

TECHNOLOGY DEMONSTRATION

PI

AMERICAN BUILDER

FEBRUARY, 1943
PRICE 25 CENTS
30 CENTS IN CANADA

WORLD'S GREATEST
BUILDING PAPER



HOW TO KEEP BUSY IN WARTIME
Job Helps—Estimating Short Cuts—10 Built-ins
War Housing—6 Apartments From One Old House



HERE'S HOW CELOTEX ADVERTISING

Builds Business for You Today and Tomorrow!

...By Telling Home Owners WHAT THEY CAN DO RIGHT NOW
and What to Expect After Victory!

WHILE America fights and plans for its "Miracle Home" of tomorrow, today's homes must not be neglected! It's your business to help home owners protect their property and improve it within the limits set by the government. But we have made it our business to tell those home owners what they can do—what the government wants them to do—to safeguard homes and vital farm buildings.

So Celotex 1943 advertising in national weeklies, home magazines, and farm papers, aims directly at that job—urges upon home owners the importance of repair and maintenance. And that builds business for you today!

As for tomorrow, after the war has been won—

when every American family will have its own substantial "nest egg" of War Bond savings—this Celotex advertising forecasts the kind of home the average family can expect to own. We believe it's good for people to see what some of the fruits of victory can be! And since the "Miracle Home" of tomorrow will be *your* business, this Celotex picture of the future serves you, too.

MAIL THE COUPON for your FREE copy of "A Wartime Guide to Better Homes," a booklet which interprets government rulings and tells home owners how to guard their property. You'll find it a help in your business today!

CELOTEX

REG. U. S. PAT. OFF.

ROOFING • INSULATING BOARD • ROCK WOOL
GYPSUM WALLBOARD • LATH • PLASTER

THE CELOTEX CORPORATION • CHICAGO



THE CELOTEX CORPORATION, CHICAGO
Please send my FREE copy of "A Wartime Guide to Better Homes". AB-2-43

Name.....
Address.....
City.....
County.....State.....

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.

More

POWER to you...AMERICA!

One of the striking things about America in peacetime was its heavy use of power. Now, in wartime, America is a downright glutton.

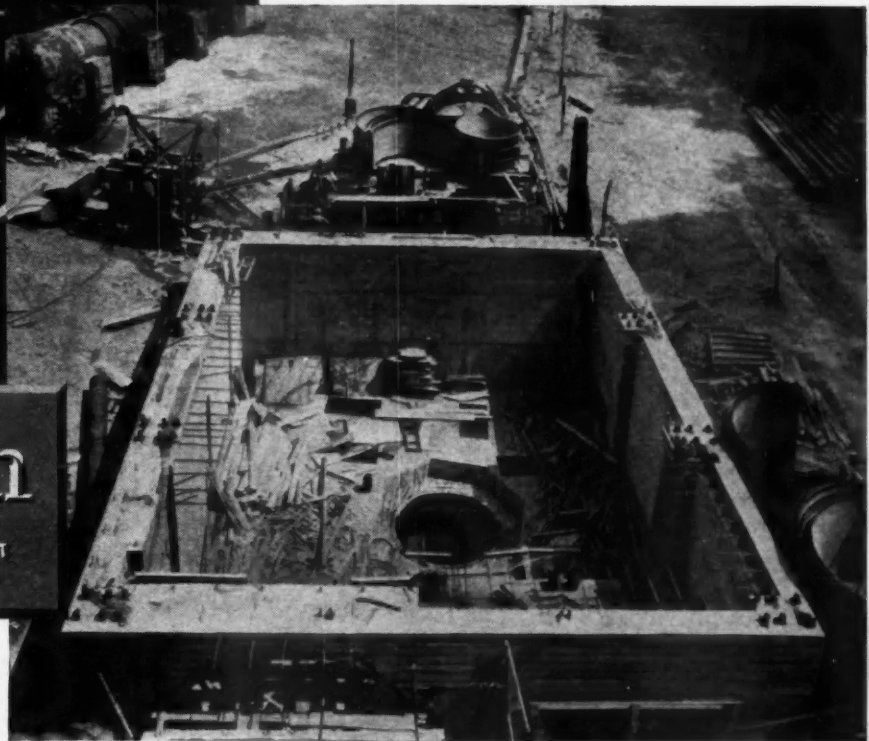
For many of the new power plants that war called into being, Lehigh Cement made the concrete required. And when service strength concrete was needed in a hurry in key sections of the jobs—it was Lehigh Early Strength Cement that got the call. For this fast-working cement makes service-strength concrete in 1/3 to 1/5 the normal time. This quick strength is especially important in cold weather: it lessens the danger of frost-damage, it cuts heat protection time and reduces costs. And remember, Lehigh Early Strength Cement makes finer, denser concrete, too.

The advantages you get by using this time-saving cement are as real, as useful, on your civilian projects as on any wartime work. Use Lehigh Early Strength Cement for all your concrete construction; and ask the Lehigh Service Department for data or counsel at any time.

Lehigh EARLY STRENGTH CEMENT
for service-strength concrete in a hurry



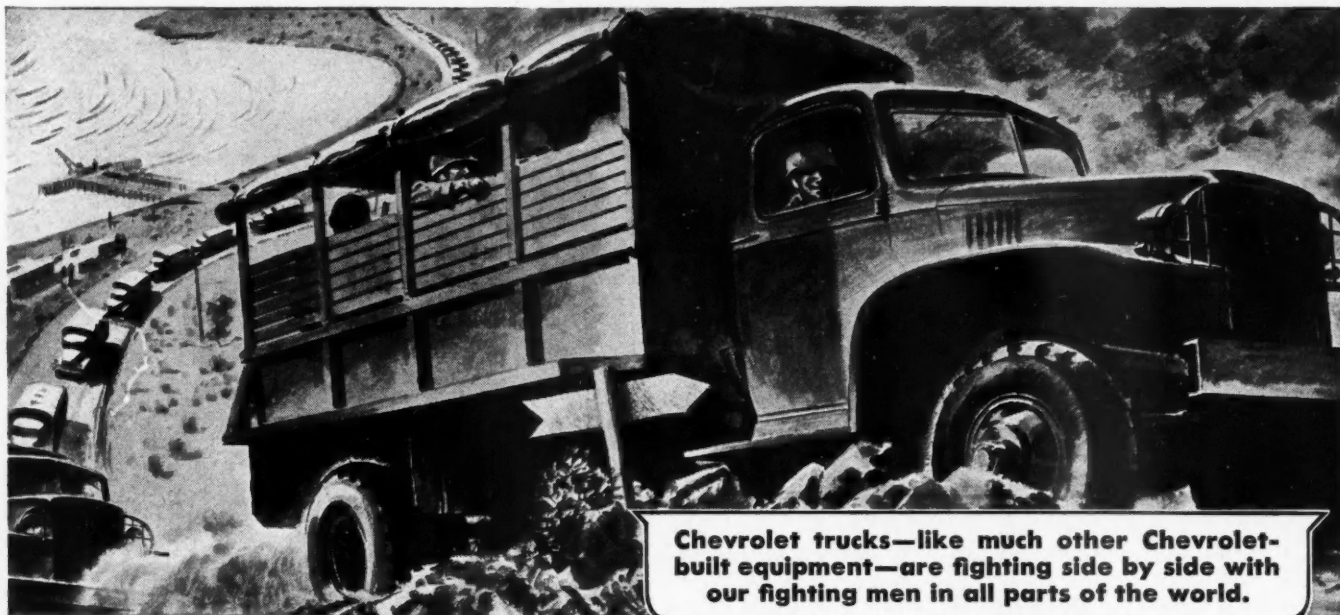
Lehigh
CEMENT



CHEVROLET TRUCKS

Vehicles of Victory

ON THE FIGHTING FRONTS—ABROAD



Chevrolet trucks—like much other Chevrolet-built equipment—are fighting side by side with our fighting men in all parts of the world.

ON THE WORKING FRONTS—AT HOME



Serving Agriculture • Serving Industry
Serving All America

War Carriers for the Nation



CHEVROLET MOTOR DIVISION, General Motors Corporation, DETROIT, MICHIGAN

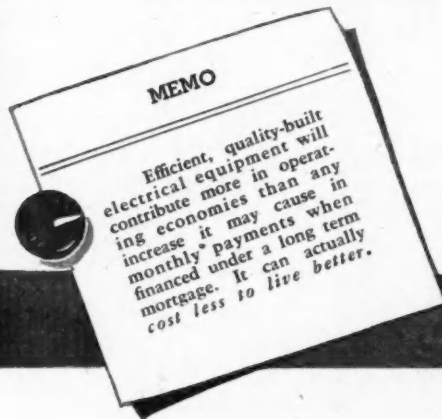


Miracles will be made to order Here!...

This is their birthplace, right here on your drawing board. The homes of tomorrow start here. Miracle homes, let's call them, with *better living built in*.

You'll give them good, free ground to hug, and you'll plan them sturdy and strong . . . just as you always have.

And you'll do more, too. For you'll make these homes to be *lived in*—lived in more comfortably, more conveniently—and more economically, too—than ever before. So you will see to it that they are made undreamably livable by the amazing new electrical equipment that is going to be *designed into* homes when the war is won.



A new series of G-E advertisements (like the one shown here) are currently appearing in national magazines. To millions of eager American families, this series points the way *through War Bonds*, to the Victory Homes they dream of. And what's more, these advertisements make bright the promise of the kind of homes they will be . . . with *Better Living Built In*.

GENERAL  ELECTRIC



Coast to coast, they're saying . . . ★

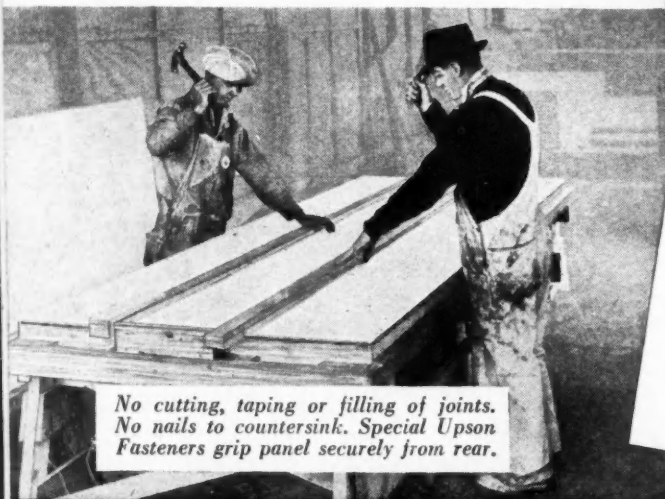
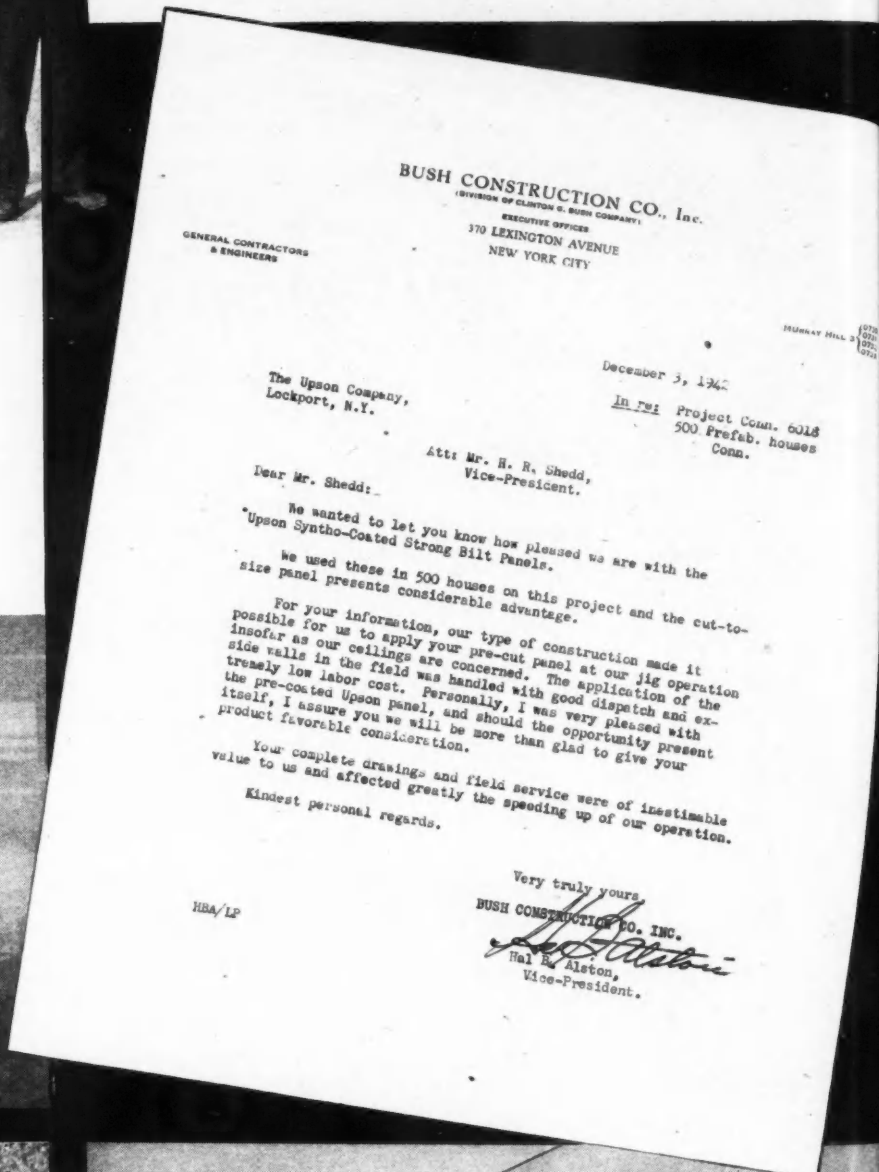
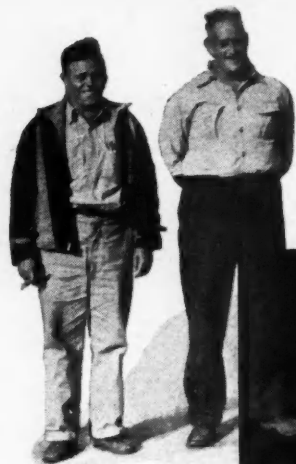
"Dry-built, full wall construction with Strong-Bilt Panels speeded the job . . . cut costs"

Left to right: Thomas Tujaro, superintendent; H. B. Alston, vice president, Bush Construction Company, New York.

CASE HISTORY No. 20: 500 demountable houses erected in Connecticut by Bush Construction Company of New York. Interior walls of Strong-Bilt Panels pre-cut to full wall size at the factory and shipped to the site for application to conventional stud construction. Precut ceiling sizes applied to prefabricated ceiling sections by jig assembly.

Upton Engineers, experienced in new mass production speed and economy methods will gladly explain adaptations to your plans and system. Phone, wire or write, The Upton Company, Lockport, N. Y.

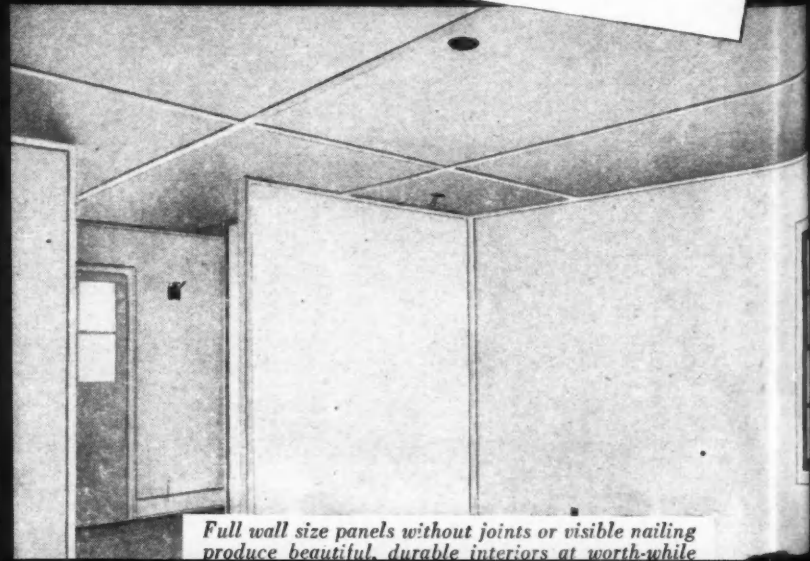
Upton Quality Products Are Easily Identified By
The Famous Blue-Center



No cutting, taping or filling of joints. No nails to countersink. Special Upton Fasteners grip panel securely from rear.

THE *Crackproof* BEAUTY SURFACE FOR WALLS AND CEILINGS

UPSON STRONG-BILT PANELS



Full wall size panels without joints or visible nailing produce beautiful, durable interiors at worth-while

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AMERICAN BUILDER

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JOSEPH B. MASON
Editor

ROBERT H. MORRIS
Business Manager

ROBERT E. SANGSTER BERNARD L. JOHNSON PAUL WATSON
Managing Editor Western Editor Associate Editor

DOLA PARR LYMAN M. FORBES JOE SANDERS L. E. ARENT
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THE CONTRACTOR WHO TURNED TO STONE!



WITH lumber short and its use restricted, this man has turned to Gold Bond Gypsum products as a lumber substitute.

Yes, there are actually three new non-critical Gold Bond products, which replace almost all of the lumber ordinarily required in new construction or remodel-

ing and repair work. These are Gold Bond Roof Plank, Exterior Board and 1" Solid Partition Panels. They've already proved their worth in emergency military and industrial building through lowered costs and faster construction. Now they're ready to go to work to help you save time and labor and money.

GET COMPLETE DETAILS FROM YOUR GOLD BOND DEALER

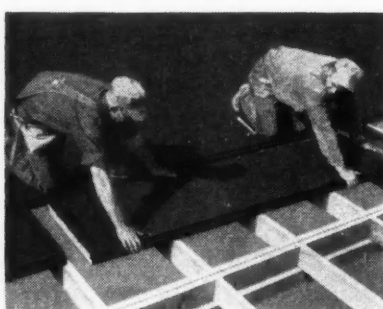


BUILD BETTER WITH
Gold Bond
Everything - for walls & ceilings

More than 150 different products for
**MODERN CONSTRUCTION
AND WAR PRODUCTION**
WALLBOARD...LATH...PLASTER...LIME
METAL PRODUCTS...WALL PAINT
INSULATION...SOUND CONTROL



For Outside Walls—Gold Bond Exterior Board which comes with tough asphalt roofing on the weather side. Takes care of sheathing and siding in one operation, building sturdy permanent walls with saving in time and money.



For New Roofs or Roof Repairs—Gold Bond Roof Plank is a heavy, durable gypsum board, which nails directly to wood joists and is quickly applied by any carpenter. Perfect base for built-up roofing. 1½" and 2" thick, 24" wide and 8', 9' and 10' long.



For Inside Walls and Partitions—Gold Bond Solid Partition Panels are fastened between the studs by mouldings. Their large size means speed on the job. Their strength insures solid, rigid walls. Permanent or demountable and completely salvageable.

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

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

Publisher's Page

Transition from War to Peace

AN argument made for huge government spending after the war is that the transition to peace will be difficult.

We have so converted from a peace to a war basis that our production for war exceeds that of all other nations combined. Why should it be more difficult to convert back to a peace basis?

Industries such as the building, steel and automobile that are engaged principally or entirely in war work surely can resume civilian production, with which they are familiar, faster than they could adjust to war production, with which they were unfamiliar. And there will be large markets available for them. The railroads, with drastic restrictions on the materials they can get, are having their tracks, equipment and other facilities worn out more rapidly than ever before by an unprecedented traffic. They will have no converting to do, and should be large buyers. Farmers, while making relatively large incomes, cannot during the war do normal building or buying of implements. They should furnish a large post-war market.

Unless we try to carry out some huge government planned and dominated program, the main post-war problems will be wages and prices. Following the last war, after declining in 1919, total production in this country was as large in 1920 as in 1918. But during these two years prices increased 34 per cent and wages rose. In 1921 production declined 25 per cent and prices more than 40 per cent from the April, 1920, peak. The trend of prices thereafter was slowly downward; in 1923 total production exceeded all previous records; and it continued increasing. Private construction increased from \$2,800 million in 1918 to \$5,200 million in 1920; declined to \$4,000 million in 1921; increased to over \$7,000 million in 1923, and to \$9,000 million in 1926.

The relationship between *prices* and *production* (including construction) is unmistakable. When prices increase much in peacetime the incomes of a large majority increase less; and they reduce or quit buying until the balance between prices and their incomes is restored. Greater increases or declines of prices in some industries than in others also curtail buying by those in the relatively *lower-price* industries from those in the *higher-price* industries.

There will be great increases in demand in the post-war period for many things—new automobiles and new homes, for example. There will be intense competition between *different industries* for the people's money. Production (or construction) by *each industry* will depend largely on how much each industry asks the people to pay in proportion to their need or desire for its products. If the automobile industry offers more for the money than the building industry, there will be relatively more buying of automobiles and relatively less construction of housing.

That is—the foregoing will occur unless government engages in a huge program of spending on "public works," including housing and other things the provision of which formerly was considered the sole business of private enterprise. There will be no real *need* for huge government spending, which would burden and compete with private enterprise. Whether there will be *seeming* need for it will depend on whether private enterprise promptly offers, and continues offering, the kinds of products the people desire at *prices* which the people will pay.

Samuel O. Drun,

HELP WIN- THE BATTLE OF THE HOME FRONT!

Sell

- ★ INSULATIONS TO SAVE FUEL
- ★ ROOFING TO PROTECT PROPERTY
- ★ GENERAL REPAIRS TO MAINTAIN VALUES



All the war effort can't be concentrated on the battle front. Property and morale must also be kept up on the *Home Front*. This brings a real opportunity for every Dealer to serve his community.

These "stay-at-home" days focus attention on the home —on the urgent need for the improvements and repairs that are necessary to protect property and preserve the investment. You can help win the Battle of the Home Front by supplying your neighbors with Carey money-saving products.

Carey Rock Wool Insulation is so important now in conserving vital fuel; Carey Asphalt Roofings for dependable weather protection; Carey Asbestos-Cement Roofing that is such a valuable safeguard against both fire and weather; and numerous other Carey Products for repairs and replacements that save time, labor and money.

Carey Products are known everywhere for dependable, low-cost service. Their in-built value will appeal to your customers—will assure you of repeat business. Write Dept. 10 for details.

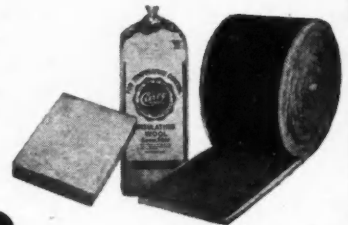
THE PHILIP CAREY MFG. COMPANY

Dependable Products Since 1873
Lockland, Cincinnati, Ohio

In Canada: The Philip Carey Company, Ltd.
Office and Factory: Lennoxville, P. Q.

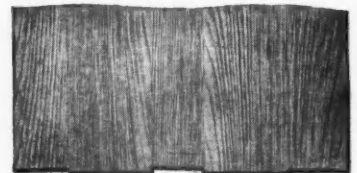
Carey MONEY-SAVING PRODUCTS

CAREY ROCK WOOL INSULATION . . .
Saves fuel and transportation— aids the war program.



CAREYSTONE ROOFING AND SIDING . . .
Reduce fire hazards, maintenance and repairs.

CAREY ROLL ROOFINGS . . .
Wear longer— cost less per year.



CAREY ASPHALT SHINGLES . . .
Protect property against weather and damage.



SPEAK FOR YOURSELVES, *Gentlemen!*



I saved a whole week by using Atlas High-Early for floors at the Henderson Produce Company

The contract didn't call for it — but we used Atlas High-Early on a housing project for stair treads to save form lumber

We placed an Atlas High-Early floor at **CENSORED** about 4:30 P. M. Next morning they had up to 1,600 lbs. of steel per sq. ft. on it. Quick work!

All Atlas High-Early jobs are kin under the surface — they're fast and they save you money

These three short stories speak for themselves:

1. Machinery on floor before building completed. The Henderson Produce Company in Monroe City, Mo., had to build an addition to their plant in order to separate and dry eggs for shipment. *Speed was essential.* The contractor used Atlas High-Early cement for the floors and estimated one week's saving in time. He was able to place machinery on the floors before the building was finished. The addition was in operation in 60 days!

2. Running up the stair treads—fast! Even though the contract did not call for it, the contractor for the stair treads in a Cincinnati Housing Project used Atlas

High-Early. He wanted to speed up the job and save lumber for forms. And he did. Use of Atlas High-Early cement instead of normal portland cement permitted removal of forms from treads in one-half the time. The job went faster and form costs were lower!

3. Storage room floor made ready overnight. A new plant at _____ needed a floor—on the double quick! Engineers and contractor decided on Atlas High-Early cement. The last concrete was placed about 4:30 P. M. At 8:30 the next morning, steel was being stored on it—as much as 1,600 pounds per square foot. This use of Atlas High-Early saved at least four or five days on an important war job.

★ ★ ★
Speed with economy is the reason why Atlas High-Early cement is specified and used so much today—speed in completing defense housing, cantonments, roads, airports, war production plants.

On almost any kind of concreting job where "Rush" is a must, rely on Atlas High-Early. In application, it's like normal portland cement and just as easy to handle. Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York City.

OFFICES: New York, Chicago, Philadelphia, Boston, Albany, Pittsburgh, Cleveland, Minneapolis, Duluth, St. Louis, Kansas City, Des Moines, Birmingham, Waco.

AB-24-48

ATLAS HIGH-EARLY CEMENT

A UNIVERSAL ATLAS PRODUCT



On and Off the Record

by *Structor*

News, Views and Comments

STASSEN ON HOUSING—After talking with young, smart Governor Harold E. Stassen of Minnesota about his new housing program, I am convinced he is on the trail of an idea of vital interest to the building industry.

Stassen told me it is his purpose to do something about housing for low income persons by encouraging private enterprise to do the job.

His is a state program—not dependent on federal subsidies. It's frankly experimental, but sets a broad basis of conditions permitting private enterprise to do what is needed. The state will use its right to acquire property by eminent domain: private builders will be guaranteed a certain occupancy or income.

This is a step builders will watch with interest and support.

INDEPENDENT WORKERS—Labor shortages in sawmills are still acute. In fact, the so-called "freezing" of labor has apparently done little good. Tough and independent lumber workers have quit jobs just because they were told not to.

One of the worst bottlenecks is choppers. I am told that 150 choppers in the redwood lumber industry could increase lumber production of that type 20 per cent. A good chopper can earn \$15 to \$20 a day. Want a job?

RATION PROBLEM—Yes, builders are having their rationing problems. There's a story going around to the effect that a carpenter contractor with a family of ten wrote in to say that with building what it is he couldn't afford to keep on buying 20 pounds of sugar a week.

PREFABS BY SASH & DOOR—Several large sash and door firms are now experimenting in building prefabricated wall sections for housing. Since they make the doors and windows in the first place, it's logical that if anyone prefabricates wall sections, they should be in a position to do so. Such sections, complete with doors and windows equipped with hardware, could be sold through the regular distribution channels. They may have something.

YARD FABRICATION—Another form of prefabrication with a future is the building of small farm structures, farm equipment and lumber items in a local shop or in dealer's yard. There's a big market for items of this type right now, and the farmer can be sold a well built brooder house, feed rack, hog

trough or what have you at less than he could build it—especially with labor as scarce as it is.

GAS FROM SAWDUST—I saw this happen. A famous lumber firm collects the gas from burning sawdust, puts it in a tank under pressure, and then uses it to operate an ordinary gas engine. This "sawdust gas" is much more efficient than ordinary gasoline, and a couple of cylinders under high pressure can drive a car a long way.

The lumber people figure on using it as power to run their sawmill equipment.

CAN'T BE LICKED—Builders are a tough and fighting crowd and this war situation can't lick them. In spite of all the difficulties, they produced 319,000 houses (private) last year. Many are still hanging on and are now fighting to get the rules changed so they can build more war houses so badly needed.

Equally heartening are the activities thousands of smaller builders are maintaining, revealed in a survey just completed by *American Builder* and reported on page 38.

These building men are not down and out—they are busy going after business. They have gone into many lines of new work including factory maintenance and repairs. They have taken on hundreds of new small operations—jobs that need to be done and that help them keep their crews busy. Only 12 per cent have given up trying and gone out of business for the duration.

KENNEDY GOES COMMERCIAL—The lively story of Builder H. E. Kennedy of Litchfield, Ill., population 6,000, (see page 40) shows what a builder really can do. When L-41 came along he thought he would be out of business. But he organized a definite plan to find jobs that could be done. As a result he is continuing to do a good business, keeping a "nucleus crew" together, and planning post-war projects.

BIG LEGAL FIGHT—It is rumored that the firms of *MacChesney, Becker & Wells* of Chicago, and *Hewes, Prettyman, Awalt and Smiddy* of Washington will soon be arguing about the similarity of names between *National Association of Home Builders of the U.S.* and *National Home Builders Assn.*—two separate organizations. The dispute arose over a merger that only partly jelled.

We propose, instead, the merger of these two legal firms into *Prettyman,*

MacChesney, Hewes, Awalt, Smiddy, Wells & Becker, and letting the builders concentrate on bettering the welfare of their industry.

PREFAB AND SCREWBALLS—I never intended that the terms "prefabricators" and "screwballs" should be taken as synonymous. An *American Builder* reader, however, seems to have reached that conclusion. "Don't worry about that stuff," he told us. "Let the screwballs lose a little of their own money—they'll soon learn." He went on to add that only the pressure of the war emergency has enabled most of the doghouse type of war housing to get by.

POST-WAR STENCH—There is something in the argument that prefabrication and "mass housing" in general will get a terrific black eye out of war housing. In fact, public reaction to many of the housing jobs is already so critical that reputable private builders don't want their firm names in any way connected with the phrase "war housing."

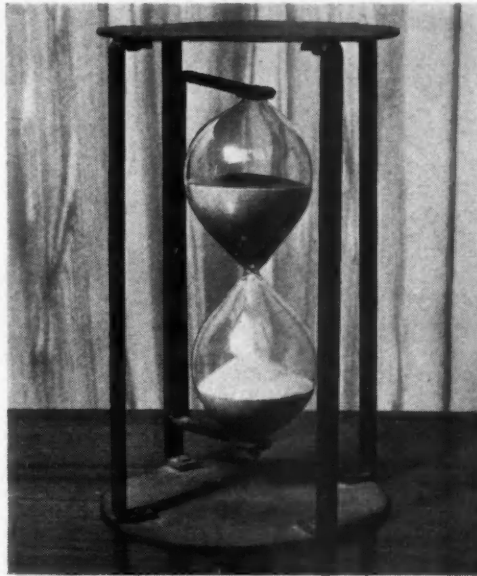
BANKERS AND FHA—At the recent Mortgage Bankers convention in New York, speakers praised FHA to the skies. Milton McDonald of the Trust Company of New Jersey, for example, called it "one of the really great pieces of legislation in 160 years." Just goes to show how times change. I recall all too well the early days of FHA, when financiers protested that FHA was socialistic and would surely put them out of business.

It is a fact that FHA is a clever blending of a government-controlled mutual mortgage system with private enterprise building. Until FHA was placed under the control of Blandford and his public housing associates, it was doing a very constructive job.

Now, the FHA boys don't dare say a word out loud in favor of private enterprise for fear of getting their heads chopped off.

POLITE STRANGULATION—They are in an unhappy spot, those FHA employees, as building men well know.

They are seeing private builders frozen out, and their own jobs whittled away. Whereas they used to do their best to help builders function, now they are silent and powerless witnesses to an inside job of polite strangulation. As long as the top NHA controls are in the hands of public housers, they can't very well say much. That is, not publicly.



... towards Brighter Days for Building

Time is running against the enemy. As the sands of Axis' strength diminish, those of America's power increase. None can say when Hitler's will run out. That they must, is inevitable. America's production for war is attending to that.

Our part in this vital production has precluded the solicitation and service to builders and dealers which we would have liked to have carried on within the limits of wartime restrictions.

Notwithstanding this preoccupation with military needs, new potentials of the post war building

era have been and are receiving close research and planning within our organization.

Definite developments and improvements have been achieved. These will comprise additions to the value and practical advantages of BRADLEY BRAND products comparable to those inherent in our now famous "Straight-Line" Hardwood Flooring.

So, to our loyal, patient friends of the building professions and trade, we acknowledge a continuing obligation which it is our purpose to meet in terms of better products that will be of profitable help in regaining their full share of the nation's building market.

BRADLEY LUMBER COMPANY *of Arkansas*

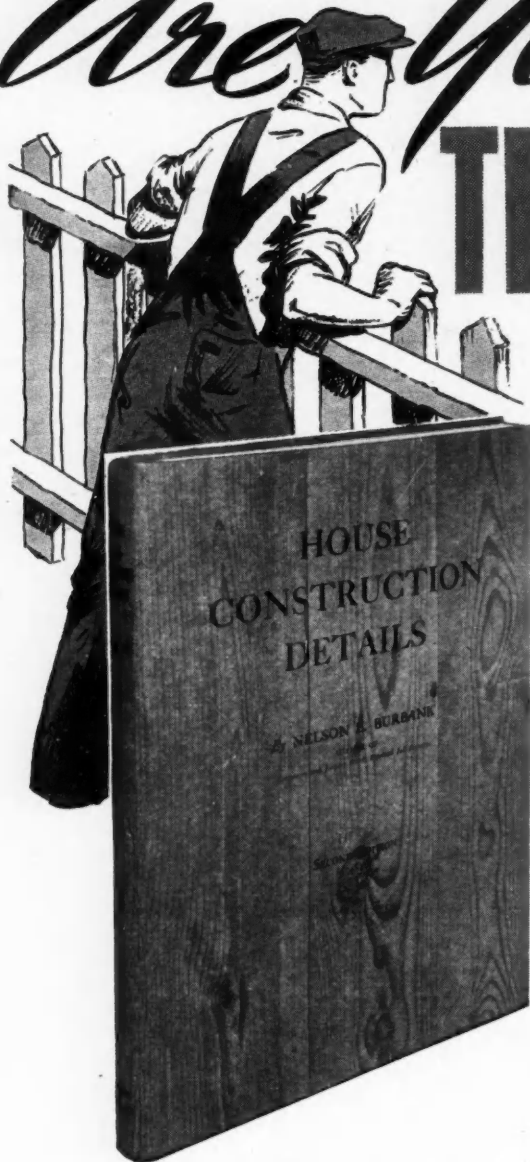
*Manufacturers of Standard and Special
Products in Hardwood and Arkansas Soft Pine.*

WARREN,

ARKANSAS



Are You THIS MAN?



Are you on the outside looking in, when you might be the man who is bossing the job? **The Man Who Knows How** is the man who gets the best building jobs. He's never idle. He drives the best car and lives in a good house. You Can Be That Man! It's easy, because you can help yourself. Read and learn at home, or in your spare time. **House Construction Details**, by Nelson L. Burbank, is the book that can help you become **The Man Who Knows How**.

It makes no difference whether you are a student, a beginner, an experienced building mechanic who wants to become a contractor, a sub-contractor, or a seasoned, experienced builder. You will find a gold mine of ideas and useful information in **House Construction Details**. It is crammed with ideas, 1,500 illustrations, details and scale drawings, with short, clear explanations.

It's so easy to find what you want in **House Construction Details**, because it begins at the foundation and goes right through the whole process of building a house, step-by-step, clear through to painting and finishing. A very well-arranged cross-index helps you locate what you want. Look over the table of contents below and see how well the book has been arranged. This valuable self-help book is sold with a money-back guarantee of satisfaction.

Here's the "How-to-do-it" book for building men, another in a series of American Builder self-help books.

Send the coupon today for your copy of "House Construction Details." With it you'll receive FREE the 1942 Book Guide—your guide to profitable reading.

FILL OUT THIS GUARANTEED ORDER FORM

American Builder and Building Age,
30 Church Street, New York, N.Y.

Enclosed find \$3.00 for which send me a copy of the New Second Edition of *House Construction Details*, and a copy of the American Builder Book Guide FREE. If I do not find the book entirely satisfactory I will return it within 5 days of receipt and you will refund my \$3.00.

Name

Address

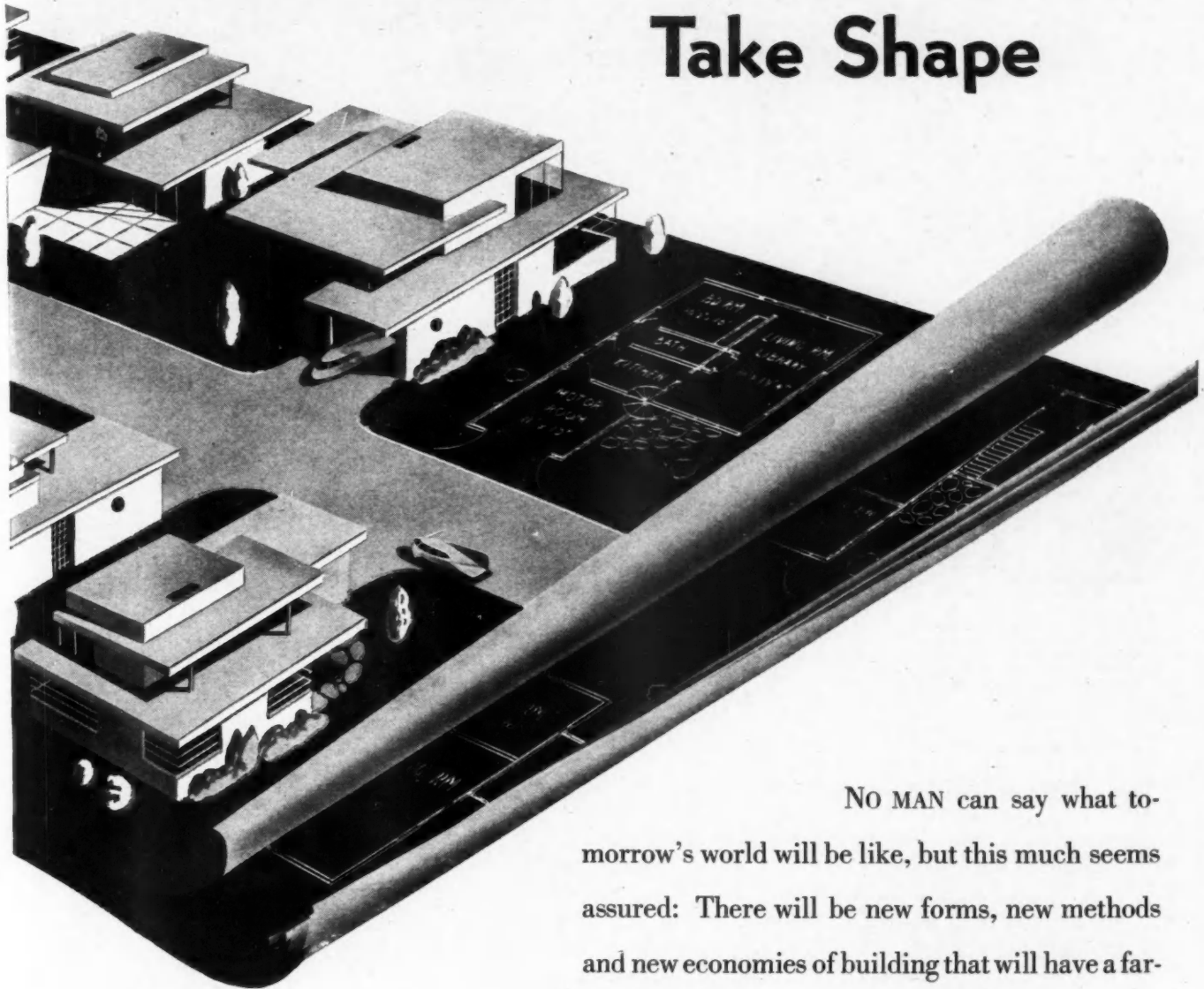
City and State

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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.

STRAN STEEL

DIVISION OF GREAT LAKES STEEL CORPORATION
1130 PENOBSCOT BUILDING, DETROIT, MICHIGAN

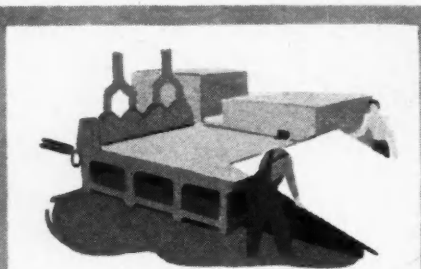
UNIT OF NATIONAL STEEL CORPORATION

TODAY—THE REFUGE OF THE PARTRIDGE

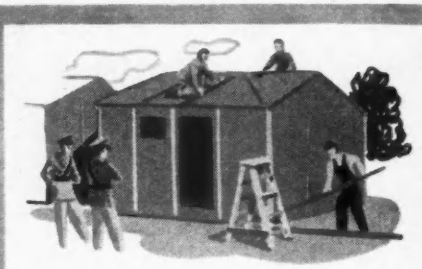
... tomorrow the shelter of fighting men, war industries, and civilians



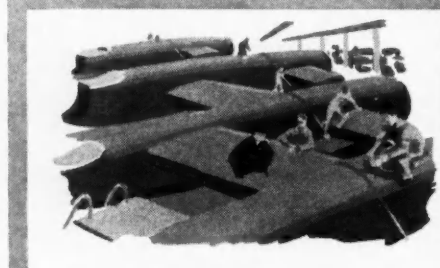
• Civilization has always followed the woodman's axe. Logs gave shelter to the families of pioneers. Wood gave shelter to expanding industry. But curious man was not content. Just as man took a raw material such as rubber and developed it into products of many uses, so man also took wood, and from it evolved a product of wider adaptability and usefulness than wood in its natural state.



• Here is how it is done. The Northwoods logs are put into powerful machines that literally rip them to pieces—all that remains are the strong wood fibres. Each fibre is impregnated with asphalt to protect against moisture. Then the fibres are processed by a special method into panels or boards. What emerges is Insulite—a product with many more uses than wood itself.



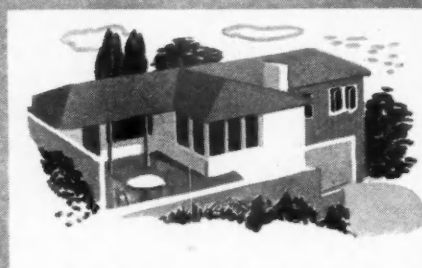
• Insulite, manufactured from wood fibres, is known for its great structural strength. Insulite, due to the processes of manufacture, has high insulation efficiency, retarding the passage of heat, or cold. Today, in the countries of the North, American soldiers are protected against the cold in hutments built of Insulite; today, in the tropical countries, American soldiers are protected against the heat by Insulite.



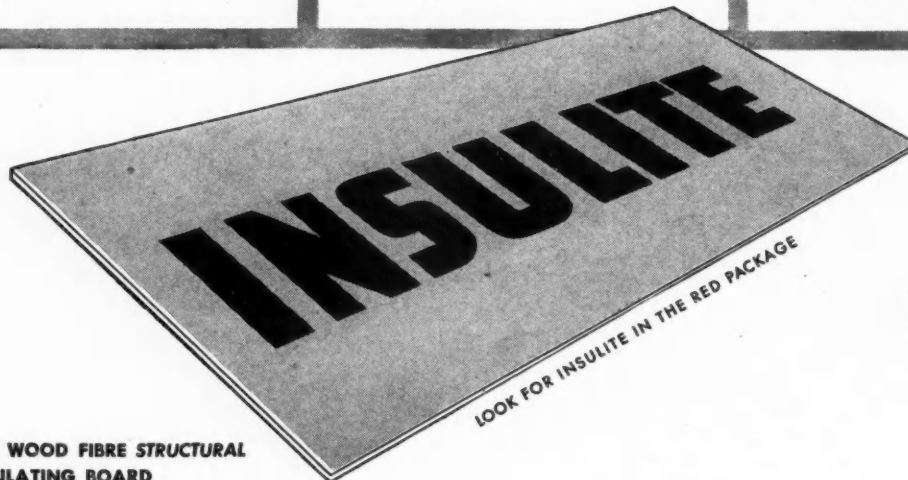
• Insulite has many other advantages. Today, speed in building is necessary to win the war. The large panels of Insulite are rapidly applied, quickly nailed into place. The saving in man hours is apparent when you consider the large area one panel of Insulite covers. This factory for the manufacture of bombers was built in record time with Insulite.



• For the finishing of offices, commercial or industrial interiors, Insulite offers many advantages. Insulite is moisture and windproofed, offers acoustical control and is protected against rot and mold. Insulite comes factory finished in a number of designs and colors, and interiors finished with it require no plastering, papering or painting.



• Tomorrow's home, when Victory is ours! Insulite's many advantages comes to the fore in planning a modern home. Walls constructed with Insulite are not only stronger, more durable, but are also weathertight, windproofed, moistureproofed and form an effective barrier against extremes of temperature, saving fuel in winter, providing cooler rooms in summer.



THE ORIGINAL WOOD FIBRE STRUCTURAL INSULATING BOARD



Insulite Division of Minnesota and Ontario Paper Company
Minneapolis, Minnesota

Washington News Summary

N. H. A. HEAD ENCOURAGES BUILDERS

Check Proposed New Plans With WPB to Speed Work

Private Builders Given Reference Rating AA-3 on War Housing Projects

A blanket preference rating of AA-3 was assigned Jan. 11 by the War Production Board to deliveries of materials for use in the construction of most of the war housing projects programmed by the National Housing Agency.

Today's action, which makes the up-rating automatic for the builder, affects the war housing for which preference rating orders P-55 have been issued to a builder, or P-19-d and P-19-h have been issued to the Federal Public Housing Authority. The builder, however, is responsible for extending the new rating to his suppliers in accordance with Priorities Regulation 12 of WPB.

In cases where the up-rating applies it is effective whether the war housing is publicly or privately financed, whether it is new construction or conversion of existing structures and whether the type of structure is permanent or temporary.

In a second provision announced at the same time, all AA-4 ratings assigned by preference orders of the P-19 series, covering essential construction projects, were raised to AA-3.

The up-rating applies to all AA-4's both in the case of orders assigning blanket ratings and orders assigning split ratings including AA-4's. However, in the latter case the up-rating to AA-3 applies only to those items that were previously rated AA-4. No change was made in ratings below the AA-4 level.

Frame Construction Priorities Issued in Six Western States

Restrictions on frame construction as set up by the war housing standards have been relaxed in the States of California, Oregon, Washington, Idaho, Nevada and Arizona. Priorities will be issued in those States for frame construction throughout including softwood underfloors; finished flooring. Beveled and drop siding of any width will be permissible and softwood sheathing can be used where satisfactory substitutes cannot be found.

Branch of WPB Ready to Answer Questions; Advise on Priorities

Considerable saving in both time and money on the part of applicants for substantial construction projects can often be effected by using the preliminary service of the Materials Control Branch of the Construction Bureau of WPB.

Contractors, builders and others who have preliminary drawings and approximate lists of materials available may consult with WPB before making final drawings and submitting formal applications.

The builder can be advised of the latest regulations regarding use of materials and make whatever corrections are necessary to conform. Later, when he is ready to file his formal application for priority assistance on Form PD-200, he should be able to give all information asked for.

For projects sponsored by Federal, State, County, Municipal, or other Governmental agencies, inquiries should be directed to Maury Maverick, director, Governmental Division, War Production Board, Temporary "E" Building, Washington, D. C.

For all other projects, inquiries should be directed to the Materials Control Branch, Construction Bureau, 54th Floor, Empire State Building, New York, New York, or the Architectural and Codes Section, Specifications Branch, Conservation Division, 8th Floor, Washington Gas Light Company Building, Eleventh and H Streets, N. W., Washington, D. C.

Private Remodeling Temporarily Halted

Privately financed remodeling of residences has been temporarily stopped throughout the nation by the order halting the issuing of PD406 forms. The order reads that all such applications must be filed on form PD105, which is the form used for priorities on new construction, but this is actually a notice of a temporary stop order because PD105 priorities can only be issued where communities have a housing quota granted by NHA.

Actually, therefore, unless a community has been granted a housing quota by NHA, all priority assistance for remodeling residences to accommodate workers or increases in the local population has been stopped. This of course does not affect

New Housing Standards to Allow Larger Floor Space Areas; Use More Lumber

But Government Continues to Change the Rules by Repeated Juggling of Legal Regulations

With each month of additive restrictions and subtractive relaxations the checkered pattern of regulations governing building shifts in rapid chess-like moves as legal Washington offers a pawn here, only to threaten checkmate there, with a new document.

The new order M-208 (the pawn) definitely provides for dealers' inventory replacement and in the main makes possible continued farm production building business, maintenance and repair work, and sales of lumber for incorporation into some manufactured commodities and for crating, boxing, etc. On the other hand priorities for remodeling have been temporarily halted (threatening checkmate) by orders to stop issuance of PD406 forms, using hereafter only PD105 forms, which means that unless a community has been granted a housing quota by NHA no priority assistance can be obtained for remodeling because form PD105 can only be issued in areas having housing quotas.

There is, however, a strong possibility that the builders may obtain a better position through the relaxation of the War Housing Standards. Already six western states have been allowed to use more lumber for frame construction; privately constructed war housing has been promoted

(Next page, col. 3)

remodeling that does not require priority assistance and which can be accomplished under the \$200 permitted construction clause of L-41.

Government spokesmen have pointed out that the amount of privately financed remodeling will be controlled in the future, although private work permitted will be allowed the rating of AA-3 enjoyed by public projects.

Apparently remodeling of homes to provide only a bedroom or two will not be permitted unless specifically authorized by NHA and will not be eligible for consideration unless located in areas specially designated by NHA as needing rooming accommodations.

Priorities Regulation No. 1 Amended, Provides Elastic Means of Material Disposal

Priorities Regulation No. 1 has been amended to provide a more elastic method of disposing of material obtained with priority assistance, or by allocation, which cannot be used as first intended.

The owner of such material may: One, use it to fill purchase orders placed with him which bear a rating of AA-5 or higher, (or a rating at least as high as that upon which the material was obtained) provided such use is permitted by other regulations controlling the material; or two, use it for his own needs, if he has been authorized to obtain material for such use by applying or extending a preference rating of AA-5 or higher; or three, he can re-deliver the material to the person from whom he purchased it.

In case a person cannot use or dispose of materials in any other way he can file a report to the WPB regional office which may be able to help him redistribute them.

Douglas Fir Cut Available Subject to Restriction of Conservation Order M-208

Under the new Douglas Fir order L-218 Amended, effective Jan. 12, Douglas fir not bought by the Central Procurement Agency, or whose cut is not authorized to be sold, shipped or delivered on Form PD-423, may be sold, shipped and delivered to distributors on orders bearing ratings assigned by and "subject to the restrictions of Conservation Order M-208, as amended Jan. 12, 1943, without particularizing persons or uses."

There has been a substantial cut of Douglas fir lumber not purchased by the Central Procurement Agency.

Order L-41 Became Effective Sept. 7, '42. States Interpretation

Recent interpretation of Order No. L-41 provides that since the order was not effective until Sept. 7, 1942, any construction completed before this date is not within the restrictions of the Amended L-41.

This means that if a farmer, for example, had completed a barn costing \$999 in August, 1942, he can at any time after Sept. 7, 1942 spend up to \$1,000 for more agricultural construction during the 12-month period ending Sept. 7, 1943.

New M-208 Allows Dealer to Replace Inventory of Lumber Sold After Jan. 12

Sales of lumber for repair and maintenance, sales for building farm production buildings, and sales of lumber for boxing and crating many listed products will make up the bulk of the lumber dealer's lumber business under the new M-208 as amended January 12, 1943. The good news is that the order provides for replacement of inventory on lumber sold after January 12

for uses specified in lists A, B, C, and D; and all mention of inventory restrictions are omitted.

The new definition of softwood lumber includes shingles and lath. Also certain unused Douglas Fir cuts have been released from the "freeze" of L-218 and can be distributed subject to the new M-208.

Dampers and Grates Released for Drive to Provide Coal Heat

Fireplace dampers or grates weighing 30 pounds or less may be sold without preference ratings, under the terms of Conservation Order M-21, as amended by the Director General for Operations.

Conservation Order M-126 was amended recently to permit the production of such grates for a limited period, as a means of providing supplemental heat for many homes.

Floor Machine Sales Rental and Transfer Restricted by L-222

Production of floor sanding, finishing, and maintenance machines, after March 15, has been prohibited by the Director General for Operations with issuance of a new order, L-222. Also, production of industrial vacuum cleaners was put under severe restrictions.

At the same time, restrictions on the sale, rental, and transfer of specified kinds of the affected machinery were imposed, effective immediately.

Rental of second-hand or used machines apparently can be continued.

Assure Continued Production by Giving AA-2x Ratings to Sawmill Operating Supplies

To assure continuous and unailing production of lumber for the 1943 war program, use of AA-2X preference ratings by loggers and sawmills to obtain operating supplies and materials for maintenance and repair is authorized under the provisions of a new preference rating order (P-138) issued Dec. 26, 1942 by the Director General for Operations.

This eliminates one of the bottlenecks blocking increased lumber production.

Subcontractors engaged in the building of logging roads and persons who carry on contract-hauling of logs are also entitled to the benefits of Preference Rating Order P-138. (Interpretation No. 1, Jan. 21, 1943.)

Stock Millwork Under Ceilings Reflecting Current Price Levels

Most of the items manufactured by the \$55,000,000 stock millwork industry have been placed under specific dollars and cents ceilings reflecting approximately current price levels, the OPA announced Jan. 4, 1943. Thirty large companies in Wisconsin, Iowa and Illinois, and about 100 other companies, are directly affected. All direct mill rail shipments of more than

15,000 pounds, and all direct mill truck hauls of more than 12,000 pounds to a single destination are included in the action. The regulation does not extend to millwork produced according to special specifications.

Lumber Shortage Vanishes, Six Billion Missing Feet Found in Lumber Stocks

The heralded 6 billion foot lumber shortage of 1942 now seems to have been a shortage that wasn't there. To put it a different way to add to the confusion: the lumber was there and the shortage wasn't. Which brings up the point that the lumber industry did a splendid job of meeting vital civilian and military requirements. Lumber stocks took up the slack. Current stock is probably less than 10 billion feet.

BUILDERS ENCOURAGED

(From preceding page, col. 3)

to an AA-3 blanket priority; while NHA Administrator John B. Blandford, Jr. has given assurance that the War Housing Standards would be relaxed in a matter of days.

Said he in discussing the vital need for private constructors to continue doing their war housing job:

"One hundred and seventy thousand new starts (in 1943) are permitted under these new war housing standards, called temporary or permanent, anything you choose. As I understand them, the new standards coming out are liberalized, providing for larger room spaces—and these have been decided after deliberation between WPB and NHA. Keep in mind when we speak of particularly private priorities, the sort of construction that you are referring to is something I think we have to go into a bit more. We would like to explore it in terms of specific projects. Our only concern is over that type of really temporary housing that has perhaps a little marketability after the war.

"This agreement eliminates for the duration any new housing not directly contributing to winning the war. But the amount of materials that can be allocated to housing is not sufficient to meet the minimum needs with new structures. We must depend on our reservoir of existing housing to supply a large portion of the demand."

It is believed that the War Housing Standards as revised will provide for from 11% to 16% more floor space. The requirements for the use of lumber will not be so strict. Lumber may be substituted for masonry in certain areas, but the final determination on that point rests with clearance by the war department. Under certain conditions completely detached homes may be erected. The requirements for a certain kind of heating unit will not be so rigid.

Further, a promise has been given to liberalize and clarify Sec. 608 of FHA Title VI (referring to large projects) which will permit increased building. Commissioner Abner Ferguson has agreed to look into mortgage valuations recognizing that WPB standards as to location, type, style and materials have raised builders' costs.

UNRESTRICTED!



AMERICA'S MOST POPULAR TYPE OF ROOFING ... *Asphalt*

Texaco's own local warehousing service to Texaco Roofing Dealers insures smaller inventories, quick turnover—to all buyers of this roofing.

IN the midst of today's drastic restrictions in building materials generally, it is encouraging to find a profit item that is *unrestricted—in quantity—in availability.*

And—faced with many problems of supply, it is encouraging to know that Texaco Asphalt Shingles and Roofing are quickly available—to and through Texaco Roofing Dealers—from a nearby Texaco warehouse. This is more than a physical convenience—it means that you can operate with smaller inventories, less money tied up in stocks and quicker turnover. And so—better profits.

Remembering that asphalt is America's 2 to 1 favorite (over all other types of roofing combined)—that Texaco is a name that millions know—that there is a Texaco roofing product for every roofing need—you've really got something to sell!

Texaco Asphalt Shingles and Roofing are available to Texaco Roofing Dealers through a large network of Texaco warehouses—east of the Rockies. Drop in, write or 'phone your nearest Texaco Roofing Dealer today, or write The Texas Company, Roofing Sales Division, 135 East 42nd Street, New York, N. Y.



TEXACO



SHINGLES and ROOFING

PREFABRICATION UP-TO-DATE

MARCH *Special Feature Issue* AMERICAN BUILDER

Continuing the feature issue program begun in January, American Builder will present in its March issue a complete, up-to-the-minute round-up of prefabrication information.

Every building professional should have a copy of this issue for its value as a permanent reference source on the subject of prefabrication.

As the leading feature in this virtual "Prefabrication Handbook" issue, you will find a full story of the amazing growth of prefabrication, along with illustrated biographical sketches of leading prefabricators in operation.

NATIONAL VS. LOCAL

The March issue of American Builder will also contain articles which survey the principal manufacturing and distribution systems of the products of prefabricators: (1) The large centrally located plants that can turn out one or more models for national distribution; (2) the regional shop fabricators capable of producing one or more flexible building units to be assembled within the surrounding trade areas; (3) the on-the-site producer of a custom-built unit planned and assembled to fill a specific contract.

THE "HOW" OF PREFABRICATION

A detailed method article will disclose the latest production practices of prefabricators, with emphasis on materials used, power equipment and other labor-saving devices employed to back up the assembly line.

Special Feature Issues

AMERICAN BUILDER'S EDITORIAL PROGRAM FOR 1943

Below, we list the principal editorial themes of each "Feature Issue" in American Builder's program for 1943. "Project Issues" not shown on this list will present field reports on current wartime building.

JANUARY: Building Tomorrow — Prospect and Preview.

FEBRUARY: The Immediate War Housing Job.

MARCH: Prefabrication Up-to-Date.

APRIL: Spring Building Number.

MAY: Looking Ahead to the Post-War Quality Home.

JUNE: Service and Commercial Buildings of Tomorrow.

AUGUST: Farm Buildings—Why, What, When.

OCTOBER: New Products and Research in Tomorrow's Homes.

All regular departments of American Builder will appear in each 1943 issue, including "Wartime Maintenance and Repair Section"—"Handy-Book of Practical Job Helps" and others you will find in the issue you now have in hand.

AMERICAN BUILDER, 30 Church Street, New York, New York

Enter my subscription for 1 year (\$2)

2 years (\$3)

Enclosed is \$..... in full payment.

New

Renewal

INCLUDE WITH MY SUBSCRIPTION, AT NO EXTRA COST,
A POSTPAID COPY OF DEFENSE HOMES HANDBOOK

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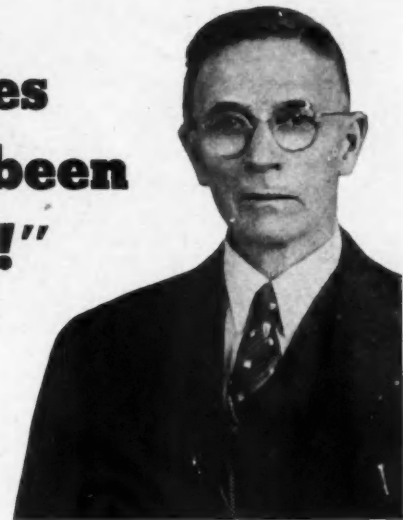
State Occupation

2-43

This offer good only in United States and Canada

CLIP AND MAIL
THIS COUPON
TODAY!

"We used J-M Asbestos Shingles on a new roof... after they'd been on another roof for 30 YEARS!"



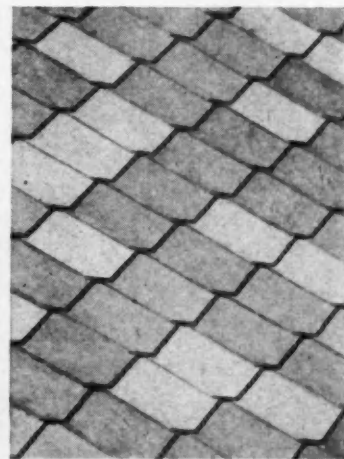
says **FRED WESTLUND**
Frankclay, Mo.



IN 1910, Mr. Fred T. Westlund was an industrious craftsman who had previously served his apprenticeship in Sweden. His first principle of business was to build for permanence. Consequently he often recommended and used Johns-Manville Asbestos Shingles on his jobs...



THIS SCHOOL at Frankclay, Mo. is typical. Built in 1910, over 30 years ago, it was roofed by Mr. Westlund with J-M Hexagonal Asbestos Shingles. 30 years later he had the contract of wrecking the building. He then used some of the salvaged shingles on the residence of Mr. Edward F. Karsch of Leadwood, Mo.



IN 1940, J-M Asbestos Shingles were found to be just as weatherproof and fireproof as the day they were first applied thirty years previously.



TODAY Johns-Manville has developed an entirely new type of asbestos shingle possessing the same permanence and fireproof qualities, but with new beauty, color and texture. Known as American Colonials, these new asbestos shingles are easier to apply—have fewer pieces to handle—yet they cost no more!

When re-roofing is needed today in order to keep property in sound repair, tell your prospects about these fireproof "30 year plus" shingles. They are an investment in permanence and security which is the right kind of an investment to make during wartime.

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

JM **Johns-Manville**
Asbestos Shingles

Letters

*Facts, Opinion and Advice
Welcomed for This Dept.*

"Absolutely Sound"— Capper

Washington, D. C.

To the Editor:

Your suggestions as to the way the building industry can render outstanding service in a War program are timely and I am convinced that your judgment is absolutely sound.—ARTHUR CAPPER, Senator from Kansas.

Wants More

New Haven, Conn.

To the Editor:

I have just read a preprint of your January article, "The Home Building Wave of the Future." If this is a sample of what is coming in the January issue, I am very anxious to get my hands on it.—BRYAN WARMAN, Sargent & Company.

Wants More Dunn

Princess Anne, Md.

To the Editor:

Tell Mr. S. O. Dunn to write two pages a month instead of one. His page is one of your best departments.—FRANKLIN M. LE CATES.

Helped Merger

Philadelphia, Pa.

To the Editor:

Your December issue covering our national association activities was beautifully done. I think your inspiration and guidance had a great deal to do with the merger of both national associations into one hard-hitting agency. — CARROLL SHELTON, Executive Secretary, Home Builders' Association of Philadelphia.

Prepare for Busy Years

Washington, D. C.

To the Editor:

I want to compliment you upon the forceful and incisive editorials which your magazine carries. They should be of considerable value in putting the facts of the war building program before the citizens of the country.

I believe that the building industry can look forward to the unprecedented prosperity in the post-war era. I make this observation on the basis of past experience, for I was Secretary of Labor and president of the National Housing Organization at the close of the last war, and I remember well the terrific building boom which took place.

When we consider the tremendous ef-

fect the automobile had on our civilization after the last war, we can only realize that the modernized airplane will have a much more profound influence on our civilization at the close of this war. Distances will be dwarfed. Homes will be built further away from the industrial centers; the population will become more decentralized. Indeed, we may even hope for the removal of those vast slum areas which now scar our cities.

And when this era comes, the building industry must be prepared to meet it. The people, by reason of forced war-savings, will be anxious to invest their money in a sound, modern home—the best investment that any man can make.

I say that the building industry should be ready if it is not, the government will have to put some sort of machinery in motion to accomplish the same thing—post-war reconstruction. But our experience in this nation has proved to us that private industry and individual enterprise are the most efficient, the most reasonable, and the most productive methods of achieving great things.

Therefore, I say to all members of the building industry, prepare for the busy years to come! If you will do this, post-war prosperity is assured, for when the building industry is on the move, the thousands of other industries related to it are also on the move—and the entire picture is a happy one of ample employment and rapid growth.—JAMES J. DAVIS, Senator.

No Notebooks

St. Louis, Mo.

To the Editor:

Will you please advise us the price of the "Handy Book of Practical Job Helps" as shown on pages 58 and 59 of your January issue?—C. L. DANN, Wiles-Chipman Lumber Company.

American Builder has no notebooks for sale. The "Job Helps" are complete as shown; are part of a series, four of which are to be published each month, may be filed if desired.—The Editors.

Read to Rotary

Howard, Kans.

To the Editor:

We must express our appreciation for Mr. Dunn's article, "Freedom Abroad, but Not at Home." Having charge of a program before our Rotary Club in which we presented the "Four Freedoms," we

read it to the group. It is going to take a lot of such thinking and preaching to bring enough of the American people around to the place where they will demand these freedoms at home and will do something to secure them. Let the good work go on.—W. V. GIBBON.

WPB Explains

Washington, D. C.

To the Editor:

The points raised by Hugh Potter in his article (December) are of prime importance. Some of them have been covered in the Joint Declaration of Policy on War Housing announced by the War Production Board and the National Housing Agency after your issue went to press.

Housing is considered a vital part of the war effort and its program must be geared to other essential parts, such as production of munitions, maintenance of public services and manufacture of goods to keep civilian economy sound and healthy.

Under the policy, the National Housing Agency will be responsible for the housing program. The War Production Board will allot materials by calendar quarters to meet specific approved programs. In announcing the joint declaration, Mr. Nelson said:

"Application of the new policy is expected to make available the maximum of housing for war workers within the limits imposed by the materials that are from time to time available for allocation to this essential part of the war program. When war housing programs have been approved, WPB will endeavor to provide materials necessary to carry them to completion as expeditiously as is consistent with all other elements of the war effort."

Other action is being studied to the end that housing receives its due consideration in the war effort.—STEPHEN E. FITZGERALD, War Production Board.

Lemke Hits Bureaucrats

Washington, D. C.

To the Editor:

I am fully in accord with you that to date the vast potential manpower has been unused and dissipated. This, because of the ignorance of a few bureaucrats. And Congress is weak-kneed and surrendered to the bureaucrats.

Government by bureaucracy must be abolished or the nation will fall even though we win the foreign war.—WM. I. LEMKE.



SIGHTED BOTTLENECK —BLASTED SAME!

Blast the bottleneck right out of your production line with Monarch Uni-Point Radial Saws. Eliminate the greatest enemy of all—*Lost Time!*

Whether a submarine lurking in the dark—or a bottleneck torpedoing your production flow—once blasted, it adds up to the same total—another step toward Victory!

The right machine in the right place is as good a shot in this war, as the right bomb-load over the right target!

In woodcutting the right machine is Uni-Point! How does Uni-Point save time?—Study these seven points about one-point cutting—a bomb-load of sawdust sense!



MONARCH UNI-POINT RADIAL SAW

- 1 No long over-arm to swing around to adjust for different angle cuts—minutes saved!
- 2 No need to change gauges and stops to conform with changing position of saw blade on different angle positions—more minutes saved!
- 3 No need to move and reset work to meet position change of saw—more minutes saved!
- 4 No need to raise or lower saw on plain or compound angle adjustments—more minutes saved!
- 5 No need to shut off motor and wait for saw to stop to make angle changes—pivot, snap and start cutting—more minutes saved!
- 6 No mutilated guide fence to replace—more minutes saved!
- 7 Simple as the old miter box—no extra gadgets to fuss with—more minutes saved!

Write for details. Ask for Catalog 60.

We also manufacture modern Saw Benches, Band Saws, Jointers, Planers, Lathes, Shapers, Mortisers, Sanders, Swing Saws. Also a complete line of Saw Mill Machinery.



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HACKETTSTOWN, NEW JERSEY

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.

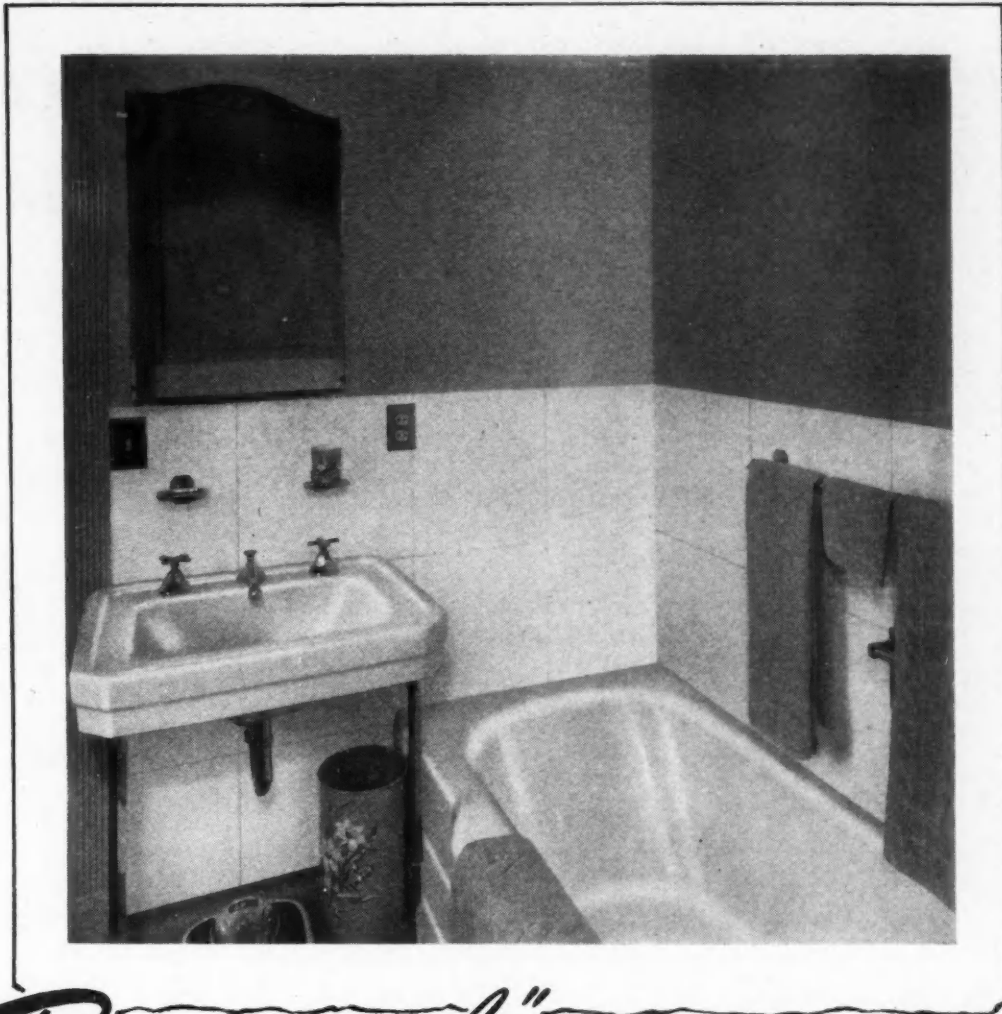


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AMERICAN BUILDER



PUT *"Buy-appeal"* INTO TOMORROW'S HOUSES
 ... WITH **CARRARA**

GETTING prospects to sign on the dotted line will present pretty much the same problems after the war. The main change will be that prospects will expect something "different"—something better than they had before. For it is typically American to demand progress, and it is as true of home-buyers as any other group.

And so it is important to put into your designs for tomorrow's homes an eye-catching room that prospects just can't resist having. One of the best bets is a Carrara bathroom. There are nine beautiful colors to choose from. Carrara makes a room

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Carrara is not costly — it can be used in homes of every price class — not only for complete walls set on the job, but also in prefabricated sections ideal for low-cost homes.

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stands for Quality Glass and Paint

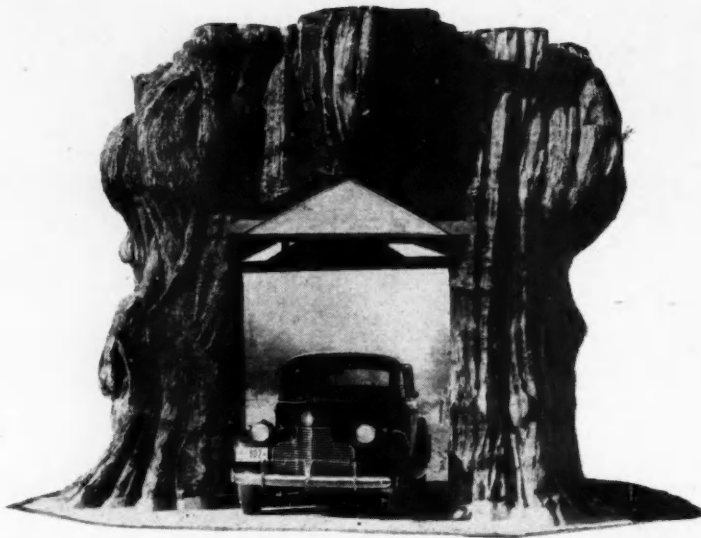
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The modern Structural Glass
 PITTSBURGH PLATE GLASS COMPANY

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Please send me, without obligation, free literature on Carrara as follows: (Please check)

- Full-color booklet "How to make Bathrooms and Kitchens Better Looking."
- Complete facts about Ready-Built Carrara Glass Panels.

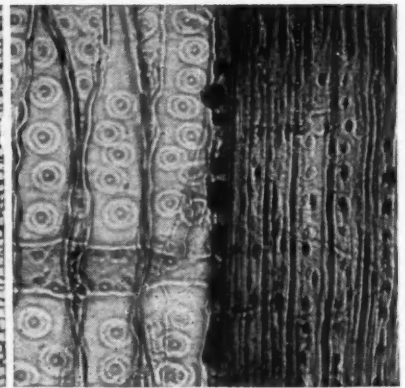
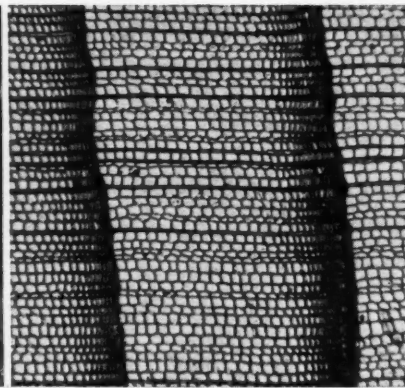
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Thuja Gigantea

... and how!

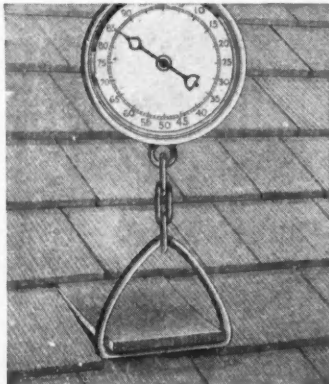
Certigrade Shingles are made from this giant "tree of life" —the Western Red Cedar.



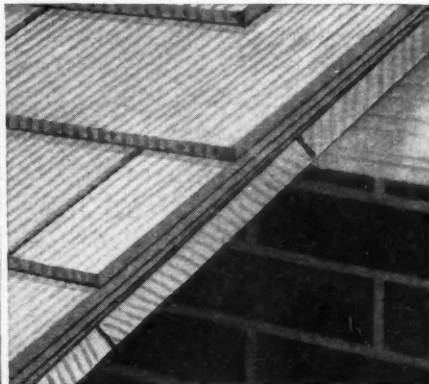
A MIRACLE OF NATURE. In describing Western Red Cedar wood scientist George B. Sudworth states: "Great durability under all sorts of exposure is its most important commercial quality." In proportion to its weight, wood of Red Cedar is exceptionally strong.

INSULATING CELLS. There are several million air-filled heat insulating cells in every cubic inch of Certigrade Red Cedar Shingles. The dark horizontal lines are wood rays that reinforce against splitting.

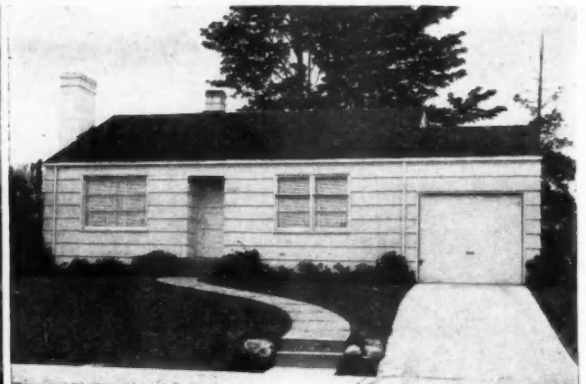
MAGNIFIED 300 TIMES. A section of a Certigrade shingle, showing globules of natural preservative oil which account for high resistance to decay over long periods of time.



HURRICANE-PROOF. Tests prove that a force of 85 lbs. is required before a properly nailed Certigrade shingle can be loosened from a roof.



ACTS LIKE A BRIDGE. A properly constructed shingle roof has at least three shingle layers at every point, providing a "bridging" effect, which accounts for high resistance to wind and heavy snow.



SATISFACTION ALL AROUND. Builders everywhere report: "When a Certigrade Red Cedar shingle roof is properly applied, you can be sure of customer satisfaction . . . and no kick-backs." Note also the beauty and substantial appearance of the double-coursed sidewalls above.

RED CEDAR SHINGLE BUREAU, White Bldg., Seattle, Wash. AB 243

Please send me, free, a complete set of blueprints which show how Red Cedar Shingles are applied properly on roofs and sidewalls.

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Red Cedar SHINGLES

Housing Stalemate a Disgrace

WITH each passing day, it appears more and more as though private builders have been *deliberately* frozen out of war housing.

While delivering lip service to private enterprise, officials of the National Housing Agency and other government agencies have finally succeeded in bringing about such impossible working conditions as to strangle this industry. Applications for FHA financing have dropped to a trickle, showing that builders are finding it impossible to function under present war housing standards.

Why this delay?

Promises have been made that these standards will be changed; but months have passed with delay upon delay, inexcusably prolonged.

Can it be that the National Housing Agency is purposely obstructing the private enterprise program? *American Builder* does not make this charge because it seems inconceivable that patriotic men in high government places could, or would, intentionally engage in sabotage.

But we will quote the remark of a responsible official of the FHA—a subsidiary of NHA—who says that "*if they had deliberately hired a group of men to confuse and obstruct private enterprise, they could not have done a better job.*"

FHA was O.K.

Under the Federal Housing Administration in pre-war days, private building firms were producing an enormous volume of low cost housing. A total of 615,000 private units were built in 1941 compared with only 90,000 public. This productive skill and capacity of private enterprise could have been converted to war housing.

But no. Private builders have been practically forced out of the picture. FHA has been throttled from the top, its staff cut. Work has been swung to public agencies despite their record of inefficiency, blundering, high costs, and delays. Now the *announced* program for 1943 is 170,000 units by private enterprise, and 170,000 by public—an inexcusably high allocation of business to public agencies that could be done far better, cheaper, and quicker by private enterprise. Yet, the situation is worse than that because by setting up impossible conditions even the 170,000 badly needed private units may be choked off.

This housing stalemate is a disgrace, and calls for a thorough airing in Congress. Senator Taft has already introduced a resolution empowering the Senatorial Committee on Education and Labor to investigate the National Housing Agency. We urge this committee to see whether, as has been so frequently reported, this agency is controlled by persons who want to see private building and private home ownership destroyed.

Let them inquire why employees of FPFA (public housing) have been loaded on the payroll so rapidly that *they now outnumber FHA and all other divisions of the National Housing Agency combined.*

If Director Blandford and his associates in the National Housing Agency really want to get war housing built quickly where most needed—if that is, *as it should be*, their primary objective—they can demonstrate their sincerity by the following:

Appoint experienced builder

1. Appoint responsible, well known, experienced, residential builders to positions of authority in the agency, and demote the public housers.

2. Immediately revise the housing standards, making them workable, while at the same time conserving critical materials. *These two are not incompatible.*

3. Revise and simplify regulations and procedures.

4. Enlarge the staff of FHA, give it more authority, and charge it with *expediting and assisting* private building in areas where the shortage is most acute.

FHA has demonstrated amply over a period of years that it can get results from private builders. The logical step is to make FHA the top organization and put at its head an experienced residential builder who knows how to get action. There are plenty of Nelsons, Kanzlers and Kaisers in this field who can make the program click without such eternally disgraceful delay and confusion.

The building industry is large and concerns the lives of millions of people. It may be disorganized—but it has many fighters.

These men will not stand idly by and see private building enterprise exterminated.

Nor will they stand idly by and permit post-war building to be taken over by public housers.

Perhaps it's time to take off the kid gloves.



Builders Demand War Housing Action

Tired of lip service from ineffectual officials; may seek aid from Congress.

REPORTS from private residential builders throughout the country show that the long accumulating feeling of bitterness and anger at the treatment they have been receiving has reached a fiery point.

They have seen more and more business turned over to public housing agencies, and have found their own methods of procedure hog-tied, bound down and made impossible.

All of this in the face of the fact that war housing is acutely needed, that materials can be secured, and that there are plenty of builders with ability and men to do the job.

Active in the forefront of a campaign to get the rules changed in some fashion to permit the private builders to function is Robert P. Gerholz of the prominent building firm of Gerholz Healy Co., Flint, Mich. As chairman of the Emergency Committee of the National Association of Home Builders of the U.S., he is willing to lead the builders of the nation in a fight and carry the

matter to Congress, if necessary, if the Government officials do not live up to their promises.

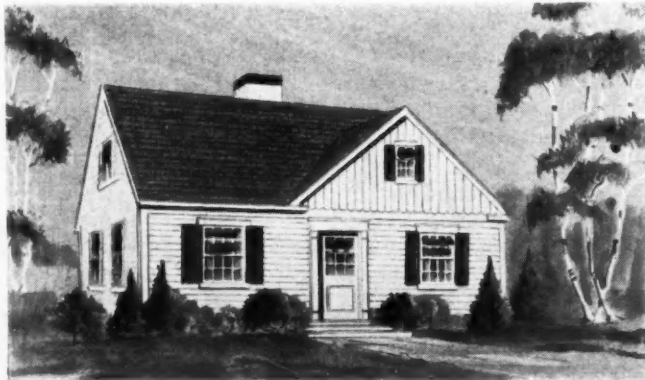
"We are going to keep on fighting," he told *American Builder*, "and we are going to follow through to see that we are given the chance to do our job."

Gerholz is a successful builder whose Bassett Park project is illustrated on this page. He has developed war houses well within the requirements of WPB, and has amply demonstrated the ability to get results.

At a meeting Jan. 24 and 25, Gerholz and members of the Home Builders Emergency Committee were assured by Government officials that important steps would be taken to make it possible for private builders to function. Included in those talked to were Blandford, Ferguson, Draper, McDonald, Kahler and Ferdinand Eberstadt of WPB. Assurances were given as follows:

1. WPB's revised standards would be issued "in a few days" and would provide an increase in floor area

(Continued to page 71)



COMPACT Gerholz Healy war house meets minimum requirements, but provides good livable plan. Gerholz and Healy have built more than 1,000 homes in recent years in their town.

★ **SUGGESTIONS TO MAKE**
 ★
 ★ **HOUSING PROGRAM WORK**



BASSETT PARK, well laid out Flint, Mich., war home community built by Gerholz Healy Co. More than 150 houses have been built. 50 are under construction. Latest models fit new WPB standards.



GERHOLZ

ROBERT E. ADAMS, builder of more than 300 houses in booming Tulsa, Okla., says:

"Our people will not live in row houses or temporary shacks or dormitories, and the builders are not interested in housing that has one bedroom 10 x 10, or 100 square feet, another bedroom 8 x 8½, or 70 square feet.

"Therefore, there will be no building by private builders in Tulsa unless the War Housing standards are modified. The floor areas must be increased to 800 square feet. This defense area is close to the lumber mills of Arkansas and Oklahoma, and lumber is available.

"Our builders have stopped any plans for additional housing in this area.

"Even should we be able to obtain priorities, it would be impossible to obtain loans from mortgage companies on houses of latest WPB standards.

"The uncertainty surrounding priority certificates when issued and the disposition of the WPB to change the deal after priorities are issued, have made us jittery. We fear we may have to redraw our plans and write new ones or that after we have obtained priority certificates they will be cancelled. The obstacles confronting us now are so great that even with our sturdy western hearts we are afraid to approach any new projects, and it will require considerable assurance from WPB and the NHA.

"In my opinion, we will need about 1,500 houses in Tulsa. Private builders can build them, and will build them with proper assurances.

"We fear that there are those in power in Washington who would destroy all private enterprise, so far as housing is concerned, and we are discouraged."



GIRSH

M. L. GIRSH of the M. Home Builders Assn. of Philadelphia makes the following proposals:

1. A builder with an established reputation and proved ability should be permitted to build war housing under Section 608 (Title

VI) without having to advance funds of his own or extend his own obligations. In other words, the housing should be built on government responsibility with the government making construction advances without all of the present restrictions that are in the present Section 608 regulations.

The provisions relative to surety bonds and cash deposits by the builder, as set forth in the Section 608 regulations, should be abandoned or modified to such an extent that it becomes relatively easy for the builder to build war housing rather than a hazardous financial undertaking as at present. All of the present regulations relating to financial responsibility, surety bonds, etc., should be eliminated.

2. The present restrictions covering the use of material have gone to the extreme and should now be made somewhat more liberal. The restrictions on the size of war housing units should be modified to permit at least a 10 per cent increase over the present size limits.

3. The builder should be permitted sufficient lumber to build the project under FHA minimum construction requirements. At present, there is an overall maximum limitation of the War Production Board which does not tie in with the minimum FHA standards. If the two figures do tie in, they do not recognize any waste in the cutting of lumber as well as the lumber required for scaffolding, etc., that is absolutely necessary in the construction of the job. There is really no need for the overall WPB limitation on the amount of lumber per house as the lumber requirements are specified by the FHA in its minimum minimum construction requirements. Certainly there is no waste of lumber on a building project, particularly in view of the present day cost of lumber.

Wants Fewer Inspectors

4. War Production Board regulations permit the sale of housing after occupancy by a war worker for four months. At the same time, these regulations prohibit the use of a separate plumbing stack for each house, which in effect makes it impossible to sell war housing

(Continued to page 71)



GUINAN

W. J. GUINAN, executive secretary of the Builders Association of Detroit, declares that the War Housing agencies have proved their "complete incapacity." He proposes a War Housing

Congressional Committee, and a simple license system for builders.

Features of his plan include:

Permission to proceed will be given in the form of a simple license carrying a serial number.

A dealer may sell building supplies—except for maintenance and repair—only to whom the WPB has issued licenses to build war housing.

The holder of a license shall agree to use only those materials and quantities specified in the WPB Housing Manual.

Quarterly Allotments

An applicant for a license shall be assigned only that number of units which he can complete in four months.

The WPB shall issue to the NHA each quarter an allotment covering the total number of dwelling units to be built in all defense areas, and issue at the same time a blanket priority covering the total amount of critical materials needed to build the allotted construction.

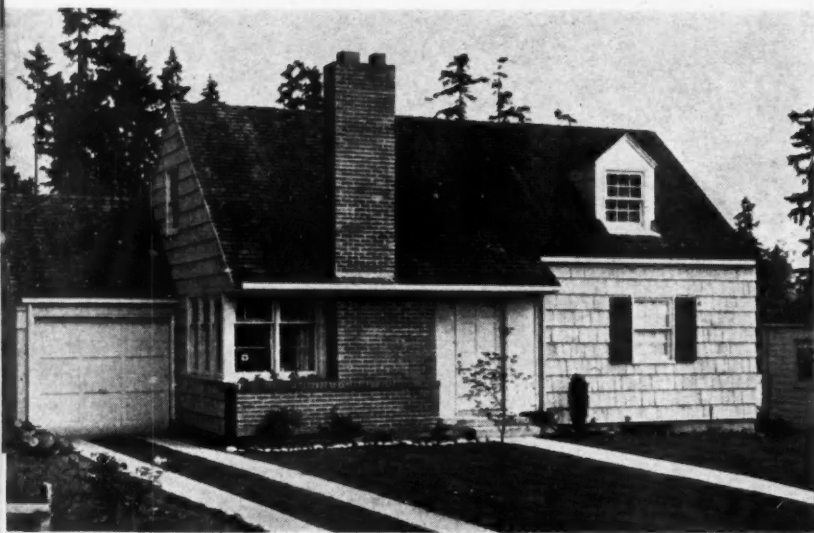
WPB shall issue no licenses to build war housing on any sites not already served by public utilities; if other sites are available within the area which are already served by utilities.

Any contemplated changes in rules and regulations shall be submitted to National Home Building Organizations at least ten days prior to their effective date. These changes in rules or regulations shall be subject to review and approval of the Congressional War Housing Committee before becoming effective.

NHA shall determine the number of war housing units to be built in each area. Allocations shall be made quarterly, and made available to the active trade organizations such as architects', lumber dealers', material supply dealers', and builder associations.

The NHA shall program NO publicly financed housing in any area which has been adequately served by the private building industry. Burden of such proof shall be on the NHA and subject to review and approval of the Congressional War Housing Committee. Notice of such hearings shall be published at least 30 days prior.

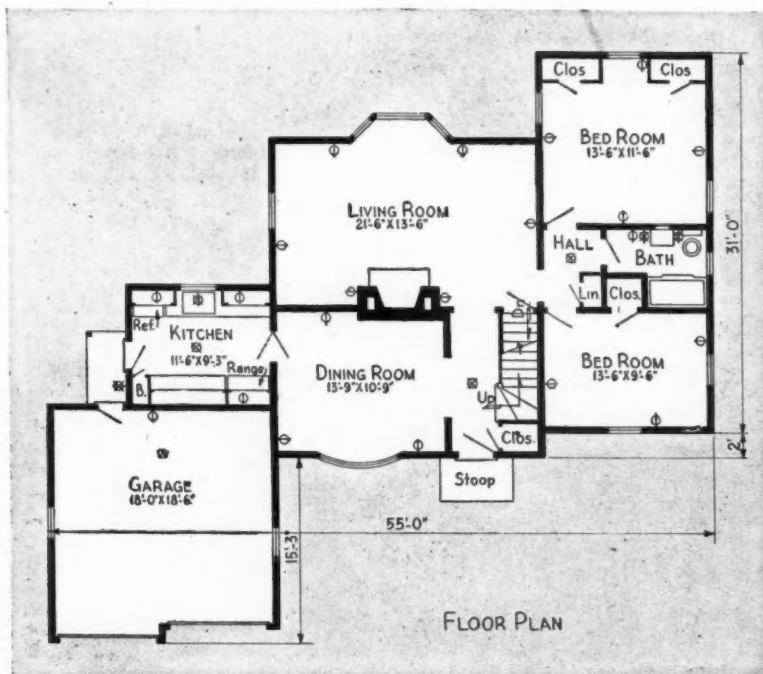
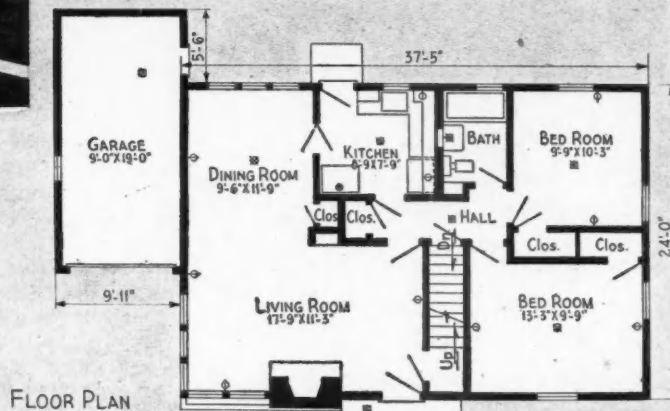
Inasmuch as the WPB has set ceilings (Continued to page 71)



POPULAR NORTHWEST COLONIAL

DESCRIBED by Builder Al Balch of Seattle, Wash., as "the most popular design we have ever had," the above illustration presents an attractive five-room and attached garage Northwest Colonial home. He has built it in his Wedgwood development with six exterior variations to fit the basic plan developed by the architects—Thomas, Grainger & Thomas. These neat little houses placed on 60 by 100 foot lots line the curved streets. (More details will be found in a later issue.)

REFLECTING the growing consumer interest in peacetime homes, as evidenced by an increasing number of inquiries to building professionals, we are inaugurating a new feature on these pages—"American Builder's Blue Ribbon Designs for the Post-War Building Market." This monthly department will provide ideas that will be useful in planning for the home building wave of the future. The material will cover the best pre-war houses—the only logical starting point.



NEW ENGLAND CHARM—R VIEW

THE floor plan at the left for the charming Connecticut home below was worked out by Architect Norris F. Prentice to take advantage of the sloping site in Builder Wallace B. Goodwin's Woodridge development near West Hartford, Conn.



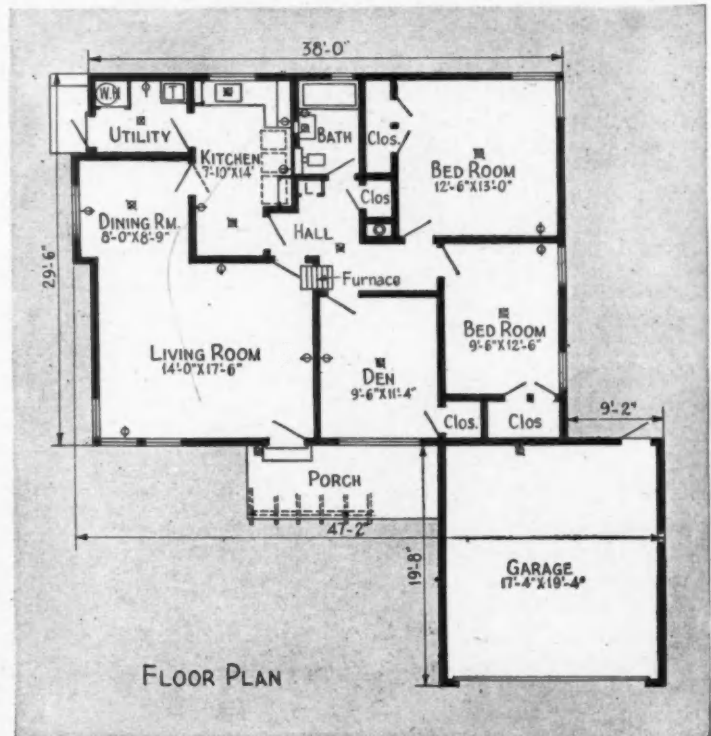
TWO VARIATIONS OF CALIFORNIA MODERN FOR A SIX-ROOM PLAN

FRITZ B. BURNS' Toluca Wood project, where he has built 400 popular priced two- and three-bedroom homes in suburban Hollywood, offers delightful living, as viewed at the right. Proper landscaping sets off the clean-cut California modern styling which had become increasingly popular before the war. Although the impression is that of a rambling type of house, the floor plan at the lower right is actually very compact and efficient. Three bedrooms (one can be a den) are well separated from living and service areas.



VIEW OVER WATER

This exterior view of the Goodwin home shows the side which faces the street, while the living room-master bedroom side overlooks a splendid view of the lake. It was one of the last designs to be completed by this New England builder in his development before the war.



Wallace E. Johnson— the Henry Kaiser of

THE Army or Navy picks a site for a new war industry in the Mid-South. The War or Navy Department asks the National Housing Authority to make a survey of housing needs in that area. The NHA makes the study and allocates a certain number of new homes for the specific area. The War Production Board takes its cue from the NHA and grants necessary priorities and specifies what price houses must be built and what rent may be charged.

And that's where Wallace E. Johnson, Memphis (Tenn.) builder, enters upon the scene of this little drama of housing America's war workers—and housing them in a hurry. Fifty-three houses at Pine Bluff, Ark., was one of his recent orders; sixty-two days later the houses were ready for the workers, houses of permanent construction.

Like Henry J. Kaiser's ship building program, Mr. Johnson sets new records in building homes for war workers only to break his own records on the very next job. The name of Wallace E. Johnson has become synonymous in the South with building homes for war workers and no wonder.

Mr. Johnson is almost fanatical on efficiency in building. Building cheaply and hurriedly is accomplished by pre-cutting, specialization of labor, building houses in groups with assembly line methods and by designing room sizes according to stock lengths of lumber.

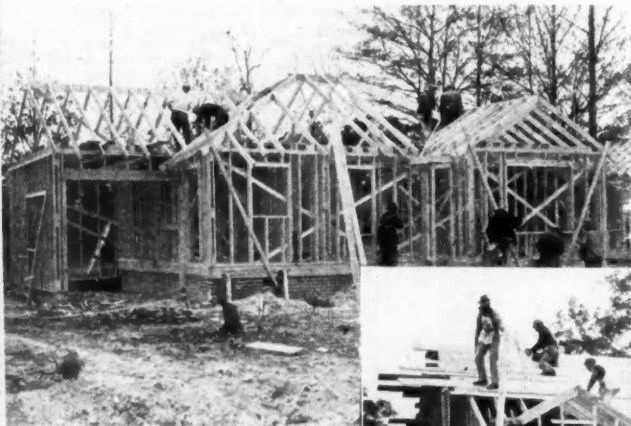
Studs are all sawed to exactly equal length by machinery and men who know how to saw accurately. "T" joints, framework for wall corners, door and window openings are nailed together in the shops. Window frames, cabinet work and trim are prepared in the shops. When material is shipped to the job, carpenters simply have to nail it together to build a house. They can't make serious mistakes. There's no waste from mistakes in cutting. There are no "cockeyed" walls and ceilings from studs of uneven length.

A single supervisor can watch as many as 11 houses at a time. When a job is finished you can carry off the waste in one wheelbarrow load.

Mr. Johnson schools all of his foremen and workers. They are paid for their days in school. When they go on the job,



JOHNSON, his method (below) and—



FIRST DAY

The framing of this house was started the same day as the photo was taken at Pine Bluff, Ark., where Wallace E. Johnson, Memphis builder, is busy erecting more than 300 of such units for war plant workers. Pre-cut lumber is ready for nailing when it arrives on the job, saving time, eliminating waste.



SECOND DAY

This view shows a typical Johnson house at the end of the second day; framing finished, closing in and siding well under way.

Here is the same house as shown at the left, finished. This housing is being built at the rate of four completed jobs a day. A little landscaping, a few finishing touches still needed.

FINISHED JOB



er of War Housing

How this Memphis, Tennessee, builder turns out private war housing units on an average of one every two-and-a-half hours

they know the "Johnson method." Once he told one of his schools, "If every man in this company should throw away one eight-penny nail a day for a year it would cost the company \$190."

His latest undertaking calls for the production of 240 houses in 60 days. That's a house every two and one-half hours in a 10 hour day. And these houses will be located in two different states, four different cities.

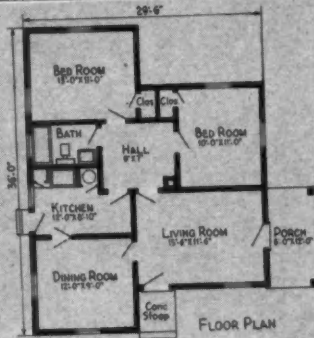
There will be 60 in Greenwood, 60 in Grenada, Miss., while there will be 60 in Pine Bluff and 60 in Blytheville, both in Arkansas. With those already built and those planned, Mr. Johnson will have constructed more than 300 houses in Pine Bluff for war workers before he is through.

There's many a headache in war housing. There are women painters, women paperhangers. They too are trained in school before they go on a job.

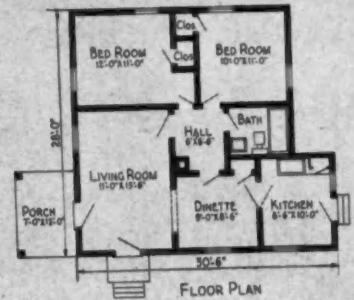
In fact Mr. Johnson's chief assistant is a woman, Mrs. Alma E. Johnson, his wife, who supervises all interior decorations, etc.

Every foreman fills out a daily inspection sheet on every project. All items finished that day or percentage of items finished that day are listed. Also the amount of money spent that day and the total spent on the project up through that day. These inspection sheets come to Johnson's office every morning, keeping him in constant touch with all of the projects. (Continued to next page)

—three of his war housing products

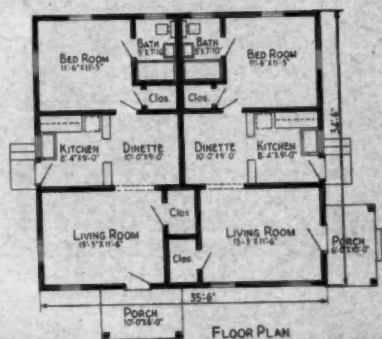


PERMANENT HOME: This unit in Wallace E. Johnson's Pine Bluff housing project has hardwood floors, tile bath and a livable arrangement as shown in the plan at the left. The exterior is attractive; closed-in porch adds to the appearance of size; detail gives a pleasing touch not usually found in such housing.



FIVE-ROOM UNIT in Johnson's 300-home program for Arkansas war workers is smaller than the other type of single-home unit illustrated. These houses rent for \$35 a month; plan is convenient; it can be completed in 2 1/2 days.

DUPLEX TYPE: This war housing unit provides good accommodations for two families at Pine Bluff, Ark. Considering limitations, it is attractive, has compact but comfortable floor plan; rental is \$27.50 per month for each side, which figures 1 per cent of total cost.





Johnson's Man on the Job

ABOVE, C. M. Jolly, general superintendent for Wallace E. Johnson, smiles because he is ahead of schedule; and that's something to smile over as it calls for one completed house a day on each of four different jobs—one house every 2½ hours.



ASSEMBLY line methods speed this project of Johnson's in Pine Bluff, Ark., as shown at right; even women painters are used (circle above) when labor is scarce. Yet all houses are different through variations that do not unduly slow production operations.



Both Mr. and Mrs. Johnson make regular visits to the various subdivisions. What if gasoline rationing cuts out these visits? Mr. Johnson has thought of that too. "I've arranged to buy a plane," he shot back.

Wallace E. Johnson, Inc., gained nationwide recognition early in the FHA program by building the first \$3000 house and lot in Tennessee.

His building business leads him in many directions, especially since he started housing war workers. He owns his own retail lumber yard. He bought a sawmill when lumber was frozen and he couldn't keep his projects going. He takes moving pictures of his houses to show how they rise from day to day.

Practically all homes for war workers are of five room construction. They are in the \$4000 class. FHA valuations on war workers' homes already finished or under construction by Mr. Johnson total \$2,300,000.

Monthly meetings of foremen are part of his regular routine. They come into Memphis and banquet at his expense at one of the leading downtown hotels. An annual barbecue for all employees is a big event.

The Johnson organization is the most efficient and loyal residential construction organization in the state. B. W. Horner, Tennessee director of FHA, said in a statement regarding this program:

"Mr. Wallace E. Johnson built his first house under FHA inspection in December, 1939, and since that time has completed and sold 673 homes in Memphis. In this time he has built up the most efficient and loyal residential construction organization in the State of Tennessee.

"By careful study, excellent planning and conscientious application he has brought his company to a position of high standing in the building industry. He is a Christian gentleman of the highest integrity and the influence of his life and ideals has permeated every member of his organization.

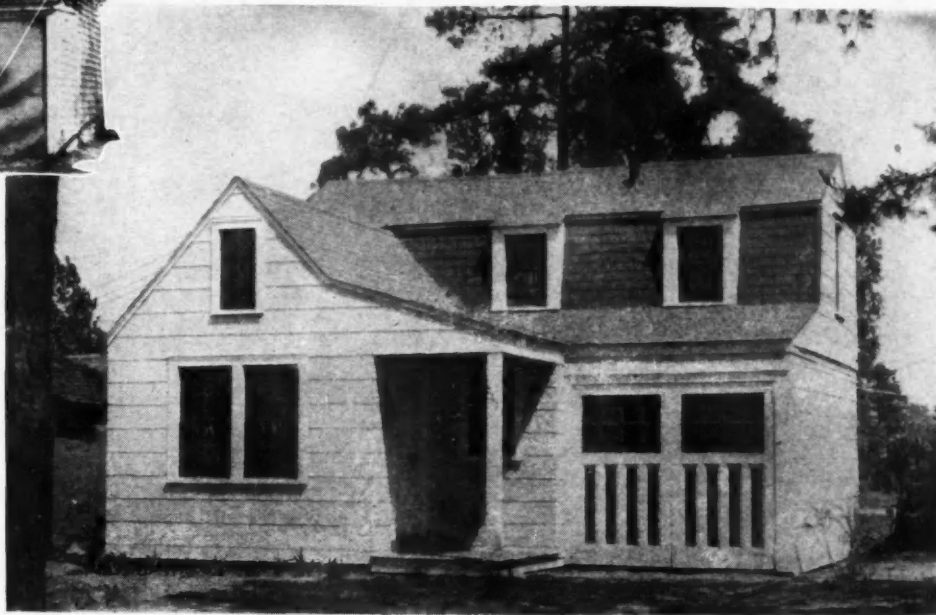
"FHA in Tennessee has utmost confidence in his ability and integrity. It is a remarkable tribute to his efficiency that there have been practically no complaints on account of poor workmanship and material in the construction of his houses made to the FHA by those who have purchased them.

"It has been my privilege to attend several of his employee meetings and I have been deeply impressed by the magnificent teamwork displayed in his organization evidencing his talents as an organizer and leader."



← Hopeless Wreck?

BEFORE the salvage and conversion of this old building which had been partially rebuilt once before for use as a garage, it appeared as above. AFTER Architect Charles A. Rais of West Springfield, Mass., had decided that it could be made habitable, the necessary work was completed with the results shown at right.

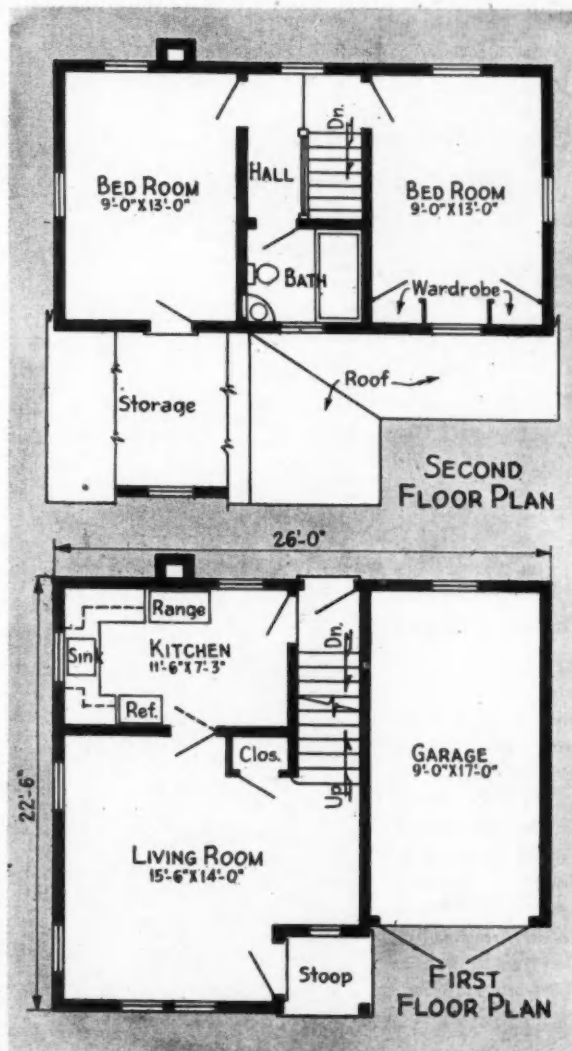


Look Again; There's a House in That Scrap Heap!

IN THESE days of salvage and conversion to provide additional quarters for workers in the expanding war program, no opportunities to bring old structures back to usefulness should be overlooked. Building industry men are the logical ones to scour their neighborhoods, smoke out old derelicts, and determine if there is any possibility of converting or rebuilding them. Besides the patriotic service thus rendered, these men can frequently find work to replace their normal operations.

At this time, some of the old structures which for years seemed to have no further utility can now be torn down for the lumber in them, and this might be used to rebuild such wrecks as the one illustrated on this page. It is a conversion in West Springfield, Mass., handled by Architect Charles A. Rais and Contractor J. A. McDonald. Considering what they had to work with, it is a noteworthy job; certainly there is no question as to the livability of the quarters provided—four rooms and attached garage. The exterior sidewalls have been covered with J-M asbestos shingles, asphalt roof applied, insulating board and tile board used on the interior and ceramic tile in bath.

THE PLAN of the hopeless wreck, as rebuilt by Contractor McDonald of West Springfield, Mass., offers a compact four-room and garage arrangement, as shown at the right. Part of the living room and the front porch were added; kitchen has dining space; second floor was divided into two good sized bedrooms and bath.



100 ATTICS Will House Over 200 War Workers—

**and Keep You in Business
for Many Months to Come**

IT IS estimated that at present there is enough wasted attic space in American homes to provide about 350,000 much-needed additional rooms. By proper use through compact arrangement, a war worker's family could be housed in a two-room suite; a single room would serve two workers as sleeping quarters.

Right there is one of the biggest opportunities for the builder still on the job. There should be at least a hundred attics in his town or neighborhood that need conversion if he is in a critical war production area—a chance to lend a helping hand in the war effort and keep himself and his organization busy for months to come.

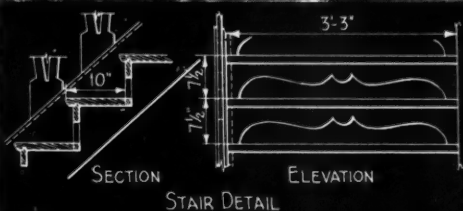
On these pages are suggestions on how to convert this unused space. At the left, Don McNeill, popular radio star, looks over his attic in a Chicago suburb for possibilities, his two sons enthusiastically joining in. Incidentally, this job went ahead, Contractor John Olson of Winnetka, Ill., doing the work.

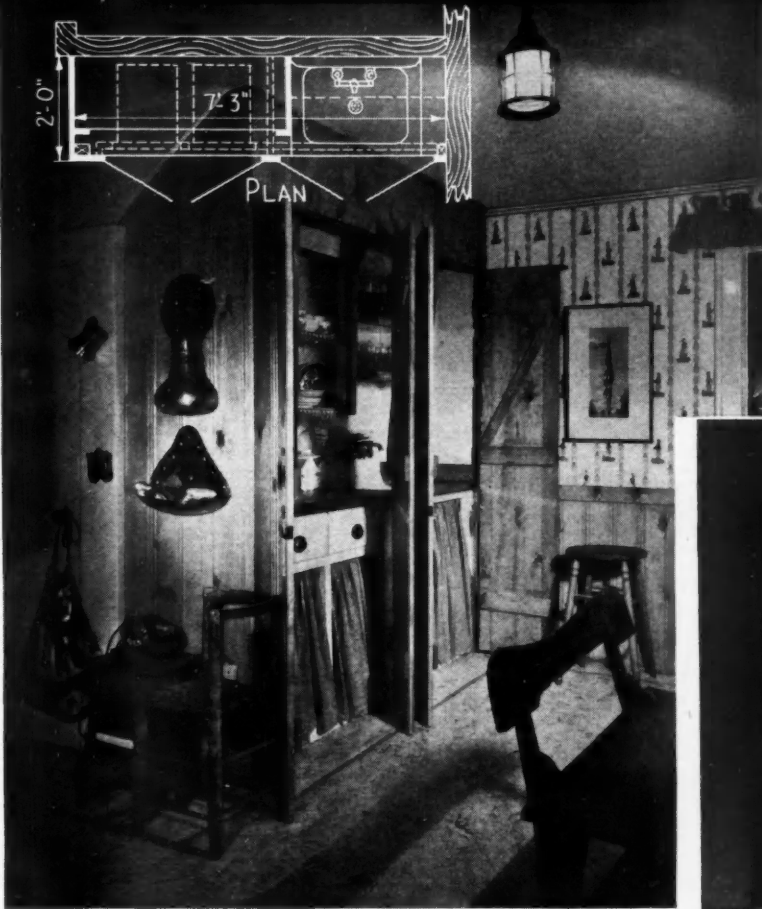
The other views present ideas which can be used in this type work. Details show how parts of these jobs were done: a decorative stairway that leads up

**WARTIME REPAIRS,
MAINTENANCE AND
CONVERSION JOBS**

Comfortable Quarters Under a Roof

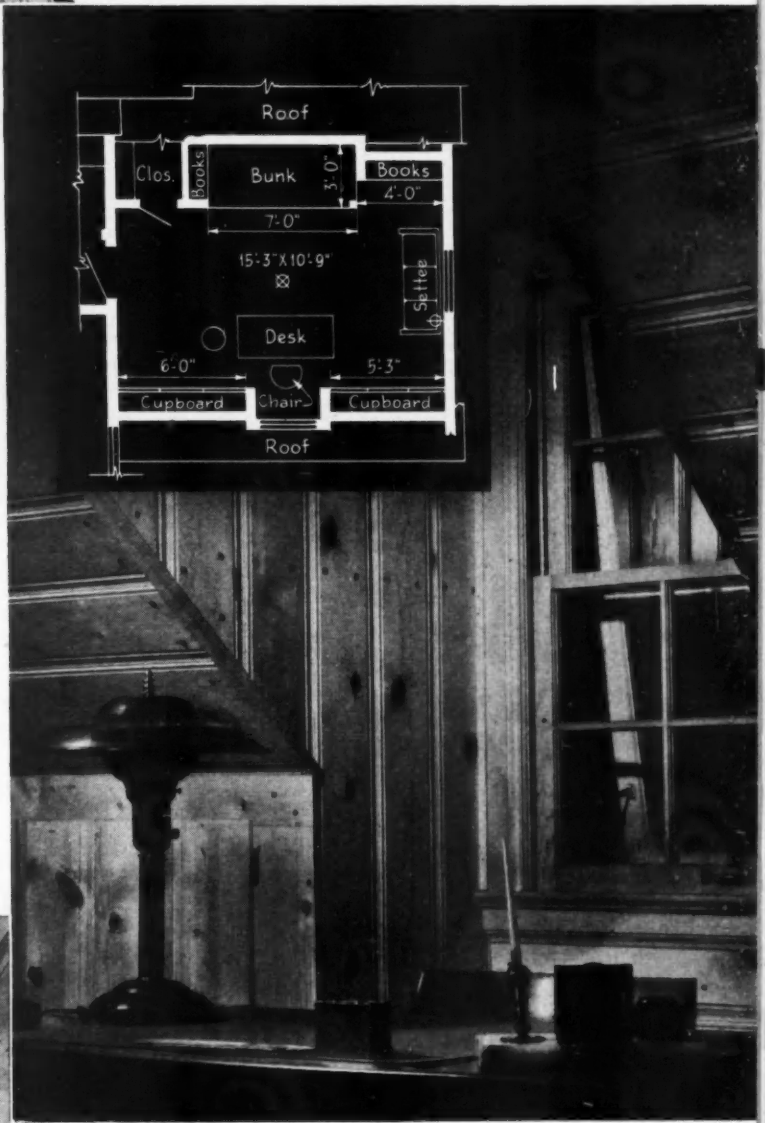
HERE is a snug little room tucked away in what might have been wasted attic space. The rustic stairway leading up to a room under the ridge is a center of interest. (See detail.) There are a number of other good details well worth studying.





How to Build a Small Kitchen for Attic Use

AT the left is pictured a pullman type kitchen built in under a roof slope. Note that it uses an old rolled rim sink, the type that can still be picked up second hand. The enclosure and doors are knotty pine, picking up the wainscot material. Under-sink storage, drawers, counter top and shelves all fit into a 7-by 2 foot space.



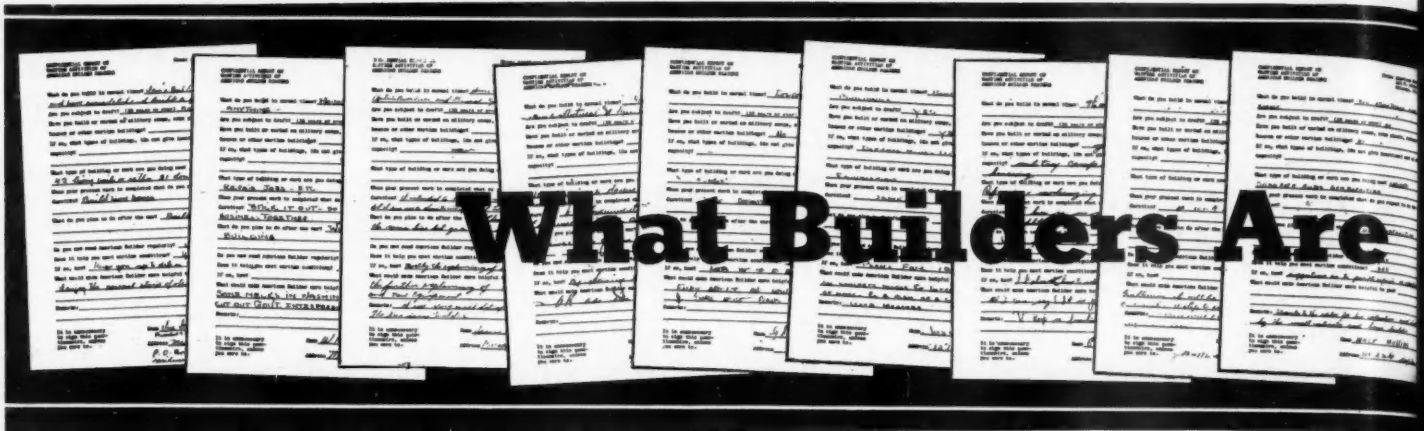
to bedroom space; a clever pullman type kitchen built into a corner; a compact single room laid out as a living room-bedroom in small space.

From a sales standpoint, advantages beyond the immediate housing opportunity can be brought out to the home owner. After all any such addition is a permanent improvement and, if not rented after the war, the space will probably be used by growing families, many of these attics having been planned originally for later finishing. Also the important job of attic insulating to save fuel can be done.

A Compact Living Room and Bedroom

AT the left is an attic room that has a wealth of charm and livability built in—such items as the bunk bed, bookcase, under-roof storage and pegged random width board finish. Above is a close-up of the dormer detail and plan.





What Builders Are Doing

By Lyman M. Forbes

HOW are builders fitting themselves into the war program? What are they doing today? What do they expect to do for the duration? What are they planning to do after the war? Those are some of the questions that *American Builder* recently asked a nation-wide cross-section of its readers.

Replies renew faith in both the patriotism and resourcefulness of the men who make up this nation's great building industry. While many already are in military service, the number is not as great as you might expect, for more than three quarters of those who replied (77.6 per cent) are over military age. Four out of each ten (40.2 per cent) have been, or are engaged in defense construction, such as the building of defense houses (including some prefabricated structures), military camps, barracks, hangars, shops, warehouses, depots, mess halls, hospitals, arms plants, arsenals, or other war contracts.

Busy on the "Home Front"

At present more than four out of each ten (42.5 per cent) are doing essential repair and maintenance work on the "home front," including remodeling, installation of insulation, storm sash, re-roofing, floor sanding, weatherstripping, and similar items. More than three out of each ten (31.6 per cent) expect to continue in this type of work for the duration.

One out of each eight men is now engaged in construction work in arsenals, air-craft factories, bomb-loading plants, or building other types of arms plants. One out of each 20 has turned to what is for them a new type of work, handling additions, maintenance and repairs in arms plants, factories and large commercial buildings. One of these commended *American Builder*, saying, "I took up your suggestion to go after industrial maintenance work and have more work than I can do."

Some Miscellaneous Jobs

Less than two out of each ten (17.2 per cent) have turned to "miscellaneous" occupations covering a wide range of activities, such as ship-building, airplane hangars, engineer on sewage disposal and water systems, estimating, project manager on industrial buildings, farm buildings, remodeling old houses, post office, superintendent of streets and public property, tax assessor and real estate broker, and a \$1.00-a-year man with the U. S. Treasury War Savings Staff.

Only 12.1 per cent reported that they are idle, or are closing their shops for the duration, and some of these undoubtedly will find war construction jobs of some kind.

How Builders Themselves into

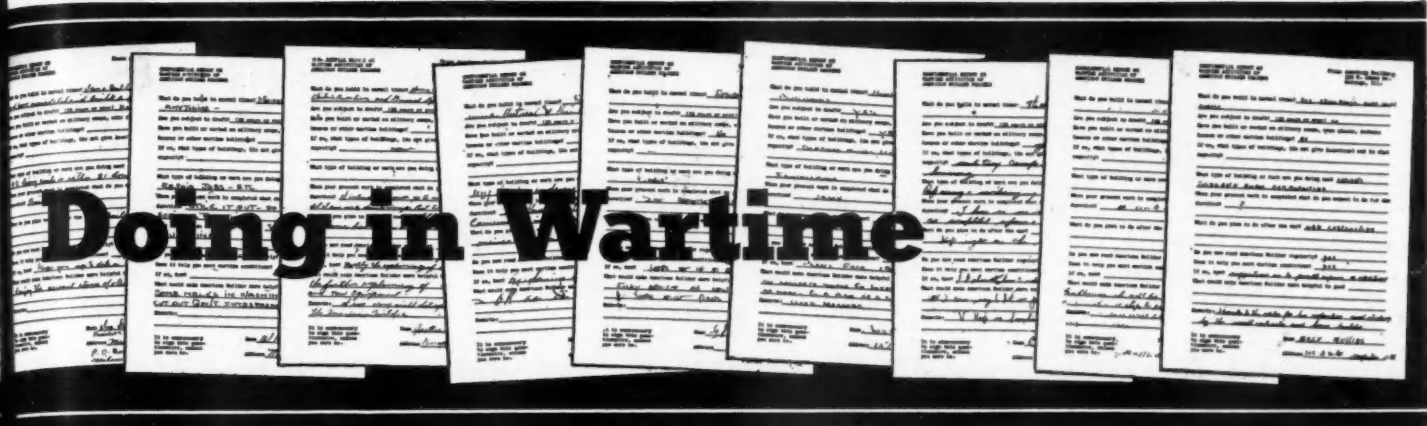
Four out of each ten have been, or are engaged in war construction.

At present four out of each ten are doing essential repair and maintenance work or remodeling on the "home front."

Only 12.1 per cent are temporarily idle.

More than three-quarters are over military age.

When asked what they expect to do for the duration, as previously stated, three out of each ten (31.6 per cent) expect to continue on general repair and maintenance work; approximately three out of each 20 (15.5 per cent) were "uncertain," or "undecided." One out of each ten (9.2 per cent) is engaged in some type of defense construction work that will continue for the duration, and another 17.3 per cent will seek work of this type. A rather large group (13.2 per cent) were classed as "miscellaneous," including occupations such as civil engineering,



Doing in Wartime

Research Editor, *American Builder*

Are Fitting War Program

One out of each 20 has turned to maintenance and repairs in arms plants, factories and large commercial buildings.

Nine out of each ten expect to resume building where they left off when the war began.

And 96.6 per cent say that they read *American Builder* regularly.

"Work in a paper mill," "Remain in the army," "Manage retail lumber yard," farming, and some classic comments like, "You answer this one," and "Lose the balance of my savings."

The question, "What do you plan to do after the war?" brought a very encouraging response. Nine out of ten (89.3 per cent) indicate that they expect to resume building where they left off when interrupted by the war. Less than one out of each ten (8.3 per cent) was "undecided." Only five readers failed to answer the question. Returns

indicate that 35.5 per cent are general contractors, 54.7 do residential building, 5.8 per cent repair and remodel, 2.3 per cent miscellaneous, and 1.7 per cent "no answer." Even those men who are temporarily engaged in wartime activities are reading and are planning their post-war work. Their replies indicate that they expect a large volume of building. Some already have business lined up, as shown by comments, such as, "I have prospects for two new houses, one store building, new roofs, etc.," and "I have five new homes awaiting in this non-defense area." Several have sons in the army and report that they expect to resume building upon their return.

This survey brought returns from readers in 169 different cities and towns, located in 37 states and the District of Columbia. Replies indicate that 96.6 per cent of the builders read *American Builder* regularly, and 63.2 per cent report that it helps them meet wartime conditions. Only 9.8 per cent answered this question negatively, because they temporarily are engaged in wartime jobs in arsenals, bomb-loading plants or other arms jobs—including one aviation instructor. All are reading the magazine to keep up on conditions and to prepare themselves for post-war building.

***American Builder* Is Helpful**

When asked how *American Builder* is helpful to them, readers were generous in their praise, as shown by remarks such as, "It gives me information in advance that I could not get otherwise." "By announcing new products of various manufacturers that can be used to replace hard-to-get things." "It gives the clearest picture of trade conditions in these troubled times that I have been able to find."

The question, "What would make *American Builder* more helpful to you?" evoked some splendid constructive suggestions, and also revealed how effectively the publication's editorial program is geared to the needs of its readers. A number of builders expressed concern over government regulations and public housing in the post-war era. Many are interested in seeing more plans of houses suitable for post-war construction; in fact there is keen interest in all editorial material dealing with conditions after the war. Readers commented favorably on the Publisher's Page, Washington News Summary and other regular departments.

Incidental remarks included many interesting comments: "More power to the *Builder*, a real 100 per cent American paper." "I have several other magazines on building. *American Builder* is worth more to me than all the others put together. I would not be without it."

Busy Today

H. E. Kennedy thought L-41 had bolted the door on building for the duration. But he went out to see for himself and below are a few of the commercial jobs he found. Photos, left to right, show:

- 1. \$137 Roof Repair over Bay Window**
- 2. \$5000 Hospital Staircase**
- 3. Re-roofing Hospital Job**
- 4. Factory floors to be Repaired**
- 5. Factory Equipment to be Painted**
- 6. Church Wing to be Added**

THE whole future of H. E. Kennedy, builder, Litchfield, Ill., hinged last year upon a \$137 hospital job. H. E. Kennedy didn't know it then. For a builder who had handled the construction of industrial plants, office buildings, church edifices, and \$30,000 homes, the roofing-over of a skylight above an overhanging bay window didn't seem like a very big project. But, the importance lay not in the size of the dollar but in the fact that here was a crack of light shining through what had hitherto been a clouded outlook.

Conservation Order L-41 on April 9, 1942, had looked like bad news and the end of building in a non-defense area. H. E. Kennedy considered his men and urged them to get other jobs while the getting was good. Of his key men he kept only two.

Now he has five men working with enough business

to keep them going. And here lies the moral that applies to builders in other towns with crews to keep busy.

For a number of years Kennedy had been hoping to do some work for the hospital, then just when things looked like they had closed up for the duration he secured the job of re-roofing the skylight of what had been the operating room.

There were other things to be done to the hospital.



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Today—Busier Tomorrow

Many things that the superintendent did not think could be done during the war. While Kennedy carefully supervised the small job he pointed out ways and means of accomplishing some of the other things that the superintendent wanted done.

The staircase, for example, was a fire trap; and it interfered with the operation of the hospital. Therefore Kennedy built a fireproof inclosed staircase on the outside rear wall of the hospital—getting in under the \$5,000 limitation.

From this start Kennedy began to develop other jobs. He started out to methodically canvas the town. The Woolworth store downtown had a repair and maintenance job. Window casements and sash on the second floor had rotted and needed replacement. In some places new flooring was needed, the receiving room needed a new entrance.

A utility had a repair and remodeling job that included taking off a porch and installing a new entrance.

There was a boiler repair at a greenhouse; repair of a warehouse entrance and door; a wainscot job, and a colorcreting job at the hospital—all besides the repair and maintenance work developed in various residences around town.

Kennedy states that this particular period has given him time to think. And he thinks thoughts like these:

"You see that Church edifice over there? See where that auditorium is sprouting out of the side? I've got the plans drawn for that when the war is over."

And sure enough he has the plans and you can see the auditorium sprout.

But not all of this visualized work is put off in the uncertain future. Another utility is interested in an essential repair and maintenance job—stimulated by the new front work accomplished. One of the largest factories in town must have its floors done over as soon as the proper materials can be tested in use. The equipment in this factory must be painted. The hoisting

equipment for carrying up the new asphalt roofing for the hospital is already in place and the work begun.

This is of course but half the story. The other half concerns the business developed in the repair and maintenance of residences in Litchfield—but chiefly this will be a story of the development for tomorrow, the house of the future—after the war.

(The second part of Mr. Kennedy's program will appear in the March issue of the American Builder—Ed.)

There's Work Here For You

Repair and maintenance of commercial and institutional establishments is often neglected. But there's plenty of work here to keep you busy.

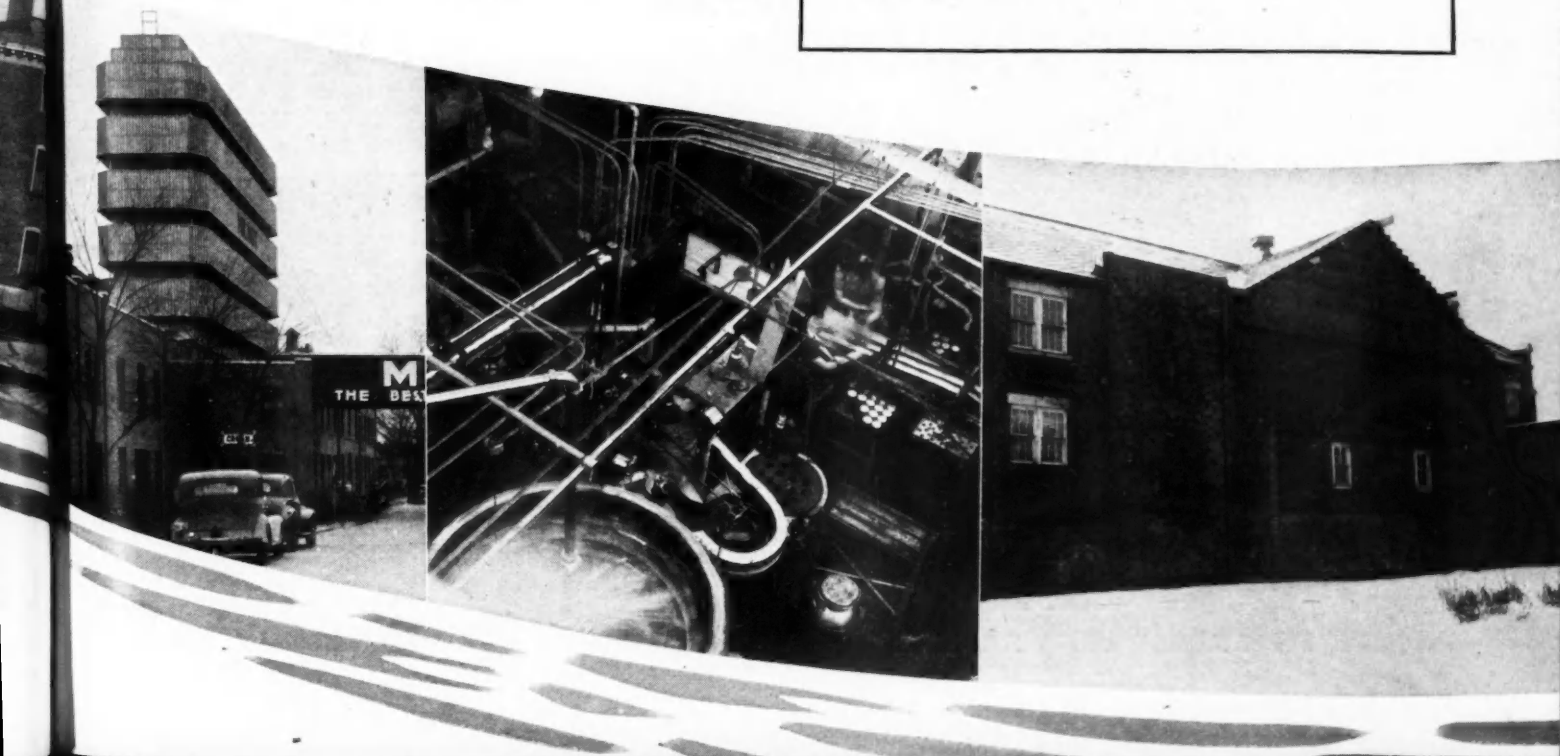
One typical Wisconsin town with 10,000 population, for example, has the following establishments:

8 schools	9 restaurants
14 churches	2 hospitals
2 movies	4 hotels
7 clubs	7 garages
80 retail establishments	

Average town of 10,000 in the United States has the following:

6 schools	2 hospitals
10 churches	4 clubs
2 hotels	2 theatres
6 garages	50 stores
8 restaurants	14 taverns
2 municipal buildings	2 bowling alleys

If you live in a town of 40,000, multiply the above figures by four to find the average potential possibilities in your town.





Jake on the Job for U.S.A.

Makes six war worker apartments from one old house; gets priority assistance and Title I FHA loan to keep nucleus crew busy.

JAKE BASS of Metuchen, N. J., is the kind of aggressive, persistent builder who keeps going, no matter what the difficulties.

Before the war he had a large crew at work building houses, apartments, small commercial structures, and did a considerable volume of remodeling. After the war he will be back in the building business in a big way.

But right now he is busy doing jobs that need to be done. Most important is the kind illustrated with this article—rebuilding an old white elephant mansion into a useful six-apartment structure to

house a half dozen war worker families.

Jake Bass did not wait for someone to come along and ask him to do this kind of work. He realized that the workers in the nearby Raritan arsenal needed places to live. He knew of dozens of old houses that were a drug on the market. He studied each one carefully, and picked structures that could be remodeled with a minimum cost and use of materials, were within easy reach of the war plant, and yet were in good surroundings that would prove to be a desirable place to live after the war.

The old mansion illustrated at right is within walking distance of the center of town; it is surrounded by fine trees and a good neighborhood. Jake talked the

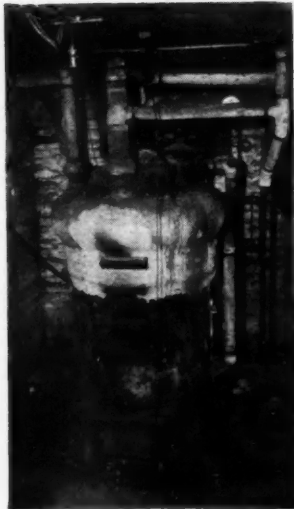
JAKE BASS at Metuchen, N. J., conversion job; says troubles of builders in this war "are nothing compared to those of last time."

SMALL MIXER, power saw, electric pipe cutter and other equipment set up inside old house help Jake Bass salvage old materials and keep construction costs down. He builds own cabinets, frames and many other items right on the job. **PIPE CUTTER** (below) is valuable in rebuilding old heating plants on such jobs as described here.





NEW chimney goes in.



OLD plant to be rebuilt.



OLD Metuchen, N. J., house was a white elephant until Jake Bass came along and turned it into attractive homes for war workers.

matter over with local FHA officials and got their hearty support and assistance. With their backing he was able to get the necessary priority assistance on materials.

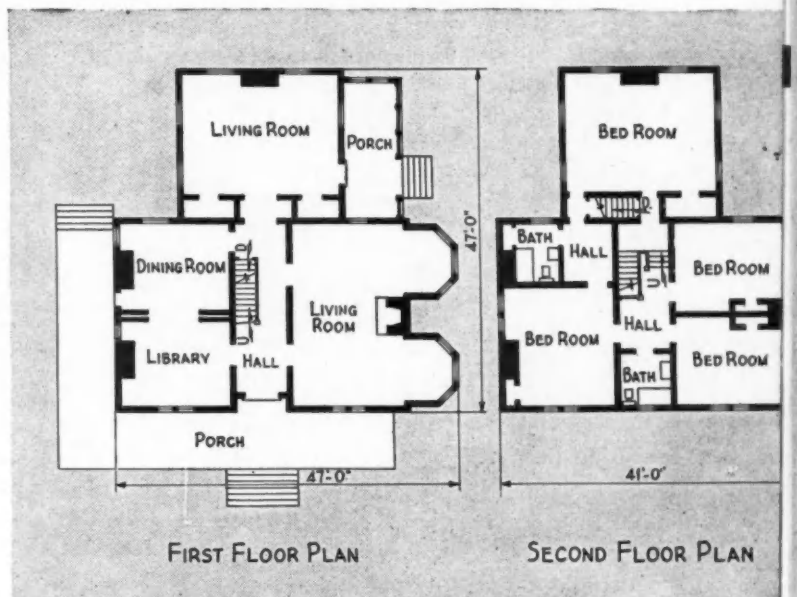
Set Up Power Equipment

Rebuilding an old house is tricky and costly work. According to Jake Bass, the way to approach it is "bit by bit, piece by piece, and finish each small section as you go along."

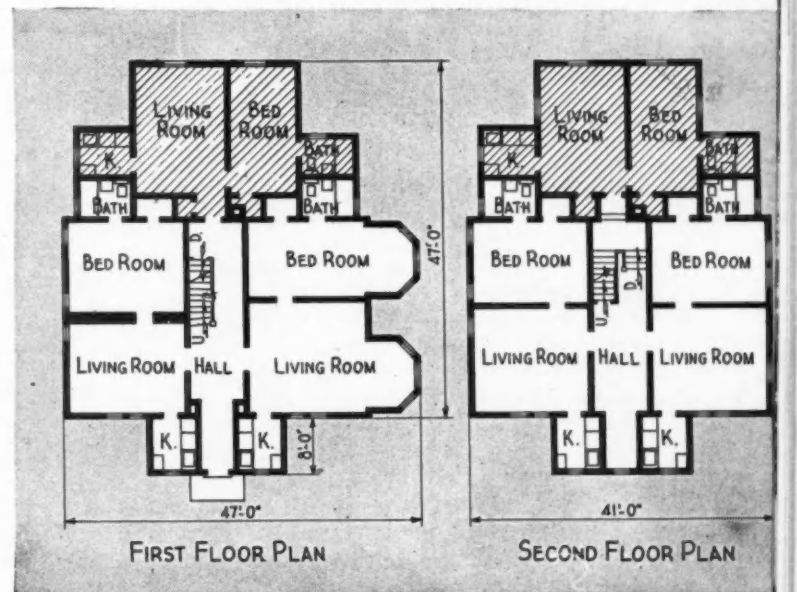
He uses a small crew of versatile men who are able to do a variety of types of work, including masonry, wiring, pipe fitting and all the other operations involved in remodeling.

They work outdoors in nice weather and indoors on rainy days. Jake sets up his DeWalt power

(Continued to page 70)



BEFORE PLAN (above) shows costly, wasteful layout of old mansion. AFTER PLAN (below) shows how six compact apartments were produced with minimum use of critical materials, labor and money.



You, Too, Can Keep Busy and Make a Profit

Five good reasons why Jake Bass keeps busy:

1. Gets top priority rating, ample financing under FHA Title I.
2. Picks old houses carefully, in good surroundings, easy to convert to small apartments.
3. Keeps small "nucleus crew" busy all the time; own men do all work, including wiring and plumbing.
4. Sets up power equipment inside old house, and uses it to salvage old lumber, trim and other materials; nothing is wasted.
5. Does job bit by bit—small sections at a time—and finishes as he goes along.



1. A comfortable and attractive alcove is formed by built-in bookcases at each end of a studio couch. Projecting cupboard at one end makes a convenient shelf.



2. Bunks double sleeping capacity of small room. Chest of drawers can also be built in.

JOBS YOU CAN SH

YOU CAN keep busy in wartime by making built-ins that owners want. Here are ten clever suggestions which include ideas for increasing storage and living space so needed in houses crowded by wartime conditions. Any of these will enhance the attractiveness of a room by filling out an otherwise uninteresting wall, or a lonely corner, and by adding color, charm and usefulness to a room. Many of these ideas can be carried out by the use of non-critical species of lumber, short lengths, or other materials that may still be found around a yard. Offer these suggestions to your customers; show them how built-in equipment of this kind will improve the appearance and usefulness of their rooms; and keep yourself busy.

7. The combination dining room-kitchen below and opposite presents suggestions for a number of useful and clever built-ins.



6. An original and interesting idea for a study or den is illustrated above: A built-in desk of knotty pine, with shelves above, alongside a corner built-in couch.





3. Shelves at each side of kitchen window give extra storage space and add color.



4. Bookshelves can be built on each side of door to add interest to a formerly plain corner.



5. An idea for built-in cupboards and dressing table in bathroom.

N SELL

**10 Clever
Built-ins
To Keep
Builders
Busy Now**



45



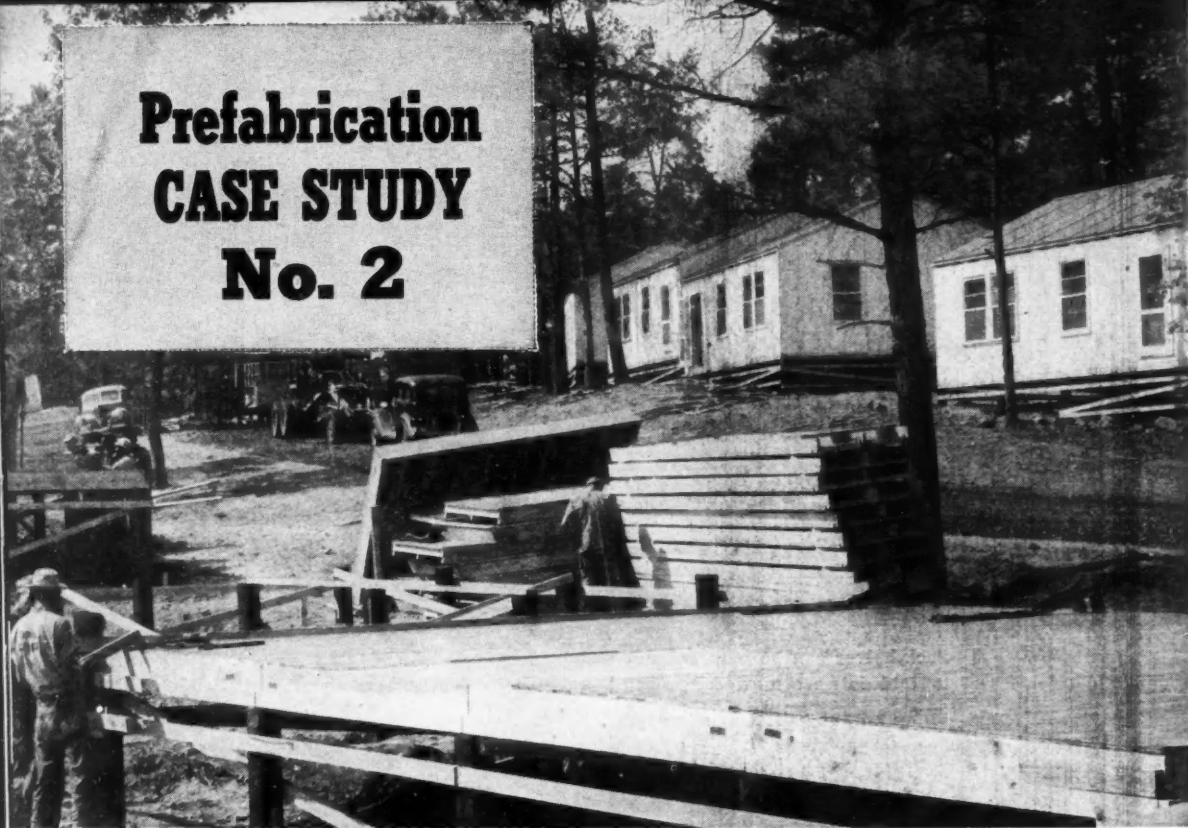
8. To right above is novel treatment of corner cabinet idea. Note curving front.

9. An easily built-in dressing table, with chests fitting under roof angle, is at right, below.

10. Shelves built into a wide picture window add a decorative note.



Prefabrication CASE STUDY No. 2



AT the left is illustrated a typical view of E. L. Bruce's prefabricated house project showing erection on the site; this is the second of a series of articles on the methods and techniques of prefabrication; other articles will follow.

As reported by
Lyman M. Forbes
Research Editor

How E. L. Bruce Builds War Houses

A TRIP through the prefabricating plant of the E. L. Bruce Company, Memphis, Tenn., reveals some of the manufacturing refinements that are required to produce demountable, remountable houses for war workers, as compared with convention prefabrication methods where houses are intended for permanent use.

The company has built a thoroughly modern high-ceilinged, day-light, prefabricating plant, 420' long and 120' wide to produce standardized demountable, remountable houses, in two- and three-bedroom designs, in "right handed" and "left handed" models. All are built for use of workers in war production centers of adjoining states. The plant was laid out scientifically so that raw materials enter at one end and finished sections leave at the other.

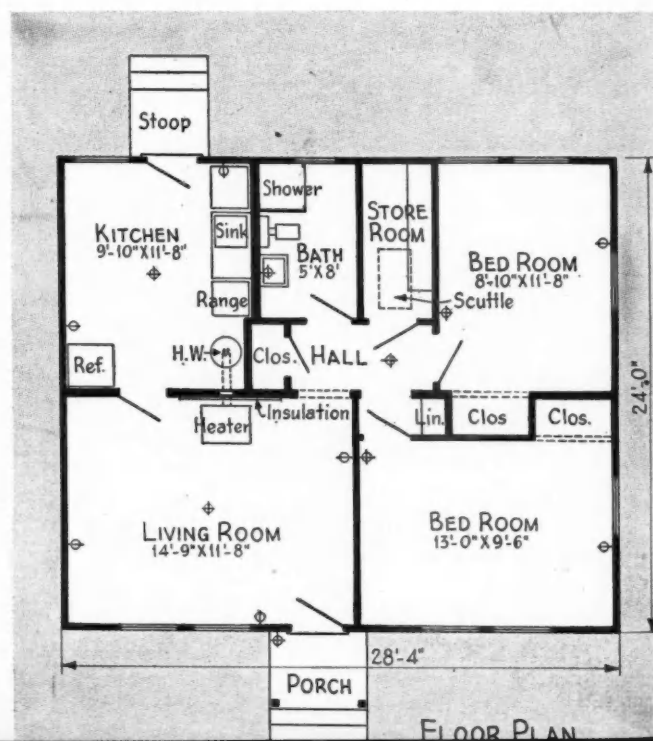
The houses are manufactured under patents of Carpenter Houses, Inc., of Baltimore, Md. Dove-tailed wall sections, and partition sections, when set in place on the floor platform at the site, are locked together by means of a hand-operated key that draws them together. The sections can be taken apart again by use of the same key. Floors, ceilings and roofs likewise are made in sections, and are secured in place with Dubthead nails, screws, and bolts, so that they can be taken apart again when desired.

Demountable, remountable features of these houses, and the fact that they are shipped rather long distances, calls for smaller sections than are found in conventional prefabrication at or near the site, and also calls for precision manufacturing throughout.

When the plan was laid out a model home was cut, assembled and erected. Then it was taken apart again and the sections were used as patterns for section-size jigs, which are spread through the plant in orderly array; each plainly marked with the numbers and letters that identify the section to be made on the jig.

Lumber and plywood ride into the plant on hand trucks direct from a railroad siding just outside the door to a battery of Walker-turner and Beach saws and power tools that have been adapted to the specialized needs of the job. Here pieces are cut to length, or given angle end cuts, drilled, rabbeted, shaped. Each piece is

BELOW is plan of one of Bruce's prefabricated single-family units. Note absence of windows along one side for grouping as duplex housing. On the opposite page, cross section shows construction.



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worked on semi-automatic precision tools for its particular place in the jig of a certain section and model.

The cut pieces, after leaving the machines, present a confusing jumble to the eye of the uninitiated visitor, yet operators and foremen can identify each piece by its jig, and model number, and can tell at a glance whether it is for a "right-handed" or "left-handed" house. Plywood panels are cut in an adjoining shop. Cut pieces then go to the jigs where sections are assembled.

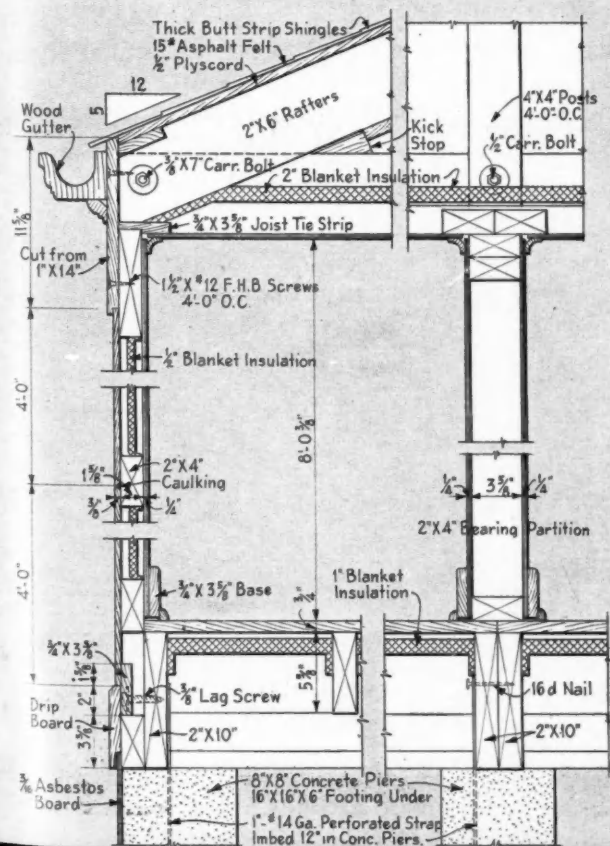
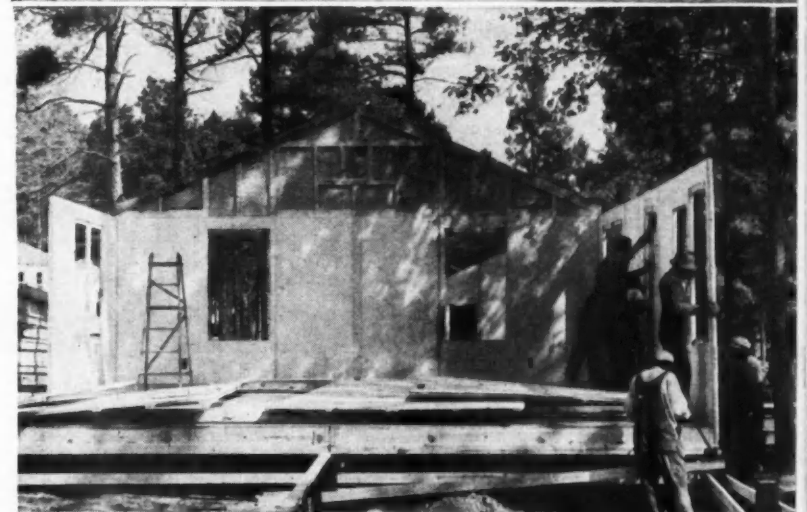
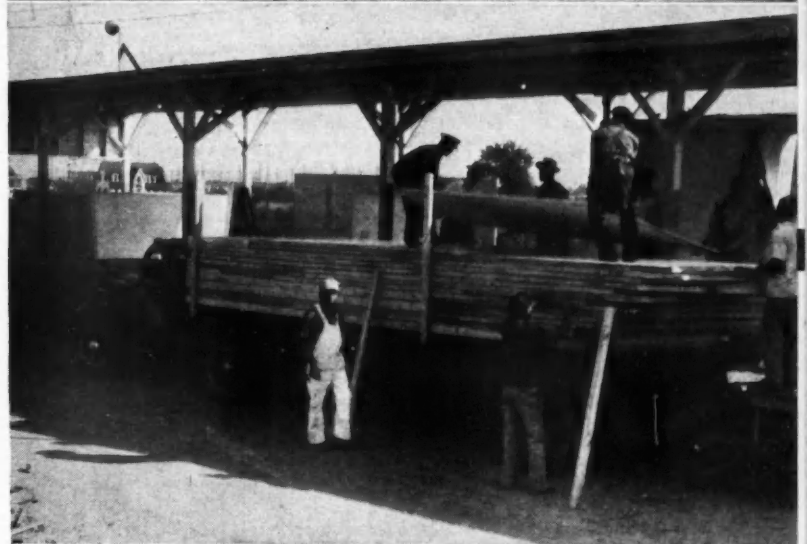
Exterior walls are made up in standard sections. Ten pieces are required for a 2-bedroom house. Variable lengths, include gable ends up to 14' in length. Each section is made of 2" studding, laid flat, with 3/8" exterior grade plywood on the outside, and 1/4" wallboard grade plywood on the inside. Plywood panels are glued-nailed to the studs and plates. Laucks glues are used throughout. Wall locks are installed at the joints and screws are provided for fastening sections to floors in the field. Openings are cut into the sections after they are completed.

Fourteen pieces of interior partition are required for the two-bedroom model. They are made the same as exterior sections, except that 1/4" wallboard plywood is used on both faces.

Ceilings are made up in sections, each 4' x 12'. Fourteen pieces are required for the two-bedroom house. Each is made up of three 2" x 6" joists, with 3/8" bevel gypsum board panels running the full length. Red-I-Batt, Quilt-type insulation of redwood bark, supplied by Insulation Service, Inc., Milwaukee, is used in ceilings, and also is staple-stitched into wall sections. The bark used in this insulation is treated, non-flash and

(Continued to page 72)

FOUR steps in the production and assembly of the prefabricated house manufactured by E. L. Bruce Co., Memphis, are illustrated at right: Top to bottom, making sections in the plant; loading the panels; putting the sidewalls in place; and finishing with roof panels.





GOTTA KEEP BUSY
SOMEHOW! SAYS:
"Home-Front" Homer

A Dozen Practical Pointers on Maintenance and Small Construction to Keep Up the Home Front

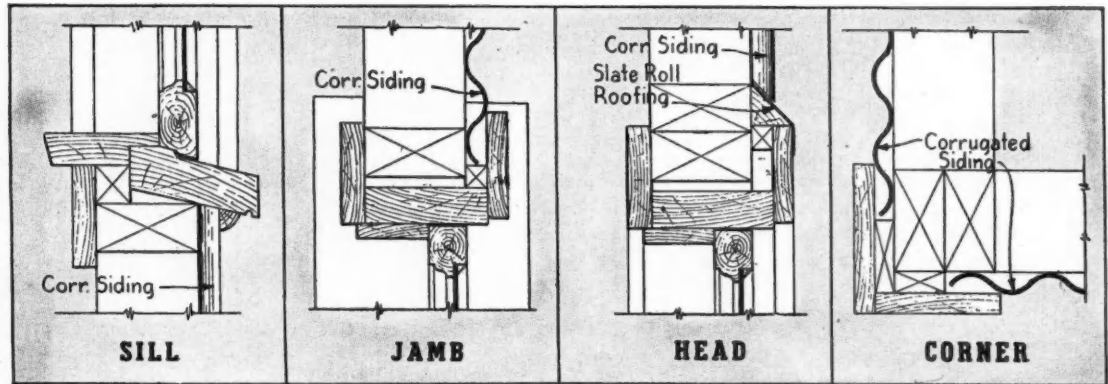
How to Apply Non-Critical Corrugated Asphalt Siding on Various Jobs

AS A new non-critical emergency material developed to meet the numerous building needs where steel sheets were normally used, asphalt corrugated siding should help many builders on industrial and farm jobs. It consists of heavy felt sheets saturated with bituminous material and bound together with asphalt adhesive. Application methods for the most part follow the steel sheet procedure as the physical form is quite similar to that of the steel product. However, certain of the finishing details will help users of this material.

In the four illustrations below is indicated the handling of sill,

jamb, head and corner. At the sill, quarter-round is placed below the outside sill in contact with corrugation crowns to make a tighter, neater joint. At the jamb, the outside trim of the frame very nearly meets a crown of the siding, making an adequate seal at this point. Flashing must be used at the head, and may consist of mineral-surfaced asphalt roofing, or a strip of smooth roll roofing, nailed in place as indicated. Beveled cut at this joint makes a tight job and looks better. Corners should be planned so that the siding is laid in place so that the edge closest to the corner curls away from the wall. This allows the outside corner board to meet the crown of the first corrugation and produce an adequate joint. Here and at the other points covered in this description, plastic cement may be used as a seal.

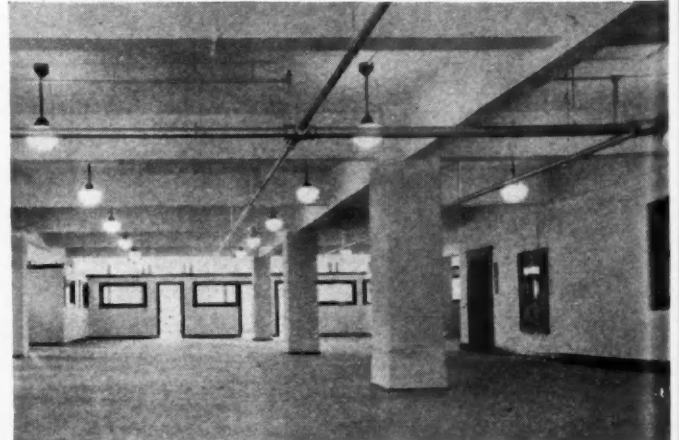
THE illustrations at the right show finishing details for applying corrugated asphalt siding. Attaching the sheets themselves follows standard practice of nailing with 1 1/4" large headed roofing nails driven at least 1" in girts and studs.



How to Improve Lighting with Paint

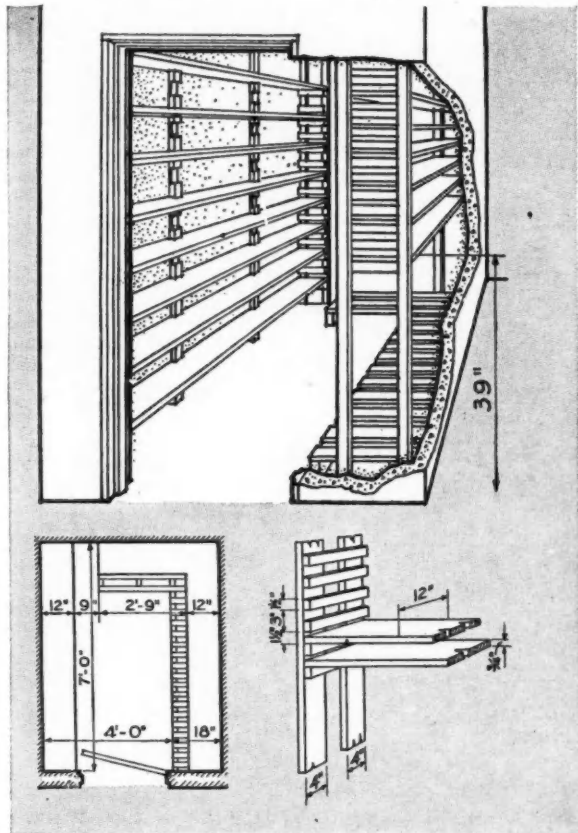
WHEN old commercial or industrial buildings become gloomy due to poor light reflection qualities of the interior finish, a

single coat of the new resin-emulsion type of paint now available will do a miraculous refinishing job. The two views below, "before" (left) and "after" the paint rejuvenation of a Cincinnati building indicates the vast improvement possible with paint.



How to Build a Food Storage Room

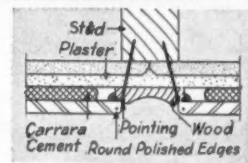
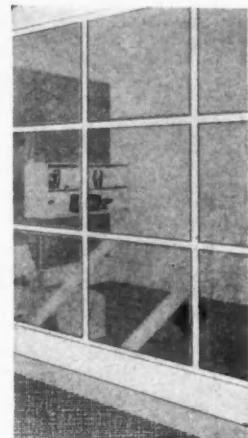
A ROOM for the storage of home canned foods and other supplies has long been the need of every farm home. During these wartimes, however, many people will be raising much of their own produce in Victory gardens. The problem of many of these home makers will be that of properly storing this food. Builders can be helpful by suggesting a room similar to the one detailed below. It should be dry, cool, frost-proof and well ventilated. Insulation will probably be necessary for protection against excessive temperatures. The size of the room will depend upon the amount of food to be stored. Data on container sizes, and other useful information on the storage of food is contained in Farmers' Bulletins from the U.S. Department of Agriculture.



How to Use Glass for Practical Decoration on Remodeling Jobs

AT THE right are two clever ideas on the use of non-critical glass products which should find application in some of the remodeling and conversion jobs now being undertaken. The upper one shows how to use structural glass as a partitioning material which is, in itself, decorative, permanent and easily cleaned. The installation detail showing a section through this wall shows that the method of applying is quite simple; the only exposed wood members are the attaching mouldings. A wide range of color available in this type of glass allows the selection of a harmonious scheme with balance of the room.

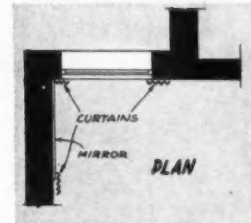
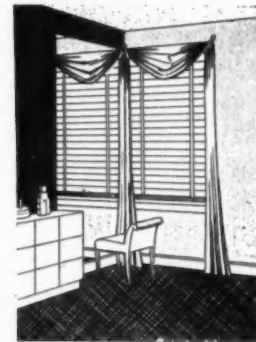
STRUCTURAL glass partition details.



ANOTHER idea which should find frequent application in the type of remodeling and conversion job being done today—the main objective being to produce additional quarters, not necessarily ideal ones—is sketched at the right. Here the clever use of mirror produces the effect of a double window in a case where the opening is crowded into a corner of a room. Beyond the attractiveness added, there is the real advantage of additional light being reflected across to what otherwise might be a dark corner. The plan shows the location of the window where conditions would be as described here.

Variations of this idea can be applied to windows where a mirror panel on each side of a narrow window would give an effect of a wider one.

CORNER mirror reflects window.



How to Correct Footing Error

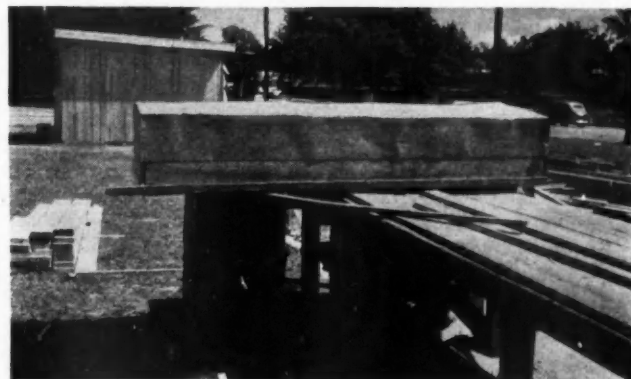
AN error due to different dimensions on foundation plans and on the drawing for the steel structure of a public building resulted in the footings for supporting stanchions being off their marks by some 4 inches. Since these foundation piers were carried to hard material some 8 feet below ground level, and had a belled base, it would have been a big job to change them to the proper locations. Permission was granted to use the following time saver.



A cutting torch was used to extend the bolt holes in the bases as slots across the plates, allowing the columns to be moved 3 inches from center. Concrete sub-floor to be laid to a height just above the top of the base plates was counted upon to correct any irregularity which might otherwise show up in the flooring.

How to Protect a Power Saw Rig

THE need to protect and prolong the life of tools is now well appreciated; one contractor provides this protection for his saw rig with a wood frame cover, as shown below. It has a curved top of plywood, and is light enough to be easily lifted by one man.



How to Build Partitions of Non-Critical Materials

THE timely system of wall construction detailed at left, developed by A. G. Wedberg of Chicago, makes use of gypsum board and plaster, eliminating all metal.

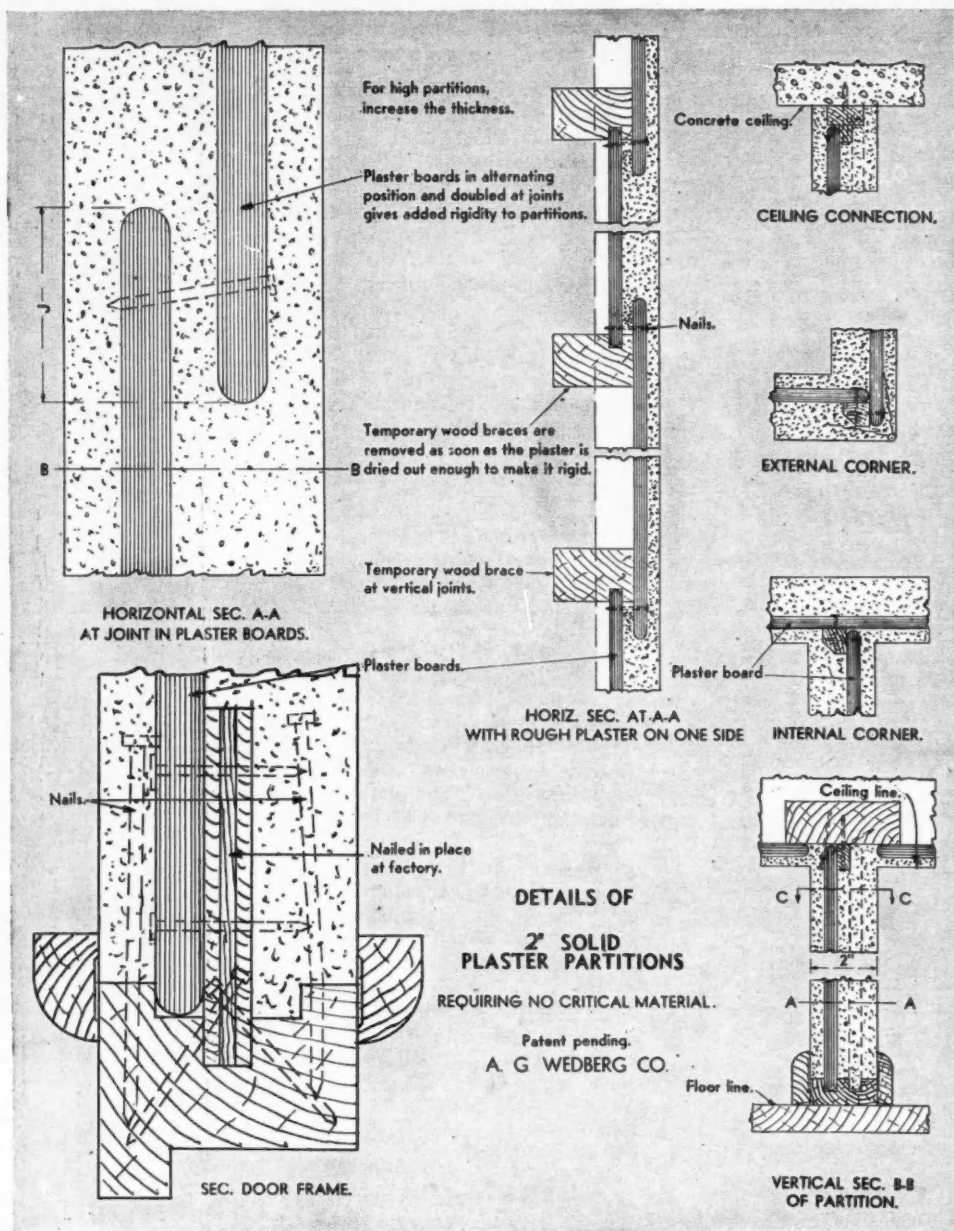
A wood runner with two grooves is first nailed to the floor and a 3/8" wood runner at the ceiling. Edges of a course of perforated plasterboards are set in the grooves of two temporary 2" x 3" wood braces, set up as one unit, with one end of the plaster board in the groove on the floor runner and the top edge of the plasterboard nailed to the ceiling runner.

Edges of the plaster board on the other side are nailed to the edges of the other plasterboards held by the temporary braces. Heavy coat of plaster is put on one side and the temporary braces are removed before the other side is plastered.

Plasterboards in alternating position, doubled at joints and spaced apart to give double bond for plaster at joints, make a very rigid partition that will not crack.

If an unusually rigid wall is required, a 1/8" wire may be placed on each side at every joint. This gives a truss effect in the partition.

The greatest reduction in cost is effected by the saving of metal channels and metal lath and reduction in cost of labor for erection.



DETAILS OF 2" SOLID PLASTER PARTITIONS REQUIRING NO CRITICAL MATERIAL. Patent pending. A. G. WEDBERG CO.

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How to Use Lead for Plumbing

LEAD is one of the few products listed as allowable for use, in the WPB War Housing Manual, and is encouraged by the Conservation Branch. At right are two striking examples showing the use of lead pipe in remodeling. They illustrate such important facts as flexibility and space-saving. Lead pipe may be reeved through narrow openings, or through holes bored in center of joists. It can be bent, twisted and direction changed to conceal in partitions. No beads or collars extend to require furring. Use of a 3" lead soil stack is possible in an existing 2 x 4 partition, and it can be inserted from above without disturbing plaster. Lead in sheet form may be used as a shower bath pan, covered with ceramic tile, where bathtubs are unobtainable. Flanges, caulking ferrules and other fittings are now being made of hard lead to replace brass.

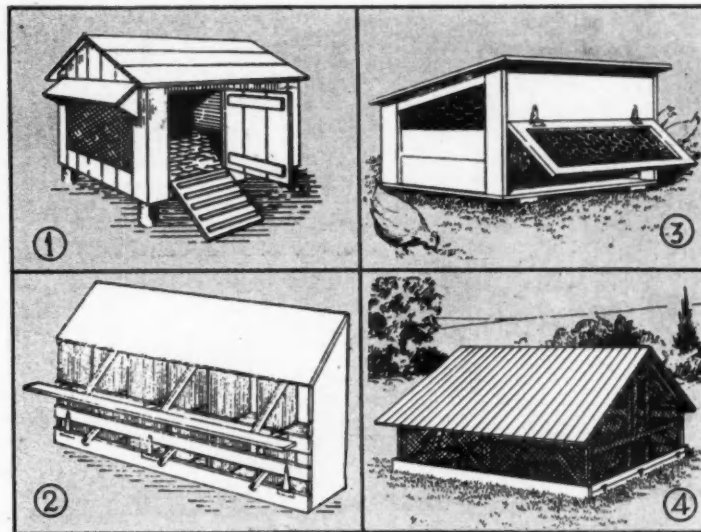


LEAD, waste and supply pipes (left) run through joist and studs. At right: Remodeled bathroom with lead pipe twisted.

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How to Build a "Back Yard" Chicken Coop

WITH eggs at sky-high prices and getting scarcer and scarcer, large numbers of John Q. Citizens are going into the business of raising their own chickens, rabbits, and vegetables. This opens a market for building men. Illustrated at right are four typical small poultry structures designed by National Plan Service, Inc., Chicago, from suggestions by Midwest Colleges. The small hen house is sanitary, is only 4 x 4 feet, and can be moved around, as necessary. The portable brooder coop is useful and efficient, and has a floor that can be detached for cleaning. The summer shelter coop provides clean ground and a safe space for chicks which have outgrown their brooder house. The hen laying nests provide another product for sale, and are easily constructed. Plans for these and numerous other types of poultry houses and equipment are available from National Plan Service, as well as from many well known manufacturers of materials and equipment.



FOUR TYPES of poultry structure suggested for "home grown" chicken raisers, including a small hen house, a brooder coop, and a laying nest.

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Walk-Through Type Barn and Milk House

DETAILED below is a walk-through type milking barn and milk house which is popular in many parts of the country. The cattle are fed and housed in a separate shelter barn, remaining in the walk-through stalls only long enough to be milked. This plan provides for milking of six cows at a time, which cares for a total herd as large as sixty cows.

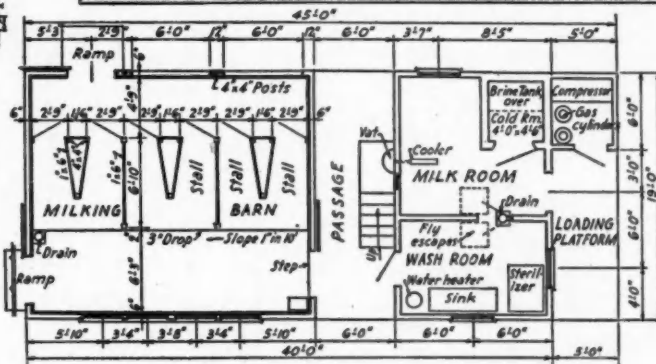
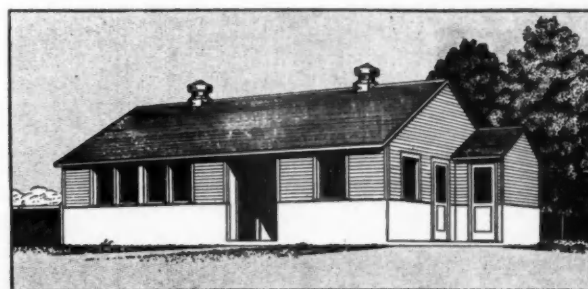
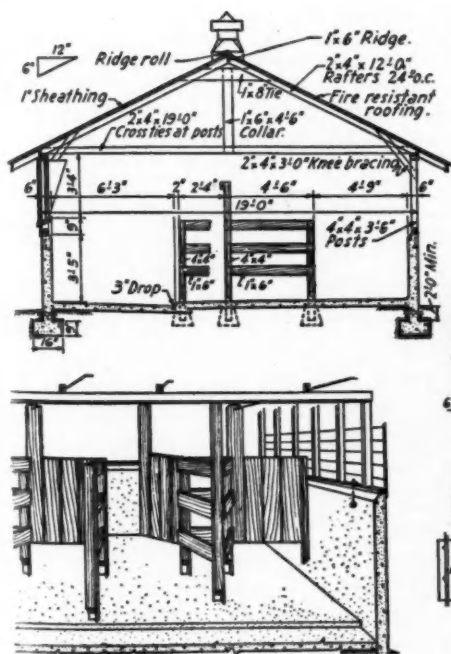
This structure is one of a number designed by well known farm experts for the Portland Cement Association, which has also prepared detailed specifications on the proper construction of floors, walls and other concrete uses on the farm.

Insulation and proper ventilation are necessary if dairy barns in northern areas are to be warm, healthful and reasonably dry. With proper insulation and ventilation, cows will usually produce sufficient heat to maintain a temperature of 45 to 50 degrees. Inlet flues extending into the building near the ceiling should be provided.

The following dairy barn design data cover some frequently raised essential points:

Dairy Barn Design Data

- Light = 4 sq. ft. of window area per cow
- Stall width = 3 ft. 6 in. (may vary 3 ft. 2 in. to 3 ft. 8 in.)
- Stall length = 4 ft. 8 in. (may vary 4 ft. 6 in. to 5 ft. 4 in.)
- Feed alley width = 4 ft. 0 in. (may vary 3 ft. 0 in. to 5 ft. 0 in.)
- Manger width = 2 ft. 6 in. (may vary 2 ft. 0 in. to 2 ft. 8 in.)
- Litter alley width = 5 ft. 0 in. (4 ft. 6 in. to 8 ft. 0 in. for driveway)
- Cross alleys width = 3 ft. 6 in. (not less than 3 ft. 0 in.)
- Bull pen size = 9 x 9 ft. or larger
- Calf—or young stock pen = 7 x 7 ft. or larger—best to be 10 to 12 ft. wide
- Mows should provide 2 tons (1,000 cu. ft. storage space) for each cow
- Mows should provide 1 ton (500 cu. ft. storage space) for each cow where 4 to 6 months' pasture or silage is provided.



CATTLE are fed and housed in separate shelter barn in this "walk-through" type of milking barn.

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SHORT CUT Estimating Methods

For Fast and Profitable Selling

By Herbert F. Lotz, Estimating Expert

NO. 1—ROOFING

BECAUSE SUCCESSFUL SELLING of roofing, siding, insulation and paint depends greatly on QUICK and ACCURATE estimating, American Builder has arranged to publish a series of articles on these subjects by a top-notch expert. "Herb" Lotz conducts estimating classes for contractors and dealers for the Johns-Manville Co. The simplified pricing and estimating formulae shown here have had seven years actual field trial by thousands of users.—The Editors

A quick and accurate way to figure roofing quantities without climbing up on roof.

General: Estimators will find this a quick and accurate method of arriving at roofing quantities and selling prices without the necessity of "counting" courses or climbing on the roof by observing the following instructions.

A. Draw a Sketch. Outline the foundation and all projecting portions, including porches, overhang, etc., to be roofed.

B. Compute the "flat" or ground area in square feet. This is easily developed by multiplying the overall width by the overall length for rectangular houses. If the house is "cell" shaped with one or more projections, the separation of the sketch into logical rectangles, when multiplied separately and added together, will give the "flat" area.

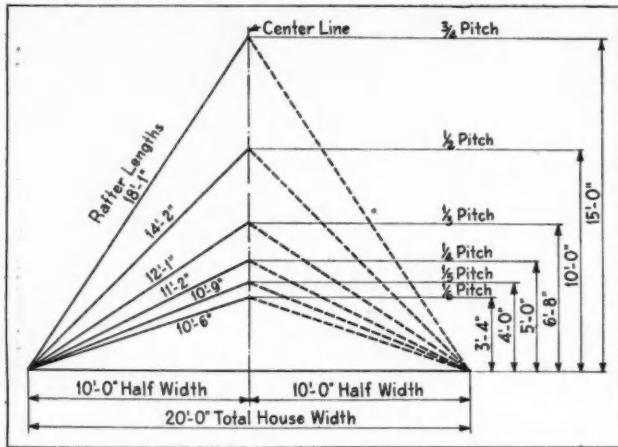
C. Select the type of roof. It may be Gable, Hip, Dutch Colonial, Plain, Cut-Up with Dormers, or include two separate types, such as a gable and hip in the same roof. This can be determined by observation.

D. Determine the roof pitch. This is the slope or rafter length which increases as the ridge height increases and can best be explained by the diagram of a 20-ft. wide roof cross section which also shows the ridge heights, pitches and rafter lengths. See figure (No. 1).

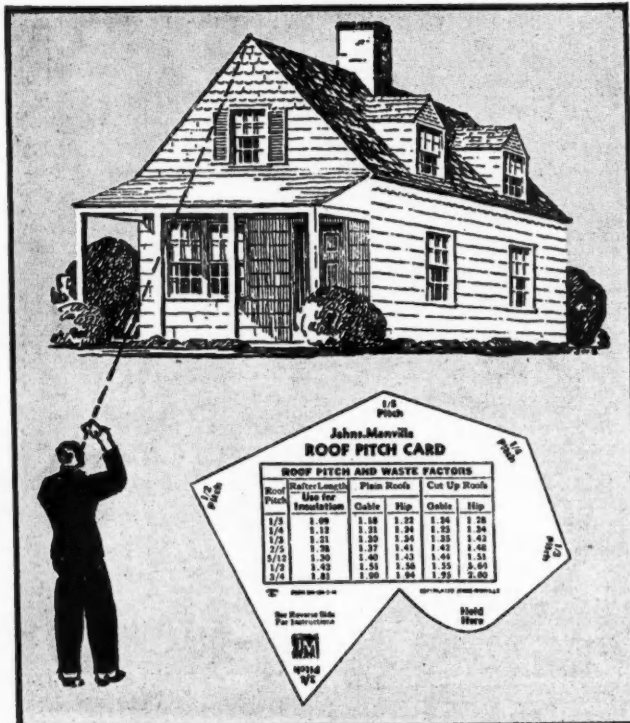
By observing this diagram it can be seen that in a house 20 ft. wide the rafter lengths and ridge heights, vary as follows:

	Rafter Length	Ridge Height
1/6 pitch becomes.....	21'1"	3'4"
1/5 pitch becomes.....	21'9 1/2"	4'0"
1/4 pitch becomes.....	22'5"	5'0"
1/3 pitch becomes.....	24'2 1/2"	6'8"
1/2 pitch becomes.....	28'5"	10'0"
3/4 pitch becomes.....	36'2 1/2"	15'0"

(Continued to page 76)



No. I—Diagram of 20-ft. roof cross section.



No. II—Pitch card used to determine roof pitch.

Table of Roofing Factors Including Allowances for Waste In Columns 4, 5, 6 and 7 Hip and Valley and Rafter Length Factors in Col. 8 and 9 Factor for Roof Insulation in Col. 3

Col. 1 Rise In Inches Per Foot of Run	Col. 2 Equivalent Pitch	Col. 3 Roof Factor Use For Insulation	Col. 4 Plain Roof Factors Including Waste		Col. 5 Cut-up Roof Factors Including Waste		Col. 6 Common Rafter Factor	Col. 7 Hip or Valley Rafter Factor
			Gable Type	Hip Type	Gable Type	Hip Type		
3	1/8	1.03	1.12	1.16	1.17	1.23	.515	.719
4	1/6	1.06	1.15	1.19	1.21	1.26	.527	.723
5	5/24	1.09	1.24	1.22	1.23	1.30	.542	.738
6	1/4	1.12	1.21	1.24	1.25	1.34	.559	.751
7	7/24	1.16	1.25	1.29	1.30	1.37	.579	.766
8	1/3	1.21	1.30	1.34	1.35	1.42	.591	.783
9	3/8	1.25	1.34	1.38	1.39	1.46	.625	.801
10	5/12	1.31	1.40	1.43	1.44	1.51	.651	.822
11	11/24	1.36	1.45	1.49	1.50	1.57	.678	.844
12	1/2	1.42	1.51	1.56	1.55	1.64	.707	.867
13	13/24	1.48	1.57	1.61	1.62	1.69	.737	.892
14	7/12	1.54	1.61	1.67	1.68	1.75	.768	.918
15	5/8	1.60	1.69	1.73	1.74	1.81	.800	.945
16	2/3	1.67	1.76	1.80	1.81	1.88	.833	.973
17	17/24	1.74	1.83	1.87	1.88	1.95	.867	1.000
18	3/4	1.81	1.90	1.94	1.95	2.00	.901	1.030
19	19/24	1.88	1.97	2.01	2.02	2.08	.936	1.060
20	4/5	1.95	2.04	2.08	2.09	2.15	.972	1.080

No. III—Handy table of roofing factors.

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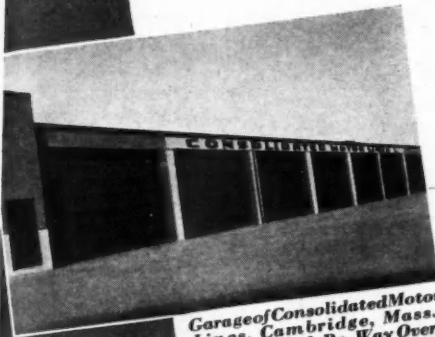
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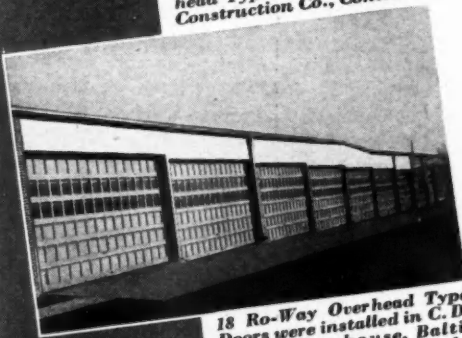
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18 Ro-Way Overhead Type Doors were installed in C. D. Kenny Warehouse, Baltimore, Md. Installation by Kirson Const. Co., Contrs.



Warehouse of American Stores Co., Baltimore, Md. Equipped with 7 Ro-Way Overhead Type Doors. Consolidated Engr. Co., Contrs.



Clear Span Trusses for Barns, Halls, Garages

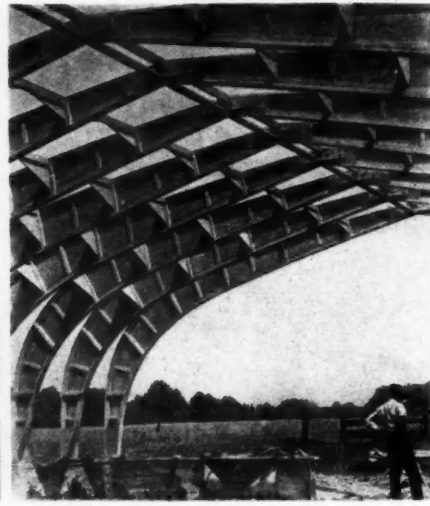
40-FOOT clear span suitable for a dairy barn under construction and test near Annapolis by Marine-Air Research.

NEWLY developed for war construction, glued-up arch I-beams of wood offer some interesting possibilities for post-war civilian use. Barns, warehouses, garages, hangars, rinks and halls can utilize to advantage the clear floor space, structural strength and attractive architectural appearance of these new-type plywood roof trusses.

The Marine-Air Research Corp., Annapolis, Md., is one of the pioneers in this development. One of its experimental models, of 40 foot span suitable for a farm dairy stable, was erected last May just out of Annapolis, and was tested by the Haller Engineering Association, Inc., construction company for Pan-American Airways.

This structure, as illustrated, was designed to carry a 40 lb. live load; but in the Haller load tests the arches carried satisfactorily over 140 lbs. per square foot of roof area. The construction uses all-wood prefabricated arches, built up in I-beam sections with laminated cap strips and a plywood web. The building was sheathed with exterior grade plywood; but common siding could be used, and covered with ordinary roll roofing.

The dimensions of the plywood beams
(Continued to page 70)



GLUED-UP arch I-beams with laminated cap strips and a plywood web, shown in process of erection for dairy barn.

The Home Building Wave of the Future—Part II

by W. C. Bober

Editor's Note: The first part of W. C. Bober's article, which appeared in the January American Builder, described how America's great new POWER TO PRODUCE is working to create a huge post-war building program. In this concluding article, he describes the changes under way which will affect the future of the building industry.

THE greatest internal migration after the war may quite possibly be a direct consequence of the war. It has already given rise to a notable relocation of industry. The extent to which new plants and industrial activity cause internal migration is clear from some of the present war time figures. In the last two years, New York State has lost over 500,000 people to New Jersey, Connecticut, and the Western States. The housing demand created by such a shift in population is obvious and this is merely one example. Very few of the great new war plants are located within the limits of big cities. Many are located in places that were hardly ever heard of before. Housing for these war workers has been thrown up very hastily where it has been done at all. In many places commutation over long distances is necessary today. After the war, these plants will either permanently produce war equipment for a standing peacetime army of formidable proportions, or they will be converted to peacetime civilian production, or stand idle. In the first two cases, a great demand for permanent peacetime housing will develop within reasonable transportation distance of these plants. In the latter case, the discharged workers will ultimately flood into other areas, increasing the demand for housing there.

But the bulk of our industry is still thickly congested in a relatively small northeastern part of the country, much of it dangerously close to the coast and dangerously centralized in huge plants in this airplane age of bombers when an enemy can already strike across the ocean as suddenly as the Japanese struck at our fleet at Pearl Harbor. We may hope that the end of this war will inaugurate a peaceful world, but history teaches otherwise and this is not likely to be the last great war. All over Europe, a decentralization of industry, a dispersion of plants throughout the country, has developed because of the war, begun in fact several years before it opened. The airplane of World War I was a toy in range and striking power compared to that of this war. Similarly, the present plane will be a toy compared to the range and striking power of the bomber a generation hence.

Higher Incomes Mean More Homes

Unless we are prepared to bet on the end of all major wars, a most unsafe gamble indeed, we may find ourselves compelled to begin a gradual relocation and dispersion of our industries, over a period of perhaps a couple of decades, which may well give rise to the greatest long-term building activity we have ever seen in this country. The gradual shift of population that such a movement would involve must bring with it a wholly unprecedented volume of new home construction and all the vast amount of non-residential construction from schools, churches, garages to utilities, etc., that invariably results when home building booms.

We now come to the second fundamental—people's pocket-books. The latter is determined by the national income and its distribution. The skyrocketing indices of production, some of which I have quoted in this article, are demonstrating that we

(Continued to page 72)

Only a very brave man will venture in these days to make definite long-range forecasts. However, some of the outlines of the post-war world picture are beginning to take form.

If the war is not too long and we do not shirk the responsibilities of political, financial, and economic leadership, there will be firm basis for the hope that the return to peace-time production can be accomplished without sacrifice of American ideals. Private enterprise should have its chance, as it always has had in this country, although no doubt it will necessarily be subject to controls for a considerable period of time.

A tremendous demand for homes of small and medium size will certainly exist. If the war is short, that demand may become effective through the ability of the individual to use his savings, with ordinary financing, to provide a home for himself. If the war is long, the Federal Government will probably devise means by which the necessary housing can be provided for the people.

The adjustment to a war economy has brought many new problems to our Company, but we are not altogether forgetting the post-war period. Plans and policies are under consideration, but not far enough advanced to make any announcement at this time. American industry will come out of the war with new and improved products and our Company will endeavor not to be an exception to that rule. Whether new methods of construction will largely take the place of old, we do not know; but in any case, there will be need of woodwork in residential construction and our products will be designed and produced to meet the requirement, whatever form it may take.

Naturally, in accordance with established Curtis policy, whatever our program may be, it will be built with maximum regard for the interests of distributors of Curtis products.

G. L. CURTIS
PRESIDENT, CURTIS COMPANIES INCORPORATED
CLINTON, IOWA

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This statement comes from a man who *knows* the building industry, and who speaks with the authority gained from many years of contact with the trade. His words are not only a definition of Curtis policy, but a message of confidence and reassurance for lumber dealers, builders and architects everywhere.



News of the Month

Post-War Problems Discussed at Meetings

MANY connected with the building industry are particularly interested in post-war planning, as evidenced, for example, by the "War and Post-War Clinic" held by the Mortgage Bankers Association on Jan. 14 in New York City, and the post-war program being developed by The Producers' Council, which was

discussed in Cincinnati on January 19. Guy Greer, member of the board of Editors of Fortune magazine, talking before the Mortgage Bankers Association of America in New York Jan. 14 declared that replanning and rebuilding of American cities is probably the nation's foremost post-war job, and that a very large proportion of all the manpower, materials and equipment not otherwise employed could be advantage-

ously used in these efforts for many years to come—and further, that the financing of this mammoth task will be no obstacle "if we use a little foresight now." Mr. Greer was speaking before the Association's first 1943 "War and Post-War Clinic" at the Waldorf-Astoria Hotel which was attended by Mortgage Bankers, real estate men, government agency executives, title and trust company and life insurance officials and bankers.

His subject was "The Future of Urban Real Estates" which he said depended almost entirely on whether or not towns and cities take the increasingly critical situation in hand and replan and rebuild themselves. "If they do not, the future will be dark indeed," he warned.

"And where is the money coming from?" he asked after describing his plan. "We shall have, after the war, the greatest productive organization in our history. Our equipment and skilled manpower will be all set to go. The period of shifting from wartime to peacetime need not be long and difficult if we use a little foresight now," Greer said and then emphasized "that, as a nation, we shall be debt free. We shall not have borrowed abroad; on the contrary, we will have lent enormous sums. As a nation, we shall pay for our war effort as we go—for the obvious reason that we can use up during the war only what we already have plus what we can produce."

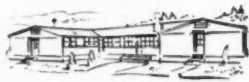
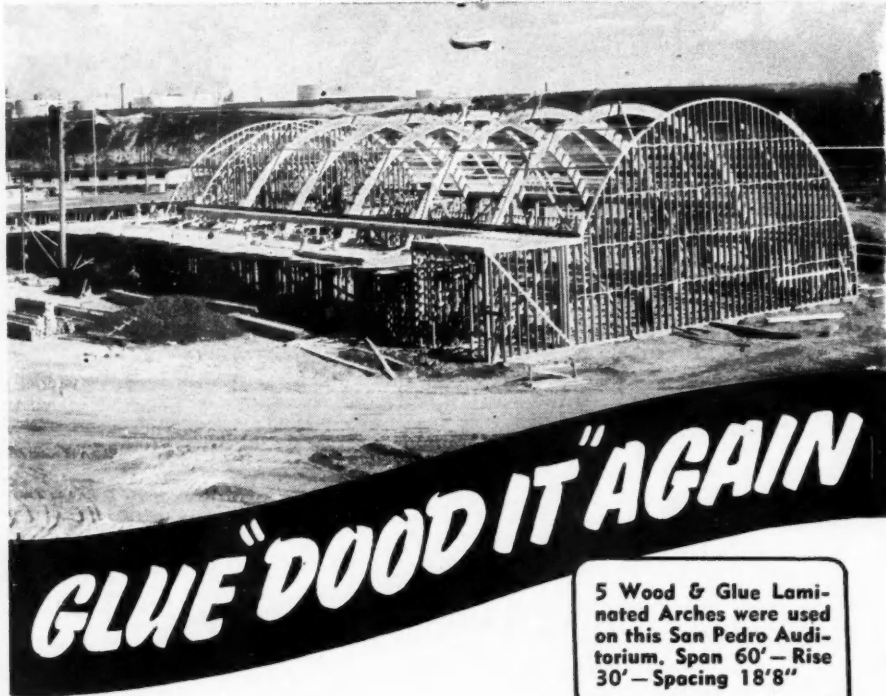
Overcrowding and congestion are the basic root causes of the over-intensive use of urban land and "the chief subsidiary cause, I suspect, is high real estate taxation, which is a main element in the vicious circle of mounting costs of municipal administration and services and the desperate efforts of cities to meet them while more and more of the well-to-do taxpayers are moving outside the city limits," he said.

S. Morris Livingston, chief of the national economics unit in the Department of Commerce and its chief spokesman on the building industry told the mortgage bankers at the same clinic that the building industry will be like several others in the immediate post-war period—its biggest job is going to be controlling a boom rather than preventing a depression.

"We made the mistake of removing price controls immediately after the last war. The increase in prices was greater in the 18 months after the Armistice than during the year and a half we were in the war. This inflation led to the collapse of 1921.

"Given no greater increase in construction costs than has already occurred in the last two years, and five years of added depreciation and obsolescence of the 1940 structures, the competitive position of new construction should be no worse than it was in 1940. The possibilities of designing a better house at no greater cost encourages the hope that this competitive position relative to the prewar house will be greatly improved, he said in discussing the building outlook.

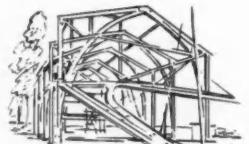
Livingston declared that the nation's biggest post-war problem was finding a



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market for almost 50 per cent more goods and services than we produced in 1940, which he said can easily be done.

"We will end the war in a condition that is half-boom and half-depression. In national income we will be at the height of a boom. In terms of what civilians are able to buy, we will be at the bottom of a depression. The dammed-up demand will exceed our capacity to produce these goods for several years after the war.

"Anything like a maximum use of our productive resources would mean a sharp reversal of the last decade and an enormous additional demand for housing. The dollar income of the average non-farm family is now as great as it was in 1929. Maintenance of this income under more normal conditions should lead to about the 1930 rate of expenditures on housing. With the increase in families this means that total housing expenditures would be about one-third greater than those reported for April 1930 and about 80 per cent above April 1940."

Other speakers at the Clinic, the discussion theme of which was "The Post War Mortgage Business," included Raymond T. Cahill, first assistant FHA commissioner, who spoke on the future outlook for this government agency, and Miles L. Colean, vice president of Starrrett Brothers & Eken, Inc., New York. Mr. Coleman is a noted authority on home building and home financing and recently completed a study on the subject for The Twentieth Century Fund. He spoke on urban planning and rebuilding.

Demand for post-war houses will be largely centered in the \$3,000 to \$5,000 class, the building industry must change its methods drastically to operate on a mass production basis and post-war construction will not be so concentrated in the big metropolitan centers as it has been in the past, was the forecast given by Mr. Cahill, first assistant commissioner of the Federal Housing Administration, Washington.

At the Producer's Council meeting in Cincinnati on Jan. 19, George J. Haas, sales manager of the Stran-Steel Division, Great Lakes Steel Company, urged architects and engineers, material men and contractors to organize their own local committees for post-war planning and to join their efforts with local business and industry groups to insure full employment after the war.

A long-time member of the American Institute of Architects and a past president of the Michigan Society of Architects, Mr. Haas was the principal speaker at a joint meeting of the Cincinnati Chapter of the Institute and the southern branch of the Ohio Society of Architects, with the Cincinnati Chapter of The Producers' Council.

"The broad objective of The Council's post-war program," said Mr. Haas, "is the development, in co-operation with other branches of the construction industry and major allied groups, of plans and policies to insure that construction will perform its proper function in support of a full post-war economy and contribute the largest possible share towards full employment and economic stability.

"The Producers' Council, as a cross-sectional organization of manufacturers of all kinds of building materials and equipment, has assumed the responsibility in such post-war preparations for the manufacturing interests. It is proceeding with specific studies which will be of benefit to the other interests in the industry as well as to producers. For instance, The Council expects to produce, in a few months time, a forecast of the post-war construction market, and thereafter will make various proposals for maintaining a high volume of construction in the post-war. It will undertake to analyze governmental relations to construction in the past, and recommend what these relationships should best be in the future. It will endeavor to evaluate technological developments incident to the war and with

the help of the technical professions to estimate their effect upon future design and construction techniques."

A general post-war committee was organized by The Council about a year ago under general chairman Russell G. Creviston of Crane Co., former president of The Council. Its membership consists of representatives appointed by manufacturers of building materials and equipment, or associations of such manufacturers. But producers operating through The Council's program have no thought of doing this whole construction industry planning job themselves, but rather of getting it started. They are freely inviting the other branches of the industry to appoint liaison representatives to the general post-war committee and to the several working committees.



BRUCE *Factory-Finished* **STREAMLINE** **HARDWOOD FLOORING**
 Trade-Mark Reg. U. S. Pat. Off.
 A PRODUCT OF E. I. BRUCE CO., MEMPHIS, TENN.

New Appointments in WPB

THE appointment of John R. Kimberly as Assistant Director General for Operations was announced today by Ernest Kanzler, Director General. Mr. Kimberly was until today Deputy Director General for Industry Divisions.

Curtis Calder, who has been assistant to Mr. Kimberly, will become Deputy Director General for Industry Divisions, and his assistant will be Dr. Ernest W. Reid, who has been Chief of the Commodities Bureau.

The position of Assistant Director General has been unfilled since the resignation of C. H. Matthiessen, Jr., some weeks ago. The Assistant Director General has full authority to exercise the powers of the Director General in his absence.

John R. Kimberly was formerly of the Kimberly-Clark Corporation, Neenah, Wisconsin. He came to OPM in 1941 as consultant in Industrial and Office Machinery Branch.

Curtis Calder, New York City, is President of the American and Foreign Power Company, Inc., New York City. He came to WPB in Nov. 1942 as Assistant Deputy Director General for Industry Divisions.

Dr. Ernest W. Reid, Pittsburgh, Pennsylvania, was a Senior Industrial Fellow in Mellon Institute, Pittsburgh, Pennsylvania. He came to Washington in June, 1940, as a member of the Advisory Commission to the Council of National Defense, and was assistant chief of the chemicals section. He was appointed Chief of WPB Chemicals Branch in 1942.

Wood Fireproofing Industry Is Possibility

DEVELOPMENT of a national wood fireproofing industry is foreseen as the result of a recent move by the government to replace steel and make large quantities of fire-resistant lumber available to safeguard war construction.

Spurred by the war program and helped by the establishment of federal specifications for fire-retardant chemicals and processes, the capacity of the wood-preserving industry to

produce fire-resistant lumber has been stepped up to an estimated 250,000,000 board feet annually.

Reaching full production in 1943, fire-resistant wood is destined to play an important role in the United States Navy plans to overcome the submarine menace. An expanding fleet of blimps—intended to guard the nation's shores against undersea craft and possibly even enemy aircraft—is being housed in gigantic fireproofed buildings constructed with treated timbers.

Lower cost homes and safer homes are expected to result from the post-war application of the material to residential building. Metal lath and plaster construction has been entrenched in most building codes because of the fire hazards ordinarily attributed to wood. It is pointed out that as fireproofed wood is accepted as a fire-resisting material, the use of fireproofed-plywood panels and sheathing may sharply reduce the cost of modest homes.

ASHVE Installs 1943 Officers At 49th Annual Banquet

NEWLY elected officers of the American Society of Heating and Ventilating Engineers for 1943 were installed at the 49th Annual Banquet, held at Hotel Gibson, January 26. They are: President, M. F. Blankin, Philadelphia, Pa.; First Vice-President, S. H. Downs, Kalamazoo, Mich.; Second Vice-President, Prof. C. E. A. Winslow, New Haven, Conn.; Treasurer, E. K. Campbell, Kansas City, Mo.; and for Members of the Council elected for Three-Year term are: John F. Collins, Jr., Pittsburgh, Pa.; Prof. James Holt, Cambridge, Mass.; E. N. McDonnell, Chicago, Ill.; and Lt.-Comdr. T. H. Urdahl, Washington, D. C.

The membership elected five members of the Committee on Research for Three-Year term, as follows: H. J. Rose, Pittsburgh, Pa.; L. P. Saunders, Lockport, N. Y.; Prof. L. E. Seeley, New Haven, Conn.; Comdr. A. E. Stacey, Jr., Washington, D. C.; and C. Tasker, Toronto, Ont., Canada.

MIAMI *wood bathroom* CABINETS

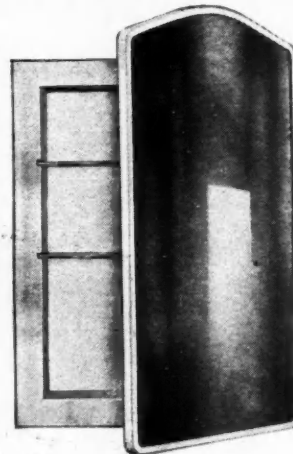
Modern as metal units

Miami Wood Framed Mirrors are available in six sizes from 14 1/2" x 20 1/2" up to 22 1/2" x 30 1/2".



MIAMI Wood Cabinets are modern, streamlined, beautiful. Their neatly framed mirrors, durable finish and compact, easily accessible cabinet space reflect good design and craftsmanship. MIAMI Wood Cabinets are equipped with convenience features that are standard in MIAMI Metal Cabinets. You will find they are built to meet today's needs for real service and dependability.

NO. 102-W



The Miami Line consists of two distinctive wood cabinet models; also wood-framed wall mirrors in six sizes. The cabinet body of the new models is made of kiln dried hardwood, with joints double locked, glued and tenoned; door back of moisture-proof composition board; mirrors of double-strength quality; finish, three coats baked-on, white enamel. A feature of the cabinet especially emphasized, is the neat mirror frame of steel (by permission of WPB), finished to match the cabinet. Equipment consists of two glass shelves; bar-type door stop; stainless steel door strike and bullet door catch.

For complete details and catalog, write Dept. AB.

MIAMI CABINET DIVISION

THE PHILIP CAREY MFG. COMPANY
Dependable Products Since 1873
MIDDLETOWN, OHIO

Miami Wood Cabinets are modern, streamlined units—unlike the old-fashioned model illustrated below.



War Production Board Personnel; Latest List

The following revised list of executive personnel of the War Production Board is made available for information purposes:

(Building Code: Census—Census Bldg.; IA—Indiana Ave.; JS—Jefferson School (Sixth and D, S.W.); LLB—Lend-Lease Bldg.; NPOB—New Post Office Bldg.; RH—Raleigh Hotel; RRB—Railroad Retirement Bldg.; SSB—Social Security Bldg.; MCB—Municipal Center Building; TE—Temporary "E"; TR—Temporary "R"; TS—Temporary "S"; WGLB—Washington Gas Light Bldg.; Empire St.—Empire State Bldg., New York.)

EXECUTIVE OFFICE OF THE CHAIRMAN

Chairman, Donald M. Nelson, 5055 SSB.....2113
Vice Chairman, W. L. Batt, 5055 SSB.....2212
Vice Chairman, J. S. Knowlson, 5075 SSB.....71211
Vice Chairman, C. E. Wilson, 5037 SSB.....2134

OFFICE OF RUBBER DIRECTOR

Director, William M. Jeffers, 5027 SSB.....3256

COMBINED PRODUCTION AND RESOURCES BOARD

Deputy Chairman-US., J. S. Knowlson, 5075 SSB.....71211

SMALLER WAR PLANES DIVISION

Deputy Chairman of WPB on Smaller War Plants, Lou E. Holland, 1110 RH.....73085

PROCUREMENT POLICY DIVISION

Director, Houlder Hudgins, 4514 SSB.....2251
Contract Review Branch, Chief, Carman G. Blough, 8-211 TE.....2859

STATISTICS DIVISION

Director, Stacy May, 5700 SSB.....2410
Industry and Facilities Branch, Chief Dr. Ver-gil D. Reed, 2717 SSB.....6436

DIVISION OF INFORMATION

Director, Stephen E. Fitzgerald, 5525-A-SSB.....5242

OFFICE OF PROGRAM VICE CHAIRMAN

Program Vice Chairman, Ferdinand Eberstadt, 5300 SSB.....74642

FACILITIES BUREAU

Construction Division

Director, W. V. Kahler, H-251 TE.....4951
Assistant Chief, Thomas L. Peyton, 5-201 TE...73860
Housing Branch, Chief, Sullivan Jones.....
Projects Service Branch, Chief, Hugh Beshers.....
Materials Control Branch, Chief, Harlow Lewis.....
Project Analysis Branch, Chief, John McTigue.....
Consultation Branch, Chief, D. L. Hoopingarner.....

INDUSTRY DIVISIONS

Steel Division, Director, Hiland Patcheller, 1029 SSB.....2634
Copper Division, Director, Harry O. King, 1085 TR.....72927

Commodities Bureau

Director, E. W. Reid, 4014 MCB.....2262

Construction and Utilities Bureau

Director, John Hall, rm 5721 SSB.....3183
Plumbing and Heating Division, Director, Joseph F. Wilber, 610 SB.....3051
Building Materials Division, Director, John L. Haynes, 201 470 IA.....72732
Lumber and Lumber Products Division, Di-rector, Arthur T. Upson, 201 SRT.....73256

Equipment Bureau

Farm Machinery and Equipment Division, Di-rector, George L. Gillette, H-371 TE.....6473
General Industrial Equipment Division, Di-rector, Wm. L. Frank, 1075 TE.....5811
Construction Machinery Division Director, Joseph T. Ryan, H-367 TE.....71142

Proof
THIS WINTER...

THE HEATILATOR FIREPLACE is proving . . . in thousands of homes all over America . . . every sales claim ever made for it. It is providing circulating heat. Heat that supplements the fires in furnaces and helps to solve the problem of fuel rationing and fuel shortages.

● Because our production facilities are needed for war work, no more Heatilator Fireplaces can be made for the duration. But you, Mr. Builder, have the satisfaction of knowing that every Heatilator Fireplace you did install is doing a worthwhile war job in helping to heat American homes.

HEATILATOR, INC.
612 E. Brighton Ave.
Syracuse, N. Y.

HEATILATOR
Fireplace



What will post-war plumbing fixtures be like?

WE DON'T KNOW, but we do know this: that iron and steel are being subjected to the severest tests they have ever known — and that out of the flaming crucible of war will come new and improved grades for the plumbing industry.

Sinks, tubs and lavatories are likely to be lighter, stronger, more efficient and attractive than anything we have known in the past. Their designs will be highly functional and they will be integrated into the "architecture" of the kitchen and bathroom. In short, they will be new products for a new world.

ARMCO's Research Laboratories are busy on irons and steels for the war effort, but the round-the-clock work they are doing already lights the way for radically improved metals for your post-war requirements. Enameling iron is one of these, and improvements being developed for war uses indicate that porcelain enamel will be an even better material, and that it can continue to occupy the leading place as the "lifetime finish."

The builder is sure to have brighter opportunities than ever after the war is won — and *Formed Iron Plumbing Ware*, as new as tomorrow's airplane, will help him make the most of these opportunities for service and profit. The American Rolling Mill Company, 191 Curtis Street, Middletown, Ohio.

**THE AMERICAN
ROLLING MILL
COMPANY**

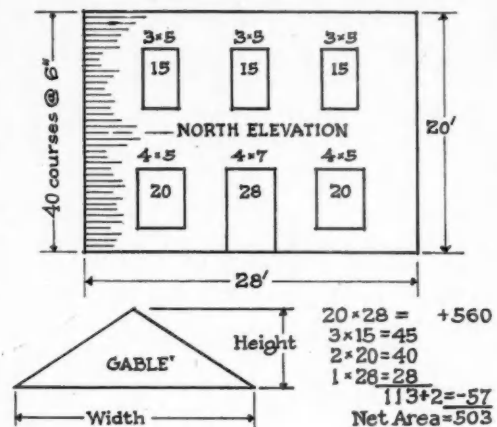


American Builder

HANDY-BOOK

HOW TO ESTIMATE ROLL SIDING

AMERICAN BUILDER FOR FEBRUARY 1943



AREA EACH SIDE. Make sketch of each side of house and get area in square feet. (Height of house can usually be determined from the ground by counting the courses of shingles or clapboards and multiply the number of courses times the exposure.)

DEDUCTIONS. Measure windows and door, dropping odd inches from the foot size. Figure areas in porches to be deducted with windows and doors. Under each sketch calculate areas of openings. If job requires over 1000 feet of siding, deduct *one-half* of window area for waste. If job is under 1000 square feet do not deduct anything for openings.

NET AREAS. Add the net areas for all sides of the house including gables. The area of a gable equals half the height times the width. Divide the grand total net area by 100 to find how many squares of roll siding are required.

NAILS. For roll siding about 2 pounds of 1 1/2" japanned siding nails are required per square.

Thanks to U. S. Gypsum Co.

Short Cuts & Time Savers

American Builder's Job Helps appear each month as part of an editorial series begun in the January issue. The purpose of this series of articles is to provide builders with practical "how-to-do-it" information to use in office or on job.

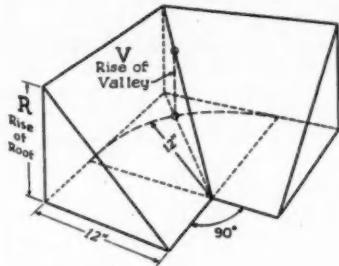
Subjects covered in the series thus far are: How to Find Volume of a Pile, How to Make a Secret Door, How to Estimate Roofing, and How to Finish a Damp Cellar.

Two additional sheets, devoted to estimating and specifying, are shown on the following pages.

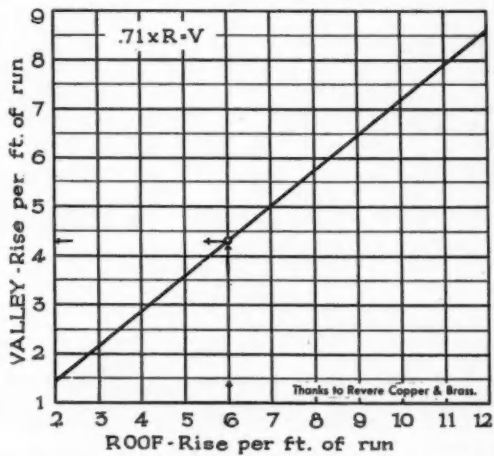
OF JOB HELPS

HOW TO FIND SLOPE OF VALLEYS

AMERICAN BUILDER FOR FEBRUARY 1943



It is frequently necessary to find the slope of a gutter between two roofs of the same pitch intersecting at right angles. The chart below shows that two intersecting roofs having 6" rise per foot will have a gutter whose rise is about 4 1/4" per foot.

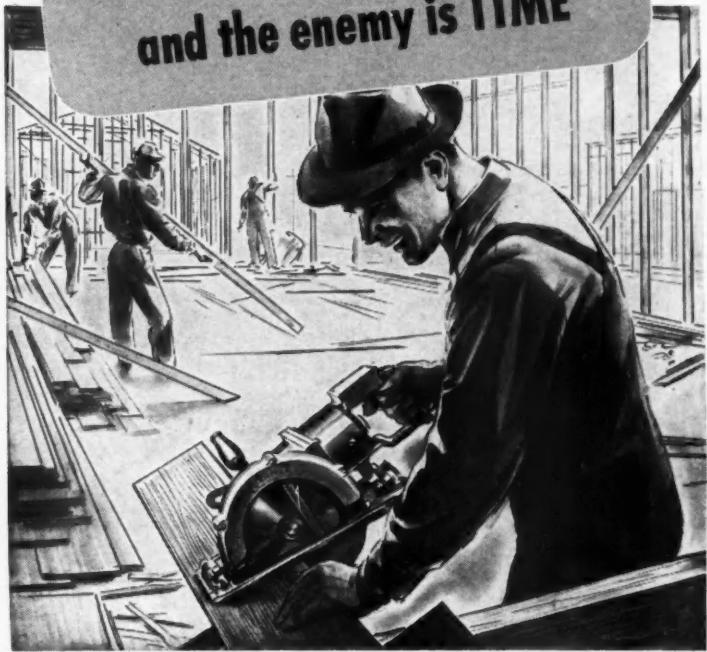


No Notebooks for Sale

AMONG numerous letters commenting on this "Job Helps" department have been requests from builders for notebooks in which to file the sheets. *American Builder* does not have notebooks for sale.

"Job Helps" is a continuing editorial feature appearing monthly. The information is arranged in convenient 3 x 5 notebook page size so that it may be filed or used on the job. The sheets are not for sale or available from any other source than the editorial pages of *American Builder*.

Where **TOOLS** are Weapons...
and the enemy is **TIME**



All over the world, cantonments, air and naval bases, industrial plants, and emergency housing projects are being built on "impossible" schedules, so that our fighting forces can be sheltered and supplied.

It is a battle fought by "soldiers of construction", day and night, in stifling heat and bitter cold. Their weapons are Tools, and the relentless enemy is Time.

These men know that without good tools, their skilled hands would be helpless. To meet this tremendous demand for portable electric tools, our manufacturing facilities have long-since "gone to war". When these soldiers of construction return to their peacetime jobs, Stanley Safety Saws and other Electric Tools will again be available for all. Stanley Electric Tool Division, The Stanley Works, New Britain, Conn.



STANLEY ELECTRIC DRILLS pack the power for hard drilling jobs in wood or metal. They operate efficiently from standard power lines or portable generator sets.



STANLEY ELECTRIC HAMMERS, with the "Free Thrown Plunger," are time savers for vibrating forms, drilling, clipping, channeling in concrete, brick, and stone.

1843 **STANLEY** 1943

TRADE MARK

STANLEY ELECTRIC TOOLS



This Wood Comes Back Home To Work After Long Life Has Been Added

MANY LUMBER MILLS employ Wolmanized Lumber* on construction that is exposed to conditions conducive to decay—for log haul-ups, tramway supports and decking, conveyors, fuel bins and platforms. They cut their lumber to size, frame it ready for erection, and send it to a Wolmanizing plant for treatment. Then back to the mill it comes, prepared to give many years of service.

THAT'S CONVINCING evidence that the lumber producers think a great deal of this long-lived lumber.

WOLMANIZED LUMBER is ordinary wood that has been treated to make it highly resistant to decay and termite attack. Preservatives are driven deep into the wood by the vacuum-pressure method. "Fibre fixation" prevents their leaching out. Service records covering millions of feet, some of it in use over eighteen years, are evidence of its durability.

WARTIME STRUCTURES are being built of Wolmanized Lumber all over the world. The desirable properties of wood construction are retained—easy, fast erection, lightness, strength, resilience, good insulating properties. And long life is added, assuring low upkeep costs. Consider Wolmanized Lumber in your post-war planning. American Lumber & Treating Company, 1645 McCormick Bldg., Chicago, Ill.

*Registered Trade Mark

WOLMANIZED LUMBER



American Builder HANDY-BOOK

HOW TO ESTIMATE PAINTING				
AMERICAN BUILDER FOR FEBRUARY 1943				
Coating Material	Character of surface	Sq. ft. covered by		
		1 gallon	2 coats	3 coats
Oil point (gloss finish)	Smooth wood	600	325	225
	Rough wood	350	200	135
Oil point (flat finish)	Metals	700	340	230
	Plaster	450	250	175
	Hard brick	400	225	160
	Soft brick	350	200	150
	Smooth cement	350	200	150
	Rough cement (stucco)	200	100	100
	Smooth wood or wallboard	500	275	200
	Plaster	400	225	160
	Hard brick	350	200	150
	Soft brick	300	175	125
Essence point	Smooth cement	300	175	125
	Smooth cement (stucco)	150	75	75
	Smooth, painted with undercoats	500	250	200
	Smooth wood	500	275	200
	Smooth wood	450	250	175
	Smooth wood	100	50	50
	Rough wood	125	60	75
	Smooth	150	75	75
	Rough	100	50	50
	Smooth	300	150	100
Exterior spar varnish	Smooth	400	200	150
	Plaster	400	200	150
	Brick	250	125	100
	Plaster	200	100	75
Interior finishing varnish	Brick	200	100	75
	Plaster	200	100	75
Shellac	Brick	200	100	75
	Plaster	200	100	75
Shingle stain	Brick	200	100	75
	Plaster	200	100	75
Asphalt roof paint	Brick	200	100	75
	Plaster	200	100	75
Asphalt-asbestos liquid roof cement	Brick	200	100	75
	Plaster	200	100	75
Cold-water paint (5 pounds powder)	Brick	200	100	75
	Plaster	200	100	75
Calcimine (5 pounds powder)	Brick	200	100	75
	Plaster	200	100	75
Whitewash (4 to 5 pounds hydrated lime)	Brick	200	100	75
	Plaster	200	100	75

Estimating and specification data are given in the sheets are part of a continuing editorial series appear

Fence Manufacturer Tells Former Customers How to Repair Fence

ALTHOUGH wire fence cannot be supplied to farmers during the present stage of the war, Keystone Steel and Wire Co., is showing its continued interest in its steady customers by mailing a broadside on the repair and conservation of fences to almost half a million farmers. Names of the farmers who receive this two-color folder on the maintenance of their fences were supplied by dealers who have been Keystone customers.

No attempt is made to stimulate the purchase of fence at this time, but valuable information on the care of existing fence is contained in the mailing piece.

Furnace Company Awarded Army Ordnance Banner

ON DECEMBER 17, in the presence of employees and several hundred invited guests, the Army Ordnance Banner was awarded to L. J. Mueller Furnace Company, Milwaukee, Wis., in recognition of the record which has been achieved by the

OF JOB HELPS

HOW TO SPECIFY BACKWARDS

AMERICAN BUILDER FOR FEBRUARY 1943

Divisions of work	Per cent	Cost of House		
		\$4000	\$5000	\$6000
Excavating, Grading	1.8	\$72	\$90	\$108
Concrete Foundations	5.9	236	295	354
Concrete Walks, Steps	0.6	24	30	36
Chimney, Fireplace	3.0	120	150	180
Lumber (Material)	16.0	640	800	960
Doors installed	4.2	168	210	252
Windows installed	5.9	236	295	354
Cabinets installed	2.2	88	110	132
Carpenter Labor	12.5	500	625	750
Roofing	2.4	96	120	144
Flashings, etc.	1.1	44	55	66
Insulation	3.0	120	150	180
Glazing	1.0	40	50	60
Linoleum Floors	1.5	60	75	90
Tilework	1.5	60	75	90
Lath and Plaster	5.6	224	280	336
Paint, Decorating	6.3	252	315	378
Plumbing	8.5	340	425	510
Heating	10.5	420	525	630
Electrical	2.1	84	105	126
Planting, Lawn	2.1	84	105	126
Miscellaneous	2.3	92	115	138
TOTAL	100.0	4000	5000	6000

This table represents a fair average for the proportionate cost of the various divisions of the work for a frame house. If a prospect has a fixed budget of say \$5000, for instance, to build a house whose material list is known, the quality of materials can be determined. Suppose 20 D. H. windows are to be glazed. The table shows \$50 for glazing, or \$1.25 each light. At the market price for the different grades of glass in place, therefore, it can be quickly determined whether to use DS or SS, in A, B, or other quality.

two American Builder Job Helps shown above. These ing each month only in American Builder.

company in its production of Ordnance materiel.

Presentation was made by Major Frank Parker, of the Chicago Ordnance District, and the banner was accepted on behalf of the employees by Miss Dorothy Johnson, oldest girl employee in point of service, and Ray Skorch.

Address of welcome was given by Harold P. Mueller, president of the company, who told of the steps which have been taken by the company in converting from peacetime to war production. G. C. Mueller, vice-president, introduced Gov. Julius P. Heil, who paid tribute to L. J. Mueller, Sr., founder of the company in 1857, and to L. J. Mueller, Jr., and H. P. Mueller, of the second and third generations, who succeeded in turn to the presidency.

C. M. Burgess, president, Burgess-Norton Mfg. Co., Geneva, Ill., and civilian chairman of the Ordnance Tank Track Committee, complimented the company on its production record to date and outlined tank track production plans for the future.

Frank J. Nunlist, representing Mueller's War Contract Division, was master of ceremonies for the Presentation Program.

In the evening, the company was host to a large number of guests at a dinner at the Plankinton Hotel.



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.

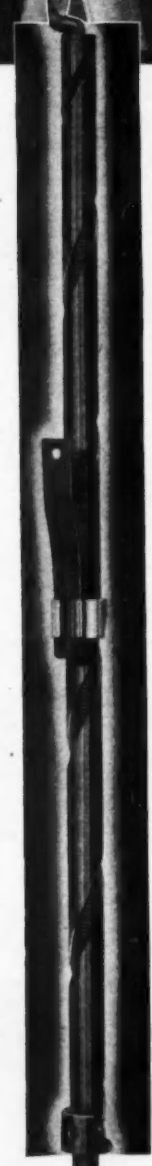
And on the Home Front

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.

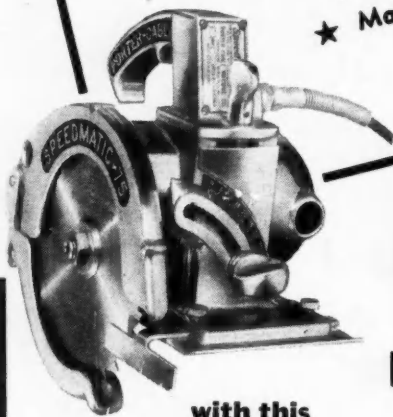


GRAND RAPIDS HARDWARE COMPANY
GRAND RAPIDS • MICHIGAN



Got Any of These Remodeling Jobs To Do?

- ★ Cut new doorways
- ★ Cut openings in floors
- ★ Sawing stair stringers
- ★ Sizing studding, joists & siding
- ★ Cutting plywood
- ★ Ripping old lumber
- ★ Making cabinets



Do Them
QUICKER
at
LESS COST

with this

Speedmatic ELECTRIC
HANDSAW!

Just the right weight and handiness you want—plus all the power and stamina you'll ever need. It's perfectly balanced for one-hand operation in any position and the wide shoe assures a steadier, truer rest. More—it has a "quick set" depth and angle adjustment, and the safety guard can't clog. You'll depend on it to do your toughest jobs, in the toughest places—particularly as the amazing helical gear drive gives you 11% MORE USABLE POWER from the motor.

Don't be content with anything less. Why should you, when this top-quality saw will prove to be "cheapest in the long run"? Ask your local Porter-Cable man or local dealer today (name in classified 'phone book). Or drop a postcard for full details.



Here's a Handy Helper for
Fitting, Finishing and Trim

You'll never believe how much time this portable electric sander will save you in fitting, finishing, trim or cabinet work until you try it. So, ask for a free demonstration and convince yourself that you can't afford to do without it.

PORTER CABLE MACHINE CO.

1721-2 N. Salina St.,

Syracuse, N. Y.

CATALOGS AND HOW-

6—VITREOUS CHINA AND PERMA-GLOSS PORCELAIN SANITARY WARE—General Ceramics sanitary ware for defense housing, Army, Navy and Marine camps and bases, and industrial plants and public buildings is offered by the General Ceramics Co., in Illustrated Price Book GC-6. Also, additions to General Ceramics' line are three new Perma-Gloss items which are illustrated and described in a new four-page brochure. Perma-Gloss ware is composed of carefully selected clays and is fired at a high temperature with a layer of vitreous china glaze.—General Ceramics Co., Sanitary Ware Division, Metuchen, N.J.

7—HOW TO INSTALL REDWOOD PIPE—A new 16-page bulletin entitled "Redwood Pipe" has been distributed by the California Redwood Association. The wartime curtailment of steel for pipe manufacture resulted in considerable inquiry about durable redwood pipe, and in order to answer these questions, the Association consolidated and brought up-to-date previous technical information on redwood pipe, included new material, and published the bulletin as a comprehensive manual, covering both eastern and western practices in wood pipe construction. By means of numerous tables, text and drawings, the bulletin deals with the problem of installation of four types of redwood pipe—continuous stave pipe, machine banded pipe, bored pipe, and redwood lined metal pipe. On the defense plant front, it is pointed out that these types of pipe are adaptable to every common, daily usage.—California Redwood Association, 405 Montgomery St., San Francisco, Calif.

8—AMERICAN ROOF TRUSSES—A four-page folder mentions the various types of wooden roof trusses which the American Roof Truss Co., engineers, fabricators and erectors, have designed for adaptability to every type of building, and lists the advantages to be gained through use of this product, which is available with a low priority rating.—The American Roof Truss Co., 6850 Stony Island Ave., Chicago.

9—HOW TO FIGURE LUMBER—"The Perry Lumber Reckoner" is a pocket size book of 106 pages, written and compiled by L. W. Perry, a lumberman. It helps one to figure any number of pieces of boards, dimension or timber of every standard size, and of every length from 2 to 68 feet. The Builders' Estimates of Quantities, and a simple way of figuring interest, complete the information given in this little book, which sells for \$2.00.—Benjamin F. Jenks, Box 3963 Shaker Square Station, Cleveland, Ohio.

10—COMBINATION SHEATHING PAPER AND WALLPAPER—"Fleming's Wallrite Decorated Building Paper for Beautiful Walls" is the title of a catalog which describes the beauty, comfort and economy obtained through use of this new product. Included are ten sets of questions and answers on the use, qualities, and installation of Wallrite, as well as sample pieces of the eight colorful and attractive patterns now available.—Fleming & Sons, Inc., Dallas, Tex.

11—HOW TO BUILD SOUTHERN PINE BARNs AND IMPLEMENT SHEDS—Southern Pine Association has prepared this plan book especially for the farmer who is his own carpenter and builder. Included are plans for Gothic roof barns, gambrel roof barns, gable roof barns, implement sheds, as well as a 4-page sheet devoted to wind-resistant construction. Each design is accompanied by complete, easily interpreted working plans, with suggested floor plan and material list—all printed on one sheet. No other plans, blueprints or specifications are needed. All working plans are flexible in order to permit various alterations, so that the finished structure can be made to meet one's exact requirements.—Southern Pine Association, New Orleans, La.

TO-DO-IT INFORMATION

12—HOW TO SELECT CONTROLS FOR FUEL CONSERVATION

—A new 16-page manual has been prepared by Hotstream to accomplish two important aims—to explain in everyday terms, as they apply to different types of firing, the fundamental rules and formulae which govern the proper burning of fuel and the utilization of heat so created; and to offer suggestions for the selection of equipment with which the most efficient use of fuel can be attained. The Manual is divided into five major divisions: the first is concerned with natural draft coal burning; the second covers automatic stoker firing; the third explains chain grate and spreader stoker operation; the fourth discusses forced draft hand firing; and the fifth takes up natural draft oil burning. Each type of installation is illustrated with carefully planned drawings, and a brief analysis of the use and value of combustion instruments is also included.—The Hotstream Heater Co., 807 Grand Ave., Cleveland, Ohio.

13—THE CASCO TROUBLE-SHOOTER FOR JOINT-GLUING—

A new 22-page non-technical booklet has recently been issued for the benefit of glue foremen and inspectors, so many of whom are new users of glue in glued wood construction. The subject matter is confined to joint and assembly gluing of wood, with casein glue, urea resin glue (cold setting), and phenol resin glue (warm setting), and included is material on how to identify the cause of a poor glue joint; the mechanics of casein and resin glue; and common gluing faults and their remedies.—Casein Company of America, 350 Madison Avenue, New York City.

14—HOW TO INSTALL VERTICAL SASH BALANCE—A small folder has just been issued by Caldwell which describes, with accompanying drawings, the various steps to be followed in the installation of their vertical (spiral) sash balance.—The Caldwell Mfg. Co., Rochester, N.Y.

15—QUIZ BOOK ON REARDON PRODUCTS—This pocket sized handbook was designed primarily to serve as a textbook for architects, painting contractors and paint salesmen, and to answer the questions most frequently asked on the selection, use and application of colored paint. The book is divided into sections by the insertion of colored thumb guides—each section devoted to a different Reardon water paint product—and at the end are two sections on patching materials and sizing materials.—The Reardon Co., 2nd & Clinton Sts., St. Louis, Mo.

SERVICE COUPON—CLIP and MAIL to CHICAGO

Readers Service Department, (February, 1943)
American Builder,
105 W. Adams St., Chicago, Ill.

Please send me additional information on the following product items, or the catalogs, listed in this department:

Numbers

Name

Street

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OCCUPATION*

*Please note that occupation must be stated if full service is to be given

THIS PRINCIPLE ••
WILL CONTRIBUTE TO BETTER
LIVING, AFTER THE WAR

What to do about the fireplace in the small, tightly constructed home of the future?

The exhaustion of air from the living quarters tends either (1) to create a partial vacuum, and therefore back drafts and smoke, or (2), infiltration and therefore annoying cold drafts, cold floors, uneven temperatures and interference with automatic heat controls.

By admitting outdoor air through heating ducts, the Bennett Fresh Air Unit overcomes these difficulties and definitely increases the comfort and pleasure to be derived from the fireplace.

When Victory again enables us to produce fireplace units and construction supplies, you'll find BENNETT ready to offer you many advantages.

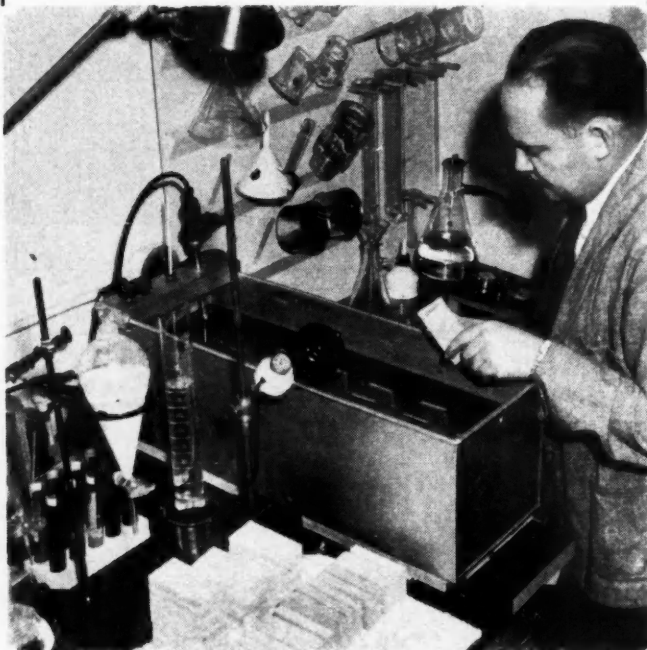
BENNETT FIREPLACE CO.
NORWICH, N. Y.

BENNETT
Guaranteed
FIREPLACES

Two types of Units — Fresh Air and Recirculating. Construction supplies. Flexscreens. Specialties. Ready for you — better than ever — after Victory.

PUTTING WESTERN PINES TO SOAK

We are experimenting with water repellents that will effectively control dimension changes in wood so that, for uses where a constant fit is necessary, satisfactory results may be assured under adverse conditions. One test is soaking repellent-treated blocks of Western Pines in water of accurately controlled temperature and measuring the swelling by a precision dial gauge.



In these wartime days, as in the days of peace, the Western Pine Association Research Laboratory is constantly experimenting to determine new values, new uses, and to improve manufacturing procedures for the Western Pines.

WESTERN PINE ASSOCIATION

Yeon
Building.



Portland,
Oregon.

*Idaho White Pine

*Ponderosa Pine

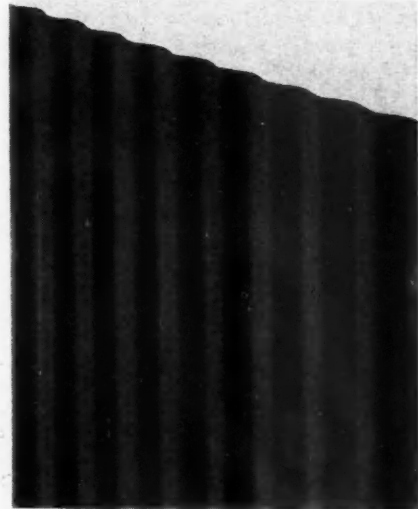
*Sugar Pine

*THESE ARE THE WESTERN PINES

War Substitutes

A GROUP of new products developed to meet the immediate demands of wartime construction has just been put on the market by The Celotex Corporation, Chicago. The new products replace more critical materials, such as steel and lumber, in both temporary and permanent structures. WPB is advocating the use of such products in place of less available materials.

One of these products being used for both government and private construction is called corrugated asphalt siding—a



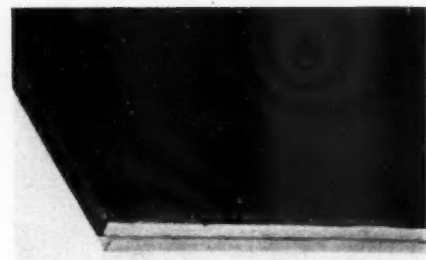
CORRUGATED asphalt siding.

and resin product designed for wartime application on industrial, commercial and farm buildings. It can replace corrugated steel sheets used for covering outside walls of temporary structures of all kinds, including factory buildings, warehouses, storage and machine sheds, dairy barns and drying sheds.

Corrugated asphalt siding consists of two sheets of heavy felt saturated with a recently developed resino-bituminous compound. The sheets are bound together with a high melting-point asphalt adhesive and corrugated under high pressure.

The finished sheets are hard, rigid, light in weight and moisture-proof. They retain their stiffness and corrugations in summer weather because of the high melting-point, wear-resistant resins used in the saturating process.

Corrugated asphalt siding weighs approximately 12 ounces per



GYPSUM exterior wallboard.

square foot. It is available in five sizes—28" x 6', 7', 8', 9', and 10', and is applied in the same general manner as corrugated steel sheets.

The new White Rock Gypsum exterior wallboards supply both structural and weather protection needs for many buildings such as barracks, warehouses, recreation centers and repair shops. The products also are applicable to war workers' homes, dormitories and industrial buildings. They are available in 1/2-inch and 1-inch thicknesses finished either with smooth or mineral surfaced roll roofing. The 1-inch thickness (shown here) is a two-ply, laminated product with shiplap joints along the long edges. The 1/2-inch thickness has square edges. Sizes are 2 feet by 8, 9 or 10 feet.

For Your Needs

The Celotex gypsum roof slab is an improved rigid type of roof deck plank. It may be used to replace wood plank or other types of unit roof deck construction.

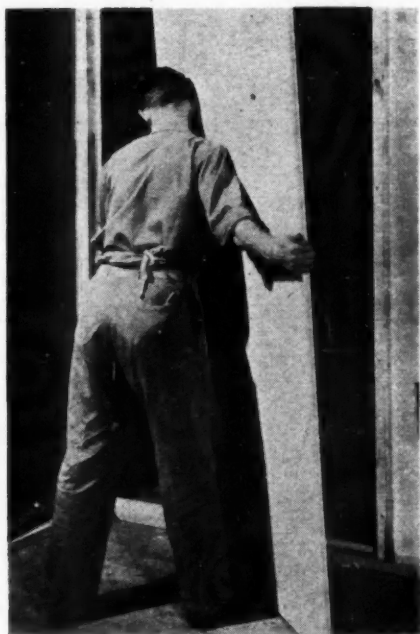
The slabs are made by laminating together two, three or four thicknesses of White Rock wallboard to form an integral unit. Thicknesses are 1, 1½ and 2 inches. The units are 2 feet wide by 8, 9 and 10 feet long. All thicknesses are available with square edges. The 1½-inch thickness is also available with T&G



LIGHT weight roof slab.

joints on the long edges, and the 1 and 2-inch thicknesses with shiplap joints on the long edges. On the upper sides of the slabs, the tough paper provides a ready bond for roofing materials. On the lower sides, when exposed between the beams, the cream color of the paper provided high light reflection.

The slabs are light in weight. The 1½-inch thickness weighs 6¼ lbs. per sq. ft., and the 2-inch slab weighs 8½ lbs. per sq. ft.



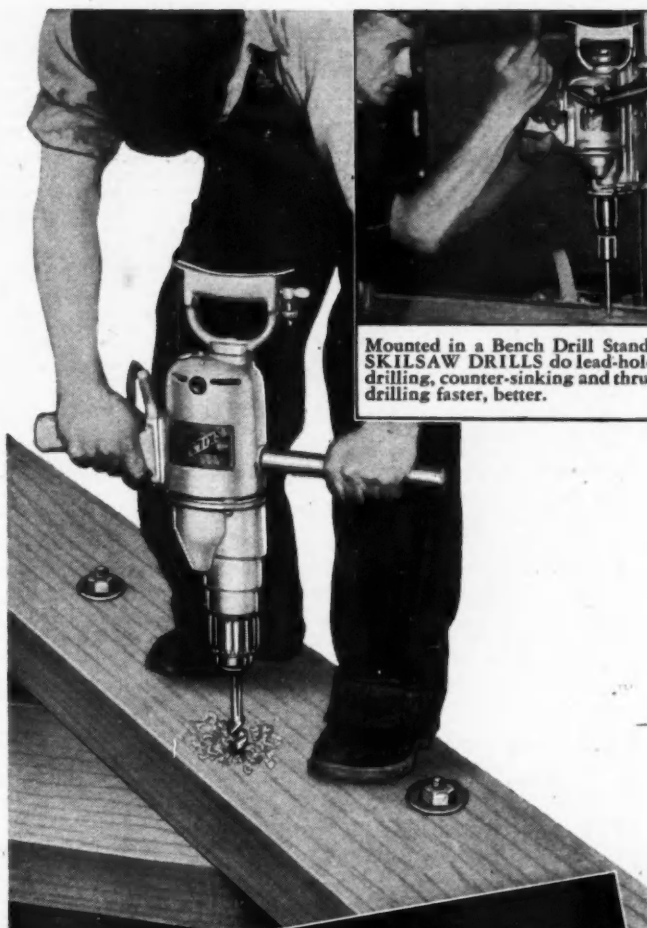
EXTRA thick wallboard panel.

They also are fireproof, rotproof and will not twist or warp. Expansion and contraction is practically nil.

White Rock Extra Thick Gypsum wallboard panels are made in 1-inch, 1½-inch and 2-inch thicknesses by laminating two, three or four layers of gypsum wallboard. This provides a core of fireproof gypsum that will not warp, twist, expand or contract. Each exposed surface is covered with tough, cream-colored Manila paper that has high light-reflection value.

Three types of demountable partitions employing these laminated gypsum panels have been worked out by Celotex. Two are studless, non-load-bearing partitions, one of which eliminates battens at the joints. The third is a load-bearing partition, which may also be used for low partitions in high-ceiling rooms.

Because of their large size—4 feet wide by 6 to 12 feet long—the panels can be erected easily and rapidly.



Mounted in a Bench Drill Stand, SKILSAW DRILLS do lead-hole drilling, counter-sinking and thru-drilling faster, better.

The Extra Power in
SKILSAW DRILLS
means Extra Speed
IN WAR CONSTRUCTION!

● Wherever SKILSAW DRILLS are on the job, cantonments go up *quicker*, housing projects are finished *faster*, war plants are ready for production *sooner*. Here's the reason: with their greater drilling power SKILSAW DRILLS drive more holes per hour . . . punch holes in drilling bottle-necks . . . *get more work done with fewer men*.

SKILSAW DRILLS are lighter and more compact for easiest handling even in tightest spots. Yet they're ruggedly built to stand up under today's toughest construction schedules. 23 Models—a size and type for every drilling job. Ask your distributor for a demonstration of SKILSAW DRILLS . . . *today!*

SKILSAW, INC., 5031 Elston Ave., Chicago, Ill.

New York • Boston • Buffalo • Philadelphia • Cleveland • Detroit
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 Dallas • Los Angeles • Oakland • Portland • Seattle • Toronto, Can.

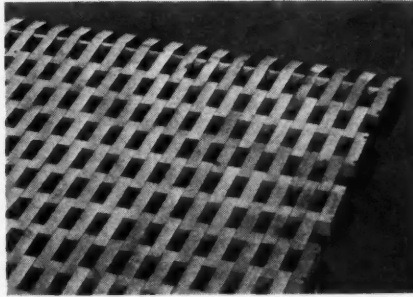
SKILSAW PORTABLE ELECTRIC **TOOLS**
 ★ MAKE AMERICA'S HANDS MORE PRODUCTIVE ★

NEW PRODUCTS—**Flexible Wood Link Mat**

AMERICAN Mat Corporation, 1796 Adams St., Toledo, Ohio, has just announced a new substitute product in flexible matting, which is substantially constructed of wood links. It is light in weight, and can be rolled or folded up for easy handling and cleaning; when lying flat, it follows the contour of the floor.

Flexible wood link matting makes for safety underfoot, with the ends beveled to reduce the danger of tripping, is comfortable to stand on, and affords good drainage. It is particularly applicable for use back of counters and bars, in kitchens and laundry rooms, in factories, around machinery, and on oily and greasy floors.

The mat is 1" thick, and comes in stock sizes—18" x 32", 24" x 38", and 30" x 44"—but can also be obtained in special sizes of any length and up to 37" in width. It comes in natural wood color.



LIGHT weight flexible wood matting.

Non-Chemical Odor Absorber

A NEW non-chemical material, known as Nox-Odor, has been developed by Tamms Silica Co., Chicago; it absorbs paint and varnish odors, thereby making it possible to work or sleep in freshly painted rooms without discomfort. The container, which is no larger than a tin of canned food, is placed in a room, and vents at the top and bottom are then opened.

The can may be placed on painted pantry or cupboard shelves to keep paint fumes from tainting delicate foods, and it may also

be placed inside ice boxes, coolers, etc., to absorb odors and prevent butter, cheese, etc., from taking on the odors of other stronger foods stored in the same refrigerator.

Nox-Odor comes in two sizes—No. 1 a vent style package for removing odors from small rooms and refrigerators, and No. 2, a large mesh bag suitable for hanging in large rooms or in meat coolers, and commercial refrigeration and food storage rooms.

New Fibre Utility Can

A UTILITY receptacle or container made from a fibre material has just been announced by the Arvey Corp., 3462 N. Kimball Ave., Chicago. This has been developed to serve as a substitute for scarce war metals in many types of containers and receptacles in common use in homes, public buildings, factories, service depots, etc.

The fibre can is a sturdily built receptacle of 20 gallon capacity, serving in place of sheet iron or steel cans as a container for fruit, vegetables, ashes, refuse, garbage, etc.

The new type of strong, extra heavy, single-ply impregnated fibre, from which it is made, has a bursting strength of 500 lbs. per square inch; it's light in weight, tough, durable, water resistant and vermin proof, and has strong rope handles and an overlapping of the same fibre material. All seams are made with heavy flat wire stitching for strength and lasting service.

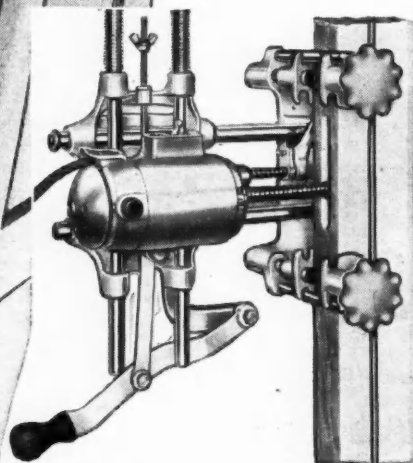


LIGHT weight fibre utility can.



"We're cutting a Mortise a Minute with the Carter Lock Mortiser

...that's how we get doors hung on schedule on the big jobs!"



There's not much time allowed for completing the big war housing and building contracts. That's why smart builders use the Carter Lock Mortiser. It does a cleaner, better job than hand mortising, and does it *10 times as fast*.

It's the lightest, easiest-to-handle mortiser made. Adjustment is simple, for any mortise up to 5/4" long, 4 3/4" deep. It feeds automatically to the desired depth. With the grinding pencil furnished, it sharpens its own cutters. The 1 H.P. motor drives it 18,000 R.P.M.

The Carter Lock Mortiser will *pay for itself* easily on *one* medium sized contract, and go on saving, year after year. It is completely described in the Carter catalog. Write for a copy.

**R. L. CARTER DIV., The Stanley Works
New Britain, Connecticut**

CARTER TIME-SAVING TOOLS

Lead Floor Flange Offered

TO SAVE brass and to avoid delays in installing fixtures a new type water closet floor flange has been developed by the Lead Industries Association, 420 Lexington Ave., New York City. This flange, made of hard lead, is intended to take the place of the conventional brass flange for the same purpose.



LEAD floor flange

This flange can be soldered directly to the closet bend without preliminary tinning. An added advantage is that it can be welded or "burned" to the lead band, thus eliminating the use of solder entirely.

Plumbers by using this flange will not only simplify their buying problems but will also contribute to victory by saving brass.

New Compound to Destroy Soot

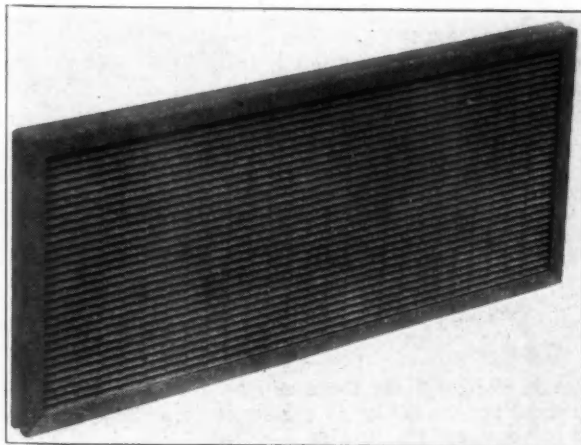
SINCE soot-clogged heating systems waste fuel, a new soot destroyer called "Chimney Sweep," recently announced by G. N. Coughlan Co., Orange, N. J., is of particular interest at this time. It is a scientific combination of finely ground chemicals especially compounded to act upon and reduce the residual deposits of combustion that are found in all types of heaters, furnaces and burners. When sprinkled on coal, oil or gas fires, Chimney Sweep destroys the soot by harmless chemical action; it may also be used for woodburning fireplaces.

The product is packed in a 48 oz. can, which is said to be a winter's supply for an average home.

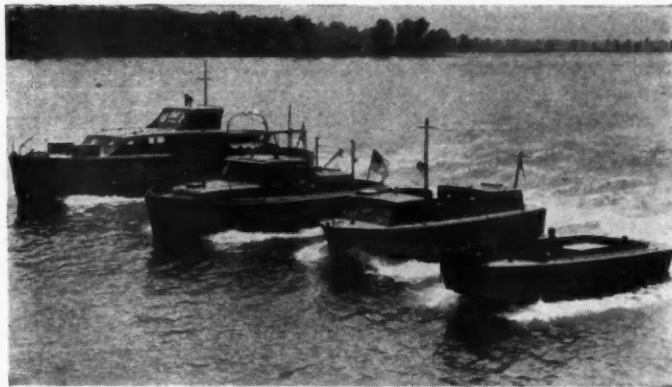
Sight-Tite Ventilating Grilles

BARBER-COLMAN Company, Rockford, Ill., has developed the Uni-Flo Sight-Tite Grille. Its purpose is to meet the demand for a ventilation unit which cannot be seen through from any angle. The fins of this grille are of an inverted V shape, and over-lap. Diffusers on the edges of the fins add rigidity and a pleasing appearance.

The Sight-Tite grille is useful for ventilation openings in doors, walls, panels, baseboards, etc. It may also be used for exterior fresh air intake openings, because of the fact that it provides an effective barrier to rain or snow. Sizes up to and including 36" x 36" are offered. Larger sizes as needed are prefabricated in two or more sections and assembled into a common frame.



NO LOOKING through this grille.

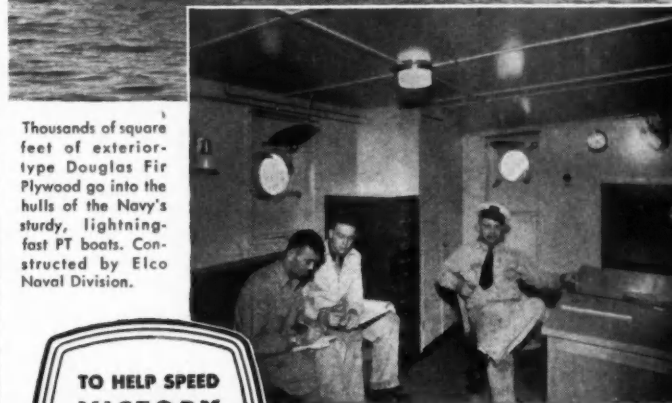


Four outstanding boats built by Chris-Craft with exterior-type fir plywood: (from left) U. S. Army Q boat, U. S. Army Aircraft Rescue boat, U. S. Navy Picket boat, U. S. Navy Troop Landing boat.

BOATS...

are one of Douglas Fir Plywood's most interesting War uses!

●Exterior-type Douglas Fir Plywood is serving in all kinds of Army and Navy boats and in Liberty ships because it is so easy to fabricate . . . so lightweight . . . so resistant to damage yet, if damaged, so simple to repair . . . Remember, the many war jobs Douglas Fir Plywood is doing now will make this miracle wood far more useful to you after Victory!



Thousands of square feet of exterior-type Douglas Fir Plywood go into the hulls of the Navy's sturdy, lightning-fast PT boats. Constructed by Elco Naval Division.

The cabins in Kaiser Liberty ships are snug, thanks to walls and ceilings of Douglas Fir Plywood.

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

SEND FOR NEW WAR USE FOLDER
Dozens of photographs show many of the war jobs Douglas Fir Plywood is doing all over the world. You'll find it extremely interesting. It's free, of course. Douglas Fir Plywood Association, Tacoma, Washington.

DOUGLAS FIR PLYWOOD
Real Lumber
MADE LARGER, LIGHTER SPLIT-PROOF STRONGER

Sound Design and superior quality have made Knapp Products the standard of comparison for many years.

Knapp specializes in plastering accessories which, when again available and together with a plastered interior, will be essential to the better building of tomorrow.

Until then Knapp will continue to produce countless parts and sub-assemblies for the tools of war.

KNAPP METAL TRIM
 KNAPP BROS. MANUFACTURING CO.
 GENERAL OFFICES • JOLIET, ILLINOIS

Jake on the Job

(Continued from page 43)

saw, electric pipe cutter, handy concrete mixer and other equipment right inside the old house, and if the men run out of work, they can always turn to building cabinets, cleaning up old doors and trim, or pulling nails.

This type of work calls for close supervision, but it has the advantage of being a low-overhead job and serves to keep a nucleus crew going through the war.

In the case of the old Metuchen mansion pictured, Jake Bass will get six good, well lighted, livable apartments which he can rent for \$45 a month each. He expects to salvage most of the old heating plant and will install a coal stoker to insure low janitor costs. Structural changes in the old house were very slight, consisting principally of the building of small kitchen and bath wings in which the plumbing is economically grouped back-to-back.

Jake Bass admits that this kind of rebuilding work is not easy, and that there are plenty of troubles along the line. He is cheerful about it, though. "Our troubles today are nothing compared with those of the last war," he says. He went through the last one, and ought to know. "There are plenty of jobs for builders willing to take the trouble to go after them," he declares. "Jobs that need doing, too."

* * *

Clear Span Trusses for Barns, Halls, Garages

(Continued from page 54)

tested were 36' 9" clear span at the base and a height of 12' 7 $\frac{1}{4}$ " at the apex. The construction of the beam was similar to an I-beam. The sections comparing to the top and bottom flanges were constructed of 2 pieces 3 $\frac{1}{8}$ " x $\frac{1}{2}$ " glued together. The web was $\frac{3}{8}$ " plywood; $\frac{3}{4}$ " square stiffeners running parallel to the direction of the beam were glued and nailed in place—three on each side of the web above the lower flange and below the upper flange. In addition 1" square stiffeners were nailed and glued on each side of the web at right angles to the direction of the beam, spaced every 2 feet. The beam was constructed in two halves, butt-jointed at the hinge, with the joint reinforced by a piece 2' long and 5" wide x $\frac{3}{4}$ " thick glued to each side of the web and through-bolted. The beam section was 11 $\frac{1}{2}$ " wide at the base, 8" wide at the joint and 26" wide at the widest point at the knee. The beam was anchored at the base by setting into a socket bolted to the concrete foundation.

First Test Run on a Beam

The first test was run under the supervision of R. A. Haller. This test was run on a beam which was already framed and sheathed-in as part of a building. A concentrated load of 2,000 pounds was applied at the center point of the beam. The deflection was 5/32" and recovery upon removing the load was 100 percent. A distributed load of 6,840 pounds was then applied from 72 loading points. Deflection readings were taken at the center and 12 feet each way from the center. Deflection at the center was 7/32" and from the other two points 7/64" and 1/8". Recovery upon removal of the load was 100 percent. Since these beams were constructed on 4-foot centers and distributed load amounted to 46.5 pounds per square foot.

R. E. Bell, vice president of Marine-Air Research Corp., states that similar tests have also been made on an arch of 96-foot span, which also carried the load successfully. This test was run under the supervision of Shreve, Lamb, and Harmon, well-known New York City architects, and of Navy's Bureau of Yards and Docks. As a result of these tests, their design has been incorporated in plans for a 134-foot span hangar, to be built for a well known plane manufacturer, Bell advises.

"Our buildings are designed to fit the needs of the individual users," he explains, "and are standardized only to the extent that we employ the laminated arch, or in some cases a bowstring truss. We feel, however, that after the war, with the inevitable increase in civilian flying there will be a wide market for a standardized hangar similar to our structure, and we expect to have a low cost, easily assembled unit ready for production when that time arrives."

Builders Demand War Housing Action

(Continued from page 28)

of from 10 to 14 per cent. They will also relax the lumber requirements in areas approved by the army.

2. The National Association of Home Builders will be consulted before further drastic moves.

3. Time-and-a-half and double time wages paid on public projects will be "looked into."

4. Section 608 of Title VI will be liberalized and clarified so builders can use it.

5. FHA will reconsider valuations—recognizing the increased costs due to WPB war standards.

* * *

GIRSH—

(Continued from page 29)

to individual war workers at any time. The housing must be sold in pairs with a joint mortgage and this, of course, is impractical. The fourth change that is requested is that each house be permitted its own stack so that the properties can be sold to the occupants at some future date.

5. There should be a simplification and curtailment of the paper work now involved. Under the latest regulations, instead of simplification, we find that the NHA is setting up its own field inspection service along with the War Production Board. In other words, war housing will be subjected to field inspections by FHA inspectors, NHA inspectors and WPB inspectors. Anyone who is familiar with the amount of time that is consumed on the part of the builder by this overlapping of government inspection will clearly see that the burden on the builder is excessive.

In view of the fact that the FHA has a complete staff of experienced inspectors already in the field, it would certainly seem that this is the logical agency to do the job. If the NHA and WPB set out at this time to hire field inspectors, it will take them many months for them to gain sufficient experience on the job and their value will be negligible in view of the fact that their work is already covered by another agency.

Certainly the government is not setting a good example when it duplicates the existing field inspection service of the FHA with two new field inspection services involving a great waste of manpower and overburdening the builder with a lot of government field men covering the same ground.

* * *

GUINAN—

(Continued from page 29)

on both sales and rentals, the NHA shall concern itself only with the number of units needed in each area, and leave such details as size, type, sale or rental.

If for any reason beyond control of the builder, and due to orders, rules or regulations issued by any government agency, a project cannot be completed, the builder shall be compensated by NHA, to the extent of all monies spent in the development of the program. This compensation shall include both direct costs and overhead.

The FHA shall process all applications in the form of a letter stating number of units, location and utilities serving sites, and shall include no plans, specifications or material lists. FHA shall concern itself only with the following four questions in making its recommendations:

- (a) Is requested number of units within current allotment?
- (b) Are the utilities in the sites?
- (c) Does the past record of the applicant indicate a speedy and efficient completion of the project?
- (d) Has the applicant complied with all rules and regulations in previous war housing projects?

All applications shall be processed within 48 hours of receipt, and copy of recommendation or denial sent to WPB and the applicant. If an application is not processed within 48 hours of receipt, both WPB and applicant shall be notified and given reason for delay.

FHA shall process all applications within 10 days. If delayed over 10 days, applicant shall be notified in writing, with the reason given.

FHA shall follow *current costs* in making appraisals. Commitments which fail to meet current costs shall be subject to review by the Congressional War Housing Committee, upon application by the builder.

SPECIFICATIONS FROM WASHINGTON

WASHINGTON, D. C. - SPECIFICATIONS ISSUED BY WAR DEPARTMENT OFFICE OF THE CHIEF OF ENGINEERS FOR THEATRE OF OPERATIONS OF MOBILIZATION CONSTRUCTION. *ALL VITREOUS GLAZED EARTHENWARE SHALL BE FIRST QUALITY ...SHALL PASS...CRAZE RESISTANCE TEST...IN BOILING WATER...FOR MINIMUM OF 14 DAYS, 24 HOURS EACH....*

...AND PERMA-GLOSS MEETS ALL EARTHENWARE "MUSTS"



Just as each selectee . . . at every induction center must measure up to our Army's rigid physical standards . . . glazed earthenware must prove its wartime fitness. Specifications by the War Department call for rigid adherence to specifically stated conditions.

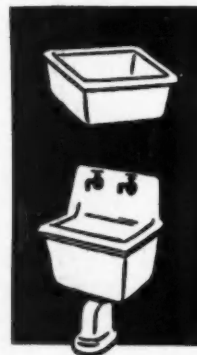
Perma-Gloss ware meets every one of these vitreous glazed earthenware "musts"—as to quality, thoroughness of firing, surface glaze and resistance to craze. It exceeds these requirements in its dunt-proof quality and its ability to withstand thermal shocks.

"Getting into Hot Water" proves PERMA-GLOSS durable

In total immersion tests at boiling temperatures, in autocraze tests subjecting the sample to 75 lbs. per square inch, in tests after application of dye solution, Perma-Gloss Sanitary Ware passes its "physical exam."

Carefully-selected clays are molded, sprayed with a layer of vitreous china glaze and fired at a high temperature. The durable body which results is acid-proof through and through. Perma-Gloss units are uniform in wall thickness throughout.

Flat rim sinks, flat rim trays (single or in combination) slop sinks and other essential war home units—all these Perma-Gloss items illustrate products specially developed to cooperate with the WPB restriction on cast iron and pressed steel sanitary ware. More detailed information on request.



General Ceramics Co.
 GENERAL CERAMICS COMPANY
 SANITARY WARE
SANITARY WARE DIVISION
 METUCHEN • NEW JERSEY

BUILDERS:

**Help farmers
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PORTLAND CEMENT ASSOCIATION

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BUY WAR SAVINGS STAMPS AND BONDS

How E. L. Bruce Builds War Houses

(Continued from page 47)

withstands fully approved flame tests. Dubthead nails and screws are provided for fastening the ceiling sections in field erection.

The roof is made in sections (14 pieces), each 4' x 13', made up of three 2' x 6' joists, with ½" plywood, building paper and 210 lb. Lehon asphalt shingles. Each roofing section has an inverted, U-shaped metal connector running its entire length. These connectors overlap and form waterproof junctions. Dubthead nails, screws and bolts are used to fasten roof sections in place.

Floors are complete in sections, each 7' x 12' (eight pieces for a two-bedroom house), made up of proper joist construction with Bruce factory-finished Streamline oak flooring laid directly over 30 lb. saturated felt, with 1" redwood bark insulation between joists.

Windows are furnished complete, with exterior trim attached to frame and inside casing loose. Double-hung sash are equipped with spring balances. Windows need only be set into rough openings, precision cut in wall sections, and fastened in place at the site.

Doors are fitted to frames, cut for finish hardware, and need only be set.

Plumbing is roughed in at the plant and is shipped to the site in place in floor and wall sections. Wiring likewise is installed in ceiling and wall sections, with sufficient slack to allow for connecting up in the field. Outlet boxes, switches, plates, receptacles and load center panels are provided for field installation.

Wall sections are given a priming coat when they come off the jigs, and are delivered to the site ready for painting after assembly.

Field erection is handled by Fred Young and Sam Maury, builders of Memphis, who have developed experienced crews of key men who teach and supervise the field crews. Field erection is a delight to watch, for the houses go together with the speed and precision of motor parts.

Footings and foundations posts are of creosoted wood, or cement blocks. Floor beams are leveled and fastened, then floor sections are laid in place. Wall sections are raised and fastened, ceilings are laid, and a truck-hoist then lifts the roof sections in place. At the time of the interview the plant was turning out ten houses a day on a single shift, and erection crews were working at the same speed.

According to the present plan these houses will be demounted and used as southern tenant farmsteads, or for group housing of itinerant crop workers. There will be no ghost towns after the war where these demountable units have been erected.

* * *

The Home Building Wave of the Future

(Continued from page 54)

are already very close to producing a national income of \$120,000,000,000 a year—which may well represent the amount required for "full employment" a few years after the war (at present prices and hours of work) and after the ever-rising production per man hour has offset the temporary war workers who will return to the home after the conflict. This national income of \$120 billions which we will surely achieve sometime in 1943 is fully \$45 billions greater than that of 1925, the greatest home building year on record in which we came close to building 1,000,000 homes.

If we maintained such an income level after the war and only two-thirds of this vast increase in national income is paid out to consumers, it would be equivalent to an increment in consumer income of \$30 billion over and above 1925. In view of the fact that roughly one-fifth of consumer income is regularly paid out for housing, almost regardless of income distribution, a sum of \$6,000,000,000 a year, equivalent to 1,200,000 new dwelling units at \$5000 per home, would be available for housing the American people over and above the amount spent on housing in the record-breaking year 1925. Thus, theoretically, a \$120 billion national income year (and we are already in plain sight of such a year) would finance a volume of home construction

over twice as great as in the peak year, which was 1925.

But income is never evenly distributed and effective commercial housing demand depends on the distribution of income quite as much as on its aggregate amount. It is therefore highly important to note the following: When national income rises rapidly, an ever increasing number of families moves out of the lower-income brackets in which they cannot afford to own homes, into higher-income brackets in which they can afford homes at prices which the building industry believes can be put on the market after the war. This exceedingly important fact regarding effective commercial housing demand can best be illustrated by the following figures:

At the bottom of the Depression, in 1933, the national income (paid out) was only \$45 billions. As a result, 69% of all non-farm families received less than \$1500 a year and were for all practical purposes outside the unsubsidized commercial home-building market. But in 1935, when the national income had already risen to \$57 billions, only 59% of all non-farm families received less than \$1500. Earlier, however, in 1929, when the paid-out national income had been \$79 billions, a still smaller number of families, only 35% of the total, had received less than \$1500 a year.

We therefore have the following highly important facts: As the national income rises from \$45 billions to 57 billions and then to 79 billions, the number of people outside the commercial building market drops from 69% of all non-farm families to 59% and then to 35%. I have used the figure \$1500 here because there are those of us who hope that, after the war, the housing industry will be able to provide a house as low as from \$3000 to \$3500 which would not be out of range on very easy payments, to families with \$1500 a year income.

6,738,000 New Housing Prospects

But if the last sentence appears too optimistic, let us assume that \$3500 will be the lowest figure at which a house can be built and sold commercially after the war. This will require a family income of a minimum of about \$1750. Here is what the National Bureau of Economic Research reveals, in its latest report entitled "Fiscal Planning for Total War" regarding the movement of consumer units (which means—families plus individual earners separated from families) into higher income brackets as a result of the rise in national income:

Annual Income	Number of Consumer Units		Change
	At National Income Level of \$81 Billions	At National Income Level of \$109 Billions	
Below \$1750	25,817,000	19,079,000	-6,738,000
\$1750 to \$10,000.....	14,904,000	21,333,000	+6,429,000
Over \$10,000	553,000	862,000	+ 309,000
TOTAL	41,274,000	41,274,000	0

Thus, as the national income rises from \$81 billions (roughly the 1929 level) to \$109 billions (roughly the early 1942 level) 6,738,000 consumer units move out of the BELOW-\$1750 per year class and move up into the ABOVE-\$1750 a year class. In other words, if we apply these figures to the housing market, 6,738,000 new consumer units can afford to buy housing without governmental subsidy and on a commercial basis as a result of a rise in national income from an \$81 billion to a \$109 billion level—assuming the building industry can provide an acceptable \$3500 house after the war, and assuming further that taxes do not too greatly reduce family incomes. (The application of the National Bureau's figures to the housing market is my own and not the Bureau's.)

Thus, this shift of the national income an \$81 billion to a \$109 billion level (at approximately the present salary, wage, and other income level of 1941) pours \$28,000,000,000 of ADDITIONAL purchasing power into the pockets of the nation's consumer units. And the great bulk of this increase, \$25,400,000,000, finds its way into the hands of consumer units earning between \$1,750 and \$10,000 a year, normally the great commercial housing market. If the normal percentage of one-fifth is spent for housing, we have here a sum of over \$5,000,000,000 a year available for housing expenditures in the commercial housing market in a \$109 billion national income year in ADDITION TO the normal housing expenditures that can be expected from an 81 billion year.



Timber trusses for this Texas structure effected saving of \$730.

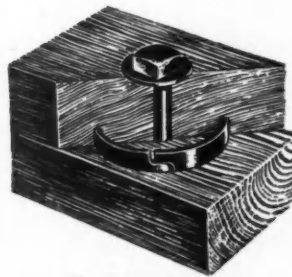
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As large suppliers of lumber and timbers on both wartime and civilian projects, the manufacturers of Arkansas Soft Pine are prepared to furnish builders technical data, specifications, etc., which will be mailed promptly on request. Just address:

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Our facilities are now devoted 100% to manufacturing prefabricated war housing for government agencies, as illustrated above. These buildings are attractive and well-built, but still embody demountable features so that they can be taken down and re-erected with 85% salvage.

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But, as we have seen, the national income level is likely to reach \$120 billions—not merely 109 billions—sometime in 1943. If this pace can be maintained after the war, it is very probable that around 7,500,000 to 8,000,000 more families will be in the above-\$1,750 annual income class than in 1929. What this would mean to the home-building industry and to private enterprise generally is obvious. *It is a fact of almost incomparable importance in the matter of effective, commercial, housing demand.*

Total Home Cost Down

We have discussed two basic fundamentals in regard to actual commercial demand for homes—the number and mobility of prospective home owners, and their pocket-books as represented by their annual income (after taxes). *We now come to the third and perhaps most important fundamental of all—the RELATION between the prospect's pocket-book and the price of the home.*

Obviously, we can have many million more families getting over \$1750 a year than in 1929 and still sell fewer homes if the home is not priced right, or if the home building industry cannot meet the competition of the innumerable other lines of business that will also be struggling fiercely for the consumer's dollar after the war. The choice is always with the consumer whether he will use his savings over and above the fundamental necessities of food, clothing, existing shelter, health, taxes, etc. for a new car, an annual pleasure jaunt, or for a new home, or any other consumer want for that matter. Price is therefore of decisive importance in any mass market.

The median FHA valuation of new single family homes on which mortgages were accepted in 1940 was \$5059 (including land). This represented a material reduction in cost since 1936 and further reductions have been made since. In fact the proportion of low cost housing has been rising steadily.

Also, the average total building cost of new houses has declined materially from 1934 to 1941, the main reason being the drastic reduction in size. The 1941 home was on the average 35% smaller in square footage than the 1934 house.

\$3500 House Expected

This striking development has actually enabled the home building industry to market houses at steadily lower prices in the face of steadily rising square-footage costs. So far, because of the greatly reduced size of the average American family, and because of greatly improved design and lower maintenance cost, the smaller house has proved highly acceptable to the market.

Fortunately some of the ablest representatives of the industry are convinced that it will be practicable after the war to build a house to sell for about \$3500 that will be fully acceptable to very great numbers of people. This would open up a vast new layer of commercial demand and is in fact the best piece of news that the home building industry and home prospects have heard for many years. The Federal Housing Administration has already reduced financing charges and further reductions must ultimately be made in line with the general decline of interest rates.

The home building industry, as I have said before, must forever keep in mind that it will find itself after the war in aggressive competition for the consumer's dollar with a thousand old wants and numberless new ones. A greatly improved automobile is coming, not in the first year after the war, but ultimately. New metals, new plastics, new materials of all kinds, hot-housed in the furnace of war, will be available for many other products besides housing.

We in the home building industry have still much to learn about merchandising. We must become complete modern merchandisers of a "finished package," that is, of the entire house. We must be ready to exhibit complete models of finished houses, be the final source of home information and handle the entire matter of financing.

"Overhang" Eliminated

We have discussed the three fundamental factors that are highly favorable to building demand. There are, besides, other favorable factors of great importance but for which I have only limited remaining space. Among these are the following: (1) The "over-

hang" of existing housing property that has bedeviled the market ever since the onset of the Great Depression, has practically disappeared. (2) The vacancy ratio, in many very important centers, is at the lowest figure in several decades. (3) The mortgage debt on homes is being reduced. (4) A home replacement market is definitely developing and will in fact ultimately overshadow the population-growth market in importance.

Regarding the first of the above factors, the year 1941, because of the high national income and demand for homes in industrial centers, was a record-breaking year for disposal of residential real estate owned by the principal mortgage-lending institutions, a great deal of which was "overhang" due to foreclosures and voluntary agreements in the depression years.

The reduction of this overhang, with which new home construction was in constant competition, had been going on ever since the Recovery after 1933. But in 1941 the reduction attained new highs, and took close to 140,000 existing homes off the market. The Federal Home Loan Bank Board has estimated that the "overhang" of the major financial institutions had dropped to \$1,403,908,000 on Dec. 31, 1941. It is therefore clear that this important depressing factor will be a problem of the past by the time normal home construction is resumed after the war.

Vacancies Practically Nil

Closely related to the liquidation of the overhang is the decline in residential vacancies. The 1940 housing census had given us a clear indication that the overbuilding of the Twenties had been absorbed by the underbuilding of the Thirties, as was to be expected considering that the number of non-farm households had increased by about 4,500,000 in the decade ending 1940 and only about 3,000,000 homes were built in the same period. The residential vacancy ratio for the entire U.S. was reported at 5.0% in 1940, just about a normal figure, but the ratio in the urban territory was only 4.3 and in many important cities it was much lower, even down to 1 or 2% in some places, clearly indicating that important backlogs of home construction existed even in 1940.

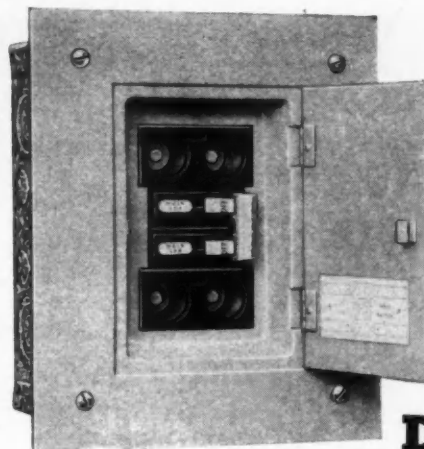
Mortgage Debt Will Be Cut

In 1941, the mortgage debt on 1 to 4 family non-farm homes passed the 20 billion dollar mark, rising to \$20,157,000,000 on Dec. 31 of that year and coming within about \$1,000,000,000 of the all-time peak in 1930. The debt had been rising ever since the beginning of the Recovery, due of course to the fact that home building in the United States has always been synonymous with debt incurrence. The prosperous year 1941 added about a billion dollars to the home mortgage debt of 1940 as was to be expected, as prosperity leads people to incur debt. But now during the war years with its suspension of normal home building, the nation as a whole will be paying off debts on homes thereby clearing the scene for a new period of rapid debt accumulation, which in our past has always been synonymous with home building.

Huge Replacement Market

We now come to the replacement market to which we have already referred. The census of 1940 recorded 37,326,682 dwelling units in the United States and for the first time reported rather completely regarding the state of repair, plumbing equipment, etc. Of the 35,025,873 homes on which such information was reported 6,413,553 needed "major repairs." This is generally a euphonism meaning the structure should be torn down and replaced. If we allow a decade for the job, we would have right here an annual replacement market of over 640,000 homes. Or to figure it another way, if all the occupied homes, numbering 34,861,625 in 1940, were given a lifetime of 50 years, we would have to replace them at the rate of 697,000 annually and that takes no account of the fact that about 35 to 40% of the 1940 homes were already about 50 years old in that year.

It is obvious therefore that with a new construction market of about 485,000 homes for new families resulting from population growth, the replacement market can, and some day will, overshadow the "new" market exactly as it has done in the automobile industry. But to convert this theoretical market into



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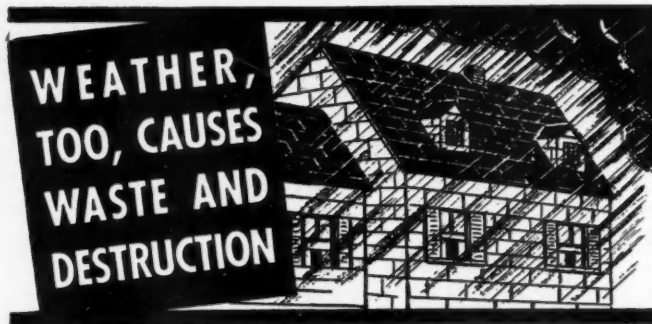


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an actual commercial one would require a far higher national income than we have had in the past. We have already seen how an income of \$120 billions per year would literally lift families by the millions into income brackets where they could for the first time afford to buy new homes. As a result, about 4 to 5 million obsolete and dilapidated dwellings would cease to have a market and become permanently vacant, ready for demolition. It is always important to remember that we no longer get streams of immigrants from Europe with very low standards of living willing to live in the very obsolete depressed dwellings. This market is gone for good, which is one of the basic reasons why replacement will bulk so large in due time.

We have dwelt largely on the favorable factors but it would be utterly unrealistic to close our eyes to the unfavorable ones. There are some, of course, but I have only space to dwell on one. Total war expenditures in the last year of the war may be as high as \$100 billions or over 20% more than the total national income paid out in 1929. Even granting that we will almost certainly maintain a large peacetime military establishment for a long time to come, it is hard to see how we can spend much over \$10 billions a year for defense in a peacetime world. A very abrupt reduction of public spending by the enormous sum of 90 billions a year cannot fail to cause a tremendous reaction, backlogs or no backlogs, exactly as a similar rapid reduction of an immeasurably smaller volume of government spending materially helped precipitate the "Recession" in the fall of 1937. It must never be forgotten that the need for new housing is a highly postponable want, that not only can be, but invariably is, deferred in times of depression and insecurity.

There must therefore be, above all things, an orderly economic demobilization after the war, in which wise business and governmental policy must work hand in hand in a spirit of true cooperation. Otherwise, instead of the prosperity that the backlogs and the enormous rise in physical producing capacity entitle us to look forward to, we may get outright catastrophe. Public construction, on a great scale, including slum clearance and rehabilitation of blighted areas, must march hand in hand with the utmost encouragement to private enterprise if "Rebuilding America" is to take the place of war as the great national stimulus to prosperity.

* * *

Short Cut Estimating Methods

(Continued from page 52)

Rafter length dimensions shown are correct to the nearest common builder's fraction.

E. Miscellaneous Accessories: Items such as starters, ridge, valleys, gutters, flashings, etc., can be easily estimated after the previous steps have been performed.

Sketching and Estimating:

1. Draw an outline of the foundation including roofed porches and other roofed portions which may extend beyond the foundation. (A sketch blank with convenient dimension lines has been prepared for this purpose by the Johns-Manville Co.).
2. Determine the roof overhang (the distance the roof projects over the wall line).
3. Insert the overall dimensions of the foundation plus roof overhang on the sketch.
4. Determine the type of roof (by observation), and note it on the sketch blank.
5. Determine the roof pitch by means of Pitch Card or other method and insert on sketch blank.

To use the pitch card, stand 50 to 100 feet away from the building in order to see roof peak. Hold pitch card by its round edge, at eye level. Focus the angles of the card with the ridge or peak of the roof until the angle that corresponds with the peak is found. See figure (No. II).

6. The major roof slope will determine the proper pitch factor to be used in arriving at the total sq. ft. roof area. Refer to columns 2, 4, 5, 6 and 7 in the factor table page 4. Some of these pitch factors can be found on the J-M Pitch Card.

If there are dormers on the roof, and their pitch is the same as or less than the pitch of the roof, the waste allowance, for cut-up roofs, will cover the area of the dormer roofs. If

porches are to be roofed, figure roof area in the same manner.

7. Multiply the total "flat" area by the proper pitch factor to find number of squares of roofing required. (Adjust to nearest square, half square or bundle.)

Houses having two pitches or "double pitch," such as "dutch colonials," which are usually $\frac{1}{3}$ and $\frac{3}{4}$ pitch, can be obtained by adding the two pitch factors together and dividing by 2 to find the unknown factor.

For example: The dutch colonial house, 24' x 30', has a flat area of 720 sq. ft. It has a double pitch, approximately one half of the slope is $\frac{1}{3}$ pitch and the other half $\frac{3}{4}$ pitch. It is a plain gable type roof.

Solution: The $\frac{1}{3}$ pitch factor is—1.30

The $\frac{3}{4}$ pitch factor is—1.90

The new factor is $3.20 \div 2$ or 1.60

Multiply 720 sq. ft. by 1.60 = 1152 sq. ft. or $11\frac{1}{2}$ squares

Dormer Areas: Where dormers only are to be re-roofed, or where the sides of dormers are to be finished with siding or roofing, the table on Page 00 (No. IV), which includes allowance for waste and openings, will be found convenient.

No. IV

AVERAGE DORMER ROOF AND SIDEWALL AREAS
Includes Allowance for Waste and Openings

Width Lift Type	Roofing sq. ft.	Starter lin. ft.	Ridge lin. ft.	Flashing lin. ft.	Side Walls sq. ft.	No. Wds.
5'0"	79	6	..	40	88	1
6'0"	93	7	..	42	94	1
7'0"	108	8	..	44	100	1
8'0"	119	9	..	46	88	2
9'0"	132	10	..	48	94	2
10'0"	145	11	..	50	100	2
11'0"	159	12	..	52	106	2
12'0"	172	13	..	54	93	3
Gable Type						
5'0"	80	10	12	33	60	1
6'0"	72	10	12	35	70	1
7'0"	80	10	12	37	80	1
8'0"	85	10	12	39	70	2
9'0"	94	10	12	40	75	2
10'0"	100	10	12	42	85	2
11'0"	110	10	12	44	90	2
12'0"	120	10	12	46	80	3
Hip Type						
5'0"	70	20	Ridge and Hips 18	33	52	1
6'0"	85	22	19	35	58	1
7'0"	98	22	20	37	64	1
8'0"	104	24	21	39	52	2
9'0"	116	26	22	40	58	2
10'0"	128	28	23	42	64	2
11'0"	144	32	24	44	70	2
12'0"	160	32	25	46	57	3

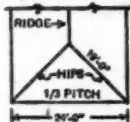
Hips and Valleys:

To find hip or valley lengths to nearest larger 6" or foot, proceed as follows:

1. Find pitch with Pitch Card.
2. Measure the side where they intersect, and find length in table. (See example 1)

Example 1

Roof Pitch..... $\frac{1}{3}$
Width 24'
Hip Length = 19' Ans.



SAMSON SPOT
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We also manufacture braided cords of all kinds, sizes, colors and qualities, also polished cotton twines and specialties in this field.

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33,000 KITCHENS MUST BE RIGHT!

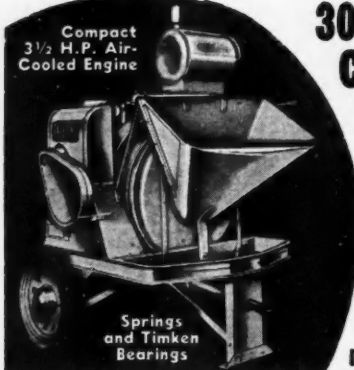


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Fig. 950—LEAD WOODSCREW ANCHOR available in 15 different sizes from 1/8" diameter by 1/2" length to 3/4" diameter by 2" length.
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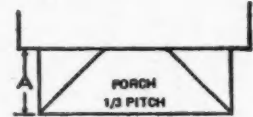
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- Where they do not intersect, measure the side where they join the building and double the amount given in table. (See Example 2.)
- Always include overhang in measurement.

Example 2

Roof Pitch..... 1/3
Width "A"..... 8'
Double 6'-6" (The Table Figure) = 13' Ans.



HIP AND VALLEY TABLE

Wth. Ft.	ROOF PITCH				Wth. Ft.	ROOF PITCH			
	Up to 1/4	Up to 1/3	Up to 1/2	Up to 3/4		Up to 1/4	Up to 1/3	Up to 1/2	Up to 3/4
	Linear Feet of Hip or Valley					Linear Feet of Hip or Valley			
4'	3'0"	3'6"	3'6"	4'0"	25'	18'0"	18'6"	22'0"	26'0"
5'	4'0"	4'0"	4'6"	5'0"	26'	19'6"	20'6"	23'0"	27'0"
6'	4'6"	5'0"	5'6"	6'0"	27'	20'6"	21'0"	23'6"	28'0"
7'	5'6"	5'6"	6'0"	7'0"	28'	21'0"	22'0"	24'6"	29'0"
8'	6'0"	6'6"	7'0"	8'6"	29'	22'0"	23'0"	25'6"	30'0"
9'	7'0"	7'0"	8'0"	9'6"	30'	22'6"	23'6"	26'0"	31'0"
10'	7'6"	8'0"	9'0"	10'6"	31'	23'6"	24'6"	27'0"	32'0"
11'	8'6"	8'6"	10'0"	11'6"	32'	24'0"	25'0"	28'0"	33'0"
12'	9'0"	9'6"	10'6"	12'6"	33'	25'0"	26'0"	29'0"	34'0"
13'	10'0"	10'6"	11'0"	13'6"	34'	25'6"	26'6"	30'0"	35'0"
14'	10'6"	11'0"	12'6"	14'6"	35'	26'6"	27'6"	30'6"	36'0"
15'	11'6"	12'0"	13'0"	15'6"	36'	27'0"	28'0"	31'6"	37'0"
16'	12'0"	12'6"	14'0"	16'6"	37'	28'0"	29'0"	32'6"	38'0"
17'	13'0"	13'6"	15'0"	17'6"	38'	28'6"	30'0"	33'0"	39'0"
18'	13'6"	14'6"	16'0"	18'6"	39'	29'0"	30'6"	34'0"	40'0"
19'	14'6"	15'0"	16'6"	20'0"	40'	30'0"	31'6"	35'0"	41'6"
20'	15'0"	16'0"	17'6"	21'0"	41'	31'0"	32'0"	36'0"	42'6"
21'	16'0"	16'6"	18'6"	22'0"	42'	31'6"	33'0"	37'0"	43'6"
22'	16'6"	17'6"	19'6"	23'0"	43'	32'6"	33'6"	37'6"	44'6"
23'	17'6"	18'0"	20'0"	24'0"	44'	33'0"	34'0"	38'6"	45'6"
24'	18'0"	19'0"	21'0"	25'0"	45'	34'0"	35'0"	39'6"	46'6"

CAUTION: When estimating Hips and Ridges, figure to nearest larger square, bundle or roll.

Ridge:

Gable Type Roofs—Figure linear feet from gable to gable.
Hip Type Roofs—Figure linear feet between point of intersection of hip rafters with the ridge (this is the difference in feet between the width and length of a hip roof).

Starters:

Gable Type Roofs—Double the linear feet of ridge.
Hip Type Roofs—Lin. ft. of entire exposed edge of roof.
Eaves Shingles—For some types of asbestos shingles, Eaves shingles, in addition to starters, are required. Get prices and estimate same as starters.
Caution: When estimating Starters, figure to nearest larger square, bundle or roll.

Servicing:

This operation consists of replacing on old roofs, any missing shingles and re-nailing any others which may have warped or curled. Add the service charge per square for the total number of roof squares.

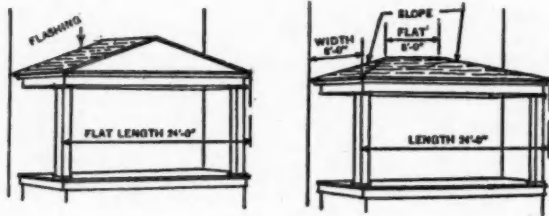
Stripping:

Either 1/2" x 3" or 1/2" x 4" wood bevel strips, or, in some instances, wood mason lath, are nailed at the butts of old wood shingles for asphalt roofs, to even the surface so that the new roofing will have a secure nailing and lay flat. For asbestos roofs, stripping is necessary to prevent the rigid shingles from "cocking up." Figure this charge by the number of squares of roofing and add to estimate.

Flashings:

Building projections, such as porches, bay windows, entrances, garages, wing buildings, solariums, etc., require flashing where they join the main structure. To estimate linear feet, including lap and waste, proceed as follows:

1. Determine pitch and type of roof, i.e., gable or hip.
2. **Gable Roofs**—Measure ground or flat length and find total lin. ft. of flashing in table opposite "Length" column. (See Example 1.)
3. **Hip Roofs**—Measure width and find length of both slopes in "width" column. Add "flat" length which is found by subtracting twice the width from the total length. (See Example 2.)
4. Always include overhang in measurements.



Roof Pitch 1/3

Example 1	Example 2
Ground Length is 24'	Ground Width is 8'
Length Column Reads 30'	Width Column Reads 20'
Total Lin. Ft. = 30'	Add "Flat" Length 8'
	Total Lin. Ft. = 28'

FLASHING TABLE

Width	Length	ROOF PITCH					Width	Length	ROOF PITCH				
		1/5	1/4	1/3	1/2	3/4			1/5	1/4	1/3	1/2	3/4
		Linear Feet of Flashing							Linear Feet of Flashing				
3	6	8	8	8	10	13	17	34	38	39	42	50	63
4	8	10	10	11	13	16	18	36	40	41	45	52	67
5	10	12	12	13	15	20	19	38	42	44	47	55	70
6	12	15	15	16	18	24	20	40	45	46	49	58	74
7	14	17	17	18	21	27	21	42	47	48	52	61	78
8	16	19	19	20	24	31	22	44	49	50	54	64	81
9	18	21	21	23	27	34	23	46	51	53	57	67	85
10	20	23	23	25	30	38	24	48	53	55	59	69	89
11	22	25	26	28	33	42	25	50	55	57	62	72	92
12	24	27	28	30	35	45	26	52	58	59	64	75	96
13	26	30	30	33	38	49	27	54	60	61	66	78	100
14	28	32	32	35	41	53	28	56	62	64	69	81	103
15	30	34	35	37	44	56	29	58	64	66	71	84	107
16	32	36	37	40	47	60	30	60	66	68	74	86	111

Chimney Flashing—Estimating Instructions:

1. Count the number of brick wide and long in one course. The proper pitch column in the table will give the lin. ft. of flashing, including waste and lap for four sides.
2. Where only three sides are flashed, such as a chimney on the side of a house, deduct the number of inches to the nearest foot corresponding with the number of brick on the unflashed side.
3. Where chimneys are to be equipped with a "saddle" or "cricket," to divert water or snow, deduct the number of inches to the nearest foot corresponding with the number of brick on the side affected, and to the remaining flashing, add the saddle price.
4. Stucco and stone chimney dimensions may be determined either by actual measurements or observation.

CHIMNEY FLASHING TABLE

No. of Brick	Inches	Pitch of Roof					No. of Brick	Inches	Pitch of Roof				
		to1/3to1/2to3/4							to1/3to1/2to3/4				
		Wide	Long	Wide	Long	Linear Feet of Flashing			Wide	Long	Wide	Long	Linear Feet of Flashing
2	2	18"	18"	11	11	12	2 1/2	2	22"	18"	12	12	13
2	2 1/2	18"	22"	12	12	13	2 1/2	2 1/2	22"	22"	13	13	14
2	3	18"	26"	13	13	15	2 1/2	3	22"	26"	14	14	15
2	3 1/2	18"	30"	13	14	16	2 1/2	3 1/2	22"	30"	14	15	17
2	4	18"	34"	14	15	17	2 1/2	4	22"	34"	15	16	18
2	4 1/2	18"	38"	15	16	18	2 1/2	4 1/2	22"	38"	16	17	20
2	5	18"	43"	15	17	21	2 1/2	5	22"	43"	16	18	22
2	5 1/2	18"	47"	16	18	22	2 1/2	5 1/2	22"	47"	17	19	23
2	6	18"	51"	17	19	23	2 1/2	6	22"	51"	18	20	24
2	6 1/2	18"	55"	18	20	24	2 1/2	6 1/2	22"	55"	19	21	25
2	7	18"	60"	19	21	25	2 1/2	7	22"	60"	20	22	26
2	7 1/2	18"	64"	20	22	27	2 1/2	7 1/2	22"	64"	21	23	28
2	8	18"	68"	21	23	28	2 1/2	8	22"	68"	22	24	29

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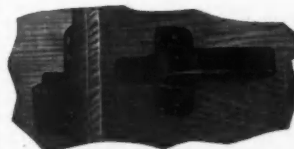
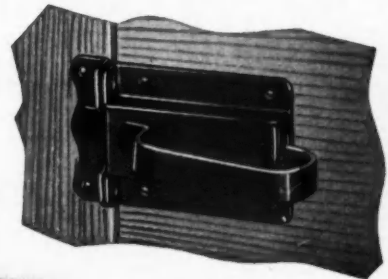
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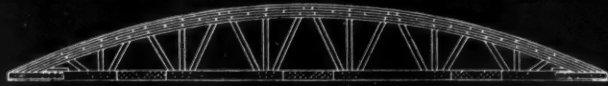


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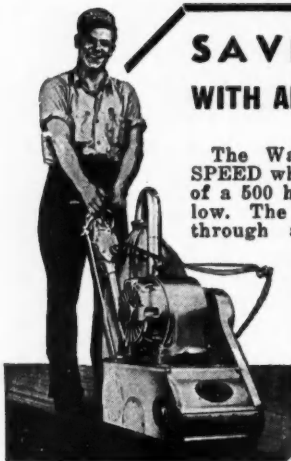
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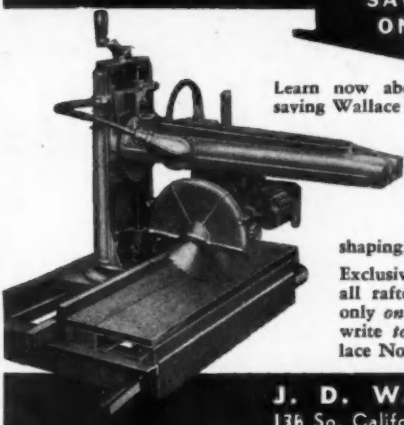
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