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and Building Age

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# Floors that pay Dividends

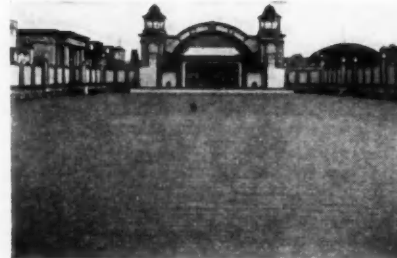
Floors of beauty create proud home-owners, assets for builders. Like Birch, Hard Maple offers many patterns and color effects.



Service counted with Oak Park, Chicago suburb. The new "gym" added to its Emerson school, was floored with Hard Maple, which "had served so well in the original building."



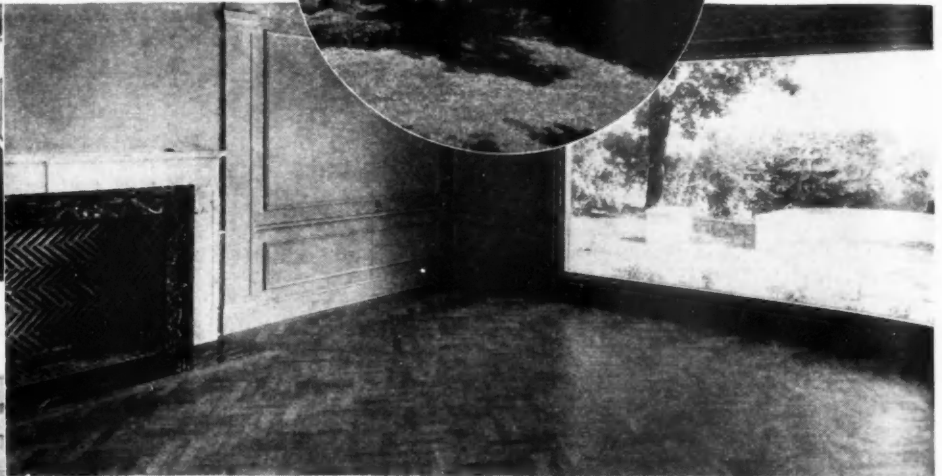
School's a happier place for children confined, when floors are warm and dry and cheerfully clean, as in this Indianapolis classroom, one of thousands floored with Hard Maple.



5 years outdoors in rain, sun and snow, yet this dance floor at Chicago's White City remains in good condition. Perfect for dancing, smooth Hard Maple lowers operators' costs as well.



Visitors to Brown's Bakery, Defiance, Ohio, find sanitation from the ground up, starting with clean Hard Maple floors, as used in hundreds of bakeries.



● Many are Hard Maple's uses, and wherever it's used in floors, one thing's sure . . . you can *forget* that floor once it's carefully laid. No "make this good and that," with Hard Maple.

Of all floorings, this pays dividends, every year of its life . . . dividends not only in comfort, in pride of ownership and satisfaction in use, but in "low cost of using." For its smoothness is lasting, its beauty practically permanent, its cost of maintenance and cleaning remarkably low. And, usually, its extra years of service make it the most economical flooring that money can buy.

This is important to any builder—for a satisfied customer is still the best advertisement. Far-seeing builders consider Hard Maple carefully—on *any* job—and make sure always it's trademarked **MFMA** Maple, the trademark that guarantees it to be all Northern Hard Maple, milled and graded to exacting Association standards.

**MAPLE FLOORING MANUFACTURERS ASSOCIATION**

1781 McCormick Building, Chicago, Ill.

See our catalog data in Sweet's, Sec. 11/77.

Write for photographic folder on **MFMA** Maple flooring



Scores of textile plants, like the Grabur Silk Mill at Graham, N. C., are floored with Hard Maple, most economical flooring for most industries.



Hundreds of skaters nightly rolling on eight wheels each—that's punishment. But "Skateland" with its log cabin style **MFMA** Maple floor (Trenton N. J.) makes sure of satisfied skaters, as rinks everywhere.

Floor with **MFMA** Maple  
REG. U. S. PAT. OFF.  
 (N O R T H E R N H A R D)

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# PUBLISHER'S PAGE

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## The War and Business

**S**INCE this page appeared last month the war in Europe, the probable effects of which were then discussed here, has begun; and, contrary to experience in 1914, its first effect *apparently* has been to stimulate business in this country. Why "apparently"? Because, in spite of constant threats of war, this country's business in general already had been slowly gaining for almost four months; and it is impossible to tell how much of the accelerated gain that occurred in September would have occurred if the war had not commenced.

Anyway, the war has commenced; and also during the last month general business has made one of the most marked advances ever recorded in the same length of time. The steel mills, whose output is the best single measure of durable goods production, have suddenly received orders compelling them to operate almost to their actual capacity. In the first eight months of the year railroad freight loadings averaged only 60 per cent as large as in 1929; but by the middle of September they were almost 75 per cent as large.

**C**AN we reasonably expect a continuance of improvement in our business for some time if we stay out of the war? The correct answer seems to be, "Yes,—if we act sensibly." We have had for years at home a vast and increasing *potential* demand for goods—especially housing and other durable things. All we have needed for restoration of prosperity have been changes that would convert this vast domestic *potential* demand into *effective demand*—i.e., buying. The war—if we stay out of it—is sure, for some time at least, to increase foreign buying of many American goods—buying, for example, from South America of goods formerly bought from the nations now warring in Europe. This increased foreign demand may not only add *directly* to our volume of business, but may *indirectly* start

changes that will help increase our effective domestic demand for many commodities.

But let us not fool ourselves. The war, if we stay out of it, probably will, at least temporarily, help our business. But we can easily exaggerate how much it will help. And it is certain that American producers must continue to depend almost entirely upon American buyers for their markets. The buyers of *consumers'* goods are individuals; the buyers of *durable* goods are principally business concerns; and we can't have recovery and prosperity unless we greatly increase buying by both—especially the latter.

**H**OW, then, increase buying—especially of durable goods, including housing, and the materials and labor used in it? *By reducing government spending and taxing, and government interference with business.* This needs to be emphasized now more, and more strongly, than ever. The country has waited for six years under the New Deal administration for the increase in the buying of durable goods by *private enterprise* that is still necessary to starting a real recovery. But private enterprise thrives only on *freedom*—freedom from excessive taxation; freedom from government spending that often subsidizes competition with it; freedom from too much government regulation.

General business in this country declined during over four months of this year, and then had improved almost four months before the war in Europe began. It now promises to continue improving during the rest of this year and at least the first half of next. How assure its continued improvement? We repeat: "*By*"—*not increasing, but—*"*reducing government spending and taxing and government interference with business.*"

*Samuel O. Dunn*

# Warning

**COLD NIGHTS JUST AHEAD  
—PLAY SAFE...USE 'INCOR'**



**W**HEN Winter sets in and weather gets really cold, you're all set for it. But these sunny Fall days fool you; nights turn cold when you least expect it. Down goes the thermometer . . . and, unless you're prepared, frost may nip the concrete.

Be on the safe side. Use 'Incor' 24-Hour Cement . . . heat the mixing water . . . to avoid heat loss, protect the concrete promptly after placing. For 24-hour service strength, supply heat in order to maintain curing temperature at about 70°.

'Incor', a more thoroughly processed Portland cement, is service strong and safe from freezing in one-fifth the usual time. That saves heating expense, cuts winter costs all along the line.

Dependable high early strength plus long-time durability—proved by 'Incor's 12-year service record. Figure 'Incor' cold-weather savings on jobs already under way or about to start. Use 'Incor'\* this Winter—you'll be money ahead if you do. Write for copy of "Cold-Weather Concreting." Lone Star Cement Corporation, Room 2232, 342 Madison Avenue, New York.

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

*Sales Offices:* ALBANY, BIRMINGHAM, BOSTON, CHICAGO, DALLAS, HOUSTON, INDIANAPOLIS, JACKSON, MISS.; KANSAS CITY, NEW ORLEANS, NEW YORK, NORFOLK, PHILADELPHIA, ST. LOUIS, WASHINGTON, D. C.

**LONE STAR CEMENT CORPORATION**  
MAKERS OF LONE STAR CEMENT . . . 'INCOR' 24-HOUR CEMENT

# AMERICAN BUILDER

## AND BUILDING AGE

### No Building Blackout Here

*What will the war do to building?*

*How fast will prices rise?*

*Is a home a good buy now?*

WHILE there are no sure-fire answers to such questions as the above, we can profitably examine the war factors already affecting the building business, compare them with 1914 and attempt to draw conclusions that will be of value in planning business for the coming months.

Perhaps it should be said that the *only* thing anyone can be sure of today is that as long as the fate of nations hangs on the unpredictable decisions of dictators Hitler, Stalin and their axis partners, uncertainty must be expected.

Bearing this in mind, the first fact of importance for building men to consider is that when the first world war broke out in 1914 the building industry was in a declining market.

For several years construction had been lagging and the twelve months previous had seen a sharp drop. In spite of the fact that when war was declared the stock market closed for five months and U. S. business for a time came almost to a standstill, building volume was not materially lessened. It leveled off the first few months, the decline was stopped, and by the end of the first year construction had turned up.

#### Now On Rising Market

This time we are on a rising building market with a definite shortage of homes. The stock market has spurred upwards at once—and a rising stock market has always been an aid to home construction. The American banking system today is strong. Business in general is better prepared for war—psychologically and otherwise. The anticipated war demand for American goods will come at a time when business indices are moving upward. The result should be a sharp upturn in business of all kinds—not just in war materials.

It is important to note that a good part of increased sales of American products will not go to belligerents but to neutrals—including South America—whose orders were formerly filled by the now warring nations.

It is a natural conclusion, therefore, that better business, more wages, higher incomes and higher market values will have a favorable effect on home building.

#### "Buy Now," Says Wenzlick

Roy Wenzlick, president of Real Estate Analysts, Inc., speaking before the National Association of Woodwork Jobbers in Chicago a few days ago, said, "If you are

going to build a house, now is the time to do it." November and December should show good construction gains, he declared, and predicted that the first six months of 1940 will be good. After that, rapidly advancing building costs will affect the rising volume, he indicated.

There has been much loose talk about rising building costs. If the war continues there will eventually be a considerable rise. But *American Builder* believes more harm than good is done by scaring the public, as did the prominent New York builder who announced a \$500 to \$1,000 price increase in his houses effective in one week! The American public is in no mood to be rushed into building by talk of sharp increases in building costs. A few may be stampeded, but the more likely result is that the majority of prospective buyers will decide that costs have gone out of sight and will just decide to postpone buying.

#### What About Prices?

Opinion differs as to the extent of rise possible. Wenzlick points out that building costs advanced 218 per cent in the six-year period after the start of the first world war, and implies that a similar rise may take place this time. On the other hand, Roger Finkbine, president of the National Retail Lumber Dealers' Association, has pledged the 100 per cent co-operation of the entire retail lumber industry to oppose any unjustifiable increase in items used in home building, thereby jeopardizing the recent gains in low-cost home construction. Very few increases are thus far justifiable, and those occurring can be put down largely to speculation. While individual builders should by all means point out the advantage of buying now, the industry as a whole should vigorously set itself to oppose sharp increases, such as occurred in 1937 and killed off the then promising boom.

One powerful argument that builders and realtors can use to effective advantage today is that in a world full of uncertainty and confusion, the average citizen will find, more than ever before, that a home of his own is the best and safest form of investment. No matter what happens, Mr. John Citizen has to have a place to live, and in a home of his own he is more secure against rising costs than in a rented house or an apartment, where rents have already turned sharply up. With the possibility of inflation ahead—either the moderate inflation of higher prices or the more excessive inflation possible from other economic causes—the home owner with a long-term mortgage stands to profit. He can now obtain a 20 or 25-year mortgage with a *fixed* monthly charge that is the lowest in the nation's history. The purchase of a home on such terms is the best possible hedge against inflation that the average citizen can make.

While rents go up, the home buyer can today finance his home at low interest rates with charges fixed, no matter what happens to the nation's price structure. A timely warning should be made, however, that present low interest rates are the result of a plentiful supply of money that may not continue indefinitely. As industrial expansion increases, the trend in interest rates will be upward. The present softening of the government bond market is an indication of this trend.

### But If U. S. Enters

All of the above is based on the assumption that the U. S. will not enter this war. Any building industry man who wishes to see his industry continue to function will certainly join in every effort possible to see that we do not get in. Several members of the *American Builder* staff and thousands of its readers passed through one war in which the U. S. partook. The world was not saved for democracy, the war debts were not paid, and we are still suffering from the economic dislocation that war caused. When the United States entered the war, private and residential building volume dropped precipitantly, and finally practically stopped except for construction of cantonments and other emergency government work.

### Keep Out and Keep Busy

The only really valid argument against the purchase of a home today is by the young man of army service age who says, "I would be a fool to tie myself up with payments on a house. If I go into the army, how can I keep them up on \$30 a month!"

One answer to this is, of course, we do not expect the United States to enter the war. But a further and more complete answer would be to secure the co-operation of your local financing institution in having a clause inserted in the mortgage to the effect that in case of war, payments on the principal of the amortized mortgage would be deferred until the mortgagee is discharged from service. Fortunately, most prospective purchasers of homes are married men with children who would be last to be called in time of war.

The best slogan for the building industry is "Keep Out and Keep Busy." The effect of industrial payroll expansion is already being felt. More men are being put back to work and plants and industries long idle will soon be putting more money into circulation. Higher prices for farm products will mean prosperity on the farm and a consequent increase in farm building and improvements. In the cities, where residential vacancies already are in many areas less than one per cent, the increase in business, plus a movement of workers to the cities, will quickly create a need for more housing. The job for every building industry man is, first, to help keep the U. S. out of this war and, second, organize a private "Build Now Campaign" of his own, for it is entirely possible that those who build homes during the next six months will get them at lower prices than they will see again in this generation.

## "TRUCOST" MARCHES ON

A FURTHER improvement in the "TruCost" estimating figures, which are given for all home designs illustrated in *American Builder*, now puts these accurate quantities right on the home design page along with the photograph and floor plans. Up to this time this information has been carried on a separate page in tabular form. The editors believe that having the "TruCost" estimating figures right alongside the house design will make them much more usable and convenient to refer to. Look for this new feature in the home design section this month.

The "TruCost" system of estimating, fully protected by copyright and patent registration, was introduced to *American Builder* readers in the magazine of May, 1938. So it is just eighteen months old; and in that comparatively short time has won many friends. As a method of quick, accurate estimating, which does not require figuring the complete detailed bill of materials, "TruCost" is worth hundreds of dollars. If a contractor's time, to say nothing of his eyesight and general health, is worth anything at all, an estimating system like this that relieves him of hours and hours of detailed work figuring estimates on houses that he never builds, adds up as something mighty valuable. And so "TruCost" has been adopted by many contractors, builders and dealers; and it has relieved them of much non-productive labor, at the same time helping them to a quick, accurate price to quote a customer promptly and to close many a sale.

### Basic Idea Is Very Simple

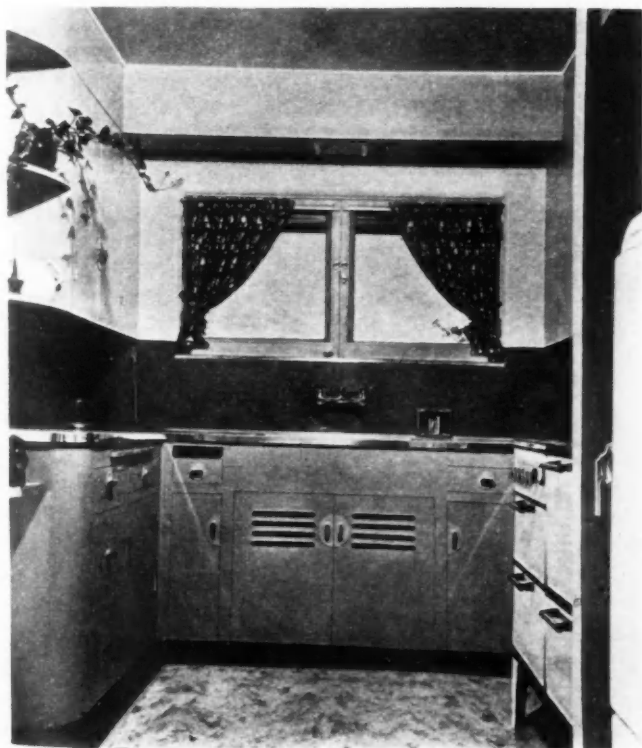
The central idea of "TruCost" is very simple. It is a perfected system of estimating "by the square" instead of by individual pieces of lumber and other items of material. A "square of outside wall," for instance, includes not only the outside siding but the building paper, the sheathing and the studding and sills as well. Each contractor makes up his own list of materials and cost of construction of this "square of outside wall," and that cost then becomes his own individual, accurate cost which can be applied to any house he undertakes to build.

The "TruCost" estimating figures give the exact number of each of the units of construction to complete the "TruCost" estimate. These figures are, of course, fixed and unchanging for each design as illustrated. However, the method of construction and the use of materials, and the resulting costs are entirely within the control of each individual builder. In this way, these "TruCost" figures are accurate and hold good for any and every community.

The "TruCost" system leaves the fixing and quoting of the price where it should and must be, namely, with the local dealer and contractor who have the responsibility of making good on such quotations by actual delivery and performance. Many *American Builder* readers have put their own cost records into the shape and form required for "TruCost" estimating, and these convenient quantity figures now listed alongside each design should be a real help to the active men of the building industry.



OUTDOOR LIVING ROOM with barbecue fireplace is feature of \$1,000 prize winner built by Frederick J. Zimowski at Altadena, Calif. (Plans on page 35.)



### Better Kitchens—

STEP SAVING, labor saving kitchens with modern arrangements such as the one above set a new record in this Builders' Competition. The U-shaped kitchen above is in the mountain home at top of page detailed on the two following pages; designed by Harold J. Bissner.

## Prize Winning A. G. A. Builders' Competition Homes

ON THE following thirteen pages is shown a selected group of prize-winning homes in the American Gas Association's Builders' Competition. From the hundreds of houses entered by builders from all parts of the country, the judges picked a group of well equipped, well laid out houses that show that operative builders and building professionals as a whole are making real progress in home design, construction and equipment.

THE CONTEST SHOWED that there is a strong tendency towards more practical, salable design. Only a small percentage of the entries was of the flat roof, modernistic type. The jury which picked the prize winners was composed of two prominent builders—George F. Nixon of Chicago and Hugh Russell of Seattle; two architects—Otto Teegen of New York and Miles Colean, assistant administrator of FHA, Washington; and Bernard L. Johnson, editor of the *American Builder*.

## \$1,000 Prize Winner



UNPAINTED, 1 by 12 in. redwood boards with 2 in. battens are used on this California prize-winning home. The house has a modern open plan with large windows overlooking the canyon.

## Mountain Home—Rough Redwood Board Exterior



CLOSE-UP OF EXTERIOR shows unusual brick entrance detail and use of horizontal redwood contrasting with vertical battens. BELOW is interior looking towards the dining room from the living room.



**Frederick J. Zimowski, Builder**  
**Harold J. Bissner, Architect**

THIS \$1,000 ALL-GAS, PRIZE-WINNING HOME has an unusual exterior and floor plan that are ideally suited for the location overlooking a canyon near Altadena, Calif. Large windows and glass doors face out over the view, and the house naturally opens out into an outdoor living room where the family will undoubtedly spend a large part of its time. The rough redwood boards of the exterior are 1" x 12" placed vertically with 2" battens. The boards are given only 1 coat of raw linseed oil. Underside of the 30" eaves, however, has been given 3 coats of olive green paint to blend with the sage brush and greasewood.

GAS EQUIPMENT includes a Betz vertical closet-type gas-fired air conditioning system located in a closet off center hall. Hot water is supplied by Crane "Champion" 20-gal. automatic storage unit. The refrigerator is an Electrolux G-410.

FLOORS throughout are of "Diacrete" lightweight concrete—a 4" reinforced slab laid on a cinder bed. All rooms are fully carpeted except bath, kitchen and service porch. House is fully insulated with 4" Gimco mineral wool.

**"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE:**  
Trench Walls, 220 lin. ft.; Basement Floor, 42 sq. ft.; Garage Floor, 2.90 sq. ft.; Outside Walls, 18.00 sqs.; First Floor, 12.00 sqs.; Ceiling, 15.30 sqs.; Roof Pitch, 4 1/4" rise per ft. run; Roof, 23.10 sqs.; Hips and Valleys, 264 lin. ft.; Cornice, 36", 220 lin. ft.; Partitions, 170 lin. ft.; Inside Finish OS Walls, 167 lin. ft.; Front and OS French Doors, 9 opgs.; Rear and Grade Doors, 2 opgs.; Garage Door 8 ft. wide, 2; Inside Doors and Cased Opps., 16 opgs.; Windows and Casements, 18 opgs.; Chimney, 20 lin. ft.; Porch Floor, 3.60 sqs.; Porch Ceilings, 152 sqs.; Porch Beam, 26 lin. ft.; Porch and Balcony Post and Newels, 2; Porch and Deck Rail, 4 lin. ft.



### All-Gas Equipment

INTERIOR done in modern style with smooth finish interior stucco, built-in cabinets and attractive brick-faced fireplace with large mirror.



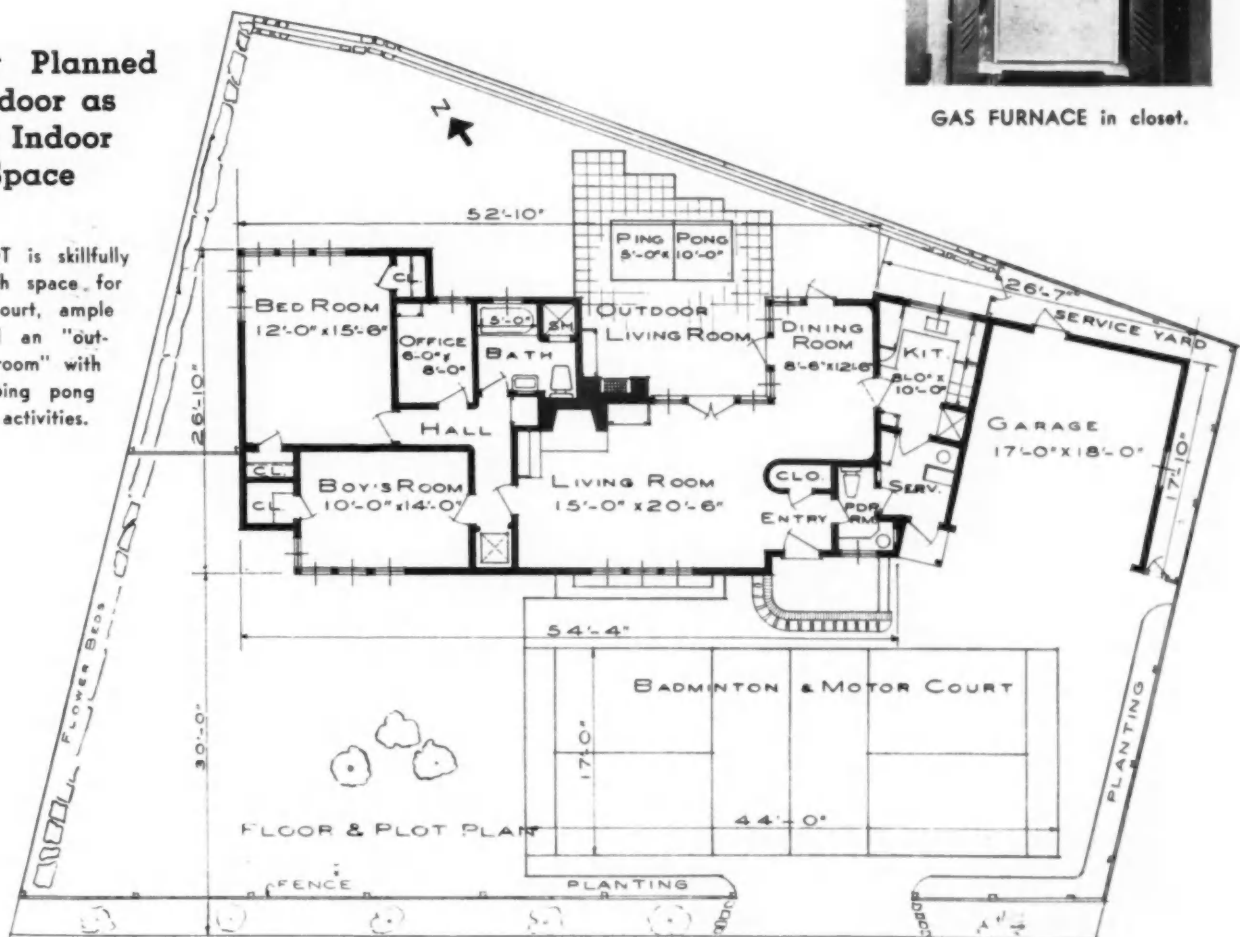
THE MANNER IN WHICH THIS HOUSE is fitted to its site, as well as the interior arrangement, shows a fine understanding of the living requirements of the occupants. The living and dining rooms open naturally upon a well-laid-out outdoor living room on the edge of the canyon. The large glass doors and windows facing towards the view bring light and air into the interior. The kitchen is compact and well laid out, convenient to the dining room, and also has access to the front door through the powder room. The master bedroom has large corner windows which also overlook the view, and the boy's room has built-in bunks. Since there is no basement the gas-fired heating unit is located in a closet off the hall.



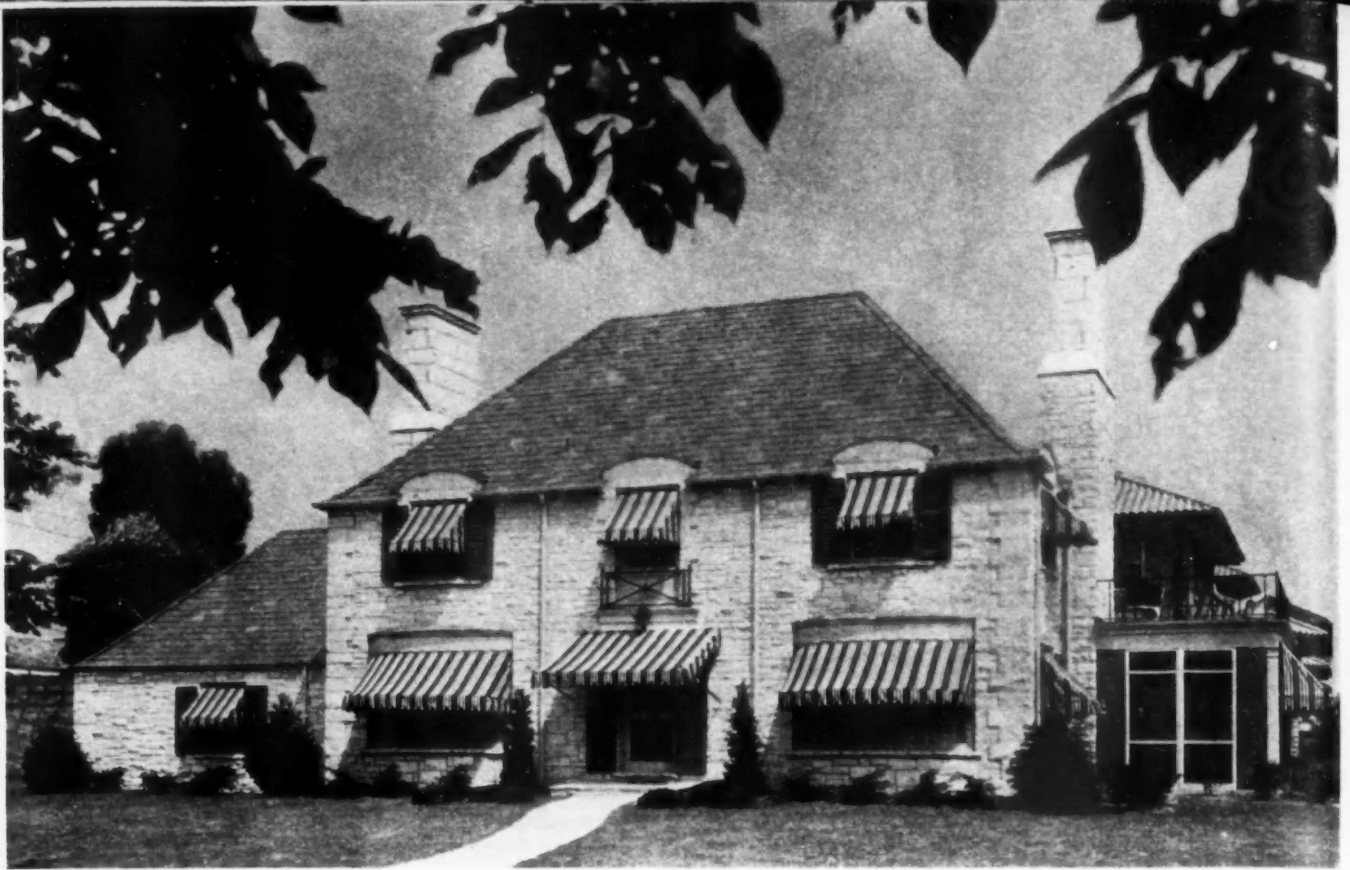
GAS FURNACE in closet.

### Expertly Planned For Outdoor as Well as Indoor Living Space

ENTIRE PLOT is skillfully laid out with space for badminton court, ample parking, and an "outdoor living room" with space for ping pong and other activities.



USE:  
Floor, sqs.;  
23.10  
; Par  
Front  
opgs.;  
opgs.;  
Porch  
n. ft.;  
Rail,

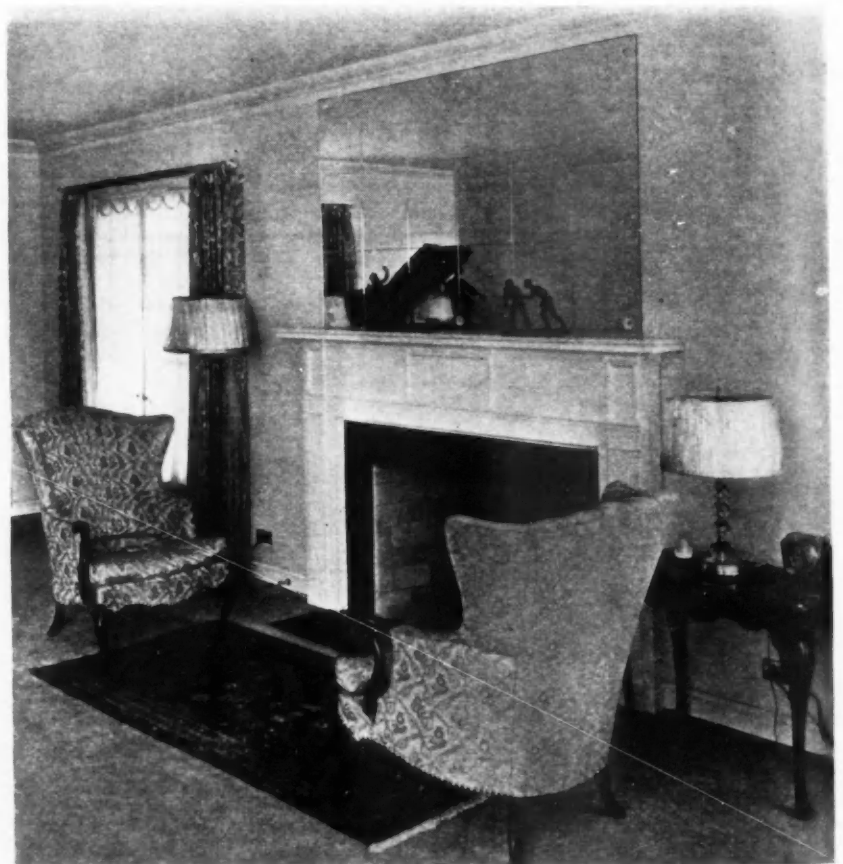


**7-Room French Provincial  
with Stone Exterior**

**R. W. Bramberg, Builder, Oak Park, Ill.**

THE MAIN PORTION of this imposing French Provincial home is flanked by two large stone chimneys. A two-car garage balances the living room porch at opposite end. The two bow windows repeat the curved lines of the three front dormers breaking through the cornice, giving the exterior a pleasing and refined styling. The kitchen, as viewed on the opposite page, is efficiently laid out with straight-line production from the refrigerator at the rear entrance to the stove at dining room door.

**\$1,000 PRIZE WINNER  
GAS EQUIPPED**



THE LIVING ROOM, as seen at the right, indicates the clean-cut, modern detailing of interior in this French Provincial home built by R. W. Bramberg, Oak Park, Ill., and shown above, with plans on the opposite page. The scored mirror over the mantel is an unusual and attractive feature.



### CONSTRUCTION OUTLINE

**FOUNDATION:** Walls and floor poured concrete; asphalt dampproofing.

**STRUCTURE:** Stone veneer over stud walls; sheathing, Celotex T & G Vapor-seal; inside lathed with USG Rocklath and plastered; floor construction, wood joists.

**ROOF:** Wood rafters and sheathing with asbestos shingles; 4" rock wool.

**FIREPLACE:** Black marble face.

**SHEET METAL WORK:** 26-gauge Toncan.

**WINDOWS:** White pine sash; L-O-F glazing; bronze weatherstripping; Fenestra steel basement sash.

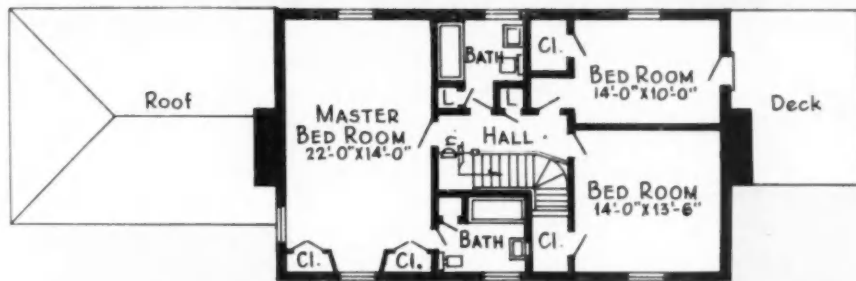
**FLOOR COVERING:** Clear oak throughout. Linoleum in kitchen; baths, tile floor and wainscot; recreation room, asphalt tile.

**HARDWARE:** Corbin cast brass.

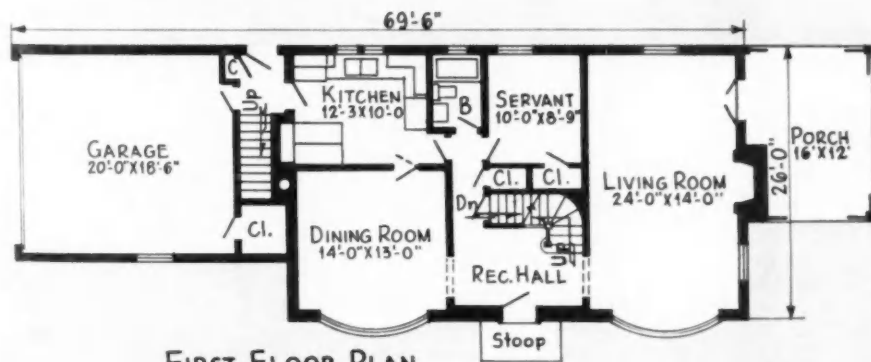
**PAINTING:** Exterior, 3 coats "Dutch Boy" white lead and oil; interior, Pratt & Lambert 3 coats.

**ELECTRIC FIXTURES:** Lightolier.

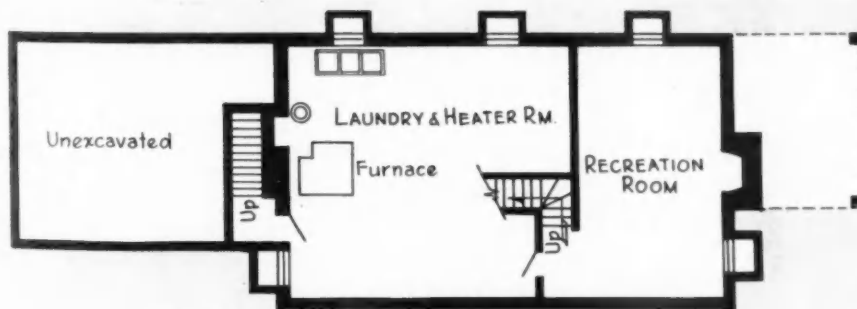
**WINTER CONDITIONING:** Gas-fired Sunbeam heating system.



SECOND FLOOR PLAN



FIRST FLOOR PLAN



BASEMENT PLAN

**EXCELLENT PLANNING** was one of the major considerations in awarding a first prize to this Oak Park house built by R. W. Bramberg. From the well proportioned reception hall, there is access to the living room on one side, dining room on the other, to stairs to the basement recreation and utility rooms and to the second floor. A rear hall kept to minimum size connects servant's room, bath and kitchen, giving perfect circulation. A second stair to the basement leads down from the service and grade entrance. A breakfast set with cupboard above fits into one corner of the kitchen. On the second floor three good-sized bedrooms, two baths and plenty of closets are well planned.



**\$1,000  
PRIZE  
WINNER**

## "Spirit of New England"

**Delval Construction Co., Builders  
Oscar A. DeBogdan, Architect**



IN describing this White Plains, N.Y., house the architect said that it is of "simple design capturing the spirit of early New England architecture." It also captured a \$1,000 prize in the A. G. A. Builders' Competition. Floor plan is flexible and efficient, with room over garage convenient as maid's room, guest room or study. Specifications include C. A. Dunham Co.'s "Sav-T-heat" gas vapor system; 40-gal. Whitehead Monel metal gas water heater; Electrolux refrigerator; Roberts and Mander "Quality" gas range; Anti-Hydro waterproof cement; Anaconda copper termite flashing; Red River Lumber Co. redwood siding; USG Red Top Diamond, Jr. wirelath; Murphy kitchen cabinets; Armstrong linoleum; Kohler plumbing fixtures; Lightolier Colonial fixtures; Richard E. Thibaut wallpaper; Bangor slate roof; Anaconda leaders, flashing, water pipes and heating pipes; Curtis Silentite windows, doors and trim; Minwax floor finish on oak floors; Dutch Boy white lead and oil paint.

**FOUR BED-  
ROOMS and 3  
baths are included  
in plan. Compact  
gas vapor  
system and hot  
water heater are  
shown at right.**



**"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE:** Basement Walls, 135 lin. ft.; Trench Walls, 130 lin. ft.; Basement Floor, 930 sq. ft.; Garage Floor, 400 sq. ft.; Excavation per ft. deep, 41 cu. yds.; Outside Walls, 27.40 sqs.; First Floor, 9.60 sqs.; Second Floor, with fin. fl., 12.70 sqs.; Ceiling, 10.00 sqs.; Roof Pitch, 9" rise per ft. run; Roof, 20.50 sqs.; Hips and Valleys, 30 lin. ft.; Cornice, C & F, 120 lin. ft.; Cornice, 8", 108 lin. ft.; Partitions, 350 lin. ft.; Inside Finish OS Walls, 292 lin. ft.; Front and OS French Doors, 3 opps.; Rear and Grade Doors, 2 opps.; Garage Door 8 ft. wide, 2; Inside Doors and Cased Opps., 31 opps.; Windows and Casements, 28 opps.; Chimney, 38 lin. ft.; Main Stairs, 2; Porch Floor, 2.94 sqs.; Porch Ceilings, 2.20 sqs.; Porch Beam, 45 lin. ft.; Porch and Balcony Post and Newels, 13; Porch Roof, 3.84 sqs.; Porch Cornice, 58 lin. ft.; Porch and Deck Rail, 16 lin. ft.

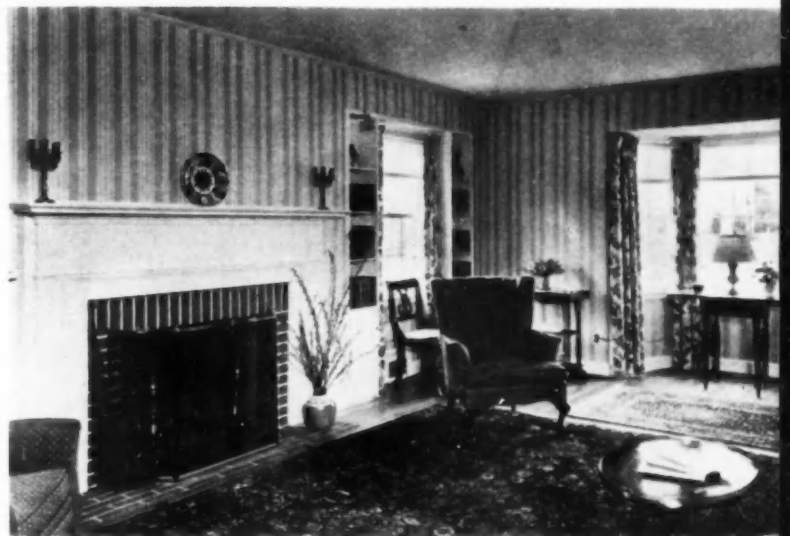
**\$500  
PRIZE  
WINNER**



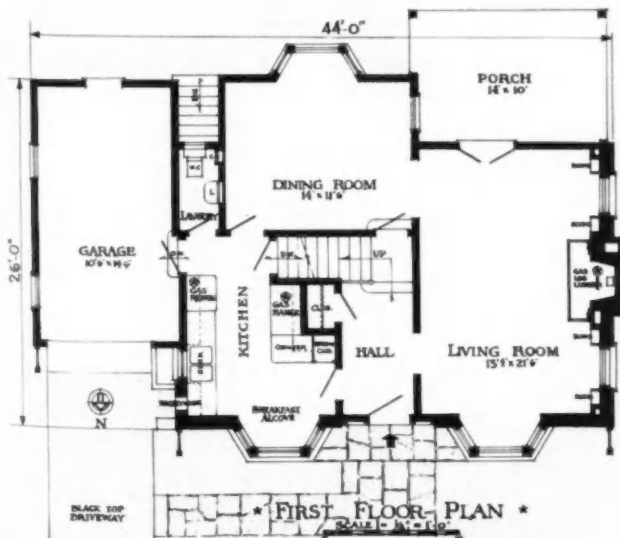
## All-Gas Dutch Colonial

GOOD DESIGN and a compact, efficient plan make this Dutch Colonial, built by M. R. Marksbury of Columbus, Ohio, a winner. Equipment includes a Sunbeam gas-fired air conditioning unit. "Overhead" garage door, Curtis Silentite windows, Armco 25-gauge flashing, Donley fireplace equipment, Toch Bros. integral waterproofing, Pratt and Lambert interior paints, Cabot's Double-White exterior paint. The architect is W. F. Breidenbach.

**"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE:** Basement Walls, 132 lin. ft.; Trench Walls, 33 lin. ft.; Basement Floor, 814 sq. ft.; Garage Floor, 200 sq. ft.; Excavation per ft. deep, 38 cu. yds.; Outside Walls, 22.00 sqs.; First Floor, 8.50 sqs.; Second Floor, with fin. fig., 9.24 sqs.; Second Floor, without fin. fig., .35 sqs.; Ceiling, 10.50 sqs.; Roof Pitch, 5" & 11" rise per ft. run; Roof, 28.20 sqs.; Hips and Valleys, 10 lin. ft.; Cornice, C & F, 238 lin. ft.; Cornice, 6", 40 lin. ft.; Partitions, 230 lin. ft.; Inside Finish OS Walls, 260 lin. ft.; Front and OS French Doors, 3 opps.; Rear and Grade Doors, 2 opps.; Garage Door 8 ft. wide, 1; Inside Doors and Cased Opps., 25 opps.; Windows and Casements, 32 opps.; Gable Sash and Louvers, 5 opps.; Chimney, 34 lin. ft.; Main Stairs, 1; Porch Floor, 1.60 sqs.; Porch Ceilings, 2.00 sqs.; Porch Beam, 41 lin. ft.; Porch and Balcony Post and Newels, 13; Porch Roof, 1.50 sqs.; Porch Cornice, 30 lin. ft.; Porch and Deck Rail, 16 lin. ft.

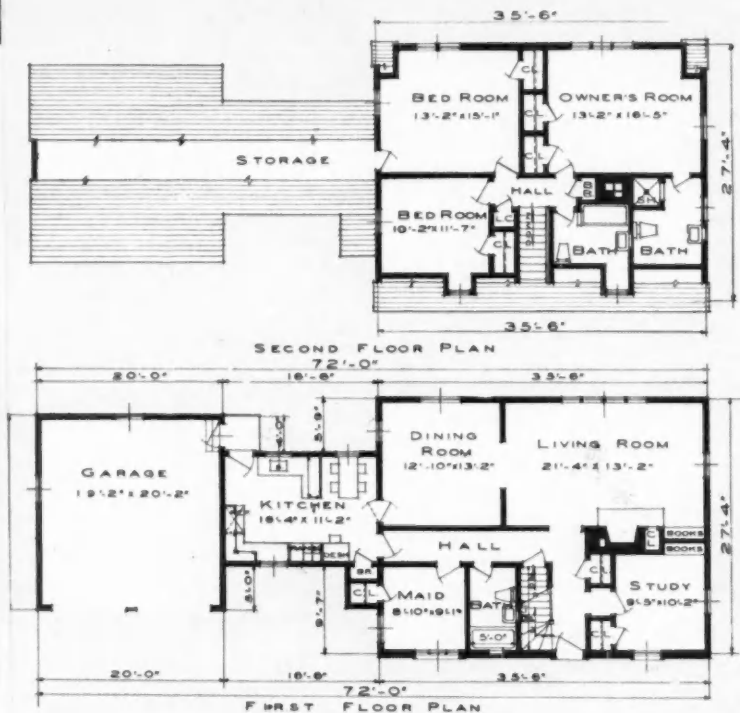


MANTEL AND WINDOW DETAILS lend charm to living room.





THE WELL-PROPORTIONED 2-CAR GARAGE is connected to main house by the low-roofed kitchen-dinette.



## 8-Room Colonial with Winter Air Conditioner

HOMER T. BROWN of Brookline, Mass., built this rambling Colonial from plans by Royal Barry Wills, Boston architect. The equipment consists of a General Electric winter air conditioning unit, a 45-gal. Ruud Monel metal storage water heater, Serval refrigerator, Glenwood range, G-E Silent Mercury electric switches throughout. It is insulated with Sterling fibre blanket on all exterior second floor walls and ceilings.

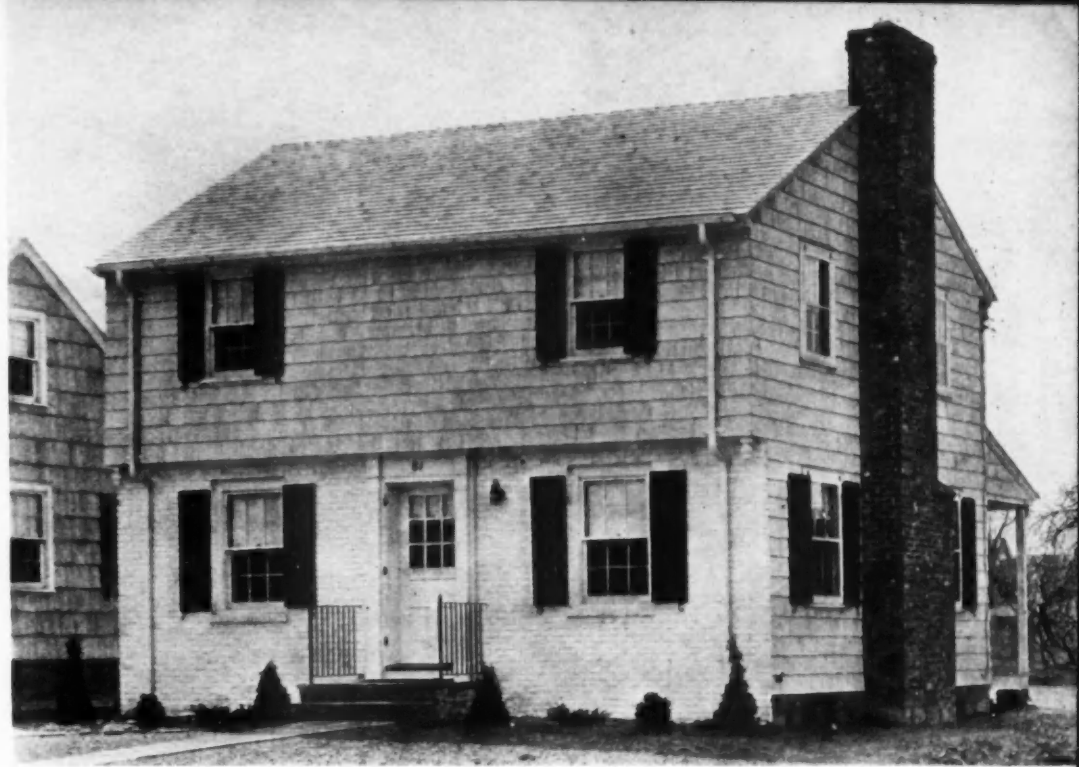
THE FLOOR PLAN has many interesting features, including a maid's room with private outside entrance. The manner in which the kitchen and breakfast nook are placed in a 1-story room connecting main part of house with garage is good. Dining room and living room face the rear away from city traffic. There is an attractive study downstairs, 3 bedrooms and 2 baths upstairs.



### \$500 Prize Winner

CLEAN, AUTOMATIC HEAT makes possible this attractive pine-paneled basement room with its brick fireplace, well cased-in windows and plastered ceiling. It adds a valuable extra room to the living space of this fine house.

**"TRUCOST" ESTIMATED FIGURES FOR THIS HOUSE:** Basement Walls, 98 lin. ft.; Trench Walls, 42 lin. ft.; Basement Floor, 520 sq. ft.; Excavation per ft. deep, 26 cu. yds.; Outside Walls, 19.40 sqs.; First Floor, 5.90 sqs.; Second Floor, with fin. flg., 6.04 sqs.; Ceiling, 6.04 sqs.; Roof Pitch, 7" rise per ft. run; Roof, 7.30 sqs.; Hips and Valleys, 20 lin. ft.; Cornice, C & F, 62 lin. ft.; Cornice, 6", 52 lin. ft.; Partitions, 156 lin. ft.; Inside Finish OS Walls, 190 lin. ft.; Front and OS French Doors, 2 opps.; Rear and Grade Doors, 1 opp.; Inside Doors and Cased Opps., 16 opps.; Windows and Casements, 19 opps.; Gable Sash and Louvers, 1 opp.; Chimney, 33 lin. ft.; Main Stairs, 1; Porch Floor, 1.20 sqs.; Porch Ceilings, .90 sqs.; Porch Beam, 28 lin. ft.; Porch and Balcony Post and Newels, 4; Porch Roof, 1.10 sqs.; Porch Cornice, 28 lin. ft.; Porch and Deck Rail, 8 lin. ft.

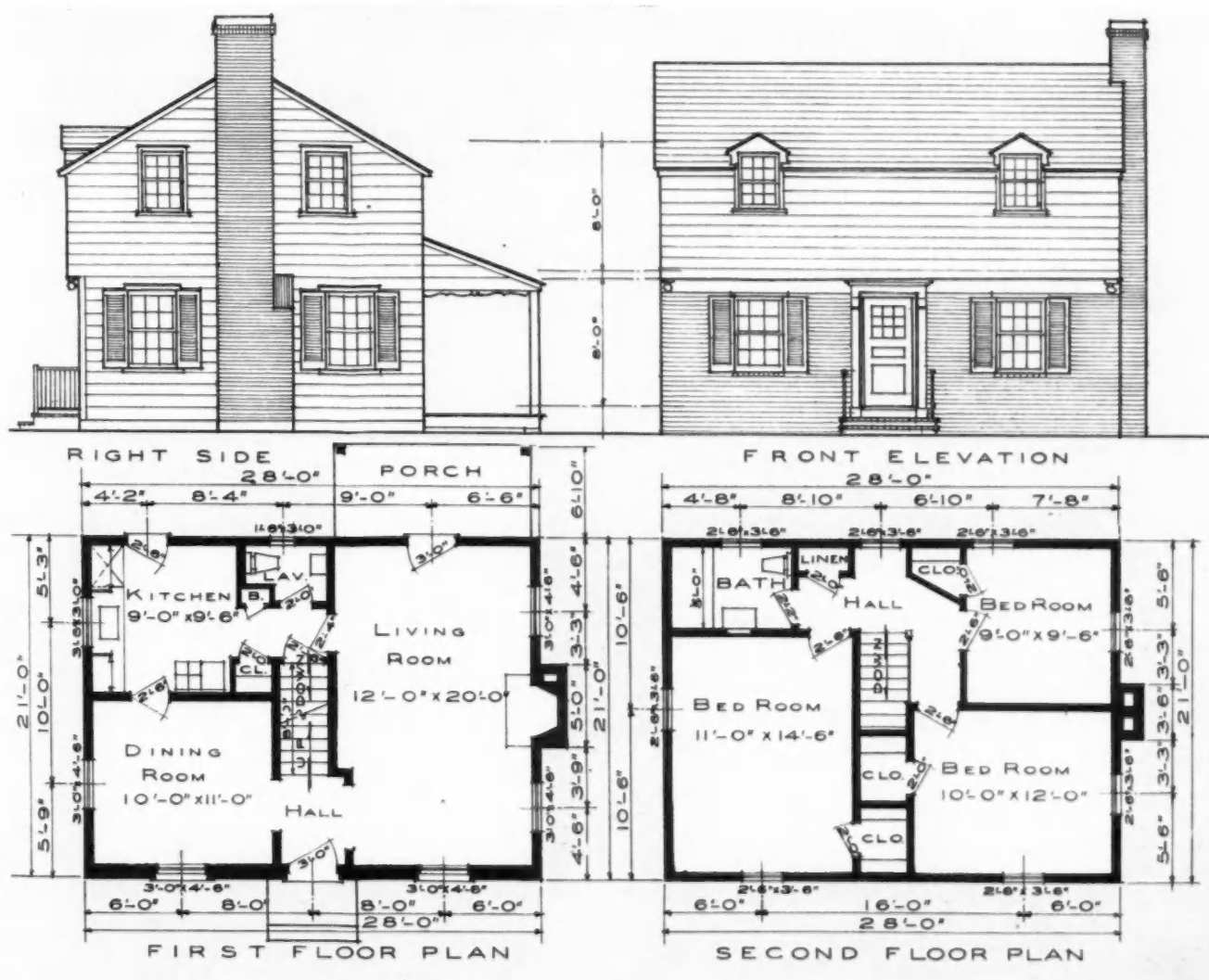


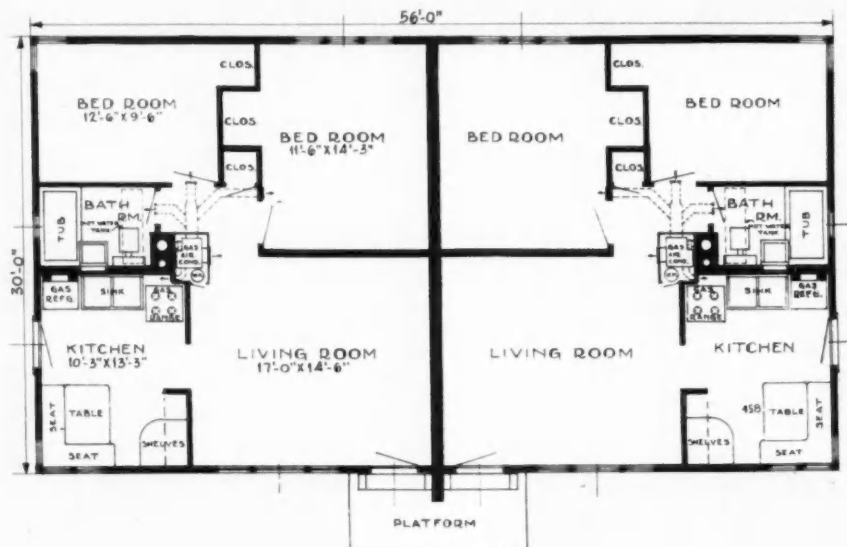
**28 x 21 Ft.  
-6 Rooms**

A COMPACT, ECONOMICAL PLAN was worked out by George W. Long, builder of this house, for Rochester, N.Y., moderate income workers. He equipped it with gas-fired winter air conditioner, John Wood Co.'s Penfield water heater, Glenwood gas range, Standard

Sanitary plumbing fixtures, Johns-Manville mineral wool insulation, U. S. Gypsum Rocklath plaster base, copper tubing throughout. One important defect in the plan, according to the judges, is the lack of a front entrance coat closet; otherwise the arrangement is well worked out.

**\$500 Prize Winner**





THIS LITTLE 2-FAMILY HOUSE located in Milwaukee was built for rental to low-income workers by Frank Kirkpatrick. Individual gas air conditioning units and water heaters are located in a small closet adjoining the bathroom. Sheathing and sub-flooring are of 5/16" Douglas fir plywood.

## Low Cost 2-Family Cottage—Gas Heated

THE JUDGES of the A. G. A. Builders' Contest awarded this two-family house, built by Frank Kirkpatrick of Milwaukee, a \$500 prize because of the manner in which it provided compact, comfortable, low-upkeep housing at an extremely low cost. Each unit is individually heated with a Janitrol BC 45-37 vertical gas-fired air conditioning unit with forced circulation, placed inside a closet in the approximate center of the apartment. A "Hot-stream" gas water heater is also located in the closet, and the 20-gal. water tank placed horizontally over door in bathroom, enclosed by a plywood panel. Duct work is kept to the minimum. The kitchen-dinette is cleverly arranged with built-in seats and shelves and is equipped with Alcazar Stanton gas range, Standard Sanitary sink.

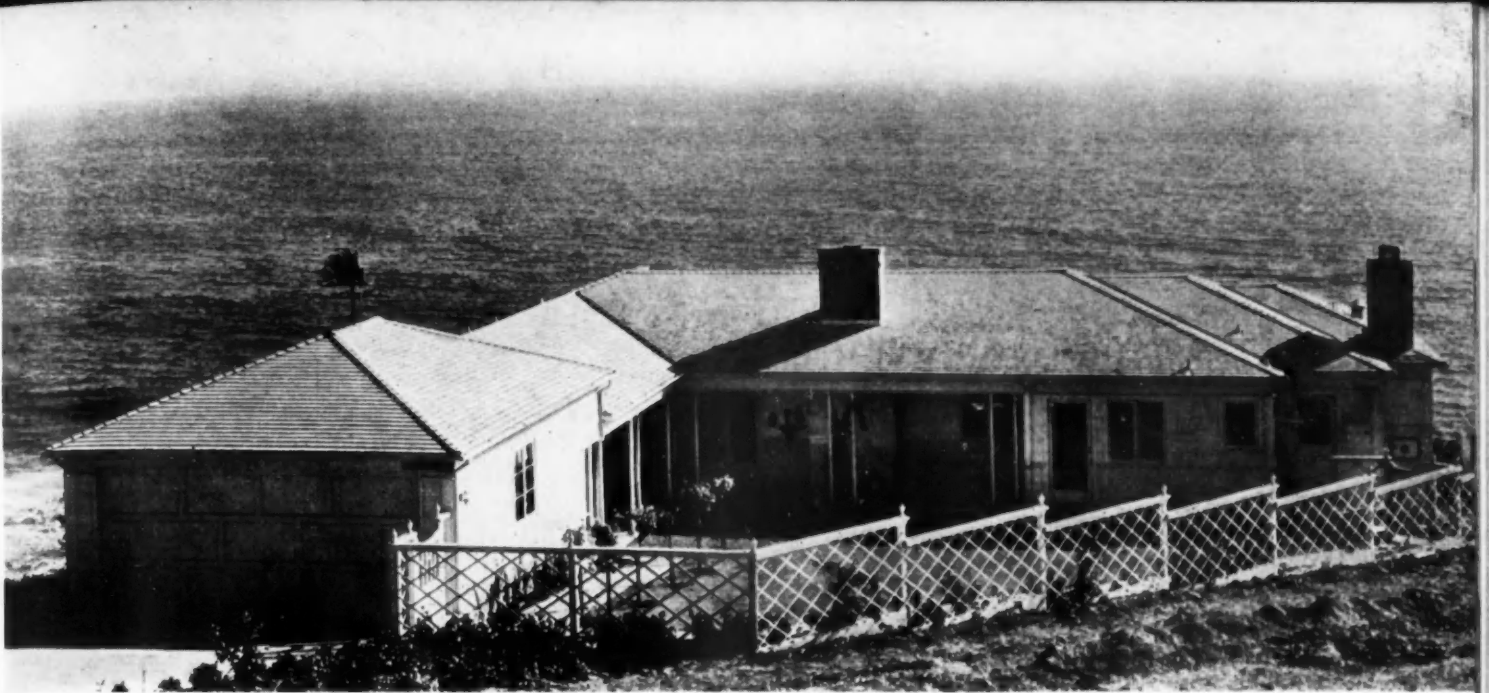
The brick chimney contains a 4" glazed tile flue for the gas furnace, and the soil pipe for the plumbing fixtures. Exterior walls are of 16" red cedar shingles, double-

coursed with 12" exposure, laid upon 5/8" Douglas fir plywood panels. Interior wall surfaces are also of Douglas fir plywood which was given 2 coats of I. F. Laucks' "Rez" with a finish coat of Minwax.

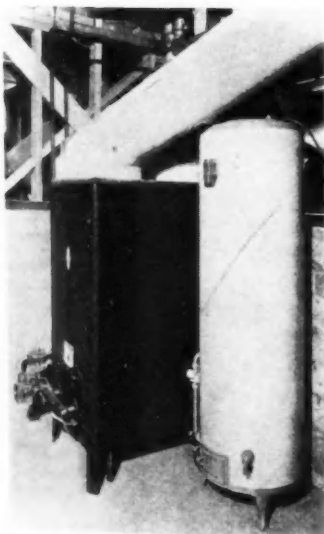
There is no basement, but the 8" block concrete foundation walls are carried 5' below grade. Between the 5/8" plywood subfloor and the finish floor 1" sleepers are laid, over which is placed 1 layer of 15 lb. felt allowed to sag slightly to divide the air space in two.—Aubrey St. Clair, architect.

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Trench Walls, 204 lin. ft.; Excavation per ft. deep, 70 cu. yds.; Outside Walls, 20.20 sqs.; First Floor, 16.80 sqs.; Ceiling, 16.80 sqs.; Roof Pitch, 8" rise per ft. run; Roof, 20.52 sqs.; Cornice, C & F, 184 lin. ft.; Partitions, 214 lin. ft.; Inside Finish OS Walls, 168 lin. ft.; Front and OS French Doors, 2 opps.; Rear and Grade Doors, 2 opps.; Inside Doors and Cased Opps., 16 opps.; Windows and Casements, 24 opps.; Gable Sash and Louvers, 2 opps.; Chimney, 48 lin. ft.; Porch Floor, .70 sqs.; Porch Ceilings, .42 sqs.; Porch Beam, 20 lin. ft.; Porch Roof, .25 sqs.; Porch Cornice, 20 lin. ft.





CLEVER BUFFET arrangement built between kitchen and dining alcove, providing handy storage for dishes and silverware.



AUTOMATIC GAS FURNACE and water heater in basement.

## L-Shaped 6-Room House by the Sea

SMITH CONSTRUCTION COMPANY of Laguna Beach, Calif., built this livable home on an unusually striking site overlooking the water, and the floor plan shows how successfully it has been laid out to take advantage of its location. The large living room at the center has big glass windows and doors opening onto the porch towards the view side. Dining room and master bedroom also overlook the view. The builder selected gas heat and installed 2 No. 60 Series A. C. Payne gas furnaces. Other equipment includes a Magic Chef gas range, Electrolux refrigerator, Overhead garage door, Schlage hardware, Kohler plumbing fixtures. Roof is of Certigrade red cedar shingles; flashings, downspouts and gutters of 26-gauge American Rolling Mill's Armco. Other materials include Chamberlin metal weatherstrip and spring bronze thresholds, Armstrong linoleum, Ponderosa pine paneling, Sherwin-Williams paint, Gladding McBean tile, USG Rocklath plaster base, "A" quality Pennvernon plate glass. The architect is Aubrey St. Clair of Laguna Beach.

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Basement Walls, 256 lin. ft.; Trench Walls, 125 lin. ft.; Basement Floor, 1540 sq. ft.; Garage Floor, 360 sq. ft.; Excavation per ft. deep. 75 cu. yds.; Outside Walls, 30.10 sqs.; First Floor, 16.50 sqs.; Ceiling, 20.10 sqs.; Roof Pitch, 7" rise per ft. run; Roof, 31.70 sqs.; Hips and Valleys, 238 lin. ft.; Cornice, 8", 304 lin. ft.; Partitions, 203 lin. ft.; Inside Finish OS Walls, 126 lin. ft.; Front and OS French Doors, 4 opps.; Rear and Grade Doors, 5 opps.; Garage Door 8 ft. wide, 2; Inside Doors and Casement Opps., 20 opps.; Windows and Casements, 40 opps.; Chimney, 52 lin. ft.; Porch Floor, 5.80 sqs.; Porch Ceilings, 5.02 sqs.; Porch Beam, 76 lin. ft.; Porch and Balcony Post and Newels, 24; Porch Roof, 1.82 sqs.; Porch Cornice, 34 lin. ft.; Porch Rail, 56 lin. ft.

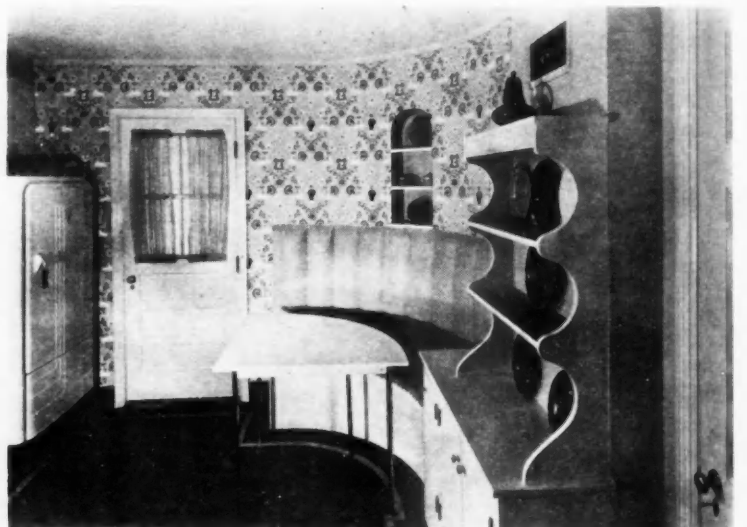
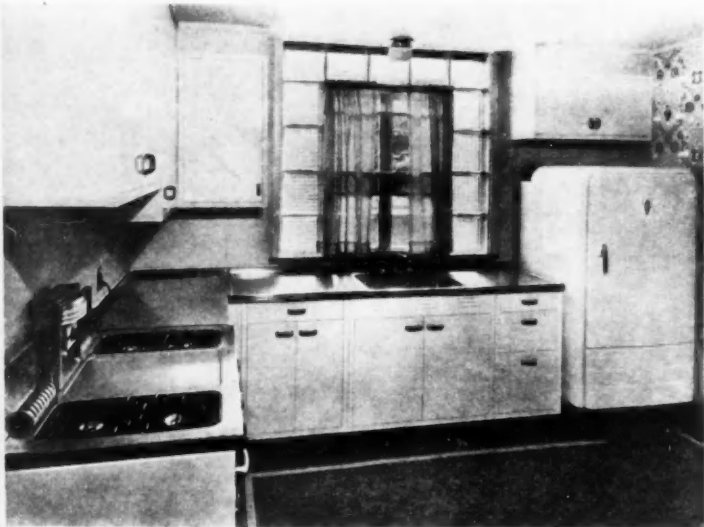
# Excellent Plan— Modern Kitchen

**\$500 Prize Winner**



FARMER AND DURAN, Tulsa, Okla., builders, put up this \$500 prize winner as a model home, equipped it with complete year 'round air conditioning, including a Bryant gas heater and Silica Gel dehumidifier, Sirocco blower, McQuay cooling coils, Libbey-Owens-Ford filters, Minneapolis-Honeywell controls. They also equipped it with a Magic Chef Certified Performance range with Monel metal top, a General automatic insulated storage

water heater, a Majestic 3-bushel size incinerator, 2 Peerless wall-type bathroom heaters, and a Homestead Wood-fire fireplace heater. The plan is spacious and well organized, with nicely proportioned rooms, an attractive downstairs library and lavatory, maid's quarter and bath at rear of garage. Two views of the model kitchen, below, show the efficient sink and gas range units and attractive built-in breakfast set.





A NICELY DETAILED COLONIAL FIREPLACE with built-in cupboards and bookshelves is the center of interest in the living room.



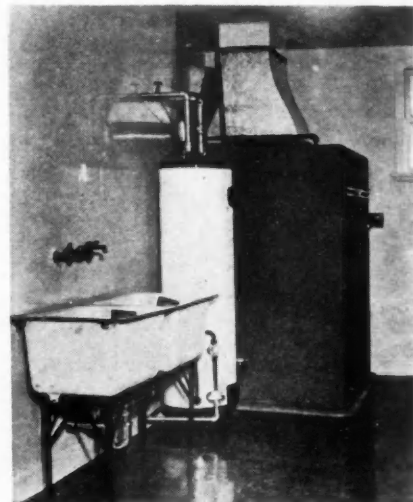
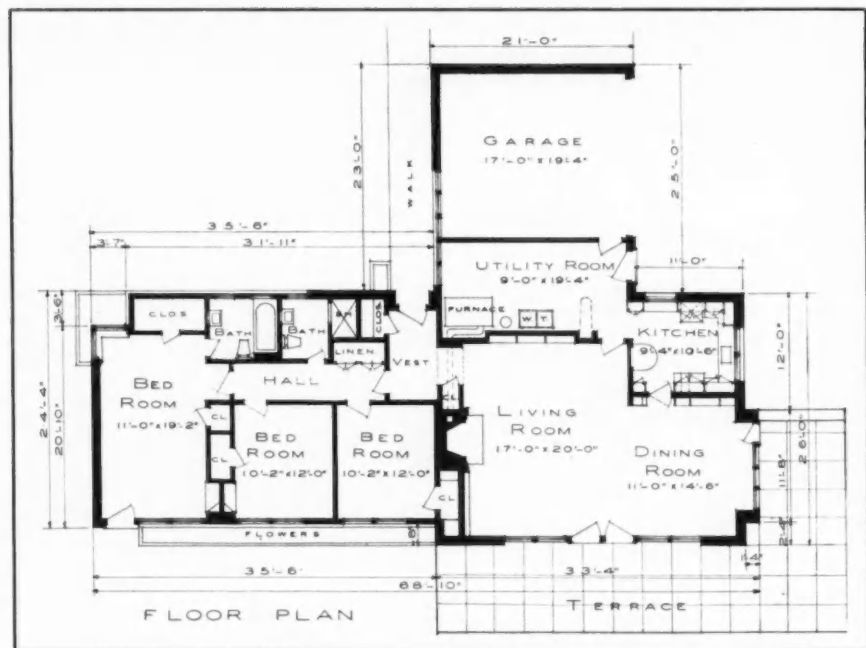
CLEAN AND CAREFREE COMFORT is made possible by the gas-fired winter air conditioner and automatic Monel metal storage water heater with a capacity of 45 gals.



THE ALL-GAS KITCHEN of Homer Brown's prize-winning house is cheerful, efficient and easy to keep clean. There is a built-in exhaust fan, attractive lighting fixture, well arranged work area and cabinet space. The builder selected and installed a modern insulated gas range with the new, up-to-date sales features.



HORIZONTAL LINES in brickwork and shingles give this Portland, Ore., prize winner a modern appearance. Murphy and Dean, builders.



EXTREMELY SIMPLE DUCT WORK made possible by grille-like chamber under floor area which acts as air return.

## \$1,000 Prize Basementless House—Heated Floors

MURPHY and Dean, Portland builders, employed an unusual floor construction and air return to the gas-fired Mueller air conditioning unit in this house. A 4" slab of ready-mix waterproof concrete was placed on the ground; then a 3-ply membrane of roofing paper applied on tar; then 1" of concrete was placed on top of the membrane, and over this 2" x 4" Wolmanized sleepers. Next 2" x 4" Wolmanized joists were laid at right angles to the sleepers, upon which Wolmanized ship-lap subfloor was laid; finally a layer of building paper

and 13/16" oak. Sleepers and joists being at right angles to each other, they form a grille-like chamber through which the air, at a temperature of 60° to 65°, is returned to the gas-fired conditioning unit. Entire flooring is thus evenly and equally warmed and ventilated. Other materials and equipment include Schlage hardware, Dutch Boy white lead, Fir-Tex insulating lath, G-E wires, switches and equipment. The floor construction was designed by C. H. Wallwork, consulting architect, in cooperation with Mueller Furnace Sales Co. of Portland.

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Trench Walls, 232 lin. ft.; Basement Floor, 210 sq. ft.; Garage Floor, 336 sq. ft.; Excavation per ft. deep, 73 cu. yds.; Outside Walls, 20.90 sqs.; First Floor, 13.60 sqs.; Ceiling, 19.10 sqs.; Roof Pitch, 8" rise per ft. run; Roof, 28.30 sqs.; Hips and Valleys, 200 lin. ft.; Cornice, 24", 250 lin. ft.; Partitions, 240 lin. ft.; Inside Finish OS Walls, 190 lin. ft.; Front and OS French Doors, 3 opgs.; Rear and Grade Doors, 2 opgs.; Garage Door 8 ft. wide, 2; Inside Doors and Cased Opgs., 19 opgs.; Windows and Casements, 26 opgs.; Chimney, 22 lin. ft.; Porch Floor, 522 sqs.

# 21 Years of Successful Home Building

**Lang Brothers of Cincinnati, Ohio, Have Emphasized Quality Construction in Homes of Moderate Price to Establish Reputation; Build 950 Well Planned Homes Since 1918**

**J**OSEPH LANG and Frank Lang have been building houses in and around the city of Cincinnati since 1918 and have erected 950 homes in this time. Organizing the firm of Lang Brothers in 1918, these builders have built homes ranging from low priced dwellings to more expensive ones. Catering to the demand for a popular, low priced, quality dwelling, well within the reach of the average family budget, Lang Brothers recently completed a series of 45 homes in College Hill, a suburb of Cincinnati. The building of homes has been a specialty of this firm. The result of experience, and constant attention to new developments in home building practice, has been the creation of homes that offer the buyer everything he could want from the standpoint of practical arrangement, permanence and comfort. (See pages 48 and 49.)

As illustrated in drawings below, this concern features three basic points of construction in every house which govern its durability. The first is proper draining and waterproofing around foundation, and is assurance of a dampproof foundation and basement.

The second basic feature of Lang Brothers, Inc., houses is a furred masonry wall. As the accompanying cross section drawing shows, an air space breaks contact between the rough masonry walls and interior finish.



SPECIAL attention is given to window sizes and placement, giving the added sales appeal of plenty of daylight and good wall space for the furniture.

A FEATURE of Lang-built homes is the careful planning of efficient, convenient and modern kitchens, with built-in cabinets as shown.



easier and more economical heating.

The third basic feature is one of insulation. A heavy blanket of insulating wool covers the entire ceiling area of these homes. This provides still further for heating ease and comfort in winter, as well as a cooler abode in summer.

Lang Brothers have always given particular attention to windows. Much of the ease of heating a home depends on the tightness of its windows, how they are set into the walls and how they operate. Attention is given to the arrangement of the windows to provide the maximum amount of daylight.

Kitchen planning is another feature of Lang-built homes and every effort is made to keep abreast of the times with built-in cabinets, tiled walls, modern sinks and convenient refrigeration and stove locations.

## CONSTRUCTION OUTLINE

Some of the materials and equipment of Lang Brothers houses are as follows:

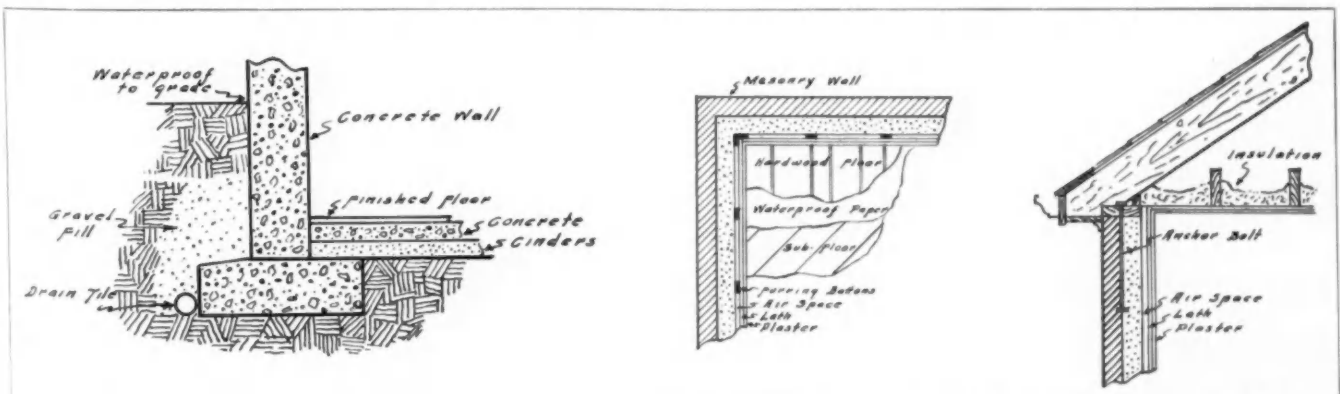
PLUMBING FIXTURES: Standard Sanitary.

KITCHEN CASES: Farley & Loetscher Mfg. Co.; Permasheen sink, Tracy Mfg. Co.

CASEMENT SASH: Detroit Steel Products Co.

WATER HEATER: Pittsburgh Water Heater Corp.

(Continued to page 49)



ABOVE are detailed three basic points of Lang Bros. construction—proper foundation treatment, the furred masonry wall, and insulation.

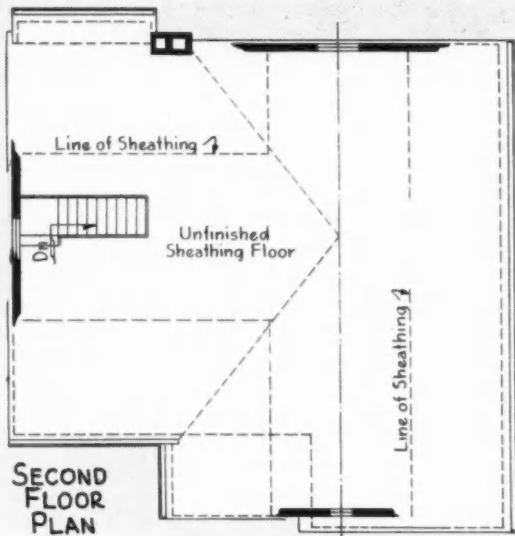


THIS Lang Bros. house has five rooms on the first floor, garage, recreation room and utility room in basement, and an unfinished second floor. A feature of this type of plan is access to the bedrooms and bath without going through living room.

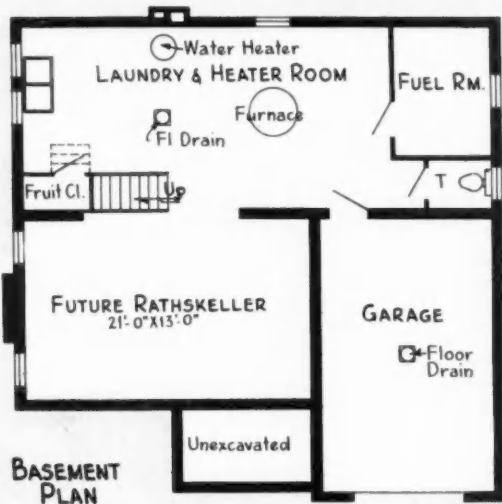
## Compact Bungalow; Five Rooms; English Style

Lang Bros., Builders, Cincinnati

**"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE:** Basement Walls, 170 lin. ft.; Trench Walls, 16 lin. ft.; Basement Floor, 760 sq. ft.; Garage Floor, 260 sq. ft.; Excavation per ft. deep, 46 cu. yds.; Outside Walls, 18.10 sqs.; First Floor, 10.80 sqs.; Second Floor, without fin. fig. 7.30 sqs.; Ceiling, 10.80 sqs.; Roof Pitch, 11" rise per ft. run; Roof, 16.30 sqs.; Hips and Valleys, 40 lin. ft.; Cornice, C & F, 114 lin. ft.; Cornice, 6", 66 lin. ft.; Partitions, 155 lin. ft.; Inside Finish OS Walls, 136 lin. ft.; Front and OS French Doors, 1 opg.; Rear and Grade Doors, 1 opg.; Garage Door 8 ft. wide, 1; Inside Doors and Cased Opps., 16 opg.; Windows and Casements, 18 opg.; Gable Sash and Louvers, 3 opg.; Chimney, 31 lin. ft.; Porch Floor, 60 sqs.; Porch Ceilings, 54 sqs.; Porch Beam, 16 lin. ft.; Porch and Balcony Post and Newels, 5.



SECOND FLOOR PLAN



BASEMENT PLAN

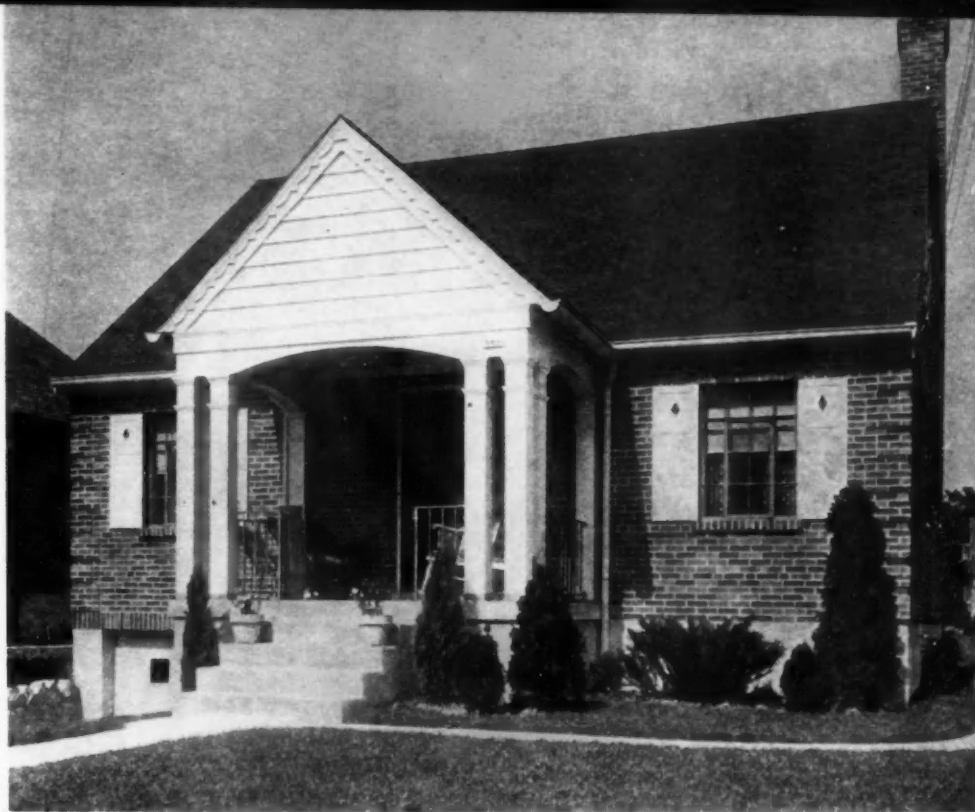


FIRST FLOOR PLAN

**CONSTRUCTION OUTLINE**

(Continued from page 47)

- HEATING: Sunbeam furnace.
- ROOFING: Asphalt shingles.
- PAINTS: E. I. du Pont de Nemours & Co.
- GLASS: Libbey-Owens-Ford.
- HARDWARE: Russell & Erwin Mfg. Co.
- LINOLEUM: Armstrong.
- GARAGE DOOR: Frantz.
- IRON WORK: Cincinnati Iron Fence Co.
- LATH AND PLASTER: National Gypsum Co.



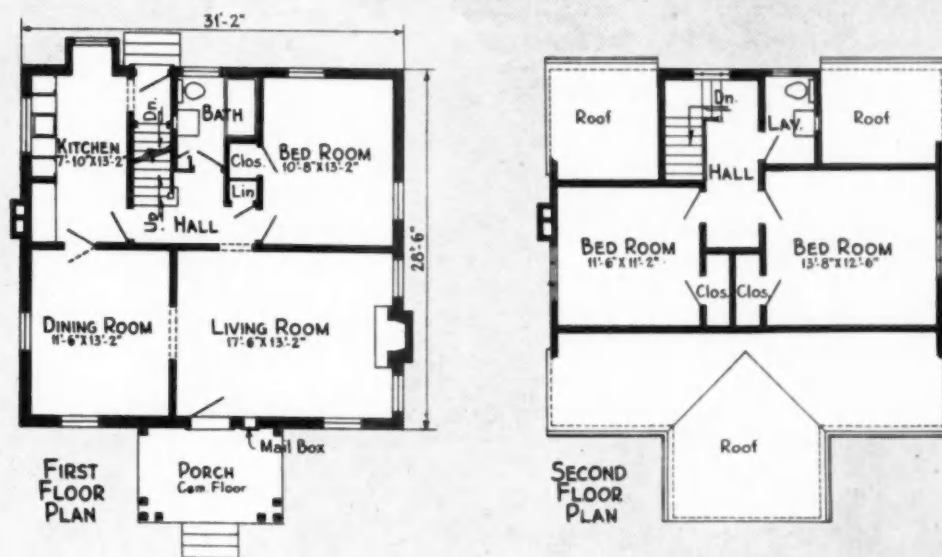
**Two-Story 6-Room Colonial Home**

THE six-room house shown above, with plans below, and the one on the opposite page, are typical examples of current Lang Bros. building in the suburban College Hills section of Cincinnati. Garages in the basements are standard practice where the grade allows, making good use of this space and contributing to high value at moderate cost.

Another feature of these homes is the careful planning, equipping and finishing of the bathrooms. Some of these details are shown in the view at the right; built-in mirrored medicine cabinets, built-in shower, tile and the accessory equipment are included in Lang-built homes.



**"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE:** Basement Walls, 154 lin. ft.; Trench Walls, 4 lin. ft.; Basement Floor, 884 sq. ft.; Excavation per ft. deep, 41 cu. yds.; Outside Walls, 18.20 sqs.; First Floor, 8.60 sqs.; Second Floor, with fin. flg., 5.00 sqs.; Ceiling, 8.60 sqs.; Roof Pitch, 11" rise per ft. run; Roof, 12.80 sqs.; Hips and Valleys, 20 lin. ft.; Cornice, C & F, 96 lin. ft.; Cornice, 6", 56 lin. ft.; Partitions, 260 lin. ft.; Inside Finish OS Walls, 218 lin. ft.; Front and OS French Doors, 1 opg.; Rear and Grade Doors, 1 opg.; Garage Door 8 ft. wide, 1; Inside Doors and Casement Opgs., 19 opg.; Windows and Casements, 21 opg.; Chimney, 47 lin. ft.; Main Stairs, 1; Porch Floor, 1.20 sqs.; Porch Ceilings, .70 sqs.; Porch Beam, 27 lin. ft.; Porch and Balcony Post and Newels, 8; Porch Roof, 1.20 sqs.; Porch Cornice, 34 lin. ft.



THE floor plans at the right indicate the arrangement of this Lang Bros. six-room house. One bedroom and bath are located on the first floor; two other bedrooms and lavatory above.

# Home Show Staged by Three Chicago Builders

## Group of Ten Model Homes on North Shore Forms a Successful Sales Demonstration

**A** NEW type of co-operative sales effort was staged this summer by three builders of Chicago and suburbs. It took the form of a 1939 Home Show, the first of its kind in the Chicago area. Of course, similar demonstrations have been staged by individual builders or builders' associations, such as the Greater Detroit Home Builders' Association's Duchess Project recently described in *American Builder*. The novel feature of this joint display in Evanston, Ill., was the fact that three independent building firms co-operated to the fullest extent in presenting the ten model homes of the exhibit.



LARGE roadside sign at site announcing Home Show

The newspaper advertisement which announced the Home Show is reproduced below. W. C. Tackett, Inc., Chicago, W. G. Ruggles Associates, Inc., Evanston, and C. A. Hemphill Associates, Evanston, were the three firms sponsoring the idea. Each builder had three houses, Ruggles having previously erected the tenth house on this site. The homes were exhibited fourteen hours a day and were floodlighted at night. The first announcement brought out 12,000 people, who went from one house to another comparing the various features. This gave the public a convenient opportunity to study good planning, construction and furnishing, one of the houses built by C. A. Hemphill, and shown on page 52, having been furnished. All three builders have reputations for fine home building in the medium and upper price brackets. Variations in styling and interior arrangement broadened the public's education in better building. Three of these houses, one built by each of the exhibitors, are shown on the three following pages with floor plans and details about their construction.

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This project, like other successful joint efforts in the building industry, demonstrates that such co-operation works to the benefit of both the builders and the buying public. To date, most of the houses have been sold by the exhibitors and a number of orders have been signed up for duplicates of the models.

### NORTH SHORE'S 1939 HOME SHOW

The FIRST of its kind in the Chicago area

For public convenience and enlightenment on home designing inside and out—construction—choice of materials—landscaping—pricing and furnishings—these ten houses were built in graceful formation within two adjoining blocks on both sides of one street. They are open day and night 14 hours per day — being floodlighted up to 9:30 o'clock each night.

Here the home buyer without fatigue or loss of time, is given the advantage of being able to compare designs, prices and workmanship of three of our leading and active Builders, all of whom have developed their own particular and individual technique in the art of home designing, decorating and building.

These three firms, each experienced in building fine homes are taking their choice of time-tested styles and presenting their conceptions of the best homes available at reasonable prices — ranging from \$13,850 to \$18,500.

HOME EXHIBIT

HERE'S THE GREATEST DAY and NIGHT

"A CENTURY of PROGRESS" (CHICAGO WORLD'S FAIR)

Open Till 9:30 P.M. Each Day

After seeing a Tackett-Built house you can step next door into a Hemphill-Built house—and next to that a Ruggles-Built house. The dwellings are varied and present modernized versions of the early Colonial, Southern Colonial, English, Norman and Georgian styles of architecture.

The houses of the three builders and the varied styles are alternated on each side and across the street for two blocks presenting an unusual opportunity for making comparison.

These homes are located in the "Evanston-Lincolnwood Sixth addition" a development where homes must cost \$10,000.00 or more. It is within the Evanston grade and high school district. The neighborhood is zoned for single family residences. All improvements are in. In the two blocks in which the ten houses are located 165 elms and 600 shrubs have been planted.

Applications for purchase are being accepted while the show is on—but possession will not be given until the show ends—several weeks hence. F.H.A. financed at 4½% interest.

W. C. Tackett, Inc.  
Phone Delaware 4015  
30 Cedar St., Chicago, Ill.

W. G. Ruggles Associates, Inc.  
Phone Wilmette 1660  
517 Davis St., Evanston, Ill.

C. A. Hemphill Associates  
Phone University 6060  
522 Davis St., Evanston, Ill.

LEFT: Reproduction of striking newspaper advertisement announcing the co-operative demonstration staged by three builders of Chicago and suburbs. The ten houses in the Home Show are illustrated on the diagonal band. The builders reported very gratifying results were obtained from this co-operative display.



**"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE:** Basement Walls, 128 lin. ft.; Trench Walls, 37 lin. ft.; Basement Floor, 900 sq. ft.; Garage Floor, 231 sq. ft.; Excavation per ft. deep, 43 cu. yds.; Outside Walls, 30.30 sqs.; First Floor, 9.94 sqs.; Second Floor, with fin. flg., 210 sqs.; Ceiling, 12.25 sqs.; Roof Pitch, 6½" rise per ft. run; Roof, 16.60 sqs.; Cornice, C & F, 108 lin. ft.; Cornice, 8", 88 lin. ft.; Partitions, 302 lin. ft.; Inside Finish OS Walls, 270 lin. ft.; Front and OS French Doors, 3 opgs.; Rear and Grade Doors, 2 opgs.; Garage Door 8 ft. wide, 1; Inside Doors and Casement Opgs., 24 opgs.; Windows and Casements, 27 opgs.; Gable Sash and Louvers, 2 opgs.; Chimney, 39 lin. ft.; Main Stairs, 1; Porch Floor, 1.80 sqs.; Porch Ceilings, 1.28 sqs.; Porch Beam, 34 lin. ft.; Porch and Balcony Post and Newels, 8; Porch Roof, 1.55 sqs.; Porch Cornice, 47 lin. ft.; Porch and Deck Rail, 52 lin. ft.



## Home Show Colonial—8 Rooms, Attached Garage

W. C. Tackett, Inc., Builder, Chicago

OF THE three houses which W. C. Tackett displayed in the North Shore Home Show, this one was considered the most popular, although the other two houses were equally well planned and built. They were sold in four days after the announcement of the opening, and orders for an additional three were taken. All were priced in a range between \$10,000 and \$20,000.

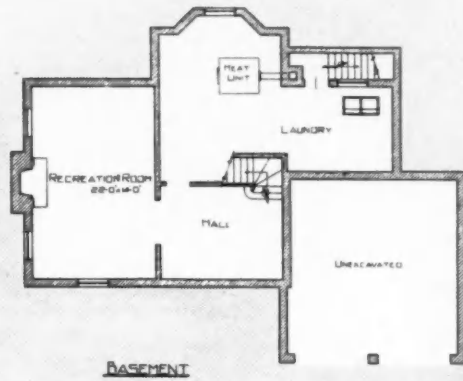
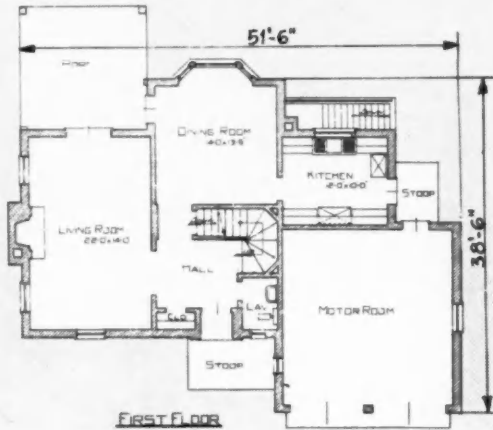
This one, as can be seen from the floor plan below, has a through side hall with excellent circulation to lavatory, grade entrance, garage, basement and kitchen. The basement has a large recreation room with wood-burning fireplace. Rear porch is screened for comfortable outdoor living. Kitchen has efficient U-shaped plan with built-in nook. Bath arrangement on the second floor is economical; ample closet space is provided throughout house.



# 7-Room French Design in North Shore Demonstration

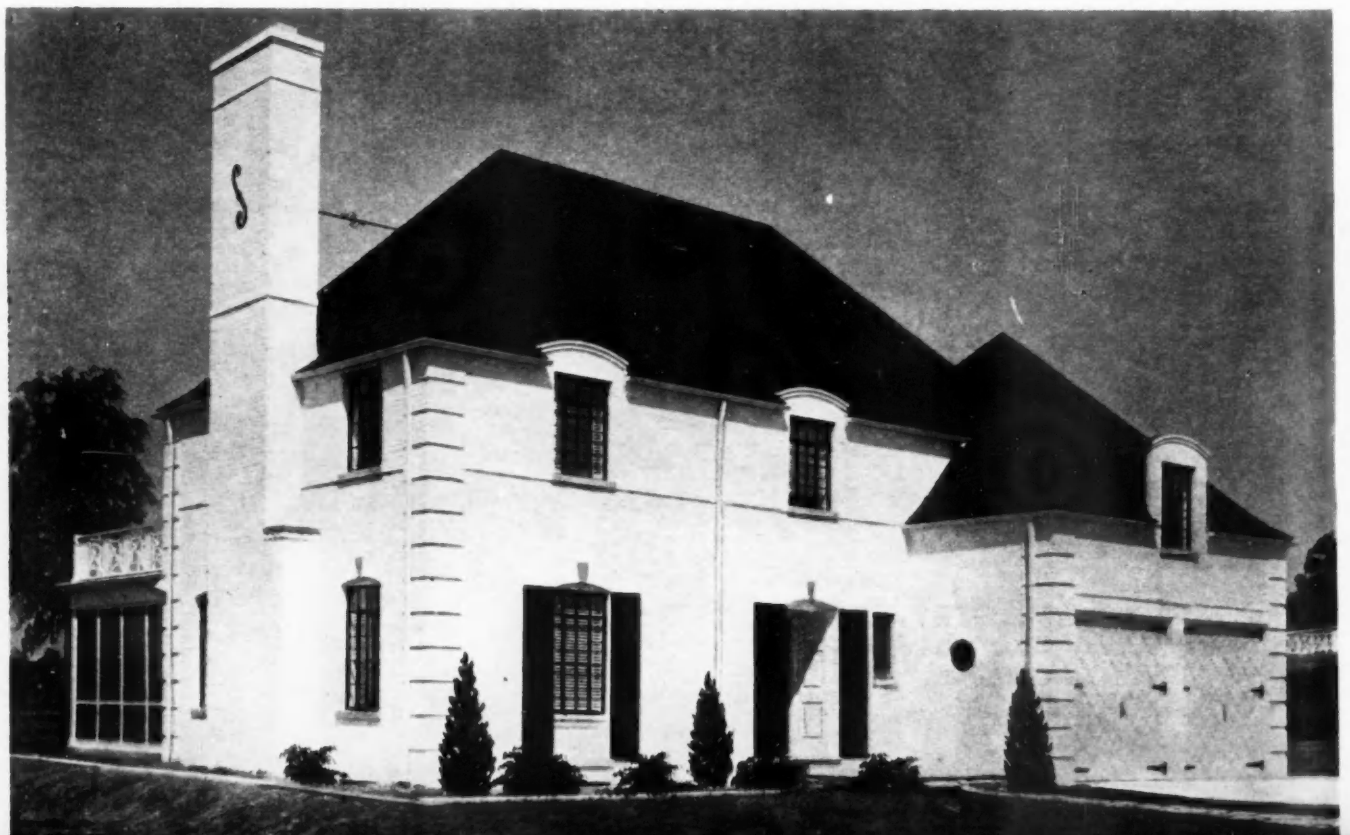
C. A. Hemphill, Builder, Evanston

THIS is one of the larger homes in the North Shore's 1939 Home Show described on page 50. It is planned for modern, convenient living from the large recreation room in the basement to the ample bath facilities on the second floor. Some of the materials and equipment used are Vapor-seal sheathing and 4" rock wool insulation, 3-coat plaster on USG Rocklath, Bruce strip flooring, Outside Luminall on common brick, red cedar shingles, gas-fired winter conditioning and Corbin hardware.



**"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE:** Basement Walls, 156 lin. ft.; Trench Walls, 110 lin. ft.; Basement Floor, 840 sq. ft.; Garage Floor, 440 sq. ft.; Excavation per ft. deep, 43 cu. yds.; Outside Walls, 26.40 sqs.; First Floor, 9.40 sqs.; Second Floor, with fin. flg., 11.20 sqs.; Ceiling, 13.80 sqs.; Roof Pitch, 12" rise per ft. run; Roof, 24.80 sqs.; Hips and Valleys, 130 lin. ft.; Cornice, C & F, 105 lin. ft.; Cornice, 6", 145 lin. ft.; Partition, 284 lin. ft.; Inside Finish OS Walls, 320 lin. ft.;

Front and OS French Doors, 3 opps.; Rear and Grade Doors, 3 opps.; Garage Door 8 ft. wide, 2; Inside Doors and Cased Opps., 23 opps.; Windows and Casements, 24 opps.; Gable Sash and Louvers, no openings; Chimney, 74 lin. ft.; Main Stairs, 1; Porch Floor, 2.90 sqs.; Porch Ceilings, 1.90 sqs.; Porch Beam, 38 lin. ft.; Porch and Balcony Post and Newels, 10; Porch Roof, 200 sqs.; Porch Cornice, 38 lin. ft.; Porch and Deck Rail, 53 lin. ft.



**"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE:** Basement Walls, 116 lin. ft.; Trench Walls, 94 lin. ft.; Basement Floor, 728 sq. ft.; Garage Floor, 200 sq. ft.; Excavation per ft. deep, 36 cu. yds.; Outside Walls, 28.40 sqs.; First Floor, 7.30 sqs.; Second Floor, with fin. fig., 8.12 sqs.; Ceiling, 10.12 sqs.; Roof Pitch, 9" rise per ft. run; Roof, 12.90 sqs.; Cornice, C & F, 136 lin. ft.; Cornice, 6", 54 lin. ft.; Partitions, 210 lin. ft.; Inside Finish OS Walls, 222 lin. ft.; Front and OS French Doors, 3 opgs.; Rear and Grade Doors, 1 opg.; Garage Door 8 ft. wide, 1; Inside Doors and Cased Opgs., 20 opgs.; Windows and Casements, 24 opgs.; Gable Sash and Louvers, 4 opgs.; Chimney, 36 lin. ft.; Main Stairs, 1; Porch Floor, 1.74 sqs.; Porch Ceilings, 30 sqs.; Porch Beam, 14 lin. ft.; Porch and Balcony Post and Newels, 10; Deck Rail, 50 lin. ft.

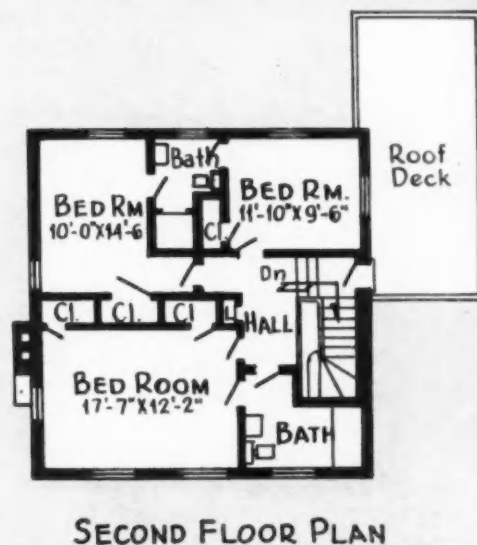
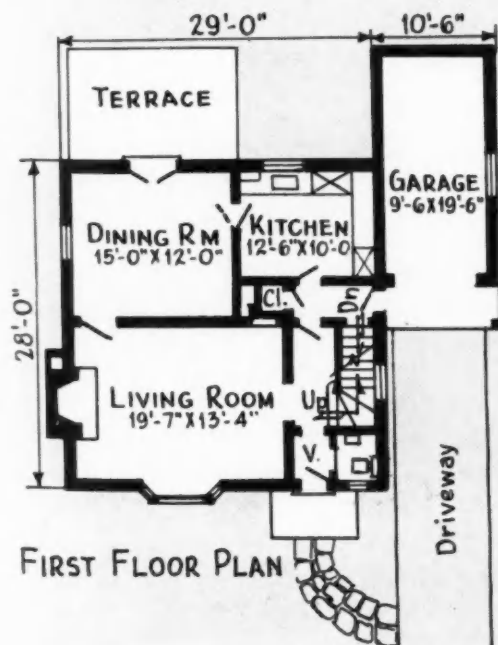


## For a Narrower Lot; Fourth Bedroom Can Be Added

William G. Ruggles Associates, Inc., Builders, Evanston

ANOTHER of the 1939 North Shore Home Show models is shown above. It is very compact and well arranged, the overall width without the attached garage being 29 feet. A feature is the possibility of adding a fourth bedroom above the garage, access already being provided by the door to the roof deck. Construction materials and equipment include poured concrete foundation on 24-inch footing, select common brick veneer, No. 1 yellow pine framing, cypress exterior trim, rock wool insulation in walls and above second floor ceiling, 3-coat

plaster on Sheetrock and metal lath, plastered basement ceiling, clear red oak flooring laid over sub-floors with deadening felt between, solid brass hardware, Mueller winter air conditioning, Armstrong linoleum, Ilg automatic kitchen ventilating fan, Weil-McLain plumbing fixtures, porcelain lined medicine cabinets, interlocking weatherstripping on doors and windows, wiring in conduits with circuit breaker, DSA glazing, ornamental wooden mantel with marble facing and hearth, drives, walks and complete landscaping.



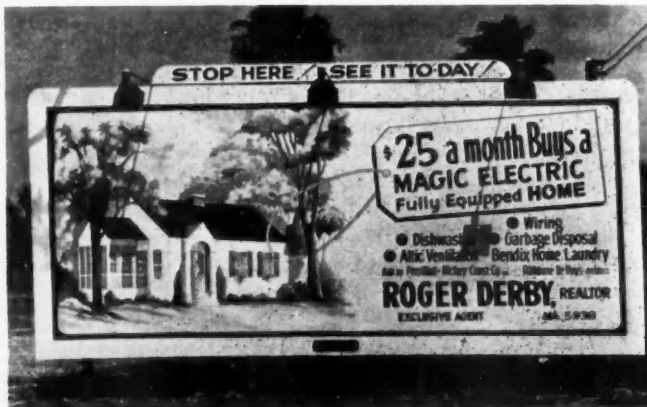


THE MAYOR (at left) cuts ribbon opening "Magic Home" assisted by builder, Herman Rickey (center) and Roger Derby (right), all of New Orleans, La.

FOR SEVERAL weeks before the grand opening of Roger Derby's new low-cost home development, the people of New Orleans kept seeing mysterious "teaser" advertisements in their local paper. One of these said:

*"They told the Wright Brothers it couldn't be done—  
See classified section, Sunday, April 30."*

Next day another cryptic message appeared:  
*"Yep! they told Marconi it couldn't be done!"*



DERBY BILLBOARD ADVERTISING in colors shows a life-size price tag.

## How Derby Does It

**New Orleans Builder Sells Fully Equipped "Magic Electric" Homes at \$25 Per Month. Clever Advertising Methods Announce Model Home Opening. Construction Photographs Show Quality.**

New Orleans newspaper readers began to wonder what was up as the following items appeared:

*"They laughed at Fulton—said it couldn't be done!"*

*"To Bell they said it couldn't be done!"*

*"They told Edison it couldn't be done!"*

*"They told Pasteur it couldn't be done!"*

With public interest built up by these teasers, full page newspaper advertisements of the type illustrated on the opposite page appeared announcing Robert Derby's new development featuring "Magic Electric" homes selling for \$25 a month. The headlines read:

*"They said it couldn't be done*

*but*

*ROGER DERBY DOES IT!"*

What Roger Derby had done was to build a fully equipped, well planned and soundly constructed home to sell for only \$25 per month. Derby had demonstrated that it was possible to provide a home in this price range fully equipped with electric dishwasher, garbage disposal unit, electric home laundry, attic exhaust fan, electric circuit breaker, 12 gauge wiring and similar quality features throughout.

The Derby houses are attractive little five-room Colonials with good cross ventilation, an attractive screened porch and a floor plan well suited to the New Orleans climate (complete floor plans and specification details are given on page 58). They are designed by Rathbone Debuys, New Orleans architect and built by the Perrillett-Rickey Construction Co. Fifty-four houses were planned for the original tract.

The Derby development is of interest to builders not



**BUSTLING ACTIVITY** preceded the grand opening of the Derby home project. Hundreds drove out before the formal opening and on the official day it took an extra crew of policemen to handle the crowd.



THEY SAID IT COULDN'T BE DONE, BUT—

# ROGER DERBY DOES IT!

HERE IS THE  
GENERAL ELECTRIC  
MAGIC HOME

"MODERN" is the word . . .



**DISHWASHER** —no more dishes to wash  
Finished in highest quality stain and acid-resistant vitreous enamel. Swiftly washes and dries by their own heat, silverware, gold and glass, china and dishes. The GE dishwasher is the result of years of painstaking experimentation to perfect the complete practical unit to dispense with, for all time, this disagreeable household duty.



**ELECTRIC SINK AND GARBAGE DISPOSAL** —no garbage to handle  
Ends accumulation of messy garbage, bones, food scrapings, etc. They all go down the drain into the disposal unit and are ground into a fine pulp and quickly flushed away with water. No odors or clogged pipes.



**ADEQUATE WIRING** —a better sight, better light home  
The GE Home Wiring System is adequate for any average current demand. Economical because it eliminates waste current, travels through wires more than adequate to carry it. Shows large lighters, at their rated voltage without variation. Irons, percolators, toasters and other electrical appliances will heat quickly and operate efficiently. No more fuses to worry with.



**ATTIC VENTILATION**  
Of the proper size to handle the requirements of these homes. A complete change of air every minute. Attic ventilation is necessary in this tropic climate. Create your own weather. No home should be built without attic ventilation.



**BENDIX Home LAUNDRY**  
"The successor to the washing machine." In these modern homes this Bendix Laundry handles all your washing problems. It's really great fun doing the wash the Bendix way...put the clothes in the round opening, set the controls, add soap and bluing, press the switch. When the clothes are finished it stops. It's all entirely automatic...washing, rinsing, damp drying ready for the line. Simple, isn't it?



**COLORED BATH FIXTURES**  
In keeping with the other modern features of these homes, baths are finished with colorful fixtures in tones of alighting charm.



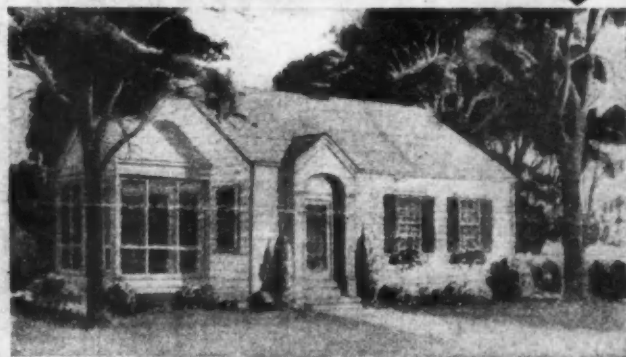
**Continuous CONCRETE FOUNDATION**  
Double strength piers are set on a single continuous concrete foundation reinforcement with No. 4 steel bars. All soil all moisture termite treated. Termite proofing shields and slate moisture proof shields used on all piers. Anchor Bars are used to Firmly Anchor Entire House to Foundation.



**FIR DOOR**  
Handsome fir door adds beauty and dignity to the entrance. You will be charmed with their fine sturdy appearance and graceful brass fittings.



**CYPRESS LUMBER**  
The best cypress—the wood eternal—used for exterior. All lumber checked and inspected upon arrival, square cut for perfect fit, cypress siding lead and oil painted as each part before fitting. National Stain and Floor Finish and Sherwin-Williams Paints throughout. Double oak hardwood floors. All lumber subject to inspection by Southern Pine Association inspectors.



ONLY  
**\$25.41**  
PER MONTH

This Registered Home  
IN DERBY PLACE.  
Open for Inspection Today 10 A. M. to 9 P. M.  
Daily 2 to 9

The First Community of  
REGISTERED HOMES  
in New Orleans



We are proud to announce that these homes are eligible for Certificate of Registration issued by the Federal Home Loan Bank of Washington. Registration of these homes and issuance of these certificates is predicated on the use of designs, plans and specifications approved by the Federal Home Building Service. These homes have passed these rigid investigations and specimens copy of Registration Certificates may be inspected on the property.



The Shield  
of Protection

All Roger Derby Homes built under the exacting supervision and inspection of the Federal Housing Experts.

Roger Derby Magic Electric Homes Are Registered Homes

Exclusive Financing Agents DRYADES' BUILDING & LOAN ASSOCIATION

**ROGER DERBY**  
EXCLUSIVE AGENT  
CARONDELET BLDG. • MA. 5938

FULL PAGE ADVERTISEMENTS such as this announced the grand opening of the Roger Derby development in New Orleans. Each day during the preceding week, the smaller "teaser" advertisements at the top of the page appeared, leading up to the final slogan.

Quality Construction Details Demonstrated by Photographs Mounted on Large Easel in Model Home.



Photo Display

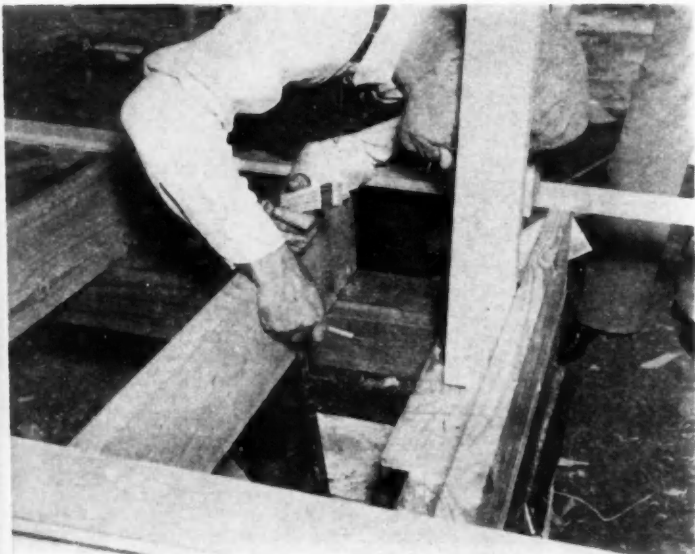
only because of the construction methods and equipment installed—which is considerable—but also because of the striking advertising and promotion methods. In the first place the houses were tied in with the Federal Home Loan Bank registration plan, each house being inspected and awarded a certificate of registration by the local Home Building Service Organization.

To dramatize to the public the quality construction methods employed, photographs were taken during construction, many of which are shown on the following pages, and a large display put up in the model home. These photographs were close-up construction details, each photograph 8½" x 11" in size, mounted on a large easel with appropriate description under each. One of the photo-

graphs for example showed the steel anchor bars which firmly tie the frame work to the foundation at each corner as a protection against movement by flood, hurricane, or other causes. Another close-up photograph shows the 6 x 6 timber sills, termite shields and slate moisture barriers inserted in the foundation. Some 17 photographs in all were mounted on the easel which gave a clear picture of the construction methods which anyone could quickly grasp.

Only a Few More Dollars

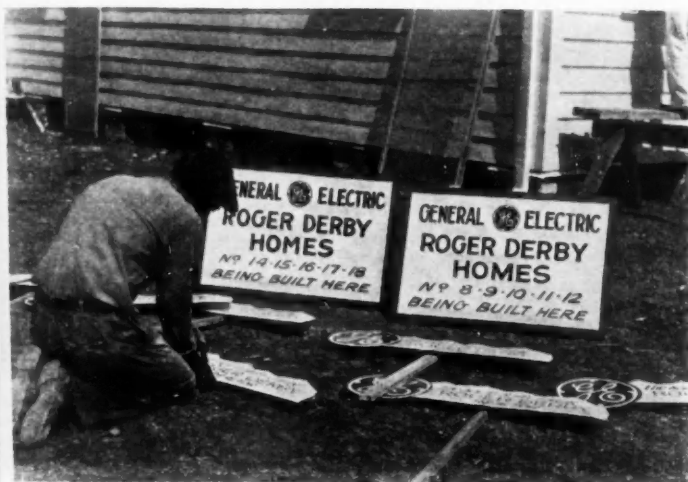
One of Derby's theories which he set out to demonstrate in his "Magic Electric" homes was that the cost of a fully equipped kitchen represents only a few dollars per month when amortized over the 25-year period of the loan and that this cost is very slight in comparison to the benefits received by the home owner. In these small homes which cost the owner only \$25 per month, Derby provides a General Electric dishwasher, modern steel cabinets with built-in sink and garbage disposal unit



STEEL anchor bar ties framing to foundation.



POWER SAW as shown above speeds construction job and assures square cut and accurate fit. The 6 x 6 timber sills are termite treated; the houses are set on brick piers one of which can be seen here.



"KEY TO BETTER LIVING" is the slogan appearing on the Roger Derby direction signs above. SLATE MOISTURE-PROOF SHIELDS (at right) inserted in brick foundation wall are pointed out by the Derby sales manager. Note also the termite proofing shields below.



**The Derby Complete Electric Home and Kitchen Equipment Cost Only A Few Dollars Per Month**

and a Bendix home laundry. Any one of these items if purchased separately by the owner would have to be financed over a short period of time and would cost the owner much more than when installed by the builder. Thus Roger Derby is able to sell his houses to the housewife on the basis of less kitchen drudgery; no messy garbage problems; better living; fewer colds (dishes washed in an electric dishwasher are immersed in scalding water which kills germs) and on other points that greatly affect the every-day life of the buyer.

One of the important selling items in these houses is scientific attic ventilation. The houses have well built ventilation with louvres at the gable ends and a center ventilator built to resemble a chimney. Installed in the attic is a large sized ventilating fan which provides a complete change of air in the house every minute.

In his advertising Derby also features the fact that the houses are adequately wired and gets the cooperation of the local utilities or the local Adequate Wiring Bureau who check plans and certify that each is properly wired

with equipment of adequate size to take care of the heavy modern requirements of the electric home. Such a wiring system, it is pointed out, is more economical because it eliminates waste current caused by wires that are inadequate to carry the load. With a properly planned system, irons, electric toasters and other appliances heat more quickly and more consistently. An electric circuit breaker eliminates the use of fuses. Lumber throughout the Derby houses is of best quality, is square cut with a power saw and properly primed and painted. For example the outside siding is of cypress with all joints and intersections painted with pure white lead and oil before being nailed in place.

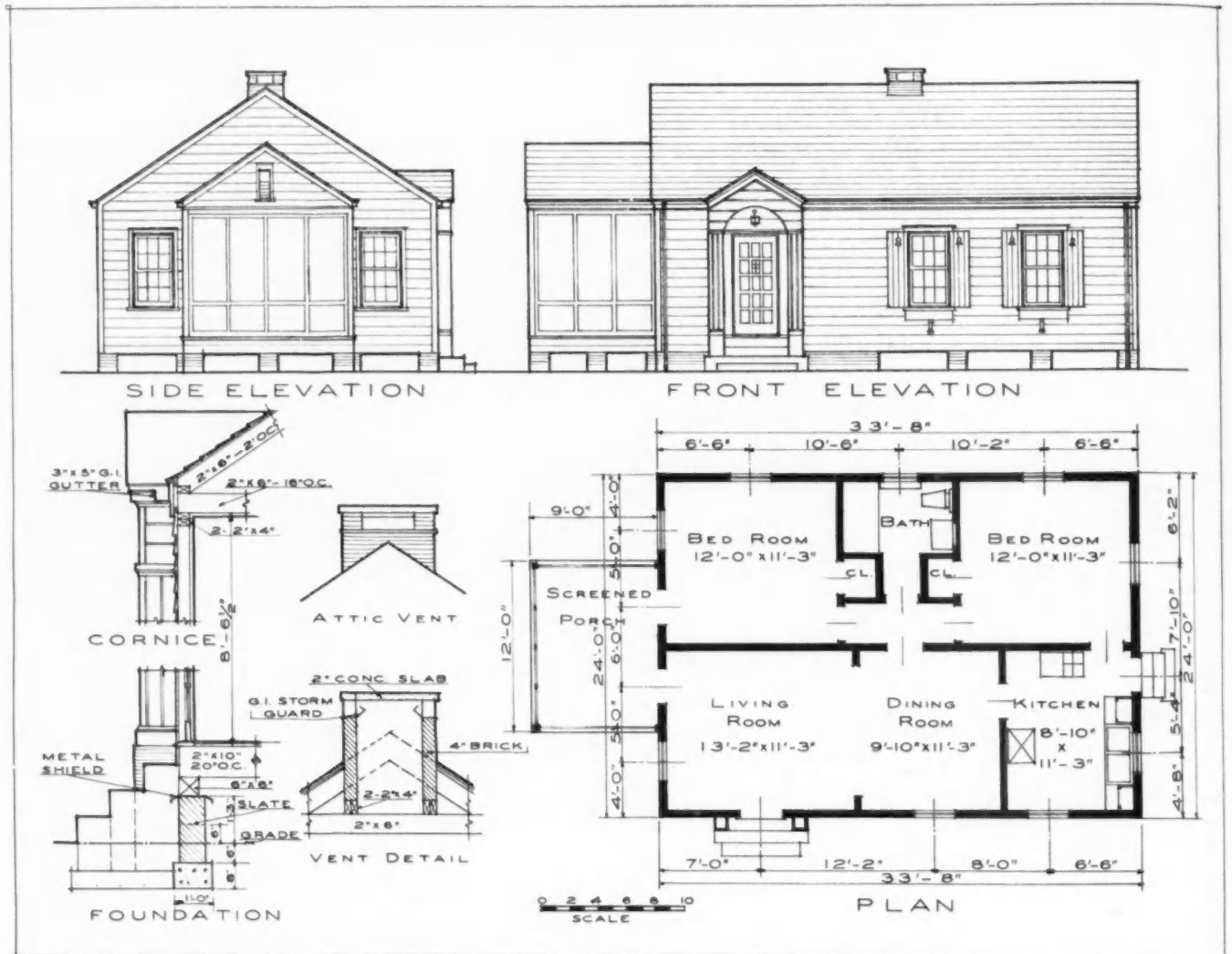
In addition to extensive newspaper advertising, large billboards have been installed showing the houses in color, with a large price-tag attached announcing their cost at only \$25 a month. As a result of the advertising program, thousands of people turned out to the official opening and a special corps of police was required to handle the crowds. The mayor of the city was on hand



STEEL kitchen unit with sink and dishwasher is quickly installed in Derby home. AT RIGHT, painter applying quality product.



QUALITY LUMBER checked and inspected as delivered to job. National Sash and Door millwork used. AT RIGHT—CYPRESS SIDING being applied with joints and intersection painted with pure white lead and oil.



DETAILED DRAWINGS of the Derby built house by architect Rathbone Debuys, New Orleans, show attractive, economical layout with good cross ventilation, a screened porch, interesting attic vent built to look like a chimney to accommodate attic fan. Foundation details show hurricane anchor rods, metal termite shields and slate moisture barrier. Exterior view below.



to cut the ribbon as the model house was opened.

"In the conducting of our development," says Roger Derby, "I have kept four principles in mind, depending upon them for the success which we have so far obtained. These are:

"First, by building houses with identical floor plans, but different exteriors, we are able to approximate the assembly line method of mass production used in the automobile industry, and still not have homes too similar in appearance.

"Second, by building in quantity, the cost of materials

and of supervising becomes appreciably smaller.

"Third, furnishing for people of small means, the comforts and luxuries owned only in the past by the rich—as the including of an electric dishwasher, sink and home laundry—is a selling point which carries great weight with people of moderate or small income.

"Fourth, we build only homes designed by an able architect—in this case Mr. Rathbone Debuys."

A brief list of specification and construction details includes the following:

**CONCRETE**—Ready-mixed concrete, water content 7 gals. per bag of cement, in 1, 3, 5 proportions for plain concrete, and 1, 2, 4 proportions for reinforced.

**SLATE COURSE**—Insert 2 layers good slate well lapped in third brick course above final grade as moisture barrier.

**LUMBER**—All framing lumber dense short leaf Southern yellow pine, kiln-dried or well seasoned conforming to grades of Southern Pine Association as follows:

- Sills—6 x 6—S4S—No. 1 Com. LL 85% heart
- Floor Joists—2 x 10—S2E—No. 2 Com. DSL
- Ceiling Joists—2 x 6—S4S—No. 2 Com. DSL
- Rafters—2 x 6—S4S—No. 2 Com. DSL
- Studs—2 x 4—S4S—No. 2 Com. DSL
- Plates—2 x 4—S4S—No. 2 Com. DSL
- Corner Braces—2 x 4—S4S—No. 2 Com. DSL
- Roof Sheathing—1 x 6—T&G—No. 2 Com. DSL
- Sub Floor—1 x 6—S4S—No. 2 Com. DSL

**SHEATHING PAPER**—15 lb. asphalt saturated rag felt.

**SIDING**—A-grade Louisiana red cypress bevel siding, end

(Continued to page 116)



## How Free Service Sells Homes and Lowers Costs for California Building Company



CREW of Standard Building Co. Free Service Department and their workshop on wheels.

**A**RE there unsuspected minor errors of construction in the homes you build? Is the new home owner as satisfied with his purchase a year later as he was the day he first signed the contract? Is he boosting your work among his friends? Is he acting as an unofficial salesman for your new homes?

Not many contractors know the answers to these questions, but The Standard Building Company, 1500 Judah Street, San Francisco, does. A workshop on wheels solved these problems, and a dozen more like them.

Established twenty years ago, The Standard Building Company is a well known institution to thousands of San Francisco home owners. And the workshop on wheels, a little grey truck that rambles around the Beach section in this city, servicing homes, is steadily building customer satisfaction.

About five years ago Fred and Carl Gellert, who own The Standard Building Company, did some careful thinking on the matter of building low cost homes. Nearly every other type of manufacturer maintained a service department for his product, but, once a home was sold, that was usually the last a contractor knew about it.

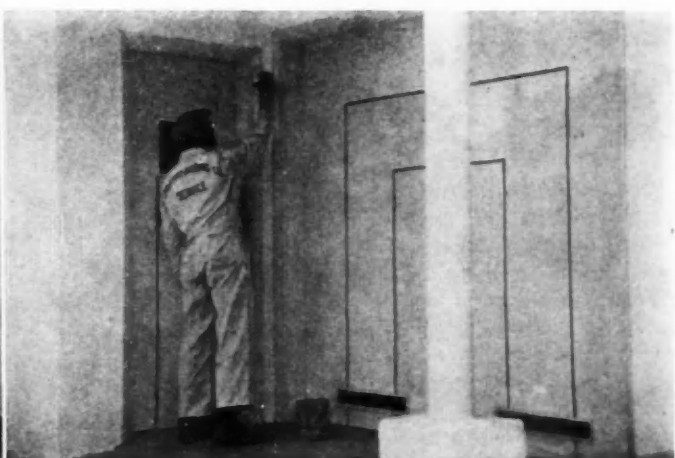
So there and then a service department was born. The

Gellert brothers had always kept a careful check on their work, but now a systematic effort was made to eradicate anything that might cause dissatisfaction. Business was growing so fast that two years later the truck was added to the department, and now The Standard Building Company employs four men whose sole job is to keep home owners happy.

Few contractors realize that there are dozens of little things that annoy the owner of a newly built home. The workshop on wheels is a real trouble shooter. It is virtually a rolling hardware store, carrying everything from a screw to a ladder.

Is the stucco dirtied by the gardener? The service crew touches it up. Does a window stick? The service crew waxes it, makes it open easily. Has the paint been scratched by furniture movers? The service crew takes care of that.

They hang clotheslines, put new wallpaper on spots soiled by owners' children. They repair stucco that has been damaged when installing the telephone. They adjust locks and doors. Sometimes they install new washers in leaking faucets, even after they have been in use for two years or more. *(Continued to page 118)*



BY MAKING small adjustments and repairs as shown above Standard's Free Home Service pays for itself in owner good will.

# Model Homestead Community Grows Near Chicago

## Smith & Dawson Develop 360-Acre Project; Sell Over 140 Low-Cost Homes in 3 Years

**T**HREE years ago Smith & Dawson, Chicago builders and developers, saw an increasing demand for the homestead type of project consisting of an acre or more of land, and a well built, modestly priced home. Starting in a small way, this project, known as Prospect Heights, has blossomed into one of the largest developments of its kind around Chicago, and now there are almost 150 of these plots with homes on them sold, and the entire development has been spread to cover 360 acres.

Originally, the raw farm land was cut up in checker board fashion having houses located near the main road on plots with 100 foot of frontage. As plans have developed, however, winding roads through the newly acquired acreage and dead end streets provide more interesting home sites without traffic hazards. The original sites were of more than an acre, but it was found that lots of slightly less than an acre were equally or more salable than the larger ones; the present sites are still of 100-foot frontage and over 300 feet deep.

The houses are individually designed by Architect Carl J. Kastrop. Numerous styles have been tried, but this

year it was found that variations of a Cape Cod design were the most popular. Two of these are shown, one on the next page and one on the two pages following, with variations of exterior details. Most of the houses are planned for a utility room instead of a basement, and almost all have an attached garage, with a kitchen in a portion of the connecting wing. It has also been found that by placing one bedroom on the first floor and leaving the second floor to be finished later, there is a greater appeal to younger couples. The other popular style is with living room, dining room, kitchen and utility room on the first floor and two bedrooms upstairs, finished.

This unique community of home owners with modest incomes has now been developed to a point where all facilities are available. A community shopping center and school were added this year. Buses connect with train service to the city, and both electricity and gas are available. A low spot in the center of the development will be transformed into a small lake surrounded by a playground for the children. All these advantages, together with the large plot of ground where owners can follow their gardening and other hobbies, has made Prospect Heights increasingly popular.

Newspaper advertising has been used to some extent as sales promotion, a reproduction of one of these ads being shown on this page. The large head above and to the left of this is part of the newspaper's own promotion which appeared page length and told how the small Smith & Dawson ad had attracted 3,000 people the day on which it appeared. Besides selling four homes, numerous mail and telephone calls added to the prospect list and made the results most gratifying. Another opportunity for promotion was used to best advantage when one of the Smith & Dawson houses was awarded first prize in the Public Service Company of Northern Illinois' home building and modernization contest.

Prices of these houses with one acre of land range from \$4,250 to \$5,750. They are financed with FHA insured 90 per cent loans.

**\$19,800<sup>00</sup> WORTH OF HOMES SOLD IN 6 DAYS AT AN ADVERTISING COST OF LESS THAN 1½%!**



### FREE PUBLICITY

ABOVE: A reproduction of the heading used in the Chicago Tribune's own promotion ad telling of the success of the Smith & Dawson advertisement at the right. The Tribune promotion was three columns wide and page length, detailing how four home sales totaling \$19,800 were made by Smith & Dawson in six days at an advertising cost of less than 1½ per cent.

See This Model Home at Beautiful

## PROSPECT HEIGHTS

New 5 Room Cape Cod Home

One of 100 Newly Built Homes  
Now Open for Inspection  
Also 4 to 6 Room Houses  
from \$4,250 to \$5,750

Well insulated solid brick home—complete plumbing. Plastered walls, hardwood floor, air conditioned, gas or oil heat. Steel kitchen cabinets. One acre. Nicely landscaped. Take Northwest Highway to Mt. Prospect. Turn North on Route 54—2 miles to Prospect Heights.

*Carl J. Kastrop, Architect.*

**\$5,750**

Includes one acre of land.

**\$35** per month, 12 c a day principal, interest, taxes and fire insurance.

**F. H. A.**

Co-operating to Make Possible These Splendid Values Are:

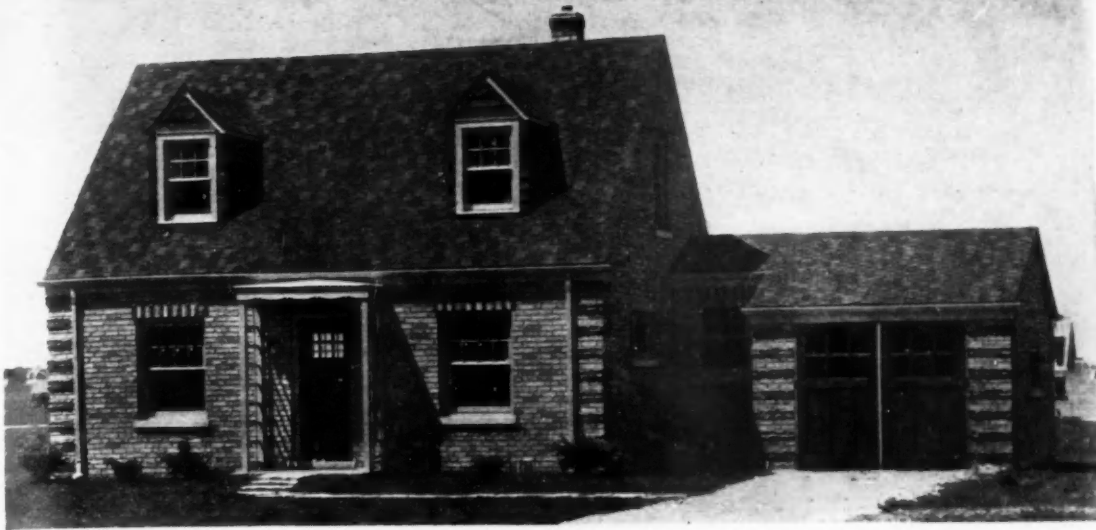
<p><b>ASPHALT TILE FLOORING</b> Thos. Moulton Floor Co. 168 W. Wacker Dr. <b>BARRETT ROOFING</b> Wholesale Roofing Supply Co. 5649 N. Chicago Ave. <b>BRICK</b> Lutter Brick Co. 1814 Diversey Ave. <b>CRUSHED STONE</b> Elmhurst Chicago Stone Co. Elmhurst, Ill. <b>ELECTRICAL FIXTURES</b> Stadel Electrical Service 351 N. La Salle St. <b>EXCAVATING</b> Meyer Coal &amp; Material Co. 1133 Lee St., Des Plaines</p>	<p><b>F. H. A. LOANS</b> Percy Wilson Mortgage &amp; Finance Corp. 134 N. La Salle St. <b>GLAZING</b> Industrial Glass Co. 5210 Milwaukee Ave. <b>HARDWARE</b> Schubert Hardware Co. 3411 W. Chicago Ave. <b>HEATING EQUIPMENT</b> Associated Air Cond., Ind. 5838 N. Western Ave. <b>LATHING</b> Chas. W. Hammerl 1024 Cora St., Des Plaines</p>	<p><b>LINE, PLASTER, CEMENT</b> Arlington Elev. &amp; Coal Co. Arlington Heights, Ill. <b>LUMBER</b> Herman H. Hettler Lbr. Co. 5001 Sibley Ave. <b>MELWORK</b> Harris Brothers Co. 1349 W. 35th St. <b>PAINT</b> Louton Paint, Varnish Co. Des Plaines, Ill. <b>PLASTERING</b> Martin Christensen 1700 N. Laramie Ave. <b>PLUMBING CONTRACTOR</b> Charles R. Ewing, Inc. 4812 N. Kilpatrick Ave.</p>	<p><b>PLUMBING FIXTURES</b> Gateway Supply Co. 4846 Milwaukee Ave. <b>ROOFING CONTRACTOR</b> Harry Seeman &amp; Sons 412 N. 1st Ave., Maywood <b>STEEL METAL WORK</b> Airway Heating &amp; Ventilating Co. 4820 W. Division <b>STEEL KITCHEN CABINETS</b> St. Charles Mfg. Co. 721 N. La Salle St.</p>
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**SMITH & DAWSON**

1 N. La Salle St.
Developers
State 3861

### PAID ADVERTISING

LEFT: 255-line advertisement which attracted 3,000 people to inspect this Smith & Dawson Cape Cod home at Prospect Heights. Besides selling four homes, it furnished a large list of prospects and brought in innumerable requests by mail and telephone for further information about this homestead project.



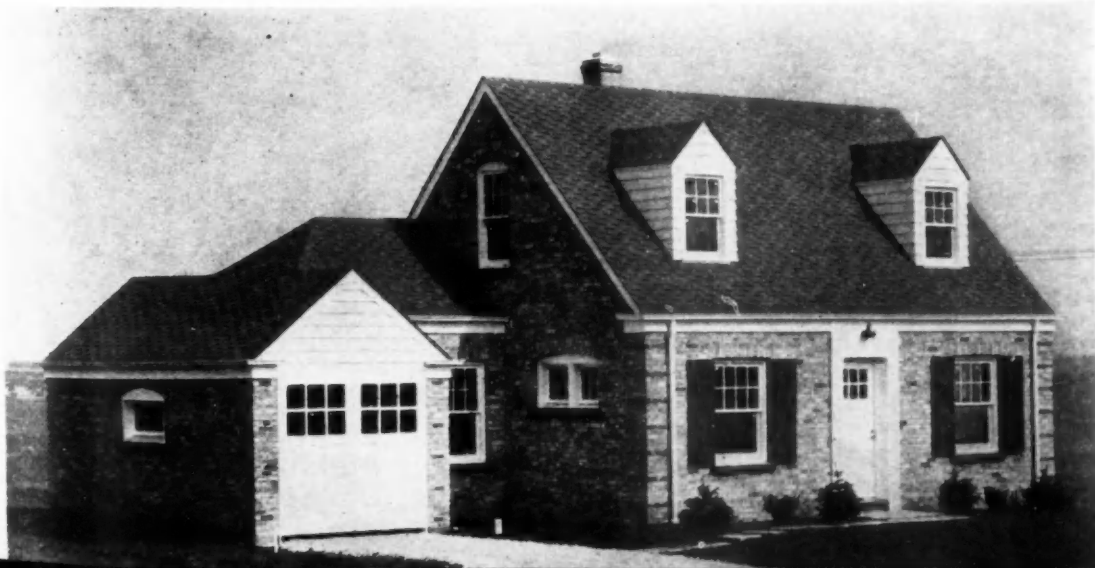
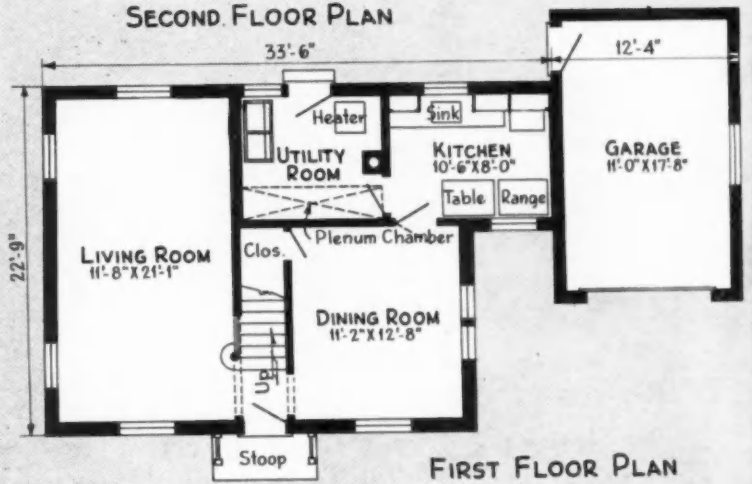
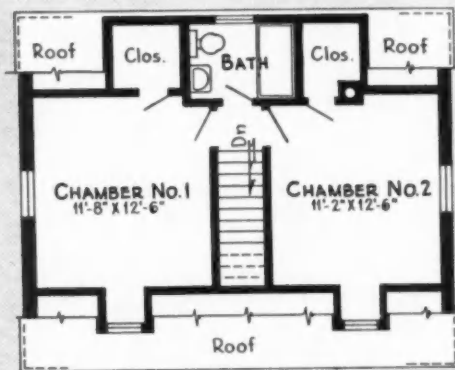
THE exterior at the left fits the plan as detailed below. These Smith & Dawson homesteads are independent of municipal improvements; each has its own well and automatic electric pump and septic system.

## Five-Room Prospect Heights Cape Cod Homestead

THIS Smith & Dawson house is one of the popular models having a five-room plan and several exterior variations, two of which are shown on this page. Like most Prospect Heights houses, it has a utility room instead of basement. The kitchen is located in the connecting wing to the garage, allowing cross ventilation. There is a good sized closet underneath the stairs. Two bedrooms and bath on the second floor are finished.

Walls are of solid brick construction with plaster on furring. Roof is Barrett asphalt shingles. Equipment includes St. Charles metal kitchen cabinets, and winter air conditioning, either gas or oil-fired. One acre of land is included in the purchase price.

**"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE:**  
 Basement Walls, 0 lin. ft.; Trench Walls, 156 lin. ft.; Basement Floor, 80 sq. ft.; Garage Floor, 210 sq. ft.; Excavation per ft. deep, 31 cu. yds.; Outside Walls, 19.20 sqs.; First Floor, 6.50 sqs.; Second Floor, with fin. fg., 4.70 sqs.; Ceiling, 8.60 sqs.; Roof Pitch, 12" rise per ft. run; Roof, 12.34 sqs.; Hips and Valleys, 16 lin. ft.; Cornice, C & F, 258 lin. ft.; Partitions, 173 lin. ft.; Inside Finish OS Walls, 210 lin. ft.; Front and OS French Doors, 1 opg.; Rear and Grade Doors, 2 oggs.; Garage Door 8 ft. wide, 1; Inside Doors and Casement Oggs., 10 oggs.; Windows and Casements, 16 oggs.; Chimney, 26 lin. ft.; Main Stairs, 1; Porch Floor, .24 sqs.; Porch Ceilings, .10 sqs.; Porch Beam, 11 lin. ft.; Porch and Balcony Post and Newels, 4; Porch Roof, .14 sqs.; Porch Cornice, 11 lin. ft.; Porch and Deck Rail, 4 lin. ft.



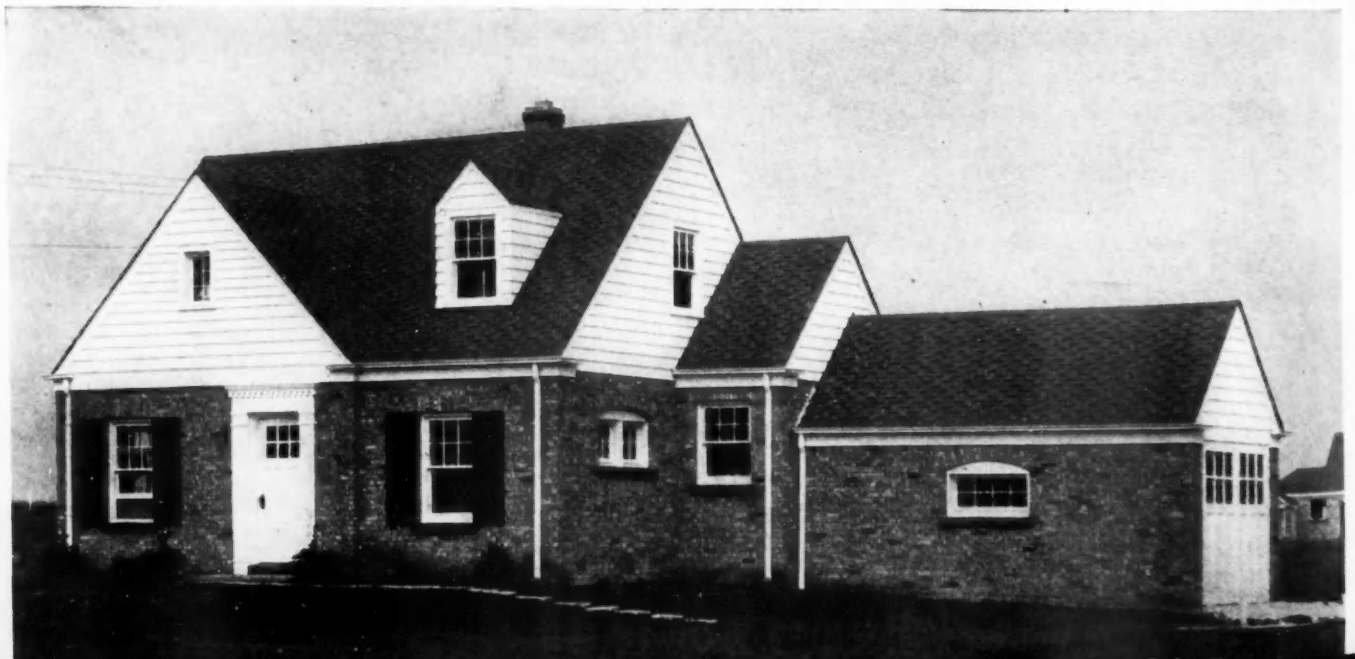
ONE of the exterior variations of the above plan is shown at the left. Floor plans have been reversed and slightly different exterior details used, including brickwork, front entrance, roof over garage and connecting wing and color of the roof and trim.

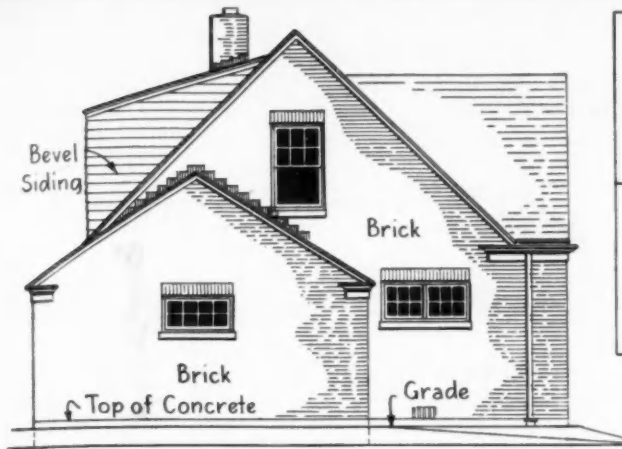
THE exterior at the right is shown in plan and side elevation on the opposite page. It has a front entrance porch which is a much appreciated feature. The variation immediately below was awarded first prize in the Public Service Co. of Northern Illinois Home Building Contest. The one at the bottom of the page more closely resembles the exterior at the right except that the plan has been reversed.



## Basementless Economy Design for the Country

THREE exteriors on this page are variations for the plans and details on the opposite page. This arrangement has been found very salable because, for a young married couple, the second floor can be left unfinished until a later date, there being one bedroom and bath on the first floor. The use of a front projecting gable set to one side instead of two dormers varies the appearance greatly.





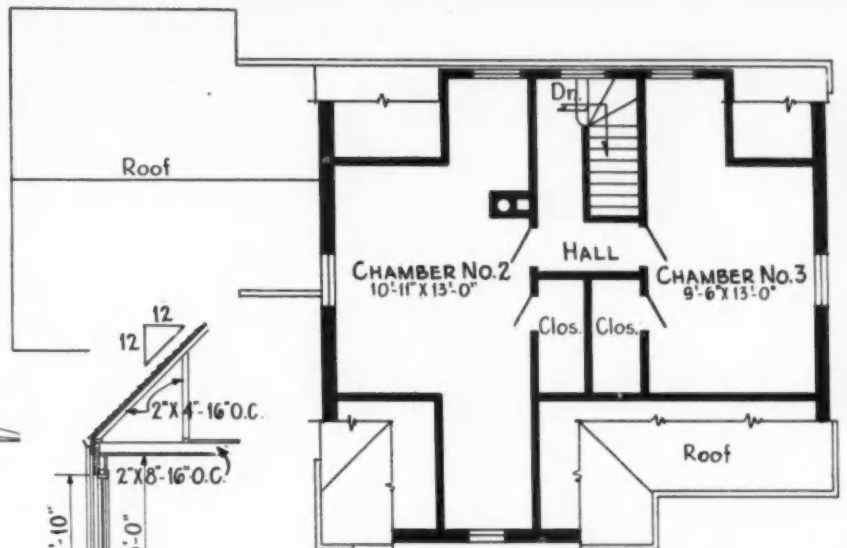
RIGHT SIDE ELEVATION

**Plans and Details of Prospect Heights Suburban Homestead  
Smith & Dawson, Builders**

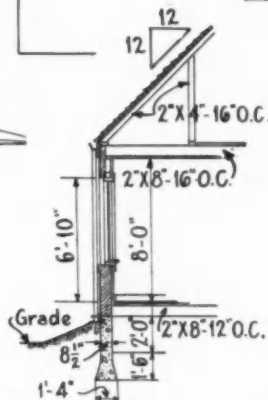


ABOVE: The compact kitchen in the prize winning home shown directly opposite is well lighted and cross ventilated; clever planning makes this possible, as shown in the floor plans to the right. The utility room is handily located next to the kitchen; section detail indicates economical winter conditioning installation, the main supply duct being located in a furred-down portion of the ceilings in the hall and adjacent closet.

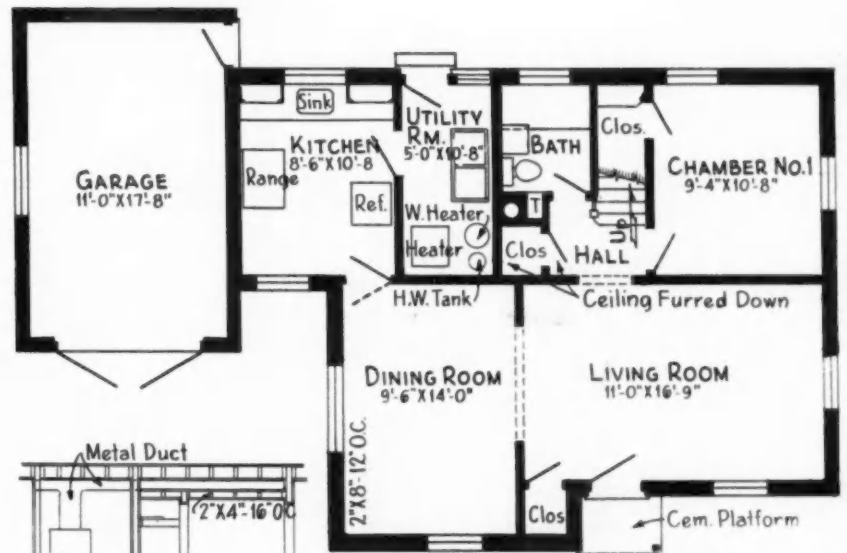
**"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE:**  
Trench Walls, 170 lin. ft.; Basement Floor, 55 sq. ft.; Garage Floor, 200 sq. ft.; Excavation per ft. deep, 34 cu. yds.; Outside Walls, 21.70 sqs.; First Floor, 7.15 sqs.; Second Floor, without fin. fig., 5.30 sqs.; Ceiling, 9.15 sqs.; Roof Pitch, 12" rise per ft. run; Roof, 15.50 sqs.; Hips and Valleys, 30 lin. ft.; Cornice, C & F, 200 lin. ft.; Partitions, 107 lin. ft.; Inside Finish OS Walls, 114 lin. ft.; Front and OS French Doors, 1 opg.; Rear and Grade Doors, 2 opgs.; Garage Door 8 ft. wide, 1; Inside Doors and Cased Opgs., 9 opgs.; Windows and Casements, 12 opgs.; Gable Sash and Louvers, 5 opgs.; Chimney, 26 lin. ft.; Main Stairs, 1; Porch Floor, .15 sqs.; Porch Ceilings, .12 sqs.; Porch Beam, 8 lin. ft.; Porch and Balcony Post and Newels, 3; Porch Cornice, 7 lin. ft.



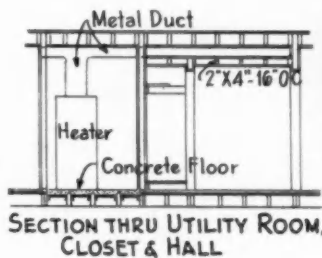
SECOND FLOOR PLAN



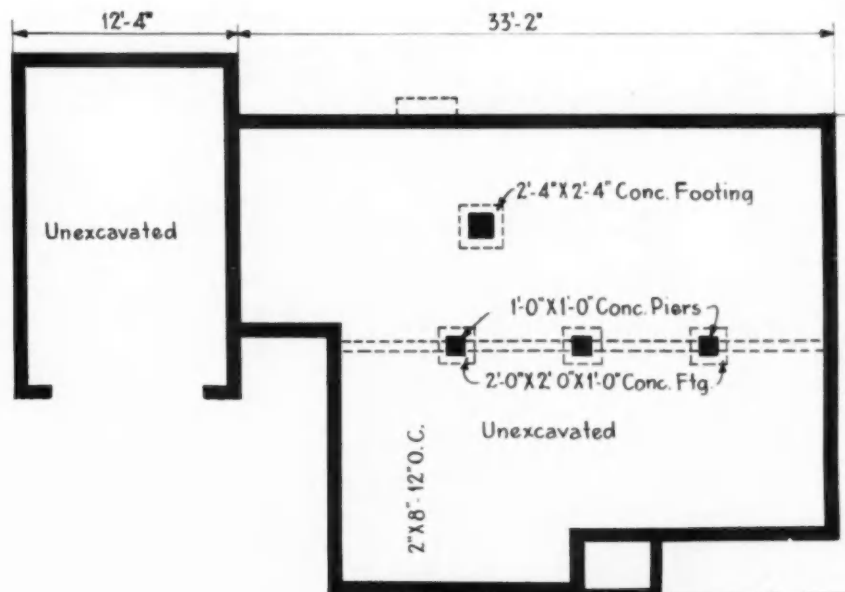
TYPICAL WALL SECTION



FIRST FLOOR PLAN

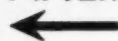


SECTION THRU UTILITY ROOM, CLOSET & HALL



BASEMENT PLAN

AFTER



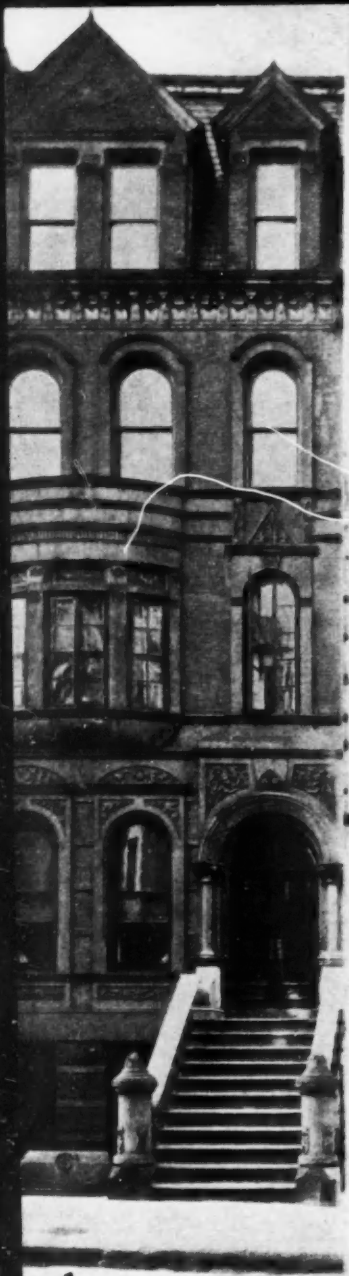
## Old "Brownstone" Modernized Wins \$500 Prize Award

**Herbert Lippmann, New York Architect, Restyles Manhattan Row House; Points Way for Salvage of Others**

**T**HE modernization of this old New York property is of great interest because it shows what can be done to salvage thousands of similar buildings. The fact that this project was among the prize winners in the A.G.A. Builders' Competition, receiving one of the \$500 awards, indicates the practicability and thoroughness of the undertaking.

One of Manhattan's awkward Late Victorian row houses, built in the 1880's, it was altered by Herbert Lippmann, New York architect, into a modern plan in Late Georgian style; "a country house in town," the owners call it. The "stoop" was removed and an inviting random flagstone entrance was arranged on the ground floor. The numerous ugly carved ornaments and clumsy mouldings and the dormers were removed, and the front changed into this Georgian type facade with imitation stone and a few iron railings.

The kitchen was placed on the street front, so that the dining room and porch-like breakfast room, as well as the living room and the chief bedrooms,



↑ **BEFORE**

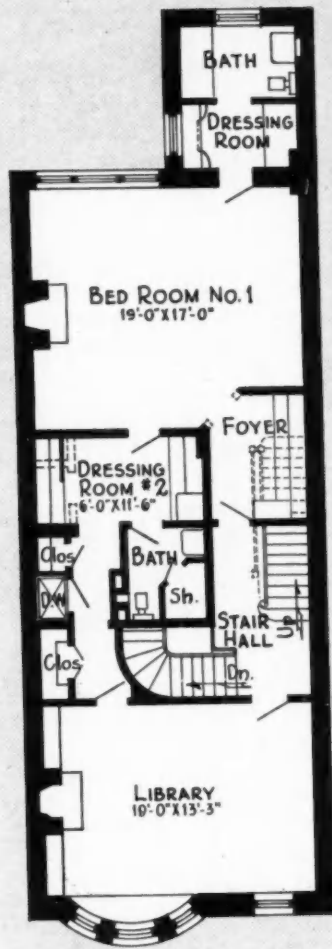
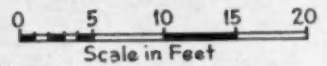
ABOVE: The before and after views show how an old Victorian row house in Manhattan built in the 80's was restyled with a Georgian exterior; interior changes are indicated in the accompanying floor plans.

RIGHT: In changing the interior layout, important rooms now face this pleasing rear garden instead of overlooking traffic on the street.

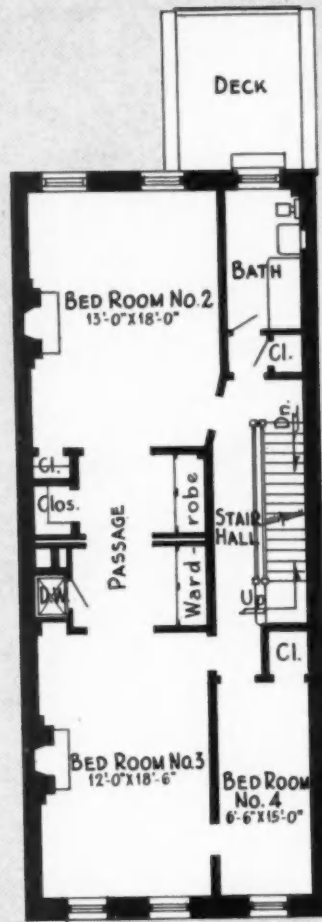


FLOOR plans show the modernized arrangement of old Manhattan row house; dotted lines indicate old work that has been removed. There are six floors, including a cellar and basement, the former not being in evidence from the street elevation, but having windows in the rear where the grade is lower.

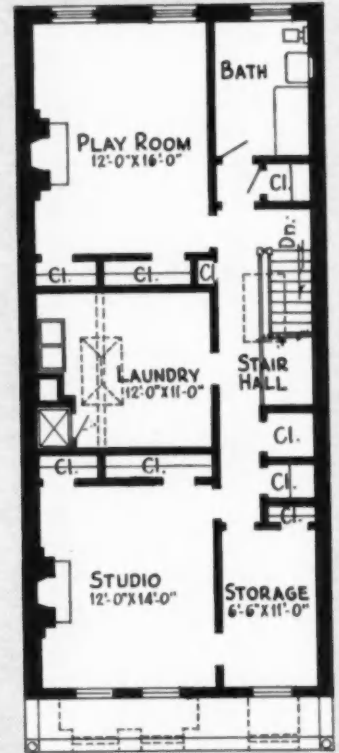
Note: Dotted lines indicate old work that was removed.



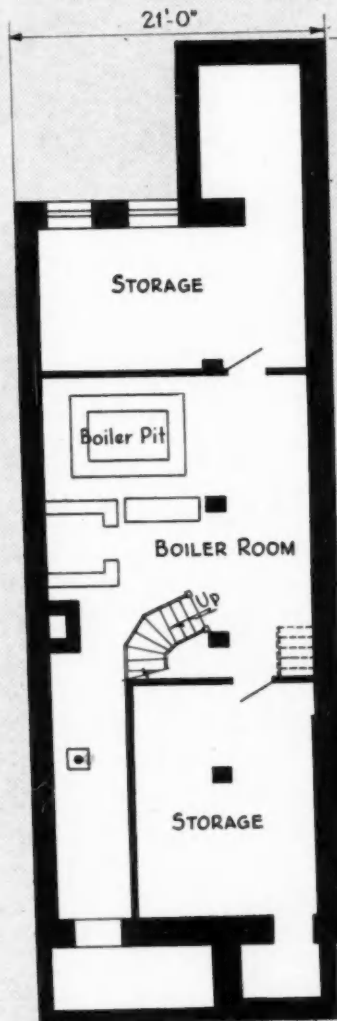
SECOND FLOOR PLAN



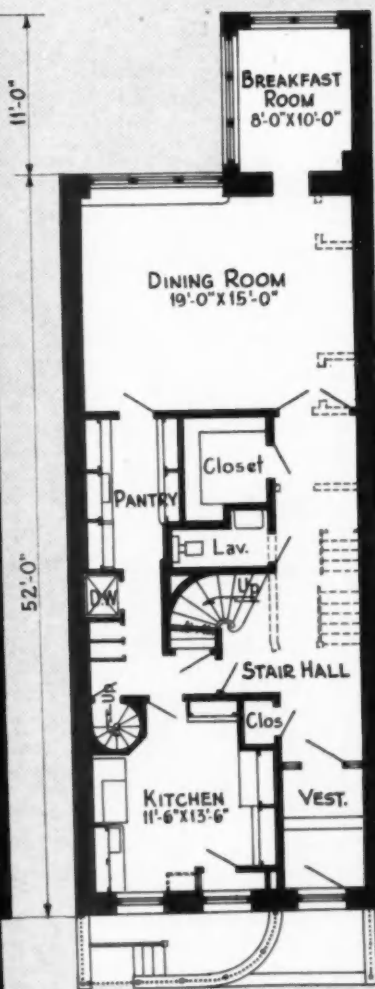
THIRD FLOOR PLAN



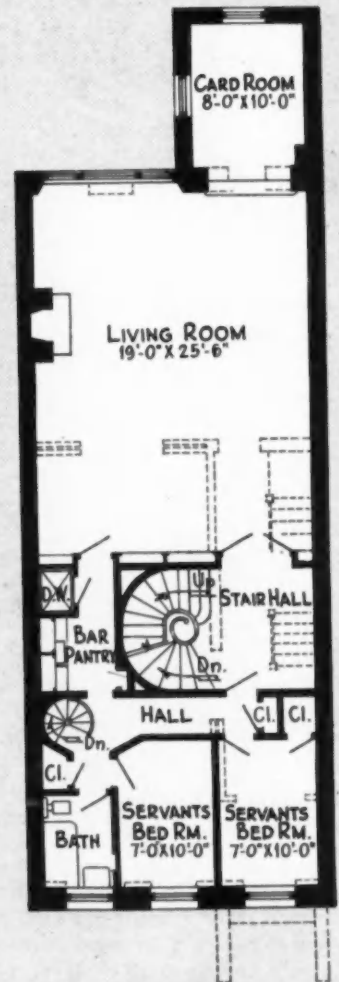
FOURTH FLOOR PLAN



CELLAR PLAN



BASEMENT PLAN



FIRST FLOOR PLAN

SOME of the materials used in this modernizing are: P. Aguado Co. imitation brownstone; USG blocks; Covert fireplace dampers; Wheeling tile; Ketcham shower door; United Metal Box Co. medicine chests; Kohler and Standard Mfg. Co. plumbing fixtures; Bryant winter air conditioner; Elkay stainless steel sinks; Reading hardware; Lightolier electric fixtures; Loeffler phones; Murtha dumbwaiter.

now face south away from the street and look out over a charming rear garden. The enlarged living room and its alcove card room are spaciouly arranged for large gatherings; there is a special service bar pantry. The owners have a fine bedroom suite with separate dressing rooms and baths and a library-living room.

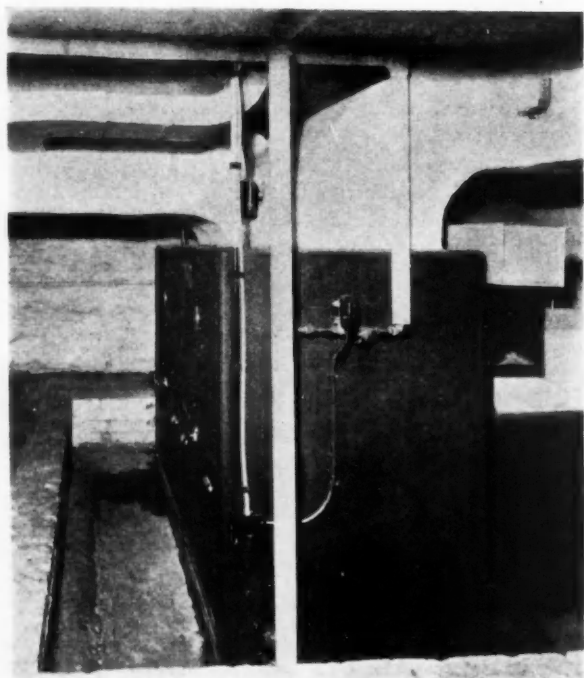
In the "brownstone era" the domestic help were obliged to climb to the top floor to their rooms; in replanning, this top floor is used for the owner's carpentry work shop, a guest suite, and the laundry; the latter separates the visiting laundress from other daily services, and is served by dumbwaiter. Bedrooms for the domestics are conveniently close to the kitchen and service entrance—a necessity in competing with the convenience offered domestics in modern apartment houses.

The broad entrance hall and circular stairway give a graciousness to the interior that suggests a country house, particularly in connection with the view of the garden seen looking down this hall and across the dining room.

The materials such as brick and timber, hardwood floors, etc., existed and remain; new plastering is on expanded metal lath, and modern flexible electric wiring, interior telephones, brass water pipe, and modern tiled bathrooms were installed. Extent of structural changes is shown on the floor plans.

#### VIEW OF PRIZE WINNING MODERNIZED INTERIORS

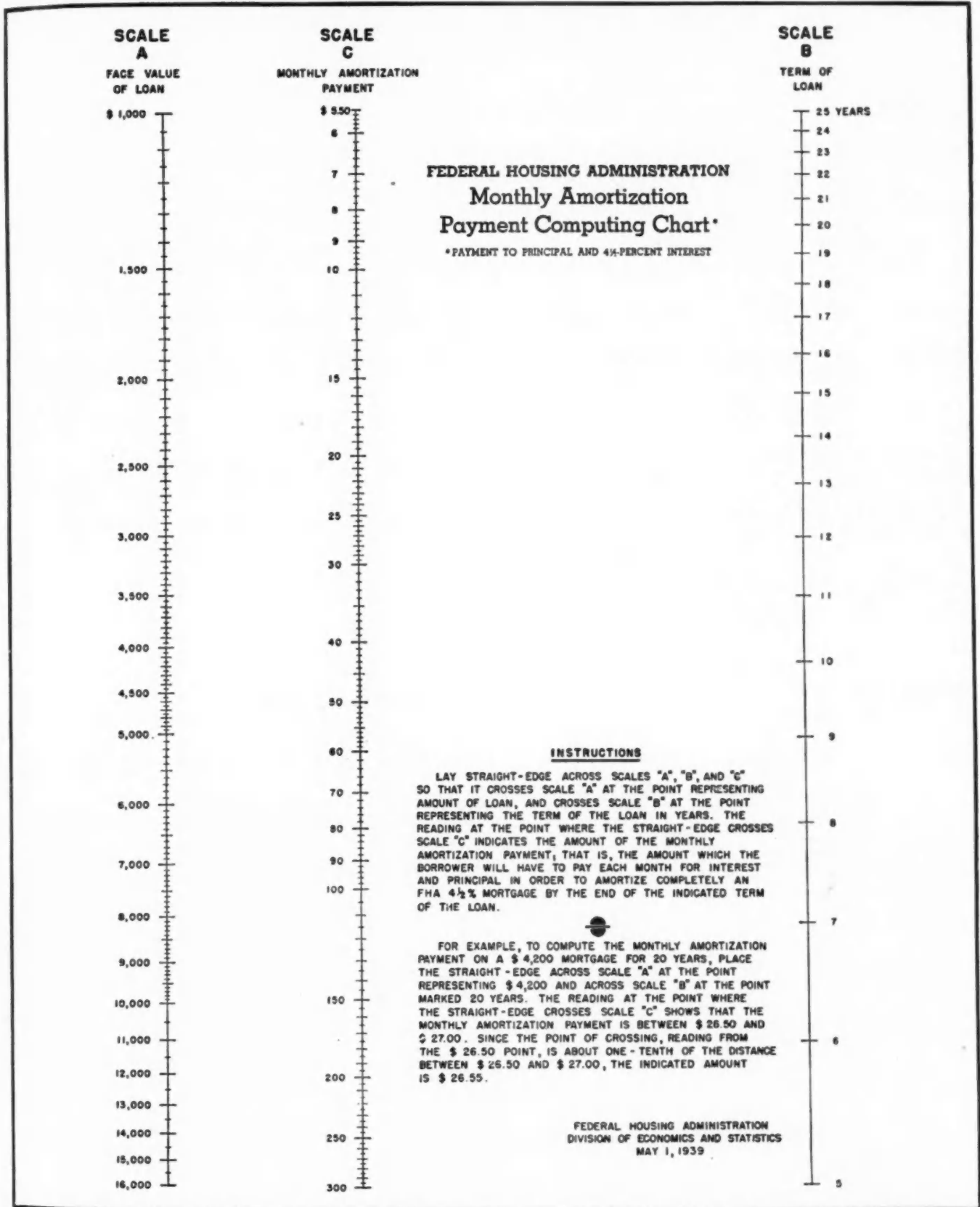
ABOVE: A large mirror in the entrance hall reflects the fine circular stairway and entrance doors to the living room of this house modernized by Architect Herbert Lippmann. Right: The butler's pantry and kitchen located in the basement have plenty of built-in cupboard space.



ABOVE: The Bryant winter air conditioning unit was set in a pit in the cellar floor to provide necessary headroom for the ducts. Note the supply line for the conditioner humidifier.







## Monthly Payments for 4½ Per Cent Loans

HERE IS THE NEW FHA chart for computing monthly payments on 4½ per cent loans now being insured by the FHA. Simply lay a straight-edge across the three lines in the chart, crossing Scale A at the face value of the loan, crossing Scale B at the term in years, and the reading on Scale C will be the monthly payment required for interest and principal on a 4½ per cent mortgage.

# How to Make Winter Building PAY

**A Brief Outline of Cost-Cutting Cold Weather Methods, Including Data on Uses and Advantages of Calcium Chloride, High Early Strength Cements, Proper Protection. War Expected to Bring Higher Costs Next Spring**

**S**CIENTIFIC advances in materials, methods and equipment have taken winter building out of the red and into the black. Winter building has been proven profitable, providing the builder takes advantage of the factors making for lower costs but at the same time devises ways to get around the well known difficulties that tend to increase costs.

It is common knowledge that labor is cheaper and more plentiful, materials more easily available and prices all along the line lower during the cold weather season. One important factor is that subcontractors, anxious to keep at least a part of their crew busy, will figure on lower overhead and profit. Likewise, with fewer jobs to go around, architects' fees tend to be lower, financing costs more reasonable and services of all kinds easier to obtain.

The secret of success, therefore, is to make the most of these lower cost factors but devise ways and means to offset the difficulties of freezing temperatures, snow, sleet and difficult weather.

Recent improvements in the technique of winter building rather conclusively demonstrate that the high cost factors can and are being brought down while the low cost factors still remain.

### Proper Organization Important

This year, with war raging in Europe, the situation is particularly favorable to profitable winter operations, since it is generally predicted that by spring a considerable

rise in building costs will have taken place meanwhile.

Of paramount importance in profitable winter operation is a better thought out plan of operations, which should be carefully scheduled with an eye to the probable weather conditions that will be prevailing. It is obvious that, if possible, foundations should be gotten in before the ground is frozen and the house enclosed before really bad snow and cold. However, even after the worst has happened work can go ahead successfully and at lower cost than in the summer time. The order of operations may be changed somewhat—that is, the heating contractor may be called upon to set up the heating unit while the house is still rough-enclosed. Once it is in operation, all interior jobs can go ahead satisfactorily.

### Protection of Materials

All kinds of materials must be protected against snow and moisture, and here again care in planning the job and ordering the materials is important. Deliveries must be arranged so that good dry flooring and trim, for example, are not delivered and stored inside the house before the plaster has dried and the moisture conditions return to normal.

### Concreting in Cold Weather

The oldest and most difficult problem of winter construction—concrete work—has been largely solved through technological improvements. All cements, due to their finer grinding, now harden more rapidly. Increase in knowledge of the use of better proportioned water-ratio mixes that attain a safe strength more quickly has taken place. The use of high early strength cements has radically cut down the hardening time of concrete and thereby reduced the time of protection required. For

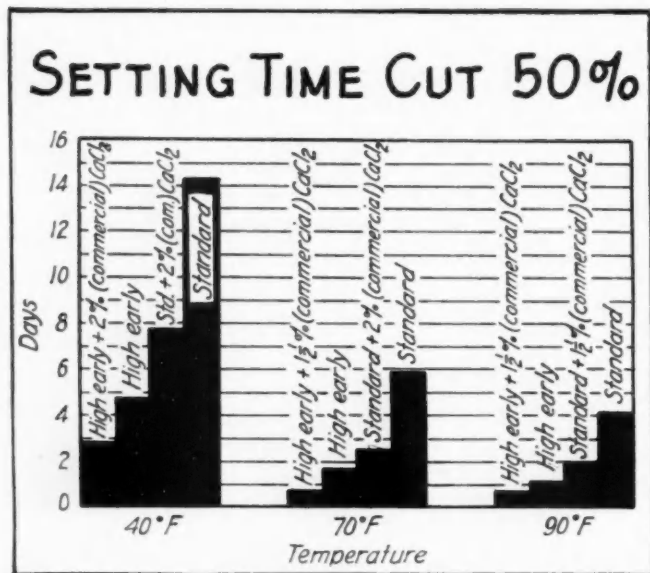


TABLE I—Effect of addition of calcium chloride on length of time required for concrete to attain 2,500 lb. per square inch compressive strength is shown based on National Bureau of Standards studies.

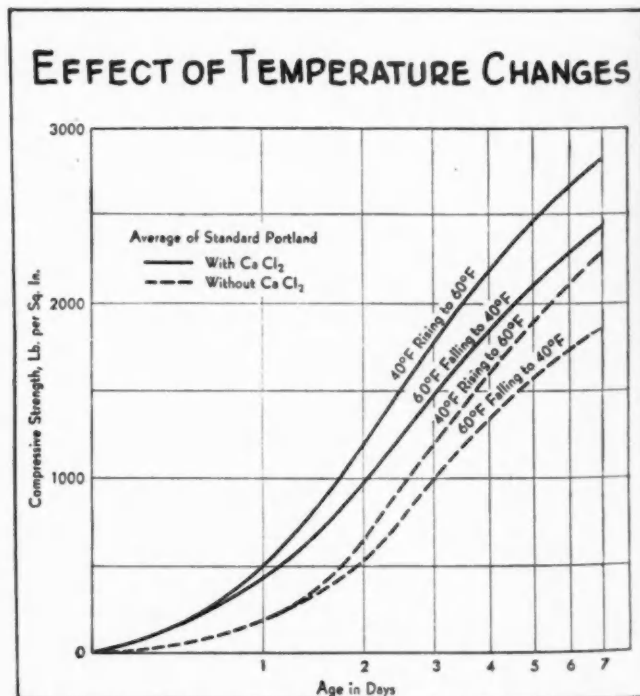


TABLE II—Adverse effect of falling temperatures on concrete is largely offset by addition of calcium chloride, tests by the American Road Builders' Association portrayed in the above chart indicate.

**PER CENT INCREASE IN COMPRESSIVE STRENGTH OF CONCRETE WITH 2 PER CENT ADMIXTURE OF CALCIUM CHLORIDE**

Mix 1:2:4, 6½ gal. water per sack of cement, 70 deg. F. damp curing.

Age at test	Increase in strength per cent of plain concrete
1 day	128
3 days	64
7 days	31
28 days	13
3 months	9
1 year	8

**PER CENT INCREASE IN COMPRESSIVE STRENGTH OF MORTAR WITH 2 PER CENT ADMIXTURE OF CALCIUM CHLORIDE**

Mix 1:2:6 by weight, 6½ gal. water per sack of cement, damp curing.

Age at test	Increase in strength at curing temperature indicated per cent of plain mortar		
	40 deg. F.	70 deg. F.	90 deg. F.
1 day	300	145	90
3 days	117	68	41
7 days	75	32	23
28 days	20	12	15
3 months	10	14	16

example, a 6-gal. high early mix will attain full service strength of 2,000 lbs. or over in 24 hours. Protection that will maintain a temperature of 60 to 70 degrees is required for only 24 hours with high early cement of this type at above-freezing temperature. When the thermometer goes down to between 20 and 30 degrees, protection is required for only two days; below 20 degrees only three days' protection is required. Careful cost analyses indicate that the use of high early strength cements reduces winter heating and protection costs by 60 to 70 per cent.

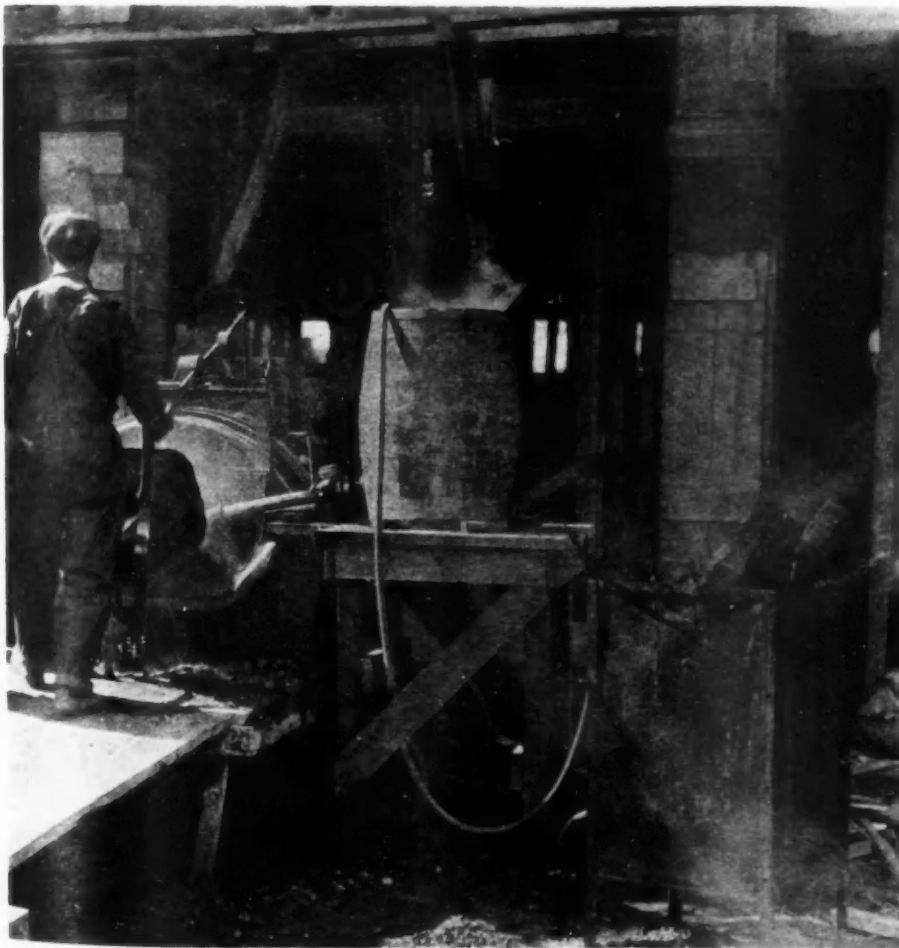
Another scientific development that has had a large bearing on simplifying cold weather concreting is the use of calcium chloride. Recent tests by the National Bureau of Standards (see Table I page 68) throw new light on the effects of calcium chloride on portland cement mixes. In a report on these tests the Portland Cement Association (Bulletin No. ST 23) presents the above tables.

These National Bureau of Standards tests substantiating the results of many earlier tests show that the addition of calcium chloride to either standard or high early strength portland cement reduces by approximately one-half the time required to reach the same compressive strength at temperatures ranging from 40 to 90 degrees. A similar increase in flexural or bending strength is secured.

The action of calcium chloride is especially valuable in concrete poured at low temperatures. While it is common knowledge that the normal hardening of ordinary concrete is greatly retarded by cold weather, these tests bring out the extent to which hardening is delayed. They showed that the one-day strength of portland cement when placed at 40 degrees F. was 91 per cent less than a similar concrete mix at 70 degrees. Three days were required for the Bureau specimens stored at 40 degrees to reach the strength attained by the 70 degree specimens in one day.

With the addition of 2 per cent of calcium chloride the concrete develops a marked degree of higher early strength which serves to protect it against a drop in temperature. The adverse effect of falling temperatures is largely offset.

Of considerable important to residential builders is the effect of calcium chloride on portland cement mortars. The National  
(Continued to page 124)



SCIENTIFIC PLANNING OF WINTER WORK, taking advantage of the latest developments in materials and equipment that prevent delays, put this business in the profits-earning class.

## Glass-Faced Structural Unit Developed

**T**HE evolution of building materials in the past quarter century has been progressively toward lighter, more artistic and more durable load-bearing construction units. Recent introduction of a new light-weight concrete block faced with colored structural glass makes possible the architectural use of glass at heights heretofore thought impossible.

The new structural unit, called glastone, although only recently placed on the market by Libbey-Owens-Ford Glass Co. of Toledo, already has been used in several construction jobs in Michigan, and forms the walls of a two and one-half story office building erected at Charleston, W. Va., for the company. It has already been accepted as a load-bearing structural unit by the Detroit Building Commission, and is up for adoption in other cities where building commissioners expressed interest in it when it was first publicly introduced at their recent national convention in Detroit.

Glastone is composed of vitrolite bonded to haydite, a light-weight concrete, well known in the building trade for its strength and resistance to fire and moisture. A layer of mastic binds the colored glass and concrete into a solid masonry unit. The glass is further anchored to the concrete by a hidden, rust-proof metal binder.

Made in a variety of colors, glastone is especially suitable for commercial and public buildings, offices, service stations, store front bulkheads, theater facades, corridor walls, lobbies and swimming pools. It may be installed by any mason competent to install limestone, terra cotta or similar building materials.

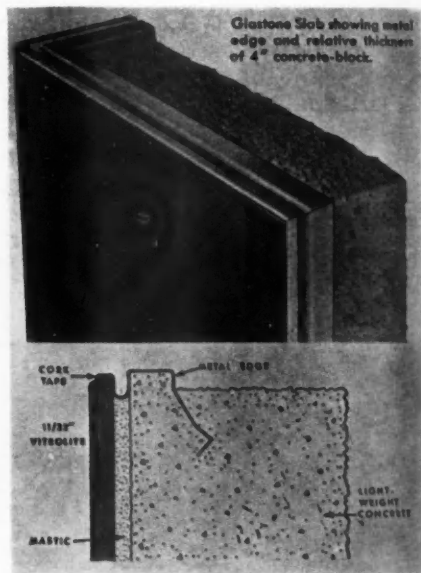
Glastone has been used in the exterior construction of Lynch and Sullivan furniture store, Wyandotte; Farmington Dairy, Detroit; Atlantic & Pacific Tea Company Super Market, Ann Arbor, and Main Grocery, Ann Arbor, all in Michigan.

As an example of what can be done with glastone, the Libbey-Owens-Ford two and a half story building at Charleston is of special interest to the building trade. In that building, the glastone is in units 4 inches thick, but it may be used in units from 1½ inch thickness for

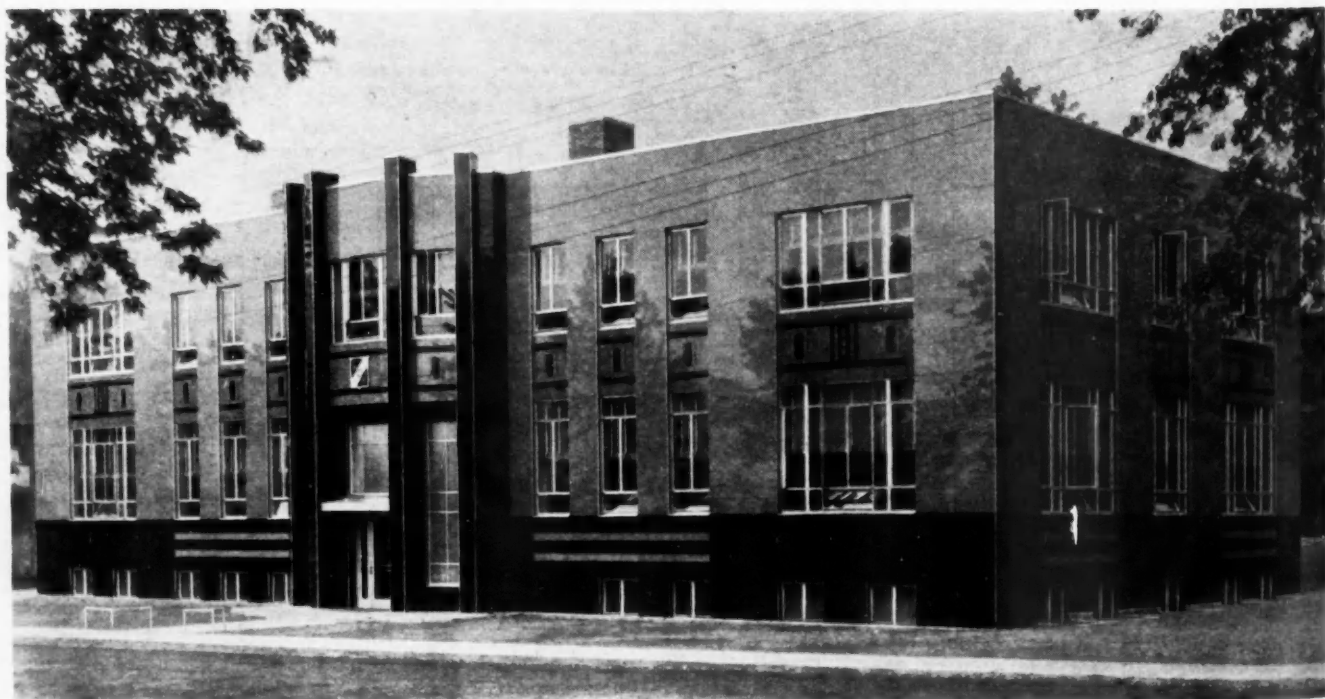
remodeling work, to 8 inches for solid wall construction. Each unit is composed of a vitrolite colored glass facing supported in a cork lined metal frame which is cast into haydite to make a firm bond. Metal dowel holes in the concrete provide a ready means of anchoring. Spaces between the units are closed by caulking, and the mortar bed is confined to the concrete backing. The glastone is joined to steel frame wherever possible.

All glastone units must be made to specification and may be cast in various shapes and in sizes up to 12 square feet. Special shapes may be cast to fit window sills, curves or other unusual surfaces.

In the Charleston building, glastone units up to 4 feet by 3 feet were used. The large blocks were provided with slots to allow handling by block and tackle. Glastone varies in weight from 90 to 100 pounds per cubic foot and is tested to a strength of 1500 to 2000 pounds per



**RIGHT:** Cross section diagram shows metal edge around vitrolite cast into concrete block for permanent anchorage. **BELOW:** Libbey-Owens-Ford office building, Charleston, W. Va., constructed entirely of new glastone structural masonry unit.





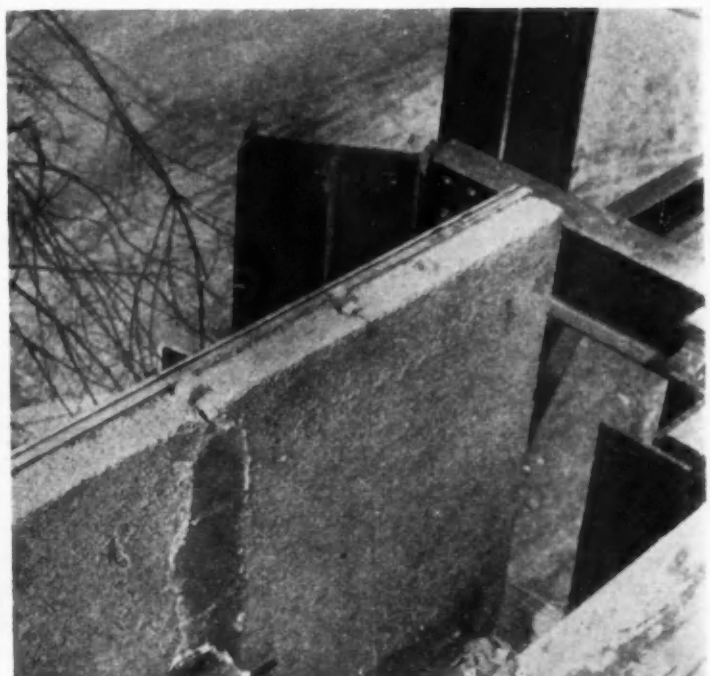
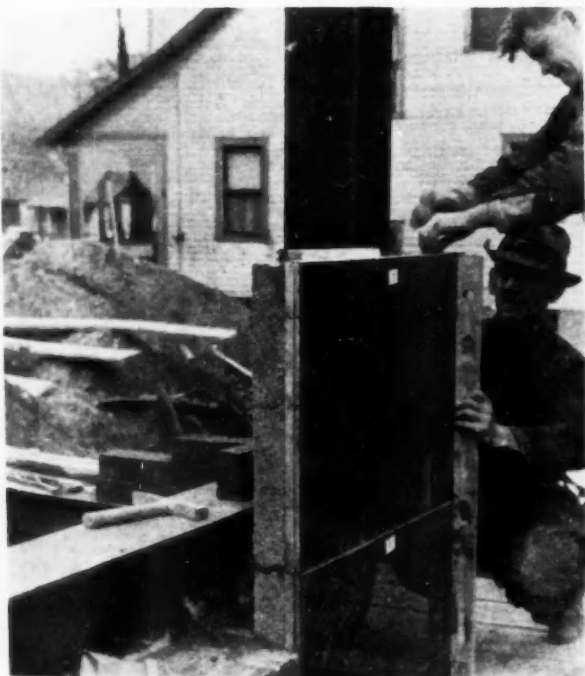
square foot over the gross area. Aluminum or other metal ornament may be cast into glastone. The completed building shows true and plumb walls, with perfect alignment. Dirt and mortar is easily cleaned from the vitrolite surface.

This first full size glastone building is distinguished by harmony of color. There is a sun tan field, Van Dyke brown base and columns, and special green spandrels with accents of sun tan, brown, red and aluminum. A heavy rain cleans the walls of dirt and grime, quickly restoring the natural beauty and light reflections to the polished glass surfaces.

Each glastone unit is designed to bear its share of weight. The metal binder is not exposed on the face of the glass after installation, as it covers only the rear edge of the glass extending to within 1/16 inch of the face. It is completely concealed after pointing.

The form of the metal edge is important and its special  
*(Continued to page 120)*

LEFT AND BELOW: Two examples of store construction using glastone units; brilliant and attractive color combinations are possible with the vitrolite facing used on this newly developed material.



ABOVE LEFT: Glastone may be laid up like any other load-bearing masonry unit. RIGHT: Rear view of units.

# How to Estimate Accurately

## In This Article of the Estimating Series Walls, Cornice and Roofing Are Discussed

By **J. DOUGLAS WILSON**

Head, Building Trades Dept., Wiggins  
Trade School, Los Angeles, Calif.

**T**HE last article of this series discussed the frame unit of exterior finish; the other three units, namely, walls, cornice, and roofing, are considered below. The materials considered are siding, shingles, water table, belt course, and corner boards.

### Wall Unit

**SIDING:** Siding is finish lumber nailed horizontally on the exterior of a frame building. Sometimes it is called rustic, ship lap, channel rustic, beveled siding, novelty siding, etc., each term being applied to some special shape of material. Figure 1 shows some of the more commonly used patterns.

A piece of siding will not lay or cover as much space as is indicated by its size. A 1" x 8" board will cover 7" of space, a 1" x 10" covers 9". This is because the rabbett in the bottom edge of siding laps over the board below it. This rabbett will average  $\frac{1}{2}$ " in width. Another  $\frac{3}{8}$ " is lost in making a rough piece of lumber into siding. A third factor is shrinkage, as a rough piece of lumber will shrink from  $\frac{1}{8}$ " to  $\frac{1}{4}$ ". There is also considerable end waste caused by cutting siding to join on the studs. A certain fractional part must, therefore, be added to the net area to allow for these losses.

It is necessary to know whether the wall surface is a solid one, without openings, or if it has window and door openings. Gable areas are considered as a solid surface, although occasionally there may be a small ventilator or louvre frame in a gable.

Two rules are used when figuring siding. If the area to be covered is a small one, such as the side of a garage, then a convenient way is to figure the material by the piece, as follows:

**Rule 1:** Divide the wall height by the amount one board covers (see figure 2). Result equals number of boards. Count a part of a board as a whole one. The length of the stock is the same as the length of the wall which must be considered in even foot lengths. Repeat for each wall.

### Siding Table

The following table indicates the amounts to add for various widths of siding. The explanation below the table shows the application of the table to walls without openings; gable areas and walls with openings.

Rough lumber size	Coverage	Milling	Waste End	Constant
1 x 4	3"	33-1/3%	5%	1.40
1 x 6	5"	20%	5%	1.25
1 x 8	7"	15%	5%	1.20
1 x 10	9"	12%	5%	1.17
1 x 12	11"	10%	5%	1.15

**To Find Wall Area:** The wall height is found by measuring from the lower edge of the bottom board of siding to the top edge of the top board. In other words, add to the wall height measurement from the underside of the mudsill to the top of the doubling plate the amount of stock which would be wasted off the top board. (See figure 2.) The perimeter of the building equals the total wall length. Increased wall height times perimeter equals wall area.

**Rule 2:** a. For a wall without openings: find wall area and multiply by a constant selected from the table above.

b. For a gable area: multiply roof rise by one-half the span, (see figure 3). Then multiply this result by a constant selected from the above table. Then add an additional 20% to allow for the waste incurred due to the slope of a roof.

c. For a wall with openings: find the wall area; deduct all openings 10 square feet in area, or more; then multiply the difference by a constant selected from the table above.

**SHINGLES ON WALLS:** Occasionally a building will be designed with exterior walls to be covered with shingles.

There are two kinds of lumber used, cedar and redwood, the former being preferable. Both are used on account of weather resisting qualities.

The thickness of the butt end of a shingle will vary, this thickness being stated in terms of the number of shingles that will measure 2". To illustrate: shingles ordered 5/2 will measure five shingles to 2"; 6/2 means 6 shingles will measure 2". Shingles are sold by the bundle, assuming 250 four-inch width shingles to a bundle.

When estimating shingles allowances must be made for door and window openings. Deduct all openings whose area is equal to or in excess of 10 square feet.

### Shingle Table

Shingles will cover the identical amount of surface whether laid on a wall or a roof. The table on the next page indicates the square feet of surface covered by one bundle of shingles for varying exposures and different length shingles.

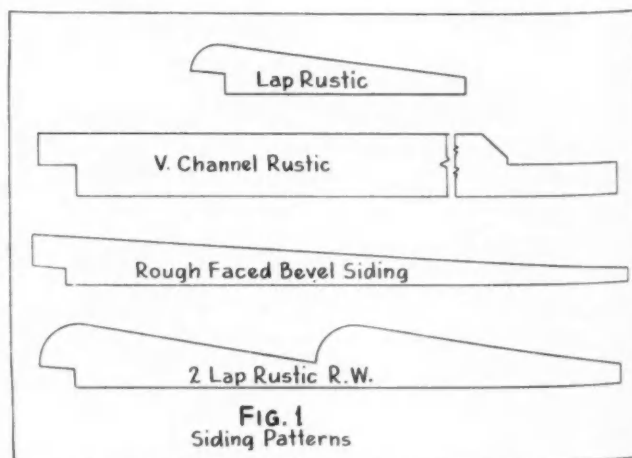


FIGURE 1: Some of the more commonly used siding patterns.

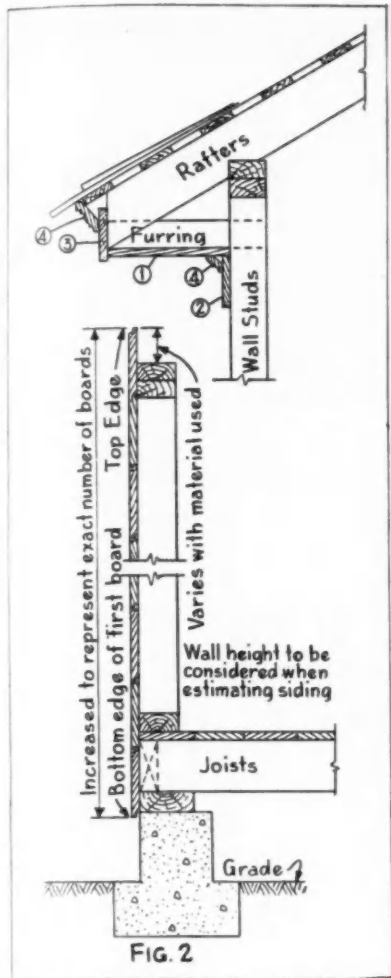


FIG. 2

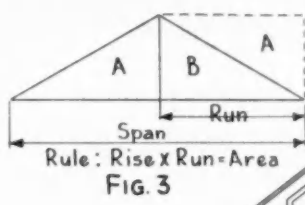


FIG. 3

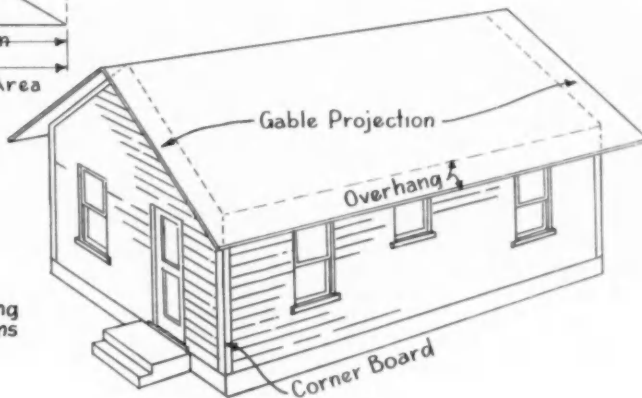


FIG. 4

Illustrating overhang and gable projections

ABOVE: In Figures 3 and 4 are shown method of figuring gable areas and illustration of open cornice and corner boards respectively.

LEFT: Cross section diagram of wall, cornice and roof in which members are identified and rules illustrated for estimating these portions of house.

**BELT COURSE:** If an architect desires to make a break between a foundation and the exterior face of the outside walls, a continuous band known as a belt course is sometimes placed at the sill line. Occasionally, a belt course will be placed at the second floor line of a two story residence. The size of the stock used for this belt course will vary according to the architect's detail.

**Rule:** The perimeter of the building plus 12" for every corner equals the number of linear feet of material to order.

**CORNER BOARDS:** Corner boards are pieces of finish stock sometimes required on exterior corners of a house finished with siding, as shown in figure 4. They provide certain architectural effects and also eliminate the necessity of making mitered joints on the siding. The size will be given on the blueprint or in the specifications. One piece should always be 1" wider than the other. The wide one is then lapped over the narrow one, so that both appear to be of the same width. The kind of lumber is usually redwood or similar weather-resisting material.

**Rule:** Allow two pieces of stock for every outside corner of the building. The length must be measured on the elevation sheets of the blueprint.

SQUARE FEET OF SURFACE COVERED BY ONE BUNDLE OF SHINGLES			
Exposure	16" shingle	18" shingle	24" shingle
4	20	17 1/2	
4 1/2	22 1/2	20	
5	25	22 1/2	
5 1/2	27 1/2	25	
6	30	27 1/2	20
6 1/2	32 1/2	30	22 1/2
7	35		24
7 1/2	37 1/2		26 1/2
8	40		

**Rule:** To find number of shingles for the exterior walls of a building:

- Figure the wall area by multiplying wall height by building perimeter.
- Figure gable areas by multiplying roof rise by rafter run (see figure 3).
- Combine results to get total wall area.
- Deduct combined area of all openings ten square feet or more in area.
- Divide remainder by a constant selected from the shingle table based on shingle length and exposure.

Result equals number of bundles of shingles. Count a part of a bundle as a full one.

**WATER TABLE:** This is a piece of finish stock used for architectural effects at either the mudsill line of the house or at the same height as the sill line of the window frames.

**Rule:** The perimeter of a building, plus 12" for every outside corner for miters, equals the linear feet of water table required.

**Cornice Unit**

The cornice is that part of a roof which extends beyond the outside walls of a house. There are two types, open and closed or box. In an open cornice the rafters and sheathing are exposed. In a box cornice the rafters and sheathing are not seen and additional cornice materials are required.

**OPEN CORNICE:** The open cornice is divided into two parts (see fig. 4).

- The overhang, the cornice which extends beyond the roof at the top plate line and forms the eaves.
- The gable projection, that part of a roof which extends beyond the face of a gable wall.

The gable projection is often finished with a verge rafter which is supported by rafter lookouts or brackets. Sometimes only a moulding is used to form the finish. The cornice area is covered with various materials, the one most commonly used being T & G ceiling stock.

**VERGE RAFTERS:** Verge rafters are pieces of finish lumber that form the finish of a gable end of a roof. The lumber is usually a better grade than used for rafters and generally S4S. The size is indicated on the elevation sheet or in the specifications.

(Continued to page 128)

# Who Builds What in the Building Business?

## Survey Shows the Large Volume, Variety, and Value of Buildings Erected by Typical American Builder Readers

**M**OST building statistics merely show how many buildings of a certain kind and value were erected over a selected period of time. Such figures give no indication as to how buildings are planned, erected, sold, or who controls buying—in other words they tell nothing about the men behind the buildings. *American Builder* has conducted another nation-wide survey among its readers that throws new light on the operations of typical active building men.

Information for this study was furnished by 3,110 active building men. Returns came from all states. Each reader reported the number, type, and value of his residential and non-residential projects erected during 1938. These data, combined with information regarding vocational classifications of those who furnished information, and the sizes of towns in which they are located, give quite an interesting picture of their operations.

The 3,110 building men covered in this survey were responsible for \$152,958,125 worth of construction during 1938, an average annual volume of \$49,182 per *American Builder* reader. Of these 3,110 concerns, 2,572 (82 per cent) erected 17,692 new houses, valued at \$95,788,707, an average of 6.8 new homes per *American Builder* reader, and an average annual residential volume of \$37,242. In addition, 2,211 of these concerns were responsible for \$57,169,418 worth of other construction, including commercial, industrial, and public buildings, an average annual non-residential total of \$25,856 per *American Builder* reader.

### Many Types of Buildings Erected

A surprisingly large variety of work was reported by the building men who furnished information for this survey. Residential projects, in addition to the 17,692 single-family dwellings previously mentioned, included new apartment buildings, conversions of houses into apartments, building of combined apartments and stores, apartment and hotel remodeling, building of camps, cottages, cabins, residential remodeling, private garages.

Commercial activity included new stores and commercial buildings, offices, business blocks, store fronts, store modernization, and service stations. Public buildings include a large volume of municipal, county, state, and federal structures; theatres and theatre remodeling, churches and additions, schools and additions, such as auditoriums and gymnasiums. Industrial building activities listed new factories and industrial buildings, warehouses, factory additions and repairs. Public works ranged from pumping stations, reservoirs, sewage disposal plants, and a coast guard station to a penitentiary cell block. Farm buildings included barns of all kinds, sheds, elevators and cribs, and miscellaneous farm remodeling. Considerable concrete and masonry work was reported, with roofing and siding, various types of marine structures or projects, and miscellaneous contracting.

### Volume by Sizes of Towns

Changes in building volume occur in long cycles that average 18 years from peak-to-peak, or valley-to-valley. Volume is expanding at present, and a building boom is

on the way. This *American Builder* survey shows that the annual volume of individual building men varies according to changes in national totals, and according to sizes of towns in which they carry on their building operations.

An accompanying table shows variations in annual volume according to sizes of towns. Nine different population groups are shown, ranging from towns of less than 2,500 to cities of more than 500,000 population. The number of replies received from building men in towns of each population group is shown, together with the total volume of business reported, and the average annual volume per reader. Note that 733 replies were received from towns under 2,500 and that the total volume reported was nearly 21 million dollars. Two hundred and four replies were received from cities of more than 500,000 population, and here again a total volume of slightly more than 20 million dollars was reported. The average annual volume of building concerns in the smallest towns is slightly over \$28,000, while that of builders in the biggest cities is nearly \$100,000. The table shows that between these two extremes the average annual volume of business increases in direct proportion to population, and that the larger the town or city, the

(Continued to page 120)

NUMBER OF REPLIES, TOTAL VOLUME, and AVERAGE VOLUME PER READER BY SIZES (Populations) OF TOWNS

Populations of Towns	Total Number of Replies	Total Volume Per Population Group	Average Annual Volume Per Reader
Under 2,500	733	\$20,885,446	\$28,493
2,500 to 5,000	332	9,595,681	28,902
5,000 to 10,000	324	12,162,972	37,540
10,000 to 25,000	436	19,681,959	45,142
25,000 to 50,000	299	19,120,661	63,948
50,000 to 100,000	247	16,852,515	68,228
100,000 to 250,000	279	25,757,270	92,319
250,000 to 500,000	179	8,711,600	48,668
Over 500,000	204	20,190,021	98,970
	3,033	\$152,958,125	
Reported no building	77		
	3,110		

THIS TABLE shows the number of questionnaires received from "American Builder" readers located in towns and cities of various sizes, together with their average annual volume of business. Note that with a single exception, average annual volume grows larger with each increase in size of town.



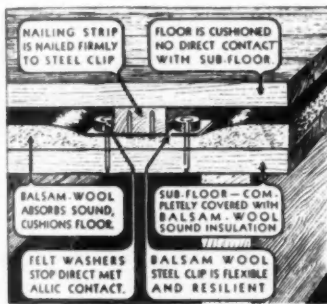
# New Building Materials and Equipment

## Balsam-Wool Sound Insulation System

A NEW type of sound deadening for standard methods of construction, called the Balsam-Wool sound insulation system, has been announced by the Wood Conversion Company, St. Paul, Minn., manufacturers of Balsam-Wool and Nu-Wood. This system is easy to apply, economical and efficient. All that is needed for complete installation are Balsam-Wool, Balsam-Wool clips and wood strips. The Balsam-Wool is placed over the area to be insulated, acting as a stop or absorption agent against noise that would ordinarily pass through the wall, floor or ceiling. The clips are then fastened at intervals of 24 inches on the underside of sleepers at right angles. This clip unit consists of a flat piece of spring steel and four nails, two of these nails holding the spring steel clip to the sleeper, and the other two, cushioned in felt washers, fastening the sleeper to the floor, wall or ceiling. The interior finish is then nailed to the top of the sleepers, as shown below.

Because of the special design of the Balsam-Wool clips, no movement or creeping is allowed in the horizontal direction, but sufficient free action is allowed vertically. Therefore the system acts as an insulator, and also gives the floor a resiliency or softness which is highly desirable. Due to the fact that the sleepers are supported continuously, there is no sagging under heavy furniture or piano loads.

Balsam-Wool sound insulation clips are sold as an individual unit, cartoned in packages sufficient to treat approximately 1,000



square feet of area. Balsam-Wool sound insulation is not shipped as part of the unit, but is available 33 inches wide, 1/2-inch thick, and packaged in rolls. Standard Balsam-Wool in 1/2 and 1-inch thicknesses may be used as a sound deadener with this system.

CROSS SECTION of new sound deadening construction.

## Stainless Steel "Lumber"

A NEW stainless steel lumber was recently placed in production by the Allegheny Ludlum Steel Corporation, Pittsburgh, through its Ludlite division, in Watervliet, N.Y.

These lumber panels, known as Ludlite Bord, consist essentially of thin sheets of 18-8 stainless steel, permanently bonded to an inert mineral backing material to form strong, rigid panels of convenient building size.

The mineral backing material is relatively inexpensive, consisting of asbestos fibres, Bentonite (volcanic clay), portland cement and calcined magnesite. This material is processed under great pressure and bonded to the stainless steel facing by means of a special pressure-cementing process to form semi-rigid and extremely flat lumber panels.

Some of the outstanding features of this new product are as follows: It is fireproof and fully weather-resistant; the permanent and highly reflective steel facing reflects about 90 per cent of all heat rays directed at it; in addition, backing material has high thermal insulating value; and while it will absorb moisture, such absorption does not cause the product to warp or distort, thus making it immune to high humidity and equally suitable for indoors or outside applications; it is acoustically a sound absorbing material; the surface has excellent resistance to denting or marring by impact.

Ludlite Bord is made in two standard size panels—2 x 4 feet and 2 x 8 feet, the 4-foot length being especially suitable for wainscoting and the 8-foot length for wall surfacing. It comes in two standard thicknesses—3/8 and 1/4-inch, weighing 1.54 and 2.5 pounds per square foot respectively. The 3/8-inch panel is flexible enough to be bent 180 degrees to suit the requirements of a job, without losing any of its flatness. The 1/4-inch panel is extremely rigid and possesses high load-bearing strength.

The material is available in two finishes—standard No. 4 (satin) and pebbled (embossed face). During manufacture, the satin-finish panel is given a special film coating to protect the surface finish. Coating is readily removed with a damp sponge on the job. The pebbled surface does not show dents or scratches, and is used where surface wear of an unusually abrasive nature may be encountered. Because of its light-reflective qualities, it is suitable for such applications as signs, displays, etc.

Ludlite Bord is easy to fabricate, requiring no special knowledge and only ordinary tools such as found in any carpenter's chest. Sawing this product does not cause excessive wear of saw teeth as elements in the backing provide lubrication.

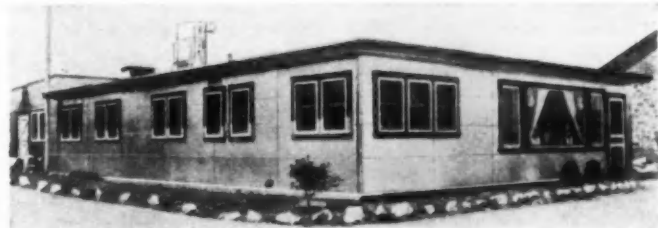
On wall surfaces, the panels may be varied with other materials. Doors may be built up with a wood frame and covered with Ludlite Bord, giving the massive appearance of solid stainless steel. Building trim can be built up by using a combination of stainless lumber and moulding, joined by soldering or welding. Unattractive columns may be faced with the paneling.

Marketing plans have been worked out so that the board will be available to industrial consumers, architects, builders and contractors through either Allegheny Ludlum's own district sales offices and warehouses or those of selected distributors.

RIGHT: Slipping moulding trim in place over new stainless steel Ludlite Bord used as wainscoting.

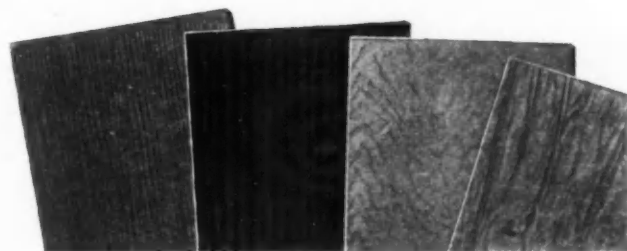


BELOW: Cold storage locker plant surfaced on outside with stainless steel panels.



## New Hollow Core Flush Door

THE M and M Wood Working Company, Portland, Ore., has announced a new "Sturdibilt" hollow core flush door, available in unselected birch, unselected gum, vertical grain fir and Philippine light and dark red mahogany, with which woods natural finishes, stains and bleaches, as well as paint finishes, can be achieved. Smooth, easy painting surfaces of birch and gum give the newest in modern appearances. Hardwood face veneers, 1/16-inch thick, assure ample depth for decorative routing if desired. "Swing touch" balance is obtained by rigid construction and elimination of all excessive weight. Features are three-piece glued-up stiles, and ventilation system; by securely gluing the three-ply panels to the core, a rigid "bridge girder" unit is made.



NEW hollow core flush doors available in above woods.

## NEW PRODUCTS—

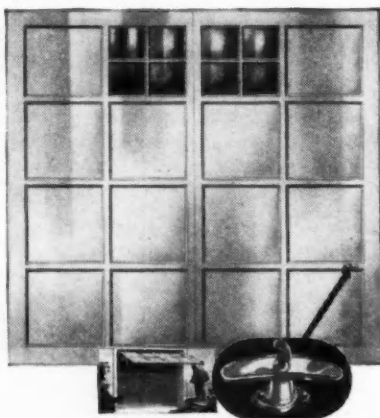
(Continued from page 75)

### Garage Door with New Lock and Sash

A FREE-SPINNING cylinder lock, to be included as standard hardware equipment on the Craw-Fir-Dor, and a new sash design, known as Craw-Fir-Dor No. 39, have been announced by the Fir Door Institute and the Crawford Door Company, manufacturers of the hardware and holders of the patents on the door.

The new lock, which is similar in design to quality automobile trunk locks, replaces the original handle locking device and is included at no extra cost.

Garage door Design No. 39, a companion door to the standard 8-panel model, is a 16-panel layout and comes beaded for glass in the two upper inside panels; glazing will be done by distributors or dealers. This durable Douglas fir door, manufactured according to the rigid specifications of the Fir Door Institute, will fit any house or garage style since its layout conforms to current design trends.



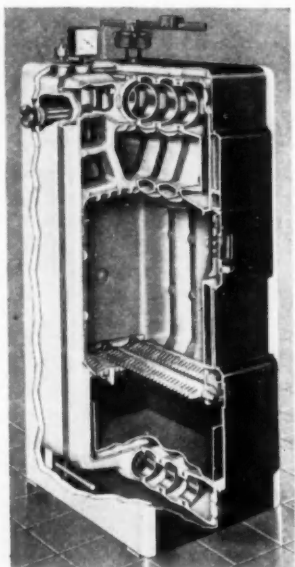
LOCK and sash design of new Douglas fir garage door.

### Boiler for Small Houses Uses Any Fuel

A NEW boiler which is especially designed for the small house market, and which can be used with coal, oil or gas, has been announced by the National Radiator Company, Johnstown, Pa.; it is known as the National No. 1 Series heat extractor.

This boiler can be used on either steam or hot water heating systems, and can be installed on the first floor when a basement is not available. It is made in four sizes, with net load ratings for the hand-fired models ranging from 170 to 350 square feet for steam, and 275 to 550 square feet for hot water. The ratings for the oil-fired model range from 230 to 430 square feet for steam, and from 370 to 680 square feet for hot water. It operates with exceptional efficiency, due to the intermediate sections with extended heating surface, flues being broken up into five passages, and the "wet bottom" design which permits the boiler to be set on wooden floors without danger from overheating.

The boiler is very compact, being 20 inches wide and 55 inches high overall, and is shipped from the factory with the sections completely assembled to reduce installation time.



NEW, efficient boiler for small houses burns coal, oil or gas.

### Turn-Over Hardware for Garage Doors

COBURN Trolley Track Co., Holyoke, Mass., has developed a set of Turn-Over hardware with which a carpenter can easily transform a pair of swinging garage doors into a smooth-operating, one-piece upward-acting door.

Features of this hardware set for converting doors at low cost are as follows: New doors are not necessary; the door opens

itself, and closes easily and quietly; adjustable pivot arms can be attached directly to the side walls with jamb space up to 12 inches; overhead position provided with strong horizontal pipe support; simple adjustment, ease of weatherstripping, outside padlocking are incorporated.



RIGHT: Hardware set easily converts swinging garage doors into upward-acting type.

### Complete Upward-Acting Garage Door

A COMPLETE upward-acting garage door unit consisting of door panels and operator has been announced by the Carr, Adams & Collier Co., Dubuque, Ia. It is known as the "Carr-dor" and is designed with narrow line, sturdy construction and simple streamline operator. Snow, ice or wind will not affect the easy, smooth action or the positive closing. Because of simplicity in construction and operation, there is nothing to get out of order.

The "Carr-dor" consists of two matched units, each unit being made with six divided panels. White pine stiles and rails are thoroughly kiln-dried. Panels are 3-ply laminated fir, made in 1 3/8-inch thickness. The door is prefitted for an 8 by 7 foot opening with ample allowance for satisfactory operation, and is bored

for hardware joining the two units. Installation instructions, which are included with the package of hardware, include directions for mounting hardware on door.

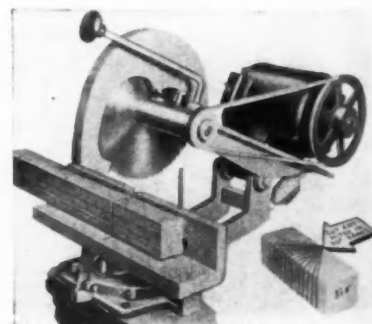


SIMPLE streamline operator on garage door.

### Swiveling Chop Saw

A POPULAR priced swiveling chop saw that is adaptable for use throughout the building trades has been placed in the hands of dealers by the Hollywood Manufacturing and Supply Co., Glendale, Calif. The saw has an exclusive swiveling base which permits any mitre cuts to be made in a 90 degree range. It is equipped with quick stops which are set at the factory for making 45 degree mitres and 90 degree right angle cuts without trial, and other intermediate positions can be mitred by setting the handy adjustment in the base. The saw cuts any wood up to 3 x 4 inches in one operation and with such precision that sanding is unnecessary. The saw is equipped with a 10-inch Atkins' combination blade running at 6,000 r.p.m. and the spindle is equipped with dust-proof ball bearings for long life. A 1/3 h.p. motor operates the saw through a V-belt.

ACCURATE mitre cuts quickly made on new chop saw.



# PRACTICAL JOB POINTERS

A READERS EXCHANGE of tested ideas and methods, taken from their own building experience. Two dollars or a year's subscription to American Builder is paid for each item when published. State business connection or trade.

## Stud Cutting Rig

WE have found that the simple template made of odd pieces of scrap (as shown below), when used with an electric hand saw, makes possible worth while savings in framing a group of houses. This stud cutting frame takes 16 pieces of 2x4 at one time and serves as a guide for cutting all members of the same length. Two men can cut between 300 and 400 studs on it in an hour's time by merely laying the material on the base (Fig. 1), turning down the hinged guides of the frame Fig. 2, and running the power saw along both sides. It will be noticed that one side is adjustable for different lengths.—H. C. FONDE & SON, Knoxville, Tenn.



FIG. 1. Lengths of 2x4 are laid on the cutting frame.

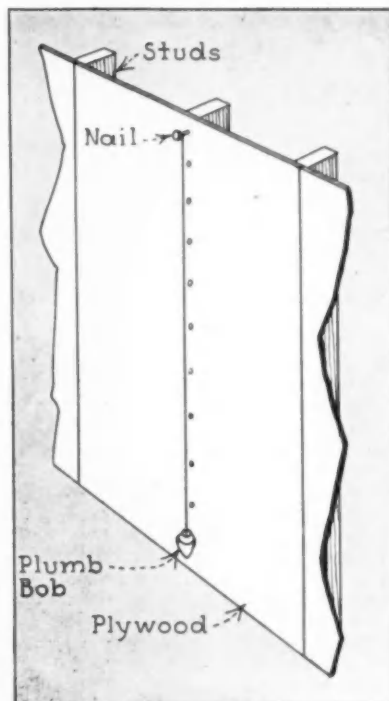


FIG. 2. Guide is turned down and electric saw cuts studs to length.

## Nailing Wallboard Panels

HAVE an idea that may be good for some one along the line. Your December issue had a lot of 3-ply building materials and wallboard ads in it, and so my pointer will work in just right.

You will have to think of this as a sheet of wallboard or 3-ply being nailed to a partition. With the studding 16 inches o.c., there will be two studs in the center of the sheet, and it is sometimes hard to hit the studs when nailing. So if you hang a plumb bob on the first nail at top, you will have the exact place to nail without making a line of the wallboard.—ROY NILES, Carpenter, Syracuse, Ind.



IF STUDDING has been framed carefully so that it plumbs, a plumb bob hung from a nail driven through top of wall panels into the stud will indicate line for nailing.

## Figuring Concrete in Walls

A SHORT cut for calculating the cubic yards of concrete in walls or floors is to multiply the length by the width or height and divide by the number corresponding to the thickness of the wall, as listed below:

- For 3 in. walls divide by 108
- For 4 in. walls divide by 81
- For 6 in. walls divide by 54
- For 8 in. walls divide by 40.5
- For 10 in. walls divide by 32.4
- For 12 in. walls divide by 27

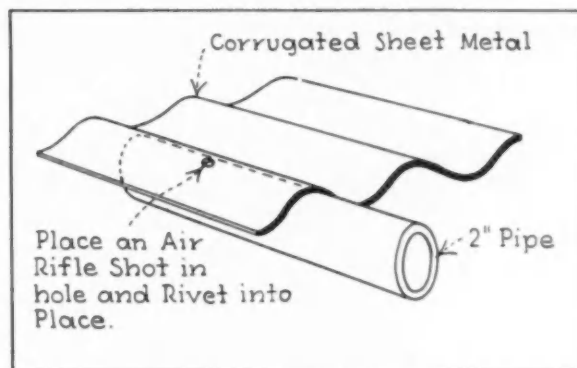
Thus, for a wall 48 ft. x 5 ft. high and 8 in. thick— $48 \times 5 = 240$ ;  $240 \div 40.5 = 5.92$  cu. yds. of concrete required.—OSCAR WEST, Bryan, Ohio.

## How to Repair Used Corrugated Sheets

IT IS a laborious task to solder nail holes in used corrugated sheet metal.

An easy and effective method for mending these holes is by means of the use of BB shot or ordinary air rifle shot. It not only saves time and energy as well as money, but it is much easier on the patience of the builder using used tin.

Place a two-inch pipe in the corrugation under the hole. Place a BB into the hole and rivet it down with a hammer. It forms a perfect seal. Unnecessary pounding should be avoided. This is also a very effective way to mend new tin in case of necessity.—ALWIN L. TOEWS, Angwin, Calif.



LEAD SHOT rivetted into nail holes easily mends corrugated metal sheets.

# • REFERENCE DATA SECTION •

*THE BASIC DATA contained in this section will be found useful in starting a file of reference material; other up-to-date information to be found in later issues can be added.*

## Closet Planning for Economy and Convenience

IN THIS Reference Data section, as well as basic information, tables, etc., two major problems of planning are considered—closets and bathrooms. Basic plans and arrangements for both of these are shown.

In closet planning, the recent trend to cut down the number and size of these storage spaces has made it imperative that they have the maximum capacity for the cubage allowed. General practice has been to equip closets with a hook rail or moulding; and an added shelf with perhaps a cross bar considered as full equipment. In some of the more expensive houses, a shoe shelf and mirror door complete the furnishings. It has been found, however, that like the kitchen, the closet can be dressed up to give added sales appeal to homes.

Like any other portion of the house, careful planning and adequate equipping of closets can produce more house for the money. For instance, while planning closet features and accessories which will fully utilize closet sizes, the actual usable capacity can be increased to a point where the space saving will more than pay for cost of equipment.

Manufacturers are now offering well designed and sturdily built fixtures for use in closets. For example, Knap & Vogt Manufacturing Company have a complete line which was designed to cover all closet needs, and is called K-Veniences. Other builders' hardware manufacturers, such as Stanley, have individual items of closet equipment.

### Fixtures for Better Closet Planning

Some of the more important closet fixtures for equipping space-saving, convenient storage space are illustrated below and are as follows:

CLOTHING CARRIER attaches under the shelf and slides in

and out of the closet on ball-bearing rollers. This is ideal for closets of great depth. A slight pull forward on the handle of the Carrier brings the whole wardrobe out into the light, in full view, making clothing accessible for easy selection; keeps clothes closets orderly, protects the clothing, reduces cleaning and pressing bills, and virtually doubles the amount of hanging space. It is made in a wide variety of sizes.

ADJUSTABLE EXTENSION CLOSET ROD is a pleasant relief from the old, rough wooden or unfinished iron bar. This is especially adaptable to shallow closets where the clothing carrier cannot be used to advantage and is perhaps even more adaptable to the average closet. This Rod is also made in an assortment of sizes, the sliding extension feature making it adjustable to the full width of any closet. It is substantially built, will hold a full quota of clothing without sagging, and is attractively finished in chrome and nickel, permitting hangers to slide easily back and forth over the rod.

10-INCH GARMENT BRACKETS hold six suits or dresses on hangers in the space formerly taken up by one—on a single hook.

SHOE RACKS attach to door or wall and hold many pairs of shoes in orderly array off the floor.

TIE RACKS provide for dozens of ties.

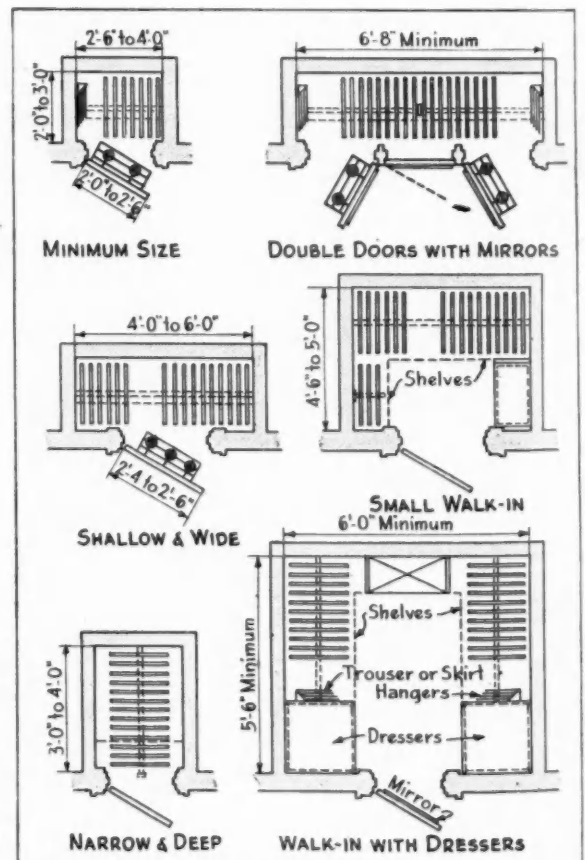
SWINGING TROUSER HANGERS hold four pairs full-length in crease, flat against the door or wall, out of the way except for selection.

HAT HOLDERS with large, rounded knobs to protect the hat, attach to either the closet shelf or to door or wall, and keep hats off the shelves in the same way as the attachable Shoe Rack keeps shoes off the floor. They are made individually, as well as in combination units holding up to six hats and in addition providing a place for ties or scarfs.

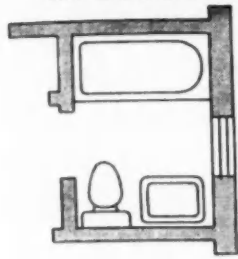


LEFT: Example of narrow and deep closet equipped with proper fixtures to give maximum capacity, convenience and proper storage of various items. The fixtures are described in text above.

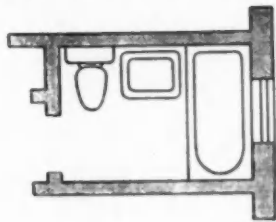
RIGHT: Basic plans for six closet arrangements covering most of the problems found in closet design for homes. The drawing at the left and the descriptions above identify equipment shown in plans.



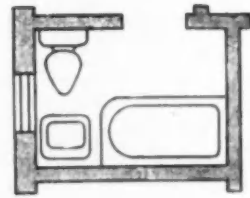
### Six Basic Bathroom Plans and Six Special Baths for Unusual Conditions



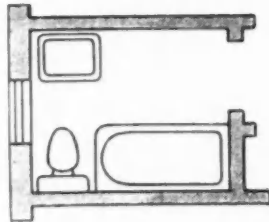
**BASIC PLAN A**  
Lavatory and closet on one wall—tub on opposite wall.



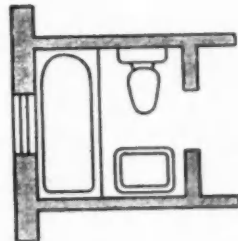
**BASIC PLAN B**  
Lavatory, closet and tub all on same wall.



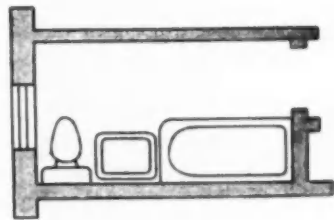
**BASIC PLAN C**  
Lavatory and tub on one wall—closet on opposite wall.



**BASIC PLAN D**  
Closet and lavatory on opposite wall—tub on adjoining wall.



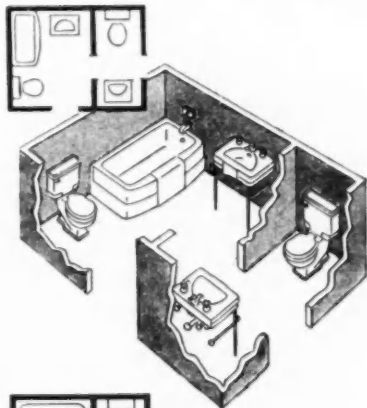
**BASIC PLAN E**  
Lavatory and tub on one wall; closet on opposite wall.



**BASIC PLAN F**  
Lavatory and closet on one wall. Tub on adjoining wall.

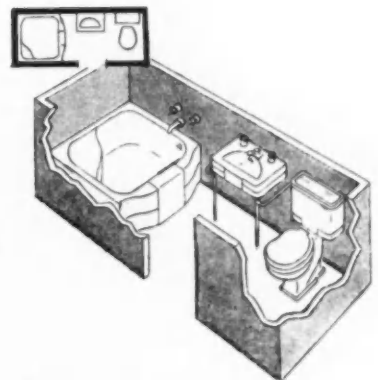
#### THE RUSH HOUR SPECIAL

Here's a bathroom plan that provides a complete bath which is accessible both to the master bedroom and to the hall—with an additional lavatory and closet that can be used with privacy at the same time. In some installations a closet and lavatory are installed in one room—a bathtub and lavatory in the other. This arrangement requires little more room than a conventional bathroom.



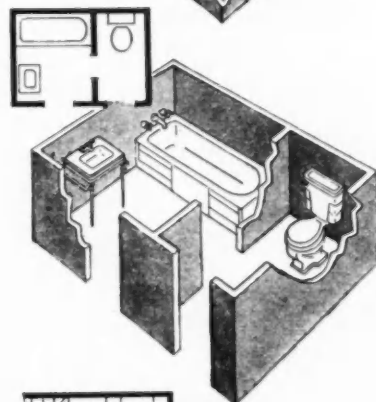
#### FOR THE UNUSUAL SPACE

In remodeling it is often possible to wall off the end of a bedroom or part of a hall and have the comfort of an additional bathroom. The Neuro-Receptor Bath makes it possible to have a full-length bathtub with a shower even in this narrow space.



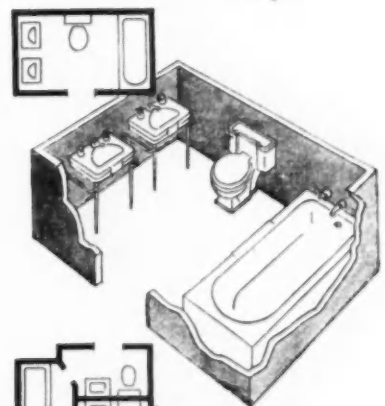
#### THE TOILET STALL

From England comes the idea of taking the toilet out of the bathroom proper and putting it in a separate little compartment by itself. A hall door to this little room gives a double service feature by providing both privacy and accessibility. A second lavatory might be added providing extra convenience.



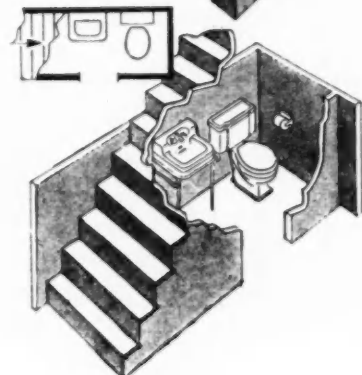
#### TWO LAVATORY COMBINATION

If space does not allow you to have more than one bathroom in your house, think about putting two lavatories in that bathroom. That's a way to beat convenience at its own game. Or perhaps you would prefer to have the extra lavatory in the hall or in a bedroom—at any rate its modest cost will prove a worth-while investment in relieving congestion.



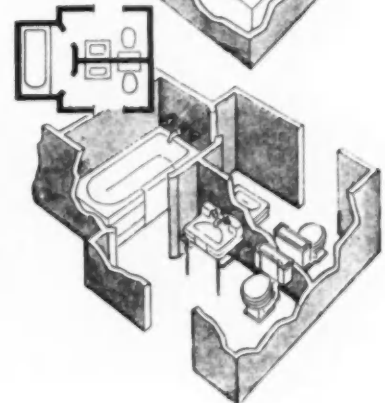
#### THE HALF-BATHROOM

Tucked away on the main floor, beneath a stairway, or in a small clothes closet, a room equipped with a lavatory and closet is a worthy addition to bathroom facilities in any home. Small size lavatories and inexpensive toilets, plus some individual color selections can make your half-bathroom charming, as well as useful.



#### THE PARTITION BATH

Another "rush hour" idea is the partition bath which uses only the space ordinarily required for one bathroom. The floor area is divided by a partition—a toilet and a lavatory occupy each section of the space, and the tub is accessible to both. Ideal for homes that have adjoining bedrooms.



### Number of Gallons in Round Cisterns and Tanks

Depth in Feet	Diameter in Feet							
	5	6	7	8	9	10	11	12
5	735	1,060	1,440	1,875	2,380	2,925	3,550	4,237
6	881	1,270	1,728	2,250	2,855	3,510	4,260	5,084
7	1,028	1,480	2,016	2,625	3,330	4,095	4,970	5,931
8	1,175	1,690	2,304	3,000	3,805	4,680	5,680	6,778
9	1,322	1,900	2,592	3,375	4,280	5,265	6,390	7,625
10	1,469	2,110	2,880	3,750	4,755	5,850	7,100	8,472
11	1,616	2,320	3,168	4,125	5,250	6,435	7,810	9,319
12	1,762	2,530	3,456	4,500	5,705	7,020	8,520	10,166
13	1,909	2,740	3,744	4,875	6,180	7,605	9,230	11,013
14	2,056	2,950	4,032	5,250	6,655	8,190	9,940	11,860
15	2,203	3,160	4,320	5,625	7,130	8,775	10,650	12,707
16	2,356	3,370	4,608	6,000	7,605	9,360	11,360	13,554
17	2,497	3,580	4,896	6,375	8,080	9,945	12,070	14,401
18	2,644	3,790	5,184	6,750	8,535	10,530	12,780	15,248
19	2,791	4,000	5,472	7,125	9,010	11,115	13,490	16,095
20	2,938	4,210	5,760	7,500	9,490	11,700	14,200	16,942

Depth in Feet	Diameter in Feet							
	13	14	15	16	18	20	22	24
5	4,940	5,765	6,698	7,520	9,516	11,750	14,215	16,918
6	5,932	6,918	8,038	9,024	11,419	14,100	17,059	20,302
7	6,944	8,071	9,378	10,528	13,322	16,450	19,902	23,680
8	7,936	9,224	10,718	12,032	15,225	18,800	22,745	27,070
9	8,928	10,377	12,058	13,536	17,128	21,150	25,588	30,454
10	9,920	11,530	13,398	15,040	19,031	23,500	28,431	33,838
11	10,913	12,683	14,738	16,544	20,934	25,850	31,274	37,222
12	11,904	13,836	16,078	18,048	22,837	28,200	34,117	40,606
13	12,896	14,989	17,418	19,552	24,740	30,550	36,960	43,990
14	13,888	16,142	18,758	21,056	26,643	32,900	39,803	47,374
15	14,880	17,295	20,098	22,560	28,546	35,250	42,646	50,758
16	15,872	18,448	21,438	24,064	30,449	37,600	45,489	54,142
17	16,864	19,601	22,778	25,568	32,352	39,950	48,332	57,526
18	17,856	20,754	24,118	27,072	34,255	42,300	51,175	60,910
19	18,848	21,907	25,458	28,576	36,158	44,650	54,018	64,294
20	19,840	23,060	26,798	30,080	38,062	47,000	56,861	67,678

To find the number of gallons in a tank of unequal diameter multiply the inside bottom diameter in inches by the inside top diameter in inches, then this product by .34; point off four figures and the result will be the average number of gallons to one inch in depth of the tank.

### Weights and Measures of Concrete Materials

Sand weighs from 80 to 100 pounds per cubic foot, dry and loose, and from 90 to 115 pounds dry and well shaken. Gravel weighs from 100 to 120 pounds per cubic foot loose, and about 20 pounds more when well rammed.

Crushed limestone weighs about 90 pounds per cubic foot, varying somewhat either way with the size and the proportion of fine dust.

Copper slag, which has been used successfully where weight is wanted in concrete, weighs 120 to 125 pounds per cubic foot.

Quicklime weighs 64 pounds per cubic foot.

Portland cement, loose, weighs 70 to 90 pounds per cubic foot; packed, about 110 pounds per cubic foot.

### Number of U. S. Gallons in Rectangular Tanks

For One Foot in Depth.

Width in Feet	Length of Tank in Feet										
	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7
2	29.92	37.40	44.88	52.36	59.84	67.32	74.81	82.29	89.77	97.25	104.73
2.5	.....	46.75	56.10	65.45	74.80	84.16	93.51	102.86	112.21	121.56	130.91
3	.....	.....	67.32	78.54	89.77	100.99	112.21	123.43	134.65	145.87	157.09
3.5	.....	.....	.....	91.64	104.73	117.82	130.91	144.00	157.09	170.18	183.27
4	.....	.....	.....	.....	119.69	134.65	149.61	164.57	179.53	194.49	209.45
4.5	.....	.....	.....	.....	.....	151.48	168.31	185.14	201.97	218.80	235.63
5	.....	.....	.....	.....	.....	.....	187.01	205.71	224.41	243.11	261.82
5.5	.....	.....	.....	.....	.....	.....	.....	226.28	246.86	267.43	288.00
6	.....	.....	.....	.....	.....	.....	.....	.....	269.30	291.74	314.18
6.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	316.05	340.36
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	366.54

Width in Feet	Length of Tank in Feet									
	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12
2	112.21	119.69	127.17	134.65	142.13	149.61	157.09	164.57	172.05	179.53
2.5	140.26	149.61	158.96	168.31	177.66	187.01	196.36	205.71	215.06	224.41
3	168.31	179.53	190.75	202.97	213.19	224.41	235.63	246.86	258.07	269.30
3.5	196.36	209.45	222.54	235.63	248.73	261.82	274.90	288.00	301.09	314.18
4	224.41	239.37	254.34	269.30	284.26	299.23	314.18	329.14	344.10	359.06
4.5	252.47	269.30	286.13	302.96	319.79	336.62	353.45	370.28	387.11	403.94
5	280.52	299.23	317.92	336.62	355.32	374.03	392.72	411.43	430.13	448.85
5.5	308.57	329.14	349.71	370.28	390.85	411.43	432.00	452.57	473.14	493.71
6	336.62	359.06	381.50	403.94	426.39	448.83	471.27	493.71	516.15	538.59
6.5	364.67	388.98	413.30	437.60	461.92	486.23	510.54	534.85	559.16	583.47
7	392.72	418.91	445.09	467.46	492.45	523.64	549.81	575.99	602.18	628.36
7.5	420.78	448.83	476.88	504.93	532.98	561.04	589.08	617.14	645.19	673.24
8	.....	478.75	508.67	538.59	568.51	598.44	628.36	658.28	688.20	718.12
8.5	.....	.....	540.46	572.25	604.05	635.84	667.63	699.42	731.21	763.00
9	.....	.....	.....	605.92	639.58	673.25	706.90	740.56	774.23	807.89
9.5	.....	.....	.....	.....	710.65	744.31	777.97	811.63	845.29	878.95
10	.....	.....	.....	.....	.....	748.05	781.71	815.37	849.03	882.69
10.5	.....	.....	.....	.....	.....	.....	824.73	858.39	892.05	925.71
11	.....	.....	.....	.....	.....	.....	.....	864.00	897.66	931.32
11.5	.....	.....	.....	.....	.....	.....	.....	905.14	938.80	972.46
12	.....	.....	.....	.....	.....	.....	.....	.....	989.29	1022.93

Example—To find number of gallons in a rectangular tank that is 7.5 feet by 10 feet, the water being 4 feet deep: Look in extreme left-hand column for 7.5, and opposite to this in column headed 10 read 561.04, which being multiplied by 4, the depth of water in the tank, gives 2244.2, the number of gallons required.

### Weights of Building Materials—Dry Woods

	Pounds			Pounds	
	Bd. Ft.	Cu. Ft.		Bd. Ft.	Cu. Ft.
Ash, American White	3.9	47	Larch, Western	3	36
Birch	3.9	47	Mahogany, Honduras	2.9	35
Beech	3.7	44	Mahogany, Spanish	4.4	53
Boxwood	5	60	Maple	4.1	40
Cedar, American	2.9	35	Maple, soft	3.5	42
Cedar, Pt. Orford	2.6	31	Oak, Live	4.9	50
Cedar, Incense	2	24	Oak, Red	3.9	47
Cedar, Western Red	2	24	Oak, White	4.3	52
Cherry	3.5	42	Pine, Southern	3.7	44
Chestnut	3.4	41	Pine, Sugar	2.2	26
Cork	1.3	16	Pine, Western White	3.3	40
Elm	2.9	35	Pine, White	2.1	25
Fir, Douglas	2.8	34	Pine, Yellow	2.8	34
Hemlock	2.1	25	Pine, Western Yellow	2.4	29
Hemlock, Pacific	2.6	31	Spruce	2.1	25
Hickory	4.4	53	Spruce, Sitka	2.2	26
Larch	3	36	Sycamore	3.1	37
			Walnut	3.2	38

### How to Make Watertight Concrete

Concrete made from properly selected aggregates, combined with portland cement in suitable proportions, when thoroughly mixed to the right consistency carefully placed and adequately protected during early hardening, will be watertight under all ordinary conditions.

Watertight concrete means good concrete. A few fundamental principles of good construction should be carefully observed. These can be summarized as follows:

1. All portions of the structure should be strong enough to resist the head of water, either internal or external, to which the concrete may be subjected.

2. Use clean, well graded aggregates.

3. Use a relatively rich mixture, a 1:2:3, or better 1:1½:3.

4. Use the minimum amount of mixing water that will give a workable, plastic consistency; not over 6 gallons per sack of cement.

5. Mix the concrete thoroughly, at least 1½ minutes per batch mixer.

6. Place the concrete carefully in layers 6 to 12 inches deep, spading or rodding it thoroughly to prevent the formation of stone pockets or voids.

7. If possible place the concrete in one continuous operation to avoid construction joints. If placing is interrupted, be sure to get a good bond between the fresh concrete and that placed previously.

8. Keep the concrete warm and damp for the first ten days.

In tests conducted by the U. S. Bureau of Standards, thin slabs of a lean (1:6) portland cement mortar and 1:1½:2 concrete were subjected to a water pressure of 60 pounds per square inch. This pressure is equivalent to a 138-foot head of water. Although water penetrated through 1½-inch limestone slabs in periods ranging from 20 seconds to 20 minutes, it took 3½ hours for water to penetrate through a 2-inch slab of 1:6 mortar, while at the end of 24 hours, when the test was terminated, the 2-inch slab of 1:1½:2 concrete was still dry.

Hundreds of concrete tanks are being used for the storage of fuel oil, which is lighter than water, and these tanks are oil-tight, and of course watertight. Concrete basements, pits, bridges, and tanks will also be watertight if proper care is taken in their construction. Experience and tests have shown that proper practice will make watertight concrete.

# BARRETT VB BATT

## WORKS BOTH WAYS



### EASY TO APPLY . . . PROFITABLE TO SELL

Barrett VB \*Batts are made just the right size for a snug fit between 16" or 24" framing.

And the waterproof paper backing makes an overlapping flange 1 1/2" wide on all four sides.

Result: You can stock both the full and semi-thick VB Batts for all types of jobs—no need to carry rock wool batts in different widths.

Here is a saving that means money to you. And remember, too, that important *plus* factor—the Barrett name. Homeowners expect the best and *get it* when they see that familiar Barrett trade-mark . . . which is now the pattern theme on the paper backing of all Barrett VB Batts.

#### THE BARRETT COMPANY

40 RECTOR STREET, NEW YORK, N. Y.

2800 So. Sacramento Ave., Chicago, Ill.

Birmingham, Alabama

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

NOW, MORE THAN EVER, IT'S BARRETT "BETWEEN THE WORLD AND THE WEATHER"



**BATTS**  
**BLOWING FIBRE**  
**LOOSE WOOL**

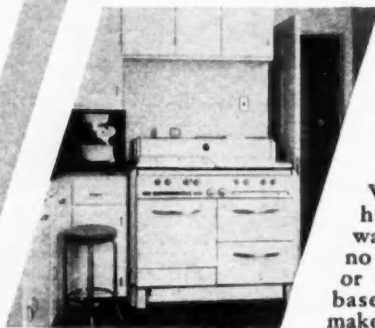


# THE BUILDING INDUSTRY

*hundreds of All-GAS homes like these*



TYPICAL A. G. A. PRIZE-WINNING HOME DESIGNED FOR "BETTER LIVING"  
— One of the five \$1,000 Prize Winners in the A. G. A. All-Gas Home Builders Competition. R. W. Bramberg, Oak Park; Ill., builder, built this delightful home for Mr. Richard Jones at 1101 Fair Oaks Avenue.



This home has a conveniently arranged all-gas kitchen—featuring a modern, automatic range and silent, trouble-free gas refrigeration.

With gas for automatic house-heating and water-heating, there are no coal bins, fuel tanks or ash cans. Spacious basements like this make fine game rooms.



• Now, more than ever, home-seekers are looking for homes that offer *most for their money* in living comforts and conveniences. That is why leading builders all over the country are now installing Gas equipment for the 4 Big Jobs—Cooking—Water Heating—Refrigeration—House Heating.



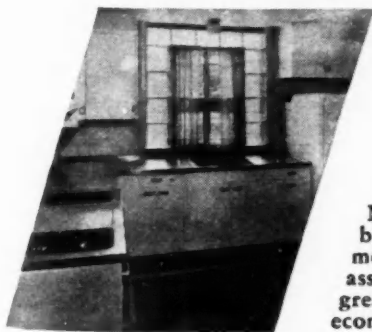
# SWINGS TO

# GAS

## are being built throughout the country

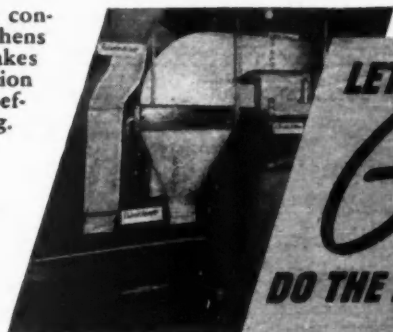


ANOTHER A. G. A. PRIZE-WINNING HOME FEATURES SUMMER AIR-CONDITIONING  
This delightful modern home belongs to J. T. M. Knox, Jr., at 16 East 26th Place. Built by Farmer & Duran, Tulsa, Okla., it is one of the \$500 prize-winners in the A. G. A. All-Gas Home Builders Competition.



Gas is used in today's convenience-designed kitchens — because only gas makes possible silent refrigeration and 100% heat control for effortless, automatic cooking.

Not only for house-heating but also for winter and summer air-conditioning, gas assures greater convenience, greater comfort and greater economy of operation.



LET  
**GAS**  
DO THE 4 BIG JOBS

COOKING  
WATER HEATING  
REFRIGERATION  
HOUSE HEATING

• For full information and detailed specifications of the new gas ranges, refrigerators, water heaters, and house heating equipment, consult your local gas company.

## AMERICAN GAS ASSOCIATION



To save the gas appliances you specify bear the Approval Seal of the American Gas Association Testing Laboratories.

**Covering Capacity of Shingles**

Exposure to Weather Inches	Number of Square Feet of Roof Covered by 1,000 Shingles		Number of Shingles Required for 100 Square Feet of Roof	
	4" wide	6" wide	4" wide	6" wide
4	111	167	900	600
4 1/4	118	177	847	565
4 1/2	125	188	800	534
5	139	208	720	480
5 1/4	153	230	650	437
6	167	250	600	400
7	194	291	514	343
8	222	333	450	300

Some allowance must be made for waste but as no two jobs are identical in this respect, the builder must add his own allowance for waste.

**Number of Lath in Plaster Work**

14 lath are required per square yard.

**Working Strength of Various Building Materials\***

**Compression (Direct)**

**STEEL AND IRON**

The safe carrying capacities of various building materials (except in case of columns) are as follows: The strength given being the working strength in pounds per square inch of section.

Rolled steel	16,000
Cast steel	16,000
Wrought iron	12,000
Cast iron (in short blocks.)	16,000
Steel ribs and rivets (bearing)	20,000
Wrought iron pins and rivets (bearing)	15,000

**TIMBER**

	With Grain	Across Grain
Oak	900	800
Yellow pine	1,000	600
White pine	800	400
Spruce	800	400
Locust	1,200	1,000
Chestnut	500	1,000
Hemlock	500	500

**CONCRETE**

Concrete (Portland) cement, 1; sand, 2; stone, 4	230
Concrete (Portland) cement, 1; sand, 2; stone, 5	208
Concrete (Rosedale, or equal), cement, 1; sand, 2; stone, 4	125
Concrete (Rosedale, or equal), cement, 1; sand, 2; stone, 5	111

**STONEMORTAR**

Rubble stonework in Portland cement-mortar	140
Rubble stonework in Rosedale cement-mortar	111
Rubble stonework in lime- and cement-mortar	97
Rubble stonework in lime-mortar	70

**BRICKWORK**

Brickwork in Portland cement-mortar; cement, 1; sand, 3	250
Brickwork in Rosedale, or equal, cement-mortar, cement, 1; sand, 3	208
Brickwork in lime and cement-mortar, cement, 1; lime, 1; sand, 6	160
Brickwork in lime-mortar; lime, 1; sand, 4	111

\* The stresses given in these tables are those recommended by the National Board of Fire Underwriters.

**Nails—Size, Gauge and Number Per Pound**

Name	Length, Inches	Gauge	No. per Lb. (Varies)
2d	1	15	876
3d, Fine	1 1/4	15 1/2	600
3d, Common	1 1/4	14	568
4d	1 1/2	12 1/2	316
5d	1 3/4	12 1/4	271
6d	2	11 1/2	181
7d	2 1/4	11 1/4	161
8d	2 1/2	10 1/4	106
9d	2 3/4	10 1/2	96
10d	3	9	69
12d	3 1/4	9	63
16d	3 1/2	8	49
20d	4	6	31
30d	4 1/2	5	24
40d	5	4	18
50d	5 1/2	3	14
60d	6	2	11

Standard lengths are the same for wire and cut nails.

**Safe Loads in Tons of 2,000 Pounds for Square Wooden Columns**

Unsup-ported Length of Column in Feet	Size of Columns in Inches					
	6x6	8x8	9x9	10x10	12x12	14x14 16x16
<b>WHITE PINE OR SPRUCE</b>						
6	12.80					
8	11.70	22.7	29.6			
10	10.60	21.3	28.0	35.5		
12	9.54	19.8	26.3	33.7	51.1	
14	8.46	18.4	24.7	31.9	49.0	69.6
16	7.38	17.0	23.1	30.1	46.8	67.0
18		15.5	21.5	28.3	44.7	64.4
20		14.1	19.8	26.5	42.5	62.0
22			18.2	24.7	40.3	59.5
24				22.9	38.2	57.0
<b>WHITE OAK</b>						
6	14.80					
8	13.50	26.2	34.0			
10	12.50	24.6	32.4	41.0		
12	11.00	22.7	30.4	39.1	59.1	
14	9.73	21.1	28.4	36.7	56.9	80.4
16	8.64	19.5	26.5	34.6	54.0	77.8
18		17.8	24.7	32.4	51.1	74.5
20		16.3	22.7	30.5	49.1	71.3
22			21.1	28.2	46.1	68.3
24				26.4	43.9	65.5
<b>YELLOW PINE (Southern)</b>						
6	18.0					
8	16.4	32.0	41.6			
10	14.9	29.9	39.4	50.0		
12	13.3	27.8	36.9	47.6	72.0	
14	11.9	25.8	34.7	44.7	69.1	98.0
16	10.4	23.7	32.3	42.3	65.5	94.6
18		21.8	30.0	39.5	62.6	90.7
20		19.8	27.8	37.0	59.8	86.9
22			25.7	34.6	56.2	83.6
24				32.2	53.3	80.0

**Safe Loads Uniformly Distributed for Rectangular Spruce or Pine Beams One Inch Thick**

The following table has been calculated for extreme fibre stresses of 750 pounds per square inch corresponding to the following values for moduli of rupture recommended by Prof. Lanza, viz:

Spruce and white pine	3,000 lbs.
Oak	4,000 "
Yellow pine	5,000 "

For oak increase values in table by 1/3. For yellow pine increase values in table by 2/3.

The safe load for any other values per square inch is found by increasing or decreasing the loads given in the table in the same proportion as the increased or decreased fibre stress.

Span in Feet	Depth of Beam										
	6	7	8	9	10	11	12	13	14	15	16
5	600	820	1,070	1,350	1,670	2,020	2,400	2,820	3,270	3,750	4,270
6	500	680	890	1,120	1,390	1,680	2,000	2,350	2,730	3,120	3,560
7	430	580	760	960	1,190	1,440	1,710	2,010	2,330	2,680	3,050
8	380	510	670	840	1,040	1,260	1,500	1,760	2,040	2,340	2,670
9	330	460	590	750	930	1,120	1,330	1,560	1,810	2,080	2,370
10	300	410	530	670	830	1,010	1,200	1,410	1,630	1,880	2,130
11	270	370	490	610	760	920	1,090	1,280	1,490	1,710	1,940
12	250	340	440	560	690	840	1,000	1,180	1,360	1,560	1,780
13	230	310	410	520	640	780	930	1,080	1,260	1,440	1,640
14	210	290	380	480	590	720	860	1,010	1,170	1,340	1,530
15	200	270	360	450	560	670	800	940	1,090	1,250	1,420
16	190	260	330	420	520	630	750	880	1,020	1,180	1,330
17	180	240	310	400	490	590	710	830	960	1,100	1,260
18	170	230	290	370	460	560	670	780	910	1,040	1,190
19	160	210	280	360	440	530	630	740	860	990	1,130
20	150	200	270	340	420	510	600	710	820	940	1,070
21	140	190	260	320	390	480	570	670	780	890	1,020
22	140	190	240	310	380	460	540	640	740	850	970
23	130	180	230	290	360	440	520	610	710	810	920
24	130	170	220	280	350	420	500	590	680	780	890
25	120	160	210	270	330	410	480	560	660	750	860
26	110	160	210	260	320	390	460	540	630	720	820
27	110	150	200	250	310	370	440	520	610	700	790
28	110	140	190	240	300	360	430	500	580	670	760
29	110	140	180	230	290	350	410	490	560	640	740

To obtain the safe load for any thickness multiply values for 1 inch by thickness of beam. To obtain the required thickness for any load divide by safe load for 1 inch.

# I'll take this house Mr. Builder!

## It has Mesker easy-opening windows



Read What These American Housewives say about the advantages of Mesker Guildhall Casement Windows



"I like Mesker's Solid Bronze Hardware. It's so easy to keep clean and it never loses its beautiful lustre." Mrs. J. T. M., Chicago, Ill.



"I can wash them from the inside. It takes me only half the time that I used to spend in our other house with the old style windows." Mrs. B. R., Huntington, W. Va.



"With Mesker Casements, just a twist of the wrist and they are open. I like their under-the-screen operator. It's so much simpler than the old sliding windows." Mrs. O. L. McB., Des Moines, Ia.



"With Mesker screens on the inside, I can take them off anytime in a jiffy. In our former home it was a man's job requiring a ladder. I like Mesker windows for their easy screening." Mrs. A. E. S., Cincinnati, Ohio.



"Our home is always comfortable, even in zero weather, and I know that our new Mesker Casements help make this possible. I've found they are more weather-tight than the ordinary sash in our neighbor's new home." Mrs. C. B. K., Minneapolis, Minn.

## Take a tip

from Mrs. America, your No. 1 prospect! The trend in windows is towards Mesker Steel Guildhall Casements with their smart Solid Bronze Hardware, slender daylight-giving frames, satin-smooth operation, and inside easy-to-reach screens and storm sash.

See your nearest Mesker Dealer for complete prices on the entire Mesker Steel Window Line

- Mesker Guildhall Casements
- Mesker Wicket Casements
- Mesker Basement Sash
- Mesker Pivoted Sash
- Mesker Projected Sash
- Mesker Utility Sash
- Mesker Steel Doors

# Mesker

SINCE 1879

MESKER BROTHERS . . . SAINT LOUIS, MO.

# Architectural Reference Plates of DOUGLAS FIR PLYWOOD PANELING

PREPARED BY CARL F. GOULD, F.A.I.A.

These details are intended as suggestions to the builder and architect as possible ways of using Douglas Fir Plywood for walls and equipment items in modern room design.

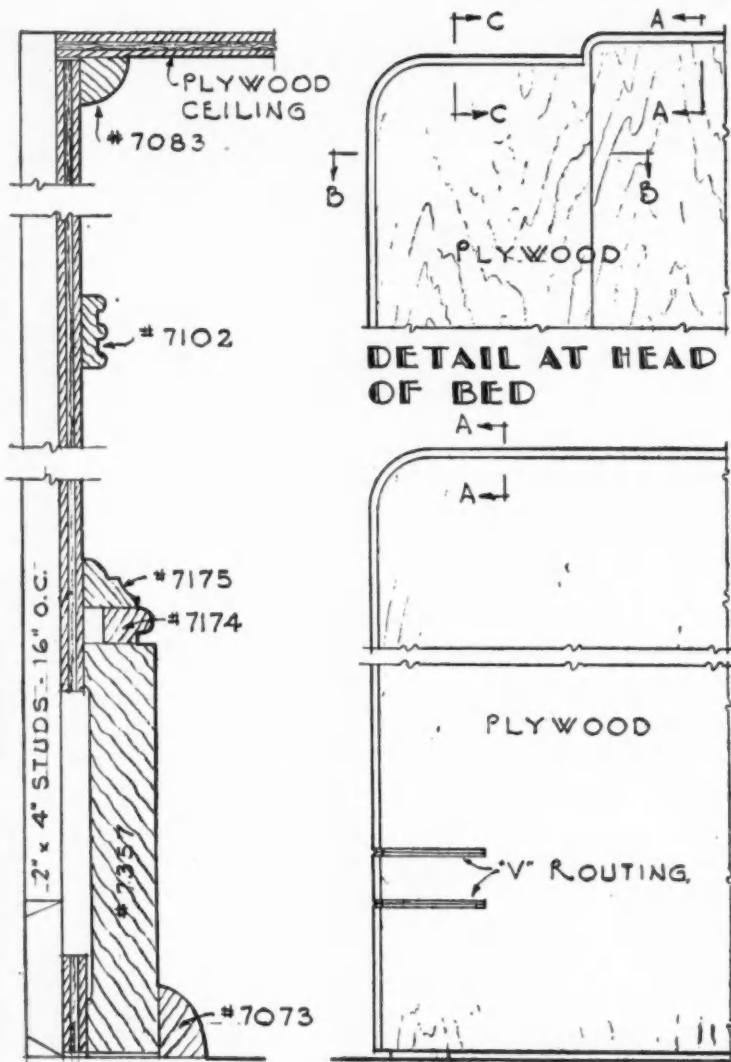
EXPRESSING the typical modern trend of room design, these details show both the walls of a bedroom and the furniture designed for effective use of Douglas Fir Plywood. For the room walls, standard lengths and widths of plywood are advantageously employed, with a beaded moulding at the joints to emphasize the horizontal effect. Particular attention is directed to the ease with which wardrobes and closet doors can be concealed if desired. The head boards and foot boards of the beds can be made an integral part of the room design by following the

details shown. A warm gray stained effect is suggested as a finish for the woodwork. An alternate finish might be a single priming coat tinted to give desired effect.

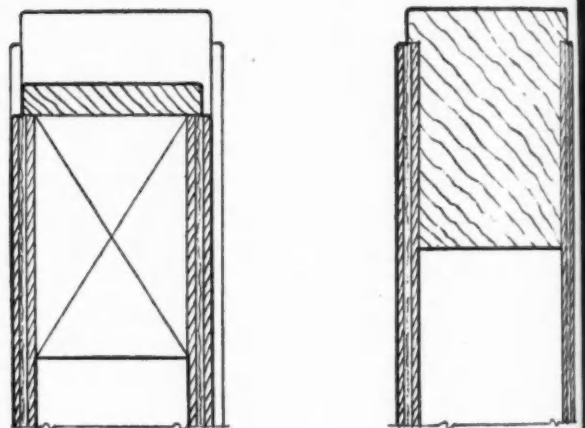
MATERIALS: Walls may be of 1/4" wallboard grade of Douglas Fir Plywood, or of a good 1-side grade for the highest quality of finish, nailed directly to studs with 4d finishing or casing nails. Since stock panels are available in even-inch widths from 12 to 32 inches, and also in 36, 42 and 48 inch widths, it will usually be possible to design with, and to utilize, standard widths without cutting.

## DETAILS

1/2 FULL SIZE AND 1 1/2" x 1'-0"



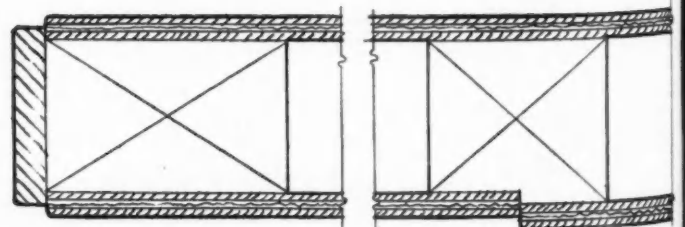
WALL SECTION  
SCALE: 1/2 FULL SIZE



SECTION 'C-C'

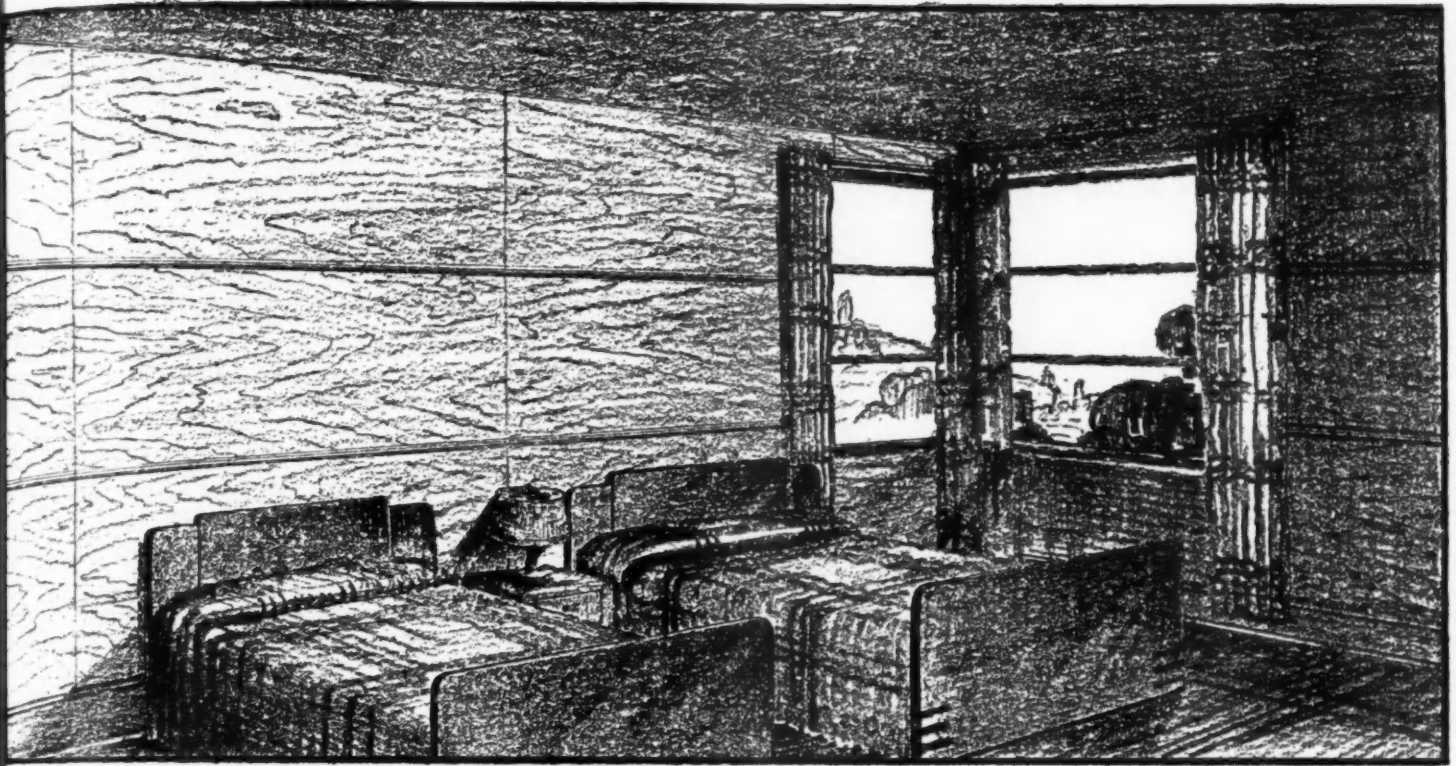
SECTION 'A-A'

SCALE ONE HALF FULL SIZE

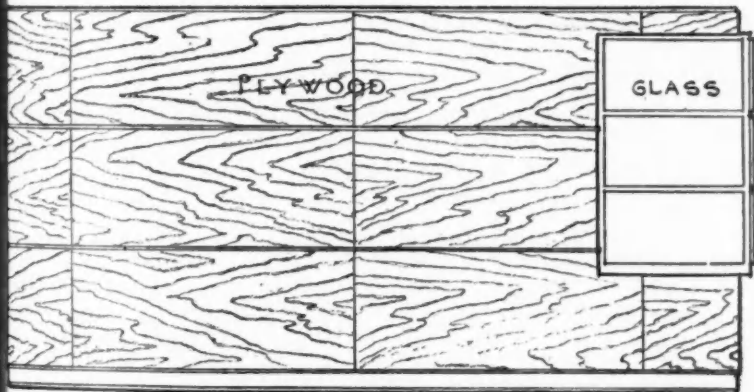


PLAN AT 'B-B'  
SCALE 1/2 FULL SIZE

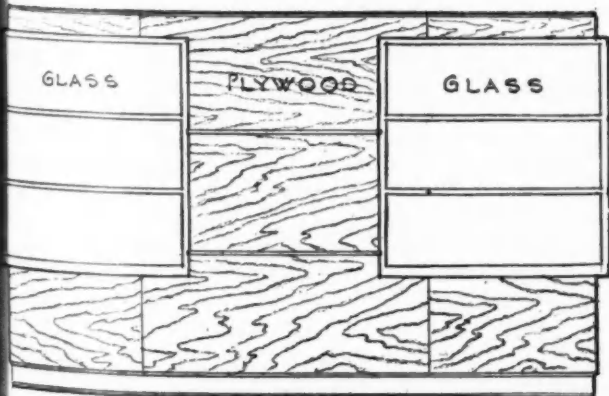
DETAIL AT FOOT OF BED



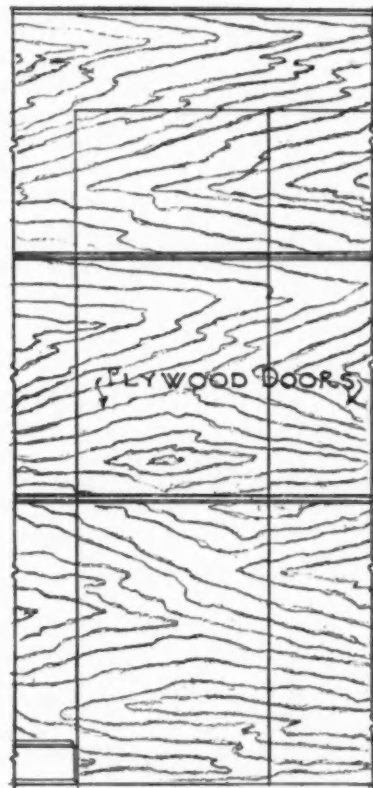
MODERN BED ROOM



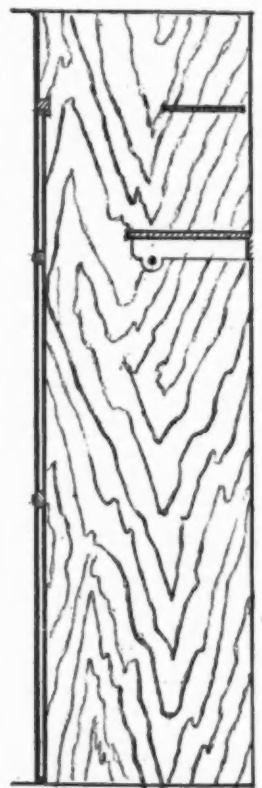
SIDE ELEVATION  
SCALE 1/4" = 1'-0"



END ELEVATION  
SCALE 1/4" = 1'-0"



ELEVATION



SECTION

DETAILS OF CONCEALED CLOSET  
SCALE 1/2" = 1'-0"

Table of Treads and Risers

Table with 15 columns for tread and riser combinations (e.g., 6" tread, 8" riser) and 15 rows of measurements.

Rule for Calculating Proportioned Width and Height of Treads and Risers of Stairs

Subtract the width of tread from 25 inches and the result will be twice the height of the riser. Thus: if the tread is 10 inches wide, then 25 - 10 = 15 ÷ 2 = 7 1/2 inches.

Furniture Dimensions

Table listing furniture items and their dimensions (e.g., Quarter Grand Piano: 4'9" x 5'3").

To Find Weights of Bars and Plates

Iron. Multiply contents in cubic inches by .27777. Result will be weight in pounds. Steel. Multiply contents in cubic inches by .28332. Result will be weight in pounds.

Painted and Galvanized Roofing

NUMBER OF SQUARE FEET IN ONE CORRUGATED SHEET (100 square feet--no allowance for laps)

Multiply the number of squares by the number set opposite length of sheet desired in the column for the material wanted. The result is the number of sheets required.

Table showing number of sheets required for different sheet lengths (5-12 feet) and corrugation types.

For Pressed Brick, Rock Face Brick and Stone Siding Sheets 28 1/4 x 60 inches, multiply number of squares by 8.5.

Weights of Building Materials, Stacked

Table listing weights of various building materials per cubic foot (e.g., Brick-Pressed: 150 lbs. per cu. ft.).

Capacity of Storage Tanks (For Domestic Use)

As a basis for figuring the size of storage tank required, take the average amount of water used daily by one person, which is as follows:

Table showing gallons per person daily for various activities: Washing dishes (.1), House cleaning (.2), etc.

Dimension and Capacities of Round Wrought Steel Tanks

Table showing dimensions (length, height, diameter) and capacities (gallons, weight) for round wrought steel tanks.

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Architect—Mr.  
S. Harold Fenno,  
Kenmore, New York



Architects—  
Althouse and Jones,  
Mansfield, Ohio



Architect—A. Raymond Ellis  
West Hartford, Connecticut.

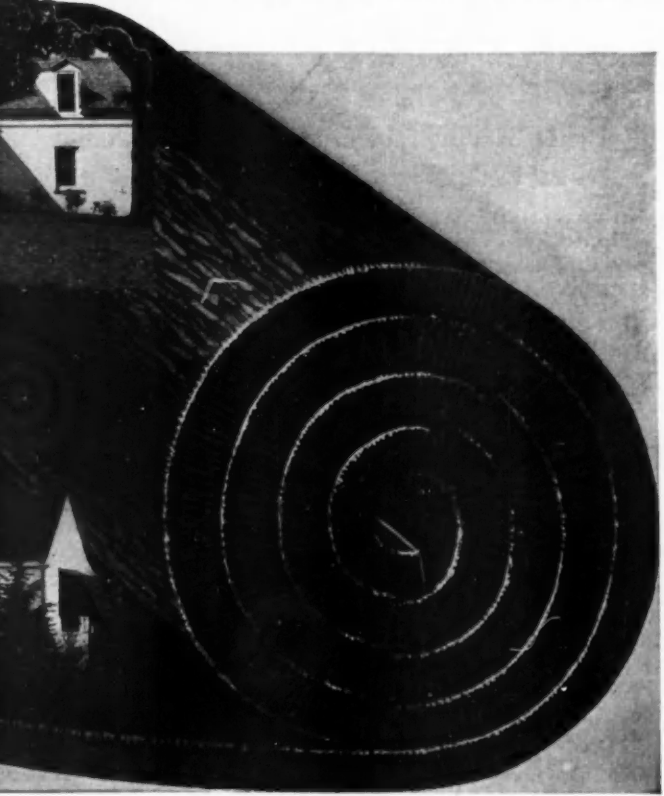
● Since 1922, thousands of the country's *best* houses—*best protected* from heat, from cold, from wind, from condensing moisture within walls . . . have been insulated the SURE way: with Balsam-Wool SEALED Insulation.

Regardless of changing construction styles—of changing needs—these houses have stood staunch against the elements, giving their owners a full measure of lasting comfort. For Balsam-Wool is *one* insulation that has never had to change its basic principle; never has been found wanting in the tests of actual use.

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**ST. PAUL, MINNESOTA**

BALSAM-WOOL—NU-WOOD—PRODUCTS OF WEYERHAEUSER





U. S. Patent Nos. 1743454—1838402—(Listed in Sweet's Catalog)

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NON-STICK WINDOWS, being completely weatherstripped, sash counterbalanced without leaky weight pockets, and delivered as an assembled unit, effect substantial savings over conventional windows.

NON-STICK WINDOWS cost the owner no more than weatherstripped weight-and-cord windows, yet add a decided appeal in ease of operation, weathertightness and beauty.

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### Rules Relative to the Circle

- To Find Circumference:**  
Multiply diameter by 3.1416.  
or divide " " 0.3183.
  - To Find Diameter:**  
Multiply circumference by 0.3183.  
or divide " " 3.1416.
  - To Find Radius:**  
Multiply circumference by 0.15915.  
or divide " " 6.28318.
  - To Find Side of an Inscribed Square:**  
Multiply diameter by 0.7071.  
or multiply circumference by 0.2251.  
" divide " " 4.4428.
  - To Find Side of an Equal Square:**  
Multiply diameter by 0.8962.  
or divide " " 1.284.  
" multiply circumference by 0.2821.  
" divide " " 3.545.
- Square.**  
A side multiplied by 1.1442 equals diameter of its circumscribing circle.  
A side multiplied by 4.443 equals circumference of its circumscribing circle.  
A side multiplied by 1.128 equals diameter of an equal circle.  
A side multiplied by 3.547 equals circumference of an equal circle.  
Square inches multiplied by 1.273 equal circle inches of an equal circle.
- To Find the Area of a Circle:**  
Multiply circumference by one-quarter of the diameter.  
or multiply the square of diameter by 0.7854.  
" " " " " circumference by 0.07958.  
" " " " " 1/2 diameter " 3.1416.
  - To Find the Surface of a Sphere or Globe:**  
Multiply the diameter by the circumference.  
or multiply the square of diameter by 3.1416.  
" " " " " four times the square of radius by 3.1416.
  - To Find the Weight of Brass and Copper Sheets, Rods, and Bars:**  
Ascertain the number of cubic inches in piece and multiply same by weight per cubic inch—  
Copper, 0.3212.  
Brass, 0.2972.  
Or multiply the length by the breadth (in feet) and product by weight in pounds per square foot.

### Table of Square Roots

No.	Sq. Root	No.	Sq. Root	No.	Sq. Root	No.	Sq. Root
25	5	650	25.46	1400	37.42	2600	50.99
50	7.071	700	26.46	1450	38.08	2700	51.96
75	8.66	750	27.39	1500	38.73	2800	52.91
100	10.00	800	28.28	1550	39.37	2900	53.85
125	11.18	850	29.15	1600	40.00	3000	54.77
150	12.25	900	30.00	1650	40.62	3200	56.57
175	13.23	950	30.82	1700	41.23	3400	58.30
200	14.14	1000	31.62	1800	42.43	3600	60.00
250	15.81	1050	32.40	1900	43.59	3800	61.64
300	17.32	1100	33.16	2000	44.72	4000	63.24
350	18.70	1150	33.91	2100	45.82	4200	64.80
400	20.00	1200	34.64	2200	46.90	4400	66.32
450	21.21	1250	35.36	2300	47.95	4600	67.82
500	22.36	1300	36.06	2400	48.99	4800	69.28
550	23.45	1350	36.74	2500	50.00	5000	70.72
600	24.49						

### Surveyors' Square Measure

- 625 square links = 1 square rod.
- 16 " rods = 1 " chain.
- 10 " chains = 1 acre.
- 640 acres = 1 square mile.
- 36 square miles or 6 miles square = 1 township.

### Surveyors' Long Measure

- 7.92 inches = 1 link.
  - 25 links = 1 pole.
  - 100 links = 1 chain.
  - 10 chains = 1 furlong.
  - 8 furlongs = 1 mile.
- Used by surveyors, civil engineers, etc., in measuring distances.

### Life of Parts, and Depreciation, in a Wood Frame House

	Average Life Years	Annual Depreciation Per Cent
Plastering	20	5
Painting, outside	5	20
Painting, inside	7	14
Shingles	16	6
Cornice	40	2 1/2
Weatherboarding	30	3 1/2
Sheathing	50	2
Flooring	20	5
Flooring (entirely carpeted)	40	2 1/2
Doors, complete	30	3 1/2
Windows, complete	30	3 1/2
Stairs and newels	30	3 1/2
Base	40	2 1/2
Building Hardware	20	5
Outside blinds	16	6
Sills and floor joists	15	6 2/3
Dimension lumber	50	2
Porches	20	5





**GETTING A  
BUILDING CONTRACT  
'AIN'T WHAT IT  
USED TO BE"**

Ten and twenty percent down payments—single amortizing mortgages—monthly payments like rent, that include everything—these things have changed the thinking of the man who wants to buy or build a home.

Especially the monthly payments that include everything. This idea starts him thinking about the extra expenses that might come along later when he is least expecting them. He thinks about re-painting, re-roofing, termites and the cost of heating—the very things that Carey Building Products are designed to protect him against.

Yes, getting a building contract "ain't what it used to be." It is now an easier job for the builder who recognizes this new situation and recommends insulating roofs; attic and side-wall insulation for comfort and economy; permanent and fireproof exterior walls that cut expenses and reduce the greatest hazard of all.

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—enable builders to provide the modern comfort, longer life and lower upkeep that prospective home buyers want. That is why they find the use of these products enables them to close contracts easier. Write for information about these Carey Products—address Dept. 10

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**CAREY ROCKTEX HOME INSULATION**



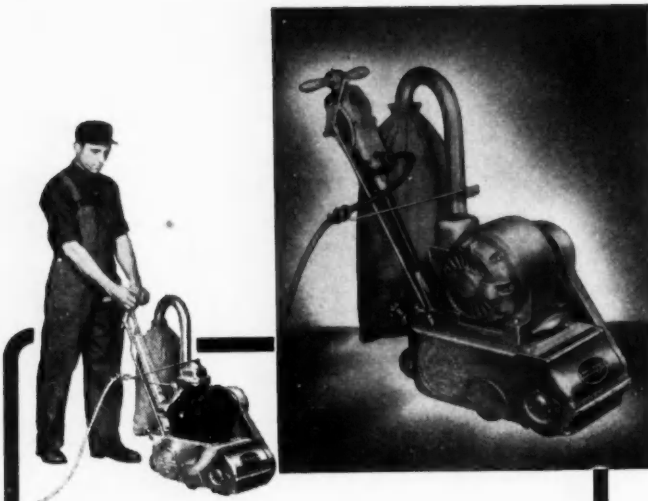
Provides maximum control of room temperature the year 'round. Will not shrink, bulge, rot or burn. Vermin and termite proof. Available in Bat, Wool, and Granulated forms, to meet all installation conditions in new or old homes.

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## Mensuration Tables, Etc.

### Linear Measure

1 hair's breadth	.....	= 1/48 inch.
3 barleycorns (lengthwise)	.....	= 1 inch.
7.92 inches	.....	= 1 link.
12 inches	.....	= 1 foot = 0.3048 metre.
3 feet	.....	= 1 yard = 0.91438 metre.
5 1/2 yards	.....	= 1 rod, perch, or pole.
4 poles or 100 links	.....	= 1 chain.
10 chains	.....	= 1 furlong.
8 furlongs	.....	= 1 mile = 1.6093 kilometres = 5280 feet.
3 miles (nautical)	.....	= 1 league.
1 line	.....	= 1/12 inch.
1 nail (cloth measure)	.....	= 3/4 inches.
1 palm	.....	= 3 inches.
1 hand (used for height of horses)	.....	= 4 inches.
1 span	.....	= 9 inches.
1 cubit	.....	= 18 inches.
1 pace (military)	.....	= 2 1/2 feet.
1 pace (common)	.....	= 3 feet.
1 Scotch ell	.....	= 37.06 inches.
1 vara (Spanish)	.....	= 33.3 inches.
1 English ell	.....	= 45 inches.
1 fathom	.....	= 6 feet.
1 cable's length	.....	= 120 fathoms.
1 "knot"	.....	= 6082.06 feet.
1 degree of equator	.....	= 69.1613 statute miles.
1 degree of equator	.....	= 60 geographical miles.
1 degree of meridian	.....	= 69.046 statute miles.
1 degree of meridian	.....	= 59.809 geographical miles.
1.1527 statute miles	.....	= 1 geographical mile.
6086.07 feet	.....	= 1 minute of longitude = 1 nautical mile.
5280 feet	.....	= 1 statute mile.

### Circular Measure

60 seconds	.....	= 1 minute
60 minutes	.....	= 1 degree
30 degrees	.....	= 1 sign
12 signs	.....	= 1 circle or circumference

### Cubic Measure

1.728 cubic inches	.....	= 1 cubic foot
27 cubic feet	.....	= 1 cubic yard

### Square Measure

144 square inches	.....	= 1 square foot
9 square feet	.....	= 1 square yard
30 1/4 square yards	.....	= 1 square rod
40 square rods	.....	= 1 rood
4 roods	.....	= 1 acre
640 acres	.....	= 1 square mile
36 square miles	.....	= 1 township

### Decimal Equivalents of Common Fractions

1/8 = .0625	9/16 = .5625
1/16 = .125	5/8 = .625
3/4 = .1875	11/16 = .6875
5/16 = .25	3/4 = .75
3/8 = .3125	13/16 = .8125
1/2 = .375	7/8 = .875
5/16 = .4375	15/16 = .9375
1/16 = .5	

### TWELFTHS

1/12 = .0833	7/12 = .5833
2/12 = .1667	8/12 = .6667
3/12 = .2500	9/12 = .7500
4/12 = .3333	10/12 = .8333
5/12 = .4167	11/12 = .9167
6/12 = .5000	

### Miscellaneous Data

#### FORCE OF THE WIND

Description	Miles per hour	Feet per minute	Feet per second	Force in lbs. per sq. foot
Hardly perceptible	1	88	1.47	0.005
Just perceptible	{ 2	176	2.93	0.02
	{ 3	264	4.4	0.044
Gentle breeze	{ 4	352	5.87	0.079
	{ 5	440	7.33	0.123
Pleasant breeze	{ 10	880	14.67	0.492
	{ 15	1,320	22	1.107
Brisk gale	{ 20	1,760	29.3	1.968
	{ 25	2,200	36.6	3.075
High wind	{ 30	2,640	44	4.428
	{ 35	3,080	51.3	6.027
Very high wind	{ 40	3,520	58.6	7.872
	{ 45	3,960	66	9.963
Storm	50	4,400	73.3	12.500
	Great storm	{ 60	5,280	88
{ 70		6,160	102	24.108
Hurricane or cyclone	80	7,040	117.3	31.488
	100	8,800	146.6	49.200

# THE OUTSTANDING TRUCK FOR THE MONEY FORD V-8 FOR 1940

## FORD FEATURES FOR 1940

New styling • Increased engine accessibility  
 Increased chassis accessibility • Choice of  
 power—95, 85, 60 hp • 42 body and chassis  
 types • New Sealed-Beam Headlamps • Big-  
 ger batteries, larger generators with auto-  
 matic voltage regulation • Big hydraulic  
 brakes • Full-floating rear axle with straddle-  
 mounted pinion and ring gear thrust plate  
 Two-speed axle (optional at extra cost)  
 Ford Engine and Parts Exchange Plan.

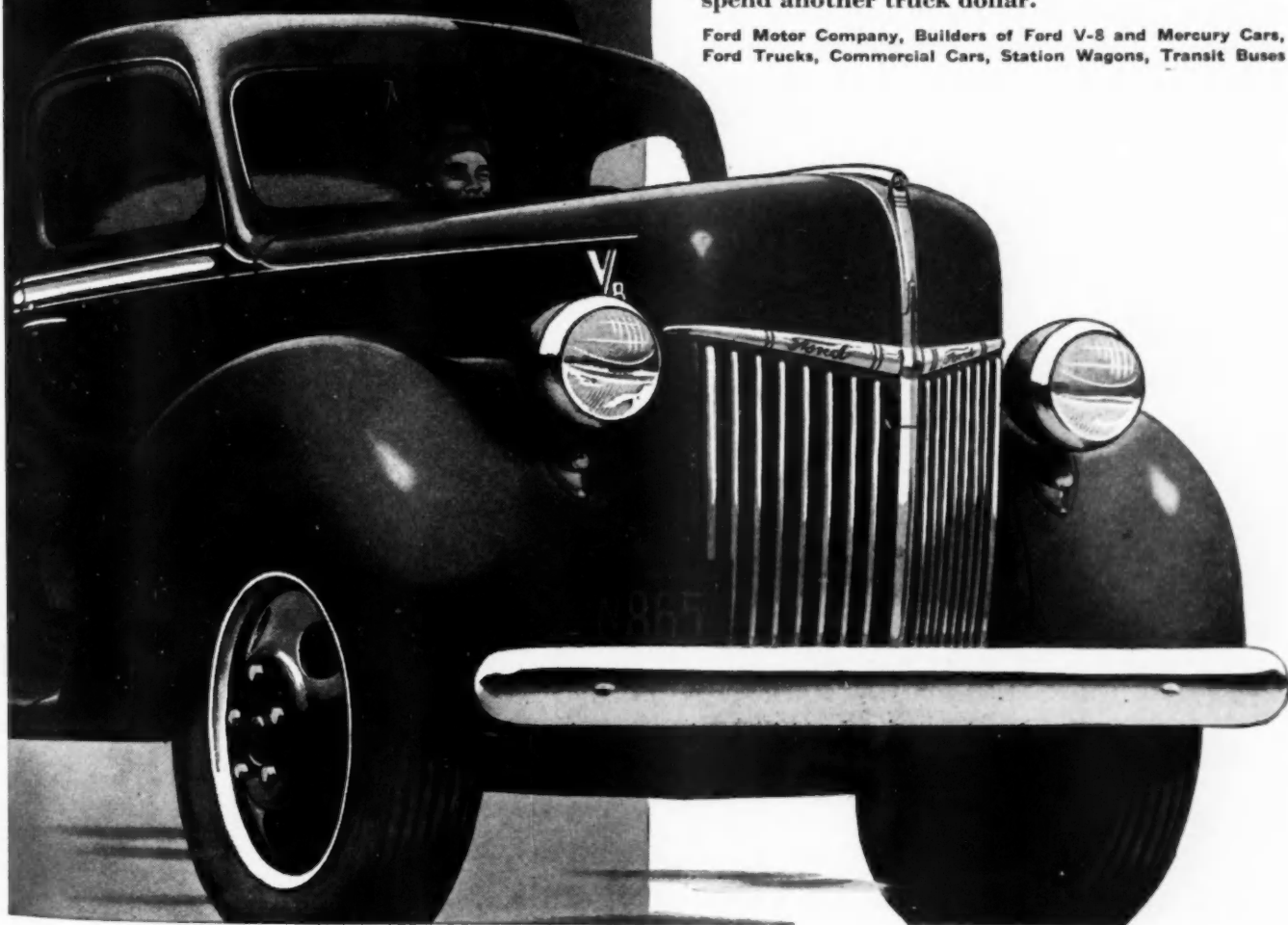
The big new 1940 Ford Truck line gives you value in construction, performance and economy that means "the outstanding truck for the money."

Three eight-cylinder engine sizes—95, 85 and 60 hp. Six wheelbases. 42 body and chassis types.

There's new styling. New engine and chassis accessibility, making it easier to check the oil, service the distributor and other engine accessories, as well as clutch, transmission and rear axle. New, softer, more comfortable seats in Regular cabs. These and many more improvements join a host of time-tested, time-proved Ford features in 1940.

See the new Ford Truck at your dealer's. Compare it with any other truck. Arrange for an "on-the-job" test and know the difference before you spend another truck dollar.

Ford Motor Company, Builders of Ford V-8 and Mercury Cars, Ford Trucks, Commercial Cars, Station Wagons, Transit Buses



ce in  
 e. per  
 foot  
 005  
 02  
 044  
 079  
 123  
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 428  
 027  
 872  
 963  
 300  
 712  
 108  
 488  
 200

## "We call it our Hollywood dining-room!"



**Here's Why!** Last summer in Hollywood we saw them making a movie on a dining-room "set." The property engineer told us the walls were Masonite Tempered Presdwood. He said they use that board because they can get so many beautiful effects with it. And it's so durable they can use it over and over again. Yet it costs little.



**Back Home**—Our builder recommended Masonite Tempered Presdwood for remodeling our dingy old dining-room. That board certainly goes up easily. It's a dry material—there's little muss or fuss. And it has given us an opportunity to get lots of unique ideas into the whole room. For example, the Tempered Presdwood walls, painted light blue, are offset from the old walls to provide indirect lighting. The built-in buffet is made of Tempered Presdwood and painted grey. The built-in window table and shelves are the same moisture-resisting material, white enameled. Properly applied, it will not warp, chip or crack. And they say it will last as long as the house stands.

**Masonite**  
THE WUNDER WOOD OF A THOUSAND USES  
SOLD BY LUMBER DEALERS EVERYWHERE

**CLIP AND MAIL THIS COUPON**

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**FREE!**

MASONITE CORPORATION, DEPT. AB-2  
111 W. Washington St., Chicago, Illinois

Please send me a free sample and full details about Masonite Tempered Presdwood.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

### Number of Common Brick (8" x 2 1/4" x 3 3/4") Required for One Square Foot of Brick Wall of Any Thickness

Thickness of wall in inches	Number of bricks thick	Thickness of Mortar Joints in inches					
		1/4 in.	1/2 in.	3/4 in.	1 in.	1 1/4 in.	1 1/2 in.
4 or 4 1/2	1	7 1/2	7	6 1/2	6 1/4	5 3/4	5 1/2
8 or 9	2	15	14	13	12 1/2	11 3/4	11
12 or 13	3	22 1/2	21	19 1/2	18 1/2	17 1/2	16 1/2
16 or 17	4	30	28	26	24 3/4	23 1/2	22
20 or 21	5	37 1/2	35	32 1/2	30 5/8	29 3/8	27 1/2
24 or 25	6	45	42	39	37	35 1/4	33

### Quantity of Mortar Required to Lay 1,000 Common Bricks

Thickness of Mortar Joints in Inches	Quantity of Mortar					
	1/4 in.	1/2 in.	3/4 in.	1 in.	1 1/4 in.	1 1/2 in.
1/4 in.	9 cu. ft.	13 1/2 cu. ft.	18 cu. ft.	22 1/2 cu. ft.	27 cu. ft.	

### Brick Required and Weights of Ideal Hollow Brick Walls

Type of wall—	Number of brick per sq. ft. of wall	Average weight per sq. ft. of wall, pounds
8" All-Rolok .....	9.03	50.36
12 1/2" All-Rolok, Type 1 .....	13.28	74.02
12 1/2" All-Rolok, Type 2 .....	14.30	80.22
8" Rolok-Bak, Headers, 3rd Course .....	10.78	62.45
8" Rolok-Bak, Headers, 6th Course .....	10.52	60.85
12 1/2" Rolok-Bak .....	15.44	87.63

### Materials Required for One Cubic Yard of Brick Mortar Showing Both Lime and Portland Cement Mixture

—Mix by Volume—			Lime	Cement	Sand
Lime	Cement	Sand	Lbs.	Lbs.	Cu. Yds.
Pct.	Pct.	Ratio			
100	0	1:4	182 Q	1 Bbl.	0
		1:4	297H	6 Sacks	0
100	0	1:3	243 Q	1.35 Bbls.	0
		1:3	396H	8 Sacks	0
100	0	1:2 1/2	292 Q	1.62 Bbls.	0
		1:2 1/2	475H	9.5 Sacks	0
100	0	1:2	322 Q	1.8 Bbls.	0
		1:2	528H	10.5 Sacks	0
90	10	1:3	219 Q	1.22 Bbls.	98
		1:3	356H	7.12 Sacks	98
80	20	1:3	194 Q	1.08 Bbls.	196
		1:3	317H	6.34 Sacks	196
70	30	1:3	170 Q	0.95 Bbls.	294
		1:3	277H	5.5 Sacks	294
60	40	1:3	146 Q	0.81 Bbls.	392
		1:3	238H	4.76 Sacks	392
50	50	1:3	122 Q	0.68 Bbls.	490
		1:3	198H	4 Sacks	490
40	60	1:3	97 Q	0.54 Bbls.	588
		1:3	158H	3.16 Sacks	588
30	70	1:3	73 Q	0.41 Bbls.	697
		1:3	119H	2.38 Sacks	697
20	80	1:3	49 Q	0.27 Bbls.	784
		1:3	80H	1.6 Sacks	784
10	90	1:3	24 Q	0.13 Bbls.	882
		1:3	40H	0.8 Sacks	882
0	100	1:3	0		981
10	100	1:3 + 1/10	24 Q	0.13 Bbls.	981
10	100	1:3 + 1/10	44H	0.88 Sacks	981

Q Represents Quicklime.  
H Represents Hydrated Lime.

### Amount of Mortar Required for a Cubic Yard of Masonry

Kind of Masonry	Mortar, Cu. Yd.	
	Minimum	Maximum
Ashlar, 12-in. courses, 1/4-in. joints.....	0.06	0.08
Ashlar, 18-in. courses, 1/4-in. joints.....	0.03	0.04
Ashlar, 12 to 20-in. courses, 3/8 to 1/2-in. joints... ..	0.07	0.08
Ashlar, 20 to 32-in. courses, 1/4 to 3/8-in. joints... ..	0.05	0.06
Brickwork (bricks of standard size, 8x2 1/4 x 3 3/4 in.)		
1/8-in. joints .....	0.10	0.15
1/4-in. to 3/8-in. joints.....	0.25	0.35
1/2-in. to 3/4-in. joints.....	0.35	0.40
Concrete blocks or tile.....	0.50	0.55
Rubble course, not dressed.....	0.33	0.40
Rubble, roughly dressed.....	0.25	0.30
Squared-stone masonry, 12-in. courses and 1/4-in. joints .....	0.20	0.25
Squared-stone masonry, 18-in. courses and 1/4-in. joints .....	0.12	0.15

# "TO CLOSE-IN JOBS QUICKER AND CLOSE-UP SALES EASIER WE INSULATE WITH C-S-I"

SAYS MR. R. HILLMAN, HEMPSTEAD LAKE PARK HOMES, LAKEVIEW, L. I.



"On bleak, cold Fall days nothing sells our houses quicker than C-S-I Insulation, with the fuel-saving, weather-tight insulation it gives us to talk about.

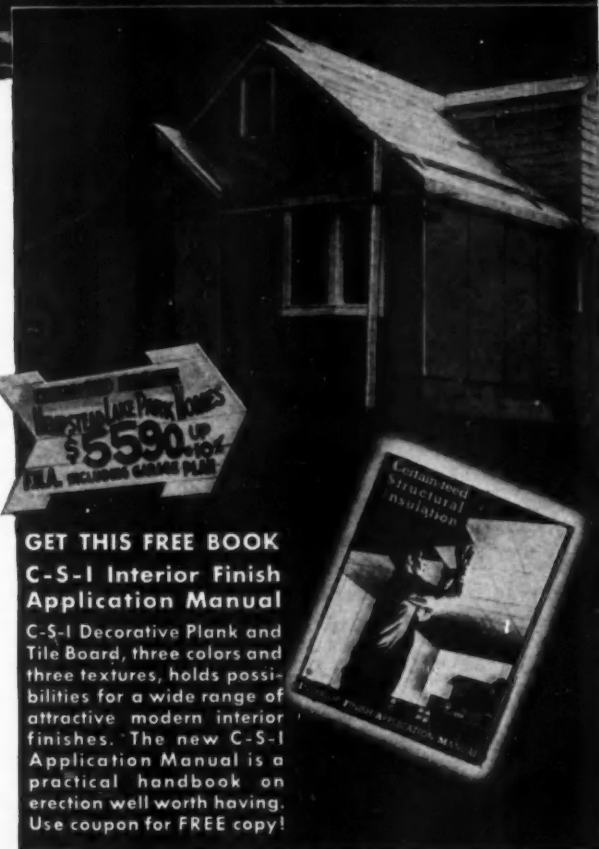
"Not only that, but the big sheets of C-S-I Sheathing go up fast, let us close-in the job quicker. We can finish up inside without losing days on account of bad weather.

"The cost of a house insulated with C-S-I Asphalted Sheathing is less than \$50.00 more than uninsulated houses using ordinary sheathing material, building papers, etc."

Whatever price-class homes you build, you will find C-S-I (Certain-teed Structural Insulation) a complete line for every insulation need . . . inside as well as outside. For insulation plus a perfect plaster base use C-S-I Key Lap Lath or C-S-I Asphalted Key Lap Lath. For insulation plus an attractive self-finish use C-S-I Decorative Plank and Tile Board. Wherever it's used, C-S-I does double-duty . . . adds insulation and structural strength or insulation and decoration.

Here's another profit tip for Fall building: For the extra sales-appeal of roofs with cheerful color and animation, use Wood-Tex Shingles to get the strong contrast of shadow lines from a grain that is actually built-up on the thick butt.

Use the coupon below for practical informative literature.



GET THIS FREE BOOK  
C-S-I Interior Finish  
Application Manual

C-S-I Decorative Plank and Tile Board, three colors and three textures, holds possibilities for a wide range of attractive modern interior finishes. The new C-S-I Application Manual is a practical handbook on erection well worth having. Use coupon for FREE copy!

# Certain-teed

REGISTERED U. S. PAT. OFF.  
QUALITY MADE *Certain*  
SATISFACTION GUARAN-*teed*

CERTAIN-TEED PRODUCTS CORPORATION • GENERAL OFFICES, NEW YORK, N. Y.

CERTAIN-TEED PRODUCTS CORP.  
100 East 42nd Street, New York, N. Y.

Gentlemen: Without obligation please send  
 C-S-I Interior Finish Application Manual.  
Also send me informative literature on  
 WOOD-TEX  BESTWALL.

Name \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_

H-5

# U-S PRODUCTS Help Sell Homes!



**Y**OU can make strong statements, selling statements, about U. S. heating equipment. U. S. guarantees its products for workmanship and material and to heat the published net radiator load if installed to meet U. S. specifications. This means customer satisfaction. Homes equipped with U. S. products sell faster.

**UNITED STATES RADIATOR CORPORATION**

General Offices: Detroit, Michigan  
Branches and Sales Offices in Principal Cities

## Table of Weights of Pine Joists, Studs and Rafters Based on a Weight Per Board Foot of 2.8 Pounds

Spacing	Size	Weight per Sq. Foot	Size	Weight per Sq. Foot	Size	Weight per Sq. Foot
12"	2"x4"	1.87	2"x6"	2.8	2"x8"	3.74
14"	"	1.60	"	2.4	"	3.20
16"	"	1.40	"	2.1	"	2.80
18"	"	1.25	"	1.87	"	2.50
20"	"	1.12	"	1.68	"	2.24
22"	"	1.02	"	1.53	"	2.04
12"	2"x10"	4.68	2"x12"	5.61	2"x14"	6.55
14"	"	4.00	"	4.80	"	5.00
16"	"	3.50	"	4.20	"	4.90
18"	"	3.13	"	3.75	"	4.38
20"	"	2.80	"	3.36	"	3.92
22"	"	2.55	"	3.06	"	3.57

### Weights of Partitions

	Lbs. per sq. ft.
Gypsum partition blocks 3" thick	10
" " " 4" "	12
" " " 5" "	14
" " " 6" "	16
Plaster on brick, tile or concrete	5
Partition Tile 3" thick	17
" " 4" "	18
" " 6" "	25
" " 8" "	31
" " 10" "	35

### Weights of Ceiling

	Lbs. per sq. ft.
Lath and plaster, 2 coats	9
Lath and plaster, 3 coats	10
Suspended ceiling (metal lath and steel ties)	10

### Weights of Sheathing, Flooring, Etc.

	Lbs. per sq. ft.
Pine, Hemlock, Spruce, Poplar, Redwood, per inch thick	3
Chestnut, Maple, Birch, Oak	4

### and Hot Water Heating in Residences and Other Buildings

Direct Radiation*		Size of Flue	
Steam (Sq. Ft.)	Water (Sq. Ft.)	Round Diam. In.	Square
250	400	8	8 x 8
300	500	8	8 x 8
400	700	8	8 x 8
500	850	10	8 x 12
600	1,000	10	8 x 12
700	1,200	10	8 x 12
800	1,350	12	12 x 12
900	1,500	12	12 x 12
1,000	1,700	12	12 x 12
1,200	2,100	12	12 x 12
1,400	2,400	14	12 x 16
1,600	2,700	14	12 x 16
1,800	3,000	14	12 x 16
2,000	3,400	14	12 x 16
2,200	3,700	16	16 x 16
3,000	5,100	16	16 x 16
3,500	5,900	18	16 x 20
5,000	8,500	18	16 x 20

\*NOTE—When a considerable amount of "indirect" radiation is to be used, increased boiler capacity is necessary; and in many cases such demands require a larger chimney flue for the same number of square feet of radiation used.

### Safe Bearing Loads on Masonry

Material	Lbs. per sq. in. of area
Granite—	
Cap Stone	700
Squared Stonework	350
Sandstone—	
Cap Stone	350
Squared Stonework	175
Rubble Stonework, lime mortar	80
Rubble Stonework, cement mortar	150
Limestone—	
Cap Stone	500
Squared Stonework	250
Rubble Stonework, lime mortar	80
Rubble Stonework, cement mortar	150

# THIS HAPPENS *ONLY* IN A FACTORY

# Mack

# FACTORY

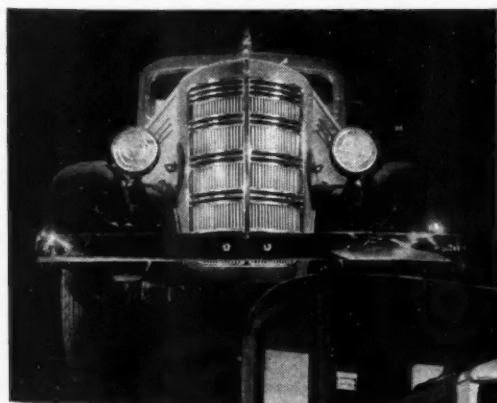


ABOVE, you see the exclusive, patented process of graduated heat treatment, which gives Mack axle shafts extraordinary strength and toughness.

**T**HROUGH many exclusive processes of manufacturing and methods of testing, it is made certain that every Mack part and every complete Mack provide the most dependable, most economical hauling job money can buy. Through 39 years of specialization, Mack has held to a policy of rigid control of quality—right from the selection of raw materials. This control is maintained through the largest research and engineering facilities ever devoted exclusively to truck manufacture.

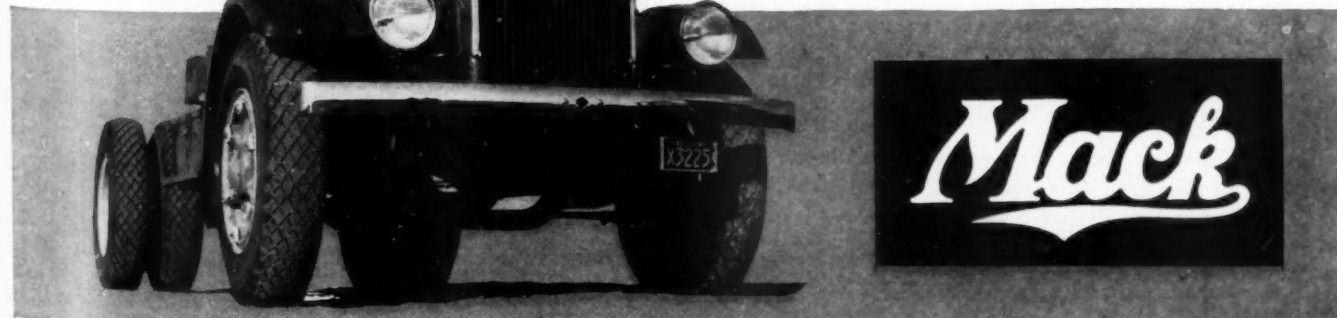
**MACK TRUCKS, INC.**

**NEW YORK, N. Y.**



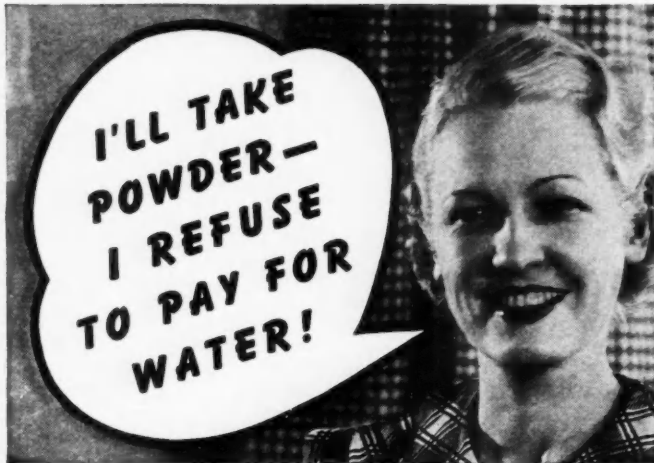
**LOWEST-PRICED MACK!** At upper left, the new Mack ED, 8,500 lbs. gross vehicle weight, priced at \$675.00, for standard chassis f.o.b. Allentown, Pa. Cab, body and taxes extra.

**AT LOWER LEFT, Mack Model BX**—one of the big Macks for use in the heavy hauling field.



**THE MOST COMPLETE LINE OF TRUCKS IN THE WORLD...1 TO 30 TONS**

# ... IF WOMEN BOUGHT CASEIN PAINT



- Thrifty Housewives Buy Flour—Not Dough
- Thrifty Paint Users Buy Powder Casein—Not Paste

**MRS. HOUSEWIFE:** I want to do a little decorating and I understand that casein paint gives an attractive effect at low cost.

**MR. PAINT DISTRIBUTOR:** Yes—it does. We have it in two forms, paste and powder.

**MRS. HOUSEWIFE:** What's the difference?

**MR. PAINT DISTRIBUTOR:** There's no difference as far as the finished product is concerned—both have to be mixed up. Both meet the same Federal Specifications.

**MRS. HOUSEWIFE:** Then, I suppose paste and powder are the same price?

**MR. PAINT DISTRIBUTOR:** No—casein paint in powder form costs about 25% less than the paste.

**MRS. HOUSEWIFE:** Why is that?

**MR. PAINT DISTRIBUTOR:** Well, the paste contains water and has to be packed in expensive metal containers. The powder is concentrated.

**MRS. HOUSEWIFE:** I'll take the powder casein paint then. When I bake a cake I buy flour not dough—I wouldn't think of paying for water!

**The Lady is Right!** Anyway you look at it—savings in cost; ease of mixing; fresh paint for every job—powder casein paint is the "buy" and the call is for **MODEX**.

# Modex

THE CONCENTRATED CASEIN PAINT IN POWDER FORM



## SEND FOR COMPLETE INFORMATION

The Reardon Company, 2200 N. Second Street, St. Louis, Mo.

Please send me your new illustrated folder on Modex, the concentrated powder casein paint.

Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_

## Number of Pieces of Lumber Required for a Full Thousand Feet

Length in Feet	2x4 Pieces and Exact Amount	2x6 Pieces and Exact Amount	2x8 Pieces and Exact Amount	2x10 Pieces and Exact Amount	2x12 Pieces and Exact Amount
12	125 1000	84 1008	63 1008	50 1000	42 1008
14	108 1008	72 1008	54 1008	43 1003½	36 1008
16	94 1002½	63 1008	47 1002½	38 1013½	32 1024
18	84 1008	56 1008	42 1008	34 1020	28 1008
20	75 1000	50 1000	38 1013½	30 1000	25 1000
22	69 1012	46 1012	35 1026½	28 1026½	23 1012
24	63 1008	42 1008	32 1024	25 1000	21 1008

## Wt. of Fresh Fallen Snow

5 to 12 pounds per cubic foot.

## Costs of Oak Flooring Per Square Foot of Floor Area

B. M. Price Per M Sq. Ft.	Cents Per Square Foot			
	¾x1½	¾x2	1½x1½	1½x2½
\$ 25	3½c	3½c	3½c	3½c
30	4 c	3½c	4½c	4 c
35	4½c	4½c	5½c	4½c
40	5½c	5 c	6 c	5½c
45	6 c	5½c	6½c	6 c
50	6½c	6½c	7½c	6½c
55	7½c	6½c	8½c	7½c
60	8 c	7½c	9 c	8 c
65	8½c	8½c	9½c	8½c
70	9½c	8½c	10½c	9½c
75	10 c	9½c	11½c	10 c
80	10½c	10 c	12 c	10½c
85	11½c	10½c	12½c	11½c
90	12 c	11½c	13½c	12 c
95	12½c	11½c	14½c	12½c
100	13½c	12½c	15 c	13½c
105	14 c	13½c	15½c	14 c
110	14½c	13½c	16½c	14½c
115	15½c	14½c	17½c	15½c
120	16 c	15 c	18 c	16 c
125	16½c	15½c	18½c	16½c
130	17½c	16½c	19½c	17½c
135	18 c	16½c	20½c	18 c
140	18½c	17½c	21 c	18½c
145	19½c	18½c	21½c	19½c
150	20 c	18½c	22½c	20 c
155	20½c	19½c	23½c	20½c
160	21½c	20 c	24 c	21½c
165	22 c	20½c	24½c	22 c
170	22½c	21½c	25½c	22½c
175	23½c	21½c	26½c	23½c
180	24 c	22½c	27 c	24 c
185	24½c	23½c	27½c	24½c
190	25½c	23½c	28½c	25½c
195	26 c	24½c	29½c	26 c
200	26½c	25 c	30 c	26½c
205	27½c	25½c	30½c	27½c
210	28 c	26½c	31½c	28 c
215	28½c	26½c	32½c	28½c
220	29½c	27½c	33 c	29½c
225	30 c	28½c	33½c	30 c
230	30½c	28½c	34½c	30½c
235	31½c	29½c	35½c	31½c
240	32 c	30 c	36 c	32 c
245	32½c	30½c	36½c	32½c
250	33½c	31½c	37½c	33½c
255	34 c	31½c	38½c	34 c
260	34½c	32½c	39 c	34½c
265	35½c	33½c	39½c	35½c
270	36 c	33½c	40½c	36 c
275	36½c	34½c	41½c	36½c
280	37½c	35 c	42 c	37½c
285	38 c	35½c	42½c	38 c
290	38½c	36½c	43½c	38½c
295	39½c	36½c	44½c	39½c
300	40 c	37½c	45 c	40 c
305	40½c	38½c	45½c	40½c
310	41½c	38½c	46½c	41½c
315	42 c	39½c	47½c	42 c
320	42½c	40 c	48 c	42½c

Note: Allowance should be made for any irregularities in shape of rooms, also for floor-layer's cutting waste.

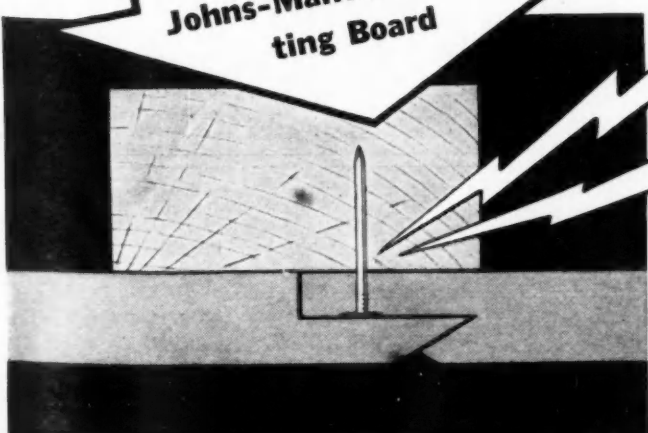


This new Johns-Manville  
Insulating Board Plant  
at Jarratt, Va., says:—



**YOUR RESPONSE TO THE NEW J-M LINE  
HAS BEEN SO GREAT I'VE ALREADY  
HAD TO INCREASE MY CAPACITY...**

Here's one of the  
many reasons why  
dealers and builders  
are so enthusiastic  
about the new  
Johns-Manville Insula-  
ting Board



**T**HE new J-M Insulating Board was introduced less than 90 days ago. Yet thousands of dealers and builders have already learned that it is *exactly* what their customers want.

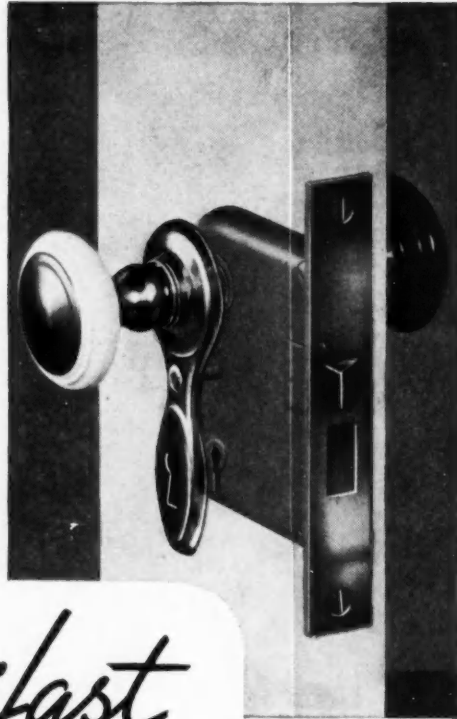
This quality wood-fiber board has the new smooth, durable Glazecoat Surface in an attractive Ivory color which reflects light beautifully. There is a full line of bevel panels and planks in four pastel colors, and equipped with the famous Lightning Joint which conceals nailing. And rounding out the complete line there is Asphalt-Coated Weathertite Sheathing, J-M Insulating Lath and J-M Service Board, a new low-cost product. No wonder the most modern and best equipped insulating board plant in the world is already adding new production equipment to meet the demand!

**NO EXPOSED NAILS MAR THE BEAUTY  
OF DECORATIVE UNITS... THANKS TO  
EXCLUSIVE J-M LIGHTNING JOINT!**

J-M Bevel Panels and Planks go up easily and quickly because of the new J-M Lightning Joint. Simply nail the tongue. The adjacent panel fits snugly into the groove and stays firmly in place. *Nailheads are completely concealed!* Only the new J-M Insulating Board has this important feature... yet it costs no more! Get samples and details at once. Write—Johns-Manville, 22 E. 40th St., New York City.



**JOHNS-MANVILLE INSULATING BOARD**



*Unifast*

**SAVES YOU 8 OPERATIONS ON EVERY DOOR . . . .**

One Phillips machine screw secures the combined rose and key plate firmly to the mortise lock itself. You save the time and labor required to center and drive eight wood screws—and the annoyance and kicks that result when they don't "stay put" in the thin doors. You furnish a modern rose and key plate design that is authentic and always in good taste.

Unifast can be used with glass, metal or Patrician metal-and-plastic knob sets, and is available in brass, brush brass and chromium, and other hardware finishes. It's the ideal lockset for 1 3/8" stock doors—the ideal profit builder for you. Write for further details or consult any Lockwood Builders' Hardware Dealer.

*For the modern effects and latest improvements in builders' hardware—see Lockwood.*

Each of these names presents an outstanding Lockwood development or improvement in builders' hardware	PATRICIAN PLASTELLE UNIFAST EQUIPOISE BOR-IN CAPE COD
---	--

**LOCKWOOD HARDWARE MFG. CO.**



*Division of*  
**INDEPENDENT LOCK CO., FITCHBURG, MASS.**

**Amount of New Air to Be Supplied Per Person**

	Without Humidification or Recirculation	Cubic Feet With Humidification but Without Recirculation	Per Minute With Humidification and Recirculation	Number of Air Changes per Hour
<b>Schools—</b>				
Class Rooms . . . . .	30	20	5 to 10	....
Assembly Rooms . . . . .	15 to 20	10 to 15	5 to 10	....
Gymnasiums . . . . .	30	25	15 to 20	....
Toilets . . . . .	....	....	....	10 to 20
Locker Rooms . . . . .	....	....	....	5 to 10
Kitchens . . . . .	....	....	....	20 to 60
Lunch Rooms . . . . .	....	....	....	10 to 20
<b>Theaters—</b>				
Seating Space . . . . .	30 to 50	20 to 30	10 to 15	....
<b>Hospitals—</b>				
Wards . . . . .	30 to 40	20 to 30	....	20 to 60
Kitchens . . . . .	....	....	....	10 to 20
Dining Rooms . . . . .	....	....	....	10 to 20
Toilets . . . . .	....	....	....	....
<b>Hotels—</b>				
Dining Rooms . . . . .	....	....	....	10 to 15
Kitchens . . . . .	....	....	....	20 to 60
Ball Rooms . . . . .	....	....	....	5 to 10
Work Space . . . . .	....	....	....	5 to 10
Assembly Rooms . . . . .	20 to 30	15 to 20	10 to 15	....

**NUMBER OF SQUARE FEET IN ONE CORRUGATED SHEET (Standard Lengths)**

Feet	2 1/2 and 3/4 In. Corrugated 26 In. Wide	1 1/4 In. Corrugated 3 V Crimp 25 1/2 In. Wide	V Crimp 3 V Crimp and Pressed Standing Seam 24 In. Wide
5	10.833	10.625	10.
6	13.	12.75	12.
7	15.167	14.875	14.
8	17.333	17.	16.
9	19.5	19.125	18.
10	21.667	21.25	20.
11	23.833	23.375	22.
12	26.	25.5	24.

**Number of Slates and Nails for 100 Square Feet of Roof**

Size Inches	Exposure when Laid	Number to 100 Sq. Ft.	Weight of Galvanized Nails	Spacing of Lath
14 x 24	10 1/2	98	1 1/2	10 1/2
12 x 24	10 1/2	114	1 1/2	10 1/2
12 x 22	9 1/2	126	1 1/4	9 1/2
11 x 22	9 1/2	138	4d-2	9 1/2
12 x 20	8 1/2	141	2	8 1/2
10 x 20	8 1/2	170	2 3/8	8 1/2
12 x 18	7 1/2	160	1 7/8	7 1/2
10 x 18	7 1/2	192	2 1/4	7 1/2
9 x 18	7 1/2	213	2 1/2	7 1/2
12 x 16	6 1/2	185	2 1/2	6 1/2
10 x 16	6 1/2	222	2 1/2	6 1/2
9 x 16	6 1/2	246	3	6 1/2
8 x 16	6 1/2	277	3d-3 1/8	6 1/2
10 x 14	5 1/2	261	3	5 1/2
8 x 14	5 1/2	327	3 3/4	5 1/2
7 x 14	5 1/2	374	4 1/4	5 1/2
8 x 12	4 1/2	400	4 1/2	4 1/2
7 x 12	4 1/2	457	5 1/4	4 1/2
6 x 12	4 1/2	533	6	4 1/2
8 x 10	3 1/2	514	5 7/8	3 1/2
7 x 10	3 1/2	588	6 3/4	3 1/2
6 x 10	3 1/2	686	7 7/8	3 1/2

To determine the number of pieces to a square of any size slate not given, first deduct three inches from the length; divide this by two; multiply by the width of the slate; and divide the result into 14,400.

**Window Glass—Sizes, Weights and Thickness**

**GRADES**

"AA" first quality; "A," second quality; "B," third quality. SIZES OBTAINABLE (U. S. Government Specifications)  
The maximum dimensions recommended are:

	Width in inches	Length in inches
For single strength . . . . .	40	50
For double strength . . . . .	60	80
For heavy sheet . . . . .	66	90

**THICKNESS AND WEIGHTS**

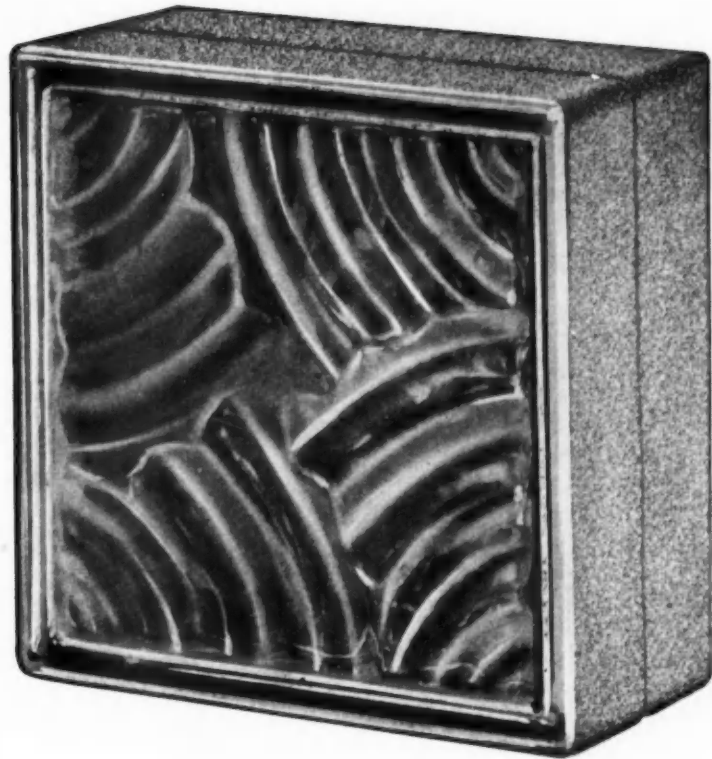
	Thickness in inches.		Number of lights per sq. ft.		Average weight in ounces per sq. ft.
	Min.	Max.	Min.	Max.	
Single strength . . . . .	.080	.100	10.5	12.0	18.5
Double strength . . . . .	.111	.125	8.0	9.0	24.5
28-oz. glass . . . . .	.125	.135	7.5	8.0	26.0
29-oz. glass . . . . .	.135	.148	6.5	7.0	29.0
34-oz. heavy glass . . . . .	.150	.175	6.0	6.5	34.0
39-oz. heavy glass . . . . .	.176	.205	5.0	5.5	39.0

**PLATE GLASS**

The sizes of stock plate glass vary from 6 inches by 6 inches, by even inches, to 144 inches by 200 inches or 138 inches by 208 inches.

**MIRRORS**

This glass can be obtained in sizes varying from 4 x 4 inches, by even inches, to 84 inches by 150 inches and with bevels varying from 1 to 2 inches.




# INSULUX

*Presents A Beautiful New Decorative Design  
for use in Residential and Commercial Buildings*

**T**his new, exclusive Insulux design—the "Circon," No. 330—answers perfectly the demand of builders for a glass block with unusual decorative value. It harmonizes with almost any style of residential architecture. It adds striking beauty to store fronts, restaurants, theaters and other business buildings.

The design creates an all-over decorative pattern that gives unity to the glass block panel. It transmits a high percentage of light but maintains privacy. Like all Insulux Glass Block, it has high insulation value that helps to lower heating costs.

The addition of this new decorative block emphasizes the unequalled variety of designs that Insulux offers to dealers and builders. Whether you sell building materials or complete houses, Insulux Glass Block will boost your sales and help you give owners the satisfaction that builds good will. Owens-Illinois Glass Company, Insulux Products Division, Toledo.

**OWENS - ILLINOIS**  
**INSULUX**  **Glass Block**

**INSULUX GLASS BLOCK HAVE BEEN USED IN MORE THAN 50,000 INSTALLATIONS**

# MONCRIEF FURNACES and Winter Air Conditioners



*Satisfy*  
Your Clients

**in Every Particular**

Builders will find in the complete Moncrief line a type and a size for every warm air heating and winter air conditioning need—all moderately priced and of the finest design, construction and appearance. Furnaces are made in both cast and steel; winter air conditioners in specialized types for either coal, oil or gas. For big value, high efficiency and low operating cost, you can rely on Moncrief. Get in touch with the Moncrief dealer near you.



*Send for Literature*

Clearly written, profusely illustrated with cutaways, diagrams and charts. Of interest to every builder, architect and engineer.

**THE HENRY FURNACE & FOUNDRY CO.**  
3479 EAST 49th STREET CLEVELAND, OHIO

### Safe Loads in Pounds Uniformly Distributed for Common Sizes of Standard Steel I-Beams

Safe loads below are figured for fibre stress of 16,000 pounds per square inch and include weight of beam.

Distance Between Supports in Feet	Standard I-Beams			
	7-Inch 15 Lbs.	8-Inch 18 Lbs.	9-Inch 21 Lbs.	10-Inch 25 Lbs.
4	27,600			
5	22,080	30,330		
6	18,400	25,280		
7	15,770	21,670		
8	13,800	18,960	25,160	
9	12,270	16,850	22,370	
10	11,040	15,170	20,130	26,050
11	10,040	13,790	18,300	23,680
12	9,200	12,640	16,770	21,710
13	8,490	11,670	15,480	20,040
14	7,890	10,830	14,380	18,610
15	*7,360	10,110	13,420	17,360
16	*6,900	*9,480	12,580	16,280
17	*6,490	*8,920	11,840	15,320
18	*6,130	*8,430	11,180	14,470
19	*5,810	*7,980	*10,590	13,710
20	*5,520	*7,580	*10,064	13,020

\*While safe at these spans, the deflection in each case will be greater than the allowable limit for plastered ceilings, which is 1/360th of the span.

### Safe Loads in Pounds Uniformly Distributed for Common Sizes of Standard Steel I-Beams

Safe loads below are figured for fibre stress of 16,000 pounds per square inch and include weight of beam.

Distance Between Supports in Feet	Standard I-Beams	
	12-Inch 31.5 Lbs.	15-Inch 42 Lbs.
10	38,370	62,830
11	34,880	57,120
12	31,970	52,360
13	29,510	48,330
14	27,400	44,880
15	25,580	41,880
16	23,980	39,270
17	22,570	36,960
18	21,310	34,900
19	20,190	33,070
20	19,180	31,410
21	18,270	29,920
22	17,440	28,560
23	16,680	27,320
24	15,990	26,180
25	*15,350	25,130

\*While safe at these spans, the deflection in each case will be greater than the allowable limit for plastered ceilings, which is 1/360th of the span.

### Approximate Weight and Strength of Manila Rope

Manila, Sisal, New Zealand, and Jute Ropes weigh (about) alike. Tarred Hemp Cordage will weigh (about) one-fourth more. Manila is about 25 per cent stronger than Sisal. Working load about one-fourth of breaking strain.

Circumference in Inches	Diameter in Inches	Weight of 1000 Feet in Pounds	Number of Feet and Inches in One Pound		Strength of New Manila Rope in Pounds
			Feet	Inches	
3/4	3/4	23	50		450
1	3/4	33	33		780
1 1/4	3/4	42	25		1000
1 1/4	1/2	52	19		1280
1 1/2	1/2	74	11		1760
1 3/4	1/2	101	9		2400
2	3/4	132	7		3140
2 1/4	3/4	167	6		3970
2 1/2	1 1/4	207	5		4900
2 3/4	1 1/4	250	4		5900
3	1 1/4	297	3	6	7000
3 1/4	1 1/4	349	2	10	8200
3 1/2	1 1/4	405	2	4	9600
3 3/4	1 1/4	465	2	1	11000
4	1 1/2	529	1	10	12500
4 1/4	1 1/2	597	1	8	14000
4 1/2	1 1/2	669	1	5	15800
4 3/4	1 1/2	746	1	4	17600
5	1 3/4	828	1	2	19500
5 1/4	1 3/4	1000	1		23700
6	2	1190		10	28000
6 1/4	2	1291		9 1/2	33000
6 1/2	2 1/4	1397		8 1/2	38000
7	2 1/4	1620		7	44000
7 1/4	2 1/4	1860		6 1/2	50000
8	2 3/4	2116		5 1/2	60000
8 1/4	2 3/4	2388		5	63000
9	3	2873		4 1/2	67700
9 1/4	3	2983		4	70000
10	3 1/4	3306		3 1/4	78000

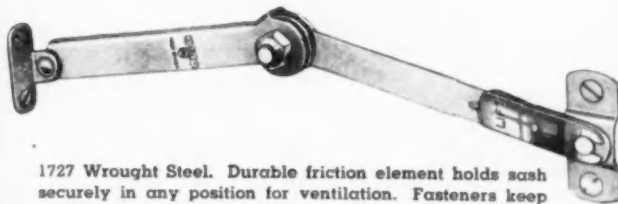
# 20% Saving IN FUEL COSTS!

**That's A  
Selling Point for  
Your New Houses!**

Today's home buyer demands winter protection — and he knows that Storm Sash will give it to him. Winter Windows, properly applied with quality Storm Sash Hardware, not only eliminate the discomforts that come from drafts but tests show they save up to 20% on heating costs . . . a selling point you shouldn't overlook!

In the complete Stanley line you'll find exactly the Storm Sash Hardware you need. Made of heavy wrought steel in durable rust-resistant finishes, Stanley Storm Sash Hardware will "stand up" under the severest conditions. A few of the items are shown here. Your hardware dealer has them ready for you. The Stanley Works, New Britain, Conn.

## STORM SASH FASTENERS AND SETS



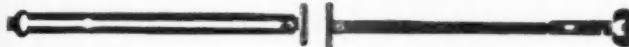
1727 Wrought Steel. Durable friction element holds sash securely in any position for ventilation. Fasteners keep the window tightly closed and locked. No rattling.

1723 1/2. Similar to 1727 above, but with high base and offset arm for use with sliding screens.



1732 Set. Wrought Steel. For sash hung outside casing. Special flared hook won't slip from eye. Wing-nut fasteners hold sash securely.

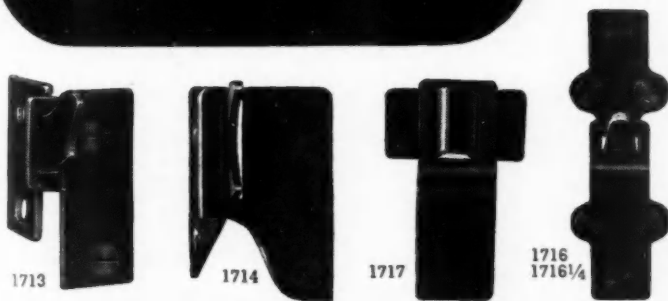
1729 Wrought Steel. Sash can be held in any position for ventilation. Especially good where sliding screens are used.



1718. Wrought Steel. Reversible. Locks sash when closed.

1719 Wrought Steel. End slot in arm is shaped to make a tight wedge-fit in the guide.

## STORM SASH HANGERS



1713 Wrought Steel for light sash. 1714 for heavy sash. Use where head casing will not permit use of surface hangers.

1716 Wrought Steel; 1716 1/4 Wrought Brass. For heavy sash hung flush with casing. Made of extra heavy metal.

1717 Wrought Steel. For sash hung flush with casing. Shape of hook allows sash to be easily hung from inside.

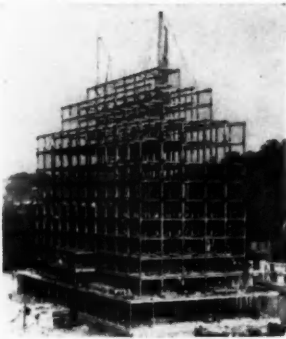
# STANLEY

Trade Mark

HARDWARE FOR CAREFREE DOORS

1939  
d for  
as  
pounds  
0-Inch  
25 Lbs.  
26,050  
23,680  
21,710  
20,040  
18,610  
17,360  
16,280  
15,320  
14,470  
13,710  
13,020  
will be  
high is  
d for  
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pounds  
5-Inch  
42 Lbs.  
62,820  
57,120  
52,300  
48,330  
44,880  
41,880  
39,270  
36,900  
34,900  
33,070  
31,410  
29,920  
28,560  
27,320  
26,180  
25,130  
will be  
high is  
Hemp  
stronger  
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Manila  
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450  
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19500  
23700  
28000  
33000  
38000  
44000  
50000  
60000  
63000  
67700  
70000  
79000

**NOW—ADD NEW PROFITS TO  
YOUR REGULAR VOLUME WITH  
INTERNATIONAL  
STEEL BUILDING MATERIALS**



State Office Building  
Frankfort, Kentucky  
All-Welded Construction



Steel Garage 60' X 80' X 14'  
Citrus Growers Ass'n  
Largo, Florida



Paramus Skating Rink, Park Ridge, N. J.  
220' x 120' floor area with clear span bowstring truss.

Industries in your city are expanding . . . outgrowing their old buildings . . . looking for a quick and economical solution to their new housing problems.

With International's help, you can fill the building needs of the industries in your locality . . . and add profitable new volume to your regular business.

International Steel Buildings are individually designed to fill special industrial requirements, but are assembled from standard parts carried in stock. They are low in first cost, inexpensive to maintain, durable and fire-safe.

Whether you want a steel building for an industrial plant, trusses for a garage or steel sash for an apartment, International can give you prompt delivery from its vast stock—at competitive prices!

**WRITE TODAY** for catalogs and prices of International Standard Steel Building Materials—including Structural Steel, Bowstring Trusses, Steel Doors and Windows, Steel Buildings, Lintels, Joists, Beams, Store Fronts, Airplane Hangars, Deck and Roof Sheets.

**INTERNATIONAL  
STEEL COMPANY**

1342 Cleveland Ave.

Evansville, Indiana

**Safe Loads on Stud Partitions**

Weight and Strength Based on Actual Size Board Measure.  
Add Weight of Plaster or Ceiling.  
Single Plate Top and Bottom Included, Same Size as Studs.  
Safe Load Based on Studs Being Bridged at Center.

Nominal size	Actual size	Distance on centers, inches	Height, feet	Per Linear Foot of Partition, Safe load, pounds	Weight, pounds	Partition, Board feet
2 x 4	1 7/8 x 3 7/8	12	8	3723	16.30	6.66
"	"	"	10	3180	19.56	8.00
"	"	"	12	2631	22.82	9.33
"	"	16	8	2793	13.04	5.33
"	"	"	10	2355	15.50	6.33
"	"	"	12	1974	18.75	7.66
2 x 6	1 7/8 x 5 7/8	12	8	5787	25.30	10.00
"	"	"	10	4926	30.56	12.00
"	"	"	12	4076	35.42	14.00
"	"	16	8	4326	20.24	8.00
"	"	"	10	3699	24.03	9.50
"	"	"	12	3057	27.83	11.00
2 1/2 x 6	2 1/4 x 5 1/2	12	8	9079	34.30	12.50
"	"	"	10	8250	41.16	15.00
"	"	"	12	7422	48.02	17.50
"	"	16	8	6808	27.44	10.00
"	"	"	10	6187	32.59	12.00
"	"	"	12	5566	37.73	13.75
3 x 6	2 3/4 x 5 1/2	12	8	11823	42.00	15.00
"	"	"	10	10992	50.40	18.00
"	"	"	12	10175	59.80	21.00
"	"	16	8	8868	33.60	12.00
"	"	"	10	8244	39.90	14.25
"	"	"	12	7630	46.20	16.50
2 x 8	1 7/8 x 7 1/2	12	8	7692	33.80	13.33
"	"	"	10	6570	40.56	16.00
"	"	"	12	5436	47.32	18.66
"	"	14	8	4315	54.08	21.33
"	"	"	16	5769	27.04	10.66
"	"	"	10	4927	32.11	12.66
"	"	"	12	4077	37.18	14.66
"	"	"	14	3236	42.25	16.66
2 1/2 x 8	2 1/4 x 7 1/2	12	8	12382	46.80	16.66
"	"	"	10	11252	56.16	20.00
"	"	"	12	10122	65.52	23.33
"	"	14	8	9008	74.88	26.66
"	"	"	16	9286	37.44	13.33
"	"	"	10	8439	44.46	15.83
"	"	"	12	7591	51.48	18.33
"	"	"	14	6756	58.50	20.83
3 x 8	2 3/4 x 7 1/2	12	8	16124	57.20	20.00
"	"	"	10	14990	68.04	24.00
"	"	"	12	13877	80.08	28.00
"	"	14	8	12743	91.52	32.00
"	"	"	16	12093	45.76	16.00
"	"	"	10	11242	54.34	19.00
"	"	"	12	10408	62.92	22.00
"	"	"	14	9557	71.50	25.00

**Miscellaneous**

**To Drill Hardened Steel.** Cover your steel with melted bees-wax; when coated and cold, make a hole in the wax with a fine pointed needle or other article the size of holes you require, put a drop of strong nitric acid upon it; after an hour rinse off and apply again; it will gradually eat through. A mixture of one ounce of sulphate of copper, 1/4 ounce of alum, 1/2 teaspoonful of powdered salt, one gill vinegar and 20 drops of nitric acid will make a hole in steel that is too hard to cut or file easily.

A small hole drilled at the end of a crack in sheet steel will stop it from growing longer.

**To Sharpen Reamers.** Use a stone on face and top of cutting edge, taking care to keep stone perfectly flat.

**To Temper Steel on One Edge Only.** Dip the edge to be tempered into hot lead until proper color; then temper in ordinary fashion.

**Annealing Steel.** For small pieces of steel take a piece of gas pipe two or three inches in diameter and put the pieces in it, first heating one end of the pipe and drawing it together, leaving the other end open to look into. When the pieces are of a cherry red, cover the fire with sawdust; use a charcoal fire, and leave the steel in over night.

**In Turning Steel or Other Hard Metal.** Use a drop composed of petroleum, two parts, and turpentine, one part. This will insure easy cutting and perfect tools when otherwise the work would stop, owing to the breakage of tools from the severe strain.

**To Clean Rusty Steel.** Mix ten parts of tin putty, eight parts of prepared Buck's-horn and twenty-five parts of Spirit of Wine to a paste. Cleanse the steel with this preparation; finally rub off with soft blotting paper. Immerse the articles in kerosene oil for some time and the rust will loosen and come off easily.

Ammonia Citrate takes rust and oxides off iron without attacking the iron.

**To Clean Zinc.** Rub with a piece of cotton cloth dipped in kerosene, afterwards with a dry cloth.

**TO COPPER IRON OR ZINC**

Brine water, three quarts; Sulphate of Copper, one pound. Mix, immerse the article, and let it remain till the color suits. Then wash and dry in sawdust.

**TO LOOSEN A SCREW THAT IS RUSTED IN IRON OR WOOD**

Heat a piece of iron and then place it against the head of the screw; the heat will cause the screw to expand and break the rust; let it cool off, and the screw will contract again, and will then be easily removed.

# JUST WHAT DOES CALCIUM CHLORIDE DO FOR COLD WEATHER CONCRETE?

## DO YOU KNOW THESE FACTS:

● The *National Bureau of Standards* tests show that the one-day strength of 40° F. concrete was 91% less than 70° F. concrete . . . that it takes three days for 40° F. concrete to equal the one-day strength . . . that at seven days, the 40° F. concrete was still 50% weaker than 70° F. concrete.

● SOLVAY CALCIUM CHLORIDE IS A DEFINITE AID IN OFFSETTING THE EFFECTS OF LOW TEMPERATURES.

*National Bureau of Standards* tests prove that addition of calcium chloride to 40° F. concrete increased the one-day strength 300% . . . three-day strength 117% . . . seven-day strength 75%.

● SOLVAY CALCIUM CHLORIDE USED WITH ALL PORTLAND CEMENTS—halves time with high early, as well as standard, white and colored portland cements.

● BETTER CONCRETE, ADDED SAFETY, LOWER COSTS.

● Solvay Calcium Chloride increases final strength 8 to 12% . . . provides dependable curing . . . produces denser, more waterproof concrete.

● Early strength shortens cold weather danger.

● Total costs are substantially cut since delays are avoided, forms removed earlier, finishing speeded.

### GET ALL THE FACTS FROM THIS NEW BOOK

New 44 page book, packed full of facts on the use of calcium chloride in concrete. Mail coupon immediately for your copy.

## SOLVAY SALES CORPORATION

*Alkalies and Chemical Products Manufactured by The Solvay Process Company*

40 RECTOR STREET

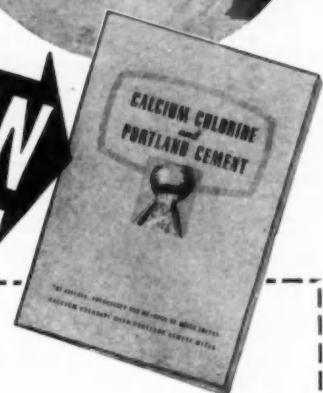
NEW YORK, N. Y.

# SOLVAY

TRADE MARK REG. U. S. PAT. OFF.

# CALCIUM CHLORIDE

for BETTER CONCRETE  
at LOWER COST!



SOLVAY SALES CORPORATION  
40 Rector Street, New York, N. Y.

Kindly send me a copy of your new booklet  
"Calcium Chloride and Portland Cement."

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City \_\_\_\_\_

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Contractor     Architect     Plant Operator     Engineer

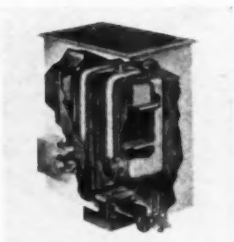
# WHY



**INSTALL  
PAYNE GAS  
FLOOR FURNACES  
IN LOW COST  
HOMES ?**

**BECAUSE THEY SAVE MONEY!** Payne Gas Floor Furnaces eliminate costly basement excavations, are quickly and easily installed. Scientifically designed and precision-built for years of trouble-free service, Payne furnaces do away with expensive service calls.

**BECAUSE THEY GIVE Satisfaction!** Payne Gas Floor Furnaces are the finest built — provide instant, healthful, circulating warmth. Homeowners are enthusiastic about Payne's unitized heating — warmth when and where it is wanted, at the right temperature, with no waste fuel. Profit by the prestige of Payneheat!



Recirculating air system provides constant circulation at uniform temperature. The air never comes in contact with the gas flame. No oxygen depletion. No sweating walls. No excessive dryness. Manual or automatic control. Eight sizes from 15,000 to 80,000 B.T.U.'s per hour.

**... BUT DON'T STOP THERE ...**

Finish up a good installation with the famous Payne "A" Vent — the safest, most efficient vent pipe you can buy! An inner tube of 99.6% pure aluminum, impervious to burned gas, produces a hot stack almost immediately, assuring perfect draft. Two layers of asbestos and an outer casing of galvanized iron give full insulation which prevents cooling of the inner tube — overheating on the outside.

Don't take a chance on inferior venting. Look for the orange-spiral stripe that marks Payne "A" Vent!

**PAYNE FURNACE & SUPPLY Co., Inc.**  
BEVERLY HILLS, CALIFORNIA

## News of the Month

Building Activities and Meetings

### September Building Continues Upward Trend; 50 Per Cent Above 1938 Likely

FOR the first half of September contract figures from F. W. Dodge Corporation showed that residential building amounted to \$52,674,000 in 37 eastern states. Since this figure is almost 50 per cent larger than that for the same period last year, the foreign situation had not caused any adverse change in the upward trend of residential building during this first two weeks for which figures are available. The statistics for the four classes of construction, as recorded during August, are as follows:

37 Eastern States	August, 1939	August, 1938	Sept. 1-15, '39
Residential .....	\$127,163,000	\$ 99,732,000	\$ 52,674,000
Non-Residential .....	69,882,000	87,316,000	41,670,000
Public Works.....	95,170,000	88,113,000	41,566,000
Utilities .....	20,113,000	37,980,000	24,341,000
Total .....	\$312,328,000	\$313,141,000	\$160,251,000

### NEWS BRIEFS—

**H. H. SIMMONS**, advertising manager of the Crane Co., has been promoted to manager of advertising and sales promotion, succeeding Russell G. Creviston, who assumes a new position, director of trade relations. . . . **JAMES A. STERLING**, formerly advertising and sales promotion manager of the Norge Div., Borg-Warner Corp., has been advanced to the position of general merchandise manager for all Norge products; George G. Whitney succeeds Mr. Sterling as advertising manager. . . . **BERGER** Mfg. Div., Republic Steel Corp., has been awarded the largest recorded U. S. order of kitchen cabinets to be used for Metropolitan Life's Parkchester Development, which has 12,247 kitchens.



H. H. SIMMONS

\*\*\*

### BUILDING BUZZ

by Edgar Allen, Jr.



"I think you'd better put in an additional large closet—my husband insists on a dent!"





**"ROUGHING IN"**  
*Starts Immediately*  
*when you use*



**LONG-SPAN**  
**STEEL FLOOR AND ROOF SYSTEM**

*The Quick-Welded Fireproof Construction*

THERE is no waiting for concrete to dry when you build floors, roofs or ramps of Wheeling Long-Span Steel joists. Each unit is pre-fabricated of 12 or 14 gauge Wheeling COP-R-LOY to correct dimensions and is ready to put into position and weld to adjoining joists. No cutting. No fitting. And no chance of wrong assembly. Accuracy does not depend upon the skill of the workman. The completed deck is instantly available for the supplies of steamfitters, electricians and tradesmen. "Roughing in" starts immediately. Write for full details.



*A crew of 6 men can place, weld and complete approximately 1,000 square feet of Long-Span Steel Floor and Roof System in one hour*



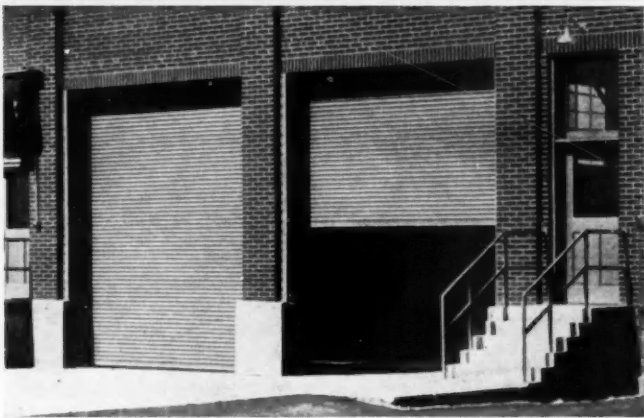
**WHEELING CORRUGATING CO.**

WHEELING, WEST VIRGINIA

*Offices in Principal Cities*

<p>LONG SPAN STEEL JOISTS</p>	<p><b>WELDED INTO A RIGID DECK</b></p>	
	<p><b>FOR ANY TYPE OF FLOORING</b></p>	<p><b>OR BUILT-UP ROOFING</b></p>

## What KINNEAR means to the Contractor . . .



Quick and accurate estimates on all door requirements . . . accurate designs and working drawings . . . the full cooperation, at the time of installation, of a trained construction crew . . . relief from the responsibility entailed in speedy and proper installation . . . these are a few of the reasons Kinnear Doors have won such wide favor among contractors. They have learned that when they accept the Kinnear bid, they are money ahead . . . and, at the same time, they protect their reputation for rendering client satisfaction.

### STEEL ROLLING DOORS

Rugged, highly efficient and space-saving. Interlocking steel-slat curtain rolls upward in steel jamb-grooves, and coils compactly overhead. For manual, mechanical or electrical operation. The original door of this type—its efficiency proved over nearly half a century!

### Rol-TOP DOORS, Wood or All-Steel

Highest Quality, sectional, upward acting doors that operate on special ball bearing rollers in rigidly mounted steel tracks. Counterbalanced for easiest operation. Weathertight "keystone" seal. The all-steel Rol-Top is exceptionally durable—can't sag, warp, split or pull apart. Built in any size with provision for any number of light sections.

Kinnear also makes Steel Rolling Fire Doors and Shutters, Bi-folding Doors, Barrier Rol-TOP Doors, the famous Kinnear Steel Rolling Grille and other special types of upward-acting doors. Write for catalog.

**THE KINNEAR MANUFACTURING COMPANY**  
1560-80 FIELDS AVENUE COLUMBUS, OHIO

Offices and Agents In Principal Cities  
Factories: Columbus, Ohio; San Francisco, Cal.

# KINNEAR

ROLLING DOORS

## LETTERS from Readers on All Subjects

Facts, opinions and advice  
welcomed here

### Correcting Davison's Figures

Washington, D.C.

To the Editor:

This letter will prove that I have not entirely forgotten my promise to send to you some material in reference to the relative bearing of interest rate and building cost reduction on the total expense to the owner in acquiring a house.

The following example illustrates the effect of a 10% reduction in building costs as compared to a 10% reduction in interest rates, as prepared by our Research Division.

Assuming a \$5,000 house, a \$500 down payment, a \$4,500 mortgage for 25 years, 1/2 of 1% FHA premium, a tax rate of \$25 per \$1,000 (the approximate national average), hazard insurance premium of \$30 per year, and water rent of \$15 per year, the monthly payments based on a 5% mortgage would be:

Monthly amortization payment to principal and interest (\$4,500 mortgage).....	\$26.33
Average FHA premium.....	1.12
Average taxes.....	10.42
Average hazard insurance premium.....	2.50
Average water rent.....	1.25

Total monthly payment.....\$41.62

Based on a 4 1/2% mortgage, the monthly payment would be:

Monthly amortization payment to principal and interest (\$4,500 mortgage).....	\$25.02
Average FHA premium.....	1.13
Average taxes.....	10.42
Average hazard insurance premium.....	2.50
Average water rent.....	1.25

Total monthly payment.....\$40.32

Consequently, a 10% reduction in the mortgage interest rate from 5% to 4 1/2% results in a reduction in the home owner's monthly payment of \$1.30 or 3.12%.

On the other hand, assuming that the \$5,000 house can be produced for \$4,500 as a result of a reduction in material, labor, or land cost, and with the same down payment, the monthly payment would be:

Monthly amortization payment to principal and interest (\$4,000 mortgage).....	\$23.40
Average FHA premium.....	1.00
Average taxes*.....	9.38
Average hazard insurance premium*.....	2.22
Average water rent.....	1.25

Total monthly payment.....\$37.25

\*Based on the reduced value of the property.

This is a reduction of \$4.37, or more than 10%, in the monthly payment.

In other words, a 10% reduction in the original cost of the house is more than three times as effective as a 10% reduction in the interest rate. A 10% reduction in the interest rate results in a saving to the borrower over the entire 25 years of \$390, but a reduction in any or all of the items entering into the original construction of the house, amounting to 10% of the original cost of the house, results in a saving over the entire period of \$1,311.

FEDERAL HOUSING ADMINISTRATION,  
By Miles L. Colgan, Assistant Administrator.

### More About John T. Flynn's Article

Wichita, Kans.

To the Editor:

I am sending you a copy of a letter which I recently sent to *The Reader's Digest*, Pleasantville, N.Y. It reads as follows:

"In the last issue of your magazine, there appears an article  
(Continued to page 110)

**MORE SALES! MORE PROFITS!**  
**WITH MCKINNEY FORGED IRON SAMPLE BOARDS**

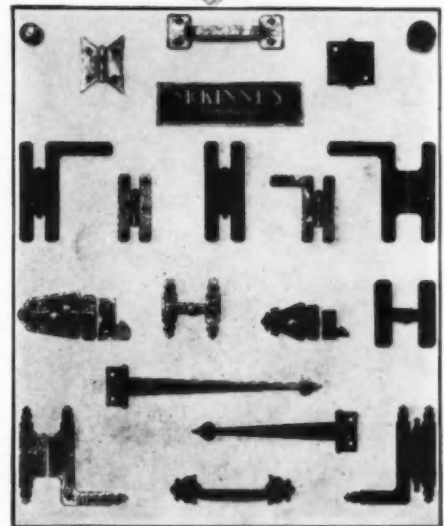


No. 7

McKinney Forged Iron Sample Boards tell a complete sales story of authentic design, master craftsmanship and beautiful texture.

Available in nine standard panels that make *easier selling* for you and *easier buying* for your customers.

*Write for Complete Details*



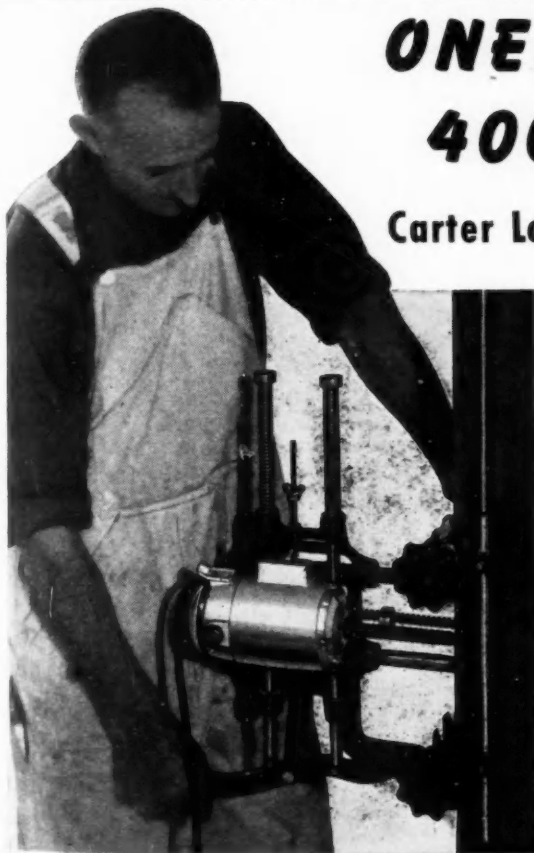
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**MCKINNEY MANUFACTURING COMPANY : PITTSBURGH, PA.**

**DESIGNERS AND MANUFACTURERS OF GOOD HARDWARE FOR 73 YEARS**

**ONE MAN CAN MORTISE  
 400 DOORS PER DAY!**

**Carter Lock Mortiser Makes BIG Profits for Contractors**



ON one Ohio real estate development alone, a Carter Lock-Mortiser paid for itself in just five days . . . and then went right ahead piling up profits for the contractor.

Quickly set up, the Carter Lock-Mortiser cuts a finished mortise in just 30 seconds — can be arranged to spot for knob and keyhole. In continuous operation, it will actually mortise a door a minute. Four simple adjustments change over from one size lock to another in 90 seconds. Uniform feed means a *smoother* cut. And every mortise is parallel with stile and exactly centered.

Send coupon right now for the facts on this money maker.

**FEATURES**

- Uniform Feed. No overloading of motor.
- 4 Quick Adjustments for lock-size changeover.
- 30 Seconds Per Cut — a mortise a minute in continuous use.

**CLIP THE COUPON NOW!**

R. L. Carter Div., The Stanley Works  
 133 Elm Street, New Britain, Conn.

Please send complete literature and prices on the Carter Lock-Mortiser.

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

**CARTER MONEY MAKING TOOLS**



**Controlled building —  
controlled costs —  
therefore profits assured**

That's what the contractor has —and gets—with Precision-Built construction!

"TOMORROW'S HOMES" tells the full story of the Precision-Built method, shows you how to control building, control costs, use local labor and local materials, and be sure of your profits in advance!

This book, written after 15 years of research, tells exactly how to sell, fabricate and erect houses—in 17 to 30 days. It shows you how to cut costs. "TOMORROW'S HOMES" contains more than 300 pages and is profusely illustrated with photographs and full construc-

tion details. It provides a complete, accurate and rapid estimating system—with area, lineal foot and cubic yard tables from 1'0" x 1'0" to 50' x 50'.

The Precision-Built System of Construction is thoroughly proved. Some \$3,000,000 of architect-designed, Precision-Built Homes have already been erected. The results of this experience are available to you.

This valuable new book—normally priced at \$10.00 per copy—is privileged to established builders at \$5.00 per copy. Use the coupon below—mail it in today—to make certain of getting your copy.

*Weatherproof*  
**HOMASOTE**  
*Insulating and Building Board*

HOMASOTE COMPANY, TRENTON, NEW JERSEY

I enclose check ( ) money order ( ) to secure \_\_\_\_\_ copies of TOMORROW'S HOMES at \$5.00 per copy.

( ) I would like further details about TOMORROW'S HOMES.

Name.....

Address.....

City..... State..... 01

**Letters—**

(Continued from page 108)

by Mr. John T. Flynn condemning the building industry for its methods and practices and everyone who owns a home or pays rent as suckers.

"It was a great surprise to me, as to many others, that your magazine published this article. I have wanted to believe what I read in *The Reader's Digest*, and there is so much that I know is untruthful in Mr. Flynn's article.

"In our trade papers there have appeared many replies to Mr. Flynn's brain storm.

"May I call to your attention an article by R. E. Saberson in the August issue of the *American Builder*. Mr. Saberson has delved into the accusations made by Mr. Flynn, and points out specifically where some of them are wrong.

"You will not be fair to your readers unless you also publish Mr. Saberson's article. There are two sides to problems, and in this one you will agree, after reading Mr. Saberson's article, that plain common sense makes his side the right side.

"Be fair to one of our largest industries, be fair to all those whom Mr. Flynn brands as suckers, as your readers do live in houses, and publish Mr. Saberson's article."

BILL DAVIS, The Long-Bell Lumber Company.

**Wants "Collier's" to Apologize**

Stafford Springs, Conn.

To the Editor:

Pardon me if I suggest that the title of your editorial, page 39, August, should be "Building Industry Wants the *Public* to Have the Truth."

We poor lumbermen are tired of having this stuff taking up valuable space in the trade papers. There should be brains and money enough in our industry to force Collier's to apologize for and retract some of the implications in Mr. Flynn's article, and then to publish the truth, unadulterated by political propoganda, about this business of "home building."

C. H. MOORE, The C. H. Moore Co., Building Materials.

**Detroit Project Attracts Interest**

Grosse Pointe Park, Mich.

To the Editor:

I think you and your staff did a wonderful job in your presentation of the activities of our Association, the building business in Detroit, and our 1939 Project. This is an opinion which is apparently widely shared, if the evidence pointing to that conclusion continues to pile up. We have already received numerous letters and inquiries originating in all parts of the country—a distinct indication of the reader interest in your magazine.

W. J. GUINAN, Builder.

**Fighting Building Rackets in Detroit**

Detroit, Mich.

To the Editor:

I am enclosing our letter to the Michigan Attorney General at Lansing and his reply. Incidentally, it entirely coincided with the opinion we had formed some four weeks ago. Our letter, together with Mr. Read's, merely complete one part of the record. But the matter is not finished. In the war which the Greater Detroit Home Builders' Association is conducting for decent government, especially where it touches the building industry, this exchange represents only a minor skirmish.

GREATER DETROIT HOME BUILDERS' ASSOCIATION  
By W. J. Guinan.

Detroit, Aug. 17, 1939.

Honorable Thomas Read,  
Attorney General for the State of Michigan,  
Lansing, Mich.:

The activity directed toward convening a Grand Jury to delve into the alleged racketeering in the building industry has assumed an ominous degree of immobility.

But while official movement appears gradually to approach a dead stop, rumors grow and multiply.

These rumors are not at all complimentary either to the law enforcing officers of the State or to the present state of political morals.

(Continued to page 112)

# CONSTRUCTION COSTS REDUCED $\frac{1}{3}$

With **UNITS MADE ON THIS MACHINE**

THIS AUTOMATIC MACHINE PRODUCES NOT ONLY DUNBRIK but also DUNSTONE in 16 sizes, offering savings of  $\frac{1}{3}$  in material costs,  $\frac{1}{2}$  in mortar and  $\frac{1}{3}$  in labor, thus bringing permanent construction costs down to the level of good frame.

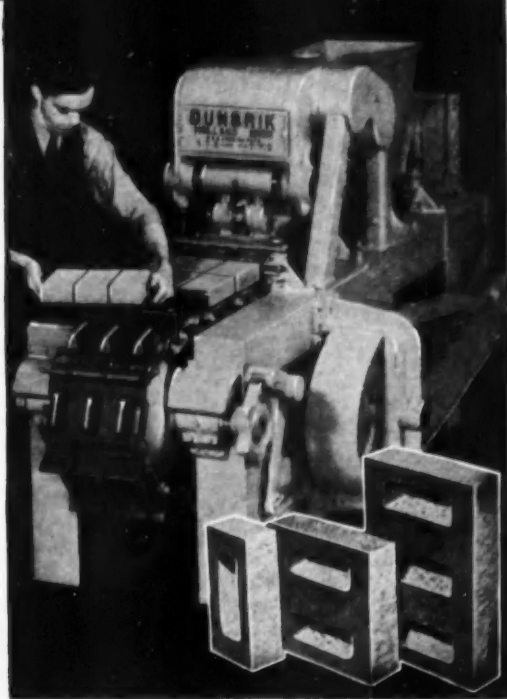
SOME DUNBRIK MANUFACTURERS, FORMERLY CONTRACTORS AND BUILDERS, recently established, have used or sold millions of units. One sold over three million the first year. Another sold 39 out of 45 home builders. Names furnished upon request.

THEY WERE EQUIPPED WITH EXCLUSIVE LINE PRODUCTION MACHINERY enabling them to manufacture at lowest cost. Their equipment costs were but a fraction of former methods of equal capacity. They were granted definite franchises protecting their market, business and future, including engineering and advertising service.

WE ALSO SUPPLIED THEM WITH PROVEN PROCESSES AND FORMULAS for producing DUNBRIK-DUNSTONE in over 40 colors, shades and textures. Products now being used by Government and City Building Departments throughout the country.

INVESTIGATE. LET US PROVE TO YOU THIS OUTSTANDING MANUFACTURING OPPORTUNITY. Write today for free booklets. They tell the whole story. Prepare now to cash in on the coming shortage in building materials and price advances.

**W. E. DUNN MFG. CO.**  
450 West 24th St., Holland, Michigan



## COAL WINDOWS

"For Convenience and Safety"  
Door and frame of heavy-gauge steel—Malleable iron hinge pins, body of steel, rigid in construction. Finished in black japan.

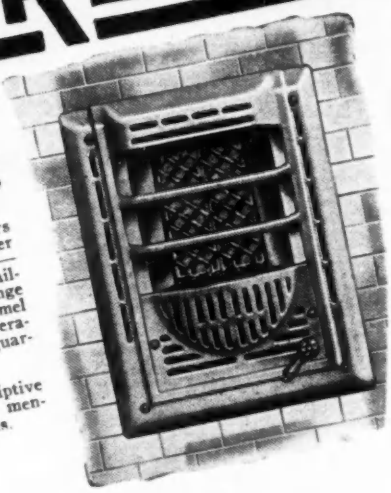
# PEERLESS

## GAS HEATERS

"For Quick Clean Heat"

These gas-fired Wall Heaters are ideal for baths and other small rooms—easy to install—no floor space required. Available in white, and wide range of colored Porcelain Enamel Finishes. Economical in operation—Highest efficiency guaranteed.

Write for complete descriptive literature on the above mentioned building specialties.



**PEERLESS MANUFACTURING CORP.**  
1400 West Ormsby Ave. Louisville, Kentucky



# PULLMAN UNIT SASH BALANCES

NO—WEIGHTS, CORDS OR PULLEYS

## The Most Perfect Window

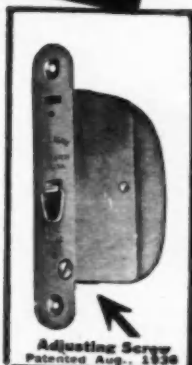
for any home is the double-hung window with Pullman UNIT Sash Balances. Pullman Sash Balances assure perfect window control. They give you easy, quiet operation and entirely encased all pressed steel construction; light in weight and non-breakable.

### ADJUSTABLE BALANCES

Tension of inside coiled spring is quickly changed with an ordinary screw driver, without removing balances.

You can install a set in 10 to 15 minutes. This is the greatest improvement in Sash Balances in 50 years.

Guaranteed for the life of the building.



Write for **FREE LITERATURE**

## PULLMAN MFG. CORPORATION

Established 1886

A Half Century of Progress

1180 University Ave.

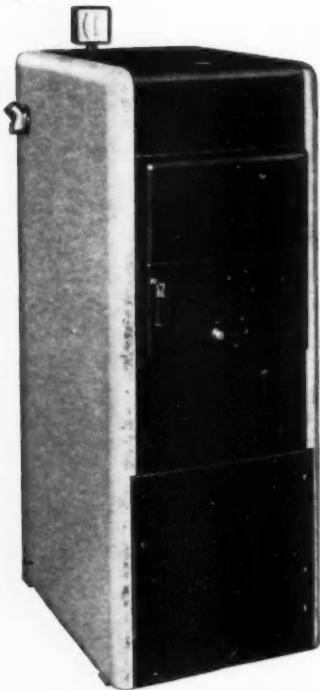
Rochester, N.Y.



"The radiator system in the sample house is certainly making a hit. That National Boiler seems to have an unusual appeal, as nearly every buyer checks to make sure it will be installed in his house. It's a smart buy."

The exceptional beauty of the Heat Extractor, combined with many new features for greater convenience and economy, will help sell houses anywhere. Your prospects will appreciate its space-saving compactness. It will operate on the first floor if a basement is not provided.

#### PRICED — DESIGNED FOR SMALL HOMES



★ The Heat Extractor is especially designed and priced for small homes. Sections are assembled at the factory, the wet base reduces setting-up time and the amount of insulation around the combustion chamber.

The water-backed base conserves heat that ordinarily escapes through the base and floor, and also permits the boiler to set on a wood floor.

Other features: Fingers on heating surface; long fire travel through five flue passages; beautiful red and black crinkle finish; plus a bond to guarantee ratings and materials.

★ Model illustrated is for oil-firing. Burner can be placed at front or rear. Also available for coal or gas. Sensitive damper regulation, ash pan and other new features on hand-fired model. See your heating contractor for complete details or write for catalog.

**THE NATIONAL RADIATOR COMPANY**  
General Offices · Johnstown, Pa.

#### Letters—

(Continued from page 110)

We can scarcely believe that anyone can be unconscious of the fact that there has been unceasing criminal activity during the past two years in the Detroit area, which has had as its objective the demoralizing of the local building industry.

We can scarcely believe that anyone can be unaware of the fact that such activity adds considerable to the cost of home building, and by the same token, lessens the opportunity of home ownership.

Nor can we possibly be convinced that Government, which has been in a constant state of (PUBLIC) anguish for the past five years over the condition of housing costs, and has constantly bewailed (PUBLICLY) this fact, can be unaware (PRIVATELY) that racketeering and criminal destructiveness add to the cost of housing. And that the subsequent burden falls on the small home owner and taxpayer.

We cannot conceive of the possibility that the officials whose sworn duty it is to protect the lives, properties and rights of (ALL) the people can be ignorant of the fact that within the last two years—

1. Homes have been blown up and destroyed.
2. Homes have been stained, damaged and wrecked.
3. Workingmen have been threatened, intimidated and beaten up.

And finally, we cannot believe that Government (PRIVATELY) is ignorant of the fact that not one single constructive or effective step has been taken to correct this situation, and to eliminate such practices by convicting and punishing those responsible.

It is not strange that the air is filled with rumors; it would be very strange if the opposite were true.

If the man in the street thinks the proposed Grand Jury investigation has sunk in the cesspool of political expediency, who can say that his logic is bad? Racketeering and big money are evil twins, and who can blame the man in the street if he thinks these twins (PRIVATELY) exert more influence than the entire body of honest citizenry?

Who can blame the man in the street if he is becoming skeptical of the (PUBLIC) Government concern in the matter of Housing, when events shape themselves to indicate that this concern (PRIVATELY) is only a (PUBLIC) display of empty lip service.

We are, therefore, directing to you this inquiry, that these rumors, at least within the building industry, may cease to be rumors; that they may be destroyed or translated into fact.

And we earnestly solicit your consideration of the following questions and respectfully request specific answers:

1. Has the proposed plan for a Grand Jury Investigation of unlawful practices in the Detroit Building Industry been abandoned? Is so, why?
2. If this plan has not been abandoned, what is the present position of the plan, and when may definite action be expected?

THE GREATER DETROIT HOME BUILDERS'  
ASSOCIATION.

Lansing, Mich., August 25, 1939.

Mr. Edmund Kuhlman,  
Executive Vice President,  
Greater Detroit Home Builders' Assn.:

For your information, I wish to advise that during the last three months, with the limited facilities available, I investigated the alleged racketeering to the end that sufficient information would be obtained to warrant the calling of a grand jury.

Under date of August 21, I filed with the Circuit Court for the County of Wayne a petition asking that a grand jury be convened for the purpose of investigating alleged building rackets, gambling, bribery and other crimes in the Detroit area.

This petition was denied by the Wayne circuit bench sitting en banc. At the time that my petition was denied, a prior petition was before the court which was sufficiently broad to include all that I had hoped to bring before the grand jury. This petition was granted. Therefore, co-operating with the grand jury, we have today offered and made available to the grand jury all the information in our files pertaining to the alleged rackets in the Detroit area. I suggest that any information obtained by you by reason of your private investigation be turned over to Hon. Homer Ferguson or his staff.

THOMAS READ, Attorney General, State of Michigan.

**One Room Paneled  
with GENUINE WOOD  
in Every Modern Home!**

—yesterday, a designer's dream;  
... to-day, a reality

**DELUXE  
WELDBORD**

DECORATIVE HARDWOOD PANELS

at **17½¢**

Per Sq. Ft.

F. O. B. Warehouse

abruptly take fine woods out of the luxury class and put them within the budget-reach of everyone who builds or re-models.

**WELDBORD** panels come in economical **BIG** sizes—4'x8', 4'x7' and 4'x6', in ¼" thicknesses only. They are **HARDWOOD PLYWOOD** throughout with faces of American Walnut, Plain White Oak or African Mahogany, all faces running the long way of the panel, and all are hot-press resin-bonded for unusual permanence. Pre-finished panels with matching moldings at somewhat higher prices.

**THINK OF IT!** The paneling for a 12'x15' living room costs less than \$55.00. Compare this with the cost of any other type of wall finish—and the **WELDBORD** wall is far more durable, costs nothing to maintain and has all the aristocratic yet delicate charm which man has associated with fine woods since time began.

**For DRI-WALL Construction  
use Blue Label WELDBORD**

the hardwood plywood wallboard which takes paint or wall paper perfectly. Cross-grain construction for extra stiffness—check-proof surface—no grain raising.

**7½¢ per Sq. Ft. in most localities**

Lumber Dealers! Write for details of our  
"We-Stock-It" Selling plan

**UNITED STATES PLYWOOD  
CORPORATION**

EXECUTIVE OFFICES

616 WEST 46th STREET NEW YORK, N. Y.

Branch Offices and Warehouses in Principal Cities

Man PLUS idea  
leads to another  
triumph for  
**CONCRETE**



Concrete demonstration home erected by John D. Edwards, Milwaukee, Wis. Concrete walls, partitions, floor. Good looks, big value and aggressive merchandising pulled in the crowds—and made sales!

*Builder John D. Edwards  
of Milwaukee builds and sells  
37 firesafe Concrete Homes  
in one year!*

Mr. Edwards set out to offer buyers homes of such beauty, of such obvious and lasting structural value that sales-appeal would be sure-fire. And he *did* it—by the same means that has chalked up a long list of successes in other cities.

Mr. Edwards built a demonstration home—of **CONCRETE**. Through newspaper advertising and sales literature, he featured the fact that concrete won't burn. Concrete is firesafe and storm-proof... resistant to rot, rust, termites and decay... warm in winter, cool in summer... thrifty in upkeep. Prospects flocked in. He sold and built 37 concrete houses in 1938, and is having another big year in 1939.

**Test Concrete's Appeal in Your Community**

There's plenty of proof that builders and realtors can increase their sales and profits by becoming known as local builders of concrete homes. The first step is to get an attractive design. Then build a demonstration home. And *feature* the beauty, firesafety, long life and economy of concrete in sales calls and advertising.

Write us for helpful information

**PORTLAND CEMENT ASSOCIATION**

Dept. A10-3, 33 W. Grand Ave., Chicago, Ill.

A national organization to improve and extend the uses of concrete.

*Temseal insulates the residence of George K. Johnson, Warren, O. East Ohio Lumber Co., Warren, dealer. Interstate Sash & Door Co., Cleveland, wholesaler.*



STEP UP SALES WITH *Temseal*  
THE NEW, DOUBLE-SEALED SHEATHING!

**T**HERE'S plenty of good sales ammunition for you in Temseal—the new insulating sheathing made by Armstrong! This material is doubly sealed at the factory against both air and moisture infiltration.

This double coating of asphalt and strong kraft paper reinforcement also gives Temseal unusual strength. This makes buildings more rigid. Furthermore, the use of Temseal makes it unnecessary to use building paper or felt.

Armstrong's Temseal is available in the standard sheathing thickness of  $2\frac{5}{32}$ " , and in large boards 4' wide by 8', 8½', 9', 9½', 10', and 12' long. Let us send you a sample and complete details about this new Armstrong's Temlok product. Write today to Armstrong Cork Co., Building Materials Division, 979 Concord Street, Lancaster, Pennsylvania.



*Armstrong's*  
**TEMLOK INSULATION**  
De Luxe Interior Finishes  
TEMSEAL SHEATHING • LATH • MONOWALL

**Letters—**  
**Social Security Funds for Home Financing**  
Houston, Tex.

To the Editor:

I have read the August issue of the *American Builder* with a great deal of pleasure, especially the articles entitled, "The Building Industry Wants the Truth" and "The Building Industry's Ills Aired," but neither article seemed to give any answer to the problems of lower-cost housing that confront the building industry.

I own a lumber yard known as the "Texas Lay-More Tile & Lumber Company" at Three Rivers, Texas. Three Rivers is a small Texas town of 2250 population, agriculture and oil being the business of the surrounding country, and we have the same problems in lower-cost housing which apparently confront the rest of the country. Mr. B. J. Nelson is manager of my yard at Three Rivers and is a capable sales manager who thinks ahead and tries to overcome the obstacles that confront us. On my numerous visits to Three Rivers we have discussed at length the problems of lower-cost housing for persons who can afford to pay no more than \$10 to \$15 per month for their home and, during these many discussions, we decided to use FHA Title I, Class 3 Loans, which was apparently devised to meet this market; however, we have been unable, thus far, to find a lending institution that was willing to make this class of loan at 3½ per cent discount with so little investment by the prospective owner.

The class of home purchasers interested in these small low-cost homes will be the eventual recipients of the Social Security funds which are being amassed by our government, and the idea struck us that these funds could be put to exceptionally good use by providing homes now for the class of people who need them most and who will eventually be drawing from the Social Security funds when their earning days are over. Incidentally, the interest returns on these funds would certainly build up substantial reserves to be added to the tremendous amount of funds now accruing. We wrote to all the departments in Washington that we could think of, including FHA, the Social Security Board, Old Age Benefit Board, and even to the President of the United States, and, of course, received courteous replies from each and every one of them explaining why it could not be done, due to the present lack of legislation permitting the funds to be invested in that manner. In other words, the "buck passing" was handled with extreme finesse by each department. Mr. Nelson and I gave the job up as being one too large for us to cope with.

Last week I made one of my usual trips to Three Rivers and found Mr. Nelson very much elated. He said to me, "Gene, we had a very distinguished visitor in the yard this week. I was sitting at my drawing-board working on some plans and wondering how we could finance the job if we got it, when three men walked in the yard. I walked over, extending my hand, and said, 'Nelson is the name.' One of the gentlemen shook hands with me and said, 'Garner is the name, John Garner from Uvalde. My fishing partners and I are on the way to Corpus Christi for a little fishing trip. I saw your correspondence in regard to the use of Social Security funds for small home financing and I think it is one of the best ideas that has been advanced. Of course, you received the usual letters from the different departments explaining why this could not be done; however, the proposition is not only entirely feasible, but extremely desirable, and if you will proceed along certain lines to get the legislation inaugurated, I believe my office can be of help in seeing that the enabling legislation is passed.'"

We have searched the length and breadth of the country for funds to finance these small homes. The FHA has the setup for handling and insuring such loans, our only difficulty being to secure the loan. I might add that we have no building and loan association that we can turn to for this class of financial assistance and must depend upon outside funds. From our point of view, we know what it will take to cure the ills of the building industry in our small town and that is, money at a reasonable rate with which to provide homes for people in the low income bracket.

If your good office can stimulate a little agitation for the legislation needed to turn loose Social Security funds for the purpose of building small homes, you will render a tremendously worthwhile service to the building industry as a whole.

EUGENE C. TIPS,  
Texas Master Builders, Inc.





Visit The French Pavilion at the New York World's Fair

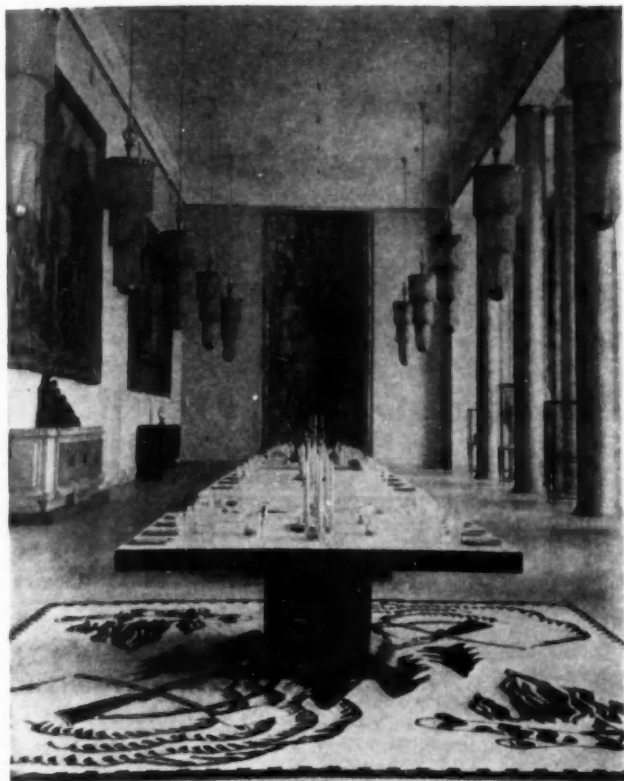


Photo by courtesy of the French Government

Salle des Fastes, Pavillon Francais, New York World's Fair

Architects: Expert and Patout, with M. Chaume, collaborator, Paris, France

Resident Architect: Dominique Berninger, New York
General Contractors: James Stewart and Co., New York
Plastering Contractor: J. A. Cuddihy Plastering Co., New York
Hawk Spread White Finish Used

The French did it Right!

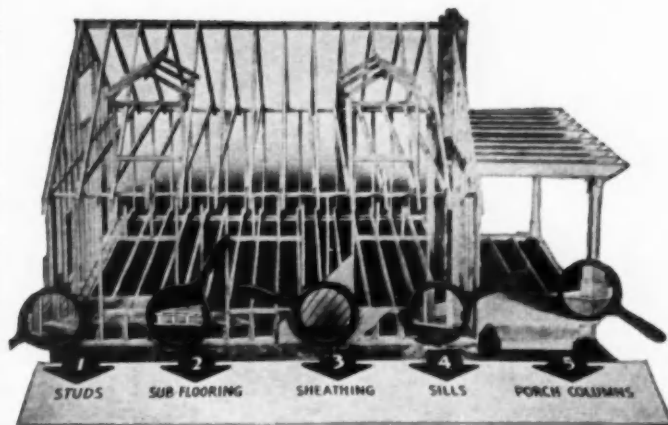
They insisted that only the finest materials be used in their building at the Fair. They were particular about the interior plaster work. So Hawk Spread White Lime Finish was used and the result is a thing of beauty.

Hawk Spread White Finish and Ohio White Finish-- always packed in Zig Zag Bags for easy identification-- produce the finest plaster work. Write for booklet telling how they are made -- why they are better.

The Ohio Hydrate & Supply Co., Woodville, Ohio

OHIO PRODUCTS SOLD EVERYWHERE IN FAMOUS ZIG ZAG BAGS
Ohio White Finish—Hawk Spread White Finish—Ohio Rite-wall Fibered Lime Plaster—Ohio Sanlime Finish—Mastite Masonry Mortar—Ohio Masons Lime—Ohio Ground Lime.

BUILDERS! Meet the Demand for DURABLE CONSTRUCTION



By Protecting the Vital 20%.

with DU PONT Chromated Zinc Chloride PRESERVED LUMBER

More and more home owners and investors are demanding protection against decay and termite damage--particularly for the "Vital 20%"--those sections of a building which are near the ground and foundations.

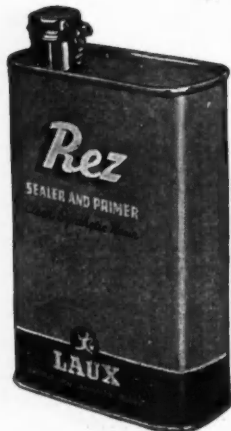
Use lumber treated with Du Pont Chromated Zinc Chloride particularly for these vulnerable areas. It lasts 3 to 5 times longer than untreated lumber and it is:

Decay resistant . . . termite repellent . . . fire retarding . . . readily fabricated . . . odorless . . . paintable . . . more resistant to abrasion . . . clean . . . economical.

Write today for complete details about Du Pont Chromated Zinc Chloride Preserved Lumber and the names of suppliers.

E. I. DU PONT DE NEMOURS & COMPANY INCORPORATED
GRASSELLI CHEMICALS DEPARTMENT
WILMINGTON DELAWARE

# AMAZING STAIN TEST TELLS REZ STORY



**The REZ Line**  
(Synthetic resin finishes)

**REZ**  
synthetic resin  
sealer, primer

**REZITEX**  
exterior resin  
plastic paint

**REZICOTE**  
stucco, brick,  
cement paint

**PLASTEREZ**  
interior resin  
plastic paint

Specify plywood, doors, millwork  
Resized-at-mill

THERE IS a "believe-it-or-not" difference in the two ends of this piece of wood. One is smooth, even, rich. The other rough, streaked and dull. Both were finished with the same stain, at the same time. BUT—the smooth, satin-like end was first given a single coat of LAUX REZ! Now note! That coat stops grain raise, provides a hard surface that finishes like hardwood. Try this test! See how REZ protects wood, gives a more beautiful finish. Write for free REZ sample and additional information.

## LAUX SALES CO.

(Division of I. F. Laucks, Inc.)

Seattle, Oakland, Los Angeles, Chicago, Minneapolis, Houston, Portsmouth, Va.; Vancouver, B. C.

Stocks available nationally: Harbor Plywood Corporation, distributors and warehouses in 22 leading cities; Lumber Reserve Supply Co., Des Moines; Reserve Supply Co., Minneapolis; Minot Builders, Minot, N. D.; Building Service, Great Falls, Mont.; Kohler-McLister, Denver; Rust Sash & Door Co., Kansas City; 4-States Supply, Carthage, Mo.; E. W. Camp, Cincinnati, Indianapolis; Lawrence R. McCoy, Worcester, Mass.

### Letters—

#### Likes New Home Design Book

New Orleans, La.

To the Editor:

I have received my copy of "Buyer-Approved Homes of Known Cost." I have also received the previous years' issues of the similar book and have found them exceedingly valuable in connection with house designing. I believe, however, that this year's book is the best of any of them, and if possible, I would like to get another copy for my office use.

W. H. SCALES,  
Architectural Engineer.

#### Wants "Man Hours" Data

Pawling, New York.

To the Editor:

I have received my first copy of your fine magazine. I am sure I will enjoy and benefit by reading it regularly.

I honestly tell you that the "TruCost" section will be appreciated by me. However, it could be more useful and helpful if you would include in your article the "man hours" for each square, section or piece of work. I don't believe labor varies to a great extent. If you would give us an average, it would be fine.

JOHN F. RICE, Carpenter.

#### Estimating Series Well Received

South Pasadena, Calif.

To the Editor:

I have mailed to you article number IX with 6 illustrations, on "How to Estimate Accurately," and will have the final article in your hands shortly to complete this series in a suitable manner.

I am still receiving requests for the previous articles already published by builders who have not seen the complete series; also requests for the concluding material. I have had letters from real estate promoters, lumber dealers, carpenters, contractors, one attorney, and today one from an architect. So apparently *American Builder* must enjoy a wide range of readers.

J. DOUGLAS WILSON.

\* \* \*

#### How Derby Does It

(Continued from page 58)

primed by dipping in white lead and oil. Galvanized finishing nails driven flush.

**EXTERIOR MILLWORK**—Clear Louisiana red cypress.

**SASH CORDS**—Windows hung with Samson "Spot" cord, Samson Cordage Works, Boston.

**INTERIOR MILLWORK AND TRIM**—Select cypress.

**STRUTS**—1" x 6" struts on 4' centers nailed to bearing partition added to brace rafters.

**SUBFLOOR**—Ends of subflooring nailed to 2" x 4" plate from underside.

**SCREENS**—Full length 2-panel screens, galvanized hangers with 16-mesh aluminum wire cloth.

**FLOORS**—Select 1" x 3" T. & G. plain red oak end-matched, machine sanded to smooth finish. One coat Pratt & Lambert oak floor filler rubbed in, 2 coats pure white gum shellac, 2 coats floor wax.

**SHEET METAL**—Copper bearing galvanized iron 26-gauge with 2-oz. zinc coating per sq. ft. or heavier.

**TERMITE SHIELDS**—26-gauge sheet metal placed to completely isolate ground connections from woodwork of building. Exposed edges neatly crimped or angled. Bed fully on piers and other bearing surfaces. Special attention directed to shielding at steps. Shields with neat tight clamps placed on pipes rising from the ground and anchor rods rising from foundation. Give 1 coat of red lead and 1 coat of lead and oil paint.

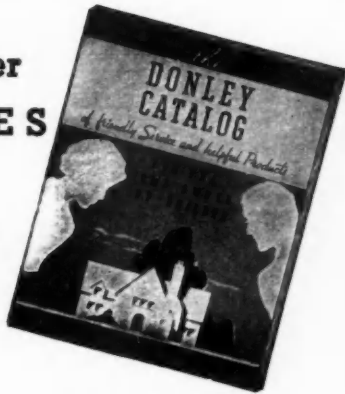
**ROOFING FELT**—30-lb. asphalt saturated roofing felt not less than 4".

**ROOFING**—Flintkote Dutch lap asbestos shingles in colors selected to harmonize with exterior trim.

**KITCHEN EQUIPMENT**—G-E dishwasher, sink with garbage disposal unit, Bendix home laundry, sink with garbage disposal unit to be roughed in by plumber and attached to wall by

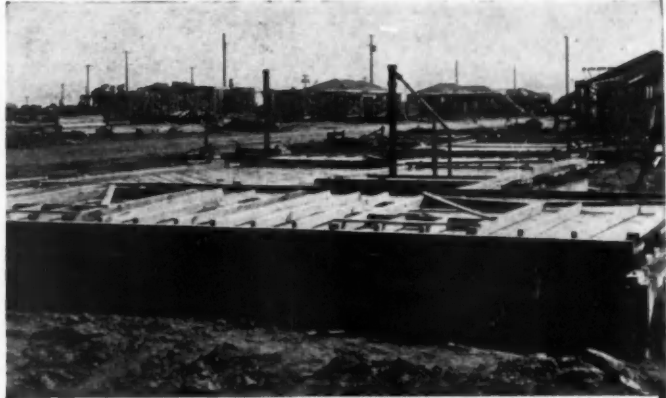
(Continued to page 118)

**Guide to Better  
FIREPLACES  
and Home  
Conveniences**



● This Twenty-First edition of the Donley catalog, fresh from the press, is much more than a record of merchandise. . . . In every page it conveys aid and inspiration to the designer and builder of homes. . . . Full information and details for making fireplaces work efficiently. . . . Installation data showing the varied applications of Donley Heatsaver Fireplaces. . . . Incinerators, septic tanks, package and mail receivers, coal chutes, basement windows and scores of helpful home devices are presented with exact data for ordering and installation of Donley Devices, sold by material dealers in every locality. Write today for this newest issue, fresh from the printers.

**DONLEY BROTHERS CO.**  
13910 Miles Ave., Cleveland, O.



**IT HELPS YOU  
SELL HOUSES!**

**WOLMANIZED LUMBER\* MEANS SAVINGS FOR  
HOME BUYERS, MORE SALES FOR YOU**



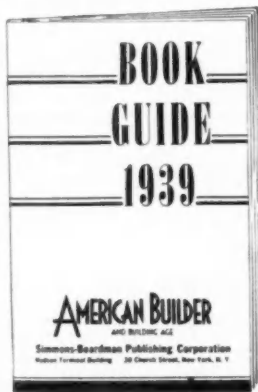
Forty houses by one builder, 58 by another, constructed with Wolmanized Lumber! It is used because it helps make sales. And it helps make sales because in the long run it means savings for the home owner.

Use Wolmanized Lumber to put your quality-and-economy point across. Tell prospects: "Notice the sills, joists, and subfloor in this house. These are danger points where decay and termite damage often causes expensive repairs. But we have used Wolmanized Lumber at these points. Wolmanized Lumber is pressure treated with a preservative which gives thorough protection against damage. It safeguards the whole house, but adds less than 2% to the total cost, far less than an average repair bill!"

It is a real value which helps you sell houses, and which has the approval of financing agencies. Write today for samples of pamphlets which you can use in explaining Wolmanized Lumber to your prospects. **AMERICAN LUMBER & TREATING COMPANY, 1406 Old Colony Building, Chicago.**

\*Registered Trade-Mark

**Free on Request**



**The New  
American Builder  
and Building Age  
BOOK  
GUIDE**

In the index of this 64-page, 6 x 9 catalog you will find listed the building books published or revised within the past 10 years. The Book Guide contains concise descriptions of 500 books, booklets and estimating forms. The latest plan books, up-to-date estimating books, concrete manuals, architectural handbooks and other building books of all kinds are fully described.

BOOK SERVICE DEPARTMENT

**American Builder and Building Age**

30 CHURCH STREET

NEW YORK, N. Y.

**WOLMANIZED  
LUMBER**

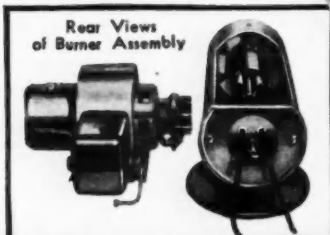
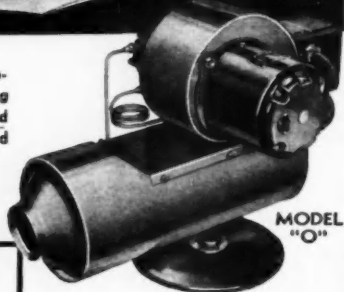
USED FROM HERE



TO HERE  
TO PROTECT THE  
WHOLE STRUCTURE

**Gar Wood PRESENTS A  
SENSATIONALLY NEW  
TYPE OF  
CONVERSION OIL BURNER  
that tops them all!**

The new Model "O" automatic Conversion Oil Burner—for new or existing home heating plants—provides stabilized air delivery, unobstructed air travel and quiet, clean combustion. Not temperamental. High winds, cold start-ups and poor draft conditions leave it virtually unaffected.



Air passes across the end of the tube (not through it) with adequate rotation causing the air to spread out fan-shape in exactly the same manner and shape as the conical oil spray leaving the jet. The result is a perfect, sunflower-shaped fire.

Dealers Investigate!

Write for Model "O" literature.

**GAR WOOD INDUSTRIES, INC.**  
AIR CONDITIONING DIVISION  
7924 RIOPELLE STREET • DETROIT, MICHIGAN  
CANADIAN DISTRIBUTOR: Engineering Industries Ltd., Leaside, Ontario

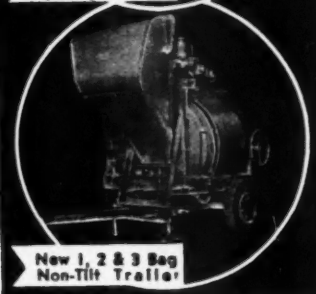


New 1/2 Bag End Discharge Tilter

- MIX FASTER
- MOVE FASTER
- BUILT TO "TAKE IT"



New End Discharge 1/2 Bag Non-Tilt



New 1, 2 & 3 Bag Non-Tilt Trailer

**You're Right When You Pick CMC**

You get the newest in Mixers, Tilters and Non-Tilt . . . all sizes. Mix faster, move faster. No dead weight. Built to take it. You can bid right and be on the profit side with this kind of equipment.

**Write for New Catalog**

Get new catalog showing latest CMC Mixers . . . all sizes . . . Plaster and Mortar Mixers, Dual Prime Pumps, Hoists, Saw Rigs, Carts and Barrows.

**CONSTRUCTION MACHINERY CO.** Waterloo, Iowa

**How Derby Does It** (Continued from page 116)

carpenter. Bendix laundry roughed in by plumber and installed by manufacturer's agent. G-E exhaust fan. Single circuit No. 10 wire for above equipment.

WIRING—G-E wiring, 6-panel switch box and circuit breaker. Branch wiring No. 14, except for Bendix, Disposall and dishwasher circuit, No. 10, and except for circuit to refrigerator, No. 12.

EXTERIOR PAINT—3 coats Sherwin Williams and Devco & Raynolds exterior paint. Exterior wood finish back-primed before erection. Door and window frames primed immediately on arrival at job.

FOUNDATION ANCHORS—Set 24 1/2" deformed reinforced mild billet steel bars in concrete foundation and bend upper end over joist to anchor house securely.

LINOLEUM—Bathroom floors Sealex inlaid linoleum. Walls covered with Sealex linoleum wall covering with aluminum edging.

BATHROOM FIXTURES—5' Biggs recessed tub with rim seat and safety bottom in white and stock colors, acid resisting. Briggs wall-type lavatory and colored vitreous china closet combination with reverse trap bowl.

\* \* \*

**How Free Service Sells**

(Continued from page 59)

Actually, the workshop on wheels is a guarantee that all homes built by the company are perfect in every respect.

Is this an unnecessary expense to the builder? Fred Gellert doesn't think so. He is a big, solid, enthusiastic man, and he is thoroughly convinced of the value of service.

"We have sold dozens of new homes through the activities of our service department," he said.

The workshop on wheels is an advertisement in itself. According to Thomas Maddock, superintendent, prospective buyers have even stopped the car on the street and inquired about this new service.

Largely due to the leads turned up by the service department there has been no summer slump in building at Standard. Business is forty per cent ahead of 1938 and new homes for August fifty per cent ahead of the same period last year.

There are other advantages, besides sales, that have been gained from the workshop on wheels. This modern service department is helping Standard construct a better home at lower cost. Paradoxically, the longer the service department is in operation, the less need there is for it.

Defects found in older homes are remedied in building the new ones. An example of the type of trouble eliminated is cited in the matter of sagging garage doors. The simple use of a strap hinge on these doors, instead of the old type, eliminated this annoyance completely.

The rolling workshop serves much the same purpose in home construction as the testing department does for an automobile manufacturer. It takes the bugs out of new construction at practically no cost to the contractor. Minor adjustments, made at the time of building, eliminate future trouble and result in additional convenience to the home owner.

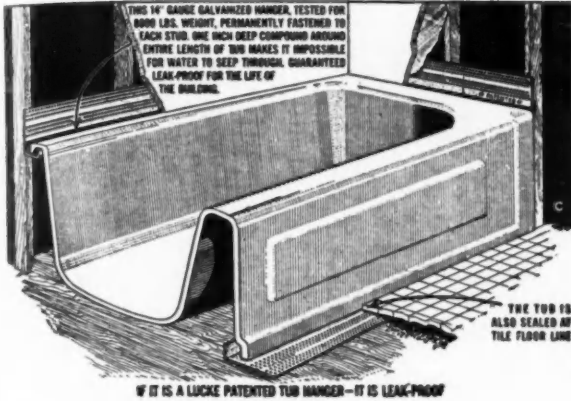
Much of the experience gained by the Gellert brothers through their service department is being utilized by the local Federal Housing Authority.

In addition to their service work the crew go over new homes and see that the buildings are in first class shape for the new owner.

By keeping in constant contact with owners, and giving speedy attention to their needs The Standard Building Company, with its workshop on wheels, is illustrating the way to more sales and better homes for all progressive builders in San Francisco.—Vernon Wilkinson.

# YOU CAN TIE

This Leak Proof Protection Into your Bathroom At small additional cost



The Lucke Leak-Proof Tub Hangers prevent seepage between walls and tubs. End unsightly cracks and ruined plastering. Eliminate settling. Specified everywhere by leading architects and contractors for remodeling or new construction. All types of tubs. All types of wall construction. Ask your tile setter about it. Catalog free. Send for it.

## THE LUCKE LEAK-PROOF BATH TUB HANGER

Manufactured exclusively by

<b>WILLIAM B. LUCKE, INC.</b>	<b>WILMETTE, ILL.</b>
Boston	San Francisco
New York	Los Angeles
Minneapolis	
New Orleans	

# SAMSON SPOT

## SASH CORD



TRADE MARK

*Economical*



Samson Spot Sash Cord installed with the proper weights and pulleys, will give at least 25 years of service. In cost per year of service, it is by far the least expensive material for hanging double hung windows. Easily identified by the colored spots, it is made in one quality—the best. Write for samples and specification data.

## SAMSON CORDAGE WORKS

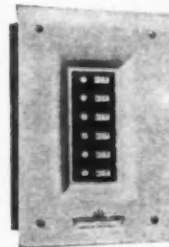
BOSTON, MASS.

Those who make an art of living depend on this world famed hotel as the very embodiment of gracious service, true refinement and dignified hospitality.

Under the same Management as  
 The Gotham  
 The Drake  
 The Evanshore  
 The Town House  
 A. S. Kinkeby  
 Managing Director

# The Blackstone

Michigan Avenue · CHICAGO



## FA Type A. C. Circuit Breaker Service Equipment

Specially desirable for residential construction . . . Positive, automatic protection against short circuits and sustained overloads . . . Proper time lag characteristics to prevent needless circuit interruptions when momentary overloads occur . . . No more "groping in the dark" to restore service . . . Convenient and handy—merely return the handle to the "ON" position, after the cause of the short circuit has been removed . . . Operates manually, like an ordinary tumbler switch . . . Unusually attractive appearance . . . Modern styling . . . Beautiful pearl gray finish . . . Easy to keep clean . . . Priced right.

For 120 volt AC service . . . Capacities: 15, 20, 25, 35 and 50 Amp . . . Approved by Underwriters' Laboratories . . . Send for New Bulletin No. 58 . . .

*Frank Adam*  
 ELECTRIC COMPANY  
 ST. LOUIS

**New 3 1/2-S KWIK-MIX**  
*non-till*

**Modern Rubber Roller Drum Drive**

No ring gear—no pinion  
—no countershaft, less  
wear—smooth running.



**LOAD WHILE  
MIXING—  
INCREASES  
PRODUCTION  
40 TO 50%**

**END  
DISCHARGE**

**Write For Bulletin 2X**

**KWIK-MIX CONCRETE MIXER CO.**  
PORT WASHINGTON . . . WISCONSIN

**I'LL USE THE  
Mall Saw  
IT'S MUCH  
FASTER!**

That's what the men on the job are saying—and what your men will say too—once they see the *speed, power, flexibility, accuracy, easy operation and safety* of the MALL-SAW—specially designed and built for house framing and form work. Saves you **TIME, LABOR, MONEY!** There's a MALLSAW for every job; cutting capacities —1" to 4".

**MALL TOOL  
COMPANY**  
7737 SOUTH CHICAGO AVENUE  
CHICAGO, ILLINOIS  
Also makers of MALL  
Door Mortisers, Door  
Planes and Drills.

I would like to have your free folder on MALLSAWS and other Portable Electric Power Tools.

Name .....

Street .....

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

**Glass-Faced Structural Unit**

(Continued from page 71)

design has four purposes. First, the back edge is crimped into the concrete which is cast after the metal edge is applied around the glass. Second, the metal edge has a high shoulder 5/8 inch wide, entirely backed by solid concrete. This flat shoulder is the load bearing point and extends 1/32 inch higher than the metal around the vitrolite. After installation the flat metal shoulders and concrete portions of the blocks receive the entire load of the wall, allowing the vitrolite surface of each block to be entirely free from any pressure or load whatsoever. Third, the metal edge has a half-round groove at the mastic line. This allows the metal to act as a spring which exerts a continual pressure on the glass regardless of expansion or contraction. Fourth, the front portion of the metal contains a continuous layer of cork tape which prevents direct metal-to-glass contact and also cushions the edge of the glass to protect it from damage.

Glastone offers insulation two to three times that of cast stone, brick or similar building materials. A glastone block 8 inches thick offers ten per cent better thermal insulation than 8 inches of brick lined with one-half inch of cork. Plaster may be applied directly to the concrete surface of glastone.

While there is no danger of breakage except under severe impact, any damaged surface may be replaced, giving glastone an important advantage over other masonry units. In case of breakage, the mastic holds fragments to the wall, preventing possible injuries from falling particles.

Tucker and Silling Architects, Inc., of Charleston, W. Va., designed the Libbey-Owens-Ford Company glastone building in that city.

\* \* \*

**Who Builds What**

(Continued from page 74)

larger the volume of business done by local building men.

American Builder also grouped replies from readers according to their vocational classifications to determine the average annual volume of each. Findings are shown in an accompanying table. The largest number of replies (2,054) came from general contractors and builders, whose average annual volume is \$51,669. The smallest number of replies came from sub-contractors (28) who also showed the smallest annual volume. There were 134 replies from architects and engineers, who reported an average annual building volume of \$148,909. This is a very interesting figure, because 4,000 of the 7,000 architectural firms in the United States do an annual business of less than \$25,000. Approximately one out of each seven architectural firms does an average annual business of more than \$50,000. American Builder architectural subscribers show an average annual volume of nearly \$150,000, and obviously are active concerns whose business volume is far above national averages.

The building industry is in a state of flux at all times. Its man-power is constantly shifting and growing. Building mechanics take a few jobs as sub-contractors. They continue to expand, and ultimately become general contractors and builders, as older men retire. There also are changes in the types of work done by various building men according to local conditions and the industry's current position in the national building cycle. During active years a residential builder includes commercial, industrial, and public buildings in his operations. During quiet years the commercial and industrial builder may fall back on a mainstay of residential modernizing, or other light construction work.

(Continued to page 122)

# BE INDEPENDENT!

—WITH YOUR OWN FLOOR REFINISHING BUSINESS

Be your own boss—set your own salary figure—put yourself in the money today and for the rest of your life. It's not unusual to clear \$10.00—\$20.00—and even \$30.00 in a day with the revolutionary new Whizz-ard sander. Many contractors who started with one machine now operate several—have gained financial independence.

It's clean, inside work, and can be carried on throughout the entire year. And conditions were never more favorable for building a business of your own. Building is definitely on the boom!

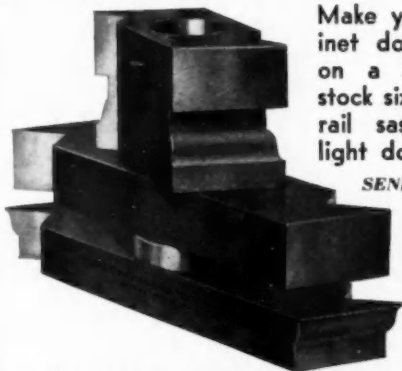
We help you by providing a machine which is truly the acme of perfection in productive and profitable sanding equipment—by giving you effective merchandising helps. A 3c stamp and this advertisement will put you on the road to consistent, insured profits and INDEPENDENCE. Don't delay longer—write TODAY!



## LITTLE GIANT BELT SANDER

Information on this strikingly different and exceedingly versatile bench belt sander as well as literature on other model floor sanders will be sent on request.

**CLARKE SANDING MACHINE CO.**  
DEPT. AB-1039 :: MUSKEGON, MICH.



Make your odd sash, cabinet doors and mouldings on a Shaper, using our stock size cutters for check rail sash, cabinet doors, light doors, mouldings

SEND FOR OUR CATALOG

Manufacturers and Dealers in  
**WOODWORKING MACHINES, SAWS, KNIVES, and MILL SUPPLIES**

**WOODWORKERS' TOOL WORKS**  
222 Jefferson Street, South, Chicago

## Now Ready AMERICAN BUILDER AND BUILDING AGE BOOK GUIDE

The 1939 edition of this popular guide to books and booklets on building is now ready. In its 64 pages are described some 500 books on all subjects connected with home building, from foundation to furniture. Books which have not been revised within ten years have been omitted. Some English books are included where they are outstanding or where there are no American books on the subject.

Send For Your Free Copy  
Book Service Department

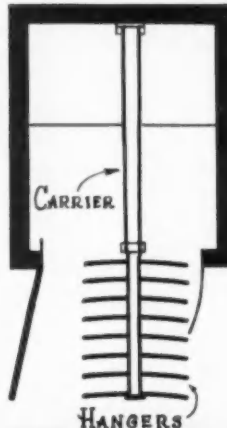
**American Builder and Building Age**  
30 Church Street New York, N. Y.

Save up to \$40 per Closet in Cubage



K-Venience Clothing Carrier  
—In Sizes to Fit All Closets

One of 40 space-saving closet fixtures in the K-Venience line.

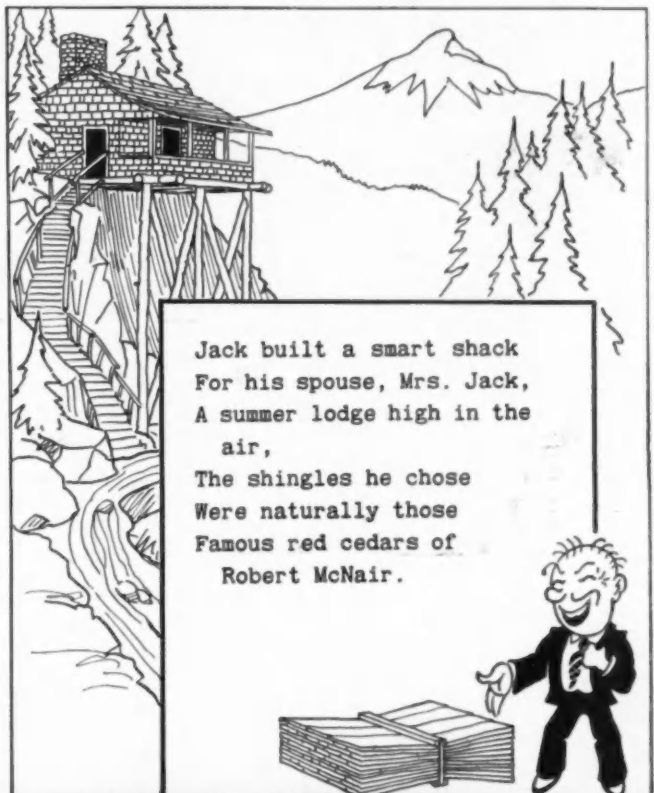


## -and Double Closet Capacity

Figuring average house costs at from 25 to 45 cents per cubic foot, a few dollars spent for K-Venience Clothes Closet Fixtures, will give you economy planned closets which are equal in utility to those twice their size. For example, a closet 2' x 5'—equipped with K-Veniences, can give you the same clothing capacity you would ordinarily get in a closet 4' x 5'. This saves between 80 and 90 cubic feet or from \$20 to \$40 in cubage. K-Veniences also keep all apparel orderly, easily accessible, and provide eye-catching sales appeal to answer Mrs. America's demand for more closet space.

**FREE CATALOG** with plans, ideas and helpful data showing how K-Veniences Double Closet Capacity. Write today.

**KNAPE & VOGT** MANUFACTURING COMPANY  
Dept. M-10 Grand Rapids, Mich.



Jack built a smart shack  
For his spouse, Mrs. Jack,  
A summer lodge high in the  
air,  
The shingles he chose  
Were naturally those  
Famous red cedars of  
Robert McNair.

**ROBERT McNAIR SHINGLE CO.**  
VANCOUVER, BRITISH COLUMBIA  
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Architect  
 Builder

Dealer  
 Owner



### Who Builds What (Continued from page 120)

Two-thirds of the active building men who furnished information for this survey erected two, three, or four different types of buildings within a year. Knowledge of this variety in types of work done is important in understanding the working methods and buying habits of active building men.

It was found that 2,572 readers, out of 3,110, erect new residential buildings, and that 899 of this number erect them exclusively. Four hundred and eighty-one erect new commercial buildings; 18 exclusively. Ninety-eight erect new industrial buildings; ten exclusively. Four hundred and thirteen erect new public buildings; 34 exclusively. Two hundred and fifty-three do commercial, industrial, and public building repairs and remodeling. Many other combinations of construction activity were reported.

American Builder readers are most active in residential and light-load-bearing construction, where both the largest total dollar volume and largest number of projects will be found. Findings of mail surveys have been confirmed by field surveys in a number of cities. They show that American Builder readers control buying in 70 per cent of the nation's residential and light-load-bearing construction, the largest and most profitable segments of the building market.

#### NUMBER OF REPLIES AND VOLUME, BY VOCATIONAL CLASSIFICATIONS

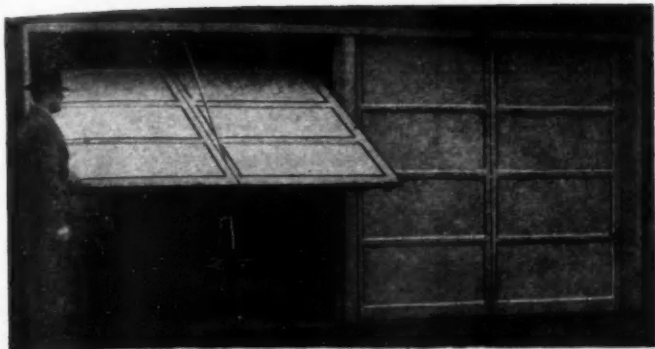
Vocational Classification	Number of Replies	Total Dollar Volume	Average Annual Volume Per Reader
General Contractors and Builders .....	2,054	\$106,130,036	\$ 51,699
Sub-contractors .....	28	150,954	\$ 5,391
Construction Superintendents and Foremen .....	68	1,966,710	\$ 28,922
Carpentry Contractors and Builders .....	468	8,715,558	\$ 18,622
Architects and Engineers .....	134	19,953,818	\$148,909*
Real Estate Builders and Developers .....	168	10,212,482	\$ 60,788
Property Maintenance and Finance .....	37	1,941,770	\$ 52,480
Vocational Classifications not Indicated .....	76	3,886,806	\$ 51,142
	<b>3,033</b>	<b>\$152,958,125</b>	<b>\$ 49,182†</b>

\* Approximately one out of each seven of 7,000 architectural firms in the United States does an average annual business of more than \$50,000; 4,000 of them average less than \$25,000 a year. American Builder architectural subscribers show an average annual volume of nearly \$149,000 each, and obviously are active concerns whose annual volume is far above national averages.

† Average includes those who reported no building.

HERE IS a tabulation showing the number of questionnaire returns received from "American Builder" readers of various vocational classifications, together with the average annual volume of readers in each group. Note that the largest number of replies was received from general contractors and builders, the smallest number from sub-contractors, and that the largest annual volume is reported by architects and engineers.





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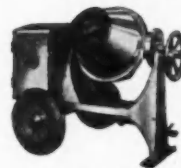
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I am an  architect,  contractor  dealer  home owner.  
(Check classification above)

**Winter Building**

(Continued from page 69)

Bureau of Standards report shows that the addition of 2 per cent calcium chloride at 40 degrees temperature increases the one-day strength by 300 per cent, the three-day strength by 117 per cent, and the seven-day strength by 75 per cent. In practice this means that approximately seven days can be saved in the time required to achieve 2500 lb. compressive strength in cement mortar maintained at 40 degrees F.

By cutting in half the time required to develop full-strength concrete, the danger period from freezing is greatly shortened. The time required for protection is therefore shortened and the expense of fuel, equipment, labor and covering is correspondingly reduced. By increasing workability calcium chloride permits a substantial reduction in the water-cement ratio. This, of course, means that less water is required to properly place the concrete. Coupled with the fact that calcium chloride reduces the freezing point of water this provides another safeguard against frozen concrete. It should be noted, however, that calcium chloride is not recommended to replace but rather to supplement the usual safeguards in freezing weather.

**Recommended Practice**

For all types of concrete, used with or without admixtures, the following suggestions for winter practice are advised:

1. *Prompt protection*—Heat generated by the hardening of concrete is greatest during the first hour after placing. It is thus highly important to provide protection to conserve this heat immediately after placing. Don't wait until the end of the day's work but apply protection immediately.

2. *Good mix important*—Rich, scientifically proportioned mixes with low water content attain strength more quickly and are desirable for cold weather work. Lean, wet mixes acquire strength slowly and are, therefore, in greater danger of freezing.

3. *Heating aggregates*—Aggregates should be stored in compact piles and kept free of ice. Unless adequate heat is provided in the mixing water they should be heated to a temperature of from 60 to 70 degrees. A common practice is to pile the aggregates over perforated low-pressure steam pipes.

4. *Heating mixing water*—The easiest method of raising the temperature of mixed concrete is to heat the water. This may be done by the use of steam coils, direct-fired boiler, or exhaust steam released at the bottom of the tank. A 5 degree rise in temperature of the mixing water will produce a rise of approximately 1 degree in the temperature of the concrete. The following formula prepared by the Portland Cement Association may be of value in estimating the temperature of mixed concrete:

$$X = \frac{Wt + .22 W't'}{W + .22 W'}$$

Where W = weight of water  
W' = weight of solids (cement and aggregates)  
t = temperature of water  
t' = temperature of solids  
X = temperature of mixed concrete.

For example, assume a mix with 210 lb. sand, 320 lb. gravel, 50 lb. (6 gal.) total of water, 10 lb. of which is introduced with the sand. Assume temperature of materials = 45 deg. and of water = 170 deg., water added = 50 - 10 = 40 lb. Then

$$X = \frac{40 \times 170 + 10 \times 45 + .22 (94 + 210 + 320) 45}{50 + .22 \times 624}$$

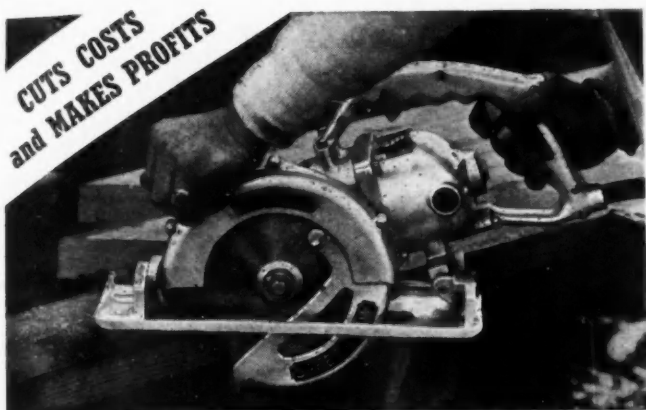
= 72 deg. F.

It will be noted that only the water added was heated to 170 degrees. The water in the aggregates had the same temperature as the aggregates themselves. It will be seen that where the bulk of the aggregates has temperature appreciably below 45 degrees, it will be necessary to heat the aggregates as well as the mixing water.

5. *Mix thoroughly*—Cold weather work calls for exceptionally thorough mixing, permitting the use of less water and higher early strength concrete.

6. *Protection of concrete*—Newly placed concrete generates heat due to the chemical action that takes place in the hardening. It is important, therefore, in cold weather to properly enclose and protect the concrete to retain as much of this heat as possible.

(Continued to page 128)



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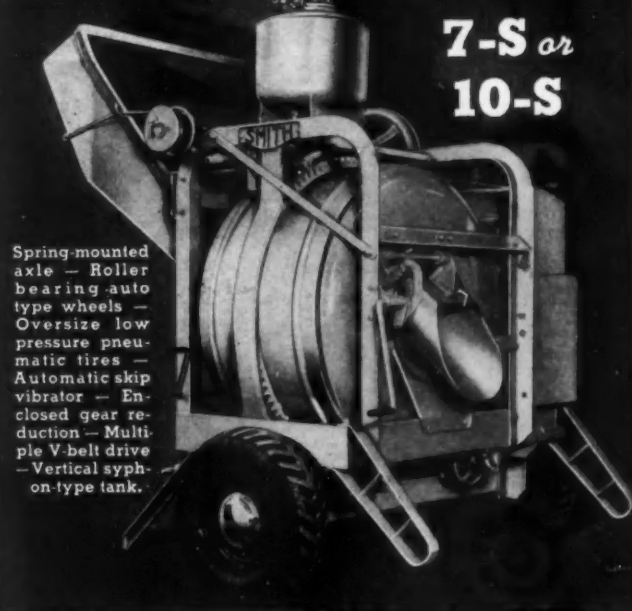
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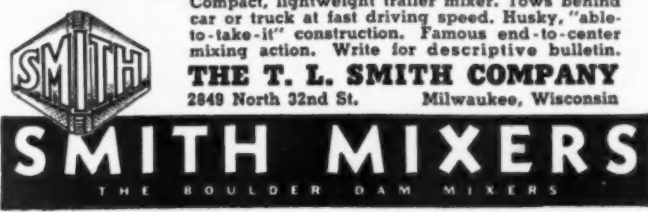
## TRAIL-SMITH

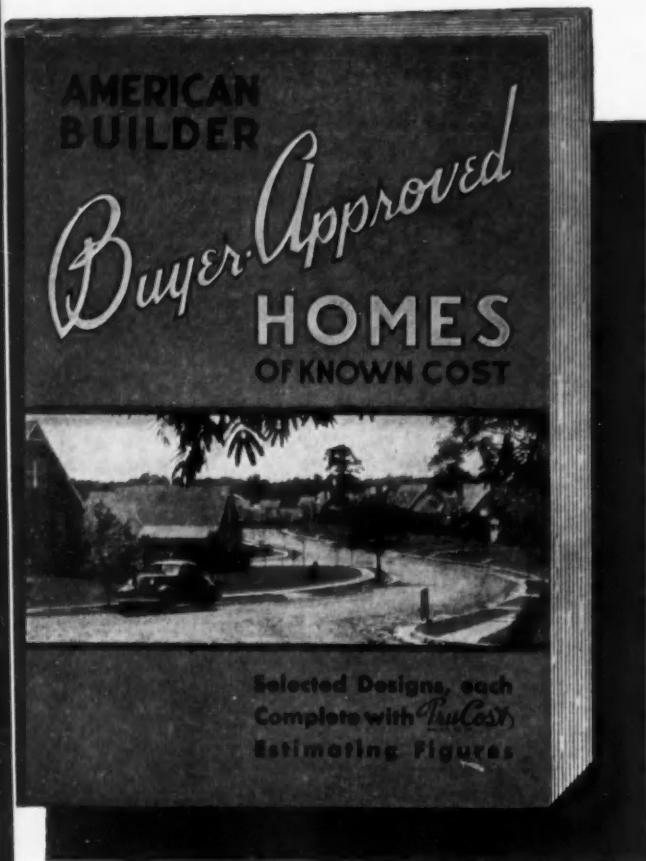
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Many economists forecast that the conflict now waging abroad will provide a leverage for a pronounced upturn in American home building.

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In the second place, the public knows that war, even if it be three thousand miles away, and stays there, means higher building costs, steeper rents, labor and material shortages. Hence it is more approachable on the subject of **BUILDING NOW**, at present low interest rates and present building prices, both of which are bound to go up.

In the third place, business here has already amazingly absorbed the shock of war. The spectacular advance in steel production—the upping of railway traffic—the inrush of orders from countries unable to get supplies from Europe, the decrease in unemployment, all presage an industrial boom of major proportions. And when business is good, home building booms!

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Continued from preceding page

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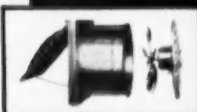
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**SPEED PRIME PUMPS**

**Winter Building**

(Continued from page 124)

Careful analysis of all the costs involved indicates that adequate protection in which temperatures of 60 to 70 degrees are maintained more than pays. The methods used vary greatly with the type of structure and the exposure. Burlap, heavy beds of straw and canvas enclosures are common protection. Canvas enclosures containing perforated steam pipes or salamanders are also used.

Before placing concrete in the forms, ice and frost should be removed. This is best done with live steam. Concrete should, of course, never be placed on a frozen subgrade.

\* \* \*

**How to Estimate Accurately**

(Continued from page 73)

**Rule:** Count the verge rafters as shown on the elevation sheets. Each gable requires two. The length is the same as the common rafter and can be either measured on the elevation or figured mathematically.

**NOTE:** The same estimating rule will apply if a moulding is used instead of a verge rafter.

**TONGUE & GROOVE SHEATHING:** Tongue & groove (T & G) 1" x 6" ceiling stock is often used to cover an open cornice in order that it may have a finished appearance. As a piece of 1" x 6" stock "lays" only 5 1/4", additional stock must be ordered to have enough to cover a given surface. There are two rules required to figure the area of a cornice. Each applies to overhang and gable projection, respectively. (See figure 4.)

**Rule 1, overhang area:** Multiply the length of the rafter projection (in even feet or half feet) by the length of the eave, which is building length plus gable projection. Shed or gable roofs have two overhang areas, one for each side wall. A hip roof will have four such areas, one for each outside wall of a building. The eave length of a hip roof is building length plus twice the cornice run.

**Rule 2, gable projection area:** a. To find the area of a gable projection for a shed roof multiply the rafter length, from plate line to ridge, by the distance the verge rafter is out from the building. For a gable roof compute the same way but double the result as there are two such areas in a gable.

b. 1/5 must then be added to these areas to allow for some cornice boards to extend back to the second rafter to help prevent the verge rafter from sagging.

c. After the area is known then allowance must be made for loss due to milling and laying the T & G stock.

**Rule 3, allowance for waste:** Combine the gable projection area and the overhang area. Then add 1/6. The result equals board feet of T & G sheathing stock to order for an open cornice.

**Box Cornice and Roofing Unit**

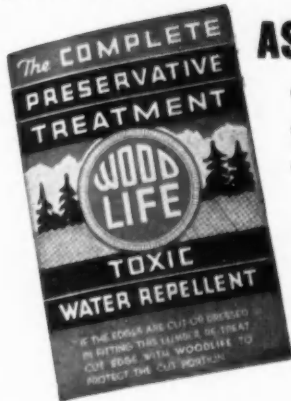
A box cornice is composed of several parts, namely fascia, frieze, planscher, and moulding. (See figure 2.)

**Rule:** Check the detail sheets to find the sizes and number of parts to the box cornice. Use an architect's scale and measure the lengths of the cornice as shown on the different elevation sheets. Allow 12" extra for each outside corner. Then order lengths that will cut with the least waste.

The last unit of exterior finishing is roofing. Either wood shingles or composition roofing materials are used.

**WOOD SHINGLES:** Wood shingles are used as a roof covering on many types of roofs, such as shed, gable, hip, and intersecting. The first three named are figured alike when estimating the number of shingles, as each has one or more flat surfaces. The hip and inter-

(Continued to page 130)



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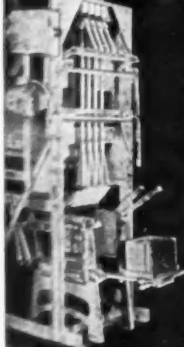


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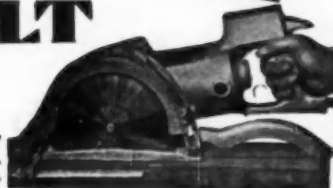
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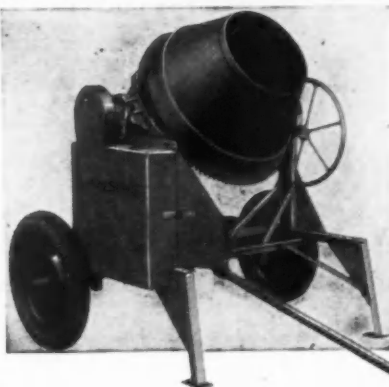
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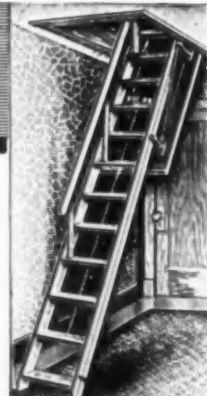


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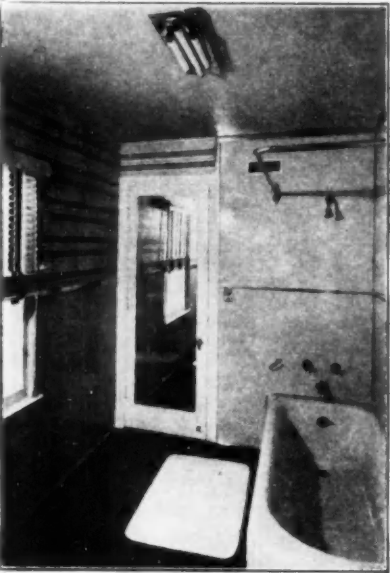
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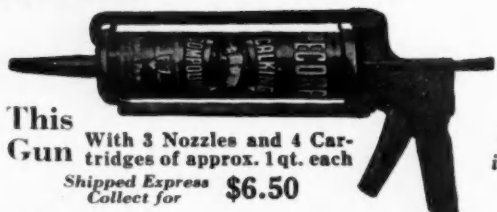


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**How to Estimate Accurately**

(Continued to page 128)

secting roofs require more shingles due to waste on the hip and valley rafters.

**ROOF AREA RULES:** The following rules indicate how to find the area for various types of roofs.

**Shed Roof:** Rafter length times eave length equals roof area.

**Gable Roof:** Rafter length times ridge length times two equals roof area.

**Hip Roof:** As a hip roof has the same area as a gable roof (on a building having the same dimensions and roof pitch) common rafter length times eave length times two equals roof area.

**Intersecting Roof:** This roof is easiest figured on the basis of roof plan area. The roof plan area is found by increasing building dimensions by the cornice run. Then multiply the width by the length and deduct any "take-away" areas.\*\* Then multiply the actual plan area of the roof by a constant selected from the following table for the required roof pitch.

CONSTANT TABLE FOR COMMON RAFTER LENGTHS AND ROOF AREAS		
Pitch	Cut	Constant
1/8	3 & 12	1.03
1/6	4 & 12	1.054
5/24	5 & 12	1.083
1/4	6 & 12	1.11
7/24	7 & 12	1.15
1/3	8 & 12	1.2
3/8	9 & 12	1.25
5/12	10 & 12	1.3
1/2	12 & 12	1.41
7/12	14 & 12	1.53
5/8	15 & 12	1.6
2/3	16 & 12	1.66
3/4	18 & 12	1.8
7/8	21 & 12	2.015

*Rules to Find Number of Bundles of Shingles:*

1. Roof area divided by number of square feet of surface covered by one bundle equals number of bundles. Count part of a bundle as a full one.

2. For hip or intersecting roofs figure the same as rule one and then add 5% to allow for waste on the hips and valleys.

3. Hips and ridges are usually shingled by using an extra row laid in such a manner as to make them waterproof. This requires additional shingles. Allow one bundle for every 25 linear feet or fraction thereof, of hips and ridges.

**COMPOSITION ROOFING PAPER:** Composition roofing is sold in rolls 3' wide, 36' long. Each roll contains 108 square feet, but will only cover 100 square feet. The extra 8 square feet is used for laps to make a water-tight roof. The thickness of the material varies from 1/2 ply to 3 ply, the latter being the thickness. Composition roofing paper can be bought in various colors and finishes.

At least 12" should be added to the width and length measurements of a flat roof before finding roof area, to allow for the paper turning up at the firewalls. Add more if the plan indicates more height should be turned up as sometimes the roofing goes over the top edge of the firewall.

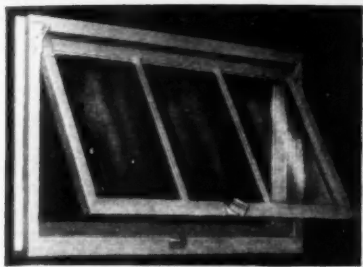
**Rule:** Find the roof area and divide by 100. Result equals number of rolls of roofing. Any fractional part of 100 square feet must be counted as a full roll as parts of a roll cannot be purchased.

\*\*See previous estimating article in June, 1939 issue of *American Builder*.

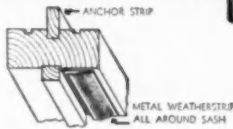


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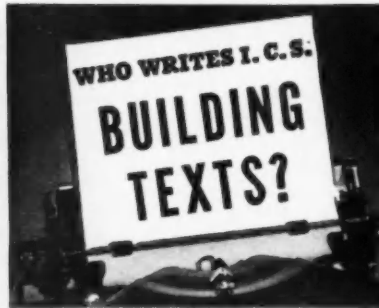
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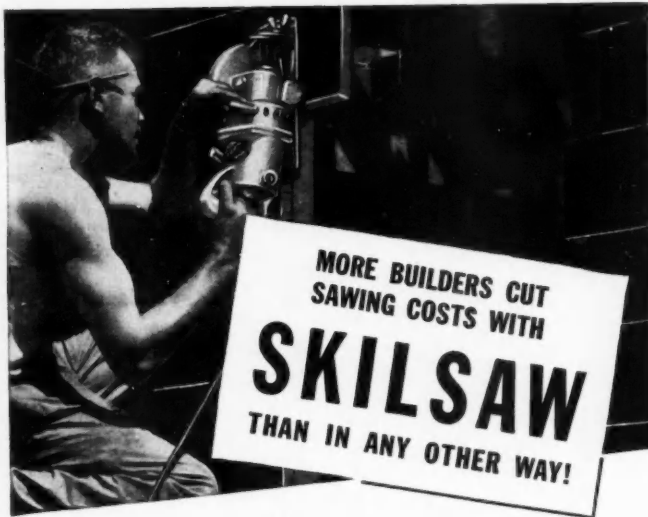
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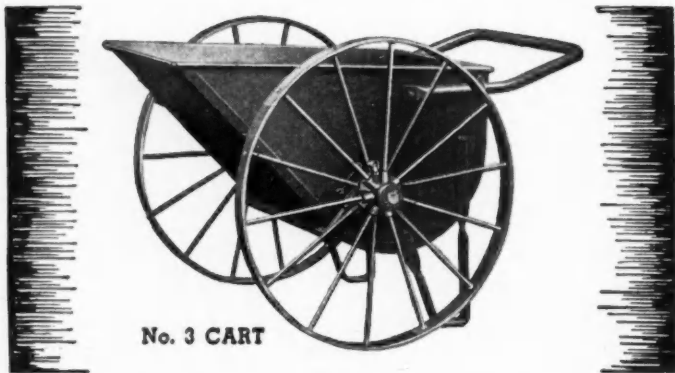
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## NEW INFORMATION—CATALOGS OFFERED

Readers Wanting to Receive Any of the Catalogs and Data Sheets Listed in This Department Should Write on Their Business Stationery Direct to the Manufacturer. When Writing, Mention This Department of American Builder and State Your Occupation or Business Connection.

“MODERN” GARAGE DOOR EQUIPMENT—A new series of data sheets illustrates “Modern” garage door hardware for upward-acting garage doors, both new and old. Garage door operators (electrical) are also detailed.—THE MODERN STEEL PRODUCTS CO., Columbus, Ohio.

“POWER KING MULTISAW ARM”—A series of data sheets shows the Power King electric hand saw in six models and the new Power King Multisaw arm, which attaches to the work bench and transforms the portable electric saw into a rigid, accurate woodworking machine for ripping, cross-cutting, mitering, etc.—POWER KING TOOL CORP., Warsaw, Ind.

“AVOID WATER HAMMER”—“Fortify Your Pipe Lines Against Destructive Water Hammer; Avoid Costly Repairs and Operating Delays” is the leading message in an 8-page data sheet offering a new development in piping practice, the “Wacor” water hammer arrester. The details and operation of this ingenious improvement are shown.—WATER HAMMER ARRESTER CORP., Milwaukee, Wis.

WEIL-McLAIN RAYDIANT “CONCEALED” RADIATOR—Full information on this improved heating appliance is contained in a 4-page color folder with an 8-page supplemental data sheet, Advance Bulletin No. H-65, giving dimensions, ratings and other engineering data. This is described as an into-the-wall out-of-the-way radiator that scientifically blends radiant heat and convected heat for extra comfort.—WEIL-McLAIN CO., Erie, Pa.

NORGE WINTER AIR CONDITIONER FOR THE SMALL HOME—Model 120 is presented in a new 4-page catalog, and is said to have every feature of the most expensive air conditioning unit, yet priced to fit the small home budget. It is a pressure oil burner with electric ignition, fully automatic control, and forced air circulation, the air being filtered and humidified.—NORGE HEATING AND AIR CONDITIONING DIV., Borg-Warner Corp., Detroit, Mich.

CLINTON MORTAR AND STUCCO COLORS—Standard specifications and recommendations for using Clinton mortar colors, cement colors, plaster colors, stucco colors and colored plastic roof cements have been issued in the form of a 4-page data sheet.—CLINTON METALLIC PAINT CO., Clinton, N.Y.

“EASY ON THE EYES”—A very interesting and instructive brochure of 32 pages and covers on Clearlite sheet glass. The process of making sheet glass is illustrated, and then a large number of architectural photographs show what Clearlite sheet glass accomplishes in homes, stores, offices and other important buildings.—FOURCO GLASS CO., Clarksburg, W. Va.

NEW “GENERAL, JR.” KITCHEN VENTILATING FANS—Information regarding this important equipment is presented in a new data sheet which gives specifications, dimensions and method of installation.—GENERAL BLOWER CO., Inc., 2402 Market St., Philadelphia, Pa.

UNION METAL STEEL BRIDGING—A new data sheet offers this specialty with the slogan, “Ready for use, no sawing, no splitting, stops squeaky floors, never warps or shrinks.” An interesting analysis of bridging costs is included.—THE UNION METAL MANUFACTURING CO., Canton, Ohio.

“THE WRIGHTFLOR”—A 4-page data sheet in full color showing WrightFlor color chart of 10 popular patterns in which this popular flooring material is offered. WrightFlor is a new

(Continued to page 132)

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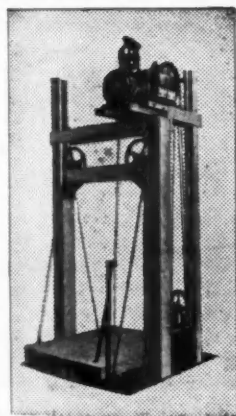
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## Catalogs Offered

(Continued from page 132)

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**TRUSCON POR-LOX SYSTEM**—A 4-page data sheet showing how cement tile roofs can be resurfaced with new color and waterproofing.—**THE TRUSCON LABORATORIES**, Detroit, Mich.

"USE YOUR ATTIC"—is the advice contained in an 8-page folder and price list of Marco folding stairways.—**THE MARSCHKE COMPANY**, 551 University Ave., St. Paul, Minn.

"HOW TO PLAN THE BATHROOM YOU'VE ALWAYS WANTED"—A 16-page 4-color booklet elaborately illustrated—tells all about bathroom planning, shows proper arrangement of fixtures, piping systems and accessories, illustrates architectural and decorative design and features color harmony.

A companion piece, "Choosing the Heating System for Your Home," is a complete, non-technical discussion, 20 pages illustrated, of the history of house heating and the important types of house heating equipment now available.—**CRANE COMPANY**, 836 S. Michigan Ave., Chicago, Ill.

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"GREATER COMFORT WINTER AND SUMMER"—A 12-page application booklet on Presstitched Kimsul Expanding Blanket insulation. Numerous ways to use this material are illustrated and described.

A companion piece of a more technical nature for architects, builders and engineers is entitled "Controlled Insulation Value." It is in vertical file form, 12 pages and covers.—**KIMBERLY-CLARK CORP.**, Neenah, Wis.

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"PICTURE WINDOWS FOR SMALL HOUSES"—No. 4 of a series of four portfolios of window ideas using Fenestra casements. Five design sheets on heavy art paper show exterior and interior perspective sketches and details of the picture window construction. Technical and construction details are described on the inside of the portfolio cover and in a small inserted handbook.—**DETROIT STEEL PRODUCTS CO.**, 2250 E. Grand Blvd., Detroit, Mich.

"WHAT TO EXPECT FROM A WHITE LEAD PAINT"—28 pages and covers of dependable paint information from the Lead Industries Association. It explains the qualities of good paint and the proper application necessary to obtain the utmost service. A simplified white lead painting guide for computing amounts of paint ingredients needed is a feature which builders will find useful. Valuable information is also given in the mixing instructions for painting all surfaces.—**LEAD INDUSTRIES ASSN.**, 420 Lexington Ave., New York, N.Y.

**DRAFTING ROOM HELPS**—The David White Co. is offering new folders on two improvements for the drafting room, the Dazor floating lamp, and the new Scotch edger for protecting drawings. The Dazor lamp has a counterbalanced arm so that it can be set at any angle over a drafting table and instantly adjusted. The Scotch edger is to apply cellulose edging tape to drawings or blueprints for their protection—a new proposition which building contractors as well as architects are finding very much worth while.—**DAVID WHITE CO.**, 311 W. Court St., Milwaukee, Wis.