that were accomplished. Indeed, the farm machinery industry is to be highly commended for recognizing the problem, seizing the opportunity and pushing the program to a most successful conclusion.

The building industry has the same opportunity as did the farm machinery industry. The need for essential repairs in farm buildings is just as vital as the need for essential repairs on farm machinery.

Of what use is it to try to increase pork production when statistics show that in the case of poorly housed farrowing sows, one pig in three is lost through exposure? Of what use is it to try to raise an extra billion pounds of poultry or produce an extra billion dozen of eggs, when it is a known fact that exposure in improper buildings cuts poultry production by 50%? Of what use is it to fill store houses with wheat when a leaking roof may result in the destruction of half of the grain stored within?

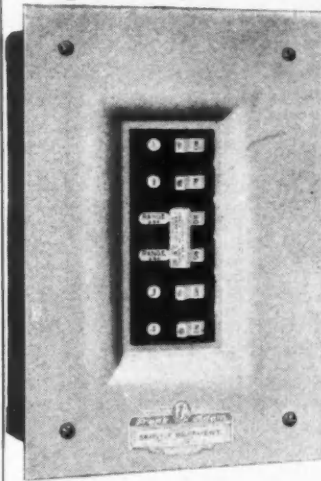
Yes, indeed, there is a market in the farm field—RIGHT NOW! There is a big enough market to keep practically every building material dealer in the country going on a profit basis if he will only take advantage of it.

IT IS UP TO THE BUILDING INDUSTRY TO TAKE THE LEAD!

The Seven Houses of Man

1. The family home where he was brought up.
2. The two rooms where he and his bride started their wedded life.
3. The small house they rented about the time the first baby was born.
4. The home they built when the family became too large for the one they had rented.
5. The mansion they erected when social ambitions of the daughters demanded a "decent" home on the right side of town.
6. The furnished apartment where the old folks moved thankfully, after the girls had married and the boys gone their way.
7. The rural cottage, with a few acres of ground, where they moved after father retired from business.

Modern Protection Assured



FA TYPE AC CIRCUIT BREAKER
SERVICE EQUIPMENT AND LOAD CENTERS

are especially suitable for war housing. With the thin wall wire, which permits additional circuits in the same size conduit, they are particularly desirable, because they afford more circuits in the space occupied by old type equipment. Besides, they afford modern protection. Reasonably priced, the maintenance cost is negligible.

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Service Equipment with D.P. 35 Amp. AC Circuit Breaker for range circuit. Also 4 S.P. AC Circuit Breakers for light and appliance Branch Circuits. Cat. No. SE41-3L7F List Price . . \$11.00

who carries Service Equipment and Load Centers in stock, ready for quick delivery. Write us, for his name and address and for Bulletin 63.



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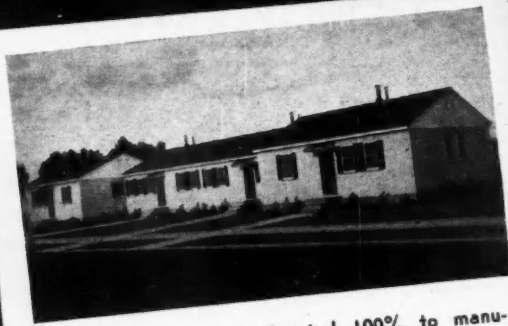


Project	Location	Kitchens
Red Hook Housing Project	New York, N. Y.	2581
Woodhill Homes Project	Cleveland, Ohio	460
Vineyard Hill Project	Wheeling, W. Va.	568
Prospect Hill Housing Project	Pawtucket, R. I.	302
Ordnance Plant Houses	Charleston, Ind.	310
Newfoundland Bases	Newfoundland	36
Home Building Corp.	Kansas City, Mo.	80
Colonial Hills & Dales Housing	Columbus, Ohio	800
Army Staff Residences	Crab Orchard, Ill.	200
Lone Star Ordnance Plant Houses	Leary, Texas	15
Parklabea Housing	Los Angeles, Cal.	60
St. Charles Apartments	Silver Springs, Md.	2649
Cartridge Loading Plant Houses	Alton, Ill.	77
Wills Homes, Inc.	Dayton, Ohio	50
Seminary Heights Project	Arlington, Va.	10
First National Development Co.	Chicago, Ill.	3550
Parkmarced Housing	San Francisco, Cal.	30
Gulf Port Mortgage Co.	Galena Park, Texas	39



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Slab Floors for Basementless House

(Continued from page 70)

or federal codes so require, rigid insulation board can be used to give floors added insulation.

Two methods for insulating concrete floors are illustrated in Figs. 3 and 4. One method employs two slabs with the insulation board between and the other uses a single slab with the insulation board between the slab and

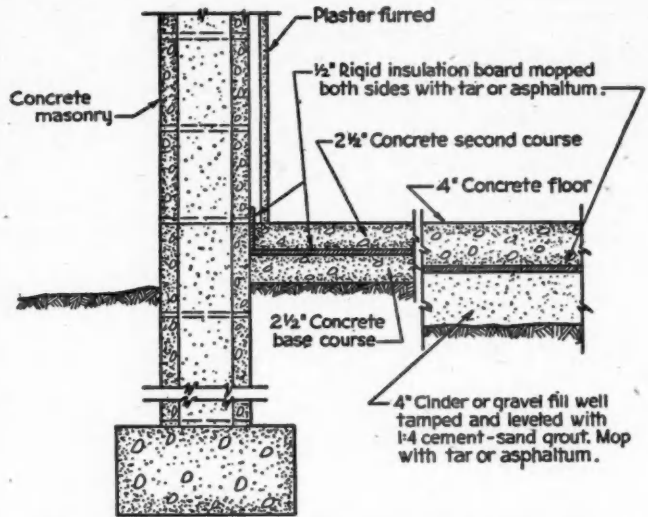


Fig. 3. Insulated and waterproofed concrete floor showing alternate methods of construction.

fill. The latter method will probably be the more economical of the two methods to build.

Level off and thoroughly tamp the earth fill inside the foundation wall to a depth of 5 1/2 in. below the desired floor level for the double slab or 8 1/2 in. if the single slab is used. All organic matter such as roots, etc., should be removed. Fills should be placed in layers not exceeding 6 in. deep and should be thoroughly consolidated by tamping or rolling. Holes and irregularities in the subgrade and trenches for piping should be filled in layers and thoroughly tamped before the main fill is placed. Best compaction will be secured if the ground is not too dry or too wet. Proper moisture content can be determined for most soils by squeezing some in the hand. With proper moisture content the soil will cling together but will not be plastic or muddy. If the fill is too wet it should be allowed to dry before rolling; if too dry it should be sprinkled. After the fill has been compacted, it should be carefully checked for elevation and profile.

Insulated Double Slab Construction

If the subgrade is dry it should be sprinkled the day before concrete is placed and dry spots resprinkled just prior to placing concrete.

Concrete for both base and finish courses should be of the same mixture as discussed above.

Place the concrete on the subgrade and strike it off to the proper grade to receive the insulation board. Use screed boards placed at about 10- to 12-ft. centers for this purpose. The concrete should be wood-floated to a smooth, level surface, care being taken not to work the surface excessively, or while free water is standing thereon. Do not trowel this course as a wood-floated texture is best for adhesion of the following mop coat.

When the concrete has hardened and its surface is dry, mop with hot tar or asphaltum. As this mopping proceeds and before the hot tar or asphaltum has time to cool and harden, place the insulation boards, pressing them down into the mastic. Then mop on a thick coating

of hot tar or asphaltum making sure the entire insulation is covered and joints are well filled. One-half-inch thick insulation board should be sufficient for most climates but a thicker board can be applied if desired.

Before constructing the second course, place a strip of insulation board 4 in. wide and of the same thickness as used in the floor against the foundation wall, as shown in Figs. 3 and 4. Mop this strip on both sides with hot tar or asphaltum.

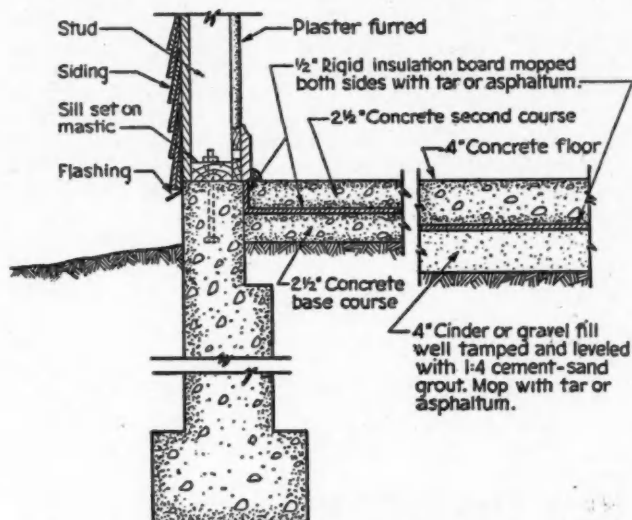


Fig. 4. Insulated and waterproofed concrete floor for frame buildings showing alternate methods of construction.

Place the second course of concrete over the mopped-on insulation, using the same mixture as for the base course. This course should be finished and cured as discussed above for waterproofed concrete floors.

Insulated Single Slab Construction

In building the insulated single slab floor the subgrade should first be brought to an elevation 8 1/2 in. below the finished floor grade and prepared as discussed for insulated double slab construction above. The next step is to place 4 in. of coarse cinders, gravel or crushed stone fill as shown in Figs. 3 and 4. The fill should be tamped or rolled to a straight, level profile to an elevation 4 1/2 in. below finish floor grade. A thin slush coat of portland cement grout, consisting of 1 volume of portland cement and 4 volumes of sand (1:4 mix) and sufficient water to produce a medium thin grout, should then be spread over the compacted fill and leveled to provide a firm base for the insulation board. After the grout has hardened and dried, the insulation board should be mopped on as described above for the insulated double slab.

A 4-in. thick concrete slab is then placed and finished as described above for waterproofed concrete floors. Adequate curing should be provided.

* * *

Noted Architect Dies

ALBERT KAHN, one of the world's most noted industrial architects, and builder of most of the automotive industries factories, died in Detroit on Dec. 8, 1942.

As head of the architectural firm of Albert Kahn, Inc., he had built many widely known office buildings and libraries throughout the world. He had been chosen to design the Naval bases at Midway Island, Honolulu, Alaska, Puerto Rico, Jacksonville, and other points.

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Commercial Building—

(Continued from page 52)

that have been forced out of business by the war will be going back in to serve a greatly expanded market. People will be cashing in their war bonds savings, retail shops will be busy and will be willing to spend a considerable part of their profit in modernization and improvement—especially since, if they don't, the profits will be largely taxed away.

As to store fronts themselves, some interesting developments are taking place. Fluorescent and tube lighting will change a lot of ideas. Glass, plastic, aluminum and improved metals will affect design.

One of America's foremost store front designers told *American Builder* that the trend in store front design is towards "breaking up" of store front surfaces, of projecting displays, of use of solid masses in good proportions. Bulkheads will be low or not used at all. Where they are, the tendency is to let them project somewhat. Open vestibules and glass doors, as well as low bulkheads, are definitely in the trend because people like to see into the store, and the activity is one of the best forms of sales appeal.

Manufacturers of materials that go into store fronts have been busy in war production, but they have a host of new ideas up their sleeves. It will take time for many of these to be developed so that in the immediate post-war period, the industry will take up about where it left off. The best pre-war will serve as the pattern for the post-war building market.

* * *

What Kind of a Post-War House?

(Continued from page 37)

their market by lowering building costs.

While it is possible that a few great national house building firms may emerge after the war, it seems more likely that building will remain as it has in the past, largely regional or local. Distribution is the Achilles' heel on which many ambitious prefabrication or mass housing schemes on a national basis floundered.

No matter who produces building materials or prefabricated parts for houses there must be some local builder or erector who can handle local relations with public officials, buy land, install streets, utilities and foundations, and sell the finished product. It would seem logical, therefore, that the efficient and wide-awake builder of pre-war days will become the successful builder of tomorrow. I believe that the small or inefficient builder will have tough going.

Perhaps the most interesting improvements in post-war homes will take place in interior appointments and equipment. Here there are ample precedents for rapid progress. The clean, modern lines of some of the best pre-war kitchens and bathrooms point the way to still further development. Kitchen, bathroom and heating equipment will tend to be still more standardized in efficient "package" units that can be installed with a minimum of labor on the job.

I do not expect the industry to be able to provide \$5,000 worth of ranges, refrigerators or heating and air conditioning equipment in a \$5,000 house. The cost of such items will perhaps be considerably lower due to technological improvements in manufacture, but such items have always been "mass produced." Refrigerators and ranges, for example, have been produced by the hundreds of thousands. And that is one reason why it is difficult to get manufacturers to develop any specialized type for new houses. Any variation from the mass produced model immediately raises the cost.

I firmly believe that all of us in this industry are facing an exciting and stimulating period of change, progress and development ahead. Those of us that can best fit technological improvements into a pattern of design that will meet with public approval will make the greatest success. For after all, technological development has not been a problem in any of the ambitious housing schemes of the past that have failed. Before any of us can succeed in post-war housing we must be pretty sure we know the answer to:

- What will the public buy?
- What can it pay for?
- What can we sell at a profit?

NHA Home Conversion Program—

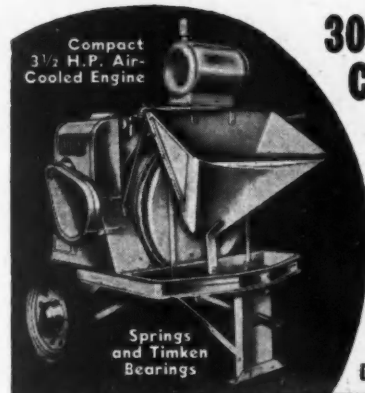
(Continued from page 69)

priority ratings for all dwelling units produced under this conversion program. WPB says AA-4's are sufficient to obtain materials needed for conversions.

The principal idea behind the Conversion program is to provide adequate housing for war workers, saving as much time, critical materials, labor, transportation and money as possible. In the case of conversion by lease, cost experience indicates that the plan will permit expenditures for conversion (alteration, improvements and such back debts and taxes as are assumed and paid by NHA) not to exceed \$400 a room. This would come to a maximum of about \$2400 per unit of six rooms—the maximum allowable number for a one-family unit. These top limits, even with the net rent paid to the owner by NHA added, are well below the cost limits of the Lanham Act.

For further information on the Conversion and War Guest programs, write to Mr. Angus A. Acree, Chief of Information, Homes Use Service, National Housing Agency, 715 Longfellow Building, Connecticut and Rhode Island Avenues, Washington, D. C. Below are listed the cities which have been approved for Homes Use Programs in ten national regions, and the man in charge of each region:

- | | |
|---|---|
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Bridgeport, Conn.
Hartford, Conn.
New Britain, Conn.
Portland, Me.
Portsmouth, N. H.
Springfield, Mass. | Canton-Massillon, Ohio
**Louisville, Ky.
REGION VI—PHILIP M. KLUTZNICK
Evansville, Ind.
Chicago, Ill.
Madison-Merrimac, Wis.
Milwaukee, Wis.
South Bend, Ind.
Indianapolis, Ind.
**Terre Haute, Ind.
**Joliet, Ill.
Sioux Falls, S. D. |
| REGION II—CHARLES S. ASCHER
*Erie, Pa.
Newark, N. J.
Paterson, N. J.
New Brunswick, N. J.
Red Bank, N. J.
Camden, N. J.
Buffalo, N. Y.
Watertown, N. Y.
Elmira, N. Y.
Pittsburgh, Pa.
Beaver, Pa.
Philadelphia, Pa.
Williamsport, Pa.
Syracuse, N. Y.
Allentown-Bethlehem, Pa.
New Castle, Pa.
Pottstown, Pa.
Reading, Pa. | REGION VII—H. W. ARONSON
Ogden, Utah
Wichita, Kansas
REGION VIII—PRESTON L. WRIGHT
Fort Smith, Ark.
Little Rock, Ark.
Pine Bluff, Ark.
Oklahoma City, Okla.
Tulsa, Okla.
Amarillo, Texas
Corpus Christi, Texas
Fort Worth, Texas
Houston, Texas
Waco, Texas
REGION IX—G. W. COP-LEN
*Portland, Ore.
*Vancouver, Wash.
Seattle, Wash.
Tacoma, Wash.
Spokane, Wash. |
| REGION III—MILTON FISCHER
Washington, D. C.
Wilmington, Del.
Baltimore, Md.
Newport News, Va.
Norfolk, Va.
Portsmouth, Va. | REGION X—EUGENE WESTON, JR.
San Francisco, Cal.
San Diego, Cal.
Los Angeles, Cal.
Bellflower, Cal.
Inglewood, Cal.
Long Beach, Cal.
South East Cities
Oakland, Cal.
Richmond, Cal.
Berkeley, Cal.
Alameda, Cal.
San Mateo County
Tucson, Ariz.
Phoenix, Ariz. |
| REGION IV—ROBERT K. CREIGHTON
*Mobile, Ala.
Jacksonville, Fla.
*Tampa, Fla.
*Brunswick, Ga.
Savannah, Ga.
Wilmington, N. C.
Charleston, S. C. | |
| REGION V—WILLIAM K. DIVERS
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Akron, Ohio
Cleveland, Ohio
Dayton, Ohio
Muskegon, Mich.
Warren, Ohio
Marion, Ohio | ** No conversion activity |



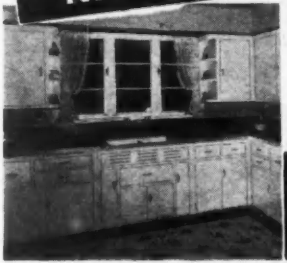
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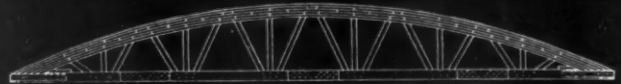
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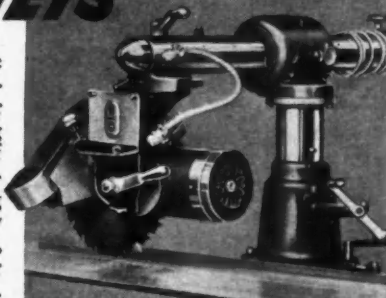
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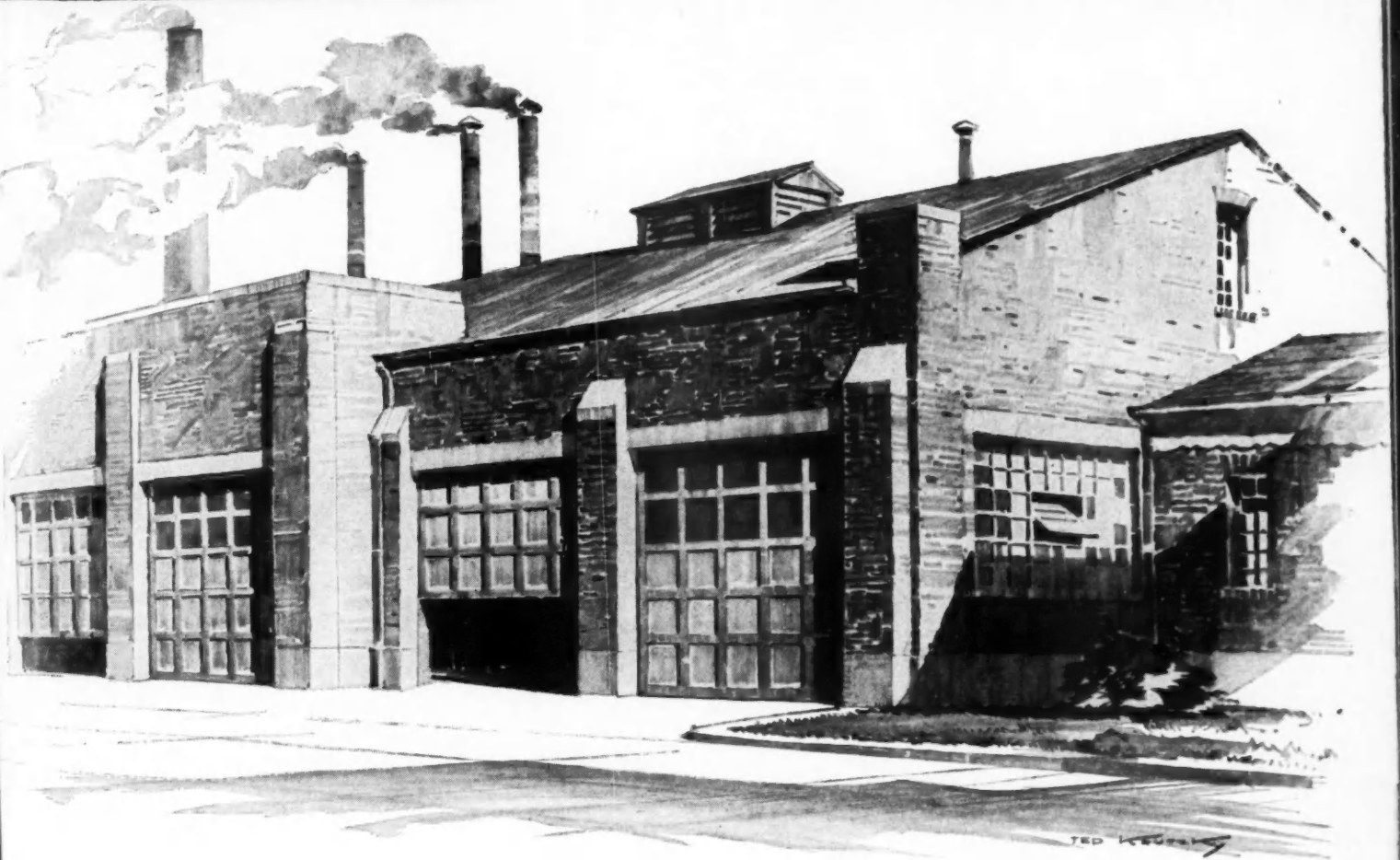
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