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NOVEMBER, 1942

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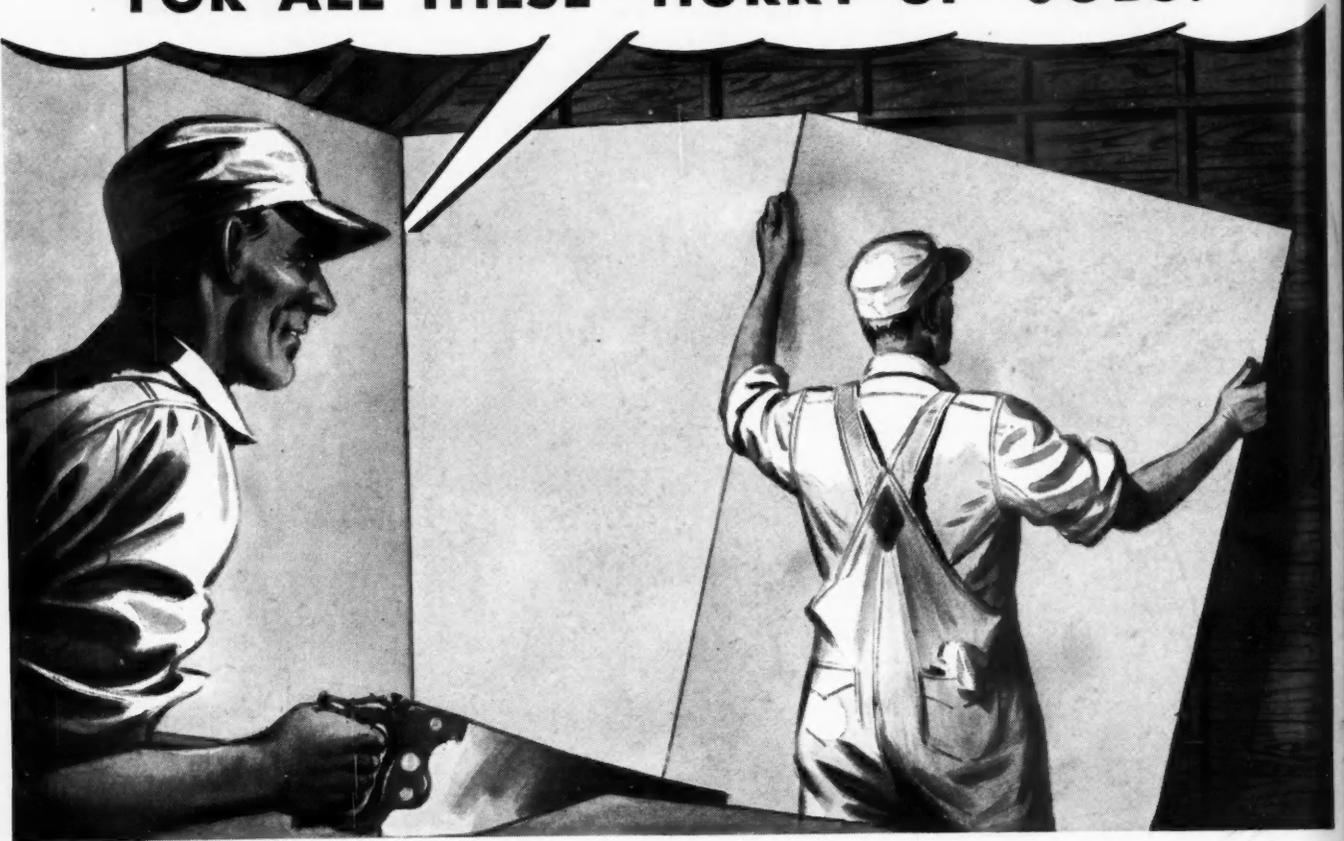
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IT'S A GOOD THING WE CAN GET WHITE ROCK GYPSUM WALL BOARD FOR ALL THESE "HURRY-UP" JOBS!



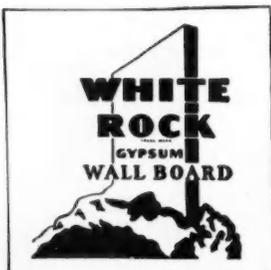
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T H E C E L O T E X C O R P O R A T I O N • C H I C A G O

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.

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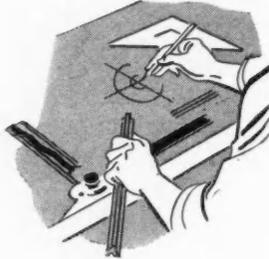
SIDE BY SIDE in the plants of Minneapolis-Honeywell and its subsidiary, The Brown Instrument Company of Philadelphia, control research for war and control research for peace go on twenty-four hours a day. Our present job is to provide the nation with the necessary equipment for combat, for military and defense housing and for essential war industry. Out of this experience are coming developments in automatic controls for American industry and American homes that

will provide an effortless, scientific comfort and efficiency, for post-war living and working. To all who own or sell heating and air conditioning equipment, or who use industrial instruments, we say: "M-H and Brown Engineers are building, every day, every hour, for the war and for the future." Minneapolis-Honeywell Regulator Co., 2842 Fourth Ave. S., Minneapolis, Minn. In Canada: Toronto, Ontario. In Europe: London, England and Stockholm, Sweden.

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isn't it?



Every reader of this advertisement believes, somehow, that the future is worth the fight. Production records say so. Your personal sacrifices say so. Your crowded hours say so.

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We can do some Imagineering, here and now. We can decide where we go from here. We can slip an eighth day of thinking time into our crowded seven-day week, if we will.

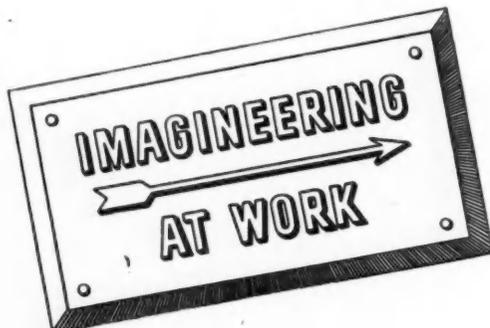
We can build new models, in our minds at least. We can take the facts and the promise of the new materials and methods we are learning about in the war, and dream them into the new products and improved services that will make new jobs.

We can even provide the wherewithal which will prime the future. Every War Bond we buy does that.

The future is more than a hope. It is a duty.

Getting together on future ideas is putting Imagineering into practice.

Might you and we do just that, for the sake of the boys who are fighting to give us all a future? ALUMINUM COMPANY OF AMERICA, 2120 Gulf Bldg., Pittsburgh, Pa.



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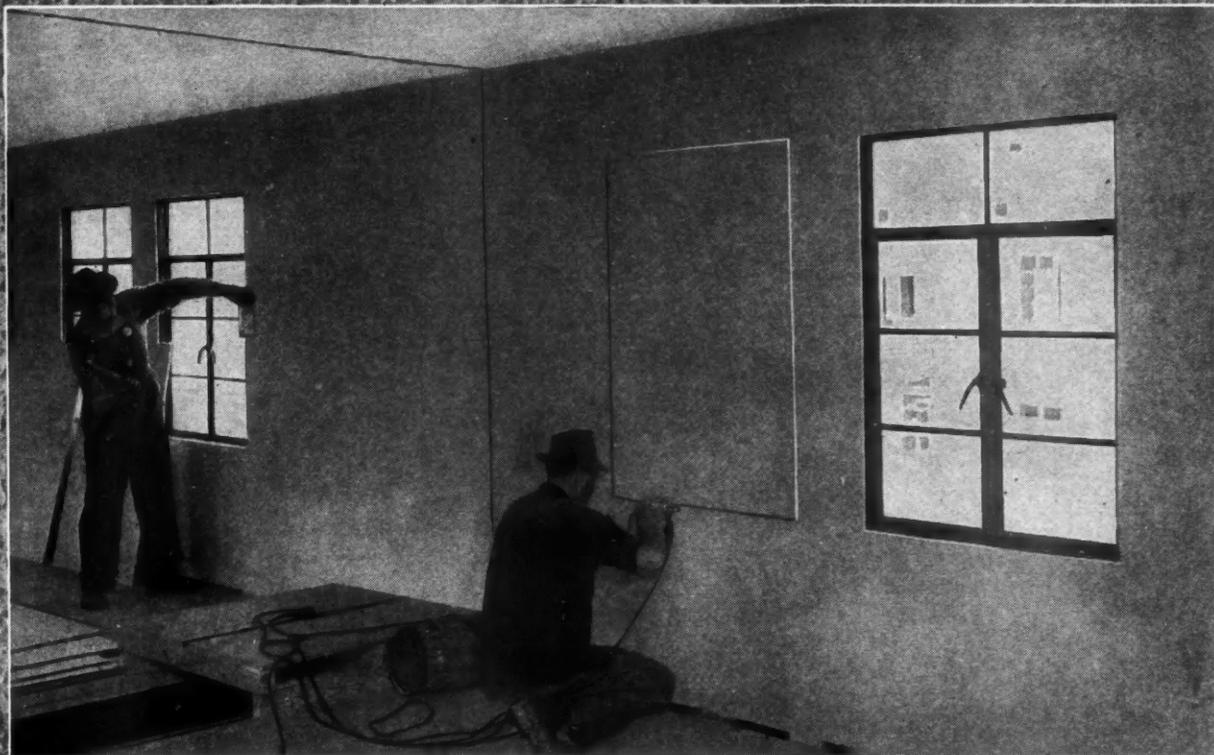
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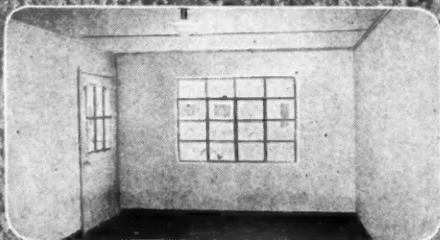
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Walls and ceilings of enduring beauty which remain forever free from ugly creeping cracks.



Occupants invariably prefer the crisp, fresh beauty of walls and ceilings made with Upson Strong-Bilt Panels.



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PANELS**

**THE BEAUTY SURFACE FOR WALLS
AND CEILINGS**

AMERICAN AND BUILDING AGE BUILDER

64 YEARS OF CONSTRUCTIVE LEADERSHIP

CONTENTS FOR NOVEMBER, 1942

Publisher's Page—Freedom Abroad—But Not at Home?—by Samuel O. Dunn.....	9
On & Off the Record.....	12
Washington Review.....	14
Latest Rulings Affecting Builders	
Looking Ahead to the Post-War Home.....	18
When America Can Again Build Freely, What Will the New Homes Be Like?	
Letters from Readers.....	22
Editorial—Better to BUILD than Billet.....	27
An Ideal War Home.....	28
How Mills & Sons, Chicago Builders, Have Kept Their War Housing Job at Top Quality in Face of Handicaps; See Rewards in Post-War Market	
Sell Insulation, Check Fuel Waste—Tests Prove Value.....	32
Prefab Sections Create Quick Housing.....	35
Mass-Production Plants, Woodworking Experience Used to Make Plywood Panels for Floor, Walls and Roof	
63-Man Barracks Built in a Day.....	36
Aggressive Western Contractor Proves "It Can Be Done" Through Careful Planning and Coordination of Subcontractors' Work	
Southwest Builders Show They Can Save Materials with "Mud".....	38
War-time Maintenance & Repair of Buildings.....	40
How to Lay a "Floating Floor;" Answers to "Repair and Remodel" Questions; White Cement Floors Speed War Production; Demountable Glass Block Partitions for Stores, Offices, Homes	
How to Build a Concrete Milk-Cooling Tank.....	45
Low Cost Farm Homes in the South Add to Milk Output for Lend-Lease	46
For Action—Join the Seabees.....	48
New Construction Battalions of U. S. Navy Are Doing Vital Jobs in Distant Bases. Skilled Building Men up to 50 Years Old Wanted	
How California Aircraft Workers Got Good Homes at Substantial Savings.....	50
Service to Readers.....	52
Getting Along with Less of Critical Materials.....	54
Trends in Equipment and Building Materials.....	60
News of the Month.....	64
Index to Advertisers.....	80

IN THE NATION'S SERVICE



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FROM CANTONMENTS TO CHICKEN COOPS



... here are 3 construction shortcuts for America at war

TO speed wartime construction and avoid material shortages National Gypsum developed Gold Bond Exterior Board, 1" Solid Partition Panels, and Gypsum Roof Plank. But it didn't take American contractors and builders very long to figure out plenty of domestic and farm uses, particularly after they realized that they could get all they wanted.

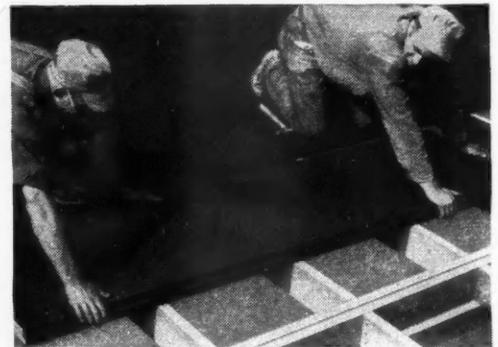


Gold Bond Exterior Board is a combination sheathing and siding material which covers up to 20 square feet in one operation, saving time and money on the job. It's made of husky extra-thick Gypsum Board panels with durable overcoat of weatherproof asphalt roofing. A rigid, sturdy type of construction for plants and farm buildings.



Gold Bond 1" Solid Partition Panels save time, materials and expense in factories and offices. They go up in a hurry and are held in place by mouldings—no nails are required for the panels themselves. Tough enough to withstand the hardest usage. Can be completely salvaged when temporary structures are torn down.

No critical materials are used in the manufacture of these products. All are immediately available. Write for complete information including specifications.



Gold Bond Gypsum Roof Plank answers the need for quickly applied, permanent, weatherproof, fireproof roof plank. Any carpenter can apply. Nails directly to wood joists with no metal attachments required. Ivory underside serves as the ceiling and dispenses with the need for further decoration.

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

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

Publisher's Page

Freedom Abroad—But Not at Home?

"POST-WAR PLANNING" is the title of a pamphlet recently issued by the government's National Resources Planning Board. "Post-war planning," it says, "is by no means the task of governments alone, but also the opportunity and the responsibility of private enterprise."

This statement *alone* shows that a revolution is intended by those now in power in the relations between our government and private enterprise. For after our other great wars, civil and foreign, the shaping of our peacetime economy was left *entirely* to private enterprise; while the statement quoted—like everything else in this pamphlet—plainly implies that after this war *government* will dominate, and *private enterprise* will do only what government permits and directs.

What, then, are we fighting *against*? What are we fighting *for*?

We have been assured by the highest government spokesmen, and most of us have assumed, that we are fighting against totalitarianism as practiced in Germany, Italy, Russia and Japan. But the *essence* of totalitarianism, and what has made life completely different in those countries and in the United States, has been the dictation of their governments in *peacetime* over industry, transportation and commerce.

If such government dictation is not what we are fighting *against*, what are we fighting against? And if it is what we are fighting against, why, unless because we believe it is incompatible with what most of us have believed we are fighting *for*—viz., *freedom*? And not merely freedom from foreign *dictators*, but from wholesale *dictation by any government*, foreign or our own, Nazi, Communist, Fascist or "*democratic*."

But *any form of freedom whatever is impossible*, in war or peace, under any government exercising the same power our governments have had, and, *in addition*, complete control over production, transportation and commerce. Our government is now for war purposes more and more assuming and exercising such economic control; and consider how fast, in consequence, *every* form of freedom—whether to produce, buy, sell, transport, or to change salaries, wages or prices, or to act, publish or even *speak*—is disappearing.

Most of this may be necessary in conducting the present war and war economy. But most of it would also be *considered* necessary by those in power, and *actually would be necessary*, successfully to manage a government-planned and controlled economy in *time of peace*. If you doubt it, consider that *every* form of freedom now being destroyed here *actually was* destroyed in *time of peace* in the totalitarian countries.

The post-war economy being planned for us by our government leaders is the *absolute negation* of their declared objectives in the war. For there is no important difference between the totalitarianism they pretend to be fighting to destroy in Europe and Asia, and the totalitarianism their own carefully-prepared and widely-disseminated literature demonstrates they are working and propagandizing to establish in America.

We must support them with our resources and blood in establishing freedom for other peoples; but why expect us to support them in abolishing *our own freedom*? Small wonder they denounce those who criticize them and their policies for allegedly spreading "disunity" and for not concentrating on the war effort!

Samuel O. Druun,

“Where Do I Go From Here?”

What about the newly amended WPB Order L-41? What of Order M-208 controlling the sale of lumber? How will all of the new conditions, new requirements, new developments affect me now?

These questions and many others are being asked by building men in all divisions of the building industry today. They are coming from building men engaged in war construction as well as from those who are not. Questioning voices, too, have begun to rise from among those building men who have left their communities to work on barracks, war structures, ships and the like.

There is a growing realization on the part of building men everywhere that *NOW they must be alert to what is happening more than ever before.*

Yet, as these questions are being asked, the very answers are being given regularly in each issue of American Builder.

In the last issue of American Builder, for example, building men were offered a complete interpretation of the amended L-41 order, showing former and present cost limits on various types of construction; preference rating order; application forms necessary; where they must be filed, etc.

Definite advice was also given on the new lumber Order M-208 as it applies to wholesale and retail dealers, saw mills, distribution yards.

Specific messages on vital questions were con-

veyed to the men of the construction industry by William V. Kahler, Chief of the Bureau of Construction, War Production Board, by Lt. General Brehon Somervell, Commanding General, U. S. Services of Supply, by John B. Blanford, Jr., Administrator of the National Housing Agency.

Introducing a new department, “Wartime Maintenance and Repair of Buildings,” American Builder brought squarely before the attention of building men the tremendous opportunities available today in the field of maintenance concerned with commercial and industrial properties, public buildings, institutions, housing and housing groups, etc.

That one issue alone offered this information, as well as articles on how to put more punch in war home designs . . . how to get along on less critical materials . . . opportunities in building and selling wood specialties . . . important Washington developments interpreted for their effects on building . . . a survey of housing needs six months hence . . . opinions on the post-war home . . . practical job pointers, and more.

Issues like the October issue, and the November issue you now have in hand give you a good idea of the thoroughness with which American Builder is answering the question you may be asking yourself, “where do I go from here?”

The time to enter your American Builder subscription is *today*—NOW!

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Free . . . Fill in the coupon at the right—attach your remittance of \$2 for a one year *American Builder* subscription or \$3 for two years—and mail. As soon as your subscription payment is received, a postpaid copy of our 180 page DEFENSE HOMES HANDBOOK will be mailed to you free of charge.

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★ Five of the first fifty-three Army-Navy Production Award pennants . . . for plants with the highest achievement in the production of war equipment . . . have been awarded to Westinghouse.

**To Westinghouse men and women,
for "an outstanding contribution to victory"**

IN ANNOUNCING that five of the first fifty-three Army-Navy Production Awards go to Westinghouse, James Forrestal, Undersecretary of the Navy, said, "The men and women in these plants are making an outstanding contribution to victory. Their practical patriotism stands as an example to all Americans and they have reason to be proud of the record they have set."

Westinghouse, one of the world's leading manufacturers of electrical equipment, is now producing war materials at the rate of 4000

carloads per month . . . enough to fill a freight train 37 miles long every 30 days.

To this effort, we are applying the full extent of Westinghouse "know how" in scientific research, in engineering, and in production. As a result, production, on a man-hour basis, is 95% ahead of the mid-1940 rate. In some divisions, production is up more than 300%.

This is the record to date. We hope to make it still better tomorrow.



Westinghouse

Westinghouse Electric and Manufacturing Company,
Pittsburgh, Pa. • Plants in 25 cities—Offices everywhere

On and Off the Record

by *Structor*

News, Views and Comments

BILLETING HISTORY—When NHA Chief Blandford recently talked about the possibility of compulsory billeting of war workers in private homes he touched on a subject that has an explosive note in American history. During Revolutionary days the compulsory billeting of soldiers in the Colonists' homes was one of the most potent causes of war. As a result, this practice is definitely outlawed in the United States Constitution. It may be that billeting of civilians would be a different matter; but even so, it would call for specific authorization by Congress.

REMODELING BETTER—Blandford's other proposal, which is to lease or buy privately owned homes and other buildings and remodel them to provide additional quarters for war workers, has more real possibilities. There are thousands of vacant buildings, such as warehouses, stores, abandoned hotels and other structures that can and should be put to use. Also, there are many public buildings, such as city halls, schools and even post offices that might serve.

Remodeling of old buildings in this fashion should provide much business for builders. Such widely scattered jobs, mostly in fairly small amounts, cannot be done by the big A. G. C. type contractor who has been getting so much of the present government business. Remodeling jobs will call for the services of thousands of the smaller building firms that are now most hard-pressed for work.

AA-4's—The announcement that War Production Board field offices, with the exception of four or five, have been authorized to countersign and approve issuance of P-55 preference rating orders for privately financed projects with a blanket rating of AA-4, came as remarkably good news to the whole industry. Of top importance is the fact that it enables lumber dealers to replace their inventory. This blanket AA-4 priority ought to get most of the materials needed, unless the whole priority system again gets out of hand.

PUBLIC ALSO TO GET AA-4's—Naturally private builders have been critical of the fact that until the recent change, public housing agencies were getting a far better priority rating than private. AA-3's were issued to a large part of the recent public allocations. WPB now says that no more AA-3's will be issued, but that the publicly financed projects will be on the same basis as private, with AA-4's.

INGENUITY ALWAYS—I have the greatest confidence in the ingenuity and resourcefulness of builders, and with the new priority setup believe they will get a big volume of housing under way. Of course the complications and difficulties are terrific. Of course it looks every now and then as though private builders are completely stopped.

But as a matter of fact, one by one, the problems are licked, the builders have rolled up their sleeves, plunged into the job and continued to go ahead. I can remember a dozen times in the last two years when people said that no more private houses could be built under existing circumstances. Yet jobs have continued to be started, as they are being started this very day. The proof lies in the fact that more than 250,000 privately built war housing units were started in the first nine months of this year. To hear

some people talk, you would think that hardly a thing had been done or could be done.

ESSENTIAL INDUSTRY—I consider the building of war housing as important and essential as any defense industry, and on a par with fighters at the front. War workers simply cannot produce needed weapons of war in many places unless houses are provided. Dormitories have not worked. Public agencies are making a terrific effort but are nowhere near as capable of prompt and efficient production as are thousands of experienced private operators. Don't let anyone say that home building in wartime is not an essential industry. It is, and it is one we are all proud to be a part of.

N.A.H.B.—The National Association of Home Builders, with offices at 1737 K Street, N. W., Washington, D. C., has been doing a remarkably constructive job for the building industry. This group now represents a considerable part of the former Home Builders Institute and National Home Builders Association. Frank W. Cortright, as executive secretary, ought to have the support of all builders. He is also in a position to be of valuable service and assistance to builders.

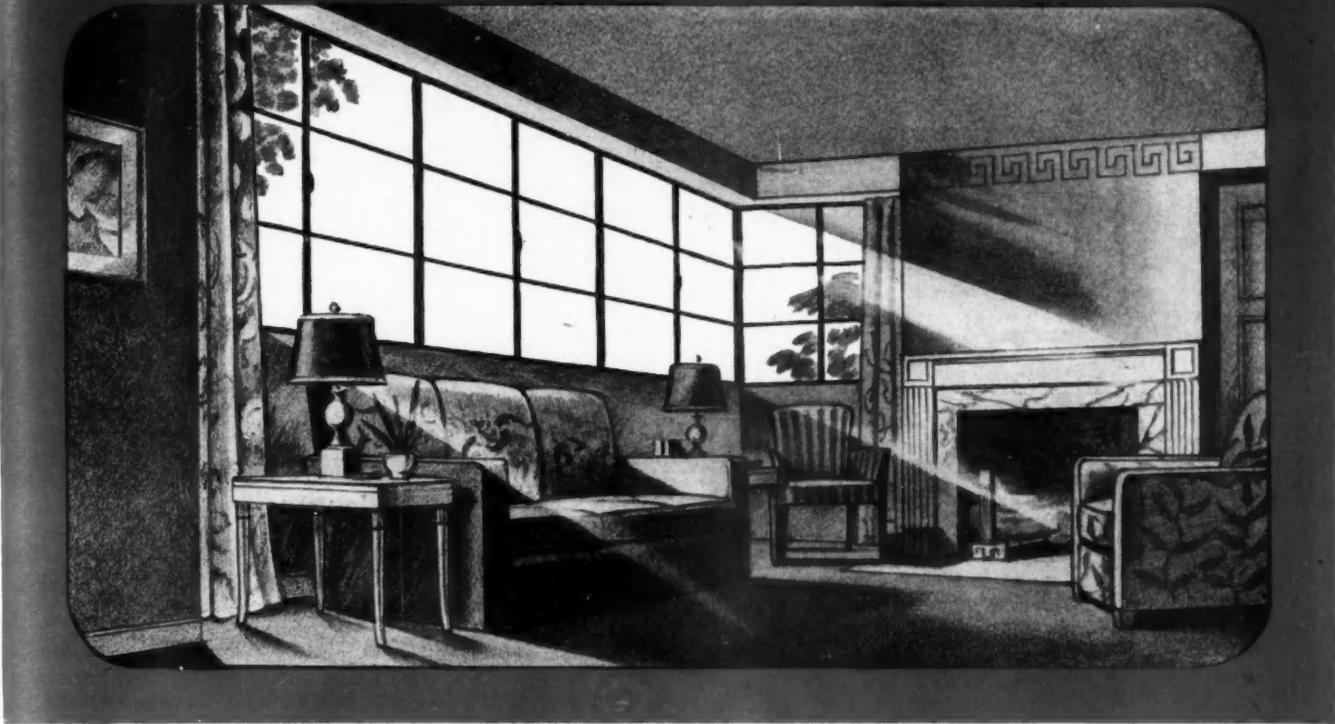
At a recent meeting of N.A.H.B.'s Emergency Committee, when the lumber and priority situation threatened completely to bottleneck building, the key men of all of the principal government agencies were on hand to work out the problems constructively with the private builders. Included among the government officials were William V. Kahler, Sullivan Jones and William McDonald of WPB; John B. Blandford and Clarence Farrier of NHA; Earl Draper and Howard Vermilya of FHA. Hugh Potter, who served as chairman, did a masterful job of presiding, so that a constructive and co-operative atmosphere prevailed, which has resulted in clearing up a number of the industry's most perplexing problems.

STILL LESS CRITICAL MATERIALS—Although private builders have cut down notably on use of critical materials, WPB has still further cuts in mind. Masonry construction, row and multiple housing and overall limits on floor area are in prospect. To my mind, reductions in size of units can be carried too far, with the result that workers will refuse to live in such houses just as they have refused to live in dormitories. There is a limit to the "shoe-box" architecture American workers will put up with.

HOUSING FUTURE—I believe in a growing future for home building, one in which the productive resources of the entire industry will be taxed to produce the houses that are needed and can be sold. I disagree violently, however, with some of the recent folderol that has been published in newspapers and some architectural magazines about the homes of the future. Houses on stilts, queer-looking flat-topped affairs, houses of fabric, houses with pipeless bathrooms, and houses that bear no relation to the past, present or future are seriously shown although there is not one chance in 10,000 that the sketchily drawn dreams of the designers will ever be built.

Housing will make great strides in design, materials and equipment, but the change will be *evolution* rather than *revolution*, and the starting point will be where the pre-war builders of 1942 left off.

The post-war houses you build will be BRIGHTER AND MORE CHEERFUL



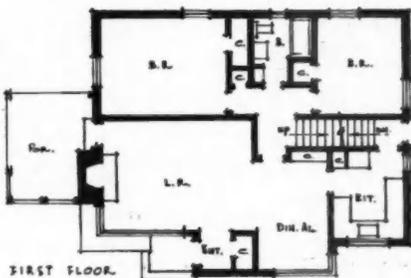
HERE'S A POST-WAR IDEA FOR BUILDERS



An important feature of this step-saving house (designed by Hyde & Williams, Architects) is its good circulation—the dining alcove is adjacent to the kitchen, and the front door is reached conveniently from every part of the house. Kitchen has well-planned work centers. Large corner windows brighten both the living room and dining alcove. Both bedrooms have two windows, for cross ventilation. A large dormer window daylights a second-story bedroom.

Your post-war houses will be brighter and more cheerful because they will be daylighted by larger windows—that's the new trend.

New Fenestra Package Windows will provide more light, better ventilation, easy opening, safe washing, convenient screens, economical storm sash; and you'll install them in a jiffy (5 minutes on the outside, 8 minutes on the inside) because they'll come to you complete. They'll save you money on first cost, on installation cost, and on maintenance cost . . . File the "Idea" shown at left, for your future reference.



Warehouse Stocks Still Available

Fenestra's manufacturing facilities are now almost entirely engaged in the production of vital war materials. However, warehouse stocks of new Fenestra Package Windows and other types of Fenestra Residence Casements are still available *now*, under proper priorities. Consult nearest Fenestra Branch Office.

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Fenestra PACKAGE Windows



WASHINGTON

Review

*Latest Rulings
Affecting Building*



Four Favorable Actions

IN MID-OCTOBER the Washington authorities issued four new directives definitely helpful to private-enterprise home building:

(1) The War Production Board has authorized all field offices (with the exception of Northern Los Angeles, Boston, Brooklyn, Fort Smith, Arkansas, and Minneapolis-St. Paul) to counter-sign and approve issuance of P-55 preference rating orders for privately financed home building projects with blanket ratings of AA-4.

(2) The above instructions also apply to previously issued priorities, if critical materials cannot be secured under existing priority rating.

(3) No more AA-3 ratings will be given to publicly financed war housing.

(4) Lumber dealers may replace inventory sold on AA-4 war housing priority orders.

Recognition of the essentiality of the privately financed portion of Administrator John B. Blandford's war housing program by the War Production Board, is evidenced by the above rulings. States Frank W. Cortright, Washington Secretary of the Home Builders Emergency Committee of the National Association, "Furthermore they justify our confidence in those Government officials who recently gave us assurance of early relief."

WPB Removes Limitations to Save Fuel

REMOVAL of the \$200 limitation on construction, in cases where home improvements are planned for the purpose of conserving fuel oil, was announced by the War Production Board on October 2. This new Government policy enables houses of all sizes to be insulated in ceiling and walls without the delay entailed in securing a special permit under PD-200. Also included in the order are provisions for storm sash, weatherstripping and pipe covering.

FHA is assisting in the financing of these fuel-saving improvements. FHA Commissioner Abner Ferguson has publicly announced, "If the property owner lacks cash to pay for furnace conversion or insulation in one lump sum, loans for such purposes may be secured from the private lending institutions operating under the FHA's Title I program."

By the October 2 order, installation of insulation materials, air cell pipe covering, weatherstripping, and storm windows and doors in order to conserve fuel was exempted from the War Production Board's Conservation Order L-41. Previously, insulation projects costing more than \$200 in the case of one-to-five family houses or more than \$1,000 in the case of larger residential structures required specific WPB authorization.

The exemption applies to insulation projects started before January 1, 1943, and prohibits the use of rubber, cork, or metal other than for fastenings.

The order also exempted from L-41 all construction started prior to January 1, 1943, which is necessary for the conversion or substitution of heating equipment to permit use of fuel other than oil, electricity or gas. Previously, this exemption had applied only to the Eastern States and to Oregon and Washington.

Under WPB regulations, the sale or delivery of equipment to be used for converting equipment burning oil or gas to coal-

burning equipment is exempt from the restrictions of Plumbing and Heating Order L-79.

From a financing standpoint, loans to finance furnace conversion or insulation projects are exempt from the Federal Reserve Board's consumer credit regulations. As a result, loans for such purposes under the FHA's Title I program may run for as long as three years in amounts up to \$2,500, the maximum terms permitted by the National Housing Act for loans of this type. Title I loans are repaid in equal monthly installments.

Trip to Washington Not Necessary

WPB has again urged businessmen that whenever they wish to obtain information from the War Production Board they should go to their regional or field offices before coming to Washington.

"We have 12 regional and 127 field offices scattered throughout the country," the announcement said. "They were established in order to save businessmen the trouble of coming to Washington, and also to prevent an overload of work in Washington."

"When a businessman comes to Washington instead of going to his regional or field office he not only undergoes considerable expense and inconvenience himself, but also increases the burden on the men in Washington. Furthermore, the businessman can usually get quicker action in the field."

Another New Form!

THE NEW FORM PD-200B must be used after October 26 for all applications for amendments to construction projects authorized by a preference rating order of the P-19 series, the Director General for Operations announced on October 20.

This form is now available, it is promised, at FHA and WPB field offices.

It should be used for requests for a higher rating and for items not previously authorized or for increases in quantities previously authorized. When a higher rating is requested the applicant must list the items required and describe the efforts made to obtain these items with the authorized rating.

After October 26, it was emphasized, requests for project amendments will not be accepted on PD-1A forms or by letter, as is the case up to this time. Letters, however, will continue to be accepted for requests by persons undertaking construction projects for permission to alter delivery dates or for extensions of expiration dates as authorized on the original application.

Longer Work Week Finally Authorized

AT LAST admitting that we are *at war* and that speed in construction of vitally needed war housing projects is desirable, Commissioner Herbert Emmerich of the Federal Public Housing Authority, National Housing Agency, authorized on October 17 the lengthening of the 40-hour work week called for in construction. He stated that contractors will be reimbursed for the amount of over-time pay involved.

In an order to FPHA regional directors, Commissioner Emmerich said:

"It is essential that construction work be actively prosecuted

(Continued to page 72)

America Originated the SUBMARINE



**National Brass
Originated**

**DEXTER-TUBULAR
LOCKS & LATCHES
and**

MODERN CABINET HARDWARE

Built-in stamina makes possible the endurance and performance of American submarines under gruelling wartime conditions. *Dexter Tubular* Locks and Latches and Modern Cabinet Hardware originated by National Brass Company are manufactured to similar exacting specifications — possess a quality that enables them to be backed by a Lifetime Guarantee.

National Brass Company Modern CABINET HARDWARE and the Dexter Tubular Commander line conform with the specifications given in the new Builders Hardware Manual of the *War Production Board* and can be promptly supplied to those with qualifying rating. If you do not have both the Handy Reference Cabinet Hardware and the Commander Line Catalog, write for your copy. Let us serve you.



National Brass Co. Mfrs. GRAND RAPIDS, MICH.

Certified

BUILDERS HARDWARE • CABINET HARDWARE • SCREEN DOOR HARDWARE

FOR VICTORY TODAY AND SOUND BUSINESS TOMORROW



Get This Flag Flying Now!

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

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

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

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

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

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



Save With
War Savings Bonds

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

AMERICAN BUILDER

Now...
MUNITIONS
for the business
of **WAR!**



OWNER: International Business Machines Corp.
GENERAL CONTRACTOR: Vincent J. Smith

CHIEF ENGINEER: Leigh St. John, IBM Corp.
CONCRETE CONSTRUCTION: Serafini Construction Co.

From machines for peace-time business to machines for the business of war! Mr. Thomas J. Watson, President of International Business Machines Corporation, has dedicated the energies of his organization to making munitions for Uncle Sam. Naturally, the sooner a factory is finished, the sooner the munitions will be used against the foe.

Speed was all-important here. And one factor in the speed achieved was Lehigh Early Strength Cement. By its use a construction schedule was maintained that would have been out of the question with normal cement.

For instance: Pipe tunnels and retaining walls were back-

filled in 24 hours . . . floor slabs were ready for the steel-erecting equipment a week after pouring . . . 2nd, 3rd and 4th floors were poured within a week instead of a month . . . forms were stripped from face of building in 5 days instead of 21.

In war, speed is a top-flight factor; and Lehigh's Early Strength Cement makes substantial contribution to it. But it provides many other advantages, that peace-time construction has found—and will find again—to be decisive. The Lehigh Service Department is always ready and glad to supply details.

Lehigh

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

LEHIGH PORTLAND CEMENT COMPANY • ALLENTOWN, PA. • CHICAGO, ILL. • SPOKANE, WASH.

Looking Ahead

To The Post-War Home

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

"Public Housers Are Edging In"

Indianapolis, Ind.

Editor Post-War Home:

I have read with interest the comments in the current issue of your magazine, concerning post-war housing problems. The fact that we venture to think ahead indicates a living and growing faith in the future of our beloved country.

It is becoming more obvious, to those of our people who study the trends, that we must adjust ourselves to new points of view so far as social and economic problems are concerned, both global and national. We are most vitally interested in the other fellow's problems and his point of view. If we turn aside from this new challenge, then we will find ourselves lost in a chaotic state of affairs which could easily be insoluble. For one, I have faith that our leadership will not fail us in this hour of destiny.

Our housing problem is first a social problem. Our changing economy has wrought a new pattern which we have sought to solve by letting it solve itself. The pattern of the public housers' thinking and planning has flashed like a meteor into our vision and panicked us with the result that the housing industry was inclined to "dig in" and private enterprise is only now beginning to evaluate its job in the future.

From our experience in financing houses for over 135 years, the savings and loan business has derived some guide posts. We have experienced throughout the land the fact that when a man wants a home he can have one. This is the result of our way of life, that when a man wants something he can obtain it if he is willing to work and save for it. Today, with revamped plans of finance, even the lower brackets in the income picture can obtain a home on easier terms than at any time in our nation's history. It is interesting to note that, outside of the largest metropolitan areas, the average loan is about \$3,000.00 and that the average home owner income is more nearly \$2,000.00, or even a little less. By the means of home loans the vast majority of our fellow citizens can purchase modern homes of their own and have them produced by the building industry as we know it today.

In our new social consciousness we acknowledge the fact that there is still a mass of our fellow citizens who for various and sundry reasons cannot follow this elementally sound American way of home purchase. It is to this picture that we must give serious consideration. This is the field which has given the professional houser his momentum, but due to the restrictions of possible returns on the ventures he wants to promote, he is constantly edging up into the field of the more profitable economic operations of private enterprise in providing housing.

Careful analysis of housing projects of all grades, which are operating everywhere today, will provide the cold hard facts for the planning of tomorrow. It may even be able to prove that private industry still has a challenge to do the low-cost housing job instead of using the tax dollar to provide the needed housing. Let us check each type of housing used and evaluate results before we say in just what fields the tax dollar shall provide housing and private enterprise carry the balance of the job.

Private enterprise is ready to build mass housing enterprises or more scattered developments. To place all of our future projects in open areas adjacent to our cities will only further complicate our growing city problems. Ways and means must be found to take over areas of substandard housing in our cities and permit and encourage the building of quasi public housing. To fail to de-

velop a sensible plan of operation will put the burden on the tax dollar in a period when it will have to bear all the traffic will stand. To hold down the tax dollar expense, it is vital that all of the municipal services be conserved. We have them in place in many areas under consideration, and why not use them in the light of our newly acquired sense of economy? These problems we regard as very vital and important, and we know that the building industry must help to solve them.

We will have money for this task beyond peradventure. In spite of taxes and bond purchases, the savings of our people reflected in our financial institutions will assure us of the life blood to do this job of housing America. Let's get at the solution of our problem of the future and do it together as a unit—or the job won't be done—George will do it for us!

FERMOR S. CANNON,

President Railroadmen's Federal Savings and Loan Association of Indianapolis.

Gael Sullivan Offers Eleven Points

Chicago, Ill.

Editor Post-War Home:

The war will have a marked effect on the future design and planning of housing. Just as we are now building for military air supremacy, we will continue to strive for economic air supremacy in the post-war period. This annihilation of distance will be reflected in the well-planned city. Distance will be a matter of time and not miles—and the development of improved highways and airways will permit the creation of residential areas in what are now considered isolated neighborhoods.

Effectiveness of structures under aerial bombardment challenges the ingenuity of our designers and the exterior form of our buildings will consequently reflect this ingenuity. Present inadequate building codes will be revised, and rightly so, to permit substitutions of certain scarce materials and perhaps to ban forever the construction of wall-bearing apartments and structures more than three stories high. The architecture of display, pride and self-gratification will disappear entirely. In fact, to all intents and purposes, it practically disappeared a year or two ago.

Summing up the question of what the new homes will be like when America can again build freely, I would say:

(1) There will be more housing planned for the lower income groups.

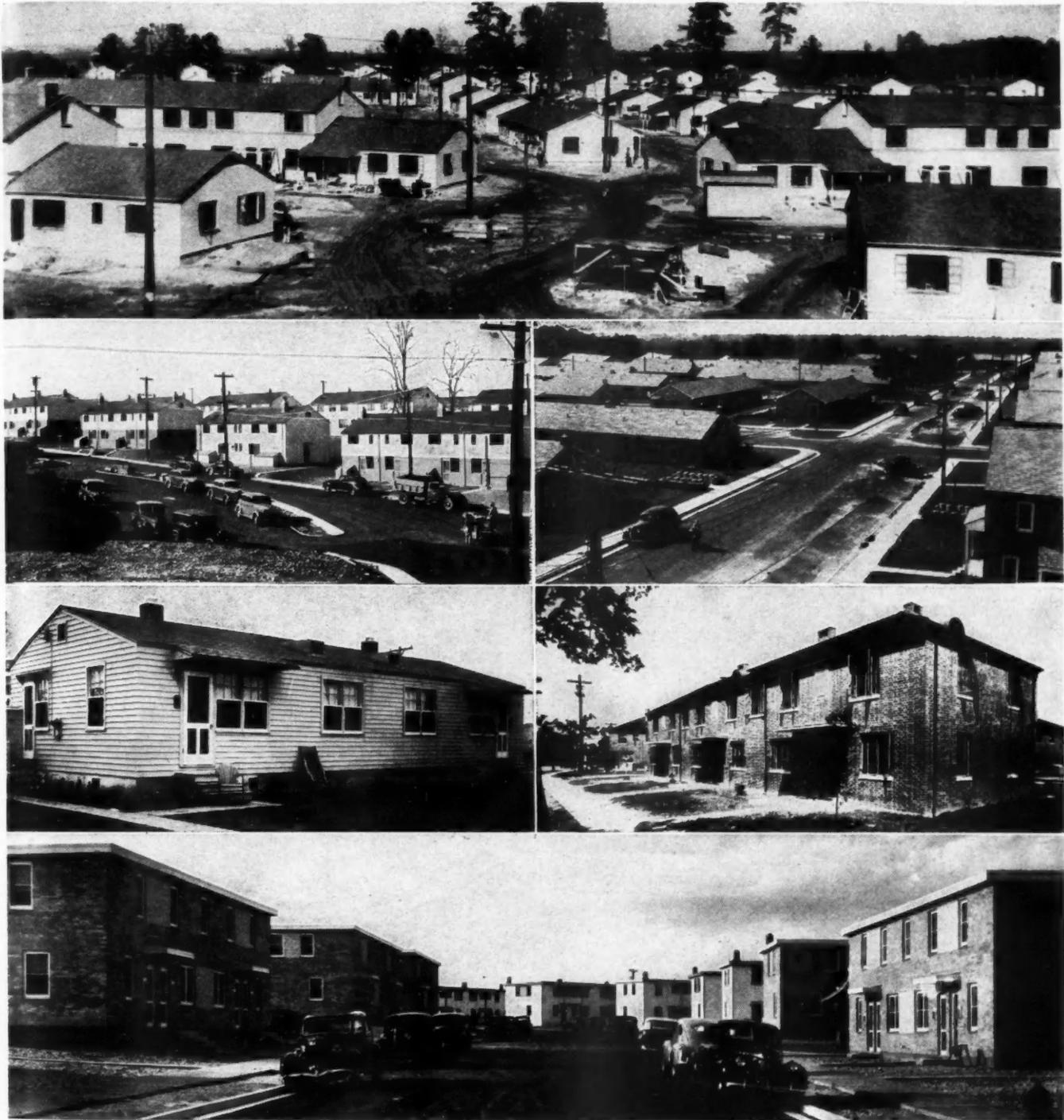
(2) The tendency will be toward larger maximum space per unit rather than toward minimum of space.

(3) Houses will be composed of prefabricated and standardized integrated units manufactured in quantity, such as, bathroom units completely fabricated in the factory, readily assembled heating units, and prefinished flooring, walls, windows, cabinets, and interior millwork.

(4) The construction work at the site will be reduced to a minimum and will consist mainly of assembling the various component parts which have been prefabricated or which have been cut to correct size at the factory. These parts will be large in size and will be constructed of a variety of materials.

(5) There will be less use of glass to bring the "outdoors in" as so many designers stress today, unless the glass is shatter-proof and can be made splinter-proof. Buildings containing large areas

(Continued to page 68)



Photos from National Housing Authority

BUILDINGS *to house War Workers*

The workers who move to busy war plant areas must be properly housed, if health and morale are to be preserved. In most localities, new construction is the only answer. The hundreds of thousands of these homes are taking a vast amount of Stanley Hardware for doors, windows, cabinets, garages . . .

Because manufacture of hardware has been restricted to release metals for vital war needs, and because existing stocks are of necessity earmarked for defense hous-

ing and other government approved projects, the supply available for normal needs is severely limited. The Stanley Works, New Britain, Conn.



STANLEY HARDWARE



WHAT DO GUN TURRETS AND "GARBAGE GRINDERS" HAVE IN COMMON?



NO MATTER what this sky warrior looks like, it's how it *functions* that counts! So in designing a modern bombing plane, the gun turrets and all other "operating equipment" rank equally important with the fuselage.

For the same reason, in tomorrow's homes, the "garbage disposall," and other "operating equipment," which in large measure determine how a house *functions*, will assume new importance.

Today, millions of American men and women—in the armed forces, on the production lines, on the home front—are learning that the right kind of operating equipment does the job easier, better, faster, and at less cost. In their new After Victory homes they will look for beauty of design and soundness of structure of course, *but they will also demand the right kind of equipment for Better Living BUILT-IN!*

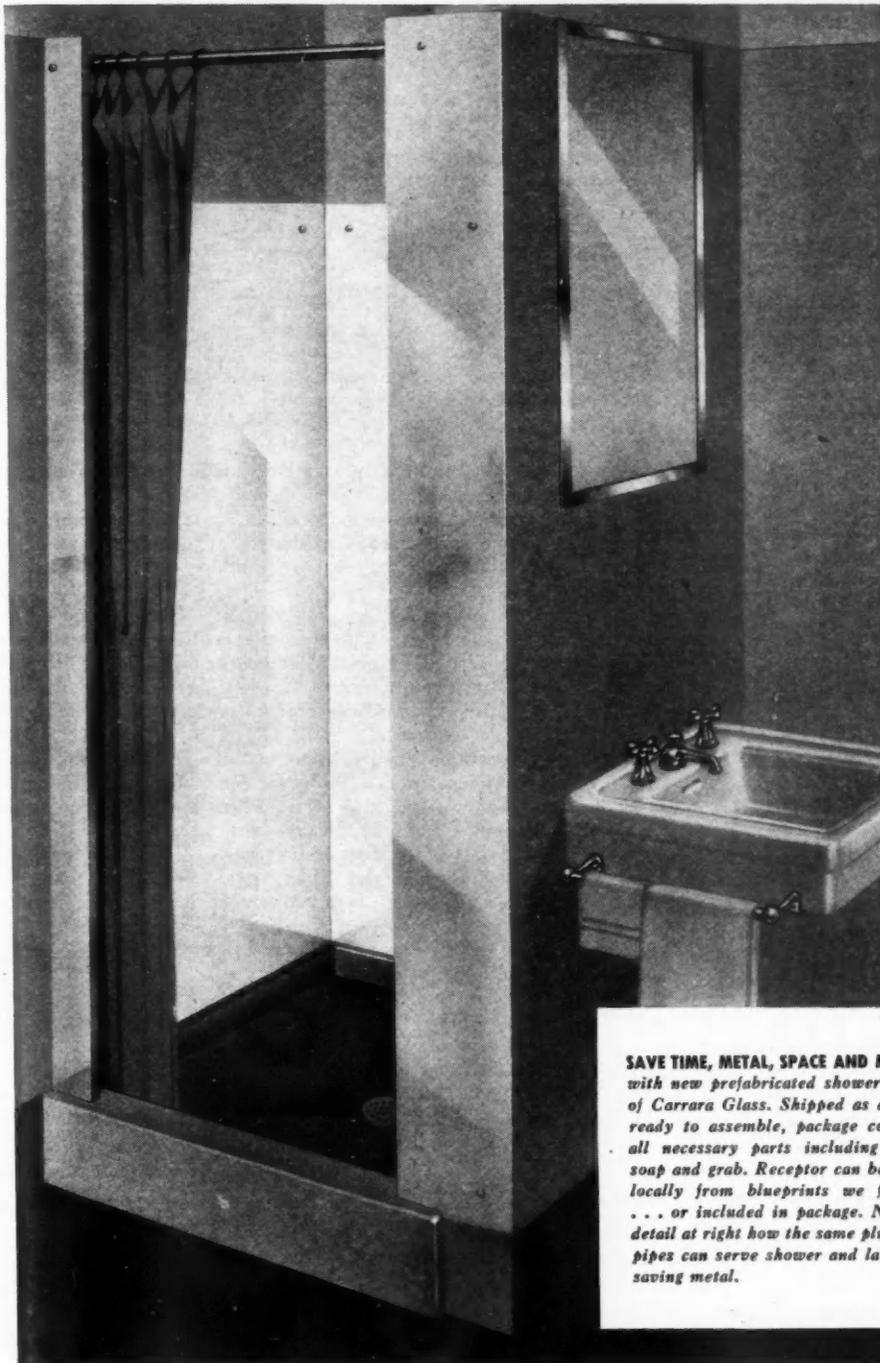
GENERAL ELECTRIC

HOME BUREAU

BRIDGEPORT, CONN.

New Sensation IN BUILDING CIRCLES!

PREFABRICATED CARRARA SHOWER STALLS



SAVE TIME, METAL, SPACE AND MONEY with new prefabricated shower stalls of Carrara Glass. Shipped as a unit, ready to assemble, package contains all necessary parts including china soap and grab. Receptor can be made locally from blueprints we furnish . . . or included in package. Note in detail at right how the same plumbing pipes can serve shower and lavatory, saving metal.

NO wonder this revolutionary development is causing excitement! Read some of the reasons:

These new Carrara Glass shower stalls bring the famous beauty and utility of Carrara Glass to the bathrooms of low-cost homes.

Absolutely no metal is involved in installation, except a few screws which we supply.

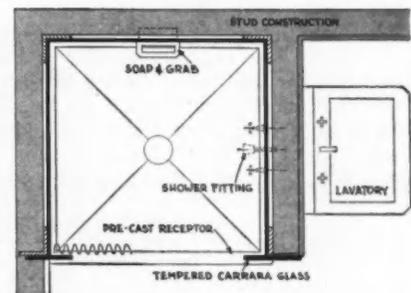
Panels of Carrara are prefabricated at the factory, and arrive on the job with all holes drilled, ready for immediate installation. Even inexperienced workmen can assemble a Carrara shower in record time. The Carrara panels fit into prepared grooves in the receptor. And all you have to do to finish the job is secure the tops of the panels to the studs with a few simple fastenings.

These showers are compactly designed, leaving more room for closets and other desirable features.

And there are several types available, to meet the requirements of various plumbing layouts.

The Carrara panels are tempered, giving them 4 times the strength and toughness of ordinary glass of the same thickness.

Save metal, time, space and money with these prefabricated shower enclosures. Send the coupon for information and details of installation.



"PITTSBURGH" stands for Quality Glass and Paint

CARRARA

The modern Structural Glass

PITTSBURGH PLATE GLASS COMPANY

Pittsburgh Plate Glass Company
2121-2 Grant Building, Pittsburgh, Pa.
Please send me, without obligation, your free literature and installation details on the new Prefabricated Carrara Shower Enclosures.

Name.....

Address.....

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

Letters from Readers

*Facts, Opinion and Advice
Welcomed for This De-
partment...Write the Editor*

Hidden Subsidies in Government Housing

Cleveland, Ohio.

To the Editor:

I am writing you as a private individual to tell you that I appreciate your fine editorial, "Private Versus Government Housing," which appears in the October issue of *American Builder*. I agree with your remarks completely.

However, as you know, government built tax subsidized houses are only one of the advantages enjoyed by the government in competition with private business. The other is the cost of administration of the entire public housing program.

If the cost of operation of the multiple public housing departments of the government in Washington, plus the cost of regional offices, field men and what not were added to the cost of public house construction, we would probably run into another form of a subsidy.

I understand that overhead expense connected with public housing construction is not included in the costs of public housing construction. If this is true I am wondering whether or not *American Builder* could dig up these overhead costs. If they could you would certainly have some worthwhile material for another editorial and thus keep the ball rolling which is of crucial interest to the continuance of private enterprise and particularly to the building industry.

GEO. BOEDDENER.

A Big Business from Little Jobs

Jackson, Miss.

To the Editor:

I was very much interested in your article, "The House Doctor," in the August issue. This idea might be a new idea to Mr. Fonde, as described, but it is an idea on which I have built up a very successful business, started several years before Pearl Harbor.

Nearly three years ago I decided to strike out for myself, after having worked in retail lumber yards for years as a salesman, estimator, contractor, etc. All of my experience had been in small delta towns in the state; but I decided that the capital city of the state was the most promising place to start such a venture. As my capital was very limited and as I did not want to be under obligation to any particular lumber dealer, I decided to contract on small jobs only, "No job too Small." By doing this I could have quick turnover of my money and not much competition.

I inserted the enclosed ad. in one of the leading papers and it has been running for over two years without interruption.

CARPENTRY—REPAIRING

J. M. FLY. Foundation Repairs. Painting. Carpentry. Plaster Repairs. "No job too Small." Phone 3-3725.

I operate two pick up trucks, completely equipped with all types of tools and a small amount of materials, such as weatherstripping, screws, nails, roofing cement, caulking compound, etc. I will take any type of small job, such as adjusting and trimming doors, installing window cords, plastering, papering, painting, carpentry, etc.

I have many jobs for as small an amount as \$1.00. I find that I have very little competition; for these small jobs are the ones that most contractors dislike. Since commencing this business, I have not contracted for a single new structure (except a dog house); I have had a good many jobs for around \$1,000, but most of my contracts are never for over \$200.00.

I am now thoroughly convinced that there is a wonderful opportunity in these small jobs, and I only trust that the shortage

of materials, labor, rubber, etc., will not force me to close down my business. I am doing everything in my power to keep my business going, without having to go into any form of the defense work.

J. M. FLY, General Contractor,
Remodeling & Repairing, "No Job too Small."

Aiming at Very Cheap Homes

Jackson, Miss.

To the Editor:

Our dealers outside the defense areas must depend largely upon farm trade. There will be more money in the pockets of farmers of Mississippi in the coming fall and winter months than ever before.

We know, however, that it would be unwise to put on a campaign to influence farmers to build new homes if the present homes will keep the family comfortable. The trend now indicates that many people will go back to the farms in order to keep up production and in order to escape the higher cost of living in towns and cities.

What we need is some plans for dwellings to cost about \$750 or \$1500, and have them so planned that additions can be made when the war is over. We need to stress the fact that there must be a minimum of critical material. No use to install electric lights, bath tubs and such conveniences that will use material which is almost impossible to get.

The Farm Security Administration has been building a dwelling for \$500 that has four rooms. However I doubt if it can be built for that money now. But its general outline can be planned and later some distinguishing features may be put on.

Keep in mind that most of these houses will be built with labor that will cost per hour far less than in the North, and that the lumber will be cheaper. It is my observation that county war boards pass applications when a real need is shown and they can get by in Washington. This is the biggest chance our dealers have of keeping some building going.

We have a different situation in the South from other sections of the country. We have negro carpenters, many of whom will be idle in the Delta area if there is nothing in the way of building. I do not think that the simple houses we ask for will in any way conflict with the war effort.

J. K. MORRISON, Secretary,
Mississippi Retail Lumber Dealers Association, Inc.

Post-War Building?—"Something of a Dud"

Corning, N. Y.

To the Editor:

History seems to be repeating itself. When I first subscribed for the old "*Carpentry and Building*" nearly every factory, saw mill, mine and tannery had its row of company owned shanties; and now we are back in the shanty age again. The only difference is that the shanties are being built for and by the government.

I have been a reader of four of the leading architectural magazines for years and of late all of them are featuring prefabricated and other doo dad monstrosities as a revival of the shanty age. You are all harping on the great boom of private building necessary to house the population and the great demand for architects, contractors and building mechanics after the war; but you neglect to tell us what you propose to use for money for all this building.

Knowing that the total assessed valuation of all the property in the continental United States is approximately 144 billion

(Continued to page 71)

To all users of
MENGEL**BORD**
and
Mengel Flush Doors

Ever since the War began, The Mengel Company, America's largest producer of hardwood products, has been undertaking the responsibility for a rapidly-increasing amount of vital war production.

Today our plants are turning out millions of feet of aircraft veneers for gliders and cargo and training planes, and other millions of feet of plywood for aircraft, boats, Army and Navy buildings, furniture, ammunition boxes, etc. We are turning out precision wood parts for thousands and thousands of Army cargo truck bodies, and doing many other high-priority war jobs. . . .

And still the demand increases, until we have had to entirely subordinate our output of

all Peace-time products to the multiplying needs of our boys in khaki and blue. . . .

That is why, today, we are unable to give you the kind of service you're accustomed to getting on Mengelbord and Mengel Flush Doors. But much as we would like to be earning your friendship and good-will by superlative service and delivery, we know you will agree that our first duty is to the Nation.

In the meantime, we are trying to produce for you as much Mengelbord and as many Mengel Flush Doors as can possibly be turned out *without interference to the War program*. We know you would heartily disapprove any other course of action, and we appreciate your friendship and your patriotism in yielding first place to the Armed Forces.

THE MENGEL** COMPANY, Incorporated**
Louisville, Kentucky

ROOFS OF ENDURING BEAUTY

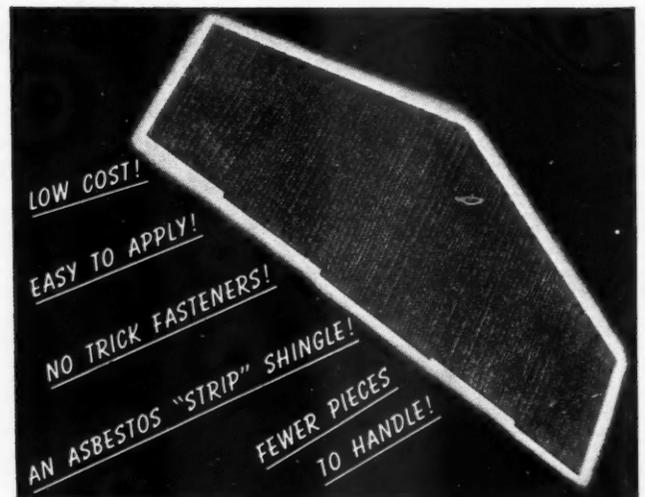
... with Fireproof **ASBESTOS!**



4 Reasons why J-M American Colonial Shingles meet the requirements of today's war economy!

1. Made of two "non-critical" materials—asbestos and cement.
2. Easily applied with a minimum of man-hours of labor. No special knowledge or skill required.
3. Protect against the spread of fire. Asbestos can't burn.
4. Last 30 years plus—cut future upkeep expense for homeowners.

When a new roof is needed today, you will find more and more prospects who want the permanence and fire protection of a Johns-Manville asbestos shingle roof. Based on actual performance, you can show them that these famous shingles are built to last not just 5 years, not just 10 years, but 30 years PLUS. Furthermore, they are unusually attractive in appearance with lovely texture and pleasing color blends. They provide the kind of roof that millions of homeowners prefer. Johns-Manville, 22 East 40th Street, New York City.



Johns-Manville
Asbestos Shingles



For Remodeling For New Construction

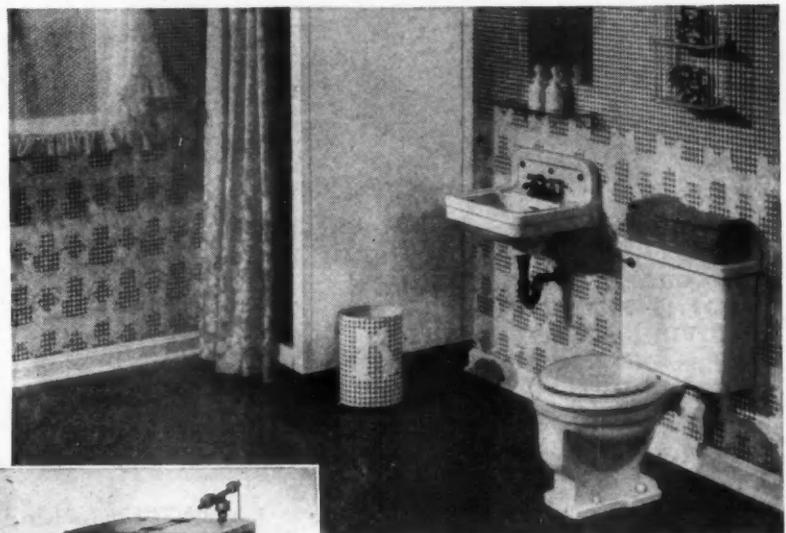
Crane BATHROOMS, KITCHENS AND HEATING



IN CHANGING single family dwellings to multiple family units and in building new homes for America's war worker families, the plumbing and heating must meet rigid specifications in the matter of quality, price and the use of non-critical materials.

Crane fixtures and equipment have been developed to meet the special needs of wartime construction. Lavatories of vitreous china with cast iron trim, shower stalls using the minimum amount of metal, fittings designed to save metal, sinks and laundry tubs of Duraclay are all available.

On any remodeling or new construction that affects our war efforts, you will find equipment in the Crane line designed to do the job while saving critical materials.



● Crane bathroom with vitreous china lavatory and closet, shower stall of non-critical material. All fixtures have trim of cast iron, heavily galvanized.

● Crane boilers and radiators for both water and steam heating are helping to keep American defense workers warm and healthy. Illustrated is the No. 110 Boiler specially designed for the economical burning of coal. May be had with jacket as illustrated until present supply of jackets is exhausted.

CRANE

CRANE CO., GENERAL OFFICES:
836 S. MICHIGAN AVE., CHICAGO
VALVES • FITTINGS • PIPE
PLUMBING • HEATING • PUMPS

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



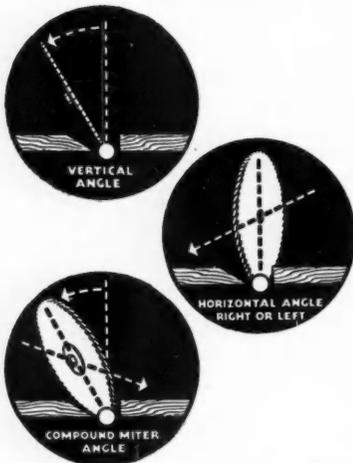
The DOT marks the SPOT!

MONARCH UNI-POINT RADIAL SAW ENTERS WORK AT SAME POINT IN TABLE REGARDLESS OF CROSS-CUT ANGLE

Think what this means! No swinging arm to adjust. No need to move material, stops or gauges. Speeds up production enormously and at the same time gives far greater accuracy.

No wonder UNI-POINT is sweeping the country as the greatest advance in machine design in a generation. Other outstanding features contribute further to this popularity:

DIAGRAMS SHOWING UNI-POINT PRINCIPLE PROMOTING GREATER SPEED AND ACCURACY



- 1** UNI-POINT has a telescoping Ram. No long arm to bump the head or block vision. A gentle push on the ram and, presto, table is entirely clear.
- 2** UNI-POINT stops automatically at all common positions with snap-speed accuracy. On all angle cross cutting no need to stop motor, raise or lower saw, fuss with gadgets or time-wasting adjustments.
- 3** UNI-POINT locking features are in "safety zone" in front of and below the table.
- 4** UNI-POINT guide fence is never mutilated on miter cuts—because saw cuts through same spot—always. Eliminates frequent replacements.

Increase Your Volume and Your Profits. Install UNI-POINT. Immediately you'll see the difference!

Write for Details

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



AMERICAN SAW MILL MACHINERY CO.

HACKETTSTOWN, NEW JERSEY

Better to BUILD than Billet

ADMINISTRATOR John B. Blandford, Jr., of the National Housing Agency has announced that if all other means fail, the compulsory billeting of war workers in private homes may become necessary. To take a step so drastic and contrary to tradition in a country where billeting of soldiers was long ago made unconstitutional would indicate a very serious condition indeed in our housing affairs. If compulsory billeting becomes necessary it will be an admission that our national war housing program has miserably failed. Whatever the reasons—and they cannot all be blamed on shortages of critical materials—*let us correct them and get on with the job.*

The building business has thousands of determined, ingenious men. Government officials and private builders should get together on a program to build houses wherever they are needed—and quickly.

Private initiative must be revived

This is not an impossible job. Private builders alone constructed more than 250,000 war housing units in the first nine months of this year. They overcame great obstacles; many have been disheartened by the difficulties they encountered. Even if materials are made available, they say, they are fed up with trying to operate under such conditions as have prevailed. The drive and force of private enterprise in construction have been almost nullified. This can and must be changed. Administrator Blandford of NHA and Commissioner Ferguson of FHA could bring about the change.

Builders are patriotic. They want to help win the war in the way for which they are best fitted—by building houses.

AA-4 ratings now granted

The way has been paved for a vigorous resumption of private building by the War Production Board announcement that blanket AA-4 ratings will be approved in the issuance of P55 preference orders. Builders have expressed the belief that AA-4 will be sufficient to get materials they need, including lumber, and it will also enable the lumber dealers to replace their inventories.

That obstacle has been overcome. Others will no doubt arise, and no builder can expect smooth sailing in such times. But it will take more than the announcement of an AA-4 priority to get some of the most needed private operators back on the job. Rulings, regulations and priority problems have become so

complex that thousands of the smaller building firms and material dealers do not know where to start or what to do. These problems can be solved. The Federal Housing Administration has the men, or can get them, to put on a vigorous drive to encourage, help and promote needed housing. A few years ago FHA embarked on a nationwide promotion campaign on small homes. Some called it a ballyhoo program; but it got results. The construction of small homes boomed, largely as a result of the promotion efforts of FHA.

Enlist dollar-a-year men

Grim war has no place for such peacetime ballyhoo. But a building and remodeling campaign comparable to the Treasury's drive to sell war bonds would be justified and would get results. The FHA organization is headed by men who know how the private builders can produce when given an opportunity. *Let's cut red tape to the minimum, organize national, state and local committees, enlist minute men from private industry, if necessary bring in some top-flight dollar-a-year building men, and get going.*

The National Association of Home Builders, of which Hugh Potter of Houston, Tex., is chairman, and Frank Cortright executive secretary, has been doing a notable job already to iron out the difficulties between private builders and government officials. The scope of the Association's Emergency Committee should be expanded, and it might well head up such a program.

Thousands of small builders needed

More than a handful of large builders are needed to get Blandford's program of 270,000 homes built between now and the end of June, 1943. The number of builders needed runs into the tens of thousands, and becomes higher if remodeling is included.

Many thousands of small builders operating on individual or scattered lots must be enlisted. Such groups as the National Retail Lumber Dealers' Association, Producers' Council, National Homes Foundation, and building industry trade associations should be brought in.

This is no time to take a defeatist attitude—whether on our wide-flung battle fronts or on our housing front at home. It is better to build than to billet, the required building can be done without excessive use of critical materials, *and it can be done quickly.* America's builders are inventive, aggressive, ingenious and, as we have said, they are fighters. All that they require is leadership.



AN IDEAL WAR



ABOVE is a war worker's family standing in the doorway of the new Mills' Westbrook home just sold to them; the panorama view shows the winding street on which it is located along with similar homes being completed; a typical kitchen, compact and efficient, is shown opposite.



An Ideal War Home? That sounds more like something from the peaceful days of the past rather than today's actuality. After all, it takes a lot of nerve now to go ahead on just producing shelter to a minimum standard; there are plenty of excuses why a builder might not be expected to do more than merely get by. Yet Mills & Sons, in their Westbrook development near Chicago and in a war production area, are thinking in terms of an ideal home. What's more, they are doing their best to produce one in quantity under the same general restrictions and difficulties facing the industry. The pictures above show the results.

The story of what is happening in this project is heartening and perhaps will be useful in helping other builders keep up the fight for good, privately built war housing. There's plenty of grief in keeping going, but that is nothing new to a builder who is determined to push ahead and be in a spot to reap the benefits which can follow later.

When Mills called in its sales force to check the popular features that defense workers wanted in the homes in which they were expected to live for the duration, it was with the objective of coming as near to meeting the most commonly requested items as was possible within the limitations of present restrictions. Once having determined these, which amounted to fourteen reasonable points of design, they rushed plans through to build just such a house as would satisfy this average buyer. Here's what these war workers want—

1. One room that can be used as dining room or bedroom.
2. Stairs from attic to lead to bath hall, eliminating necessity for second floor plumbing.
3. Access to basement near outside entrance, since area-ways are out of the question in Title VI houses, due to necessity of saving on materials and costs.
4. Attractive bathroom layout with tub away from window.
5. Kitchen in front of house, affording better view during day for housewife.
6. Sink beneath window.
7. Kitchen adjoining living room, so dinette space can be provided there if dining room is omitted.
8. High roof line so as to provide space for two large rooms to be finished after the war.
9. Bedrooms in rear of house, away from street noises.
10. Access to kitchen, children's bedroom, or basement, so family can reach them directly, simplifying housework.
11. Side entrance from kitchen which will tie in with future breezeway or garage.
12. Good closet space.
13. Flexible plan, so that dining room can be changed to front.
14. A first floor bedroom available for elderly people or use in case of illness, after rooms on second floor are completed.

At this point some readers, who have good reasons

HOME

By R. E. Sangster

How Mills & Sons, Chicago Builders, Have Kept Their War Housing Job at Top Quality in Face of Handicaps; See Rewards in Post-War Market



to do so, will ask the current question: "So what?" It is common knowledge that many home builders have been forced out of business due to financial inability to hold their organizations together during the last twelve months of bureaucratic fumbling when profits frequently vanished. Others just gave up because it was easier to do that and look for something else. Those remaining divide into builders turning out mediocre Title VI war housing and builders determined to offer real homes—the best possible. Just patriotic? Partly right, but there's a tremendous market ahead and producers of the top quality job today are learning the how of tomorrow when the small home market will be bigger than ever but highly competitive. Builders weathering the clouds of war will be better trained to get under way with the starting gun.

Mills & Sons have done just that. Their present development was opened, as reported in the October 1941 *American Builder*, with an entirely different kind of house, a compact four-room "efficiency apartment" type detached unit. As conditions changed the character of their homes changed, the one constant factor being quality in planning, construction and materials. Since the start, this firm has completed 25 houses, now occupied, has 64 more under construction, 50 of which are sold, and is anticipating enough priorities to complete this 400-unit project. Inasmuch as no one knows how long the war will last or when some of the restrictions may be lifted, this program may be completed or curtailed before



more houses can be built. But Jack Mills, vice-president of the firm in charge of purchasing and construction, has stated to *American Builder*:

"We believe we can complete our present program which should keep us busy until about April of next year. It is possible that by then the war housing requirements will be reprogrammed and that builders like ourselves will have a big job to complete to take care of new war production personnel in plants now going up. Perhaps more materials and labor will be available by then. Certainly we'll need the houses.

"Meanwhile, we'll do our part as best we can and take it as it comes. If we can't keep going through a long war we'll still have the satisfaction and experience that

has gone with the job to date. We're bullish on the post-war market and want to be ready to go because it should be the chance of a lifetime."

There are no spectacular features in Mills' present program—no "thousand houses overnight" thrills or prefabrication miracles. Just a well managed operation that might be duplicated by any number of builders equally determined and equally capable of looking ahead. Plans and construction views tell their own story. The bulk of the work is subcontracted under the careful supervision of the Mills organization. Their own crews handle the masonry and carpentry.

Among the quality materials going into these Westbrook houses are: USG Gyplap sheathing over frame

and finished with clear quarter-sawn cedar siding with building paper between; plaster on Rocklath interior finish; Bruce Streamline V-joint oak flooring; 210-pound USG thick butt 3-in-1 asphalt shingles over roofing felt; slab doors; W. P. interior trim; du Pont enamel finish; Truscon double-hung weatherstripped steel sash, SSA glazed; Sellers custom-made kitchen cases; Standard plumbing fixtures; Sunbeam furnaces, solid brass cast knobs and wrought brass trim hardware; Armstrong inlaid linoleum.

Changes are made constantly according to what is available. The specifications allow for alternates and several are listed for almost every product. Always, however, the best possible substitution in their judgment is made. With these facts as a basis, if this writer were making a prophecy on the outlook for Mills & Sons and those builders doing a similar job, it would be: Some day, regardless of the when, where or how, this same group of men will lead in the post-war revival and upsurge in the building industry. And that's a safe bet.

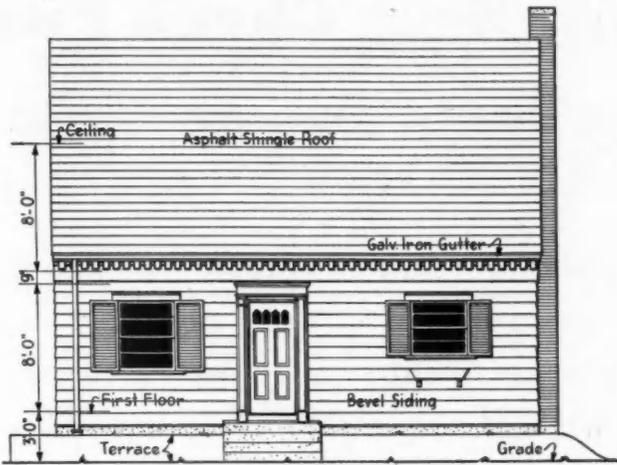
CONSTRUCTION VIEWS:

THE three houses in the foreground of the nearly completed group at the top show how the basic design opposite is varied by different exteriors and turning plan lengthwise on lot.

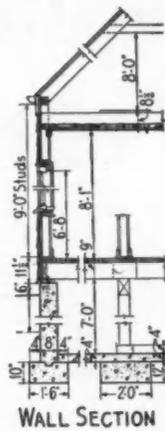
PAVING a street in Westbrook; Mills & Sons have idealized this development for war workers from plot plan to final sale. Modern planning included curved streets with a minimum of cross traffic, culs-de-sac, landscaped lots to fit site contours.

CONSTRUCTION in line with the best they can produce: note poured concrete foundations, waterproofed; sound framing, corner braced; good workmanship throughout structure.





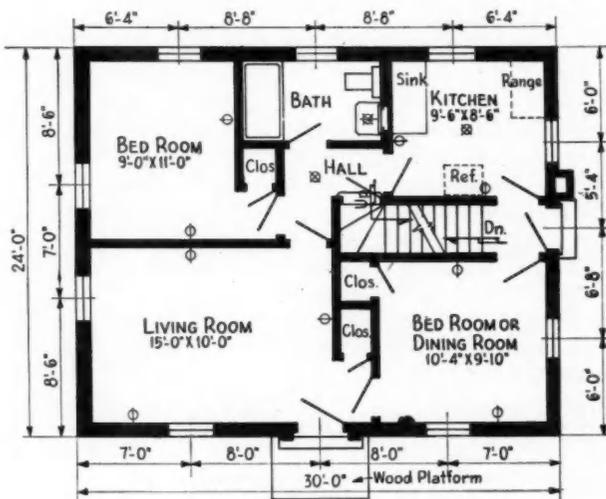
FRONT ELEVATION



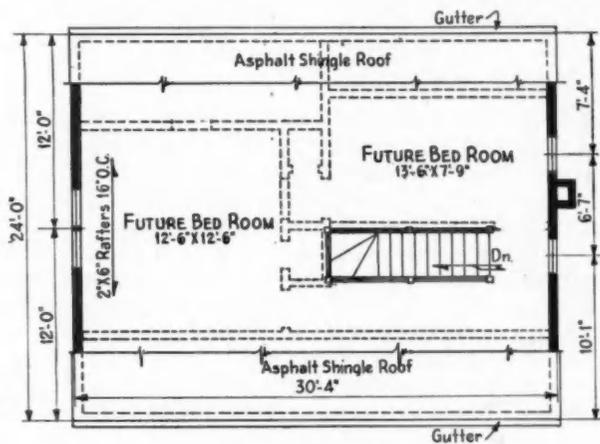
WALL SECTION



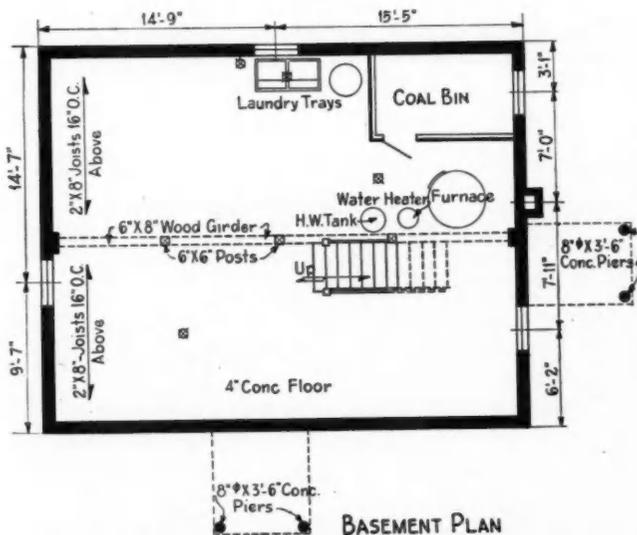
RIGHT SIDE ELEVATION



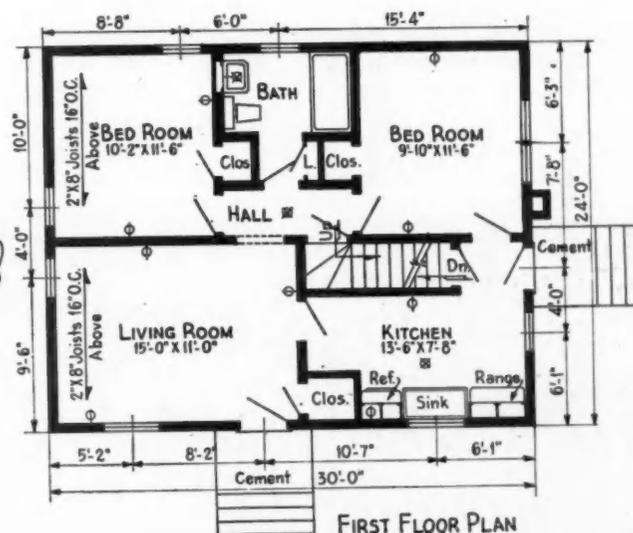
FIRST FLOOR PLAN



FUTURE SECOND FLOOR PLAN

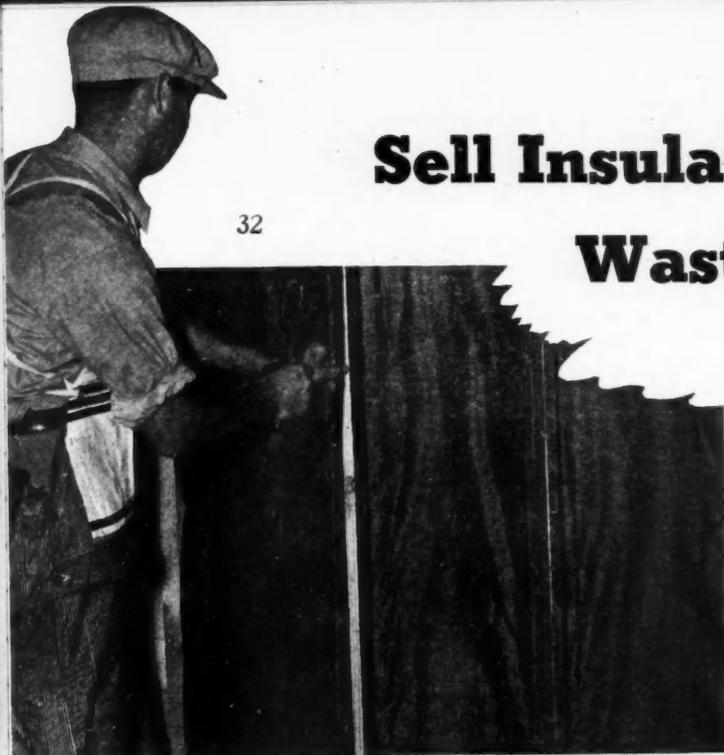


BASEMENT PLAN



FIRST FLOOR PLAN

PLANS, elevations, section of Mills & Sons "Ideal War Home" being built in their Westbrook subdivision near Chicago. Alternate first floor plan shows kitchen placed near bath to meet WPB requirements of fixtures back-to-back. Future second floor plan indicates (broken line) ways in which bedrooms and storage space can be arranged. Note particularly basement plan which allows good space for children's playroom, additional room or workshop.



Sell Insulation, Help Check Fuel Waste—Tests Prove Value

Builders have golden opportunity to cooperate in heat economy campaign; public will be insulation-minded during November; can answer practical question, "How thick?"

By Bernard L. Johnson

MAXIMUM economic value, both for home fuel saving and for comfort, was found for standard single-thick Balsam-Wool insulation blanket, as compared with the company's double-thick and triple-thick blankets, in a series of actual performance tests conducted by the Wood Conversion Co. last winter. Savings in fuel oil, doubly important today, for the heating season ranged from 29.2 per cent to 34 per cent as compared with the fuel consumed in heating the uninsulated house used in these tests.

A complete report of the scientific test results was made last June to the semi-annual meeting of the American Society of Heating and Ventilating Engineers by D. B. Anderson, manager, Sales Engineering Dept., Wood Conversion Co., and an associate member of the Society.

In his paper, published in the ASHVE Journal, Mr. Anderson emphasizes the importance in home insulation tests of fully duplicating actual home conditions both as to construction and occupancy. Ordinary laboratory tests are not sufficient, he feels, and the typical "housewife" test in the occupied home is not closely enough

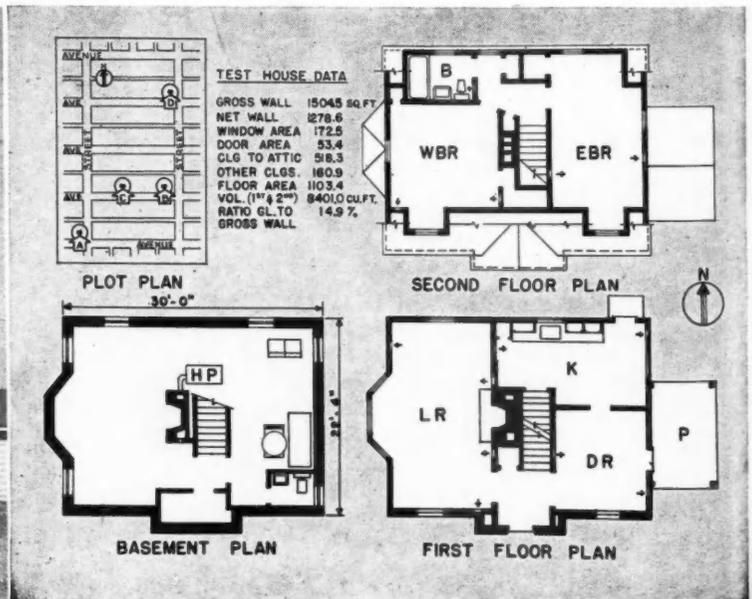
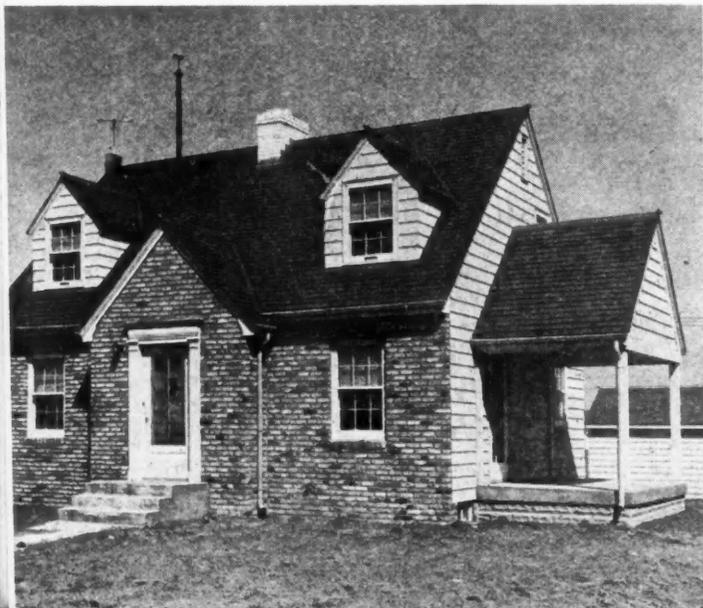
controlled or recorded to yield satisfactory data.

This is due to the fact that such tests involving one or two houses are exposed to many unpredictable variables due to the difference in the habits of individuals occupying them. For this reason the findings of such tests are not accepted as fact by industrial or technical men. Consumers, however, are often confused by claims resulting from such tests.

Accordingly, Mr. Anderson and his staff decided to undertake what turned out to be perhaps the most complete and convincing home insulation test project so far sponsored by any manufacturer. Four new houses in a north St. Paul subdivision were built, each identical in size, design and location conditions and also identical in construction except for the one detail of heat-stop insulation. As to this, House A was *uninsulated*. House B had *0.9 inch* blanket insulation (standard, single-thick Balsam Wool), House C had *1.7 inch* blanket insulation (double-thick Balsam-Wool), and House D had *2.3 inch* blanket insulation (triple-thick Balsam-Wool).

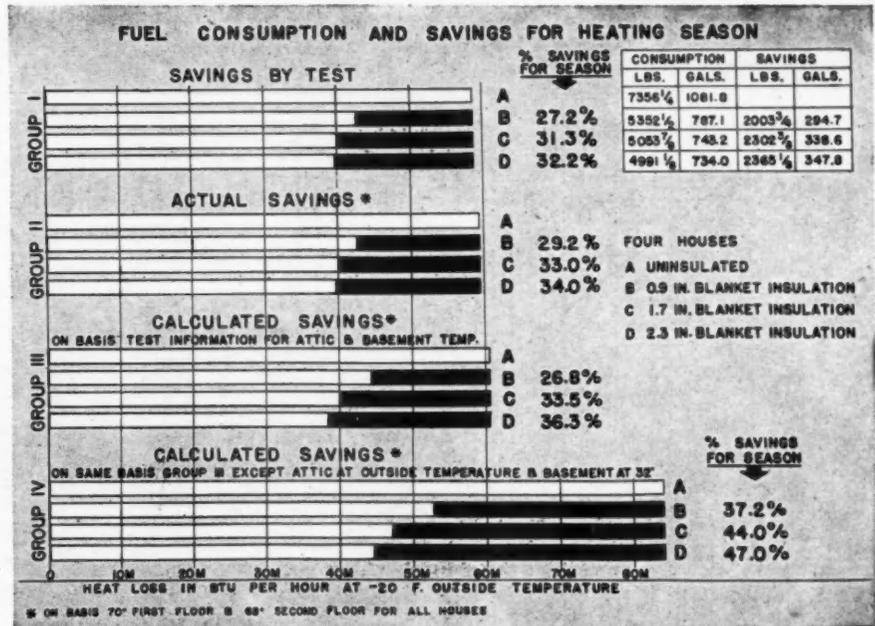
These houses were built according to the standard

BELOW: One of the four test houses identical except for insulation. Plans show size and relative location in St. Paul.



HERE'S WHAT TESTS SHOWED

Savings up to 34 per cent in the INSULATED houses over an identical one uninsulated.



THIS chart shows the actual and calculated fuel consumption for the four test houses A, B, C and D. GROUP II, Actual Savings, is the chief point of interest in chart to builders.

building methods of the St. Paul contractors operating in the popular price field. They were not special in any way except for the insulation features as noted above plus the addition of 43 thermocouples in each house for taking temperature readings. With these thermocouples temperatures could be read quickly and regularly from attic to basement—at walls and ceilings, window surfaces as well as air temperatures at various levels in each room. In the attic alone, for instance, tests were read regularly at 7 different points.

Construction was completed in the fall of 1941 and the tests were conducted continuously throughout the heating season from Oct. 10, 1941 to May, 1942. As many as 1000 temperature readings were made and recorded each 24 hours throughout the test period. In order to avoid differences in heat load due to occupancy factors these houses were held off the market and were not lived in nor entered during the tests except by those taking the measurements and readings.

A quantity of detailed information and data of value to heating experts was developed by these tests, especially in checking actual results against calculated

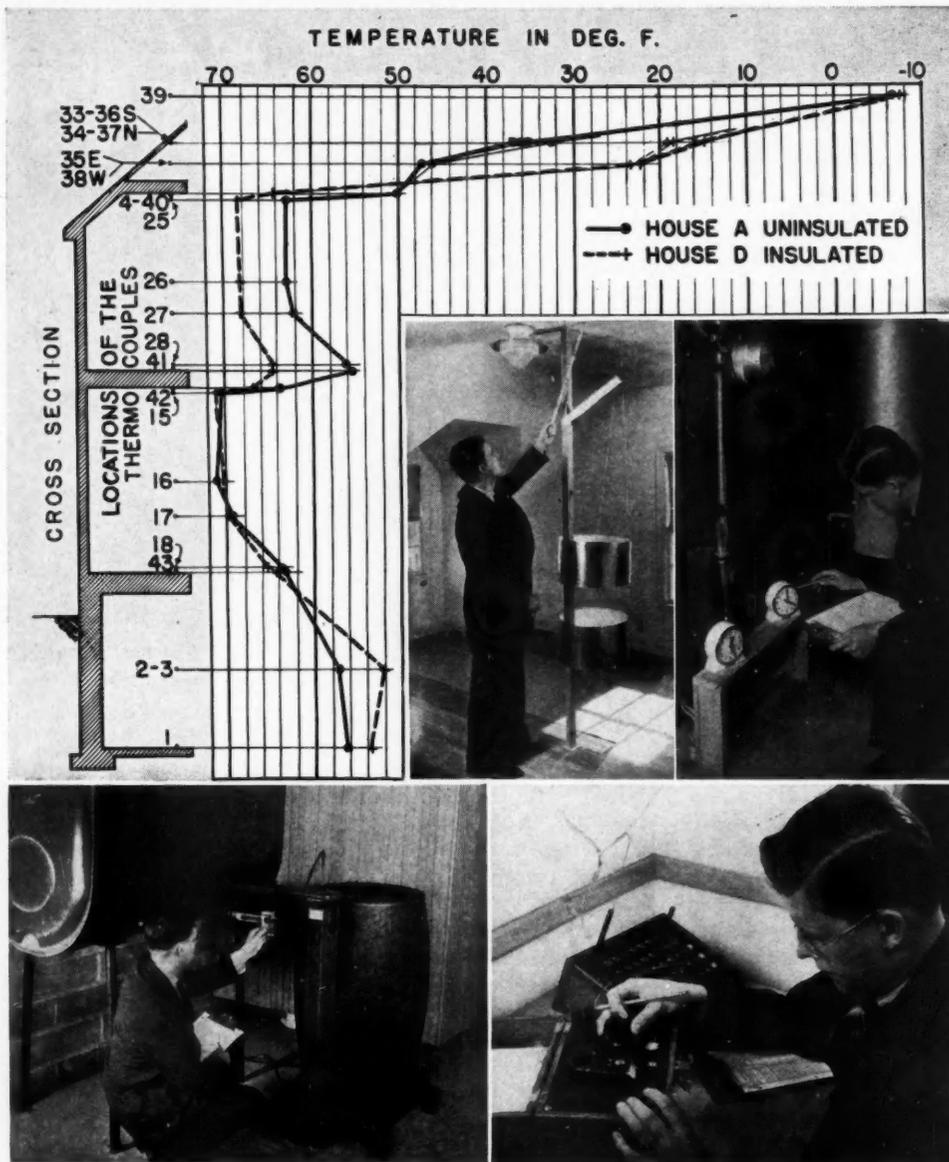
performance. Much of this is brought out in Mr. Anderson's report. Of major interest to everyone now, however, in these wartime days of fuel shortage and oil rationing, is the substantial savings in fuel oil needed to heat a home accomplished by the use of single-thick Balsam-Wool in sidewalls and roof of a house.

Dealers, builders, carpenters, furnace men and home owners are all directly concerned with this; and these complete and thorough tests as reported by the Wood Conversion people certainly leave no room for argument about getting every heat-wasteful house properly insulated—and now! Savings, up to one-third, in fuel oil requirement for home heating is patriotic; it is also prudent and thrifty. The War Production Board has joined with FHA to encourage and make easy all such home insulation jobs. Priorities are automatic and FHA financing is approved.

In these test houses, heated with forced warm air furnaces, an accurate record of oil consumed during the heating season shows that in the uninsulated house (A) 1081.8 gals. were burned, in house B, 787.1 gals. (a saving of 294.7 gals. or 27.2%), in house C, 743.2 gals. (a

THESE test houses were built according to standard methods of local contractors; below, installing heating system and louvre.





THE chart at the left shows temperatures taken at points throughout the houses as located on the cross section. To measure these temperatures, thermocouples were placed in 43 positions, as indicated by the figures on this chart. The photos show some of the steps in gathering these accurate data.

←
**TESTS WERE
SCIENTIFIC**

breathing line, and much less heat loss in the attic. All of this means more comfort and more healthful living in the insulated house. It bears out scientifically with proof the common experience we have all had of drafty floors, cold body-heat-absorbing outside walls, chilly upstairs rooms and an overheated zone near the furnace.

The diagram showing cross section of a house gives the actual record of temperatures averaged, for a 24-hour period in the uninsulated house A and the triple-thick insulated house D. Reference to the vertical section at left indicates to approximate scale the relative position at which temperatures were measured, and the average temperature reading is indicated on the horizontal scale, reading from 70 F. at left to -10 F. at right. The lines between points are merely connecting lines for easier reference to plotted points and are not intended to show the complete gradient through the structure. Each plotted point is the average of 6 readings, taken at 4-hour intervals during a 24-hour period. Of particular interest is (a) the lower floor and ceiling surface temperature in the first floor of uninsulated House A; (b) the temperature drop through the first floor ceiling, due to normal temperature gradient on first and second floors and the lower air temperature in the second floor rooms; (c) the small temperature drop through the uninsulated second floor ceiling construction and the corresponding large temperature drop through the insulated ceiling construction; (d) temperatures of the inside surface of the north and south slopes of the roof in both the east and west ends of the attic—the temperatures on the south slope being higher, due to solar effect; (e) the relatively high vented attic air temperature with reference to outside air in both insulated and uninsulated houses.

(Continued to page 75)

saving of 338.6 gals. or 31.3%), and in house D, 734 gals. (a saving of 347.8 gals. or 32.2%). A constant temperature was maintained thermostatically of 70 degrees in the first floor rooms and 68 degrees in the second floor rooms. However, in the uninsulated house (A) it was found that the second floor temperature was two degrees less, or 66 degrees, due to the great amount of heat lost through the ceiling.

In order to increase the temperatures in this uninsulated second floor to 68° it would have been necessary to change the duct work in the house, also to increase the amount of heat in this area. If this change had been made and if extra firing had been used to bring this second floor temperature up to 68 degrees, as in the other three (insulated) houses, enough extra fuel oil would have been consumed to bring the percentage of saving for houses B, C and D up, respectively, to 29.2 per cent, 33 per cent, and 34 per cent.

Another body of data, also, of great interest to dealers, builders and home owners was developed by the extensive temperature readings taken in all parts of these test houses, from basement floor to attic roof. These show the insulated houses to be very much more uniformly heated. There is less heat loss in the basement, greater uniformity of heat in first floor rooms as between floor line, breathing line and ceiling line, a much warmer second floor space both at floor and

Prefab Sections Create Quick Housing

Mass-production plants, woodworking experience used to make plywood panels for floor, walls and roofs

BRINGING to the prefabrication field the woodworking experience gained in more than 25 years of mass-production of doors, three great Pacific Northwest plywood and door manufacturers have tooled parts of their plants to assembly lines for house sections.

Perhaps the one advantage the door manufacturers have over all other firms which have entered into house "manufacturing" is that they have an accumulated knowledge of production with wood, plywood and glue—the three components that go into making the house sections. These things go into doors, too, and each plant has a capacity of thousands of doors a day; these firms have ample capital, equipment, plant facilities and skilled workmen for large scale production of house sections built to exact specifications.

The companies are Wheeler-Osgood Sales Corp. and Buffelen Lbr. and Mfg. Co., both of Tacoma, Wash., and Harbor Plywood Corp.-Acme Door Co., of Hoquiam, Wash.

Basic material used in this system of shop-fabrication is, of course, fir plywood. The stressed-skin principle

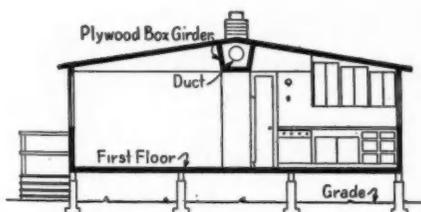
with plywood glued to both sides of light framework is followed. The new system was developed by Kem Weber, Los Angeles, Calif., designer, who is associated with Otto K. Eitel of Chicago for the development of this system. It utilizes pre-built panels of walls, roof and floor, large but light enough to be handled easily by two men. The first house was erected at Tacoma by March Construction Co.

Costs Only \$2,200

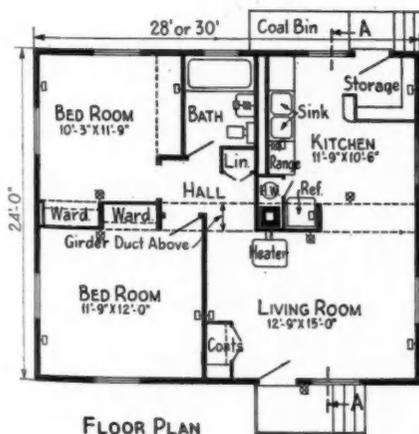
As designed, the house is the type that can answer the critical housing need for war workers and can be erected as single or multiple-unit dwellings. Also, the panels can be formed into dormitories or commercial buildings. The structures can be erected as permanent homes or buildings or be made demountable for post-war movement and re-erection. Manufacturers are looking to the post-war market for stock house sections.

The one-family home, as developed by Weber and Eitel, can be erected by two carpenters and a helper in a
(Continued to page 74)

PERSPECTIVE sketches of exterior and interior at right indicate novel features of Kem Weber prefab system. Note particularly box girder at ridge which supports roof sections and acts as duct for heating and ventilating, and carries most of wiring. Plan and section below show this key point (see construction view at end of article).



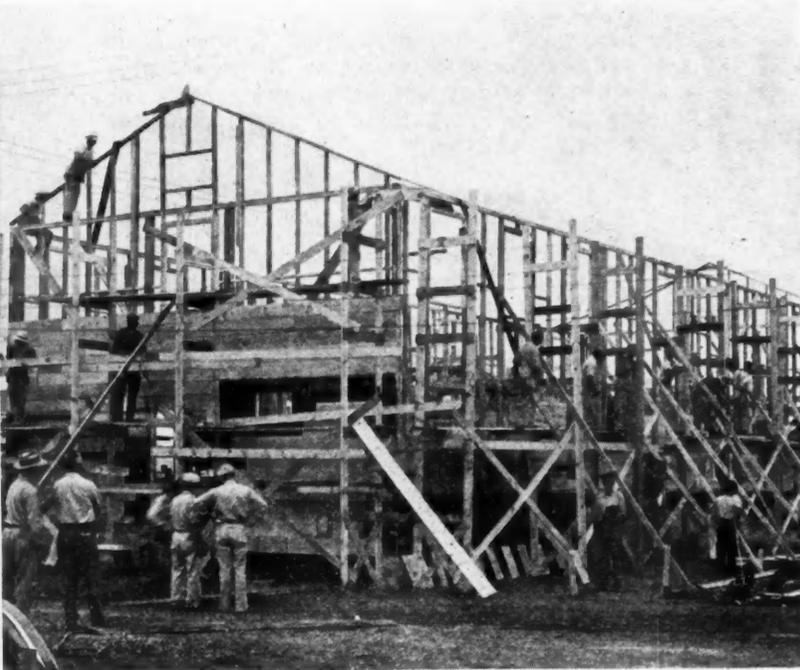
SECTION A-A



FLOOR PLAN



9 A.M.—JOB UNDER WAY 2 HOURS. End areas covered 3 rolls high with asphalt felt; cement asbestos siding partially applied. Width of 1 roll asphalt felt tacked along 80-ft. side. Note crates of plumbing fixtures in foreground.



63-Man Barracks Built in a Day

Aggressive western contractor proves "it can be done" through careful planning and coordination of subcontractors' work. Framing sawed on job with battery of electric saws

BUILD a barracks in a day? It couldn't be done, they said.

To settle this argument the area engineer of a western military post suggested that the contractor try it.

The contractor did, and thereby hung up another record for the nation's wartime building industry.

A building 80 feet long by 29½ feet wide was chosen for the honor. As a sporting proposition, it was agreed that nothing out of the ordinary was to be done in the way of prefabrication, but that the work was to be carried on in the normal manner except for co-ordinated speed of construction, application and installation. Hence none of the framing or other lumber was precut in the shop, but was sawed on the job with a gasoline-powered buzz saw, a battery of electrically operated Skilsaws and the customary handsaws.

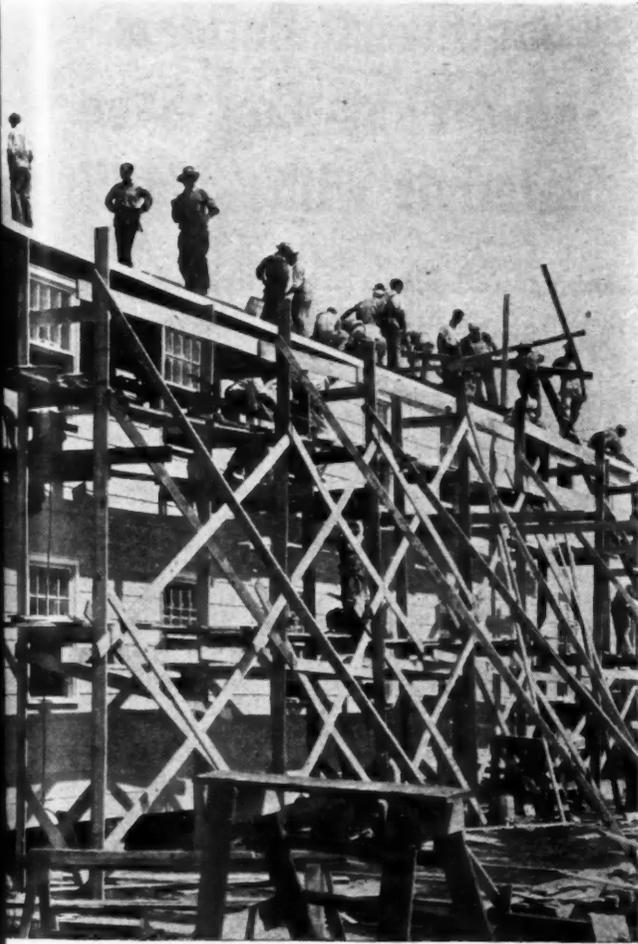
The secret of success was simply careful advance planning, supervision and expert co-ordination of the work

of each trade. Days in advance the job superintendent and subs agreed exactly where, when and how each trade would start and finish, and where, when and how each bit of material would be brought to the job or stored until needed.

Method of Applying Siding

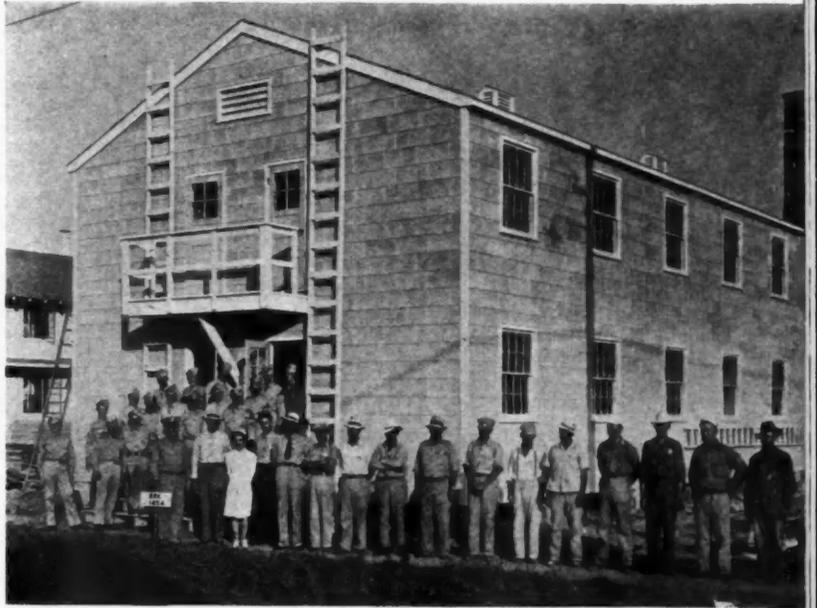
In the case of the asbestos-cement siding, with which many of the barracks are covered, the sub-contractor laid out the job from the drawings before it was built. The specifications called for 47 squares of face nailed 12" x 24" asbestos-cement siding shingles over 15-lb. asphalt felt sheathing paper applied to 1" x 6" T&G sheathing boards.

Instead of starting the first course of siding shingles at the corners with a full shingle, followed by a half-shingle to start the second course in the customary manner, the subcontractor struck chalk lines horizontally



3:30 P.M.—CARPENTERS putting finishing touches on 1" x 6" roof sheathing. Roofers laying asphalt shingles over 15-lb. felt. Siding mechanics are applying asbestos-cement siding shingles around completed window and door frames.

7 P.M.—BARRACKS COMPLETED and accepted by Army engineers. Fire ladders in place and non coms ready to take over.



on the sheathing paper as quickly as each section of wall area was free of carpenters, and also marked off short vertical chalk lines to locate the 3" felt backer strips. Then the first course was started (resting on bottom cant strips) in the center of each clear wall area and extending toward the corners or openings, but keeping away from corners or openings by the width of one or one and one-half shingles.

Thus his men were able to apply siding over the major portion of the exterior walls before the window frames and door frames were installed. As each frame was installed, a man got busy immediately and applied the rest of the asbestos-cement siding shingles to fit snugly around it.

In like manner the applying of the siding shingles up to the building corners was postponed until the carpenters applied the square battens over the vertical corner flashings, after which the siding mechanics nailed the full-sized and half-sized corner shingles in place in jig time.

The subcontractor had 12 siding mechanics working, each man assigned to a definite post with definite instructions. Material had been brought to the job one day in advance and was piled each side of the work. Excavation started bright and early, followed by the masons who laid the cement block foundations. A heavy shower delayed operations for half an hour, but the carpenters swung into action at 7:30 A.M. By 9 A.M. the width of one roll of asphalt felt had been tacked along each 80-foot side of the building; the ends had been covered three rolls high; and about 50 per cent of the sheathed and papered area had been sided.

Plumbers and bricklayers started at 9 A.M. Electricians started at 1 P.M. Ten roofers hopped to it at 2 P.M. At 2:30 P.M. ten painters started. They completed their

work in 4½ hours. The building being covered with asbestos-cement siding there was no siding to be painted. Approximately six gallons of paint were applied to the window casings, doors and door casings, porches, cornices, coal box and ladders. By 7 P.M. the building was 100 per cent complete, passed the final inspection and was accepted by the Army representatives.

In general, the method of speeding construction was for each trade to concentrate on finishing its work in a section of the building to the point where the next trade could start to work, the first trade meanwhile moving as a crew to another section completely out of the way of the trade which followed it. Thus the lower portion of the building was covered with wood sheathing; then the upper sidewalls were sheathed to the lines of the eaves; then the gable ends were sheathed. All this was followed by the siding mechanics who had something like 75 per cent of the wall area sided before the roof rafters were raised.

In fact, there wasn't a rafter in place until after 1:30 P.M., yet all of the rafters and most of the roof sheathing were nailed down by 2:30 P.M., and the roofers were on the job, finishing their work of laying 27 squares of 12" x 36" asphalt shingles over 15-lb. asphalt felt a little after 6 P.M.

Other trades followed similar methods to those used by this contractor. For instance, plumbing supply manifolds at fixtures were assembled away from the job and installed as units; the electricians assembled as much as possible of their cables, outlets, junctions, panels, etc., before entering the building, and so forth.

There was no desire on the part of the Army Engineers,

(Continued to page 73)

Southwest Builders Show They Can Save Materials with "Mud"

Adobe found suitable for farm and other buildings besides homes as example of wartime resourcefulness

ADOBE, now timely because it is non-critical, has long been used in the Southwest for building modern homes in the larger towns and cities. In an earlier day, adobe construction was much cheaper than any other kind because cheap labor could be had, and native builders were employed. In these days, building with adobe is done at about the same cost as building with brick or hollow tile, but adobe continues to be used by some builders on account of its advantages for the southwestern climate. Adobe houses as built by the modern builder usually have walls twelve inches in thickness which includes one inch of plaster on the inside walls, and one inch of stucco on the outside. These mud walls form a very satisfactory insulation, making an adobe house cheaper to heat in the winter, and much cooler in the summer. Another advantage, builders say, is the value an adobe wall has in keeping the noise of the city out of the house.

Leon Watson & Associates in Albuquerque, New Mexico, has opened a new subdivision in which all of the houses are of adobe construction. In these houses the inside partitions, as well as the outside walls, are built of adobe, and adobe is used as in-

LEFT, top to bottom: Concrete floor and foundation of an adobe house by Leon Watson & Associates in Albuquerque, N. Mex., with this sidewall material piled in foreground; walls halfway up being laid with adobe mud, although sometimes adobes are laid in lime mortar; since adobe walls will not hold cement stucco, wire mesh is nailed over outside walls, as shown here; in putting on the adobe roof, 8 inches of dirt are rolled down firmly, allowed to harden, and finished with a built-up gravel surface. Below, finished product, with few critical materials.



sulation for the roof. The houses are plastered inside with the regular cement plaster and stuccoed outside, the stucco being laid over one-inch hexagonal mesh wire that is nailed to the adobe walls outside. The houses range from those of 1100 square feet with four rooms, selling for \$3000.00 to those of 1350 square feet selling for less than \$4000.00, complete. This price includes the lot, 70 x 80 feet, and is the delivered price. Thirty-five or forty homes of this type have been built and sold in this addition.

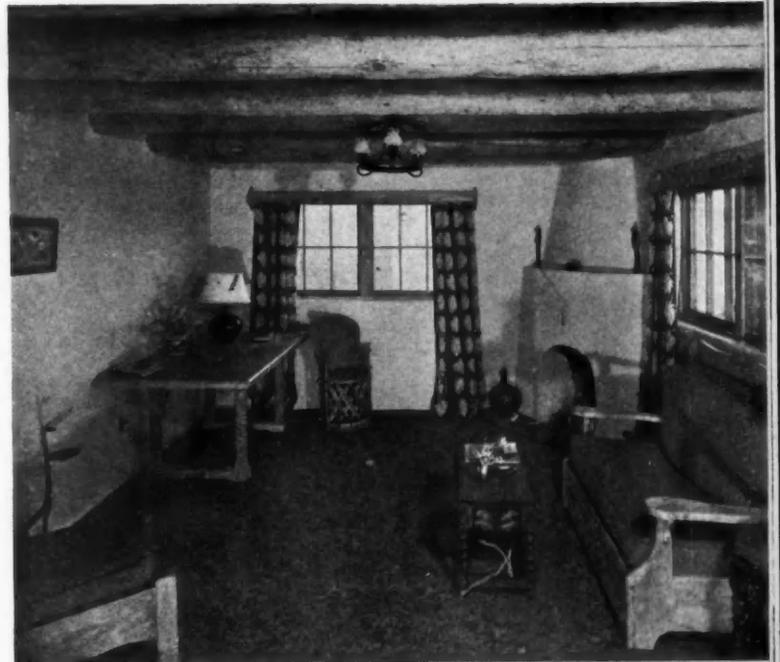
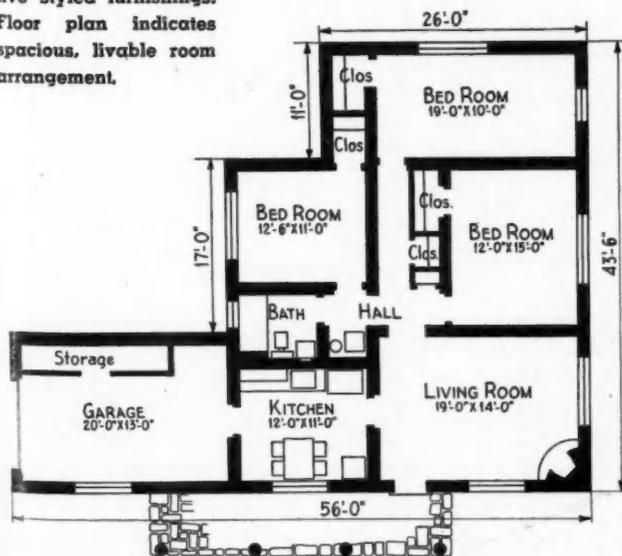
In this development, adobe is being used more extensively than in the ordinary modern adobe home, in that the entire roof is of adobe also.

The ceiling beams are of native logs, or in the language of the Southwest, "vigas," laid from wall to wall and forming not only the ceiling, but foundation for the roof as well. Short boards are nailed to the top of these vigas in a herringbone pattern, and thick building paper is nailed to these to form a solid platform that will hold the adobe dirt. The next step in building the roof is to spread an inch or so of wet adobe mud on top of this building paper, then six or eight inches of adobe dirt is shoveled on and rolled down with heavy rollers. This layer of dirt is then graded to lead the water into "canales" which carry it off of the roof. For the top layer, a coating of adobe mud is applied which has been mixed with a patented oil preparation known as "Bitumules." When this top coating has hardened, it is almost like cement, and on top of this a regular built up gravel roof is applied. The roof when finished is eight or nine inches thick and not only insulates the house, but generally lasts a lifetime.

Adobe houses of this type are acceptable to the Federal Housing Administrator for loans in three states, as noted in the following FHA explanation: "In the three southwestern states of Arizona, California and New Mexico, the adobe house is a native dwelling which is both practical and inexpensive. Since adobe construction is effective in keeping out heat, this type of house is well adapted to the arid regions of the Southwest."

INTERIORS at right: Walls are plastered; ceiling beams, called vigas, support roof boards laid in herringbone pattern which, in turn, take the thick built-up adobe roof. Note the modern equipment which ties in well with the plain surfaces and native styled furnishings.

Floor plan indicates spacious, livable room arrangement.



WARTIME Maintenance & Repair of Buildings

A department devoted to keeping America's investment in structures in efficient condition "for the duration"

How to Lay a "Floating Floor"

Treated Wood over Sand Cushion on Concrete Proving Popular with Plant Superintendents

A GROWING TREND and a forthcoming government action—both of which will profoundly affect the builder's remodeling market—are just beginning to be felt. Analyze these two facts: (1) The War Production Board continues to discourage new plant construction by encouraging greater use of existing facilities. (2) Local industry is due for a spurt in order to supply the commodities that merchants will need after November 15. That is the date that local truckers, retail delivery trucks, and privately-owned vehicles still performing non-essential work will have their trucking-as-usual sharply curtailed. After November 15 no truck can operate without an ODT certificate. Lacking a delivery-distribution system, many products will be confined to the area in which they are made; local industry will be handed the job of making and supplying many of the products formerly made in concentrated manufacturing centers.

Remodeling opportunities are waiting for development within the walls of local shops and plants. Essentially such remodeling is a means of increasing production or adopting facilities to the manufacture of new products. Possession of enough machines and tools is taken for granted—but this alone isn't enough. Production lines

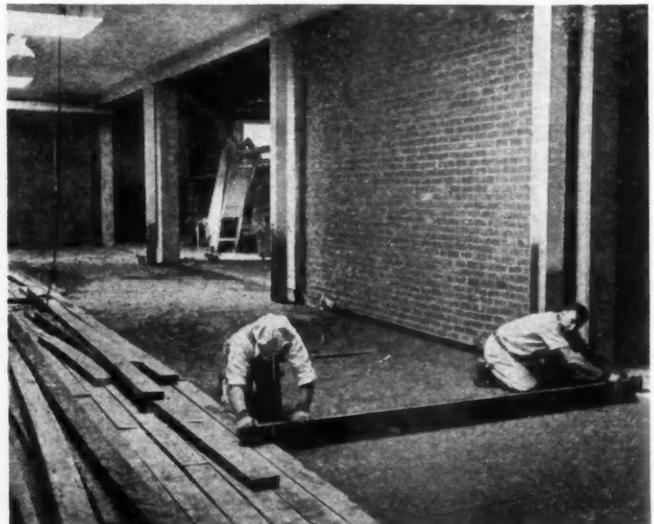
must be changed, heavy equipment moved, trucking surfaces provided—all of which hangs a "welcome mat" out for the plant superintendent, lumber dealer, or the building contractor who can take these worries off the shoulders of plant officials.

If a survey were conducted of plant change-overs made to date on World War II's production front, floor improvements would take a large slice of money spent. Oftentimes holes, disintegrated concrete, and other conditions that make it advisable to reconstruct a floor don't show up until machinery and equipment are cleared away. Frequently it is necessary to install an entirely new floor: the old one may be past repairing; new processes, production and heavier loads require a surface that can stand up to hard usage. Under these conditions, the "floating floor" can be used to advantage. This floor can be used to provide a level surface over an old broken or pitted concrete slab, a restful floor for workers, or a good trucking base.

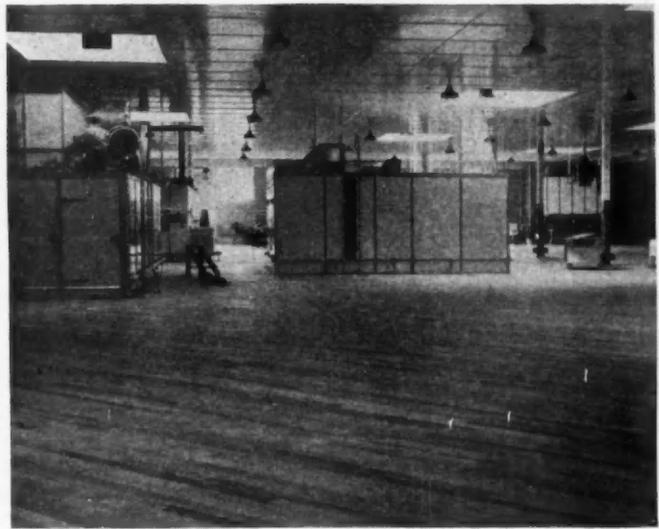
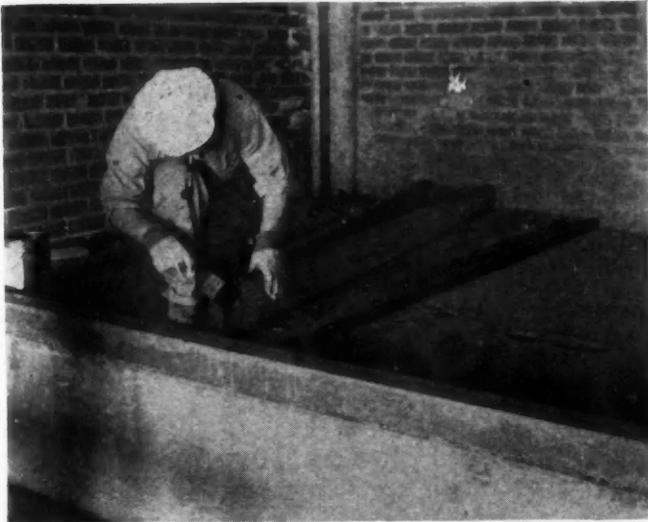
This system, with subflooring laid over kiln-dried sand, uses approximately one-half as many nails as the average floor; it calls for more lumber, but the slightly higher cost is offset by the fact that it is a foolproof floor, especially applicable to light machine shops, baking, print-



IN CONSTRUCTING the "floating floor," the first step is to mop two layers of saturated felt on the dry-clean concrete slab. RIGHT: After the felt has been laid, kiln-dried sand is spread over the



surface and screeded level. This layer of sand acts as a cushion to distribute weight and inhibit sound. On top of it the sub-floor of treated lumber is laid.



AS NO AIR circulation is possible under the finish floor, the subflooring is specified pressure-treated with Wolman Salts or other clean preservatives to prevent decay. UPPER LEFT: a carpenter applies a brush solution of Wolman Salts to cut ends where original protection might be lessened. UPPER RIGHT: The "floating floor" gets its name partly from its cushion of sand and partly from its

subfloor construction. LOWER LEFT: Finish flooring is blind nailed to the subfloor, using one nail in every third plank. LOWER RIGHT: The completed "floating floor" in a bakery plant. Greater resilience, uniformity of surface, high acoustical quality, and freedom from excessive springiness are gained by the use of this floor system. It is growing in use for plant conversions.

ing and similar industrial plants, warehouses, armories, and shipping rooms in factories.

While the conventional resilient floor—hardwood on sleepers and underfloor—is satisfactory for providing a warm comfortable surface over a concrete slab, it often fails to answer the need for resilience plus uniformity of surface, durability, and freedom from springiness.

To combine all these qualities in a simple, easily installed floor, builders in the Southwest recently revised details of the early "floating floor" by ironing out the drawback of decay in the subfloor.

Tests show that the cushion of dry sand effectively distributes weight and that this type of floor inhibits sound reflection almost as much as acoustical treatment in the ceiling. Facility for rapid building lowers labor cost.

In construction, two layers of saturated felt are mopped on the dry, clean concrete slab. Kiln dried sand is screeded level over the waterproofing to a minimum depth of one inch. When heavy loading is not a consideration, one and one-quarter inch by six-inch pine or fir subflooring, laid directly on the sand and in the direction of the short

axis of the room, can be used. Thicker stock is needed in industrial plants subject to heavy trucking, as noted in the specifications of W. E. Long Company, bakery engineers, calling for two-inch material dressed standard to one and five-eighths inch.

Because no air movement is possible under the finish floor, the subflooring is specified pressure-treated with Wolman Salts or other clean preservatives to prevent decay. The Wolmanized subfloor is not nailed up. An expansion seal of soft pitch is poured into a one-inch space left between the floor and the wall of the room. Finish flooring is blind-nailed to the subfloor, using one nail in every third subfloor plank. Here again, greater thickness must be specified if trucking creates considerable mechanical wear. A gymnasium floor can use 25/32 inch maple finish flooring, whereas the industrial food plant needs 33/32 inch maple.

During the making of the cinema production "Fantasia" at the Walt Disney studios in Hollywood, engineers built a "floating floor" to obtain a perfectly level surface, essential for difficult photographic effects that require the use of high camera stands on wheels. Disney's

photographers are sure of their angle when moving two-ton camera trucks over this floor, and the technicians of the sound department noted a decrease in the acoustical problems.

The degree of actual resilience obtained can be measured by the fact that basketball coaches and gym instructors have reported fewer cases of sore ankles when training teams on such floors. This cushioned firmness, spread over the entire floor surface by the layer of sand, allows the floor to absorb part of the shock normally transmitted to the arch and ankle of the foot by a non-resilient structure. The severe pounding taken by the feet of an athlete in a game or daily work-out may seem to

be an extreme case, but is actually not much greater than that of the plant employee who is on his feet all day.

Industrial workers say that trucks are moved with less effort on the "floating floor," as compared with the conventional sleeper floor. The explanation is found in the fact that the "spring" in the floor between each sleeper actually makes the trucker push his load over a series of small hills.

In plants where sanitation requires that the floor be washed down nightly with water, this construction with its treated subflooring is being rapidly adapted to eliminate decay. Wood blocks, imbedded in mastic, often buckle under such conditions.

Answers to "Repair and Remodel" Questions

REMODELING to house war workers, repairs to maintain property, and installations to conserve heat and fuel are three types of work for which the FHA is insuring loans during wartime under the Title I program, according to Abner H. Ferguson, Federal Housing Commissioner.

"Because these three types of work have an important place in the war effort, they are exempted from some of today's restrictions on materials and credit," Mr. Ferguson states. "Creating suitable housing for war workers, conserving fuel, and maintaining the nation's \$80,000,000,000 property investment are the present objectives of loans made on the FHA's Title I Plan."

FHA has prepared the following questions and answers for the use of property owners who wish to remodel and repair under wartime conditions:

How Much Can Be Borrowed?

How much money can be borrowed for repairs and maintenance work?

Ans.: Loans for such work may be obtained from FHA insured lending institutions in amounts up to \$2,500.

How soon must these loans be repaid?

Ans.: Repair loans are subject to installment credit rules of the Federal Reserve System and those under \$1,500 must be repaid within 12 months. An exception has been made for essential emergency repairs to allow up to 3 years for repayment.

What sort of repair work is permissible?

Ans.: Work such as painting, papering, repairs to plumbing and roofing or any similar repairs that are necessary to keep property in good working condition. Luxury repairs or improvements merely to beautify a home are not approved. Repairs also must be of a nature that does not change the structural design of a building.

Can repairs of this type be made anywhere in the country?

Ans.: Yes.

What about loans for improvements that will reduce fuel consumption, such as conversion of oil burners to coal units, insulation, storm doors and windows and weatherstripping?

Ans.: FHA loans may be obtained to finance such conversions and installations. Loans for such purposes have been exempted from the Federal Reserve Board's consumer credit regulations and may run for as long as 3 years.

Must the owner obtain permission from WPB before undertaking such fuel conservation measures?

Ans.: No.

What about loans for remodeling to provide additional living quarters?

Ans.: FHA loans for this purpose are available in amounts up to \$5,000 for as long as 7 years. They are to be paid off in monthly installments.

What are the conditions under which a remodeling loan will be granted?

Ans.: To qualify for a loan, a remodeling project must be located in an area where the housing situation for war workers is critical, and must be made with a view to providing living accommodations for war workers. Applicants for loans must certify to the bank or other private lending institutions that for 60 days after his project is completed he will give first call for occupancy to war workers.

Who are considered war workers?

Ans.: Members of the armed forces, persons employed in plants producing war materials, or employees of agencies of the Government that are engaged in war work.

What is a critical war housing area?

Ans.: It is an area designated by the President as having insufficient housing accommodations for war workers employed nearby.

What type of construction can be undertaken with a remodeling loan?

Ans.: Attics, basements and other unfinished spaces may be converted into finished rooms or apartments and additions and alterations may be made to existing buildings. A building not used as a dwelling may be remodeled into a single or multi-family house.

Is WPB Permission Necessary?

Must an owner obtain permission from the War Production Board for remodeling or repair work?

Ans.: WPB authorization is necessary in a remodeling project unless the total cost of the improvement is less than \$200. The WPB must also give priority assistance where the purchase of critical materials is required. Maintenance work and essential repairs that do not change structural design are permitted without WPB authorization. Applications for WPB preference ratings and authorization to begin construction can be filed with local officers of FHA.

Why does Government encourage remodeling projects for war workers?

Ans.: Because the President has said that existing structures are being counted upon to absorb a large proportion of the 1,600,000 war workers who need housing. Remodeling requires a much smaller amount of critical materials than new construction.

Where can repair and remodeling loans be obtained?

Ans.: The credit facilities of more than 5,000 banks and other lending institutions are available under FHA's lending program. Any FHA office and almost any local bank or financial house can provide information about loans.

**WARTIME REPAIRS,
MAINTENANCE, AND
BUILDING UPKEEP**



WHITE concrete floor reflects light to underside of work in this huge bomber assembly plant.



WHITE CEMENT topping being applied over grey concrete base. Can be applied to new or old floors to provide clean, light-reflecting surface that conserves power, increases production.

**White Cement Floors
Speed War Production**

**See wide application to factories,
food plants, stores, offices, hospitals**

AN IMPRESSIVE new development in wartime construction which has opened a large new field of jobs for builders is the use of white cement floors.

White cement floors got their first big test in a number of huge bomber plants where it was important that light be reflected to the underside of working surfaces. So successful have they proved that their use is now rapidly spreading to hundreds of other types of structures.

In a new study by engineers of the Universal Atlas Cement Company to be released shortly as a technical bulletin, striking facts are presented about the savings in electricity, lamp installations and labor through use of white cement. Tests of white concrete floors in use in bomber plants show that 61 per cent less light was absorbed than by grey concrete. It was found that the slight extra cost of the white concrete was soon paid for by the savings in power alone.

Even under wartime restrictions this development in white cement floors has opened a wide new range of jobs for builders in both old and new installations. The re-topping of old floors where production, conservation, lighting, sanitation and safety are important may prove a good source of business. The installation of white cement floors is particularly adaptable to such structures as dairies, food plants, warehouses, hangars, hospitals,

offices, shops and in corridors, basements and stairwells.

Usual practice is to apply a one to two-inch layer of white cement over either an old or new floor. Tests over a period of years have shown that the floors are as resistant to traffic and abrasion as grey cement, and are easily kept clean. A large use is foreseen in home recreational room floors.

An interesting phase of the Universal Atlas study was the relation of work surfaces in factories to their background. Research clearly showed that war workers produce more effectively and with less eye strain when there is a minimum of contrast between the work in hand and the surrounding background. White cement floors, it was shown, reduce contrast by providing a background with a degree of brightness similar to most of the materials on which work is done in industry.

Recommended Practice

Following is the recommended practice and specification procedure for white cement floors:

The white cement concrete floor finish may be placed after the concrete base has hardened or while it is plastic. The first method is preferred, as the finish is then put on after other building operations have been completed, and

it is less likely to be damaged or discolored. Satisfactory results can be secured by either method if the concrete base is properly prepared. White cement concrete floor finish may also be used for resurfacing old concrete floors. In case the same floor level is to be maintained, one inch of the old finish could be removed. If, for any reason, it is not advisable to remove the top one inch of floor and the floor level does not have to be maintained, consideration should be given to placing a new two inch slab on top of the old floor and reinforced with wire mesh weighing not less than thirty pounds per 100 square feet.

The white cement concrete finish should be not less than one inch thick whether it is placed integral with the concrete base or after the concrete base has hardened.

Preparation of Hardened Base—In new construction, the base course should be brought to grade not less than one inch below the finish grade, and the surface should be reasonably true. It should be brushed with a stiff-bristled broom, after it has partially hardened, removing all laitance, loose particles and scum, thereby creating a better surface for bond by exposing the aggregate and scoring the surface. If it is impossible to remove the

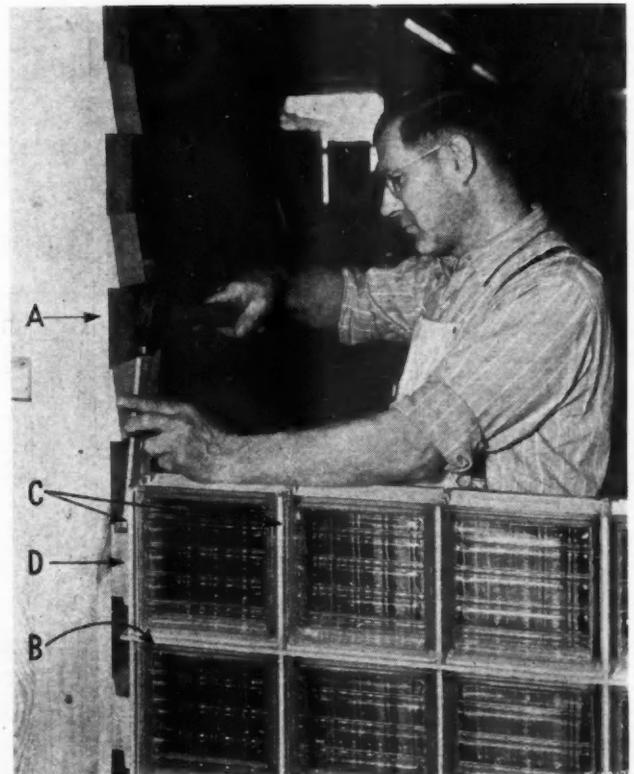
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Demountable Glass Block Partitions for Stores, Offices, Homes

WARTIME conversion or subdivision of offices, stores, commercial buildings and living quarters will be aided by this new idea in demountable glass block partitions. Under a system developed by engineers of the Insulux Division of Owens-Illinois Glass Company, glass block partitions may be quickly erected and as quickly demounted. Keystones of the system are prefabricated wood strips and wedges, delivered in packages.

Construction of the glass block wall has been reduced to the simplest procedure. The blocks are held in place by the wood separation strips with raised edges which fit snugly into flutings in the glass.

Since no critical materials are used the partitions offer a new source of war business for builders. They may be used to convert an oversized room into an extra bedroom for a war worker, or an oversized office into space for several smaller units. Extensive use is also seen in restaurants and grills, shop windows, commercial structures and in service halls and corridors.



BUILDING a new glass block partition is a matter of a few hours' work, using prepared wood strips and blocks. Wood frame (A) is first selected. Special wood mouldings (B and C) hold blocks in position. Prepared wedges (D) lock blocks in place. Partition may be quickly demounted, is expected to fill need for extra rooms in stores, offices and homes.

Low Cost Farm Homes in the South

Basic planning for Alabama community dairy project adaptable to other areas under present restrictions

A GROUP of extremely low cost houses, as designed by the Farm Security Administration for a group dairying project, was recently erected by the Bear Lumber Company of Montgomery, Ala., in Lowndes County near that city. While the houses seem to represent pretty well the government concept of a home for the small tenant farmers of the South, the planning could be adapted to privately built farm dwellings in warm locations and with a few changes could be used almost anywhere.

Some 75 of these houses were erected on this project known as Grassland Farms, all three-bedroom type without baths, outdoor pit toilets being provided. The roofs (with composition roll roofing) are extremely flat,

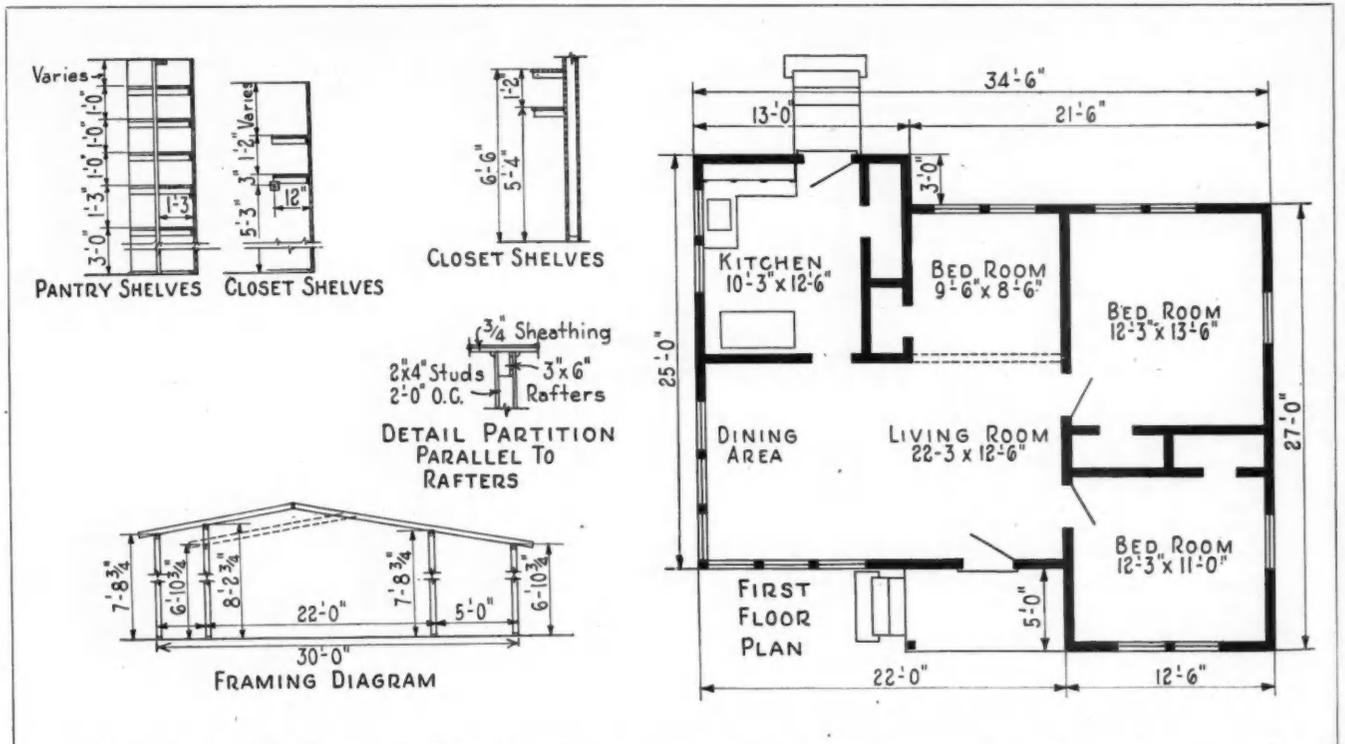
so that the roof decking serves as ceiling for the rooms. The rafters which are exposed in the rooms are 3" x 6" on 3' centers.

The Bear Lumber Company pre-cut much of the framing for the houses in its own shop before trucking the materials to the job. In this way quantity production methods were realized.

Concrete footings of the houses, including also the chimney to foundation level, were poured by machine. The houses are set on face brick piers and without curtain walls. Exterior walls are either of vertical boards and battens or redwood shingles. Front and back entrance stoops are of wood with wood steps.

Other distinguishing characteristics of the houses

COMPACT three-bedroom plan has multi-use dining - living - sleeping area, two other bedrooms and kitchen. Kitchen projection can be extended further to rear at slight extra cost. To plan for future additions, bathroom and connecting hall space could be left between bedrooms by making the plan deeper.



Add to Milk Output for Lend-Lease

Precut framing, minimum of equipment and critical materials can keep costs within war limitations

include corner windows in groups of threes, gypsum board interior walls and pine floors. The houses have no chimneys but the living room of each house is served by a sheet metal flue for a coal or wood stove.

The houses are built in small groups of 15 to 20 each, so the cost of providing water (from wells), roads and other facilities was held to a minimum. Each dairy farmer has his own smokehouse, also small plot of land for individual crop and garden. Most of the land, however, is devoted to pasture land for dairy cattle which are fed and milked in community barns. There are some exceptions where farmers own their own cattle and milk them, but make use of the community pasture.

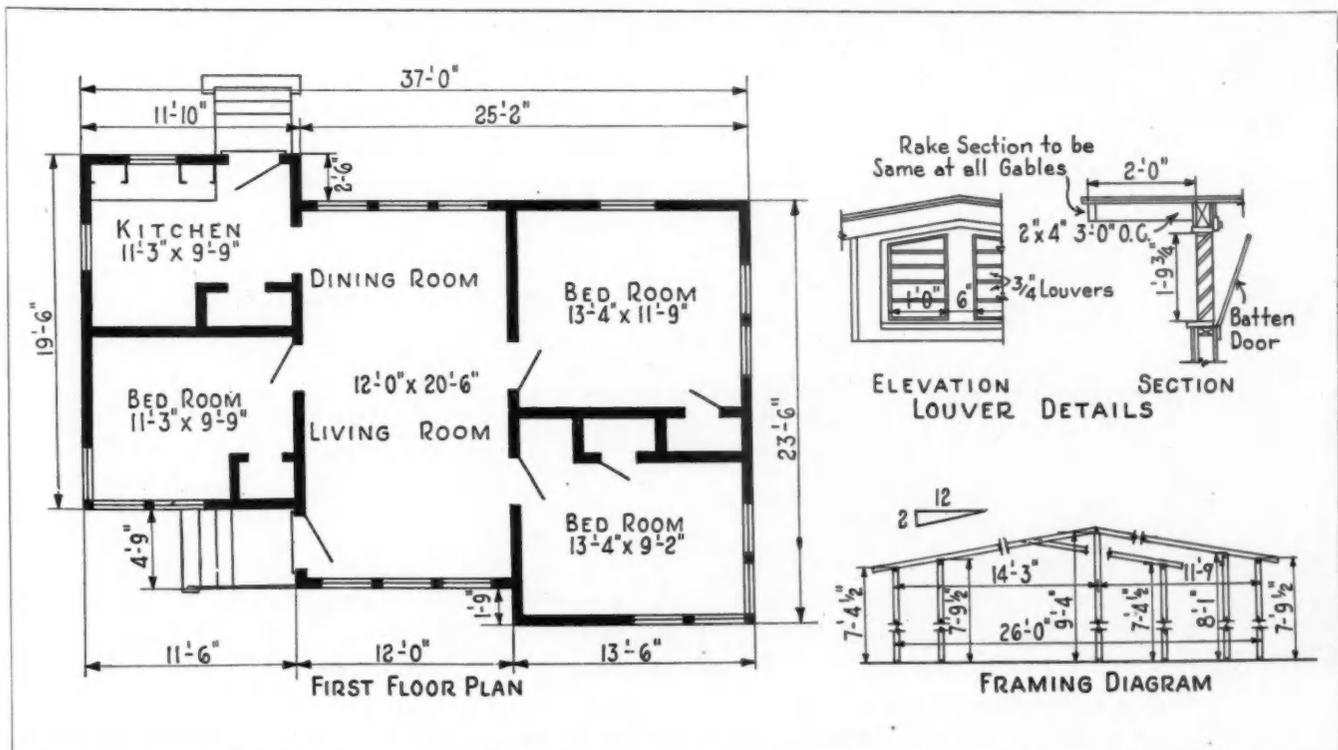
"In beginning this project," said E. S. Morgan, south-

eastern regional director of the Farm Security Administration with headquarters in Montgomery, "we had two objectives in mind. We hoped to work out a system of agriculture that would allow these families to make an independent living, using the land for the kind of agriculture for which it is best suited. Secondly we desired to increase the production of a commodity for which there is now a ready market. The milk moves from our cooling station to two condensaries which are now supplying some lend-lease demands.

The Grassland Farms project occupies a 12,331 acre area formerly devoted to cotton, but on account of boll weevil infestation in recent years cotton culture is no longer profitable.



ALTHOUGH living-dining room serves as traffic artery, this plan has advantage of good cross ventilation through this room, important for southern climate. Exterior of redwood shingles contrast with other homes as shown opposite, covered with combination of boards and battens and some horizontal siding.





IN A TROPICAL setting these Seabees march to their construction job equipped either to work or fight.

FOR ACTION— Join the Seabees

New Construction Battalions of U.S. Navy are doing vital jobs in distant bases. Skilled building men up to 50 years old wanted

By Joseph B. Mason

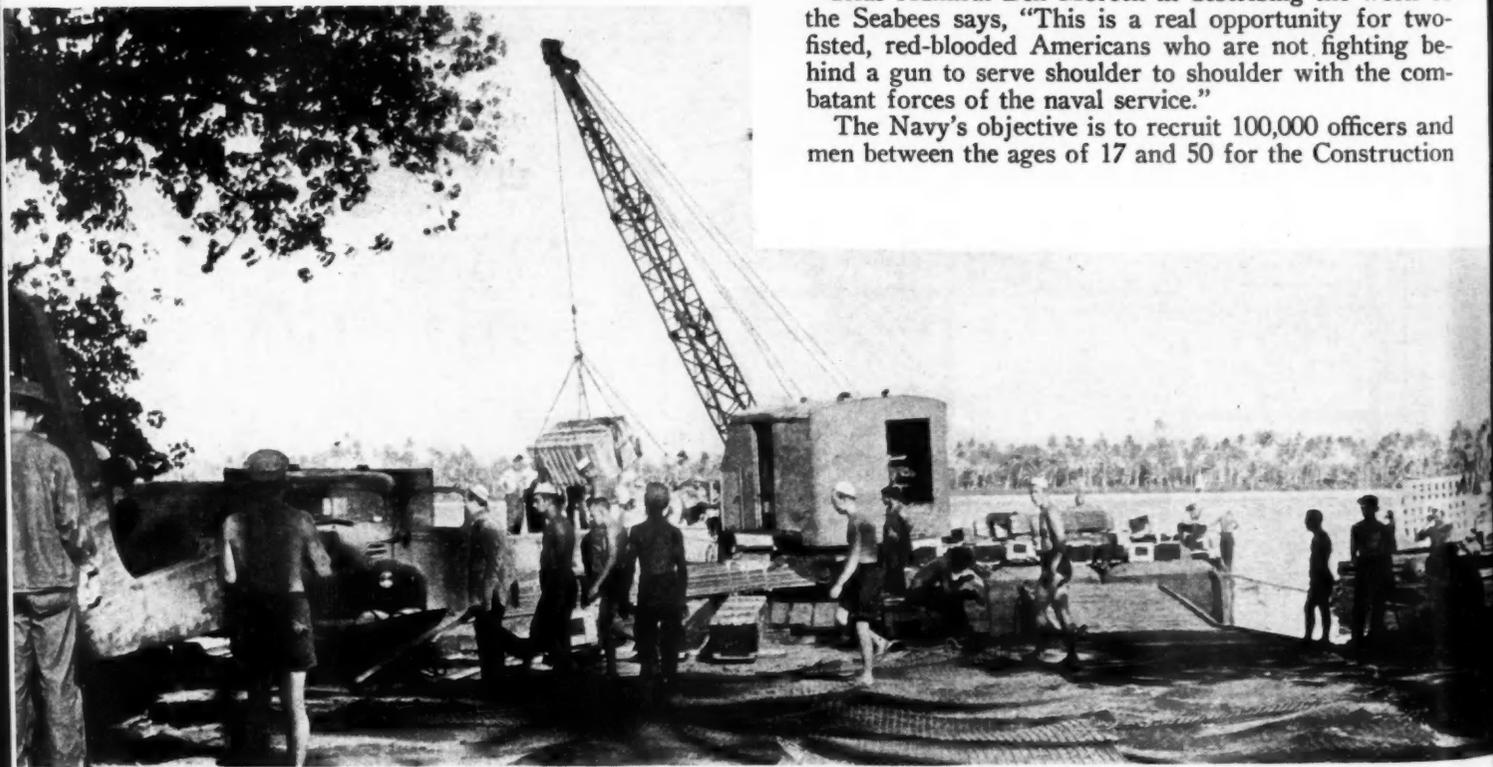
THE Navy's new Construction Battalions are made up of men who are willing to build and fight. Officially called the Seabees, these Construction Battalions are being recruited for immediate service on foreign shores.

There is scarcely any other branch of the Army or Navy that has so quickly caught the imagination and interest of building industry men as these new Construction Battalions. For they provide action and excitement aplenty.

One of the first of the Seabee Battalions was dispatched to a distant South Pacific island, where they landed close on the heels of the Marines and immediately went into action building docks, roads, runways, barracks, hospital units, power plants and a host of other structures. For a time they lived a real jungle existence—drank coconut milk and went spear fishing at night with the natives. They were equipped with guns to protect themselves in case of attack.

Rear Admiral Ben Moreell in describing the work of the Seabees says, "This is a real opportunity for two-fisted, red-blooded Americans who are not fighting behind a gun to serve shoulder to shoulder with the combatant forces of the naval service."

The Navy's objective is to recruit 100,000 officers and men between the ages of 17 and 50 for the Construction



AT A SOUTH PACIFIC BASE the Navy's Construction battalion unloads heavy equipment, first laying wire mats so it will not bog down in the unstable footing of a tropical beach.



FROM CIVILIAN construction work to the Navy's Seabees these men went. Here they are inserting sticks of dynamite to blast a stump out of the way.

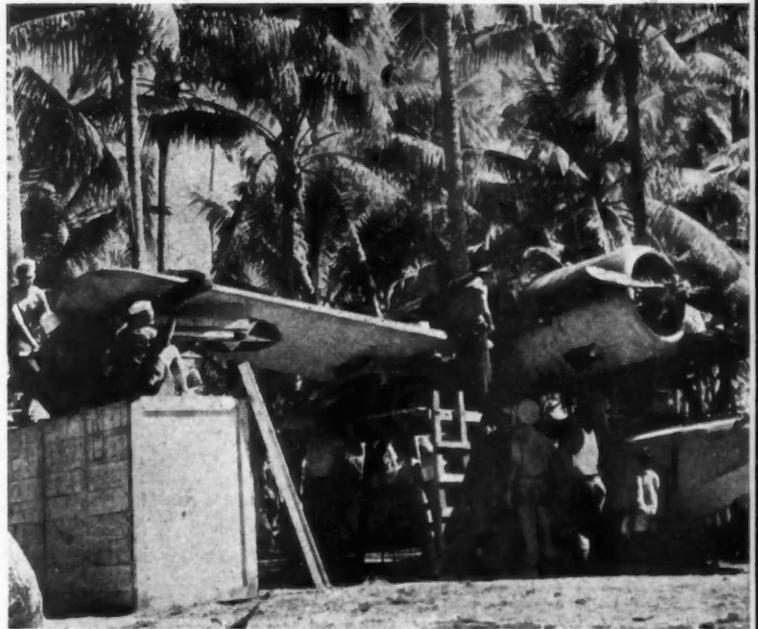
Battalions. In each construction company there are 60 unskilled men (laborers) enlisted as first and second class seamen. The balance of each company includes a wide variety of trades and occupations, including carpenters, electricians, shovel operators, crane operators, pipe fitters, steel workers, painters, truck drivers, welders, etc.

Applicants for enlistment are interviewed by officers of the Civil Engineer Corps and are thoroughly questioned as to their experience in their trades. Men who qualify are enrolled in Class V-6 of the Naval Reserve and are eligible for ratings from second class seamen to chief petty officers, with salaries ranging from \$54 to \$126 a month. Every man who has a rating of petty officer second class or above is eligible for an allowance of \$37.50 a month for dependents. Men with ratings below P.O. 2c are eligible for allowances which vary with number and nature of dependents.

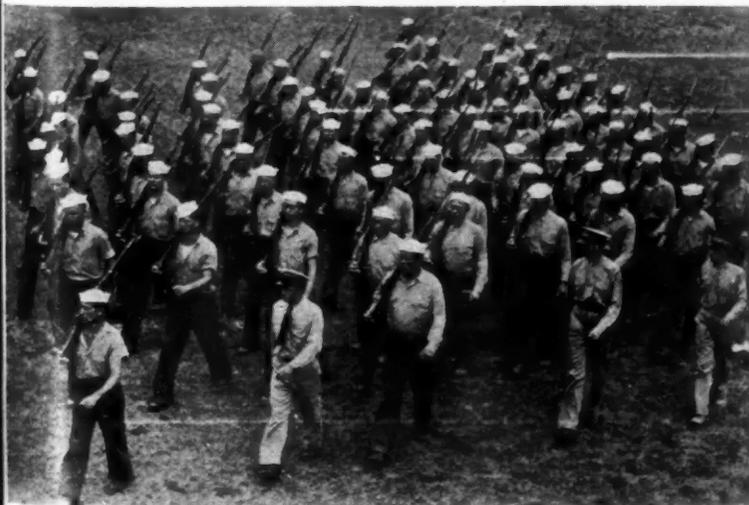
Prior to Pearl Harbor the Navy's construction work was largely done under contract by private builders with the Bureau of Yards and Docks. The fast moving "global war" has, however, shown the need for well-equipped Construction Battalions that are a part of the fighting Navy. As the great naval strategist Admiral Mahan has
(Continued to page 78)



SEABEES unload coral rock at one of the Navy's newest South Pacific bases as they build a road or runway.



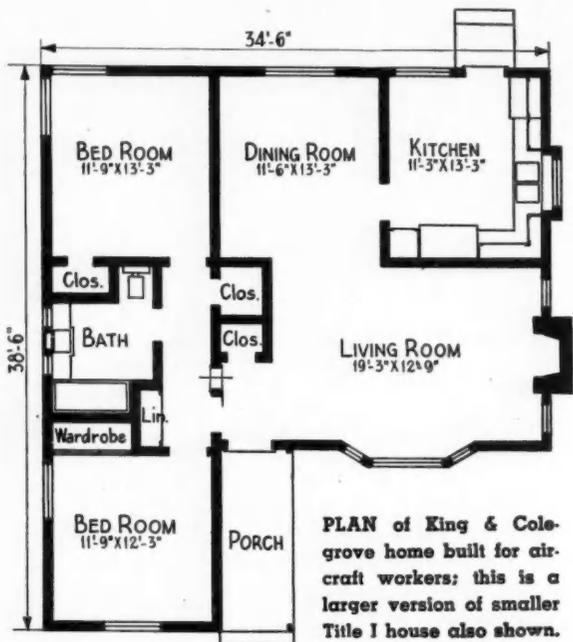
IMPROVISED PLATFORMS are constructed in this jungle base to assist the workmen in attaching wings to a Navy plane.



"BUILD AND FIGHT" is the motto of the Navy's Seabees. At left, a group in training at Norfolk, Va., is seen. At right, seabees clad in green camouflage overalls are seen "swabbing the deck" in front of their Quonset huts.

How California Aircraft Workers Got Good Homes at Substantial Savings

BELOW, typical Whittier Park Title VI stucco design. Note rain water diverter placed above the front entrance steps.



King & Colegrove, operative builders, cut costs of Title I and Title VI homes in Whittier Parks; use planned production, basic plans, leased lots

model home on tract at all times. Quantity stocks of paint, lumber, medicine cabinets, shoe racks, etc. were maintained in a large warehouse on the premises. Here too, window frames were cut and assembled.

All construction work was on a sub-contract basis. Painting, rough and finish carpenter and shingling crews could not work elsewhere. However, this requirement did not apply to plumbing, plastering, electrical crews or cabinet installers. Crew foremen were required to keep in close contact with operations so that they could allocate work in sequence. Construction was scheduled to keep crews in the various trades moving so there was no slack in operations. It is estimated that a crew roughed in a small house in two days. At peak eight crews were employed at the site, with from four to seven men in a crew.

Variation Achieved with But Few Plans

Title VI houses have eight different elevations. Four of these stock plans are also adapted to small Title I dwellings. Houses of the same design, however, were never placed in adjoining lots, but on opposite sides of the street and were varied by different window treatment and bandsaw details or were given a different roof pitch or broken up by varied color combinations. The tendency was to give one bedroom a choice of wallpaper or special texture finish walls. Kitchens are laid out in (1) Pullman arrangement with utilities and cabinets in a straight line; (2) horseshoe type, considered the most popular; (3) with sink under corner windows.

Some kitchens are equipped with built-in spice cupboards over stove. Made-to-order kitchen and linen closet cabinets have chopping boards and bread boards and sort-

OUT of a group of 125 homes at Whittier Park Estates, near Vultee aircraft plant and the new Douglas factory at Long Beach, Calif., 40 Title VI houses have been constructed by King & Colegrove, builders and developers, ranging from \$3,795 minimum, to \$4,695 maximum. This company has built over 500 homes, mostly two-bedroom type, in less than four years; all houses, including those under Title VI, have double garage. Price covers house and lot, FHA and escrow costs, fence, landscaping front (lawn and shrubs) and grading rear. Lots are from 50 to 60 ft.; landscaping is a practice common to all houses regardless of price. In addition, some 40 houses were completed under Title I, Class 3, on a leased lot classification plan built to sell for \$3,370.

These builders had discontinued contract work and switched over completely to operative building with a

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ing slide for linen. Other details include cedar lined closet in at least one bedroom; wood wainscoting or plaster mold in dining room; fireplace except in smaller bracket houses. All Whittier Park houses are built according to the same structural specifications. The same materials are employed throughout. Price difference is accounted for in land value; lot size and location and the elimination of extra details. For instance, in minimum Title VI (smaller houses under Title I also) wall space and floor area are reduced to a minimum and there are fewer cabinets, thereby cutting down on the paint; a minimum amount of tile is specified; there is an absence of upholstered dinette. Providing table space in kitchen, with window outlook, eliminates the necessity of such a facility and again cuts basic construction cost. Double doors are used in place of sliding doors for wardrobes which are equipped with metal shoe racks. This is another economy feature. The use of a standard door set in a plaster opening for the linen closet also results in lower construction costs, while space-saving plans further call for eliminating service porch and the placement of laundry tubs in an attached garage. The expediency of attaching the garage to the house, incidentally, effects a saving of about \$110 alone in construction costs. Water heaters are installed in a separate compartment high up from the kitchen floor with an asbestos hood as a protection at the top, and a lower section that serves as a broom closet.

Economies Allow Quality Structures

These home planners also economized in the bathroom by utilizing tile trim instead of a tile wainscoting around tub. Such short cuts, which trim basic costs, enabled the builders to offer houses at minimum that compare in structural specifications with the higher-price group. In minimum Title VI houses also, King & Colegrove experimented with the use of enamel finish fibreboard panels around tub and shower. These plain surface panels extend about 4' above the tub. Plumbing fixtures are chrome trimmed. There are no porcelain appointments.

Whittier Park Estates is laid out with rolled curbs to give streets a wider perspective, a more attractive appearance and to eliminate breaking-out curbs when driveways are set in.

Structural specification highlights for these houses under both Title VI and Title I include:

Exterior: Stucco with wood trim. This style is considered best adapted to Southern California living. No. 1 redwood siding trim.

Foundation: 16" continuous concrete.

Walls: Solid wall construction—2 x 10 joists—no span over 14'.

No. 1 grademarked lumber.

1 x 6 diagonal subfloor laid under 1 x 3/8 red quarter-sawn oak.

Detailed casing around doors and windows. (No "bull nosing.")

Roof: No. 1 cedar cross-cut shingles.

Graves sash balance used for all windows.

Plumbing fixtures: Standard, Crane, Washington-Eljer.

Heating: Mission water heaters and floor furnaces.

Venetian blinds for living and dining rooms and all windows with metal screens.

Bathroom and kitchen floors covered with linoleum.

All houses with metal shoe racks and metal medicine cabinets.

Hardware: Standardized pattern used throughout (local manufacture).

Tile: Pacific Tile and Porcelain.

Paint: DuPont only. Builders stock in quantity and issue to paint crew.—S. A. Lewis.



EXTERIOR and plan of Whittier Park Title 1, Class 3 house; lot is furnished on a 30-year lease, with an option to the owner to buy.



THIS Whittier Park design by King & Colegrove is one of the smaller houses being built under Title I.

SERVICE TO READERS

EACH ITEM in this department is numbered for convenience of readers. Please use coupon on this page for requesting further information or new catalogs. Mail coupon to American Builder Reader Service, 105 W. Adams St., Chicago; or write direct to these manufacturers mentioning your profession, occupation or connection with building industry.

NEW TOOLS, MATERIALS AND EQUIPMENT OFFERED

AB950 Wappat portable electric hand saws are presented in a new Bulletin S-6, from Fred W. Wappat, 7323 Penn Ave., Pittsburgh, Pa. Users of portable electric hand saws can increase the efficiency of these tools by the use of simple, labor-saving rigs described and illustrated in this bulletin. These rigs are easily built of stock material. Typical is a jig for squaring and cutting partition studs to length and making angular or jack rafter cuts. By using two or more jigs, these cuts can be made with production line speed and economy.

AB951 "Homasote Precision-Built Homes" is a new two-color brochure, 16 pages, well illustrated, from Homasote Co., Trenton, N.J. It makes a very complete presentation of the historical development, present status, and future possibilities of prefabricated houses according to the Homasote "Precision-Built" system. Some of the lessons learned in wartime housing are discussed for the benefit of civilian home building in the pre-post-war and post-war period.

AB952 Anthracite Industries, Inc., Chrysler Bldg., New York City, has issued a number of very helpful booklets and instruction data sheets to assist in the present fuel oil emergency. Bulletin L40, "Special Grates for Conversion from Oil to Anthracite," is an illustrated handbook of 16 pages and covers, presenting the recommendations of the Anthracite Industries Laboratory, which is a testing and experimental service headquarters for the coal producers. A companion piece of 8 typewritten pages (Report No. 3121) is entitled, "Suggestions for Conversion from

Oil to Coal." A recent copy of the "Laboratory Bulletin" (No. 23) is a 12-page data sheet entitled, "Securing a Maximum of Satisfaction from Anthracite Burning Equipment, Including Heating Inspection Charts for Steam, Vapor, Hot Water, and Warm Air." These charts, 3 in number, show cross sections of homes and indicate adequate and inadequate installation features for steam, hot water, and warm air.

AB953 "Hand-Firing of Bituminous Coal in the Home" is an illustrated booklet, 36 pages and covers, issued by the University of Illinois Engineering Experiment Station, Urbana, Ill. It is the University Bulletin of Sept. 15, 1942, and is No. 46 of the Experiment Station "Circular Series." This is a timely bulletin explaining in non-technical language the principles involved in the combustion of bituminous coal, commonly known as "soft coal," and describing the best methods of firing such coal so as to obtain the maximum of smokelessness and economy.

AB954 Flintkote Cold Process Roofing is thoroughly and attractively covered in a new 20-page data sheet or handbook, entitled, "Built-up Roofs Applied Cold!" The sub-title indicates clearly the contents, "A complete service for 'flat' roofs, including roof maintenance, re-roofing and new construction." Numerous typical installations are illustrated, and specifications are presented, the text of each specification being further clarified by means of pen and ink drawings and close-up photographs showing installation details. This new handbook is issued by the Flintkote Co., 30 Rockefeller Plaza, New York City.

AB955 Barrett's "RPM News" is a helpful new periodical from The Barrett Division, 40 Rector St., New York City, for circulation to lumber, building supply and hardware dealers, as well as to roofers and shingle applicators. The first issue is an illustrated 8-page newspaper, tabloid size. The R, P and M of the title stand for Repair, Protect, Maintain, and clearly indicate the scope of the publication. It presents sound and helpful advice and roofing pointers most attractively. Another new offering by Barrett is the "Reference Manual for Architects and Engineers"—72 pages, hard covers.

AB956 "Floors That Endure by Tile-Tex" is a new 12-page brochure in full color from the Tile-Tex Co., Chicago Heights, Ill. It presents specification data on Tile-Tex resilient flooring, both for homes and for commercial buildings. A wide line of color patterns and many decorative color suggestions are included.

AB957 A new panelboard catalog (Bulletin No. 67) dated Oct. 1, 1942, has been issued by the Frank Adam Electric Co., St. Louis, Mo. It is a book of 36 pages. It gives very complete data on the Frank Adam panelboards and cabinets of several types.

AB958 "Do's and Don'ts of Fuel Saving" is a clever little mailing piece booklet from The Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., giving pointers for the individual home owner or householder—some simple commonsense rules that do not involve the more elaborate and costly fuel-saving means that research has developed. Each of the twenty rules given is attractively illustrated.

AB959 "Hollymade" cabinet hardware and plastic door knobs and locksets in the modern streamlined manner are attractively presented in three new data sheets from the Pacific Plastic and Mfg. Co., Inc., 5446 Carlton Way, Hollywood, Calif.

AB960 Wilson rolling wood doors are presented in a new 4-page data sheet from The J. G. Wilson Corp., 370 Lexington Ave., New York City. This is headed, "Save Steel; Use Wilson Rolling Wood Doors to Meet Requirements of the War Program." The availability of these wood doors for the construction and maintenance of all war facilities is stressed. Construction, dimensions and specifications are included.

AB961 "America's Forests," first of two books for school use published by the American Forest Products Industries, Public Relations Department, 1319 Eighteenth St., N.W., Washington, D.C., is off the press. This will be supplied in quantity free to all teachers and schools requesting it, to members of the forest industries, or to other interested inquirers. It is an attractive illustrated booklet of 44 pages and covers, suitable for use in 7th, 8th and 9th grade classes. A sequel to be entitled, "Trees for Tomorrow," will tell how the forest industries are making progress in reforestation.

SERVICE COUPON—CLIP and MAIL to CHICAGO

Readers Service Department,
American Builder,
105 W. Adams St., Chicago, Ill.

(November, 1942)

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

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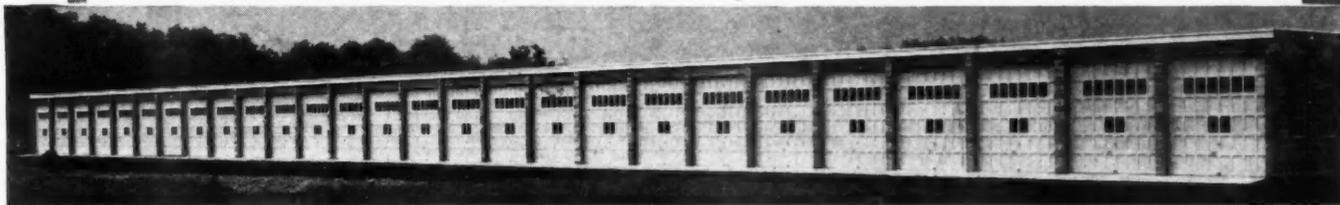
THEY HAVE
what it Takes to Win!

"QUICK in Action"

"QUIET in Operation"

"TOUGH in Service"

"TRIM in Appearance"



State Armories, Framingham, Mass.
 Equipped with 54 Ro-Way Doors. L. Santucci, Arlington, Mass., Contractors.

These are the qualities you want in Overhead Doors, too. That's why you will find in use in the Armed Services and in essential War Industries so many...

Rō-Way Overhead Type Doors

There is a model of Ro-Way Door to meet every service requirement, just as there are trained men for every type of combat. Like the men of our Armed Forces, *performance in action* has won the esteem of America and the confidence of those responsible for securing efficient war-service equipment. Note some of the exclusive features of Ro-Way Overhead Type Doors:

- "Crow's Foot" Outer Bearing Support
- "Zip-Lock" for quick adjustment of Twin Torsion Springs
- "Tailor Made" Power-metered Springs
- "Ro-Way Design" Track Rollers with double-thick tread
- "New Friction-Reducing" Track
- Parkerized and Painted Hardware

Write for detailed information and prices on Ro-Way Doors for Industrial and Commercial use.

ROWE MANUFACTURING CO. 757 Holton Street, Galesburg, Ill., U.S.A.

Rō-Way

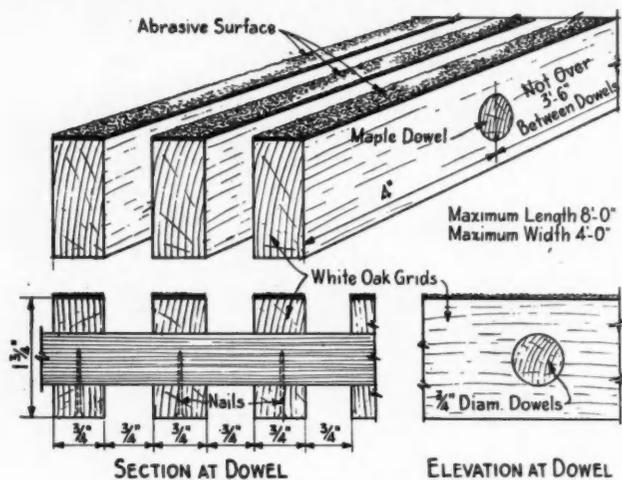
OVERHEAD TYPE DOORS

"There's a Ro-Way for every Door way!"

Getting Along with Less of Critical Materials

Wood Grids Developed

A NEW non-critical material grid that is non-slipping has been developed by the Ohio Rubber Co., Willoughby, Ohio. It is known as the "Orco Grid" and is constructed as shown in the detail view. They are made of white oak, are surfaced with an abrasive which has been strongly bonded to the oak under



ORCO grids are made of wood.

heat and pressure with "Valim," a new composition by The Ohio Rubber Company.

Orco Grids are made in widths of 4' 0" and in lengths to 8' 0". The weight is 3.3 lbs. per square foot. They are strong and rigid.

Strength of Concrete Increased by New Discovery

A NEW product which makes concrete several times more resistant to weather and abrasion in dams, fortifications and construction projects of all types has been announced by Dr. W. A. Gibbons, Director of Development, United States Rub-



CONCRETE cast against the new Hydron form linings is several times as resistant to weather and abrasion as ordinary concrete.

ber Company, New York City. The product is known as Hydron and is an absorptive lining for forms in which concrete is poured.

By removing water and air bubbles from the surface of concrete, Hydron produces a concrete that will last longer and will have a smoother and more pleasing finish without brushing or scraping.

In one test, samples of concrete were held within two inches of an air blast delivering sharp steel grit at twenty pounds air pressure, Dr. Gibbons stated. With concrete cast against ordinary wood

forms the blast dug a hole one quarter inch deep in one minute. With concrete cast against Hydron the particles bounced off the case-hardened surface leaving a barely perceptible mark.

In weathering tests where samples were repeatedly frozen and thawed, samples of concrete cast against Hydron withstood four times as many cycles as samples cast against wood.

Hydron form linings consist of an absorptive material faced with a fabric. The linings are easily applied to the concrete forms by stapling. Hydron is light, easily handled and flexible for curved surfaces.

After the concrete has been cast the forms are removed and the fabric is easily peeled from the concrete leaving a smooth surface that needs no brushing, scraping or other refinishing operation.

"V-Vent" Wood Louvers Instead of Metal

INTRODUCING a new type wood louver developed as a substitute for metal grilles or screens ordered by the U. S. Government for use in the lower parts of doors at army camps and war housing, the Wheeler Osgood Sales Corp., Tacoma, Wash., announces that the "V-VENT" louvers are now available for immediate use. They have six important advantages, according to the manufacturer. They are twice as strong as the old-style slat-type louvers, are more permanent, permit controlled ventilation, cut off light, keep out rain, and can be installed in doors or in shutters. "V-Vents" have a particular advantage for "dim-outs" providing as they do both ventilation and restriction



H. A. GANES, left, Wheeler Osgood general superintendent, explains "V-Vents" to Norman O. Cruver, General Manager.

of light. They are inverted "V" in shape as compared with the flat slat louver and can be adapted to many different uses both in doors and in shutters.

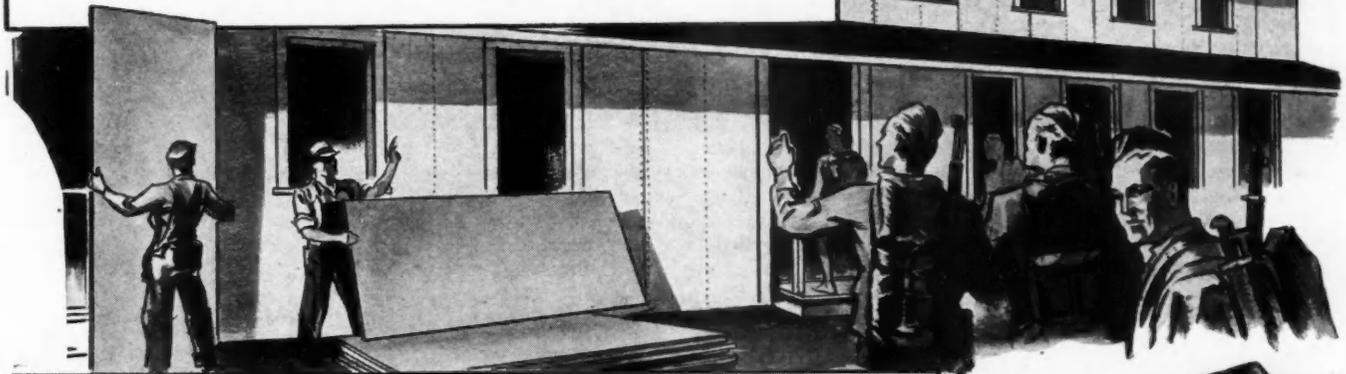
Furnished in $1\frac{1}{8}$ ", $1\frac{3}{8}$ " or $1\frac{3}{4}$ " in thickness, "V-Vents" are now available to meet a current building problem.

Cement Dispersing Agent for Concrete

THE Master Builders Company, Cleveland, has recently placed on the market a cement dispersing, air entraining agent known as HP-7 which, when added to a paving mix, is claimed to improve all the essential qualities of concrete—transverse

(Continued to page 56)

For Today's Emergency!



For Tomorrow's Security . . .



INSULITE meets your need!

TODAY, even minutes count. The critical shortage of labor makes it imperative that all types of construction be accomplished in the shortest time possible.

In this emergency, Insulite meets the need. Contractors and builders know those buildings constructed with Insulite go up quickly, because the large, strong panels can be rapidly applied. For exterior walls, or for interior walls

and ceilings, Insulite saves time in application. And Insulite *insulates as it builds*—double value from one material.

All Insulite products represent the highest quality, and the use of Insulite in large government contracts is convincing proof that it meets every demand—quick application, adaptability to every kind of construction, a minimum of waste, plus outstanding durability.

Time is EVERYTHING Today!



SAVES TIME: See how the large panels of Insulite, covering a large section of a wall, are quickly applied and nailed into place.



MORE TIME SAVED: On interior walls, Insulite again saves time. Insulite interiors require no plaster, papering or painting.

INSULATE WITH

INSULITE

THE ORIGINAL WOOD FIBRE STRUCTURAL INSULATING BOARD

INSULITE
Minneapolis,
Minnesota

Division of
Minnesota and Ontario
Paper Company

REG. TRADEMARK

LESS OF CRITICAL MATERIALS

(Continued from page 54)

strength, resistance to wear, freedom from scaling. Furthermore, it appears that this is accomplished with little or no increase in cost, and in some cases with an actual reduction.

HP-7 is essentially a combination of an air-incorporating agent (sodium lauryl sulphate) with a cement-dispersing agent (a derivative of lignin sulphonic acid).

Maximum dispersion of cement in the mix has long been recognized as necessary to the attainment of maximum strength an economy. The introduction of air, however, is a newer development which is not so generally known or understood. In fact it is actually contrary to the preconceived ideas of many people. Space does not permit discussion of this subject beyond the statement that small amounts of entrained air permit use of lower water-cement ratios, reduce bleeding, and add to the durability of the concrete pavement—especially as regards scaling.

A 24-page pamphlet entitled, "Cement Dispersion and Air

Entrainment in Concrete Pavement Construction," by Edward W. Scripture, Jr., Director of the Master Builders Research Laboratories, is available from the manufacturer. It contains a detailed and partly technical account of the character, development and use of HP-7 and of other products intended for the same ends; and includes reports of tests on various ordinary and special concretes at 3, 7 and 28 days.

Metal Conserving Sink

IN A RELATIVELY obscure, but far from insignificant way, Mutschler Brothers Co., Nappanee, Ind., is contributing to the housing program through its V-line of hardwood kitchen cabinetry equipment and cabinet sink combinations. In this development emphasis has been upon multiple unit projects (involving 15 or more kitchens) and the special requirements which they present.

By taking advantage of short cut production methods, and



**FOR INCREASED EFFICIENCY
IN WAR PRODUCTION PLANTS**

WOOD-SECTION

BARCOL OVERDOORS

**WITH ELECTRIC
DOOR OPERATORS**

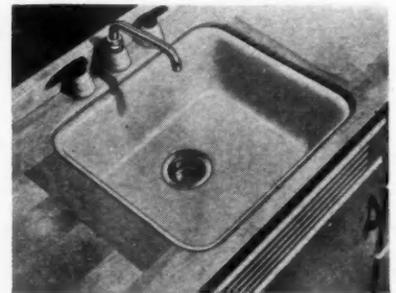
Time lost in waiting for a door to be opened or closed is time lost from the war effort. You cannot reduce that lost time to zero, because big doors will not yet open or close *instantly*—but you can reduce *wasted* time to a *minimum* by using dependable, durable BARCOL OVERdoors with electric Door Operators that insure efficient handling. There are many places in war production plants where a quick, easy-operating BARCOL OVERdoor will save time and speed operations.

SAVE STEEL. Wood-section BARCOL OVERdoors require a minimum of critical materials and are built to exacting standards for trouble-free performance. For engineering details and specifications to suit *your* needs, consult your Barcol representative.



BARBER-COLMAN COMPANY

104 MILL STREET • ROCKFORD, ILLINOIS
SALES, INSTALLATION, AND SERVICE REPRESENTATIVES IN PRINCIPAL CITIES



PREFABRICATED cabinet sink combination offers hard maple sink and counter top, and china sink.

less costly construction and fittings, a price level has been achieved which is in line with government allowance.

Special consideration has been given to the elimination of critical materials in the development of the V-Line. Cabinetry of hardwood trimmed with approved door and drawer pulls, hard maple sink and counter top, vitreous china sink bowls, and an approved type of deck faucet and spray.

The prefabricated completely finished units of the V-Line are delivered to the job ready for installation which may be accomplished in a few hours. Many expensive man-hours in vital production areas where man-hours are scarce may be conserved through the use of prefabricated cabinetry.

Caulking Offers Tie-Up with Fuel Conservation Campaign

CALBAR Paint & Varnish Co., Philadelphia, has revealed, as a result of an independent survey made for it, that in 60 per cent of the homes over five years old it was not unusual to find cracks $\frac{1}{8}$ inch to $\frac{1}{4}$ inch and more around door and window frames. This concern, which manufactures Caulk-O-Seal compound and caulking guns, points out that fuel waste through heat losses at these points, due to lack of proper caulking, should be checked if the current Government campaign to conserve fuel is to be entirely effective. Painters, carpenters, builders, caulkers, roofers, hardware merchants and general contractors doing caulking can help towards this objective.

How to
**CUT RED TAPE
 IN REPAIRING
 and
 REMODELING**



**No priorities—fewer delays—quick occupancy
 when you specify Armstrong's Monowall**

YOU can avoid a lot of red tape when you use Armstrong's Monowall. This prefinished wall and ceiling material spares you many delays and difficulties where labor shortages exist. Made of non-restricted materials, Monowall is readily available. And rooms in which it is employed are immediately usable—no waiting for plaster to dry, no final finishing.

Yet, at the same time, you retain wide freedom in design, for Armstrong's Monowall is offered in thirty-three practical, attractive colorings—smart plain colors, as well as the popular tile-, marble-, and wood-designs which many clients prefer. Armstrong also furnishes a complete line of channels and moldings in plastic, wood,

metal, and hardboard for special decorative treatments.

Most rooms of average size can be completed in a day—even by one competent man working alone. There's no litter or dust to spread throughout a building. Best of all, Monowall has a tough, glossy surface which withstands years of normal use without cracking, fading, or growing dull. That means less frequent need for remodeling, too. You'll find Armstrong's Monowall well adapted for use in commercial and institutional interiors, as well as in homes. Write today for complete information and samples. Armstrong Cork Company, Building Materials Division, 979 Concord Street, Lancaster, Pennsylvania.



Armstrong's Monowall, as used in this attractive bathroom, is readily adaptable to practically any decorative plan. Its tough, mirror-smooth surface is exceptionally easy to keep clean.

ARMSTRONG'S MONOWALL

TEMSEAL SHEATHING • TEMLOK LATH • TEMLOK DE LUXE INTERIOR FINISH

Building Prospects After the War

A VAST, immediate post-war consumer demand for new homes and home improvements is disclosed by a nation-wide survey by the Chamber of Commerce of the United States of family needs within the first six months after the end of hostilities.

The Chamber consumer survey shows that there will be a demand for 1,500,000 mechanical refrigerators, 1,200,000 washing machines, 1,200,000 radios. About 3.4 out of every ten home owners would make repairs and improvements in their homes within six months after the war, with 17 per cent planning to paint the outside; 7 per cent expecting to put on a new roof, and 6 per cent hoping to redecorate the interior. Six out of every 10 farmers who own their own farms would do these things in the first six months: build or repair farm outbuildings, barns, fences, tenant houses.

The careful sampling of the nation's families indicates that nine hundred thousand families intend to build or buy a new house within six months after the war is over:

- 33 per cent would pay \$3,000 for the house
- 26 per cent would pay \$3,000 to \$5,000 for the house
- 24 per cent would pay \$5,000 to 10,000 for the house
- 7 per cent would pay more than \$10,000
- 10 per cent are uncertain what they would pay.

In all, an expenditure of about \$5,000,000,000 for new homes is indicated.

48 Pointers in Woodwork Care Booklet

A TOTAL of forty-eight important rules for the proper care of doors, windows and other home woodwork are presented in a handy, pocket-sized folder entitled, "Pointers on Care of Woodwork." This folder was prepared by Ponderosa Pine Woodwork, Chicago, to help enhance and preserve woodwork values.

These forty-eight rules, compiled as the result of a nation-wide survey among leading woodwork manufacturers, dealers and contractors, form a trustworthy guide to long-lasting woodwork satisfaction.

One of the rules points out the importance of preservative treatment for all exterior woodwork by the manufacturer. Such treatment increases resistance to rotting—staining—fungus growth, etc.

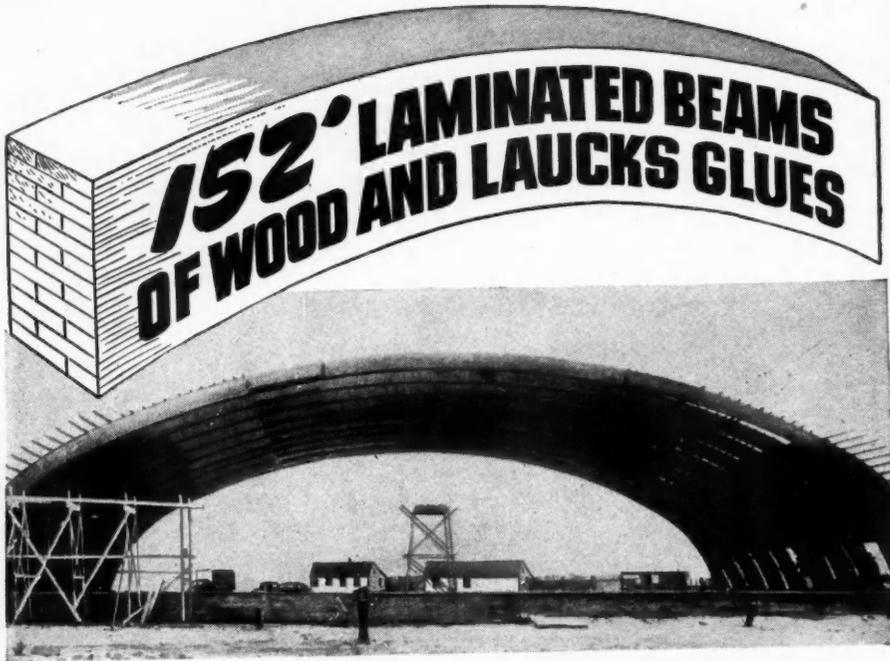
"See that doors are properly seasoned before painting"—"Be sure that the top and bottom edges of doors receive two coats of paint or varnish"—these are two important pointers in the section of the folder on the care of doors. The strict observance of these two rules will go far toward assuring smooth-fitting, long-lasting doors.

Lyon Shelving in Wood

QUICKLY ADJUSTABLE shelving is now offered in wood by Lyon Metal Products, Inc., Aurora, Ill. It is made in open and closed types. Sections are 36" wide and 84" and 96" high, and may be had in 12", 18" or 24" depths.

Top, base, shelves, braces, arms and up-rights are made of solid hard wood. Side panels, back panels on closed type are 1/4" plywood. Finished with a green tinted preservative coating that reduces moisture absorption; easy to set up.

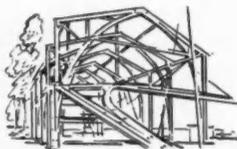
Features of Lyon wood shelving include dividers, bin fronts, adjustable shelves, and shelf boxes.



LAUCKS GLUE GUN



LAUCKS GLUE FOR PREFABRICATED WARTIME HOUSING



LAUCKS GLUE LAMINATED ARCHES FOR U. S. ARMY CHAPEL

THESE LAMINATED ARCHES for army air force hangars . . . safe and sturdy, saved tons of steel for combat duty, speeded up erection and proved again what wood and Laucks glue can do in wartime construction.

The beams for this hangar represent only one of many jobs erected by a famous fabricator of laminated arches and beams, who has standardized on Laucks Construction Glues.

Whether you're interested in laminated arches and beams, stressed cover structures, prefabricated housing, dry-built construction, or some other type of wartime work where wood and glue are important . . . get in touch with Laucks, the world's largest manufacturers of water-resistant and waterproof glues and resins. Write, wire or phone . . .

I. F. LAUCKS, Inc.

Lauxite Resins - Lauxein Glues

In U. S. Address Inquiries to—
SEATTLE—911 Western Ave. CHICAGO—6 N. Michigan Ave.
LOS ANGELES—859 E. 60th St.

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

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

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



LAUCKS CONSTRUCTION GLUES

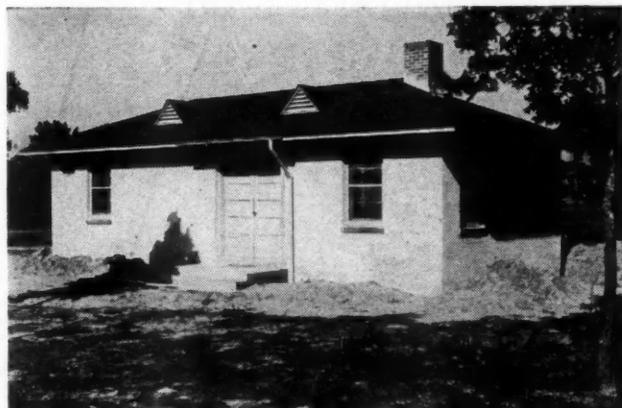
Consult LAUCKS—America's Glue Headquarters



WOOD shelving by Lyon.



Uncle Sam practices WHAT HE PREACHES



● The trim-looking building above, an Army Radio Transmitter Station, was finished with stucco made with Atlas White cement—resulted in saving of lead, zinc, steel.



● Modern Officers' Quarters at a U. S. Army Base shows the effective use of buff-colored portland cement stucco made with Atlas White cement.

New stucco construction at another U. S. Army Base saves critical building materials . . . steel, lead, zinc.

HERE'S an up-to-the-minute idea for many types of buildings . . . the modern stucco construction on these new Army buildings. It has been used successfully at several Army Bases.

Portland cement stucco made with Atlas White cement was used for both interior and exterior walls—reinforcing mesh was not required. This construction saved critical materials—steel for nails, steel for reinforcing, lead and zinc for paints, etc.

In addition, masonry walls of concrete or cinder block relieves transportation facilities as masonry normally is produced locally; hence, short haul assures delivery, compared to long haul with many other building materials.

Portland cement stucco made with Atlas White cement (plain or waterproofed) is a modern medium for quick, economical building. Use it for buildings at Army and Navy Bases, war workers' homes, stores, hospitals, theaters and other construction necessary for the nation's welfare. You can count on it for durability, weather-resistance, and fire-safeness. And it is low in first cost and low in upkeep. Specify it for new buildings and modernization and save critical materials and transportation facilities.

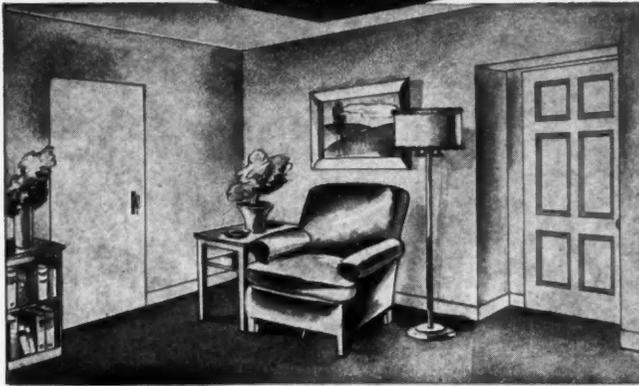
OFFICES AT: *New York, Chicago, Philadelphia, Boston, Albany, Pittsburgh, Cleveland, Minneapolis, Duluth, St. Louis, Kansas City, Des Moines, Birmingham, Waco.*

AB-8-20

ATLAS WHITE CEMENT

A UNIVERSAL ATLAS PRODUCT





**"NEW DOORS SURELY HELP
MODERNIZE A HOME!"**



INSTEAD of building, people are remodeling and modernizing their homes these days. Nothing adds so much distinction to a home as new doors. A new entrance door "sets off" the entire home. And new interior doors add dress and trim.

Wheeler Osgood doors are made from fir, one of the world's finest woods for door manufacture—uniform, super-strong, beautiful and rot-proofed by nature. And into every Wheeler Osgood door, whether it be a Tru-Fit entrance door or a standard, stock interior door, goes the finest of craftsmanship.

Color Graded! Wheeler Osgood's sensational new "Color-Grading" system shows at a glance the grade, style, size and surface of every door! Biggest marketing innovation in door manufacture history!

WHEELER OSGOOD "COLOR-GRADED" GRADE A AND B Douglas Fir doors are built in strict accordance with Department of Commerce Standards CS73-38, CS91-41.

WHEELER OSGOOD DOORS



FREE Wheeler Osgood Sales Corp.
Dept. 13, Tacoma, Wash.

Gentlemen: Please send me free literature
on Wheeler Osgood "Color-Graded" Doors.

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

A COMPLETE LINE OF INTERIOR
AND EXTERIOR DOORS

TRENDS in Equipment and Building Materials

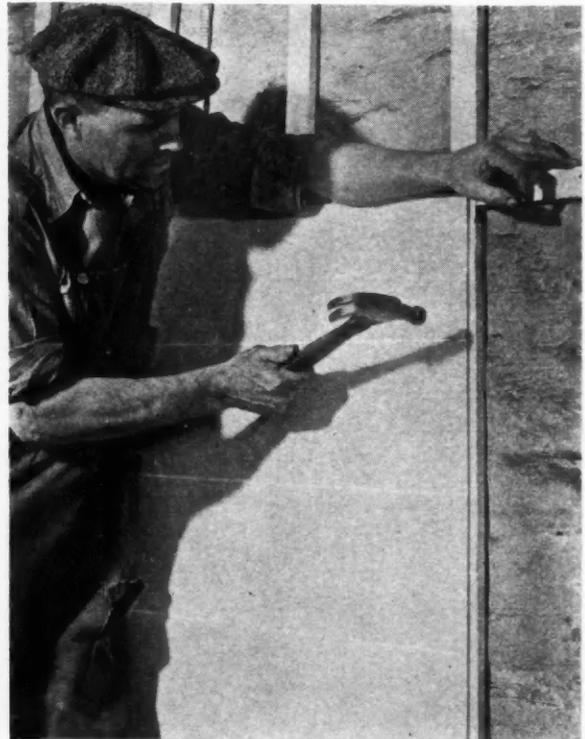
New Type of Prefinished Wall Panels

CCHEVRON BOARD, a new, low-cost, velvet-smooth, plastic-coated wall board available in large wall-size sheets and requiring no on-the-site finishing has been introduced by Barclay Manufacturing Company, Inc., New York, manufacturer of Barclay Tileboard, and prompt shipments are now being made. The new pre-finished panels are already being used by the government for ship construction, war housing and military bases and installations.

The panels, available in sizes up to 4 x 8 feet, come in three designs—tile board, unscored sheets and streamlined—and in a wide range of pastel tones. The plastic finish is permanently bonded to the compressed wood fibre base at the factory, and will not warp, chip, craze, crack or peel. The panels are quickly and easily installed by nailing, screwing or cementing to the old walls or new framing.

Their low cost has also opened many new fields for these panels in industrial and commercial building and remodeling.

Among the uses for the new panels are factory conversions, barracks, shower stalls, kitchens, baths, canteens, laboratories, trucks and ambulances, and sectional units.



WORKMAN installs a panel of Barclay Chevron Board in a speedy remodeling project.

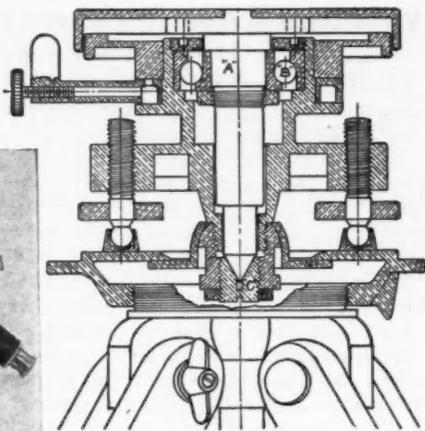
Universal Level Transit

SEVERAL important features have been added by the David White Co., Milwaukee, to the "Universal" level transit which has been a standard instrument among contractors and engineers throughout the country for many years.

The most important patented feature is the ball bearing race which is shown in detail in the illustration. Spindle A is supported by bearing B and end thrust adjustment cone C. This feature insures perfect adjustment under the most severe conditions, and will not drag or tighten in sub-zero temperature. Engineers and contractors will appreciate this feature.

The instrument is equipped with the same high power telescope as in the higher priced engineers' transits. It is also

David White "Universal" level transit.



A - SPINDLE
B - BEARING RACE
C - END THRUST

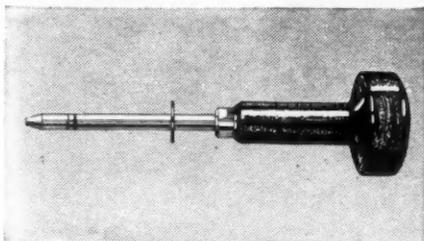
equipped with a clamp and a tangent screw to both the horizontal and the vertical circle. A compass can also be supplied if desired.

The "Universal" level transit is designed especially for heavy duty work in connection with all survey and checkup operations on building and road construction. It is used for: Finding differences in elevation—Determining grades for building—Laying out lots and foundations—Running lines for curbs and sidewalks—Aligning foundation piers—Plumbing walls and uprights—Checking walls in course of construction—Ascertaining slopes for tiling—Relocating lost surveying monuments—General highway construction work—Landscape and truck gardening—Interior leveling of floors, shafts, etc.—Obtaining angles of any desired degree—Running boundary lines on disputed territory—Etc.

Immediate delivery can be made with priority rating of A-1-J or better.

Brad Setter is Magnetized

A POPULAR new item in the tool line of the Markwell Manufacturing Co., 200 Hudson St., New York City, is the Bradmaster, a magnetic tool for selecting and picking up brads and then placing and driving them in difficult corners. Selling at a nominal price, this useful device is magnetized to pick up brads quickly; a one hand operation. Brads can also be countersunk with this handy tool.



MARKWELL magnetized Bradmaster.

Ideal for all carpenters, electricians, window trimmers, handy men, cabinet makers, display men, auto mechanics, repair men, radio mechanics, etc.

The Bradmaster is a companion tool to the Markwell Tackmaster which is an automatic tacking hammer for one-hand driving of two-pronged staples. These are rammed home accurately in any predetermined position.

Vermiculite Goes to War

THE War Department's huge new office building across the Potomac from Washington will be protected from incendiary bombs—or summer's heat—by vermiculite, a mineral which is now becoming as important a factor in modern warfare as it is in building. The order for the vermiculite came to a North Carolina mine which had already supplied thousands of tons to make bomb-proof decks for military installations. Because of these uses and the rapid discovery of other uses, vermiculite production in North Carolina is proceeding at a record rate, with new deposits being opened.

Vermiculite has the peculiar quality of exfoliation with intense heat. Treated thus, the expansion is so great that untreated mineral weighing 100 pounds per cubic foot will weigh only 6 to 20 pounds per cubic foot after heating. It is also highly resistant to fire, and mixed with concrete provides both

(Continued to page 62)

For
**WAR
HOUSING!**



Use the flooring that
is ideal for fast,
low-cost construction!

SPEED is the keynote of war housing today. That's why factory-finished Streamline Hardwood Flooring is the first choice of contractors for large and small projects all over the nation. Completely finished at the factory with the amazing "Bruce-Way" Finish, Streamline Flooring is ready to use as soon as it's laid. In addition to saving valuable days on the job, Streamline produces a floor superior in appearance and durability. Yet—it costs less than any comparable floor. It's the greatest improvement ever made in hardwood flooring! Write for details.



FOR NEW CONSTRUCTION
FOR REPAIR WORK
FOR REMODELING

E. L. BRUCE CO., Memphis, Tenn.

BRUCE Factory-Finished **STREAMLINE** HARDWOOD FLOORING
FLOOR FINISHES • TERMINIX • LUMBER PRODUCTS

BUILDERS:

**Help farmers
increase food production!**



Concrete masonry milk houses and concrete cooling tanks help dairy farmers meet Army sanitation requirements and new, rigid city milk codes.

Concrete all-weather feeding floors save feed and labor, help produce healthier, faster growing hogs and cattle.



A HUGE VOLUME of construction is needed by farmers in their war effort to produce more food. These busy, short-handed farmers *need builders*—and contractors in every farming region can render a real wartime service in this field.

You have the experience to build productive, labor-saving improvements such as feeding floors, barnyard pavements, milk houses and other needed farm facilities. You may have equipment not being used on war construction. And concrete materials, ideal for farm construction, are widely available with minimum transportation. Reinforcing steel seldom required.

Write today for free literature giving practical details of needed farm building possible under war conditions.

PORTLAND CEMENT ASSOCIATION

Dept. 11-3, 33 W. Grand Ave., Chicago, Ill.

BUY WAR SAVINGS STAMPS AND BONDS

Vermiculite Goes to War

(Continued from page 61)

lightness and insulation. When vermiculite is used as an aggregate in concrete, the pre-cast slabs can be sawed, nailed and worked very much like wood.

Because of its lightness when treated, vermiculite is also being used for packing shells and bombs for shipment to the front, and for filling life preservers as a substitute for cork. Experiments are now under way to use it as a filter for aviation gasoline, to replace the various earths now scarce.

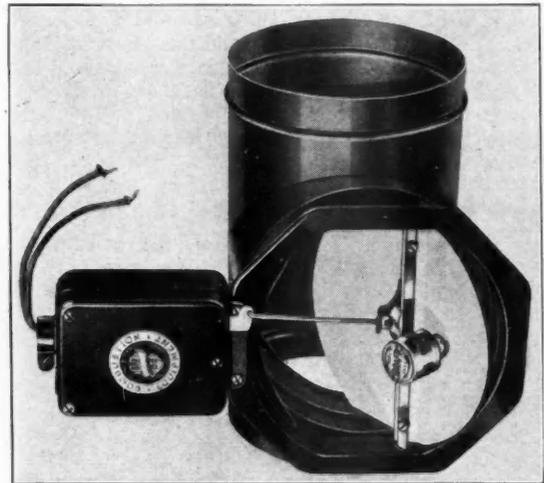
Department officials pointed out that the mineral's peculiar properties indicate many widespread peacetime uses. Experiments have been made in using light-weight concrete for pre-fabricated houses, and its use as an insulator was already well under way before the war. It can also be used in making heat-insulating bricks and in fireproof plasters.

According to a report issued recently by the North Carolina State Geologist, lubricating qualities of vermiculite are comparable to those of flake graphite. Used as an extender for aluminum paints, it increases coverage by 25 per cent.

New Draft Controller

HOTSTREAM Heater Co., Cleveland, has engineered a new line of Draft-O-Stats, Models "B" and "BM." The "BM" model can reduce fuel oil consumption as much as 25% by increasing the "cut-out" period.

If conversion from oil to coal is required, no additional wiring or equipment is required since it will operate from the exist-



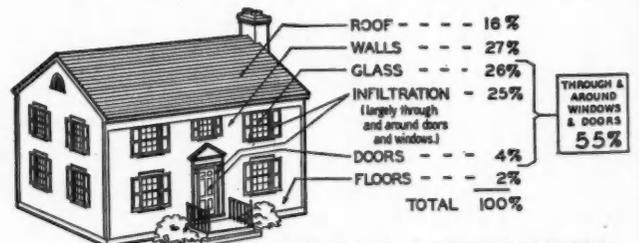
MODEL "BM" Draft-O-Stat in full check position.

ing oil burner circuit, and will automatically control the coal burning process in response to the action of the room thermostat.

When it's all over "Over There," and the boiler is converted back to oil burning service, the Draft-O-Stat serves as an automatic draft control without change in wiring.

Where Heat Escapes

HEATING engineers, retained by the National Lumber Manufacturers' Ass'n., Washington, D.C., have prepared the accompanying diagram to show percentages of heat loss in the



DISTRIBUTION OF THE HEAT LOST FROM AN AVERAGE TWO STORY FRAME HOUSE

various parts of the typical American home as ordinarily constructed. Their figures show that storm-windows and storm-doors are most important fuel savers. They save 31 per cent of the total heat loss.

Teco Movie Films Available

FIVE prints of a highly interesting 500-foot motion picture reel illustrating the quantity manufacture and erection of prefabricated wood dwelling houses now are available for loan to construction engineers and forest industry groups on request to Timber Engineering Company, Washington, D. C.

The 16 mm film, which runs 25 minutes, was photographed by Dr. J. E. Myer, Teco research engineer, at the 250-acre Laurel, Miss., plant of the Green Lumber Company where the houses were prefabricated in sections and at Hinesville, Ga., where a large group of these "ready-to-wear" homes were erected.

Dr. Myer carefully traces the process from its beginnings on the "green chain" to final occupation by the home owner and reveals the "fantastic speed" which has been achieved by the use of assembly-line methods. Panels for twelve houses are shown prefabricated in one eight-hour day and houses erected from the ground in two hours and forty minutes.

No charge is made for the loan of the film, other than mailing costs.

Insulate for Victory

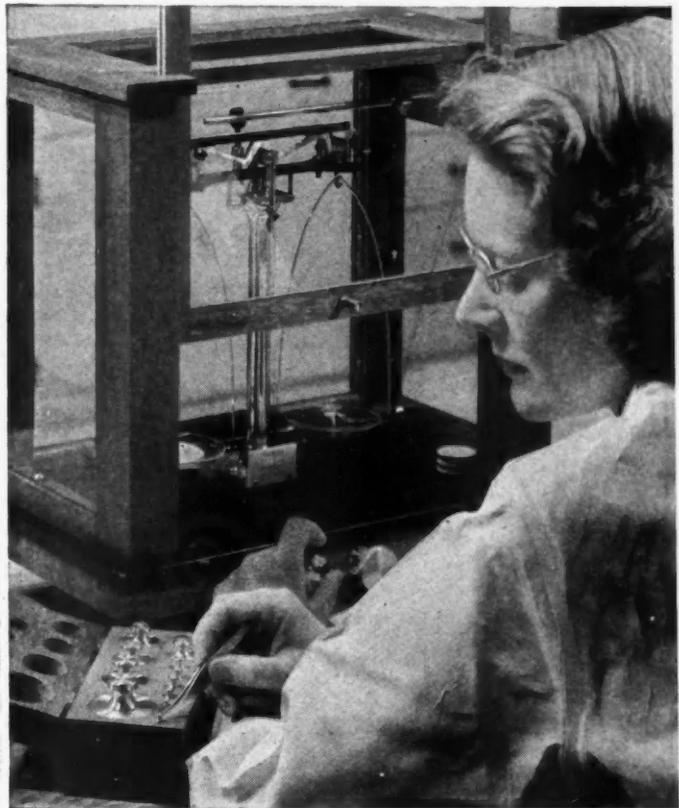
AS an aid to the Government's fuel conservation campaign, the National Mineral Wool Association, New York, is presenting to the Office of War Information several thousand of the posters shown in the accompanying reproduction. Painted by Robert E. Lee, famous poster artist, these striking full-color designs will be on display in the offices of fuel oil rationing boards, in post offices, public libraries and schools throughout the rationed states. The vigorous design showing Uncle Sam's fist smacking old Boreas and the lively slogan, "There's fight In Fuel," lead logically to the message, "Insulate Your Home . . . Save Fuel for Victory." Imprinted at the base of each sheet will be the identifying line, "Produced by National Mineral Wool Association in Cooperation with the United States Government."

Additional thousands of posters will be available for individual manufacturer imprints, in place of the Association's credit line. Contractors and dealers may obtain them from their source of mineral wool supply and may affix their own identifying labels at the base of the sheet. The poster measures 19 in. by 27 in.



SMASHING poster helps fuel drive.

Her name isn't on your payroll . . .



. . . yet this Plywood chemist is working for you just the same!

● The chemistry of wood is one of the most difficult and involved branches of science. The chemistry of plywood presents an even greater problem to the chemist because both wood and adhesive must frequently be considered at the same time.

But the more the Douglas Fir Plywood industry knows about the chemical structure of Douglas fir and adhesives, the better the plywood it can manufacture.

That's why chemical research has such an important part in the Douglas Fir Plywood Association's intensified research program . . . a program that is being carried on now so that the post-war Douglas Fir Plywood you buy will be more useful to you than ever before. Douglas Fir Plywood Association, Tacoma, Washington.

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

REMEMBER—there's a grade or type of Douglas Fir Plywood for every purpose. A genuine panel bears one of these "grade trade-marks":

- EXT-DFFA**—waterproof type
- PLYWALL**—wallboard grade
- PLYSCORD**—sheathing grade
- PLYPANEL**—cabinet grade
- PLYFORM**—concrete form grade

DOUGLAS FIR PLYWOOD

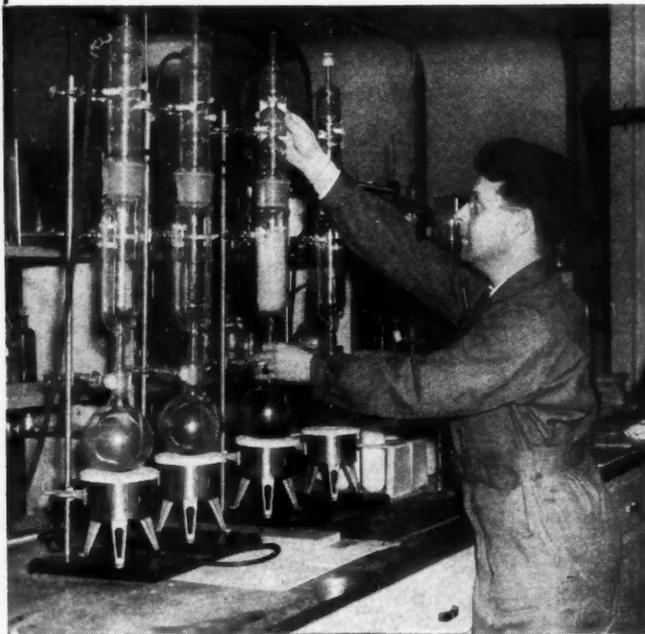
Real Lumber

**MADE LARGER, LIGHTER
SPLIT-PROOF
STRONGER**

"A PRODUCT OF AMERICA'S ETERNALLY REPLENISHING FORESTS"

Look at these Soxhlet Extractors

In them, keen, penetrating solvents and heat remove resin and water from samples of the Western Pines . . . experiments to improve the manufacturing procedures of these fine woods.



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—

NEWS of the MONTH

Savings League to Offer Strong Program

WAR HOUSING, war bond, man power, and rent control key men will confer with savings, building and loan association managers holding in Chicago, on November 16-18, the Annual Meeting of the United States Savings and Loan League, Fermor S. Cannon, Indianapolis, president. A high point will be a patriotic luncheon in honor of the 3,000 officers, directors and employees of the savings and loan institutions now in the armed forces, to be addressed by one of the nation's best known speakers in tribute to service men, the Hon. James G. Stewart, Mayor of Cincinnati.

Speakers, as listed on the program made public this week, are: Representative Fritz G. Lanham, Chairman, Public Building and Grounds Committee, House of Representatives, on "Housing During the War and After"; John B. Blandford, Jr. Administrator, National Housing agency; Abner H. Ferguson, Commissioner, Federal Housing Administration; John H. Fahey, Commissioner, Federal Home Loan Bank Administration; Paul Porter, Deputy Administrator, Office of Price Administration on "Price Control and Real Estate"; Ted R. Gamble, Assistant to the Secretary of the Treasury; Eric A. Johnston, Spokane, president, Chamber of Commerce of the United States; Montfort Jones, professor of finance, University of Pittsburgh, on "Our Financial Future"; Carroll Binder, foreign correspondent, on "The Outlook for Victory"; and Mayor Stewart.

The annual address of the President of the United States Savings and Loan League will be given by Mr. Cannon on the first afternoon, with the report of Secretary-Treasurer Herman F. Cellarius of Cincinnati on the statistical position of the business, and an address by Morton Bodfish, executive vice president of the League, on the national and international scene as it affects the thrift and home lending business.

Planning File for "War Bond Homes"

A COMPREHENSIVE program promoting systematic savings in War Bonds today to buy the comforts of a modern home tomorrow has been initiated by Edison General Electric Appliance Company, Chicago. The plan embraces not only advertising messages stimulating consumer desire for peacetime products which the bonds will buy, but also a coordinated merchandising drive via distributors and retailers of Hotpoint electric kitchen equipment.

The merchandising activity centers around a device for giving



HOME Planning File, with the "roof" removed to show the labeled file folders. The box is nine by twelve inches.

consumers practical help in planning their postwar new homes. This takes the form of a unique "Home Planning File," to be distributed through public utilities and other appliance outlets to families expecting to build when materials are again available. An attractive and useful article, the file gives the trade something concrete to work with in establishing contacts with post-war prospects.

Simultaneously, it provides the consumer with the means of working toward the future purchase on a tangible basis.

The file consists of a cardboard box, colorfully decorated to represent a red brick house. The green-tiled roof comes off to reveal a set of eleven labeled file holders in which the family may accumulate clippings, sketches, ideas and data for the home it some day hopes to build. One of the folders, labeled "Financing," contains a special form for keeping a record of ownership of War Bonds and the purchase for which each is destined.

The scope of the activity which can be built up around the home planning file is a broad one, since Hotpoint designed it so that it covers not just the company's own products, but every aspect of building a new home. The material for insertion in the "Kitchen and Breakfast Nook" folder of the file is supplied by Hotpoint. The retailer can insert materials concerning other merchandise he normally handles in the folders which are provided for other rooms of the house and for such subjects as "Lighting and Fixtures" and "Heating and Ventilating." The retailer may also work out a cooperative arrangement with other local dealers to provide literature where the merchandise concerned is not handled by him.

Hotpoint furnishes the files at 25 cents each. This is the actual cost of turning them out, the company absorbing original art and production expense. The material for insertion in the kitchen folder is furnished by Hotpoint without charge.

The back surface of the file box displays a reminder message stressing the patriotic reasons for continued purchases of War Bonds. This shows, in pictorial form, the menace of Axis bomber attacks to the security of American homes.

Conn Joins Up

ROBERT L. CONN, Vice President and Treasurer of Puritan Cordage Mills, Inc., Louisville, Kentucky, has recently joined the Armed Forces. He expects to be stationed at Fort Benjamin Harrison at Indianapolis. Mr. Conn has been connected with the Puritan Cordage Mills for the past 20 years, during which time he had risen to the Vice Presidency of the company.

30-Pound Brass Sign Goes to War

THE SEARCH for scrap metals is taking on the nature of a treasure hunt in many instances. Typical of the spirit behind the nation's desire to contribute to this great need is the scrap of a 37 year old brass sign which has marked the entrance to the General Offices of The Philip Carey Mfg. Company, Lockland, Ohio. This sign, although in good condition after its long service, was a casualty to the company's salvage drive, recently conducted by Mr. Al Kuester, office manager.

In the accompanying photograph, Mr. Kuester is shown at the right.

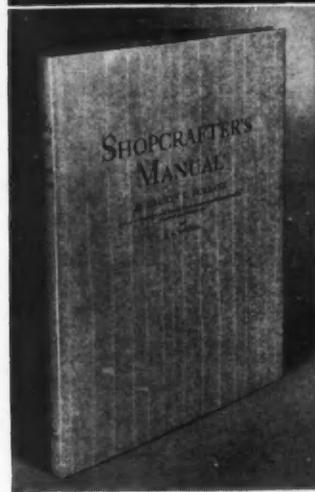
The sign contained 30 lbs. of brass and is being replaced by one made of wood.



BRASS sign is contributed to Scrap Drive.

THERE'S NO PRIORITY ON INGENUITY!

Why Not Build What You Can't Buy Today?



LET THIS NEW BOOK HELP YOU

Shopcrafter's Manual

By

Nelson L. Burbank
and E. M. Mitchell

One hundred and forty projects—furniture for the home, garden, nursery, lamps, cabinets, chairs, tables, useful articles, novelties and toys made from commercial woods and veneers that you can get today. Large working drawings show construction details. Photographs show the finished article. Material lists and step-by-step instructions.

Here is a manual that will delight the home craftsman, the beginner or the experienced woodworker with power tools. Projects range from simple toys to useful furniture in modern designs and light finishes. Look over the accompanying list of projects, then send the coupon below for your copy of the new SHOP-CRAFTER'S Manual.

142 pages—140 projects—8 1/2" x 11"—\$2.00

Furniture for the Home—56 Projects, including benches, book-cases, cabinets, counter tops, desks, lamps, seats, stools, tables.

Garden Furniture—16 projects, including gates, lattices, pergolas, garden seats, chairs and tables, boat, bird houses.

Children's Furniture—12 projects, including a child's bed, chairs, bath table, desk, lamp, and double bunks.

Toys—14 projects, including cut-outs, floating toys, children's play-house, game table, ping-pong table, rocker, sled, toy box.

Novelties—42 projects, including brackets, signs, holders of various kinds, trays, shelves, aquarium, plaques, humidior.

FILL OUT THIS GUARANTEED ORDER FORM

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

Enclosed find \$2.00, for which send me a copy of Shopcrafter's Manual, 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 \$2.00.

Name _____

Address _____

City and State _____

This Winter's Concrete Needs These "EXTRAS"

---Extra Speed, Extra Quality, Extra Safety

This winter's concrete schedule calls for speed . . . but not at the sacrifice of quality or safety! The addition of Solvay Calcium Chloride to portland cement provides:

1. **EXTRA SPEED**—halves setting time, provides 3 days strength in one day . . . 7 days strength in 3 days when used with either standard or high early cement.
2. **EXTRA QUALITY**—increases ultimate strength, workability—permits reduction of water-cement ratio, makes denser and more durable waterproof concrete.
3. **EXTRA SAFETY**—offsets dangerous effects of sudden drops in temperature, shortens protection period, adds extra protection against freezing.

These EXTRA qualities are obtained without changing the normal chemical action of portland cement—and at a cost so low that the savings in finishing, forms, protection and labor far outweigh the cost of calcium chloride.

use **SOLVAY CALCIUM CHLORIDE**
with all PORTLAND CEMENTS

For Approved, Low Cost, War Time
FIRE PROTECTION
Use Pails, Barrels, Pumps and

SOLVAY CALCIUM CHLORIDE
TRADE MARK REG. U. S. PAT. OFF.

WON'T Freeze Won't Foul
Evaporate Easy to Prepare
Deteriorate No Maintenance

LOW COST—The cost of Solvay Calcium Chloride solutions ranges from 3c to 8c per gallon. This means that complete units consisting of pails and solution can be obtained for one dollar or less.

➔ **QUICK EASY WAY TO END SLIPPERY ICE!**

. . . on sidewalks, steps, streets, loading platforms, spread clean white flakes of Solvay Calcium Chloride. Loosens ice quickly. Can be swept or shoveled away without chopping. Solvay Calcium Chloride can also be mixed with sand or cinders for skidproofing.

Send for complete information. Write to Dept. 3411,

SOLVAY SALES CORPORATION

40 Rector Street,

New York, N.Y.

NEWS OF THE MONTH

(Continued from page 65)

W. G. Hume Joins Reynolds Wire

WILLIAM G. HUME has been elected a Vice President of the Reynolds Wire Co., Dixon, Illinois, manufacturers of Screen Cloth, Hardware Cloth, wire and wire products. He was formerly General Manager of Sales of the Pittsburgh Steel Co., Pittsburgh, Pa. Immediately before joining the Reynolds company, he had been loaned to the War Production Board and assumed his duties there the day after Pearl Harbor as Chief of the Rod and Wire Products Unit of the Iron and Steel Branch.

He has been in the wire business for 31 years, having been General Manager of Sales for the Keystone Steel & Wire Co., Peoria, Ill., and later, before going to Pittsburgh, was Vice President of the Northwestern Steel & Wire Co., Sterling, Ill.

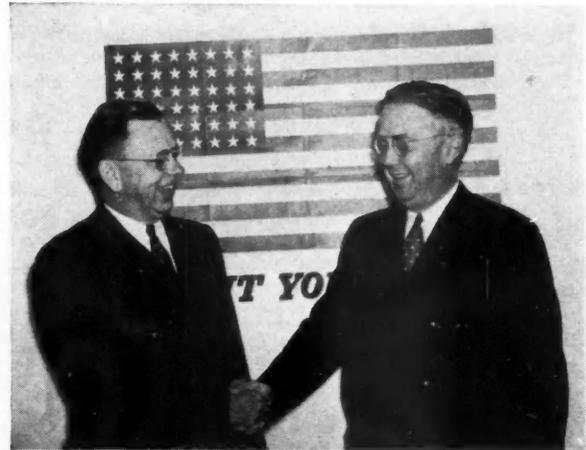


W. G. HUME

Vice President of the Northwestern Steel & Wire Co., Sterling, Ill.

Mortgage Bankers Elect

CHARLES A. MULLENIX, Cleveland mortgage banker, was elected president of the Mortgage Bankers Association of America to succeed Frederick P. Champ, Logan, Utah, at the Association's 29th annual meeting and Conference on War-time Mortgage Finance which concluded its sessions on October 2 at the Edgewater Beach Hotel, Chicago. Mr. Mullenix announced that a principal activity of the Association next year will be a giant war bond drive with a goal of a billion dollars set. Another will be a systematic study of post-war problems, among them the possibility of private interest taking over all mortgages held by federal agencies.



CHARLES A. MULLENIX and FREDERICK P. CHAMP.

The immediate post war period will clearly show what apparently few fully appreciate today—that the average American city is already approaching the last stage of serious urban disintegration because of the spread of blight and the rapidly widening slum areas, Frederick P. Champ stated at this conference.

"During the past decade, particularly in recent years, when most people were impressed with the growing revival in home construction, we only built two non-farm houses for every five net additional families. Now, with new building halted for the duration, the housing shortage generally may become very acute immediately after the war. The immediate demand may run as high as 800,000 units annually in the years right after the war. We must prepare to meet a large portion of this demand by rehabilitating our cities.

"The initial step, where the greatest prospect for immediate activity lies, will undoubtedly be in recovering the dead close-in urban districts that have fallen victim to blight. It is in these districts where, with federal assistance, the first frontal attack can be made."

World's Only Concrete Service Roll

JOHN J. EARLY, nationally known for his work with concrete, has produced a monumental honor roll displaying names of the men in service from the Universal Atlas Cement Company. In the form of a precast architectural concrete slab, it is permanently embedded in a wall of the same material in the offices of this company. As shown in the illustration, a metal framed glass fronted case contains an alphabetical list of Universal's men in the services. Immediately surrounding this is a white field in which there is a blue star, both made by exposing aggregates of those colors in a matrix of cement. In the red border vitrified glass is used in place of aggregates. No artificial color pigments employed.



UNIVERSAL Atlas Cement Company's honor roll in the form of a precast concrete slab, 3 by 4 feet.

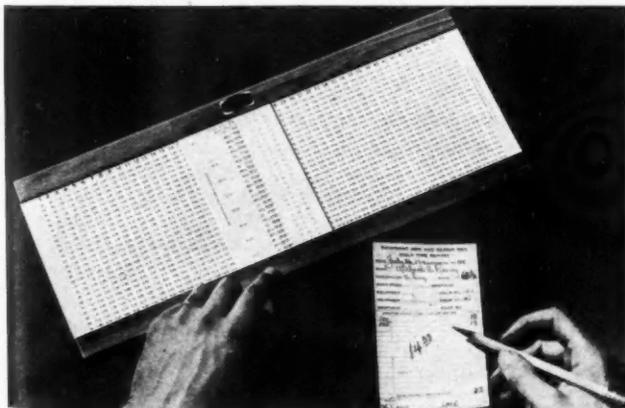
Devoe Offers Metal Protective Paint

AS A FURTHER STEP in the conservation of vital metals, E. S. Phillips, president of Devoe & Reynolds Company, Inc., has announced that his company has developed and is now marketing "Bar-Rust Metal Protective Paint." Production of this new paint is intended for the protection of outside or interior surfaces of industrial plants or other structures having an appreciable amount of exposed metal.

New Pay Roll Calculator

PAY rolls and job costs can be figured in a fraction of the usual time through the use of a new calculator, according to the manufacturers, the Berger-Bricker Company of 433 South Spring Street, Los Angeles, California.

Operating on a simple new principle, this device includes all hourly rates of pay from \$0.50 to \$1.75 with a half-cent spread between rates. It covers all time periods up to 104 hours with divisions of one-tenth of an hour. It is handsomely made of lacquered wood and easily fits into a desk drawer.



USEFUL payroll calculator for contractors.

Timber Construction FOR INDUSTRIAL PLANTS COMES BACK!

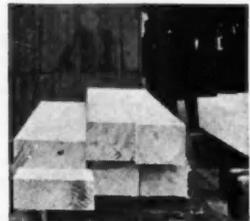


Teco Connector-built trusses in a war plant, Somewhere, South

WITH steel production now absorbed in the manufacture of vital fighting materiel, engineers and builders have switched to lumber and timbers for factory, plant and other heavy construction.

They are on solid ground in doing so, because heavy timber construction has proved dependable and lasting in textile mills, factories, shipyards, warehouses, canneries, etc., over life-spans of 75 years and more.

Timber construction is flexible, rapid, adapted to time-saving prefabrication. Over-all building costs are in line. With Teco Ring Connectors, load bearings and joints compare in strength with those of steel. Under modern chemical treatments, timbers are effectively resistant to deterioration and fire. Even untreated timbers are slow burning, do not buckle.



Today's timber construction projects include ordnance plants, munitions factories, recreation centers, hangars, theatres, warehouses, machine shops, etc., with countless more on drafting boards. *Heavy timber construction has come back!*

Arkansas Soft Pine is supplying a substantial volume of lumber and timbers to these war projects. This species qualifies for all structural requirements under Federal Specifications MM-L-751b and offers a sustained source of standardized heavy construction material and framing lumber. *For technical data, specifications and complete information, all without charge, address:*



ARKANSAS SOFT PINE BUREAU
1124 BOYLE BUILDING
LITTLE ROCK, ARKANSAS

facturers' research departments, will continue to develop new products and improvements to old products which will eventually be their contributions to the home of the future.

If the whole problem were put into your hands, where would you start planning or improving in order to get the greatest gain from the least amount of work? The one place we would suggest is the water piping system. This would be our choice because we know full well that existing practices leave the water supply in the average home miserably inadequate.

You are familiar with the water faucet on the upper floor which merely trickles when the dishes are being washed downstairs, or the laundry is in operation. Then there is the garden hose which splashes at your feet instead of providing a strong powerful stream, merely because someone else is using the water inside the house. The danger of being scalded is imminent in most shower installations, because of inadequate piping to the fixture. You have probably felt variations in the temperature when standing under the shower, which were due to only minor changes in the supply conditions to the fixture.

But beyond all this, proper planning now on the part of municipalities, the architect and engineer, the development builder and the plumbing contractor, would enable the owner of the "home of the future" to enjoy such conveniences as sprinkling systems, air conditioning, multiple baths and powder rooms—all supplied with a piping system adequate to cover peak consumption, rather than by the present day practice of a piping system adequate for the use of only one fixture at a time (the average small home having from 6 to 12 fixtures).

R. B. WILLIAMS,
Reincke, Ellis, Younggreen & Finn.

Concrete Milk Cooling Tank

(Continued from page 45)

appears on the surface of the concrete base slab.)

After the base has hardened, the insulation for the tank floor is laid and a hole is cut in it for the outlet pipe to pass through. Space between pipe and insulation is later filled with hot asphalt. Rigid insulation 3 in. thick is recommended for the tank floor and walls. Wall insulation is erected after floor insulation is placed, being careful to space it so that it will be exactly 4 in. from the outside face and 3 in. from the inside face of the tank wall. Since an insulating material loses its insulating value when wet, it should be waterproofed by dipping in hot asphalt. Insulating boards should be cut to fit before being waterproofed so that all sides and edges will be thoroughly covered with asphalt.

Mixing and placing concrete. A 1:2¼:3 mixture of concrete is recommended. This means 1 part portland cement, 2¼ parts sand and 3 parts of gravel or crushed rock. None of the coarse material should be larger than ¾ in. in size. The proper amount of water for this mix is 5 gal. per sack of cement, using average moist sand. The mixture should be mushy, but not soupy. In placing tank walls, take care to fill the inner and outer walls to the same depth so that insulation will not be moved out of position. Concrete should be spaded carefully and thoroughly to produce smooth walls and dense concrete. When forms are completely filled, ½x8-in. anchor bolts are set about 2 ft. apart around the top, the threaded ends projecting about 1¾ in.

In warm weather forms may be removed in about 24 hours. More time is needed to protect the concrete in cool weather. Tank should be covered with canvas, burlap, straw or other material and this covering kept wet for 7 days for proper curing. After concrete is hardened, the 2x10 planks are bolted around the rim as shown in Fig. 2. A thin layer of portland cement mortar is spread over the top of the wall before setting the plank to secure a tight fit.

A thickness of heavy tar paper is placed in the cover which is built of boards as shown.

The milk-cooling tank should be at least 2 weeks old before it is put into service.

Plans and instructions for building milk-cooling houses will be sent free on request in United States and Canada.

New Knothole Filler

A NEW synthetic resin binder used in knothole filler has been found to increase the value of low-grade lumber and to improve high-grade lumber. Secret of this filler is that it won't shrink even when used in 2-inch-diameter knotholes.

**"THERE'S NO JOB
TOO TOUGH FOR
A BOLSTER TYPE
STANLEY DRIVER!"**



Here's how the bolster provides "built-in" strength and endurance

1. Blade tempered its entire length. Recesses are forged into butt end which is then driven into steel bolster.

2. Bosses are forced into recesses in blade, locking blade in bolster. Four wings are swaged on the outside of the bolster. Pyralin washer added for insulation.

3. Combined blade and bolster are driven into handle by hydraulic pressure. Long wings lock into hardwood handle so blade cannot twist.



**No. 25
STANLEY
SCREW DRIVER**

You may seldom need all the rugged endurance that is built into a Stanley bolster type driver, but when you do, you know you can depend on it. Patented Bolster Construction positively locks blade in handle . . . prevents turning or twisting. Provides insulation and reinforces Driver against considerable pounding. Blades tempered entire length for extra strength. Tips accurately machine cross-ground to size for non-slip fit in screw slots. Hardwood handle fluted for comfortable grip. Satin black finish.

Your hardware dealer will supply you. Ask for a copy of Stanley Tool Catalog No. 34.

Stanley Bolster Construction is also available in . . .

No. 45 Small blade—parallel sided tip

No. 55 Small blade—regular tip

STANLEY TOOLS

Division of The Stanley Works, 133 Elm St., New Britain, Conn.

THE TOOL BOX OF THE WORLD

White Cement Floors Speed War Production

(Continued from page 44)

laitance and roughen the slab by brooming, the surface should be cleaned and prepared by chipping after the base has hardened. Immediately prior to placing the white cement concrete finish, the base should be thoroughly cleaned by scrubbing with clean water and a stiff brush. If the base has dried out, it should be thoroughly wetted. There should be no pools of water on surface when finish is applied. A thin coat of cement grout should be broomed into the surface of the base just previous to placing the finish.

Preparation of Base for Integral Finish—When the white cement concrete finish is to be placed before the base has hardened, the mix for the base should be such that it will not permit water to collect in puddles on the surface. If this occurs, the white cement concrete finish will absorb the excess water which may result in discoloration of the finished white surface and will reduce the density, durability and strength of the finish. Any water that collects on the surface of the base should be removed before the finish is applied. The concrete for the base should have stiffened sufficiently, without showing footprints, before the white cement concrete finish is placed.

Preparation of Base for Resurfacing—Where the old floor level must be maintained, the old concrete should be cut away to a depth of one inch.

Where the white cement concrete finish is to be placed directly over an old concrete floor, the old surface should be roughened with a pick or grinding tool and all loose particles, grease, oil, paint and other materials should be removed.

In either case, the surface of the base should then be cleaned by scrubbing with clean water, using a stiff brush. Where conditions permit, it should be saturated with water overnight. A cement grout should be broomed into the surface just prior to placing the white cement concrete floor finish.

White Portland Cement—White Portland cement, conform-

ing to the requirements for Type 1 cement of the Standard Specifications for Portland Cement, American Society for Testing Materials (Serial Designation C 150-41), should be used for white cement concrete floor finish.

Aggregates—Fine aggregate for a white cement concrete floor finish should be either white or light colored and consist of clean, hard, durable particles of silica sand, crushed white marble or white stone screenings entirely free from dust, clay, loam or vegetable matter. It should be graded from coarse to fine to meet the following requirements:—

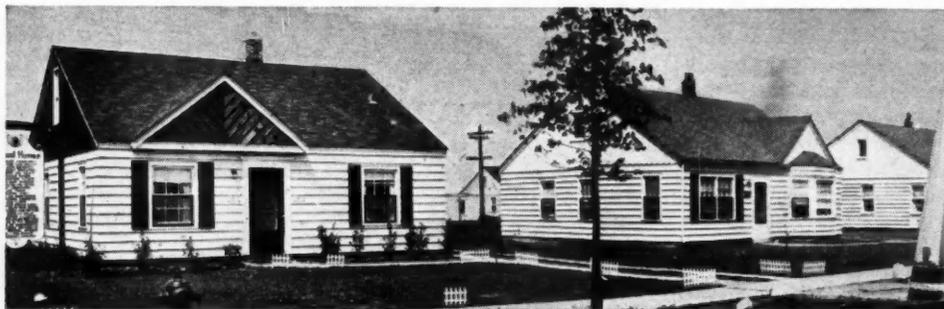
Passing $\frac{3}{8}$ " sieve	100%
Passing No. 4 "	95 to 100
Passing No. 16 "	45 to 65
Passing No. 50 "	5 to 15
Passing No. 100 "	0 to 5

Coarse aggregate should consist of clean, hard, durable, white or light colored aggregate such as high silica gravel, quartz, white stone or white marble free from dust, clay, loam or vegetable matter, and from coatings which tend to weaken the bond. The gradation should meet the following requirements:—

Passing $\frac{1}{2}$ " sieve	100%
Passing $\frac{3}{8}$ " "	95 to 100
Passing No. 4 "	40 to 60
Passing No. 8 "	0 to 5

All aggregates should be submitted for approval prior to use.

Mixture—The nominal mix to be used may vary slightly depending upon local conditions, but as a general rule, a mixture of 1 part white Portland cement, 1 part of fine aggregate and 2 parts of coarse aggregate by volume is recommended. If the aggregate is very coarse, the volume of coarse aggregate may be reduced but in no case should the volume of coarse material be less than one and a half times the volume of the fine. Not more than 5 gallons of mixing water, including the moisture in the aggregates, should be used with each sack of white cement. Separate mixing and placing equipment, and separate tools should be used for the white cement concrete and the grey cement concrete for the base to avoid contamination or dis-



HALVORSEN'S
Linwood Homes
Chicago, Ill.



"Tile-Text floors help sell Defense Homes"

Says F. H. HALVORSEN
Successful Chicago Real Estate Builder

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

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

THE Tile-Text Company CHICAGO HEIGHTS ILLINOIS

coloration of the white concrete. The white cement concrete should be machine mixed and each batch mixed for at least 1½ minutes after all ingredients are in the mixer.

Consistency—The white cement concrete should be of the driest consistency possible to work with a sawing motion of the strike-off board, or straight-edge. Changes in consistency should be obtained by adjusting the proportions of fine and coarse aggregate within the limits specified and without exceeding the water cement ratio of 5 gallons per sack previously mentioned.

Placing and Compacting—After striking off the finish to the established grade, it should be compacted by rolling or tamping and then floated with a wood float or power floating machine. The surface should be tested at frequent intervals with a straight-edge to detect high and low spots which should be eliminated.

Finishing and Trowelling—Trowelling of the white cement concrete finish should follow the floating. Trowelling should not be done when the surface is wet. It should be delayed to permit sufficient hardening in order to prevent an excess of fine materials from being brought to the surface. The finish should be brought to a smooth surface free from defects and blemishes. No dry cement or mixture of dry cement and sand should be sprinkled directly on the surface to absorb moisture or stiffen the mix. After the concrete has further hardened, additional trowelling may be necessary but should be done only as directed. The use of stainless metal or celluloid trowels are suggested as an aid to prevent staining.

Protection and Curing—As soon as the white cement concrete finish has hardened sufficiently to prevent damage to the surface from the elements or other causes, it should be covered immediately with a strong durable type of nonstaining waterproof paper. The paper should be overlapped and sealed with a nonstaining latex cement or equal to insure protection of the surface. The paper covering also acts as a curing aid to prevent too rapid drying out of the concrete surface during warm

weather. As an aid in preventing destruction of the paper, and defacing of the white cement concrete finish, before the floor is put into use, it should be kept covered with clean, dry sand, boards or other satisfactory material placed on the top of the paper.

If at any time during the progress of work the temperature is or may drop within 24 hours to 40 degrees F., the water and aggregates should be heated and precautions taken to maintain the temperature of the concrete above 70 degrees F. for at least three days or above 50 degrees F. for at least five days.

Final Cleaning and Treatment—In order to preserve and maintain the original color of the white cement concrete finish, the following procedure is recommended. After removal of the protective covering, the white cement concrete floor should be swept and cleaned with a machine equipped with special revolving brushes, using water and neutral soap if necessary. After thorough cleaning, the floor surface should then be sealed with an approved type of colorless, transparent, nonstaining material and applied in accordance with the manufacturer's directions.

Letters from Readers

(Continued from page 22)

dollars and that the federal debt may reach more than a hundred billion plus the staggering debts of the states, counties, cities, etc., and that the remnant of the population is impoverished thru inflation and excessive taxation, I am under the impression that the post-war building boom will prove something of a dud.

I am enclosing check for another year's subscription, although I have decided not to renew any more subscriptions until we have a decided change in government, when the individual architect and contractor can look forward to something better than day work on a government day job or a subordinate job with the big subsidized corporations.

WM. A. WELCH,
General Contractor and Builder.



SAMSON SPOT SASH CORD



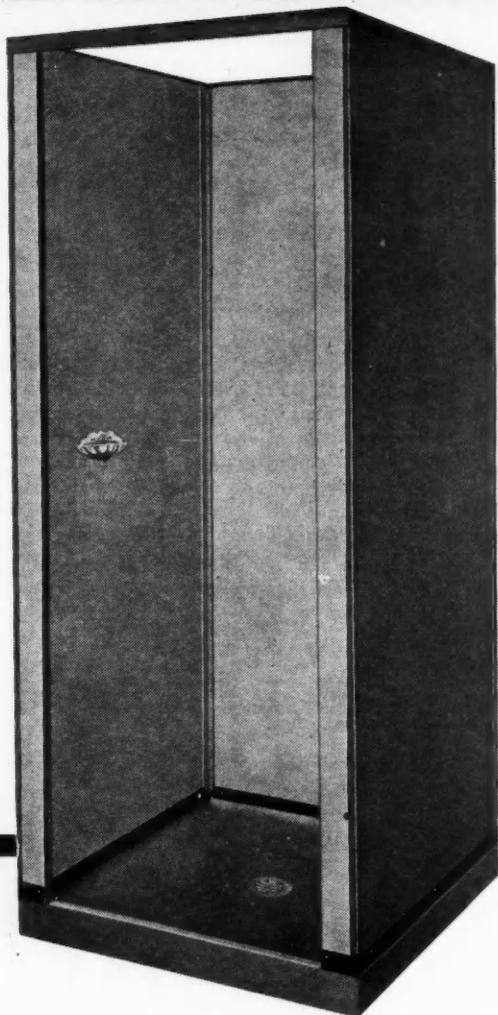
The most durable material for hanging windows.

By specifying and using Samson Spot Cord for hanging windows, with suitable weights and pulleys, you obtain perfect balance by a time-tested method. You also guard against the use of inferior unidentified cord.

SAMSON CORDAGE WORKS, BOSTON, MASS.

★ ★ ★ ★ ★
★ When you buy War Stamps and ★ ★ ★ ★ ★
★ War Bonds, you do two good things ★ ★ ★ ★ ★
★ at the same time — you save for ★ ★ ★ ★ ★
★ a rainy day, and you help ★ ★ ★ ★ ★
★ to win the war. ★ ★ ★ ★ ★
★ ★ ★ ★ ★

Bathe-Rite
VICTORY
SHOWER CABINETS



SAVE 25% on INSTALLATION TIME . .

Contractors! Get all the facts about the Bathe-Rite VICTORY Cabinet's quick-assembly advantages. You'll install MORE high quality Showers in LESS time, at lower cost . . . And make a more effective contribution to Wartime building speed now so essential.

Standard Models—for Every Need

Bathe-Rite VICTORY Cabinets in two sizes (30 x 30 x 75", 32 x 32 x 75") meet all Wartime Specifications of U. S. War Department and Federal Public Housing Authority. Cabinets come to you packed for easy handling, quick installation and easy clean-up, even without skilled help.

WRITE OR WIRE FOR PRICES OR DETAILS!

Delivery assured in any quantity, when and where needed.

Bathe-Rite division
MILWAUKEE STAMPING COMPANY

8275 South 72nd Street

Milwaukee, Wisconsin

WASHINGTON REVIEW

(Continued from page 14)

for periods in excess of the established 40-hour straight-time, work-week, where conditions of unusual emergency exist, and where labor and materials can be obtained with requisite speed and in adequate volume.

"Where such conditions exist, FPHA Regional Directors are authorized to order an increase in the number of working hours per week, and to execute change orders covering payment to the contractor for work in excess of the 40-hour week as required by the contract."

To Halt Non-War Works Projects

DONALD M. NELSON, Chairman of WPB, on October 21 notified heads of eight governmental agencies that he had revoked priority assistance to a large part of non-military construction for the Federal Government.

"As things now stand," Mr. Nelson said, "facilities and construction programmed for 1943, with the carry-over of uncompleted 1942 projects, will absorb between one-fifth and one-fourth of the total war effort. As a result, the aggregate demand of such projects for materials, labor, transportation, manpower, and technical and engineering services is so great as not only to jeopardize the various military and essential civilian production programs in general, but to force the most essential war projects dangerously behind schedule.

"We cannot afford to continue to expend our substance in these times otherwise than in support of the war effort, and so it is obvious that the vast amounts of material and labor being currently expended in the present large public and private construction programs must be diverted into channels which will contribute directly to winning the war.

"In this connection, I am concerned not only with civilian but with military construction as well, which, with the concurrence of the Under Secretaries of War and the Navy, is also to be reviewed and restricted in the light of its essentiality under present conditions."

FLASH—New Edict Cancels Recent Higher Ratings Order

ON Oct. 26, after the departments, "Washington Review" and "On & Off the Record," had gone to press, news of the following new regulation from the War Production Board, canceling part of the "Four Favorable Actions" there referred to, was received. This regulation was signed by W. V. Kahler and was telegraphed to the Regional Offices of the WPB.

"The authorization given in instructions to all Regional Directors of the War Production Board on October 8, 1942, to apply AA-4 blanket ratings to P-55 Orders, is hereby cancelled inasmuch as the allotment of material provided by the associated Determination of the Requirements Committee has been exhausted. Therefore, effective Tuesday, October 27, 1942, and until further notice, no new P-55 Orders shall be issued, regardless of rating; nor shall any applications for reratings of outstanding P-55 Orders be processed with a rating higher than A-1-A.

"Similarly, no new P-110 Orders shall be processed, regardless of rating; nor shall any outstanding P-110 Orders be re-rated higher than A-1-A."

Truck Certificates Now Required

RULES for filing of applications for Certificates of War Necessity for fleets of trucks and buses were issued on October 13 by the Office of Defense Transportation.

Operators of more than two commercial motor vehicles must obtain fleet Certificates for all vehicles, while operators of one or two vehicles require a single unit Certificate for each vehicle.

Certificates of War Necessity are required under General

Order ODT No. 21. Other truck conservation orders, including General Order ODT No. 17, governing operations of contract and private carriers remain in full force and effect.

Mailing of application blanks to fleet operators is nearly completed for the entire country, while mailing of applications for single unit Certificates is approximately one-third completed, Washington officials advise. Approximately 95 per cent of the truck owners require single unit Certificates.

Automotive equipment, such as hoists, cranes, winches, tanks, bodies, etc., are considered "parts" for the purpose of General Order ODT No. 21, Jack Garrett Scott, general counsel of the Office of Defense Transportation, said in an interpretation issued on October 20.

Under the provisions of Order No. 21, no person may purchase, or have installed or mounted upon a commercial motor vehicle, any "part" after November 15, 1942, without having a Certificate of War Necessity for the vehicle on which the part is to be installed or mounted.

Air Conditioning Equipment "Drafted"

WASHINGTON authorities have asked department stores, theaters, hotels and office buildings with air conditioning equipment above 100 horsepower to "volunteer" such equipment for "active duty" in war production factories. Not only is low temperature refrigeration equipment essential to the production of certain types of synthetic rubber and aviation gasoline, but it also serves a myriad of other war production requirements.

Air conditioning, for example, makes possible a high degree of accuracy where work to close tolerances is called for. Thus, it helps insure the accuracy of bombsights and firing devices. In addition, air conditioning serves in the production of powder, in the loading of shells, in the production and processing of photographic film, in the manufacture of lenses and fine optical instruments.

Twin City Hoo-Hoo Club Elects

AT THE OPENING meeting of the 1942-43 program held in Minneapolis, September 3, the annual election of officers was conducted by the Twin City Hoo-Hoo Club.



JOHN H. GILES

John H. Giles was elected president, succeeding Lawrence Youngblood. Other new officers are Clyde Starling, first vice president; Raymond Gore, second vice president and Parker H. Betzer, secretary-treasurer.

Plans were laid for the coming season based on the slogan "Win the War First" adopted at the meeting. Nine new members were inducted into the organization. In appreciation of the service of retiring president Youngblood, a hunting jacket was given him by the members.

Barracks Built in a Day

(Continued from page 37)

the general contractors or the subcontractors to have the workmen speed up any faster than normal, as this, they felt, would serve no useful purpose. However, three bricklayers, employed by the general contractor to build the chimney for the heating stove, got the idea that speed was of the essence, and the way they picked 'em up and laid 'em down on that chimney was worth walking a mile to see.

The total cost of the completed barracks was about \$16,000, which is a lot of building to put up in one day—11 hours and 45 minutes, to be exact, deducting the half-hour lost on account of rain. That night 63 soldiers took over the barracks, all finished, with rooms for non coms, general quarters for enlisted men; showers, toilets, wash basins and electric lights in working order; even the heating stove ready to light, but its use postponed until cooler weather.

The general contractor handled the excavating, foundations, brick chimneys with tile flues, carpenter framing, carpenter finishing, wood sheathing, interior flooring and interior finishing. In charge of the work of his own men, and to co-ordinate the work of the various subcontractors, the general contractor assigned certain men and, in addition, there was a general contractor's foreman over each type of work listed above.

Looking for War Work?



This
**WALKER-TURNER
RADIAL SAW**
can help you get it!

To get war sub-contracts, you must be equipped to handle volume work . . . fast, accurately, economically. That's exactly what you get in the Walker-Turner Radial Saw and why builders using them are busy on war work of all kinds.

The Walker-Turner Radial Saw is a complete shop in itself. It cuts metals, plastics, wood, and many other materials. Sliding Ram design eliminates overhanging arm, affords clear view of work. Ample safeguards. Patented, geared, shockproof motor permits deep cuts with smaller blades.

You can get this fine Walker-Turner Radial Saw promptly for war work, at the very low price of \$354.50. Write for detailed literature, **WALKER-TURNER CO., INC., 10112 Berckman St., Plainfield, N. J.**

MACHINE TOOLS

DRILL PRESSES — HAND AND POWER FEED • RADIAL DRILLS
 METAL-CUTTING BAND SAWS • POLISHING LATHES • FLEXIBLE SHAFT MACHINES
 RADIAL CUT-OFF MACHINES FOR METAL • MOTORS • BELT & DISC SURFACERS

BOOST YOUR YARDAGE 30% to 40% FASTEST 3 1/2 S ON MARKET



Faster Than a Power Loader -- Merely Lift Gate to Charge Next Batch -- Load Hopper While You Mix and Discharge

Today's leading half bagger. Jaeger Drum gives more thoro criss-cross re-mix, faster discharge — Syphon Water Tank is accurate, fast—3 1/4 H. P. Air-Cooled Engine is light, compact—End Discharge Design is fast to trail, easy to spot and pour. *Get Catalog and prices.*



3 1/2 S HIGH SPEED TILTRAILER
Also Non-Tilt Trailers up to 14S Size—World's Biggest Selling Line.

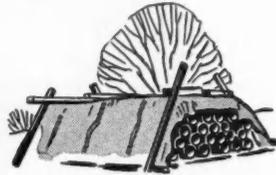
THE JAEGER MACHINE CO.
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JAEGER SPEEDLINE



The SISALKRAFT method of concrete curing is simple, positive, economical. Cover the freshly finished slab with SISALKRAFT and forget it. No sprinkling or flooding — no sand, straw or burlap. The paper can often be re-used many times, offering great economy in both material and manpower. Write for complete data and sample.

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Use tough, waterproof SISALKRAFT to cover materials and tools — close-in and protect for winter. Available in rolls, covers, blankets of many sizes.

Prefab Sections Create Quick Housing

(Continued from page 35)

day and a half. Finished in another day or two it would be ready for occupancy only four or five days after the ground is cleared for the foundation. Cost complete with exception of the lot is only about \$2,200 when erected in quantity.

The Weber design has contributed at least two developments to prefabrication. First, the roof is supported by a single box type girder built of plywood. It extends from front to back of the house, is supported at three points and provides a slightly pitched roof. This girder will accommodate most of the electric wiring and acts as a duct for distribution of both heat and ventilation.

Second, the designer has placed emphasis on interior room arrangement and built-in features to pack livability into every square inch of the 24- x 28- or 30-foot floor area.

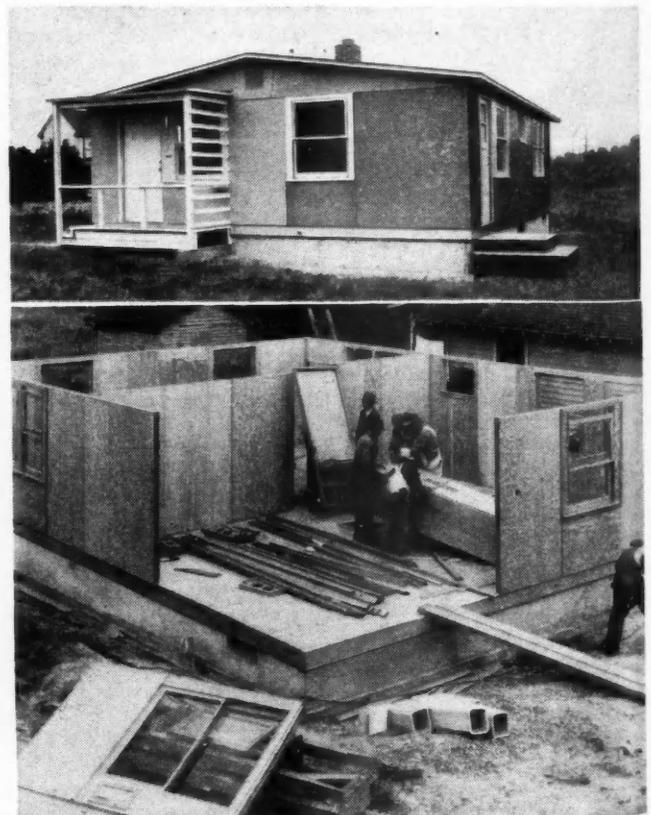
Built-ins which come as standard equipment with the house include the table and dinette bench, ample kitchen cabinets, storage space in the utility room, living room cabinets and shelves and bedroom closets and drawers.

Crux of the Kem Weber system of construction is the factory fabrication of floor sections 4 x 8 feet, wall sections 4 x 7 and roof panels 4 x 12. These are made by gluing plywood to either side of the framework so the plywood becomes part of the load-bearing structure.

For outside of exterior wall sections 3/8-inch exterior (waterproof) plywood, bonded with synthetic resin adhesives, is used. Interior finish is of 1/4-inch plywood of the regular moisture-resistant grade. Floor panels are formed with 1/2-inch panels on top of the joists and 5/16-inch plywood on the under side. The roof sections are of 5/16-inch plywood on top of the rafters as a base for finish roofing and 1/4-inch plywood underneath.

Extra insulation for exterior walls, roof or floor is installed at the factory merely by inserting blankets as sections are fabricated. The original house has blanket insulation in roof and exterior wall sections. A sealer coat is factory-applied to protect panels during erection.

These manufactured parts provide for a locking device permanently holding the wall, roof and floor sections together when erected. It is an interlocking wood spline slipped between the framework of adjoining panels as they are erected.



BUILT-INS FOR CONVENIENCE. Developed by Kem Weber, Los Angeles, Calif., designer, this "manufactured" home includes cabinets and other conveniences as part of walls.

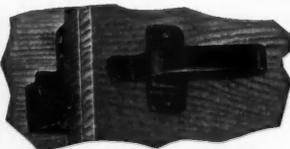
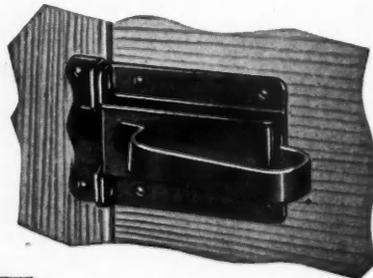
WAGNER

DANDY REVERSIBLE LATCH NO. 847!

FOR SWINGING DOORS....POPULAR PRICED

Center screw covered by latch bar at all times.

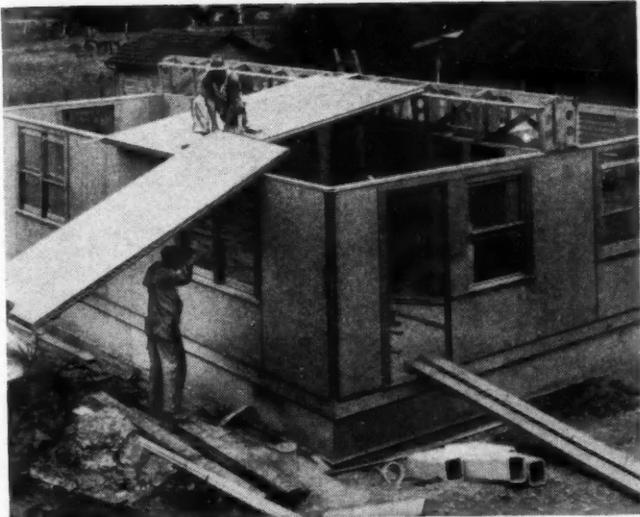
Convenient padlock eye for security.



Furnished with back latch to protect door from damage, from wind, etc.

Here is a quickly installed, economical and efficient latch for swinging doors. Fits right or left hand doors without changing spring. Long latch bar permits space up to 5/8" between door and jamb.

WAGNER MANUFACTURING COMPANY
Dept. AB-1142, Cedar Falls, Iowa



EASE IN HANDLING. Any of the factory-formed wall, roof or floor sections can be handled by two men. Largest are 4 x 12-foot roof sections supported by center plywood girder. All panels are stressed-skin construction.

Erection is simple. After the usual foundation is prepared, floor stringers are placed and the floor panels slipped into place. Anchor plates for wall sections go at edges of the floor panels. Wall sections are erected; as interior partitions are formed, cabinets and other built-ins become part of the walls. The plywood box girder is installed and roof sections hoisted in place. Finish roofing completes erection.

In the original structure the living room and dining alcove has walls finished with light stain in a mellow tan which retains the grain pattern but subdues the contrast. Wallpaper is the finish for the bedrooms. Kitchen and bath are painted. All ceilings slope slightly (under side of the roof panels form the ceilings) and give the effect of added room size.

Home Insulation Tested

(Continued from page 34)

Mr. Anderson in his report gives the following detailed description of the four houses used in these tests:

Construction of Test Houses

"All houses were located within an area of four city blocks, near the north city limits of St. Paul, Minn. In selecting the location for each of the test houses, the relative position of other buildings in the vicinity was considered in order that, as far as practicable, each test house would have equal exposure to sun and wind. The plot on which the houses were constructed was fairly level, and all houses were south facing.

"The test houses were 1½-story structures of standard frame construction. With the exception of the degree of insulation, all houses were identical. The plan from which all houses were erected and dimensions of each are shown. The wall section consisted of rough sand finish plaster on plaster board lath, 2x4-in. studs, wood sheathing, building paper, and wood shingles exposed 8 in. and applied in single course. On the first floor front only, brick veneer construction was used.

"A shed dormer across the entire width of the second floor at the rear, together with the two dormers in front, provided a second floor area nearly as large as the first floor area. The ceiling section consisted of rough sand finish plaster on plaster board lath, applied directly to the underside of joists and rafters. The attic was not floored and a louvered opening in each gable provided means for venting the attic space. The roof section consisted of wood sheathing laid tight, asphalt felt paper with wood shingles exposed 5 in. to the weather. First floor construction consisted of 13/16 in. oak floor, building paper and 1 in. wood subfloor, applied to floor joists. Basement walls were of 12-in. concrete blocks, exposed approximately 12 in. above grade level, and the basement floor consisted of a 4-in. concrete slab.

"All windows in the first and second floors were factory weatherstripped and equipped with storm sash and the base-

(Continued to page 76)

SONNEBORN'S
LIGNOPHOL

The one-application
penetrating
wood finish



FOR GOOD LOOKING, LONG WEARING FLOORS
USE LIGNOPHOL

Lignophol is no ordinary surface finish, but a beautifying and preservative treatment that penetrates into the wood, assuring exceptionally long wear. Yet Lignophol requires only one application instead of the two or three coats needed with ordinary finishes.

Save time, cut costs—and assure more lasting satisfaction by using Lignophol for floors, trim, etc.

Write today for free folder giving full information and performance data covering 25 years of successful use.

Where Results Count—Count on Sonneborn

L. SONNEBORN SONS, Inc.
88 Lexington Avenue New York, N. Y.

NON-TILTING PLASTER-MORTAR KWIK-MIX 6-P

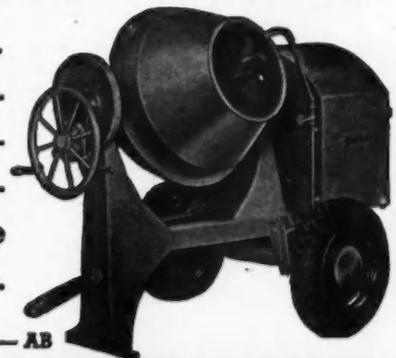


Fast discharge — 7 seconds — no tilting necessary — weighs only 850 pounds — air-cooled engine — V-belt and worm drive.

WRITE FOR BULLETIN NP — AB

3½-S TILTING KWIK-MIX

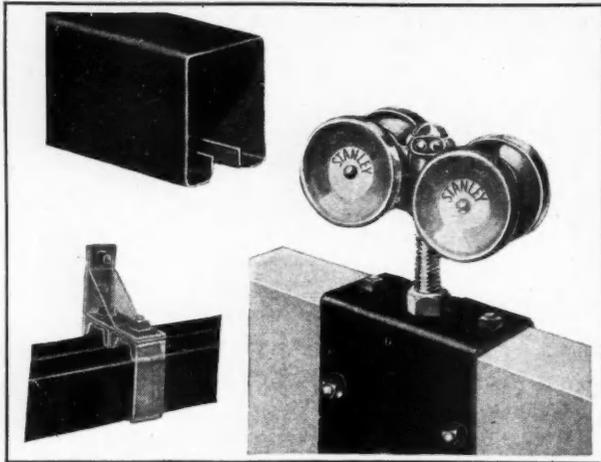
Side discharge — anti-friction bearings — welded construction — discharge either side — spring mounting.



WRITE FOR BULLETIN SD — AB

KWIK-MIX CONCRETE MIXER CO.
PORT WASHINGTON WISCONSIN

STANLEY HARDWARE For Rolling or Sliding Doors



3 Sizes meet all needs for Doors up to 1000 Pounds

Only three sizes, X, Y, and W, of Stanley No. 2641 Track and No. 2650 Hangers, handle all common sliding doors weighing up to 350, 700 and 1000 pounds, respectively. X track is 16 gauge, Y is 14 gauge and W is 13 gauge.

Stanley Hangers have accurate two-way adjusting nut and ball bearing swivels. Stanley "Hold-Fast" Track Clamps hold sections of track rigid and perfectly aligned. Send for catalog describing the complete line of Stanley Hardware.

THE STANLEY WORKS... NEW BRITAIN, CONN.

STANLEY

TRADE MARK

HARDWARE FOR CAREFREE DOORS

Home Insulation Tested

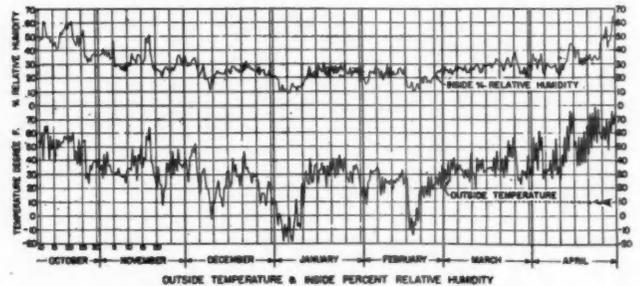
(Continued from page 75)

ment windows were equipped with storm sash but not weatherstripped. Exterior doors were weatherstripped and equipped with storm doors.

"Heat was provided by a forced warm air oil burning furnace having a manufacturer's rated hourly output of 85,000 Btu and the oil burner was of the vaporizing type. The primary and secondary heating surfaces of the furnace totaled 42.5 sq. ft. The heating plant was equipped with a centrifugal blower, belt driven by a two-speed motor. The furnace casing was provided with an inner liner spaced approximately 1 in. from the exterior casing.

"The duct design was identical in all houses and the warm-air supply and return registers were located as shown in Fig. 2. All registers were of the baseboard type, with air flow deflected 15 deg. downward and the return air was filtered. The room thermostat was located on an inside wall of the dining room at a height of 49 in. above the floor, or one-half level, floor to ceiling.

"Of particular interest is the relative humidity in the houses as shown in the chart on this page. This chart shows the result of humidity readings taken in one of the insulated houses. All insulated houses closely resembled each other in this respect.



"It will be noticed on this chart that the humidity in this house during the greater part of the heating season remained between 20% and 30%. This is particularly interesting considering the fact that no artificial humidity was introduced into the house during the test period. Also that there was no cooking, washing, bathing, canning or any of the activities normally common to every day occupancy which add humidity to the average home.

"It should also be noted that the relative humidity followed almost exactly the raising and lowering of outside temperatures and that this continued as shown in the relative humidity at the beginning of the heating season at which time the houses were just completed and at the end of the season at which time the house should have thoroughly dried out. It will be noted that during March and April relative humidities were well over 30% and sometimes over 40%. This indicates importance of moisture barriers on insulation as a permanent protection for the insulation against moisture.

"House A was uninsulated; the three other identical houses were insulated with blanket insulation in exterior walls and second floor ceiling as follows: In House B the insulation was 0.9 in. thick, in House C the insulation was 1.7 in. thick, and in House D the insulation was 2.3 in. thick. The insulating mat consisted of felted wood fibres enclosed between continuous liners of asphalt saturated and coated paper. Insulation in Houses C and D was divided by intermediate liners, separating the total thickness into two individual layers; thus air circulation within the insulating material itself was reduced to a minimum. The conductivity k factor of the insulation was 0.25 Btu at a mean temperature of 70° F. The edges of each strip of insulation were stapled to the inside face of the framing members by means of a spacing flange, which automatically offset the insulation from the inside face of framing and provided an additional air space. The ends of each strip of insulation were fastened to plates or headers. Insulation was applied in accordance with manufacturer's specifications.

"The houses were unoccupied during the tests, for only in this way could the number of times they were entered be definitely controlled. To further regulate the amount of outside air admitted, a definite schedule of opening and closing windows was established. The houses were unfurnished. All first and second floor windows were equipped with shades, which were kept in half-drawn position at all times."

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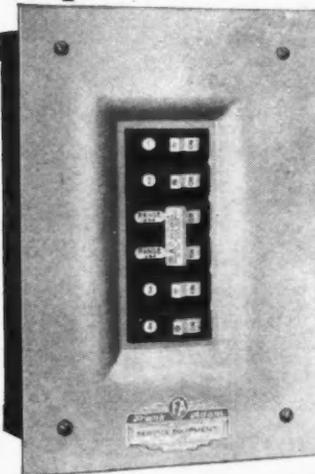
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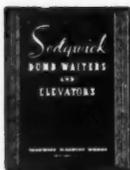
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For Action— Join the Seabees

(Continued from page 49)

said, "Seapower consists of the combined strength of ships, men and bases." In the present war, the Navy must be equipped to build new bases with extraordinary speed in the far-flung corners of the globe. Thus, building and construction men are taking a place second only to the fighting Marines themselves in naval warfare. They must be able to land on some lonely coral atoll thousands of miles from home and quickly change it into a thriving naval base of steel, concrete and specially built structures of many kinds. Their job is not construction alone since they must be ready to fight off any enemy which attempts to interfere.

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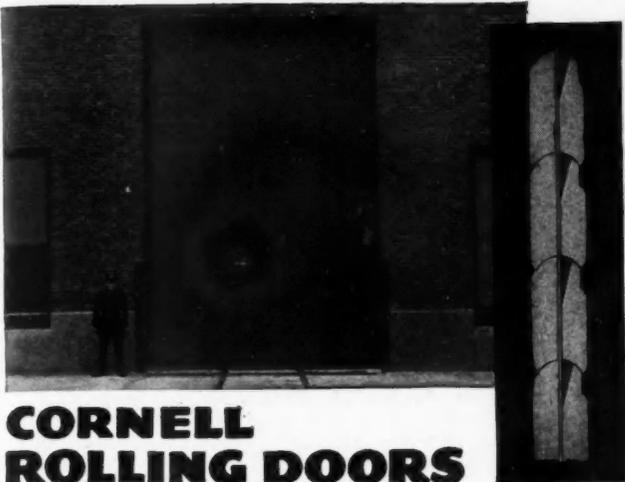
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Of American Builder and Building Age published monthly at Chicago, Ill., for Oct. 1, 1942.

State of Illinois⁹⁵,
County of Cook

Before me, a Notary Public, in and for the State and county aforesaid, personally appeared Bernard L. Johnson, who, having been duly sworn according to law, deposes and says that he is the Editor of the American Builder and Building Age and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

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(SEAL)

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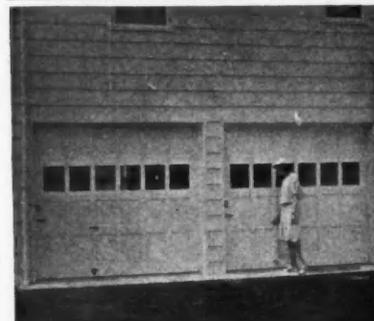
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INDEX TO ADVERTISERS NOVEMBER, 1942

A

Adam Electric Company, Frank..... 77
Aluminum Company of America..... 4
American Builder.....10-65-77
American Floor Surfacing Machine Co. 80
American Fluresit Co., The..... 81
American Saw Mill Machinery Co..... 26
Arkansas Soft Pine Bureau..... 67
Armstrong Cork Company..... 57

B

Barber-Colman Company..... 56
Bathe-Rite Division..... 72
Breinig Brothers, Incorporated..... 81
Bruce Co., E. L..... 61

C

Celotex Corporation, The..... 2
Chicago Tech College..... 80
Consolidated Machinery and Supply Company, Ltd..... 79
Construction Machinery Co..... 81
Cornell Iron Works..... 79
Crane Co..... 25

D

Detroit Steel Products Company..... 13
Douglas Fir Plywood Assn..... 63

F

Farley & Loetscher Mfg. Co..... 81

G

General Electric Home Bureau..... 20

I

Insulite..... 55

J

Jaeger Machine Co., The..... 73
Johns-Manville..... 24

K

Kawneer Company, The..... 5
Kees Mfg. Co., F. D..... 79
Kinnear Mfg. Co., The..... 79
Kwik-Mix Concrete Mixer Co..... 75

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L

Laucks, Inc., I. F.....	58
Lehigh Portland Cement Company.....	17

M

Mall Tool Company.....	77
Markwell Manufacturing Co.....	77
Mengel Company, Incorporated, The.....	23
Milwaukee Stamping Company.....	72
Minneapolis-Honeywell Regulator Co.....	3

N

National Brass Company, Mfrs.....	15
National Gypsum Company.....	8
National Door Manufacturers Association.....	80
National Manufacturing Co.....	4th Cover

O

Overhead Door Corporation.....	3rd Cover
--------------------------------	-----------

P

Paine Co., The.....	79
Pittsburgh Plate Glass Co.....	21
Portland Cement Association.....	62

R

Red Cedar Shingle Bureau.....	68
Rilco Laminated Products, Inc.....	82
Rowe Manufacturing Co.....	53

S

Samson Cordage Works.....	71
Sedgwick Machine Works.....	78
Sisalkraft Co., The.....	74
Skilsaw, Inc.....	78
Smith, Inc., Landon P.....	80
Solvay Sales Corporation.....	66
Sonneborn Sons, Inc., L.....	75
Stanley Tools.....	69
Stanley Works, The.....	19-76

T

Tile-Tex Company, The.....	70
Timber Engineering Company.....	76
Treasury Department.....	16

U

United States Steel Corp. Subsidiaries.....	59
Universal Atlas Cement Company.....	59
Upton Company, The.....	6

W

Wagner Manufacturing Co.....	74
Walker-Turner Co., Inc.....	73
Western Pine Association.....	64
Westinghouse Electric and Manufacturing Company.....	11
Weyerhaeuser Sales Co.....	82
Wheeler Osgood Sales Corp.....	60
White Co., Inc., David.....	81

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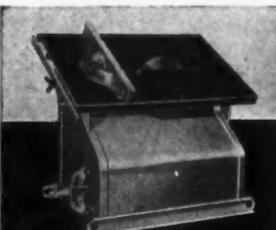
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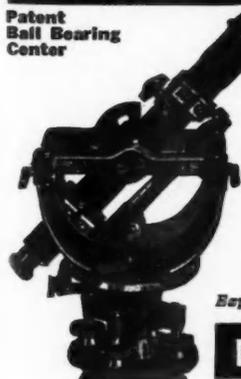


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If you're planning a building where vast clear, post-free spans are required, such as airplane hangars, factories, munition plants, storage and service buildings, auditoriums, churches, recreation centers, drill halls, you can get the job done better, faster and economically with Rilco laminated structural framing members.

Rilco designs, engineers and manufactures glued laminated ply-beams for flat roof structures of one and two stories—beam arches for roof spans up to 200 feet and more—bowstring trusses, standard timber trusses, boomerang, utility arches—

Scientifically kiln-dried—properly seasoned lumber, selected for strength, density and slope of grain, are combined with modern structural glues to form strong and sturdy structural members of any desired size, type or shape.

Rilco glued laminated products are designed and engineered for the specific job—manufactured under rigid factory supervision in five modern plants, strategically located for prompt service—and delivered to the job site ready for erection. Regardless of the size of the job or its location, *North, South, East or West*, Rilco stands ready to help you get the size and type of arch, beam or truss you need. Complete engineering data and design service is available to your architect or engineer. Write today for information on Rilco Products.

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RILCO

DESIGNERS
AND FABRICATORS OF
ENGINEERED WOOD
PRODUCTS FOR A WIDE
VARIETY OF USES

RILCO LAMINATED PRODUCTS, INC.
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1554 FIRST NATIONAL BANK BUILDING, SAINT PAUL, MINNESOTA

Factories: ALBERT LEA, MINN., BRODHEAD, WIS., CHICAGO, ILL., HUNTINGTON, IND., WILKES BARRE, PA.

SAVE TIME with "OVERHEAD DOORS"

Buy
WAR BONDS
& STAMPS



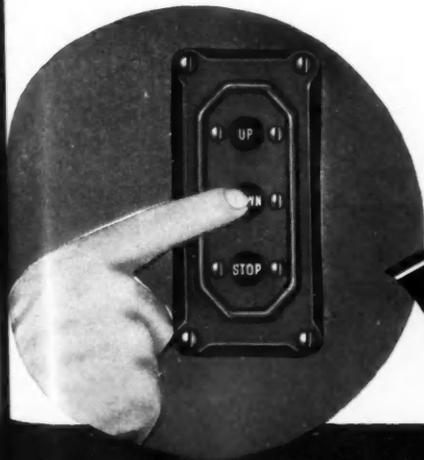
Electrically operated "OVERHEAD DOORS" may be controlled by pull station, push button station or key switch station located at any convenient point.

Fast, reliable door operation is important. The "OVERHEAD DOOR" is saving man-hours in army, navy, marine and coast guard buildings and war production plants. Our facilities are devoted to war work.

This quality door (the result of twenty-one years of collaboration with architects and engineers) is built in any size to fit any opening and sold as a complete unit, ready for installation.

Our Nation-Wide Sales-Installation-Service covers every state in the Union.

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The
OVERHEAD DOOR
TRADE MARK
WITH THE
MIRACLE WEDGE

Save Fuel This Winter



STORM SASH AND STORM DOORS ARE ONE OF THE BEST MEANS OF SAVING FUEL.

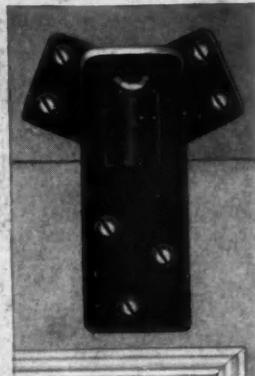
The government recommends the installation of storm sash and doors in climates where temperatures reach the lower levels.

For satisfactory installations use *National Hardware*. Three styles of sash hangers to choose from. These hangers are equally efficient for hanging full length screens. Extra bottom sections can be ordered and installed on screens, simplifying the changing from storm sash to screens for summer use. Hangers come in sets complete with screws, ready to install.

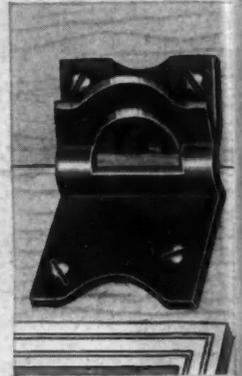
National Combination Screen and Storm Door Latches are artistically designed to harmonize with any style of architecture. They may be had in two styles—Rim Latch or Mortise Latch. Both are strongly built of rust-resisting materials, packed one latch in a box, complete with screws.

See Your National Dealer Today

Your National Dealer carries a complete line of National Builders Hardware—He can aid and advise you in the selection of the proper hardware for every job. His advice is yours for the asking. If your National Dealer does not have certain items of National Hardware you ask for, we know you will be disappointed, but remember many National items have gone to war and are doing their part in the service of our country. When peace once again is restored you will find every item of the National Line back on your dealers' shelves awaiting your selection.



Hanger No. 79

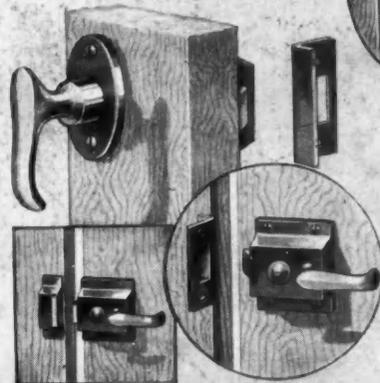
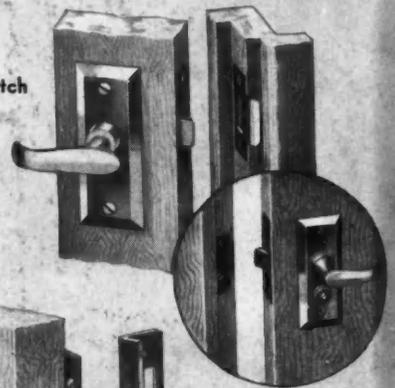


Hanger No. 80



Hanger No. 78
Ideal for use on standard Brick-Mould but works equally well on frame construction.

No. 96
Mortise Door Latch



No. 95
Rim Door Latch

National
Builders Hardware

NATIONAL MANUFACTURING CO. STERLING ILLINOIS